

Supplemental Agreement No. 2

Job No. 100614

FAP. No. SD-AR51 (1)

Job Title: **JONESBORO TRANSPORTATION & DRAINAGE PLANNING  
CRAIGHEAD COUNTY**

Date April 27, 2010

**WHEREAS**, the City of Jonesboro, Arkansas and Associated Engineering and Testing, LLC entered into an Agreement for Surveying Services on July 17, 2006; and,

**WHEREAS**, representatives of the City of Jonesboro, Arkansas requested work in addition to that defined in the Agreement.

**NOW THEREFORE**, the following modifications will be made to the Agreement to include the additional work requested:

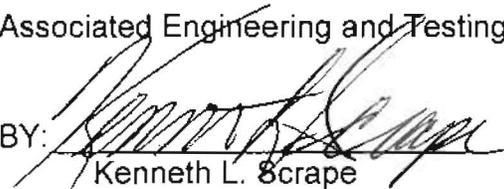
**MODIFICATIONS:**

- 1) The "Contract Ceiling Price" (Section 1.4) is increased from \$ 665,754.31 to \$ 750,455.49.
- 2) The "Title I Services Ceiling Price" (Section 1.14) is increased from \$ 665,754.31 to \$ 750,455.49.
- 3) The "Title II Services Ceiling Price" (Section 1.17) is increased from \$ 0.00 to \$ 0.00.
- 4) The fixed fee (Section 3.4) is increased from \$ 50,651.94 to \$ 56,125.55.
- 5) See Attachment A for modifications to Section 6, 7, and 13.
- 6) See Attachment B for modifications to Appendix A -- Justification of fees and costs
- 7) The completion date (Section 17.1) for Job No. 100614 is changed from December 31, 2009 to December 31, 2010.
- 8) See Attachment C for Work Plan for the additional work.

**IN WITNESS WHEREOF**, the parties execute this Supplemental Agreement No. 2, to be effective upon the date set out above.

Associated Engineering and Testing, LLC

The City of Jonesboro, Arkansas

BY: 

BY: \_\_\_\_\_

Kenneth L. Scrape  
Managing Partner

Harold Perrin  
Mayor

**ATTACHMENT A**  
**DESCRIPTION OF ADDITIONAL WORK**

**6. DESCRIPTION OF THE PROJECT**

ESTABLISH A FIRST ORDER VERTICAL CONTROL BENCHMARK NETWORK WITHIN THE CITY OF JONESBORO (66 ADDITION BENCHMARKS AS DIRECTED BY THE CITY ENGINEER) IN ACCORDANCE WITH THE REQUIREMENTS OF NATIONAL GEODETIC SURVEY

**7. INFORMATION AND TITLE I SERVICES TO BE PROVIDED BY CONSULTANT**

A: Establish a first order vertical control benchmark network within the city of Jonesboro (66 addition benchmarks as directed by the city engineer) in accordance with the requirements of National Geodetic Survey (N.G.S.). The benchmark monuments shall have stability of A or B and will be submitted for approved by N.G.S. & acceptance into the National Spatial Reference System.

**13. DELIVERABLES**

A: Electronic leveling field data for processing by National Geodetic Survey.  
B: Digital Photographs of newly constructed Benchmarks in JPG format.  
C: Reference ties to newly constructed Benchmarks.

# ATTACHMENT B

## COST ESTIMATE FOR THE ADDITIONAL WORK

ASSOCIATED ENGINEERING & TESTING, LLC  
P.O. BOX 1462  
JONESBORO, AR 72403

DATE: 04/27/2010

RFQ #: 2005:95

JOB TITLE: CITY OF JONESBORO – FIRST ORDER VERTICAL CONTROL NETWORK  
THROUGHOUT THE CITY OF JONESBORO (66 NEW BENCHMARKS)

COUNTY: CRAIGHEAD

### ESTIMATE OF COST FOR CHANGE ORDER NO. 2

**SALARY BASED ON SCOPE:**

<u>POSITION</u>	<u>RATE</u>	<u>HOURS</u>	<u>AMOUNT</u>
Registered Surveyor	\$25.00	108	\$2,700.00
Survey Technician	\$15.50	120	\$1,860.00
Cadd Operator	\$15.50	0	\$0.00
3-Man Field Crew	\$34.00	502	\$17,068.00

(1)	TOTAL LABOR		<u>\$21,628.00</u>
(2)	OVERHEAD %	<u>153.08</u>	<u>\$33,108.14</u>
(3)	SUB TOTAL		<u>\$54,736.14</u>
(4)	EXPENSES (DESCRIBE BELOW) (Extraordinary expenses only allowed in computing Fixed Fee)		<u>\$0.00</u>

