



Engineering Department

DATE: April 19, 2022
FROM: Gabe Schell, City Engineer
ITEM: Ash Coulee Dr – Engineering Amendment – HC 143

REQUEST:

Consider approval of amendment to existing agreement for professional services with KLJ for Ash Coulee Dr Reconstruction – HC 143

Please place this item on the April 26, 2022, City Commission meeting agenda.

BACKGROUND INFORMATION:

KLJ is under contract to perform preliminary engineering services relating to the reconstruction of Ash Coulee Dr between Tyler Parkway/15th Street NW and N Washington Street. This project is funded by ½ cent sales tax.

This request is for authorization of scope and fee to include the design engineering of the improvements as selected by the Commission on March 22, 2022. This scope would authorize engineering and right of way on the project through final design and bid. This agreement could be amended in the future to include construction engineering at a later date.

RECOMMENDED CITY COMMISSION ACTION:

Approval of amendment to existing agreement for professional services with KLJ for Ash Coulee Dr Reconstruction – HC 143

Budget amendment of \$500,000 from ½ cent sales tax for design engineering, right of way acquisition and wetland mitigation.

STAFF CONTACT INFORMATION:

Gabe Schell, PE | City Engineer, 355-1505 or gschell@bismarcknd.gov



Amendment to Agreement for Professional Services

City Number: HC 143

Amendment # 1

Background Data

- a. Effective Date of Agreement for Professional Services September 14, 2021
- b. Engineer KLJ Engineering LLC
- c. Owner City of Bismarck
- d. Project Ash Coulee Drive Reconstruction (Tyler Parkway/NW 15th Street to N. Washington Street)
- e. This Part of the Project Phase II - Final Design

Nature of Amendment (check all that apply)

- Additional services to be performed by Engineer
- Modifications to services of Engineer
- Modifications to responsibilities of Owner
- Modifications to payment to Engineer
- Modifications to time(s) for rendering Services

Description of Modifications

Refer to Attachment "C", Phase II - Final Design and Plan Preparation Scope of Services

Agreement Summary

a. Original Agreement amount	<u>\$434,495.88</u>
b. Net change for prior Amendments	<u>\$0</u>
c. This Amendment amount	<u>\$750,122.05</u>
d. Adjusted Agreement amount	<u>\$1,184,617.93</u>

Engineer and Owner hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect. The Effective Date of this Amendment is April 26, 2022.

Owner City of Bismarck
Signed _____
Name Steve Bakken
Title President, Board of City Commissioners
Date _____

Attest _____
Name Keith J. Hunke
Title City Administrator

Engineer KLJ Engineering LLC
Signed _____
Name Mark Anderson, PE
Title Senior VP, Environment & Public Works
Date _____

Attest _____
Name Erika Lorenz
Title Contract Administrator



ATTACHMENT “C”
April 26, 2022
Phase II – Final Design and Plan Preparation
for
Ash Coulee Drive Reconstruction (Tyler Parkway/NW 15th Street to N. Washington Street)
City Project: HC 143

PURPOSE

KLJ Engineering LLC (KLJ) will provide the engineering services for the Ash Coulee Dr. Reconstruction project in three separate phases, subject to satisfactory performance, funding availability, and subsequent agreement of scope and fees for each phase. The three separate phases include traffic analysis, public involvement, conceptual design, and environmental documentation (wetlands and cultural) in Phase I; final design, right-of-way and plan preparation in Phase II; and construction administration in Phase III.

The purpose of this attachment is to describe the scope of work and responsibilities required to complete Phase II services between April 2022 and October 2022. Services include final design and preparation of construction plans, specifications, and estimates; utility coordination; and right of way acquisition.

Project Area

The project area will cover the Ash Coulee Dr. corridor between the Tyler Parkway/NW 15th Street intersection and the N. Washington Street intersection.

SERVICES TO BE PERFORMED BY KLJ

2.1 Project Management & Coordination

Project Management & Coordination

Manage the project and provide overall coordination of the work completed by the planning and design team. This work shall consist of managing work assignments, internal team meetings, subconsultants, client coordination, project budget, and schedule.

