



October 18, 2017

Mr. Thomas Clements, P.E.
Senior Municipal Engineer
Lexington-Fayette Urban County Government
Division of Engineering
104 East Vine Street, 4th Floor
Lexington, KY 40507

RE: Item 7-3223 Citation Trail Shared Use Path
Proposal for Engineering Services

Mr. Clements:

Banks Engineering is pleased to submit this proposal to provide professional engineering services for the Citation Trail Project. Based on our recent scoping and negotiations discussions, we have prepared manhour estimates and fee proposals for our team. Attached please find:

- TC 40-2, KYTC fee proposal forms for Banks Engineering and Integrated Engineering
- KYTC Production-hour worksheets for Banks Engineering and Integrated Engineering
- Fee proposal from 2020 Land Surveying

As summarized on our form TC 40-2, the proposed base fee for this project is a total of **one hundred six thousand four hundred sixty-eight dollars (\$106,468)**. In addition to the base fees, and as discussed subsequent to our negotiations meeting, we also request that allowances be established in the event that certain additional services are required. The allowances described below, totaling \$10,633, will not be invoiced unless they are specifically authorized by you in writing prior to the work being performed.

- \$7,291 if a Conditional Letter of Map Amendment (CLOMR) is required due to potential floodplain impacts
- \$3,342 for geotechnical engineering services if rock soundings are required for a potential retaining wall

Thank you again for selecting us for this project. If you have any questions or need additional information, please contact me at (859) 881-0020 or by email at jsteinmetz@banksengineering.net.

Very truly yours,
Banks Engineering, Inc.

John B. Steinmetz, P.E.
Senior Engineer

17093



KENTUCKY TRANSPORTATION CABINET

Department of Highways

DIVISION OF PROFESSIONAL SERVICES

ENGINEERING AND RELATED SERVICES FEE PROPOSAL

TC 40-2

Rev. 06/2017

Page 1 of 1

SECTION 1: PROJECT INFORMATION

DATE:	October 16, 2017	COUNTY:	Fayette	ITEM #:	7-3223
PROJECT:	Citation Trail Shared Use Path				

SECTION 2: BUDGET INFORMATION

FEE CONSIDERATIONS	PROPOSED MAN HOURS	NEGOTIATED MAN HOURS	AVERAGE RATE	ESTIMATED COST
Survey	13		\$ 28.85	\$ 375.05
Preliminary Line and Grade	128		\$ 51.92	\$ 6,645.76
Utility Coordination	4		\$ 50.00	\$ 200.00
Right of Way Plans	0		\$ 48.08	\$ -
Final Plans	319		\$ 50.50	\$ 16,109.50
Meetings	64		\$ 57.69	\$ 3,692.16
Public Involvement	28		\$ 53.85	\$ 1,507.80
QA/QC	40			\$ -
				\$ -
				\$ -
TOTAL PRODUCTION HOURS	596			
TOTAL DIRECT PAYROLL				\$ 28,530.27
OVERHEAD (126.00 %)				\$ 35,948.14
PROFIT (15.00 %)				\$ 9,671.76
COST OF MONEY (%)				\$ -

DIRECT COSTS	AMOUNT
TOTAL DIRECT COSTS	\$ -

SUBCONSULTANTS	AMOUNT
Integrated Engineering	\$ 24,854.00
2020 Land Surveying	\$ 7,464.00
TOTAL SUBCONSULTANTS	\$ 32,318.00

TOTAL FEE \$ **106,468**

*Rounded to the nearest dollar

SECTION 3: SIGNATURE

FIRM NAME: Banks Engineering, Inc. | **SIGNED BY:** John B. Steinmetz, PE

John B. Steinmetz

Senior Engineer

10/17/17

CONSULTANT SIGNATURE

TITLE

DATE

PROFESSIONAL SERVICES SIGNATURE

TITLE

DATE

PRODUCTION-HOUR WORKSHEET (revised 7/14)

