Armstrong Mill Sidewalks

FAYETTE COUNTY
ITEM NO. 7-3213

PHASE I & II DESIGN
ENGINEERING AND RELATED SERVICES

PROPOSED
PRODUCTION HOURS AND FEE

Submitted by:
Integrated Engineering, PLLC
166 Prosperous Place, Suite 220
Lexington, Kentucky 40509
859-368-0145

INTEGRATED ENGINEERING

January 4, 2018

TABLE OF CONTENTS

APPENDICES

PRODUCTION-HOUR WORKSHEET

COUNTY :	Fayette					
PROJECT :	Armstrong Mill Sidewalks	**PROJECT TYPE :**		Sidewalks & Drainage		
UPN :		**CONSULTANT :**		Integrated Engineering, PLLC		
FED.NO :		**PREPARED BY :**		David Moses PE, PLS		
ITEM NO :	7-3213	**DATE :**		1/4/2018		

SURVEY

IE 2

No.	ITEM	CREW	UNIT	AMOUNT	HRS/UNIT	HOURS
	RECONNAISSANCE					
1	Control - (existing)	1	Mile	0.33	10	3
2	Utilities - (data gathering, identification & contact)	1	No.	0.33	20	7
3	Drainage - (sink holes, streams, pipes, etc.)	1	Mile	0.33	10	3
	CONTROL					
4	Horizontal	2	Mile	0.33	8	5
5	Vertical	2	Mile	0.33	8	5
6	Process data	1	Mile	0.33	15	5
	PLANIMETRIC SURVEY					
7	Planimetric location *(specify complete, pickup or update)*	2	Mile	0.33	40	26
8	Subsurface Utility Engineering, Quality Levels C & D	1	Mile	0.33	40	13
9	Subsurface Utility Engineering, Quality Level B	1	LS			0
10	Subsurface Utility Engineering, Quality Level A	1	LS			0
11	Process data	1	Mile	0.33	20	7
	TERRAIN SURVEY					
12	DTM data collection *(Items 11-18 not required if used)*	2	Acre	1.5	0	0
13	Verify terrain model accuracy	2	Mile			0
14	Tie-ins	2	No.			0
15	Drainage situations survey (Bridge)	2	No.	2	2	8
16	Drainage situations survey (Culvert)	2	No.			0
17	Drainage pipe section (non-situation size)	2	No.			0
18	Flood plain data	2	No.	2	4	16
19	Railroad Surveys	2	No.			0
20	Additional necessary DTM data *(specify pickup or update)*	2	Acre			0
21	Process data	1	Mile	0.33	20	7
	ESTABLISH PROPERTY LINES & OWNERSHIP					
22	Contact & Interview Property Owners	1	Parcel			0
23	Field tie property lines/corners	2	Parcel	24	0.5	24
	STAKING					
24	Stake centerlines, approaches, detours	2	Mile			0
25	Stake core holes - structures *(unit is per structure)*	2	No.			0
26	Stake core holes - roadway *(unit is per core hole)*	2	No.			0
	SURVEY MISCELLANEOUS					
27	Determine roadway elevations (Crown and EP)	2	Mile	0.33	24	16
28	Environmental areas	2	No.			0
29						0
	SURVEY TOTAL					**145**

PRELIMINARY LINE AND GRADE

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
30	Computer setup	LS	1	0	0
31	Prepare existing manuscripts	Mile	0.33	30	10
32	Establish approximate property lines and ownership	Parcel	24	0	0
33	Study and develop typical sections	No.	1	4	4
34	Study and develop horizontal alignments	Mile	0.59	15	9
35	Study and develop vertical alignments	Mile	0.59	15	9
36	Create and evaluate proposed roadway models	Mile	0.59	10	6
37	Design entrances	No.	14	0.57	8
38	Pre-size pipes (all alternates)	No.			0
39	Pre-size culverts (all alternates)	No.			0
40	Pre-size bridges (all alternates)	No.			0
41a	Conduct Traffic Engineering Analysis (Basic; Highway Capacity Manu	Intersec	1	24	24
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.	1	12	12
44	Study and develop maintenance of traffic plan	LS	1	20	20
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	16	16
47	Revise plans and estimates	LS			0
48	Preliminary Right of Way with taking areas	Parcel	6	1	6
49	Prepare Design Executive Summary	LS			0
50	Develop/document "Avoidance Alternatives to Water Related Impacts	LS			0
	PRELIMINARY LINE & GRADE MISCELLANEOUS				
51	Prepare Preliminary Design Technical Memorandum	LS	1	8	8
52	Research for Public Agency & Permit Requirements	LS	1	0	0
53					0
54					0
55					0
	PRELIMINARY LINE AND GRADE TOTAL				**136**

