

WORK ORDER
PURSUANT TO AN AGREEMENT BETWEEN
THE CITY OF FORT COLLINS
AND
AECOM

DATED: October 1, 2015

Work Order Number: 4-400904300-19

Purchase Order Number:

Project Title: Vine / Lemay / BNSF

Original Bid/RFP Project Number & Name: 8134 Vine / Lemay / BNSF Contract

Commencement Date: April 12, 2019

Completion Date: August 31, 2019

Maximum Fee: (time and reimbursable direct costs): Not to Exceed \$54,954.00

Project Description: Design updates and refinements to the current plan set as well as progressing structure selection report and Geotechnical Engineering services.

Scope of Services: See Attached

Professional agrees to perform the services identified above and on the attached forms in accordance with the terms and conditions contained herein and in the Professional Services Agreement between the parties. In the event of a conflict between or ambiguity in the terms of the Professional Services Agreement and this work order (including the attached forms) the Professional Services Agreement shall control.

The attached forms consisting of **Four (4)** pages are hereby accepted and incorporated herein, by this reference, and Notice to Proceed is hereby given.

Professional

By:  _____

Date: 4/16/2019

City of Fort Collins

By:  _____
Project Manager

Date: 4/12/19

By: _____
Gerry Paul
Director of Purchasing and Risk Management
(over \$60,000.00)

Date: _____



VINE/LEMAY/BNSF
 CITY OF FORT COLLINS - Contract #8134
 Work Order 4
 Date April 8th, 2019

Task Description	Proj Mgr		Planning		Roadway		Roadway		Roadway		Structures		Drainage		Proj Mgr		Sub Total Hours	Sub Total Cost																																																																																															
	Sr. Dept Mgr.	Project Mgr	Planner II	Engineer IV	Engineer III	Engineer II	Senior PM	Engineer IV	Engineer III	Engineer II	Senior PM	Eng I	Senior PM	Engineer I	Sr. Admin	Proj Mgr																																																																																																	
A. Project Initiation and Continuing Requirements	Richer	Whitely	Keck	Keck	Bernhardt	Jaeger	Maj	Naezel	Naezel	Fuentes	Fuentes	Pebrun	Fuentes	Fuentes	Megan	Megan	80	\$	\$																																																																																														
A.1 Progress Meetings	B																8	\$ 1,980	\$																																																																																														
A.2 Meeting Minutes	9																9	\$ 1,980	\$																																																																																														
A.2 Project Management	6		B														32	\$ 3,720	\$																																																																																														
A Subtotal - Project Initiation and Continuing Requirements	23	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20	49	\$ 7,300	\$																																																																																														
B. Engineering Design																		\$	\$																																																																																														
B.1 Survey Review additional info provided by the City					4												4	\$ 520	\$																																																																																														
B.2 Roadway Engineering																	0	\$	\$																																																																																														
a. Review Design Criteria and Prioritize Exceptions					2												2	\$ 550	\$																																																																																														
b. Reverse Horizontal Alignment					18												18	\$ 3,070	\$																																																																																														
c. Simplify Typical Sections and Update 3D Model Baselines					4	80	32										116	\$ 14,020	\$																																																																																														
d. Update Grading and Earthwork					2	46											48	\$ 5,270	\$																																																																																														
e. Update Utility Impacts					2												12	\$ 1,320	\$																																																																																														
f. Prepare Final Plans					2												12	\$ 1,320	\$																																																																																														
B.3 Hydrological/Stormwater Engineering																	0	\$	\$																																																																																														
a. High-level Ditch Profile Analysis																	2	\$ 1,180	\$																																																																																														
b. High-level Storm Sewer Profile Analysis																	2	\$ 1,180	\$																																																																																														
c. Plan Development																	4	\$ 1,720	\$																																																																																														
B.4 Landscaping/Urban Design																	2	\$ 1,500	\$																																																																																														
B.5 Major Structure Design																	32	\$ 3,280	\$																																																																																														
a. Update 50% Abutment Foundation Design						12											12	\$ 7,480	\$																																																																																														
b. Preliminary BNSF Submittal						12											24	\$ 7,480	\$																																																																																														
c. Finalize Structure Selection Report																	40	\$ 6,880	\$																																																																																														
B.6 Geotechnical Investigation																	30	\$ 7,320	\$																																																																																														
B Subtotal - Engineering Design	0	3	28	14	152	52	42	24	24	110	40	40	10	46	0	0	522	\$ 64,660	\$																																																																																														
Total AECOM Hours	23	3	28	20	152	52	42	24	24	110	40	40	10	46	20	20	571																																																																																																
Total AECOM Labor	\$ 4,930	\$ 525	\$ 2,755	\$ 2,900	\$ 19,760	\$ 4,940	\$ 7,980	\$ 3,480	\$ 3,480	\$ 14,300	\$ 3,200	\$ 1,900	\$ 3,980	\$ 3,980	\$ 1,600	\$ 1,600		\$	\$																																																																																														
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Total ODCs																																																																																																																	
<table border="0" style="width: 100%;"> <tr> <td>Total AECOM Labor Cost</td> <td>\$</td> <td>71,850</td> <td colspan="16"></td> </tr> <tr> <td>ODCs</td> <td>\$</td> <td>104</td> <td colspan="16"></td> </tr> <tr> <td>Total Subconsultants Cost</td> <td>\$</td> <td>(17,000)</td> <td colspan="16"></td> </tr> <tr> <td>AECOM Credit</td> <td>\$</td> <td>54,954</td> <td colspan="16"></td> </tr> <tr> <td>Total Cost</td> <td>\$</td> <td>54,954</td> <td colspan="16"></td> </tr> </table>																			Total AECOM Labor Cost	\$	71,850																	ODCs	\$	104																	Total Subconsultants Cost	\$	(17,000)																	AECOM Credit	\$	54,954																	Total Cost	\$	54,954																
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I am a representative of AECOM Technical Services, Inc., duly authorized to contractually bind the firm. My signature below constitutes formal agreement (without further signature) to a Work Order, which is issued by the City of Fort Collins pursuant to the terms of this Task Order Proposal, without substantive change. I also declare that to the best of my knowledge the wage rates and other fiscal unit rates supporting the compensation to be paid by the City of Fort Collins for the professional services on this document are accurate, complete, and current at the time of contracting, and include no unallowable or duplicate costs.

