

Memorandum

DATE:

December 12, 2016

TO:

Derek Case

Assistant Construction Engineer Headquarters, Mail Stop 47354

DPB

THRU:

Julie Meredith/Dave Becher

Program Administrator, SR 520 Program, Mail Stop NB82-99

FROM:

Stephen Strand

Project Engineer, West Approach Bridge North Project,

Mail Stop TB-93, (206) 770-3518

PROJECT:

C-8625

SR 520 West Approach Bridge North Project

SUBJECT:

CO # 72 – Marine Casing Ext and Misc

Requested Action:

☐ Review ☐ Review and Region Execution ☒ Review and HQ Execution
--

Change Approval

- I I I I I I I I I I I I I I I I I I I	
Dpty. Construction Mgr. Concurrence: James VanSteenburg	Various*
Project Engineer Concurrence: Steve Strand	Various*
Project Engineer Change Approval: Brian Dobbins	Various*
Region Change Approval: Dave Becher	Various*
HQ Construction Change Approval: Derek Case	Various*
Office of Equal Opportunity (OEO): John Huff	Various*
FHWA Approval: Anthony Sarhan	Various*
Program Funding Concurrence: Janet Buoy	9/21/2016

^{*} See Attachment A for details regarding Change Approvals and Approvals to Proceed.

Description of the Change

This change order includes several independent changes that have or will occur on the West Approach Bridge North (WABN) project including:

• Marine Casing Extensions

The Contract Plans detail the elevation that the permanent shaft casings for the WABN structure are to be advanced into dense soil. During construction there were several instances where casings began to "sink" after being advanced to the specified design elevation leading to the conclusion that the plan elevations were not sufficient. This WSDOT

initiated change order extends the permanent shaft casings for Piers 34-41 to ensure they are properly seated in dense soil.

This change order also resolves the following Contract changes that will no longer be processed independently:

- ITS Mods From Damaged SB (Draft CO #78)

 An accident on SR 520 resulted in the destruction of Sign Bridge No. 520/1.7E (SB00404). WSDOT determined that an existing Dynamic Message Sign (DMS) can be utilized while still maintaining an acceptable level of service without replacing SB00404 as required in the Contract. This WSDOT initiated change order deletes Contract Work that no longer needs to be completed as a result of the unanticipated removal of SB00404.
- Work Platform Screening Mod (Draft CO #61)
 The Contract Plans specify a grating screen to be installed on the south side of the equipment platform belvederes at Piers 16, 21, 28 and 36. This WSDOT directed change replaces this screen with railing and toe plate for improved access for maintenance.

In additional to the changes above and as a part of this change order, the Contractor has agreed to retract their protests of the following:

• Tire Wash - FWI SL #0276 & SL #0281 (See Attachment C) The Contract Plans, Provisions, and Water Quality Monitoring & Protection Plan (WQMPP) detail Temporary Erosion & Sediment Control (TESC) measures that must be implemented during construction. The WQMPP requires a tire wash at the entrance/exit point of the Contractor's Temporary Work Access (Trestle) until the Trestle is removed. The Contractor may propose modifications to the WQMPP, but they must be approved by the Department of Ecology.

The Contract Staging Plans direct the Contractor to install the tire wash during stage 1 of construction, but the tire wash is not shown in stage 2 of construction. The Contractor's position is that the tire wash is no longer required during stage 2 of construction as the tire wash is not shown on the stage 2 plans. In addition to the Contractor's stance regarding the tire wash as shown in the staging plans, the Contractor also states that WSDOT delayed contract work in the vicinity of Wall 1 due to taking too long to approve Contractor proposed modifications to the WQMPP which would allow hose stations in lieu of a tire wash.

Falsework - FWI SL #0222 & SL #0231 (See Attachment C)
 The Contract requires that the Contractor design and construct falsework for the WABN structure and provides design standards that the falsework must adhere to. A falsework submittal was transmitted to WSDOT for approval that would utilize the permanent casings to support the falsework. WSDOT rejected the falsework submittal as there are no

applicable design standards which support the Contractor's stance that there is sufficient bond strength between the permanent casings and columns to support the falsework holding Bridge girders and diaphragms. The Contractor is seeking compensation for the additional cost of labor and materials to attach the falsework to the top of the Bridge shafts, not the permanent casings.

Evolution of the Change

Extended Marine Casings

On October 1, 2015, a WSDOT inspector observed the casing at Pier 36 Shaft B sinking after initial installation. This issue was reviewed and on October 5, 2015, WSDOT SL #222 directed the Contractor to extend the casing an additional seven feet to an elevation of -21.0.

On October 7, 2015 and October 8, 2015, permanent shaft casings were installed for Pier 38 Shaft B and Pier 39 Shaft B. Measurements were taken and materials tested and a determination made that these casings would also need to be extended. On October 9, 2015, WSDOT SL #223 directed the Contractor to extend the casings ten and seven additional feet, respectively, for these shafts. Revising the elevation to -30.0 feet for Pier 38 Shaft B and -16.0 for Pier 39 Shaft B.

On October 28, 2015, the Contractor submitted FWI SL #180 providing notice of settlement of the permanent casing for Pier 35 Shaft B. On October 29, 2015, WSDOT SL #237 directed the Contractor to extend the casing an additional nine feet, revising the plan elevation to -23.0.

On October 29, 2015, FWI SL #181 provided notice that the casing for Pier 36 Shaft B was sinking and cited differing site conditions (DSC). This settlement occurred after the casing had been extended seven feet per direction provided on October 5th, via WSDOT SL #222. Flatiron West, Inc. (FWI) had stopped work on this shaft due to "possible ramifications of the can (casing) sinking any further. This could result in major environmental issues, the weld to the casing extension sliding below the lake level, or damaging the integrity of the shaft."

With this latest issue, WSDOT reviewed the remaining permanent shaft casing installations and determined that conditions to date warranted extending casings for Piers 35-41 to mitigate risks inherent with extending casings once installation had begun and to ensure proper seating of these casings in dense soil. On October 29, 2015, WSDOT SL #239 provided direction as follows to extend the permanent shaft casings:

Pier	Shaft	Revised Elevation	Previous Direction
34	' A	(-30 feet)	
35	A	(-32 feet)	
35	В	(-32 feet)	WSDOT SL #237 (-23 feet)

36	* A	(-34 feet)	
36	В	(-31 feet)	WSDOT SL #222 (-21 feet)
37	Α	(-35 feet)	
37	В	(-35 feet)	=
38	A	(-33 feet)	
38	В	(-33 feet) +	WSDOT SL #223 (-30 feet)
39	A	(-27 feet)	
: 39	В	(-27 feet)	WSDOT SL #223 (-16 feet)
40	A	(-27 feet)	
40	В	(-27 feet)	
41	A	(-39 feet)+	
41	В	(-35 feet)	

Change Orders 68 and 107 were previously executed in order to make timely payment to the Contractor and its subcontractors while the overall change order was negotiated. Those amounts have been deducted from the settlement amount.

ITS Mods From Damaged SB

On March 17, 2015, an accident on SR 520 resulted in the demolition of sign bridge SB00404. The Contract calls for the removal of the existing signing on SB00404 to be replaced with a Variable Message Sign (VMS). Instead of requiring the Contractor to replace SB00404, it was decided that the existing DMS to be removed by the Contractor located 750 feet east of SB00404 could be utilized without replacing SB00404 or installing the new VMS. WSDOT then initiated this change order to delete from the Contract the removal of the existing DMS and the work required to install the new VMS on SB00404. This reduction in work reduced the overall price of this change order. Change approvals were obtained as documented in Attachment A.

Work Platform Screening Mod

On August 21, 2015, the Contractor submitted Request for Information (RFI) 276 Equip Plat Vertical Grating Screen requesting confirmation that vertical grating screen is required on the south side of the equipment platform and requesting details for this work since none were provided. After reviewing the RFI, WSDOT determined that a screen was not necessary on the south side and that a railing was preferred to improve access to this area by maintenance personnel. This reduction in work reduced the overall price of this change order. Change approvals were obtained as documented in Attachment A.

Tire Wash

On June 16, 2016, the Contractor proposed several modifications to the WQMPP including a proposal to use hose stations instead of a tire wash at the entrance to the Trestle and a request to eliminate the need to backfill the removed piles with Bentonite clay. The Contractor had previously requested that the tire wash requirement be eliminated in RFI 056, but the proposal was rejected because the request did not provide sufficient information that the alternate method is equal to or better than a tire wash. The Department of Ecology and Department of Fish and Wildlife have differing rules regarding the use of Bentonite clay for in-water

work, and a response to the WQMPP revision proposal was not immediately provided.

On July 21, 2016, the Contractor notified WSDOT via email that stage 2 of construction would begin on July 29, 2016 and the tire wash stations would be removed in accordance with the Contract Staging Plans. The Contractor stated in the email that if WSDOT wants the tire wash left in place through stage 2, there would be cost and schedule impacts because the Contractor could not perform Wall 1 work with the tire wash in place. The Contractor pointed out that no response had yet been provided regarding the use of hose stations at the Trestle.

WSDOT responded to the email in WSDOT SL #0421 on July 29, 2016 stating that the Contractor had not provided sufficient details that the hose stations were equal to or better than the tire wash detailed in the Contract Provisions. WSDOT met with the Contractor and Department of Ecology and approval to use hose stations instead of a tire wash was provided and hose stations installed on August 6, 2016. The Contractor submitted FWI SL #0276 on August 2, 2016 and SL #0281 on August 15, 2016 providing their notice of protest and supplement to that protest. The Contractor seeks compensation to recover time lost between July 29, 2016 and August 6, 2016.

This change order eliminates a protest by the Contractor and settles any potential additional costs to WSDOT.

Falsework

The Contractor submitted S.167.004 Falsework for Piers 19-40 for WSDOT review in August 2015. The submittal was approved as noted, as the Contractor was not able to establish sufficient evidence showing that the bond strength between the permanent shaft casings and shaft concrete would support the Bridge falsework. In subsequent submittals regarding the Bridge falsework, the Contractor failed to prove that their assumptions were correct regarding the bond strength between the permanent casings and shafts to WSDOT's satisfaction. The Contractor protested WSDOT determination that their design did not meet Contract requirements in FWI SL #0222 on March 2, 2016 then supplemented their protest in FWI SL #0231 on March 17, 2016. WSDOT found the protest to be invalid and notified the Contractor in WSDOT SL #0324 on March 10, 2016 and in WSDOT SL #0335 on March 24, 2016.

This change order eliminates a protest by the Contractor and settles any potential additional costs to WSDOT.

Prior Approval

Extended Marine Casings

In order to avoid delays to the schedule and cost impacts associated with resources standing by, prior approval in advance of an executed change order was provided by the Project Engineer as follows:

Date	Doc#	Direction
10/5/15	WSDOT SL #222	Extend Casing for Pier 36B
10/9/15	WSDOT SL #223	Extend Casing for Pier 38B & 39B
10/29/15	WSDOT SL #237	Extend Casing for 35B
10/29/15	WSDOT SL #239	Direction to Extend Casing for Piers 34-41

Change approval and Prior Approval are documented for initial direction for 35B, 36B, 38B, and 39B through the WSDOT serial letters noted above. Change approval to proceed with additional casing extensions were received as shown above and direction provided by the Project Engineer on behalf of HQ Construction via WSDOT SL #239. See Attachment A for approvals documentation.

ITS Mods From Damaged SB

To ensure that the Contractor did not begin procurement of expensive ITS equipment for work that will no longer occur, WSDOT directed the Contractor to delete the ITS work included in this change prior to being issued an executed change order in WSDOT SL #0303 on February 4, 2016. See Attachment A for approvals documentation.

Work Platform Screening Mod

To ensure that the Contractor did not begin procurement of expensive steel grating in lieu of bridge railing for their work platform through a WSDOT initiated change, WSDOT directed the Contractor to replace the steel grating with railing prior to being issued an executed change order on February 22, 2016. See Attachment A for approvals documentation.

Payment

In accordance with Standard Specifications 1-04.4, the Contractor is entitled to compensation for the additional cost of the labor, material and equipment as a result of this change, and WSDOT is entitled to cost savings for the reduction in scope of work. WSDOT and FWI negotiated a \$4,990,000 settlement to cover all of these issues. The (net) total negotiated lump-sum cost of this change order is \$2,890,000 after accounting for previous interim change order payments made through Change Orders 68 and 107. All items contained in this change order are full and final settlement. See the table below for a summary of all costs associated with this change order.

Total negotiated price for all work	\$4,990,000
covered by this change order	
CO #68 Interim Payment	(\$1,500,000)
CO #107 Interim Payment	(\$600,000)
CO #72 Remaining Balance	\$2,890,000

See Attachment B for the engineer's estimate.

Time

The casing installation work modified in this change order was not on the schedule critical path. However, the duration of the casing installation was extended 45 days beyond the date that the Contractor planned to have completed installation of the marine casings. The Contractor is entitled to compensation for labor, equipment, and material costs due to the extended, unplanned duration of that work and their efforts in recovering some of the added time through overtime and added resources. Had the contractor not pursued the work as efficiently as they did the critical path may have been impacted. They are not entitled to additional contract time since the overall Project schedule critical path was not impacted. See Attachment B for further details.

Contract time is not affected by this change order.

DBE Statement

This change order transfers DBE participation by Amaya to Grady Excavating, Inc. and adds \$540,000 of DBE participation to Rebar International, Inc. which was erroneously reduced during processing of Change Order 73. Amaya's reduced DBE participation as a result of the deleted work due to damaged SB00404 is substituted by Grady Excavating, Inc. The revised Project COA DBE participation amounts are summarized below.

