Washington State Department of Transportation

Change Record

Contract Number	Contract Title	Federal Aid Number
9419	Lacamas Creek Bridge Replacement	#STBG-0506(004)
Change Order Number	**Change Description**	**Date**
001	Differing Site Conditions	Jul 8, 2020
Region	**Project Engineer**	**Phone Number**
Southwest Region	Colin Newell	360-740-8600
Prime Contractor / Design-Builder		
Farline Bridge, Incorporated		

☐ Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications or the RFP

☒ Change proposed by Contractor / Design-Builder

Evolution & Description Of Change

The Contractor encountered differing site conditions during construction of the 6 foot diameter shafts at piers 1 and 2 of Bridge NO. 506/106, this encounter resulted in revisions to plan sheets BR5, BR6, and BR35 and this change order. Highly Weathered Sandstone at approximately the 40 foot elevation at pier 1 and 30 foot elevation at pier 2 was found to be described as Differing Site Conditions, defined by Standard Specification 1-04.7. WSDOT recognizes the differing site condition as a preexisting subsurface condition encountered on the project, differing materially from what was indicated in the contract.

This change order compensates the Contractor for the added work resulting from a differing site condition encountered while installing shafts for Bridge NO. 506/106. This work is described below.

This change order is to compensate the Contractor for costs borne by differing site conditions described as follows: Constructing 5.5 ft. diam. shaft, force account for differing site condition additional cost, additional erosion control and water pollution prevention, WSDOT reimbursement of salvaged steel from 6 ft. diam. shafts and costs associated with stranded direct costs of labor, equipment and materials.

Constructing 5.5 ft. diam. shaft includes materials, equipment, mobilization and demobilization of equipment, labor for building beds required for tying rebar cages, drilling and pouring shafts at piers, breaking down and loading materials used for constructing tying beds, Engineering services for shaft cage construction, rock to backfill subgrade at piers, dump fees for excavated shaft materials and for dewatering at piers.

Force account for differing site condition additional cost includes labor, equipment and materials, utilized by the subcontractor for slower production rates, The prime is compensated for assisting the sub-contractor during this time, rental of falsework, baker tanks and equipment identified on this change orders justification of cost sheets.

Additional erosion control and water pollution prevention needed during the period of time the Contractor was required to perform environmental work for permit compliance, includes materials, equipment and labor used by the prime for compliance of permits.

This change order creates the following new item:

"Cost via Differing Site Conditions"

Washington State Department of Transportation

Change Record

Contract Number	Contract Title	Change Order Number
9419	Lacamas Creek Bridge Replacement	001

Basis of Cost & Justification:

This change order is to provide lump sum payment to the Contractor for added work to this contract. The independent Engineers Estimate of $673,839.00 conducted by WSDOT staff supports the agreed upon price of $673,839.00 paid in this change order. The Contractor is entitled to the additional compensation, as this is added work to the contract per Standard Specification 1-04.4.

The net cost to the contract is estimated at $673,839.00.

Please see attached cost justification.

Contract Time:

This change order adds an additional 15 working days to the contract time. Of the additional working days 12 are for time spent constructing 5.5 ft. diam. shaft and 3 days for force account - differing site condition additional cost, the added work was a continuation of critical path work. The Contractors request for additional working days was evaluated in accordance with section 1-08.8 of the Standard Specifications.

Prior Approvals:

Colin Newell, P.E., Chehalis Area Engineer, gave his approval for this change order on February 25, 2020.
Chris Tams, P.E., WSDOT Southwest Region Construction Engineer, gave approval on February 25, 2020.
Neal Uhlmeyer, P.E., WSDOT HQ Construction Engineer, gave approval on February 25, 2020.

List Attachments:

P.E. approval, Region Construction Engineer approval, Construction Engineer approval.
Revised and added plan sheets.
Cost justification with Vertex Calendar of work items and letter describing cost by Wes Anderson.
Change Order Check List.

Distribution: Copy of Change Record & Change Order w/Backup - Project Engineer
Copy of ONLY Change Order - Prime Contractor / Design-Builder
Copy of Change Record & Change Order w/Backup - Region Construction Office
Electronic Copy & Original of Change Record & Change Order w/Backup - State Construction Office

CONTRACT NO: 009419 FEDERAL AID NO:STBG-0506(004)
CONTRACT TITLE: SR 506, LACAMAS CREEK BRIDGE REPLACEMENT
CHANGE ORDER NO: 1 DIFFERING SITE CONDITIONS

PRIME CONTRACTOR: SW0251037 FARLINE BRIDGE, INCORPORATED
1455 MILLER DR
97383-9431
STAYTON OR 97383-0149

( )Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications

(X)Change proposed by Contractor

ENDORSED BY: Farline Bridge Inc.	SURETY CONSENT: Liberty Mutual Insurance Company
Joey Walczak (Jul 2, 2020 14:33 PDT)	Ty Moffett (Jul 2, 2020 14:35 PDT)
CONTRACTOR SIGNATURE	ATTORNEY IN FACT
Jul 2, 2020	Jul 2, 2020
DATE	DATE

