

APR 09 2015



Washington State
Department of Transportation

Memorandum

April 2, 2015

TO: J. Carpenter / M. Fleming ^{WDF}

THRU: D. Whitehouse / B. White ^{WDF}

FROM: W. Smith / K. Vaughn ^{WS}

SUBJECT: Contract 8127 - Snowshed to Keechelus Dam Phase 1C
State Project
Change Order 118 - "Wall 7 Vic. Final Agreement"

Please find attached the State Construction Office approved and executed Change Order No. 118 for this project.

Description of the Change: The constructability issues associated with Wall 7 have been well documented in previous change orders. A number of change orders (9) addressed issues relating to Soil Nail Wall 7 grout quantity overruns and related impacts. Change Orders 67 and 74 provided for the Contractor to collaborate with WSDOT in redesigning portions of the project to allow the project to move forward without the as-bid Wall 7. Change Order 91 followed those change orders and: deleted Walls 5, 6, 7, 23, and the Slide Curve Bridge; added new items to address temporary roadway construction near Wall 7, construct the temporary Wall 707 Shoring Wall, and Geosynthetic Retaining Wall 707; modified multiple items for the early 2014 construction season. Change Order 100 added construction work that took place in the mid to late 2014 construction season.

Change orders 107, 108, & 109 (broken into 3 change orders, due to the limitations of CCIS), formally accepted the "All Addenda Incorporated with CRIP and Wall 7 Revision" contract plans and provisions, replacing the "All Addenda Incorporated with CRIP" contract plans as the current contract plans and provisions for construction. Construction related work in these change orders included revisions of some item quantities, deletions of others, and some added items. A major item added by these change orders is an equitable adjustment for an increased overhead rate, indirect and/or overhead costs associated with deleted work and an equitable adjustment for a subcontractor, associated with deleted work.

This change order constitutes final agreement and acceptance of quantity and pricing adjustments for all impacts related to the Wall 7 Re-design, based upon the "All Addenda Incorporated with CRIP and Wall 7 Revision" contract plans and provisions. This change order also addresses all schedule related impacts and costs associated with the Wall 7 Re-design.

Evolution of the Change: During the 2012 and 2013 construction seasons the Contractor attempted to construct Soil Nail Wall 7 in accordance with the contract as bid. Drastic overruns in grout quantities were encountered as a result of unanticipated voids in the subsurface material. Grout quantities on average consistently exceeded 250% of neat line quantities and in some cases exceeded 2000% of plan. These problems continued through the summer of 2013, with no improvement or solution in sight, despite exhausting many different attempts to solve the problem. Compounding the problems with grout quantities, were a couple of Environmental Compliance Assurance Process (ECAP) violations in August and September of 2013. These violations prompted the Project Engineer to stop work on Wall 7 grouting. No further construction work on Wall 7 occurred until Change Order 91(Spring 2014). See also the change order memorandums for Change Orders 67, 74, and 91 for more detail.

Change Orders 91, 100, and 107-109 allowed actual construction work to proceed on the “Wall 7 Vic. Re-design”. Ideally, all aspects of the new design would have been incorporated into one change order. However, due to the magnitude of changes, and in order to enable construction activities to progress without further delay, the decision was made to write multiple change orders representing progressive “stages” at which new plans would be available as a part of each of these change orders.

This change order represents the final change order of the “Wall 7 Re-design” series of change orders.

Entitlement: Due to the elimination of the construction of the as-bid Wall 7, Wall 23, Slide Curve Bridge, and associated work, together with the replacement of this work with the Wall 7 Redesign, the Contractor is entitled to additional compensation as described in Section 1-04.4 for the added and modified work. As much as possible during the negotiation process, unit contract prices were used and quantities adjusted for the added or modified work. However, much of the work was changed (as defined in Std. Spec. Section 1-04.4) from that which was bid; this resulted in negotiated prices being higher than original bid prices.

Price:

The project office has prepared an independent engineer’s estimate of the costs to perform the work described in this change order; it can be found in the project offices’ change order file.

Contract Time: This change order adds 88 working days to contract time.

Please contact Will Smith, at (509) 577-1844, if you have any questions or comments.

WS:kv

Enclosures: Change Order 118, Checklists.
cc: Change Order File

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CONTRACT NO: 008127 FEDERAL AID NO:
 CONTRACT TITLE: I-90, SNOWSHED TO KEECHELUS DAM PHASE 1C - REPLACE
 CHANGE ORDER NO: 118 WALL 7 VIC-FINAL AGREEMENT

PRIME CONTRACTOR: [REDACTED] GUY F. ATKINSON CONSTRUCTION, LLC.
 707 SOUTH GRADY WAY STE 500
 RENTON WA 98057-3224

BOND NO. 105659758/82206904/09032749

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

Change proposed by Contractor

<p>ENDORSED BY:</p> <p style="font-size: 1.2em; color: blue;"><i>Robert Adams</i></p> <hr/> <p>CONTRACTOR</p> <p style="font-size: 1.2em; color: blue;">4/01/15</p> <hr/> <p>DATE</p>	<p>SURETY CONSENT: TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA/FEDERAL INSURANCE COMPANY/FIDELITY AND DEPOSIT COMPANY OF MARYLAND/ZURICH AMERICAN INSURANCE COMPANY</p> <p style="font-size: 1.5em; color: blue;"><i>[Signature]</i></p> <hr/> <p>ATTORNEY IN FACT - KAREN C. BOWLING</p> <p style="text-align: center;">MARCH 31, 2015</p> <hr/> <p>DATE</p>
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ORIGINAL CONTRACT AMOUNT: 177,144,342.66
 CURRENT CONTRACT AMOUNT: 186,342,388.77
 ESTIMATED NET CHANGE THIS ORDER: 10,122,685.63
 ESTIMATED CONTRACT TOTAL AFTER CHANGE: 196,465,074.40

