

March 3, 2015

Mr. Paul Holzen, PE
Director of Engineering
City of Franklin
109 Third Avenue South
Franklin, TN 37064

**RE: Proposal for Professional Services
Preliminary Engineering for New Greenway Connections**

HARPETH RIVER WALK (BICENTENNIAL PARK TO EASTERN FLANK BATTLEFIELD)

Dear Paul:

We are pleased to submit this proposal to you to provide preliminary engineering services for these exciting new projects for the City of Franklin. Thank you for placing confidence in Civil Infrastructure Associates, LLC (CIA). We look forward to working with you on these projects.

Project Background and Description

In keeping with the goals and objectives outlined in the City of Franklin Greenway and Open Space Master Plan (Master Plan), the City desires to evaluate the corridor of the proposed Pinkerton Park / Eastern Flank Battlefield Connection and as an add alternate the Pinkerton Park / Bicentennial Park Connection to ascertain the most judicious alignment for the trails. The two trail connections and their optional locations are described in more as follows:

1. Pinkerton Park / Eastern Flank Battlefield connection

As the name implies, the new path would generally extend from the existing trail system at Pinkerton Park located at 405 Murfreesboro Road southward along the Harpeth River. It is anticipated that the path would terminate at the Eastern Flank Battlefield Park. The total length of the project is approximately 6500 feet. Preliminarily, the City has expressed interest in exploring two options for the proposed alignment as follows (refer to Attachment A1 for a map of the alignment options):

Option 1A:

Alignment Option 1A would extend from Pinkerton Park southerly along the eastern and northern bank of the Harpeth River to a point generally opposite the aforementioned river access parking area where a new bridge across the Harpeth River would be constructed to complete the connection to Lewisburg Avenue.

Option 1B:

This alignment option would extend from Pinkerton Park southerly along the eastern bank of the Harpeth River to a point just east of the large bend in the river where a new bridge across the river would be constructed. From the proposed bridge, the path would extend southward to and across Lewisburg Avenue. The path would then continue easterly along and generally parallel to the southern margin of Lewisburg Avenue to terminate at Carriage Park Drive.

2. Pinkerton Park / Bicentennial Park Connection (Add Alternate 1)

Again, as the name implies this section of trail would connect the existing trail system at Pinkerton Park to the new trail system at Bicentennial Park also known as the 3rd Avenue North Trail/Greenway Project. For this connection, the City has expressed interest in evaluating 2 options for the proposed alignment as follows (refer to Attachment A2 for a map of the alignment options):

Option 2A:

Alignment Option 2A would extend from Pinkerton Park north and westerly along the eastern and northern bank of the Harpeth River through Fort Granger Park, across East Main Street / Franklin Road to a point where an easterly extension of North Margin Street would intersect the Harpeth River. At this location the City would construct a pedestrian bridge across the Harpeth River to connect to the Bicentennial Park trail system. The total length of this option would be approximately 3700 feet long including the bridge.

Option 2B:

Alignment Option 2B would begin at the terminus of the existing trail west of Pinkerton Park across the Harpeth River at the intersection of South Margin Street and 1st Avenue South and extend north-northwesterly along the north side of 1st Avenue. The Option 2B corridor would extend northwesterly along 1st Avenue South across East Main Street and onward along 1st Avenue North to Bridge Street. At Bridge Street the corridor would leave the existing roadway and extend along the westerly bank of the Harpeth River to the trail system at Bicentennial Park. The total length of the Option 2B connection is approximately 2600 feet.

In conformance with the Master Plan, all four alignment options will be designed as a multi-use path section having a paved width of 12 feet with 2 foot wide granular shoulders. A notable exception would be the portion of Option 2B along the 100 Block of 1st



Avenue South and 1st Avenue North where sidewalk exists and space is limited. Also, alternate shoulder treatments may be evaluated along portions of Option 1B parallel to Lewisburg Avenue as right-of-way and/or public safety needs dictate.