ORIGINAL CONTRACT AMOUNT:	3,238,905.33
CURRENT CONTRACT AMOUNT:	3,582,384.35
ESTIMATED NET CHANGE THIS ORDER:	673,839.00
ESTIMATED CONTRACT TOTAL AFTER CHANGE:	4,256,223.35

Signature Required: (X)Project Engineer (X)State Construction Engineer
(X)Regional Administrator ( )Other Agency

Colin Newell (Jul 8, 2020 09:44 PDT)	
PROJECT ENGINEER SIGNATURE	STATE CONSTRUCTION ENGINEER SIGNATURE
Jul 8, 2020	Jul 9, 2020
DATE	DATE
	OTHER APPROVAL WHEN REQUIRED
Chris Tams (Jul 9, 2020 07:04 PDT)	
REGIONAL ADMINISTRATOR SIGNATURE Carley Francis	SIGNATURE DATE
Jul 9, 2020	
DATE	REPRESENTING

CG02v04(revised Feb 2005)

CONTRACT NO:009419 CHANGE ORDER NO: 1

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 OF WORK

This change order revises Plan Sheets BR5, BR6, and BR35 as shown on sheets 4, 5 and 6 of this change order and compensates the Contractor for the Differing Site Condition (Changed Conditions) encountered during construction of the 6 foot diameter shafts at piers 1 and 2 of Bridge NO. 506/106.

This change order is to compensate the Contractor for costs borne by differing site conditions described as follows: Constructing 5.5 ft. diam. shaft, force account for differing site condition additional cost, additional erosion control and water pollution prevention, WSDOT reimbursement of salvaged steel from 6 ft. diam. shafts and costs associated with stranded direct costs of labor, equipment and materials. The item "Cost via Differing Site Conditions" is shown on sheet 3 of this change order.

This work shall be in accordance with all contract requirements as follows: Plans, Revised Plans, and Special Provisions associated with this Change Order.

This change order creates the following new item:

"Cost via Differing Site Conditions"

MATERIALS

The materials for the item "Cost via Differing Site Conditions" shall conform to the contract requirements, Plans, Revised Plans, and Special Provisions associated with this Change Order.

CONSTRUCTION REQUIREMENTS

Construction requirements for the item "Cost via Differing Site Conditions" pertaining to constructing 5.5 ft. diam. shaft shall conform to the requirements of revised plans shown on sheets BR5, BR6 and BR35 of this change order, pertaining to force account for differing site condition additional cost shall be in accordance with Section 1-09.6, salvaged steel shall be as follows: Unused reinforcing bars and casing from Bid Item No. 20, "Constructing 6 Ft. Diam. Shaft", shall be salvaged.

PAYMENT

The item "Cost via Differing Site Conditions" will be paid at the agreed lump sum amount of $673,839.00.

The Contractor, Farline Bridge, LLC, by the signing of this change order agrees and certifies that:

Upon payment of this change order in the amount of $673,839.00, total compensation for any and all work performed as a result of encountering the differing site condition (DSC) and subsequent work from the re-design of the shafts and bridge approach backfill have been satisfied in full and the State of Washington is released and discharged from any extra compensation or entitlements in any manner arising out of Contract No. 9419 regarding the differing site condition (DSC)for the 6 foot diameter shafts.

