INTRO.GR1

# INTRODUCTION

This Contract shall be constructed in accordance with the 2021 Standard Specifications for Road, Bridge, and Municipal Construction.

## SPECIAL PROVISIONS

Several types of Special Provisions are included in this contract; General, Region, Bridges and Structures, and Project Specific. Special Provisions types are differentiated as follows:

| | |
|---|---|
| (date) | General Special Provision |
| (******) | Notes a revision to a General Special Provision and also notes a Project Specific Special Provision. |
| (Regions[1] date) | Region Special Provision |

**General Special Provisions** are similar to Standard Specifications in that they typically apply to many projects, usually in more than one Region. Usually, the only difference from one project to another is the inclusion of variable project data, inserted as a "fill-in".

**Region Special Provisions** are commonly applicable within the designated Region. Region designations are as follows:

| Regions[1] | |
|---|---|
| ER | Eastern Region |
| NCR | North Central Region |
| NWR | Northwest Region |
| OR | Olympic Region |
| SCR | South Central Region |
| SWR | Southwest Region |
| WSF | Washington State Ferries Division |

**Project Specific Special Provisions** normally appear only in the contract for which they were developed.

DIVISION1.GR1

## Division 1
## General Requirements

DESWORK.GR1

### DESCRIPTION OF WORK

DESWORK1.FR1
(March 13, 1995)
This Contract provides for the improvement of *** $$1$$ *** and other work, all in accordance with the attached Contract Plans, these Contract Provisions, and the Standard Specifications.

DESWORK2.FB1
(August 3, 2015)

This contract provides for the improvement of *** $$1$$, *** by cleaning and painting the metal surfaces of the following *** $$2$$ *** and other work, all in accordance with the Contract Provisions and Standard Specifications.

| Highway & Bridge | Location | Structure Element |
|---|---|---|

*** $$3$$ ***

1-02.GR1
## Bid Procedures and Conditions

1-02.1.GR1
## Prequalification of Bidders

1-02.1.INST1.GR1
Section 1-02.1, including title, is deleted and replaced with the following:

1-02.1.OPT1.GR1
***(April 2, 2018)***
***Vacant***

1-02.4.GR1
## Examination of Plans, Specifications and Site of Work

1-02.4(1).GR1
***General***

1-02.4(1).INST1.GR1
Section 1-02.4(1) is supplemented with the following:

1-02.4(1).OPT1.FR1
(September 3, 2019)
The Reference Information for this project is available for review by the bidder at the following location:

*** $$1$$ ***

The Reference Information includes the following:

*** $$2$$ ***

1-02.6.GR1
## Preparation of Proposal

1-02.6.INST2.GR1
The fourth paragraph of Section 1-02.6 is revised to read:

1-02.6.OPT1.GR1
(June 1, 2017)
The Bidder shall submit with the Bid a completed Disadvantaged Business Enterprise (DBE) Utilization Certification, when required by the Special Provisions. For each and every DBE firm listed on the Bidder's completed Disadvantaged Business Enterprise

Utilization Certification, the Bidder shall submit written confirmation from that DBE firm that the DBE is in agreement with the DBE participation commitment that the Bidder has made in the Bidder's completed Disadvantaged Business Enterprise Utilization Certification. WSDOT Form 422 031 (Disadvantaged Business Enterprise Written Confirmation Document) is available for this purpose. Bidder must submit good faith effort documentation with the Disadvantaged Business Enterprise Utilization Certification ONLY In The Event the bidder's efforts to solicit sufficient DBE participation have been unsuccessful. Directions for delivery of the Disadvantaged Business Enterprise Written Confirmation Documents and Disadvantaged Business Enterprise Good Faith Effort documentation are included in Sections 1-02.9 and 1-02.10.

1-02.6.OPT2.GR1

(June 3, 2019)

The Bidder shall submit with the Bid a completed Underutilized Disadvantaged Business Enterprise (UDBE) Utilization Certification, when required by the Special Provisions. For each and every UDBE firm listed on the Bidder's completed Underutilized Disadvantaged Business Enterprise Utilization Certification, the Bidder shall submit written confirmation from that UDBE firm that the UDBE is in agreement with the UDBE participation commitment that the Bidder has made in the Bidder's completed Underutilized Disadvantaged Business Enterprise Utilization Certification. WSDOT Form 422 031U (Underutilized Disadvantaged Business Enterprise Written Confirmation Document) is to be used for this purpose. Bidder must submit good faith effort documentation only in the event the bidder's efforts to solicit sufficient UDBE participation have been unsuccessful. The Bidder shall submit a UDBE Bid Item Breakdown form defining the scope of work to be performed by each UDBE listed on the UDBE Utilization Certification. If the Bidder lists a UDBE Trucking firm on the UDBE Utilization Certification, then the Bidder must also submit a UDBE Trucking Credit Form (WSDOT Form 272-058) documenting how the UDBE Trucking firm will be able to perform the scope of work subcontracted to them. Directions for delivery of the Underutilized Disadvantaged Business Enterprise Written Confirmation Documents, Underutilized Disadvantaged Business Enterprise Good Faith Effort documentation, UDBE Bid Item Breakdown Form and the UDBE Trucking Credit Form are included in Section 1-02.9.

1-02.6.OPT3.GR1

(August 2, 2004)

The fifth and sixth paragraphs of Section 1-02.6 are deleted.

1-02.6.INST3.GR1

Section 1-02.6 is supplemented with the following:

1-02.6.OPT4.FR1

***(April 2, 2018)***

***Alternative Bids***

The bidding proposal on this project permits the bidder to submit a bid on one or more alternatives for the construction *** $$1$$ ***.

**Bid Proposal**

The bid proposal is composed of the following parts: Base Bid and Alternatives *** $$2$$ *** i.e. A1, A2, etc.

The <u>base bid</u> includes all items that do not change as to quantity, dimension, or type of construction, regardless of which alternative is bid.

The Alternative portions of the bid proposal contain all items which change as to quantity, dimension, or construction method, depending on which alternative is bid.

**Alternative A1**
Alternative A1 is based on constructing the *** $$3$$ ***.

The bid items for Alternative A1 are as listed in the bid proposal.

**Alternative A2**
Alternative A2 is based on constructing the *** $$4$$ ***.

The bid items for Alternative A2 are as listed in the bid proposal.

**Bidding Procedures**
The bidder shall submit a price on each and every item of work included in the base bid. The bidder shall also submit prices on each and every item under the alternative on which the bidder chooses to bid, or, if the bidder chooses to bid on more than one alternative, the bidder shall submit prices for each and every item under each alternative chosen. If the bidder chooses to bid on more than one alternative, the bidder shall submit their sealed bid in the envelope provided by the Contracting Agency using the Proposal Form provided. If the bidder chooses to bid on more than one alternative, the bid cannot be accepted electronically via Trns·Port Expedite® software and BidExpress®.

The successful bidder will be determined by the lowest total of an alternative plus the base bid. Award will be based on the lowest total subject to the requirements of Section 1-03.

1-02.6.OPT5.FR1
***(August 3, 2015)***
***Cumulative Alternates Bidding***
The Bid Proposal for this Contract requires the Bidder to bid cumulative Alternates as part of the bid. As such the Bidder is required to submit a Base Bid and a bid for each of the Alternate(s).

**Bid Proposal**
The Bid Proposal includes the following:

1. Base Bid
   The Base Bid shall include constructing all items included in the Proposal *except* those items contained in the Alternate(s).

2. Alternate(s)

   a. Alternate A1
      Based on constructing (*** $$1$$ ***)
      The Bid items for Alternate A1 are as listed in the Bid Proposal.

   b. Alternate A2
      Based on constructing (*** $$2$$ ***)
      The Bid items for Alternate A2 are as listed in the Bid Proposal.

c. Alternate A3
Based on constructing (*** $$3$$ ***)
The Bid items for Alternate A3 are as listed in the Bid Proposal.

**Bidding Procedures**

To be considered responsive the Bidder shall submit a price on each and every Bid item included in the Base Bid and all Alternate(s.)

The successful Bidder will be the Bidder submitting the lowest responsible Bid for the highest order Preference that is within the amount of available funds for the project. Available funds will be announced immediately prior to the opening of Bids. The following are listed in order from highest to lowest Preference:

1. Preference 1: Lowest total for Base Bid plus Alternate A1 plus Alternate A2 plus Alternate A3, plus etcetera.

2. Preference 2: Lowest total for Base Bid plus Alternate A1 plus Alternate A2 plus Alternate A3.

3. Preference 3: Lowest total for Base Bid plus Alternate A1 plus Alternate A2.

4. Preference 4: Lowest total for Base Bid plus Alternate A1.

5. Preference 5: Lowest total for Base Bid.

The Contracting Agency may, at their discretion, award a Contract for the Base Bid, without any additional Alternates, in the event that all Bids exceed the available funds announced. In any case, the award will be subject to the requirements of Section 1-03.

1-02.6.OPT6.FR1

***(January 7, 2019)***

***Progress Schedule Minimum Bid***

A minimum bid of *** $$1$$ *** lump sum has been established for the item “Min Bid Req - Type *** $$2$$ *** Progress Schedule *** $$3$$ ***.” The Contractor’s bid shall equal or exceed that amount. If the Contractor’s bid is less than the minimum specified amount, the Contracting Agency will unilaterally revise the bid amount to the minimum specified amount and recalculate the Contractor’s total bid amount. The corrected total bid amount will be used by the Contracting Agency for award purposes and to fix the amount of the contract bond.

1-02.6.OPT7.FR1

(January 7, 2019)

A minimum bid of *** $$1$$ *** per each has been established for the item “Min Bid Req - Schedule Update *** $$2$$ ***.” The Contractor’s bid shall equal or exceed that amount. If the Contractor’s bid is less than the minimum specified amount, the Contracting Agency will unilaterally revise the bid amount to the minimum specified amount and recalculate the Contractor’s total bid amount. The corrected total bid amount will be used by the Contracting Agency for award purposes and to fix the amount of the contract bond.

1-02.6.INST4.GR1
Item number 3 in the second paragraph of Section 1-02.6 is supplemented with the following:

1-02.6.OPT8.FR1
(September 3, 2019)
The successful Bidder will be the Bidder submitting the lowest responsive Bid that does not exceed the maximum funds available. The maximum funds available for this Contract is *** $$1$$ ***.

Submitting a Proposal that exceeds the maximum funds available will result in the Proposal being declared irregular and shall cause the Bid to be rejected by the Contracting Agency. Submitted Proposals that exceed the maximum funds available will be opened publicly in accordance with Section 1-02.12 prior to being rejected.

1-02.9.GR1
## Delivery of Proposal

1-02.9.INST1.GR1
Section 1-02.9 is supplemented with the following:

1-02.9.OPT1.GR1
***(June 3, 2019)***
***UDBE Document Submittal Requirements***
When a Proposal is submitted the following documents may be submitted as a supplement to the Proposal:

1. UDBE Utilization Certification;

2. UDBE Written Confirmation Documents;

3. Good Faith Effort Documentation (GFE);

4. UDBE Bid Item Breakdown (WSDOT Form 272-054);

5. UDBE Trucking Credit Form (WSDOT Form 272-058).

The Bidder shall submit these supplemental documents as follows:

1. Physically in a sealed envelope marked as “BID SUPPLEMENT” and bearing the Bidder’s company name, project title, Bid date, and description of all contents (i.e., UDBE Utilization Certification, UDBE Written Confirmation Documents, UDBE Bid Item Breakdown Form, UDBE Trucking Credit Form, and/or UDBE GFE Documentation); or

2. By facsimile to the following FAX number: 360-705-6966; or

3. By e-mail to the following e-mail address: DBEDoc@wsdot.wa.gov

***UDBE Utilization Certification***
The UDBE Utilization Certification shall be received at the same location and no later than the time required for delivery of the Proposal. The Contracting Agency will not open or consider any Proposal when the UDBE Utilization Certification is received after the time

specified for receipt of Proposals or received in a location other than that specified for receipt of Proposals. The UDBE Utilization Certification may be submitted in the same envelope as the Bid deposit.

***UDBE Written Confirmation and/or GFE Documentation***

The UDBE Written Confirmation Documents and/or GFE Documents are not required to be submitted with the Proposal. The UDBE Written Confirmation Document(s) and/or GFE (if any) shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received no later than 48 hours (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. To be considered responsive, Bidders shall submit Written Confirmation Documentation from each UDBE firm listed on the Bidder's completed UDBE Utilization Certification and/or the GFE as required by Section 1-02.6.

***UDBE Bid Item Breakdown and UDBE Trucking Credit Form***

The UDBE Bid Item Breakdown and the UDBE Trucking Credit Forms (if applicable), shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received no later than 48 hours (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. To be considered responsive, Bidders shall submit a completed UDBE Bid Item Breakdown and a UDBE Trucking Credit Form for each UDBE Trucking firm listed on the UDBE Utilization Certification, however, minor errors and corrections to UDBE Bid Item Breakdown or UDBE Trucking Credit Forms will be returned for correction for a period up to five calendar days (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. A UDBE Bid Item Breakdown or UDBE Trucking Credit Forms that are still incorrect after the correction period will be determined to be non-responsive.

Although the UDBE Bid Item Breakdown and UDBE Trucking Credit Form are required as part of a responsive Bid Proposal, the information contained in these documents is used solely for Award purposes and will not be included as part of the executed Contract.

The only documents that can be accepted after the 11:00:59 am time for delivery of Proposal are the Written Confirmation Documentation, the UDBE Bid Item Breakdown Form, the UDBE Trucking Credit Form, and/or GFE. Incomplete or inaccurate documents will be rejected, except as detailed above for the UDBE Bid Item Breakdown Form and UDBE Trucking Credit Form. The Contracting Agency is not responsible for delayed, partial, failed, illegible or partially legible FAX or e-mail document transmissions, and such documents may be rejected as incomplete at the Bidder's risk.

1-02.9.INST2.GR1

The first paragraph of Section 1-02.9 is replaced with the following:

1-02.9.OPT2.GR1

(June 1, 2017)

For projects scheduled for Bid opening in Olympia, the Proposal shall be sealed and submitted in the envelope provided with it to the address provided below. The Bidder shall fill in all blanks on this envelope to ensure proper handling and delivery. Bids are to be received no later than until 11:00:59 A.M. Pacific time on the date of Bid opening:

Washington State Department of Transportation
Room 2D20
310 Maple Park Avenue SE

Olympia, WA 98501-2361

1-02.12.GR1

## Public Opening of Proposals

1-02.12.INST1.GR1

Section 1-02.12 is supplemented with the following:

1-02.12.OPT1.FR1

***(August 3, 2015)***

***Date of Opening Bids***

The bid opening date for this project is *** $$1$$ ***. Bids received will be publicly opened and read after 11:00:59 A. M. Pacific Time on this date.

1-02.13.GR1

## Irregular Proposals

1-02.13.INST1.GR1

In item number 1 of Section 1-02.13, sub-items i and j are revised to read:

1-02.13.OPT1.GR1

(September 8, 2020)

i. Vacant.

j. Vacant.

1-02.13.INST2.GR1

In item number 1 of Section 1-02.13, sub-items f through j are revised to read

1-02.13.OPT2.GR1

(September 8, 2020)

f. The Bidder fails to submit or properly complete an Underutilized Disadvantaged Business Enterprise Utilization Certification, if applicable, as required in Section 1-02.6;

g. The Bidder fails to submit written confirmation from each UDBE firm listed on the Bidder's completed Underutilized Disadvantaged Business Enterprise Utilization Certification that they are in agreement with the Bidder's UDBE participation commitment, if applicable, as required in Section 1-02.6, or if the written confirmation that is submitted fails to meet the requirements of the Special Provisions;

h. The Bidder fails to submit Underutilized Disadvantaged Business Enterprise Good Faith Effort documentation, if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to demonstrate that a Good Faith Effort to meet the Condition of Award was made;

i. The Bidder fails to submit a UDBE Bid Item Breakdown form, if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions;

j. The Bidder fails to submit UDBE Trucking Credit Forms, if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions; or

1-02.INST1.GR1
Section 1-02 is supplemented with the following:

1-02.OPT1.GR1

**(April 5, 2004)**

***Protest Procedures***

**Form and Substance**

All protests regarding any contents or portion of the bid proposal must be submitted to the Contracting Agency as soon as possible after the protestant becomes aware of the reason(s) for the protest. All protests must be in writing and signed by the protestant or an authorized agent. Such writing must state all facts and arguments on which the protestant is relying as the basis for its action. Such protestant shall also attach, or supply on demand by the Contracting Agency, any relevant exhibits referenced in the writing. Copies of all protests and exhibits shall be mailed or delivered by the protestant to the bidder against whom the protest is made (if any) at the same time such protest and exhibits are submitted to the Contracting Agency. All protests shall be directed to:

Washington State Department of Transportation
Attn: Manager, Contract Ad & Award
PO Box 47360
Olympia, Washington 98504-7360
Phone: (360) 705-7017
Fax: (360) 705-6810

**Pre-award Protests**

To allow sufficient response time, all pre-award protests must be received by the contracting agency no later than 5:00 p.m. of the second business day after the bid opening date. If the protest is mailed after the bid opening date and before the pre-award protest deadline, the protestant shall immediately notify WSDOT's Manager, Contract Ad & Award by telephone, or some other means of rapid communication, that a protest has been made.

The Contracting Agency shall consider all the facts available to it, and issue a decision in writing within five (5) business days after receipt of the protest, unless, in the Contracting Agency's sole discretion, more time is needed. The protestant and the bidder(s) against whom the protest is made will be notified if additional time is necessary; and if the additional time required affects the bid opening date or the award date, all bidders shall be notified.