Scope of Services

CIA will perform preliminary engineering for the four alignment options described above. In general conformance with design standards established in the Master Plan, the following tasks will be performed:

1. CIA will utilize existing Franklin GIS data for preliminary design. We will develop a digital terrain model from the existing LIDAR point data provided by the City. Existing tax parcel data will be used for determining the location of property lines.
2. CIA will meet with and confer with City Engineering Department personnel throughout the preliminary design process. CIA has anticipated 5 site visits for this task.
3. Based on the City GIS data, CIA will develop preliminary horizontal and vertical design alignments for the four options.
4. From the preliminary design alignments, preliminary grading and drainage plans will be developed for each of the four options in order to better estimate construction earthwork and drainage quantities.
5. Preliminary pedestrian bridge sizing and pedestrian bridge manufacturer recommendations will be provided for the proposed river crossings. This task will be provided by Alfred Benesch & Company (Benesch) as a sub-consultant. No hydraulic modeling or structural analysis is anticipated under this preliminary design task.
6. A preliminary schedule of estimated construction quantities will be developed for each of the four alignment options.
7. A preliminary property right-of-way and easement acquisition table will be prepared for each option based primarily upon existing tax parcel mapping data.
8. CIA will prepare an Engineer's Opinion of Probable Construction Costs for each of the four alignment options using TDOT standard item numbers. Bridge costs, to be provided by Benesch, will be substantially based on historical bridge construction data with applied escalation factors.

Exclusions

For scope clarification, please note that the following items are specifically excluded from the proposed scope of services:



1. Any and all geotechnical exploration and/or analysis,
2. Any and all permitting activity related to environmental, cultural, archeological, or historical research and review,
3. Any and all permitting activity related to future project construction including hydraulic, grading, storm water, right-of-way, utility, and railroad access and crossing,
4. Any and all landscape design services typical of those requiring the seal of a professional landscape architect.

Project Deliverables

The following items will be delivered for each alignment option:

1. Preliminary grading and drainage plans,
2. Property Map and Acquisition Table showing anticipated right-of-way and/or easement acquisition,
3. Engineer's Opinion of Probable Construction Costs.

Schedule

The professionals at CIA will strive to complete the services described herein with efficiency within reasonable timelines. Please allow 8 complete weeks for delivery of Options 1A-1B following full execution and approval of the City's Agreement for Professional Services. If the City chooses to add Alternate 1, please allow 12 complete weeks for completion of all four alignment options.

Fees

Civil Infrastructure Associates, LLC will provide the scope of work described herein for the following fees:

Pinkerton Park / Eastern Flank Battlefield Connection: **\$32,010**
(This fee includes a sub-consultant fee for \$7500 for preliminary structural engineering services to be provided by Alfred Benesch & Company) Refer to Attachment B1 for a detailed scope and fee summary.

Add Alternate 1
Pinkerton Park / Bicentennial Park Connection: **\$20,080**
(This fee includes a sub-consultant fee for \$3500 for preliminary structural engineering services to be provided by Alfred Benesch & Company) Refer to Attachment B2 for a detailed scope and fee summary.



Add Alternate 2

Topographic Survey of Selected Option
Pinkerton Park / Eastern Flank Battlefield Connection: **\$31,560**
(Refer to Attachment C1 for detailed Scope and Fee Estimate for Add Alternate 2)

Add Alternate 3

Topographic Survey of Selected Option
Pinkerton Park / Bicentennial Park Connection: **\$19,280**
(Refer to Attachment C2 for detailed Scope and Fee Estimate for Add Alternate 3)

Customary direct expenses including travel expenses, in-house printing costs, postage, etc. are included within the lump sum fee.

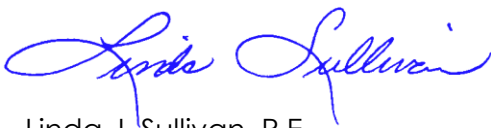
If you have any questions or comments regarding this proposal or the project in general, please do not hesitate to call me at 615-438-9664. We look forward to a pleasant teaming relationship with you and other City staff on this exciting project.

Sincerely,

CIVIL INFRASTRUCTURE ASSOCIATES, LLC



Timothy L. Haggard, PE, RLS, LEED AP
Senior Civil Engineer



Linda J. Sullivan, P.E.
President

- Attachments:
- A1) Map – Pinkerton Park / Eastern Flank Battlefield Connection
 - A2) Map – Pinkerton Park / Bicentennial Park Connection
 - B1) Scope & Fee Summary: Pinkerton Park / Eastern Flank Battlefield Connection
 - B2) Scope & Fee Summary: Add Alternate 1 – Bicentennial Park Connection
 - C1) Scope & Fee Summary: Add Alternate 2 - Topographic Survey: Pinkerton Park / Eastern Flank Battlefield Connection
 - C2) Scope & Fee Summary: Add Alternate 3 – Topographic Survey: Bicentennial Park Connection



Data Sources:
Imagery: BING

CIA shall evaluate two crossing of the Harpeth River prior to preliminary engineering. Coordinate with the Engineering and Parks Department.