Approval Required: Region Olympia Service Center Local Agency

<p><input checked="" type="checkbox"/> APPROVAL RECOMMENDED <input type="checkbox"/> EXECUTED</p> <p style="font-size: 1.5em; color: blue;"><i>W. Smith</i></p> <hr/> <p>PROJECT ENGINEER</p> <p style="font-size: 1.2em; color: blue;">4/2/15</p> <hr/> <p>DATE</p>	<p>EXECUTED:</p> <p style="font-size: 1.5em; color: blue;"><i>Jeff Adams</i></p> <hr/> <p>STATE CONSTRUCTION ENGINEER</p> <p style="font-size: 1.2em; color: blue;">4-9-15</p> <hr/> <p>DATE</p>
<p><input checked="" type="checkbox"/> APPROVAL RECOMMENDED <input type="checkbox"/> EXECUTED</p> <p>REGIONAL ADMIN:</p> <p style="font-size: 1.2em; color: blue;"><i>W. Brian White</i></p> <p style="text-align: right;">W. Brian White</p> <hr/> <p>BY:</p> <p style="font-size: 1.2em; color: blue;">4/6/15</p> <hr/> <p>DATE</p>	<p>OTHER APPROVAL WHEN REQUIRED</p> <hr/> <p>SIGNATURE DATE</p> <hr/> <p>REPRESENTING</p>

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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 follows previously executed Change Orders 67 "Wall 7 Alternative Design Analysis", 74 "Wall 7 Vic.-Design Selected Alt.", 91 "Wall 7 Vic. Early 2014 Work", 100 "Wall 7 Vic. 2014 Work", and 107-109 "Wall 7 Vic. Final Plans". Collectively, all these change orders address what is commonly referred to as the "Wall 7 redesign".

This change order addresses remaining changes resulting from the final (100%) completion of the "All Addenda Incorporated with CRIP and Wall 7 Revision" Contract Plans and Provisions (hereinafter referred to as the "Plans") produced under Change Order 74, and accepted by WSDOT under Change Order 107, by adding, deleting and revising numerous items.

1 item is deleted, 3 items have revised quantities, and 34 new items have been added as shown on page 13 of this change order.

The Engineer agrees to allow an additional westbound Lane Closure Exception (traffic may be reduced to one lane of traffic between Sunday night at 9:00 pm through Friday morning at 9:00am) before Memorial Day, or after the Labor Day holiday weekends, in order to eliminate the MOT Stage 5b traffic shift.

All issues, concerns, costs, time considerations, and impacts associated with the "Wall 7 redesign" and Atkinson Serial Letters 194 and 199 are resolved by endorsement of this change order.

MATERIALS REQUIREMENTS:

All materials shall meet the requirements of the "All Addenda Incorporated with CRIP and Wall 7 Revision" Contract Plans and Provisions, the 2010 Standard Specifications, and this change order.

The table on page ^{14 AH WS} 13, represents the correlation between the actual item names shown in this change order, and the corresponding "Standard Item" name, or the name of the item which is part of the "All Addenda Incorporated with CRIP and Wall 7 Revision" Contract Provisions. The requirements of the 2010 Standard Specifications, Addenda, and Amendments to the Standard Specifications and "All Addenda Incorporated with CRIP and Wall 7 Revision" Contract Provisions shall be applied to each of the items within this change order, according to the item name in the column "Equivalent Standard or Provision Item Name".

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CO 118-Spot Hollow Core Dowel

The materials for hollow core dowels shall be as shown in the Plans.

CO 118-Geocomposite Clay Liner

The materials for the "geocomposite clay liner" shall be as shown in the Plans.

CO 118-Bioinfiltration Pond

The materials for the "bioinfiltration pond" shall be according to pages 14-17 of this change order, except for the following: Sand shall meet the requirements of 9-03.13; pea gravel shall be non-fractured rock with 100% passing the 3/8 In. screen, minimal fines. Acceptance will be by visual inspection. AA 25

CO 118-Rock Fill for Ponds

The material for "Rock Fill for Ponds" shall meet the requirements for Select Rock Embankment as described on page 215 of the Provisions.

CO 118-Flow Splitter

The materials for the "Flow Splitter" shall be as shown in the Plans, with the following exception: The "Shear Gate 18" Diam." shown in the Plans on pages 372A and 372B is changed to "Shear Gate 8" Diam.

CO 118-Precast Barrier-Temporary Scupper

The "Heavy Roofing Paper" material specified in the Plans between the plugging material and the asphalt pavement shall consist of 30 pound roofing paper. Acceptance will be by visual inspection.

Material used for plugging scupper holes (when they are no longer needed) shall be in accordance with Section 9-20.4(4).