Subcontractor	Increased/Decreased Amount per this CO	Revised Total DBE Amount
Grady Excavating, Inc.	\$51,564	\$594,890.51
Amaya	(\$51,564)	\$1,848,436.00
Rebar International, Inc.	\$540,000	\$12,583,778.86

See Attachment A for approvals of the substitutions.

Attachments

CCIS Change Order Document (22 pages) Change Order Checklist (2 pages) Change Approval Emails (Attachment A) Engineer's Estimate (Attachment B) Letters (Attachment C)

File: CO Files: CO 072; ProjectWise: 16.05.072

DATE: 11/14/16 Page 1 of 22

CONTRACT NO:

008625

FEDERAL AID NO: BR-NHPP-0520 (053)

CONTRACT TITLE:

SR 520, MONILAKE TO EVERGREEN PT. BRIDGE WEST APPR

CHANGE ORDER NO:

2 MARINE CASING EXT AND MISC

PRIME CONTRACTOR: SW0178155

ESTIMATED CONTRACT TOTAL AFTER CHANGE:

() Region

Approval Required:

FLATIRON WEST, INC

18702 NORTH CREEK PARKWAY #202

BOTHELL

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

WA 98011-8019

() Local Agency

1110110.	
CONTRACTOR	ATTORNEY IN FACT
12/8/2016 DATE	DATE

205, 491, 632.00

() Olympia Service Center

() EXECUTED	EXECUTED:
A Th	K TE BIMAS III
PROJECT ENGINEER	STATE CONSTRUCTION ENGINEER
12-13-16 DATE	12/19/16 DATE
(APPROVAL RECOMMENDED () EXECUTED	OTHER APPROVAL WHEN REQUIRED
BY: 52520 Director of Constantin	Inthony Janhan 12/19/16 SIGNATURE
December 18,2016	FHWA
DATE	CAPS & CC 15 10 12/16/20

DATE: 11/14/16 Page 2 of 22

CONTRACT NO: 008625

CHANGE ORDER NO: 72

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 makes the following modifications to the Contract Plans and Provisions:

1. Extend the permanent shaft casings for Piers 34 through 41, to ensure the

casings advance adequately into dense soil.

- 2. Delete Contract Work that is no longer required as a result of the prematurely demolished Sign Bridge No. 520/1.76E (SB00404) and deletes the requirement for the removal of the existing Dynamic Message Sign (DMS) in the vicinity of Foster Island. Destruction and replacement of Variable Message Sign (VMS) 520vm00177 was addressed under CO #048 SR520 Closure Costs. Disadvantaged Business Enterprise (DBE) participation for this item is adjusted as detailed below.
- 3. Replace the galvanized bar grating screen on the south side of the equipment platform belvederes at Piers 16, 21, 28 and 36 with railing and toe plate.

This change order settles the following issues:

- 4. The Contractor's protest regarding falsework for the WAEN structure as detailed in FWI SL#0222 and FWI SL#0231 is retracted.
- 5. The Contractor's protest regarding tire wash stations as detailed in FWI SL#0276 and FWI SL#0281 is retracted.

This change order also increases the DBE Condition of Award (COA) commitment amount for bid item #146 performed by Rebar International, Inc. by \$540,000 to correct an erroneous reduction of that same amount in Change Order #73.

General Criteria:

The Project COA DBE participation is revised as follows:

- 1. DBE participation by Grady Excavating, Inc. is increased to \$594,890.51 for work performed under the following bid item:
- 128 Constructing 9'-0" Diam. Shaft

\$393,632.51

2. DBE participation by Amaya is decreased to \$1,848,436.00 for work performed under the following bid items:

257	Sign Bridge No. 1	\$148,364.00
258	Sign Bridge No. 2	\$110,709.00
259	Sign Bridge No. 3	\$139,009.00
260	Sign Bridge No. 4	\$102,817.00
261	Sign Bridge No. 5	\$152,205.00
263	Sign Bridge Support Bracket	\$152,205.00
265	Illumination System	\$308,650.00

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CONT	RACT NO: 008625	CHANGE ORDER NO: 72		
266	COS Illumination System	\$800.00		
267	COS Traffic Signal System	\$51,450.00	84	
268	COS Traffic Signal System	\$45,430.00		
271	Bus Beacon System	\$6,300.00		
272	Closed Circuit Television	\$35,742.00		
276	Dynamic Message System	\$594,755.00		

3. DBE participation by Rebar International, Inc. is increased to \$12,583,778.86 for work performed under the following bid item:

146 St. Rein. Bar For Shaft

\$3,300,313.86

The Contractor shall assure that subcontracts are executed as part of meeting the DBE Subcontracting Goal that was established as part of the COA.

Construction Criteria:

Contract Provisions Volume 1 of 2, Special Provisions Shaft Excavation, Section 6-19.3(3)B Temporary and Permanent Shaft Casing is supplemented as follows:

Permanent casing elevations (Elev.) shall be changed as follows:

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Pier 34 Shaft A, Plan Elev. -14.0, Revised Elev. -30.0
Pier 35 Shaft A, Plan Elev. -14.0, Revised Elev. -32.0
Pier 35 Shaft B, Plan Elev. -14.0, Revised Elev. -32.0
Pier 36 Shaft A, Plan Elev. -19.0, Revised Elev. -34.0
Pier 36 Shaft B, Plan Elev. -14.0, Revised Elev. -31.0
Pier 37 Shaft A, Plan Elev. -21.0, Revised Elev. -35.0
Pier 37 Shaft B, Plan Elev. -19.0, Revised Elev. -35.0
Pier 38 Shaft A, Plan Elev. -20.0, Revised Elev. -45.0
Pier 38 Shaft B, Plan Elev. -20.0, Revised Elev. -33.0
Pier 39 Shaft A, Plan Elev. -9.0, Revised Elev. -27.0
Pier 39 Shaft B, Plan Elev. -9.0, Revised Elev. -27.0
Pier 40 Shaft A, Plan Elev. -23.0, Revised Elev. -27.0
Pier 40 Shaft B, Plan Elev. -23.0, Revised Elev. -27.0
Pier 41 Shaft A, Plan Elev. -14.0, Revised Elev. -35.0
Pier 41 Shaft B, Plan Elev. -10.0, Revised Elev. -35.0
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Contract Plans Volume 4 of 10 is modified as follows:

Plan Sheets ILN03a titled "Illumination General Notes & Legend", ILR04 titled "Illumination Removal Plan", IL04 titled "Illumination Plan", ILD03 and ILD10 both titled "Illumination Details", TSN06 and TSN09 titled "ITS Wiring Schedule", TS07 titled "ITS Plan" and TSD02, TSD16 and TSD17 all titled "ITS Details" are deleted and replaced with pages 7 through 17 of this change order.

Plan Sheets TSD14, TSD26, TSD68 and TSD69 all titled "ITS Details" are deleted.

Plan Sheet SS7 titled "Sign Specifications" is modified as follows:

- Delete line items R130 and R131.

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CONTRACT NO: 008625

CHANGE ORDER NO: 72

Plan Sheet SS8 titled "Sign Specifications" is modified as follows: - Delete line item R143.

Plan Sheet SNO4 titled "Sign Plan" is deleted and replaced with page 18 of this change order.

Contract Plans Volume 9 of 10 is modified as follows: Plan Sheet BA592 "Sign Mounting at Existing Truss Details 1" is supplemented with the following note:

"All work associated with Sign Bridge No. 520/1.76E (SB00404) is deleted. SB00404 was removed following an accident on March 17, 2015 that destroyed this existing sign structure."

Plan sheets BA617 titled "Belvedere and Equipment Platform Belvedere Elevation and Sections" and BA617.1 titled "Belvedere and Equipment Platform Belvedere Framing Plan 2" are deleted and replaced with pages 19 through 20 of this change order.

Add plan sheet BA619.1 titled "Belvedere and Equipment Platform Belvedere Framing Details 2" and included as page 21 of this change order.

Measurement and Payment:

Total amount of this change is \$2,890,000.

Change Order #068 "Casing Ext Interim Pay" and Change Order #107 "Marine Casing Int Pay 2" were executed previously, providing partial/timely payment to the Contractor for the Marine Casing changes described in this change order. That amount, \$2,100,000, has been deducted from the total negotiated amount of \$4,990,000 leaving a balance paid under this change order in the amount of \$2,890,000.

The new pay item, "CO#72 Marine Casing Ext and Misc", in the Lump Sum amount of \$2,890,000, shall be the final and full payment for all additional costs for equipment, labor, tools, materials, engineering, indirect, overhead, and other costs realized by Flatiron West, Inc. and its subcontractors, consultants, and suppliers for all changes included in this change order.

Time:

Contract time is not affected by this change order.

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CONTRA	CT NO: 0	08625 ·	CHANGE ORDER NO: 72			
ITEM GRO	1	ITEM DESCRIPTION	UNIT MEASURE	UNIT PRICE	EST QTY CHANGE	EST AMT CHANGE

1/4 0

01

CO#72 MARINE CASING EXT AND MISC

L.S.

2,890,000.00

1.00 2,890,000.00

2,890,000.00

DATE: 11/14/16 Page 6 of 22

CONTRACT NO:	008625			C	CHANGE ORDER NO: 72
CONTRACTOR NAME/ID	ITEM NO.	C/P CURRENT COA AMOUNT	REVISED COA AMOUNT	CONTRACTED PROPOSAL AMT	NARRATIVE DESCRIPTION
FRADY EXCAVATING, I	NC.	<u> </u>			
883762164	0128	342,068.51	393,632.51	11,376,250.00	
	Contractor	Total			
		342,068.51	393,632.51		
MARLIES CORPORATION	DBA AMAYA	ELECTRIC			
10891382	0257	188,805.00	148,364.00	140,000.00	
	0258	148,350.00	110,709.00	105,000.00	
	0259	175,450.00	139,009.00	105,000.00	
	0260	140,058.00	102,817.00	88,000.00	
	0261	144,153.00	152,205.00	88,000.00	
	0263	0.00	152,205.00	230,000.00	
	0265	322,000.00	300,650.00	4,200,000.00	
	0266	850.00	800.00	42,000.00	
	0267	52,450.00	51,450.00	118,000.00	
ž.	0268	45,450.00	45,430.00	155,000.00	
	0271	6,500.00	6,300.00	11,000.00	
	0272	35,167.00	35,742.00	83,000.00	
	0276	640,767.00	594,755.00	675,000.00	
		7**********	commonwa.		
	Contractor	Total			
		1,900,000.00	1,848,436.00		
		•••••••	Extendence		
CORD TAITEDWRETOWNS					
EBAR INTERNATIONAL	07.65	2 750 212 85	3 300 312 64	7 200 200 20	
11204188	0146	2,760,313.86	3,300,312.86	7,322,700.00	
	Contractor	Total			
		2,760,313.86	3,300,313.86		
			CAUSTICANANA		

DATE: 11/14/16 Page 7 of 22

CONTRACT NO:	08625			C	HANGE ORDER NO:	72
CONTRACTOR NAME/ID	ITEM NO.	CURRENT COA AMOUNT	REVISED COA AMOUNT	CONTRACTED PROPOSAL AMT	NARRATIVE DESCRIPTION	

Change Order Total

5,002,382.37

5,542,382.37

CONSTRUCTION NOTES (CONTINUATION FROM ILNO3)

DURING STAGE 48, 600V RATED CONDUCTORS SHALL ONLY BE PROVIDED AT SUCH TIME AS THE 15KV CONDUCTORS TO THE FOSTER ISLAND TRANSFORMER ARE DISCONNECTED AND REMOVED. AT THAT TIME, THE 600V CONDUCTORS CAN BE PULLED INTO THE SAME 4° CONDUCT BEING PROVIDED EARLIER FOR THE 15KV CONDUCTORS.

INSTALL SCHEDULE 40 PVC CONDUIT FOR 600V RATED CONDUCTORS.

EXISTING LUMINAIRE AND CONDUIT WAS DESTROYED AS A RESULT OF AN ACCIDENT ON MARCH 17, 2015 AND SHALL BE REPLACED.