- Legend**
- ALIGNMENTS**
- Option 1A
 - Option 1B
 - Parcel Lines
- FLOOD ZONE**
- FLOODWAY

City of Franklin
Pinkerton Park to
Eastern Flank
Battlefield
Greenway Extension

Conceptual Route
Alternatives Map



ATTACHMENT A1
MARCH 2015



Image courtesy of USGS © 2015 Microsoft Corporation © 2015 Nokia © AND

Data Sources:
Imagery: BING

Legend

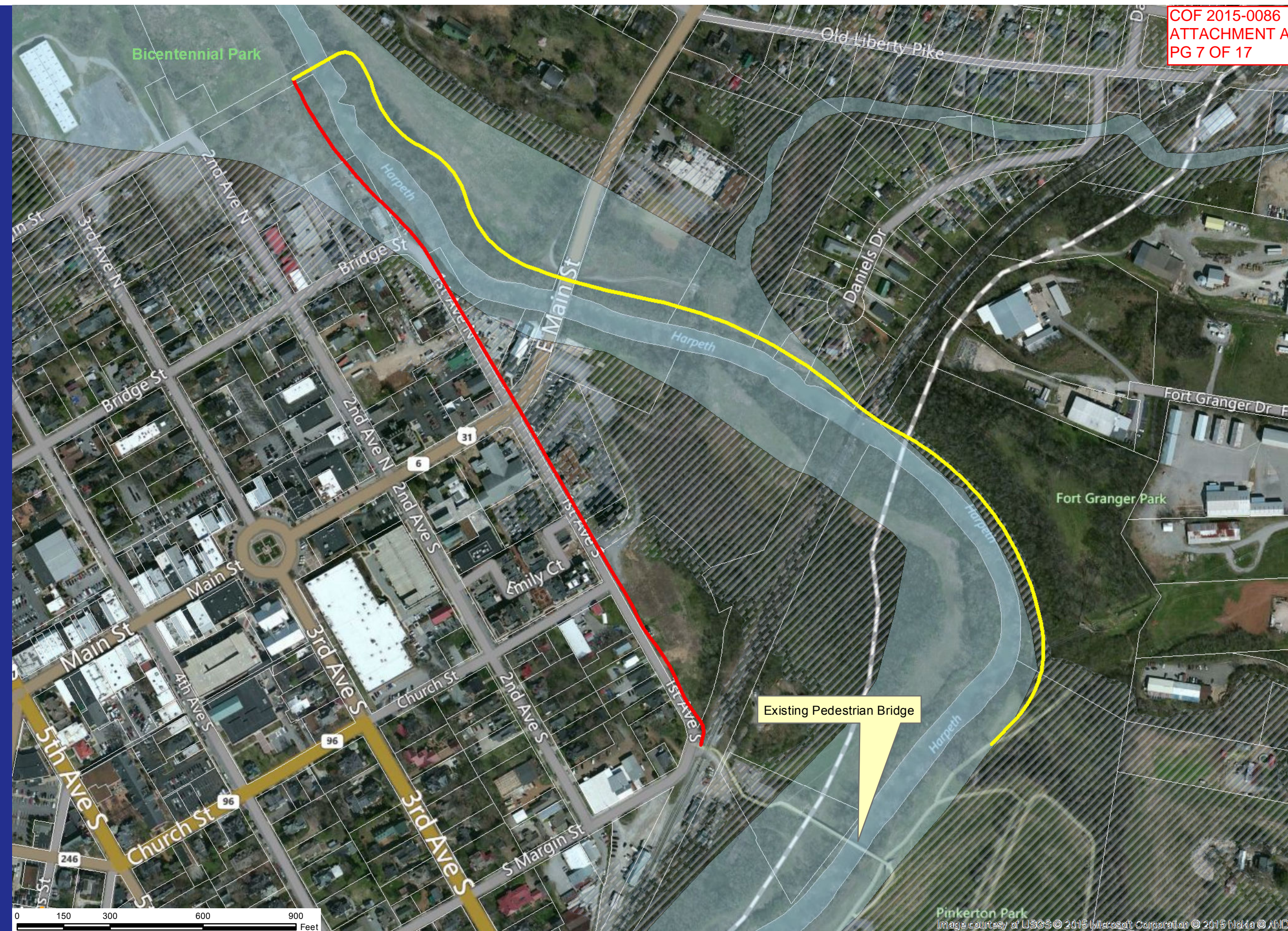
- Parcel Lines
- ALIGNMENTS**
- Option 2A
- Option 2B
- FLOOD ZONE**
- ▨ 500 Year (0.2 % Annual)
- ▨ A (100 Year)
- ▨ AE (100 Year)
- FLOODWAY

