



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

## Header @ 2

[List View](#)
**General Information** [Contact](#) [Default Values](#) [Discount](#) [Document Information](#) [Clarification Request](#)

Procurement Folder: 1435001

SO Doc Code: CRFQ

Procurement Type: Central Master Agreement

SO Dept: 0313

Vendor ID: VC0000066437

SO Doc ID: DEP2400000049

Legal Name: STAHL SHEAFFER ENGINEERING LLC

Published Date: 7/9/24

Alias/DBA:

Close Date: 7/17/24

Total Bid: \$328,650.00

Close Time: 13:30

Response Date: 07/10/2024

Status: Closed

Response Time: 11:37

Solicitation Description: Mapping Services in Northern West Virginia (Open-End)

Responded By User ID: wkrasneski

Total of Header Attachments: 2

First Name: Walt

Total of All Attachments: 2

Last Name: Krasneski

Email: wkrasneski@sthalshaeffe

Phone: 304-381-4281



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:** 1435001  
**Solicitation Description:** Mapping Services in Northern West Virginia (Open-End)  
**Proc Type:** Central Master Agreement

Solicitation Closes	Solicitation Response	Version
2024-07-17 13:30	SR 0313 ESR07102400000000220	1

**VENDOR**  
VC0000066437  
STAHL SHEAFFER ENGINEERING LLC

**Solicitation Number:** CRFQ 0313 DEP2400000049  
**Total Bid:** 328650  
**Response Date:** 2024-07-10  
**Response Time:** 11:37:39  
**Comments:**

**FOR INFORMATION CONTACT THE BUYER**  
Joseph E Hager III  
(304) 558-2306  
joseph.e.hageriii@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	Control Surveying	600.00000	HOUR	130.000000	78000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Commodity Line Comments:

Extended Description:

Control Surveying (Spec Item 3.2 & 4.2)

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Topographic, Planimetric and Check Surveying	1800.0000	HOUR	130.000000	234000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Commodity Line Comments:

Extended Description:

Topographic, Planimetric and Check Surveying  
(Spec Item 3.1.1.3 & 4.2)

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Topographic Mapping - (0-25 Acres)	15.00000	ACRE	300.000000	4500.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Commodity Line Comments:

Extended Description:

Topographic Mapping - (0-25 Acres)  
(Spec Item 3.2 & 4.2)

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Topographic Mapping - (25-50 Acres)	30.00000	ACRE	130.000000	3900.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Commodity Line Comments:

Extended Description:

Topographic Mapping - (25-50 Acres)  
(Spec Item 3.2 & 4.2)

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	Topographic Mapping - (50-100 Acres)	75.00000	ACRE	60.000000	4500.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Commodity Line Comments:

**Extended Description:**  
Topographic Mapping - (50-100 Acres)  
(Spec Item 3.2 & 4.2)

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
6	Topographic Mapping - (Over 100 Acres)	125.00000	ACRE	30.000000	3750.00

Comm Code	Manufacturer	Specification	Model #
81151601			

**Commodity Line Comments:**

**Extended Description:**  
Topographic Mapping - (Over 100 Acres)  
(Spec Item 3.2 & 4.2)



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

State of West Virginia  
Centralized Request for Quote  
Service - Prof

<b>Proc Folder:</b> 1435001			<b>Reason for Modification:</b>
<b>Doc Description:</b> Mapping Services in Northern West Virginia (Open-End)			
<b>Proc Type:</b> Central Master Agreement			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2024-06-24	2024-07-10 13:30	CRFQ 0313 DEP2400000049	1

BID RECEIVING LOCATION

BID CLERK  
DEPARTMENT OF ADMINISTRATION  
PURCHASING DIVISION  
2019 WASHINGTON ST E  
CHARLESTON WV 25305  
US

VENDOR

**Vendor Customer Code:** VC0000066437  
**Vendor Name :** Stahl Sheaffer Engineering, LLC  
**Address :** 250 Lakewood Center  
**Street :**  
**City :** Morgantown  
**State :** WV **Country :** US **Zip :** 26508  
**Principal Contact :** Rob Milne, P.E.  
**Vendor Contact Phone:** 304.381.4281 **Extension:**

FOR INFORMATION CONTACT THE BUYER

Joseph E Hager III  
(304) 558-2306  
joseph.e.hageriii@wv.gov

Vendor  
Signature X

FEIN# 11-3759367

DATE 6/27/2024

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

**ADDITIONAL INFORMATION**

The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Department of Environmental Protection to establish an open-end contract for Mapping Services in the Northern Counties of West Virginia per the attached specifications and terms and conditions.

INVOICE TO			SHIP TO		
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Control Surveying	600.00000	HOUR	\$130.00	\$78,000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

**Extended Description:**

Control Surveying (Spec Item 3.2 & 4.2)

INVOICE TO			SHIP TO		
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Topographic, Planimetric and Check Surveying	1800.00000	HOUR	\$130.00	\$234,000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

**Extended Description:**

Topographic, Planimetric and Check Surveying  
(Spec Item 3.1.1.3 & 4.2)

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Topographic Mapping - (0-25 Acres)	15.00000	ACRE	\$300.00	\$4,500.00

Comm Code	Manufacturer	Specification	Model #
81151601			

**Extended Description:**  
 Topographic Mapping - (0-25 Acres)  
 (Spec Item 3.2 & 4.2)

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Topographic Mapping - (25-50 Acres)	15.00000	ACRE	\$130.00	\$1,950.00

Comm Code	Manufacturer	Specification	Model #
81151601			

**Extended Description:**  
 Topographic Mapping - (25-50 Acres)  
 (Spec Item 3.2 & 4.2)



INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Topographic Mapping - (50-100 Acres)	75.00000	ACRE	\$60.00	\$4,500.00

Comm Code	Manufacturer	Specification	Model #
81151601			

**Extended Description:**  
 Topographic Mapping - (50-100 Acres)  
 (Spec Item 3.2 & 4.2)

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	Topographic Mapping - (Over 100 Acres)	125.00000	ACRE	\$30.00	\$3,750.00

Comm Code	Manufacturer	Specification	Model #
81151601			

**Extended Description:**  
 Topographic Mapping - (Over 100 Acres)  
 (Spec Item 3.2 & 4.2)

SCHEDULE OF EVENTS		
<u>Line</u>	<u>Event</u>	<u>Event Date</u>

## INSTRUCTIONS TO VENDORS SUBMITTING BIDS

**1. REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

**2. MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

**3. PREBID MEETING:** The item identified below shall apply to this Solicitation.

☐ A pre-bid meeting will not be held prior to bid opening

☐ A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

**4. VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted emails should have the solicitation number in the subject line.

Question Submission Deadline:

Submit Questions to:  
2019 Washington Street, East  
Charleston, WV 25305  
Fax: (304) 558-3970  
Email:

**5. VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

**6. BID SUBMISSION:** All bids must be submitted on or before the date and time of the bid opening listed in section 7 below. Vendors can submit bids electronically through *wvOASIS*, in paper form delivered to the Purchasing Division at the address listed below either in person or by courier, or in facsimile form by faxing to the Purchasing Division at the number listed below. Notwithstanding the foregoing, the Purchasing Division may prohibit the submission of bids electronically through *wvOASIS* at its sole discretion. Such a prohibition will be contained and communicated in the *wvOASIS* system resulting in the Vendor's inability to submit bids through *wvOASIS*. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via email. Bids submitted in paper or facsimile form must contain a signature. Bids submitted in *wvOASIS* are deemed to be electronically signed.

Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason.

**For Request for Proposal ("RFP") Responses Only:** Submission of a response to a Request for Proposal is not permitted in *wvOASIS*. In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal prior to the bid opening date and time identified in Section 7 below, plus \_\_\_\_\_ convenience copies of each to the Purchasing Division at the address shown below. Additionally, the Vendor should clearly identify and segregate the cost proposal from the technical proposal in a separately sealed envelope.

**Bid Delivery Address and Fax Number:**

Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130  
Fax: 304-558-3970

A bid submitted in paper or facsimile form should contain the information listed below on the face of the submission envelope or fax cover sheet. Otherwise, the bid may be rejected by the Purchasing Division.

VENDOR NAME:

BUYER:

SOLICITATION NO.:

BID OPENING DATE:

BID OPENING TIME:

FAX NUMBER:

**7. BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time:

Bid Opening Location: Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

**8. ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

**9. BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

**10. ALTERNATE MODEL OR BRAND:** Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

[ ] This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

**11. EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

**12. COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

**13. REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.

**14. UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

**15. PREFERENCE:** Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at: [www.state.wv.us/admin/purchase/vrc/Venpref.pdf](http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf).

**15A. RECIPROCAL PREFERENCE:** The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: [www.state.wv.us/admin/purchase/vrc/Venpref.pdf](http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf).

**16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37 and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women- owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

**17. WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

**18. ELECTRONIC FILE ACCESS RESTRICTIONS:** Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

**19. NON-RESPONSIBLE:** The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform or lacks the integrity and reliability to assure good-faith performance.”

**20. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b.”

**21. 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.

**22. WITH THE BID REQUIREMENTS:** In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

**23. EMAIL NOTIFICATION OF AWARD:** The Purchasing Division will attempt to provide bidders with e-mail notification of contract award when a solicitation that the bidder participated in has been awarded. For notification purposes, bidders must provide the Purchasing Division with a valid email address in the bid response. Bidders may also monitor WV OASIS or the Purchasing Division's website to determine when a contract has been awarded.

**24. ISRAEL BOYCOTT CERTIFICATION:** Vendor's act of submitting a bid in response to this solicitation shall be deemed a certification from bidder to the State that bidder is not currently engaged in, and will not for the duration of the contract, engage in a boycott of Israel. This certification is required by W. Va. Code § 5A-3-63.

## **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 a 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: \_\_\_\_\_ per occurrence.

☐ **Automobile Liability Insurance** in at least an amount of: \_\_\_\_\_ 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. WARRANTY:** The Vendor 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 (c) be 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](http://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; (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](mailto: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 hearth, 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.

**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) \_\_\_\_\_

(Address) \_\_\_\_\_

(Phone Number) / (Fax Number) \_\_\_\_\_

(email address) \_\_\_\_\_

**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.

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Signature of Authorized Representative)

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

\_\_\_\_\_  
(Phone Number) (Fax Number)

\_\_\_\_\_  
(Email Address)

ADDENDUM ACKNOWLEDGEMENT FORM  
SOLICITATION NO.:

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)*

- |   |  |
|---|--|
| <input type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> 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.

\_\_\_\_\_  
Company

  
\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

**SPECIFICATIONS**

- 1. PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Department of Environmental Protection to establish an open-end contract for Mapping Services in the Northern Counties of West Virginia. The scope of work shall include the development of detailed topographical mapping from field survey data, aerial photography, light detection and radar (LiDAR) data, or currently utilized and developing technologies. Upon delivery, these data should be suitable and adequate for the development of detailed construction plans and specifications. The limits of areas to be mapped shall be outlined on documents included in the Work Directive, and also, as directed and determined during initial on-site meetings.

Counties included on this contract are Hancock, Brooke, Ohio, Marshall, Wetzel, Tyler, Monongalia, Preston, Marion, Doddridge, Harrison, Taylor, Mineral, Grant, Tucker, Barbour, Lewis, Braxton, Upshur, Webster, Pocahontas, Randolph, Pendleton, Gilmer, Calhoun.

Previous Solicitation: CRFQ DEP2000000039 that closed on 06/30/2020. Vendors may view previous solicitation responses on the West Virginia Purchasing Division Bid Opening page:

<https://www.state.wv.us/admin/purchase/Bids/FY2020/BO20200630.html>

- 2. DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
- 2.1 “Contract Item” or “Contract Items”** means the list of items identified in Section 3.1 below and on the Pricing Pages.
- 2.2 “Pricing Pages”** means the schedule of prices, estimated order quantity, and totals contained in wvOASIS used to evaluate the Solicitation responses.
- 2.3 “Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
- 2.4 “LiDAR”** is an optical sensing technology used to determine the position, velocity, or other characteristics of distant objects by analysis of pulsed laser light reflected from their surfaces.
- 2.5 “NAD83/2011”** is the North American Datum of 1983.
- 2.6 “NAVD/88”** is the North American Vertical Datum of 1988.

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

- 2.7** “**ASCII**” is the American Standard Code for Information Interchange.
- 2.8** “**ASC**” is the American Standard Code which is a text file in which each byte represents one character according to ASCII Code.
- 2.9** “**TXT**” is a computer file that contains Text (and possibly formatting instructions) using seven-bit ASCII characters.
- 2.10** “**GSD**” is the Ground Sample Distance which is the physical measure of the level of detail of data collection for remote digital imaging of the surfaces of terrestrial objects.
- 2.11** “**NTE**” means Not-To-Exceed.
- 2.12** “**RGB**” means Red-Green-Blue which is a color model based on additive color primaries.
- 2.13** “**JPEG**” means Joint Photographic Experts Group which is a development group for compressed 24-bit color image stored format; also a file extension.
- 2.14** “**TIFF**” means Tagged Image File Format which is a graphics file format.
- 2.15** “**USB**” means Universal Serial Bus which is an industry standard developed in the mid-1990s that defines the cables, connectors and communication protocols in a bus for connection, communication and power supply between computers electronic devices.
- 2.16** “**2D**” means two-dimensional space which is a geometric model of the planar project.
- 2.17** “**3D**” means three-dimensional space which is a three-dimensional representation of geometric data.
- 2.18** “**CSV**” means Comma Separated Values which is a file that stores tabular data (numbers and text) in plain text.
- 2.19** “**XML**” means Extensible Markup Language which is a markup language that defines a set of rules for encoding documents in a format which is both human-readable and machine-readable.
- 2.20** “**LAS**” means Laser File Format which is a file format which is used in lidar processing operations.



REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

- 2.21 “DWG”** means Drawing Format which is a binary file format used for storing two- and three-dimensional design data and metadata. It is the native format for several CAD packages.
- 2.22 “DTM”** means Digital Terrain Model which is a utility (command) for AutoCAD that automatically creates an irregular triangular network from a given selection set of 3D objects.
- 2.23 “DEM”** means Digital Elevation Model which is a digital model or three-dimensional representation of a terrain’s surface.
- 2.24 “AutoCAD”** is a commercial software application for two-dimensional and three-dimensional computer aided design (CAD) and drafting.
- 2.25 “GPS”** means Global Positioning System which is a space-based navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites.
- 2.26 “RFQ”** means Request for Quotation.
- 2.27 “F.O.B.”** is an abbreviation for Free on Board which means that a vendor or consignor will deliver goods without any expense to the consignee.

**3. GENERAL REQUIREMENTS:**

- 3.1 Contract Items and Mandatory Requirements:** Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.

**3.1.1 CONTROL, TOPOGRAPHIC, PLANIMETRIC AND CHECK SURVEY**

- 3.1.1.1** Use of publicly available data to generate deliverable must be sited with metadata providing source of data, datum, projection and units of measure. Cite sampling tests to indicate level of precision of data set regarding deliverable.
- 3.1.1.2** All field surveys will be based upon the NAD83/2011 WV State Plane horizontal datum and the NAVD88 vertical datum. Benchmarks and horizontal control shall be of a permanent nature and established outside of the

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

anticipated limits of construction. The minimum requirements for the installation of control shall be specified in the project Work Directive.

**3.1.1.2.1** The Measurement and payment for control surveying shall be 'per hour' and shall be inclusive of all requirements herein. No additional payment will be made for this work.

**3.1.1.3** Field Surveys for Topographic Mapping – Field surveys will be conducted as needed to establish horizontal and vertical control data for preparation of the topographic map(s) as well as the required check sections and any necessary planimetric locations. The following specifications and stipulations will apply to field survey:

**3.1.1.3a** The maximum allowable relative horizontal positioning precision is 2 cm (0.07 feet) plus 50 parts per million (based upon direct distance between the two points.)

**3.1.1.3b** Horizontal traverses shall be closed. Total angular misclosure shall be less than 5 seconds times the number of angles. Horizontal direction shall be referenced to the horizontal datum specified in 3.1.1.2.

**3.1.1.3c** A baseline shall be established across or in close proximity to the site with permanent objects or conventional surveying markers as directed in Item (d) below. Baselines may be established on pre-existing jeep trails, roads or utility rights of way on or in close proximity to the site. A minimum of three (3) baseline stations shall be monumented by conventional survey markers (e.g. galvanized spikes, rebar with plastic caps, etc.) set flush with the ground surface and referenced by guard stakes, and shall be inter-visible to one another and be tied to the horizontal and vertical control.

**3.1.1.3d** All field survey control work on the public right of way where possible, however, the WVDEP/AML shall obtain right of way on private property where needed.

**3.1.1.3e** During the field survey, traverse stations shall be marked and referenced so that they can be readily

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

recovered or re-established. A minimum of two reference points should be set at each horizontal change in the baseline. Traverse stations shall be marked by conventional survey markers (e.g. galvanized spikes, rebar with plastic caps, etc.) flush with the ground surface and referenced by guard stakes or natural or identifiable permanent objects at the ground surface. The location and description of all traverse stations shall be accurately recorded in the notes or contained within a point list file, such as an ASCII format (i.e. ASC or TXT.) The markings on the guard stakes shall include the station number and elevation of the traverse station.

**3.1.1.3f** Vertical traverses shall be of such precision that the error of closure (in feet) shall not exceed plus or minus 0.05 times the square root of the length of the traverse (in miles). The locations, descriptions and elevations of benchmarks shall be accurately recorded in the notes or contained within a point list file.

**3.1.1.4** The measurement and payment for Topographic, Planimetric and Check Surveying shall be 'per hour' and shall be inclusive of all requirements herein. No additional payment will be made for this work.

## **3.2 Topographic Mapping**

### **3.2.1 TOPOGRAPHICAL MAPPING using Aerial Photography and Airborne or Terrestrial LiDAR**

**3.2.1.1** Aerial Photography – Digital imagery derived from a digital camera shall have a gsd (ground sample distance) NTE of 10.0 cm, RGB (color). NTE 12 microns. The photographs shall be made with a calibrated precision-type aerial camera in a vertical position. The Mapping Consultant or their Sub-Consultant shall supply (1) a copy of a calibration certificate, issued by the National Institute of Standards and Technology (NIST) or other competent testing organizations, which is dated within the past thirty-six (36) months or (2) a copy of a specification document issued by a competent testing organization or the manufacturer citing the fiducial dimensions of the imaging device upon demand by the DEP. Any

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

commercial aerial film with a fine-grain emulsion may be used. Altitude shall be the height above average ground required to achieve the accuracy listed in these specifications, not to exceed 4,800 feet.

The time for taking the photographs shall be such that the sky is clear of clouds and haze, streams are within their normal banks, deciduous trees and other vegetation are without leaves and the ground is free from snow cover. The time for taking of photographs shall be further confined to that portion of the day when the sun is at its highest angle.

The entire project area shall have stereoscopic coverage within the useable distortion-free portion of the field of the lens. Side overlap shall be no less than 25 percent.

At the completion of the work, the following shall be provided the contracting officer.

**3.2.1.1a** All imagery shall be submitted in both digital format (JPEG or TIFF), and printed photos of the mapped area(s).

**3.2.1.1b** Copies of cross-sections taken every 300 feet along the baseline, plotted and overlaid on cross-sections developed from the mapping to verify the mapping accuracy. Upon review, WVDEP/AML reserves the right to request corrections to any discrepancies of areas of concern. The requested corrections shall be made at the vendor's cost. These areas shall specifically include areas of mapping in which concentrated design and/or construction efforts are required, as per the Work Directive, and also, as directed and determined during initial and subsequent on-site meetings.

**3.2.1.1c** Two sources of digital electronic media (e.g. compact disc, USB drive, etc.) containing all survey mapping and data, and all data sets obtained or generated (i.e. point and classification data) contours, 2D base-map, 3D planimetrics and breaklines, surface modeling, flight lines, extents, associated ASCII, CSV, TXT, XML, LAS, DWG files and DTM/DEM model file(s) delivered in

**REQUEST FOR QUOTATION**  
**[Mapping Services in Northern WV]**

---

digital data files compatible to AutoCAD version 2010 format or later.

**3.2.1.2** Public Source Data – Use of publicly available data to generate deliverable source of data must be cited with metadata providing source of data, datum, projection and units of measure. Cite sampling test to indicate level of precision of data set regarding deliverable.

**3.2.1.3** LiDAR – Airborne or Terrestrial LiDAR data, either obtained from available sources, or generated and compiled, shall meet requirements outlined in the National Geospatial Program LiDAR Base Specification Version 1.2 for Quality Level 2 (aggregate nominal pulse density of no less than 2 pulses per square meter). LiDAR shall be classified for the recovery of bare Earth data.

**3.2.1.4** Field Surveys – Field surveys will be conducted as needed to establish horizontal and vertical control data for use in compiling mapping from aerial photography. Such surveys shall also be performed to obtain ground surveyed check sections and airborne LiDAR data collections. Typical technologies for survey data collection include the use of conventional and robotic total stations, terrestrial imaging and global positioning system (GPS) survey equipment.

**3.2.1.5** Topographic Mapping – Topographic base map drawings shall be on 24” x 36” standard map sheets. Every 10’ contour interval shall be accentuated with elevations noted. The topographic contour map(s) shall be prepared using stereo photogrammetric or DTM methods. The basic map shall be plotted and mechanically transcribed to a scale of 1” = 50’ with a contour interval of 1 foot unless otherwise specified by the DEP based on particular needs established due to the site-specific circumstances. Digitally compiled and triangulated surface model(s) shall be DTM or XML compatible formats.  
The topographic drawings shall have included on them (lower right part of map) the following:

-The name of the project

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

- Inserts showing location and all control and reference points
- The location of the project (county map)
- Legend
- Title block for approval signatures
- Map Scale
- North Arrow
- Coordinate Grid Lines

The various views required to be presented on the drawings shall be oriented in the following manner:

**3.2.1.5a** If the mapping requires the use of two sheets or more, match lines will be used to relate the sheets together. If the use of more than two sheets is necessary, an additional sheet will be required with a reduced scale enabling the placement of the entire area on one sheet indicating how the sheets relate to each other.

**3.2.1.5b** Each topographic sheet shall be oriented, whenever possible so the direction of stream flow is from the left to the right or from the top to the bottom of sheet. Arrows indicating the direction of stream flow will be included. Spot elevations shall be shown to assist in determination of hilltops, saddles and road intersections. Each sheet shall contain a bar scale and a geodetic or polar north arrow.

**3.2.1.5c** Physical Features – All physical features situated on the ground such as vegetation, rivers, ponds, lakes, small streams, rock outcrops and other unusual features will be located and identified on the topographic map.

**3.2.1.5d** Cultural Features – All cultural features such as houses, barns, buildings, commercial businesses, highways, railroad, bridges, pipelines, farm ponds, fences, electric power lines, telephone lines, utility lines, gas wells and any other cultural features shall be located and identified on the topographic map. Specific features dealing with mining such as the limits of coal refuse, landslides if determinable, the location of strip mine highwalls and overburden, deep mine openings, both draining and dry and any other mining related

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

feature must be located and identified on the topographic map. This requirement should be accomplished to the best degree possible without an actual detailed survey, such as digital orthophotos.

**3.2.1.5e** All horizontal and vertical control points – to include permanent or temporary benchmarks, will be located and identified on the map. There shall be a minimum of three vertical points and three horizontal points.

**3.2.1.5f** The precision of the topographic map for all areas within the actual project area shall not be less than the following:

- Average error shall not exceed 0.01 x the scale of the map expressed in feet per inch.
- Percentage errors in scaled errors shall not exceed 0.02 x the scale of the map expressed in feet per inch.
- Of points chosen at random, the percentage whose error in elevation exceeds one-half the specified contour interval shall not exceed 10 percent.
- All maps shall be drawn to the limits as shown on the mapping outline for the individual areas.

Note: Areas outside the actual project limits are to be as precise as conditions allow but will not be held to these limits.

**3.2.1.5g** Symbols and abbreviations shall be in accordance with “Standard Map Symbols” published by the Soil Conservation Service, U.S. Department of Agriculture, January 1965 or adopted industry standards.

**3.2.1.6** The measurement and payment for Topographic Mapping shall be ‘per acre’ and shall be inclusive of all requirements herein. No additional payment will be made for this work.

### **3.3 Mapping Consultant Qualification Requirements**

**3.3.1** The mapping consultant shall demonstrate the capability of providing topographical, design data and construction surveys in accordance with US National Map Standards. Minimum

**REQUEST FOR QUOTATION**  
**[Mapping Services in Northern WV]**

---

experience is two (2) years. To the extent possible, the Mapping Consultant will utilize available aerial photography, aerial topographic maps and existing or generated, LiDAR data sets and the information contained thereon, in addition to, planimetric locations for the development of mapping. All survey work described below shall be performed under the direction of a Professional Surveyor, licensed or registered in the State of West Virginia, who will certify the work and drawings performed under this contract and as directed in the specific project work directive.

During the performance of this contract, the Mapping Consultant agrees to follow and obey all Federal and State Laws and Regulations, etc.

The Mapping Consultant must meet the requirements listed below in order to be considered qualified to perform the work designated by this RFQ. Successful Mapping Consultants should have the following professional capabilities or staff available at the time of the bid.

- Professional Surveyor
- Competent Field Staff and Survey Crew
- Professional Drafting Capabilities
- Adequate Computer Aided Design Capabilities (AutoCAD Version 2010 format (or later) or Engineer approved alternate)
- Capacity to process and complete multiple projects within the designated time frames

Mapping Consultant must submit the following at the time of bid:

- Names of individuals performing work including registration/licensing numbers.
- List of similar work completed by your firm (include five (5) recent examples).
- Name of Project Manager anticipated for this work.
- Number of years your company has performed this type of work.

The Mapping Consultant will be required to have knowledge or experience in the following areas:



REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

- Development of Topographic Mapping from Field Survey as well as from Aerial Photographs or currently utilized and developing technologies. The use of Sub-Consultants will be permitted under this contract for aerial photography work.

### **3.4 Additional Requirements**

- 3.4.1** In accomplishing services to fulfill the requirements of Work Directives, neither the Mapping Consultant or his Sub-Consultant shall create any adverse environmental effects, and shall be responsible for all compliance with all applicable local, state and federal environmental and occupational health and safety laws and regulations pertinent to the work.
- 3.4.2** Any Mapping Consultant shall be ineligible to bid on any aspect of the construction phase of a project if it prepared any part or aided in the preparation of any part of the contract documents for construction.
- 3.4.3** WVDEP/AML may retain ten percent (10%) of the Mapping Consultant's invoices until such time the Department is satisfied that all of the conditions of the contract have been met. The mapping consultant must be responsible for taking any and all such measures as are necessary to correct any defect(s) arising out of the contract which are proven to be as a result of error(s) in the mapping. Such corrective action(s) shall be performed to the satisfaction of the Assistant Director.

### **3.5 Location of Work:**

- 3.5.1** The mapping consultant shall furnish all personnel, facilities, equipment, material, supplies and services for all of the scope of work required in this contract at the location(s) specified.
- 3.5.2** The area of work shall include the entire State of West Virginia. The counties listed below are the coal producing counties and those in parentheses represent where most of the work required in the contract is located.

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

**“Northern” Counties**

- 1. (Hancock)**
- 2. (Brooke)**
- 3. (Ohio)**
- 4. Marshall**
- 5. Wetzel**
- 6. Tyler**
- 7. (Monongalia)**
- 8. (Preston)**
- 9. (Marion)**
- 10. Doddridge**
- 11. (Harrison)**
- 12. (Taylor)**
- 13. Mineral**
- 14. (Grant)**
- 15. (Tucker)**
- 16. (Barbour)**
- 17. (Lewis)**
- 18. (Braxton)**
- 19. (Upshur)**
- 20. (Webster)**
- 21. Pocahontas**
- 22. (Randolph)**
- 23. Pendleton**
- 24. (Gilmer)**
- 25. Calhoun**

**3.6 Contractor Information Form (AVS):** Vendor must complete this form to request an eligibility evaluation from the Office of Surface Mining Reclamation and Enforcement. This requirement applies to contractors and their sub-contractors and is found under OSMRE’s regulations at 30 CFR 874.16. Vendor must sign and date and form must be recent. Vendor should provide this document with their submitted bid response and will be required prior to award.