FILE NAME			CELT TANK			and the same	The second second
TIME	12:45;19 PM			1	ACCOUNT MO.	STATE	FED.AID PROJ.NO.
DATE	6/7/2016			-	10	WASH	
PLOTTED BY	schiccy		1 - much	200	235	56, 500	
DESIGNED BY	M. KUNDURU		1/	1		NUMBER	
ENTERED BY	M. KUNDURU	↑ CO#78 - MODS FROM DAMAGED SB	10/27/15	KM	134	1012	
CHECKED BY	J.YANG/D. SIMS	A CO#50 ELECTRICAL - LANDSIDE MODS	8/12/15	KM	CONTI	RACT NO.	LOCATION NO.
PROJ. ENGR.	D. EDWARDS	A CO#49 ITS - NEMABEACONLAYOUT MOD	8/12/15	KM	100		
DECIONAL ADM	I MEDEDITU	REVISION	DATE	BY			



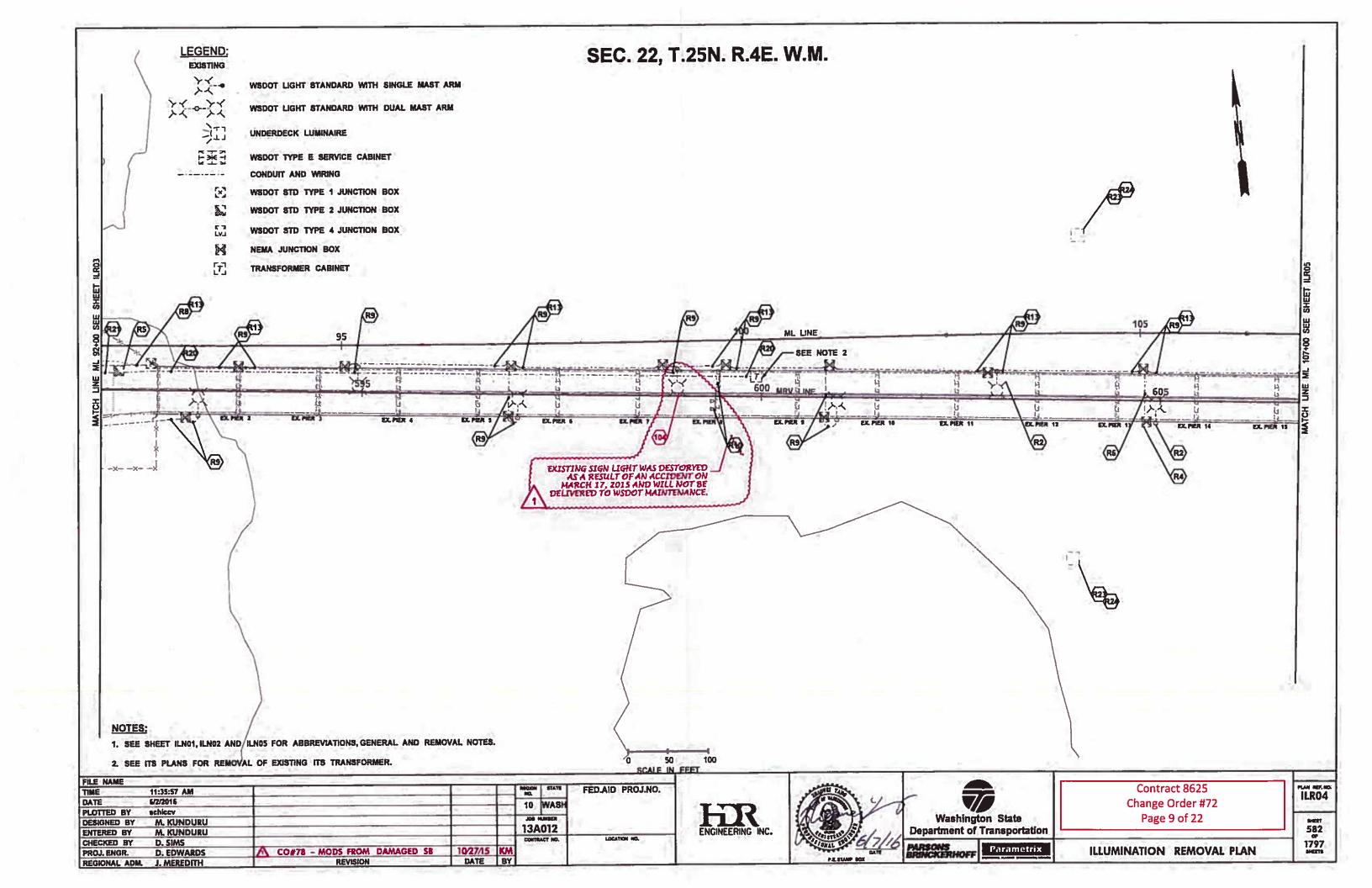


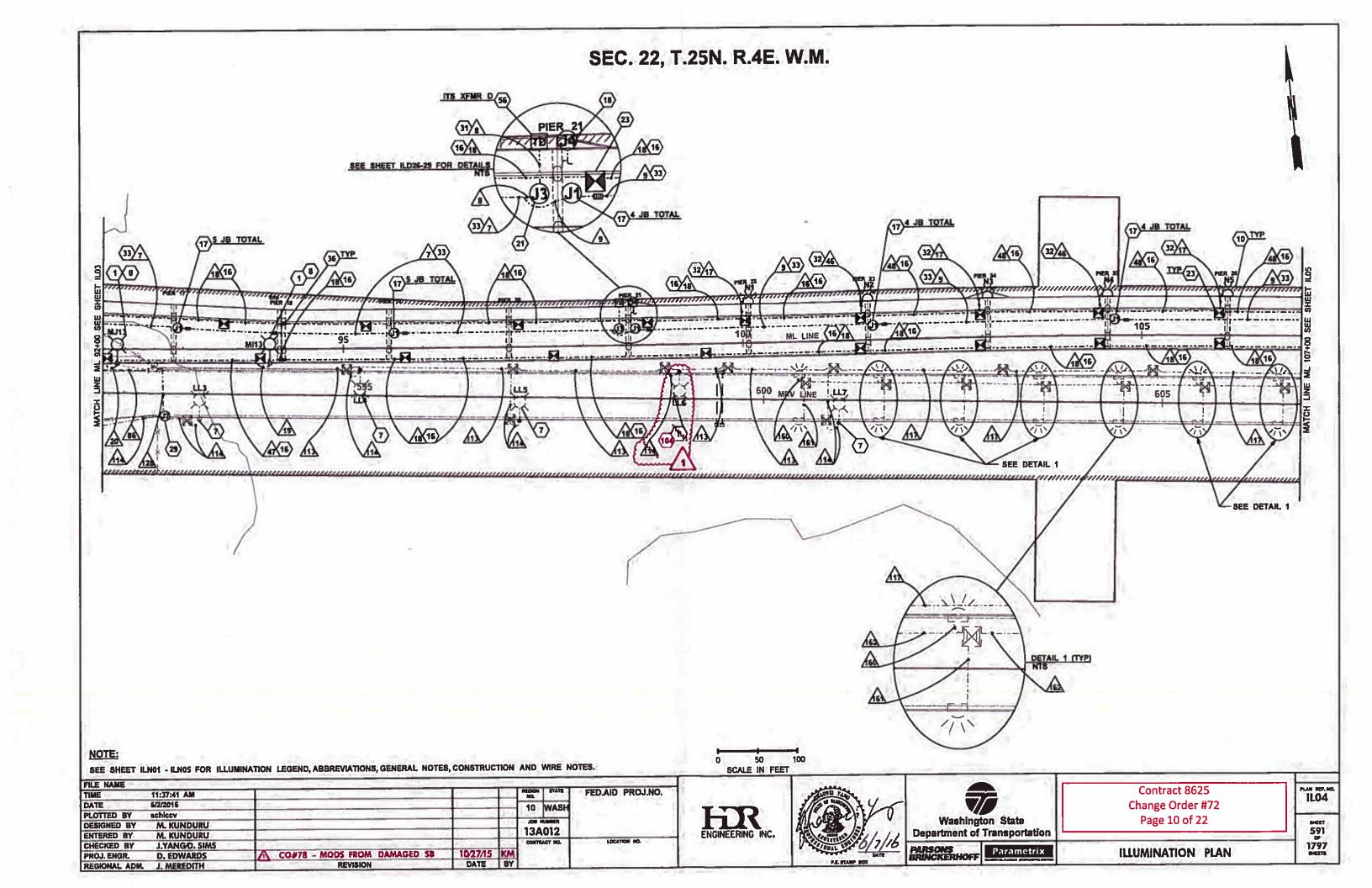


Contract 8625 Change Order #72 Page 8 of 22

ILLUMINATION REMOVAL NOTES

ILNO3a





412-41		BREAKER	BREAKER	STON BL	10000	-
CIRCUIT	DESCRIPTION	RATING	TYPE	RATING	(V)	LOAD (KVA
100	MAIN	200	DPST	-	480	
A	ILLUMINATION A (PEDESTRIAN UNDERDECK)	30	DPST	30	480	1.2
В	ILLUMINATION B (WB LOOP ON-RAMP, 24TH AVE UNDERDECK & MAINLINE)	30	DPST	30	480	5,2
С	ILLUMINATION C (NAVIGATION EB BRIDGE)	25	DPST	30	480	7.5
D	ILLUMINATION D (MAINLINE NEAR MONTLAKE)	30	DPST	30	480	3.9
E	ILLUMINATION E (WB LOOP ON-RAMP AND EASTBOUND-OFF RAMP)	30	DPST	30	480	2.6
E.	ILLUMINATION F (EASTBOUND UNION BAY BRIDGE)	30	DPST	30	480	3.7
G	ILLUMINATION G (MONTLAKE UNDERDECK)	30	DPST	30	480	2.3
Н	TRANSFORMER H (ITS)	60	DPST	NA	480	20.0
1157	TRANSFORMER I (ITS)	20	DPST	N/A	480	7.5
J	TRANSFORMER J (ITS)	20	DPST	N/A	480	7,5
K	TRANSFORMER K (ITS)	-48·20	DPST	N/A	450	4507.5
L	ILLUMINATION L (EASTBOUND FOSTER ISLAND)	30	DPST	30	450	2.4
М	INTERNAL TRANSFORMER M	15	DPST	N/A	480	3.0
N	SPARE	20	DPST	4	480	
0	SPARE	20	DPST	Section of	480	
	PEAK LOAD (INCLUDING FUTURE	LOAD)			- KINTS	-81:8 74
1000	CONTINUOUS LOAD				The second	-58:0 46

BREA	KER SCHEDULE	TYPE E SERVICE, 240/4 NEAR ARBORETUM ((6)					
CIRCUIT	DESCRIPTION	BREAKER RATING		CONTACTOR RATING	VOLTAGE (V)	TUAD (KV	
-47	MAIN	70	DPST		480	- 1	
A	TRANSFORMER A (ES/CCTV)	30	DPST	N/A	480	7.5	
В	ILLUMINATION B (EASTBOUND ON-RAMP)	30	DPST	30	480	2.0	
С	ILLUMINATION C (EASTBOUND ON-RAMP)	30	DPST	30	480	2.4	
D	SPARE	20	DPST	N/A	480		
E	SPARE	20	DPST	NA	480		
F				N/A	480		
G			and the same	N/A	480		
Н			1 Y	N/A	480		
alli.			1	N/A	480		
J			A. A.	N/A	480	11 -1	
K				N/A	480		
L				N/A	480	-	
М	INTERNAL TRANSFORMER M	15	DPST	N/A	480	3.0	
			7	N/A	480		
				N/A	480		
28	PEAK LOAD (INC	LUDING FUTURE LOAD)				20.0	

BREA	KER SCHEDULE	MODIFIED TYPE E SERVICE 277/ 480V, NEAR CSTW-FACILITY M (SUA 5595)							
CIRCUIT	DESCRIPTION	BREAKER RATING	BREAKER TYPE	CONTACTOR RATING	VOLTAGE (V)	LOAD (KVA)	PHASE (A, B, C		
	MAIN	225	BETTER DET		480/277	H = -			
A	PEDESTRIAN LIGHTING (ABUTMENT LC1)	40	TPST	NA	480	15.0	ABC		
В	TRANSFORMER B (ITS NEAR ABUTMENT)	70	DPST	N/A	480	25.0	CA		
С	TRANSFORMER C (ITS PIER 16)	40	DPST	N/A	480	15.0	BC		
D	TRANSFORMER D (ITS PIER 21)	40	DPST	N/A	480	15.0	AB		
E	TRANSFORMER E (NAV PIER 28)	25	DPST	N/A	480	7.5	CA		
F	TRANSFORMER F (ITS PIER 28)	40	DPST	N/A	480	15.0	BC		
G	TRANSFORMER G (ITS PIER 36)	40	DPST	N/A	480	15.0	AB		
н	ILLUMINATION H (WB MAINLINE WEST OF ABUTMENT)	30	DPST	30	480	0.9	BC		
100	ILLUMINATION I (WB MAINLINE/RAMP ON BRIDGE)	30	DPST	30	480	4.4	BC		
	ILLUMINATION J (WB MAINLINE/RAMP ON BRIDGE)	30	DPST	30	480	4.4	AB		
K	ILLUMINATION K (WB MONTLAKE OFF RAMP WEST OF ABUTMENT)	30	DPST	30	480	3.6	BC		
L.	ILLUMINATION L (WB 24TH AVE E OFF RAMP WEST OF ABUTMENT)	30	DPST	30	480	2.5	BC		
M	INTERNAL TRANSFORMER M	15	DPST	NA	480	3.0	AB		
N	PEDESTRIAN LIGHTING (PIER 16 (LC2), PIER 28 (LC3))	40	TPST	N/A	480	15.0	ABC		
0	SPARE	20	DPST		480	T. 66 TO	3-		
Р	SPARE	20	DPST		480		TO THE		
	PEAK LOAD (INCLUDING FUTUR	RE LOAD)*	10.			150.0			
	CONTINUOUS LOAD	A second	100			85.1	200		

	production and the second	- TO TO SO			THE RESERVE AND ADDRESS.
• FIRST 10K	WA RECEPTACLE LOAD	D AT 100%	DEMAND	FACTOR AND	REMAINING
OVER 10KV	A AT 50% DEMAND F	ACTOR IS L	JSED IN	CALCULATING	PEAK LOAD.

SEE SHEET ILNO1-02 FOR ILLUMINATION LEGEND, ABBREVIATIONS AND GENERAL NOTES.

