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Change Record

Contract Number 009151	Contract Title I-90, Floating Bridges Replace Anchor Cables	Federal Aid Number NHPP-0901(497)
Change Order Number 14	Change Description Lakebed Sediment Changed Cond.	Date Jan 22, 2019
Region Northwest Region	Project Engineer Dave Lindberg, P.E.	Phone Number 425-225-8725
Prime Contractor / Design-Builder American Bridge Company		

- Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications or the
- Change proposed by Contractor / Design-

Evolution & Description Of Change

Attached for review and further processing is PE recommended Change Order No. 14. This change order provides for added Work and delay costs due to clay-like material found at the eyebars of Anchor Cables 90/25S-G-S, 90/25S-I-S, 90/25S-L-S and 90/25S-M-S that was not specified in the Contract Documents. This change order directs the Contractor to remove the clay-like material from the eyebars of each cable and re-sequence Work as necessary to minimize impacts to the project schedule.

The Contract provides for the replacement of 32 anchor cables on the I-90 Floating Bridges and specifies that the cable-to-eyebars connections of Cables 90/25S-G-S, 90/25S-I-S, 90/25S-L-S and 90/25S-M-S were buried in mud or riprap. On June 5, 2018 during excavation at Anchor Cables 90/25S-G-S, 90/25S-I-S, 90/25S-L-S and 90/25S-M-S, the Contractor discovered that the eyebars connections were buried under a clay-like material instead of soft silt or ballast rock as indicated in the Contract. The clay-like material was not easily removed by water jetting.

The Contractor notified the WSDOT Construction Office of the Differing Site Condition (DSC) in a letter dated June 6, 2018. On June 18, 2018, WSDOT directed the Contractor to continue with the removal of the clay-like material using hand removal and water jetting, the same method used for soft silt. Removal of the clay-like material by water jetting took 14 days longer than was planned for the material specified in the Contract. This resulted in eight days of idled crews and equipment rentals and two added days to re-sequence Work for the Contractor's main cable replacement barge, which is on the critical path.

On September 10, 2018, HQ Construction concurred with the Contractor's claim of a DSC at the eyebars connections of Cables 90/25S-G-S, 90/25S-I-S, 90/25S-L-S and 90/25S-M-S.

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*PLSCE 2/4/19*

Distribution By:

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Region

- Original of Change Records & Change Order w/Backup - State Construction Office

Contract Number 009151	Contract Title I-90, Floating Bridges Replace Anchor Cables	Change Order Number 14
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**Basis of Cost & Justification:**

New item "CO#14 Lakebed Sediment Changed Cond." will be paid at the agreed lump sum amount of \$938,737.28. This shall be full pay for all labor, equipment, materials and associated costs necessary to perform the Work. Please see the narrative below and attached estimate for the basis and justification of costs.

Water jetting at G-S began on May 24, 2018 and took five (5) days during which the main barge crew held on-site for safety purposes. The Contractor's equipment was configured to remove silt and not the clay-like material, which resulted in reduced efficiency. The Contractor ceased excavation on May 31, 2018 to re-sequence the Work until a means to proceed was determined. On June 4 and 5, 2018, the Contractor resumed excavating at G-S utilizing divers and a ROV crew to remove the remaining material by hand.

Water jetting at I-S began on June 1, 2018. The main barge crew was held on-site for one day since replacing G-S would have resulted in weekend Work, and WSDOT had not yet authorized schedule recovery. On June 5, 2018, the Contractor anticipated reaching the eyebar at I-S, but the DSC resulted in idle time for the Subcontractor scheduled to move the excavation barge. On June 6, 2018, the excavation Subcontractor determined the eyebar excavation at I-S to be complete after four days of water jetting. On June 7, 2018, the diving Subcontractor conducted an underwater inspection at I-S and discovered that more water jetting was needed, which took place June 12 through June 14, 2018, concurrent with the replacement of P-S and O-S.

Water jetting at L-S began on June 7, 2018 and took three days. After the main barge crew was held on-site for two days during excavation of L-S, the Contractor re-sequenced Work to replace P-S and O-S which required accelerating a shipment of cables to arrive on June 11, 2018. The main barge crew worked one additional day, June 9, to move and reconfigure the barge and one additional day, June 11, to receive the cable shipment. Water jetting at M-S began June 15, 2018 and took three days. Between the four cables, 18 days of water jetting were required, but only four days were planned. In total, the DSC resulted in 10 added days of critical path Work for the main barge crew and 14 added days of water jetting. Please see attached schedule analysis.