The Contracting Agency's decision shall be final and conclusive. Selection of the successful bidder, if one is to be made, will be postponed until after the Contracting Agency has issued its decision. The Contracting Agency shall provide the protestant with written notice of this decision no later than two full working days prior to execution of the contract.

**Post-award Protests**

The Contracting Agency shall immediately notify all unsuccessful bidders of the Contracting Agency's award decision. Any decision made by the Contracting Agency regarding the award and execution of the contract or bid rejection shall be conclusive subject to the scope of the judicial review permitted under Washington Law. Such review, if any, shall be timely filed in the Superior Court of Thurston County, Washington.

Protests which do not comply with the above-specified procedures will not be considered.

1-03.GR1

## Award and Execution of Contract

1-03.2.GR1

## Award of Contract

1-03.2.INST1.GR1

The first sentence of Section 1-03.2 is revised to read:

1-03.2.OPT1.GR1

(April 7, 2008)

It is the Contracting Agency's intent to award the Contract within 24 hours of the bid opening.

1-03.3.GR1

## Execution Of Contract

1-03.3.INST1.GR1

Section 1-03.3 is supplemented with the following:

1-03.3.OPT1.GR1

***(August 5, 2013)***

***Escrow Bid Documentation***

**Scope and Purpose**

The purpose of this specification is to preserve the Contractor's bid documents for use by the Contracting Agency in any litigation between the Contracting Agency and Contractor arising out of this Contract.

The Contractor shall submit a legible copy of all documentation used to prepare the bid for this contract to a escrow institution designated by the Contracting Agency. Such documentation shall be placed in escrow with the escrow institution and preserved by that institution as specified in the following sections of this specification.

**Bid Documentation**

The term "bid documentation" as used in this specification means any writings, working papers, computer printouts, charts, and any other data compilations which contain or reflect all information, data, and calculations used by the Contractor to determine the bid in bidding for this project. The term "bid documentation" includes but is not limited to Contractor equipment rates, Contractor overhead rates, labor rates, efficiency or productivity factors, arithmetic extensions, and quotations from Subcontractors and materialmen to the extent that such rates and quotations were

used by the Contractor in formulating and determining the amount of the bid. The term "bid documentation" also includes any manuals which are standard to the industry used by the Contractor in determining the bid for this project. Such manuals may be included in the bid documentation by reference. The term does not include bid documents provided by the Contracting Agency for use by the Contractor in bidding on this project.

**Submittal of Bid Documentation**

The Contractor shall submit the bid documentation to the escrow institution. The bid documentation shall be submitted to the escrow institution within seven calendar days after the contract for this project has been executed by the Contracting Agency. The bid documentation shall be submitted in a sealed container. The container shall be clearly marked "Bid Documentation" and shall also show on the face of the container the Contractor's name, the date of submittal, the project title, and the contract number.

**Affidavit**

The sealed container shall contain, in addition to the bid documentation, an affidavit signed under oath by an individual authorized by the Contractor to execute bidding proposals. The affidavit shall list each bid document with sufficient specificity so a comparison can be made between the list and the bid documentation to ensure that all of the bid documentation listed in the affidavit has been enclosed in the sealed container. The affidavit shall show that the affiant has personally examined the bid documentation and that the affidavit lists all of the documents used by the Contractor to determine the bid for this project and that all such bid documentation has been enclosed in the sealed container.

**Verification**

The escrow institution upon receipt of the sealed container shall place the container in a safety deposit box, vault, or other secure place, and immediately notify the Contracting Agency in writing that the container has been received. Upon receipt of such notice, the Contracting Agency will promptly notify the Contractor in writing that the Contracting Agency will open the sealed container to verify that the affidavit has been enclosed and to compare the bid documents listed in the affidavit with the bid documents enclosed in the container to ensure that all of the bid documentation has been submitted and that the copies are legible. The notification will advise the Contractor of the date and time the container will be opened and the name of the Contracting Agency employee who will verify the contents of the container. The Contracting Agency employee verifying the contents of the escrow container will not be involved or connected with the review, evaluation, or resolution of any claim by the Contractor made to the Contracting Agency in connection with the contract for which the verification was made. The Contractor may have representatives present at the opening.

**Supplementation**

Documents listed in the affidavit but not enclosed in the sealed container through error or oversight shall be submitted in a sealed container within five calendar days after the opening of the original container. Also, any bid documentation that is illegible shall be replaced with legible copies and furnished within five calendar days after the opening of the original container. The face of the container shall show the same information as the original container except the container shall be marked "Supplemental Bid Documentation". The same procedure used in verifying the

contents of the original container shall be used in verifying the contents of the supplemental submittal.

**Duration and Use**

The bid documentation and affidavit shall remain in escrow during the life of the contract and will be returned to the Contractor by the escrow institution, provided that the Contractor has signed the final contract voucher certification and has not reserved any claims on the final contract voucher certification against the Contracting Agency arising out of the contract. In the event that claims against the Contracting Agency are reserved on the final contract voucher certification, the bid documentation and affidavit shall remain in escrow. If the claims are not resolved and litigation ensues, the Contracting Agency may serve a request upon the Contractor to authorize the escrow institution, in writing, to release the bid documentation and affidavit in escrow to the Contracting Agency. The Contractor shall respond to the request within 20 days after service of the request. If the Contractor objects or does not respond to the request within 20 days after service of the request, the Contracting Agency may file a motion under the Civil Rules requesting the court to enter an order directing the escrow institution to deliver the bid documentation and affidavit in escrow to the Contracting Agency. The Contractor shall respond to the request within the time required by the then applicable Civil Court Rules for the Superior Court of the State of Washington. If the Contractor objects or does not respond to the request within the time required by the then applicable Civil Rules, the Contracting Agency may file a motion pursuant to such rules requesting the court to enter an order directing the escrow institution to deliver the bid documentation and affidavit in escrow to the Contracting Agency. The escrow institution shall release the bid documentation and affidavit as follows:

1. To the Contracting Agency upon receipt of a letter from the Contractor authorizing the release;

2. To the Contracting Agency upon receipt of a certified copy of a court order directing the release of the documents;

3. To the court for an <u>in camera</u> examination pursuant to a certified copy of a court order;

4. The bid documentation and affidavit shall be returned to the Contractor if litigation is not commenced within the time period prescribed by law.

The Contractor agrees that the sealed container placed in escrow and any supplemental sealed container placed in escrow contain all of the bid documentation used to determine the bid and that no other bid documentation shall be utilized by the Contractor in litigation over claims brought by the Contractor arising out of this contract unless otherwise ordered by the court.

**Remedies for Refusal or Failure to Provide Bid Documentation**

Failure or refusal to provide bid documentation shall be deemed a material breach of this contract. The Contracting Agency may at its option refuse to make payment for progress estimates under Section 1-09.9 until the Contractor has submitted the bid documentation required by this specification. The Contracting Agency may at its option terminate the contract for default under Section 1-08.10. These remedies are

not exclusive and the Contracting Agency may take such other action as is available to it under the law.

**Confidentiality of Bid Documentation**

The bid documentation and affidavit in escrow are and will remain the property of the Contractor. The Contracting Agency has no interest in or right to the bid documentation and affidavit other than to verify the contents and legibility of the bid documentation unless litigation ensues between the Contracting Agency and Contractor over claims brought by the Contractor arising out of this contract. In the event of such litigation, the bid documentation and affidavit may become the property of the Contracting Agency for use in the litigation as may be appropriate subject to the provisions of any court order limiting or restricting the use or dissemination of the bid documentation and affidavit as provided in the preceding section entitled Duration and Use.

**Cost and Escrow Instructions**

The cost of the escrow will be borne by the Contracting Agency. The Contracting Agency will provide escrow instructions to the escrow institution consistent with this specification.

1-03.3.INST2.GR1

The first paragraph of Section 1-03.3 is supplemented with the following:

1-03.3.OPT3.GR1

(January 4, 2016)

Within 20 calendar days after the Award date, the successful Bidder shall return WSDOT Form 421-013 with the Contractor's costs for transit, bicycle and pedestrian Work.

1-04.GR1

## Scope of the Work

1-04.4.GR1

## Changes

1-04.4.INST1.GR1

Section 1-04.4 is supplemented with the following:

1-04.4.OPT1.GR1

(April 30, 2020)

Change Orders will be transmitted electronically to the Contractor for signature. The Contractor shall apply all signatures electronically using the software provided by the Contracting Agency. Within 21 days of execution of the Contract, the Contractor shall submit a Type 1 Working Drawing consisting of the names, email addresses, and text-message capable phone numbers for the authorized change order signers and shall bear the name, phone number and email of the officer providing this authorization. Delegation of authority to sign Change Orders shall be by the officer authorized to sign the Contract in accordance with Section 1-02.1.

1-04.5.GR1

## Procedure and Protest by the Contractor

1-04.5.INST1.GR1
Section 1-04.5 is supplemented with the following:

1-04.5.OPT1.GR1

***(April 2, 2018)***

***Project Partnering***

The Engineer and the Contractor's Project Manager (PM) may mutually agree to plan and execute a Project Partnering session as soon as practical after Contract execution. The objective of this Partnering session is to promote open lines of communication and teamwork between the Contracting Agency and Contractor staff for the effective completion of the work, and to the standard of quality that will be a source of pride to both the Contracting Agency and the Contractor. Commitments made by both parties shall be memorialized in a Project Partnering Agreement at the conclusion of the Partnering session. The Partnering agreement will not affect the terms of the Contract. It is intended only to establish an environment of cooperation and mutual understanding between the parties.

The planning and execution of the Partnering process is intended to be a collaborative effort between the Engineer and the PM. Partnering sessions may be facilitated by the Engineer, the Engineer and PM, or a mutually agreeable Partnering Facilitator (PF). Selection of a PF, dates and location of the sessions, materials needed for the meetings, frequency and location for follow up meetings and estimated cost associated with this effort should be discussed and agreed to prior to moving forward with the Partnering process.

An initial 1 day (or half day) facilitated Project Partnering session is recommended to initiate the partnering agreement. After the initial Partnering session, quarterly follow up meetings on projects with over 120 working days shall be scheduled to evaluate how the Partnering process is working, acknowledge successes and opportunities for improvement.

The cost to retain the services of a Partnering Trainer (if mutually selected as the PF), locate and rent a neutral location to hold the meeting (if held offsite), and any additional materials needed to host the meeting, will be paid by the Contractor. The Partnering Field Guide is available as a resource to the Engineer and PM to assist in the planning of the Partnering session(s) at the following link:

https://www.wsdot.wa.gov/sites/default/files/2012/03/28/WSDOTProjects-Partnering-FieldGuide.pdf

The Contracting Agency will reimburse invoice cost for the Contractor provided Partnering Trainer, facilities and materials at a rate of 50% under the Bid item, "Project Partnering".

***Payment***

"Project Partnering", by calculation.
"Project Partnering" will be calculated and paid for as described above.

1-05.GR1

## Control of Work

1-05.3.GR1

## Working Drawings

1-05.3.INST1.GR1

Section 1-05.3 is supplemented with the following:

1-05.3.OPT1.FR1

(September 3, 2019)

When submittals require review by the railroad, the Engineer will require up to *** $$1$$ *** calendar days from the date the submittals are received until they are returned to the Contractor. If a submittal is returned unapproved and then resubmitted, then an additional review time of up to *** $$2$$ *** calendar days will be required.

If more than *** $$1$$ *** calendar days are required for the Engineer's review of any individual submittal or resubmittal, an extension of time will be considered in accordance with Section 1-08.8.

1-05.4.GR1

## Conformity With And Deviations From Plans And Stakes

1-05.4.INST1.GR1

Section 1-05.4 is supplemented with the following:

1-05.4.OPT1.GR1

***(August 7, 2017)***

***Contractor Surveying - Structure***

Copies of the Contracting Agency provided primary survey control data are available for the bidder's inspection at the office of the Engineer.

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, slope stakes, and grades necessary for the construction of bridges, noise walls, and retaining walls. Except for the survey control data to be furnished by the Contracting Agency, calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.

The Contractor shall inform the Engineer when monuments are discovered that were not identified in the Plans and construction activity may disturb or damage the monuments. All monuments noted on the plans “DO NOT DISTURB” shall be protected throughout the length of the project or be replaced at the Contractors expense.

Detailed survey records shall be maintained, including a description of the work performed on each shift, the methods utilized, and the control points used. The record shall be adequate to allow the survey to be reproduced. A copy of each day's record shall be provided to the Engineer within three working days after the end of the shift.

The meaning of words and terms used in this provision shall be as listed in "Definitions of Surveying and Associated Terms" current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

The survey work by the Contractor shall include but not be limited to the following:

1. Verify the primary horizontal and vertical control furnished by the Contracting Agency, and expand into secondary control by adding stakes and hubs as well as additional survey control needed for the project. Provide descriptions of secondary control to the Contracting Agency. The description shall include coordinates and elevations of all secondary control points.

2. Establish, by placing hubs and/or marked stakes, the location with offsets of foundation shafts and piles.

3. Establish offsets to footing centerline of bearing for structure excavation.

4. Establish offsets to footing centerline of bearing for footing forms.

5. Establish wing wall, retaining wall, and noise wall horizontal alignment.

6. Establish retaining wall top of wall profile grade.

7. Establish elevation benchmarks for all substructure formwork.

8. Check elevations at top of footing concrete line inside footing formwork immediately prior to concrete placement.

9. Check column location and pier centerline of bearing at top of footing immediately prior to concrete placement.

10. Establish location and plumbness of column forms, and monitor column plumbness during concrete placement.

11. Establish pier cap and crossbeam top and bottom elevations and centerline of bearing.

12. Check pier cap and crossbeam top and bottom elevations and centerline of bearing prior to and during concrete placement.

13. Establish grout pad locations and elevations.

14. Establish structure bearing locations and elevations, including locations of anchor bolt assemblies.

15. Establish box girder bottom slab grades and locations.

16. Establish girder and/or web wall profiles and locations.

17. Establish diaphragm locations and centerline of bearing.

18. Establish roadway slab alignment, grades and provide dimensions from top of girder to top of roadway slab. Set elevations for deck paving machine rails.

19. Establish traffic barrier and curb profile.

20. Profile all girders prior to the placement of any deadload or construction live load that may affect the girder's profile.

The Contractor shall provide the Contracting Agency copies of any calculations and staking data when requested by the Engineer.

To facilitate the establishment of these lines and elevations, the Contracting Agency will provide the Contractor with the following primary survey and control information:

1. Descriptions of two primary control points used for the horizontal and vertical control. Primary control points will be described by reference to the project alignment and the coordinate system and elevation datum utilized by the project. In addition, the Contracting Agency will supply horizontal coordinates for the beginning and ending points and for each Point of Intersection (PI) on each alignment included in the project.

2. Horizontal coordinates for the centerline of each bridge pier.

3. Computed elevations at top of bridge roadway decks at one-tenth points along centerline of each girder web. All form grades and other working grades shall be calculated by the Contractor.

The Contractor shall give the Contracting Agency three weeks notification to allow adequate time to provide the data outlined in Items 2 and 3 above. The Contractor shall ensure a surveying accuracy within the following tolerances:

| | | Vertical | Horizontal |
|---|---|---|---|
| 1. | Stationing on structures | | ±0.02 feet |
| 2. | Alignment on structures | | ±0.02 feet |
| 3. | Superstructure elevations | ±0.01 feet variation from plan elevation | |
| 4. | Substructure | ±0.02 feet variation from Plan grades. | |

The Contracting Agency may spot-check the Contractor's surveying. These spot-checks will not change the requirements for normal checking by the Contractor.

When staking the following items, the Contractor shall perform independent checks from different secondary control to ensure that the points staked for these items are within the specified survey accuracy tolerances:

Piles
Shafts
Footings
Columns

The Contractor shall calculate coordinates for the points associated with piles, shafts, footings and columns. The Contracting Agency will verify these coordinates prior to issuing approval to the Contractor for commencing with the survey work. The Contracting Agency will require up to seven calendar days from the date the data is received to issuing approval.

Contract work to be performed using contractor-provided stakes shall not begin until the stakes are approved by the Contracting Agency. Such approval shall not relieve the Contractor of responsibility for the accuracy of the stakes.

***Payment***

Payment will be made for the following bid item when included in the proposal:

"Structure Surveying", lump sum.

The lump sum contract price for "Structure Surveying" shall be full pay for all labor, equipment, materials, and supervision utilized to perform the Work specified, including any resurveying, checking, correction of errors, replacement of missing or damaged stakes, and coordination efforts.

1-05.4.OPT2.GR1

***(August 7, 2017)***

***Contractor Surveying - Roadway***

Copies of the Contracting Agency provided primary survey control data are available for the bidder's inspection at the office of the Engineer.

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, slope stakes, and grades necessary for the construction of the roadbed, drainage, surfacing, paving, channelization and pavement marking, illumination and signals, guardrails and barriers, and signing. Except for the survey control data to be furnished by the Contracting Agency, calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.

The Contractor shall inform the Engineer when monuments are discovered that were not identified in the Plans and construction activity may disturb or damage the monuments. All monuments noted on the plans “DO NOT DISTURB” shall be protected throughout the length of the project or be replaced at the Contractors expense.

Detailed survey records shall be maintained, including a description of the work performed on each shift, the methods utilized, and the control points used. The record shall be adequate to allow the survey to be reproduced. A copy of each day's record shall be provided to the Engineer within three working days after the end of the shift.

The meaning of words and terms used in this provision shall be as listed in "Definitions of Surveying and Associated Terms" current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

The survey work shall include but not be limited to the following:

1. Verify the primary horizontal and vertical control furnished by the Contracting Agency, and expand into secondary control by adding stakes and hubs as well as additional survey control needed for the project. Provide descriptions of secondary control to the Contracting Agency. The description shall include coordinates and elevations of all secondary control points.