UTILITY COORDINATION

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
56	Utility Coordination Meeting	1	No.	4	4	16
57	Develop Utility Relocation Layout Sheets (1"=200')		Mile	0.33	24	8
58	Develop Utility Relocation Plans (1"=50')		Mile			0
	UTILITY COORDINATION MISCELLANEOUS					
59						
	UTILITY COORDINATION TOTAL					**24**

RIGHT OF WAY PLANS

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
60	Deed research	Parcel	6	0	0
61	Establish property and ownership	Parcel	6	0	0
62	Calculate Right of Way	Parcel	6	0	0
63	Prepare legal descriptions	Parcel	6	0	0
64	Complete Right of Way summary sheet	Parcel	6	0	0
65	Generate Right of Way strip map *(scale 1" = 50')*	Sheet	1	0	0
66	Prepare Right of Way Plans Submittal	LS	1	0	0
67	Right of Way revisions after Right of Way submittal	LS	1	0	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	1	0	0
81	Update existing topography and terrain model	Mile	0.33	6	2
82	Refine alignments (horizontal & vertical)	Mile	0.59	20	12
83	Develop pavement design	No.			0
84	Finalize templates & transitions	No.			0
85	Develop final roadway model	Mile	0.59	40	24
86	Develop proposed design	Mile	0.33	100	33
87	Generate plan sheets *(scale 1" = 20')*	Sheet	3	6	18
88	Generate profile sheets *(scale 1" = xxx')*	Sheet	3	6	18
89	Detail cross sections *(scale 1" = xxx')*	No.	54	0.75	41
90	Design entrances	No.	19	0.1	2
91	Revise roadway plans from soils report	Mile			0
	DRAINAGE				
92	Develop pipe sections (< 54")	No.	4	0	0
93	Develop drainage system map	Mile	0.33	0	0
94	Develop drainage situation (bridge)	No.	2	10	20
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	2	8
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.	2	40	80
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
106	Inlet spacing calculations	No.	4	0.5	2
107	Storm sewers calculations	No.	4	6	24
108	Perform scour analysis	No.			0
109	Assemble preliminary and final drainage folders	LS			0
110	Prepare advanced situation folder - bridge	No.	3	0	0
111	Prepare advanced situation folder - culvert	No.			0
	DRAINAGE MISCELLANEOUS				
112	Prepare No Rise Certification	LS	1	10	10
113					0
114					0
115					0

FINAL PLAN PREPARATION (Continued)

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
116	Prepare layout sheet	LS	1	6	6
117	Prepare typical sections	No.	1	2	2
118	Prepare Interchange geometric approval	No.			0
119	Prepare intersection geometric approval	No.			0
120	Prepare coordinate control sheet	Mile	0.33	15	5
121	Prepare elevation developments	No.			0
122	Prepare striping plan	No.	1	8	8
123	Calculate final quantities	Mile	0.33	30	10
124	Complete general summary	LS	1	6	6
125	Complete paving summary	LS	1	4	4
126	Complete drainage summary	LS	1	4	4
127	Complete pavement under-drain summary	LS			0
128	Prepare cost estimate	LS	1	8	8
129	Plot/print copies of plans	LS	1	8	8
130	Plan revisions	Mile	0.33	40	13
131	Prepare final construction plans submittal	LS	1	24	24
	MAINTENANCE OF TRAFFIC				
132	Write maintenance of traffic notes (TCP)	LS	1	8	8
133	Prepare construction phasing plans	Mile	0.33	20	7
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	Document available rock quantities	LS			0
139	Prepare Bid Proposal	LS	1	8	8
140	LPA Paperwork & Coordination	LS	1	8	8
141	Permits Preparation	LS	1	8	8
142					0
143					0
	FINAL PLANS TOTAL				**431**