COUNTY	Fayette	PROJECT TYPE	Design
ROUTE	Citation Trail	CONSULTANT	Banks Engineering
DESC	Shared use path design	REVIEWED BY	
ITEM NO.	07-3223	PREPARED BY	John Steinmetz
		DATE	10/16/17

SURVEY

No.	ITEM	CREW	UNIT	AMOUNT	HRS/UNIT	HOURS
RECONNAISSANCE						
1	Control - (existing)	1	Mile	0.55	1	1
2	Utilities - (data gathering, identification & contact)	1	No.	5	0.5	3
3	Drainage - (sink holes, streams, pipes, etc.)	1	Mile	0.55	2	1
CONTROL						
4	Horizontal	2	Mile	0.55	0	0
5	Vertical	2	Mile	0.55	0	0
6	Process data	1	Mile	0.55	0	0
PLANIMETRIC SURVEY						
7	Planimetric location <i>(complete)</i>	2	Mile	0.55	0	0
8	Subsurface Utility Engineering, Quality Levels C & D	2	Mile	0.55	2	2
9	Subsurface Utility Engineering, Quality Level B		LS			0
10	Subsurface Utility Engineering, Quality Level A		LS			0
11	Process data	1	Mile	0.55	0	0
TERRAIN SURVEY						
12	DTM data collection <i>(Items 11-18 not required if used)</i>	2	Acre	7.5	0	0
13	Verify terrain model accuracy		Mile			0
14	Tie-ins		No.			0
15	Drainage situations survey (Bridge)		No.			0
16	Drainage situations survey (Culvert)		No.			0
17	Drainage pipe section (non-situation size)		No.			0
18	Flood plain data		No.			0
19	Railroad Surveys		No.			0
20	Additional necessary DTM data <i>(specify pickup or update)</i>		Acre			0
21	Process data	1	Mile	0.55	0	0
ESTABLISH PROPERTY LINES & OWNERSHIP						
22	Contact & Interview Property Owners - <i>Michelle Park</i>	1	Parcel	12	0.5	6
23	Field tie property lines/corners	2	Parcel	55	0	0
STAKING						
24	Stake centerlines, approaches, detours	2	Mile	0.55	0	0
25	Stake core holes - structures <i>(unit is per structure)</i>		No.			0
26	Stake core holes - roadway <i>(unit is per core hole)</i>		No.			0
SURVEY MISCELLANEOUS						
27	Determine roadway elevations (Crown and EP)		Mile			0
28	Environmental areas		No.			0
29						0
SURVEY TOTAL						13

PRODUCTION-HOUR WORKSHEET (revised 7/14)

COUNTY	Fayette	PROJECT TYPE	Design
ROUTE	Citation Trail	CONSULTANT	Banks Engineering
DESC	Shared use path design	REVIEWED BY	
ITEM NO.	07-3223	PREPARED BY	John Steinmetz
		DATE	10/16/17

PRELIMINARY LINE AND GRADE

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
30	Computer setup	LS	0	0	0
31	Prepare existing manuscripts	Mile	0.55	29	16
32	Establish approximate property lines and ownership	Parcel	55	0.25	14
33	Study and develop typical sections	No.	2	2	4
34	Study and develop horizontal alignments	Mile	0.55	76	42
35	Study and develop vertical alignments	Mile	0.55	16	9
36	Create and evaluate proposed roadway models	Mile	0.55	16	9
37	Design entrances	No.			0
38	Pre-size pipes (all alternates)	No.			0
39	Pre-size culverts (all alternates)	No.	4	0	0
40	Pre-size bridges (all alternates)	No.			0
41a	Conduct Traffic Engineering Analysis (Basic; Highway Capacity Manual Procedure)	Intersection			0
41b	Conduct Traffic Engineering Analysis (Advanced; Micro-simulation)	Intersection			0
42	Study and development of interchange	No.			0
43	Study and development of intersection	No.			0
44	Study and develop maintenance of traffic plan	LS			0
45	Plot/print copies of plans for team meeting and inspections	LS	1	4	4
46	Calculate preliminary quantities and develop cost estimates	Alt.	1	8	8
47	Revise plans and estimates	LS	1	8	8
48	Preliminary Right of Way with taking areas	Parcel			0
49	Prepare Design Executive Summary	LS			0
50	Develop/document "Avoidance Alternatives to Water Related Impacts"	LS			0
PRELIMINARY LINE & GRADE MISCELLANEOUS					
51	Preliminary KDOW permitting	LS	1	2	2
52	Mid-block crossing evaluation	LS	1	12	12
53					0
54					0
55					0

