



Contract Number 008066	Contract Title SR 520 Evergreen Point Floating Bridge and Landings	Federal Aid Number BR-0520(047)
Change Order Number 230	Change Description Anchor Cable Resolution	Date Jan 31, 2017
Region SR 520 Program	Project Engineer Robyn Boyd <i>RLB</i>	Phone Number (425) 576-7066
Prime Contractor / Design-Builder Kiewit/General/Manson. A Joint Venture (KGM)		

- 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

Attached for Headquarters Construction execution and further processing is 008066 Change Order No. 230 – Anchor Cable Resolution, which is recommended for approval by the Project Office.

Evolution and Description:

This change order incorporates WSDOT-initiated changes, Design-Builder initiated changes (DBIC's), and issue resolutions to address nine issues as agreed to by WSDOT and the Design-Builder, Kiewit/General/Manson (KGM), on November 4, 2016, and makes an equitable adjustment to the Contract to settle and resolve these issues.

The nine issues are as follows:

1. Time for Completion
2. PCO 415 – RSUP Lighting Conduit Fill
3. PCO 425 – Pontoon L Junction Boxes
4. PCO 470 – Cathodic Protection Isolation
5. PCO 488 – Anchor Cable Notice
6. PCO 495 – PFS Exterior Paint Marks
7. PCO 510 – Access Doors at Wall 4 and Screening Wall
8. PCO 514 – Delete Removal of Existing Span 30
9. PCO xxx – Pontoon Anchor Eyebar Clearance

All of these issues have been extensively discussed between WSDOT and KGM. WSDOT and KGM were often in disagreement over the level of entitlement for these issues; however, WSDOT and KGM have agreed that the total price and time negotiated for this change order on November 4, 2016 resolves and closes all of these issues regardless of the level of entitlement.

This document addresses each change issue to describe the Contract revisions related to the issue, the evolution of the issue, the correspondence associated with the issue (copies attached), and the determination of entitlement for the issue.

[continued on attached "Change Record – Continuation"]

Change Record – Continuation
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Evolution & Description Of Change (continued)

Evolution and Description (continued):

1. TIME FOR COMPLETION

General Provisions (GP) Section 1-08.5 Time for Completion specifies that “The Design-Builder shall complete all Work necessary to achieve Substantial Completion within the Contract Time, and all work necessary to achieve Physical Completion and Completion of the Project within the times specified in the Contract. See Section 4 of the Contract Form.” Contract Form Section 4.1 Time for Completion specifies that “The deadline for Physical Completion is 300 Calendar Days from the date Substantial Completion is achieved.”

GP Section 1-08.5(2) Physical Completion also specifies that “The Design-Builder shall achieve Physical Completion within 300 Calendar Days of Substantial Completion.”

WSDOT and KGM agreed to increase the time allowed to achieve Physical Completion due to the Work associated with the anchor cable replacement (PCO 488) and cathodic protection isolation (PCO 470) issues that are addressed and resolved under this change order. All warranties will begin at the new Physical Completion date and all other Contract requirements will remain in effect (i.e. requirement for KGM to maintain the Project Office for 90 days past Physical Completion).

This change issue revises Contract Form Section 4.1 and GP Section 1-08.5(2) to add 120 Calendar Days to the time allowed to achieve Physical Completion from the date that Substantial Completion is achieved.

- Associated Letters: none
- Entitlement: KGM did not provide a DBIC proposal or cost proposal for this issue. This issue is implemented into the Contract as a no cost change.
- Time: KGM did not provide a DBIC proposal or time impact analysis for this issue. This issue adds 120 days to achieve Physical Completion, but does not adjust Contract Time (associated with the achievement of Substantial Completion).

2. PCO 415 – RSUP LIGHTING CONDUIT FILL

Technical Requirements (TR) Section 2.16.4.3.3 specifies that “Pedestrian wayfinding lighting shall be provided on the Regional Shared Use Path (RSUP) between the East Approach Bridges abutment and the west end of the west transition span of the new floating bridge.” Section 2.16.4.3.3 also specifies that the pedestrian wayfinding “Luminaires shall be recessed into the concrete barrier on the south side of the RSUP” and that “Conduits shall be installed inside the concrete barrier in accordance with the Mandatory Standards.”

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TR Section 2.16.4.4.1.2 Conduit System, as modified in 008066 Change Order No. 190, specifies that “In new conduits, conductors shall occupy a maximum of 26 percent of the cross-section of the conduit, except where the new conduits serve as a main feeder. In new conduits that serve as a main feeder or in existing conduits, conductor fill shall meet NEC requirements for conduit with three or more conductors, and shall occupy a maximum of 40 percent of the conduit’s cross-sectional area.”

KGM submitted RFI 1108 stating that a portion of the RSUP concrete barrier was designed and built with 1-inch diameter conduit for the pedestrian wayfinding lighting system, which resulted in conductors occupying more than 26 percent of the cross-section of the conduit. KGM noted that after this condition was discovered, the system was redesigned and subsequent RSUP concrete barrier were cast with 2-inch diameter conduit. The RFI further noted that the fill percentage could be reduced using common (shared) neutral conductors.

KGM then submitted KGM Letter 0683 dated March 11, 2016, which included a Category 2 DBIC proposal to revise the RSUP pedestrian wayfinding lighting requirements as described in RFI 1108. Concurrence for this DBIC was provided in WSDOT Letter 0818 dated April 5, 2016.

This change issue revises TR Section 2.16.4.4.1.2 for the RSUP pedestrian wayfinding lighting barrier from the floating bridge northeast sentinel to the East Approach Bridges abutment to specify that the system’s conductors may occupy a maximum of 40 percent of the cross-section of the lighting conduit, and to allow the use of common (shared) neutral conductors.