FILE NAME							
TIME	8:10:01 AM		CAL S	100	REDIGIN	STATE	FED,AID PROJ.NO.
DATE	6/6/2016		1		10	WASH	
PLOTTED BY	schicev		1		1,15,175.1	10,000,000	
DESIGNED BY	M. KUNDURU			757		Annett .	
ENTERED BY	M. KUNDURU	and Charles and the construction of the constr	de military			012	ALCOHOL: N
CHECKED BY	J.YANG/D. SIMS	A CO#78 - MODS FROM DAMAGED SB	10/27/15	MK	CONTR	ACT NO.	LOCATION NO.
PROJ. ENGR.	D. EDWARDS	AS-BUILT REVISIONS	3/13/15	JC		1	
REGIONAL ADM.	J. MEREDITH	REVISION	DATE	BY	600		A Townson









Contract 8625 Change Order #72 Page 11 of 22

CIRCUIT	DESCRIPTION	BREAKER RATING	BREAKER TYPE	CONTACTOR RATING	VOLTAGE (V)	LOAD (KVA)
	MAIN	60			120/240	-
A	PIER LIGHTING	30	SPST	30	120	0.2
В	PIER LIGHTING	30	SPST	30	120	0.2
C	RECEPTACLE	20	SPST	N/A	120	1.8
D	HEATER	15	SPST	N/A	120	0.1
E	LIGHTING CONTROL SWITCH	15	SPST	N/A	120	0.01
F	SPARE	20	DPST	N/A	240	1 1 A
G	SPARE	20	DPST	N/A	240	- 1 Type
	PEAK LOAD				-	2.3
M	CONTINUOUS LOAD					0.5

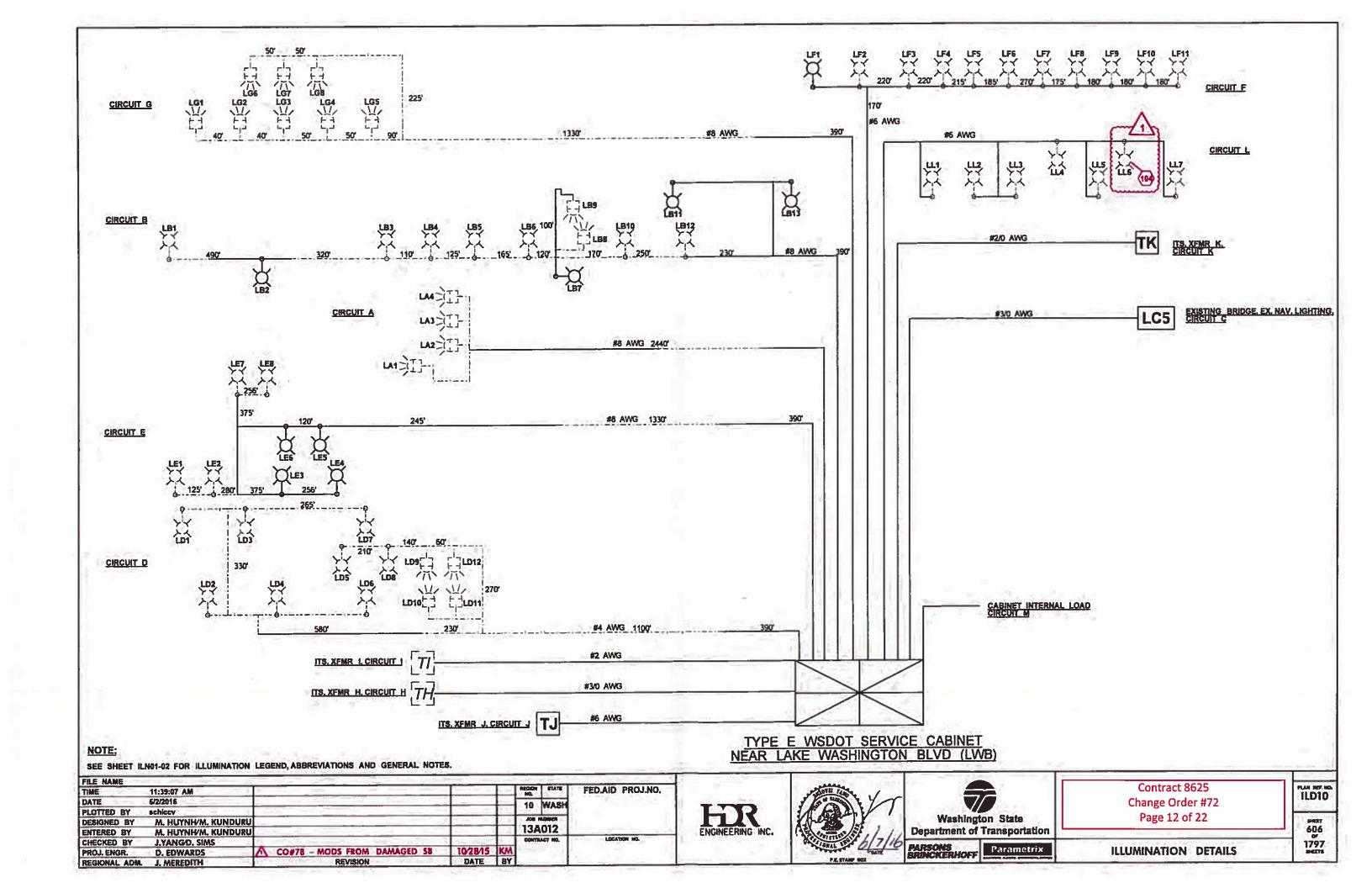
CONTINUOUS LOAD

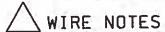
CIRCUIT	DESCRIPTION	BREAKER RATING	BREAKER TYPE	VOLTAGE	AMP LOAD	KVA LOAD		
E	PRIMARY MAIN	25	DPST	480V		7.5		
EE	SECONDARY MAIN	45	DPST	240V	222	10-6		
E-1 E-2	NAVIGATION CABINET	30	DPST	120/240V	10	2.4		
E-3	SPARE	20	SPST	120V	-			
E-4	SPARE	20	SPST	120V		22.4		
E-5					1-11			
E-6	RECEPTACLE	20	20 SPST 120V					
CONTRACTOR N		TRANSFORME	TRANSFORMER RATED LOAD					
		TRANSFORME	R ACTUAL LO	AD		4.2		

ILD03

ILLUMINATION DETAILS

599 or 1797 sector





RUN NO.	EXISTING CONDUIT	NEW	INNERDUCT	EXISTING CONDUCTOR	NEW CONDUCTOR	REMARK
			A	1-248MFO*		MAINLINE COMMUNICATIONS
1	4" PVC		В	1-485MFO		VIDEO/DATA DISTRIBUTION (PRIMARY)
			C		1-96SMFO	MAINLINE COMMUNICATIONS
			D	1-25TWP*	1-48SMFO	DATA COMMINICATION, VIDEO/DATA DISTRIBUTION (SECONDARY
2	4" PVC		A	1-48SMFO		VIDEO/DATA DISTRIBUTION (PRIMARY)
200			B,C,D	EMPTY		SPARE
	4 - 10		A	1-24SMFO*		MAINLINE COMMUNICATIONS
3	4" PVC		8	EMPTY		SPARE
	100		C		1-96SMFO	MAINLINE COMMUNICATIONS
			D	1-25TWP*	1-48SMFO	DATA COMMINICATION, VIDEO/DATA DISTRIBUTION (SECONDARY
4		2" RGS	12		6-2C (sh)	DETECTOR LEAD-IN
5		2.5" RGS	1		9-#6	DMS POWER
	10-1-2	2.5" RGS			EMPTY	8PARE SPARE
		4" PVC	A		1-485MFO	VIDEO/DATA DISTRIBUTION (PRIMARY)
			B,C,D		EMPTY	SPARE
6	7 - 77	S. Carlotte	A,B		EMPTY	SPARE
		4" PVC	C		1-968MFO	MAINLINE COMMUNICATIONS
			D	0	1-485MFO	VIDEO/DATA DISTRIBUTION (SECONDARY)
	-		A		1-48SMFO	VIDEO/DATA DISTRIBUTION (PRIMARY)
7	1 4	4" RG5	8		1-48SMFO	VIDEO/DATA DISTRIBUTION (BRIDGE CONTROL SYSTEM)
7			C,D	CHAT E	EMPTY	SPARE
	1	4" RGS	A		1-96SMFO	MAINLINE COMMUNICATIONS
	100		B,C,D		EMPTY	SPARE
6	7.0	2" RGS			1-CCC	CAMERA CABLE
	f	100			1-WTC	WAVETRONICS CABLE(ALPHA 6023-C)
	4" RG8	-	A	1-48SMFO	0)	VIDEO/DATA DISTRIBUTION (SECONDARY)
	1,435.0		B,C,D	EMPTY	Name of the last	SPARE
	14		A	1-96SMFO*		MAINLINE COMMUNICATIONS
	4" RGS	45	В		1-96SMFO	MAINLINE COMMUNICATIONS
9	2		C,D	EMPTY		SPARE
	1000	14	A		1-48SMF0	VIDEO/DATA DISTRIBUTION (PRIMARY)
	4" RGS	1 1	8	la de la constanta	1-48SMF0	VIDEO/DATA DISTRIBUTION (BRIDGE CONTROL SYSTEM)
	15 0000	1	C,D	EMPTY	k=	SPARE
	4" RGS		A,B,C,D	EMPTY	- 12 - 50 - 1	SPARE
		15-1	A	1-24SMFO*		MAINLINE COMMUNICATIONS
10	4" RGS		В	1-488MFO*	£4	VIDEO/DATA DISTRIBUTION (SECONDARY)
100	Part Print	1. 1	C		1-48SMFO	VIDEO/DATA DISTRIBUTION (SECONDARY)
			D	1-25TWP TEMP*		DATA COMMINICATION
11	P. E.	2"RGS	FEE 10.2	(27.3-3"	1-48SMF0	VIDEO/DATA DISTRIBUTION (LATERAL)
12	V	2" RGS	F-0.24)	PART I	2-2C (sh)	DETECTOR LEAD-IN
13	38	2"RGS	(1-48FOPP	CABINET COMMUNICATION
		2"RGS	_ ===		EMPTY	SPARE
14	191 (123)	2"			1-CAT6	CABINET COMMUNICATION
15	2.5"	13:34:4	(E) = 1	1-25TWP TEMP*	A SECTION	DATA COMMINICATION
			Tarres 9	1-25TWP*		DATA COMMINICATION
16	2"	P b 3	1 m	EMPTY	EW LINES	EMPTY
	2"	E SA DE		1-25TWP*	Editor Services	DATA COMMINICATION
17	3"			1-48FOPP*	22	CABINET COMMUNICATION
18	1.5" RGS"	ALTER TO THE	17 - 130	2-485MFO*	7	VIDEO/DATA DISTRIBUTION (SECONDARY)
19	2" RGS"			2-48SMFO*		VIDEO/DATA DISTRIBUTION (SECONDARY)
		Carrie	SO A DIMENSI	Sextern and A	101	

NOTE: "TWP" IS A PLACE HOLDER FOR DMS COMMUNICATION CABLES. FIBER OR CATE ARE THE OTHER ALTERNATIVES.

FILE NAME		1000				-			
TIME	11:40:08 AM		Miles and the second	Maria de la Companya del Companya de la Companya de la Companya del Companya de la Companya de l			REGION NO.	STATE	FED.AID PROJ.NO.
DATE	6/2/2016	3.5%					10	WASH	
PLOTTED BY	schicav				1 322	100	1 550	hi OShiri	
DESIGNED BY	T. CHI				T A S			NUMBER	
ENTERED BY	T. CHI	100			100	100	_	012	STATE OF THE PARTY
CHECKED BY	D. SIMS	and the second	The same of the sa	CONTRACTOR -	L. Barrer	Service .	CONTI	LACT NO.	LOCATION NO.
PROJ. ENGR.	D. EDWARDS	Λ	CO#78 - MODS FROM	M DAMAGED SB	10/27/15	MK			
REGIONAL ADM.	J. MEREDITH	THE RESERVE	REVISIO	N	DATE	BY	-	- 20	