CONTRACT TIME

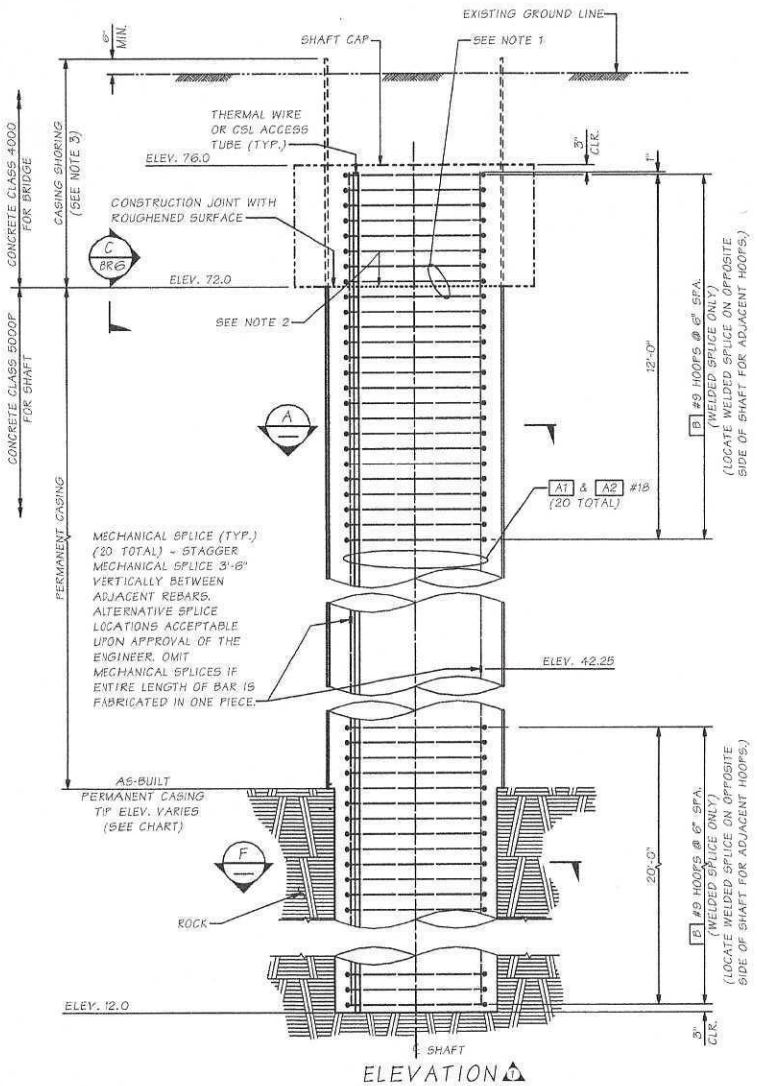
This change order adds 15 working days to the contract.

CONTRACT NO:009419 CHANGE ORDER NO: 1

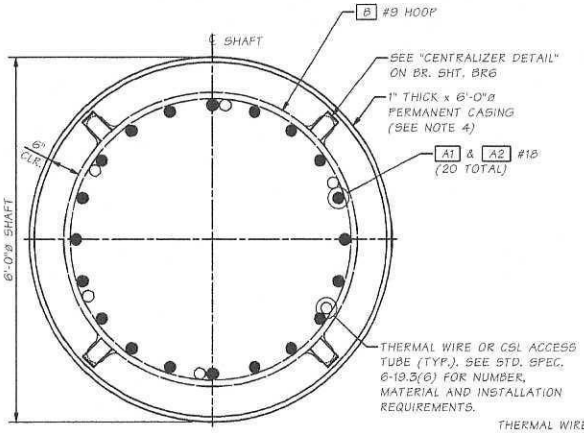
ITEM NO	GROUP NO	STD ITEM	UNIT OF MEASURE	UNIT PRICE	EST QTY CHANGE	EST AMT CHANGE
ITEM DESCRIPTION: COST VIA DIFFERING SITE CONDITIONS						
1015	01		L.S.	0.00	0.00	673,839.00

AMOUNT TOTAL

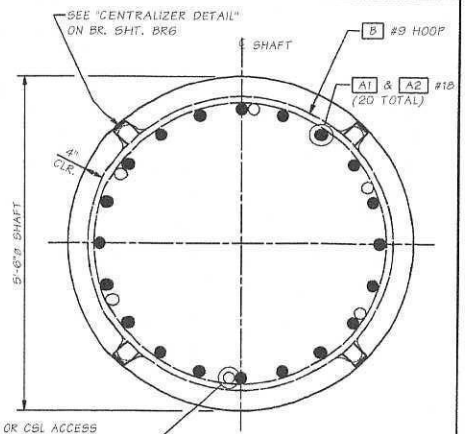
673,839.00
==========



ELEVATION 1



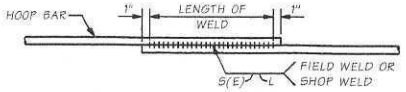
SECTION A 1



SECTION F 1

1

AS-BUILT PERMANENT CASING TIP ELEVATION	
SHAFT	TIP ELEV.
1A	27.61
1B	29.30
1C	26.70
2A	23.05
2B	24.44
2C	25.03



WELDED LAP SPLICE DETAIL

WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. 6-02.3(24)E FOR WELD DIMENSIONS, SEE TABLE BELOW.

1

	DEFORMED BAR	WELD DIMENSIONS		
		S	E	LENGTH (L)
HOOPS	#9	9/16"	3/8"	8"

NOTES:

1. ADJUST HOOP SPACING TO PROVIDE CLEARANCE FOR SHAFT CAP REINFORCEMENT.
2. REMOVE SEDIMENT, LAITENCE & WEAK CONCRETE FROM TOP OF SHAFT TO SOUND CONCRETE PRIOR TO SETTING SHAFT CAP REINFORCEMENT.
3. CASING SHORING MAY BE DELETED PROVIDED THAT THE CONTRACTOR SHORES AND EXCAVATES FOR THE SHAFT CAP PRIOR TO THE SHAFT EXCAVATION.
4. PERMANENT CASING SHALL CONFORM TO ONE OF THE FOLLOWING:
   - i. API 5L GRADE X52 FOR LONGITUDINAL SEAM WELDED OR HELICAL (SPIRAL) SEAM SUBMERGED-ARC WELDED CASING.
   - ii. ASTM A252 GRADE 3 FOR LONGITUDINAL SEAM WELDED OR HELICAL (SPIRAL) SEAM SUBMERGED-ARC WELDED CASING. MINIMUM YIELD STRENGTH SHALL BE 50 KSI.
   - iii. ASTM A572 GRADE 50 OR ASTM A588 FOR LONGITUDINAL SEAM WELDED CASING.