Progress Reports and Meetings

Submit a monthly status report via email to the City which will summarize the work performed in the current period, upcoming activities in the next period, summary of project decisions, and potential out of scope work activities. The reports shall include percent complete for key project activities. The status report shall also identify deviations from the planned schedule and what actions will be taken to get the project back on schedule. Bi-weekly coordination meetings will be held between KLJ and City of Bismarck staff to discuss the project status and help expedite decision-making.

Project Schedule

Submit and maintain a Phase II schedule. The schedule will include dates for major work items. The schedule will be reviewed and adjusted as necessary to incorporate changes in the work concept and progress to date.

2.2 Roadway Design

Roundabout Design

KLJ will develop one preliminary single lane roundabout option for the intersection of East Valley Dr. showing potential inscribed circle locations. The exhibit will be used to select the final roundabout location with input from City of Bismarck.

KLJ will perform design analysis and refinement on the selected roundabout location including fast-path, phi-angle, sight distance, and design vehicle swept path analysis. The roundabout design will follow guidance from NCHRP 672 and achieved design criteria will be documented in a memorandum provided to City of Bismarck.

KLJ will produce a refined roundabout layout (approximately a 30% design) showing the recommended roadway geometrics and other features including construction limits. The final roundabout geometry for each intersection will be placed onto an exhibit or roll plot. The exhibit will show all the roundabout design parameters and design vehicle turning paths.

The roundabout is assumed to be single lane roundabout with an inscribed circle diameter of approximately 130 feet. A 40-ft bus design vehicle will be accommodated for all turning movements. A WB-67 design vehicle will be accommodated for east-west through traffic along Ash Coulee Dr.

The design assumes a shared-use path on the north side of Ash Coulee Dr. and a sidewalk on the south side. A pedestrian connection will be provided on the west leg of the roundabout with ADA ramps. On-street bicycle accommodations for the roundabouts are not anticipated. Preliminary and final roundabout design will be completed, which includes the roundabout intersection layout sheets, intersection details, curb line profiles, lighting, and signing and marking sheets.

KLJ will develop wetland impact tables for the USACE 404 permit application separate from the plan set and complete the 404-permit application. We assume that mitigation credits will be purchased for the impacts and that the impacts will be permitted under the nationwide permit.

Design & Plan Preparation

The roadway design will be based upon the alignment, profile, and typical sections developed in the preliminary design phase and include design and plan development for the following plan sections per City of Bismarck standards and specifications:

- Section 1 Title Sheet
- Section 2 Table of Contents
- Section 4 Scope of Work
- Section 6 Plan Notes (may be implemented as a special provision)
- Section 8 Estimate of Quantities
- Section 10 Basis of Estimate
- Section 11 Data Tables
- Section 20 General Details
 - Details will include ADA ramps, municipal utilities, erosion control, pipe bedding, and concrete joints.
- Section 30 Typical Sections
- Section 40 Removals

- Section 50 Inlet & Manhole Summary
- Section 57 Water Main Plan and Profile (Bolton and Menk)
- Section 60 Roadway Plan & Profile (to include storm sewer)
- Section 76 Sediment & Erosion Control
- Section 81 Survey Data Layouts
- Section 85 Landscaping Layouts (AGL Landscape Architects)
 - KLJ will prepare detailed planting plans within the project right of way corridor (median and boulevard areas) as well as within the central island. Planting plans to include street tree locations, planting details, and notes for installation, irrigation, warranty, and process of plant establishment period. Tree selections will be based upon current City Forestry approved species listed in the latest version of the “Street Tree Guide”. Roundabout landscaping is anticipated to only include plants, ground cover and irrigation. Prior to development of 50% plans, KLJ will facilitate a meeting with the City Forester to determine scope of desired planting levels to be included in the plans.
- Section 90 Pavement Layouts
- Section 100 Work Zone Traffic Control
 - This activity includes completing the traffic control layouts with the assumption that Ash Coulee Dr. will be closed from North Washington Street to Tyler Parkway divided into a minimum of 2 phases. The phases will be separated at E. Valley Dr. with the portion of the roadway east of E. Valley Dr. having a limitation of closure only while school is out of session. Business and residential access will be accommodated.
- Section 110 Signing & Pavement Marking
- Section 140 Lighting
- Section 150 RRFB (Bolton and Menk)
- Section 170 Retaining Walls
- Section 200 Cross Sections
- Exhibit Wetlands Table
- Opinion of Construction Cost