Alan Echman
 Alan Echman
 Vice President

**WO #4
Scope of Work
8134 Vine & Lemay BNSF Improvements
50% Review Comment Incorporation**

Table of Contents

DESCRIPTION	PAGE
A. Project Initiation and Continuing Requirements	1
B. Engineering Design	2
C. Exclusions	3

INTRODUCTION

This work order defines the AECOM efforts required to incorporate the 50% plan review comments into the status plan set. The tasks associated with this work order include:

- Project Initiation and Continuing Requirements
- Engineering Design

A. PROJECT INITIATION AND CONTINUING REQUIREMENTS

As part of the continuing requirements, AECOM will perform the following:

1. **Progress Meetings.** The City's Project Manager and the AECOM Project Manager will be responsible for the day-to-day management of the Scope of Work. Specifically, the Project Managers will meet bi-weekly to cover the following:
 - Activities completed since the last meeting
 - Review of outstanding/late activities
 - Activities to be completed by the next meeting
 - Solutions proposed for unresolved and/or anticipated issues
 - Task order financial status and invoicing

Progress meetings will generally be conducted as conference-calls, however occasionally it may be coordinated that in-person meetings can be achieved. A total of 6 (1-hour) progress meetings are included in this scope. It is assumed 2 meetings will be in the City's office and the remainder will be conference calls.

The consultant will provide monthly invoices to the City Project Manager stating progress on the project tasks and highlighting any issues of concern.

Deliverables:

- Progress Meeting Minutes
- Monthly invoices

2. **Project Management.** The Consultant will coordinate the work tasks being accomplished by the entire AECOM Project Team to ensure project work completion stages are on schedule. Project staffing and assigning of tasks, scheduling and invoicing are included within this task.