**4. CONTRACT AWARD:**

**4.1 Contract Award:** The Contract is intended to provide Agencies with a purchase price on all Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

- 4.2 Pricing Pages:** Vendor should complete the Pricing Pages with Bid Cost per Unit. Vendor should complete the Pricing Pages in their entirety as failure to do so may result in Vendor's bids being disqualified.

The Pricing Pages contain a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

For a bid to be accepted, all line items must contain a price or be inclusive in another item. Otherwise, your bid will be disqualified.

Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document. If responding with a paper bid, Vendors should download and/or print the assembled CRFQ document (with the highest version number) from wvOASIS and insert their unit price and extended cost for each line item.

**5. ORDERING AND PAYMENT:**

- 5.1 Ordering:** Vendor shall accept orders through wvOASIS, regular mail, facsimile, e-mail, or any other written form of communication. Vendor may, but is not required to, accept on-line orders through a secure internet ordering portal/website. If Vendor has the ability to accept on-line orders, it should include in its response a brief description of how Agencies may utilize the on-line ordering system. Vendor shall ensure that its on-line ordering system is properly secured prior to processing Agency orders on-line.

This is an indefinite quantity contract for the services specified in the Statement of Work and for the period set forth herein. Delivery and performance shall be made in accordance with the provisions of this contract.

Work will be ordered by the WVDEP/AML Project Manager or authorized representative through a Work Directive which shall specify the location of this project site, the specified problem, the work to be performed and the time frame during which the work must be completed. The Mapping Consultant will then be responsible for contacting WVDEP/AML to arrange an on-site meeting. Upon completion of a field reconnaissance with a WVDEP/AML representative, the Mapping Consultant will submit a Cost Proposal for the work requested, signed by a principal of the firm. The individual project cost proposal which contains the quantity estimates shall be in accordance with the unit prices provided in the response to this RFQ.

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

- 5.2 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia. Payment to the Mapping Consultant will be made on the basis of the items and unit prices outlined in the Purchase Order.

The Mapping Consultant shall invoice after the completion of work specified in the Work Directive and after submission of all required work when the Performance Period is less than thirty (30) days. Invoices may be submitted monthly when the Performance Period exceeds thirty (30) days.

**6. DELIVERY AND RETURN:**

- 6.1 Delivery Time:** The Mapping Consultant shall prepare, submit and deliver all original survey notes, associated data files, base topographic mapping and additional drawings etc., or calculations as may be requested by the specific Work Directive within the time frame established for the project. The submission of all preliminary documents or required revisions must also be accomplished within said time frame. Additional time will be given for completion of any revisions and to provide time for billings. Such time to be defined as the performance period.

The WVDEP/AML will be responsible for obtaining any necessary Rights of Entry for purposes for performing field surveys to provide ground control for topographic mapping from aerial photography. The majority of this work should be done in public access areas such as highway right of way, etc. Additionally, any ground surveys will require the Mapping Consultant to identify to the WVDEP/AML any areas requiring access so that the WVDEP/AML may obtain Right of Entry for those areas.

The work and services to be performed under this contract shall be subject to continuous monitoring and inspection by the State's authorized representatives. Such inspector will ensure compliance. Final Inspection and acceptance will be made by the WVDEP/AML Project Manager or authorized representatives.

- 6.2 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if orders will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party. If time frames are not met, the WVDEP/AML may refrain from issuing further Work Directives and if a Mapping Consultant persists in being late with submittals, the WVDEP/AML may refuse to renew the Mapping Consultant's contract.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

- 6.3 Delivery Payment/Risk of Loss:** Standard order delivery shall be F.O.B. destination

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

to the Agency's location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery. The Agency will pay delivery charges on all emergency orders provided that Vendor invoices those delivery costs as a separate charge with the original freight bill attached to the invoice.

**6.4 Return of Unacceptable Items:** If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either make arrangements for the return within five (5) days of being notified that items are unacceptable, or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion.

**6.5 Return Due to Agency Error:** Items ordered in error by the Agency will be returned for credit within 30 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

## **7. VENDOR DEFAULT:**

**7.1** The following shall be considered a vendor default under this Contract.

- 7.1.1 Failure to provide Contract Items in accordance with the requirements contained herein.
- 7.1.2 Failure to comply with other specifications and requirements contained herein.
- 7.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
- 7.1.4 Failure to remedy deficient performance upon request.

REQUEST FOR QUOTATION  
[Mapping Services in Northern WV]

---

**7.2** The following remedies shall be available to Agency upon default.

7.2.1 Immediate cancellation of the Contract.

7.2.2 Immediate cancellation of one or more release orders issued under this Contract.

7.2.3 Any other remedies available in law or equity.

**8. MISCELLANEOUS:**

**8.1 No Substitutions:** Vendor shall supply only Contract Items submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

**8.2 Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.

**8.3 Reports:** Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.

**8.4 Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

**Contract Manager:** Rob Milne, P.E.  
**Telephone Number:** 304.381.4281  
**Fax Number:** N/A  
**Email Address:** rmilne@stahlsheaffer.com

# Office of Surface Mining Reclamation and Enforcement

## Instructions for Completing the AML Contractor Form OMB #1029-0119

**Purpose:** The Office of Surface Mining Reclamation and Enforcement Applicant/Violator System (AVS) office is required to conduct eligibility checks for businesses performing abandoned mine land (AML) reclamation work to ensure those businesses are not associated with any coal mining violations in accordance with the Surface Mining Control and Reclamation Act (SMCRA). This form is used to update the AVS database which maintains relationship information between individuals and their associated businesses. If you have any questions, please contact the AVS Office at 800-643-9748.

**Part A: General Information:** Part A should be completed by the AML Contractor. You can find an electronic fillable form on our website (<https://www.osmre.gov/programs/regulating-coal-mines/avs>).

**Part B: Obtain an Organizational Family Tree (OFT):** Part B should be completed by the AML Contractor. An Organizational Family Tree (OFT) indicates the relationships between individuals and their associated business.

**You can obtain an OFT two ways:**

1. Call the AVS Office at 800-643-9748 to request your company's OFT.
2. Go to the AVS website (<https://avss.osmre.gov>). Click "Access AVS", and then "Login as Guest". Place your cursor on the "Entity" Module and click. Type your business name (or entity number) in search box and press enter. Select your company and then click on the "Relationship" tab to display your Entity OFT information. Print the Entity OFT from AVS. Review the OFT, if you need to make updates complete Part D. Attach the OFT to your AML Contractor Form.

*If you are a new company or this is your first AML bid:* Your business is most likely **not** in the AVS. If your company does not appear in the AVS database, move on to Part C, check Box 3, and complete Part D of this form.

*If your company has worked on previous AML projects or in the coal mining industry:* Your business is most likely in the AVS, but may need to be updated. Obtain and review your OFT and then complete Part C.

**Part C: Certifying and updating information in the Applicant/Violator System (AVS).** Part C should be completed by the AML Contractor. Please check the box that best describes your situation, sign and date.

**Note: Signature date must be recent (within 30 days) to be considered.**

**Part D: OFT Information.** Part D should be completed by the AML Contractor **only** if you want to make updates to what information is in the AVS, or if your company **does not** have any information in the AVS. Include **all** fields, including the relevant begin and/or end dates for individuals, including middle name or initial for individuals if possible.

### **Answers to Part D FAQs:**

*Which employees should be included in Part D?*

Any current or separated employee of significance should be listed. Refer to the list provided at the top of Part D. For those owning less than 10% reporting the ownership is optional. Include those employees who direct, manage, or control the project. If, for example, a Professional Engineer has the power to determine how the project is conducted you should include him/her on Part D.

*What address and phone number should I use?*

Use the address and phone number where the person receives business correspondence.

*What are the begin and end dates for?*

**Begin dates** indicate when a person started in that position in your company. If an individual still works at the company you can simply fill in the begin date and leave the end date blank or write "N/A". **End dates** are used for indicating that someone no longer works in that capacity or is no longer employed at the company. **If an employee has held more than one position** or title, note the begin dates/end dates for each position.

ABANDONED MINE LANDS (AML) CONTRACTOR INFORMATION FORM

You must complete this form for your AML contracting officer to request an eligibility evaluation from the Office of Surface Mining Reclamation and Enforcement (OSMRE) to determine if you are eligible to receive an AML contract. This requirement can be found under OSMRE's regulations at 30 CFR 874.16. **NOTE:** This form must be signed and **dated within 30 days** of submission to be considered for a current bid.

**Part A: General Information**

Business Name: \_\_\_\_\_  
Tax ID #: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, & Zip: \_\_\_\_\_  
Phone Number: \_\_\_\_\_  
Email Address: \_\_\_\_\_

**Part B: Obtain an Organizational Family Tree (OFT) from the Applicant Violator System (AVS)**

If you plan to certify the existing AVS information or submit updates under Part C, you must include an OFT. Instructions for downloading an OFT from the AVS can be found at: <https://www.osmre.gov/sites/default/files/2022-02/OMB%201029-0119%20instructions.pdf>. If you require assistance you may contact the AVS Office by phone at: 800-643-9748, or by email at: [avshelp@osmre.gov](mailto:avshelp@osmre.gov).

**Part C: Certifying and updating information in the AVS**

Select one of the options, follow the instructions for the selected option, sign, and date below.

I, \_\_\_\_\_, have express authority to certify that:  
(Print Name)

- ☐ 1. Our business is listed in the AVS. The information is accurate, complete, and up to date. (If you select this option, you must attach an Entity OFT from the AVS to this form). Do not complete Part D.
- ☐ 2. Our business is in the AVS. The information needs to be updated. (If you select this option, you must attach an Entity OFT from the AVS to this form). Complete Part D to provide the missing or corrected information.
- ☐ 3. Our business is not listed in the AVS. The information needs to be added. Complete Part D to provide the information.

\_\_\_\_\_  
Date\_\_\_\_\_  
Signature\_\_\_\_\_  
Title



**Part D: OFT Information**

Contractor's Business Name: \_\_\_\_\_

If the current Entity OFT information for your business is incomplete in the AVS, or if there is no information in the AVS for your business, you must provide all of the following information as it applies to your business. Please include additional copies of this page if the space below is not sufficient to capture all information.

- Every officer (President, Vice President, Secretary, Treasurer, etc.);
- All Directors, Partners, and Members;
- All persons performing a function similar to a Director;
- Every person or business that owns 10% or more of the voting stock in your business;
- Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.
- **Please list an end date for any person who is no longer with your business.**

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Begin Date: \_\_\_\_\_  
 End Date: \_\_\_\_\_  
 % Ownership: \_\_\_\_\_  
 Position/Title: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Begin Date: \_\_\_\_\_  
 End Date: \_\_\_\_\_  
 % Ownership: \_\_\_\_\_  
 Position/Title: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Begin Date: \_\_\_\_\_  
 End Date: \_\_\_\_\_  
 % Ownership: \_\_\_\_\_  
 Position/Title: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Begin Date: \_\_\_\_\_  
 End Date: \_\_\_\_\_  
 % Ownership: \_\_\_\_\_  
 Position/Title: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_

**PAPERWORK REDUCTION STATEMENT**

The Paperwork Reduction Act of 1995 (44 U.S.C 3501) requires us to inform you that: Federal Agencies may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a current valid OMB control number. This information is necessary for all successful bidders prior to the distribution of AML funds, and is required to obtain a benefit.

Public reporting burden for this form is estimated to range from 15 minutes to one hour, with an average of 30 minutes per response, including time for reviewing instructions, gather and maintaining data, and completing and reviewing the form. You may direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Office of Surface Mining Reclamation and Enforcement, 1849 C Street, NW, Room 4559, Washington, DC 20240.

REQUEST FOR QUOTATION:

# Mapping Services in Northern WV

July 10, 2024



SUBMITTED TO:



SUBMITTED BY:

**STAHL SHEAFFER  
ENGINEERING**

250 Lakewood Center, Morgantown, WV 26508

[stahlsheaffer.com](http://stahlsheaffer.com)

# Contents

## Cover Letter

## Firm Overview ..... 1

## Services/Equipment..... 2

- Survey & Reality Capture ..... 2

## Past Performance ..... 4

- WVDOT/DOH Green Bag Road Improvements, Monongalia, WV ..... 4
- West Virginia Roadway Improvement Initiative, Various Counties, WV..... 4
- 2345 Murray Avenue Site Survey and Scan, Pittsburgh, PA (2023) ..... 5
- 1-40 & SR 13, Mobile LiDAR Scan, Tennessee (2023) ..... 5
- Penn State Retaining Wall Survey, Allegheny County, PA (2023) ..... 6
- Pennsylvania Turnpike – Northeast Extension, 3D Mobile LiDAR Sign Inventory, Scranton, Lackawanna Co. to Albrightsville, Carbon Co., PA ..... 6
- I-81 Wilkes-Barre, 3D Mobile LiDAR, Luzerne County, PA ..... 6
- HRI – State Route 322, Juniata County, PA ..... 7
- Landfill Stockpile Aerial Survey, Private Client, Wheeling Landfill, WV ..... 7
- Penn State Musser Gap to Valleylands Survey, College Township, PA (2023)..... 7
- Leonburg Road ALTA Survey and Subdivision Plan, Mannik Smith Group, Cranberry Township, PA (2022) ..... 7
- EQT – SR 4005, SR 4007, SR 4008, SR 4010 and SR 4015 Roadway Improvement Project, Greene County, PA..... 8
- Popple Construction – Interstate 81 Pavement Reconstruction..... 8
- Roofed Heavy Use Area & Manure Storage Facility Design, Spring Township, Snyder County, PA ..... 8
- Shippensburg Streetscape, 3D Mobile LiDAR, US 11 Shippensburg, PA ..... 9
- SR 150 Lock Haven Signals, 3D Mobile LiDAR Base Mapping, Lock Haven, PA ..... 9
- Shopping Center Site Improvements, Pleasant Valley Shopping Center, Altoona, PA9

## Personnel..... 10

- Robert R. Milne, P.E.– Regional Office Manager – Morgantown, WV ..... 10
- Chad Shaffer, PLS – Surveying Manager ..... 12
- Greg Copelli, PLS – Professional Land Surveyor ..... 14
- Jonathan Yerger – Survey Crew Chief ..... 15
- Andrew Gouty, LiDAR Analyst II ..... 16

## Stahl Sheaffer COAs ..... 18

## Subconsultant ..... 19

- Tuck Mapping Solutions, Inc. (TMSI)..... 19

*This document contains proprietary and confidential information of Stahl Sheaffer Engineering and shall not be used, disclosed, or reproduced, in whole or in part, for any purpose other than to evaluate this document, without the prior written consent of Stahl Sheaffer Engineering.*

July 10, 2024

Mr. Josh Hager  
Department of Administration - Purchasing Division  
2019 Washington Street, East  
Charleston, WV 25305

Re: WV DEP Mapping Services for Northern West Virginia  
CRFQ 0313 DEP2400000049

Dear Mr. Hager:

Stahl Sheaffer Engineering (Stahl Sheaffer) is pleased to submit this Quotation for Mapping Services for Northern West Virginia. We understand the agency seeks to establish an open-end contract for Mapping Services in the Northern Counties of West Virginia. It is further understood that the scope of work will include the development of detailed topographical mapping from field survey data, aerial photography, light detection and radar (LiDAR) data, or currently utilized and developing technologies.