**Contract Time:**

The 10 added days of critical path were recovered in Change Order No. 7R1, "Schedule Recovery", which only paid the difference in labor costs for the Contractor to work added Saturdays or Sundays versus a weekday. CO#7R1 did not pay for the 10 added days of labor and equipment costs incurred by this change order. As a result, an extension of time will not be granted as a result of this change order.

**Prior Approvals:**

Kevin Waligorski, Assistant State Construction Engineer, gave his approval on September 10, 2018.  
Cathy Arnold, NWR Engineering Manager, gave her approval on December 10, 2018.  
Dave Lindberg, Project Engineer, gave his approval on September 10, 2018.

**List Attachments:**

Schedule Analysis  
Checklist  
Estimate  
Approvals

**Distribution By:**

**Project Office**

Copy of Change Records & Change Order w/Backup - Project Engineer  
Copy of ONLY Change Order - Prime Contractor / Design-Builder  
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Original of Change Records & Change Order w/Backup - Region Construction Office

**Region**

Original of Change Records & Change Order w/Backup - State Construction Office

# Contract 009151 CHANGE ORDER NO. 14 TIME IMPACT ANALYSIS

**LAKEBED SEDIMENT CHANGED CONDITION**  
Prepared by Brendan Byron  
Based on Contractor's Approved CPM

DAY	CABLES (CRITICAL)	EYEBAR EXCAVATION
Monday, May 21, 2018	C-S Replacement	No Work
Tuesday, May 22, 2018	C-S Replacement	No Work
Wednesday, May 23, 2018	C-S Replacement	No Work
1 Thursday, May 24, 2018	DELAY - Crew Standby	G-S Excavation
2 Friday, May 25, 2018	DELAY - Crew Standby	G-S Excavation
Saturday, May 26, 2018	No Work	
Sunday, May 27, 2018	No Work	
Monday, May 28, 2018	Memorial Day	
3 Tuesday, May 29, 2018	DELAY - Crew Standby	G-S Excavation
4 Wednesday, May 30, 2018	DELAY - Crew Standby	G-S Excavation
5 Thursday, May 31, 2018	DELAY - Crew Standby	G-S Excavation
6 Friday, June 1, 2018	DELAY - Crew Standby*	I-S Excavation
Saturday, June 2, 2018	No Work	
Sunday, June 3, 2018	No Work	
Monday, June 4, 2018	G-S Replacement	I-S Excavation
Tuesday, June 5, 2018	G-S Replacement	I-S Excavation
Wednesday, June 6, 2018	G-S Replacement	I-S Excavation
7 Thursday, June 7, 2018	DELAY - Crew Standby	L-S Excavation
8 Friday, June 8, 2018	DELAY - Crew Standby	L-S Excavation
9 Saturday, June 9, 2018	Added Barge Move to P-S	No Work
Sunday, June 10, 2018	No Work	
10 Monday, June 11, 2018	P-S & O-S Delivery	L-S Excavation
Tuesday, June 12, 2018	P-S Replacement	I-S Excavation
Wednesday, June 13, 2018	P-S Replacement	I-S Excavation
Thursday, June 14, 2018	O-S Replacement	I-S Excavation
Friday, June 15, 2018	O-S Replacement	M-S Excavation
Saturday, June 16, 2018	No Work	
Sunday, June 17, 2018	No Work	
Monday, June 18, 2018	I-S Replacement	M-S Excavation
Tuesday, June 19, 2018	I-S Replacement	M-S Excavation

KEY	
Work Included in Baseline =	
Added Excavation =	
Added Critical Path Work =	
No Work =	

\* Main barge crew was on standby because WSDOT had not yet authorized schedule recovery to install new cables

**ADDED CRITICAL PATH WORK = 10 DAYS**

**ADDED EXCAVATION = 14 DAYS**

**CONTRACT TIME FOR ADDED CRITICAL PATH WORK ADDRESSED IN CHANGE ORDER NO. 7R1 "SCHEDULE RECOVERY".**


**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
CHANGE ORDER**

DATE: 12/12/18  
Page 1 of 3

CONTRACT NO: 009151 FEDERAL AID NO: NHPP-0901(497)  
 CONTRACT TITLE: I-90, FLOATING BRIDGES REPLACE ANCHOR CABLES  
 CHANGE ORDER NO: 14 LAKEBED SEDIMENT CHANGED COND.