B. ENGINEERING DESIGN

As part of engineering design, AECOM will perform the following activities:

1. **Survey Supplement Support.** AECOM will coordinate with the City to identify/confirm the survey design needs. Survey design will be performed by the City and provided to AECOM as noted below:
 - a. Topographic survey (to include utilities and existing right-of-way) of the following items:
 - Constructed embankment material prism north and south of Vine Drive/BNSF
 - Constructed CBC north of Vine Drive/BNSF
 - Storm drain feature locations at Lemay/Lincoln and Lemay/Buckingham intersections and the storm system from the neighborhood north of Buckingham to Lincoln
 - b. 3D existing ground surface
2. **Roadway Engineering.** AECOM will perform the following roadway engineering tasks, as noted below, to incorporate the City's 50% plan review comments into the current 50% status plans. Engineering required to advance the design further is not included in the scope but will be addressed in a future work order.

This effort includes:

- a. Design Criteria. Review design criteria application and exception list created for 50% plan submittal, and coordinate with City staff to prioritize the exceptions.
 - b. Revisions to horizontal alignment. This task includes alignment refinement at the north tie-in to achieve a higher design speed. Options discussed in the 50% review meeting will be evaluated and presented to the City for consensus.
 - c. Simplify and revise the typical section template based on 50% review comments. Update the roadway reference file, the 3D model, and the proposed design surface to reflect the revisions.
 - d. Update design of roadside grading and toes-of-slope. Revise the preliminary rough grading and earthwork quantities to reflect the embankment material placed north and south of Vine Drive/BNSF.
 - e. Apply turning templates. Use AutoTurn to test and review turning movements at the signalized intersections (Lincoln, Buckingham, Suniga) to verify intersection layout.
 - f. Plan Development. Roll plots and electronic 11x17 PDF's will be utilized for reviewing and coordinating design revisions. Roadway plan sheets will be revised to reflect updated alignment and roadway layout.
3. **Hydrology/Hydraulic Engineering.** AECOM will perform high-level profile and capacity analysis for the roadside ditches, as discussed at the 50% plan review meeting.

4. **Landscape/Urban Design.** AECOM will update the 50% landscape plans according to the revisions made to the rendering.
5. **Major Structure Design.** AECOM will finalize the abutment foundation design for the Vine Drive/BNSF Bridge to support the submittal to the BNSF Railroad.
 - a. Update 50% abutment foundation design. AECOM will evaluate and update the abutment foundation design that is current in the 50% design plans with the results of the geotechnical investigation. Design results will be included in the submittal to the BNSF Railroad.
 - b. Preliminary BNSF Railroad Submittal. AECOM will review and/or incorporate any City comments into the draft preliminary railroad support. Report will be prepared and packaged in accordance with the 2016 UPRR/BNSF RR Guidelines for Grade Separation Structures.
 - c. Finalize Structure Selection Report. AECOM will update and finalize the structure selection report to reflect the abutment foundation recommendations from CTL Thompson.
6. **Geotechnical Investigation.** Using the prior soil boring data, for the geosynthetic-reinforced-soil (GRS) abutments of the proposed bridge to carry Vine Street over Lemay Avenue, AECOM Denver geotechnical staff will:
 - a. Check bearing capacity and estimate settlement of the approach embankments.
 - b. Check 2-D global stability of the embankments (section in the direction of Vine Street).
 - c. Check internal stability of the embankments to establish reinforcement length and vertical spacing.
 - d. Assist AECOM Transportation staff, if needed, with detailing of the attachment of the proposed boulder facing to the GRS substrate.
 - e. Prepare a technical memorandum (estimated at 2-3 pages) summarizing the geotechnical analysis.

C. EXCLUSIONS

The following are not included in this scope and their inclusion is subject to a change in scope, schedule and/or fee: Value Engineering studies, survey, utility coordination and design, pot-holing, environmental, traffic engineering, phasing/MOT, SWMP, specifications, and right of way plans. These services will be provided under a separate task order as applicable. Environmental assumes FHWA/CDOT requirements are not applicable.

END OF SCOPE OF WORK