

**BOARD OF COUNTY COMMISSIONERS
COUNTY OF KITTITAS
STATE OF WASHINGTON**

RESOLUTION NO. 2013 - 105

**TO AUTHORIZE CHAIR SIGNATURE FOR THE APPROVAL OF
SUPPLEMENTAL AGREEMENT #4 WITH DAVID EVANS AND ASSOCIATES
FOR THE NELSON SIDING SAFETY IMPROVEMENT PROJECT**

WHEREAS: Kittitas County Public Works has reviewed and recommends the changes proposed by David Evans and Associates in Supplemental Agreement #4 – Nelson Siding Safety Improvement Project; and

WHEREAS: The cost changes depicted in Supplemental Agreement #4 are necessary for the overall benefit of the project; and

WHEREAS: Supplemental Agreement #4 represents the amount for additional design changes to the original agreement. The consultant agreement has a current maximum payable amount of \$886,830.29. Supplemental Agreement #4 would increase this amount by \$51,500 for a new maximum payable amount of \$930,256.28.

NOW, THEREFORE BE IT RESOLVED that the Board of County Commissioners, in the best interest of the public, does hereby authorize Chair signature of Supplemental Agreement #4 for a new maximum payable amount of \$930,256.28. This closes the design contract with David Evans and Associates for the Nelson Siding Safety Improvement Project.

DATED on this 20th day of August, 2013, at Ellensburg, Washington.

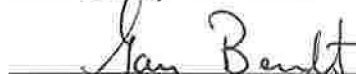
**BOARD OF COUNTY COMMISSIONERS
KITTITAS COUNTY, WASHINGTON**



Obie O'Brien, Chair



Paul Jewell, Vice-Chair



Gary Berndt, Commissioner





**Washington State
Department of Transportation**

Supplemental Agreement Number 4		Organization and Address David Evans and Associates, Inc. 1115 West Bay Drive NW, Ste. 301 Olympia, WA 98502	
Original Agreement Number		Phone: (360) 705-2185	
Project Number KTTC0000-0004	Execution Date 7/30/2013	Completion Date 12/31/2013	
Project Title Nelson Siding Road Safety Enhancement	New Maximum Amount Payable \$ 930,256.28		
Description of Work Supplement No. 4 covers additional work performed by the CONSULTANT under the direction of the COUNTY as described in the attached Scope of Work, Exhibit A-1. This work includes environmental permitting assistance, engineered profile design, retaining wall design, driveway design, and associated modifications to the bridges and stormwater facilities.			

The Local Agency of Kittitas County
desires to supplement the agreement entered into with David Evans and Associates, Inc.
and executed on 6/3/2008 and identified as Agreement No. _____
All provisions in the basic agreement remain in effect except as expressly modified by this supplement.
The changes to the agreement are described as follows:

I

Section 1, SCOPE OF WORK, is hereby changed to read:
See the attached Exhibit A-1, which describes additional work performed beyond the previous scope.

II

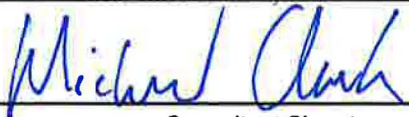
Section IV, TIME FOR BEGINNING AND COMPLETION, is amended to change the number of calendar days for completion of the work to read: The project end date is amended to be 12/31/13

III

Section V, PAYMENT, shall be amended as follows:
The new maximum amount payable is \$930,256.28, with a fixed fee total of \$83,954.99

as set forth in the attached Exhibit A, and by this reference made a part of this supplement.

If you concur with this supplement and agree to the changes as stated above, please sign in the appropriate spaces below and return to this office for final action.

By: Michael Clark, Vice President


Consultant Signature

By: Obie O'Brien


Approving Authority Signature
August 20, 2013

Date

Supplement No. 4

EXHIBIT A-1

SCOPE OF WORK

NELSON SIDING ROAD SAFETY ENHANCEMENT PROJECT

KITTITAS COUNTY, WASHINGTON

INTRODUCTION

David Evans and Associates, Inc. (CONSULTANT) provided final plans, specifications, and estimate (PS&E) on March 30, 2012, for the Nelson Siding Road Safety Enhancement Improvements project (PROJECT) to Kittitas County (AGENCY). During the development of the PS&E, CONSULTANT performed additional scope of services. The additional scope of services performed by the CONSULTANT was necessary to deliver Ad-ready PS&E by April 2012 to meet CRAB funding constraints. The majority of these changes to the scope of services resulted from permitting conditions of approval and the COUNTY's goal to keep all PROJECT improvements within the existing right of way. Following is a summary of the additional scope of service tasks performed by the CONSULTANT.