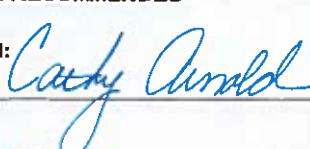
PRIME CONTRACTOR: SW0230778 AMERICAN BRIDGE COMPANY  
 1390 WILLOW PASS RD  
 SUITE 330  
 CONCORD CA 94520-5250

- Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications  
 Change proposed by Contractor

ENDORSED BY:  _____ CONTRACTOR 12/12/18 _____ DATE	SURETY CONSENT: _____ ATTORNEY IN FACT _____ DATE
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ORIGINAL CONTRACT AMOUNT: 5,755,000.00  
 CURRENT CONTRACT AMOUNT: 7,607,047.35  
 ESTIMATED NET CHANGE THIS ORDER: 938,737.28  
 ESTIMATED CONTRACT TOTAL AFTER CHANGE: 8,545,784.63

Approval Required:  Region  Olympia Service Center  Local Agency

<input checked="" type="checkbox"/> APPROVAL RECOMMENDED  PROJECT ENGINEER 1/22/19 _____ DATE	<input type="checkbox"/> EXECUTED EXECUTED:  STATE CONSTRUCTION ENGINEER J. CUTHBERTSON 02/06/2019 _____ DATE
<input checked="" type="checkbox"/> APPROVAL RECOMMENDED REGIONAL ADMIN:  BY: _____ 1-28-19 _____ DATE	<input type="checkbox"/> EXECUTED OTHER APPROVAL WHEN REQUIRED _____ SIGNATURE _____ DATE _____ REPRESENTING _____

**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
CHANGE ORDER**

DATE: 12/12/18  
Page 2 of 3

CONTRACT NO: 009151

CHANGE ORDER NO: 14

All work, materials, and measurements to be in accordance with the provisions of the Standard Specifications and Special Provisions for the type of construction involved.

This contract is revised as follows:

**DESCRIPTION**

This change order provides for added Work and delay costs due to a Differing Site Condition, clay-like material, found at the eyebars of Anchor Cables 90/25S-G-S, 90/25S-I-S, 90/25S-L-S and 90/25S-M-S.

**CONSTRUCTION REQUIREMENTS**

The Contractor shall remove clay-like material surrounding the eyebars of Anchor Cables 90/25S-G-S, 90/25S-I-S, 90/25S-L-S and 90/25S-M-S and re-sequence Work as necessary to minimize impacts to the project schedule.

**MEASUREMENT AND PAYMENT**

New item "CO#14 Lakebed Sediment Changed Condition" shall be paid at the agreed lump sum amount of \$938,737.28. This shall be full pay for all labor, equipment, materials and associated costs necessary to perform the Work.

**CONTRACT TIME**

Contract time has been addressed in Change Order No. 7R1, "Schedule Recovery". As a result, it is mutually agreed that an extension of time will not be granted as a result of this change order.

**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
CHANGE ORDER**

DATE: 12/12/18  
Page 3 of 3

<b>CONTRACT NO: 009151</b>	<b>CHANGE ORDER NO: 14</b>
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ITEM NO	GROUP NO	STD ITEM	ITEM DESCRIPTION	UNIT MEASURE	UNIT PRICE	EST QTY CHANGE	EST AMT CHANGE
1016	01		CO#14 LAKEBED SEDIMENT CHANGED CONDITION	L.S.	0.00	938,737.28	938,737.28

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938,737.28  
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Change Order Checklist

Cont. No. : 009151 Cont. Title: I-90, Floating Bridges Replace Anchor Cables  
 C.O. No.: 14 C.O. Title: Lakebed Sediment Changed Cond.