PRELIMINARY LINE AND GRADE TOTAL 128

PRODUCTION-HOUR WORKSHEET (revised 7/14)

COUNTY	Fayette	PROJECT TYPE	Design
ROUTE	Citation Trail	CONSULTANT	Banks Engineering
DESC	Shared use path design	REVIEWED BY	
ITEM NO.	07-3223	PREPARED BY	John Steinmetz
		DATE	10/16/17

UTILITY COORDINATION

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
56	Utility Coordination Meeting	2	No.	1	2	4
57	Develop Utility Relocation Layout Sheets (1"=200')		Mile			0
58	Develop Utility Relocation Plans (1"=50')		Mile			0
UTILITY COORDINATION MISCELLANEOUS						
59						
UTILITY COORDINATION TOTAL						4

RIGHT OF WAY PLANS

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS	
60	Deed research	Parcel			0	
61	Establish property and ownership	Parcel			0	
62	Calculate Right of Way	Parcel			0	
63	Prepare legal descriptions	Parcel			0	
64	Complete Right of Way summary sheet	Parcel			0	
65	Generate Right of Way strip map (scale 1" = 100')	Sheet			0	
66	Prepare Right of Way Plans Submittal	LS			0	
67	Right of Way revisions after Right of Way submittal	LS			0	
R/W PLANS MISCELLANEOUS						
68	Deed Research for Existing Alignments	LS			0	
69	Deed Research for Existing Parcels	Parcel			0	
70	Prepare Legal Descriptions for Right of Way transfer	Parcel			0	
71						
72						
RIGHT OF WAY PLANS TOTAL						0

PRODUCTION-HOUR WORKSHEET (revised 7/14)

COUNTY	Fayette	PROJECT TYPE	Design
ROUTE	Citation Trail	CONSULTANT	Banks Engineering
DESC	Shared use path design	REVIEWED BY	
ITEM NO.	07-3223	PREPARED BY	John Steinmetz
		DATE	10/16/17

FINAL PLAN PREPARATION

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
80	Computer setup	LS			0
81	Update existing topography and terrain model	Mile			0
82	Refine alignments (horizontal & vertical)	Mile	0.55	24	13
83	Develop pavement design	No.	1	2	2
84	Finalize templates & transitions	No.	1	4	4
85	Develop final roadway model	Mile	0.55	12	7
86	Develop proposed design	Mile	0.55	24	13
87	Generate plan sheets (scale 1" = 20')	Sheet	6	8	48
88	Generate profile sheets (scale 1" = 5')	Sheet	6	8	48
89	Detail cross sections (scale 1" = 5')	No.	60	0.5	30
90	Design entrances	No.			0
91	Revise roadway plans from soils report	Mile			0
DRAINAGE					
92	Develop pipe sections (< 54")	No.			0
93	Develop drainage system map	Mile	0.55	0	0
94	Develop drainage situation (bridge)	No.			0
95	Develop drainage situation (culvert)	No.			0
96	Develop blue line stream channel change (=> 200')	No.			0
97	Drainage analysis (entrance pipes)	No.			0
98	Drainage analysis (A <= 200 acres)	No.	4	0	0
99	Drainage analysis (200 acres < A < 1.0 sq. mile)	No.			0
100	Drainage analysis (A => 1.0 sq. mile) level 1 analysis	No.			0
101	Drainage analysis (A => 1.0 sq. mile) level 2 analysis	No.			0
102	Drainage analysis (A => 1.0 sq. mile) level 3 analysis	No.			0
103	Special drainage studies	No.			0
104	Roadway ditches and channels	Mile			0
105	Develop Erosion Control Plan	Mile	0.55	0	0
106	Inlet spacing calculations	No.			0
107	Storm sewers calculations	No.			0
108	Perform scour analysis	No.			0
109	Assemble preliminary and final drainage folders	LS			0
110	Prepare advanced situation folder - bridge	No.			0
111	Prepare advanced situation folder - culvert	No.			0
DRAINAGE MISCELLANEOUS					
112	CLOMR / LOMR or No Rise Certification	LS	1	0	0
113					0
114					0
115					0