SCOPE OF SERVICES

TASK 19 Additional Environmental and Design Services

19.1 Additional Environmental Investigation and Permitting

The CONSULTANT performed approximately 20 hours additional staff time to facilitate timely environmental approval for the PROJECT and receive favorable conditions of approval. This work included coordinating with resource agencies for the Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife (WDFW), Nationwide Permit (NWP) from the U.S. Army Corps of Engineers (Corps), and managing a subconsultant to provide archaeological and cultural resources services for the PROJECT. In addition, CONSULTANT incorporated the environmental conditions of approval into the final contract special provisions.

19.2 Engineered Profile Design

The COUNTY directed CONSULTANT to perform the Optional Task 13.1(c)iii in Supplement No. 3 which creates an 'engineered profile' rather than a standard thickness overlay for Nelson Siding Road. An 'engineered profile' was necessary because the roadway construction centerline that was developed to meet 50-MPH design speeds did not match the existing pavement centerline. This shift of the horizontal centerline forced the need for HMA prelevel in many areas to create a crowned cross section, as well as superelevation of the roadway at horizontal curves to show that the minimum HMA thickness of three inches could be achieved.

The benefit of creating an engineered profile is the PROJECT horizontal and vertical centerline design can be upgraded to meet the safety objectives identified in the CRAB grant application.

Following is a summary of work performed by CONSULTANT:

- a) CONSULTANT prepared a preliminary vertical profile associated with the proposed horizontal construction centerline and incorporated into roadway plan/profile sheets.
- b) After creation of the vertical profile, CONSULTANT evaluated the cross sectional superelevation needed at the horizontal curves to meet the project design speed as well as achieve the minimum HMA thickness of three inches. A superelevation diagram was created and shown in the profile views of the roadway plan sheets.
- c) CONSULTANT prepared a three dimensional finished grade model to incorporate the vertical profile, cross sectional superelevation, and shoulder widening. The finished grade surface was used to evaluate impacts for the full length of the project. In areas where the fill slopes and associated roadside drainage ditches extended beyond the existing right of way limits and/or encroached on wetlands and streams, retaining walls were evaluated (see Task 19.3 below).
- d) CONSULTANT prepared quantity calculations for HMA pavement and roadway fill material associated with the shoulder widening work.
- e) CONSULTANT created 68 roadway cross section plan sheets identifying existing and finished grade surfaces at 50-foot intervals for use as a reference document during the bidding process.

19.3 Retaining Wall Design

The CONSULTANT performed additional services to incorporate retaining walls into the project at locations where the shoulder widening and associated fill slopes/roadside ditches extended beyond existing right of way or into sensitive areas. After evaluating the proposed finished grade model as discussed in Task 19.2, CONSULTANT identified approximately 3, 000 linear feet of retaining walls at 17 locations that would be required.

Benefits to the COUNTY for using retaining walls to avoid impacts to right of way and sensitive areas include allowing the COUNTY to meet their goal to advertise the project for construction in the spring of 2012. By meeting that schedule, the contractor is able to perform work during the 2012 in-water work period and the COUNTY is able to meet their CRAB funding timeline commitments.

The CONSULTANT performed the following work to incorporate the walls into the project contract documents:

- a) Gravity Block Walls
 - i) CONSULTANT evaluated the finished grade model to identify required wall locations and approximate height. Proposed horizontal limits of the walls were identified on the roadway plans.
 - ii) Guardrail and end treatments were identified on the roadway plans at all wall locations and quantities were calculated for the cost estimate.
 - iii) Wall profile sheets were prepared that included wall heights and locations of block elevation changes. Typical wall cross section details were created for varying wall heights.
 - iv) Quantity calculations were performed for wall surface area, wall excavation, and wall backfill.

b) **Concrete Wall at Nelson Creek**

The CONSULTANT provided additional wall design to avoid impacting the existing cross culvert at Nelson Creek or the creek itself because the creek system was not included in the environmental permitting approvals at this location. As a result of the roadway horizontal centerline shift, shoulder widening, and paving depths, it was determined that a retaining wall would be required to avoid impacts to the existing culvert as well as Nelson Creek. The standard gravity block wall section width could not be used at this location without impacting the culvert and creek, therefore an alternative wall type was proposed for this location.

CONSULTANT evaluated three wall types for optimal wall and barrier construction costs and selected a design that utilizes H-piles with a concrete panel and a cast-in-place concrete traffic barrier tied to the H-piles. CONSULTANT performed engineering calculations, created retaining wall profile and details, provided a special provision, and evaluated quantities for the cost estimate.