I. Executed by the State Construction Office		Yes	No	
1.	Cost or credit equal to or exceeding \$500,000. *1, *3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If yes, State
2.	Change in the contract documents beyond the scope, intent, or termini of the original contract. *2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Construction Office
3.	Any proposed revision or deletion of work that affects the Condition of Award requirements. (Must be coded "CO" in CCIS, Includes changes to goal or commitment)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Approval Required.
4.	Change in contract time greater than 30 working days, or a change in contract time not related to any change order. *1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
II. Executed by the Region (Per Delegation)		Yes	No	
5.	Determination of impacts and/or overhead.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, State
6.	Change to Contract Provisions or Standard Plans.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Construction Office
7.	Material or product substitution. (Excludes materials associated with Std. Specification Sections 6-07, 8-01, 8-02, 8-12, 8-18, & 8-20)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Approval Required.
8.	Structural design change in the roadway section. (Requires concurrence from designer)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9.	Determination of changed condition. (Section 1-04.7 of the Standard Specifications)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10.	Settlement of a claim. (Section 1-09.11(2) of the Standard Specifications)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
11.	Repair of Damage regarding "acts of God" or "acts of the public enemy or of government authorities". (Section 1-07.13 of the Standard Specifications)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12.	Structural change to structures.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Approvals obtained: Project Engineer: Dave Lindberg, P.E. Date: 9/10/2018  
 Region: Cathy Arnold, P.E. Date: 12/10/2018  
 State Construction Office: Kevin Waligorski, P.E. Date: 9/10/2018  
 Other (Local Agency, FHWA, Surety, etc.): \_\_\_\_\_ Date: \_\_\_\_\_

To be completed by the Project Engineer:

CO reason(s) (See "2008 Codes and Definitions" on State Construction Office web page): MP-01, CC, AW  
 Change Order Prepared by: Brendan Byron Date: 1/17/2019

Is this project under full FHWA stewardship oversight?\*1  Yes  No

To be completed by the Region:

Is the change eligible for Federal participation where applicable?  Yes  No  
 Change Order Reviewed by: Candy Masterson Date: 1/28/19

\*1. Change (Cost or Credit) greater than \$200,000 or greater than 30 days on Full Federal Stewardship Oversight requires FHWA approval [See Construction Manual Ch. 1.2.4C(3), Ch 1-3.4]

\*2. Per RCW 47.28.050, any change beyond \$7,500 that is beyond the original scope shall go through the competitive bidding process.

\*3. Engineering error changes over \$500,000 require reporting (See reporting instructions and template on State Construction Office web page)

This form represents the minimum information required by the State Construction Office. If you wish to supplement this information, you may do so on a separate sheet of paper.



Cont. No. : 009151

Cont. Title: I-90, Floating Bridges Replace Anchor Cables

C.O. No.: 14

C.O. Title: Lakebed Sediment Changed Cond.

<b>III. Executed by the Region Engineering Manager</b>			
13. Cost or credit equaling or greater than \$100,000 but less than \$500,000.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
14. Change in contract time between 10 and 30 working days, or a change in contract time not related to any change order.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Has design documentation been updated?  Yes  No

Checklist prepared by (Project Field Office): Brendan Byron Date: 1/17/2019

Change Order reviewed by (Project Field Office): Dave Lindberg Date: 1/22/2019

<b>Clearances:</b>		
Design/Technical Lead	Name: _____	Date: _____
Maintenance	Name: _____	Date: _____
Agreements?	Name: _____	Date: _____
Local Agency Coordination?	Name: _____	Date: _____
Other? _____	Name: _____	Date: _____



**Contract 009151  
CHANGE ORDER NO. 14  
ESTIMATE - SUMMARY**

**Lakebed Sediment Changed Cond.  
Prepared by Brendan Byron**

Item Description	Total
Prime Contractor Labor	\$243,255.84
Excavation Barge Equipment	\$182,097.55
Main Barge Equipment	\$172,821.02
Subcontractor AUS	\$107,516.84
Subcontractor Global Diving & Salvage	\$180,245.97
Subcontractor Westar Marine	\$22,528.29
	WSDOT Independent Estimate \$908,465.51
	Contractor's Cost Proposal \$938,737.28
	Percent Difference 3.33%
	<b>Total Agreed Amount \$938,737.28</b>

<b>Total Amount This Change Order</b>	<b><u>\$938,737.28</u></b>
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**Assumptions:**

Prime Contractor and Subcontractor Labor, Equipment, Material and Service costs for the additional Work to remove the clay-like material were tracked by record of protested work according to Standard Specifications Section 1-04.5. WSDOT checked the Contractor's pricing against invoices, subcontract agreements, Rental Rate Blue Book equipment rates and approved force account wage rates, which are assumed to be correct, and found the Contractor's pricing to be consistent with these documents. Please see the following estimate sheets for further detail.

