SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS

CHANGE ORDER JUSTIFICATION

CHANGE ORDER NUMBER
2
5/27/2021
Page 1 of 15

PROJECT: Index – Galena Road Flood Repair MP 6.4 – MP 6.9

PROJECT #: RC 1532, RC 1774, RR 6322 **FED AID #** ER-0701(063)

PROJECT ENGINEER: Sam Chi

WRITTEN JUSTIFICATION

1. DESCRIPTION OF CHANGE.

This is an administrative change order to adjust quantities within cost groups 1 and 2 to align with the funding participation percentages outlined in a letter dated April 27, 2018 to Renae Larsen, Assistant Local Programs Engineer with the Washington State Department of Transportation, WSDOT, Northwest Region Local Programs office. The letter addresses several concerns from Jeff Horton (FHWA) regarding betterments in the project that do not qualify for FHWA Emergency Relief Program (ER) funds. Specifically, The Diversion Berms, the 180-ft Bridge, and the Box Culvert Vented Ford. There were several bid items that did not have the correct participation assignments. This Change order corrects these quantities within the applicable Groups that do not qualify for ER funds.

2. WHAT IS REQUIRED BY CONTRACT? WHY THE CHANGE? (REFERENCE PLAN SHEETS & SPEC SECTIONS.)

This is an administrative Change Order to revise the Summary of Quantities as indicated below. These Group quantity adjustments are necessary to follow the ER fund participation percentages between Snohomish County and FHWA.

Item No.	Group No.	Item Description	Unit Meas.	Unit Price	Est. quantity
23	1	Temporary Work Access – AC4	L.S.		-0.46
23	2	Temporary Work Access – AC4	L.S.		0.46
26	1	Channel Excavation Inc. Haul	C.Y.		-839.00
26	2	Channel Excavation Incl. Haul	C.Y.		839.00
43	1	Rock for Erosion and Scour Protection Class D	Ton		18,663.00
43	2	Rock for Erosion and Scour Protection Class D	Ton		-18,663.00
66	1	Superstructure - Bridge	L.S.		-0.25
66	2	Superstructure - Bridge	L.S.		0.25
71	1	Structure Excavation Class A with Bedrock Incl. Haul	C.Y.		-186.00
71	2	Structure Excavation Class A with Bedrock Incl. Haul	C.Y.		186.00
74	1	Temporary Rock Dowel Type 1	Est.		14,720.00
74	2	Temporary Rock Dowel Type 1	Est.		-14,720.00
172	1	Rock Excavation For Shaft Incl. Haul	L.F.		-9.50
172	2	Rock Excavation For Shaft Incl. Haul	L.F.		9.50

3. HOW IS CHANGE ORDER THE SOLUTION?

This change order will assure contract payment amounts are distributed appropriately to the right funding Groups.

4. ALTERNATIVE(S) CONSIDERED.

No other alternatives have been considered.

5. REASON FOR ENTITLEMENT AND WHY IT CANNOT BE PAID UNDER EXISTING CONTRACT.

This is a no cost change, there is no entitlement for additional cost.

PROJECT: Index – Galena Road Flood Repair MP 6.4 – MP 6.9

PROJECT #: RC 1532, RC 1774, RR 6322 **FED AID #** ER-0701(063)

PROJECT ENGINEER: Sam Chi

6. APPROVALS: PROJECT MANAGER, TECHNICAL ADVISOR (TRAFFIC, STRUCTURAL), JURISDICTION, OTHER AGENCY.

Standard change order approval (Construction Manager, Engineering Services Director). WSDOT Local Programs must also approve this change.

SnoCo Design Project Manager (Larry Brewer) provided concurrence with quantity/group reassignments on May 17, 2021 and March 15, 2021 by email.

7. TIME: INCREASE OR DECREASE WORKING DAYS.

This change order does not affect contract time.

8. COST: ESTABLISH OR VERIFY INCREASE OR DECREASE. (CONTRACTOR PROPOSAL, ENGINEER'S ESTIMATE, NEGOTIATED, SUPPLIER, BID ITEM, ETC.)

This is a no cost change. Overall quantities remain the same for each bid item affected.

ATTACHED BACKUP DOCUMENTATION:

1. April 27, 2018 Memorandum from Larry Brewer (SnoCo Project Manager) to Renae Larsen (WSDOT Local Programs) regarding Index – Galena Road Betterment Cost Splitting ER0701(063), RC1532. 3 pages

2. Email concurrence from Larry Brewer (SnoCo Project Manager) regarding quantity reassignment. 5 pages

3. SOQ Revisions (Exhibit). 5 pages

Snohomish County
Public Works

MEMORANDUM

Date: April 27, 2018

To: Renae Larsen, Assistant Local Programs Engineer, NWR Local Programs, WSDOT

From: Larry Brewer, Project Manager L Brewer

Subject: Index-Galena Road Betterment Cost Splitting
ER0701(063), RC1532

Snohomish County proposes to repair Index-Galena Road between mile point 6.4 and 6.9. This project is partly funded with FHWA Emergency Relief Program (ER) funds. The intent of ER funds is to replace the damaged transportation system in-kind. The ER Program typically does not pay for betterments.

This memo will discuss and propose ER fund participation percentage for specific feature. The ER fund participation percentage described in this memo will provide guidance so that the portion of the project that is deemed a betterment is not paid for with ER funds.

Jeff Horton (FHWA) identified 3 project features proposed by the County that are betterments to some degree.

A. Diversion berms
B. 180-ft. bridge
C. Box Culvert Vented Ford (BCVF)

Three memos were developed in March 2016 (BergerAbam) that examined options and costs of these features. The estimated costs from the 2016 memos will be used to develop the participation percentages.