(5)	Fixed Fee (10%)		<u>\$5,473.61</u>
(6)	EXPENSES (NOT ALLOWED in computing Fixed Fee)		

<u>EQUIPMENT</u>	<u>RATE</u>	<u>HOURS</u>	
GPS Equipment	\$20.00	0	<u>\$0.00</u>
Leveling Equipment, Material & Supplies (Reimburse Per Invoice)	N/A	N/A	<u>\$22,332.83</u>

*Mileage	<u>Miles</u>	<u>Rate/Mile</u>	
	5,020	\$0.43	<u>\$2,158.60</u>

*Lodging and meals	<u>Man days</u>	<u>Days</u>	<u>Rate</u>	
	3	0	\$65.00	<u>\$0.00</u>

(7)	TOTAL	(3+4+5+6)	<u>\$84,701.18</u>
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CITY OF JONESBORO  
 FIRST ORDER VERTICAL CONTROL NETWORK  
 EQUIPMENT, MATERIALS AND SUPPLIES  
 PRICE BREAKDOWN

QUANTITY	ITEM NO.	DESCRIPTION	UNIT PRICE	AMOUNT
14		SURVEY LEVEL, 2 RODS & ACC. (14 WKS. RENTAL)	\$300.00	\$4,200.00
		(LEVEL AND RODS TO BE CERTIFIED PER NGS REQUIREMENTS PRIOR TO LEVEL WORK STARTING)		
420	MSS91604	9/16" X 4' STAINLESS STEEL ROD	\$17.85	\$7,497.00
56	MSS12	9/16" STAINLESS STEEL DRIVING POINT	\$9.91	\$554.96
392	M13	9/16" LOCKING CONNECTOR THREAD	\$0.91	\$356.72
56	MSSDP1	9/16" Stainless Steel Spherical Datum Point	\$11.98	\$670.88
56	BMAC1	NGS STYLE ACCESS COVER	\$48.37	\$2,708.72
20	UV6800	ADHESIVE FOR BMAC/PVC PIPE	\$11.30	\$226.00
14		3-1/2" BRASS DISK	\$24.73	\$346.22
14		EPOXY	\$5.59	\$78.26
224	10385	80# BAG OF CONCRETE MIX	\$3.46	\$775.04
1		PVC GLUE & CLEANER	\$10.00	\$10.00
140		5" PVC PIPE (20' JOINTS) PRICE PER FT	\$3.25	\$455.00
88		BIO-DEGRADABLE GREASE	\$11.71	\$1,030.48
1		GREASE GUN	\$3.99	\$3.99
3		EYE & HEARING PROTECTION	\$25.00	\$75.00
1		CLEANING MATERIALS/SUPPLIES	\$50.00	\$50.00
1		BOLTS/NUTS	\$14.70	\$14.70
22		CHANNEL POST	\$47.31	\$1,040.82
66		WITNESS SIGNS	\$8.86	\$584.76
			<b>SUB-TOTAL =</b>	<b>\$20,678.55</b>
		SALES TAX	8.00%	\$1,654.28
			<b>TOTAL =</b>	<b>\$22,332.83</b>

CITY OF JONESBORO  
FIRST ORDER VERTICAL CONTROL NETWORK  
EQUIPMENT TO BE FURNISHED BY ASSOCIATED ENGINEERING  
AT NO ADDITIONAL COST TO THE CITY

1. UTILITY TRAILER (1)
2. AIR COMPRESSOR (1)
3. JACK HAMMER WITH ROD DRIVING ADAPTOR (1)
4. SLEDGE HAMMER (2)
5. SMALL BALL PING HAMMER (1)
6. PIPE WRENCH (2)
7. CONCRETE TROWEL (2)
8. DIGGING BAR (1)
9. SPRING LOADED PUNCH (1)
10. STAMPING DIES (1 SET NUMERIC AND ALPHA)
11. STAMPING BASE (1 - MOUNTED ON TRAILER)
12. GENERATOR (1)
13. ELECTRIC DRILL (1)
14. EXTENSION CORDS (2)
15. ELECTRIC ROTARY HAMMER WITH BITS (1)
16. MANUAL ROD DRIVER (1)
17. MANUAL POST DRIVER (1)
18. STAR DRILL (1)
19. CHISELS (2)
20. CARPENTERS LEVEL (1)
21. HANDHELD GPS (1)
22. MISC. TOOLS
23. SAW (1)
24. EYE AND HEARING PROTECTION
25. WHEEL BARROW (1)
26. TARPS (2)
27. SHOVEL (1)
28. SHARP SHOOTER (1)
29. RAKE (1)
30. BRUSH HOOK (1)
31. POST HOLE DIGGERS (1)
32. BENCH VICE (1 - MOUNTED ON TRAILER)
33. AUGER (1)
34. 5 GALLON GAS CAN (1)
35. 5 GALLON BUCKET (1)
36. WATER HOSE (1)
37. 25' TAPE MEASURE (1)
38. 100' FIBERGLASS TAPE (1)
39. PAINT, FLAGGING, ETC.