19.4 Driveway Design

- a) Existing Driveways: CONSULTANT created profiles for all existing driveways and side streets to determine the new slope as a result of the roadway shoulder widening and pavement depth. The first round of evaluation used a varying finished grade slope that matched in at the point of the existing driveway. If this new slope exceeded the COUNTY's maximum slope, then a proposed design profile grade was created that extended beyond the right of way limits with a slope equal to the COUNTY's maximum slope. The project improvements resulted in 26 driveways with match points that extended beyond the right of way, which were added to the Driveway Profiles sheet in the Contract Plans.
- b) Side Street Grading: CONSULTANT created design profiles for 4 side street intersections and included them in the Driveway Profiles sheets in the Contract Plans.
- c) New Driveways: The COUNTY identified three new driveways to be constructed on the project as a result of design impacts from the bridges, retaining walls, and guardrail limits. CONSULTANT provided horizontal control for the center of driveways, identified surfacing limits in the Roadway Plans, and prepared finished grade design profiles.

19.5 Bridge Modifications

As a result of incorporating an engineered roadway profile and superelevation design (see Task 19.2) at horizontal curves, the roadway cross section at the two bridges changed from a crown section to a full superelevation. CONSULTANT modified the bridge plans to reflect the change in roadway cross slope, bridge abutment elevations, and retaining wall heights at Little Creek.

19.6 Drainage Modifications

As a result of incorporating an engineered roadway profile and superelevation design (see Task 19.2) at horizontal curves and the two bridges, the stormwater treatment swales required

David Evans and Associates, Inc.
July 30, 2013

modifications. After the roadway cross slope changed from a crown section to a full superelevation section at the bridges, the treatment swales were redesigned to be at the low side of the cross slope rather than on both sides of the roadway. CONSULTANT calculated the revised roadway treatment area, modified the treatment swale lengths to accommodate the increased treatment length, and updated the Contract Plans with the new treatment swale designs.

Exhibit E - Summary of Payments

	Basic Agreement	Suppl. #1	Suppl. #2	Suppl. #3	MRF Request #1	Suppl. #4	MRF Request #2	Total
Direct Salary Cost	\$ 127,104.00	no change	no change	\$ 126,707.00	\$ 9,360.02	\$ 14,064.64	\$ 2,614.98	\$ 279,850.64
Overhead (incl. payroll additives)	\$ 227,211.00	no change	no change	\$ 226,501.43	\$ 16,731.97	\$ 25,141.95	\$ 4,674.54	\$ 500,260.89
Direct Non-Salary Costs	\$ 62,877.00	no change	no change	\$ 3,312.75	\$ -	\$ -	\$ -	\$ 66,189.75
Fixed Fee	\$ 38,131.00	no change	no change	\$ 38,012.10	\$ 2,808.01	\$ 4,219.39	\$ 784.49	\$ 83,954.99
Subtotal:	\$ 455,323.00	\$ -	\$ -	\$ 394,533.28	\$ 28,900.00	\$ 43,425.98	\$ 8,074.01	\$ 930,256.28
Management Reserve Fund				\$ 36,974.01	\$ (28,900.00)		\$ (8,074.01)	\$ (0.00)
Total	\$ 455,323.00	no change	no change	\$ 431,507.29	\$ (0.00)	\$ 43,425.98	\$ 0.00	\$ 930,256.28

Prepared: July 31, 2013
Kittitas County
Nelson Siding Road Safety Enhancement (Supplement #4)

EXHIBIT E-1
Consultant Fee Determination Summary Sheet
(Cost Plus Fixed Fee)

David Evans and Associates, Inc.				
Design Labor:				
Classification		Hrs. x	Hourly Rate	Direct Cost
Project Manager (PMGR)		56.0	\$59.00	\$3,304
Professional Engineer (PFEN)		56.0	\$50.00	\$2,800
Sr. Design Engineer (SDEN)		18.0	\$36.00	\$648
Sr. CADD Technician (SCAD)		100.0	\$32.75	\$3,275
Design Engineer (DEEN)		112.0	\$42.00	\$4,704
Sr. Scientist (SSCI)		12.0	\$38.00	\$456
Structural Manager (SMGR)		6.0	\$63.00	\$378
Sr. Bridge Engineer (SBEN)		6.0	\$80.00	\$480
CADD Technician (CADD)		27.0	\$23.50	\$635
DEA Labor Total:		393.0		\$16,680
Overhead Rate:	178.76%			\$29,816
Fee:	30.00%			\$5,004
Subtotal DSC + OH + Fee				\$51,500
DEA Design Labor & Expenses Total:				\$51,500

Management Reserve Fund	\$0
Consultant Contract Total:	\$51,500

Nelson Siding Road Safety Enhancement (Supplement #4)

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DEA Hrs