- Approvals and Concurrences Provided for this Change:
 - Subject Matter Expert Concurrence – Northwest Region Electrical Inspector Randy Palmer, October 19, 2015
 - Project Engineer Level Approval – Robyn Boyd, September 6, 2016
 - Region/Program Level Approval – Dave Becher, October 20, 2016
 - State/HQ Construction Office Level Approval – Derek Case, October 21, 2016
- Associated Letters (attached):
 - KGM Letter 0683
 - WSDOT Letter 0818
- Entitlement: KGM proposed this issue as a Category 2 DBIC; however, this change is not deemed equal or better than the Contract requirement being changed. This issue provides for the acceptance of as-built construction such that the Design-Builder is not required to perform corrective Work; therefore, an equitable adjustment is made to the Contract Price resulting in a credit to the State. This issue decreases the Contract Price the lump sum amount of \$10,000 (see attached Engineer’s Estimate).

3. PCO 425 – PONTOON L JUNCTION BOXES

TR Section 2.13.4.22 Bridge and Retaining Wall Barriers and Railings, as modified by 008066 Change Order No. 197, specifies that “The Design-Builder shall cast a minimum of two, two-inch diameter conduit pipes with junction box pairs (one for each conduit pipe) spaced at 180-foot maximum into all new concrete bridge barriers for the full length of the barrier, including barriers on bridge approach slabs.”

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TR Section 2.16.4.4.1.2.2 Junction Boxes similarly specifies that “The maximum spacing for junction boxes in traffic barriers, retaining walls or structures shall be 180 feet within each raceway system.”

KGM submitted RFI 1086 stating that a pair of junction boxes was not cast into the Pontoon L roadway deck median barrier. RFI 1086 included KGM Non-Conformance Report #352, which showed that the boxes were to have been installed approximately 75-feet from the west end of Pontoon L. The omitted junction box pair results in a distance of 360-feet between the junction box pair cast 60-feet from the east end of Pontoon K and the junction box pair cast 300-feet from the west end of Pontoon L. WSDOT responded to RFI 1086 stating that it would be acceptable to omit the uninstalled junction boxes and to leave the barrier constructed as is.

KGM then submitted KGM Letter 0680 dated February 9, 2016, which included a Category 3 DBIC credit proposal of \$1,587 to accept the condition described in RFI 1086. Concurrence for this DBIC was provided in WSDOT Letter 0836.

This change issue revises TR Section 2.13.4.22 and TR Section 2.16.4.4.1.2.2 to allow a distance of 360-feet between the junction box pairs in the Pontoon L roadway deck median barrier.

- Approvals and Concurrences Provided for this Change:
 - Subject Matter Expert Concurrence – Northwest Region Electrical Inspector Randy Palmer, September 9, 2015
 - Project Engineer Level Approval – Robyn Boyd, May 31, 2016
 - Region/Program Level Approval – Dave Becher, October 21, 2016
 - State/HQ Construction Office Level Approval – Derek Case, October 21, 2016
- Associated Letters (attached):
 - KGM Letter 0680
 - WSDOT Letter 0836
- Entitlement: KGM proposed this issue as a Category 3 DBIC for a credit of \$1,587. This issue provides for the acceptance of as-built construction such that the Design-Builder is not required to perform corrective Work; therefore, an equitable adjustment is made to the Contract Price resulting in a credit to the State. This issue decreases the Contract Price the lump sum amount of \$2,000 (see attached Engineer’s Estimate).

4. PCO 470 – CATHODIC PROTECTION ISOLATION

TR Section 2.17.12 Cathodic Protection and Stray Current Mitigation specifies that the Design-Builder shall provide cathodic protection and stray current mitigation systems that are designed to protect the sections of anchor cables that are submerged in water, as well as the reinforcing steel in the sections of Pontoon exterior walls and bottom slabs that are located below the waterline.

TR Section 2.17.12 states that the primary goal of the systems is to mitigate fresh water corrosion of the anchor cables, and to protect the reinforcing steel in the Pontoons’ exterior walls and bottom slabs which may experience stray current discharge.

TR Section 2.17.12.1 Design Parameters specifies that the anchor cables and the Pontoons shall have separate cathodic protection systems, and provides the design parameters for each of the systems. TR

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Section 2.17.14.4 Bonding similarly specifies that “All metallic components of the Pontoon anchor assembly, including the hawse pipe in each Pontoon, shall be electrically isolated from the electrically continuous reinforcing steel in the walls and the slabs of the Pontoon.”

TR Section 2.17.12.1 notes that “The manufacturer of the Pontoons Furnished by the State (PFS) is required to make all effort to isolate the Pontoon reinforcing steel from the anchor cable assemblies. However, this isolation may not be sufficient and shall be considered in the design of the cathodic protection system.”

WSDOT Letter 0856 dated August 19, 2016 informed KGM that during a site visit by WSDOT Cathodic Protection Specialist Ali Akbar Sohahngpurwala, WSDOT learned that the anchor cable cathodic protection system was not isolated from the Pontoons cathodic protection system. WSDOT Letter 0856 noted that the cathodic protection system designed by KGM did not appear to consider the as-built condition of the PFS, which did not contain appropriate isolation of the PFS reinforcing steel from the anchor cable assemblies.

KGM Letter 0711 dated September 1, 2016 responded by stating that “the original KGM cathodic protection system design met the RFP requirements,” but also stating that some of these requirements were impossible to meet.

While WSDOT does not entirely agree with KGM’s position, there is some cost and risk associated with supporting two systems rather than one. As such, WSDOT Project and Technical staff determined that modifications could be made to the Contract requirements to protect the anchor cables and the Pontoon reinforcing steel utilizing a single cathodic protection and stray current mitigation system in lieu of two separate system. This also reduces the amount of work required to be performed by KGM in order to provide a suitable system.