**Contract 009151  
CHANGE ORDER NO. 14  
COST ESTIMATE**

**Lakebed Sediment Changed Cond.  
Prepared by Brendan Byron**

PRIME CONTRACTOR LABOR										
Labor Classification	Qty	Days	ST	OT	DT	Unit	ST	OT	DT	Total
<b>Excavation Barge</b>										
Superintendent - Carpenter	1	14	8.0	2.0	2.5	HOUR	\$81.76	\$112.89	\$144.02	\$17,358.74
Journeyman - Carpenter	2	14	8.0	2.0		HOUR	\$68.07	\$92.35		\$20,419.28
Operator 1AA	2	14	8.0	2.0		HOUR	\$73.05	\$97.86		\$21,843.36
Operator 2	2	14	8.0	2.0		HOUR	\$71.02	\$94.81		\$21,217.84
<b>Main Barge</b>										
Superintendent - Carpenter	1	10.0	8.0	--	--	HOUR	\$81.76	\$112.89	\$144.02	\$6,540.80
Foreman - Carpenter	1	10.0	8.0	--	--	HOUR	\$72.96	\$99.70	\$126.44	\$5,836.80
Journeyman - Carpenter	8	10.0	8.0	--	--	HOUR	\$68.07	\$92.35	\$116.64	\$43,564.80
Apprentice Carpenter 2	1	10.0	8.0	--	--	HOUR	\$51.09	\$66.88	\$82.68	\$4,087.20
Apprentice Carpenter 3	1	10.0	8.0	--	--	HOUR	\$53.52	\$70.53	\$87.54	\$4,281.60
Apprentice Carpenter 8	1	10.0	8.0	--	--	HOUR	\$65.67	\$88.76	\$111.84	\$5,253.60
Operator 1AA	2	10.0	8.0	--	--	HOUR	\$73.05	\$97.86	\$122.67	\$11,688.00
Operator 2	2	10.0	8.0	--	--	HOUR	\$71.02	\$94.81	\$118.60	\$11,363.20
Operator 4	2	10.0	8.0	--	--	HOUR	\$67.47	\$89.49	\$111.51	\$10,795.20
Operator Apprentice	1	10.0	8.0	--	--	HOUR	\$54.00	\$69.29	\$84.57	\$4,320.00
ABC Labor & Standby Subtotal										\$188,570.42
29% Markup on Labor										\$54,685.42
<b>ABC Labor &amp; Standby Total</b>										<b>\$243,255.84</b>

**Assumptions:**

Prime Contractor Labor rates and hours worked were checked against the Contractor's certified payrolls, which are assumed to be correct. For the Contractor's main barge, two 10-person crews were stationed on the barge for 8 hours on each added day of critical path Work. For the Contractor's excavation barge, it is assumed that a crew of 7 worked 10 hours per day, with the exception of the superintendent who worked 12.5 hours per day. A markup of 29% is included on Prime Contractor Labor according to Standard Specifications Section 1-09.6.

**Contract 009151**  
**CHANGE ORDER NO. 14**  
**COST ESTIMATE**  
**Lakebed Sediment Changed Cond.**  
**Prepared by B. Byron**

