



T: 304.776.7473
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5088 Washing Street W
Charleston, WV 25313

e Robinsonengineering.com

October 27, 2015

West Virginia Department of Environmental Protection
Office of Abandoned Mine Lands and Reclamation
601 57th Street
Charleston, WV 25304

**Re: Mapping Services for Northern Counties of West Virginia
CRFQ 0313 DEPI600000017**

Gentlemen:

E.L. Robinson is pleased to have the opportunity to submit our Proposal to the WVDEP's Office of Abandoned Mine Lands and Reclamation, for the Mapping Services for Northern Counties of West Virginia. This proposal is in accordance with the guidelines outlined in the CRFQ 0313 DEPI600000017 by the State of West Virginia, Department of Administration Purchasing Division Document dated October 5, 2015.

E.L. Robinson is the leading multi-disciplined engineering/architectural/planning firm providing consulting engineering services in West Virginia. Our offices in West Virginia are located in Charleston, Bridgeport, Beckley and Chapmanville, making our firm geographically positioned to handle your southern WV mapping needs both efficiently and economically.

You will see that teamwork is the spirit and foundation of our organization. We acknowledge the importance of a quick turn-around and excellent quality service, which our administrative procedures, overall organization, and depth of experience provides you. We are very proud of our performance under past contracts with the Office of Abandoned Mine Lands and Reclamation, as well as other contracts we have held with the WVDEP. We value our working relationship with all AML personnel, and will continue to strive to provide for excellence in all work we do.

E.L. Robinson has provided consulting engineering services in West Virginia for over twenty-five (25) years, allowing us to have a complete understanding of mapping services required by the Office of Abandoned Mine Lands and Reclamation. Our past experience in providing mapping services for the WV Abandoned Mine Lands Program has spanned over the past 20 years. Mapping services provided has included setting aerial photography control points, performing planimetric and topographic field surveys, performing surveys to supplement or enhance existing aerial photography and/or aerial Lidar mapping. We have also performed many quality assurance/quality check surveys to verify new and existing mapping prior to its use for design of reclamation projects, to insure accuracy to mapping standards.

10/29/15 12:57:20
WV Purchasing Division

We welcome the opportunity to continue our working relationship with the WVDEP's Office of Abandoned Mine Lands and Reclamation look forward to providing mapping services for all of their projects. We feel our track record indicates that mapping services can be provide on both "Planned Reclamation Projects" and "Emergency Reclamation Projects" utilizing the latest technologically advanced surveying equipment and software. We believe no other company can match the quality of our work, and experience. Our experience and office locations relative to Southern WV should allow us to be more efficient and therefore very cost competitive.

We trust that the selection of E.L. Robinson Engineering Co. will allow our firm to continue to meet the surveying/mapping needs of the WVDEP's Office of Abandoned Mine Lands and Reclamation.

Thank you for the invitation to answer this RFQ, and if you have any questions or require any additional information for either the WVDEP's Office of Abandoned Mine Lands and Reclamation or the State of West Virginia, Department of Administration Purchasing Division, please contact me anytime at (304) 541-2917 r (304) 855-4546. If I should be unavailable, please contact Mr. Ed Robinson at (304) 776-7473.

Respectfully submitted,

E. L. Robinson Engineering Co.

A handwritten signature in black ink, appearing to read "J. T. Rayburn". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

James T. Rayburn, PS
Manager of Surveying

Tel: (304) 541-2917
Fax: (304) 855-4561
trayburn@elrobinson.com



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MAPPING SERVICES IN NORTHERN WEST VIRGINIA

CRFQ 0313 DEP1600000017

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

CHARLESTON, WEST VIRGINIA

E. L. ROBINSON ENGINEERING CO.

CHARLESTON, WEST VIRGINIA

Introduction

E.L. Robinson Engineering is an employee-owned, multi-disciplined engineering /surveying / planning firm with a staff of over 100 full-time professionals and support personnel located in ten offices throughout West Virginia, Ohio and Kentucky. Over the last 30 years, E.L. Robinson has grown to one of the largest firms in the region, offering a diverse scope of services. Since 1978, E.L. Robinson has provided a full range of quality engineering services, from planning and analysis to design and implementation.

Named for its founder and president, Edward L. Robinson, P.E., P.S., the firm has based its success on a commitment to quality projects with superior client service. Finding new and creative ways to address challenges has brought the firm's vision of excellence into reality. The firm has grown to understand the ingredients of a professional service firm include not only brick and mortar, but also leading edge technology and a talented, motivated staff that is continually growing and advancing their skills.

The use of technology has allowed the firm to expand engineering capabilities and make use of resources such as High Definition Laser Scanning, Mobile Scanning and Mapping, GPS Control Surveys, Real-time Kinematic (RTK) Surveys and conventional surveying. In addition to the use of technology, E.L. Robinson continues to strive to invent new and more effective ways to serve our clients. One way we accomplish this task is by providing a thorough pre-analysis of every project, saving the client time, money, and legal exposure. When the client is informed on every phase of the job and every challenge, the reputation of the firm grows stronger and the relationship with client strengthens.