2.3 Lighting Design

KLJ will calculate the optimized pole spacing according to AASHTO illumination and uniformity requirements. The approach will be to provide a continuation of the existing streetlighting along Ash Coulee Dr. utilizing the City of Bismarck’s preferred luminaires. The areas that will be illuminated include the roadway, roundabout, intersections, and pedestrian walkways. Design will attempt to minimize lighting pollution outside of the subject lighting area.

The lighting plans will include completed electrical design ready for bidding and construction. Electrical design will meet NEC 2020 requirements, and include utility coordination, panel location, panel layout, overcurrent protection, lighting control, wire sizing, grounding, and conduit routing as well as determining voltage drop and conduit fill requirements as required to design the lighting system.

The plan sheets will be developed using survey data gathered in Phase 1 and follow City of Bismarck Engineering Department standards. Design will include the location of the poles, conduit, pull boxes, and meter pedestals. Details will be provided on the point of service, lighting control, electrical one-line, pole foundations, poles, and luminaires. KLJ will coordinate with the local electrical service provider to ensure power can be delivered to the proposed feed point locations.

2.4 Watermain Design (Subconsultant: Bolton & Menk)

The proposed watermain improvements along Ash Coulee Dr. are necessary to provide redundant service loops and establish a separation of the existing network between Pressure Zone 3 and Zone 4. We will design and develop a 3D pipe network model of the watermain system along the corridor and connections to adjacent roadways. Plan and profile drawings will be generated showing the new and existing watermain pipe network, Zone 3 and Zone 4 connection points, and watermain detail plan sheets. To achieve this the following new watermains are expected to be installed.

- Install 16-inch Zone 3 watermain on Kites Lane from Harp Hawk Drive to Ash Coulee Drive.
- Install 16-inch Zone 3 watermain on south side of Ash Coulee Drive between Kites Lane and Golden Eagle Lane.
- Install 8-inch Zone 4 watermain on north side of Ash Coulee Dr. between Amberglow Dr/Ash Coulee Pl and E. Valley Dr.
- Install a 16-inch Zone 4 watermain on north side of Ash Coulee Dr. between E. Valley Dr. and the water tower.
- Connect both new 16-inch Zone 4 watermain and 8-inch Zone 4 watermain to existing 24-inch watermain on E. Valley Dr. south of Ash Coulee Dr.
- Install a 24-inch watermain transmission pipeline Zone 3 connection on south side of Ash Coulee Dr. at the water tower.
- Install an 8-inch watermain Zone 4 bypass in intersection of Ash Coulee Dr. and Golden Wave Dr./Eagle Crest Loop.
- Tie new 16-inch Zone 4 watermain on north side of Ash Coulee Dr. into existing 8-inch watermain on Mustang Dr/Horizon Middle School service.

2.5 Sanitary Sewer Design

KLJ will assess the ability to install the sanitary sewer at a future date and make recommendations to the City of Bismarck. This scope assumes that sanitary sewer will not be installed with this project.

2.6 Storm Sewer Design

Final Report

KLJ will evaluate the proposed storm drainage system for approximately 1.2 miles of Ash Coulee Drive and prepare a final storm water report documenting the design calculations for the project. The report will include an evaluation of the downstream drainage swales for the need of energy dissipation and erosion control. It will also evaluate the capacity of the existing detention ponds to determine if they can receive roadway runoff. The use of vegetative swales and hydrodynamic separators at discharge locations will be evaluated to determine appropriate measures to meet City water quality requirements. We will evaluate appropriate erosion mitigation measures up to 100-feet downstream of the discharge locations south of Ash Coulee Drive. A draft report will be submitted for review which will include design calculations and preliminary layouts. After comments are received and the drainage system is approved, a final report will be submitted based upon the final storm water system design.

