

October 3, 2022

Mr. Ted Martin, P.E., CFM
Stormwater Manager
City of Independence, Missouri
111 E. Maple
Independence, Missouri 64055

Re: Fairmount Stormwater Improvements

Dear Ted,

Anderson Engineering, Inc. is pleased to assist the City of Independence with the Fairmount Stormwater Improvements and the additional work determined during the utility field check meeting and input from nearby residents. The addition of two more project locations along Arlington and Kentucky Avenue at Glenwood Avenue as additional project sites to resolve existing flooding issues is also appreciated. The following indicates the breakdown of the fees for each of these additional work items (see attached manhour breakdowns):

- | | |
|--|-------------|
| • Additional work spread over three locations (of original four) | \$ 6,800.00 |
| • Arlington Avenue stormwater improvements | \$12,000.00 |
| • Glenwood Avenue stormwater improvements | \$31,800.00 |

These services will be provided on an hourly basis not to exceed a combined amount of \$50,600.00 unless additional services are requested and agreed upon by the City. Payment for services are due upon receipt.

Thank you for choosing AE to assist you with this work. Please let us know if you have any questions.

Sincerely,



Gary D. Strack, P.E., F.NSPE
Vice President



CLIENT : City of Independence
Project Description : Fairmont Stormwater Improvements - 4 Locs. Design Changes

Date: 6/6/2022

AE Project # : 21KC40020

Prepared by : KWB
Reviewed by : GDS

Project Work Plan - Estimating Sheet

Task Description	Principal Engr	Proj Mgr	Des Engr	PLS 1	2 Man Crew	Tech 4	Tech 2	Admin	TOTALS	
									Hours	Task Cost
Topo Survey D		1		2	6	2			11	\$1,668.50
Easement Descriptions				4					4	\$672.00
Conveyance Hydraulics A									0	\$0.00
Conveyance Hydraulics B									0	\$0.00
Conveyance Hydraulics C									0	\$0.00
Conveyance Hydraulics D									0	\$0.00
Preparation of Final Plans A									0	\$0.00
Preparation of Final Plans B		1	4				20		25	\$2,041.50
Preparation of Final Plans C			2				4		6	\$500.00
Preparation of Final Plans D		1	4				16		21	\$1,753.50
Prelim Opinion of Construction Estimate									0	\$0.00
Total Hours >>	0	3	10	6	6	2	40	0	67	
Hourly Rate >>	\$218.50	\$177.50	\$106.00	\$168.00	\$157.50	\$105.00	\$72.00	\$52.50		
Cost >>	\$0	\$533	\$1,060	\$1,008	\$945	\$210	\$4,200	\$0		\$6,635.50

Legend

A = 14th & Hedges
B = 9th & Carlisle
C = 18th & Crescent
D = 25th & Overton

REIMBURSABLE EXPENSES :

Mileage :	50	miles @	\$0.585	\$29.25
Hand Auger Borings	0	each @	\$700.00	\$0.00
Travel/Per Diem	0	days @	\$150.00	\$0.00
Plans/Prints/Copies	0	sheets @	\$4.00	\$0.00
Title Commitments	0	@	\$150.00	\$0.00
Miscellaneous	1	@	\$135.25	\$135.25
Total Expenses =			\$164.50	

Total Labor : \$6,635.50
Total Expenses : \$164.50

SUBTOTAL : \$6,800.00

TOTAL SERVICES : \$6,800.00

SCOPE OF SERVICES

Requirements of the Preliminary Design

I. General

- A. Existing Conditions – Determine the watershed, major drainage-way, drainage structures and flow constrictions. Research other existing information such as soil types, depth to bedrock, utilities, rights-of-way and easement information, if applicable to the proposed project.
- B. Standards – Identify applicable design and construction standards including APWA Section 5600, FEMA, MDNR Dam Safety Program and other applicable standards as pertinent.
- C. Utility Contacts – Identify contacts for utility companies and provide them map of project corridor; request information on their utility within corridor and illustrate on base project map. At a minimum, the following utility companies should be included:
 - 1. Electric – Independence Power and Light
 - 2. Gas – Spire
 - 3. Cable TV - Comcast
 - 4. Telephone – AT&T
 - 5. Water – Independence Water Department
 - 6. Sewer – Independence Water Pollution Control

The first utility coordination meeting will be held after the completion of the surveys.