Experience and Technical Capabilities - E.L. Robinson Engineering Co.

Surveying

- ELR has extensive surveying/mapping experience
- ELR provides these services with in-house personnel led by Tom Rayburn, P.S.
- ELR uses the most current survey technology and software available
- ELR Will utilize existing mapping resources where available to reduce costs

CADD Drafting

- CADD technicians, with the firm since its creation over 35 years ago, still with ELR providing wealth of experience.
- All CADD Software is the current release, however mapping can be saved to backward compatible software releases.
- Added numerous CADD technicians over the years.

Subcontractors

- ELR typically utilizes Henderson Aerial Surveys for Aerial Photography and Lidar services on mapping projects. We intend to utilize their services for the projects where Aerial Photography and Lidar may be needed. We have previously worked with this firm on numerous AML and other Mapping projects throughout the State of West Virginia.

WVDEP AML Experience - E. L. Robinson Engineering Co.

- Over 100 AML Projects completed in WV since the mid 1980's.
- E. L. Robinson has been completing AML Designs since 1996.
- 15 AML Emergency Design Projects completed in WV.
- 2 Geotechnical Investigations for Subsidence completed in WV
- 14 ODNR Emergency Project Designs
- 6 ODNR Investigations (4 Subsidence; 2 Landslides)
- 150 + AML mapping projects completed for various clients since 1980
- Most personnel that completed work on these projects - still with the firm. Ed Robinson, Wendell Williams, Tom Rayburn, and Tim Cart have been involved in mapping projects since the early 1980's.

Communication - E. L. Robinson Engineering Co.

- ELR Project Manager will provide phone or e-mail status to DEP Project Manager on a weekly or as needed basis
- DEP and ELR will jointly review project prior to aerial photography acquisition and prior to mapping from photography.
- ELR will provide completed plan sheets for Preliminary Review
- ELR will advise DEP of any significant issues if they are encountered in the Design Phase
- ELR welcomes DEP input at any point in the process

Recent WVDEP Similar Projects Since 2012

- Since 2012 we have surveyed and mapped the following projects under the Mapping Services for Northern Counties of West Virginia – RFQ DEP15704:

Bloomington Lake Refuse #2	Parker Run	Squires Creek (Moats) Refuse & Portal
Camden Hartley	Pepper Portals	Cheyenne
Delta Mining	Shinns Run	New Cumberland
Donnie Thorn Highwall	T&T	Sugar Camp
Ed E Development	Wocap Energy	Branchland
Edenezer Run Highwall #9	Booth Creek (Browning Farms) Mines	Buffalo Coal
Fairmont	Canyon Refuse and Dump	Carson_Glady
Frederick Highwall	Carson One	Coburns Landslide
Gooney Otter	Chaffey Run Strip	Elkins-Randolph County Landfill
Grafton 4	Ed Gower HW#2	F&M 2014
Hallelujah	F&M Permit S-1044-87	Gold Resources
Hopewell Church Refuse & Drainage	Glady Fork	Linn Mining
Lake Lynn	Maurin Mine Fire and Portals	Red Warrior
Larry Fredrick Highwall	McAlpin Portals & Drainage	Squire Creek
Morgan Highwall #46	Morgantown Airport Subsidence II	United Coals & Energy Marketing
Moundsville Landslide	Mountain View Portals	Webster County Land Fill
Omega Mining	Pendleton Creek StripPhase II	Whitehall Mine Fire
Owl Creek		

- We are presently working on the Tub Run PHIII mapping Project located in Tucker County WV, which involves mapping and surveying approximately 1800 acres, with digital aerial photography, LiDAR, control surveying, terrestrial LiDAR, and topographic surveying.

Why Select E.L. Robinson?

- Provided AML related services for over twenty (20) years.
- Staff that worked on these projects is still with the firm.
- High willingness to commit staff and resources to the successful completion of AML Mapping Projects.
- High willingness to invest in human resources and equipment to enhance our AML capabilities.
- High willingness to produce high quality - cost efficient mapping for use in project designs.
- Capability to provide all Surveying and Design in-house.
- Commitment of Senior-Level Project Managers in addition to large engineering support staff.
- Understand the requirements of the Project.
- Understand the needs of the Client.
- High willingness to do whatever it takes to identify and take care of AML concerns.