CO 118-Electrical and ITS Adjustments

Controlled Density Fill (CDF) shall be accordance with Section 2-09.3(1)E Controlled Density Fill (CDF) or Controlled Low Strength Material (CLSM).

The 4th sentence of the 4th paragraph of Section 2-09.3(1)E is revised as follows: "CDF shall be designed to have a minimum 28-day strength of 150 psi."

CONSTRUCTION REQUIREMENTS:

All work shall meet the requirements of the "All Addenda Incorporated with CRIP and Wall 7 Revision" Contract Plans and Provisions, the 2010 Standard Specifications, and this change order.

CO 118-Mechanical Excavation

This work shall consist of mechanical excavation using specialized equipment (including long-reach excavators in the areas described below), scaling of the slope in the mechanically excavated areas, and any necessary sizing of removed material to facilitate loading and hauling as directed by the

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Engineer. The actual excavation methods used will ultimately depend upon the quality of the rock within the excavation area.

It is recognized that, in the areas of Mechanical Excavation, there will be overlapping effort between Mechanical Excavation, access establishment and Clearing and Grubbing. Most of the Clearing portion of Clearing and Grubbing has already been performed; much of the Grubbing portion will be accomplished in conjunction with force account work and will be very difficult to differentiate. The Clearing and Grubbing item will be paid in full as otherwise provided for in the contract. The Contractor shall sort and dispose of woody debris from material to be embanked at no additional cost to WSDOT.

The following paragraph applies to excavation areas H, I, J, and K.

Lines 10 thru 22, on page 202, and the "Rock Cuts" section (pages 204 thru 214) of the contract provisions apply to this work, with the condition that in this case, the notes included on the plan sheets take precedence over the contract provisions.

CO 118-Roadway Ex. Incl. Haul-Area H

This work will consist of roadway excavation and haul, including haul of material generated from Mechanical Excavation. The limits of this item are from LW 8374+72 to LW 8381+00, and shall include all excavation from the median edge of traveled way of the westbound roadway (LW line) to the top of the cut on the hillside as shown in the Plans.

The Contractor is advised that there is fiber reinforced shotcrete, previously placed on this contract. This fiber reinforced shotcrete shall be broken into pieces not exceeding 18 inches, for incorporation into embankment areas as approved by the Engineer.

Within this area are existing rock bolts and dowels, also placed previously on this contract. Prior to excavating in this area, the Contractor shall remove all nuts, washers, and face plates from rock bolts and dowels within the work area. As excavation proceeds, rock bolts and dowels shall be cut as needed to facilitate excavation. Once the final face of the slope is exposed, the Contractor shall locate and cut each bolt/dowel in a manner that provides for a sufficient amount of bolt/dowel remaining exposed to allow installation of a face plate, washer, and nut. Each bolt/dowel shall then be torqued as follows: Type V and Type H bolts and dowels shall be torqued to a nominal 1000 ft. lbs.; Type L to a nominal torque of 500 ft. lbs.

CO 118-Roadway Ex. Incl. Haul-Area I

This work will consist of conventional excavation, including controlled blasting, roadway excavation and haul from LW 8381+00 to LW 8387+00, and shall include all excavation from the median edge of traveled way of the westbound roadway (LW line) to the top of the cut on the hillside as shown in the Plans.

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The Contractor shall protect the Wall 708 wall straps from damage resulting from blasting operations. Any damage to components of Wall 708 as a result of the Contractor's blasting and/or excavation operations shall be the responsibility of the Contractor.

CO 118-Roadway Ex. Incl. Haul-Area J

This work will consist of conventional excavation, including controlled blasting, roadway excavation and haul. Also included will be hauling of material generated from Mechanical Excavation. The limits of this item are from LW 8387+00 to LW 8392+00, and shall include all excavation from the median edge of traveled way of the westbound roadway (LW line) to the top of the cut on the hillside as shown in the Plans. This work will include excavating the upper portion of this area using conventional excavation methods until a bench capable of accommodating Mechanical Excavation equipment can be established. The lower portion of this area will be excavated using conventional drilling and blast blasting methods.

The Contractor shall protect the Wall 708 wall straps from damage resulting from blasting operations. Any damage to components of Wall 708 as a result of the Contractor's blasting and/or excavation operations shall be the responsibility of the Contractor.

CO 118-Roadway Ex. Incl. Haul-Area K

This work will consist of roadway excavation and haul, including haul of material generated from Mechanical Excavation. The limits of this item are from LW 8392+00 to LW 1396+50, and shall include all excavation from the median edge of traveled way of the westbound roadway (LW line) to the top of the cut on the hillside as shown in the Plans.

Rock Bolts / Dowels / Horiz. Drains:

For the following rock bolt / dowel / horizontal drain installations, the following descriptions of conventional vs. non-conventional installations apply for the following items:

Informational delineation of conventional vs. non-conventional installations is shown on Plan Sheets RK5A thru RK6A.

For the purpose of this change order, "conventional" is defined as any rock bolt / dowel / horizontal drain installation, done from a traditional drilling bench excavated from the slope, to a height of 8 feet above the drilling bench.

For the purpose of this change order, "unconventional" is defined as any rock bolt / dowel / horizontal drain installation that exceeds a height of 8-feet above a "conventional drilling bench", or for which a work area bench cannot be constructed. This work would typically be on high, steep slopes with limited access, using drilling and installation methods such as suspended from a rope, man lift, forklift, or a crane.