Stahl Sheaffer's highly experienced and registered professionals are capable and prepared to provide the services as outlined in this Request for Quotation. In addition, we have selected **Tuck Mapping Solutions, Inc. (TMSI)** to be our subconsultant to provide high-density full-waveform LiDAR and aerial photography.

Our West Virginia office is located in Morgantown and places Stahl Sheaffer in a position to be responsive and readily available. Please contact me at 304.381.4281 or via email at [rmilne@stahlsheaffer.com](mailto:rmilne@stahlsheaffer.com) should you have any questions or require additional information.

Sincerely,



Rob Milne, P.E.  
Regional Office Manager - WV / Designated Contact Person  
Stahl Sheaffer Engineering

Copy File P24-229

## Firm Overview

Stahl Sheaffer Engineering (Stahl Sheaffer) is a multi-discipline civil engineering firm that has been providing services since 2006. Stahl Sheaffer specializes in highway, pavement, traffic and bridge engineering, municipal engineering, land surveying, site and building design, and construction services. Our licensed engineers, surveyors, construction managers, and inspectors have worked extensively with both public and private sector clients. Additionally, our firm operates an AASHTO accredited soil and materials laboratory that specializes in testing subgrade soils and pavement materials.

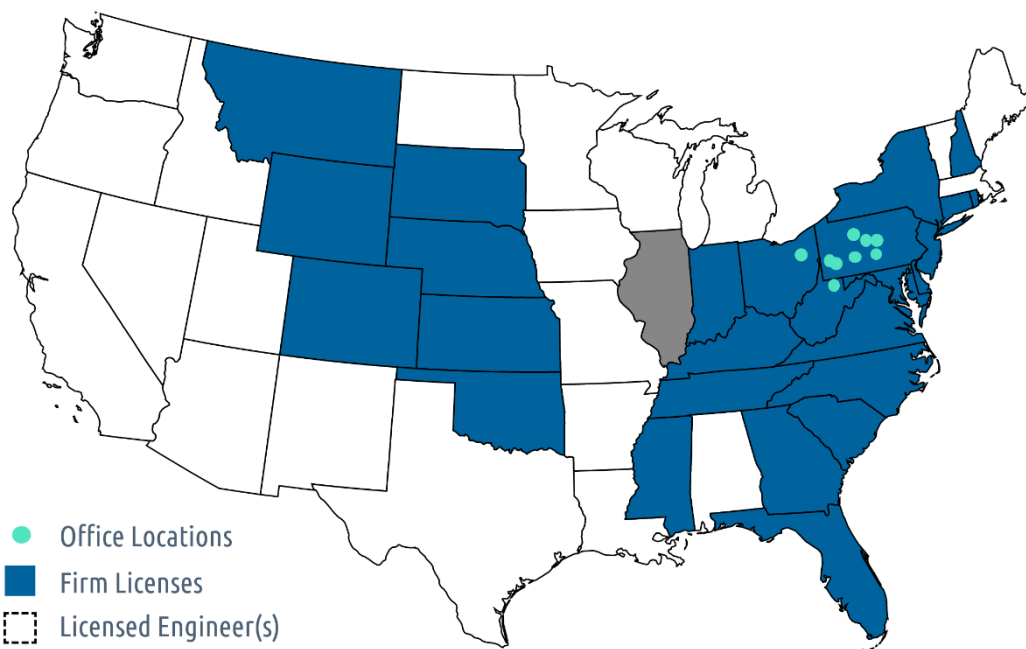


Our size and reputation have grown based on the work of dedicated teams with exemplary skill and the use of advanced technology to meet our clients' needs. We do this with a high degree of quality and professionalism, and we strive to continually build on our reputation for being adaptable, innovative, and cost effective.

Stahl Sheaffer has more than 130 employees, operating from 9 locations from which we can assign resources to meet timelines and design requirements. Our professionals are licensed or certified as civil engineers, bridge safety inspectors, tunnel inspectors, façade inspectors, surveyors, geologists, environmental scientists, GIS technicians, and construction inspectors.

Services for the mapping in Northern WV project will be provided from our local West Virginia office in Morgantown, as well as supplemental offices that are close to the project site.

Stahl Sheaffer has 9 **Locations**, Licensed in **23 States**





# Services/Equipment

## Survey & Reality Capture

Stahl Sheaffer provides comprehensive survey and imaging services, including:

- Boundary and topographic surveys
- 360° scanning / 3D terrestrial scanning
- Utility mapping and coordination
- ALTA/ACSM surveys
- Flood elevation surveys
- Right of way documentation
- Base plan preparation
- Construction stakeout



Technology used to augment these services includes:

- **Mobile Survey-grade LiDAR Scanning** (*Leica Pegasus:Two*) – Our mobile system produces survey grade data suitable for design work. The resolution and detail of the system is nearly 10X the operating rate of the MX2, which will allow us to collect much more detailed data at higher (safer) speeds. This speed increase allows us to perform long range/high end mapping projects such as interstate corridor mapping and state highway survey contracts. Over 30 state DOTs (including Pennsylvania and Ohio) accept and approve the Pegasus:Two system as design tool for use on highway projects.
- **Mobile LiDAR Scanning** (*Trimble MX2*) – Geo-referenced 3-D point cloud data useful for road infrastructure analysis, overhead utility location, bridge and overhead structure clearances, and asset inventory mapping.
- **Mobile Imaging Scanning** (*Trimble MX7*) – VISION technology allows for the collection of georeferenced high-resolution panoramic photos for road infrastructure analysis, change detection, asset inventory, and well site monitoring.
- **Ground-Based LiDAR** (*FARO Focus 3D HDR System*) – Survey-grade ground-based laser scanning used to collect high resolution LiDAR data and panoramic imagery to extract topography, traditional survey data, and 3D modeling information. This data can be used for stockpile volumetrics, plant process modeling, Building Information Modeling [BIM], underground tunnel and quarry mapping, road surface modeling, overhead clearance modeling, and bridge inspection and modeling.
- **Aerial Inspection** (*Matrice 200 Series Mid-Sized Drone*) – Our FAA Part 107 certified sUAS pilot, combined hardware technologies, and expertise allow us to collect data information over large distances and typically inaccessible locations. We can support structural engineering projects with the ability to perform aerial surveys for bridges or buildings in tight locations. The final product is video or high-res photos of the areas of concern, and since the work is done entirely from a secure location on the ground or within the building, we can compile that data while significantly reducing or eliminating the risks associated with a high-reach, boson swing, or swing-stage access.

See building scan video here:  
<https://vimeo.com/244052471>

Stahl Sheaffer can perform feature extraction on LiDAR and survey data to create AutoCAD and MicroStation base mapping and planimetric files, allowing engineers to make well-informed design decisions to tailor modification and construction plans to fit the situation at hand. Stahl Sheaffer can also create “intelligent” 3D models of the survey data. Project data can be imported directly into AutoDesk, Bentley, and ESRI packages as an industry standard .LAS format for clients to use directly as if on site to pull measurements, locations, and clearance information, saving time and money.



# REALITY CAPTURE TECHNOLOGY

Better understand what works best for your next project



LEICA  
PEGASUS:  
TWO



TRIMBLE  
MX2



TRIMBLE  
MX7



FARO  
FOCUS  
3D HDR

	LEICA PEGASUS: TWO	TRIMBLE MX2	TRIMBLE MX7	FARO FOCUS 3D HDR
360 Imagery	X	X	X	X
Condition Inspection	X	X	X	X
Asset Inventory	X	X	X	X
Overhead Utility Clearance	X	X		X
Rough Design	X	X		X
Mapping Grade Pointcloud	X	X		X
Rapid GIS Extraction	X	X	X	
Mapping-Grade Feature Extraction	X	X		X
Engineering-Grade Mapping	X			X
Survey-Grade Mapping	X			X
Crack Index Calculation	X			
Rut Depth Calculation	X			
City Asset Inventory	X	X	X	
Curb and Gutter	X			X
Stormwater Drainage Location	X			X
360 Videos	X	X	X	
Building Information Modeling				X
Interior Structure Scans				X
ADA Compliance Checks				X
MEP Routing				X
Historic Site Documentation				X
Oil & Gas Facility As-builts	X			X

# Past Performance

## WVDOT/DOH Green Bag Road Improvements, Monongalia, WV



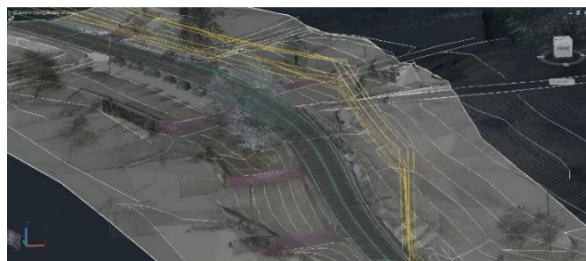
This West Virginia Department of Highway's (WVDOH) Preliminary Investigation and Engineering (PIE) and Final Design project for Greenbag Road (CR 857) is an approximately 3.5-mile-long minor arterial roadway that provides an east-west connection, linking Don Knotts Boulevard (SR 119) and Earl L Core Road (WV 7) in the City of Morgantown, Monongalia County, West Virginia. The Greenbag Road corridor has long been recognized as a challenging roadway to navigate due to existing geometric deficiencies, significant intersection delay during peak hours, and increased volume of truck traffic and development within the corridor.

Stahl Sheaffer was retained by the WVDOH to complete a traffic study, NEPA clearance activities, right-of-way plan development, and final design for the widening and installation of two new roundabouts and pedestrian/bicycle accommodations along 1.5 miles of

Greenbag Road. The project involved an extensive alternatives analysis, roadway design, roundabout design, retaining wall design, culvert widening, traffic control, drainage design, 3D LiDAR scanning, right-of-way plan development, preparation of traffic study for intersection capacity and corridor analysis, and subconsultant oversight for the development of an EA, including extensive public involvement efforts. Stahl Sheaffer has completed final design activities and submitted the PS&E for the project to the WVDOH.

## West Virginia Roadway Improvement Initiative, Various Counties, WV

Stahl Sheaffer was the lead design engineering firm on a project that included various public roadway improvement projects totaling 183 miles located in several WVDOH Districts (District 1, 2, 3, 4 & 6). The work involved approximately 100 roadway upgrade projects, 8 bridge replacement or rehabilitation projects, 2 aluminum box culverts, numerous slide repairs, and assisting in the construction management of these roadway improvement and bridge projects as part of the scope. Stahl Sheaffer completed the geotechnical inspection and design, survey, design, DOT permitting, environmental permitting, and project bidding with extensive support from the GIS and LiDAR departments. Stahl Sheaffer assisted in the construction of the roadway improvements in less than 12 months from Notice to Proceed.





### 2345 Murray Avenue Site Survey and Scan, Marshall Dennehey, PC, Pittsburgh, PA (2023)

Stahl Sheaffer performed a boundary and topographical survey of a 0.60-acre tract, as well as a terrestrial 3D scan of the exterior of the office building and all public spaces within the building. The site survey and 3D scan were used as evidence in a lawsuit.



### 1-40 & SR 13, Mobile LiDAR Scan, Tennessee (2023)

Stahl Sheaffer used mobile LiDAR to scan approximately 2 miles of I-40 East and West bounds, 0.40 miles of east off and on ramps, 0.42 miles of west off and on ramps, and 0.60 miles of SR 13. The roadway data was collected with the Leica Pegasus:Two traveling up to 50 mph. The data was processed to survey control, this has a tolerance of Vertical +/- 0.05 feet and a Horizontal +/- 0.07 feet. The point cloud and photos were provided to the client for extraction of the data to make a survey basemap.



## Retaining Wall Survey, The Pennsylvania State University, Allegheny County, PA (2023)

Stahl Sheaffer performed a topographic survey of a failing retaining wall at the northern most corner of the parking lot northeast of Broadway Avenue on the Penn State Greater Allegheny campus. Survey Area of Interest included the failing retaining wall, parking lot area, sanitary and storm water systems, existing utilities, trees 12 inches in diameter or larger, and approximately 135 feet of the wooded hill behind the failing wall. This survey was necessary to provide existing topography for new grading, sediment control design, sanitary sewer elevation adjustments, and parking lot improvements.