This change issue specifies that the Design-Builder shall provide a design that addresses the cathodic protection system and stray current mitigation system for the anchor cables and the Pontoons as one Cathodic Protection and Stray Current Mitigation system, and resolves any and all issues, impacts, costs, credits, and/or schedule delays related to this change. Changes to the Contract specifications associated with this change will be addressed under a future change order.

- Associated Letters (attached):
 - WSDOT Letter 0856
 - KGM Letter 0711
- Entitlement: KGM did not provide a DBIC proposal or cost proposal for this issue. This change issue increases the Contract Price the lump sum amount of \$750,000 (see attached Engineer’s Estimate) for the added Work to redesign the Cathodic Protection and Stray Current Mitigation System, and to settle and resolve any and all issues, impacts, costs, credits, and/or schedule delays related to this issue.

5. PCO 488 – ANCHOR CABLE NOTICE

TR Section 2.12.4.2.8 Anchor Design specifies that the floating bridge “Anchors shall be located as shown in the Outfitting and Assembly Minimum Technical Requirements (Appendix M23).” Appendix M23, Bridge Sheet No. A17 shows that there shall be a total of 58 anchors at the floating bridge.

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TR Section 2.12.5.16.1 Anchor Cable Material Requirements, as modified in 008066 Change Order No. 121 R2, specifies the type, size, and material requirements for the floating bridge anchor cables. TR Section 2.12.5.16.3 Anchor Cable Testing, Shipping, and Handling specifies that “The Design-Builder shall ensure that the methods of coiling, shipping and handling the (anchor cable) strand shall not permanently deform the strand wires.”

TR Section 2.12.5.16.10 Anchor and Anchor Cable Inspection specifies that “The Design-Builder shall inspect each anchor and its associated anchor cable in their final positions. The inspection shall identify damage such as broken wires, kinks, crushing or other damage; snagging of strand wires; snagging of anchor cables with themselves or with other cables.” TR Section 2.12.5.16.10 further states that “The Design-Builder shall repair all damage to the anchor cables in accordance with Section 1-07.13 of the General Provisions and as specified in this section.”

WSDOT Letter 0819 dated April 5, 2016 noted that KGM’s structural engineering consultant Simpson Gumpertz & Heger provided an engineering analysis describing anomalies in 37 of 56 anchor cables (two anchor cables were not included in the analysis). WSDOT Letter 0819 stated that “The anchor cables are exhibiting two types of anomalies: raised wires / broken wires, and deformation in the form of waviness over a cable length ranging from 3 to 20 feet. WSDOT concurs with SHG’s findings that the anchor cables meet the short term capacity requirements to safely open the bridge to traffic. Replacement of the damaged anchor cables needs to begin as soon as possible. The Design-Builder shall bear all costs of replacing the damaged anchor cables as the damage is a consequence of improper handling during the installation process.”

KGM then submitted RFI 1279 asking WSDOT to accept 18 anchor cables with raised/misaligned/protruded wires in their as is condition. WSDOT did not approve this request.

KGM Letter 0696 dated May 24, 2016 stated that the extent of the damaged cables was agreed to by WSDOT and KGM in early 2016. WSDOT Letter 0838 dated June 7, 2016 disagreed with KGM’s assertion, stating that “KGM’s own documents have not been consistent with listing the damage of the anchor cables.” WSDOT Letter 0838 further stated that “After reviewing the anchor cable installation documentation WSDOT has determined the Design-Builder did not handle the anchor cables in accordance with RFP section 2.12.5.16.3. During the cable installation process the cables were bent well below the structural strand minimum bending radius industry standard while using a single point support. The Design-Builder shall bear all costs of replacing the damaged anchor cables as the damage is a consequence of improper handling during the installation process.”

In RFI 1282, KGM provided documentation to support the acceptance of anchor cables with raised/misaligned/protruded wires. WSDOT responded that “WSDOT considers raised wires in tensioned anchor cables to be permanent deformations of the wires as well as a break in the Class C zinc armoring provided by the exterior lay of wires.” WSDOT also noted that based on WSDOT construction inspection history, tensioned or non-tensioned cables that display wires out of lay or large gaps in the lay are likely to have been mishandled resulting in permanent deformations of the cables.

KGM Letter 0698 dated June 24, 2016 stated that KGM is proceeding with the replacement of all anchor cables that WSDOT identified for replacement due to bends/kinks, damaged zinc coating, or raised/misaligned/protruded wires; however, KGM does not agree that cables with

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raised/misaligned/protruded wires require replacement, therefore, KGM reserves its rights to pursue additional cost and time for the replacement of these cables.

WSDOT Letter 0847 dated July 20, 2016 restated WSDOT's assertion that the damaged anchor cables were the result of mishandling during installation, and that the observed damage is to be repaired by KGM as specified in TR Section 2.12.5.16.10. Nevertheless, the letter states that "WSDOT understands that KGM does not consider "misaligned" or "protruded" wires as permanently deformed strand wires. WSDOT will continue to work with KGM to determine if any amount of out-of-lay wires would be considered as an insignificant defect and can be accepted."

KGM Letter 0712 dated September 8, 2016 transmitted a report prepared by KGM's structural engineering consultant Simpson Gumpertz & Heger that included a review of 13 anchor cables with raised wires. KGM Letter 0712 requested that the 13 anchor cables be accepted based on the findings of the report.

Upon further inspection and analysis, it was determined that 46 anchor cables required replacement due to damage. KGM agreed to accept responsibility to replace 27 damaged cables, but disputed the replacement of 19 anchor cables which KGM considered to be acceptable as is.

This change issue specifies that the Design-Builder shall replace the following 46 Pontoon anchor cables: ANE, ANW, ASW, BLN, CN, CS, DN, DS, EN, ES, FN, FS, GLN, GLS, GN, GS, HS, IN, IS, JN, JS, KS, LN, LS, MN, MS, NN, ON, OS, PS, QLN, QLS, QN, QS, RN, RS, SN, SS, TN, TS, UN, US, VLN, VLS, WSE and WSW. This change issue specifies that the replacement anchor cables shall be furnished, installed, and inspected in accordance with the Contract requirements, and includes document "Pontoon Anchor Cable Replacement Criteria" as a reference for the acceptance or rejection of the replacement anchor cables.