Diversion Berms
A diversion berm is an excavated channel or rock berm designed to deflect a potential debris slide away from the new road. The existing road did not have diversion berms in the project area. There are two proposed diversion berms.
FHWA indicated that ER funds will not participate in diversion berm work.
The estimated cost for the diversion berm is $166,600.
ER participation percentage = 0%

180-ft. Bridge
A bridge is required near the upstream end of the project to cross a stream and wetland complex that provides fish habitat. Four option were evaluated in the 2016 memo. The 72 ft. span (memo option 4) was rejected since the impact to ESA fish was great. A reduced bridge length of 145 ft. (memo option 2, concrete girder with drilled shafts) was more expensive than the 180 ft. bridge. The County proposes to build the 180 ft. bridge (steel girders with drilled shaft foundation). FHWA indicated that ER funds could be used for a bridge up to the cost of the 110 ft. bridge (concrete girders on shallow footings).

The costs are shown in the table below. The cost of option 3 (110 ft. bridge) is 75% of option 1 (180 ft. bridge). So 75% of the cost of the bridge items will be eligible for ER reimbursement, and 25% of the cost will be not be eligible for ER reimbursement.

		Cost from memo	
Minimally functional option	110' Bridge with shallow foundation	$ 2,294,000	option 3
County preferred choice	180' bridge with deep foundation	$ 3,058,000	option 1
Additional cost for betterment		$ 764,000	
	ER participation percentage =	75%	

Box Culvert Vented Ford

Mid-project the proposed road crosses a hillside stream that was also identified within a debris flow zone. Minimally a 12 ft. culvert is required to pass the design stream flow. The county proposes to install a box culvert vented ford, essentially an armored culvert with precast decking that can be removed for debris removal. FHWA indicated that ER funds would pay for the basic culvert option.

The costs are shown in the table below. The cost of the basic culvert is 54% of the BCVF. So 54% of the cost of the BCVF can be eligible for ER reimbursement, and 46% of the cost will be not be eligible for ER reimbursement.

		Cost from memo
Minimally functional option	Pipe Arch culvert	$ 681,600
County preferred choice	BCVF	$ 1,272,000
Additional cost for betterment		$ 590,400
	ER participation percentage =	54%

Tracking Costs

The project can track these costs during bidding and construction. A second funding group that excludes ER funds will be added to the Engineer' Estimate, Summary of Quantities, and proposal. Lump sum items (i.e., Bridge superstructure) can directly use agreed ER participation percentage to split the cost.

Below is a sample from the SOQ. The BCVF girders show 54% of the plan quantity in Group 1, and 46% in group 2. The lump sum split for Bridge superstructure shows 75% in group 1 and 25% in group 2.

SUMMARY OF QUANTITIES						
INDEX GALENA FLOOD REPAIR						
REGION			MP 6.4 - 6.9			
10			STATE			
			WA			
ITEM NO.	PLAN QUANTITY	UNIT	DESCRIPTION	STD ITEM NO.	Standard Spec Sect. 1-07.2 (1) GROUP 1 ER, FLAP, RAP, County	Standard Spec Sect. 1-07.2 (1) GROUP 2 FLAP, RAP, County
			STRUCTURE			
52	70	L.F.	PRESTRESSED CONCRETE GIRDER (BCVF)	4269	39	31
53	1	L.S.	SUPERSTRUCTURE - BRIDGE	4300	0.75	0.25

The construction engineering staff and contract administration staff will document the work completed in each group during construction.

CHANGE ORDER #2
05/27/2021
Justification Page 4 of 15
Attachment 1

Group 2 Items

The following items are only used in the bridge or BCVF and the appropriate ER participation percentage will be used to split the plan quantity into Groups 1 and 2.

- REMOVING SHAFT OBSTRUCTIONS
- TEMPORARY WORK ACCESS-AC4 (for BCVF)
- CONSTRUCTING 6 FT. DIAM SHAFT
- ST. REINF. BAR FOR BRIDGE
- QA SHAFT TEST
- CONC. CLASS 4000 FOR BRIDGE
- PERMEON TREATMENT
- PRESTRESSED CONCRETE GIRDER (BCVF)
- SUPERSTRUCTURE - BRIDGE
- CONC. FOR BCVF
- STEEL COST ADJUSTMENT

The following items are comingled with other work that is fully eligible for ER funds. Quantity calculations will be required to determine the quantity required for each feature before applying the appropriate participation percentage.

- CHANNEL EXCAVATION INCL. HAUL *(multiple scour protection areas, and diversion berm)*
- FILTER BLANKET *(diversion berm)*
- ROCK FOR EROSION AND SCOUR PROTECTION CLASS D *(scour protection areas, and diversion berm)*
- STRUCTURE EXCAVATION CLASS A INCL. HAUL *(BCVF, bridge, walls)*
- SHORING OR EXTRA EXCAVATION CL. A *(BCVF, bridge, walls)*
- STRUCTURE EXCAVATION CLASS A ROCK INCL. HAUL *(BCVF, bridge, walls)*

There are other work items (i.e. Mobilization, Survey,...) that may provide de minimis support of the betterment features, but those items will remain in Group 1.

End of memo.

VonAschen-Cook, Melissa

From: Brewer, Larry
Sent: Monday, May 17, 2021 5:45 PM
To: Chi, Sam; Randall, Michael
Cc: Rooney, Joseph; Dave Lindberg; Olsen, Megan
Subject: RE: IGR - ER Funding Split

Sam,

Thanks for this summary email.
I concur with proposed distributions for items 23, 26, and 71.

Larry Brewer, P.E. | Supervisor
Snohomish County Public Works | Engineering Services - Design
3000 Rockefeller Ave., M/S 607 | Everett, WA 98201
O: 425-262-2733 | larry.brewer@snoco.org

I may be working remote at this time.