- D. Hydrology and Hydraulics – Provide the design storms used for the analysis of the system components. Determine existing and proposed design flow rates for the drainage system. Summarize results including a description of the models and hydrologic and hydraulic methods used for the analyses and basis for using the model selected.
 - 1. Hydrology Analysis – Develop the runoff flow rates for a minimum 10 and 100-year return intervals for each sub-area of the project watershed. Provide the appropriate hydrologic parameters used for the runoff computations including runoff coefficients, curve numbers, percent imperviousness, time of concentration, rainfall intensity and/or rainfall hyetograph. Summarize the results including the methodology used for the analysis and explain the basis for the selected approach.
 - 2. Hydraulic Analysis – Perform hydraulic calculations per APWA 5600 in sufficient detail to determine conduit and channel sizes. Summarize the methodology used for the hydraulic analysis and explain the basis for the selected approach.

- E. Permits – Investigate relevant federal, state and local permitting requirements, if any, for the proposed project.
 - F. Consultant shall meet with City staff and participate in a public meeting for information gathering purposes.
- II. Preliminary plans and specifications shall be clearly stamped “preliminary”, or otherwise indicated. All plans shall be prepared in accordance with the latest editions, supplements and revisions of the City’s storm drainage design criteria and APWA Section 5600, as adopted. The construction drawings shall be prepared in AutoCAD format. The City of Independence project number shall be included upon all correspondence. Submit to the City four (4) full size plans and construction cost estimates upon completion of preliminary design.
- A. The Consultant shall survey the project with the City supplying the Consultant/surveyor with benchmark records as near to the project location as possible. The Consultant/surveyor shall set any other needed permanent benchmarks for the project. All vertical datum must be USGS datum and tied to the City controls.
 - 1. Survey size, type, location, and elevation of all storm drainage facilities including culverts, pipes, headwalls, manholes, and inlets.
 - 2. Perform topographic survey of entire project area needed for design of the project, including dwellings/structures, sheds, fences, walls, streets, curbs, ditches, utilities, sidewalks, decks and patios, size and species of trees 2 inches and larger, shrubs, bushes, landscaping, and property pins. Provide the minimum low opening for each dwelling.
 - 3. Where there is a group of trees, show the outside limits and label accordingly.
 - 4. Contact Missouri One Call and obtain available mapping from all pertinent utilities for locates of existing utilities and tie then into the topographic survey. Include sizes of utility lines.
 - 5. The construction contractor will be required to provide construction staking for the project, not the Consultant. However, the Consultant may contract with the general contractor to perform construction staking.
 - 6. All proposed structures or improvements shall be located by station and offset or their coordinate values on the plans. There shall be a note as to the exact point(s) being located for each type of structure or improvement on the final plans.
 - 7. Prepare survey base map depicting above information, including property lines, ownership and easement dimensions and information for use in preparing plans.
 - B. Provide plan and profiles, details, sections, and watershed drainage calculations. Unless pre-approved, plan and profiles shall be scaled no larger than 1”=20’ horizontal and 1”=10’ vertical.
 - C. Show location of property lines, utilities, and other conflicts that will impact the design of the selected alternative.

- D. Current construction cost estimate. Estimate shall include construction quantities, unit costs, and a 10% contingency for utility relocation expenses, legal expenses, and easement acquisition as applicable.
- E. Correspondence indicating significant changes in scope or design from information submitted as part of the Preliminary Engineering Study.
- F. A drainage area plan must be included as part of the Preliminary Plan submittal. This plan must indicate complete hydrologic calculations and any pertinent hydraulic calculations performed as part of the design. Design Hydraulic Grade Line, or water surface elevation for the conveyance systems, plotted on profile view of plans. Multiple design return may be plotted, however, at a minimum; the controlling design return interval must be shown.
- G. Tabular description of how the design flows are intercepted and conveyed.

