

Scott Boettcher

From: Trent Lougheed <tlougheed@ci.chehalis.wa.us>
Sent: Thursday, March 23, 2017 8:29 AM
To: Scott Boettcher
Subject: FW: Bishop Road culvert
Attachments: Bishop Road Narrative.docx; Bishop Road Preliminary Estimate.xlsx

Scott,

A couple of representatives from WSDOT met with the City Manager and myself regarding the Rice Road Culvert Replacement Grant Application, and concerns they had for benefit/cost analysis at this location. Understanding their concerns, they indicated that they would support work within the stream that provided benefit to more people/property, and the Bishop Road crossing seems to fit that bill better for them.

Attached is a cost estimate and very brief narrative of the Scope of the project, so if the Flood Authority will allow, the City of Chehalis would like to replace the Rice Road project with Bishop Road.

Trent

P.S. WSDOT does agree that improvements are needed at the Rice Road crossing as well, but maybe further analysis and alternatives can be looked at in the future.

From: Patrick Skillings [mailto:pskillings@skillings.com]
Sent: Tuesday, March 14, 2017 4:02 PM
To: Trent Lougheed
Subject: Bishop Road culvert

Good afternoon Trent,

Due to the fact that WSDOT won't support the culvert replacement at Rice Road, we identified the crossing at Bishop Road to be the next best candidate. I have attached the project narrative and engineer's estimate for the replacement of the culvert at Bishop Road. Did you need us to complete any additional paperwork or application? Also, do you want to see the hydraulic calcs that were used to develop estimate?

Regards,
Patrick

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Bishop Road – Dillenbaugh Creek Culvert Replacement

Project Narrative

The current Dillenbaugh Creek culvert under Bishop Road is a double 10' wide by 6.5' tall, bottomless, box culvert. It is undersized and does not pass 25-100 year rain events efficiently. This project will replace the box culvert with a new culvert that is 12.5' long, 68' deep, with a 25' span that will pass a 25 year flood at a 1% grade. There may still be some flooding at the 100 year flood. These criteria are Washington State Department of Transportation (WSDOT) hydraulic design standards for culvert design.

The construction cost estimate is based on the 12.5' long, 68' deep, with a 25' span culvert being replaced at its current location. This estimate assumes removing the existing culvert full depth and width, then constructing the new culvert within that excavation. A full closure of Bishop Road will be required during this excavation period, necessitating a detour route east down Maurin Road.

Total project length is estimated at 300 feet. The Lewis County Rural Road Design Standard of a 40' roadway, 12' foot lanes with 8 foot shoulders is assumed, as is the standard roadway section of 0.30' hot mix asphalt surface, 0.20' crushed surfacing top course, and 0.80' crushed surfacing base course. Unit prices for the calculated item quantities utilize the latest WSDOT bid results. The cost per square foot for the new structure was calculated from unit costs for preliminary design in the WSDOT Bridge Design Manual.

The design and construction engineering estimates at 20% are standard for a project of this type and include the environmental processes as well.

Rice Road
Dillenbaugh Creek Culvert Replacement
Construction Estimate

Item No.	Quantity	Unit	Item	Unit Cost	Total Cost
PREPARATION					
1	1	LS	Mobilization	\$110,000.00	\$110,000.00
2	1.5	ACRE	Clearing and Grubbing	\$10,000.00	\$15,000.00
3	2500	SY	Removing Asphalt Pavement	\$13.00	\$32,500.00
4	1	LS	Remove Existing Culvert	\$20,000.00	\$20,000.00
5	700	LF	Remove Existing Guardrail	\$3.25	\$2,275.00
6	2	EACH	Remove Exisitn GR Anchor	\$200.00	\$400.00
GRADING					
7	500	CY	Unsuitable Exc Incl Haul	\$10.00	\$5,000.00
8	5000	CY	Select Borrow Incl Haul	\$20.00	\$100,000.00
STRUCTURE					
9	5000	CY	Structure Exc Class A Incl Haul	\$25.00	\$125,000.00
10	1	LS	Shoring or Extra Exc Class A	\$5,000.00	\$5,000.00
11	1000	CY	Gravel Backfill for Foundation Cl A	\$40.00	\$40,000.00
12	3300	SF	Concrete Box Culvert	\$150.00	\$495,000.00
SURFACING					
13	300	TON	Crushed Surfacing Top Course	\$25.00	\$7,500.00
14	900	TON	Crushed Surfacing Base Course	\$25.00	\$22,500.00
HOT MIX ASPHALT					
15	500	TON	HMA Cl 1/2 Inch PG 64-22	\$85.00	\$42,500.00
EROSION CONTROL AND PLANTING					
16	30	DAY	ECS Lead	\$100.00	\$3,000.00
17	50	CY	Topsoil Type B	\$8.00	\$400.00
18	1.5	ACRE	Seeding and Mulching	\$5,000.00	\$7,500.00
19	500	LF	Check Dam	\$15.00	\$7,500.00
20	500	LF	Wattle	\$5.00	\$2,500.00
21	2600	LF	Silt Fence	\$6.00	\$15,600.00
22	1	EST	Erosion/Water Pollution Control	\$20,000.00	\$20,000.00
TRAFFIC					
23	750	LF	Beam Guardrail Type 1	\$40.00	\$30,000.00
24	2	Each	Beam Guardrail Terminal	\$2,500.00	\$5,000.00
25	1	LS	Detour Signing	\$10,000.00	\$10,000.00
26	1000	LF	Paint Line	\$0.25	\$250.00
27	1	LS	Project Temp Traffic Control	\$20,000.00	\$20,000.00

Rice Road
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Construction Estimate

OTHER ITEMS						
28	1	LS	Type B Progress Schedule		\$5,000.00	\$5,000.00
29	1		Roadway Surveying		\$5,000.00	\$5,000.00
30	1	EST	Roadside Cleanup		\$10,000.00	\$10,000.00
31	1	LS	Trimming and Cleanup		\$5,000.00	\$5,000.00
32	1	LS	SPCC Plan		\$500.00	\$500.00

Total less Mobilization	\$1,059,925.00
Mobilization = 8%	\$84,794.00
use	\$110,000.00

Construction Estimate	\$1,169,925.00
Construction Contingency 30%	\$350,977.50
Subtotal Construction	\$1,520,902.50
Sales Tax @ 8.0%	\$121,672.20

TOTAL CONSTRUCTION	\$1,642,574.70
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Design Engineering 20%	\$328,514.94
Construction Engineering 20%	\$328,514.94

TOTAL PROJECT COST	\$2,299,604.58
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GRANT REQUEST	\$2,299,604.58
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