PRODUCTION-HOUR WORKSHEET (revised 7/14)

COUNTY	Fayette	PROJECT TYPE	Design
ROUTE	Citation Trail	CONSULTANT	Banks Engineering
DESC	Shared use path design	REVIEWED BY	
ITEM NO.	07-3223	PREPARED BY	John Steinmetz
		DATE	10/16/17

FINAL PLAN PREPARATION (Continued)

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
116	Prepare layout sheet	LS	1	4	4
117	Prepare typical sections	No.	2	4	8
118	Prepare Interchange geometric approval	No.			0
119	Prepare intersection geometric approval	No.	1	8	8
120	Prepare coordinate control sheet	Mile			0
121	Prepare elevation developments	No.			0
122	Prepare striping plan	No.	1	0	0
123	Calculate final quantities	Mile	0.55	20	11
124	Complete general summary	LS	1	8	8
125	Complete paving summary	LS	1	4	4
126	Complete drainage summary	LS	1	0	0
127	Complete pavement under-drain summary	LS			0
128	Prepare cost estimate	LS	1	8	8
129	Plot/print copies of plans	LS	1	4	4
130	Plan revisions	Mile	0.55	40	22
131	Prepare final construction plans submittal	LS	1	8	8
MAINTENANCE OF TRAFFIC					
132	Write maintenance of traffic notes (TCP)	LS			0
133	Prepare construction phasing plans	Mile	0.55	2	1
134	Develop diversion plan sheets	Sheet			0
135	Develop diversion profile sheets	Sheet			0
136	Develop diversion cross sections	No.			0
137	Develop temporary drainage	No.			0
FINAL PLANS MISCELLANEOUS					
138	Final Landscape Plan	LS	1	0	0
139	KDOW Stream Construction Permit	LS	1	0	0
140	Specifications and contract documents	LS	1	40	40
141	Bidding and construction administration assistance	LS	1	12	12
142	LPA coordination	LS	1	16	16
143					0
FINAL PLANS TOTAL					319

PRODUCTION-HOUR WORKSHEET (revised 7/14)

COUNTY	Fayette	PROJECT TYPE	Design
ROUTE	Citation Trail	CONSULTANT	Banks Engineering
DESC	Shared use path design	REVIEWED BY	
ITEM NO.	07-3223	PREPARED BY	John Steinmetz
		DATE	10/16/17

MEETINGS

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
150	Review meetings	2	No.	2	4	16
151	Drainage inspection	2	No.	1	4	8
152	Final inspection	2	No.	1	4	8
153	Misc. project coordination meetings	2	No.	2	4	16
154	Project team meetings	2	No.	2	4	16
MEETINGS MISCELLANEOUS						
155	Value Engineering Study		LS			0
156	Constructability Review		LS			0
MEETINGS TOTAL						64