III. Coordination and reviews

- A. Utility coordination meeting. The Consultant shall contact and work closely with utilities to determine the locations of existing and planned facilities to be shown on the plans. The Consultant shall prepare correspondence to all utility companies at the proper times during the design phase and will provide plans to utilities prior to the utility coordination meeting
- C. Consultant shall submit preliminary plans and specifications as described herein for formal City review and attend review meeting with City staff.
- D. Assess state and federal environmental regulations and permit conditions.
- E. Meet with City staff at scheduled project meetings

IV. Testing

The Consultant will not perform a geotechnical investigation, as it will not be required to complete the design. If other special testing is necessary, Consultant shall specify with the proposal, and this will be included as an additional service.

V. Field Check

The Consultant shall coordinate a field check during the preliminary design phase to assess the accuracy of the survey, proposed structure locations, and determine conflicts with topographic conditions and utilities. Immediately prior to the field check, the Consultant shall survey stake the center of the proposed drainage facilities with elevations noted for each top of structure. Preliminary design submittal shall include corrections noted from the field check.

Requirements of the Final Design

- I. Final design plans and specifications shall be clearly stamped “Final” or otherwise indicated. A transmittal letter shall accompany this submittal addressing City staff’s comments on the preliminary design.
 - A. Plans, profiles, sections, details, and easements acquisitions drawings per City standards. Unless pre-approved, plan and profiles shall be scaled no smaller than the 1” = 20’ horizontal and 1” = 10’ vertical.
 - B. Correspondence indicating significant changes in scope or design from information submitted as part of the Preliminary Plans. If such changes occur, all information required as part of the Preliminary Plans shall be resubmitted for items which have changed and all portions of the project which have been affected by the change(s).
 - C. Final plans shall incorporate all comments from preliminary plan submittal stage; a written narrative shall be provided which outlines how the comments were addressed.
 - D. Updated specifications shall be submitted with final plans.
 - E. A grading plan and/or cross sections shall be provided which clearly indicate limits of grading. Overflow channels and swales used to accommodate the maximum design storm shall be defined and the effects of velocity/shear determined.
 - F. All hydrology and hydraulic calculations performed to meet City and APWA requirements regarding the 10-year and 100-year return interval events shall be submitted as part of the Final Plans. If hydraulic calculations are too awkward to submit, a detailed narrative may be submitted describing all design assumptions and considerations. Plans shall contain hydrologic and hydraulic summary tables detailing capacities for each inlet and conduit.
 - G. Easement and ownership sheet that illustrates property lines, right of ways, existing and proposed easements, and a table listing in square feet all the required temporary construction easements and permanent easements.
 - H. Current construction cost estimate.
- II. Project coordination and reviews
 - A. Consultant shall contact affected utilities and facilitate a coordination meeting.
 - B. Obtain guarantee title reports of each property impacted. Locate utilities and additional easements required for the improvement
 - C. Meet with City staff at scheduled project meetings.
 - D. Following approval of the final design, Consultant shall attend and discuss project in a public meeting.

III. Submittals

- A. Consultant shall submit four (4) sets of plans, specifications, and construction cost estimates as described herein for formal City review, attend review meeting with City staff, and revise per City criteria.
- B. Prepare permanent and temporary construction easement descriptions and figures in accordance with the City's acquisition requirements.
- C. Consultant shall prepare and submit state and federal permit applications.

Requirements of the Acquisition Set & Construction Bid Documents

I. Acquisition Phase

- A. Consultant shall prepare permanent and temporary construction easement descriptions and figures in accordance with the City's acquisition requirements.
- B. Submit two (2) sets of corrected plans from the final design review along with easement documents to the City to perform reviews in preparation for the acquisition and bidding phases.