E. L. Robinson Engineering Co.

Surveying Team Leaders

Ed Robinson, PE # [REDACTED], PS # [REDACTED]
President and CEO
304.776.7473
ed@elrobinson.com

Tom Rayburn, PS [REDACTED]
Manager of Surveying/Geomatics
Division
304.541.2917
trayburn@elrobinson.com

Tim Cart, PE # [REDACTED], PS # [REDACTED]
Senior Engineer / Project Manager
304.776.7473
tim@elrobinson.com

Jack Worstell, LSIT
3D Technologies and Geomatics –
Survey Party Chief
304.552.8408
jack@elrobinson.com

Richard Mays
Senior Technician
304.855.4546
rmays@elrobinson.com

John Cruikshank
Senior Technician
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Robert K. Fuller, PS [REDACTED]
3D Technologies and Geomatics –
Survey Party Chief
304.776.7473
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Russell Hill
Survey Party Chief
304.541.2922
rhill@elrobinson.com

Frank Ellison
Survey Party Chief
304.541.0717
fellison@elrobinson.com

Wendell Williams, LSIT
Senior Technician
304-776-7473
wendell@elrobinson.com

Project Manager

Tom Rayburn, PS [REDACTED]
Manager of Surveying/Geomatics Division
304.541.2917
trayburn@elrobinson.com

APPENDIX A

Signature Sheets, Affidavit, Bid Schedule and Vendor Preference Certificate

MAPPING SERVICES IN NORTHERN COUNTIES OF WEST VIRGINIA

CRFQ 0313 DEP1600000017

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

CHARLESTON, WEST VIRGINIA

E. L. ROBINSON ENGINEERING CO.

CHARLESTON, WEST VIRGINIA



E.L. ROBINSON
ENGINEERING

CERTIFICATION AND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid, offer or proposal for review and consideration; 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.

E. L. Robinson Engineering Co.

(Company)


(Authorized Signature) (Representative Name, Title)

Ph (304) 776-7473 Fax (304) 776- 6426 October 27, 2015

(Phone Number) (Fax Number) (Date)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: E. L. Robinson Engineering Co.

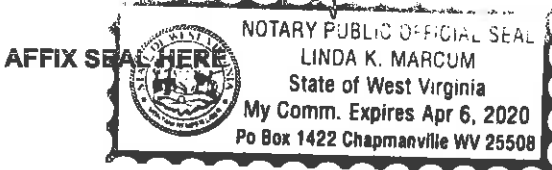
Authorized Signature: [Signature] Date: October 28, 2015

State of West Virginia

County of Logan, to-wit:

Taken, subscribed, and sworn to before me this 28 day of October, 2015.

My Commission expires April 06 2020 ~~2018~~



NOTARY PUBLIC [Signature]



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

**State of West Virginia
 Request for Quotation**

Proc Folder: 133232

Doc Description: Addendum 01: Mapping Services in Northern West Virginia

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2015-10-05	2015-10-29 13:30:00	CRFQ 0313 DEP1600000017	2

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

E. L. Robinson Engineering Co.
 5088 Washington Street West
 Charleston, WV 25313
 (304) 776-7473

FOR INFORMATION CONTACT THE BUYER

Beth Collins
 (304) 558-2157
 beth.a.collins@wv.gov

Signature X

FEIN #

102419499

DATE **Oct. 27, 2015**

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

ADDITIONAL INFORMATION:**Addendum No. 01:**

This addendum is issued to modify the solicitation per the attached documentation and the following:

1. To delete line 4 on the commodity lines for 'Mobile Scanner' this line was added in error.

No other changes.

CRFQ
 THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING BIDS FOR AN OPEN END CONTRACT FOR MAPPING SERVICES IN THE NORTHERN COUNTIES OF WEST VIRGINIA, PER THE ATTACHED SPECIFICATIONS AND DOCUMENTATION.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Control Surveying	600.00000	HOUR	\$70.00	\$42,000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description :

Control Surveying

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Topographic, Planimetric and Check Surveying	1800.00000	HOUR	\$70.00	\$126,000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description :

Topographic, Planimetric and Check Surveying

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Terrestrial LIDAR Collection	600.00000	HOUR	\$95.00	\$57,000.00

Comm Code	Manufacturer	Specification	Model #
81151601	Leica	Scanstation	C10 and/or HDS 7000

Extended Description :
Terrestrial LIDAR Collection

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Mobile Scanner	300.00000	HOUR	See Addendum 1	

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description :
Line is inactive, not a bidable line.
Mobile Scanner

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Topographic Mapping - Aerial Photography (0-25 Acres)	15.00000	ACRE	\$178.00	\$2,670.00

Comm Code	Manufacturer	Specification	Model #
81151601	Microsoft Leica	Digital Camera LiDAR Sensor	UCX ALS70

Extended Description :
(including LIDAR Collections)

List only one rate for each category.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV25304	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV 25304

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	Topographic Mapping - Aerial Photography (25-50 Acres)	30.00000	ACRE	\$94.00	\$2,820.00

Comm Code	Manufacturer	Specification	Model #
81151601	Microsoft Leica	Digital Camera LiDAR Sensor	UCX ALS70

Extended Description :
(including LIDAR Collections)

List only one rate for each category.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV25304	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON US	WV 25304

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	Topographic Mapping - Aerial Photography (50-100 Acres)	75.00000	ACRE	\$46.00	\$3,450.00