PUBLIC INVOLVEMENT

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
160	Develop and Maintain Mailing List	1	LS	1	2	2
161	Prepare for Advisory Committee/Officials Meeting	2	No.	0	6	0
162	Attend Advisory Committee/Officials Meeting	3	No.	0	4	0
163	Prepare for Public Meetings/Hearings	2	No.	1	4	8
164	Attend Public Meetings/Hearings	2	No.	2	3	12
165	Prepare and Distribute Newsletter		No.			0
166	Property owner coordination - Michelle Park	1	No.	12	0.5	6
PUBLIC INVOLVEMENT MISCELLANEOUS						
167						0
168						0
169						0
PUBLIC INVOLVEMENT TOTAL						28

QA/QC

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
180	Plan review	LS	1	40	40
181	Structure review				0
QA/QC TOTAL					40

PRODUCTION-HOUR WORKSHEET (revised 7/14)

COUNTY	Fayette	PROJECT TYPE	Design
ROUTE	Citation Trail	CONSULTANT	Banks Engineering
DESC	Shared use path design	REVIEWED BY	
ITEM NO.	07-3223	PREPARED BY	John Steinmetz
		DATE	10/16/17

PRODUCTION-HOUR SUMMARY

SURVEY TOTAL		13
LINE AND GRADE TOTAL		128
UTILITY COORDINATION TOTAL		4
RIGHT OF WAY PLANS TOTAL		0
FINAL PLANS TOTAL		319
MEETINGS TOTAL		64
PUBLIC INVOLVEMENT TOTAL		28
QA/QC TOTAL		40
GRAND TOTAL		596

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
CONSULTING ENGINEERING FEE PROPOSAL**

COUNTY :	<u>Fayette</u>	DATE :	<u>10/17/2017</u>
PROJECT :	<u>Citation Trail</u>	PROJECT TYPE :	<u>Design</u>
UPN :	<u>Shared Use Path Design</u>	CONSULTANT :	<u>Integrated Engineering, PLLC</u>
FED.NO :	<u></u>	PREPARED BY :	<u>Eddie Mesta, PE</u>
ITEM NO :	<u>7-3223</u>		

FEE CONSIDERATIONS	PRODUCTION HOURS	AVERAGE RATE	LABOR
SURVEY TOTAL	4	\$ 38.52	\$154.08
LINE AND GRADE TOTAL	24	\$ 40.87	\$980.88
UTILITY COORDINATION TOTAL	0	\$ 46.27	\$0.00
RIGHT OF WAY PLANS TOTAL	0	\$ 46.27	\$0.00
FINAL PLANS TOTAL	180	\$ 46.27	\$8,328.60
MEETINGS TOTAL	0	\$ 58.86	\$0.00
PUBLIC INVOLVEMENT TOTAL	0	\$ 58.86	\$0.00
STRUCTURES TOTAL	0	\$ 44.37	\$0.00
		\$ -	\$0.00
TOTALS :	208		\$9,463.56

LIST OF OTHER DIRECT COSTS	TOTAL DIRECT PAYROLL	\$9,464
MILEAGE AND MEAL EXPENSES \$0	OVERHEAD 127.70%	\$12,084
LODGING EXPENSES \$0	PROFIT 15%	\$3,232
SURVEY TRAVEL TIME \$0	SUBCONSULTANTS	\$0
MISCELLANEOUS SURVEYING EXPENSES \$0	FACILITIES COST OF MONEY 0.78%	\$74
PRINTING EXPENSES \$0	OTHER DIRECT COST	\$0
TOTAL = \$0		

SUBCONSULTANTS	
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	TOTAL PROPOSED FEE align="right"> \$24,854
	SHOP PLANS align="right">\$0

FIRM NAME: <u>Integrated Engineering, PLLC</u>	SIGNATURE 
	<u>Eddie Mesta, PE</u>
DATE : <u>10/17/17</u>	TITLE <u>Vice President</u>