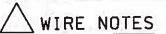




Contract 8625 Change Order #72 Page 13 of 22

ITS WIRING SCHEDULE

RUN NO.	EXISTING CONDUIT	NEW CONDUIT	INNERDUCT	EXISTING CONDUCTOR	CONDUCTOR	REMARK
0.51			Α	1-965MFO*	- International Control	MAINLINE COMMUNICATIONS
20	4" RGS		В	1-48SMFO		VIDEO/DATA DISTRIBUTION (SECONDARY)
-1			C,D	EMPTY		SPARE
21	2" RG5"			1-24FOPP*		CABINET COMMUNICATION
22	4" RG8		A,B,C,D	EMPTY	A STATE OF LIGHT	SPARE
23	2"	E E	E TELL	1-24FOPP	-6-F06-	CABINET COMMUNICATION, DMG-GOMMUNICATION(PIBER-OPTIC-CABI
	3"	-01 - 0-0	A 1000 - 1000		-6-4/9-	-OMO-POWER-
13		100			0-910-	-CM9-POWER
T	4" RG8	I III Par	A	1-48SMFO		VIDEO/DATA DISTRIBUTION (PRIMARY)
	4 300		B,C,D	EMPTY		SPARE
24	OK		A	1-96SMFO	1	MAINLINE COMMUNICATIONS
	4" RGS		В	1-48SMFO	1	VIDEO/DATA DISTRIBUTION (SECONDARY)
	W 1808		C,D	EMPTY		SPARE
25	5 10 -5 1					NOT USED
26		2" RGS	D. F. St. A.		4-4TWP #18	DMS COMMUNICATION(SEE NOTE)
	(a d	2" RGS		9 1	EMPTY	SPARE
27		2" RGS		Company of the second	5-4TWP #18	DMS COMMUNICATION(SEE NOTE)
1853	12 2	2" RGS	Ower a c	RELUCE TO	EMPTY	SPARE
28	VIII - 1	2.5"	12.		4-1/0	DMS POWER
11,400			I LA	554_2	1-2/0	DMS POWER
_ 3		2.5"	TO BY		4-2/0	DMS POWER
29	COLF	2.5" RGS		The same of the sa	4-1/0	DMS POWER
- 3			1130		1-2/0	DMS POWER
		2.5" RGS		La Company	4-2/0	DMS POWER
30	2"		3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3-48	444	POWER FROM TRANSFORMER TO CABINET
31	12 24	2" RGS	1 1 1 1 1 1		3-#8	POWER FROM TRANSFORMER TO CABINET
-		2" RGS	6 - 1		EMPTY	SPÄRE
32		3"			8-2C (sh)	DETECTOR LEAD-IN
	100	3"	1 75	7	EMPTY	SPARE
33		2" RG8		****	EMPTY	FOR FUTURE PROJECT
		2" RGS	Marie Control	-	EMPTY.	FOR FUTURE PROJECT
34			-		Test In	NOT USED
_		2"		7	1-3C	BUS FLASHING BEACON ON MAINLINE
35		2"	70-		1-2C (sh)	DETECTOR LEAD-IN
33	100	2"			EMPTY	SPARE
36	-	2"	-		2-2C (sh)	DETECTOR LEAD-IN
70	the same	2"	(a)	-	EMPTY	SPARE
37		3"		7	6-2C (sh)	DETECTOR LEAD-IN
31		2 ^m			1-3C	BUS FLASHING BEACON ON MAINLINE
- 1	-	2" RGS	12	7	1-CCC	CAMERA CABLE
38		I Koo	-	ACCESS TO	2-2C (sh)	DETECTOR LEAD-IN
20	0.150	2" RGS	8 2 2 - 7		EMPTY	SPARE
39	7 5	2" RGS	1		2-2C (sh)	DETECTOR LEAD-IN
23		2" RGS			EMPTY	SPARE
40		2.5" RGS			EMPTY	FOR FUTURE PROJECT
-0		2.5" RGS			EMPTY	FOR FUTURE PROJECT
**		2.5 RGS			6-1/0	DMS POWER
41		3 RGS	The same of the sa		5-3/0	DMS POWER
		1			a- 31 ti	word i within
					91	
		177		No.		



RUN NO.	EXISTING CONDUIT	NEW CONDUIT	INNERDUCT	EXISTING CONDUCTOR	NEW CONDUCTOR	REMARK
118	1.5"			6-2C (sh)*		DETECTOR LEAD-IN
119	1.5"	812	7 - 3	6-2C (sh)"		DETECTOR LEAD-IN
_	1"		157	2-#8*		POWER TO BUS FLASHING BEACONS
120	1.5"	1		5-2C (sh)*		DETECTOR LEAD-IN
121	1"		1	2-#8°		POWER TO BUS FLASHING BEACONS
122	2"			2-#8*	Λ	POWER TO BUS FLASHING BEACONS
123	5-7-1			Landau San San		NOT USED
124	2" RGS	100		1-24FOPP*	-6-F-06-	CABINET COMMUNICATION, DMS-COMMUNICATION(FIBER-OPTIC-GABLE)
125	2" RG8"		TA TO	1-24FOPP*		CABINET COMMUNICATION
126	1.5"			2-#8*	1.7	POWER TO BUS BEACON
120				2-#8*		POWER TO BUS FLASHING BEACONS
127	1.5"			2-#8"	1 7	POWER TO BUS BEACON CABINET
100	1.0	•		2-2C (sh)*		DETECTOR LEAD-IN
128	1"			2-#8*	C	POWER TO BUS FLASHING BEACONS
120	1.5"		1/10	2-#8*	The last	POWER TO BUS BEACON
400		1		2-#8*	Water Committee	POWER TO BUS FLASHING BEACONS
129	1"	1		2-2C (sh)*		DETECTOR LEAD-IN(BUS BEACON)
130	7			6-2C (sh)*	15	DETECTOR LEAD-IN
131	2"			1-CCC	7	CAMERA CABLE
-	1.25"					MAINLINE COMMUNICATIONS
	100	4	A	1-96SMFO*	-	VIDEO/DATA DISTRIBUTION (SECONDARY)
132	4" RGS	1	В	1-48SMF0	arrive of	
Λ. Υ.	A Carlo	-	C,D	EMPTY	-25	SPARE
	4" RGS	1 - 1	A,B,C,D	EMPTY		SPARE
9	4" FLEX			1-96SMFO*	-	MAINLINE COMMUNICATIONS
133				1-48SMF0	-	VIDEO/DATA DISTRIBUTION (SECONDARY)
-	4" FLEX	(6,		EMPTY	25	SPARE
5000				1-24SMFO TEMP*	72.2	MAINLINE COMMUNICATIONS (TEMPORARY)
134	3" RGS			1-485MFO TEMP*	11	DATA COMMINICATION, VIDEO/DATA DISTRIBUTION (TEMPORARY)
			100	1-25 TWP TEMP*	300	DATA COMMINICATION (TEMPORARY)
135		2" HDPE			1-2C (sh)	DETECTOR LEAD-IN
1		2" HDPE	1	V	EMPTY	SPARE
136		2" HDPE	No.		4-2C (sh)	DETECTOR LEAD-IN
- 24	5	2" HDPE			EMPTY	SPARE
137	1 2	2"		2 - 2 - 3	4-2C (sh)	DETECTOR LEAD-IN
138		2" RG\$	The same of the sa	A STATE OF THE STA	5-FOC	DMS COMMUNICATION(FIBER OPTIC CABLE)
139		2" HDPE	2		1-3C	ADVANCE WARNING SIGN
140		2" RGS			3-FOC	DMS COMMUNICATION(FIBER OPTIC CABLE)
141		2" RGS	Lane 2		2-FOC	DMS COMMUNICATION(FIBER OPTIC CABLE)
142	20	1.5" FLEX	W. 7 30		3-#8	DMS POWER
	Section 1			Annual Marian Company	1-FOC	DMS COMMUNICATION(FIBER OPTIC CABLE)
143	2"			2-#81		DMS POWER 2
144	2"			1-4TWP#18 ¹ 2		DMS COMMUNICATION
	2			1-WX CABLE	And Discoul	WAVETRONICS DATA
145	10135	3" RGS		E I BYLLE I	4-1/0	DMS POWER
		STATE AND			3-3/0	DMS POWER
146		3" RGS	E 551		2-1/0	DMS POWER
140		2 11.00			3-3/0	DMS POWER
147	-		***************************************	4-24FQPP		CABINET COMMUNICATION DIEG COMMUNICATION/FIDER CPTIC CABLE
17/	NO	USED	****	Section 20 Court Print Print Print Page 1975		- BPARE
	THE PERSON NAMED IN COLUMN 1					
148	1" RGS	THE PLANT OF THE	A 11 - 2 - 1	2-SC (sh)*	2-5C (sh)	RAMP METER SIGNAL HEAD

RUN NO.	EXISTING CONDUIT	NEW CONDUIT	INNERDUCT	EXISTING CONDUCTOR	Co. C. L. Control Co. See Commun.	REMARK				
150	The state of the s			1-5C (sh)*	1-5C (sh)	RAMP METER SIGNAL HEAD				
151		2" RGS			1-CCC	CAMERA CABLE				
152	1	2"	7 LA		444	POWER FROM TRANSFORMER TO CABINET				
153	175	2" RG8		T 22 22 2	4-84	POWER FROM TRANSFORMER TO CABINET	_ ;;_3			
2562	fine terms of	2" RGS	Life Country of	Conservation Li	EMPTY	SPARE	2000			
		1° RGS	3-10-2	Martine Commercial Property	2-2C (sh)	PREFORMED INDUCTION DETECTOR LEAD IN	1			
101		1º RGS			2-2C (sh)	PREFORMED INDUCTION DETECTOR LEAD IN				
154	10	1" RGS	3	7 10	2-2C (IN)	PREFORMED INDUCTION DETECTOR LEAD IN				
		1" RGS			2-2C (sh)	PREFORMED INDUCTION DETECTOR LEAD IN				
155			32 = 3		1	NOT USED	1			
	17	2.5" RGS	3 7 2		EMPTY	FOR FUTURE PROJECT	9			
156	June 38	2.5" RGS	N	in a	8-2C (sh)	PREFORMED INDUCTION DETECTOR LEAD IN				
157		2" RGS	1		8-2C (sh)	PREFORMED INDUCTION DETECTOR LEAD IN	1			
		2° RGS			1-24FOPP	CABINET COMMUNICATION	/1\			
158	The Separate Dis	2" RGS	April 1	The second second	EMPTY	SPARE				
0.000	~~~~						SE SE			
	1									
	1				-					
					Service 1					
					1000					
					Adams - The Control of the Control o					
							-			
			and the said	1						
- 19					7					
			The second	Y						
			4							
	1000		1							
		- M								
117		1	Y. Car	No.						
-			72							
		. 7								
		1	7	The same of the sa						
1		11 1		2000						
	CELLIPS CHIEF									
		100 200	C. 234		1					
			On The State of th							
	A CONTRACTOR OF THE PARTY OF TH		C 70		1					
	The state of the s	10 10 10			4					
-	W	1 -2	54		Marine L. C.					
-			15057.7		2					
ALCOHOL:	(
	0 00						s labora (Carana)			
	-	-		- V						
			and the second s							

NOTE: "TWP" IS A PLACE HOLDER FOR DMS COMMUNICATION CABLES, FIBER OR CATE ARE THE OTHER ALTERNATIVES.

* REMOVE EXISTING CABLES FROM CONDUIT. - REMOVE EXISTING CONDUIT.

FILE NAME TIME DATE STATE MOILSEN MA. 10 WASH FED.AID PROJ.NO. 11:40:34 AM 6/2/2016 PLOTTED BY achicev DESIGNED BY T. CHI 13A012 ENTERED BY A CO#78 - MODS FROM DAMAGED SB
A CO#93 - ADDED LOOPS & CCTV MOD
REVISION CHECKED BY D. SIMS OVO7/16 JA DATE BY D. EDWARDS PROJ. ENGR. REGIONAL ADM. J. MEREDITH