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR506-106_LACAMAS CREEK_BR REPLACEMENT_SWR\window files\C01-SHAFTDTLS1.wnd	
Supervisor	Aldrich, BS		
Designed By	Feely, C 12/18		
Checked By	Sawahata, D 02/19		
Detailed By	Bontemps, W 02/18		
Bridge Projects Engr.			
Prelim. Plan By	10/11/19	1 REVISED SHEET	JCF BSA
Architect/Specialist	DATE	REVISION	BY APPD

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 19X317				
CONTRACT NO.				

CHRIS FEELY — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
Oct 11 2019 1:07 PM

BRIAN S. ALDRICH — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
Oct 11 2019 1:33 PM

BRIDGE AND STRUCTURES OFFICE

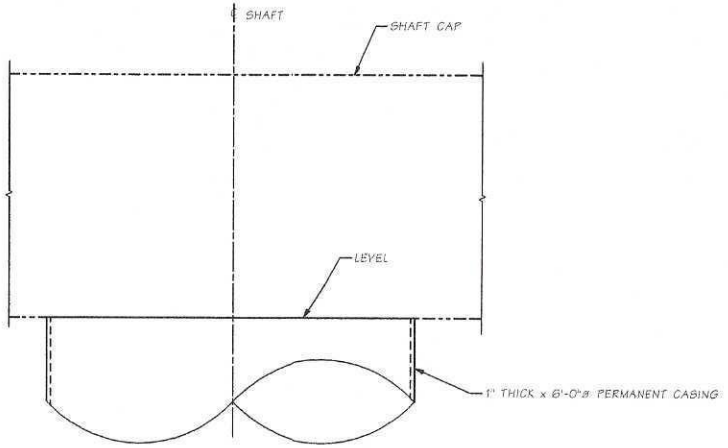
Washington State Department of Transportation

SR 506
LACAMAS CREEK BRIDGE REPLACEMENT
LACAMAS CREEK BRIDGE NO. 506/106
SHAFT DETAILS 1 OF 2

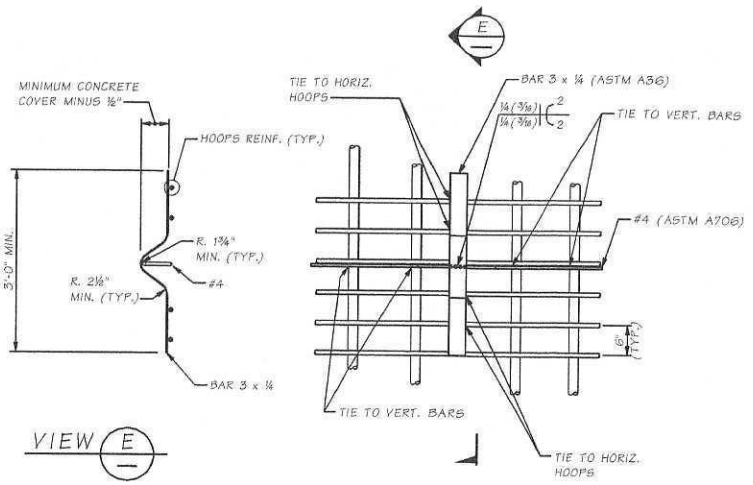
BRIDGE SHEET NO. BR5
SHEET 31 OF 67 SHEETS

SR 506 FILE NO. ____ SHEET BR5

Fri Oct 11 11:39:52 2019



1 SECTION C
REINFORCING BARS NOT SHOWN BR5



A CENTRALIZER DETAIL

CENTRALIZER NOTES:

1. EACH LEG SHALL BE TIED TO TWO VERTICAL BARS AND TWO HOOPS.
2. SEE STD. SPEC. 6-19.3(5)B FOR SPACING REQUIREMENTS.

SR 506 FILE NO. ____ SHEET BR6

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR506-106_LACAMAS CREEK_BR REPLACEMENT_SWR\window files\C01-SHAFTDTLS2.wnd				BRIDGE NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Aldrich, BS					10	WASH.			
Designed By	Feely, C 12/18					JOB NUMBER 18X317				
Checked By	Sawahata, D 02/19					CONTRACT NO.				
Detailed By	Bontemps, W 02/18									
Bridge Projects Engr.										
Prelim. Plan By		10/11/19	1 REVISED SHEET	JCF	BSA					
Architect/Specialist		DATE	REVISION	BY	APP'D					