<b>EXCAVATION BARGE AND EQUIPMENT</b>					
<b>Description</b>	<b>Days</b>	<b>Qty</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total</b>
<b>Excavation Barge</b>					
Generator 70-84 KVA	14	1	EACH	\$221.92	\$3,106.88
Tank Fuel 500-550 Gal w/ Pump	14	1	EACH	\$37.50	\$525.00
Tank Fuel 500-550 Gal w/ Pump	14	1	EACH	\$75.00	\$1,050.00
Deck Sheaves (4 each)	14	1	EACH	\$38.54	\$539.56
10' Container 4	14	1	EACH	\$16.45	\$230.30
20' Container 2	14	1	EACH	\$25.10	\$351.40
Porta Johns (4 each plus servicing)	14	1	EACH	\$40.63	\$568.82
Light Tower Towable Small	14	1	EACH	\$30.65	\$429.10
Light Tower Towable Small	14	1	EACH	\$30.65	\$429.10
3900W Vicon Manitowoc Crawler Crane	14	1	EACH	\$5,968.12	\$83,553.68
110x54 Deck Barge	14	1	EACH	\$1,212.30	\$16,972.20
Faileads (4 each)	14	1	EACH	\$71.57	\$1,001.98
M50-3-86-2 PullMaster Winch (4 each)	14	1	EACH	\$607.56	\$8,505.84
Cat C4.4 Power Unit (2 each)	14	1	EACH	\$715.13	\$10,011.82
6600lb Delta Flipper Anchors (2 each)	14	1	EACH	\$66.06	\$924.84
42" Steel Ball Buoy (2 each)	14	1	EACH	\$13.76	\$192.64
Specialist Jetting Equipment	14	1	EACH	\$550.00	\$7,700.00
TAX	14	--	L.S.	\$1,028.62	\$14,400.68
Subtotal Prime Contractor Equipment					\$150,493.84
21% Markup on Equipment					\$31,603.71
<b>Total Prime Contractor Equipment</b>					<b>\$182,097.55</b>

**Assumptions:**

Prime Contractor Excavation Barge Equipment rates were verified with the Rental Rate Blue Book, whose rates are assumed to be accurate. Costs include rental rates for all rented equipment on the excavation barge, crane operating costs and operating costs for equipment that runs regardless of whether crews are working (generators, etc.) Operating costs are NOT included for "Specialist Jetting Equipment", which are instead included in the shift rates for subcontractor Global Diving & Salvage. One day of equipment costs is included for every day of added excavation. A markup of 21% is included on equipment costs per Standard Specifications Section 1-09.6.