- Associated Letters (attached):
 - WSDOT Letters 0819, 0838, 0847
 - KGM Letters 0696, 0698, 0712
- Entitlement: KGM did not provide a DBIC proposal or cost proposal for this issue. This change issue increases the Contract Price the lump sum amount of \$2,000,000 (see attached Engineer's Estimate) to settle and resolve any and all issues, impacts, costs, credits, and/or schedule delays related to this issue.

6. PCO 495 – PFS EXTERIOR PAINT MARKS

TR Section 2.27.1.1.2 General Requirements for All Pontoons, as modified by 008066 Change Order No. 30, specifies that "The Design-Builder shall be responsible for moorage and towing of all Pontoons from the respective construction site(s) to the final floating bridge alignment in Lake Washington."

TR Section 2.27.4.1 Pontoons Furnished by the State (PFS), as modified by 008066 Change Order No. 30, specifies that "the Design-Builder shall perform a joint (coordinated) inspection with WSDOT of each PFS to be transferred to the Design-Builder. The joint inspection shall be documented by the Design-Builder and include the condition of each PFS in general and each PFS cell in particular."

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In RFI 1264, KGM noted that paint markings (predominantly orange colored) were present on the exteriors of the PFS. Some markings were related to the construction of the PFS and were present when the PFS were transferred to KGM; other markings were applied by KGM to aid in the towing of the PFS to Lake Washington. RFI 1264 requested that the paint markings be allowed to remain. WSDOT responded to RFI 1264 stating that because the PFS with construction related paint markings were accepted by KGM, and because towing related paint markings were applied to the PFS by KGM, it is KGM's responsibility to remove the paint markings. Nevertheless, WSDOT finds it acceptable to leave the paint markings as is due to the environmental risks associated with removing the markings while the PFS are in Lake Washington.

This change issue specifies that the Design-Builder is not required to remove existing construction or towing related paint markings on the exterior of the PFS, as approved by WSDOT.

- Associated Letters: none
- Entitlement: KGM did not submit a DBIC proposal or credit proposal for this issue. This issue provides for the acceptance of as-built construction such that the Design-Builder is not required to perform corrective Work; therefore, an equitable adjustment is made to the Contract Price resulting in a credit to the State. This issue decreases the Contract Price the lump sum amount of \$10,000 (see attached Engineer's Estimate).

7. PCO 510 – ACCESS DOORS AT WALL 4 AND SCREENING WALL

008066 Change Order No. 190 (PCO's 136, 148, 172, 172.1, 234 – OIC Additional Wall 3-26 and Noise Walls Design) and 008066 Change Order No. 200 (PCO's 172, 172.2, 136, 148 – South Side Walls Construction and Issue Resolution) specify that the Design-Builder shall design and construct Retaining Wall 4 located north of the Pedestrian Path, and a Screening Wall located south of the Pedestrian Path.

KGM designed Retaining Wall 4 as a cast-in-place concrete wall as required under TR Section 2.13.4.9 Permanent Retaining Walls, and designed the Screening Wall as a concrete masonry unit (CMU) wall as required under 008066 Change Order No. 190. Both walls require access doors to provide passage through the walls.

In RFI 1295, KGM requested approval to utilize the WSDOT Standard Plans for access doors in precast concrete walls at Retaining Wall 4 and the Screening Wall, in lieu of using the Standard Plans for access doors in cast-in-place concrete walls and CMU walls. This request was accepted by WSDOT.

This change issue specifies that the Design-Builder may utilize Appendix D17 WSDOT Standard Plan D-2.92-00 Sheet 2 (applicable to precast concrete walls) for the access doors and frames at cast-in-place concrete Retaining Wall 4 and at the CMU Screening Wall.

- Associated Letters: none
- Entitlement: KGM did not provide a DBIC proposal or cost proposal for this issue. This issue is implemented into the Contract as a no cost change.

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8. PCO 514 – DELETE REMOVAL OF EXISTING SPAN 30

TR Section 2.13.1 related to Bridges and Structures specifies that the Design-Builder shall conduct Elements of Work including the “Removal of existing Each Approach and West Approach Bridge components of Bridge No. 520/8.”

Appendix M1 Conceptual Plan, Bridge Sheet No. WS03 - Removal of Existing Bridge, shows the removal limits at the existing East Approach Bridge. The westernmost removal limit is immediately east of existing Pier 30, which is adjacent to the new West Connection Bridge (WCB; WSDOT Contract 008432).

KGM informed WSDOT that there were potential risks and hazards associated with removing portions of the existing East Approach Bridge that are close proximity to the new WCB.

WSDOT evaluated the issue and determined that KGM would not be required to remove the westernmost span of the existing East Approach Bridge, and that the span would be removed under a separate future Contract.

This change issue revises TR Section 2.13.1 to specify that Pier 31 and the span between Piers 30 and 31 of the existing East Approach Bridge shall not be removed.

- Associated Letters: none
- Entitlement: KGM did not submit a DBIC proposal or credit proposal for this issue. This issue deletes Work to have been performed by the Design-Builder; therefore, an equitable adjustment is made to the Contract Price resulting in a credit to the State. This issue decreases the Contract Price the lump sum amount of \$275,000 (see attached Engineer’s Estimate).

9. PCO xxx – PONTOON ANCHOR EYEBAR CLEARANCE

TR Section 2.12.4.2.8 Anchor Design specifies that “The Design-Builder shall design the anchors. The anchors shall be designed to facilitate future anchor cable replacements.”

TR Section 2.12.4.2.8.1 General Anchor Requirements specifies that “Anchor cable attachment points to the (Pontoon anchor) eyebar shall remain four feet minimum above the mudline or ballast surface, whichever is higher.”