# ***Associated Engineering and Testing, LLC***

103 S. Church St. – P.O. Box 1462 – Jonesboro, AR 72403 – Phone (870) 932-3594 – FAX (870) 935-1263

## **ATTACHMENT C**

### **WORK PLAN**

April 27, 2010

#### **First Order Vertical Control Network**

AHTD JOB #: 100614

FAP.#: SD-AR51 (1)

JOB TITLE: Pipe Inventory – City of Jonesboro

CITY: Jonesboro

COUNTY: Craighead County

The work performed on this project shall meet the current National Geodetic Survey requirements for Geodetic Leveling.

This project consists of approximately sixty-three (63) miles of vertical control network to establish approximately sixty-six (66) new benchmarks throughout the city of Jonesboro. Initially we met with Brian Ward (National Geodetic Survey Advisor) and Joshua Bettis (City Surveyor). This meeting was a planning meeting to discuss the overall scope of the project and to receive input from Brian Ward concerning NGS's requirements for submittal and approval of a Vertical Control Network which could be published by NGS. Brian provided us with detailed information concerning certification of survey equipment, survey procedures, equipment and materials for monument construction and procedures for monument construction. Brian agreed to spend time with our personal at the beginning of the project to assist in the training of field procedures and data processing.

The first phase of this project will be to recon and recover existing NGS First Order Benchmarks. Area one (1) for recon will be Southeast of Jonesboro along the Burlington-Northern Railroad, North of Bay. Area two (2) for recon will be South of Jonesboro along the Union Pacific Railroad and East of Highway 1 South. Area three (3) for recon will be Northwest of Jonesboro along the Burlington Northern Railroad and East of Highway 63. Area four (4) for recon will be in the downtown area East of Main Street along the railroad. Area five (5) for recon will be at the Municipal Airport. Area six (6) for recon will be in the Nettleton area near the crossing of Burlington-Northern Railroad with the Union Pacific Railroad. Area seven (7) for recon will be Southwest of Jonesboro along the Union Pacific Railroad at Gibson Switch and West of Highway 49 South.

(Continued)

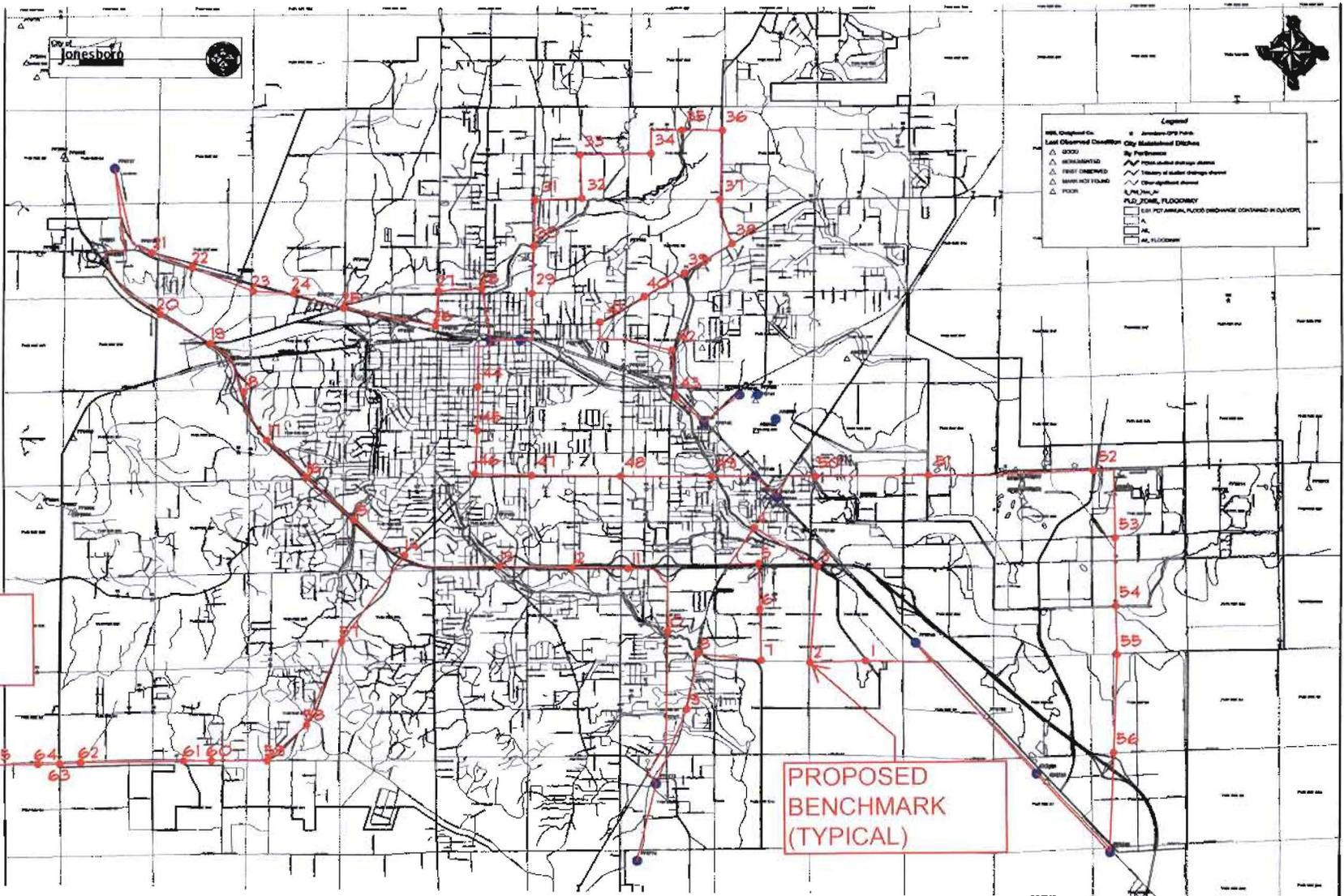
Work Plan – City of Jonesboro  
First Order Vertical Control Network  
AHTD Job #100614  
(Continued)