# Contract 009151

## CHANGE ORDER NO. 14

### ESTIMATE

Allow Horizontal Socketing  
Prepared by Brendan Byron

MAIN BARGE AND EQUIPMENT					
Description	Unit	Qty	Days	Unit Price	Total
Generator 70-84 KVA	EACH	1	10	\$89.30	\$893.00
Flexi Floats (2 each)	EACH	1	10	\$140.00	\$1,400.00
Flexi Float Cleats (6 each)	EACH	1	10	\$10.50	\$105.00
Generator 180-199 KVA	EACH	2	10	\$255.00	\$5,100.00
Misc. Bulk Inventory Equipment	EACH	1	10	\$18.75	\$187.50
Cable Tail 6/4 Female	EACH	2	10	\$0.50	\$10.00
Cable Banded 5 Wire 50'	EACH	2	10	\$9.00	\$180.00
Cable Tail 6/4 Male	EACH	2	10	\$0.50	\$10.00
Tank Fuel 251-300 Gal	EACH	1	10	\$18.60	\$186.00
Tank Fuel 500-550 Gal w/ Pump	EACH	4	10	\$37.50	\$1,500.00
Generator 19-29 KVA Tier 4	EACH	1	10	\$56.70	\$567.00
Cable 6/4 100' Length	EACH	2	10	\$6.00	\$120.00
Cable 6/4 50 Amp 50'	EACH	1	10	\$3.00	\$30.00
600 Amp Multi Panel	EACH	1	10	\$18.75	\$187.50
Male Plug 60 AMP 3 Wire 4 Pole	EACH	1	10	\$1.50	\$15.00
UTV 4WD DSL 4 Seat ROPS	EACH	1	10	\$38.90	\$389.00
Compressor 175-195 CFM Tier 4	EACH	1	10	\$26.15	\$261.50
Air Hose 3/4" X 50'	EACH	1	10	\$2.00	\$20.00
Rental - Tool Communication	EACH	1	10	\$80.20	\$802.00
Wire Feeder WCC In-Line Lead	EACH	1	10	\$37.50	\$375.00
Welder ARC 500 AMP Gas/Diesel	EACH	1	10	\$31.70	\$317.00
Welder Lead 50' Stinger and Ground	EACH	1	10	\$2.45	\$24.50
Welder Lead 50' Extra	EACH	1	10	\$3.10	\$31.00
Tripod Rescue Package	EACH	1	10	\$40.00	\$400.00
Trailer Tilt 8'-14' up to 7k Single	EACH	1	10	\$20.00	\$200.00
Crane Fork Attachment	EACH	1	10	\$17.50	\$175.00
4000 Manitowoc Crawler Crane	EACH	1	10	\$2,562.00	\$25,620.00
180x54 Deck Barge	EACH	1	10	\$1,399.50	\$13,995.00
KRS Skiff	EACH	1	10	\$150.00	\$1,500.00
KRS Anchors (3 each)	EACH	1	10	\$135.00	\$1,350.00
Crane Mats (10 Each)	EACH	1	10	\$75.00	\$750.00
Small Crew Boat	EACH	1	10	\$200.00	\$2,000.00
Large Crew Boat	EACH	1	10	\$450.00	\$4,500.00
Deck Sheaves (4 each)	EACH	2	10	\$40.00	\$800.00
10' Container 1	EACH	1	10	\$14.95	\$149.53
10' Container 2/3/4	EACH	3	10	\$14.95	\$448.58
20' Container	EACH	2	10	\$22.82	\$456.40
Porta Johns (4 each plus servicing)	EACH	2	10	\$32.00	\$640.00
Porta Sink	EACH	1	10	\$14.85	\$148.50
6" Emergency Pump	EACH	1	10	\$77.25	\$772.50
6" Discharge Hose	EACH	1	10	\$5.00	\$50.00
25,000 Beebe Winches (7 each)	EACH	1	10	\$630.00	\$6,300.00
HUL40 Air Tugger Winch	EACH	1	10	\$42.50	\$425.00
AB Power Reelers	EACH	1	10	\$1,000.00	\$10,000.00
AB Skiff	EACH	1	10	\$111.25	\$1,112.50
Light Tower Towable Small	EACH	2	10	\$27.50	\$550.00
3900W Vicon Manitowoc Crawler Crane	EACH	1	10	\$3,609.75	\$36,097.50
110x54 Deck Barge	EACH	1	10	\$772.00	\$7,720.00
Faileads (4 each)	EACH	1	10	\$16.25	\$162.50
M50-3-86-2 PullMaster Winch (4 each)	EACH	1	10	\$360.00	\$3,600.00
Cat C4.4 Power Unit (2 each)	EACH	1	10	\$425.00	\$4,250.00
6600lb Delta Flipper Anchors (2 each)	EACH	1	10	\$60.00	\$600.00
42" Steel Ball Buoy (2 each)	EACH	1	10	\$12.50	\$125.00
Van - 15 Passenger	EACH	1	10	\$75.00	\$750.00
Truck Pickup 1/2 Ton 4x4 Crew Cab	EACH	1	10	\$48.40	\$484.00
Truck Pickup - F-150	EACH	2	10	\$36.75	\$735.00
Truck Pickup - F-250	EACH	1	10	\$36.75	\$367.50
TAX	L.S.	--	--	--	\$2,883.79
Subtotal					\$142,827.29
21% Markup for Equipment					\$29,993.73
Total Equipment Cost					\$172,821.02

**Assumptions:**

Prime Contractor Main Barge Equipment rates were verified with the Rental Rate Blue Book. Costs include rental rates for all rented equipment on the main barge as well as operating costs for equipment that runs regardless of whether the crews are working (generators, etc.) One day of equipment costs is included for each day of added critical path work. A markup of 21% is included on equipment costs per Standard Specifications Section 1-09.6.