2. Establish, the centerlines of all alignments, by placing hubs, stakes, or marks on centerline or on offsets to centerline at all curve points (PCs, PTs, and PIs) and at points on the alignments spaced no further than 50 feet.

3. Establish clearing limits, placing stakes at all angle points and at intermediate points not more than 50 feet apart. The clearing and grubbing limits shall be 5 feet beyond the toe of a fill and 10 feet beyond the top of a cut unless otherwise shown in the Plans.

4. Establish grading limits, placing slope stakes at centerline increments not more than 50 feet apart. Establish offset reference to all slope stakes. If Global Positioning Satellite (GPS) Machine Controls are used to provide grade control, then slope stakes may be omitted at the discretion of the Contractor

5. Establish the horizontal and vertical location of all drainage features, placing offset stakes to all drainage structures and to pipes at a horizontal interval not greater than 25 feet.

6. Establish roadbed and surfacing elevations by placing stakes at the top of subgrade and at the top of each course of surfacing. Subgrade and surfacing stakes shall be set at horizontal intervals not greater than 50 feet in tangent sections, 25 feet in curve sections with a radius less than 300 feet, and at 10-foot intervals in intersection radii with a radius less than 10 feet. Transversely, stakes shall be placed at all locations where the roadway slope changes and at additional points such that the transverse spacing of stakes is not more than 12 feet. If GPS Machine Controls are used to provide grade control, then roadbed and surfacing stakes may be omitted at the discretion of the Contractor.

7. Establish intermediate elevation benchmarks as needed to check work throughout the project.

8. Provide references for paving pins at 25-foot intervals or provide simultaneous surveying to establish location and elevation of paving pins as they are being placed.

9. For all other types of construction included in this provision, (including but not limited to channelization and pavement marking, illumination and signals, guardrails and barriers, and signing) provide staking and layout as necessary to adequately locate, construct, and check the specific construction activity.

10. Contractor shall determine if changes are needed to the profiles or roadway sections shown in the Contract Plans in order to achieve proper smoothness and drainage where matching into existing features, such as a smooth transition from new pavement to existing pavement. The Contractor shall submit these changes to the Engineer for review and approval 10 days prior to the beginning of work.

The Contractor shall provide the Contracting Agency copies of any calculations and staking data when requested by the Engineer.

To facilitate the establishment of these lines and elevations, the Contracting Agency will provide the Contractor with primary survey control information consisting of descriptions of two primary control points used for the horizontal and vertical control, and descriptions of two additional primary control points for every additional three miles of project length. Primary control points will be described by reference to the project alignment and the

coordinate system and elevation datum utilized by the project. In addition, the Contracting Agency will supply horizontal coordinates for the beginning and ending points and for each Point of Intersection (PI) on each alignment included in the project.

The Contractor shall ensure a surveying accuracy within the following tolerances:

| | Vertical | Horizontal |
|---|---|---|
| Slope stakes | ±0.10 feet | ±0.10 feet |
| Subgrade grade stakes set 0.04 feet below grade | ±0.01 feet | ±0.5 feet (parallel to alignment)<br>±0.1 feet (normal to alignment) |
| Stationing on roadway | N/A | ±0.1 feet |
| Alignment on roadway | N/A | ±0.04 feet |
| Surfacing grade stakes | ±0.01 feet | ±0.5 feet (parallel to alignment)<br>±0.1 feet (normal to alignment) |
| Roadway paving pins for surfacing or paving | ±0.01 feet | ±0.2 feet (parallel to alignment)<br>±0.1 feet (normal to alignment) |

The Contracting Agency may spot-check the Contractor's surveying. These spot-checks will not change the requirements for normal checking by the Contractor.

When staking roadway alignment and stationing, the Contractor shall perform independent checks from different secondary control to ensure that the points staked are within the specified survey accuracy tolerances.

The Contractor shall calculate coordinates for the alignment. The Contracting Agency will verify these coordinates prior to issuing approval to the Contractor for commencing with the work. The Contracting Agency will require up to seven calendar days from the date the data is received.

Contract work to be performed using contractor-provided stakes shall not begin until the stakes are approved by the Contracting Agency. Such approval shall not relieve the Contractor of responsibility for the accuracy of the stakes.

Stakes shall be marked in accordance with Standard Plan A10.10. When stakes are needed that are not described in the Plans, then those stakes shall be marked, at no additional cost to the Contracting Agency as ordered by the Engineer.

### *Payment*

Payment will be made for the following bid item when included in the proposal:

"Roadway Surveying", lump sum.

The lump sum contract price for "Roadway Surveying" shall be full pay for all labor, equipment, materials, and supervision utilized to perform the Work specified, including any resurveying, checking, correction of errors, replacement of missing or damaged stakes, and coordination efforts.

1-05.4.OPT3.GR1

***(April 4, 2011)***

***Licensed Surveyors***

The Contractor shall be responsible for reestablishing or locating legal survey markers such as GLO monuments or property corner monuments, conduct boundary surveys to determine Contracting Agency right-of-way locations, and obtain, review and analyze deeds and records as necessary to determine these boundaries. The Contracting Agency will provide “rights of entry” as needed by the Contractor to perform the work.

The Contractor shall brush out or clear and stake or mark the right-of-way lines as designated by the Engineer.

The Contractor shall inform the Engineer when monuments are discovered that were not identified in the Plans and construction activity may disturb or damage the monuments. All monuments noted on the plans “DO NOT DISTURB” shall be protected throughout the length of the project or be replaced at Contractors expense.

When required, the Contractor shall prepare and file a Record of Survey map in accordance with RCW 58.09 and provide a recorded copy to the Contracting Agency. The Contracting Agency will provide all existing base maps, existing horizontal and vertical control, and other material available with Washington State Plane Coordinate information to the Contractor. The Contracting Agency will also provide maps, plan sheets, and/or aerial photographs clearly identifying the limits of the areas to be surveyed. The Contractor shall establish Washington State Plane Coordinates on all points required in the Record of Survey and other points designated in the Contract documents.

Existing right of way documentation, existing base maps, existing horizontal and vertical control descriptions, maps, plan sheets, aerial photographs and all other available material may be viewed by prospective bidders at the office of the Engineer.

The Contractor shall perform all of the necessary calculations for the contracted survey work and shall provide copies of these calculations to the Contracting Agency. Electronic files of all survey data shall be provided and in a format acceptable to the Contracting Agency.

All survey work performed by the Contractor shall conform to all applicable sections of the Revised Code of Washington and the Washington Administrative Code.

The Contractor shall provide all traffic control, signing, and temporary traffic control devices in order to provide a safe work zone.

***Payment***

Payment will be made in accordance with Section 1-09.6 for the following bid item when included in the proposal:

“Licensed Surveying”, Force Account.

For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Licensed Surveying" in the bid proposal to become a part of the total bid by the Contractor.

1-05.4.OPT4.GR1

***(April 2, 2018)***

***Contractor Surveying – ADA Features***

**ADA Feature Staking Requirements**

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, and grades necessary for the construction of the ADA features. Calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility. The Contractor shall build the ADA features within the specifications in the Standard Plans and contract documents.

**ADA Feature As-Built Measurements**

The Contractor shall be responsible for providing electronic As-Built records of all ADA feature improvements completed in the Contract.

The survey work shall include but not be limited to completing the measurements, recording the required measurements and completing other data fill-ins found on the ADA Measurement Forms, and transmitting the electronic Forms to the Engineer. The ADA Measurement Forms are found at the following website location:

http://www.wsdot.wa.gov/Design/ADAGuidance.htm

In the instance where an ADA Feature does not meet accessibility requirements, all work to replace non-conforming work and then to measure, record the as-built measurements, and transmit the electronic Forms to the Engineer shall be completed at no additional cost to the Contracting Agency, as ordered by the Engineer.

***Payment***

Payment will be made for the following bid item that is included in the Proposal:

"ADA Features Surveying", lump sum.

The unit Contract price per lump sum for "ADA Features Surveying" shall be full pay for all the Work as specified.

1-05.9.GR1

## Equipment

1-05.9.INST1.GR1

Section 1-05.9 is supplemented with the following:

1-05.9.OPT1.FR1

***(April 7, 2008)***

***General***

This specification contains requirements for the use of machine control grading.

Instead of providing grade control through construction stakes, the Contractor may control grade with equipment that is controlled by a machine control system.

The Contractor may use any type of equipment and machine control system that produces results meeting the requirements of the Contract.

Electronic data is provided for the Contractor's convenience, and is not a part of the Contract. No guarantee or warranty is made by the Contracting Agency that electronic data provided to the Contractor: is compatible with any of the systems that are used by the Contractor; is complete; is representative of actual conditions at the project site, or; accurately reflects the quantities and character of the actual Work required. The furnishing of electronic design data or documentation shall not relieve the Contractor from any risks or of any duty to make examinations and investigations as required by Section 1-02.4 or any other responsibility under the Contract or as required by law. Except as provided above, no corrections, additions, or updates of any kind will be made to electronic data provided to the Contractor.

The Engineer may perform spot checks of the Contractor's machine control grading results, calculations, records, field procedures, and quality control measures. If the Engineer determines that the Work being performed is not achieving results that will meet the Contract requirements, the Contractor shall make corrections to the Work at no additional cost to the Contracting Agency.

### *WSDOT Responsibilities*

1. The Engineer will set the initial horizontal and vertical control points for the project as shown in the Contract documents.

2. The Engineer will provide additional datum and scale factor information upon request.

3. After execution of the Contract, the Engineer will make available upon written request the following electronic data used to design the project:

   *** $$1$$ ***

   Data may be obtained by furnishing a written request to the Engineer at the following address:

   *** $$2$$ ***

### *Contractor's Responsibilities*

1. The Contractor shall provide any information or data that is requested by the Contracting Agency for the purpose of performing the verification of quantities, and quality.

2. The Contractor shall be responsible for any edits or conversions of the Contracting Agencies electronic data whether done by the Contractor or a vendor that is hired by the Contractor to perform such edits or conversions.

3. The Contractor shall be responsible for the accuracy and usability of any data or model that is developed from the Contracting Agencies data.

4. The Contractor shall be responsible for checking and recalibrating Machine Control Equipment as required to achieve results that meet the requirements of the Contract.

5. The Contractor shall be responsible for establishing any additional control points needed to achieve results that meet the requirements of the Contract.

6. The Contractor shall provide the Contracting Agency electronic as-built construction data for the final Roadway surface model in a MicroStation format.

7. One week prior to the start of grading operations the Contractor shall meet with the Engineers staff to review the grading plans, quality processes, and tolerance requirements.

***Payment***

All costs associated with the use of machine control grading equipment are incidental to related items of Work, and no additional payment will be provided.

1-05.9.OPT2.FR1

(April 2, 2018)

The Contractor may begin Work below the Ordinary High Water Line on *** $$1$$ *** and must complete all the Work by *** $$2$$ ***. The Contracting Agency suspects that *** $$3$$ ***, a Class A noxious weed, exists within the project boundary. In order to prevent the spread of this invasive species, the Contractor shall *** $$4$$ *** before removing equipment from the project site.

1-05.9.OPT3.FR1

(April 2, 2018)

The Contracting Agency suspects that *** $$1$$ ***, an aquatic invasive species, exists within the project boundary. In order to prevent the spread of this invasive species, the Contractor shall *** $$2$$ *** before removing equipment or temporary materials from the project site that was used directly below the Ordinary High Water Line.

1-05.14.GR1

## Cooperation With Other Contractors

1-05.14.INST1.GR1

Section 1-05.14 is supplemented with the following:

1-05.14.OPT1.FR1

***(March 13, 1995)***

***Other Contracts Or Other Work***

It is anticipated that the following work adjacent to or within the limits of this project will be performed by others during the course of this project and will require coordination of the work:

*** $$1$$ ***

1-05.14.OPT2.FR1

(March 13, 1995)

The Contractor on this project shall provide sufficient room within the right of way for a two-way haul road past the Contractor's operations for use of the *** $$1$$ *** Contractor.

1-06.GR1

## Control of Material

1-06.INST1.GR1

Section 1-06 is supplemented with the following:

1-06.OPT1.GR1

### *Buy America*

1-06.OPT1(A).GR1

(August 6, 2012)

In accordance with Buy America requirements contained in 23 CFR 635.410, the major quantities of steel and iron construction material that is permanently incorporated into the project shall consist of American-made materials only. Buy America does not apply to temporary steel items, e.g., temporary sheet piling, temporary bridges, steel scaffolding and falsework.

Minor amounts of foreign steel and iron may be utilized in this project provided the cost of the foreign material used does not exceed one-tenth of one percent of the total contract cost or $2,500.00, whichever is greater.

American-made material is defined as material having all manufacturing processes occurring domestically. To further define the coverage, a domestic product is a manufactured steel material that was produced in one of the 50 States, the District of Columbia, Puerto Rico, or in the territories and possessions of the United States.

If domestically produced steel billets or iron ingots are exported outside of the area of coverage, as defined above, for any manufacturing process then the resulting product does not conform to the Buy America requirements. Additionally, products manufactured domestically from foreign source steel billets or iron ingots do not conform to the Buy America requirements because the initial melting and mixing of alloys to create the material occurred in a foreign country.

Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. The processes include rolling, extruding, machining, bending, grinding, drilling, welding, and coating. The action of applying a coating to steel or iron is deemed a manufacturing process. Coating includes epoxy coating, galvanizing, aluminizing, painting, and any other coating that protects or enhances the value of steel or iron. Any process from the original reduction from ore to the finished product constitutes a manufacturing process for iron.

Due to a nationwide waiver, Buy America does not apply to raw materials (iron ore and alloys), scrap (recycled steel or iron), and pig iron or processed, pelletized, and reduced iron ore.

The following are considered to be steel manufacturing processes:

1. Production of steel by any of the following processes:

    a. Open hearth furnace.

b. Basic oxygen.

c. Electric furnace.

d. Direct reduction.

2. Rolling, heat treating, and any other similar processing.

3. Fabrication of the products.

a. Spinning wire into cable or strand.

b. Corrugating and rolling into culverts.

c. Shop fabrication.

A certification of materials origin will be required for any items comprised of, or containing, steel or iron construction materials prior to such items being incorporated into the permanent work. The certification shall be on DOT Form 350-109EF provided by the Engineer, or such other form the Contractor chooses, provided it contains the same information as DOT Form 350-109EF.

1-06.OPT1(B).FR1

(August 6, 2012)

The following items of work containing steel or iron construction materials are considered to be temporary and are excluded from the Buy America requirements contained in 23 CFR 635.410 as described in the above paragraphs:

*** $$1$$ ***

1-06.OPT1(C).FR1

***(August 6, 2007)***

***Structural Steel Construction Material***

**Definitions**

1. Construction material: Defined as any article, material, or supply brought to the construction site for incorporation into the final product.

2. Domestic Construction Material: A manufactured construction material will be considered domestic if it has been manufactured in the United States.

3. Manufactured in the United States: A construction material will be considered as manufactured in the United States if all manufacturing processes have occurred in the United States.

4. Structural Steel: Defined as all structural steel products included in the project.

5. United States: To further define the coverage, a domestic product is a manufactured steel construction material that was produced in one of the 50 states, the District of Columbia, Puerto Rico, or in the territories and possessions of the United States.

**Bidding and Award**

The Contractor shall submit a bid for the following bid items containing domestic structural steel appearing in the proposal under the heading **ALTERNATE *** $$1$$ ***.**

*** $$2$$ ***

(A) The Contractor may also submit a bid for the following bid items containing foreign structural steel appearing in the proposal under the heading **ALTERNATE *** $$3$$ ***.**

*** $$4$$ ***

A Contractor electing to submit a bid for any of the foreign structural steel items under **ALTERNATE *** $$5$$ ***** must also submit a bid for the appropriate domestic structural steel items under **ALTERNATE *** $$6$$ ***.** If a bid is received only for foreign structural steel material on any of the above items, the bid will be considered irregular.

Subject to the provisions of Section 1-03, all bidders are advised that the contract will be awarded to the bidder who submits the lowest total bid based on furnishing domestic structural steel construction material as specified, unless such total bid exceeds the lowest total bid based on furnishing foreign structural steel construction material as specified, by more than 25 percent. In that event, the contract will be awarded to the bidder who submits the lowest total bid based on furnishing the specified foreign structural steel material.

Except the material contained in the above foreign structural steel item(s) for which alternate bids were submitted and accepted as a basis of award, the steel and iron construction material that is permanently incorporated into the project shall consist of American-made materials only. Buy America does not apply to temporary steel items, e.g., temporary sheet piling, temporary bridges, steel scaffolding and falsework. American-made material is defined as material having all manufacturing processes occuring domestically.

If domestically produced steel billets or iron ingots are exported outside of the United States for any manufacturing process then the resulting product does not conform to the Buy America requirements. Additionally, products manufactured domestically from foreign source steel billets or iron ingots do not conform to the Buy America requirements because the initial melting and mixing of alloys to create the material occurred in a foreign country.

Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. The processes include rolling, extruding, machining, bending, grinding, drilling, welding, and coating. The action of applying a coating to steel or iron is deemed a manufacturing process. Coating includes epoxy coating, galvanizing, aluminizing, painting, and any other coating that protects or enhances the value of steel or iron. Any process from the original reduction from ore to the finished product constitutes a manufacturing process for iron.

Due to a nationwide waiver, Buy America does not apply to raw materials (iron ore and alloys), scrap (recycled steel or iron), and pig iron or processed, pelletized, and reduced iron ore.