MEETINGS

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
150	Prelim. line and grade inspection	2	No.	1	3	6
151	Drainage inspection	2	No.			0
152	Final inspection	2	No.	1	3	6
153	Misc. project coordination meetings	2	No.			0
154	Project team meetings	2	No.	2	3	12
	MEETINGS MISCELLANEOUS					
155	Value Engineering Study		LS			0
156	Constructability Review		LS			0
	MEETINGS TOTAL					**24**

PUBLIC INVOLVEMENT

No.	ITEM	PERSONS	UNIT	AMOUNT	HRS/UNIT	HOURS
160	Develop and Maintain Mailing List		LS			0
161	Prepare for Advisory Committee/Officials Meeting		No.			0
162	Attend Advisory Committee/Officials Meeting	2	No.			0
163	Prepare for Public Meetings/Hearings		No.			0
164	Attend Public Meetings/Hearings	2	No.			0
165	Prepare and Distribute Newsletter		No.			0
166	Property owner coordination		No.			0
	PUBLIC INVOLVEMENT MISCELLANEOUS					
167						0
168						0
169						
	PUBLIC INVOLVEMENT TOTAL					**0**

QA/QC

No.	ITEM	UNIT	AMOUNT	HRS/UNIT	HOURS
180	Stuctures (See Attached Structural Production Hours)	LS	1	212	212
181	Structure review				0
	QA/QC TOTAL				**212**

PRODUCTION-HOUR SUMMARY

SURVEY TOTAL	**145**
LINE AND GRADE TOTAL	**136**
UTILITY COORDINATION TOTAL	**24**
RIGHT OF WAY PLANS TOTAL	**0**
FINAL PLANS TOTAL	**431**
MEETINGS TOTAL	**24**
PUBLIC INVOLVEMENT TOTAL	**0**
STRUCTURES TOTAL	**212**
GRAND TOTAL	**972**

KENTUCKY TRANSPORTATION CABINET
Department of Highways
DIVISION OF PROFESSIONAL SERVICES

TC 40-2
Rev. 10/2017
Page 1 of 1

ENGINEERING AND RELATED SERVICES FEE PROPOSAL

SECTION 1: PROJECT INFORMATION

DATE:	Dec 20, 2017	**COUNTY:**	Fayette	**ITEM #:**	7-3213
PROJECT:	Armstrong Mill Sidewalks				

SECTION 2: BUDGET INFORMATION

FEE CONSIDERATIONS	PROPOSED MAN HOURS	NEGOTIATED MAN HOURS	AVERAGE RATE	ESTIMATED COST
Survey	145	145	$ 39.17	$ 5,679.65
Line and Grade	136	136	$ 42.59	$ 5,792.24
Utility Coordination	24	24	$ 47.45	$ 1,138.80
Final Plans	431	431	$ 47.45	$ 20,450.95
Meetings	24	24	$ 61.90	$ 1,485.60
Structures	212	212	$ 50.08	$ 10,616.96
				$ -
				$ -
				$ -
				$ -
TOTAL PRODUCTION HOURS	972	972	$ 46.47	
			TOTAL DIRECT PAYROLL	$ 45,164.20
			OVERHEAD (107.50 % **)**	$ 48,551.52
			PROFIT (15.00 % **)**	$ 14,057.36
			COST OF MONEY (0.59 % **)**	$ 266.47

DIRECT COSTS	AMOUNT
TOTAL DIRECT COSTS	$ -

SUBCONSULTANTS	AMOUNT
Geotechnology	$ 12,959.76
TOTAL SUBCONSULTANTS	$ 12,959.76

TOTAL FEE	**$ 120,999**

*Rounded to the nearest dollar

SECTION 3: SIGNATURE

FIRM NAME: Integrated Engineering

SIGNED BY: David Moses

David Moses	Vice President	12/20/2017
CONSULTANT SIGNATURE	**TITLE**	**DATE**
PROFESSIONAL SERVICES SIGNATURE	**TITLE**	**DATE**