PRODUCTION-HOUR WORKSHEET

COUNTY :	Fayette	PROJECT TYPE :	Design
PROJECT :	Citation Trail	CONSULTANT :	Integrated Engineering, PLLC
UPN :	Shared Use Path Design	PREPARED BY :	Eddie Mesta, PE
FED.NO :		DATE :	10/17/2017
ITEM NO :	7-3223		

SURVEY

No.	ITEM	CREW	UNIT	AMOUNT	HRS/UNIT	HOURS
RECONNAISSANCE						
1	Control - (existing)		Mile			0
2	Utilities - (data gathering, identification & contact)		No.			0
3	Drainage - (sink holes, streams, pipes, etc.)	1	Mile	0.55	7	4
CONTROL						
4	Horizontal		Mile			0
5	Vertical		Mile			0
6	Process data		Mile			0
PLANIMETRIC SURVEY						
7	Planimetric location <i>(specify complete, pickup or update)</i>		Mile			0
8	Subsurface Utility Engineering, Quality Levels C & D		Mile			0
9	Subsurface Utility Engineering, Quality Level B		LS			0
10	Subsurface Utility Engineering, Quality Level A		LS			0
11	Process data		Mile			0
TERRAIN SURVEY						
12	DTM data collection <i>(Items 11-18 not required if used)</i>		Acre			0
13	Verify terrain model accuracy		Mile			0
14	Tie-ins		No.			0
15	Drainage situations survey (Bridge)		No.			0
16	Drainage situations survey (Culvert)		No.			0
17	Drainage pipe section (non-situation size)		No.			0
18	Flood plain data		No.			0
19	Railroad Surveys		No.			0
20	Additional necessary DTM data <i>(specify pickup or update)</i>		Acre			0
21	Process data		Mile			0
ESTABLISH PROPERTY LINES & OWNERSHIP						
22	Contact & Interview Property Owners		Parcel			0
23	Field tie property lines/corners		Parcel			0
STAKING						
24	Stake centerlines, approaches, detours		Mile			0
25	Stake core holes - structures <i>(unit is per structure)</i>		No.			0
26	Stake core holes - roadway <i>(unit is per core hole)</i>		No.			0
SURVEY MISCELLANEOUS						
27	Determine roadway elevations (Crown and EP)		Mile			0
28	Environmental areas		No.			0
29						0
SURVEY TOTAL						4

PRELIMINARY LINE AND GRADE

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
30	Computer setup	LS	1		0
31	Prepare existing manuscripts	Mile	0.55		0
32	Establish approximate property lines and ownership	Parcel	55		0
33	Study and develop typical sections	No.	2		0
34	Study and develop horizontal alignments	Mile	0.55		0
35	Study and develop vertical alignments	Mile	0.55		0
36	Create and evaluate proposed roadway models	Mile	0.55		0
37	Design entrances	No.			0
38	Pre-size pipes (all alternates)	No.			0
39	Pre-size culverts (all alternates)	No.	4	4	16
40	Pre-size bridges (all alternates)	No.			0
41a	Conduct Traffic Engineering Analysis (Basic; Highway Capacity Manu	Intersection			0
41b	Conduct Traffic Engineering Analysis (Advanced; Micro-simulation)	Intersection			0
42	Study and development of interchange	No.			0
43	Study and development of intersection	No.			0
44	Study and develop maintenance of traffic plan	LS			0
45	Plot/print copies of plans for team meeting and inspections	LS	1		0
46	Calculate preliminary quantities and develop cost estimates	Alt.	1		0
47	Revise plans and estimates	LS	1		0
48	Preliminary Right of Way with taking areas	Parcel			0
49	Prepare Design Executive Summary	LS			0
50	Develop/document "Avoidance Alternatives to Water Related Impacts	LS			0
PRELIMINARY LINE & GRADE MISCELLANEOUS					
51	Preliminary KDOW Permitting	LS	1	8	8
52	Mid-Block Crossing Evaluation	LS	1	0	0
53					0
54					0
55					0
PRELIMINARY LINE AND GRADE TOTAL					24