City of Franklin
Pinkerton Park to
Bicentennial Park
Greenway Extension

Conceptual Route
Alternatives Map



ATTACHMENT A2
FEBRUARY 2015



ATTACHMENT B1 - SCOPE & FEE SUMMARY
Preliminary Engineering & Alternatives Analysis
Pinkerton Park to Eastern Flank Battlefield Greenway
City of Franklin, TN

COF 2015-0086
ATTACHMENT A
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SUMMARY TOTALS	Total Hours	Labor Fee	Sub-Consultants Fee	Total Fee
TOTALS ACTUAL ==>	197	\$ 24,510	\$ 7,500	\$ 32,010

FEE	TOTAL HOURS	Sr. Engineer	Sr. Designer
	Loaded Rate	\$150.00	\$110.00
PERCENT OF TIME ==>	100%	36.04%	63.96%
TOTAL HOURS ==>	197.0	71.0	126.0
Task 1.0 Data Conversion	32.0	8.0	24.0
Task 2.0 - Preliminary Design	92.0	28.0	64.0
Task 3.0 - Takeoffs & Estimation	59.0	21.0	38.0
Task 4.0 - Project Management	14.0	14.0	
TOTAL DIRECT LABOR COST==>	\$ 24,510	\$ 10,650	\$ 13,860

Project Level Scope & Labor - Breakdown

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Task Number	DESCRIPTION	TOTAL HOURS	Sr. Engineer	Sr. Designer
	Preliminary Engineering - BUDGET	197.0	71.0	126.0
1.0	<i>GIS Data Conversion and DTM Development</i>			
1.1	Obtain & Convert Data from City GIS	10.0	2.0	8.0
1.2	Develop Existing Surface DTM from LIDAR Data	12.0	4.0	8.0
1.3	Prepare, Label, and Clean Up Base CADD files for Design	10.0	2.0	8.0
2.0	<i>Preliminary Design</i>			
2.1	Create Horizontal and Vertical Alignments for Two Alignment Options	32.0	8.0	24.0
2.2	Develop Grading Plans for Two Alignment Options	24.0	8.0	16.0
2.3	Develop Preliminary Plans for Utility and/or Roadway Realignment and/or relocation	24.0	8.0	16.0
2.4	Coordinate development of alignment and profile for Pedestrian Bridge for each option	12.0	4.0	8.0
3.0	<i>Construction Takeoff & Estimation:</i>			
3.1	Prepare Preliminary Right-of-Way Acquisition Table for Two Alignment Options	13.0	1.0	12.0
3.2	Prepare Preliminary Construction Quantity Takeoff for Two Alignment Options	28.0	4.0	24.0
3.3	Prepare Engineers Opinion of Probable Construction Cost for Two Options	18.0	16.0	2.0
4.0	<i>Management & Coordination</i>			
4.1	Site Visits and Coordination Meetings	10.0	10.0	
4.2	Quality Control	2.0	2.0	
4.3	Project Management	2.0	2.0	

ATTACHMENT B2 - SCOPE & FEE SUMMARY
Preliminary Engineering & Alternatives Analysis
Add Alternate 1: Pinkerton Park to Bicentennial Park Connection
City of Franklin, TN

COF 2015-0086
ATTACHMENT A
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SUMMARY TOTALS	Total Hours	Labor Fee	Sub-Consultants Fee	Total Fee
TOTALS ACTUAL ==>	134	\$ 16,580	\$ 3,500	\$ 20,080

FEE	TOTAL HOURS	Sr. Engineer	Sr. Designer
	Loaded Rate	\$150.00	\$110.00
PERCENT OF TIME ==>	100%	34.33%	65.67%
TOTAL HOURS ==>	134.0	46.0	88.0
Task 1.0 Data Conversion	21.0	3.0	18.0
Task 2.0 - Preliminary Design	59.0	15.0	44.0
Task 3.0 - Takeoffs & Estimation	42.0	16.0	26.0
Task 4.0 - Project Management	12.0	12.0	
TOTAL DIRECT LABOR COST==>	\$ 16,580	\$ 6,900	\$ 9,680