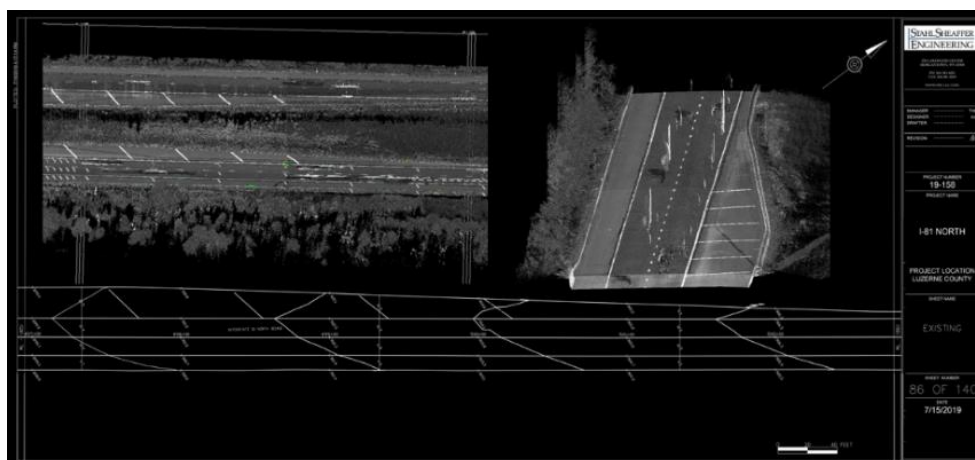


## Pennsylvania Turnpike – Northeast Extension, 3D Mobile LiDAR Sign Inventory, Scranton, Lackawanna Co. to Albrightsville, Carbon Co., PA

Stahl Sheaffer drove 40 miles for four separate passes to total 160 miles, to conduct a comprehensive scanning of signs needed for the Pennsylvania Turnpike Commission Sign Inventory project. Scanning was completed with the Leica Pegasus:Two system so that LiDAR data could also be collected simultaneously with imagery. The imagery was utilized to better manage sign condition information by the Pennsylvania Turnpike from the Northern Terminus of the Northeast Extension to the Lake Harmony / Jim Thorpe off ramp (Exit 87) during the transition to Cashless Tolling along the interstate.

## I-81 Wilkes-Barre, 3D Mobile LiDAR Dimension Measurements and Realignment, Luzerne County, PA

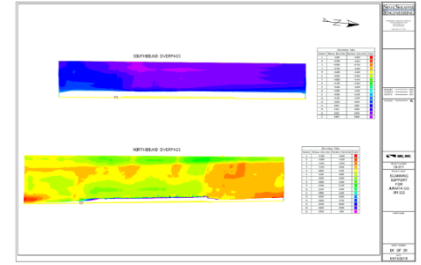
As a subconsultant for New Enterprise Stone & Lime, Inc. (NES&L), Stahl Sheaffer performed 3D Mobile LiDAR Scanning and acquired survey grade high-resolution Mobile LiDAR point cloud data tied to survey control for the analysis and realignment of 15 miles of I-81 in Wilkes-Barre, Luzerne County, PA. Stahl Sheaffer drove 15 miles for four separate passes to total 60 miles, to precisely capture the LiDAR data required for the lane analysis. From this data certain features were extracted and include, but are not limited to, edge of asphalt, paint lines, and concrete separations at the beginning of the project. Spot elevations were also extrapolated every 100 feet in high detailed areas near bridges. Elevations were also extracted every ten feet on bridge decks and bridge run offs along the mainline of the interstate. Stahl Sheaffer also provided survey plan views for the mainline of the interstate in both the north and south directions as well as the required ramp areas.



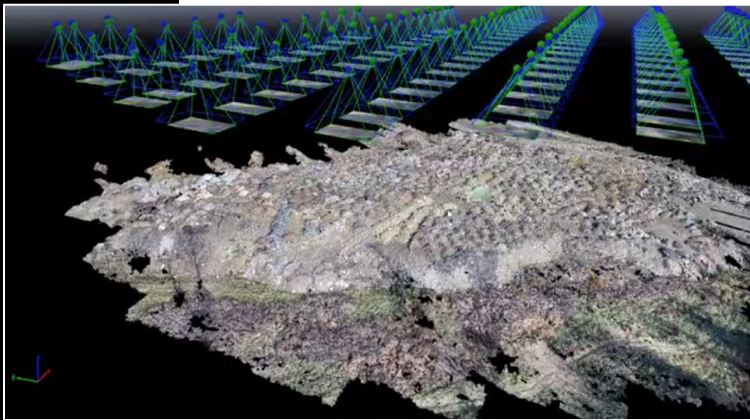


## HRI – State Route 322, Juniata County, PA

Stahl Sheaffer provided Mobile LiDAR and Terrestrial 3D Scanning data of a set of bridges on Pennsylvania State Route 322 in Juniata County. The project included collecting 360-degree 3D Mobile LiDAR data and 3D scanning of the bridge surface and approaches to document existing pavement grade and cross slope for use in analyzing pavement conformance to design plans. The scanning found the grade to be out of compliance; a report and gradient map were prepared to display the irregularities in the bridge surface.



## Landfill Stockpile Aerial Survey, Private Client, Wheeling Landfill, Wheeling, WV



Stahl Sheaffer conducted a supplemental topographic survey for the closure of a landfill. The landfill is approximately 11-12 acres and consists of waste soil, rock, construction and demolition debris, woody debris, asphalt millings, etc. The last time this area was mapped was in 2010, and since then various sources of material have been hauled in for disposal at the landfill area, in some cases exceeding the limits of the project. Much of this material remains in piles. This survey was needed to help establish current site grades, identify material, and estimate site earthwork volumes.

## Musser Gap to Valleylands Survey, The Pennsylvania State University, College Township, PA (2023)

Stahl Sheaffer performed boundary and topographical surveys of a 358-acre tract and coordinated an archaeological survey as part of the project. The survey was necessary to provide Penn State with a basemap for numerous future improvements proposed for this tract of land.

## Leonburg Road ALTA Survey and Subdivision Plan, Mannik Smith Group, Cranberry Township, PA (2022)

Stahl Sheaffer performed ALTA survey of two tracts of land totaling 8.4 acres. Stahl Sheaffer also prepared a Lot Consolidation Plan to combine the two tracts of land into one lot. The survey and consolidation plan were necessary to facilitate the planning and design for the expansion and the improvements of an existing manufacturing facility and parking lot.



## **EQT – SR 4005, SR 4007, SR 4008, SR 4010 and SR 4015 Roadway Improvement Project, Greene County, PA**



Stahl Sheaffer performed full base mapping using survey-grade LiDAR scanning equipment, the Leica Pegasus:Two, for 12 miles of roadway in Greene County, PA, as well as traditional surveying to locate utilities and property boundary evidence for right of way plans as needed. Stahl Sheaffer used Overhead Clearance mapping for multiple compressor stations across multiple states and completed design and permit plans for cement-stabilized full depth roadway reclamation, asphalt overlays, and drainage

improvements repairs for SR 4007, SR 4005, SR 4008, SR 4010, and SR 4015.

## **Popple Construction – Interstate 81 Pavement Reconstruction, Lackawanna County, PA**

Stahl Sheaffer acquired Mobile LiDAR data for an Interstate 81 highway pavement reconstruction project, for use in location of concrete pavement joints if needed to help determine or negotiate bid pay items.



## **Roofed Heavy Use Area & Manure Storage Facility Design, Spring Township, Snyder County, PA**

Stahl Sheaffer provided site survey, land development, and structural design services for the roofed heavy use area (HUA) manure storage facility located in Snyder County, PA. Design was in accordance with the National Resources Conservation Service's (NRCS) standards set forth by the US Department of Agriculture (USDA) and utilized various construction materials. The 8,640 SF structure consists of pre-engineered timber roof trusses and 4-ply glue-laminated posts



supported on reinforced concrete foundation walls (integral with a reinforced concrete slab-on-grade) and spread footings. Design utilized various bracing, including wye bracing, knee bracing, diagonal bracing, and longitudinal bracing. Properly sized and designed stormwater devices including gutters, downspouts, swales, and underground outlets were included to maintain and divert additional runoff caused by the new structure. In addition to design services, Stahl Sheaffer also assisted with inspection services in the field throughout construction of the facility.



## Shippensburg Streetscape, 3D Mobile LiDAR, US 11 Shippensburg, PA



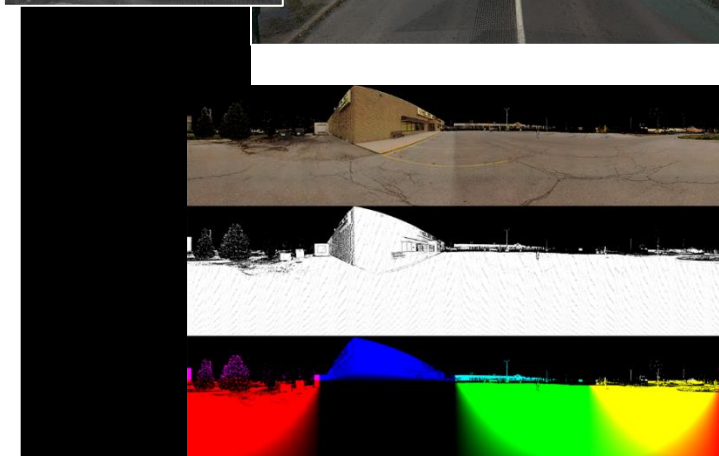
As a subconsultant to RETTEW, Stahl Sheaffer performed 3D Mobile LiDAR scanning and acquired survey grade high-resolution Mobile LiDAR point cloud data tied to survey control for a streetscape project in the town of Shippensburg. This project mapped approximately 1.5 miles along US Route 11 as well as portions of more than 15 side streets. Following data acquisition, Stahl Sheaffer used specialized mapping software to extract and map all visible features of note within 40 feet of the road right of way centerline up to and including the face of buildings. Following feature extraction, the high-resolution point cloud was used to generate a 3D digital terrain model of the ground surface for use during design.

## SR 150 Lock Haven Signals, 3D Mobile LiDAR Base Mapping, Lock Haven, PA



As a subconsultant to Gibson-Thomas Engineering, Stahl Sheaffer performed 3D Mobile LiDAR Scanning and acquired survey grade high-resolution Mobile LiDAR point cloud data tied to survey control for the design of new traffic signals in the town of Lock Haven, PA. This project encompassed 11 intersections and mapped portions of 12 roads. Following data acquisition, Stahl Sheaffer used specialized mapping software to extract and map all visible features of note within 40 feet of the road right of way centerline up to and including the face of buildings. Following feature extraction, the high-resolution point cloud was used to generate a 3D digital terrain model of the ground surface for use during design.

## Shopping Center Site Improvements, Pleasant Valley Shopping Center, Altoona, PA



The project included removal of all existing concrete between the shopping center building entrances, and replacement with accessible building entrances, ADA ramps, and parking lot pavement as required compliance.

Stahl Sheaffer assisted with site engineering and developed a static 3D topographic survey and 3D LiDAR scan of multiple units within the shopping center for the sidewalk and building entrances located along the front side of the shopping center, which included a frontage of approximately 1,400 LF. This survey formed the basis of design and construction documents defining all work required to correct ADA deficiencies throughout the shopping center.

# Personnel

**Robert R. Milne, P.E. – Regional Office Manager – Morgantown, WV**WV: [REDACTED] | O: 304.841.4299 | [rmilne@stahlsheaffer.com](mailto:rmilne@stahlsheaffer.com)**EDUCATION**

Master of Science in Civil Engineering, West Virginia University

Bachelor of Science in Civil Engineering, West Virginia University

**PROFESSIONAL EXPERIENCE**

Mr. Milne is the Regional Office Manager for Stahl Sheaffer's West Virginia location. Mr. Milne has 35 years of experience in the design and management of projects for WVDOH, West Virginia University, WVDNR, City of Morgantown, PennDOT, Pennsylvania Turnpike Commission, and additional state and municipal clients. His responsibilities include the day-to-day direction of the West Virginia operations; managing land development, roadway, and bridge design projects; and supervising and directing project teams. Mr. Milne is responsible for monitoring project budgets and project schedules, client/subconsultant coordination, and management of design teams for civil engineering projects.

Design duties include drainage improvements, erosion and sediment control permit applications, E&S plans, ADA ramp design, grading plans, roadway and intersection improvements for access roads, shared use path design, safety studies, pavement design, MPT, signing and pavement marking, utility relocation plans (water, sanitary, and utility poles), cost estimating, and bid package contract development. Projects vary in complexity from \$100,000 to \$100M in construction costs. Project management duties include scope of work preparation, client coordination, budget management, supplemental contract writing, site and roadway design, drainage design, agency coordination, public involvement, municipal coordination, traffic studies, environmental documentation, and railroad coordination through rails to trails agreements. Relevant projects include:

**WVDOH Greenbag Road Improvement Project, Morgantown, WV** – QA/QC for Right-of-way plan development and Final Design activities for the widening and installation of two new roundabouts along 1.5 miles of Greenbag Road to support the WVDOH in providing safety and operational improvements to reduce congestion and add pedestrian/bicycle accommodations along the corridor. The project involved an extensive alternatives analysis, roadway design, roundabout design, traffic control, drainage design, 3D LiDAR scanning, right-of-way development, preparation of a traffic study for intersection capacity and corridor analysis, and subconsultant oversight for the development of an EA, including extensive public involvement efforts.

West Virginia Department of Highways District 5, West Virginia 42 over North Fork of Lunice Creek Bridge Replacement, Grant County, WV – QA/QC for the replacement of the existing concrete arch structure with a staged single span prestressed concrete box beam structure supported on a full height and integral abutments. The project also included roadway work including minor adjustments to the vertical and horizontal profile, guiderail replacement, and full depth roadway reconstruction.

**Rockwool Manufacturing Northport Avenue Extension, Ranson, WV** – Project Manager responsible for the development of construction documents for the 1,400 LF roadway

**CREDENTIALS**

Professional Engineer:

WV [REDACTED] (1999)

PA [REDACTED] (2002)

extension to serve the development of the 100-acre Rockwool Manufacturing site. This project utilized WVDOH Industrial Access Road Grant funding.

