



STORMWATER CAPITAL IMPROVEMENT PROJECTS SCOPE OF SERVICES

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General Project Description

The purpose of this contract is to provide professional surveying and design services to develop concept, preliminary, and final construction plans for a proposed stormwater improvement near S. Woodbury Street and E. 25th Street. The proposed improvements include extending a storm sewer north of 1226 E. 25th Street continuing south and west to just north of Hanthorn Early Education School. The purpose of the project is to relieve reported flooding in the area.

There is a potential new development north of the proposed storm sewer that was potentially a public private partnership opportunity that could include a regional detention basin. The private development has not moved forward and the City has decided to proceed with the storm sewer improvements at this time.

Requirements of the Preliminary Design

I. Data Collection and Concept Development

- A. Existing Conditions – Determine the overall watershed, major drainage-way, drainage structures and flow constrictions. Investigate the flooding problems in the area including resident’s comments from the public meeting. Identify impacted property owners. 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. Utility Contacts – Request utility information from the City’s current utility contact list. The first utility coordination meeting will be held after the completion of the surveys.
- C. Consultant shall meet with City staff and participate in a public meeting for information gathering purposes. Consultant will prepare two duplicate D size display boards for the meeting. Consultant will also facilitate a meeting with the school grounds keeper to identify any known drainage issues.
- D. Site Visit – The two alignments will be investigated in the field for feasibility. These include the alignment developed by the City and another alignment that continues south on Woodbury Street then west on the north side of the school property. Existing utilities visible or marked will be noted.
- E. Permits – No permits are anticipated. The disturbed area is anticipated to be less than one acre.
- F. Review Meeting – at the completion of the concept phase a review meeting will be organized with the City to discuss the findings and make a final determination on which alternative to move forward with into Preliminary Design.

- II. Preliminary plans – Once the preferred alignment is selected the design will be advanced to the Preliminary stage. Preliminary plans 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 two (2) full size and two (2) half size plans and construction cost estimates upon completion of preliminary design.

- A. Field Survey - The Consultant shall survey the preferred project alignment with the City supplying the Consultant/surveyor with benchmark records as near to the project location as possible.
1. Survey Control. The Consultant will establish the survey control network of the project. Horizontal and vertical control points will be set as 5/8-Inch rebar with aluminum caps (3). References will be tied to each monument and tied to City control. Benchmarks will be set on permanent structures that have less likelihood of being disturbed. Unless dictated otherwise, the horizontal datum is to be Missouri State Plane-West Zone NAD83(2011). Vertical Datum NAVD88 w/ Geoid 18.
 2. Existing Property Line Base Mapping. Record documents will be used in conjunction with found property corners to develop the property line base map. Property lines, Right-of-Way, and subdivisions will be plotted on the survey basemap. The Consultant will conduct section-tie surveys as per City or MoDOT standards, along with platted lot and block monuments within the project limits. The section corners and other monuments are necessary to reestablish the existing right-of-way, platted lots, and un-platted properties. It is assumed these corners are monumented and referenced based on previous projects in the area. Any found monuments will be shown and labeled within base map drawing. The Consultant will order O&E reports from the City's agreed upon title company. The deliverables from the title company will include the ownership name, identification of any encumbrances on the property, a description of the property, and copies of deeds and any easements associated with the property. The Consultant will use this information to develop the right-of-way and property information used in the base mapping. The Consultant has identified a total of 15 individual tracts adjacent to the work.
 3. Utility Locates. The Consultant will contact utility companies through the Missouri One-Call system and as supplemented by the city for those utility companies not associated with the One-Call system. Utilities will be horizontally field located according to field marks by the utility companies or by a One-Call locator. If there is no response to the initial request, Missouri One-Call will be contacted a second time to re-issue the locate notices. The man-hours for this item are based on all utilities being marked within two (2) weeks of the time of the locate request. If a utility owner does not respond to the locate request, the Consultant will contact the city to discuss a plan of action and estimated cost to complete the survey. Utility companies will also be contacted directly to obtain available mapping from all pertinent utilities for locates of existing utilities and tie them into the topographic survey. Include sizes of utility lines.
 4. Topographic Field Survey. Perform a field survey to obtain sufficient detail for the preferred alignment of the proposed improvements. The field information shall include topographic information to clearly identify features along the project corridor. Terrain data collected for the survey area shall include breaklines, slopes, and a grid of elevation shots.
 - Pavement Hard shots – Hard shots will be taken at top of curb, gutter flow line, lip of gutter, sidewalks, entrances, and retaining walls.
 - Locate improvements – including dwellings/structures, sheds, fences, walls, streets, curbs, ditches, sidewalks, decks and patios, shrubs, bushes, and landscaping.
 - Locate Storm Sewer Structures – The horizontal & vertical locations of the structures will be collected. Inverts, flowlines, and pipe types and

- sizes will be plotted on the survey.
 - Locate Sanitary Sewer within the corridor extending the survey to the next manhole upstream and/or downstream of the proposed storm sewer crossings.
 - All trees 2" and greater shall be collected, species identified, and included in the basemap. Where there is a group of trees, show the outside limits and label accordingly.
 - Provide the minimum low opening for each dwelling.
5. Prepare survey base map depicting above information, including property lines, ownership and easement dimensions and information.
- B. Preliminary Plans – 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. The following plan sheets will be prepared for the Preliminary Plan submittal:
1. Title Sheet
 2. General Notes and Quantities
 3. General, Control and Reference Ties Sheet Layout Sheet
 4. Demolition Sheets
 5. Plan and profiles of storm sewer
 6. Swale typical section
 7. Drainage area map
 8. Drainage calculations
- C. 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. Tabular description of how the design flows are intercepted and conveyed.
- D. Show location of property lines, utilities, and other conflicts that will impact the design of the selected alternative.
- E. 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.
- F. Quality control review and revision of submittal documents.