TR Section 2.12.5.16.10 Anchor and Anchor Cable Inspection specifies that “The Design-Builder shall furnish digital photographs of the anchor and eyebar with the anchor cable. The Design-Builder shall complete an Anchor Inspection Form ... and shall submit the completed form with the photographs to WSDOT.”

WSDOT Letter 0838 dated June 7, 2016 stated that WSDOT had not received the required Anchor Inspection Forms or photographs, but had learned that the installation of 30 to 40 fluke anchors did not meet the Pontoon anchor eyebar clearance requirements specified in TR Section 2.12.4.2.8.1. WSDOT Letter 0838 stated that a Non-Conformance Report should be issued and that remedial action should be taken in order to provide “a long term maintenance-free solution that does not require the eyebars to be uncovered for future anchor cable replacements.”

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KGM asserted that the eyebar clearance requirements were not met because the fluke anchors experienced an unanticipated amount of settlement. WSDOT stated that information regarding the soft nature of the Lake Washington lakebed was readily available to KGM and should have been considered in the design of the anchors.

Upon further inspection and analysis, WSDOT and KGM agreed to modify the Pontoon anchor eyebar clearance requirements and to specify the corrective measures required at anchors where the eyebars are below the mudline.

This change issue revises TR Section 2.12.4.2.8.1 to state that no corrective action is necessary at anchors where the eyebar to cable pin connection is above the mudline and the full pin diameter can be identified by routine dive inspections. This change issue also revises TR Section 2.12.4.2.8.1 to specify that the Design-Builder shall trench around the anchor connection point at anchors where the eyebar to cable pin connection is below the mudline in order to provide a minimum lateral clear distance of 4-feet between the eyebar anchor cable connection point and either side of the trench, and a minimum vertical clear distance of 1.5-feet above the bottom of the trench.

- Associated Letters (attached):
 - WSDOT Letter 0838
- Entitlement: KGM did not submit a DBIC proposal or credit proposal for this issue. This issue revises the anchor eyebar clearance acceptance criteria such that less corrective Work is required by the Design-Builder; therefore, an equitable adjustment is made to the Contract Price resulting in a credit to the State. This issue decreases the Contract Price the lump sum amount of \$453,000 (see attached Engineer's Estimate).

Contract Time:

This change order increases the time to achieve Physical Completion from the date of Substantial Completion by 120 Calendar Days. This increase was requested by the Design-Builder as described in Section "Evolution & Description of the Change", item 1. TIME FOR COMPLETION.

This change order does not impact Contract Time, which is associated with Substantial Completion.

Design-Builder Concurrence:

The Design-Builder has concurred with this change.

FHWA Participation:

This change is eligible for FHWA participation.

Condition of Award (COA):

This Contract does not have a COA. This change does not affect the goal requirement for this Contract.

Contract Number 008066	Contract Title SR 520 Evergreen Point Floating Bridge and Landings	Change Order Number 230
<p>Basis of Cost & Justification:</p> <p>As mutually agreed for the Work as described in this change order, WSDOT will reimburse the Design-Builder the lump sum amount of \$2,000,000 under the change order items shown on page 8 of the change order. An Engineer's Estimate (attached) was developed by WSDOT for the purpose of reviewing and negotiating the cost of this change order.</p>		
<p>Contract Time:</p> <p>This change order does not impact Contract Time, which is associated with Substantial Completion. This change order increases the time to achieve Physical Completion from the date of Substantial Completion by 120 Calendar Days as described under "Evolution & Description Of Change".</p>		
<p>Prior Approvals:</p> <ul style="list-style-type: none"> * Project Engineer Level – Robyn Boyd, December 20, 2016 * Region/Program Level – Dave Becher, January 18, 2017 * Program Funding Concurrence – Janet Buoy, January 19, 2017 * State/HQ Construction Office Level – Craig McDaniel / Derek Case, January 25, 2017 * FHWA Level – Anthony Sarhan, January 31, 2017 		
<p>List Attachments:</p> <ul style="list-style-type: none"> * Change Record - Continuation * Change Order No. 230 (Approved by PE) * Change Order No. 230 Checklist * Engineer's Estimate * Approval Documentation * Correspondence listed in Section "Evolution & Description of the Change" 		

Distribution By: Project Office

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

**WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION
CHANGE ORDER**


DATE: 12/22/16
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CONTRACT NO: 008066 FEDERAL AID NO: BR-0520(047)
 CONTRACT TITLE: SR 520 / I-5 TO MEDINA - EVERGREEN POINT FLOATING
 CHANGE ORDER NO: 230 ANCHOR CABLE RESOLUTION

PRIME CONTRACTOR: SW0106139 KIEWIT/GENERAL/MANSON, A JOINT
 33455 6TH AVE S
 FEDERAL WAY WA 98003-6335




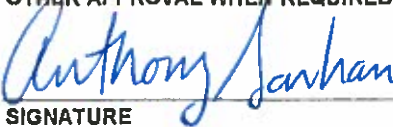
Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications

Change proposed by Contractor

ENDORSED BY:  _____ CONTRACTOR 1/9/17 _____ DATE	SURETY CONSENT: _____ ATTORNEY IN FACT _____ DATE
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ORIGINAL CONTRACT AMOUNT: 586,561,000.00
 CURRENT CONTRACT AMOUNT: 763,239,327.77
 ESTIMATED NET CHANGE THIS ORDER: 2,000,000.00
 ESTIMATED CONTRACT TOTAL AFTER CHANGE: 765,239,327.77

Approval Required: Region Olympia Service Center Local Agency

<input checked="" type="checkbox"/> APPROVAL RECOMMENDED <input type="checkbox"/> EXECUTED  PROJECT ENGINEER 1/31/2017 _____ DATE	EXECUTED:  STATE CONSTRUCTION ENGINEER February 13 th 2017 _____ DATE
<input checked="" type="checkbox"/> APPROVAL RECOMMENDED <input type="checkbox"/> EXECUTED REGIONAL ADMIN: <i>Director of Construction</i>  BY: _____ February 2, 2017 _____ DATE	OTHER APPROVAL WHEN REQUIRED  SIGNATURE _____ 2/10/17 DATE FHWA REPRESENTING _____

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CHANGE ORDER NO: 230

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:

The first paragraph above is revised to read:

All work, materials, and measurements to be in accordance with the request for proposal (RFP) and the contract documents for this project.