UTILITY COORDINATION

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
56	Utility Coordination Meeting		No.			0
57	Develop Utility Relocation Layout Sheets (1"=200')		Mile			0
58	Develop Utility Relocation Plans (1"=50')		Mile			0

UTILITY COORDINATION MISCELLANEOUS

59						

UTILITY COORDINATION TOTAL

0

RIGHT OF WAY PLANS

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
60	Deed research	Parcel			0
61	Establish property and ownership	Parcel			0
62	Calculate Right of Way	Parcel			0
63	Prepare legal descriptions	Parcel			0
64	Complete Right of Way summary sheet	Parcel			0
65	Generate Right of Way strip map (scale 1" = 50')	Sheet			0
66	Prepare Right of Way Plans Submittal	LS			0
67	Right of Way revisions after Right of Way submittal	LS			0

R/W PLANS MISCELLANEOUS

68	Deed Research for Existing Alignments	LS			0
69	Deed Research for Existing Parcels	Parcel			0
70	Prepare Legal Descriptions for Right of Way transfer	Parcel			0
71					
72					

RIGHT OF WAY PLANS TOTAL

0

FINAL PLAN PREPARATION

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
80	Computer setup	LS			0
81	Update existing topography and terrain model	Mile			0
82	Refine alignments (horizontal & vertical)	Mile	0.55		0
83	Develop pavement design	No.	1		0
84	Finalize templates & transitions	No.	1		0
85	Develop final roadway model	Mile	0.55		0
86	Develop proposed design	Mile	0.55		0
87	Generate plan sheets (scale 1" = 20')	Sheet	6		0
88	Generate profile sheets (scale 1" = xxx')	Sheet	6		0
89	Detail cross sections (scale 1" = xxx')	No.	60		0
90	Design entrances	No.			0
91	Revise roadway plans from soils report	Mile			0
DRAINAGE					
92	Develop pipe sections (< 54")	No.			0
93	Develop drainage system map	Mile	0.55	22	12
94	Develop drainage situation (bridge)	No.			0
95	Develop drainage situation (culvert)	No.			0
96	Develop blue line stream channel change (=> 200')	No.			0
97	Drainage analysis (entrance pipes)	No.			0
98	Drainage analysis (A <= 200 acres)	No.	4	8	32
99	Drainage analysis (200 acres < A < 1.0 sq. mile)	No.			0
100	Drainage analysis (A = > 1.0 sq. mile) level 1 analysis	No.			0
101	Drainage analysis (A = > 1.0 sq. mile) level 2 analysis	No.			0
102	Drainage analysis (A = > 1.0 sq. mile) level 3 analysis	No.			0
103	Special drainage studies	No.			0
104	Roadway ditches and channels	Mile			0
105	Develop Erosion Control Plan	Mile	0.55	22	12
106	Inlet spacing calculations	No.			0
107	Storm sewers calculations	No.			0
108	Perform scour analysis	No.			0
109	Assemble preliminary and final drainage folders	LS			0
110	Prepare advanced situation folder - bridge	No.			0
111	Prepare advanced situation folder - culvert	No.			0
DRAINAGE MISCELLANEOUS					
112	No Rise Certification	LS	1	100	100
113					0
114					0
115					0

FINAL PLAN PREPARATION (Continued)