1. Production of steel by any of the following processes:

    a. Open hearth furnace.

    b. Basic oxygen.

    c. Electric furnace.

    d. Direct reduction.

2. Rolling, heat treating, and any other similar processing.

3. Fabrication of the products.

    a. Spinning wire into cable or strand.

    b. Corrugating and rolling into culverts.

    c. Shop fabrication.

The Contractor may utilize minor amounts of foreign steel and iron in this project provided the cost of the foreign material used does not exceed one-tenth of one percent of the total contract cost or $2,500.00, whichever is greater.

A certification of materials origin will be required for any items comprised of, or containing, steel or iron construction materials prior to such items being incorporated into the permanent work. The certification shall be on DOT Form 350-109EF provided by the Engineer, or such other form the Contractor chooses, provided it contains the same information as DOT Form 350-109EF.

1-06.1.GR1

## Approval of Materials Prior to Use

1-06.1.INST1.GR1

Section 1-06.1 is supplemented with the following:

1-06.1.OPT1.GR1

(April 3, 2017)

For each proposed material that is required to be submitted for approval using either the QPL or RAM process the Contractor will be allowed to submit for approval two material sources or manufacturers per material type at no cost. Additional material sources or manufacturers may be submitted for approval and will be processed at a cost of $125.00 per material source or manufacturer submitted by QPL submittal and $400.00 per material submitted by RAM. All costs for processing additional material sources or manufacturers will be deducted from monies due or that may come due to the Contractor. Subject to a request by the Contractor and a determination by the Engineer the costs for processing may be waived.

1-07.GR1

## Legal Relations and Responsibilities to the Public

1-07.1.GR1

### Laws to be Observed

1-07.1.INST1.GR1

Section 1-07.1 is supplemented with the following:

1-07.1.OPT1.GR1

***(March 25, 2009)***

***American Recovery and Reinvestment Act of 2009 (ARRA) Employment Report***

The Contractor shall submit monthly reports of the number of employees actively working on this project for the Contractor and all Subcontractors of every tier. The reports shall include all employees actively working on this project at the jobsite, in the project office, in the home office, or teleworking from a home or other alternative office location; and all engineering personnel, inspectors, sampling and testing technicians, and lab technicians actively performing work directly in support of this project (excluding suppliers) during the reporting month.

The report shall be prepared using Form FHWA-1589 and submitted monthly to the Engineer. The initial report shall be submitted to the Engineer within 30-days of execution. Subsequent reports shall be submitted to the Engineer no later than 10-days after the end of each report month.

Failure by the Contractor to submit ARRA Employment Reports for the Contractor and all Subcontractors of every tier shall be reason for withholding all progress payments until reports are received. The cost of preparing and submitting ARRA Employment Reports is incidental to the Contract. The Contractor shall include all related costs in the unit Bid prices of the Contract.

1-07.1.OPT2.FR1

***(September 3, 2019)***

***Lead Health Protection Program***

Structural and non-structural materials located at the project site *** $$1$$ *** contain lead-based products. The Contractor shall be fully responsible for the safety and health of all on-site workers and compliant with Washington Administrative Code (WAC 296-155-176). The Contractors Lead Health Protection Program shall be submitted to the Contracting Agency as a Type 2 Working Drawing prior to the Contractor beginning work involving exposure to lead contamination. The Contractor shall communicate with the Engineer to ensure a coordinated effort for providing and maintaining a safe worksite for both the Contracting Agency's and Contractor's workers.

***Construction Requirements***

The Contractor shall be responsible for the containment measures required to provide and maintain a safe and healthful jobsite for the duration of the project in accordance with all applicable laws and this Special Provision.

***Payment***

All costs to comply with this Special Provision for the Lead Health Protection laws and regulations are the responsibility of the Contractor and shall be included in related items of work.

1-07.1.OPT3.FR1

***(April 3, 2006)***

***Confined Space***

Confined spaces are known to exist at the following locations:

*** $$1$$ ***

The Contractor shall be fully responsible for the safety and health of all on-site workers and compliant with Washington Administrative Code (WAC 296-809).

The Contractor shall prepare and implement a confined space program for each of the confined spaces identified above. The Contractors Confined Space program shall be sent to the Contracting Agency at least 30 days prior to the Contractor beginning work in or adjacent to the confined space. No work shall be performed in or adjacent to the confined space until the plan is submitted to the Engineer as required. The Contractor shall communicate with the Engineer to ensure a coordinated effort for providing and maintaining a safe worksite for both the Contracting Agency's and Contractor's workers when working in or near a confined space.

All costs to prepare and implement the confined space program shall be included in the bid prices for the various items associated with the confined space work.

1-07.1.OPT4.GR1

(May 13, 2020)

In response to COVID-19, the Contractor shall prepare a project specific COVID-19 health and safety plan (CHSP) in conformance with Section 1-07.4(2) as supplemented in these specifications, **COVID-19 Health and Safety Plan (CHSP)**.

1-07.3.GR1

## Forest Protection and Merchantable Timber Requirements

1-07.3.INST1.GR1

Section 1-07.3 is supplemented with the following:

1-07.3.OPT1.GR1

(August 2, 2004)

The Forest Service Provisions, included in the Appendix to these Special Provisions, are made a part of this contract. The Contractor shall comply with the requirements of these Forest Service provisions at no additional cost to the Contracting Agency.

**1-07.3(2).GR1**

***Merchantable Timber Requirements***

1-07.3(2).INST1.GR1

Section 1-07.3(2) is supplemented with the following:

1-07.3(2).OPT1.GR1

(April 7, 2008)

This project contains merchantable timber.

*Export Restrictions* - DOT Form 410-100, Purchaser Certification for Export Restricted Timber, will be included when the contract is sent to the Contractor for execution. The form shall be completed and signed by the Contractor. The Contractor shall send the original signed form and one copy of the signed form directly to the Washington State Department of Revenue at the address on the form. The Contractor shall send one signed copy along with the other documents required by Section 1-03.3 to the Contracting Agency with the executed contract.

*State Tax Requirements* - It shall be the Contractor's responsibility to pay to the State Department of Revenue all taxes on harvested timber.

1-07.4.GR1

## Sanitation

1-07.4(2).GR1

### *Health Hazards*

1-07.4(2).INST1.GR1

Section 1-07.4(2) is revised to read:

1-07.4(2).OPT1.FR1

(August 7, 2017)

This project site is known to be occupied by transients and therefore contains biological hazards and associated physical hazards. These may include, but not be limited to violent and dangerous individuals, hypodermic needles, garbage, broken glass, human and animal excrement, drug paraphernalia, and other hazards.

The Contractor shall take precautions and perform any necessary Work required to provide and maintain a safe and healthful jobsite for all workers and the public for the duration of the project in accordance with all applicable laws and contract requirements.

The Contractor shall ensure that the public, including persons who may be non-English speaking or those who may not be able to recognize potential safety and health hazards within the project area, are not harmed by the Contractors activities.

Nothing required by this Specification shall operate as a waiver of the Contractor’s responsibility for taking all steps necessary to ensure the safety of the public under Section 1-07.23 or responsibility for liability and damages under Section 1-07.14 or for any other responsibility under the Contract or as may be required by law.

**Health and Safety Plan**

The Contractor shall prepare a written Health and Safety Plan. The plan shall be prepared under the supervision of a certified industrial hygienist and shall incorporate all required County, State, and Federal health and safety provisions. The plan shall include requirements of the Federal Occupational Safety and Health Act of 1970 (OSHA), all amendments, and all other applicable health regulations.

Preparation of the Health and Safety Plan shall include an initial site assessment by the industrial hygienist. The plan shall break initial cleanup of the project into identifiable construction areas. The plan shall be submitted to the Engineer prior to commencing cleanup Work. At least one copy of the plan shall be posted at the work site while cleanup Work is in progress. The industrial hygienist shall perform one or more follow-up site assessments as needed to approve the site following completion of the initial site cleanup.

**Public Notification**

The Contractor shall furnish and install the "No Trespassing" signs shown in the Plans at locations staked by the Engineer at least 72 hours prior to performing site cleanup or any potentially hazardous Work (such as clearing or operating equipment).

At the same time that "No Trespassing" signs are posted, provide written notification of the following to the Engineer and to the chief law enforcement officer of the local governmental entity where the Work will occur:

1. The precise location of each area that is posted "No Trespassing";

2. The date and time that each site was posted "No Trespassing";

3. The date, time, description and duration of the Work to be performed at each site.

At least 72 hours prior to performing site cleanup in Work areas containing encampments (such as tents, makeshift dwellings, sleeping sites, or accumulations of personal property that are not refuse), the Contractor shall post a notification at each encampment area. Each notice shall:

1. Be weather resistant, and written in both English and Spanish.

2. Be affixed to each dwelling or post mounted within 10-feet of each encampment;

3. State the Prime Contractor's company name as the entity that performed the cleanup as required by the Washington State Department of Transportation;

4. Provide the date that the notice is posted;

5. Provide date(s) and time(s) that cleanup will occur;

6. Provide the telephone number, business hours and physical address of the location where stored personal property may be claimed.

7. State that personal property will be stored for 70-days from the date of removal, and if unclaimed within that time, will be disposed of.

At the same time that notifications are posted at encampment areas, provide written notification of the schedule to perform site cleanup to the Engineer and to the following advocacy groups:

***$$1$$***

Acceptance of signs and notifications will be based on visual inspection that the sign and notifications meet these requirements.

**Site Cleanup of Biological and Physical Hazards**

An initial cleanup of the site, including all preparatory work required to make the worksite sanitary and safe in accordance with applicable laws and with the Contract, shall be completed to remove all individuals, encampments, and personal property from areas signed “No Trespassing”, and to address all biological and associated physical hazards present on the project. Necessary worker training, on and off site preparations, and personal protective equipment shall be provided by the Contractor to complete this Work. If aggressive or violent individuals are encountered, the Contractor shall notify the local law enforcement agency to assist them in clearing the Work area.

Site cleanup of individual areas identified in the Health and Safety Plan shall be performed no more than 30 days in advance of performing other Work in each area.

The refuse generated by the site cleanup shall become the property of the Contractor and shall be removed from the project. Personal property shall be handled as required by this Specification and applicable laws.

**Removal, Storage and Return of Personal Property**

Personal property may include radios, audio and video equipment, sleeping bags, tents, stoves and cooking utensils, lanterns, flashlights, bed rolls, tarps, foam, canvas, mats, blankets, pillows, medication, personal papers, photographs, books and other reading materials, luggage, backpacks or other storage containers, clothing, towels, shoes, toiletries and cosmetics, clocks and watches, and eye glasses. Personal property does not include building materials such as wood products, metal, or rigid plastic.

Personal property items that are not refuse, contaminated, illegal or hazardous shall be removed from the Work area and stored at a location near the project site for return to the property owner. Items shall be placed in large transparent plastic bags and stored in a manner that protects them from adverse weather and theft. Reasonable efforts shall be made to place all items from each encampment into a separate bag. Each bag shall be labeled with an inventory to include a brief description of the contents, a description of the location that it was removed from, and the date that it was removed from the Work area. The Contractor shall not open closed items of personal property unless, in its determination, it is necessary to do so to protect public safety.

The Contractor shall retain the property for 70-days.

If the name and contact information of the owner of a personal property item is identified on that item, then for a period of not less than 10-days after removing

the property from the Work area, the Contractor shall attempt to notify the apparent owner of the property and make arrangements for the owner to claim the property.

The Contractor shall release the property to any individual who claims ownership provided they are able to establish ownership by identifying the property and its approximate location. The Contractor shall maintain a record of all property that is claimed. The record shall include a description of the property, the date claimed, and the name of the claimant.

If personal property is not claimed within 70-days of removal from the encampment, then the property shall become the property of the Contractor and shall be removed from the project.

**Site Preservation**

The Contractor shall preserve the site after initial cleanup of biological and physical hazards.

On a daily basis and prior to performing any Work in areas where pedestrians or encampments may be present, the Contractor shall verify that the Work area is cleared of all persons not associated with the project. Individuals may seek shelter in dumpsters, equipment, under blankets, or other places hidden from view. Individuals may be disabled, or under the influence of alcohol or drugs and it should not be assumed that loud construction noise will wake them.

If the worksite becomes unsanitary or unsafe due to new encampments or new biological and associated physical hazards after initial cleanup is completed, then the Contractor shall perform additional site assessment, additional notification and additional cleanup.

The Engineer may authorize additional site preservation measures. The nature and frequency of these measures will be as agreed to by the Engineer. Additional site preservation measures may include the use of fencing, lighting, or security, provided it is approved in advance by the Engineer. Work performed without Engineer authorization will not be eligible for payment.

**Measurement**

No trespassing signs will be measured per each.

**Payment**

Payment will be made for the following bid items when they are included in the proposal:

"No Trespassing Sign", per each.

The unit contract price per each "No Trespassing Sign" shall be full payment for all Work required to furnish, install, maintain and remove the signs.

"Health and Safety Plan", lump sum.

The lump sum unit contract price for "Health and Safety Plan" shall be full payment for all Work associated with the preparation and implementation of the Health and Safety Plan including the initial and follow up assessment(s) for initial

site cleanup, worker training and personal protective equipment, and providing required notifications.

"FA-Site Cleanup of Bio. And Physical Hazards", by force account as provided in Section 1-09.6.

Removal and disposal of biological and physical hazards; removal of individuals and encampments; removal, storage, and return of personal property; disposal of unclaimed personal property; additional site assessment, notifications, worker training and personal protective equipment required after the initial site cleanup is completed; and site preservation Work authorized by the Engineer will be paid for by force account in accordance with Section 1-09.6.

For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "FA-Site Cleanup of Bio. And Physical Hazards" in the bid proposal to become a part of the total bid by the Contractor.

1-07.4(2).INST2.GR1

Section 1-07.4(2) is supplemented with the following:

1-07.4(2).OPT2.GR1

**(May 13, 2020)**

**COVID-19 Health and Safety Plan (CHSP)**

The Contractor shall prepare a project specific COVID-19 health and safety plan (CHSP). The CHSP shall be prepared and submitted as a Type 2 Working Drawing prior to beginning physical Work. The CHSP shall be based on the most current State and Federal requirements. If the State or Federal requirements are revised, the CHSP shall be updated as necessary to conform to the current requirements.

The Contractor shall update and resubmit the CHSP as the work progresses and new activities appear on the look ahead schedule required under Section 1-08.3(2)D. If the conditions change on the project, or a particular activity, the Contractor shall update and resubmit the CHSP. Work on any activity shall cease if conditions prevent full compliance with the CHSP.

The CHSP shall address the health and safety of all people associated with the project including State workers in the field, Contractor personnel, consultants, project staff, subcontractors, suppliers and anyone on the project site, staging areas, or yards.

**COVID-19 Health and Safety Plan (CHSP) Inspection**

The Contractor shall grant full and unrestricted access to the Engineer for CHSP Inspections. The Engineer (or designee) will conduct periodic compliance inspections on the project site, staging areas, or yards to verify that any ongoing work activity is following the CHSP plan. If the Engineer becomes aware of a noncompliance incident either through a site inspection or other means, the Contractor will be notified immediately (within 1 hour). The Contractor shall immediately remedy the noncompliance incident or suspend all or part of the associated work activity. The Contractor shall satisfy the Engineer that the noncompliance incident has been corrected before the suspension will end.

1-07.5.GR1

## Environmental Regulations

1-07.5.INST1.GR1

Section 1-07.5 is supplemented with the following:

1-07.5.OPT1.GR1

***(September 20, 2010)***

***Environmental Commitments***

The following Provisions summarize the requirements, in addition to those required elsewhere in the Contract, imposed upon the Contracting Agency by the various documents referenced in the Special Provision **Permits and Licenses**. Throughout the work, the Contractor shall comply with the following requirements:

1-07.5.OPT1(A).FR1

(August 4, 2014)

The Contractor shall submit a written notification to the Engineer no later than 10 calendar days prior to beginning any ground disturbing activities *** $$1$$ ***. The Contractor shall not commence any such ground disturbing activities until the monitor is present.

1-07.5.OPT1(B).FR1

(April 1, 2019)

The Contractor shall notify the Engineer a minimum of *** $$1$$ *** calendar days prior to commencing any work in sensitive areas, mitigation areas, and wetland buffers. Installation of construction fencing is excluded from this notice requirement.

1-07.5.OPT1(C).FR1

(April 1, 2019)

No *** $$1$$ *** is allowed within *** $$2$$ *** feet of *** $$3$$ ***.

1-07.5.OPT2.GR1

***(August 3, 2009)***

***Payment***

All costs to comply with this special provision for the environmental commitments and requirements are incidental to the contract and are the responsibility of the Contractor. The Contractor shall include all related costs in the associated bid prices of the contract.

1-07.5(2).GR1

***State Department of Fish And Wildlife***

1-07.5(2).INST1.GR1

Section 1-07.5(2) is supplemented with the following:

1-07.5(2).OPT1.GR1

(April 2, 2018)

The following Provisions summarize the requirements, in addition to those required elsewhere in the Contract, imposed upon the Contracting Agency by the Washington State Department of Fish and Wildlife. Throughout the work, the Contractor shall comply with the following requirements:

1-07.5(2).OPT1(A).FR1

(April 2, 2018)

The Contractor may begin Work below the Ordinary High Water Line on *** $$1$$ *** and must complete all the Work by *** $$2$$ ***.

1-07.5(2).OPT2.GR1

(April 2, 2018)

All costs to comply with this special provision are incidental to the Contract and are the responsibility of the Contractor. The Contractor shall include all related costs in the associated bid prices of the Contract.