**City of Morgantown Eighth Street Trailhead, Morgantown, WV** – Project Manager responsible for the development of the construction documents for the Eighth Street Trailhead. This project included a concrete stairway with a wheeling channel to aide in access to the Caperton Trail system in Morgantown.

**West Virginia University Evansdale Drive Intersection Modification Project, Morgantown, WV** – Project Manager responsible for providing construction documents to relocate Evansdale Drive to the north, added a two-lane ingress/egress to the south end of the coliseum parking lot, creating a 4-way intersection.

**West Virginia University, Evansdale Drive Pedestrian Improvements Transportation Enhancement Project, Morgantown, WV** – Project Manager responsible for providing construction documents to reduce the width of the intersection and re-route a portion of Evansdale Drive to the west. This modification reduced the length and number of pedestrian conflicts with vehicular traffic.

**West Virginia University Creative Arts Center Parking Lot Renovations, Morgantown, WV** – Project Manager responsible for the development of construction documents, environmental permitting, and construction oversight to upgrade the Creative Arts Center parking lots from 245 spaces to 362 spaces.

**West Virginia University Milan Puskar Stadium Renovation Project, Morgantown, WV** – Site Civil Task Lead responsible for the development of the site civil construction documents for this \$65M stadium upgrade project. Project included utility relocations, revised grading for the north gate entry, and landscaping amenities.

**Preston County Development Authority Grace Chapel, Preston County, WV** – Project Manager responsible for the site design, permitting, and construction oversight associated with the site development of a 5-acre +/- commercial pad and access road.

**FBI/DEA Flex Ops Facility, Quantico VA** – Project Manager responsible for the development of the construction documents associated with Phase 1 of this project which included the building shell, running track, grading, drainage, and environmental permitting.

**Capon Bridge Business Park, Industrial Access Road, Hampshire County, WV** - Project Manager responsible for the design and permitting for this 500 LF +/- industrial access road.

**City of Morgantown Eighth Street Trailhead, Morgantown, WV** – Project Manager responsible for the development of the construction documents for the Eighth Street Trailhead. Project included a concrete stairway with a wheeling channel to aide in access to the Caperton Trail system in Morgantown, WV.

**WVDNR Elk River Boating Access Sites, Kanawha County, WV** – Project Manager responsible for the development of construction documents and construction oversight for five new boating ramps along the Elk River.

**Chad Shaffer, PLS – Surveying Manager**

WV: [REDACTED] | O: 570.933.9101 | cshaffer@stahlsheaffer.com



## CREDENTIALS

Professional Surveyor  
WV | 2024  
PA | 2003**EDUCATION**

Associate Civil Engineering Technology, Penn College of Technology

**PROFESSIONAL EXPERIENCE**

Mr. Shaffer is the Project Manager for Stahl Sheaffer's Survey Department, responsible for performing review of projects, directing staff surveyors and technicians, and managing client contact and project progress. He has 33 years of experience, and relevant projects include:

**WVDOT – DOH Greenbag Road, Monongalia County, WV** – Survey Project Manager for a traffic improvements to Greenbag Road. Along with placed and surveyed in control chevrons, Stahl Sheaffer's Reality Capture team used the Leica Pegasus:Two to scan two miles of the two-lane road, along with three intersecting roads. Supplemental survey ensured all basemap features beyond LiDAR limits were accounted for, and the scans were processed to produce a MicroStation existing planimetric basemap and two-foot grid DTM surface from the point cloud.

**Interstate 81 - Mobile LiDAR Mapping Project, Luzerne County, PA** – Survey Project Manager for a 15.5-mile section of Interstate 81 which included survey grade high-resolution mobile LiDAR point cloud data tied to horizontal survey control with the Leica Pegasus:Two system along the project corridor. Horizontal control was set and surveyed by Stahl Sheaffer. Horizontal control was tied to the Pennsylvania 1983 North State Plane Datum. Vertical control was based on GPS only.

- **PA Turnpike Commission New Baltimore Slide, Somerset County, PA** – Survey Project Manager for a project where Stahl Sheaffer placed and surveyed in control chevrons and used the Leica Pegasus:Two to scan four lanes east- and west-bound of the Pennsylvania Turnpike. The scans were then processed to produce a MicroStation existing planimetric basemap and a two-foot grid DTM surface from the point cloud.
- **Interstate 475, Lucas County, OH** – Survey Project Manager for a project where Stahl Sheaffer used the Leica Pegasus:Two to scan six miles of I-475 in Toledo, including the four main lanes, 12 on-and-off ramps, and additional side roads. The scans were then processed to produce a MicroStation existing planimetric basemap and a DTM surface from the point cloud. Supplemental survey was included in the basemap to include all features beyond the LiDAR range.
- **Pennsylvania Turnpike Commission Blue-Kitt Tunnels, Franklin County, PA** – Survey Project Manager for a project where Stahl Sheaffer's Reality Capture team used the Leica Pegasus:Two to scan four miles of the Pennsylvania Turnpike going through the Blue-Kitt tunnels, east- and west-bound. To ensure data accuracy, the Survey team placed chevrons, used a traverse control network, and ran levels beforehand. The resulting point cloud was processed to produce a MicroStation existing planimetric basemap, DTM, and cross-section diagrams of tunnel wall joints. Supplemental survey was included in the basemap to include all features beyond the LiDAR range.
- **Route 74 Repaving/Reconstruction Project, Perry County, PA** – Project surveyor for a 1.5-mile repaving/reconstruction project, responsible for construction layout and calculations for portions of Route 74 that were reconstructed due to steepness,



drainage problems, etc. Also responsible for the Type C surveying of the repaved sections of Route 74.

- **North Atherton Street 3D Survey, State College, Centre County, PA** – Survey Project Manager for 3D survey and base mapping of approximately 9000 LF of North Atherton Street. Responsible for the oversight and scheduling of the survey crew and technicians as well as scheduling traffic control.
- **The Pennsylvania State University Pollock Road Bollard Replacement, University Park, PA** – Project manager for construction drawings and documents for a retractable bollard replacement project on Pollock Road.
- **Clearfield Bridge Replacements, Clearfield County, PA** – Survey Manager for three bridge replacement projects, responsible for ROW location and preparation of ROW plans, utility location and coordination, and boring locations.
- **PennDOT E03976, PA 56, Bedford County, PA** – Survey Manager for a bridge replacement project, responsible for ROW location and preparation of right-of-way plans, topographical and H&H surveys.
- **PennDOT District 3-0, PA Rapid Bridge Replacement Program** – Survey Project Manager for the stakeout of ROW and temporary easements, construction stakeout, and topographical surveys for various bridges located within PennDOT District 3-0.
- **EQT Greene County Partnership Projects, Greene County PA** – Survey Manager for over 15 miles of roadway improvements, responsible for topographical, right-of-way and boundary survey along the roadway corridors.

**East Buffalo Township, Fairgrounds Road Signal Improvement, Union County, PA** – Survey Manager for traffic signal upgrades at the Fairgrounds Road and Route 45 intersection and improvements to the Buffalo Valley Rail trail crossing. Provided topographical and right-of-way survey along with right-of-way and alignments stakeouts.

**Oakwood Grove Land Development Plan, Snyder County, PA** – Project surveyor and designer for 90-unit condominium development. As surveyor, he was responsible for deed and right-of-way research, boundary survey, aerial control survey, and utility locations. As design engineer, he was responsible for design of all streets and utilities, grading plans, erosion and sedimentation control plans, NPDES Permits, Post-construction stormwater management plans, Highway Occupancy Plans, and right-of-way dedication plans.

**Penn Commons Multi-Family Residential Survey, Union County, PA** – Managed survey for a 2.21-acre site for the construction code-based design of seven multi-story wood-framed residential structures with 31 apartment units along with related parking and infrastructure improvements. Stahl Sheaffer also performed Phase I Environmental Site Assessment due diligence review and structural design.

**Greg Copelli, PLS – Professional Land Surveyor**

PA: [REDACTED] | O: 814.512.8349 | gcopelli@stahlsheaffer.com



## CREDENTIALS

Professional Surveyor  
PA [REDACTED] 2022**EDUCATION**

Bachelor of Science in Surveying Engineering, Penn State University

**PROFESSIONAL EXPERIENCE**

Mr. Copelli has eight years of experience in both the field and office aspects of surveying. He is a licensed professional surveyor. In this role, he provides existing conditions, boundary, control, construction stakeout, and ALTA/NSPS surveys as well as Subdivisions/Lot Consolidation Plans and right of way plans as services provided to various private and public clients. This includes performing topographic surveys, boundary retracement, stakeout and construction layout, and managing control networks as well as processing field data, performing land records research, and completing projects from field to finish. Relevant projects include:

**SR 3014 Bluff Ridge Road, Greene County, PA** – Project Coordinator for this 7.5-mile-long project, responsible for processing all field data from multiple crews, processing OPUS Solutions, and QA/QC of the control network throughout the project to ensure accuracy standards were met. Processed data to create a base map of the entire project to be viewed in 2D or 3D formats, created centerline alignments based off combinations of existing PennDOT Right-of-Way Plans and existing centerline to be geometrically correct, and built in GIS Property Mosaic.

**SR 3013 Oak Forest Road, Greene County, PA** – Project Coordinator for this 14-mile-long project, responsible for processing all field data from multiple crews, processing OPUS Solutions, and QA/QC of the control network throughout the project to ensure accuracy standards were met. Processed data to create a base map of the entire project to be viewed in 2D or 3D formats, created centerline alignments based off combinations of existing PennDOT Right-of-Way Plans and existing centerline to be geometrically correct, and built in GIS Property Mosaic.

**Sandy Township TASA, Clearfield County, PA** – Project Coordinator and surveyor for this project. The project involved the survey of approximately 4500 feet of Maple Avenue, Shaffer Road and an abandoned railroad grade. Responsible for all field surveys, base map preparation, courthouse research, and right-of-way plans.

**Bellefonte Area School District Survey, Borough of Bellefonte, Centre County, PA** – Project Coordinator and Surveyor for this 108-acre boundary and topographic survey. Responsible for all field surveys of site and all features in the rights-of-way of two state roads and a private road. Processed data to create a base map of entire project area to be viewed in 2D or 3D formats, completed property research and acquired plans from PennDOT to set existing rights-of-way and boundary of subject parcel. Analyzed field findings with property record data to conclude subject boundary, reset missing monumented corners, and provided a Civil3D basemap and Boundary Plat to client as deliverables.

**Jonathan Yerger – Survey Crew Chief****O: 570.274.7552 | [jyerger@stahlsheaffer.com](mailto:jyerger@stahlsheaffer.com)****PROFESSIONAL EXPERIENCE**

Mr. Yerger has over 25 years of experience as a surveyor. He is responsible for the land surveying for public and private projects that include highway projects, utility plans, and as-built plans. As Survey Crew Chief, he performs technical design, conducts deed and right-of-way research and construction stakeouts, and prepares and submits structure design to PennDOT. He has extensive experience in construction stakeout, which includes ROW, LOD, storm, sanitary, water, gas, storm management, baseline, road, curb, sidewalk, grading, etc. Prior to joining Stahl Sheaffer Engineering, Mr. Yerger was a surveyor for Dave Gutelius Excavating Inc. for over 16 years. Relevant projects include:

**WVDOT – DOH Greenbag Road, Monongalia County, WV** – Survey Crew Chief for traffic improvements to Greenbag Road. Along with placed and surveyed in control chevrons, the Reality Capture team used the Leica Pegasus:Two to scan two miles of the two-lane road, along with three intersecting roads. Supplemental survey ensured all basemap features beyond LiDAR limits were accounted for, and the scans were processed to produce a MicroStation existing planimetric basemap and two-foot grid DTM surface from the point cloud.

**Interstate 475, Lucas County, OH** – Survey Crew Chief for a project where Stahl Sheaffer Engineering used the Leica Pegasus:Two to scan 6 miles of I-475 in Toledo, OH, including the 4 main lanes, 12 on-and-off ramps, and additional side roads. The scans were then processed to produce a MicroStation existing planimetric basemap and a DTM surface from the point cloud. Supplemental survey was included in the basemap to include all features beyond the LiDAR range.

**Interstate 81 - Mobile LiDAR Mapping Project, Luzerne County, PA** – Survey Crew Chief for a 15.5-mile section of Interstate 81 which included survey grade high-resolution mobile LiDAR point cloud data tied to horizontal survey control with the Leica Pegasus:Two system along the project corridor. Horizontal control was set and surveyed by Stahl Sheaffer. Horizontal control was tied to the Pennsylvania 1983 North State Plane Datum. Vertical control was based on GPS only.

**PA Turnpike Commission New Baltimore Slide, Somerset County, PA** – Survey Crew Chief for a project where Stahl Sheaffer Engineering placed and surveyed in control chevrons and used the Leica Pegasus:Two to scan four lanes east- and west-bound of the Pennsylvania Turnpike. The scans were then processed to produce a MicroStation existing planimetric basemap and a two-foot grid DTM surface from the point cloud.

**Pennsylvania Turnpike Commission Blue-Kitt Tunnels, Franklin County, PA** – Survey Crew Chief for a project where Stahl Sheaffer's Reality Capture team used the Leica Pegasus:Two to scan four miles of the Pennsylvania Turnpike going through the Blue-Kitt tunnels, east- and west-bound. To ensure data accuracy, the Survey team placed chevrons, used a traverse control network, and ran levels beforehand. The resulting point cloud was processed to produce a MicroStation existing planimetric basemap, DTM, and cross-section diagrams of tunnel wall joints. Supplemental survey was included in the basemap to include all features beyond the LiDAR range.