Fri Oct 11 11:38:02 2019

Oct 11 2019 1:08 PM cosign

BRIDGE AND STRUCTURES OFFICE

Oct 11 2019 1:35 PM cosign

Washington State Department of Transportation

SR 506
LACAMAS CREEK BRIDGE REPLACEMENT

LACAMAS CREEK BRIDGE NO. 506/106

SHAFT DETAILS 2 OF 2

BRIDGE SHEET NO. BR6

SHEET 32 OF 67 SHEETS

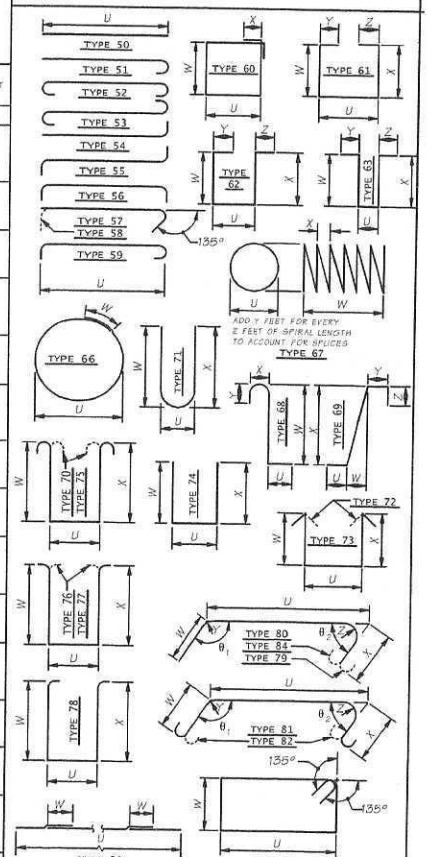
S = Bar is included in substructure quantities.
L = Lump sum quantity.
T = Transverse or S = Seismic
E = Bar is to be epoxy coated.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO REQ'D	BEND TYPE	TIE OR STIR.	LUMP SUM	SUBSTR.	EPOXY COAT	VARIES	NO. EACH	DIMENSIONS (Out to Out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	PIER 1 SHAFT CAP																								
100	Top Longitudinal	8	9	50		S				43	8.0												43	8	1049
101	Bottom Longitudinal	11	9	50		S				43	8.0												43	8	2088
102	Side Longitudinal	7	16	50		S				43	8.0												43	8	1428
103	Stirrup	7	32	72	T	S				7	8.0	3	7.0	3	7.0								15	12	1207
104	Stirrup	7	36	72	T	S				5	6.0	3	7.0	0	0.0								9	8	710
105	Tie	7	55	58	T	S				7	8.0												9	5	1056
106	End Tie	6	14	56	T	S				3	3.0												5	1	107
107	End Tie	6	8	56	T	S				7	6.0												9	2	110
	PIER 1 ABUTMENT WALL																								
108	Far Face Vertical	7	89	54		S	V	1	7	9.0													8	9	1824
									10	4.0													11	4	
109	Near Face Vertical	7	45	54		S	V	1	7	9.0													8	9	922
									10	4.0													11	4	
110	Horizontal	5	17	80	T	S				39	2.0	0	6.0	0	6.0	0	1.9	0	1.9	120	60		39	10	707
111	Wall Tie	4	32	58	T	S				2	1.0												2	9	59
112	Top Wall Tie	4	45	56	T	S				2	1.0												2	9	80
113	Girder Stop Tie	4	22	74	T	S				2	11.0	2	11.0	2	11.0								7	12	117
114	Girder Stop Tie	4	12	74	T	S				2	11.0	2	11.0	2	11.0								8	7	69
115	Girder Stop Tie - RT	4	3	74	T	S	V	1	5	4.0	2	11.0	2	11.0									10	12	22
									1	7.0	2	11.0	2	11.0									11	7	
115	Girder Stop Tie - LT	4	3	74	T	S	V	1	1	7.0	2	11.0	2	11.0									7	3	15
									1	9.0	2	11.0	2	11.0									7	5	
	PIER 1 LT WINGWALL																								
120	Far Face Vertical	7	10	54		S				18	10.0												19	10	405
120	Far Face Vertical	7	2	54		S				19	5.0												19	5	79
121	Far Face Vertical	7	39	50		S	V	1	14	8.0													14	8	654
									1	9.0													1	9	
122	Near Face Vertical	5	6	54		S				18	10.0												19	6	122
122	Near Face Vertical	5	2	54		S				18	5.0												19	1	40
123	Near Face Vertical	5	20	50		S	V	1	14	8.0													14	8	171
									1	9.0													1	9	
124	Near Face Horizontal	5	2	80	T	S			24	10.0	0	6.0	0	0.0	0	1.9	0	0.0	60	0		25	1	52
124	Near Face Horizontal	5	14	80	T	S	V	1	24	7.0	0	6.0	0	0.0	0	1.9	0	0.0	60	0		24	10	235
									1	9.0	0	6.0	0	0.0	0	1.9	0	0.0	60	0		25	1	95
125	Far Face Horizontal	7	4	80	T	S			24	5.0	0	9.0	0	0.0	0	3.5	0	0.0	120	0		25	1	205