1-07.5(3).INST1.GR1

Section 1-07.5(3) is supplemented with the following:

1-07.5(3).OPT1.GR1

(April 2, 2018)

The following Provisions summarize the requirements, in addition to those required elsewhere in the Contract, imposed upon the Contracting Agency by the Washington State Department of Ecology. Throughout the work, the Contractor shall comply with the following requirements:

1-07.5(3).OPT1(A).FR1

(August 3, 2009)

A mixing zone is established within which the turbidity standard is waived during actual in-water work. The mixing zone is established to only temporarily allow exceeding the turbidity criteria (such as a few hours or days) and is not authorization to exceed the turbidity standard for the entire duration of the construction. The mixing zone shall not exceed *** $$1$$ *** feet downstream from the construction area.

1-07.5(3).OPT1(B).GR1

(April 1, 2019)

Stormwater, dewatering water, or other authorized non-stormwater discharges that has come into contact with pH modifying substances such as concrete rubble, cast concrete or amended soils, need to be maintained between 6.5 – 8.5 standard units (su). If pH exceeds 8.5 su, the Contractor shall immediately discontinue work and initiate treatment to prevent discharges outside the acceptable range from occurring. All neutralization methods used shall be in accordance with the permit. Work may resume once treatment has been implemented and pH of the stormwater or authorized non-stormwater discharge is between 6.5 - 8.5 su or it can be demonstrated that high pH waters will not discharge to surface waters.

Stormwater, dewatering water, and other authorized non-stormwater discharges are monitored weekly for compliance with the turbidity benchmark (25 nephelometric turbidity units (ntu)) and the phone reporting trigger value (250 ntu) by the Contracting Agency. When the turbidity benchmark is breached, the best management practices (BMPs) installed on-site are not working adequately and need to be adapted, maintained or more BMPs shall be installed. When the turbidity phone reporting trigger value is breached, immediate action is required in order to lower the turbidity to ≤25 ntu or to eliminate the discharge. Daily follow-up discharge samples will be collected at all locations where a discharge

of 250 ntu or higher was collected unless the discharge was stopped or eliminated.

1-07.5(5).GR1

### *U.S. Army Corps of Engineers*

1-07.5(5).INST1.GR1

Section 1-07.5(5) is supplemented with the following:

1-07.5(5).OPT1.GR1

(April 2, 2018)

The following Provisions summarize the requirements, in addition to those required elsewhere in the Contract, imposed upon the Contracting Agency by the U.S. Army Corps of Engineers. Throughout the work, the Contractor shall comply with the following requirements:

1-07.5(5).OPT1(B).FR1

(February 25, 2013)

Temporary fills at *** $$1$$ *** must be removed within *** $$2$$ *** calendar days of beginning placement of these fills. This time period may be extended with approval from the Engineer. Requests to extend must be received a minimum of 45 days prior to the expiration of number of days listed above, since the extension is subject to concurrence by the U.S. Army Corps of Engineers.

1-07.5(5).OPT1(C).GR1

(February 25, 2013)

Temporary structures and dewatering of areas under the jurisdiction of the U.S. Army Corps of Engineers must maintain normal downstream flows and prevent upstream and downstream flooding to the maximum extent practicable.

1-07.5(5).OPT1(D).GR1

(August 3, 2009)

Heavy equipment working in wetlands or mudflats must be placed on mats or other measures taken to minimize soil disturbance as approved by the Engineer.

1-07.5(5).OPT1(F).GR1

(August 3, 2009)

The Contractor shall dispose of all creosoted timber, creosote piling and associated debris as shown in the Plans in accordance with current federal, state, and local regulations and provisions, and following Best Management Practices. Disposal shall be made in a landfill which meets the liner and leachate standards of the Minimum Functional Standards, Chapter 173-304 WAC. The Contractor shall provide receipts from the disposal facility to the Engineer. If the material is transported to a transfer station, the Contractor shall obtain documentation indicating that final disposal will comply with the standards referenced above.

1-07.5(5).OPT2.GR1

(April 2, 2018)

All costs to comply with this special provision are incidental to the Contract and are the responsibility of the Contractor. The Contractor shall include all related costs in the associated bid prices of the Contract.

1-07.5(6).GR1

***U.S. Fish and Wildlife Service and National Marine Fisheries Service***

1-07.5(6).INST1.GR1

Section 1-07.5(6) is supplemented with the following:

1-07.5(6).OPT1.GR1

(April 2, 2018)

The following Provisions summarize the requirements, in addition to those required elsewhere in the Contract, imposed upon the Contracting Agency by the U.S. Fish/Wildlife Services and the National Marine Fisheries Service. Throughout the work, the Contractor shall comply with the following requirements:

1-07.5(6).OPT1(B).GR1

(April 2, 2018)

The Contractor shall place temporary storage piles of erosive materials outside the 100-year floodplain during the rainy season (October 1 through June 1). Material that will be used within 12 hours of deposition is exempt from this requirement. The Contractor shall employ best management practices to prevent sediment delivery to waterbodies, wetlands, or conveyances that drain to such features.

1-07.5(6).OPT1(C).FR1

(April 2, 2018)

The Contractor shall not allow temporary floating work platforms to run aground. Anchors and chains shall never contact fish spawning areas in freshwater or eelgrass, kelp, macro algae, or intertidal wetlands as indicated in the Plans. Shading eelgrass, kelp, or macro algae beds by work platforms shall not exceed *** $$1$$ *** days.

1-07.5(6).OPT1(D).GR1

(April 2, 2018)

The Contractor shall provide concrete truck chute cleanout areas to contain fresh concrete and wash water. The Contractor shall dispose of the waste material at a facility permitted to take such waste.

1-07.5(6).OPT1(E).GR1

(April 2, 2018)

The Contractor shall not use creosote-treated wood below the Ordinary High Water Mark.

1-07.5(6).OPT1(F).GR1

(April 2, 2018)

The Contractor shall remove piles by directly pulling, using vibratory devices, or by cutting the piles below ground level to minimize localized turbidity. If use of a clamshell bucket is necessary due to pile breakage, turbidity curtains will be employed by the Contractor.

1-07.5(6).OPT1(G).GR1

(April 2, 2018)

The Contractor shall remove piles and place them directly into a receptacle that prevents sediment or other material from entering waters of the state.

1-07.5(6).OPT1(H).FR1

(April 2, 2018)

Contracting Agency staff will monitor sound pressure during in-water pile driving of steel piles, including H-piles, and sheet piles. Results that exceed *** $$1$$ *** will require the Contractor to adjust work methods or employ additional best practices to safely proceed.

1-07.5(6).OPT1(I).FR1

(April 2, 2018)

The Contractor shall direct temporary lights for night work away from *** $$1$$ ***.

1-07.5(6).OPT1(J).FR1

(April 2, 2018)

The Contractor shall conduct night Work only during the period from 2 hours after sunset to 2 hours before sunrise. Setting up and taking down traffic control are exempt from these time restrictions. Refer to the following website, using the City of *** $$1$$ *** for sunrise and sunset times:

http://www.sunrisesunset.com/usa/washington.asp

1-07.5(6).OPT1(K).FR1

(April 2, 2018)

The Contractor shall conduct night Work only during the period from 1 hour after sunset to 1 hour before sunrise. Setting up and taking down traffic control are exempt from these time restrictions. Refer to the following website, using the City of *** $$1$$ *** for sunrise and sunset times:

http://www.sunrisesunset.com/usa/washington.asp

1-07.5(6).OPT1(L).FR1

(April 2, 2018)

The Contractor must cease Work 2 hours before sunrise. Setting up and taking down traffic control are exempt from these time restrictions. Refer to the following website, using the City of *** $$1$$ *** for sunrise times:

http://www.sunrisesunset.com/usa/washington.asp

1-07.5(6).OPT1(M).FR1

(April 2, 2018)

When night and day time Work is required, the Contractor shall not perform Work from 1 hour before sunrise to 2 hours after sunrise and no Work from 2 hours before sunset to 1 hour after sunset. Setting up and taking down traffic control are exempt from these time restrictions. Refer to the following website, using the City of *** $$1$$ *** for sunrise and sunset times:

http://www.sunrisesunset.com/usa/washington.asp

1-07.5(6).OPT1(N).FR1

(April 2, 2018)

When night and day time Work is required, the Contractor shall not perform Work from 1 hour before sunrise to 2 hours after sunrise. Setting up and taking down traffic control are exempt from these time restrictions. Refer to the following website, using the City of *** $$1$$ *** for sunrise and sunset times:

http://www.sunrisesunset.com/usa/washington.asp

1-07.5(6).OPT1(O).GR1

(April 2, 2018)

The Contractor shall develop a Type 2 Working Drawing to ensure that trash and food waste is collected daily and contained in secured garbage receptacles.

1-07.5(6).OPT1(P).FR1

(September 3, 2019)

Between April 1 and September 22, the Contractor *** $$1$$ *** are restricted to between two hours after sunrise and two hours before sunset. Setting up and taking down traffic control are exempt from these time restrictions. Refer to the following website, using the City of *** $$2$$ *** for sunrise and sunset times:

http://www.sunrisesunset.com/usa/washington.asp

1-07.6.GR1

## Permits and Licenses

1-07.6.INST1.GR1

Section 1-07.6 is supplemented with the following:

1-07.6.OPT1.FR1

(January 2, 2018)

The Contracting Agency has obtained the below-listed permit(s) for this project. A copy of the permit(s) is attached as an appendix for informational purposes. Copies of these permits, including a copy of the Transfer of Coverage form, when applicable, are required to be onsite at all times.

Contact with the permitting agencies, concerning the below-listed permit(s), shall be made through the Engineer with the exception of when the Construction Stormwater General Permit coverage is transferred to the Contractor, direct communication with the Department of Ecology is allowed. The Contractor shall be responsible for obtaining Ecology's approval for any Work requiring additional approvals (e.g. Request for Chemical Treatment Form). The Contractor shall obtain additional permits as necessary. All costs to obtain and comply with additional permits shall be included in the applicable Bid items for the Work involved.

*** $$1$$ ***

1-07.6.OPT3.GB1

***United States Coast Guard***

1-07.6.OPT3(A).FB1

(September 3, 2019)

The Contracting Agency has obtained a United States Coast Guard Bridge Permit *** $$1$$ *** for this project.

The Contractor shall furnish, install, maintain, and remove all temporary navigation lights, signs, signals, and any other warning devices required by the Coast Guard and as required for public safety on all falsework, cofferdams, or other temporary structure in the waterway.

The Contractor shall comply with all Coast Guard requirements inclusive of the following Bridge Permit conditions:

1. The construction of falsework, cofferdams or other obstructions, if required, shall be in accordance with plans submitted to and approved by the Commander, 13th Coast Guard District, prior to construction of the bridge. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. Timely notice of any and all events that may affect navigation shall be given to the District Commander during construction of the bridge. The channel or channels through the structure shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridge to the satisfaction of the District Commander, when in the District Commander's judgment the construction work has reached a point where such action should be taken, but in no case later than 90 calendar days after the bridge has been opened to traffic.

2. *** $$2$$ ***

The Contractor shall notify the Coast Guard in writing, with a copy to the Engineer, of the work start date at least seven calendar days before beginning any site work and shall at that time designate the Contractor's authorized representative, and work phone number, for coordination on matters that relate to Coast Guard approvals and requirements.

The Contractor's applications for required Coast Guard construction approvals for this project shall include, but not be limited to, cofferdams, falsework, temporary navigation lighting, work bridges, and other obstructions. These applications shall be submitted to the Coast Guard by the Contractor, with a copy to the Engineer, a minimum of 30 calendar days in advance of the scheduled work. A schedule of when the work is to be performed and when the obstructions are to be permanently removed shall be a part of the Contractor's application.

The Contractor shall provide the Coast Guard and the Engineer with prompt verbal notice, followed by written notice, of any subsequent changes to this proposed schedule.

A copy of all Coast Guard approvals shall be provided to the Engineer upon receipt but not later than prior to beginning work on the items of work involved.

By the 20th of each month, the Contractor shall furnish the Engineer a schedule of the work expected to be performed in the next two months. The Engineer will transmit this information through the Bridge and Structures Office to the Coast Guard so that interested users of the waterway can be notified.

The Coast Guard contact is:

Bridge Administrator
Thirteenth Coast Guard District
915 Second Avenue  Suite 3510
Seattle, WA 98174-1067
D13-pf-d13bridges@uscg.mil
Telephone: (206) 220-7282

All costs in connection with furnishing, installing, maintaining, and removing temporary navigation lights, signs, signals, or other warning devices shall be included in the contract prices for the items of work involved.

All costs incurred in obtaining the required Coast Guard approvals and in complying with all requirements specified herein shall be included in the contract prices for the items of work involved.

All costs in connection with delays in the construction caused by the Contractor's failure to obtain the necessary Coast Guard approvals shall be at the Contractor's expense.

1-07.6.OPT3(B).GB1
(September 3, 2019)
The Contractor shall comply with all United States Coast Guard requirements.

The Contractor shall submit a Type 3 Working Drawing consisting of a Navigation Work Plan at least 60-calendar days prior to beginning activities and operations affecting any part of the waterway in the vicinity of the bridge work.  The Navigation Work Plan shall include, at a minimum, the following:

1. Lead Contractor contact for the project, with associated email and phone number.

2. Scheduled on-site start work date and finish work date.

3. Days and times of operation over the nominal work week.

4. Dates and times of stages of work, as applicable for operations involving sequential or staged activities.

5. Location of the Work by latitude and longitude, river mile, and geographic point of land, with latitude and longitude expressed in degrees, minutes, seconds, and thousandths of seconds.

6. Identification and description of barges, vessels and equipment present in the waterway, if any, to facilitate operations.  The description shall include vessel type, vessel name (as applicable), means of voice contact (VHF frequencies, cell phone number, etc.) to the vessel, means of anchoring and mooring the vessel and the location of such anchoring and mooring, the extent to which the vessel is encroaching into the defined navigation channel, and lighting support vessels in accordance with the Coast Guard Rules of the Road as applicable.

7. Point of contact phone number available for 24-hour-seven-days-a-week contact from local mariners through the duration of the project.

8. Detailed identification of work operation hazards to mariners, if any, created by operations (cables, buoys, machinery, tools, tows, containment and platform structures, falling debris, etc.), including details such as size, diameter, color as applicable.

9. Precautions regarding the in-water vessels, equipment, and work operation hazards, if any, affecting local mariners such as operating speed and wake, clearance distance, etc.

10. Systems and equipment causing a reduction in the available vertical clearance beneath the bridge, if any, such as containment and platform systems and supports and the equipment necessary to install, maintain, and remove such systems, and the identification of any falling debris hazard to waterway traffic.

11. Description of advisory signage and lighting to be implemented by the Contractor to advise local mariners of the operations, reduced clearances, and presence of work operation hazards, as applicable. The description shall include the advisory message, and placement and orientation of the signage and flashing amber lighting (4-seconds/15 per minute).

The Engineer will submit the Navigation Work Plan to the US Coast Guard contact identified below for concurrent review. Approval from the US Coast Guard and the Engineer is required prior to the US Coast Guard issuing a Local Notice to Mariners advising of the operations, and allowing the operations to commence.

The Contractor shall contact the US Coast Guard for requirements related to the mooring of barges, placement of log booms, and all other equipment that could be a hazard to waterway users.

Provisions shall be made for the removal, on 2 hours notice, of all equipment that would block or partially block, the navigable portion of the waterway.

The US Coast Guard contact is:

Bridge Administrator
Thirteenth Coast Guard District
915 Second Avenue Suite 3510
Seattle, WA 98174-1067
D13-pf-d13bridges@uscg.mil
Telephone: (206) 220-7282

All costs incurred in contacting the US Coast Guard and in complying with all the requirements specified herein shall be included in the contract prices for the items of work involved.

All costs in connection with delays in the construction caused by the Contractor's failure to contact the US Coast Guard shall be at the Contractor's expense.

1-07.7.GR1

## Load Limits

1-07.7.INST1.GR1
Section 1-07.7 is supplemented with the following:

1-07.7.OPT1.GR1
(March 13, 1995)
Except for the load limit restrictions specified in Section 1-07.7(2), the Contractor may operate vehicles which exceed the legal gross weight limitations without special permits or payment of additional fees provided such vehicles are employed in the construction and within the limits of this project.

Subparagraph 1 of the second paragraph of Section 1-07.7(1) is deleted.

1-07.7.OPT2.FR1
(March 13, 1995)
Except for the load limit restrictions specified in Section 1-07.7(2), and as outlined below, the Contractor may operate vehicles which exceed the legal gross weight limitations without special permits or payment of additional fees provided such vehicles are employed in the construction and within the limits of this project.

Subparagraph 1 of the second paragraph of Section 1-07.7(1) is deleted.

The Contractor shall not operate vehicles which exceed the maximum gross weight provided by law within the following areas of this project:

*** $$1$$ ***

1-07.7.OPT3.FR1
(March 13, 1995)
The State has made arrangements with *** $$1$$ *** for the Contractor's use of the *** $$2$$ *** shown in the Plans as a haul route for materials coming from *** $$3$$ *** Site *** $$4$$ *** and used on this project. The Contractor shall comply with all existing legal restrictions.

If the Contractor selects different haul routes than those designated, the Contractor shall, at the Contractor's expense, make all arrangements for the use of the haul routes.

1-07.7.OPT4.FR1
(March 13, 1995)
The Contractor shall also comply with the further restrictions imposed by the owner of the roads as follows:

*** $$1$$ ***

1-07.7.OPT5.GR1
(March 13, 1995)
Whenever the Contractor obtains materials from a source other than that provided by the Contracting Agency, or provides a source for materials not designated to come from a source provided by the State and the location of the source necessitates hauling on other than State Highways, the Contractor shall, at the Contractor's expense, make all arrangements for the use of the haul routes.