DESCRIPTION:

This change order incorporates both WSDOT-Initiated Changes and Design-Builder Initiated Changes in accordance with General Provisions Section 1-04.4 to incorporate or address the resolution of potential change order (PCO) issues associated with Contract No. 008066 as agreed to on November 4, 2016 and as described in this change order.

CONTRACT REQUIREMENTS:

*** TIME FOR COMPLETION:**

The Design-Build Contract Form shall be revised as follows:

Under Section 4.1 Time for Completion, delete the sentence:

"The deadline for Physical Completion is 300 Calendar Days from the date Substantial Completion is achieved, and the deadline for Completion is 90 Calendar Days from the date Physical Completion is achieved."

And replace with the sentence:

"The deadline for Physical Completion is 420 Calendar Days from the date Substantial Completion is achieved, and the deadline for Completion is 90 Calendar Days from the date Physical Completion is achieved."

General Provisions Section 1-08.5(2) Physical Completion shall be revised as follows:

Delete the sentence:

"The Design-Builder shall achieve Physical Completion within 300 Calendar Days of Substantial Completion."

And replace with the sentence:

"The Design-Builder shall achieve Physical Completion within 420 Calendar Days of Substantial Completion."

*** PCO 415 - RSUP LIGHTING CONDUIT FILL:**

Technical Requirements Section 2.16.4.4.1.2 Conduit System, as modified in 008066 Change Order No. 190, shall be revised as follows:

Delete the paragraph:

"In new conduits, conductors shall occupy a maximum of 26 percent of the cross-section of the conduit, except where the new conduits serve

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as a main feeder. In new conduits that serve as a main feeder or in existing conduits, conductor fill shall meet NEC requirements for conduit with three or more conductors, and shall occupy a maximum of 40 percent of the conduit's cross-sectional area."

And replace with the paragraphs:
"Conduit fill shall be as follows:

- * In new conduits, conductors shall occupy a maximum of 26 percent of the cross-section of the conduit, unless otherwise noted in this section.
- * In new conduits that serve as a main feeder or in existing conduits, conductor fill shall meet NEC requirements for conduit with three or more conductors, and shall occupy a maximum of 40 percent of the conduit's cross-sectional area.
- * In new conduits for pedestrian wayfinding lighting at the segment of the RSUP extending from the floating bridge northeast sentinel to the East Approach Bridges abutment, conductors shall occupy a maximum of 40 percent of the cross-section of the conduit, and may utilize a common (shared) neutral conductor if all of the following conditions are met:
 - Meets the requirements of the National Electrical Code (NEC) Handbook, 2011 Edition, Article 210.4 Multiwire Branch Circuits, Article 215.4 Feeders with Common Neutral Conductor, and Article 310.15(B) (5) (c) related to Neutral Conductors.
 - The loads on the phased conductors are balanced to minimize the current on the neutral conductor.
 - The phased conductors and common neutral conductor are bundled together and labeled at every junction box."

* PCO 425 - PONTOON L JUNCTION BOXES:
Technical Requirements Section 2.13.4.22 Bridge and Retaining Wall Barriers and Railings, as modified by 008066 Change Order No. 197, shall be revised as follows:

In the third paragraph, delete the sentence:
"The Design-Builder shall cast a minimum of two, two-inch diameter conduit pipes with junction box pairs (one for each conduit pipe) spaced at 180-foot maximum into all new concrete bridge barriers for the full length of the barrier, including barriers on bridge approach slabs."

And replace with the sentences:
"The Design-Builder shall cast a minimum of two, two-inch diameter conduit pipes with junction box pairs (one for each conduit pipe) into all new concrete bridge barriers for the full length of the barrier, including barriers on bridge approach slabs. Junction box pairs shall be spaced at 180 feet maximum, except that the roadway

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deck median barrier lighting conduit junction box pairs at the east end of Pontoon K and at Pontoon L may be spaced 360 feet apart."

Technical Requirements Section 2.16.4.4.1.2.2 Junction Boxes shall be revised as follows:

In the third paragraph, delete the sentence:

"The maximum spacing for junction boxes in traffic barriers, retaining walls or structures shall be 180 feet within each raceway system and 240 feet in all other areas."

And replace with the sentence:

"The maximum spacing for junction boxes in traffic barriers, retaining walls or structures shall be 180 feet within each raceway system, except as noted in Section 2.13.4.22 as modified by 008066 Change Order No. 230. The maximum spacing for junction boxes in all other areas shall be 240 feet."

* PCO 470 - CATHODIC PROTECTION ISOLATION:

As a result of issues with the isolation of the reinforcing steel in the pontoons furnished by the State (PFS), the Design-Builder shall provide a design that addresses the cathodic protection system and stray current mitigation system as one Cathodic Protection and Stray Current Mitigation system. Specifications and changes to the Contract as a result of a Cathodic Protection and Stray Current Mitigation system shall be provided by the Design-Builder and will be addressed under a future change order.

This change order resolves any and all past, current, and future issues, impacts, costs, credits, and/or schedule delays experienced by the Design-Builder related to the Work to provide a Cathodic Protection and Stray Current Mitigation system, including but not limited to the commissioning and acceptance of the system.