NOTICE: All emails, and attachments, sent to and from Snohomish County, are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56)

From: Chi, Sam <Sam.Chi@co.snohomish.wa.us>
Sent: Monday, May 17, 2021 11:40 AM
To: Brewer, Larry <Larry.Brewer@co.snohomish.wa.us>; Randall, Michael <Michael.Randall@co.snohomish.wa.us>
Cc: Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Dave Lindberg <dlindberg@kbacm.com>; Olsen, Megan <Megan.Olsen@co.snohomish.wa.us>
Subject: FW: IGR - ER Funding Split

Larry,

Per our discussion this morning, we will be processing a no-cost administrative change order to address a handful of bid items requiring adjustment per the FHWA/SnoCo funding split memo. In addition to the 4 bid items listed in the email chain below, we've identified 3 more items. Please review and provide your concurrence for the following:

1. Bid Item 23 Temporary Work Access AC4: SOQ shows 100% to Group 1. Memo references a 54/46 participation split for this BCVF related item. Change order will re-assign LS quantity - 0.54 Group 1 and 0.46 Group 2.

2. Bid Item 26 Channel Excavation Incl. Haul: SOQ shows 1196 CY assigned to Group 2. Plan Sheets VF02 (1000 cy) and DB02 (1035 cy) have work associated with diversion berm channel grading. Memo indicates no participation for work associated with diversion berms. Propose revising Group 2 quantity to 2035 cy.

3. Bid Item 71 Structure Excavation Class A incl. Haul: SOQ shows 100% (11,979 cy) assigned to Group 1. Plan Sheet VF02 shows 405 CY associated the BCVF. Memo references a 54/46 participation split for the BCVF item. Propose applying 54% participation of 405 CY to Group 1 and the remainder to Group 2. Change order will assign 11,793 cy to Group 1 and 186 cy to Group 2.

Thanks,

Sam Chi
Snohomish County Public Works
Mobile: 425-309-8464

From: Chi, Sam
Sent: Monday, April 26, 2021 12:17 PM
To: Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Olsen, Megan <Megan.Olsen@co.snohomish.wa.us>
Cc: Dave Lindberg <dlindberg@kbacm.com>; Larmore, Brian <Brian.Larmore@co.snohomish.wa.us>
Subject: FW: IGR - ER Funding Split

Joe,

I spoke with Megan about completing an administrative change order to square up the funding split discrepancy in the SOQs, specifically with the items listed below in this email. Because this is a fed aid project, we felt it was worthwhile getting this straightened out now. I will work with Dave Lindberg to get the CO drafted.

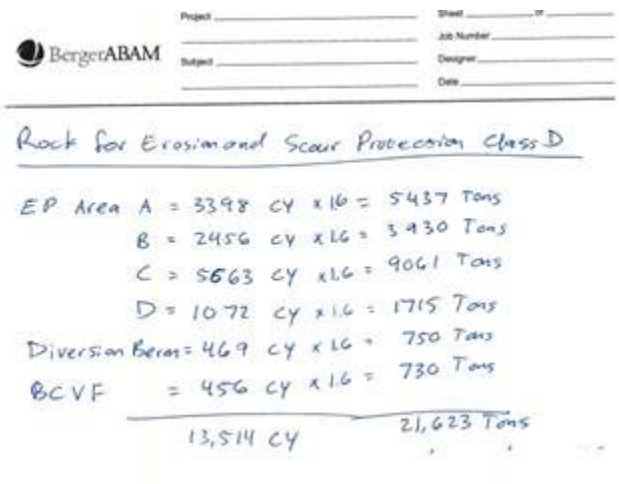
Thanks,

Sam Chi
Snohomish County Public Works
Mobile: 425-309-8464

From: Randall, Michael <Michael.Randall@co.snohomish.wa.us>
Sent: Tuesday, March 16, 2021 7:31 AM
To: Chi, Sam <Sam.Chi@co.snohomish.wa.us>; Brewer, Larry <Larry.Brewer@co.snohomish.wa.us>; Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Minyard, Nathan <Nathan.Minyard@co.snohomish.wa.us>
Cc: Olsen, Megan <Megan.Olsen@co.snohomish.wa.us>
Subject: RE: IGR - ER Funding Split

Yes, 1480 tons should be Group 2. WSP had it the other way on their estimate.

Here is their quantity calculation below:



BergerABAM

Rock for Erosion and Scour Protection Class D

EP Area A = 3398 CY x 1.6 = 5437 Tons
B = 2456 CY x 1.6 = 3930 Tons
C = 5663 CY x 1.6 = 9061 Tons
D = 1072 CY x 1.6 = 1715 Tons
Diversion Berm = 469 CY x 1.6 = 750 Tons
BCVF = 456 CY x 1.6 = 730 Tons
13,514 CY 21,623 Tons

Mike Randall, P.E. | *Engineer IV*
Snohomish County Public Works | Engineering Services
3000 Rockefeller Ave., M/S 607 | Everett, WA 98201

CHANGE ORDER #2
05/27/2021
Justification Page 7 of 15
Attachment 2

O: 425-388-6642 | C: 425-359-9268 | Michael.Randall@Snoco.org

NOTICE: All emails and attachments sent to and from Snohomish County are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56).

From: Chi, Sam <Sam.Chi@co.snohomish.wa.us>
Sent: Monday, March 15, 2021 3:29 PM
To: Brewer, Larry <Larry.Brewer@co.snohomish.wa.us>; Randall, Michael <Michael.Randall@co.snohomish.wa.us>; Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Minyard, Nathan <Nathan.Minyard@co.snohomish.wa.us>
Cc: Olsen, Megan <Megan.Olsen@co.snohomish.wa.us>
Subject: RE: IGR - ER Funding Split

Larry, Mike,

Thanks for confirming the adjustments below. One clarification to Bid Item 43, I think you meant to say that 1480 tons (associated with diversion berms) should be assigned to Group 2, not Group 1 as currently shown.