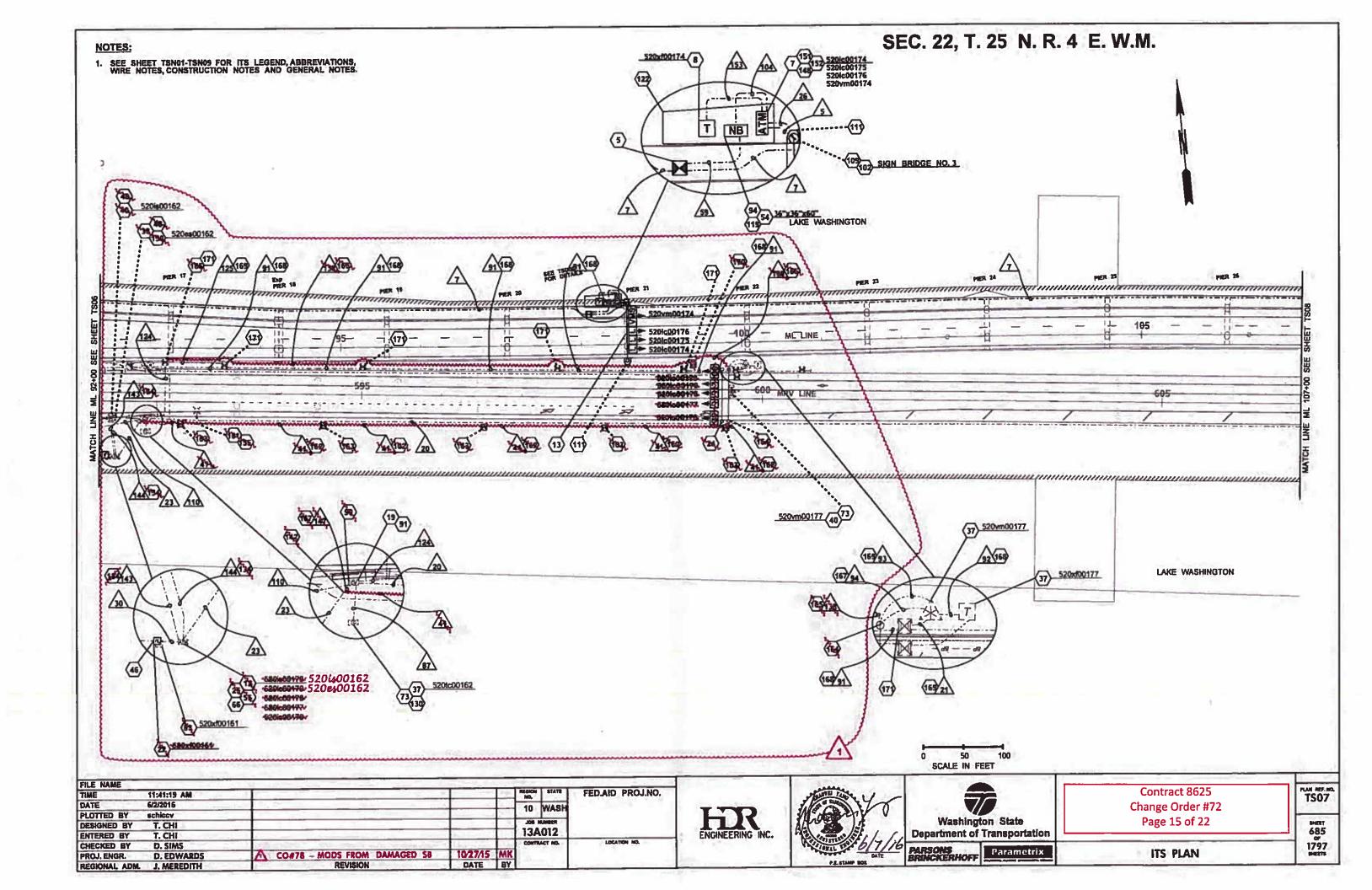


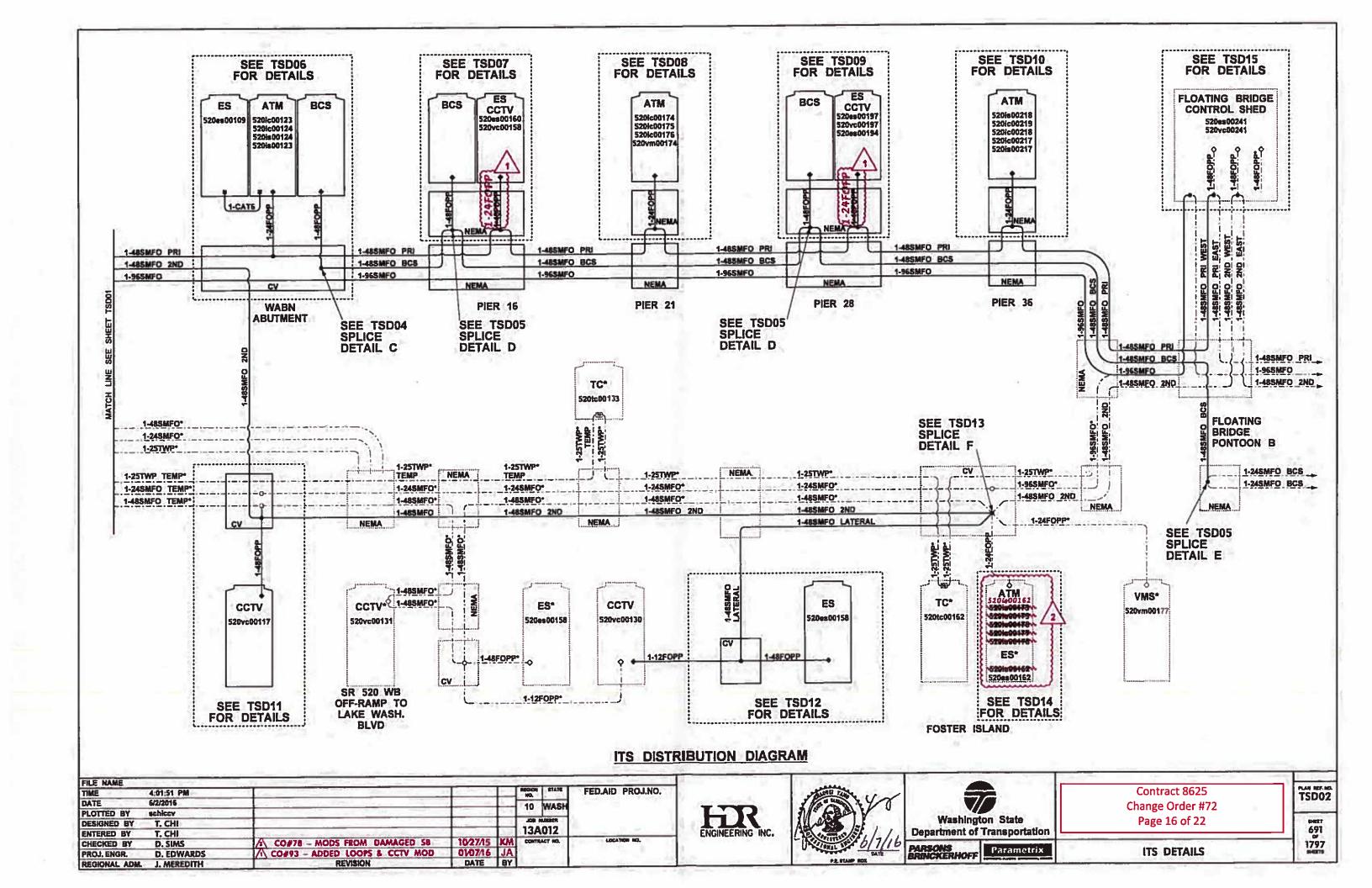
Contract 8625 Change Order #72 Page 14 of 22

578 678 or 1797 seexts

TSN09

ITS WIRING SCHEDULE





520xf00130 (LAKE WASH. BLVD) 7.5 KVA 480V-120V 48"(H) x 24"(W) x 20"(D) SUA 5596 - CIRCUIT A TYPE: CABINET: SERVICE: BUSSWORK: RATED AT 200 AMP

CIRCUIT NUMBER	DESCRIPTION	DESCRIPTION BREAKER BREAKER RATING TYPE		VOLTAGE	AMP LOAD	KVA LOAD
A	PRIMARY MAIN	20	DPST	480V	_	11/2/2013
AA	SECONDARY MAIN	40	DPST	240V		
A-1	520vc00130	20	SPST	120V	17.7	2.124
A-2	520es00158	20	SPST	120V	17.1	2.052
A-3	SPARE	2.01 10		- 25.7	100	
A-4	SPARE	7 (4.1	Lacy of			Total Control
A-5	SPARE	- TO 100		2.00		
A-6	GFCI RECEPTACLE	20	SPST	120V	15	1,8
		TRAI	SFORMER	RATED L	OAD	7.50 KV/
		TRAN	SFORMER	ACTUAL L	OAD	5.98 KVA

520xf00116 (CSTW-FACILITY M) NAME: TYPE: 37.5 KVA. 480V-120V/240V CABINET: 60"(H) x 32"(W) x 30"(D) SUA 5595 - CIRCUIT B

CIRCUIT	DESCRIPTION	DESCRIPTION BREAKER BRI		VOLTAGE	AMP LOAD	KVA LOAD
В	PRIMARY MAIN	100	DPST	480V		50
88	SECONDARY MAIN	200	DPST	240V		
	520is00123 L.1 520is90124 L.2	1 H	C1000000000000000000000000000000000000		L1=50.75	L1=6.09
B-1 B-2	5201c00123 L1 5201c00124 L2 ATM CABINET L1	70	DPST	240V	L2=31.25	1.2=3.75
B-3	520es00109	20	SPST	120V	17.10	2.052
B-4	FIRE PROTECTION CABINET	70	SPST	120V	54.167	6.5
B-5	BUS BEACON	20	SPST	120V	17.10	2.052
B-6	GFCI RECEPTACLE	20	SPST	120V	15.00	1.8
B-7	BCB	35	SPST	120V	29.167	3.5
τ.		TRA	NSFORMER	RATED L	.OAD	37.50 KV
		TRAN	SFORMER	ACTUAL	LOAD	25.74 KV

520xf00160 (PIER 16) TYPE: 15 KVA 480V-120V/240V 60"(H) x 32"(W) x 30"(D) SUA 5595 - CIRCUIT C CABINET: SERVICE: SUA 5595 - CIRCUIT BUSSWORK: RATED AT 200 AMP

CIRCUIT NUMBER	DESCRIPTION	BREAKER RATING	BREAKER TYPE	VOLTAGE	AMP LOAD	KVA LOAD
C	PRIMARY MAIN	40	DPST	480V	-	
CC	SECONDARY MAIN	80	DPST	240V	E7-54	100 m
C-1	520VC00158/520E800160	25	SPST	120V	19.80	2.376
C-2	BCS .	35	SPST	120V	29.167	3.5
C-3	SPARE			1 7 8		
C-4	SPARE					
C-5	SPARE	1200	10	•	G47.50	
C-6	GFCI RECEPTACLE	20	SPST	120V	15.00	1.6
- 107-		TRAI	SFORMER	RATED L	OAD	15.00 KV
		TRAN	SFORMER	ACTUAL L	OAD	7.68 KV/

520xf00174 (PIER 21) 15 KVA 480V-120V/240V TYPE: 60"(H) x 32"(W) x 30"(D) SUA 5595 - CIRCUIT D CABINET: SERVICE:

CIRCUIT	DESCRIPTION	BREAKER RATING	BREAKER BREAKER RATING TYPE		E LOAD	KVA LOAD	
D	PRIMARY MAIN	IN 40	DPST	480V	-	-	
DD	SECONDARY MAIN	80		240V			
	520vm00174 L1-2 520ic00174 L1		- 63-11		L1=38.19	L1=4.58	
D-1 D-2	5204c00175 L2 5204c00176 L1 ATM CABINET L2	60	DPST	240V	L2=45.10	L2=5.41	
D-3	SPARE		Tall (V)	4.7 PK.	13.7.3		
D-4	SPARE	- T- 1	-	Carre			
D-5	SPARE	a					
D-6	GFC! RECEPTACLE	20	SPST	120V	15.00	1.80	
V = 13*	-	TRAN	SFORMER	RATED I	DAD	15.00 KV/	
		TRAN	SFORMER	ACTUAL	LOAD	11.80 KV/	

520xf00194 (PIER 25) 15 KVA 480V-120V/240V NAME: TYPE: CABINET: 60"(H) x 32"(W) x 30"(D) SUA 5595 - CIRCUIT F SERVICE: BUSSWORK: RATED AT 200 AMP KVA LOAD CIRCUIT BREAKER BREAKER VOLTAGE DESCRIPTION LOAD RATING TYPE 40 DPST 480V -PRIMARY MAIN DPST 240V SECONDARY MAIN 80 FF 520VC00197/520E800197 120V 19.60 2.376 25 SPST F-1 35 SPST 120V 29.167 3.5 F-2 BCS SPARE F-3 F-4 SPARE . SPARE F-5 15.00 1.8 120V SPST F-6 GFCI RECEPTACLE 20 15.00 KVA TRANSFORMER RATED LOAD 7.676 KVA TRANSFORMER ACTUAL LOAD

CIRCUIT NUMBER	DESCRIPTION	BREAKER RATING	BREAKER TYPE	VOLTAGE	AMP LOAD	LOAD
G	PRIMARY MAIN	40	DPST	480V	-	
GG	SECONDARY MAIN	80	DPST	240V	1	***
P. Berry	520is00218 L1 520is00217 L2 520ic00219 L1 520ic00217 L2				L1=43.83	L.1=5.26
G-1	520lc00218 L1	2.00	N.E.	H.	1	
G-2	ATM CABINET L2	60	DPST	240V	L2=50.75	L2=6.05
G-3	SPARE		11111			100
G-4	SPARE					Sec. 2.
G-5	SPARE	All Declina	E0.15		Mr. S.	1
G-6	GFCI RECEPTACLE	20	SPST	120V	15.00	1.80

520xf00217 (PIER 36) 15 KVA 480V-120V/240V

TYPE:

520xf00161 (FOSTER ISLAND) NAME: PSRADS> - 7.5 kVA 480V-120V/240V (EXISTING TYPE: CABINET: 60"(H) x 24"(W) x 20"(D) 8UA 5594 - CIRCUIT K SERVICE: BUSSWORK: RATED AT 200 AMP MINIMUM BREAKER BREAKER VOLTAGE CIRCUIT DESCRIPTION LOAD LOAD NUMBER PRIMARY MAIN **** 20** DPST 480V K SECONDARY MAIN 80-40 DPST 240V KK --580ts00178-------ks 29.5 3.4 td=49.69 td=9.29 52040016 \$201000175~~~~~L4~ 5200000162 50010001974 K-1 DPST 240V 1.2-50/79-149-6:09 K,Z -ATH-CABNET 40.4 KJ 2 SPARE SPARE K-4 SPARE K-5 1.80 GFC! RECEPTACLE 20 SPST 120V 15.00 K-6 TRANSFORMER RATED LOAD 7.5 16.00 KVA TRANSFORMER ACTUAL LOAD 5.4 19:15 KVA

520xf00117 (SR 520 EASTBOUND MONTLAKE) 7.5 KVA 480V-120V

TYPE: 48"(H) x 24"(W) x 20"(D) CABINET: SERVICE: SUA 5594 - CIRCUIT K DATED AT 200 AMD

NAME:

CIRCUIT NUMBER	DESCRIPTION	BREAKER BREAKER , RATING TYPE		VOLTAGE	AMP LOAD	LOAD
Act Link	PRIMARY MAIN	20	DPST	480V	-	
JJ .	SECONDARY MAIN	40	DPST	240V		25-18
J-1	520vc00117	20	SPST	120V	17.70	2.124
J-2	SPARE		***CE	2 1984	45	20 - 21
J-3	SPARE			4.4	(T - D	
J-4	SPARE			IIO)	300	
J-5	SPARE				77.19	
J-6	GFCI RECEPTACLE	20	SPST	120V	15.00	1.80
		TRAI	SFORMER	RATED L	DAD	7.50 KVA
		TRAN	SFORMER	ACTUAL L	DAD	3.924 KVA

ABBREVIATIONS

DOUBLE POLE SINGLE THROW SPST SINGLE POLE SINGLE THROW

ELECTRONIC SURVEILLANCE (DATA STATION / RAMP METERING) FLASHING BEACON (BUSES ENTERING HIGHWAY WARNING SIGN)

FTC FIBER TERMINAL CABINET

GROUND FAULT CIRCUIT INTERRUPTER GFC

INFORMATION AND SPEED SIGN / SIDE-MOUNTED MESSAGE SIGN

le LANE CONTROL SIGN

CLOSED CIRCUIT TELEVISION VIDEO CAMERA YC

VARIABLE MESSAGE SIGN

TRANSFORMER BREAKER SCHEDULE

FILE NAME FED.AID PROJ.NO. 11:45:45 AM TIME W2. DATE 10 WASH PLOTTED BY schicev JOB (6,000) DESIGNED BY K. MANMITH 13A012 ENTERED BY K. MANMITH CHECKED BY D. SIMS CO#78 - MODS FROM DAMAGED SE 10/27/15 KM PROJ. ENGR. D. EDWARDS BY. REVISION REGIONAL ADM. J. MEREDITH



TRANSFORMER RATED LOAD

TRANSFORMER ACTUAL LOAD





15.00 KVA 13.15 KVA



Parametrix

Contract 8625 Change Order #72 Page 17 of 22

ITS DETAILS

705 1797 PHERTS

TSD16

GENERAL NOTES

FILE NAME

PLOTTED BY

DESIGNED BY

ENTERED BY

CHECKED BY

PROJ. ENGR.