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Areas of "Conventional" and "Unconventional" installations are shown in the Plans on an "Informational Only" basis for pricing purposes. Actual slope conditions at the time of the installation, as described above, will dictate which designation applies.

CO 118-Conv. Rock Bolt Type H

This work shall consist of installing Rock Bolts Type H, using conventional methods.

CO 118-Conv. Rock Dowel Type L

This work shall consist of installing Rock Dowels Type L, using conventional methods.

CO 118-Conv. Rock Dowel Type H

This work shall consist of installing Rock Dowels Type H, using conventional methods.

CO 118-Conv. Horizontal PVC Drain

This work shall consist of installing Horizontal PVC Drains, using conventional methods.

CO 118-Unconv. Rock Bolt Type H

This work shall consist of installing Rock Bolts Type H, using unconventional methods.

CO 118-Unconv. Rock Dowel Type L

This work shall consist of installing Rock Dowels Type L, using unconventional methods.

CO 118-Unconv. Rock Dowel Type H

This work shall consist of installing Rock Dowels Type H, using unconventional methods

CO 118-Unconv. Horizontal PVC Drain

This work shall consist of installing Horizontal PVC Drains, using unconventional methods.

CO 118-Spot Hollow Core Dowel

This work shall consist of installing hollow core steel dowels as directed by the Engineer.

CO 118-Strain Gages on Dowels-Sector 12

This work shall consist of installing additional strain gages onto rock dowels in Sector 12, in accordance with the "All Addenda Incorporated with CRIP and Wall 7 Revision" contract provisions for Strain Gauges.

CO 118-Cable Nets-Sector 12

Sector 12 cable nets shall be completed and in-place prior to implementing MOT Stage 4 winter shutdown.

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CO 118-Geocomposite Clay Liner

The Geocomposite Clay Liner shall be constructed as shown in the Plans, in accordance with the manufacturers' recommendations. All costs for repairs of damages to the clay liner as a result of the Contractor's operations shall be the responsibility of the Contractor.

CO 118-Bioinfiltration Pond

The Bioinfiltration Pond shall be constructed as shown in the Plans and contract provisions, and pages of this change order.

CO 118-Rock Fill for Ponds

This work shall consist of placing Rock Fill for Ponds as shown in the Plans. The top surface of the Rock Fill for Ponds shall be covered with Crushed Surfacing Base Course, to eliminate voids, to the satisfaction of the Engineer.

CO 118-Flow Splitter

The Flow Splitter shall be constructed as shown in the Plans and described by this change order.

CO 118-Precast Barrier-Temporary Scupper

This work shall consist of permanently plugging the scuppers in the precast conc. barrier from STA LW 8365+64 LT to STA LW 8372+70 LT, when they are no longer needed to provide temporary drainage. The Contractor shall plug the scupper holes in a manner that completely fills the hole with no voids. Surface shall be a Class 1 Surface Finish, according to Section 6-02.3 (14)A.

CO 118-Electrical and ITS Adjustments

Construction Note 19 on plan sheet 708 (Wall 7 TS4) states that the WB data station will be provided by the State. This note is revised to read as follows: "Install Contractor supplied WB data station on camera pole per manufacturers' recommendations. Install camera and data station control equipment in ITS equipment hut."

All junction boxes outside paving limits will be buried 0.5 ft. below the final grade of the adjacent CSBC.

MEASUREMENT & PAYMENT

Measurement and Payment for all work will be in accordance with the 2010 Standard Specifications, the "All Addenda Incorporated with CRIP and Wall 7 Revision" Contract Plans and Provisions, and this change order.

With this change order, payment for all work east of Sta. LE 8362+63, will change from pay item 411 (CRIP) to unit bid prices, with the following exceptions:

MOT; Temporary Drainage; Wall 8063 items consisting of: Structural Earth Wall, Cable Fence, Coping, and Backfill for Structural Earth Wall; Wall 8065 items: Geosynthetic Wall and Backfill for Geosynthetic Wall, and any

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Structure Excavation or Controlled Density Fill required; Keechelus Lake Avalanche Bridge (KLAB) Approach Slabs and Approach Slab Traffic Barrier; Rock Slope Stabilization items west of Sta. LW 8364+40 (dowels, bolts, drains, cable net); Horizontal PVC Drains - quantity increase in Sectors IX and X due to the CRIP; ITS VMS 3, Cantilever Sign Structure No. 5; Miscellaneous CRIP electrical near the east end of KLAB.

CO 118-Bid Item 88-Credit Item

This change order provides for a lump sum equitable adjustment credit to address changes in the quantities of Shoring or Extra Excavation CL. A, which the Contractor is required to complete as a result of the Wall 7 redesign.

CO 118-Mechanical Excavation

Payment for "CO 118-Mechanical Excavation" shall be in accordance with Std. Spec. Section 1-09.6.

CO 118-Roadway Ex. Incl. Haul-Area H

Measurement and payment for this item will be by the cubic yard based upon comparison of a LiDar DTM done after clearing and grubbing with a final LiDar DTM following completion of the excavation.