Project Level Scope & Labor - Breakdown

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Task Number	DESCRIPTION	TOTAL HOURS	Sr. Engineer	Sr. Designer
	Preliminary Engineering - BUDGET	134.0	46.0	88.0
1.0	<i>GIS Data Conversion and DTM Development</i>			
1.1	Obtain & Convert Data from City GIS	5.0	1.0	4.0
1.2	Develop Existing Surface DTM from LIDAR Data	7.0	1.0	6.0
1.3	Prepare, Label, and Clean Up Base CADD files for Design	9.0	1.0	8.0
2.0	<i>Preliminary Design</i>			
2.1	Create Horizontal and Vertical Alignments for Two Alignment Options	20.0	4.0	16.0
2.2	Develop Grading Plans for Two Alignment Options	16.0	4.0	12.0
2.3	Develop Preliminary Plans for Utility and/or Roadway Realignment and/or relocation	16.0	4.0	12.0
2.4	Coordinate development of alignment and profile for Pedestrian Bridge	7.0	3.0	4.0
3.0	<i>Construction Takeoff & Estimation:</i>			
3.1	Prepare Preliminary Right-of-Way Acquisition Table for Two Alignment Options	9.0	1.0	8.0
3.2	Prepare Preliminary Construction Quantity Takeoff for Two Alignment Options	19.0	3.0	16.0
3.3	Prepare Engineers Opinion of Probable Construction Cost for Two Options	14.0	12.0	2.0
4.0	<i>Management & Coordination</i>			
4.1	Site Visits and Coordination Meetings	8.0	8.0	
4.2	Quality Control	2.0	2.0	
4.3	Project Management	2.0	2.0	

ATTACHMENT C1 - SCOPE & FEE ESTIMATE
Topographic Survey of Selected Route Option
Pinkerton Park to Eastern Flank Battlefield Greenway
City of Franklin, TN

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ATTACHMENT A
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SUMMARY TOTALS	Total Hours	Fee
TOTALS ACTUAL ==>	220	\$ 31,560

FEE	TOTAL HOURS	PM/RLS	Survey Crew	Senior Technician
	Loaded Rate	\$150.00	\$150.00	\$110.00
PERCENT OF TIME ==>	100%	32.73%	50.91%	16.36%
TOTAL HOURS ==>	220.0	72.0	112.0	36.0
Task 1.0 Pre-Survey Preparation	16.0	16.0		
Task 2.0 - Project Control	20.0	4.0	16.0	
Task 3.0 - Topographic Survey	168.0	40.0	96.0	32.0
Task 4.0 - Project Management	16.0	12.0		4.0
TOTAL DIRECT LABOR COST==>	\$ 31,560	\$ 10,800	\$ 16,800	\$ 3,960

Project Level Scope & Labor - Breakdown

	DESCRIPTION	TOTAL HOURS	PM/RLS	Survey Crew	Survey/CAD Technician
Task Number	Topographic Survey - BUDGET	220.0	72.0	112.0	36.0
1.0	<i>Pre-Survey Research & Reconnaissance</i>				
1.1	Research to obtain Utility Mapping, Record Drawings, Deeds, Plats, Etc.	8.0	8.0		
1.2	Prepare and Mail Letters to Property Owners along Route	4.0	4.0		
1.3	Submit 811 Utility Locate Tickets and Request Locate from City	4.0	4.0		
2.0	<i>Establish Horizontal & Vertical Control</i>				
2.1	Establish Survey Control Points along Corridor with NAD83 SPC Horizontal & NAVD88 Vertical values tied to TGRN including levels.	20.0	4.0	16.0	
3.0	<i>Generalized Field Survey Scope:</i>				
3.1	Horizontal and vertical location of features within the survey limits including edges of pavement, drives, culverts, headwalls, retaining walls, fence, guard rail, bridge structures, and/or other structures.	16.0		16.0	
3.2	Locate visible evidence of existing utilities within the survey limits including flags and markers, poles, wires, cables, meters, valves, hydrants, pull boxes, manholes (including dips), etc.	28.0	4.0	24.0	
3.3	Locate grade breaks, ditches, swales, and ground shots at approximate 50' station intervals to create a DTM and produce 2' topographic contours	40.0		40.0	
3.4	Recon, Recover, and Locate right-of-way monumentation and property corners.	28.0	12.0	16.0	
3.5	Process field data, resolve right-of-way/property, develop surface DTM, and prepare survey CAD deliverable at a scale of 1"=50' and showing 2 foot contours.	56.0	24.0		32.0
4.0	<i>Management & Coordination</i>				
4.1	Coordination Meetings	4.0	4.0		
4.2	Quality Control	8.0	4.0		4.0
4.3	Project Management	4.0	4.0		