DATE

11:46:59 AM

\$/2/2016

T, CHI

T. CHI

REGIONAL ADM. J. MEREDITH

D. SIMS

D. EDWARDS

- 1. CABINET SHALL BE FABRICATED OF MILL FINISHED ALUMINUM, CABINET SHALL NOT BE PAINTED OR ANODIZED ALUMINUM.
- 2. THE SECONDARY BRANCH BREAKERS SHALL BE BOLT IN TYPE, MOUNTED ON COPPER BUSSYWORK RATED AT 100 AMPS.
- ALL CIRCUIT BREAKERS INSTALLED SHALL BE PERMANENTLY MARKED WITH APPLICABLE CIRCUIT NAME.
- 4. THE DEAD FRONT SHALL BE FABRICATED IN TWO PARTS, ONE FOR EACH COMPARTMENT.
- THE DOOR HINGE SHALL BE MOUNTED ON THE LEFT SIDE, CONSTRUCTION CORES SHALL BE GREEN WITH TWO MASTER KEYS AND ONE CORE KEY PER LOCK.
- THE ANCHOR BOLT PATTERN SHALL BE AS SPECIFIED BY THE CABINET MANUFACTURER. CABINET ANCHOR BOLTS SHALL EITHER CONFORM TO SECTION 9-06.5(1) AND BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 232, OR BE STAINLESS STEEL. THE THREADED END OF CABINET ANCHOR BOLTS SHALL EXTEND A MINIMUM OF 1-1/2 INCHES ABOVE THE TOP SURFACE OF THE CONCRETE PAD FOUNDATION.
- SEE SECTION 9-29.25 FOR ADDITIONAL REQUIREMENTS.
- TRANSFORMER VOLTAGE AND KVA REQUIREMENTS ARE AS SHOWN IN THE ITS PLANS AND SPECIAL PROVISIONS. TRANSFORMERS 7.5 KVA AND LARGER SHALL BE SUPPLIED WITH TWO FULL CAPACITY TAPS, ONE AT 5% AND ONE AT 10% BELOW NORMAL CAPACITY.
- 9. SEE TRANSFORMER BREAKER SCHEDULE FOR SIZE AND QUANTITY OF BREAKERS.
- 10. SEE CABINET FOUNDATION DETAILS FOR CABINET AND CONDUIT DETAILS.

EQUIPMENT GROUND DUPLEX RECEPTACLE WITH GFCI SPST CIRCUIT BREAKER DPST CIRCUIT BREAKER

ABBREVIATIONS

LEGEND

DOUBLE POLE SINGLE THROW SINGLE POLE SINGLE THROW SPST

GROUND FAULT CIRCUIT INERRUPTER **GFCI** XFMR

TRANSFORMER

PRIMARY SECONDARY MAIN MAIN DPST DPST XFMR 480 VAC TO 00000000 SERVICE CABINET SEE TRANSFORMER 100 BREAKER SCHEDULE CABINET BONDING JUMPER MAIN 20A B BONDING TO ITS CABINETS NEUTRAL JUMPER BUS BAR GROUND BUS BAR SUPPLEMENT GROUND TO STEEL REINFORCING BARS GROUNDING ELECTRODE IN CABINET FOUNDATION

TRANSFORMER CABINET ONE-LINE POWER DIAGRAM 480V - 120V/240V

CO#78 - MODS FROM DAMAGED SB







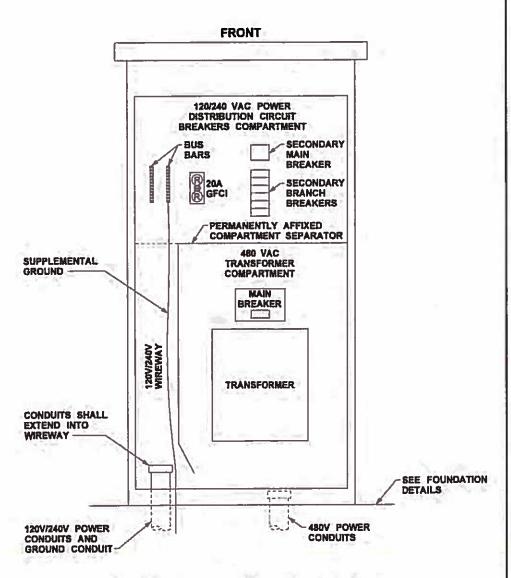


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TSD17

ITS DETAILS

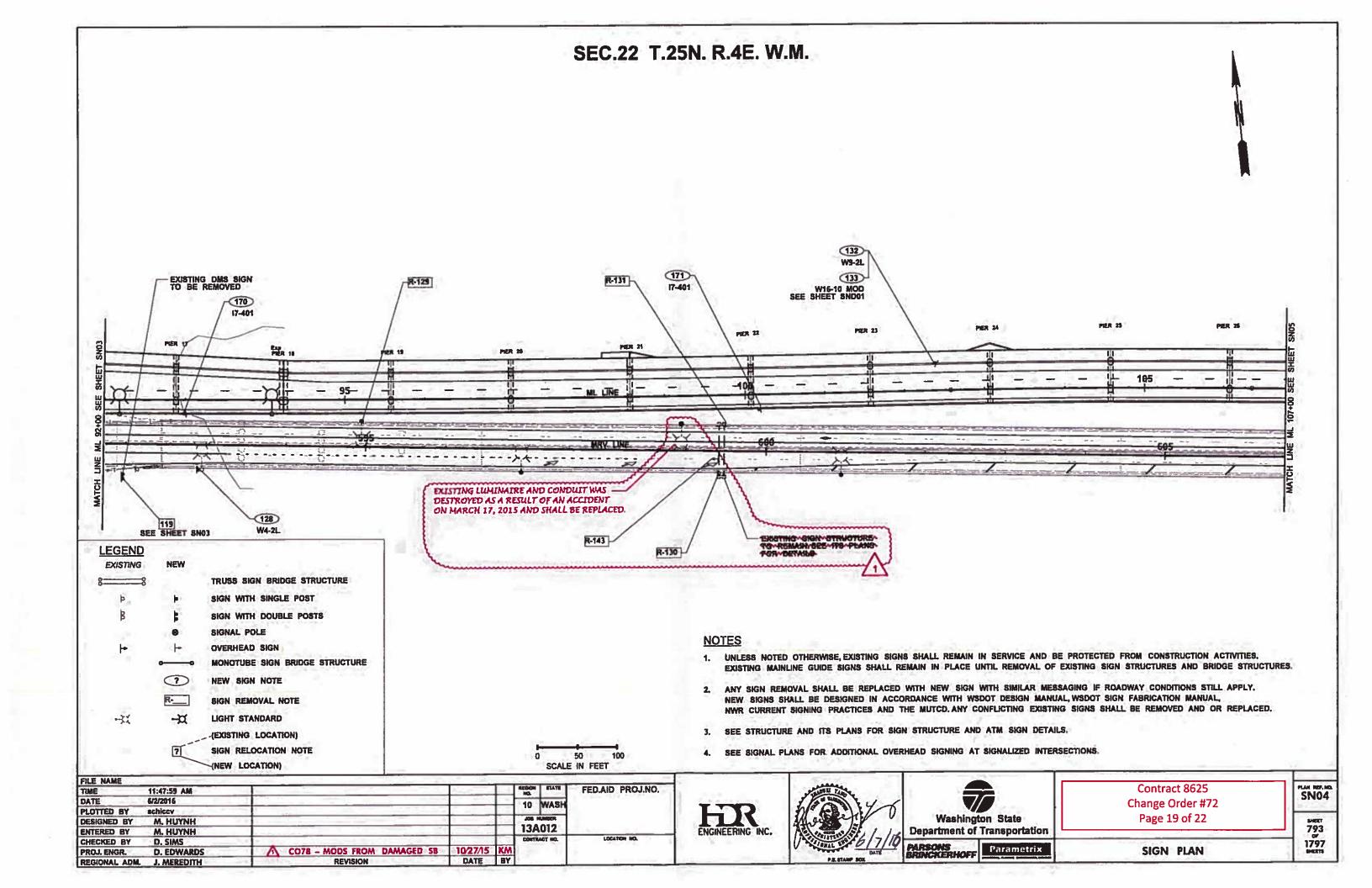
TRANSFORMER CABINET DIMENSIONS NAME RATING HEIGHT WIDTH DEPTH 48" 24" 20" 520xf00117 7.5 KVA 24" 20" 48" 520xf00130 7.5 KVA 30" 32" 60" 520xf00116 37.5 KVA 30" 32" 520xf00160 15 KVA 60" 30" 15 KVA 60" 32" 520xf00174 15 KVA 60" 32" 30" 520xf00194 60" 32" 30" 15 KVA 520xf00217 \$20xf90461