Comm Code	Manufacturer	Specification	Model #
81151601	Microsoft Leica	Digital Camera LiDAR Sensor	UCX ALS70

Extended Description :
(including LIDAR Collections)

List only one rate for each category.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

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

Comm Code	Manufacturer	Specification	Model #
81151601	Microsoft Leica	Digital Camera LiDAR Sensor	UCX ALS70

Extended Description :
(including LIDAR Collections)

List only one rate for each category.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
9	Licensed Land Surveyor	600.00000	HOUR	\$75.00	\$45,000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description :
Professional Rates (Listed Disciplines Only)

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
10	Survey Manager	1200.00000	HOUR	\$45.00	\$54,000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description :
Professional Rates (Listed Disciplines Only)

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
11	Mapping/CAD Technician	2400.00000	HOUR	\$45.00	\$108,000.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description :
Professional Rates (Listed Disciplines Only)

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
12	Travel Per Diem (Rate/Person)Day)	125.00000	EA	\$75.00	\$9,375.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description :
Applicable to Survey Crews Only

Grand Total of Line Items = \$454,065.00

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Tech Question Deadline at 5:00PM, EST	2015-10-02

DEP1600000017	Document Phase Final	Document Description Addendum 01: Mapping Services in Northern West Virginia	Page 7 of 7
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

SOLICITATION NUMBER: CRFQ DEP1600000017

Addendum Number: 01

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

Description of Modification to Solicitation:

This addendum is issued to modify the solicitation per the attached documentation and the following:

1. To delete line 4 on the commodity lines for 'Mobile Scanner' this line was added in error.

The bid opening date will remain the same of October 29, 2015 at 1:30 PM, EST

No other changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, 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.

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 checked="" 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.

E. L. Robinson Engineering Co.
Company


Authorized Signature

October 27, 2015
Date

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

State of West Virginia VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

1. Application is made for 2.5% vendor preference for the reason checked:

Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,

Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,

Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,

2. Application is made for 2.5% vendor preference for the reason checked:

Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

3. Application is made for 2.5% vendor preference for the reason checked:

Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

4. Application is made for 5% vendor preference for the reason checked:

Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,

5. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,

6. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.

Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: E. L. Robinson Engineering Co.

Signed: 

Date: October 27, 2015

Title: Manager of Surveying

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SPECIFICATIONS

- 1. PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of WV Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation (WVDEP/AML) to establish an open-end contract for Mapping Services in 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 ranging (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.

- 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 or attached hereto, and used to evaluate the Solicitation responses.

 - 2.3 "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.

 - 2.4 "NAD83/2011"** is the North American Datum of 1983.

 - 2.5 "NAVD88"** is the North American Vertical Datum of 1988.

 - 2.6 "ASCII"** is the American Standard Code for Information Interchange.

 - 2.7 "ASC"** is the American Standard Code which is a text file in which each byte represents one character according to ASCII code.

 - 2.8 "TXT"** is a computer file that contains Text (and possibly formatting instructions) using seven-bit ASCII characters.

 - 2.9 "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.

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- 2.10 "NTE" means Not-To-Exceed.**
- 2.11 "RGB" means Red-Green-Blue which is a color model based on additive color primaries.**
- 2.12 "JPEG" means Joint Photographic Experts Group which is a development group for compressed 24-bit color image stored format; also a file extension.**
- 2.13 "TIFF" means Tagged Image File Format which is a graphics file format.**
- 2.14 "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.**
- 2.15 "2D" means two-dimensional space which is a geometric model of the planar projection.**
- 2.16 "3D" means three dimensional space which is a three-dimensional representation of geometric data.**
- 2.17 "CSV" means Comma Separated Values which is a file that stores tabular data (numbers and text) in plain text.**
- 2.18 "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.**
- 2.19 "LAS" means Laser File Format which is a file format that is used in lidar processing operations.**
- 2.20 "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.**
- 2.21 "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.**
- 2.22 "DEM" means Digital Elevation Model which is a digital model or three-dimensional representation of a terrain's surface.**

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2.23 "AutoCAD" is a commercial software application for two-dimensional and three-dimensional computer-aided design (CAD) and drafting.

2.24 "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.

2.25 "RFQ" means Request for Quotation.

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

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.

3.1.1.3.a The maximum allowable relative horizontal

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positioning precision is 2 cm (0.07 feet) plus 50 parts per million (based upon direct distance between the two points).

3.1.1.3.b 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.

3.1.1.3.c 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.

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

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

3.1.1.3.f 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

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miles). The locations, descriptions, and elevations of benchmarks shall be accurately recorded in the notes or contained within a point list file.

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 fiduciary dimensions of the imaging device upon demand by the DEP. Any 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:

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

3.2.1.1.b Copies of cross-sections taken every 300 feet along the baseline, plotted and overlaid on cross-sections developed from the

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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.

3.2.1.1.c 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 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 Airborne LiDAR -- 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

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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
- 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:

3.2.1.5.a 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.

3.2.1.5.b 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 the 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.