Thanks,

Sam Chi
Snohomish County Public Works
Mobile: 425-309-8464

From: Brewer, Larry <Larry.Brewer@co.snohomish.wa.us>
Sent: Monday, March 15, 2021 2:42 PM
To: Randall, Michael <Michael.Randall@co.snohomish.wa.us>; Chi, Sam <Sam.Chi@co.snohomish.wa.us>; Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Minyard, Nathan <Nathan.Minyard@co.snohomish.wa.us>
Cc: Olsen, Megan <Megan.Olsen@co.snohomish.wa.us>
Subject: RE: IGR - ER Funding Split

I agree. Thanks Mike and Sam for the clarifications.

Larry Brewer, P.E. | Supervisor
Snohomish County Public Works | Engineering Services - Design
3000 Rockefeller Ave., M/S 607 | Everett, WA 98201
O: 425-262-2733 | larry.brewer@snoco.org

CHANGE ORDER #2
05/27/2021
Justification Page 8 of 15
Attachment 2

I may be working remote at this time.

NOTICE: All emails, and attachments, sent to and from Snohomish County, are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56)

From: Randall, Michael <Michael.Randall@co.snohomish.wa.us>
Sent: Monday, March 15, 2021 1:53 PM
To: Chi, Sam <Sam.Chi@co.snohomish.wa.us>; Brewer, Larry <Larry.Brewer@co.snohomish.wa.us>; Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Minyard, Nathan <Nathan.Minyard@co.snohomish.wa.us>
Cc: Olsen, Megan <Megan.Olsen@co.snohomish.wa.us>
Subject: RE: IGR - ER Funding Split

Sam,

I agree with all of your changes. See responses below. Larry, please let us know if you have anything else to add.

1. Bid Item 43 Rock for Erosion and Scour Protection Class D: Cost splitting memo indicates diversion berms will not be eligible for ER funds. There are approximately 1500 tons associated with the diversion berms. It appears the quantities are swapped between groups 1 and 2.
   Agree with this change. Confirmed with the 100% estimate from WSP that 1,480 TONS should be in group 1.
2. Bid Item 66 Superstructure – Bridge: 25% cost split should be assigned to group 2. Agree 25% should be in group 2. There was a rounding issue on the engineers estimate excel file, the quantities rounded up to 1 and 0 rather than .75 and .25.
3. Bid Item - 74 Temporary Rock Dowel Type 1: 25% is assigned to group 2 but is not mentioned in the cost splitting memo. I agree that this work is not associated with any betterments and should be all in Group 1. See exert from Shannon and Wilson below about use of temporary rock dowels.
4. Bid Item 172 – Rock Excavation for Shaft Including Haul: 25% cost split should be assigned to group 2. This item was a late add. I agree 25% should be in group 2.

From: Andy Caneday [mailto:AJC@shanwil.com]
Sent: Thursday, April 13, 2017 1:08 PM
To: Lenn, Shawna <shawna.lenn@abam.com>; Cline, Ed <Ed.Cline@abam.com>
Cc: Johnson, Sue <Sue.Johnson@abam.com>; Mike Harney <MDH@shanwil.com>; Scott Walker <SRW@shanwil.com>
Subject: RE: Index Galena Special Provisions for 90% Submittal - Due Date Monday, April 10th

Shawna-

We do not anticipate needing permanent rock dowels for IG; however, we wanted to leave the language for permanent rock dowels in the spec in case of unforeseen conditions requiring this tool. For temporary rock dowels, we recommend using a cost of $80 per linear foot and a quantity of 400 linear feet. We removed the rock dowel grout exceedance force account language in the spec. Our ground anchor special provision is attached.

Rock dowels may be another good discussion topic for the group. We primarily see this tool being used by the contractor during temporary rock cut slope construction for the reinforced slopes. This temporary slope construction and related shoring is the responsibility of the contractor; however, we thought it would be a good idea to have some control over how and where the bolts are installed.

Mike Randall, P.E. | *Engineer IV*
Snohomish County Public Works | Engineering Services
3000 Rockefeller Ave., M/S 607 | Everett, WA 98201
O: 425-388-6642 | C: 425-359-9268 | Michael.Randall@Snoco.org

NOTICE: All emails and attachments sent to and from Snohomish County are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56).

CHANGE ORDER #2
05/27/2021
Justification Page 9 of 15
Attachment 2

From: Chi, Sam <Sam.Chi@co.snohomish.wa.us>
Sent: Monday, March 15, 2021 10:34 AM
To: Brewer, Larry <Larry.Brewer@co.snohomish.wa.us>; Randall, Michael <Michael.Randall@co.snohomish.wa.us>; Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Minyard, Nathan <Nathan.Minyard@co.snohomish.wa.us>
Cc: Olsen, Megan <Megan.Olsen@co.snohomish.wa.us>
Subject: RE: IGR - ER Funding Split

Larry, Mike,

Following this morning's meeting with Program Planning, it sounds like there were no concerns with making corrections to Groups 1 and 2 quantities to align with the FHWA funding split memo.

I will coordinate with Megan and Joe on how we will track these changes moving forward (change order, other method?), but attached are the draft adjustments pending your concurrence.

Prior to adjustments: GR 1 = $16,001,613 / GR 2 = 2,094,061

After adjustments: GR 1 = $16,708,728 / GR 2 = 1,386,946

Can you please confirm the quantity adjustments below?

Thanks,

Sam Chi
Snohomish County Public Works
Mobile: 425-309-8464

From: Chi, Sam
Sent: Friday, February 12, 2021 8:24 AM
To: Brewer, Larry (Larry.Brewer@co.snohomish.wa.us) <Larry.Brewer@co.snohomish.wa.us>; Randall, Michael <Michael.Randall@co.snohomish.wa.us>; Rooney, Joseph <Joseph.Rooney@co.snohomish.wa.us>; Minyard, Nathan <Nathan.Minyard@co.snohomish.wa.us>
Subject: IGR - ER Funding Split

Mike, Larry,

I was able to review the funding agreement with FHWA and the betterment cost splitting memo you provided for Local Programs. I have the following comments regarding the SOQs, Groups and quantities assigned.