**Andrew Gouty, LiDAR Analyst II****C: 304.916.5511 | O: 304.381.4281 x261 | [agouty@stahlsheaffer.com](mailto:agouty@stahlsheaffer.com)****EDUCATION**

Associate of Applied Science, Kanawha Valley Community College

**PROFESSIONAL EXPERIENCE**

Mr. Andrew Gouty is responsible for managing Stahl Sheaffer's Survey/Reality Capture CAD drawings. Mr. Gouty has 10 years of experience in AutoCAD Civil 3D, Revit, Sketchup, Microstation, FARO Scene Scanner and software, Leica Register 360, and Leica Pegasus:Two running the scanner and processing the data. Relevant projects include:

**West Virginia Roadway Improvement Initiative, Various Counties, WV** – This Project consists of improving 150 miles of rural roads, spread across 10 counties in West Virginia. Mr. Gouty served as CAD Technician improving roads/ROW for the private client throughout various counties in WV. He took the survey field data and processed it to a base map for the designers to improve the road.

**US Route 33, Upshur County, WV** – LiDAR Analyst for scanning three miles of US Route 33, just east of Buckhannon. Responsible for operating the Leica Pegasus:Two to scan the four travel lanes and process to survey control within two tenths, and processing the point cloud to a terrain model to get the slope of the travel lanes. This information was put into an excel format for DOT approval. This process was completed four times – the first for existing conditions, and the second, third and fourth times for in-between lifts during paving to ensure the contractor was getting the correct cross slope during construction.

**Mannik & Smith Group, Inc, Hancock County, WV** – CAD Technician for a survey as built of a McDonalds in Chester, WV to be used by the client for renovations. Responsible for scanning the site with the FARO scanner and processing the data to create the deliverable.

**Confidential Energy Client, Various Counties, WV** – Inspection of access roads and hauling routes for pipeline construction. This project occurred across multiple counties in West Virginia where access roads were scanned with the Pegasus: Two system to ensure that road stability and conditions were not negatively impacted by pipeline construction. The scans were used as post-production data. Responsible for the mobile data acquisition of West Virginia roads and initial processing of data collected.

**West Virginia Capital Dome, Kanawha County, WV** - CAD Technician for a survey as built of the State Capital Dome to be used to rebuild the inside of the dome back to historical accuracy following repairs to old drain lines behind the walls. Responsibilities included scanning with a FARO scanner to collect 360 survey data, processed the data, and developing measurement drawings from targets on the windows and scaffolding to the columns and walls.

**Confidential Energy Client, Various Counties, PA** – Inspection and driving of access roads for well pad haul routes in North Central Pennsylvania. Responsibilities included setting control points for LiDAR data, scanning required roads with mobile LiDAR, and processing the data in office to ensure that the needs of the project were met. The data is used to ensure that roadways are within acceptable limits for use as haul roads for energy clients during pre-production, production, and post-production.

**Quantico Marine Base, Prince William County, VA** – CAD Technician for collecting LiDAR data on the Marines Base Runway and processing the data to a 0.10' of accuracy so the customer can make a survey basemap from the LiDAR data.

**New Baltimore Slide, Somerset County, PA** – CAD Technician for a LiDAR data and survey basemap of the Pennsylvania Turnpike. Responsible for processing the data to survey control and developing a survey basemap for use in engineering design.

**LUC 475, Lucas County, OH** – LiDAR Analyst for scanning six miles of I-475, side roads, and ramps in Toledo, responsible for operating the Leica Pegasus:Two to scan the four main lanes, 12 on and off ramps, and side roads; processing the scans; and developing an existing planimetric and a DTM of the surface from the processed point cloud.

**The Pennsylvania State University, Pavement Assessment, Centre County, PA** – CAD Technician for comprehensive roadway classification, assessment, and asset management solution project. This project consists of scanning the streets and parking lots with the Leica Pegasus 2 mobile scanner to collect existing condition data, processing the data for review in MapFactory, and drawing the defects out to classify the streets and parking lots in need or priority maintenance/repair. This data is provided to Penn State via a client-specific asset management prioritization tool.

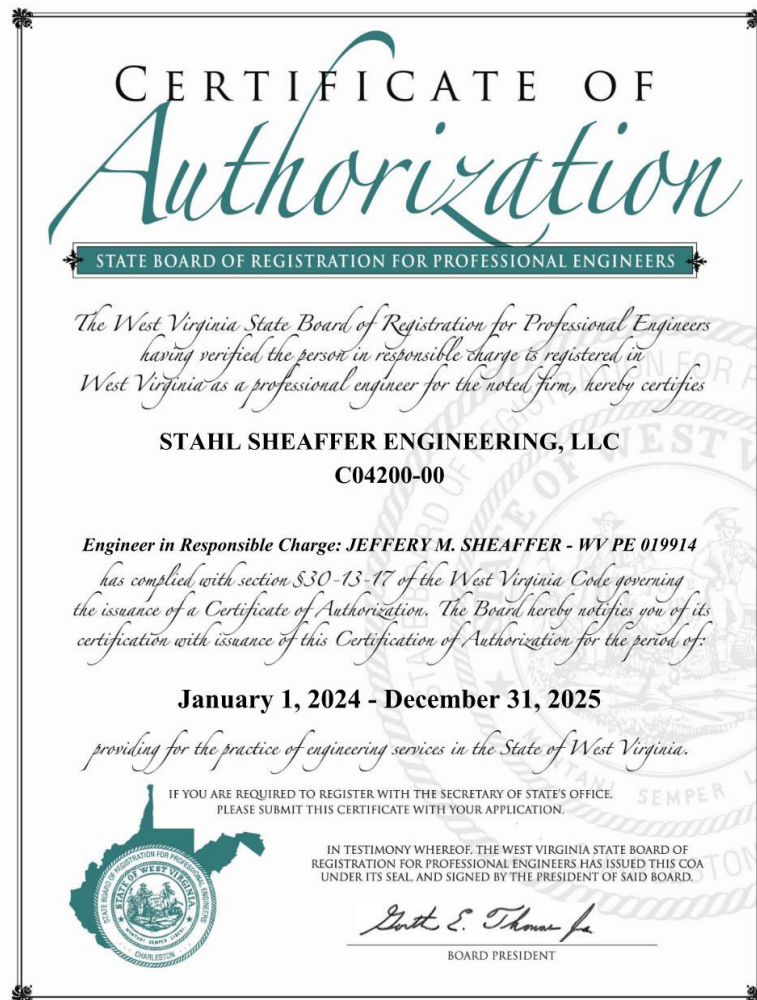
**The Pennsylvania State University, University Club, Center County, PA** – CAD Technician for scanning the interior and exterior of the 24,975 SF Penn State University Club Building using the FARO scanner, processing the data in Register 360, and creating a recap file for the client.

## CREDENTIALS

AUTOCAD  
Civil 3D  
Microstation  
Revit  
Sketchup  
Virtue Serve  
FARO Scene  
Leica Pegasus:Two  
Trimble MX7 Mobile Imagery  
GPS Acquisition  
TopoDOT  
Leica Register 360



# Stahl Sheaffer COAs



## Subconsultant

### Tuck Mapping Solutions, Inc. (TMSI)

TMSI provides high-density full-waveform LiDAR and aerial photography from fixed-wing platforms. Its staff of 20 professionals has successfully completed thousands of projects since the company's formation in 1985. The TMSI team has expertise and experience in digital and conventional aerial photography (color, black and white, B&W IR and color IR), LiDAR, digital mapping, stockpile volumetric calculation, digital orthophotography, surveying, aerial triangulation, cross sections, and many other geospatial services. Employees are well-trained for their assignments and maintain current knowledge of new developments. All projects are completed under the supervision of registered professional engineers, licensed land surveyors or certified photogrammetrists.

TMSI owns and operates four RIEGL LiDAR systems that provide rapid and accurate generation of digital point cloud data. Aerial mapping camera systems are mounted on three aircraft: A Cessna Caravan 208 (N988JD), a Piper Navajo (N190TA), and a Cessna 206 Stationair II (N193TA). The Carvan and Piper Navajo are equipped with an UltraCam Falcon Large-Format digital camera and Riegl LiDAR scanners with GYRO mounts and Airborne GPS. All aircraft are equipped with the GPS Flight Management systems for navigational and camera control to perform aerial photography projects in precise compliance with flight plans. The Caravan and the Navajo can acquire large format imagery and LiDAR simultaneously during a single flight.

#### Services include:

Digital Aerial Photography	Corridor Studies
Orthophotography	Floodplain Mapping
Right of Way Mapping	Disaster Management
Bare Earth LAS files	Airport Facilities Survey
Colorized Point Cloud	Land Use Mapping
Classified LiDAR Data	Transportation Mapping
Contour Mapping	Engineering Applications
3-D Modeling	Forestry Applications
Volumetric Studies	Digital Terrain Models
3-D Perspective Analysis	Building Footprints
Vegetation Mapping	Planimetric Feature Extraction

By leveraging aviation, acquisition, and production resources, TMSI controls the entire LiDAR mapping process, from acquisition to final client approval. This ensures a timely delivery of accurate data that has gone through custom post-processing workflow, including rigorous quality standards, to produce a variety of highly accurate products.

The TMSI team epitomizes their Appalachian heritage through hard work and an unwavering focus on quality and customer satisfaction. TMSI is a small HUBZone business with a focused "drive to satisfy" work ethic. This customer-focused culture coupled with experienced people, up-to-date technology, and state-of-the art equipment brings strong capabilities for meeting client needs. Long-term employees and long-term clients are evidence of a commitment to quality customer service, fairness, and reliability. Clients throughout the United States trust TMSI for fulfilling commitments, delivering excellent service, and providing accurate data. TMSI has demonstrated its strong capabilities and exceptional performance with a long history of satisfied clients including Tennessee Valley Authority, NOAA, Army Corps of Engineers, USGS, US Air Force, FEMA, US Marine Corps, and Vulcan.

**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
<b>Robert Tuck, PE, RLS, CP, PMP</b>	<b>Professional Land Surveyor / Project Manager – Airborne LiDAR Collection &amp; Airborne Imagery Collection/ Photogrammetrist</b>	<b>48</b>	<b>38</b>

15. FIRM NAME AND LOCATION (City and State)

Tuck Mapping Solutions, Inc., Big Stone Gap, VA 24219

16. EDUCATION (DEGREE AND SPECIALIZATION)

- BS Pre-Engineering, CNU; 1973
- BS Civil Engineering, VPI&SU; 1973
- MBA, King University; 2013
- OPUS Project Manager

17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)

TN- [REDACTED] (2000), VA- [REDACTED] (1995)  
 FL- [REDACTED] (2005), WV- [REDACTED] (1995)  
 NC- [REDACTED] (1999), SC- [REDACTED] (2005)  
 KY- [REDACTED] (1999)  
 ASPRS [REDACTED] (2007)  
 PMP - [REDACTED] (2020)



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

Mr. Tuck has been in the mapping industry for over 38 years. He is an established MAPPS and ASPRS member. Published in Professional Surveyor, ASPRS Handbook on Photogrammetry, POB, and LiDAR News. Proficient working with 3D modeling and the USACE A/E/C CAD Standard, A/E/C Graphics Standard.

**19. RELEVANT PROJECTS**

(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
Section F – Project #1		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
<b>Floodplain Mapping for the Alabama/Black Warrior Rivers; Tuscaloosa, AL</b>		2013	N/A
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm			
a. Professional Land Surveyor / Project Manager – Airborne LiDAR Collection & Airborne Imagery Collection / Photogrammetrists. Under contract # W62470-15-D-5007, provided <b>aerial photography and LiDAR</b> of over 850 miles of the Black Warrior and Alabama River from Mobile to Sipsey, Alabama. TMSI flew a 1,000-foot buffer from each riverbank with the Eagleeye Mapping System using their helicopter to produce high accuracy DEM for cross section analysis. TMSI also flew a two-mile corridor of the river collecting LiDAR in our airplane to produce a DEM with an accuracy of one foot. <b>Fee: \$1.6M</b>			
<b>New York Hyperspectral, LiDAR, Multispectral Mapping, New York, NY</b>		2020	N/A
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm			
b. Robert Tuck – Professional Land Surveyor / Project Manager – Airborne LiDAR Collection & Airborne Imagery Collection / Photogrammetrists. -Under contract with New York University - Tuck Mapping worked with New York University to map Brooklyn, NY to determine subsidence and structures and identification of ground and building cover using <b>Hyperspectral</b> mapping along with LiDAR and <b>Multispectral</b> imagery. The project determined types of structures and conditions of settling due to <b>underground utilities</b> such of subways and utility installations. <b>Fee: \$165,000</b>			
<b>USACE AE Surveying and Mapping; Port Arthur, TX</b>		2019-2020	N/A
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm			
c. Professional Land Surveyor / Project Manager – Airborne LiDAR Collection & Airborne Imagery Collection / Photogrammetrists. Under contract # W912BV-16-D-0003, TMSI contracted for the restoration efforts following Hurricane Harvey. Our work included the <b>bathymetric/terrestrial LiDAR survey, conventional surveys and SUE surveys</b> of the harbors and waterway, forty miles of levee survey (which includes much of the downtown of Port Arthur), <b>boundary survey, LiDAR, aerial mapping, ALTA survey</b> and all <b>ROW surveys</b> for properties along the forty miles of levees. <b>Fee: \$2.03M</b>			

W9127822R0079

STANDARD FORM 330 REV (7/2021)



**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
<b>Michael Hobbs</b>	<b>Photogrammetrist, Project Manager - Airborne LiDAR Collection &amp; Airborne Imagery Collection</b>	<b>34</b>	<b>34</b>

15. FIRM NAME AND LOCATION (City and State)

Tuck Mapping Solutions, Inc., Big Stone Gap, VA 24219



16. EDUCATION (DEGREE AND SPECIALIZATION)

 AAS, Drafting Mountain Empire CC; 1989  
BBA, King University, 2015

17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)

 Virginia Surveyor **Photogrammetrist** (2010)  
Project Management Professional (PMP) Training

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

Mr. Hobbs has over 34 years of experience in the practice of photogrammetry. He has worked extensively in edit/QC of mapping products before becoming a project manager. He has responsibility in project management, estimating, flight planning and mapping execution. Proficient working with 3D modeling and the USACE A/E/C CAD Standard, A/E/C Graphics Standard, and SDSFIE.