3.2.1.5.c 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.

3.2.1.5.d 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

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any other mining related 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.

3.2.1.5.e 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.

3.2.1.5.f 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 error in scaled areas shall not exceed 0.02 x 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.

3.2.1.5.g 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.

3.3 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 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

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Professional Surveyor, licensed or registered in the State of West Virginia, who will provide certified maps and/or drawings 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).
- List of similar work currently under contract.
- 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:

- 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

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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 Chief 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.

"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)

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16. (Barbour)
17. (Lewis)
18. (Braxton)
19. (Upshur)
20. (Webster)
21. Pocahontas
22. (Randolph)
23. Pendleton
24. (Gilmer)
25. Calhoun

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.
- 4.2 **Pricing Pages:** Vendor should complete the Pricing Pages with Bid Cost per Unit. All lines will have totals and a Grand Total at the bottom. 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.

Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document.

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.

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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.

- 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.

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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 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.

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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.

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.

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- 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: _____
Telephone Number: _____
Fax Number: _____
Email Address: _____

APPENDIX B

Insurance and Workers Compensation Certificate

MAPPING SERVICES IN NORTHERN COUNTIES OF WEST VIRGINIA

CRFQ 0313 DEP160000017

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

CHARLESTON, WEST VIRGINIA

E. L. ROBINSON ENGINEERING CO.

CHARLESTON, WEST VIRGINIA



Client#: 1133134

EL

ACORDTM

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
10/27/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).


PRODUCER USI Ins Svcs C/L Charleston 1 Hillcrest Drive East Charleston, WV 25311 304 347-0611	CONTACT NAME: Sherry Hersman PHONE (A/C, No, Ext): 304 347-0631 E-MAIL ADDRESS: sherry.hersman@usi.biz	FAX (A/C, No): 304 347-0605
	INSURER(S) AFFORDING COVERAGE	
INSURED E L Robinson Engineering Co. 5088 Washington Street Charleston, WV 25313	INSURER A: Phoenix Insurance Company	NAIC # 25623
	INSURER B: Travelers Property Cas. Co. of	NAIC # 25674
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY		Y6307C662365PHX15	02/08/2015	02/08/2016	EACH OCCURRENCE \$1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR					DAMAGE TO RENTED PREMISES (Ea occurrence) \$300,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$
B	AUTOMOBILE LIABILITY		Y8107C662365TIL15	02/08/2015	02/08/2016	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000
	<input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS					BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	UMBRELLA LIAB		YSMCUP7C662365TIL1	02/08/2015	02/08/2016	EACH OCCURRENCE \$10,000,000
	<input checked="" type="checkbox"/> EXCESS LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> RETENTION \$0					AGGREGATE \$10,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY		YKUB8C83585615	02/08/2015	02/08/2016	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) if yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input checked="" type="checkbox"/> Y N/A				E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
RE: North & South Statewide Mapping Contract

CERTIFICATE HOLDER WV DEP Charleston, WV	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
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APPENDIX C

Surveying Equipment List

MAPPING SERVICES IN NORTHERN COUNTIES OF WEST VIRGINIA
CRFQ 0313 DEP1600000017

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION
CHARLESTON, WEST VIRGINIA

E. L. ROBINSON ENGINEERING CO.
CHARLESTON, WEST VIRGINIA



E.L. Robinson Engineering Co. - Surveying and Mapping Equipment List

E.L. Robinson Engineering Co.							
# Units	Brand	Instrument Model & Type	Age (by year)	Serial Number	Technical Specifications		Mechanical Condition
					Compliant with NGS Standards for 2nd Order (Yes / No)	Compliant with NGS Standards for 3rd Order (Yes / No)	
1	Leica	HDS C10 Laser Scanner	2010	1260075	Yes	Yes	Excellent
1	Leica	HDS 7000 Phase Scanner	2011	3121	Yes	Yes	Excellent
1	Trimble	R7 GPS / GNSS Receivers	2008	4726K30346	Yes	Yes	Excellent
1	Trimble	R7 GPS / GNSS Receivers	2008	4821K32120	Yes	Yes	Excellent
1	Trimble	R7 GPS / GNSS Receivers	2008	4821K32124	Yes	Yes	Excellent
1	Trimble	R7 GPS / GNSS Receivers	2008	4821K32125	Yes	Yes	Excellent
1	Trimble	R8 GPS / GNSS System	2008	4607108382	Yes	Yes	Excellent
1	Trimble	R8 GPS / GNSS System	2008	4607108433	Yes	Yes	Excellent
1	Trimble	R8 GPS / GNSS System	2008	4829155908	Yes	Yes	Excellent
1	Trimble	R8 GPS / GNSS System	2008	4831156136	Yes	Yes	Excellent
1	Trimble	S6 1 Sec. Robotic Total Station	2006	92110028	Yes	Yes	Excellent
1	Trimble	S6 3 Sec. Robotic Total Station	2007	92710076	Yes	Yes	Excellent
1	Trimble	S8 1 Sec. Robotic Total Station	2008	98110141	Yes	Yes	Excellent
1	Trimble	TSC2 Survey Controller	2008	SS21A12477	N/A	N/A	Excellent
1	Trimble	TSC2 Survey Controller	2008	SS21A12613	N/A	N/A	Excellent
1	Trimble	TSC2 Survey Controller	2008	SS21A13370	N/A	N/A	Excellent
1	Trimble	TSC3 with Trimble Access	2011	RS09C01675	N/A	N/A	Excellent
1	Trimble	TSC3 with Trimble Access	2012	RS0DC06306	N/A	N/A	Excellent
1	Trimble	Trimble DiNi 12 Digital Level, 360 degrees	2004	701640A	Yes	Yes	Excellent
1	Leica	TS15 I 3" R1000 Total station w. cam, PS	2011	1612725	Yes	Yes	Excellent
1	Leica	Viva TPS (TS15+CS10/15) controller	2011	2501578	Yes	Yes	Excellent
1	Trimble	HPB450 Radio 35w	2005	6188635	N/A	N/A	Excellent
1	Trimble	HPB450 Radio 35w	2006	6188636	N/A	N/A	Excellent
1	Trimble	HPB450 Radio 35w	2007	6426784	N/A	N/A	Excellent
1	Trimble	HPB450 Radio 35w	2007	6188653	N/A	N/A	Excellent
1	Pacific Crest	PDL Radio	2005	1334515	N/A	N/A	Excellent