* PCO 488 - ANCHOR CABLE NOTICE:

The Design-Builder shall replace, as a means to repair damage, the following forty-six (46) Pontoon anchor cables installed under this Contract: ANE, ANW, ASW, BLN, CN, CS, DN, DS, EN, ES, FN, FS, GLN, GLS, GN, GS, HS, IN, IS, JN, JS, KS, LN, LS, MN, MS, NN, ON, OS, PS, QLN, QLS, QN, QS, RN, RS, SN, SS, TN, TS, UN, US, VLN, VLS, WSE, WSW.

All anchor cables shall be free of defects, and shall be furnished, installed, and inspected in accordance with the Contract documents. Any anchor cable found to be defective, as defined in the document "WSDOT Anchor Cable Replacement Criteria" included as pages 9 and 10 of 008066 Change Order No. 230, shall be removed and replaced.

This change order resolves any and all past, current, and future issues, impacts, costs, credits, and/or schedule delays experienced by the Design-Builder associated with the Work to replace Pontoon anchor cables as addressed in 008066 Change Order No. 230.

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* PCO 495 - PFS EXTERIOR PAINT MARKS:

The Design-Builder is not required to remove the existing construction-related paint marks on the exterior of the Pontoons Furnished by the State (PFS), as approved by WSDOT.

* PCO 510 - ACCESS DOORS AT WALL 4 AND SCREENING WALL:

The Design-Builder may utilize WSDOT Standard Plan D-2.92-00 Sheet 2 related to precast concrete walls (Appendix D17) for the Work associated with the access doors and frames at cast-in-place concrete Retaining Wall 4 located north of the Pedestrian Path, and at the CMU block Screening Wall located south of the Pedestrian Path.

* PCO 514 - DELETE REMOVAL OF EXISTING SPAN 30:

Technical Requirements Section 2.13.1 related to Bridges and Structures shall be revised as follows:

Delete the bulleted item:

"* Removal of existing East Approach and West Approach Bridge components of Bridge No. 520/8. For removal of existing floating bridge, see Section 2.26 (Removal of Existing Floating Bridge)."

And replace with the bulleted item:

"* Removal of existing East Approach and West Approach Bridge components of Bridge No. 520/8, except that existing Pier 31 and the span between existing Piers 30 and 31 shall remain. For removal of existing floating bridge, see Section 2.26 (Removal of Existing Floating Bridge)."

* PCO xxx - PONTOON ANCHOR EYEBAR CLEARANCE:

Technical Requirements Section 2.12.4.2.8.1 General Anchor Requirements shall be revised as follows:

Delete the paragraph:

"Anchor cable attachment points to the eyebar shall remain four feet minimum above the mudline or ballast surface, whichever is higher."

And replace with the paragraphs:

"Anchor cable attachment points to the eyebar shall remain four feet minimum above the mudline or ballast surface, whichever is higher, unless otherwise specified in this section. Fluke anchor attachment points that are less than four feet above the mudline or ballast surface shall be addressed as follows:

1. The Design-Builder shall identify all fluke anchor attachment points that require corrective action as defined below and depicted on page 11 of 008066 Change Order No. 230.
 2. Where the eyebar to cable pin connection is above the mudline and the full pin diameter can be identified by routine dive inspections, no corrective action is necessary.
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3. Where the eyebar to cable pin connection is below the mudline, the Design-Builder shall trench around the connection point to provide a minimum lateral clear distance of 4-feet between the eyebar anchor cable connection point and either side of the trench and 1.5-feet minimum vertical clearance above the bottom of the trench.
4. Where the depth of the trench exceeds 4-feet, the slope of the trench walls shall be no steeper than 2:1.
5. The Design-Builder shall provide WSDOT with as-built data for all trenched areas confirming that the final conditions meet the corrective action requirements.
6. The Design-Builder's Engineer of Record shall review the as-built condition of all trenches and confirm that they do not alter the performance of the fluke anchors."

This change order resolves any and all past, current, and future issues, impacts, costs, credits, and/or schedule delays experienced by the Design-Builder associated with the Work to conform to the Pontoon anchor eyebar clearance requirements.

PAYMENT:

As mutually agreed for the Work as described in this change order, WSDOT will reimburse the design-Builder the lump sum amount of \$2,000,000 under the change order items shown on page 8 of this change order. The lump sum amount shall be full compensation for all direct and indirect costs related to Work addressed under this change order.

TIME:

There shall be no extension of Contract Time, which is associated with Substantial Completion, as a result of this change order. This change order increases the time to achieve Physical Completion from the date of Substantial Completion by 120 Calendar Days.

RELEASE:

The Design-Builder, Kiewit/General/Manson, A Joint Venture (KGM), by the signing of this change order agrees and certifies that:

Upon payment of this change order in the amount of \$2,000,000, any and all requests for compensation for direct and indirect costs or additional time set forth in the following Potential Change Order (PCO) issues and associated documents including, but not limited to, those documents listed herein, arising out of or pertaining to Contract No. 008066, have been satisfied in full and the State of Washington is discharged and released from any additional requests for extra compensation or time related to the listed PCO issues:

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- * PCO 415 - RSUP LIGHTING CONDUIT FILL:
KGM Letter 0683 dated March 11, 2016
WSDOT Letter 0818 dated April 5, 2016
- * PCO 425 - PONTOON L JUNCTION BOXES:
KGM Letter 0680 dated February 9, 2016
WSDOT Letter 0836 dated May 31, 2016
- * PCO 470 - CATHODIC PROTECTION ISOLATION:
KGM Letter 0711 dated September 1, 2016
WSDOT Letter 0856 dated August 19, 2016
- * PCO 488 - ANCHOR CABLE NOTICE:
KGM Letter 0696 dated May 24, 2016
KGM Letter 0698 dated June 24, 2016
KGM Letter 0712 dated September 8, 2016
WSDOT Letter 0819 dated April 5, 2016
WSDOT Letter 0838 dated June 7, 2016
WSDOT Letter 0847 dated July 20, 2016
RFI's 1279, 1282, 1285, 1286, 1296
- * PCO 495 - PFS EXTERIOR PAINT MARKS:
RFI 1246
- * PCO 510 - ACCESS DOORS AT WALL 4 AND SCREENING WALL:
RFI 1295
- * PCO 514 - DELETE REMOVAL OF EXISTING SPAN 30
- * PCO xxx - PONTOON ANCHOR EYEBAR CLEARANCE