Final plans submitted to the City should contain the following:

- Title Sheet, including abbreviations, legends, and utility contacts
- General Layout Sheet
- Summary of Quantity Sheet (including removals schedule)
- Survey Reference Points Sheet
- Watershed Map and Calculation Spread Sheet
- Plan & Profile (1" = 20' scale plans) (1" = 10' vertical scale profiles) (North Arrow to the right or up on the sheet). Plans must be readable at half scale.
- Typical sections and standard details
- Special construction plans, including profiles and details
- Construction sequence and traffic control during construction
- Sediment/Erosion control plans including the SWPPP for MDNR
- Drive Profiles (1" = 10' scale, horizontal and vertical)
- Cross Sections as required (1" = 20' scale, horizontal and 1" = 10' vertical) (maximum intervals of 50')
- Quantity schedules as necessary
- Right-of-way Plan Sheets depicting the land acquisitions with dimensions that coincide with the legal descriptions (may be added to the plan and profiles if not cluttered) – submit easement documents per the City's acquisition requirements.
- Landscape/Restoration Plan (may be added to the plan and profiles if not cluttered.)

- II. Upon completion of the acquisition phase, the Consultant shall incorporate into the drawings the easement acquisition related notes; and then submit all Construction Bid Documents including two sets of the full-size final plans, two half size final plans, specifications, and the final engineer's estimate. All documents must be signed and sealed by a Missouri Registered Professional Engineer.

- III. The Consultant may be asked and compensated on a time and material basis to answer technical questions during the construction phase. The Consultant shall also address errors without any additional compensation.
- IV. The City will be responsible for the following:
- Easement acquisitions from property owners
 - Administration of the bidding and construction contract.



CLIENT : City of Independence
Project Description : Fairmont Stormwater Improvements - Arlington Ave.

Date: 5/24/2022

AE Project # : 21KC40020

Prepared by : KWB

Reviewed by : GDS

Project Work Plan - Estimating Sheet

Task Description	Principal Engr	Proj Mgr	Des Engr	PLS 1	2 Man Crew	Tech 4	Tech 2	Admin	TOTALS	
									Hours	Task Cost
Topo Survey					2	8			10	\$1,155.00
Boundary Survey									0	\$0.00
Easements									0	\$0.00
Field Check Staking					4	2			6	\$840.00
Preparation of Base Map							4		4	\$288.00
Conveyance Hydraulics			6						6	\$636.00
First Utility Coord, Mtg/Field Check		1	1						2	\$283.50
Public Meeting/Prep for Mtg									0	\$0.00
Preparation of Prelim Plans		2	4				20		26	\$2,219.00
Prelim Opinion of Construction Estimate			2						2	\$212.00
Prelim Technical Specifications		1							1	\$177.50
State & Federal Permits			2						2	\$212.00
Meetings with City Staff (2)		2	2						4	\$567.00
Second Utility Coord. Mtg		1	1						2	\$283.50
Final Plans		1	4				24		29	\$2,329.50
Final Opinion of Construction Estimate			2						2	\$212.00
Final Technical Specifications								2	2	\$105.00
City Comment Response Letter			1						1	\$106.00
Final QA/QC		1	2						3	\$389.50
Monthly Coordination Meetings		1	1						2	\$283.50
Project Manager		2						2	4	\$460.00
Questions during Construction		2	2						4	\$567.00
Total Hours >>	0	14	30	0	6	10	48	4	112	
Hourly Rate >>	\$218.50	\$177.50	\$106.00	\$168.00	\$157.50	\$105.00	\$72.00	\$52.50		
Cost >>	\$0	\$2,485	\$3,180	\$0	\$945	\$1,050	\$5,040	\$210		\$11,326

REIMBURSABLE EXPENSES :

Mileage :	300	miles @	\$0.585	\$175.50
Hand Auger Borings	0	each @	\$700.00	\$0.00
Travel/Per Diem	0	days @	\$150.00	\$0.00
Plans/Prints/Copies	50	sheets @	\$4.00	\$200.00
Title Commitments	0	@	\$150.00	\$0.00
Miscellaneous	1	@	\$298.00	\$298.00
Total Expenses =				\$673.50