* All ELR Survey equipment is maintained with yearly firmware/software agreements with original manufacturers.

APPENDIX D

Key Resumes

MAPPING SERVICES IN NORTHERN COUNTIES OF WEST VIRGINIA
CRFQ 0313 DEP1600000017

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION
CHARLESTON, WEST VIRGINIA

E. L. ROBINSON ENGINEERING CO.
CHARLESTON, WEST VIRGINIA



James T. Rayburn, P.S.

Manager of Surveying

Education:

A. S. Mechanical Engineering West Virginia Institute of Technology, 1970

Registration:

Registered Professional Surveyor in West Virginia and North Carolina

Professional Experience with E.L. Robinson Engineering:



Mr. Rayburn currently serves as Manager of Surveying for E.L. Robinson Engineering (ELR) and has more than 31 years of Design Surveying and Construction Surveying experience. The responsibilities include management of surveying and control for various design projects, including highways, buildings, and bridges. In addition, Mr. Rayburn manages and performs work consisting of courthouse research for property ownership resolution for the above mentioned project types. This includes preparation of property resolution maps, deed descriptions for property acquisitions required for project plan preparation. Mr. Rayburn has experience in Geodetic Control Surveys, 3D Laser Scanning, Photogrammetric Control, Topographic Surveys, Cemetery Surveys, Boundary Surveys, Construction Stakeout, Subdivision Surveys, along with Hydrographic surveys of river and lake bottoms. A few of the more notable surveying projects performed by ELR under the supervision of Mr. Rayburn, has been the Blennerhassett Bridge Project, 11 continuous miles of Corridor H design surveys, GPS Control for the West Virginia Statewide Mapping and Addressing Board Project, 3D Laser Scan and mapping of the CAMC Parking Garage partial collapse, and 3D Laser Scanning of I64/I77 Retaining Wall for Monitoring.

Project Experience with E.L. Robinson Engineering:

Design Surveys

- **Corridor H (WVDOT) Hardy County, WV:** Lead Surveyor for Design Surveys, Right of Way Staking, etc. for approximately 11 miles of Corridor H in Hardy County, WV. This was for Sections 6 & 7 of Corridor H, both Sections of which are now under construction. Estimated construction cost of \$150 million dollars.
- **WV Route 10 (WVDOT) Logan to Man WV, Logan County, WV:** Lead Surveyor for Design Surveys for a section approximately five miles in length from Man, WV, to Rita, WV, including the Man Bridge. Also provided control surveying for the entire project length of approximately 12 miles. The approximately five mile section of roadway is now under construction at an estimated cost of \$51 million dollars.
- **Blennerhassett Bridge, Corridor D (WVDOT), Wood County, WV:** Lead Surveyor for Design Surveys for this landmark Bridge Project which is now under construction at an estimated cost of \$120 million dollars.
- **James Rumsey Bridge (WVDOT) Potomac River, Shepardstown, WV:** Lead Surveyor for Design Surveys for this Bridge Project which is now completed at an estimated cost \$15.5 million dollars. This project involved working in an environmentally historic area, which adjoined a National Park.
- **US Route 35 (WVDOT) Mason County, WV:** Lead Surveyor for Design Surveys for two Design Sections each approximately 2.5 miles in length from Lower Five Mile Road to Upper Nine Mile Road. Also provided control surveying for the entire US 35 design project length of approximately 22 miles.
- **I64/US35 (WVDOT) I64 to US 34 Crooked Creek, Putnam County, WV:** Lead Surveyor for Design Surveys, Right of Way Staking, etc. for approximately four miles of US 35 including Interstate 64 Ramps

and Flyovers in Putnam County, WV. This included the I-64 Bridges and Flyovers, which is now under construction.