**Contract 009151  
CHANGE ORDER NO. 14  
COST ESTIMATE**

**Lakebed Sediment Changed Cond.  
Prepared by Brendan Byron**

<b>SUBCONTRACTOR ASSOCIATED UNDERWATER SERVICES (AUS)</b>				
<b>Item Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total</b>
<b>Labor</b>				
Deep Dive Shift at G-S (12 hours)	1.0	EACH	\$21,785.00	\$21,785.00
Deep Dive OT at G-S (4 hours)	1.0	EACH	\$12,578.33	\$12,578.33
ROV Shift at G-S (12 hours)	2.0	EACH	\$3,920.00	\$7,840.00
3 Person Diving (Standby Shift, 1 per day of delay)	10.0	DAYS	\$3,820.00	\$38,200.00
			<b>Subcontractor AUS Subtotal</b>	<b>\$80,403.33</b>
			21% Markup on Services	\$16,884.70
			12% Prime Markup (up to \$25,000.00)	\$3,000.00
			10% Prime Markup (\$25,000.00 to \$100,000.00)	\$7,228.80
			<b>Subcontractor AUS Total</b>	<b>\$107,516.84</b>

**Assumptions:**

Subcontractor Associated Underwater Services (AUS) provided divers, diving equipment and remote operated vehicle (ROV) crews for use during the underwater replacement of anchor cables. The Subcontractor also performed lakebed excavation using hand tools in places where clay-like material was encountered.

Costs for Subcontractor AUS are based on the Contractor's subcontract agreement and were checked against the Subcontractor's certified payrolls, which are assumed to be correct. For AUS main barge standby, it is assumed that one 3-person diving crew was stationed on the main barge for 8 hours on each day of added critical path Work. The added deep dive and ROV shifts account for hand excavation carried out on June 4 and June 5, 2018. Deep dive overtime (4 hours) was calculated by dividing the 12-hour 8-person mixed gas overtime dive rate by 3.

Since the subcontract agreement includes both Labor and Equipment costs, AUS shifts are treated as Services for this estimate resulting in a 21% markup according to Standard Specifications Section 1-09.6. A markup to the Prime Contractor of 12% to the first \$25,000.00 and 7% thereafter is added according to Standard Specifications Section 1-09.6.

**Contract 009151  
CHANGE ORDER NO. 14  
COST ESTIMATE**

**Lakebed Sediment Changed Cond.  
Prepared by Brendan Byron**

<b>SUBCONTRACTOR GLOBAL DIVING &amp; SALVAGE</b>				
<b>Item Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total</b>
<b>Services &amp; Materials</b>				
ROV Shift (12 hours)	3.0	EACH	\$4,075.00	\$12,225.00
ROV Shift (10 hours)	17.0	EACH	\$3,550.00	\$60,350.00
Excavation Crew (12 hours)	3.0	EACH	\$3,525.00	\$10,575.00
Excavation Crew (10 hours)	17.0	EACH	\$3,000.00	\$51,000.00
Wire Rope (Invoice No. 222200)	-	L.S.	-	\$495.00
Air Tuggers (Invoice No. 21922)	-	L.S.	-	\$1,870.00
			<b>Services &amp; Materials Subtotal</b>	<b>\$136,515.00</b>
			21% Markup on Services & Materials	\$28,668.15
			12% Prime Markup (up to \$25,000.00)	\$3,000.00
			10% Prime Markup (\$25,000.00 to \$100,000.00)	\$7,500.00
			7% Prime Markup (\$100,000.00+)	\$4,562.82
			<b>Subcontractor Global Diving &amp; Salvage Total</b>	<b>\$180,245.97</b>

**Assumptions:**

Subcontractor Global Diving & Salvage performed water jetting excavation at anchor locations where the eyebar is covered in sediment. The Subcontractor also provided a remote operated vehicle (ROV) crew to monitor water jetting operations.

Costs for Subcontractor Global Diving & Salvage were based on the Contractor's subcontract agreement and checked against the Subcontractor's certified payrolls, which are assumed to be correct. Global Diving & Salvage worked three (3) 12-hour and seventeen (17) 10-hour shifts throughout the 14 days of added water jetting excavation. Each shift consisted of one ROV Crew and one Excavation Crew. The excavation required additional wire rope and air tuggers for added positioning control so the jetting nozzle could be close enough to the lakebed to break up the substrate.

Since the subcontract agreement includes both Labor and Equipment costs, Global Diving & Salvage shifts are treated as Services for this estimate resulting in a 21% markup according to Standard Specifications Section 1-09.6. A markup of 12% to the Prime Contractor for the first \$25,000.00, 10% for the next \$75,000.00 and 7% thereafter is added according to Standard Specifications Section 1-09.6.