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ITEM NO	GROUP NO	STD ITEM	ITEM DESCRIPTION	UNIT MEASURE	UNIT PRICE	EST QTY CHANGE	EST AMT CHANGE
1115	01		ANCHOR CABLE RESOLUTION	L.S.	0.00	0.00	1,499,457.00
1115	03		ANCHOR CABLE RESOLUTION	L.S.	0.00	0.00	1,250,543.00
1116	01		CREDIT - ANCHOR CABLE RESOLUTION	L.S.	0.00	0.00	-237,750.00
1116	02		CREDIT - ANCHOR CABLE RESOLUTION	L.S.	0.00	0.00	-275,000.00
1116	03		CREDIT - ANCHOR CABLE RESOLUTION	L.S.	0.00	0.00	-231,000.00
1116	04		CREDIT - ANCHOR CABLE RESOLUTION	L.S.	0.00	0.00	-6,250.00

2,000,000.00

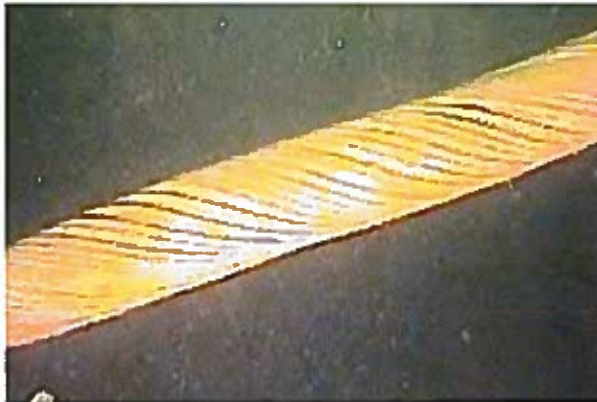
Pontoon Anchor Cable Replacement Criteria:

For the Pontoon anchor cables identified for replacement, WSDOT will consider new, installed anchor cables with any of the following damage as defective. All defective Pontoon anchor cables shall be removed and replaced.

- An individual bend, twist, or kink.
- An individual deformity including basket, bird cage, or lantern distortion, or gaps exposing under wraps of the cable.
- An individual broken wire.
- An individual wire that is a full diameter or more out of lay.
- Multiple adjacent single wires, or multiple single wires closer than 30 linear feet apart, that are 1/2 diameter or more out of lay.

New Pontoon Anchor Cable Rejection Criteria Guidelines:

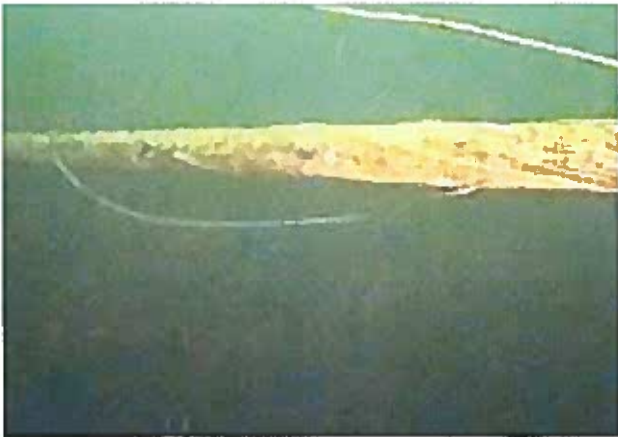
- An individual bend, twist, or kink.



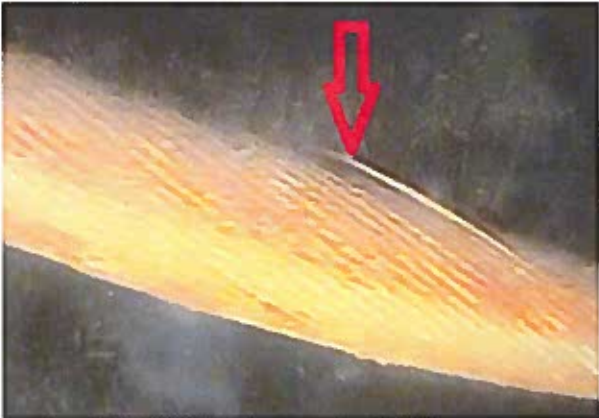
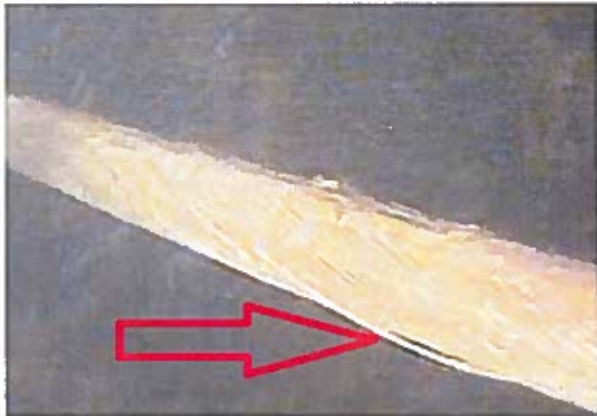
- An individual deformity including basket, bird cage, or lantern distortion, or gaps exposing under wraps of the cable.



- An individual broken wire.



- An individual wire that is a full diameter or more out of lay.



- Multiple adjacent single wires, or multiple single wires closer than 30 linear feet apart, that are 1/2 diameter or more out of lay.