- **ATB-Parrish Road (ODOT) Ashtabula County, Ohio:** Project Design Surveyor for rail grade separation project. Project involved roadway realignment, 900' new bridge, new waterline, storm and sanitary sewers. Project is currently under construction. Estimated construction cost: \$8.6 million.
- **PIC-23-3.21 and Various (ODOT) Pickaway County, Ohio:** Project Design Surveyor for ODOT Project PIC-23-3.21 and Various. Project involves deck replacements along 11 miles of US 23 in Pickaway County. Project includes large diameter culvert liner, interchange upgrade that includes mainline profile correction, ramp reconstruction, and addition of barrier wall and storm drainage. Project is currently under design (90%). Project scheduled for construction in 2007. Estimated construction cost: \$12 million.
- **ATB-90-22.06 (ODOT) Ashtabula County, Ohio:** Project Design Surveyor for Interstate Reconstruction Project. Project includes total pavement replacement, bridge widening, and contra - crossover maintenance of traffic, culvert replacements and storm sewer rehabilitation and sign replacements. Project is currently under design (50%) and scheduled for construction in 2011. Estimated construction cost: \$36 million.

Construction Surveys

- **Corridor D (WVDOT) Wood County, WV:** Lead Surveyor for Highway/Bridge Construction Monitoring surveys for the following segments of Corridor D and related relocation projects:
 - Godbey Athletic Field Relocation Construction
 - Godbey Colt Field and Soccer Field Construction
 - West WV 47 - East WV 47 Highway/Bridge Construction
 - East Buckeye - West Little Kanawha River Highway/Bridge Construction
- **Interstate I-79 Widening and Median Barrier (WVDOT) Harrison County, WV:** Lead Surveyor for construction layout surveys for the widening of I-79 from the Meadowbrook Exit, north to the Jerry Dove Exit approximately three miles in length., as a subcontractor to the prime contractor.
- **CAMC 33rd Street Relocation and Building Expansion, Charleston, WV:** Lead Surveyor for construction layout surveys for 33rd Street relocation along with ancillary items including sidewalks, drainage and utilities. Also layout surveys for building expansion project.
- **Saturn Dealership, Hurricane, WV:** Lead Surveyor for Saturn Dealership site development and access roads at Hurricane Interchange of Interstate 64.
- **Arch Coal WV Mining Operations:** Lead Surveyor as a subcontractor to Arch Coal operations for Valley Fill construction (Up to 27 Million cubic yard fills), mine haul road layout, drill line staking, and dragline pit layout.

Other Professional Experience:

Cardinal Engineering Co.

Mr. Rayburn was the President and principal in charge of a small (15 employee) mining engineering and surveying firm. Mr. Rayburn supervised and directed underground and surface mine surveying for many of the larger WV Mining Companies and/or their subcontractors. Also the firm did environmental permitting for mining and construction projects, along with construction management of these projects. Mr. Rayburn performed all types of surface and underground control and check surveys, as well as daily mine spad and take-up surveys. Mr. Rayburn also did mapping of both surface and underground operations. Duties as President included business and financial management, as well as day to day operation and scheduling of operations for the firm.

James T. Rayburn, P.S.
Chief Surveyor

Zapata Coal Corporation

Duties included surface and deep mine layout and design, responsible charge of survey crews for both underground and surface mine surveys, Underground Check Surveys, manage new construction projects, and aid in preparation of yearly budgets. Mr. Rayburn served one year as Chief Mining Engineer for the entire property (\pm 27,000 Acres).

Lester Construction Co., Inc and Black Rock Contracting, Inc.

Mr. Rayburn was a Construction Forman/Surveyor for steel erection, concrete box culverts and bridges, highway construction, mining related construction, conveyor construction and various excavation projects.

Various Mechanical Contracting Firms

Mr. Rayburn was Engineering Technician/Estimator in charge of Estimating Mechanical Construction Projects for competitive bidding, HVAC Design work, Air Systems Balancing Surveys, Contract negotiations, As-built drawings and Maintenance Manual preparation.

Professional Memberships:

- American Congress on Surveying and Mapping
- National Society of Professional Surveyors (NSPS)
- West Virginia Association of Land Surveyors, Inc.
- American Society of Civil Engineers
- WV ACEC
- Chair of WV ACEC/WVDOT Surveying Committee
- Governor's Appointment - West Virginia Boundary Commission 2009

Russell Hill

Survey Party Chief



Education

High School, 1978

Professional Experience

Mr. Hill has vast experience in all facets of surface and underground surveying. He has many years experience surveying for surface coal mines for production and reclamation. He also has worked on many of ELR's highway and bridge projects.