125	Far Face Horizontal	7	26	80	T	S	V	1	24	2.0	0	9.0	0	0.0	0	3.5	0	0.0	120	0		24	10	858
									6	9.0	0	9.0	0	0.0	0	3.5	0	0.0	120	0		7	5	
126	Bottom Edge	7	2	80		S			22	8.0	1	8.0	0	0.0	0	3.5	0	0.0	120	0		24	4	99
127	Top Edge	4	2	74	T	S	V	1	4	10.0	1	0.0	1	0.0									6	8	9
	PIER 1 RT WINGWALL								4	6.0	1	0.0	1	0.0									6	4	
120	Far Face Vertical	7	7	54		S			16	1.0													17	1	244
120	Far Face Vertical	7	6	54		S			15	7.0													16	7	203
121	Far Face Vertical	7	36	50		S	V	1	11	10.0													11	10	500
									1	9.0													1	9	
122	Near Face Vertical	5	4	54		S			16	1.0													16	9	70
122	Near Face Vertical	5	3	54		S			15	7.0													16	3	51
123	Near Face Vertical	5	19	50		S	V	1	11	10.0													11	10	135
									1	9.0													1	9	
124	Near Face Horizontal	5	2	80	T	S			23	1.0	0	6.0	0	0.0	0	1.9	0	0.0	121	0		23	8	49
124	Near Face Horizontal	5	11	80	T	S	V	1	22	11.0	0	6.0	0	0.0	0	1.9	0	0.0	121	0		23	4	177
									7	7.0	0	6.0	0	0.0	0	1.9	0	0.0	121	0		7	5	
125	Far Face Horizontal	7	4	80	T	S			23	8.0	0	9.0	0	0.0	0	3.5	0	0.0	59	0		23	11	196
125	Far Face Horizontal	7	20	80	T	S	V	1	23	4.0	0	9.0	0	0.0	0	3.5	0	0.0	59	0		23	7	639
									5	9.0	0	9.0	0	0.0	0	3.5	0	0.0	59	0		7	8	
126	Bottom Edge	7	2	80		S			20	1.0	1	8.0	0	0.0	0	3.5	0	0.0	150	0		21	9	89
127	Top Edge	4	2	74	T	S	V	1	3	7.0	1	0.0	1	0.0									5	5	7
									3	3.0	1	0.0	1	0.0									5	1	
	PIER 2 SHAFT CAP																								
200	Top Longitudinal	8	9	50		S				40	8.0												40	8	977
201	Bottom Longitudinal	11	9	50		S				40	8.0												40	8	1945
202	Side Longitudinal	7	16	50		S				40	8.0												40	8	1330
203	Stirrup	7	32	72	T	S				7	8.0	3	7.0	3	7.0								15	12	1044
204	Stirrup	7	36	72	T	S				5	6.0	3	7.0	0	0.0								9	8	710
205	Tie	7	50	58	T	S				7	8.0												9	5	980
206	End Tie	6	14	56	T	S				3	5.0												5	1	107
207	End Tie	6	8	56	T	S				7	6.0												9	2	110
	PIER 2 ABUTMENT WALL																								
208	Far Face Vertical	7	84	54		S	V	1	7	9.0													8	9	1714
									10	3.0													11	3	
209	Near Face Vertical	7	43	54		S	V	1	7	9.0													8	9	877
									10	3.0													11	3	
210	Horizontal	5	17	80	T	S			36	11.0	0	6.0	0	6.0	0	1.9	0	1.9	114	66		37	8	667
211	Wall Tie	4	30	58	T	S			2	1.0													2	9	55
212	Top Wall Tie	4	43	56	T	S			2	1.0													2	8	76
213	Girder Stop Tie	4	21	74	T	S			2	4.0	2	11.0	2	11.0									7	12	112
214	Girder Stop Tie	4	12	74	T	S			2	11.0	2	11.0	2	11.0									8	7	69
215	Girder Stop Tie - RT	4	3	74	T	S	V	1	3	2.0	2	11.0	2	11.0									8	10	18
									3	3.0	2	11.0	2	11.0									8	11	
215	Girder Stop Tie - LT	4	3	74	T	S	V	1	1	6.0	2	11.0	2	11.0									7	2	15
									1	8.0	2	11.0	2	11.0									7	4	