The unit price per cubic yard for "CO 118-Roadway Ex. Incl. Haul-Area H" shall be full compensation for all costs including breaking up boulders for haul, sorting out organic material, loading, hauling, placement and/or stockpiling of excavated material. This also includes any necessary off-site disposal of removed rock bolt/dowel material, and/or other excavated material as directed by the Engineer.

Scaling and Dressing, as described in Section 2-03.3(2)2, in this area will be included in the force account pay item "CO 118-Mechanical Excavation".

Payment for cutting existing bolts and dowels, removing all hardware, re-installing hardware upon completion of grading, and re-torquing rock bolts and dowels will be made in accordance with force account item 541 "Adjust Existing Rock Bolts/Dowels".

CO 118-Roadway Ex. Incl. Haul-Area I

Measurement and payment for this item will be by the cubic yard based upon comparison of a LiDar DTM done after clearing and grubbing with a final LiDar DTM following completion of the excavation.

The unit price per cubic yard for "CO 118-Roadway Ex. Incl. Haul-Area I" shall be full compensation for all costs including accessing, blasting, excavating, loading, hauling, placement and/or stockpiling, or otherwise disposing of the material.

Scaling and Dressing, as described in Section 2-03.3(2)2, in this area will be included in the pay item "CO 118-Rdwy. Ex. Incl. Haul-Area I".

The "Temporary Protective Granular Blanket" for the protection of Wall 708 as

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specified in the Plans, is incidental to the unit price per cubic yard for "CO 118-Rdwy. Exc. Incl. Haul-Area I".

CO 118-Roadway Ex. Incl. Haul-Area J
Measurement and payment for this item will be by the cubic yard based upon comparison of a LiDar DTM done after clearing and grubbing with a final LiDar DTM following completion of the excavation.

The unit price per cubic yard for "CO 118-Roadway Ex. Incl. Haul-Area J" shall be full compensation for all costs including blasting, excavating, sorting out organic material, loading, hauling, placement and/or stockpiling or otherwise disposing of the material.

The cost for accessing and establishing a bench capable of accommodating specialized excavation equipment at the upper portion of this excavation area will be paid under the force account item "CO 118-Mechanical Excavation".

Scaling and Dressing, as described in Section 2-03.3(2)2, in this area will be included in the pay item "CO 118-Rdwy. Exc. Incl. Haul-Area J".

The "Temporary Protective Granular Blanket" for the protection of Wall 708 as specified in the Plans, is incidental to the unit price per cubic yard for "CO 118-Rdwy. Exc. Incl. Haul-Area J".

CO 118-Roadway Ex. Incl. Haul-Area K
Measurement and payment for this item will be by the cubic yard based upon comparison of a LiDar DTM done after clearing and grubbing with a final LiDar DTM following completion of the excavation.

The unit price per cubic yard for "CO 118-Roadway Ex. Incl. Haul-Area K" shall be full compensation for all costs including breaking up boulders for haul, sorting out organic material, loading, hauling, placement and/or stockpiling, or otherwise disposing of the material.

Payment for all work associated with removing, adjusting, and re-installing rock bolt / dowel hardware, will be made in accordance with force account item 541 "Adjust Existing Rock Bolts/Dowels".

Scaling and Dressing, as described in Section 2-03.3(2)2, in this area will be included in the force account pay item "CO 118-Mechanical Excavation".

The "Temporary Protective Granular Blanket" for the protection of Wall 708 as specified in the Plans, is incidental to the unit price per cubic yard for "CO 118-Rdwy. Exc. Incl. Haul-Area K".

CO 118-Conv. Rock Bolt Type H
Measurement and Payment for "CO 118-Conv. Rock Bolt Type H" will be per linear foot, and will include all costs associated with conventionally installing rock bolts as described in the Construction Requirements for "Conventional vs. Unconventional" installation.

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CO 118-Corrv. Rock Dowel Type L

Measurement and Payment for "CO 118-Corrv. Rock Dowel Type L" will be per linear foot, and will include all costs associated with conventionally installing rock dowels as described in the Construction Requirements for "Conventional vs. Unconventional" installation.

CO 118-Corrv. Rock Dowel Type H

Measurement and Payment for "CO 118-Corrv. Rock Dowel Type H" will be per linear foot, and will include all costs associated with conventionally installing rock dowels as described in the Construction Requirements for "Conventional vs. Unconventional" installation.

CO 118-Corrv. Horizontal PVC Drain

Measurement and Payment for "CO 118-Corrv. Horizontal PVC Drain" will be per linear foot, and will include all costs associated with conventionally installing horizontal drains as described in Construction Requirements for "Conventional vs. Unconventional" installation.

CO 118-Unconv. Rock Bolt Type H

Measurement and Payment for "CO 118-Unconv. Rock Bolt Type H" will be per linear foot, and will include all costs associated with unconventionally installing rock bolts as described in the Construction Requirements for "Conventional vs. Unconventional" installation.

CO 118-Unconv. Rock Dowel Type L

Measurement and Payment for "CO 118-Unconv. Rock Dowel Type L" will be per linear foot, and will include all costs associated with unconventionally installing rock dowels as described in the Construction Requirements for "Conventional vs. Unconventional" installation.

CO 118-Unconv. Rock Dowel Type H

Measurement and Payment for "CO 118-Unconv. Rock Dowel Type H" will be per linear foot, and will include all costs associated with unconventionally installing rock dowels as described in the Construction Requirements for "Conventional vs. Unconventional" installation.