Total Labor : \$11,326

Total Expenses : \$674

SUBTOTAL : \$12,000

TOTAL SERVICES : \$12,000

Assumptions:



Project Work Plan - Estimating Sheet

CLIENT : City of Independence Date: 10/3/2022
Project Description : Fairmont Stormwater Improvements - Glenwood Avenue (Project E below)

AE Project # : 21KC40001

Prepared by : GDS

Reviewed by : KWB

Task Description	Principal Engr	Proj Mgr	Des Engr	PLS 1	2 Man Crew	Tech 4	Tech 2	Admin	TOTALS	
									Hours	Task Cost
Topo Survey E				1	12	8			21	\$2,898.00
Boundary Survey E				1	12				13	\$2,058.00
Easements E				2		8			10	\$1,176.00
Topo Survey B									0	\$0.00
Boundary Survey B									0	\$0.00
Easements B									0	\$0.00
Topo Survey C									0	\$0.00
Boundary Survey C									0	\$0.00
Easements C									0	\$0.00
Topo Survey D									0	\$0.00
Boundary Survey D									0	\$0.00
Easements D									0	\$0.00
Field Check Staking					4	2			6	\$840.00
Preparation of Base Map E							8		8	\$576.00
Preparation of Base Map B									0	\$0.00
Preparation of Base Map C									0	\$0.00
Preparation of Base Map D									0	\$0.00
Conveyance Hydraulics E		1	8						9	\$1,025.50
Conveyance Hydraulics B									0	\$0.00
Conveyance Hydraulics C									0	\$0.00
Conveyance Hydraulics D									0	\$0.00
First Utility Coord, Mtg/Field Check		4	4						8	\$1,134.00
Public Meeting/Prep for Mtg	0	0	0						0	\$0.00
Preparation of Prelim Plans E		2	12				24		38	\$3,355.00
Preparation of Prelim Plans B									0	\$0.00
Preparation of Prelim Plans C									0	\$0.00
Preparation of Prelim Plans D									0	\$0.00
Prelim Opinion of Construction Estimate		2	4						6	\$779.00
Prelim Technical Specifications		2							2	\$355.00
State & Federal Permits			0						0	\$0.00
Meetings with City Staff (2)		8	4						12	\$1,844.00
Second Utility Coord. Mtg		4	4						8	\$1,134.00
Final Plans E		1	8				40		49	\$3,905.50
Final Plans B									0	\$0.00
Final Plans C									0	\$0.00
Final Plans D									0	\$0.00
Final Opinion of Construction Estimate		2	4						6	\$779.00
Final Technical Specifications		4						2	6	\$815.00
City Comment Response Letter		2							2	\$355.00
Final QA/QC		4	8						12	\$1,558.00
Monthly Coordination Meetings		4	4						8	\$1,134.00
Project Manager		8						2	10	\$1,525.00
Questions during Construction		8	8						16	\$2,268.00
Total Hours >>	0	56	68	4	28	18	72	4	250	
Hourly Rate >>	\$218.50	\$177.50	\$106.00	\$168.00	\$157.50	\$105.00	\$72.00	\$52.50		
Cost >>	\$0	\$9,940	\$7,208	\$672	\$4,410	\$1,890	\$7,560	\$210		\$29,514

Legend

A = 14th & Hedges
B = 9th & Carlisle
C = 18th & Crescent
D = 25th & Overton
E = Glenwood Ave & Kentucky Ave

REIMBURSABLE EXPENSES :

Mileage :	200	miles @	\$0.585	\$117.00
Hand Auger Borings	0	each @	\$700.00	\$0.00
Travel/Per Diem	0	days @	\$150.00	\$0.00
Plans/Prints/Copies	100	sheets @	\$4.00	\$400.00
Title Commitments	10	@	\$150.00	\$1,500.00
Miscellaneous	1	@	\$269.00	\$269.00
Total Expenses =				\$2,286.00

Total Labor : \$29,514
Total Expenses : \$2,286

SUBTOTAL : \$31,800

TOTAL SERVICES : \$31,800