S = Bar is included in substructure quantities.
L = Lump sum quantity.
T = Transverse or S = Seismic
E = Bar is to be epoxy coated.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO REQ'D	BEND TYPE	TIE OR STIR.	LUMP SUM	SUBSTR.	EPOXY COAT	VARIES	NO. EACH	DIMENSIONS (Out to Out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	PIER 2 LT WINGWALL																								
220	Far Face Vertical	7	7	54		S				18	9.0												19	9	282
220	Far Face Vertical	7	5	54		S				18	4.0												19	4	197
221	Far Face Vertical	7	37	50		S	V	1		14	7.0												14	7	618
										1	9.0													1	9	
222	Near Face Vertical	5	4	54		S				18	9.0												19	5	81
222	Near Face Vertical	5	3	54		S				18	4.0												19	0	60
223	Near Face Vertical	5	19	50		S	V	1		14	7.0												14	7	162
										1	9.0													1	9	
224	Near Face Horizontal	5	2	80	T	S				23	2.0	0	6.0	0	0.0	0	1.9	0	0.0	113	0		23	7	49
224	Near Face Horizontal	5	14	80	T	S	V	1	23	0.0	0	6.0	0	0.0	0	1.9	0	0.0	113	0		23	1	221
									6	4.0	0	6.0	0	0.0	0	1.9	0	0.0	113	0		6	9	
225	Far Face Horizontal	7	4	80	T	S			23	6.0	0	9.0	0	0.0	0	3.5	0	0.0	67	0		23	10	195
225	Far Face Horizontal	7	26	80	T	S	V	1	23	3.0	0	9.0	0	0.0	0	3.5	0	0.0	67	0		23	7	815
									6	8.0	0	9.0	0	0.0	0	3.5	0	0.0	67	0		7	0	
226	Bottom Edge	7	2	80		S			21	10.0	1	8.0	0	0.0	0	3.5	0	0.0	144	0		23	6	96
227	Top Edge	4	2	74	T	S	V	1	3	5.0	1	0.0	1	0.0									5	3	7
									3	3.0	1	0.0	1	0.0									5	1	
	PIER 2 RT WINGWALL																								
220	Far Face Vertical	7	9	54		S				16	1.0												17	1	314
220	Far Face Vertical	7	3	54		S				15	8.0												16	8	102
221	Far Face Vertical	7	39	50		S	V	1		11	11.0												11	11	545
										1	9.0													1	
222	Near Face Vertical	5	6	54		S				16	1.0												16	9	105
222	Near Face Vertical	5	2	54		S				15	8.0												16	4	34
223	Near Face Vertical	5	20	50		S	V	1		11	11.0												11	11	143
										1	9.0													1	
224	Near Face Horizontal	5	2	80	T	S			24	5.0	0	6.0	0	0.0	0	1.9	0	0.0	66	0		24	8	52
224	Near Face Horizontal	5	11	80	T	S	V	1	24	1.0	0	6.0	0	0.0	0	1.9	0	0.0	66	0		24	4	181
									7	0.0	0	6.0	0	0.0	0	1.9	0	0.0	66	0		7	3	
225	Far Face Horizontal	7	4	80	T	S			24	2.0	0	9.0	0	0.0	0	3.5	0	0.0	114	0		24	10	203
225	Far Face Horizontal	7	20	80	T	S	V	1	23	10.0	0	9.0	0	0.0	0	3.5	0	0.0	114	0		24	6	652
									6	9.0	0	9.0	0	0.0	0	3.5	0	0.0	114	0		7	5	
226	Bottom Edge	7	2	80		S			21	2.0	1	8.0	0	0.0	0	3.5	0	0.0	151	0		22	10	93
227	Top Edge	4	2	74	T	S	V	1	4	2.0	1	0.0	1	0.0									5	12	8
									4	5.0	1	0.0	1	0.0									5	3	
	END DIAPHRAGMS																								
320	Deck Transverse	6	4	52			E	V	2	39	3.0												40	8	237
										36	11.0												38	4	
321	Stirrup	4	118	54	T					10	1.0												10	4	817
322	Stirrup	4	59	74	T					8	7.0	0	5.0	1	10.0								10	8	420
323	Pavement Seat Tie	4	59	58	T					2	3.0												2	5	95
324	Diaphragm Transverse	4	40	50				V	20	36	2.5												36	3	938
										34	0.0												34	0	
325	Diaphragm Transverse - Bot.	6	4	50				V	2	36	2.5												36	3	211
										34	0.0												34	0	
	INT. DIAPHRAGMS																								
330	Deck Transverse	6	8	52			E			31	0.0												32	5	389
331	Bottom Transverse	7	8	50						27	1.0												27	1	443
332	Middle Transverse	4	128	50						27	1.0												27	1	520
333	Top Transverse	7	4	50						27	1.0												27	1	221
334	Stirrup	4	112	74	T					0	5.0	6	3.0	6	3.0								12	9	953
335	Tie	4	64	74	T			V	32	0	5.0	4	4.0	4	4.0								8	8	376
										0	5.0	4	4.5	4	4.5								8	12	
	DECK - TOP MAT																								
300	Top Mat - West Splay	5	2	51			E			21	0.0												21	6.9	45
300	Top Mat - West Splay	5	4	51			E			18	0.0												18	7	77
300	Top Mat - West Splay	5	4	51			E			16	1.0												16	8	69
300	Top Mat - West Splay	5	8	51			E			14	5.0												15	3	127
300	Top Mat - West Splay	5	18	51			E			11	10.0												11	10	222
301	Top Mat - West Skew	5	13	51			E	V	13	15	6.0												16	1	324
										11	2.0												11	9	
302	Top Mat - Transverse	5	319	51			E			23	4.0												23	7	2843
303	Top Mat - Transverse	5	319	51			E			13	3.0												13	10	4509
304	Top Mat - East Skew	5	20	51			E	V	20	11	10.0												12	5	466
										11	9.0												12	4	
305	Top Mat - East Splay	5	4	51			E			10	8.0												11	3	47
305	Top Mat - East Splay	5	6	51			E			9	3.0												9	12	63
306	Top Mat - Longitudinal Bar	4	14	91			E			6	0.0												6	12	102
306	Top Mat - Longitudinal Bar	4	33	89			E			179	0.0	2	6.0										183	0	4078
307	Top Mat - Long. Bar - Girder	5	10	89			E			179	0.0	2	6.0										180	0	1877
308	Top Mat -Barrier Bar	4	26	91			E			10	0.0												10	6	182
	DECK - BOTTOM MAT																								
310	Bottom Mat - West Splay	6	14	50			E	V	1	16	4.0												16	4	386
										20	5.0												20	5	
311	Bottom Mat - West Skew	6	7	50			E	V	1	22	6.0												22	6	283
										31	3.0												31	3	
312	Bottom Mat - Transverse Bar	6	222	50			E			26	4.0												26	4	8760
313	Bottom Mat - Transverse Bar	6	222	50			E			10	5.0												10	5	3473
314	Bottom Mat - East Skew	6	7	50			E	V	1	23	6.0												23	6	287
										31	2.0												31	2	
315	Bottom Mat - East Splay	6	14	50			E	V	1	15	2.0												15	2	383
										21	3.0												21	3	
316	Bottom Longitudinal	5	45	89			E			179	0.0	3	0.0										181	0	8494
317	Bottom Long. - Girder	6	10	89			E			179	0.0	3	0.0										181	0	2718
	DECK - STIRRUPS																								
318	Narrow Stirrup	5	1150	77			E			0	8.0	0	10.8	0	10.0								3	7	4254
319	Wide Stirrup	5	1150	77			E			0	9.0	0	9.4	0	6.8								3	3	7492
	BARRIER CONNECTION																								
S1	Barrier Connection	5	490	69			E			1	0.0	0	3.8	1	11.0	0	11.6	0	0.0				3	9	1898
S2	Barrier Connection	4	236	69			E			1	0.0	0	2.5	1	11.0	0	0.0	0	0.0				2	10	448
	Shaft ⚠7																								
B	Shaft Hoops	9	396	66						4	10.0	0	18.0										15	7	20945
A1	Shaft Longitudinal	18	120	50						33	6.0												33	6	54672
A2	Shaft Longitudinal	18	120	50						30	0.0												30	0	48960