CO 118-Unconv. Horizontal PVC Drain

Measurement and Payment for "CO 118-Unconv. Horiz. PVC Drain" will be per linear foot, and will include all costs associated with unconventionally installing horizontal drains as described in the Construction Requirements for "Conventional vs. Unconventional" installation.

CO 118- Spot Hollow Core Dowel

Payment shall be in accordance with Section 1-09.6.

CO 118-Strain Gages on Dowels-Sector 12

Payment for additional strain gauges in Sector 12 shall be by lump sum, and shall include all costs associated with providing and installing strain

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gauges onto dowels, RDM's, conduit, and cable.

CO 118-Cable Nets-Sector 12

Measurement and Payment will be by the square foot, and will include compensation for cable net anchors installed on 20-foot spacing, instead of the spacing shown in the "All Addenda Incorporated with CRIP and Wall 7 Revision" plans.

CO 118-Geocomposite Clay Liner

Measurement and Payment will be by the square yard of geocomposite clay liner placed, and will include excavation, preparation of the subgrade, the geocomposite clay liner (overlaps will not be included in the square yard measurement), the "12 inch cover soil", all penetrations of the liner, the granular bentonite, and all associated costs to complete the work as shown in the Plans.

CO 118-Bioinfiltration Pond

Measurement and Payment for the ponds will be by the square foot of the ground surface at the top of the completed ponds. This one measurement per pond will include the bioretention topsoil mix, sand, and pea gravel/media filter drain mineral aggregate, as detailed in the plans. The 6 inches of Crushed Surfacing Base Course will be measured and paid, by the ton, utilizing existing Item 176.

CO 118-Rock Fill for Ponds

Measurement and Payment for this item will be by the cubic yard and shall be full compensation for all costs incurred for processing, stockpiling, hauling, placing, and compacting the material. The Crushed Surfacing Base Course used to "choke" the Rock Fill for Ponds will be measured and paid, by the ton, utilizing existing Item 176.

CO 118-Flow Splitter

Measurement and Payment will be per each.

CO 118-Precast Barrier-Temporary Scupper

Measurement and Payment will be per each, and shall include all costs associated with permanently plugging barrier scuppers when no longer needed.

CO 118-CRIP Item 411-Credit Item

Payment for this item will be by lump sum, and will include final adjustments to Item 411 quantities as a result of the Wall 7 re-design, including items such as MOT / Temp. Drainage, Traffic Control, and 42 In. F-Shape Barrier-Equitable Adjustment. Adjustments for outstanding Liquidated Damages will also be made under this item.

CO 118-Electrical and ITS Adjustments

Payment for this item will be by lump sum, and will include all cost adjustments for changes resulting from the Wall 7 re-design, including the addition of (2) ITS data stations, an added camera pole at ITS CCTV, ITS

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data station 1 (EB), CDF backfill for trenches (as shown in the Plans), wire run revisions, and placement of all junction boxes (outside paving limits) to a depth of 0.5 feet below the grade of the adjacent CSBC.

CO 118-Survey Adjustment

Measurement and Payment for this item will be by lump sum in accordance with the Standard Specifications.

CO 118-Concrete Supply Equitable Adjustment

Measurement and Payment for this item will be by lump sum in accordance with the Standard Specifications.

CONTRACT TIME:

As a result of this change order, Eighty-Eight (88) working days are added to contract time.

WSDOT will not assess contract time liquidated damages in accordance with Section 1-08.9, prior to October 15, 2018 for work associated with the "Wall 7 Redesign".