Employment History

Guyan Machine Company, Draftsman, 1976-1980

Appalachian Surveying, Draftsman and Survey Rodman, 1978-1981

Westmorland Coal Company, Underground Coal Miner, 1981-1983

Appalachian Surveying, Permit Technician, Survey Technician and Survey Rodman, 1983-1990

Island Creek Coal Company, Coal Mine Permitting, 1989-1990

Cardinal Engineering, Chapmanville, WV, GPS Survey Technician, Survey Party Chief and Survey Transit Man, 1990-1999

E.L. Robinson Engineering Co., Chapmanville, WV, GPS Survey Technician, Survey Party Chief and Survey Transit Man, 1999-Present

Jack L. Worstell, LSIT **Survey Party Chief**



Education

A.S. Survey Technology, Glenville State College, 1983

Professional Experience

Mr. Worstell has been employed at ELR since 1983. He has primarily served as a survey crew party chief, but also has experience as a CAD technician, survey rodman and GPS technician.

His work experience includes operating various conventional and GPS surveying equipment including robotic total stations, digital levels and RTK GPS receivers.

Mr. Worstell has also performed extensive courthouse research on numerous survey projects and has been responsible for the field work associated with AML projects.

John W. Cruikshank

Senior Technician

Education

A.S. Survey Technology, West Virginia University
Institute of Technology, 1977

Professional Experience

Mr. Cruikshank is responsible for information pertaining to right-of-way acquisition for highway and infrastructure projects, which includes deed research and correspondence with private and commercial property owners for purpose of development of right-of-way plans associated with property maps. Duties also include preparation of legal descriptions for properties to be purchased for the purpose of highway and infrastructure construction.



He is responsible for coordinating utility activities for highway and infrastructure projects, which includes determination of utilities affected by proposed highway and infrastructure projects, as well as the field location of these utilities. He maintains correspondence with utility owners for the purpose of developing plans for relocation of utilities affected by highway and infrastructure construction.

He has completed survey assignments for waterline, sanitary sewer, highway, infrastructure, gas line, electrical line, railroad layout, boundary surveys, and other engineering projects.

He has supervised the construction layout of the Charleston Town Center Shopping Mall, as well as a \$4.7 million bridge project on the West Virginia Turnpike. He has designed and performed layouts of subdivisions, underground utility relocations, Mt. Olive State Penitentiary, additions to CAMC Hospital, Thomas Memorial Hospital as well as the Shell Plant in Apple Grove, WV.

Mr. Cruikshank has been the inspector on the Greater St. Albans PSD Sanitary Sewer Project, and has supervised five monitoring studies for movement of the East Huntington Cable Bridge as well as performed field surveys for mapping of numerous DEP Reclamation Projects. Mr. Cruikshank has performed earthwork calculations on

John W. Cruikshank

Senior Technician

several site development, highway and infrastructure projects. He has extensive experience in performing courthouse research.

Mr. Cruikshank has completed the West Virginia Division of Highway "Right of Way Plans - Courthouse to Statehouse" workshop and the West Virginia Division of Highway "Property Description" workshop. He has also completed the Ohio Department of Transportation "Right of Way Plan Development Training Course" and worked on the development of right of way plans and preparation of legal descriptions for LAW-93C-0.00, Ironton-Russell bridge replacement project, Lawrence County, Ohio and ATB-Parrish Road, Ashtabula County, Ohio.

Frank Ellison

Survey Party Chief

Education

Pineville High School, 1981

Professional Experience

Mr. Ellison has vast experience in all facets of surface and underground surveying. He has many years experience surveying for surface coal mines for production and reclamation. He also has worked on many of ELR's highway and bridge projects.

Employment

Cardinal Engineering, Chapmanville, WV, GPS Survey Technician, Survey Party Chief and Survey Transit Man, 1985-1999

E.L. Robinson Engineering Co., Chapmanville, WV, GPS Survey Technician, Survey Party Chief and Survey Transit Man, 1999-Present



Richard W. Mays

Senior Technician



Education

West Virginia Institute of Technology, Montgomery, WV,
(1992-1994) pursued Civil Engineering Degree

Southern West Virginia Community and Technical
College, Logan, WV, (1991-1992) pursued general studies

Professional Experience

Mr. Mays has been an Engineering/CAD technician for E.L. Robinson Engineering Co. in Cross Lanes, WV, since January 2000. His duties include:

- Performing 3D-laser scans for highway projects,
- Creating CAD models from 3D-laser scan data,
- Reducing survey field notes,
- CAD drafting for highway and bridge design projects,
- Plotting and adjusting of deeds in Microstation and AutoCAD formats,
- Preparing right of way plans,
- Performing as GPS survey technician and GIS technician,
- Creating realistic photo renderings for various projects,
- Computer repair and maintenance, and
- Performing as a computer network technician for Cross Lanes and Chapmanville offices.

He also has experience in layout/design of valley fills and surface mine reclamation as well as maintaining surface mine pit maps.