1-07.7.OPT6.GR1

(March 13, 1995)

If the sources of materials provided by the Contractor necessitates hauling over roads other than State Highways, the Contractor shall, at the Contractor's expense, make all arrangements for the use of the haul routes.

1-07.9.GR1

## Wages

### 1-07.9(1).GR1

#### *General*

1-07.9(1).INST1.GR1

Section 1-07.9(1) is supplemented with the following:

1-07.9(1).OPT1.GR1

(January 6, 2020)

The Federal wage rates incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. WA20200001.

The State rates incorporated in this contract are applicable to all construction activities associated with this contract.

1-07.9(1).OPT2.FR1

(January 6, 2020)

The Federal wage rates for Highway Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. WA20200001. These rates are applicable to highway construction.

The Federal wage rates for Building Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. *** $$1$$ ***. These rates are applicable to building construction.

The State rates incorporated in this contract are applicable to all construction activities associated with this contract.

1-07.9(1).OPT3.FR1

(May 11, 2010)

The Federal wage rates for Building Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. *** $$1$$ ***. These rates are applicable to building construction.

The State rates incorporated in this contract are applicable to all construction activities associated with this contract.

1-07.9(1).OPT4.GR1

**(April 2, 2007)**

**Application of Wage Rates for the Occupation of Landscape Construction**

State prevailing wage rates for public works contracts are included in this contract and show a separate listing for the occupation:

> Landscape Construction, which includes several different occupation descriptions such as: Irrigation and Landscape Plumbers, Irrigation and Landscape Power Equipment Operators, and Landscaping or Planting Laborers.

In addition, federal wage rates that are included in this contract may also include occupation descriptions in Federal Occupational groups for work also specifically identified with landscaping such as:

> Laborers with the occupation description, Landscaping or Planting, or
>
> Power Equipment Operators with the occupation description, Mulch Seeding Operator.

If Federal wage rates include one or more rates specified as applicable to landscaping work, then Federal wage rates for all occupation descriptions, specific or general, must be considered and compared with corresponding State wage rates. The higher wage rate, either State or Federal, becomes the minimum wage rate for the work performed in that occupation.

Contractors are responsible for determining the appropriate crafts necessary to perform the contract work. If a classification considered necessary for performance of the work is missing from the Federal Wage Determination applicable to the contract, the Contractor shall initiate a request for approval of a proposed wage and benefit rate. The Contractor shall prepare and submit Standard Form 1444, Request for Authorization of Additional Classification and Wage Rate available at http://www.wdol.gov/docs/sf1444.pdf, and submit the completed form to the Engineer's office. The presence of a classification wage on the Washington State Prevailing Wage Rates For Public Works Contracts does not exempt the use of form 1444 for the purpose of determining a federal classification wage rate.

1-07.9(1).OPT5.FR1

(January 6, 2020)

The Federal wage rates for Highway Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. WA20200001. These rates are applicable to highway construction.

The Federal wage rates for Heavy Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. *** $$1$$ ***. These rates are applicable to heavy construction.

The State rates incorporated in this contract are applicable to all construction activities associated with this contract.

1-07.9(1).OPT6.FR1

(January 6, 2020)

The Federal wage rates for Highway Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. WA20200001. These rates are applicable to highway construction.

The Federal wage rates for Heavy Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. *** $$1$$ ***. These rates are applicable to heavy construction.

The Federal wage rates for Building Construction incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. *** $$2$$ ***. These rates are applicable to building construction

The State rates incorporated in this contract are applicable to all construction activities associated with this contract.

1-07.9(3).GR1

***Apprentices***

1-07.9(3).INST1.GR1

Section 1-07.9(3) is supplemented with the following:

1-07.9(3).OPT1.GR1

**(January 6, 2020)**

**Apprentice Utilization**

This Contract includes an Apprentice Utilization Requirement. No less than 15 percent of project Labor Hours shall be performed by Apprentices.

**Definitions**

For the purposes of this specification the following definitions apply:

1. Apprentice is a person enrolled in a State-approved Apprenticeship Training Program.

2. Apprentice Utilization Requirement is the Apprentice labor hours expressed as a percentage of the project Labor Hours.

3. Good Faith Effort (GFE) is used if the Contractor doesn't meet the Apprentice Utilization Requirement. It describes the Contractor's efforts to meet the Apprentice Utilization Requirement including but not necessarily limited to the specific steps as described elsewhere in this specification.

4. Labor Hours are the total hours performed by all workers receiving an hourly wage who are directly employed upon the project including hours performed by workers employed by the Contractor and all Subcontractors. Labor Hours do not include hours performed by foremen, superintendents, owners, and workers who are not subject to prevailing wage requirements.

5. State-approved Apprenticeship Training Program is an apprenticeship training program approved by the Washington State Apprenticeship Council.

**Electronic Reporting**

The Contractor shall use the State L&I online Prevailing Wage Intent & Affidavit (PWIA) System to submit the "Apprentice Utilization Plan" and "Good Faith Effort" documentation. Reporting instructions are available in the application.

**Apprentice Utilization Plan**

The Contractor shall submit an "Apprentice Utilization Plan" by filling out the Apprentice Utilization Plan Form (WSDOT Form 424-004) within 30 calendar days of execution, demonstrating how and when they intend to achieve the Apprentice Utilization Requirement. The Plan shall be in sufficient detail for the Engineer to track the Contractor's progress in meeting the utilization requirements and be updated and resubmitted as the Work progresses or when ordered by the Engineer.

If the Contractor is unable to demonstrate ability to meet the Apprentice Utilization Requirement in their Apprentice Utilization Plan, they must submit GFE documentation to the State L&I online PWIA System for review and comment with their Apprentice Utilization Plan. The Contractor shall actively seek out opportunities to meet the Apprentice Utilization Requirement during the construction Work.

**Contacts**

The Contractor may obtain information on State-approved Apprenticeship Training Programs by contacting the Department of Labor and Industries at:

Specialty Compliance And Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530 or by phone at (360) 902-5320.

**Compliance**

In the event that the Contractor is unable to achieve the Apprentice Utilization Requirement, the Contractor shall submit to the State L&I online PWIA System GFE documentation for review and approval. The GFE documentation shall be submitted after Substantial Completion but no later than 30 days after Physical Completion. If GFE documentation was previously submitted as part of the Apprentice Utilization Plan, it shall be updated and resubmitted after Substantial Completion but no later than 30 days after Physical Completion.

If the Contractor fails to submit GFE documentation or if the Engineer does not approve the GFE, the Contractor will be subject to disciplinary actions as allowed under WAC 468-16-180.

**Good Faith Efforts**

The GFE shall describe in detail why the Contractor is not or was not able to attain the Apprentice Utilization Requirement. The GFE documentation shall address one or more of the following areas:

1. Correspondence on solicitation of Apprentices from a State-approved Apprenticeship Training Program(s), and the response from the solicited State-Approved Apprenticeship Training Program(s) when there is a lack of availability of Apprentices.

2. Provide documentation that shows Contract requirements for TERO, Special Training or Disadvantage Business Enterprise requirements affect the ability to obtain Apprentice Labor Hours on the Contract.

3. Provide documentation demonstrating what efforts the Contractor has taken to require Subcontractors to solicit and employ Apprentices. Documentation could be posters placed on site, emphasis in subcontracts about employing Apprentices, letters, memos or other correspondence from Contractor to Subcontractor that put an emphasis on employing Apprentices.

Contractors may receive a GFE credit for graduated Apprentice hours through the end of the calendar year for all projects worked on as long as the Apprentice remains continuously employed with the same Contractor they were working for when they graduated. If an Apprentice graduates during employment on a project of significant duration, they may be counted towards a GFE credit for up to one year after their graduation or until the end of the project (whichever comes first). Determination of whether or not Contract requirements were met in good faith will be made by subtracting the hours from the journeyman total reported hours for the project and adding them to the apprentice hour total. If the new utilization percentage meets the Contract requirement, the Contractor will be reported as meeting the requirement in good faith.

**Payment**

All costs incurred by the Contractor for complying with this specification shall be included in the Contract prices for the Bid items of Work involved.

1-07.11.GR1

## Requirements for Nondiscrimination

1-07.11.INST1.GR1

Section 1-07.11 is supplemented with the following:

1-07.11.OPT1.GR1

(September 3, 2019)

<u>Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)</u>

1. The Contractor's attention is called to the Equal Opportunity Clause and the Standard Federal Equal Employment Opportunity Construction Contract Specifications set forth herein.

2. The goals and timetables for minority and female participation set by the Office of Federal Contract Compliance Programs, expressed in percentage terms for the Contractor's aggregate work force in each construction craft and in each trade on all construction work in the covered area, are as follows:

Women - Statewide

| Timetable | Goal |
|---|---|
| Until further notice | 6.9% |

Minorities - by Standard Metropolitan Statistical Area (SMSA)

Spokane, WA:
SMSA Counties:
Spokane, WA — 2.8
WA Spokane.
Non-SMSA Counties — 3.0
WA Adams; WA Asotin; WA Columbia; WA Ferry; WA Garfield; WA Lincoln, WA Pend Oreille; WA Stevens; WA Whitman.

Richland, WA
SMSA Counties:
Richland Kennewick, WA — 5.4
WA Benton; WA Franklin.
Non-SMSA Counties — 3.6
WA Walla Walla.

Yakima, WA:
SMSA Counties:
Yakima, WA — 9.7
WA Yakima.
Non-SMSA Counties — 7.2
WA Chelan; WA Douglas; WA Grant; WA Kittitas; WA Okanogan.

Seattle, WA:
SMSA Counties:
Seattle Everett, WA — 7.2
WA King; WA Snohomish.
Tacoma, WA — 6.2
WA Pierce.
Non-SMSA Counties — 6.1
WA Clallam; WA Grays Harbor; WA Island; WA Jefferson; WA Kitsap; WA Lewis; WA Mason; WA Pacific; WA San Juan; WA Skagit; WA Thurston; WA Whatcom.

Portland, OR:
SMSA Counties:
Portland, OR-WA — 4.5
WA Clark.
Non-SMSA Counties — 3.8
WA Cowlitz; WA Klickitat; WA Skamania; WA Wahkiakum.

These goals are applicable to each nonexempt Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, or federally assisted project, contract, or subcontract until further notice. Compliance with these goals and time tables is enforced by the Office of Federal Contract compliance Programs.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, in each construction craft and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goal shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of $10,000 or more that are Federally funded, at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number of the Subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed. The notification shall be sent to:

   U.S. Department of Labor
   Office of Federal Contract Compliance Programs Pacific Region
   Attn: Regional Director
   San Francisco Federal Building
   90 – 7th Street, Suite 18-300
   San Francisco, CA 94103(415) 625-7800 Phone
   (415) 625-7799 Fax

4. As used in this Notice, and in the contract resulting from this solicitation, the Covered Area is as designated herein.

<u>Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)</u>

1. As used in these specifications:

   a. Covered Area means the geographical area described in the solicitation from which this contract resulted;

   b. Director means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. Employer Identification Number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941;

d. Minority includes:

(1) Black, a person having origins in any of the Black Racial Groups of Africa.

(2) Hispanic, a fluent Spanish speaking, Spanish surnamed person of Mexican, Puerto Rican, Cuban, Central American, South American, or other Spanish origin.

(3) Asian or Pacific Islander, a person having origins in any of the original peoples of the Pacific rim or the Pacific Islands, the Hawaiian Islands and Samoa.

(4) American Indian or Alaskan Native, a person having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith effort to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of this Special Provision. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its action. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

    a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

    b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

    c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

    d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunity and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the U.S. Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these

employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of the obligations under 7a through 7p of this Special Provision provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensure that the concrete benefits of the program are reflected in the Contractor's minority and female work-force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrate the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspensions, terminations and cancellations of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of this Special Provision, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the government and to keep records. Records shall at least include, for each employee, their name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, the Contractors will not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

16. Additional assistance for Federal Construction Contractors on contracts administered by Washington State Department of Transportation or by Local Agencies may be found at:

    Washington State Dept. of Transportation
    Office of Equal Opportunity
    PO Box 47314
    310 Maple Park Ave. SE
    Olympia WA
    98504-7314
    Ph: 360-705-7090
    Fax: 360-705-6801
    http://www.wsdot.wa.gov/equalopportunity/default.htm

1-07.11.OPT2.GR1

***(April 3, 2018)***

***Disadvantaged Business Enterprise Participation***

The Disadvantaged Business Enterprise (DBE) requirements of 49 CFR Part 26 and USDOT's official interpretations (i.e., Questions & Answers) apply to this Contract. As such, the requirements of this Contract are to make affirmative efforts to solicit DBEs, provide information on who submitted a Bid or quote and to report DBE participation monthly as described elsewhere in these Contract Provisions. No preference will be included in the evaluation of Bids/Proposals, no minimum level of DBE participation shall be required as a Condition of Award and Bids/Proposals may not be rejected or considered non-responsive on that basis.

**DBE Abbreviations and Definitions**

**Broker** – A business firm that provides a bona fide service, such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for the performance of the Contract, or, persons/companies who arrange or expedite transactions.

**Certified Business Description** – Specific descriptions of work the DBE is certified to perform, as identified in the Certified Firm Directory, under the Vendor Information page.

**Certified Firm Directory** – A database of all Minority, Women, and Disadvantaged Business Enterprises. The on-line Directory is available to Contractors for their use in identifying and soliciting interest from DBE firms. The database is located under the Firm Certification section of the Diversity Management and Compliance System web page at: https://omwbe.diversitycompliance.com.

**Commercially Useful Function (CUF)**

49 CFR 26.55(c)(1) defines commercially useful function as: "A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, you must evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors."

**Contract** – For this Special Provision only, this definition supplements Section 1-01.3. 49 CFR 26.5 defines contract as: "… a legally binding relationship obligating a seller to furnish supplies or services (including, but not limited to, construction and professional services) and the buyer to pay for them. For purposes of this part, a lease is considered to be a contract."

**Disadvantaged Business Enterprise (DBE)** – A business firm certified by the Washington State Office of Minority and Women's Business Enterprises, as

meeting the criteria outlined in 49 CFR 26 regarding DBE certification. A Underutilized Disadvantaged Business Enterprise (UDBE) firm is a subset of DBE.

**Force Account Work** – Work measured and paid in accordance with Section 1-09.6.

**Manufacturer (DBE)** – A DBE firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract. A DBE Manufacturer shall produce finished goods or products from raw or unfinished material or purchase and substantially alters goods and materials to make them suitable for construction use before reselling them.

**Regular Dealer (DBE)** – A DBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of a Contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a Regular Dealer, the DBE firm must be an established regular business that engages in as its principal business and in its own name the purchase and sale of the products in question. A Regular Dealer in such items as steel, cement, gravel, stone, and petroleum products need not own, operate or maintain a place of business if it both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by long-term formal lease agreements and not on an ad-hoc basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as Regular Dealers within the meaning of this definition.

**DBE Goals**

No DBE goals have been assigned as part of this Contract.

**Affirmative Efforts to Solicit DBE Participation**

The Contractor shall not discriminate on the grounds of race, color, sex, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. DBE firms shall have an equal opportunity to compete for subcontracts in which the Contractor enters into pursuant to this Contract.

Contractors are encouraged to:

1. Advertise opportunities for Subcontractors or suppliers in a timely and reasonably designed manner to provide notice of the opportunity to DBEs capable of performing the Work. All advertisements should include a Contract Provision encouraging participation by DBE firms. This may be accomplished through general advertisements (e.g. newspapers, journals, etc.) or by soliciting Bids/Proposals directly from DBEs.

2. Establish delivery schedules that encourage participation by DBEs and other small businesses.

3. Participate with a DBE as a joint venture.

**DBE Eligibility/Selection of DBEs for Reporting Purposes Only**

Contractor may take credit for DBEs utilized on this Contract only if the firm is certified for the Work being performed, and the firm performs a commercially useful function (CUF).

Absent a mandatory goal, all DBE participation that is attained on this project will be considered as “race neutral” participation and shall be reported as such.

**Crediting DBE Participation**

All DBE Subcontractors shall be certified before the subcontract on which they are participating is executed.

Be advised that although a firm is listed in the directory, there are cases where the listed firm is in a temporary suspension status. The Contractor shall review the OMWBE Suspended DBE Firms list. A DBE firm that is included on this list may not enter into new contracts that count towards participation.

DBE participation is only credited upon payment to the DBE.

The following are some definitions of what may be counted as DBE participation.

**DBE Prime Contractor**

Only take credit for that portion of the total dollar value of the Contract equal to the distinct, clearly defined portion of the Work that the DBE Prime Contractor performs with its own forces and is certified to perform.

**DBE Subcontractor**

Only take credit for that portion of the total dollar value of the subcontract equal to the distinct, clearly defined portion of the Work that the DBE performs with its own forces. The value of work performed by the DBE includes the cost of supplies and materials purchased by the DBE and equipment leased by the DBE, for its work on the contract. Supplies, materials or equipment obtained by a DBE that are not utilized or incorporated in the contract work by the DBE will not be eligible for DBE credit.

The supplies, materials, and equipment purchased or leased from the Contractor or its affiliate, including any Contractor’s resources available to DBE subcontractors at no cost, shall not be credited.

DBE credit will not be given in instances where the equipment lease includes the operator. The DBE is expected to operate the equipment used in the performance of its work under the contract with its own forces. Situations where equipment is leased and used by the DBE, but payment is deducted from the Contractor’s payment to the DBE is not allowed.

If a DBE subcontracts a portion of the Work of its contract to another firm, the value of the subcontracted Work may be credited only if the DBE’s Lower-Tier Subcontractor is also a DBE. Work subcontracted to a non-DBE shall not be credited.