The second phase of this project will be to recon the proposed benchmark locations. After an area is selected for the proposed benchmarks position, the area will be marked for utility locates by Arkansas One Call and/or local utility providers. After utility locates are completed and the site is determined to be suitable for monument construction, the proposed monument location will be staked for construction.

The third phase of this project will be to construct the benchmark monuments. The benchmark monuments shall have stability of A or B and will be submitted for approved by N.G.S. & acceptance into the National Spatial Reference System. There will be two types of monuments constructed. The first type will be a free standing monument consisting of a 9/16" stainless steel rod driven to refusal or 30'± maximum depth and encased in concrete with a grease fill sleeve surrounding the rod and an access cover installed in the concrete, all in accordance with NGS requirements. The second type will be a disk mounted in an existing bridge structure or in an existing box culvert structure, all in accordance with NGS requirements. We estimate there will be forty-two (42) rod type benchmarks and twenty-four (24) disks in existing structure type benchmarks. We plan to construct three (3) rod type benchmarks in a ten (10) hour work day and eight (8) disks in existing structure type benchmarks in a ten (10) hour work day.

The fourth phase of this project will be to run the level loops. This will begin after the required curing time for the newly constructed monuments. We will start at the existing benchmarks in area one (1). The level loop will be run in numerical order as shown on the attached map of the City of Jonesboro which has the proposed Benchmarks labeled 1 through 66. The procedures used to run the level loops will be in accordance with the NGS requirements. There will be a closed level loop run between each benchmark and that field data will be processed for verification of accuracy prior to continuing to the next benchmark. We plan to have two and one-half (2-1/2) miles of forward movement with our level loop in a ten (10) hour work day. As the field work progresses the field data will be provided to Joshua Bettis for his review and to be forwarded to Brian Ward for his review.

The final phase of this project will be to submit the survey data to NGS for processing, review and/or approval.



EXISTING  
BENCHMARK  
(TYPICAL)

PROPOSED  
BENCHMARK  
(TYPICAL)

**Legend**

NEW DRAINAGE	PROPOSED DRAINAGE	FLOOD ZONE	FLOODWAY
EXISTING DRAINAGE	PROPOSED DRAINAGE	100-YR FLOODWAY	50-YR FLOODWAY
PROPOSED DRAINAGE	PROPOSED DRAINAGE	100-YR FLOODWAY	50-YR FLOODWAY
PROPOSED DRAINAGE	PROPOSED DRAINAGE	100-YR FLOODWAY	50-YR FLOODWAY
PROPOSED DRAINAGE	PROPOSED DRAINAGE	100-YR FLOODWAY	50-YR FLOODWAY