1. Bid Item 43 Rock for Erosion and Scour Protection Class D: Cost splitting memo indicates diversion berms will not be eligible for ER funds. There are approximately 1500 tons associated with the diversion berms. It appears the quantities are swapped between groups 1 and 2.
2. Bid Item 66 Superstructure – Bridge: 25% cost split should be assigned to group 2.
3. Bid Item - 74 Temporary Rock Dowel Type 1: 25% is assigned to group 2 but is not mentioned in the cost splitting memo.
4. Bid Item 172 – Rock Excavation for Shaft Including Haul: 25% cost split should be assigned to group 2.

Joe, Nathan – I placed the funding agreement and cost splitting memo HERE in the construction project folder for your review.

Thanks,

Sam Chi | *Construction Project Engineer*
Snohomish County Public Works | Engineering Services
3000 Rockefeller Ave., M/S 607 | Everett, WA 98201
Mobile: 425-309-8464 | sam.chi@snoco.org

NOTICE: All emails, and attachments, sent to and from Snohomish County are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56)

Snohomish County

Summary of Quantities

Project Name	INDEX - GALENA ROAD FLOOD REPAIR MP 6.4 - 6.9
Project Code	RC1532,RC1774,RR6322
Estimate ID	RC1532
Region	**10**
State	**WA**

Bid Item No.	Plan Quantity	Unit	Item Description	Std. Item No.	RC1532, GP 1, SS 1-07.2(1), ER, FLAP, County	RC1774, GP 2, SS 1-07.2(1), FLAP, RAP, County	RR6322, GP 3, SS 1-07.2(1), USFS
01. PREPARATION							
1	1.00	L.S.	MOBILIZATION	0001	0.90	0.10	
2	14.50	ACRE	CLEARING AND GRUBBING	0025	14.50		
3	150,000.00	EST.	REMOVING SHAFT OBSTRUCTIONS	0256	112,500.00	37,500.00	
4	1.00	L.S.	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	0050	1.00		
5	100,000.00	EST.	REMOVAL OF MAN-MADE DEBRIS BY FA	9999	100,000.00		
6	160.00	EACH	SELECT TREE REMOVAL-COUNTY	9999	160.00		
7	94.00	EACH	SELECT TREE REMOVAL-FS	9999			94.00
8	0.00	L.S.	DELETED ITEM	9999	0.00		
02. GRADING							
9	0.00	TON	DELETED ITEM	0408	0.00		
10	18,127.00	TON	GRAVEL BORROW INCL. HAUL	0431	18,127.00		
11	4,227.00	C.Y.	SAND DRAINAGE BLANKET	9999	4,227.00		
12	47,957.00	C.Y.	EMBANKMENT COMPACTION-ROCK	9999	47,957.00		
13	12,416.00	C.Y.	EMBANKMENT COMPACTION-EARTH	9999	12,416.00		
14	9,250.00	TON	ROCK FOR ROCK EMBANKMENT INCL. HAUL	9999	9,250.00		
15	26,905.00	C.Y.	ROADWAY EXCAVATION WITH ROCK INCL. HAUL	9999	26,905.00		
16	253.00	EACH	LWD - CLASS 1	9999	253.00		
17	104.00	EACH	LWD - CLASS 2	9999	104.00		
18	27.00	EACH	LWD - CLASS 3	9999	27.00		
19	143.00	EACH	BOULDER ANCHORS	9999	143.00		
20	1.00	L.S.	TEMPORARY WORK ACCESS - AC1	9999	1.00		
21	1.00	L.S.	TEMPORARY WORK ACCESS - AC2	9999	1.00		
22	1.00	L.S.	TEMPORARY WORK ACCESS - AC3	~~9999~~	~~1.00~~		
23	1.00	L.S.	TEMPORARY WORK ACCESS - AC4	9999	~~1.00~~ 0.54	0.46	
24	1.00	L.S.	TEMPORARY WORK ACCESS - AC5	~~9999~~	~~1.00~~		
25	1.00	L.S.	TEMPORARY WORK ACCESS - RIVER CHANNEL	9999	1.00		
04. DRAINAGE							
26	4,784.00	C.Y.	CHANNEL EXCAVATION INCL. HAUL	1040	~~3,588.00~~ 2,749.00	~~1,196.00~~ 2,035.00	
27	615.00	TON	FILTER BLANKET	~~1066~~		~~615.00~~	
28	2,200.00	TON	ROCK FOR EROSION AND SCOUR PROTECTION CLASS A	0921	2,200.00		
29	1,823.00	TON	QUARRY SPALLS	1086	1,823.00		
30	1.00	L.S.	TEMPORARY STREAM DIVERSION - BCVF	3075	1.00		
31	1.00	L.S.	TEMPORARY STREAM DIVERSION - CULVERT 4	3075	1.00		
32	1.00	L.S.	TEMPORARY STREAM DIVERSION - CULVERT 5	3075	1.00		
33	1.00	L.S.	TEMPORARY STREAM DIVERSION - CULVERT 8	3075	1.00		

LARRY EDWARD BREWER
STATE OF WASHINGTON
36437
REGISTERED
PROFESSIONAL ENGINEER

1-28-2021

Reviewed and Approved for Construction:

Douglas W. McCormick, P.E.
County Engineer
Snohomish County Public Works

1/28/2021
Date Approved

CHANGE ORDER #2
05/27/2021
Justification Page 11 of 15
Attachment 3

Snohomish County

Summary of Quantities

34	1.00	L.S.	TEMPORARY STREAM DIVERSION - CULVERT 9	3075	1.00		
35	1.00	L.S.	TEMPORARY STREAM DIVERSION - CULVERT 12	3075	1.00		
36	1.00	L.S.	TEMPORARY STREAM DIVERSION - CULVERT 13	3075	1.00		
37	1.00	L.S.	TEMPORARY STREAM DIVERSION - CULVERT 14	3075	1.00		
38	1.00	L.S.	TEMPORARY STREAM DIVERSION - BRIDGE	3075	1.00		
39	95.00	L.F.	PLAIN ALUM. CULV. PIPE 10 GAGE 24 IN. DIAM.	9999	95.00		
40	445.00	L.F.	PLAIN ALUM. CULV. PIPE 10 GAGE 36 IN. DIAM.	9999	445.00		
41	110.00	L.F.	PLAIN ALUM. CULV. PIPE 10 GAGE 48 IN. DIAM.	9999	110.00		
42	30.00	DAY	FISH EXCLUSION	9999	30.00		
43	21,623.00	TON	ROCK FOR EROSION AND SCOUR PROTECTION CLASS D	9999	~~1,480.00~~ 20143.00	~~20,143.00~~ 1480.00	
44	150.00	TON	ROCK FOR EROSION AND SCOUR PROTECTION CLASS E	9999	150.00		
45	320.00	TON	TWO MAN ROCK - MIN 24 IN	9999	320.00		
46	49.00	L.F.	AL. PIPE ARCH 10 GAGE 42X29	9999	49.00		
47	70.00	L.F.	AL. PIPE ARCH 10 GAGE 49X33	9999	70.00		
48	208.00	L.F.	AL. PIPE ARCH 10 GAGE 57X38	9999	208.00		
49	64.00	L.F.	AL. PIPE ARCH 10 GAGE 71X47	9999	64.00		
50	1.00	L.S.	CONCRETE HEADWALL - CULVERT 8	9999	1.00		
51	1.00	L.S.	CONCRETE HEADWALL - CULVERT 9	9999	1.00		
52	1.00	L.S.	CONCRETE HEADWALL - CULVERT 10	9999	1.00		
53	1.00	L.S.	CONCRETE HEADWALL - CULVERT 12	9999	1.00		
54	1.00	L.S.	CONCRETE HEADWALL - CULVERT 13	9999	1.00		
55	1.00	L.S.	CONCRETE HEADWALL - CULVERT 14	9999	1.00		
56	10,000.00	EST.	ADDITIONAL EXCAVATION FOR DRAINAGE STRUCTURE	9999	10,000.00		
08. STRUCTURE							
57	1.00	L.S.	SHORING OR EXTRA EXCAVATION CL. A	4013	0.96	0.04	
58	220.00	C.Y.	GRAVEL BACKFILL FOR WALL	4025	220.00		
59	346.00	L.F.	CONSTRUCTING 6 FT. DIAM SHAFT	4087	260.00	86.00	
60	19,000.00	LB.	ST. REINF. BAR FOR BRIDGE	4149	14,250.00	4,750.00	
61	79,000.00	LB.	ST. REINF. BAR FOR BCVF	4151	42,660.00	36,340.00	
62	4.00	EACH	QA SHAFT TEST	4160	3.00	1.00	
63	216.00	C.Y.	CONC. CLASS 4000 FOR BRIDGE	4322	162.00	54.00	
64	70.00	L.F.	PRESTRESSED CONC. GIRDER	4269	38.00	32.00	
65	654.00	S.Y.	PERMEON TREATMENT	4196	490.50	163.50	
66	1.00	L.S.	SUPERSTRUCTURE - BRIDGE	4300	~~1.00~~ 0.75	0.25	
67	40.00	L.F.	SEW TRAFFIC BARRIER	4119	40.00		
68	10,443.00	S.F.	STRUCTURAL EARTH WALL	7169	10,443.00		
69	233.00	S.Y.	BRIDGE APPROACH SLAB	5656	233.00		
70	13,770.00	C.Y.	STRUCTURE EXCAVATION CLASS A WITH ROCK INCL. HAUL	9999	13,770.00		
71	11,979.00	C.Y.	STRUCTURE EXCAVATION CLASS A WITH BEDROCK INCL. HAUL	9999	~~11,979.00~~ 11,793.00	186.00	
72	640.00	C.Y.	CONC. FOR BCVF	9999	346.00	294.00	
73	62.00	L.F.	POURED RUBBER JOINT SEALER	9999	33.00	29.00	
74	32,000.00	EST.	TEMPORARY ROCK DOWEL TYPE 1	9999	~~17,280.00~~ 32,000	~~14,720.00~~ 0.00	
09. SURFACING							
75	7,050.00	TON	RAILROAD BALLAST	9999	7,050.00		
76	6,364.00	TON	CRUSHED SURFACING BASE COURSE	5100	6,364.00		

LARRY EDWARD BREWER
STATE OF WASHINGTON
36437
REGISTERED
PROFESSIONAL ENGINEER

1-28-2021

Reviewed and Approved for Construction:

Douglas W. McCormick, P.E.
County Engineer
Snohomish County Public Works

1/28/2021
Date Approved

CHANGE ORDER #2
05/27/2021
Justification Page 12 of 15
Attachment 3

Snohomish County

Summary of Quantities

77	-1.00	CALC	AGGREGATE COMPLIANCE CREDIT	9999	-1.00		
14. HOT MIX ASPHALT							
78	93.00	S.Y.	PLANING BITUMINOUS PAVEMENT	5711	93.00		
79	3,964.00	TON	HMA CL. 1/2 IN. PG 58H-22	5767	3,964.00		
80	8,000.00	CALC	ASPHALT COST PRICE ADJUSTMENT	5837	8,000.00		
81	-1.00	CALC	JOB MIX COMPLIANCE CREDIT	9999	-1.00		
82	-1.00	CALC	COMPACTION COMPLIANCE CREDIT	9999	-1.00		
17. EROSION CONTROL AND ROADSIDE PLANTING							
83	110.00	DAY	ESC LEAD	6403	110.00		
84	28,160.00	S.Y.	PLASTIC COVERING	6464	28,160.00		
85	420.00	L.F.	CHECK DAM	6463	420.00		
86	555.00	S.Y.	STABILIZED CONSTRUCTION ENTRANCE	6468	555.00		
87	24,519.00	L.F.	COMPOST SOCK	6500	24,519.00		
88	200,000.00	EST.	EROSION/WATER POLLUTION CONTROL	6490	200,000.00		
89	6.00	ACRE	TEMPORARY SEEDING	6491	6.00		
90	0.70	ACRE	TOPSOIL TYPE A	6407	0.70		
91	3.60	ACRE	TOPSOIL TYPE B	6408	3.60		
92	411.00	EACH	PSIPE - ACER MACROPHYLLUM (BIG-LEAF MAPLE), 2 GAL	6552	411.00		
93	620.00	EACH	PSIPE - ALNUS RUBRA (RED ALDER), 2 GAL	6552	620.00		
94	278.00	EACH	PSIPE - AMELANCHIER ALNIFOLIA (SERVICEBERRY), 2 GAL	6552	278.00		
95	246.00	EACH	PSIPE - FRANGULA PURSHIANA (CASCARA), 2 GAL	6552	246.00		
96	213.00	EACH	PSIPE - POPULUS BALSAMIFERA SSP TRICHOCARPA (BLACK COTTONWOOD), 2 GAL	6552	213.00		
97	1,258.00	EACH	PSIPE - PSEUDOTSUGA MENZIESII (DOUGLAS-FIR), 2 GAL	6552	1,258.00		
98	15.00	EACH	PSIPE - SALIX LASIANDRA (PACIFIC WILLOW), 2 GAL	6552	15.00		
99	2.00	EACH	PSIPE - TAXUS BREVIFOLIA (PACIFIC YEW), 2 GAL	6552	2.00		
100	1,171.00	EACH	PSIPE - THUJA PLICATA (WESTERN RED CEDAR), 2 GAL	6552	1,171.00		
101	454.00	EACH	PSIPE - TSUGA HETEROPHYLLA (WESTERN HEMLOCK), 2 GAL	6552	454.00		
102	5,038.00	EACH	PSIPE - ACER CIRCINATUM (VINE MAPLE), PLUG	6552	5,038.00		
103	764.00	EACH	PSIPE - GAULTHERIA SHALLON (SALAL), PLUG	6552	764.00		
104	3,166.00	EACH	PSIPE - OEMLARIA CERASIFORMUS (INDIAN PLUM), PLUG	6552	3,166.00		
105	2,328.00	EACH	PSIPE - RIBES BRACTEOSUM (STINK CURRANT), PLUG	6552	2,328.00		
106	9,596.00	EACH	PSIPE - RUBUS PARVIFLORUS (THIMBLEBERRY), PLUG	6552	9,596.00		
107	7,548.00	EACH	PSIPE - RUBUS SPECTABILIS (SALMONBERRY), PLUG	6552	7,548.00		
108	255.00	EACH	PSIPE - RUBUS URSINUS (CALIFORNIA BLACKBERRY), PLUG	6552	255.00		
109	6,830.00	EACH	PSIPE - SAMBUCUS RACEMOSA (RED ELDERBERRY), PLUG	6552	6,830.00		
110	51.00	EACH	PSIPE - VACCINIUM ALASKENSE (ALASKA BLUEBERRY), PLUG	6552	51.00		
111	305.00	EACH	PSIPE - VACCINIUM PARVIFOLIUM (RED HUCKLEBERRY), PLUG	6552	305.00		
112	740.00	EACH	PSIPE - ACER CIRCINATUM (VINE MAPLE), 2 GAL	6552	740.00		
113	352.00	EACH	PSIPE - CORNUS SERICEA (REDOSIER DOGWOOD), 2 GAL	6552	352.00		
114	135.00	EACH	PSIPE - MALUS FUSCA (OREGON CRAB APPLE), 2 GAL	6552	135.00		
115	388.00	EACH	PSIPE - OEMLARIA CERASIFORMUS (INDIAN PLUM), 2 GAL	6552	388.00		
116	130.00	EACH	PSIPE - RIBES BRACTEOSUM (STINK CURRANT), 2 GAL	6552	130.00		
117	857.00	EACH	PSIPE - RUBUS PARVIFLORUS (THIMBLEBERRY), 2 GAL	6552	857.00		
118	971.00	EACH	PSIPE - RUBUS SPECTABILIS (SALMONBERRY), 2 GAL	6552	971.00		
119	31.00	EACH	PSIPE - RUBUS URSINUS (CALIFORNIA BLACKBERRY), 2 GAL	6552	31.00		

LARRY EDWARD BREWER
STATE OF WASHINGTON
36437
REGISTERED
PROFESSIONAL ENGINEER

1-28-2021

Reviewed and Approved for Construction:

Douglas W. McCormick, P.E.
County Engineer
Snohomish County Public Works

1/28/2021
Date Approved

CHANGE ORDER #2
05/27/2021
Justification Page 13 of 15
Attachment 3

Snohomish County

Summary of Quantities

120	527.00	EACH	PSIPE - SAMBUCUS RACEMOSA (RED ELDERBERRY), 2 GAL	6552	527.00		
121	54.00	EACH	PSIPE - VACCINIUM PARVIFOLIUM (RED HUCKLEBERRY), 2 GAL	6552	54.00		
122	6,816.00	EACH	PSIPE - CORNUS SERICEA (REDOSIER DOGWOOD), LIVE STAKE	6552	6,816.00		
123	635.00	EACH	PSIPE - SALIX LASIANDRA (PACIFIC WILLOW), LIVE STAKE	6552	635.00		
124	24.00	EACH	PSIPE - ATHYRIUM FILIX-FEMINA (COMMON LADY FERN), 1 GAL	6552	24.00		
125	2,755.00	EACH	PSIPE - POLYSTICHUM MUNITUM (SWORD FERN), PLUG	6552	2,755.00		
126	78.00	EACH	PSIPE - POLYSTICHUM MUNITUM (SWORD FERN), 2 GAL	6552	78.00		
127	6.30	ACRE	MEDIUM COMPOST	6481	6.30		
128	60,000.00	EST.	WEED AND PEST CONTROL	6545	60,000.00		
129	3.60	ACRE	BARK OR WOOD CHIP MULCH	6579	3.60		
130	8,800.00	L.F.	HIGH VISIBILITY FENCE	6630	8,800.00		
131	13,400.00	L.F.	HIGH VISIBILITY SILT FENCE	6635	13,400.00		
132	78,000.00	S.Y.	BIODEGRADABLE EROSION CONTROL BLANKET	6455	78,000.00		
133	1,900.00	S.Y.	FIREWEED SEEDING	9999	1,900.00		
18. TRAFFIC							
134	4,015.00	L.F.	BEAM GUARDRAIL TYPE 31	6757	4,015.00		
135	4.00	EACH	BEAM GUARDRAIL TRANSITION SECTION TYPE 21	6760	4.00		
136	565.00	L.F.	BEAM GUARDRAIL TYPE 31 - 9 FT. LONG POST	6712	565.00		
137	13.00	EACH	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	6719	13.00		
138	1.00	L.F.	BEAM GUARDRAIL ANCHOR TYPE 10	6766	1.00		
139	142.00	L.F.	CAST-IN-PLACE CONC. BARRIER	6777	142.00		
140	70.00	EACH	FLEXIBLE GUIDE POST	6832	70.00		
141	15,300.00	L.F.	PAINT LINE	6806	15,300.00		
142	1.00	HUND	RAISED PAVEMENT MARKER TYPE 2YY	6884	1.00		
143	1.00	L.S.	PERMANENT SIGNING	6890	1.00		
144	1.00	L.S.	PROJECT TEMPORARY TRAFFIC CONTROL	6971	1.00		
145	80.00	S.F.	CONSTRUCTION SIGNS CLASS A	6982	80.00		
146	300.00	L.F.	GUARDRAIL BCVF	9999	162.00	138.00	
19. OTHER ITEMS							
147	1.00	L.S.	TYPE B PROGRESS SCHEDULE	7003	1.00		
148	12,360.00	S.F.	SHORING OR EXTRA EXCAVATION CLASS B	7008	12,360.00		
149	1.00	L.S.	STRUCTURE SURVEYING	7037	1.00		
150	1.00	L.S.	ROADWAY SURVEYING	7038	1.00		
151	800.00	HR	TRAINING	7400	800.00		
152	80,000.00	EST.	ROADSIDE CLEANUP	7480	80,000.00		
153	1.00	L.S.	SPCC PLAN	7736	1.00		
154	1.00	L.S.	FIELD OFFICE BUILDING	7500	1.00		
155	4,200.00	S.Y.	CONSTRUCTION GEOTEXTILE FOR SEPARATION	7530	4,200.00		
156	6,373.00	C.Y.	GRAVEL BORROW FOR STRUCTURAL EARTH WALL INCL. HAUL	7567	6,373.00		
157	320.00	TON	GRAVEL BACKFILL FOR DRAIN	9999	320.00		
158	22,600.00	CALC	FUEL COST ADJUSTMENT	9999	22,600.00		
159	8,000.00	CALC	STEEL COST ADJUSTMENT	9999	6,000.00	2,000.00	
160	9,804.00	C.Y.	EROSION PROTECTION EXCAVATION INCL. HAUL	9999	9,804.00		
161	2,010.00	S.F.	SHORING OR EXTRA EXCAVATION FOR EROSION PROTECTION	9999	2,010.00		
162	30,531.00	S.F.	GEOSYNTHETIC REINFORCED SLOPE	9999	30,531.00		

LARRY EDWARD BREWER
STATE OF WASHINGTON
36437
REGISTERED
PROFESSIONAL ENGINEER

1-28-2021

Reviewed and Approved for Construction:

Douglas W. McCormick, P.E.
County Engineer
Snohomish County Public Works

1/28/2021
Date Approved

CHANGE ORDER #2
05/27/2021
Justification Page 14 of 15
Attachment 3

Snohomish County

Summary of Quantities

163	23,503.00	C.Y.	BORROW FOR GEOSYNTHETIC REINFORCED SLOPE INCL. HAUL	9999	23,503.00		
164	100.00	C.Y.	SALVAGED CHANNEL EXCAVATION MATERIAL	9999	100.00		
165	40.00	DAY	IN-WATER WORK WATER QUALITY MONITORING	9999	40.00		
166	140,000.00	EST.	SLOPE ADJUSTMENT	9999	140,000.00		
167	12.00	EACH	BOULDER BARRIER	9999	12.00		
168	40,000.00	EST.	DISPUTES REVIEW BOARD	9999	40,000.00		
169	12.00	EACH	PROGRESS SCHEDULE UPDATES	9999	12.00		
170	4.00	EACH	UTV SIDE X SIDE TRANSPORT	9999	4.00		
171	22.00	EACH	CONC. MONUMENT WITH CASE AND COVER	9999	22.00		
172	38.00	L.F.	ROCK EXCAVATION FOR SHAFT INCLUDING HAUL	4009	~~38.00~~ 28.50	9.50	
173	650.00	L.F.	COIR LOG	6502	650.00		

LARRY EDWARD BREWER
STATE OF WASHINGTON
36437
REGISTERED
PROFESSIONAL ENGINEER

1-28-2021

Reviewed and Approved for Construction:

Douglas W. McCormick, P.E.
County Engineer
Snohomish County Public Works

1/28/2021
Date Approved

CHANGE ORDER #2
05/27/2021
Justification Page 15 of 15
Attachment 3