Count expenditures toward race/gender-neutral participation only if the DBE is performing a CUF on the contract.

**DBE Subcontract and Lower Tier Subcontract Documents**

There must be a subcontract agreement that complies with 49 CFR Part 26 and fully describes the distinct elements of Work committed to be performed by the DBE. The subcontract agreement shall incorporate requirements of the primary Contract. Subcontract agreements of all tiers, including lease agreements shall be readily available at the project site for the Engineer review.

**DBE Service Provider**

The value of fees or commissions charged by a DBE Broker, a DBE behaving in a manner of a Broker, or another service provider for providing a bona fide service, such as professional, technical, consultant, managerial services, or for providing bonds or insurance specifically required for the performance of the contract will only be credited as DBE participation, if the fee/commission is determined by the Contracting Agency to be reasonable and the firm has performed a CUF.

**Temporary Traffic Control**

If the DBE firm is being utilized in the capacity of only “Flagging”, the DBE firm must provide a Traffic Control Supervisor (TCS) and flagger, which are under the direct control of the DBE. The DBE firm shall also provide all flagging equipment (e.g. paddles, hard hats, and vests).

If the DBE firm is being utilized in the capacity of “Traffic Control Services”, the DBE firm must provide a TCS, flaggers, and traffic control items (e.g., cones, barrels, signs, etc.) and be in total control of all items in implementing the traffic control for the project. In addition, if the DBE firm utilizes the Contractor’s equipment, such as Transportable Attenuators and Portable Changeable Message Signs (PCMS) no DBE credit can be taken for supplying and operating the items.

**Trucking**

DBE trucking firm participation may only be credited as DBE participation for the value of the hauling services, not for the materials being hauled unless the trucking firm is also certified as a supplier. In situations where the DBE’s work is priced per ton, the value of the hauling service must be calculated separately from the value of the materials in order to determine DBE credit for hauling.

The DBE trucking firm must own and operate at least one licensed, insured and operational truck on the contract. The truck must be of the type that is necessary to perform the hauling duties required under the contract. The DBE receives credit for the value of the transportation services it provides on the Contract using trucks it owns or leases, licenses, insures, and operates with drivers it employs.

The DBE may lease additional trucks from another DBE firm. The Work that a DBE trucking firm performs with trucks it leases from other certified DBE trucking firms qualify for 100% DBE credit

The trucking Work subcontracted to any non-DBE trucking firm will not receive credit for Work done on the project. The DBE may lease trucks from a non-DBE

truck leasing company, but can only receive credit as DBE participation if the DBE uses its own employees as drivers.

DBE credit for a truck broker is limited to the fee/commission that the DBE receives for arranging transportation services.

Truck registration and lease agreements shall be readily available at the project site for the Engineer review.

**DBE Manufacturer and DBE Regular Dealer**

One hundred percent (100%) of the cost of the manufactured product obtained from a DBE Manufacturer can count as DBE participation.

Sixty percent (60%) of the cost of materials or supplies purchased from a DBE Regular Dealer may be credited as DBE participation. If the role of the DBE Regular Dealer is determined to be that of a pass-through, then no DBE credit will be given for its services. If the role of the DBE Regular Dealer is determined to be that of a Broker, then DBE credit shall be limited to the fee or commission it receives for its services. Regular Dealer status and the amount of credit is determined on a Contract-by-Contract basis.

Regular Dealer DBE firms must be approved before being used on a project. The WSDOT Approved Regular Dealer list published on WSDOT's Office of Equal Opportunity (OEO) web site must include the specific project for which approval is being requested. The Regular Dealer must submit the Regular Dealer Status Request form a minimum of five days prior to being utilized on the specific project.

Purchase of materials or supplies from a DBE which is neither a manufacturer nor a regular dealer, (i.e. Broker) only the fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, can count as DBE participation provided the fees are not excessive as compared with fees customarily allowed for similar services. Documentation will be required to support the fee/commission charged by the DBE. The cost of the materials and supplies themselves cannot be counted toward as DBE participation.

Note: Requests to be listed as a Regular Dealer will only be processed if the requesting firm is a material supplier certified by the Office of Minority and Women's Business Enterprises in a NAICS code that falls within the 42XXXX NAICS Wholesale code section.

**Procedures Between Award and Execution**

After Award and prior to Execution, the Contractor shall provide the additional information described below. Failure to comply shall result in the forfeiture of the Bidder's Proposal bond or deposit.

1. A list of all firms who submitted a bid or quote in attempt to participate in this project whether they were successful or not. Include the business name and mailing address.

Note: The firms identified by the Contractor may be contacted by the Contracting Agency to solicit general information as follows: age of the firm and average of its gross annual receipts over the past three-years.

**Procedures After Execution**

**Commercially Useful Function (CUF)**

The Contractor may only take credit for the payments made for Work performed by a DBE that is determined to be performing a CUF. Payment must be commensurate with the work actually performed by the DBE. This applies to all DBEs performing Work on a project, whether or not the DBEs are COA, if the Contractor wants to receive credit for their participation. The Engineer will conduct CUF reviews to ascertain whether DBEs are performing a CUF. A DBE performs a CUF when it is carrying out its responsibilities of its contract by actually performing, managing, and supervising the Work involved. The DBE must be responsible for negotiating price; determining quality and quantity; ordering the material, installing (where applicable); and paying for the material itself. If a DBE does not perform “all” of these functions on a furnish-and-install contract, it has not performed a CUF and the cost of materials cannot be counted toward UDBE COA Goal. Leasing of equipment from a leasing company is allowed. However, leasing/purchasing equipment from the Contractor is not allowed. Lease agreements shall be readily available for review by the Engineer.

In order for a DBE traffic control company to be considered to be performing a CUF, the DBE must be in control of its work inclusive of supervision. The DBE shall employ a Traffic Control Supervisor who is directly involved in the management and supervision of the traffic control employees and services.

The DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which the funds are passed in order to obtain the appearance of DBE participation.

The following are some of the factors that the Engineer will use in determining whether a DBE trucking company is performing a CUF:

- The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on the Contract. The owner demonstrates business related knowledge, shows up on site and is determined to be actively running the business.

- The DBE shall with its own workforce, operate at least one fully licensed, insured, and operational truck used on the Contract. The drivers of the trucks owned and leased by the DBE must be exclusively employed by the DBE and reflected on the DBE’s payroll.

- Lease agreements for trucks shall indicate that the DBE has exclusive use of and control over the truck(s). This does not preclude the leased truck from working for others provided it is with the consent of the DBE and the lease provides the DBE absolute priority for use of the leased truck.

- Leased trucks shall display the name and identification number of the DBE.

**Joint Checking**

A joint check is a check between a Subcontractor and the Contractor to the supplier of materials/supplies. The check is issued by the Contractor as payer to the Subcontractor and the material supplier jointly for items to be incorporated into the project. The DBE must release the check to the supplier, while the Contractor acts solely as the guarantor.

A joint check agreement must be approved by the Engineer and requested by the DBE involved using the DBE Joint Check Request Form (form # 272-053) prior to its use. The form must accompany the DBE Joint Check Agreement between the parties involved, including the conditions of the arrangement and expected use of the joint checks.

The approval to use joint checks and the use will be closely monitored by the Engineer. To receive DBE credit for performing a CUF with respect to obtaining materials and supplies, a DBE must "be responsible for negotiating price, determining quality and quantity, ordering the material and installing and paying for the material itself." The Contractor shall submit DBE Joint Check Request Form for the Engineer approval prior to using a joint check.

Material costs paid by the Contractor directly to the material supplier is not allowed. If proper procedures are not followed or the Engineer determines that the arrangement results in lack of independence for the DBE involved, no DBE credit will be given for the DBE's participation as it relates to the material cost.

**Prompt Payment**

Prompt payment to all subcontractors shall be in accordance with Section 1-08.1. Prompt Payment requirements apply to progress payments as well as return of retainage.

**Reporting**

The Contractor and all subcontractors/suppliers/service providers that utilize DBEs to perform work on the project, shall maintain appropriate records that will enable the Engineer to verify DBE participation throughout the life of the project.

Refer to Section 1-08.1 for additional reporting requirements associated with this Contract.

**Decertification**

When a DBE is "decertified" from the DBE program during the course of the Contract, the participation of that DBE shall continue to count as DBE participation as long as the subcontract with the DBE was executed prior to the decertification notice. The Contractor is obligated to substitute when a DBE does not have an executed subcontract agreement at the time of decertification.

**Consequences of Non-Compliance**

Each contract with a Contractor (and each subcontract the Contractor signs with a Subcontractor) must include the following assurance clause:

The Contractor, subrecipient, or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

(1) Withholding monthly progress payments;

(2) Assessing sanctions;

(3) Liquidated damages; and/or

(4) Disqualifying the Contractor from future bidding as non-responsible.

**Payment**

Compensation for all costs involved with complying with the conditions of this Specification and any other associated DBE requirements is included in payment for the associated Contract items of Work, except otherwise provided in the Specifications.

1-07.11.OPT3.FR1

***(November 4, 2019)***

***Disadvantaged Business Enterprise Participation***

The Disadvantaged Business Enterprise (DBE) requirements of 49 CFR Part 26 and USDOT's official interpretations (i.e., Questions & Answers) apply to this Contract. Demonstrating compliance with these Specifications is a Condition of Award (COA) of this Contract. Failure to comply with the requirements of this Specification may result in your Bid being found to be nonresponsive resulting in rejection or other sanctions as provided by Contract.

**DBE Abbreviations and Definitions**

**Broker** – A business firm that provides a bona fide service, such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for the performance of the Contract; or, persons/companies who arrange or expedite transactions.

**Certified Business Description** – Specific descriptions of work the DBE is certified to perform, as identified in the Certified Firm Directory, under the Vendor Information page.

**Certified Firm Directory** – A database of all Minority, Women, and Disadvantaged Business Enterprises, including those identified as a UDBE, currently certified by Washington State. The on-line Directory is available to Bidders for their use in identifying and soliciting interest from DBE firms. The database is located under the Firm Certification section of the Diversity Management and Compliance System web page at: https://omwbe.diversitycompliance.com.

**Commercially Useful Function (CUF)** – 49 CFR 26.55(c)(1) defines commercially useful function as: "*A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, you must evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.*"

**Disadvantaged Business Enterprise (DBE)** – A business firm certified by the Washington State Office of Minority and Women's Business Enterprises, as meeting the criteria outlined in 49 CFR 26 regarding DBE certification. A Underutilized Disadvantaged Business Enterprise (UDBE) firm is a subset of DBE.

**Force Account Work** – Work measured and paid in accordance with Section 1-09.6.

**Good Faith Efforts** – Efforts to achieve the UDBE COA Goal or other requirements of this part which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

**Manufacturer (DBE)** – A DBE firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract. A DBE Manufacturer shall produce finished goods or products from raw or unfinished material or purchase and substantially alters goods and materials to make them suitable for construction use before reselling them.

**Reasonable Fee (DBE)** – For purposes of Brokers or service providers a reasonable fee shall not exceed 5% of the total cost of the goods or services brokered.

**Regular Dealer (DBE)** – A DBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of a Contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a Regular Dealer, the DBE firm must be an established regular business that engages in as its principal business and in its own name the purchase and sale of the products in question. A Regular Dealer in such items as steel, cement, gravel, stone, and petroleum products need not own, operate or maintain a place of business if it both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by long-term formal lease agreements and not on an ad-hoc basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as Regular Dealers within the meaning of this definition.

**Underutilized Disadvantaged Business Enterprise (UDBE)** – A DBE Firm that is underutilized based on WSDOT's Disparity Study.

**UDBE Commitment** – The dollar amount the Bidder indicates they will be subcontracting to be applied towards the UDBE Condition of Award Goal as shown on the UDBE Utilization Certification Form for each UDBE Subcontractor. This UDBE Commitment amount will be incorporated into the Contract and shall be considered a Contract requirement. Any changes to the UDBE Commitment require the Engineer's approval.

**UDBE Condition of Award (COA) Goal** – An assigned numerical amount specified as a percentage of the Contract. Initially, this is the minimum amount that the Bidder must commit to by submission of the Utilization Certification Form and/or by Good Faith Effort (GFE).

**UDBE COA Goal**

The Contracting Agency has established a UDBE COA Goal for this Contract in the amount of: *** $$1$$ ***

**Crediting DBE Participation**

Subcontractors proposed as COA must be certified prior to the due date for bids on the Contract. All non-COA DBE Subcontractors shall be certified before the subcontract on which they are participating is executed.

DBE participation is only credited upon payment to the DBE.

The following are some definitions of what may be counted as DBE participation.

**DBE Prime Contractor**

Only take credit for that portion of the total dollar value of the Contract equal to the distinct, clearly defined portion of the Work that the DBE Prime Contractor performs with its own forces and is certified to perform.

**DBE Subcontractor**

Only take credit for that portion of the total dollar value of the subcontract that is equal to the distinct, clearly defined portion of the Work that the DBE performs with its own forces and is certified to perform. The value of work performed by the DBE includes the cost of supplies and materials purchased by the DBE and equipment leased by the DBE, for its work on the contract. Supplies, materials or equipment obtained by a DBE that are not utilized or incorporated in the contract work by the DBE will not be eligible for DBE credit.

The supplies, materials, and equipment purchased or leased from the Contractor or its affiliate, including any Contractor's resources available to DBE subcontractors at no cost, shall not be credited.

DBE credit will not be given in instances where the equipment lease includes the operator. The DBE is expected to operate the equipment used in the performance of its work under the contract with its own forces. Situations where equipment is leased and used by the DBE, but payment is deducted from the Contractor's payment to the DBE is not allowed.

When the subcontractor is part of a UDBE Commitment, the following apply:

1. If a UDBE subcontracts a portion of the Work of its contract to another firm, the value of the subcontracted Work may be counted toward the UDBE COA Goal only if the Lower-Tier Subcontractor is also a UDBE.

2. Work subcontracted to a Lower-Tier Subcontractor that is a DBE, but not a UDBE, may be counted as DBE participation but not counted toward the UDBE COA Goal.

3. Work subcontracted to a non-DBE does not count towards the UDBE COA Goal nor DBE participation.

**DBE Subcontract and Lower Tier Subcontract Documents**
There must be a subcontract agreement that complies with 49 CFR Part 26 and fully describes the distinct elements of Work committed to be performed by the DBE.

**DBE Service Provider**
The value of fees or commissions charged by a DBE firm behaving in a manner of a Broker, or another service provider for providing a bona fide service, such as professional, technical, consultant, managerial services, or for providing bonds or insurance specifically required for the performance of the contract will only be credited as DBE participation, if the fee/commission is determined by the Contracting Agency to be reasonable and the firm has performed a CUF.

**Force Account Work**
When the Bidder elects to utilize force account Work to meet the UDBE COA Goal, as demonstrated by listing this force account Work on the UDBE Utilization Certification Form, for the purposes of meeting UDBE COA Goal, only 50% of the Proposal amount shall be credited toward the Bidder's Commitment to meet the UDBE COA Goal.

One hundred percent of the actual amounts paid to the DBE for the force account Work shall be credited towards UDBE COA Goal or DBE participation.

**Temporary Traffic Control**
If the DBE firm is being utilized in the capacity of only "Flagging", the DBE firm must provide a Traffic Control Supervisor (TCS) and flagger, which are under the direct control of the DBE. The DBE firm shall also provide all flagging equipment (e.g. paddles, hard hats, and vests).

If the DBE firm is being utilized in the capacity of "Traffic Control Services", the DBE firm must provide a TCS, flaggers, and traffic control items (e.g., cones, barrels, signs, etc.) and be in total control of all items in implementing the traffic control for the project.

**Trucking**
DBE trucking firm participation may only be credited as DBE participation for the value of the hauling services, not for the materials being hauled unless the trucking firm is also certified as a supplier of those materials. In situations where the DBE's work is priced per ton, the value of the hauling service must be

calculated separately from the value of the materials in order to determine DBE credit for hauling

The DBE trucking firm must own and operate at least one licensed, insured and operational truck on the contract. The truck must be of the type that is necessary to perform the hauling duties required under the contract. The DBE receives credit for the value of the transportation services it provides on the Contract using trucks it owns or leases, licenses, insures, and operates with drivers it employs.

The DBE may lease additional trucks from another DBE firm. The DBE who leases additional trucks from another DBE firm receives credit for the value of the transportation services the lessee DBE provides on the Contract.

The trucking Work subcontracted to any non-DBE trucking firm will not receive credit for Work done on the project.

The DBE may lease trucks from a truck leasing company (recognized truck rental center), but can only receive credit towards DBE participation if the DBE uses its own employees as drivers.

**DBE Manufacturer and DBE Regular Dealer**

One hundred percent (100%) of the cost of the manufactured product obtained from a DBE manufacturer can count as DBE participation. If the DBE manufacturer is a UDBE, participation may count towards the UDBE COA Goal.

Sixty percent (60%) of the cost of materials or supplies purchased from a DBE Regular Dealer may be credited as DBE Participation. If the role of the DBE Regular Dealer is determined to be that of a Broker, then DBE credit shall be limited to the fee or commission it receives for its services. Regular Dealer status and the amount of credit is determined on a Contract-by-Contract basis. If the DBE regular dealer is a UDBE, participation may count towards the UDBE COA Goal.

DBE firms proposed to be used as a Regular Dealer must be approved before being listed as a COA/used on a project. The WSDOT Approved Regular Dealer list published on WSDOT's Office of Equal Opportunity (OEO) web site must include the specific project for which approval is being requested. For purposes of the UDBE COA Goal participation, the Regular Dealer must submit the Regular Dealer Status Request form a minimum of five calendar days prior to bid opening.