**19. RELEVANT PROJECTS**

(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
Section F – Project #1		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
<b>Floodplain Mapping for the Alabama/Black Warrior Rivers; Tuscaloosa, AL</b>		2013	N/A
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> Check if project performed with current firm	
a. Project Manager – Airborne LiDAR Collection & Airborne Imagery Collection. Under contract # W62470-15-D-5007, Tuck Mapping Solutions, Inc. provided <b>aerial photography</b> of over 850 miles of the Black Warrior and Alabama River from Mobile to Sipsey, Alabama. TMSI flew a 1,000-foot buffer from each riverbank with the Eagleeye Mapping System using their helicopter to produce high accuracy DEM for cross section analysis. TMSI also flew a two-mile corridor of the river <b>collecting LiDAR</b> in our airplane to produce a DEM with an accuracy of one foot. <b>Fee: \$1.6M</b>			
(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
Section F – Project #4		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
<b>New York Hyperspectral, LiDAR, Multispectral Mapping, New York, NY</b>		2020	N/A
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> Check if project performed with current firm	
b. Project Manager – Airborne LiDAR Collection & Airborne Imagery Collection - Under contract with New York University - Tuck Mapping worked with New York University to map Brooklyn, NY to determine subsidence and structures and identification of ground and building cover using <b>Hyperspectral</b> mapping along with <b>LiDAR and Multispectral imagery</b> . The project determined types of structures and conditions of settling due to underground utilities such of subways and utility installations. <b>Fee: \$165,000</b>			
(1) TITLE AND LOCATION (City and State)		(2) YEAR COMPLETED	
Section F – Project #3		PROFESSIONAL SERVICES	CONSTRUCTION (If Applicable)
<b>USACE AE Surveying and Mapping; Port Arthur, TX</b>		2019-2020	N/A
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> Check if project performed with current firm	
c. Project Manager - Airborne LiDAR Collection & Airborne Imagery Collection. Under Contract #W912BV16D0003, TMSI teamed together to perform bathymetric surveys, LiDAR, photogrammetric, field surveys, control surveys and profiles of all the flood protection assets for 40 miles of levees and over 9000 acres of property. All final deliverables complied with all USACE standards and received exceptional CPARS ratings. <b>Fee: \$2.03M</b>			





E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT (Complete one Section E for each key person.)			
12. NAME <b>Steve Smeltzer, PS</b>	13. ROLE IN THIS CONTRACT <b>Photogrammetrist</b>	14. YEARS EXPERIENCE a. TOTAL <b>33</b>	b. WITH CURRENT FIRM <b>33</b>
15. FIRM NAME AND LOCATION (City and State) <b>Tuck Mapping Solutions, Inc.; Big Stone Gap, VA</b>			
16. EDUCATION (DEGREE AND SPECIALIZATION) <b>Ferris State University – AAS Mapping Science, Digital Mapping; 1988</b>		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) <b>Virginia Surveyor Photogrammetrists (2005)</b>	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)  Mr. Smeltzer has over 33 years of experience as a compiler of aerial mapping. His mapping experience includes highway design mapping, coal mine sites, water and sewer design projects, and city and county mapping. He has experience in the layout of ground control, aerial triangulation, digital mapping, and digital ortho production. Proficient working with 3D modeling and the USACE A/E/C CAD Standard, A/E/C Graphics Standard, and SDSFIE.			
19. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (City and State) <b>Floodplain Mapping for the Alabama/Black Warrior Rivers; Tuscaloosa, AL</b>		(2) YEAR COMPLETED PROFESSIONAL SERVICES <b>2013</b> CONSTRUCTION (If Applicable)	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> a. <i>Photogrammetrist.</i> Under contract # W62470-15-D-5007, Tuck Mapping Solutions, Inc. provided aerial photography of over 850 miles of the Black Warrior and Alabama River from Mobile to Sipsey, Alabama. TMSI flew a 1,000-foot buffer from each riverbank with the Eagleeye Mapping System using their helicopter to produce high accuracy DEM for cross section analysis. TMSI also flew a two-mile corridor of the river collecting LiDAR in our airplane to produce a DEM with an accuracy of one foot. <b>Fee: \$1.6m</b>			
(1) TITLE AND LOCATION (City and State) <b>SFG Distant Range Survey, Eglin AFB; Destin, FL</b>		(2) YEAR COMPLETED PROFESSIONAL SERVICES <b>2020</b> CONSTRUCTION (If Applicable)	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> b. <i>Photogrammetrist.</i> Under contract with New York University - Tuck Mapping worked with New York University to map Brooklyn, NY to determine subsidence and structures and identification of ground and building cover using Hyperspectral mapping along with LiDAR and Multispectral imagery. The project determined types of structures and conditions of settling due to underground utilities such of subways and utility installations. <b>Fee: \$165,000</b>			
(1) TITLE AND LOCATION (City and State) <b>LiDAR and Imagery Acquisition and Processing; Port Arthur, Galveston Army Corps of Engineers</b>		(2) YEAR COMPLETED PROFESSIONAL SERVICES <b>2019-2020</b> CONSTRUCTION (If Applicable)	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <span style="float: right;"><input checked="" type="checkbox"/> Check if project performed with current firm</span> c. <i>Photogrammetrist.</i> Under contract # W912BV-16-D-0003, TMSI contracted for the restoration efforts following Hurricane Harvey. Our work included the bathymetric survey of the harbors and waterway, forty miles of levee survey (which includes much of the downtown of Port Arthur), boundary survey surrounding the Valero Refinery, LiDAR, aerial mapping, and all ROW surveys for properties along the forty miles of levees. Mr. Smeltzer was the photogrammetrist for this mapping project. <b>Fee: \$2.03M</b>			

W9127822R0079

STANDARD FORM 330 (REV: 7/2021)



**Tuck Mapping Equipment List**

AIRCRAFT			
Fixed Wing or Rotary	Type/ Description	Photo	LIDAR
<i>Fixed/Owned 2022</i>	<p><b><i>Cessna Caravan 208 (N152TA)</i></b> S/N #20800664</p> <ul style="list-style-type: none"> <li>• Cabin: unpressurized</li> <li>• GPS: POS AV with Dual Frequency Garmin GPS and IMU</li> <li>• Garmin G-1000 Digital Cockpit</li> <li>• Garmin Collision Avoidance Sys.</li> <li>• Terrain Warning System</li> <li>• Engine: Pratt and Whitney Turbine 675 Hp</li> <li>• Max Working Elevation: 25,000' MSL</li> <li>• Speed: 130-170 knots</li> <li>• Runway: 2,000'</li> <li>• Dual Ports in Cabin</li> </ul> <p><b><u>DUAL ACQUISITION!</u></b></p>	<ul style="list-style-type: none"> <li>• UltraCam Falcon Large-Format Digital Camera with Gyro Mount and Airborne GPS and Motion Compensation</li> <li>• RIEGL VQ-780i LiDAR Scanner (Full Waveform) – 1000 kHz</li> </ul> 	<i>Yes</i>
<i>Fixed/Owned 1990</i>	<p><b><i>Piper Navajo Panther 310 (N190TA)</i></b> S/N #31-8012040</p> <ul style="list-style-type: none"> <li>• Cabin: unpressurized</li> <li>• GPS: POS AV with Dual Frequency Garmin GPS and IMU</li> <li>• GPS: Garmin 530 Moving Map</li> <li>• Ryan Collision Avoidance Sys.</li> <li>• Engines: Lycoming 350 Hp</li> <li>• Max Working Elevation: 24,000' MSL</li> <li>• Speed: 130-170 knots</li> <li>• Runway: 2,000'</li> </ul> <p><b><u>DUAL ACQUISITION!</u></b></p>	<ul style="list-style-type: none"> <li>• UltraCam Falcon Large-Format Digital Camera with Gyro Mount and Airborne GPS and Motion Compensation</li> <li>• RIEGL VQ-680i LiDAR Scanner (Full Waveform) – 600 kHz</li> </ul> 	<i>Yes</i>
<i>Fixed/Owned 2004</i>	<p><b><i>Cessna 206 Stationair II (N193TA)</i></b> S/N #U20605946</p> <ul style="list-style-type: none"> <li>• Cabin: unpressurized</li> <li>• GPS: POS AV with Dual Frequency Garmin GPS and IMU</li> <li>• GPS: Garmin 530 Moving Map</li> <li>• Ryan Collision Avoidance System</li> <li>• Engine – Continental 550 300 Hp</li> <li>• Max Working Elevation: 15,000' MSL</li> <li>• Speed: 100-140 knots</li> </ul>	<ul style="list-style-type: none"> <li>• Runway: 2,000'</li> <li>• Single Port</li> <li>• UltraCam Falcon Large-Format Digital Camera with Gyro Mount and Airborne GPS and Motion Compensation</li> </ul> 	<i>Yes</i>
<i>Rotary/Owned 2016</i>	<p><b><i>DJI Phantom 4 Pro+</i></b></p> <ul style="list-style-type: none"> <li>• Unmanned Aerial System (UAS)</li> <li>• Gimbal-Mounted 20-megapixel sensor</li> <li>• 4K/60fps video</li> <li>• On-board IMU and GPS</li> <li>• Flight controlled with PIX4D Capture software that flies flight lines over the project area</li> </ul>		<i>Yes</i>

SENSORS		
Digital Cameras /LiDAR (Make/Description)	Photo	Digital Camera/LIDAR (Make/Description)
<p><b>Vexcel UltraCam Falcon Digital Large-Format Camera</b> Purchased 2016 S/N #UC-FP-A-40616106</p> <p>100 mm focal length precision mapping camera with FMC with POS AV Navigational System with 410 IMU and Airborne GPS 5-Band 195 Mega Pixels</p>		<p><b>Vexcel UltraCam Falcon Digital Large-Format Camera</b> Purchased 2022 S/N #354S32324X716310</p> <p>100 mm focal length precision mapping camera with FMC with POS AV Navigational System with 410 IMU and Airborne GPS 5-Band 195 Mega Pixels</p>
<p><b>RIEGL LMS-Q680i</b> Purchased 2010 S/N #999 8212</p> <p>Full waveform, long-range airborne laser scanner. Laser Pulse Repetition Rate of 400kHz. Up to 266,000 measurements per second. High Accuracy, up to 20mm. 200 scan lines per second. 60-degree field-of-view. Parallel scan lines</p>		<p><b>RIEGL VQ-780i</b> Purchased 2017 S/N #2222939</p> <p>Full waveform, long-range airborne laser scanner. Laser Pulse Repetition Rate of 1000kHz. Up to 666,000 measurements per second. High Accuracy, down to 20mm. 300 scan lines per second. 60-degree field-of-view. Parallel scan lines</p>

Photogrammetric Software			
Description	Quantity	Description	Quantity
Bentley MicroStation Network Licenses	8	BAE SocetSet with VR-1 Feature Extraction	7
BAE NOAA Feature Extraction Software	3	AutoDesk AutoCAD MAP Network	5
Autometric KORK Stereo Compilation	1	ERDAS Imagine license	1
OrthosVista Match AT	1	Vexcel UltraMap	6
ESRI ArcGIS license	2	Spectra Precision Terramodel Contour Module	6

Airborne LiDAR Hardware and Software			
Description	Quantity	Description	Quantity
Riegl Full Waveform LiDAR Scanners LMS-Q560, LMS-Q680i, VQ-780i & VQ-480	4	TerraScan LiDAR Processing Soft.	10
Applanix 410 IMU systems	3	TerraMatch LiDAR Processing Soft.	1
TerraPhoto LiDAR Processing Soft.	1	Trimble R8 GPS Receivers	6
RiProcess Riegl Post Processing Software	5	Q Coherent LP360 Software	1
GeoCue LiDAR Management	6	Spectra Precision Terramodel Contour Module	6

GIS Software			
Description	Quantity	Description	Quantity
ArcGIS for Desktop Basic	4	TerraScan LiDAR Processing Soft.	10
ArcGIS for Desktop Advanced	2	TerraMatch LiDAR Processing Soft.	1
ArcGIS 3D Analyst	2	MicroStation (Open Roads, InRoads)	7
ArcGIS Spatial Analyst	2	Q Coherent LP360 Software	1



## Tuck Mapping Solutions, Inc.

Robert H. Tuck  
P.O. Box 760  
Big Stone Gap, VA 24219  
Phone: (276) 523-4669  
Fax: (276) 523-4673  
BTuck@tuckmapping.com  
www.tuckmapping.com

Certification Number: 654123

### SWaM Certification Type:

Small Start Date: 07-02-2020

SWaM Expiration Date: 07-02-2025

### NIGP Code and Description:

90504	Aerial Photogrammetry Services
90505	Aerial Photography
90510	Aerial Surveys and Mapping Services (See 962-52 for Standard Survey and Mapping Services)
92586	Surveyor Services, Land

Pcard: N

Business Category: Others

# CERTIFICATE OF Authorization

STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

*The West Virginia State Board of Registration for Professional Engineers having verified the person in responsible charge is registered in West Virginia as a professional engineer for the noted firm, hereby certifies*

**TUCK MAPPING SOLUTIONS, INC.**

**C00918-00**

**Engineer in Responsible Charge: ROBERT H. TUCK - WV PE 008428**

*has complied with section §30-13-17 of the West Virginia Code governing the issuance of a Certificate of Authorization. The Board hereby notifies you of its certification with issuance of this Certificate of Authorization for the period of:*

**January 1, 2024 - December 31, 2025**

*providing for the practice of engineering services in the State of West Virginia.*



IF YOU ARE REQUIRED TO REGISTER WITH THE SECRETARY OF STATE'S OFFICE, PLEASE SUBMIT THIS CERTIFICATE WITH YOUR APPLICATION.

IN TESTIMONY WHEREOF, THE WEST VIRGINIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS HAS ISSUED THIS COA UNDER ITS SEAL AND SIGNED BY THE PRESIDENT OF SAID BOARD.

*Scott E. Thomas Jr.*

BOARD PRESIDENT