BENDING DIAGRAMS



NOTES:
1. ALL REINFORCING BARS ON THIS SHEET SHALL BE ASTM A 706 UNLESS SHOWN OTHERWISE.
2. REINFORCING FOR TRAFFIC BARRIERS NOT SHOWN IN THE BAR LIST, SEE TRAFFIC BARRIER SHEET.
3. BEND FOR TRANSVERSE BARS DUE TO ROADWAY CROWN CONDITIONS HAS NOT BEEN SHOWN. THESE BARS SHALL BE BENT AS REQUIRED TO CONFORM TO THE CONFIGURATION OF THE STRUCTURE.
4. NUMBER AND LENGTH OF BARS TO BE DETERMINED BY THE CONTRACTOR FROM PLANS.

SR 506 FILE NO. ____ SHEET BR35

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR506-106_LACAMAS CREEK_BR REPLACEMENT_SWR\window files\C01-BARLIST.wnd	
Supervisor	Aldrich, BS		
Designed By	BAS/JCF 02/19		
Checked By	TDS/KH 02/19		
Detailed By			
Bridge Projects Engr.			
Prelim. Plan By		10/11/19 ⚠1 REVISED SHEET	JCF BSA
Architect/Specialist		DATE REVISION	BY APP'D

Fri Oct 11 11:59:44 2019

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 108X317				
CONTRACT NO.				

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

SR 506
LACAMAS CREEK BRIDGE REPLACEMENT
LACAMAS CREEK BRIDGE NO. 506/106
BARLIST

BRIDGE SHEET NO. BR35
SHEET 61 OF 67 SHEETS