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ITEM NO	GROUP NO	STD ITEM	ITEM DESCRIPTION	UNIT MEASURE	UNIT PRICE	EST QTY CHANGE	EST AMT CHANGE
0029	01	0370	CONTROLLED BLASTING OF ROCK FACE	L.F.	5.50	-20,162.00	-110,891.00
0085	01	4006	STRUCTURE EXCAVATION CLASS A INCL. HAUL	C.Y.	14.00	-2,903.00	-40,642.00
0154	01		SEW F-SHAPE TRAFFIC BARRIER - 42 IN.	L.F.	390.00	-4,995.20	-1,948,128.00
0232	01	6776	PRECAST CONC. BARRIER TYPE 42 IN. 2 SIDED	L.F.	81.00	4,756.00	385,236.00
1177	01		CO 118-BID ITEM 88 - CREDIT ITEM	L.S.	-43,130.00	-43,130.00	-43,130.00
1179	01		CO 118-MECHANICAL EXCAVATION	EST.	275,000.00	275,000.00	275,000.00
1180	01		CO 118-UNCONV. ROCK BOLT TYPE H	L.F.	221.00	900.00	198,900.00
1181	01		CO 118-UNCONV. ROCK DOWEL TYPE L	L.F.	125.00	3,550.00	443,750.00
1182	01		CO 118-UNCONV. ROCK DOWEL TYPE H	L.F.	166.00	11,975.00	1,987,850.00
1183	01		CO 118-UNCONV. HORIZONTAL PVC DRAIN	L.F.	114.00	950.00	108,300.00
1184	01		CO 118-SPOT HOLLOW CORE DOWEL	EST.	85,500.00	85,500.00	85,500.00
1185	01		CO 118-CONV. ROCK BOLT TYPE H	L.F.	75.00	600.00	45,000.00
1186	01		CO 118-CONV. ROCK DOWEL TYPE L	L.F.	63.00	3,100.00	195,300.00
1187	01		CO 118-CONV. ROCK DOWEL TYPE H	L.F.	68.00	18,195.00	1,237,260.00
1188	01		CO 118-CONV. HORIZONTAL PVC DRAIN	L.F.	41.00	4,625.00	189,625.00
1189	01		CO 118-STRAIN GAGES ON DOWELS-SECTOR 12	L.S.	85,000.00	85,000.00	85,000.00
1190	01		CO 118-CABLE NETS-SECTOR 12	S.F.	12.50	30,750.00	384,375.00
1192	01		CO 118-GEOCOMPOSITE CLAY LINER	S.Y.	56.50	7,088.00	400,472.00
1193	01		CO 118-BIOINFILTRATION POND	S.F.	16.00	9,184.00	146,944.00
1194	01		CO 118-ROCK FILL FOR PONDS	C.Y.	29.03	4,071.00	118,181.13
1195	01		CO 118-CONST. GEOTEXTILE FOR SEPARATION	S.Y.	4.00	183.00	732.00
1196	01		CO 118-FLOW SPLITTER	EACH	3,535.00	6.00	21,210.00
1197	01		CO 118-MOD CATCH BASIN TYPE 2 54 IN DIAM	EACH	8,756.00	8.00	70,048.00
1198	01		CO 118-CATCH BASIN TYPE 2 54 IN. DIAM.	EACH	9,207.00	3.00	27,621.00
1199	01		CO 118-CATCH BASIN TYPE 2 84 IN. DIAM.	EACH	15,098.00	4.00	60,392.00
1200	01		CO 118-CATCH BASIN TYPE 2 96 IN. DIAM.	EACH	18,469.00	1.00	18,469.00
1201	01		CO 118-MANHOLE 96 IN. DIAM. TYPE 2	EACH	20,276.00	5.00	101,380.00
1202	01		CO 118-MANHOLE ADD HT. 96 IN DIAM TYPE 2	L.F.	145.00	58.00	8,410.00
1203	01		CO 118-SEW TRAFFIC BARRIER 42 IN.	L.F.	575.00	6,400.00	3,680,000.00
1204	01		CO 118-PRECAST BARRIER-TEMPORARY SCUPPER	EACH	130.00	171.00	22,230.00
1205	01		CO 118-CRIP ITEM 411-CREDIT ITEM	L.S.	-924,400.00	-924,400.00	-924,400.00
1206	01		CO 118-ELECTRICAL AND ITS ADJUSTMENTS	L.S.	161,500.00	161,500.00	161,500.00
1207	01		CO 118-SURVEY ADJUSTMENT	L.S.	106,000.00	106,000.00	106,000.00
1208	01		CO 118-CONCRETE SUPPLY-EQ ADJ	L.S.	385,000.00	385,000.00	385,000.00
1217	01		CO 118-ROADWAY EX. INCL. HAUL-AREA H	C.Y.	21.55	2,530.00	54,521.50
1218	01		CO 118-ROADWAY EX. INCL. HAUL-AREA I	C.Y.	56.15	27,960.00	1,569,954.00
1219	01		CO 118-ROADWAY EX. INCL. HAUL-AREA J	C.Y.	47.35	10,880.00	515,168.00
1220	01		CO 118-ROADWAY EX. INCL. HAUL-AREA K	C.Y.	22.80	4,410.00	100,548.00

AK
WS

Change Order Item Name	Equivalent Standard or Provision Item Name
CO 118-Rdwy. Ex. Incl. Haul-Area H, I, J, K	Roadway Excavation Incl. Haul-Area ____
CO 118-Conv. Install. Rock Bolt Type H	Rock Bolt Type H
CO 118-Conv. Install. Rock Dowel Type L and Type H	Rock Dowel Type L, Rock Dowel Type H
CO 118-Conv. Install. Horizontal PVC Drain	Horizontal PVC Drain
CO 118-Unconv. Install. Rock Bolt Type H	Rock Bolt Type H
CO 118-Unconv. Install. Rock Dowel Type L and Type H	Rock Dowel Type L, Rock Dowel Type H
CO 118-Unconv. Install. Horizontal PVC Drain	Horizontal PVC Drain
CO 118-Strain Gages on Dowels Sector 12	Strain Gages on Rock Dowels
CO 118-Cable Nets Sector 12	Cable Net Slope Protection
CO 118-Mod. Catch Basin Type 2 54 In. Diam.	Catch Basin Type 2 ____ In. Diam.
CO 118-Catch Basin Type 2 54 In. Diam.	Catch Basin Type 2 ____ In. Diam.
CO 118-Catch Basin Type 2 84 In. Diam.	Catch Basin Type 2 ____ In. Diam.
CO 118-Catch Basin Type 2 96 In. Diam.	Catch Basin Type 2 ____ In. Diam.
CO 118-Manhole 96 In. Diam. Type 2	Manhole ____ In. Diam. Type ____
CO 118-Manhole Add. HT. 96 In. Diam Type 2	Manhole Additional Height ____ In. Diam. Type ____
CO 118-SEW Traffic Barrier 42 In.	SEW Traffic Barrier
CO 118-Const. Geotextile for Separation	Construction Geosynthetic

CO 118-Bio-Infiltration Pond: Materials Requirements

Description

Section 8-02.1 is supplemented with the following:

(*****)

Bioretention Treatment Soil Mix

This work consists of providing a bioretention treatment soil mixture of a compost and aggregate component.