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
116	Prepare layout sheet	LS	1		0
117	Prepare typical sections	No.	2		0
118	Prepare Interchange geometric approval	No.			0
119	Prepare intersection geometric approval	No.	1		0
120	Prepare coordinate control sheet	Mile			0
121	Prepare elevation developments	No.			0
122	Prepare striping plan	No.	1	0	0
123	Calculate final quantities	Mile	0.55		0
124	Complete general summary	LS	1		0
125	Complete paving summary	LS	1		0
126	Complete drainage summary	LS	1	8	8
127	Complete pavement under-drain summary	LS			0
128	Prepare cost estimate	LS	1		0
129	Plot/print copies of plans	LS	1		0
130	Plan revisions	Mile	0.55		0
131	Prepare final construction plans submittal	LS	1		0
MAINTENANCE OF TRAFFIC					
132	Write maintenance of traffic notes (TCP)	LS			0
133	Prepare construction phasing plans	Mile	0.55		0
134	Develop diversion plan sheets	Sheet			0
135	Develop diversion profile sheets	Sheet			0
136	Develop diversion cross sections	No.			0
137	Develop temporary drainage	No.			0
FINAL PLANS MISCELLANEOUS					
138	Final Landscape Plan	LS	1	8	8
139	KDOW Stream Construction Permit	LS	1	8	8
140	Specifications and contract documents	LS	1		0
141	Bidding and construction administration assistance	LS	1		0
142	LPA coordination		1		0
143					0
FINAL PLANS TOTAL					180

MEETINGS

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
150	Prelim. line and grade inspection		No.	2		0
151	Drainage inspection		No.			0
152	Final inspection		No.	1		0
153	Misc. project coordination meetings		No.	2		0
154	Project team meetings		No.	2		0

MEETINGS MISCELLANEOUS

155	Value Engineering Study		LS			0
156	Constructability Review		LS			0

MEETINGS TOTAL

0

PUBLIC INVOLVEMENT

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
160	Develop and Maintain Mailing List		LS	1		0
161	Prepare for Advisory Committee/Officials Meeting		No.	1		0
162	Attend Advisory Committee/Officials Meeting		No.	1		0
163	Prepare for Public Meetings/Hearings		No.	1		0
164	Attend Public Meetings/Hearings		No.	2		0
165	Prepare and Distribute Newsletter		No.			0
166	Property owner coordination		No.	12		0

PUBLIC INVOLVEMENT MISCELLANEOUS

167						0
168						0
169						

PUBLIC INVOLVEMENT TOTAL

0

QA/QC

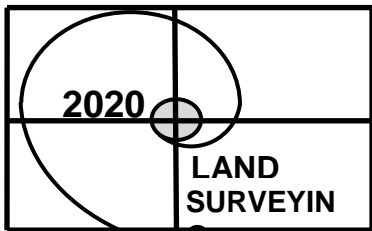
No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
180	Plan Review		LS	1		0
181	Structure Review					0

QA/QC TOTAL

0

PRODUCTION-HOUR SUMMARY

SURVEY TOTAL	4
LINE AND GRADE TOTAL	24
UTILITY COORDINATION TOTAL	0
RIGHT OF WAY PLANS TOTAL	0
FINAL PLANS TOTAL	180
MEETINGS TOTAL	0
PUBLIC INVOLVEMENT TOTAL	0
STRUCTURES TOTAL	0
GRAND TOTAL	208



2020 Land Surveying
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TO: BANKS ENGINEERING

- **SUPPORTING SURVEY SERVICES**

- **PROJECT: CITATION TRAIL**

- **PROPOSED SERVICE: AS PER items listed on PRODUCTION – HOUR WORKSHEET (revised 7-14-17), supplied to 2020 Land Surveying, via email, by Banks Engineering on 9-14-17.**

- **FIELD DATA COLLECTION (TOPO, UTILITY & CONTROL ITEMS) = 48hrs @ 95/hr = 4,560.00**

- **BOUNDARY LINE LOCATIONS = 8hrs @ 95/hr = 760.00**

- **CAD DRAFTING = 16hrs @ 45/hr = 720.00**

- **CENTERLINE LAYOUT (ONE TIME STAKING EVERY 50FT) = 15hrs @ 95/hr = 1,425.00**

TOTAL COST FOR SURVEY: 7,464.00

-This is a lump sum cost including all survey work, travel time, equipment costs.

Agreement: I (we) agree to the cost and requirements of the above mentioned services.

Client

Date