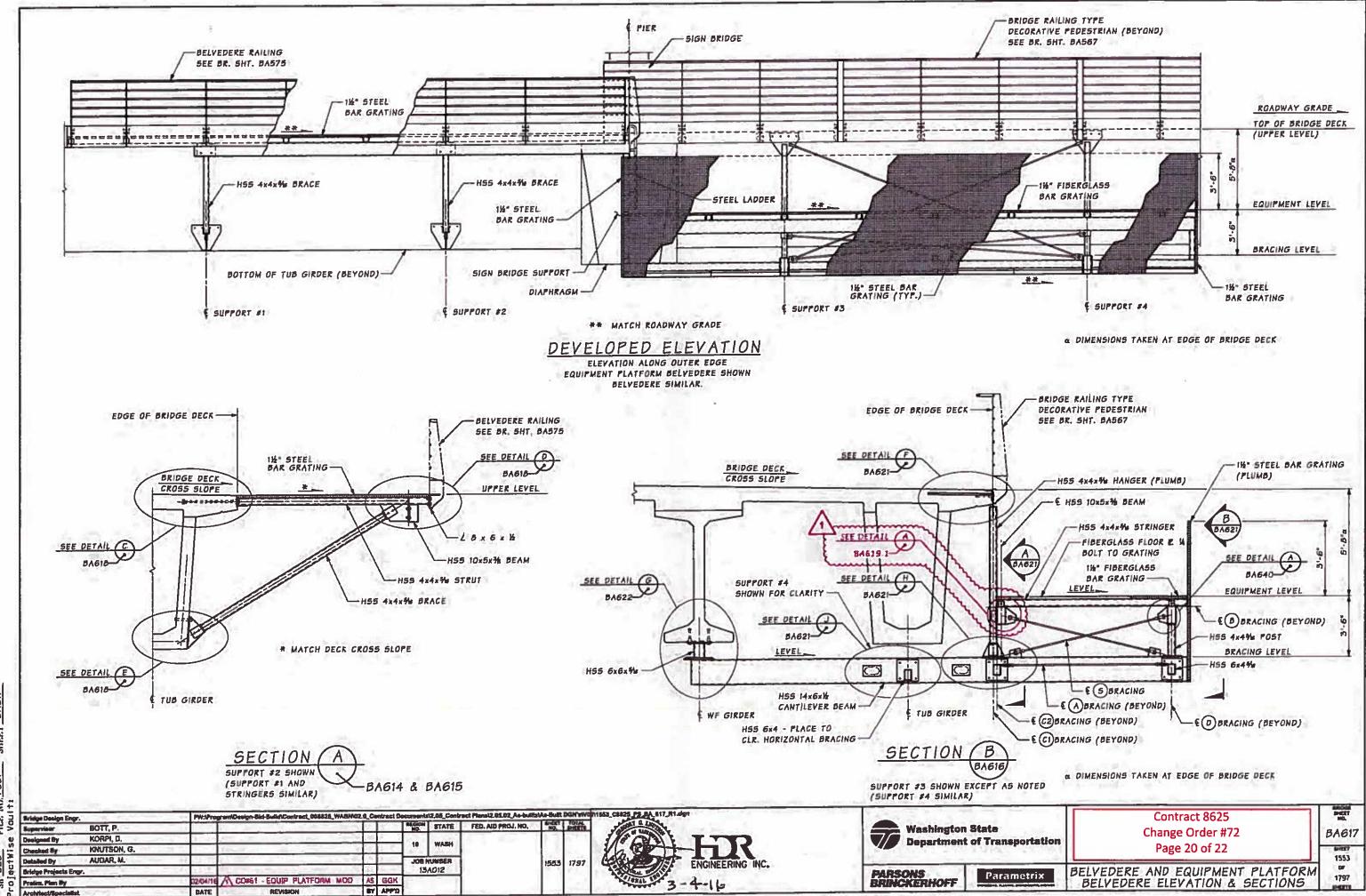


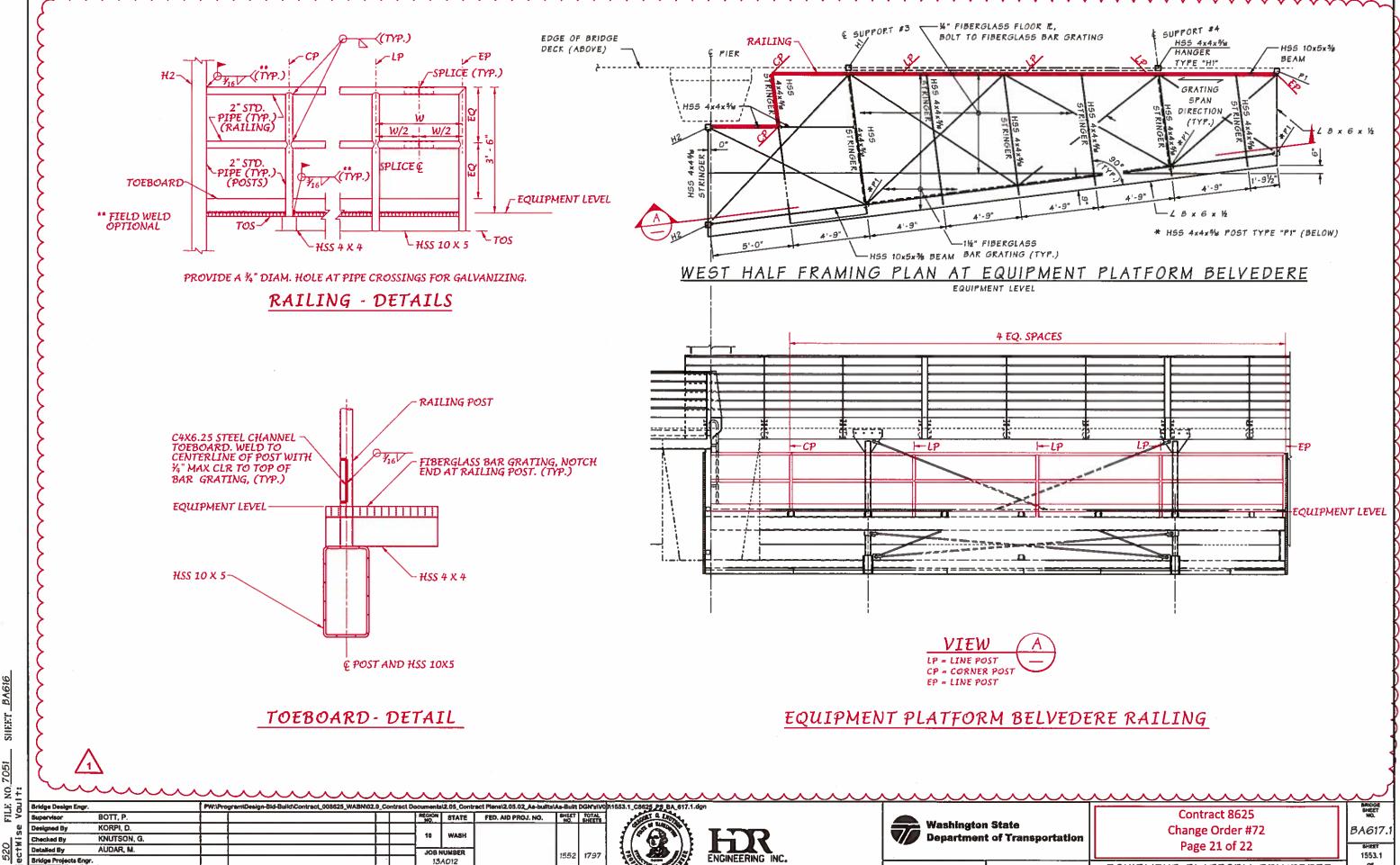
TRANSFORMER CABINET DETAILS WITH DEAD FRONTS REMOVED

Washington State Department of Transportation

706 1797







PARSONS BRINCKERHOFF

Parametrix

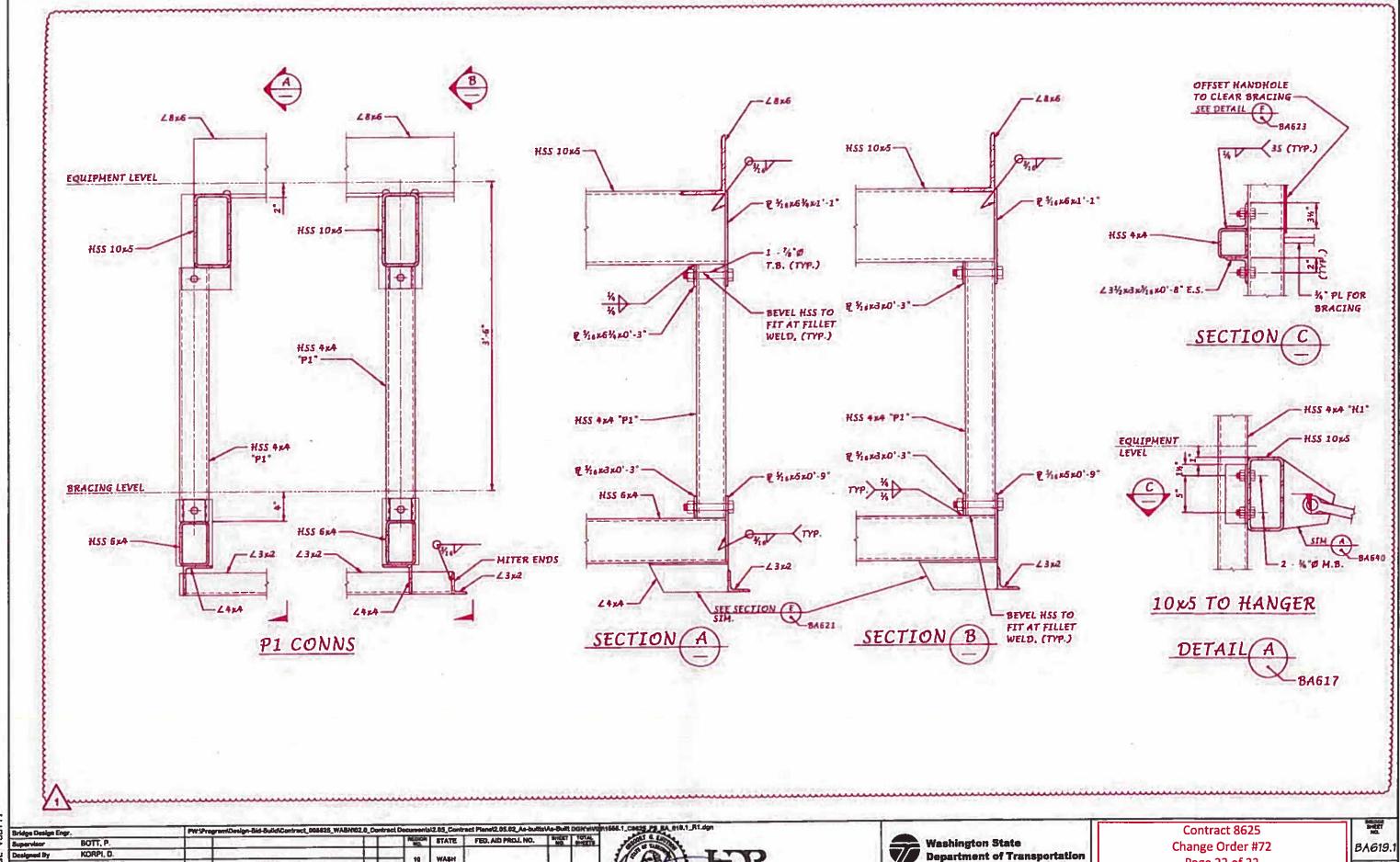
EQUIPMENT PLATFORM BELVEDERE

FRAMING PLAN 2

1797

Prelim. Plan By

10/21/15 A CO#61 - EQUIP PLATFORM MOD AS GGK



3-4-16

WASH

15/012

BY APPD

11/12/15 A COM61 - EQUIP PLATFORM MOD

DATE

1797

SHEET BABI9

Detailed By

Profits. Plan By

Bridge Projects Engr.

KNUTSON, G.

DEGUZNAN, A.

PARSONS BRINCKERHOFF

Parametrix

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BELVEDERE AND EQUIPMENT PLATFORM BELVEDERE FRAMING DETAILS 2

CHANGE ORDER-CHECKLIST

Cont. #: 8625 Cont. Title: SR 520 West Approach Bridge North (WABN) C.O. #: 72 Marine Casing Ext and Misc			If yes, State Construction Office Approval Required.
I. Executed by the State Construction Office			
1. Cost or credit equal to or exceeding \$200,000.°1	☑ Yes	□ No	x
Change in the contract documents beyond the scope, intent or termini of the original contract.*2	☐ Yes	⊠ No	х
 Any proposed revision or deletion of work that affects the condition of award requirements. (Must be coded "CO" in CCIS) 	⊠ Yes	□ No	x
 Change in contract time greater than 30 working days, or a change in contract time not related to any change order. 	☐ Yes	⊠ No	x
. Executed by the Region			
5. Cost or credit greater than \$100,000 but less than \$200,000. *1	☐ Yes	⊠ No	1 1
Change in contract time greater than 10 and less than or equal to 30 working days (must be related to changes implemented by change order).	☐ Yes	⊠ No	
I. Executed by the Project Engineer			
7. Determination of impacts and/or overhead.	☐ Yes	⊠ No	x
8. Specification change involving Headquarters generated specification.(Includes Region generated specification requiring State Construction Office Approval)	⊠ Yes	□ No	х
Specification change involving Region generated specifications.	☐ Yes	⊠ No	
10. Material or product substitution.	☐ Yes	⊠ No	х
11. Structural design change in the roadway section (Requires State Materials Lab approval)	☐ Yes	⊠ No	
12. Determination of changed condition.(Section 1-04.7 of the Standard Specifications)	XYes	No	х
13. Settlement of a claim.(Section 1-09.11(2) of the Standard Specifications)	☐ Yes	⊠ No	х
 Repair of damage regarding "acts of God" or "acts of the public enemy or of government authorities". (Section 1-07.13 of the Standard Specification) 	☐ Yes	⊠ No	<u>12</u> X
15. Structural change to structures (See BTA authority as shown in the Construction Manual)	☐ Yes	⊠ No	х
provals obtained: Project Engineer (Required): Brian Dobbins		Date: _1	Multiple
Region (Required if yes marked): Dave Becher / Julie Meredith		Date:	Multiple
State Construction Office: Derek Case	*******	Date:1	Multiple
State Materials Lab: N/A		Date:	
Other (Local Agency, FHWA, Surety, etc.): Anthony Sarhan		Date: A	26/2016
be completed by the Project Engineer : CO Reason(s) (See "2008 Codes and Definitions" on HQ Construction SharePoint): Al-04_UC			4
Change Order Prepared By: Brian Grieve		Date:	10/23/2015
Has change been entered as lesson learned? ☐ Yes ☒ No ☐ Has design documentation ber	en updated?	⊠ Y	es No
Is this project under full FHWA stewardship oversight? *1			
be completed by the Region :			
Is the change eligible for Federal participation where applicable? ☐ Yes ☐ No			10 10 11
Change Order Reviewed by: Jon Danks	****************	Date: 1	2.16.16

Change (Cost or Credit) greater than \$200,000 or greater than 30 days on Full Federal Stewardship Oversight projects requires FHWA app (see Construction Manual - Chapter 1-2.4C(3), Chapter 1-3.4, and http://www.wsdot.wa.gov/biz/construction/Stewardship/Stewardship.xls)
 Per RCW 47.28.050, any change beyond \$7,500 that is beyond the original scope shall go through the competitive bidding process.

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.

CHANGE ORDER-CHECKLIST

SR 520 Corrid	10r Proc	<u>gram:</u>	Change Order Page 2 - Checklist Supplement						
Cont. #: 8625 C.O. #: 72				W					
To be completed by the Project Engineer:									
Does this change order require coordination with other SR 520 Projects / Program Areas?									
Coordination has taken place with:									
Contract Project (identify your project): SR 520 West Approach Bridge North									
Pontoon									
Pontoon Mitigation	☐ Yes 🏻	No 🗆	N/A Name: N/A	Date:					
Pontoon Moorage	☐ Yes 🗵	No 🗆	N/A Name: N/A	Date:					
Eastside HOV	☐ Yes 🏻	No 🗆	N/A Name: N/A	Date:					
Evans Creek	☐ Yes 🏻	No 🗆	N/A Name: N/A	Date:					
FB&L	☐ Yes 🏻	No 🗆	N/A Name: N/A	Date:					
WCB	☐ Yes 🏻	No 🗆	N/A Name: N/A	Date:					
WABN	☐ Yes 🗵	No 🗆	N/A Name: N/A	Date:					
Identified risk has be	en entered i	into the S	R 520 Risk Management Database: Yes No No N/A						
Risk ID Number (if po	ending, iden	itify as Pe							
	ct Risk ID No		WN.CNS.900.01						
Projec	ct Risk ID No	o.:	N/A						
-	ct Risk ID No		N/A	· ·					
•									
To be coordinate	d with Pro	gram F	nance, Budget and Controls Group:						
Program Funding Co	ncurrence?		☑ Yes ☐ No Funding Concurrence Obtained on:	Date: 9/21/2016					
Is Sales Tax Included	d in CO Cost	it?	☐ Yes ☒ No Is sales tax deferred? ☒ Yes ☐ No						
Max Payment Curve	Changes dis	scussed	with: N/A	Date:					
Third Party Agreeme	ents discusse	ed with:	N/A	Date:					
Coordination with	Coordination with Others:								
Design / Technical Le	ead:	Name:	Jeremy Butkovich - Geotechnical Engineer of Record	Date: Multiple					
Maintenance:		Name:	N/A	Date:					
Environmental Comm	nitments:	Name:	N/A	Date:					