Design and Plan Preparation

This task includes the final design of the storm water system, developing plan notes, opinion of cost, and plan preparation for the following plan sections:

- Section 50 Inlet and Manhole Summary
- Section 60 Storm Sewer Plan & Profile

2.7 Rectangular Rapid Flashing Beacon (RRFB) Design (Subconsultant: Bolton & Menk)

Bolton & Menk will complete plans for one traffic control system in front of Horizon Middle School as determined by the approved Traffic Operations Report. The system will consist of one (1) RRFB visible to traffic traveling in each direction. Three (3) additional RRFB systems will be designed at locations to be determined. The total design throughout the corridor will consist of four (4) RRFB systems. A service drop will be coordinated with Capital Electric for each RRFB.

2.8 Right-Of-Way (ROW) Acquisition

ROW Plats and Exhibits

Prepare a preliminary and final plat for the permanent acquisition parcels and easement exhibits for the temporary acquisition parcels. We assume 2 permanent acquisition parcels and 31 temporary construction easements will be required. KLJ will utilize standard City of Bismarck temporary easement documents for acquisition of temporary construction easements.

Abstracts / Title Information

KLJ will compile a listing of properties that will be affected along the project. KLJ will obtain Right of Way Owners and Encumbrance Reports from North Dakota Guarantee and Title for the permanent parcel south of the water tower. KLJ will prepare SORs for all temporary acquisition parcels and the permanent acquisition on the school property.

Market Analysis

KLJ will complete a market analysis to evaluate raw land values of parcels that require a temporary construction easement and will record recent sale values of similar properties to determine the acquisition cost of the parcel. KLJ will prepare Waiver Valuations off the market analysis.

Appraisals

KLJ will sub-consult the appraisals to Boulder Appraisal on the permanent acquisition parcels. The appraisal for the school district parcel will be authorized by the school district and City of Bismarck if it is determined that an appraisal is needed for their parcel.

Negotiations

Conduct negotiations for the permanent and temporary acquisition parcels. We anticipate that up to five in-person meetings will be provided for each permanent acquisition parcel and we anticipate one in-person meetings for each temporary acquisition parcel.

Assemble and Submit Right of Way Packets

KLJ will assemble complete packages of right of way forms and reports for each parcel and submit to the City of Bismarck.

2.9 Utility Coordination

KLJ will develop a utility conflicts special provision to include a list of conflict locations, utility companies, and contacts along with plan sheets documenting the location of the conflicts. KLJ will work with the utility companies to develop a schedule for relocation of their facilities and document that schedule in the special provision for the contractor's use in preparing a construction bid and schedule. KLJ will work with the utility companies to identify locations for potholing to determine the actual elevations of the

utility. A total of twelve utility coordination meetings are included. It is assumed that four utilities will conduct potholing, so KLJ's services include survey crew mobilizations to mark the designated pothole locations and then return to document the exposed pipeline.

2.10 Retaining Walls

KLJ anticipates that two retaining walls will be required, and the final extents are to be determined. The walls will be on the north & south side of Ash Coulee Dr. adjacent to the city water tower. This work will include structural design, layout sheets, details, plan notes, quantities, and updating the cost estimate.

KLJ anticipates two potential retaining wall types along the project depending on wall geometry: a concrete cast in place wall, and modular block wall.

KLJ will subconsult a geotechnical investigation to Terracon to determine the retaining wall base requirements, wall thickness, backfill requirements and drainage components needed for the wall.

2.11 Services During Bidding

KLJ will develop the front-end documents such as the bid form, instructions to bidders, etc. in support of the City of Bismarck's bidding process. KLJ will provide support during bidding to answer questions from the bidding contractors (RFIs), prepare addendums, review bids and provide an award recommendation.