Materials

Section 8-02.2 is supplemented with the following:

(*****)

Compost Component

Compost for bioretention treatment soil mix shall be Fine Compost in accordance with 9-14.4(8).

Aggregate Component

Aggregate for Bioretention Treatment Soil Mix shall be naturally occurring water rounded aggregate. Aggregate from quarries, ledge rock, and talus slopes are not acceptable for this application. The use of recycled materials is not permitted.

Aggregate for Bioretention Treatment Soil Mix shall meet the follow test requirements for quality:

Aggregate Property	Test Method	Requirement
Degradation Factor	WSDOT T 112	15 min.
Los Angeles Wear, 500 Rev.	AASHTO T 96	35% max.

Aggregate for Bioretention Treatment Soil Mix shall meet the following requirement for grading prior to mixing with the compost component:

Sieve Size	Percent Passing
3/8"	100
No. 4	95 – 100
No. 10	75 – 90
No. 40	25 – 40
No. 100	4 – 10
No. 200	2.0 – 5.0

Aggregate for Bioretention Treatment Soil Mix shall be classified as well-graded sand and shall have a Coefficient of Uniformity of ≥ 6 and a Coefficient of Curve of between 1 and 3 as determined in accordance with ASTM D 2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

Bioretention Treatment Soil Mix

The Bioretention Treatment Soil Mix shall be 50% compost and 50% aggregate by volume and meet the following specification requirements:

Property	Test Method	Requirement
Cation Exchange Capacity (CEC)	U.S. EPA Method 9081	≥ 5 milliequivalents CEC/100g dry soil
Hydraulic Conductivity @85% of relative density	ASTM D 2434	0.5" Per hour minimum 12" per hour maximum

Bioretention Treatment Soil Mix Submittal Requirements

At least 30 days prior to placement the Contractor shall submit to the Engineer the test information and results for the compost component, aggregate component, and the Bioretention Treatment Soil Mix.

1. Quality analysis results for the compost compound performed in accordance with Seal of Testing Assurance (STA) standards, as specified in Section 9-14.4(8).
2. Aggregate Source Approval (ASA) report demonstrating the aggregate source satisfies the specification requirements for Degradation Factor and Los Angeles Wear.

3. Grain size analysis results of the aggregate performed in accordance with ASTM D 422 satisfying the grading requirements for the aggregate in Bioretention Treatment Soil Mix.
4. Cumulative Particle-Size Plot along with the calculations demonstrating conformance to the Coefficient of Uniformity of ≥ 6 and Coefficient of Curve of $1 \leq 3$ as determined in accordance with ASTM D 2487 for the aggregate in Bioretention Treatment Soil Mix.
5. Test results for the Organic Content from the Bioretention Treatment Soil Mix demonstrating conformance to these specification requirements determined in accordance with TMECC 05.07A.
6. Test results for Cation Exchange Capacity (CEC) for the Bioretention Treatment Soil Mix demonstrating conformance to these specification requirements determined in accordance with U.S. EPA Method 9081.
7. Test results for Hydraulic Conductivity for the Bioretention Treatment Soil Mix demonstrating conformance to these specification requirements determined in accordance with ASTM D 2434 at 85 percent of modified maximum dry unit weight as determined in accordance with ASTM D 1557.
8. Provide the following information about the testing laboratory(ies):
 - a. Name of laboratory(ies) including contact person(s)
 - b. Address(es)
 - c. Phone contact(s)
 - d. E-mail address(es)
 - e. Qualifications of laboratory and personnel including date of current accreditation by STA, ASTM, AASHTO, or approved equal.

Construction Requirements

Section 8-02.3 is supplemented with the following:

(*****)

Bioretention treatment soil mix shall be thoroughly blended by either continuous flow or batch-type mixers using revolving blades or rotary-drum mixers.

The subgrade shall be approved by the Engineer prior to the placement of the Bioretention treatment soil mix.

Subgrade for bioinfiltration ponds shall be established by placing 36" minimum rock fill for ponds or greater as shown in the plans, followed by choking courses. The choking courses shall include 6" CSBC, 6" pea gravel or media filter drain mineral aggregate and 6" sand as indicated in plans.

The Contractor shall not direct runoff from unstabilized areas to the bioinfiltration facility. Prior to placement of bioretention treatment soil mix in each bioinfiltration pond, the Contractor shall notify the Engineer to inspect the bioinfiltration pond subgrade. If any sediment deposition is observed in choking layers, a minimum 3" of that layer shall be removed and replaced with 3-inches of additional choking material that shall be placed at the Contractor's expense prior to placement of the bioretention soil mix.

Provide Rock fill for ponds to a minimum depth of 36". Loosely place choking courses to achieve a nominal final depth of 6" for each course. Mixing or placing bioretention treatment soil mix shall not be allowed if the area receiving bioretention treatment soil mix is saturated. The Engineer will have final authority to determine if saturated conditions exist. Place bioretention treatment soil mix loosely. Final grade shall be measured at 3 inches above the grade specified on the plans.