CLASSIFICATIONS AND PERCENTAGES FOR DESIGN

COUNTY : Fayette
PROJECT : Armstrong Mill Sidewalks
UPN :
FED.NO :
ITEM NO : 7-3213

Escalation:
Estimated Notice to Proceed: 2/15/2018
Estimated End of Project: 9/13/2018
midpoint: 5/31/2018
rate = 2.93%
period = 0.86
factor = 0.02515

* effective 7/21/2017

DESCRIPTION		AVERAGE RATE	CLASSIFICATIONS, CERTIFIED / AUDITED RATES, AND PERCENTAGES										TOTAL PERCENT
			Principal	Project Manager	Project Engineer	Engineer-in-Training	CADD Tech	Professional Land Surveyor	Field Technicians	Structural Project Manager			
			$70.00	$50.75	$42.00	$28.35	$29.00	$38.75	$23.25	$51.00	$0.00	$0.00	
			$71.76	$52.03	$43.06	$29.06	$29.73	$39.72	$23.83	$52.28	$0.00	$0.00	
A.	**SURVEY TOTAL**	$ 39.17	5%	10%			10%	60%	15%				100%
B.	**LINE AND GRADE TOTAL**	$ 42.59	10%	40%		40%	10%						100%
C.	**UTILITY COORDINATION TOTAL**	$ 47.45	10%	40%	35%	10%	5%						100%
D.	**RIGHT OF WAY PLANS TOTAL**	$ 47.45	10%	40%	35%	10%	5%						100%
E.	**FINAL PLANS TOTAL**	$ 47.45	10%	40%	35%	10%	5%						100%
F.	**MEETINGS TOTAL**	$ 61.90	50%	50%									100%
G.	**PUBLIC INVOLVEMENT TOTAL**	$ 61.90	50%	50%									100%
H.	**STRUCTURES TOTAL**	$ 50.08	10%		45%					45%			100%
		$ -											0%

DIRECT COSTS

MILEAGE AND MEAL EXPENSES

ACTIVITY	NO. OF TRIPS	MILEAGE COST			DAILY MEAL COST			TOTAL COST
		TRIP MILES	MILEAGE RATE	MILEAGE COST	NO. OF PEOPLE	COST	MEAL COST	
		10	$0.60					
		30	$0.60					
		180	$0.47					
		30	$0.47					
						MILEAGE AND MEAL EXPENSES TOTAL:		$0

LODGING EXPENSES

LODGING	NO. OF NIGHTS	NO. OF PEOPLE	COST PER ROOM	TOTAL COST
Cost of Lodging		0	$85.00	$0
			LODGING EXPENSES TOTAL:	$0

SURVEY TRAVEL TIME

SURVEY TRAVEL TIME	NO. OF TRIPS	HOURS PER TRIP	NO. OF PEOPLE	AVERAGE RATE	MULTIPLIER	TOTAL COST
Weekly Trip to KY 7 from Lexington	0		0	$39.17	1.3	$0
					SURVEY TRAVEL TIME:	$0

MISCELLANEOUS SURVEYING EXPENSES

ITEM	TOTAL COST
Stakes, Iron Pins, Flagging, Paint, etc.	
MISCELLANEOUS SURVEYING EXPENSES TOTAL:	$0

PRINTING EXPENSES

PRINTING ITEM	NO. OF B/W COPIES	NO. OF PAGES	COST PER PAGE	TOTAL PRINTING COST

PROJECT SCHEDULE AND PAYMENT PLAN			
MILESTONE	**DAYS**	**DATE**	**% PAYMENT**
Notice to Proceed (estimated)	0	February 15, 2018	0%
Survey Complete	30	March 17, 2018	20%
Submit Preliminary Design	75	May 1, 2018	50%
Submit R/W Plans	150	July 15, 2018	70%
Submit Final Roadway/Structural Plans	180	August 14, 2018	90%
Submit Bit Package	210	September 13, 2018	100%

Notes:
1. % payment is the maximum amount of contract amount that can be paid before completion of given milestone. The % payment shown for each milestone is based on an estimate of the % complete and % of fee earned for all work tasks at that given milestone date.