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Generalized Survey Scope:

CIA will perform field run topographic survey of an approximately 130' wide survey corridor along the chosen route Option for the proposed greenway from Pinkerton Park to the Eastern Flank Battlefield. Corridor options range from approximately 6500 feet long to 7000 feet long. Refer to the detail scope above as well Attachment A1 - Conceptual Route Alternatives Map.

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Schedule:

Schedule is unknown.

ATTACHMENT C2 - SCOPE & FEE ESTIMATE
Topographic Survey of Selected Route Option
Pinkerton Park to Bicentennial Park Greenway Connection
City of Franklin, TN

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ATTACHMENT A
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SUMMARY TOTALS	Total Hours	Fee
TOTALS ACTUAL ==>	136	\$ 19,280

FEE	TOTAL HOURS	PM/RLS	Survey Crew	Senior Technician
	Loaded Rate	\$150.00	\$150.00	\$110.00
PERCENT OF TIME ==>	100%	35.29%	44.12%	20.59%
TOTAL HOURS ==>	136.0	48.0	60.0	28.0
Task 1.0 Pre-Survey Preparation	11.0	11.0		
Task 2.0 - Project Control	15.0	3.0	12.0	
Task 3.0 - Topographic Survey	98.0	26.0	48.0	24.0
Task 4.0 - Project Management	12.0	8.0		4.0
TOTAL DIRECT LABOR COST==>	\$ 19,280	\$ 7,200	\$ 9,000	\$ 3,080

Project Level Scope & Labor - Breakdown

	DESCRIPTION	TOTAL HOURS	PM/RLS	Survey Crew	Survey/CAD Technician
Task Number	Topographic Survey - BUDGET	136.0	48.0	60.0	28.0
1.0	<i>Pre-Survey Research & Reconnaissance</i>				
1.1	Research to obtain Utility Mapping, Record Drawings, Deeds, Plats, Etc.	6.0	6.0		
1.2	Prepare and Mail Letters to Property Owners along Route	3.0	3.0		
1.3	Submit 811 Utility Locate Tickets and Request Locate from City	2.0	2.0		
2.0	<i>Establish Horizontal & Vertical Control</i>				
2.1	Establish Survey Control Points along Corridor with NAD83 SPC Horizontal & NAVD88 Vertical values tied to TGRN including levels.	15.0	3.0	12.0	
3.0	<i>Generalized Field Survey Scope:</i>				
3.1	Horizontal and vertical location of features within the survey limits including edges of pavement, drives, culverts, headwalls, retaining walls, fence, guard rail, bridge structures, and/or other structures.	12.0		12.0	
3.2	Locate visible evidence of existing utilities within the survey limits including flags and markers, poles, wires, cables, meters, valves, hydrants, pull boxes, manholes (including dips), etc.	16.0	4.0	12.0	
3.3	Locate grade breaks, ditches, swales, and ground shots at approximate 50' station intervals to create a DTM and produce 2' topographic contours	12.0		12.0	
3.4	Recon, Recover, and Locate right-of-way monumentation and property corners.	18.0	6.0	12.0	
3.5	Process field data, resolve right-of-way/property, develop surface DTM, and prepare survey CAD deliverable at a scale of 1"=50' and showing 2 foot contours.	40.0	16.0		24.0
4.0	<i>Management & Coordination</i>				
4.1	Coordination Meetings	2.0	2.0		
4.2	Quality Control	7.0	3.0		4.0
4.3	Project Management	3.0	3.0		

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Generalized Survey Scope:

CIA will perform field run topographic survey of an approximately 130' wide survey corridor along the chosen route Option for the proposed greenway from Pinkerton Park to Bicentennial Park. Corridor options range from approximately 2600 feet long to 3700 feet long. Refer to the detail scope above as well Attachment A2 - Conceptual Route Alternatives Map.

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Schedule:

Schedule is unknown.