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
- B. Consultant shall submit preliminary plans and specifications as described herein for formal City review and attend review meeting with City staff.
- C. Meet with City staff at scheduled project meetings (assume 2 meetings during preliminary design).

IV. Testing.

Consultant shall sub-contract a geotechnical sub-consultant to provide two (2) borings to determine

if rock excavation will be required for the proposed improvements. Boring depths shall be 15', or to refusal if refusal is less than 15' deep. No other testing, borings or soil investigations are included. If it's determined additional testing, borings or soil investigations are necessary, this will be an additional service, and Consultant shall be compensated accordingly.

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 plans 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 sheets 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.
 - I. Quality control review and revision of submittal documents.
- II. Project coordination and reviews
 - A. Consultant shall contact affected utilities and facilitate a coordination meeting.
 - B. Obtain updated guarantee title reports for each property impacted. It is assumed that a total of 15 will be needed.
 - C. Identify utilities and additional easements required for the improvements.
 - D. Meet with City staff at scheduled project meetings (assume 2 meetings during final design).

- E. Following approval of the final design, Consultant shall attend and discuss project in a public meeting. Consultant will prepare two duplicate D size display boards for the meeting.

III. Submittals

- A. Consultant shall submit PDF copies and two (2) full size and two (2) half size 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.

Requirements of the Acquisition Set & Construction Bid Documents

I. Acquisition Phase

- A. Consultant shall update permanent and temporary construction easement descriptions and figures in accordance with the City's acquisition requirements based on feedback from final design review.
- 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)
- Demolition Plans
- 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 (SWPPP not included since disturbance is anticipated to be less than one acre).
- 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 one (1) set of the full-size final plans, one (1) half size final plans, specifications, and the final engineer's estimate along with PDFs of each. All documents must be signed and sealed by a Missouri Registered Professional Engineer.
- III. Answer technical questions during the construction phase and review precast storm structure shop drawings. The Consultant shall also address errors without any additional compensation.

Assumptions

1. Full-size plan sheets are to be 22" x 34". US Customary (English) units of measure will be used in developing the design, construction plans, supplemental specifications, quantity estimates and estimates of probable construction.
2. PDF plan sets will be submitted to the City for review at each milestone. Hard copies included as described above.
3. This scope and fee assumes the anticipated scope as described above. If the scope changes it may need to be negotiated as a supplemental agreement.

City Responsibilities

1. Provide a list of property owner names and addresses of affected tracts. The Consultant will use the information for sending letters to each of the property owners along the project corridor to inform them that surveyors will need to have access to their property for the purpose of obtaining property line and topographic information.
2. Provide the City standard design criteria for the design of roadways and storm drainage systems to the Consultant.
3. Provide the City standard details to the Consultant for use in the project.
4. Provide the Consultant with copies of all plats adjacent to the project in *.tif or *.pdf format or hard copy as available.
5. Provide the Consultant with copies of all drainage and infrastructure plans, reports, studies, etc. along the project area.
6. Notify all property owners along the project and other interested parties of any public meetings.
7. Arrange and provide the facilities for all public and utility meetings.
8. Provide any recent bid tabs to assist in the development of the opinion of probable costs.
9. Acquire all proposed right-of-way and easements, if required.
10. Obtain all necessary permits from the State or Federal agencies.
11. Administration of the bidding and construction contract.

Items Not Included in the Scope of Services

1. Any work requested by the City that is not included in the basic services will be classified as supplemental services. Supplementary services shall include, but are not limited to the following:
 - Changes in the scope, extent, or character of the project.
 - Revisions to the plans when inconsistent with previous approvals or instructions by the City.
 - Updating plans to reflect development that has occurred after the Final Plans are complete.
2. No environmental investigations, permits or services are included.
3. CLOMR/LOMR (Letter of Map Revision) is not included in this scope and fee.
4. Structural design of bridges or retaining walls.
5. Full property survey or setting of new property corners if they are missing is not included.
6. Enclosed storm sewer system design is not included.
7. Flagging of the proposed right-of-way and easements as part of the appraisal process.
9. Preparation of any environmental clearance documents, except as noted in the scope of services.
10. Revisions or modifications to the construction plans, legal descriptions, and/ or exhibits created by negotiations between the City and the property owner during property acquisition.
11. Printing and review of bidding documents.
12. Design of an irrigation system for landscaped and grassed areas.

13. Water main relocation plans are not included.
15. At this time, bidding and construction phase services are not included in this contract, except as noted above to answer technical questions during construction. Should the City desire to have Wilson & Company perform bidding or construction phase services, including but not limited to the following items, a scope and fee will be negotiated as a supplemental service.
 - Attending pre-bid meeting
 - Provide construction management reviews
 - Provide construction staking surveys
 - Provide on-site inspection
 - Provide materials testing
 - Review shop drawings (except for precast storm structures)
 - Review RFI's, change orders, pay applications, etc.
 - Final inspection and letter of acceptance
 - Preparation of record drawings