DELIVERABLES PROVIDED BY KLJ

1. Monthly progress reports
2. Agendas and minutes for project meetings
3. 50%, 90%, and 100% design plans for project components
4. Special provisions
5. Engineer's opinion of construction cost
6. Bid form, instructions to bidders, and other documents required for bidding
7. Executed ROW documents
8. Appraisals
9. Electronic version of plan drawings and base files in Civil 3D format
10. Surface models
11. Stormwater submittals
12. USACE Permit

SERVICES NOT INCLUDED IN THIS SCOPE

1. Borrow/Waste Options
2. Environmental Clearance for Borrow/Waste sites
3. Construction Phase Services
4. Mineral Title
5. Relocation Assistance
6. Litigation and court testimony associated with any of the proposed acquisitions
7. Geotechnical services, beyond those required for wall design

Job Classification	Senior Project Manager	Project Manager	Senior Project Manager	Senior Project Manager	Engineer	Associate Engineer	Designer	Associate Engineer	CAD Technician II	Senior Engineer	Associate Engineer	Senior Engineer	Engineer	Associate Engineer	CAD Technician II	Project Assistant II	Environmental Planner II	Environmental Planner IV	Senior ROW Professional	ROW Professional	Professional Land Surveyor	Engineer	DIRECT LABOR Subtotal	REIMBURSABLE EXPENSE* Total	Subcontractor BE	KLJ's % Markup Subcontractor's Name	Subcontractor Fee	DIRECT EXPENSE2	Balance to Lump Sum or Agreed Fee	TASK TOTAL
2.1	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 8,400.00	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 14,900.00	
Labor Multiple or Sheet or Book Sheet																														
Project Management & Coordination																														
Progress Reports																														
Process Schedule																														
City Coordination Meetings																														
Team Meetings																														
Subtotal of Task 2		80	96	112	2	14	6																							
2.2	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 4,318.00	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 17,000.00	
Roadway Design																														
Roadway Geometry Modeling																														
Performance Review & Adjust																														
Roadway Geometry Modeling																														
Cross Sections																														
Title Sheet/Scope of Work/PM Cost																														
Notes																														
Basis of Estimate																														
Detail																														
Special Sections																														
Removal																														
Plan & Profiles																														
Vertical Alignment (Included in P&P)																														
Temporary Removal of Existing Curb																														
Survey Data Layout																														
Parcels Layout																														
Work Zone Traffic Control																														
Signals & Pavement Marking																														
Quantities and Orders of Cost																														
Pavement Surveys																														
Proposing Work/Order Form																														
Landscaping																														
167,000																														
50% Plan Submittal and Review																														
90% Plan Submittal and Review																														
Supplemental Design Data																														
Final Plan Submittal																														
Subtotal of Task 2		41	34	16	446	400	342	342	354																					
2.3	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 7,043.00	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 107,400.00	
Lighting Design																														
Lighting Layout & Plan Sheets																														
Lighting Analysis & Memo																														
Subtotal of Task 2		1							100																					
2.4	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 1,058.00	\$ -	\$ -	Bolton & Meek	\$ 18,099.52	\$ -	\$ -	\$ 20,097.52	
Watermain Design																														
Watermain Design																														
Subtotal of Task 2		2		16																										
2.5	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 582.00	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 182.00	
Sanitary Assessment																														
Assessment of Sanitary Sewer Need																														
Subtotal of Task 2		2		2		6																								
2.6	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 8,212.00	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 9,232.00	
Storm Sewer Design																														
Final Report																														
Design & Plan Preparation																														
Section 50 - Intl & Multiple Summary																														
Section 50 - Storm Sewer Plan & P&I																														
Subtotal of Task 2		1		64		8																								
2.7	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 252.00	\$ -	\$ -	Bolton & Meek	\$ 16,432.41	\$ -	\$ -	\$ 16,675.41	
SRFP Design																														
Task Management																														
SRFP Design and Plan Preparation																														
Subtotal of Task 2		4																												
2.8	2022	\$ 78,000	\$ 63,000	\$ 78,000	\$ 78,000	\$ 38,000	\$ 38,000	\$ 28,000	\$ 45,000	\$ 38,000	\$ 65,000	\$ 50,000	\$ 38,000	\$ 28,000	\$ 27,000	\$ 28,000	\$ 53,000	\$ 48,000	\$ 40,000	\$ 43,000	\$ 50,000	\$ 5,500.00	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 5,500.00	
Right-of-Way Acquisition																														
SRP Expense																														
Research Exhibits																														
Prepare Right of Way Documents																														
Right of Way Acquisition & EIR/MA																														
Market Analysis																														
Appraisals																														
Water Valuations																														
Acquire and Submit Right of Way Documents and Coordination																														
QCRVA																														