Purchase of materials or supplies from a DBE which is neither a manufacturer nor a regular dealer, (i.e. Broker) only the fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, can count as DBE participation provided the fees are not excessive as compared with fees customarily allowed for similar services. Documentation will be required to support the fee/commission charged by the DBE. The cost of the materials and supplies themselves cannot be counted toward as DBE participation.

Note: Requests to be listed as a Regular Dealer will only be processed if the requesting firm is a material supplier certified by the Office of Minority and Women's Business Enterprises in a NAICS code that falls within the 42XXXX NAICS Wholesale code section.

**Underutilized Disadvantaged Business Enterprise Utilization**

The requirements of this section apply to projects with a UDBE COA Goal. To be eligible for award of the Contract, the Bidder shall properly complete and submit an Underutilized Disadvantaged Business Enterprise (UDBE) Utilization Certification with the Bidder's sealed Bid Proposal, as specified in Section 1-02.9 Delivery of Proposal. The Bidder's UDBE Utilization Certification must clearly demonstrate how the Bidder intends to meet the UDBE COA Goal. A UDBE Utilization Certification (WSDOT Form 272-056U) is included in the Proposal package for this purpose as well as instructions on how to properly fill out the form.

The Bidder is advised that the items listed below when listed in the Utilization Certification must have their amounts reduced to the percentages shown and those reduced amounts will be the amount applied towards meeting the UDBE COA Goal.

- Force account at 50%
- Regular dealer at 60%

In the event of arithmetic errors in completing the UDBE Utilization Certification, the amount listed to be applied towards the UDBE COA Goal for each UDBE shall govern and the UDBE total amount shall be adjusted accordingly.

Note: The Contracting Agency shall consider as non-responsive and shall reject any Bid Proposal submitted that does not contain a UDBE Utilization Certification Form that accurately demonstrates how the Bidder intends to meet the UDBE COA Goal.

**Underutilized Disadvantaged Business Enterprise Written Confirmation Document(s)**

The requirements of this section apply to projects with a UDBE COA Goal. The Bidder shall submit an Underutilized Disadvantaged Business Enterprise (UDBE) Written Confirmation Document (completed and signed by the UDBE) for each UDBE firm listed in the Bidder's completed UDBE Utilization Certification submitted with the Bid. Failure to do so will result in the associated participation being disallowed, which may cause the Bid to be determined to be nonresponsive resulting in Bid rejection.

The Confirmation Documents provide confirmation from the UDBEs that they are participating in the Contract as provided in the Bidder's Commitment. The Confirmation Documents must be consistent with the Utilization Certification.

A UDBE Written Confirmation Document (WSDOT Form 422-031U) is included in the Proposal package for this purpose.

The form(s) shall be received as specified in the special provisions for Section 1-02.9 Delivery of Proposal.

It is prohibited for the Bidder to require a UDBE to submit a Written Confirmation Document with any part of the form left blank. Should the Contracting Agency

determine that an incomplete Written Confirmation Document was signed by a UDBE, the validity of the document comes into question. The associated UDBE participation may not receive credit.

**Selection of Successful Bidder/Good Faith Efforts (GFE)**

The requirements of this section apply to projects with a UDBE COA Goal. The successful Bidder shall be selected on the basis of having submitted the lowest responsive Bid, which demonstrates a good faith effort to achieve the UDBE COA Goal. The Contracting Agency, at any time during the selection process, may request a breakdown of the bid items and amounts that are counted towards the overall contract goal for any of the UDBEs listed on the UDBE Utilization Certification.

Achieving the UDBE COA Goal may be accomplished in one of two ways:

1. <u>By meeting the UDBE COA Goal</u>
   Submission of the UDBE Utilization Certification, supporting UDBE Written Confirmation Document(s) showing the Bidder has obtained enough UDBE participation to meet or exceed the UDBE COA Goal, the UDBE Bid Item Breakdown and the UDBE Trucking Credit Form, if applicable.

2. <u>By documentation that the Bidder made adequate GFE to meet the UDBE COA Goal</u>
   The Bidder may demonstrate a GFE in whole or part through GFE documentation ONLY IN THE EVENT a Bidder's efforts to solicit sufficient UDBE participation have been unsuccessful. The Bidder must supply GFE documentation in addition to the UDBE Utilization Certification, supporting UDBE Written Confirmation Document(s), the UDBE Bid Item Breakdown form and the UDBE Trucking Credit Form, if applicable.

Note: In the case where a Bidder is awarded the contract based on demonstrating adequate GFE, the advertised UDBE COA Goal will not be reduced. The Bidder shall demonstrate a GFE during the life of the Contract to attain the advertised UDBE COA Goal.

GFE documentation, the UDBE Bid Item Breakdown form, and the UDBE Trucking Credit Form, if applicable, shall be submitted as specified in Section 1-02.9.

The Contracting Agency will review the GFE documentation and will determine if the Bidder made an adequate good faith effort.

**Good Faith Effort (GFE) Documentation**

GFE is evaluated when:

1. Determining award of a Contract that has COA goal,

2. When a COA UDBE is terminated and substitution is required, and

3. Prior to Physical Completion when determining whether the Contractor has satisfied its UDBE commitments.

49 CFR Part 26, Appendix A is intended as general guidance and does not, in itself, demonstrate adequate good faith efforts. The following is a list of types of actions,

which would be considered as part of the Bidder's GFE to achieve UDBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

1. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified UDBEs who have the capability to perform the Work of the Contract. The Bidder must solicit this interest within sufficient time to allow the UDBEs to respond to the solicitation. The Bidder must determine with certainty if the UDBEs are interested by taking appropriate steps to follow up initial solicitations.

2. Selecting portions of the Work to be performed by UDBEs in order to increase the likelihood that the UDBE COA Goal will be achieved. This includes, where appropriate, breaking out contract Work items into economically feasible units to facilitate UDBE participation, even when the Bidder might otherwise prefer to perform these Work items with its own forces.

3. Providing interested UDBEs with adequate information about the Plans, Specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation.

    a. Negotiating in good faith with interested UDBEs. It is the Bidder's responsibility to make a portion of the Work available to UDBE subcontractors and suppliers and to select those portions of the Work or material needs consistent with the available UDBE subcontractors and suppliers, so as to facilitate UDBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of UDBEs that were considered; a description of the information provided regarding the Plans and Specifications for the Work selected for subcontracting; and evidence as to why additional agreements could not be reached for UDBEs to perform the Work.

    b. A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as the UDBE COA Goal into consideration. However, the fact that there may be some additional costs involved in finding and using UDBEs is not in itself sufficient reason for a Bidder's failure to meet the UDBE COA Goal, as long as such costs are reasonable. Also, the ability or desire of a Bidder to perform the Work of a Contract with its own organization does not relieve the Bidder of the responsibility to make Good Faith Efforts. Bidders are not, however, required to accept higher quotes from UDBEs if the price difference is excessive or unreasonable.

4. Not rejecting UDBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee

status) are not legitimate causes for the rejection or non-solicitation of bids in the Bidder's efforts to meet the UDBE COA Goal.

5. Making efforts to assist interested UDBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Bidder.

6. Making efforts to assist interested UDBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

7. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of UDBEs.

8. Documentation of GFE must include copies of each UDBE and non-DBE subcontractor quotes submitted to the Bidder when a non-DBE subcontractor is selected over a UDBE for Work on the Contract. (ref. updated DBE regulations – 26.53(b)(2)(vi) & App. A)

**Administrative Reconsideration of GFE Documentation**

A Bidder has the right to request reconsideration if the GFE documentation submitted with their Bid was determined to be inadequate.

- The Bidder must request within 48 hours of notification of being nonresponsive or forfeit the right to reconsideration.

- The reconsideration decision on the adequacy of the Bidder's GFE documentation shall be made by an official who did not take part in the original determination.

- Only original GFE documentation submitted as a supplement to the Bid shall be considered. The Bidder shall not introduce new documentation at the reconsideration hearing.

- The Bidder shall have the opportunity to meet in person with the official for the purpose of setting forth the Bidder's position as to why the GFE documentation demonstrates a sufficient effort.

- The reconsideration official shall provide the Bidder with a written decision on reconsideration within five working days of the hearing explaining the basis for their finding.

**UDBE Bid Item Breakdown**

The Bidder shall submit a UDBE Bid Item Breakdown Form (WSDOT Form 272-054) as specified in the Special Provisions for Section 1-02.9, Delivery of Proposal.

**UDBE Trucking Credit Form**

The Bidder shall submit a UDBE Trucking Credit Form (WSDOT Form 272-058), as specified in the Special Provisions for Section 1-02.9, Delivery of Proposal.

Note: The UDBE Trucking Credit Form is only required for a UDBE Firm listed on the UDBE Utilization Certification as a subcontractor for "Trucking" or "Hauling" and are performing a part of a bid item. For example, if the item of Work is Structure Excavation including Haul, and another firm is doing the excavation and the UDBE Trucking firm is doing the haul, the form is required. For a UDBE subcontractor that is responsible for an entire item of work that may require some use of trucks, the form is not required.

**Procedures between Award and Execution**

After Award and prior to Execution, the Contractor shall provide the additional information described below. Failure to comply shall result in the forfeiture of the Bidder's Proposal bond or deposit.

1. A list of all firms who submitted a bid or quote in attempt to participate in this project whether they were successful or not. Include the business name and mailing address.

Note: The firms identified by the Contractor may be contacted by the Contracting Agency to solicit general information as follows: age of the firm and average of its gross annual receipts over the past three-years.

**Procedures after Execution**

**Commercially Useful Function (CUF)**

The Contractor may only take credit for the payments made for Work performed by a DBE that is determined to be performing a CUF. Payment must be commensurate with the work actually performed by the DBE. This applies to all DBEs performing Work on a project, whether or not the DBEs are COA, if the Contractor wants to receive credit for their participation. The Engineer will conduct CUF reviews to ascertain whether DBEs are performing a CUF. A DBE performs a CUF when it is carrying out its responsibilities of its contract by actually performing, managing, and supervising the Work involved. The DBE must be responsible for negotiating price; determining quality and quantity; ordering the material, installing (where applicable); and paying for the material itself. If a DBE does not perform "all" of these functions on a furnish-and-install contract, it has not performed a CUF and the cost of materials cannot be counted toward UDBE COA Goal. Leasing of equipment from a leasing company is allowed. However, leasing/purchasing equipment from the Contractor is not allowed. Lease agreements shall be provided prior to the Subcontractor beginning Work. Any use of the Contractor's equipment by a DBE may not be credited as countable participation.

The DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which the funds are passed in order to obtain the appearance of DBE participation.

In order for a DBE traffic control company to be considered to be performing a CUF, the DBE must be in control of its work inclusive of supervision. The DBE shall employ a Traffic Control Supervisor who is directly involved in the management and supervision of the traffic control employees and services.

The following are some of the factors that the Engineer will use in determining whether a DBE trucking company is performing a CUF:

- The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on the contract. The owner demonstrates business related knowledge, shows up on site and is determined to be actively running the business.

- The DBE itself shall own and operate at least one fully licensed, insured, and operational truck used on the Contract. The drivers of the trucks owned and leased by the DBE must be exclusively employed by the DBE and reflected on the DBE's payroll.

- Lease agreements for trucks shall indicate that the DBE has exclusive use of and control over the truck(s). This does not preclude the leased truck from working for others provided it is with the consent of the DBE and the lease provides the DBE absolute priority for use of the leased truck.

- Leased trucks shall display the name and identification number of the DBE.

**UDBE/DBE/FSBE Truck Unit Listing Log**

In addition to the subcontracting requirements of Section 1-08.1, each DBE trucking firm shall submit supplemental information consisting of a completed Primary UDBE/DBE/FSBE Truck Unit Listing Log (WSDOT Form 350-077) and all Rental/Lease agreements (if applicable). The supplemental information shall be submitted in an electronic format to the Engineer prior to any trucking services being performed for DBE credit. Incomplete or incorrect supplemental information will be returned for correction. The corrected Primary UDBE/DBE/FSBE Truck Unit Listing Log and any Updated Primary UDBE/DBE/FSBE Truck Unit Listing Logs shall be submitted and accepted by the Engineer no later than ten calendar days of utilizing applicable trucks. Failure to submit or update the DBE Truck Unit Listing Log may result in trucks not being credited as DBE participation.

Each DBE trucking firm shall complete a Daily UDBE/DBE/FSBE Truck Unit Listing Log for each day that the DBE performs trucking services for DBE credit. The Daily UDBE/DBE/FSBE Truck Unit Listing Log forms shall be submitted by Friday of the week after the Work was performed by email to the following email address for the region administering the Contract:

Eastern Region - ERegionOEO@wsdot.wa.gov
North Central Region - NCRegionOEO@wsdot.wa.gov
Northwest Region - NWRegionOEO@wsdot.wa.gov
Olympic Region - ORegionOEO@wsdot.wa.gov
South Central Region - SCRegionOEO@wsdot.wa.gov
Southwest Region - SWRegionOEO@wsdot.wa.gov
Washington State Ferries - FerriesOEO@wsdot.wa.gov

**Joint Checking**

A joint check is a check between a Subcontractor and the Contractor to the supplier of materials/supplies. The check is issued by the Contractor as payer to the Subcontractor and the material supplier jointly for items to be incorporated into the project. The DBE must release the check to the supplier, while the Contractor acts solely as the guarantor.

A joint check agreement must be approved by the Engineer and requested by the DBE involved using the DBE Joint Check Request Form (form # 272-053) prior to its use. The form must accompany the DBE Joint Check Agreement between the parties involved, including the conditions of the arrangement and expected use of the joint checks.

The approval to use joint checks and the use will be closely monitored by the Engineer. To receive DBE credit for performing a CUF with respect to obtaining materials and supplies, a DBE must "be responsible for negotiating price, determining quality and quantity, ordering the material, installing and paying for the material itself." The Contractor shall submit DBE Joint Check Request Form for the Engineer approval prior to using a joint check.

Material costs paid by the Contractor directly to the material supplier are not allowed. If proper procedures are not followed or the Engineer determines that the arrangement results in lack of independence for the DBE involved, no DBE credit will be given for the DBE's participation as it relates to the material cost.

**Prompt Payment**

Prompt payment to all subcontractors shall be in accordance with Section 1-08.1. Prompt payment requirements apply to progress payments as well as return of retainage.

**Subcontracts**

Prior to a DBE performing Work on the Contract, an executed subcontract between the DBE and the Contractor shall be submitted to the Engineer. The executed subcontracts shall be submitted by email to the following email address for the region administering the Contract:

Eastern Region – ERegionOEO@wsdot.wa.gov
North Central Region – NCRegionOEO@wsdot.wa.gov
Northwest Region – NWRegionOEO@wsdot.wa.gov
Olympic Region – ORegionOEO@wsdot.wa.gov
South Central Region – SCRegionOEO@wsdot.wa.gov
Southwest Region – SWRegionOEO@wsdot.wa.gov
Washington State Ferries – FerriesOEO@wsdot.wa.gov

**Reporting**

The Contractor and all subcontractors/suppliers/service providers that utilize DBEs to perform work on the project, shall maintain appropriate records that will enable the Engineer to verify DBE participation throughout the life of the project.

Refer to Section 1-08.1 for additional reporting requirements associated with this contract.

**Changes in COA Work Committed to UDBE**

The Contractor shall utilize the COA UDBEs to perform the work and supply the materials for which each is committed unless approved by the Engineer. The Contractor shall not be entitled to any payment for work or material completed by the Contractor or subcontractors that was committed to be completed by the COA UDBEs.

**Owner Initiated Changes**

Where the Engineer makes changes that result in changes to Work that was committed to a COA UDBE. The Contractor may be directed to substitute for the Work in such instances.

**Contractor Initiated Changes**

The Contractor cannot reduce the amount of work committed to a COA UDBE without good cause. Reducing UDBE Commitment is viewed as partial UDBE termination, and therefore subject to the termination procedures below.

**Original Quantity Underruns**

In the event that Work committed to a UDBE firm as part of the COA underruns the original planned quantities the Contractor may be required to substitute other remaining Work to another UDBE.

**Contractor Proposed DBE Substitutions**

Requests to substitute a COA UDBE must be for good cause (see UDBE termination process below), and requires prior written approval of the Engineer. After receiving a termination with good cause approval, the Contractor may only replace a UDBE with another certified UDBE. When any changes between Contract Award and Execution result in a substitution of COA UDBE, the substitute UDBE shall be certified prior to the bid opening on the Contract.

**UDBE Termination**

Termination of a COA UDBE (or an approved substitute UDBE) is only allowed in whole or in part with prior written approval of the Engineer. If the Contractor terminates a COA UDBE without the written approval of the Engineer, the Contractor shall not be entitled to credit towards the UDBE COA Goal for any payment for work or material performed/supplied by the COA UDBE. In addition, sanctions may apply as described elsewhere in this specification.

The Contractor must have good cause to terminate a COA UDBE.

Good cause typically includes situations where the UDBE Subcontractor is unable or unwilling to perform the work of its subcontract. Good cause may exist if:

- The UDBE fails or refuses to execute a written contract.
- The UDBE fails or refuses to perform the Work of its subcontract in a way consistent with normal industry standards.
- The UDBE fails or refuses to meet the Contractor's reasonable nondiscriminatory bond requirements.

- The UDBE becomes bankrupt, insolvent, or exhibits credit unworthiness.

- The UDBE is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to federal law or applicable State law.

- The UDBE voluntarily withdraws from the project, and provides written notice of its withdrawal.

- The UDBE's work is deemed unsatisfactory by the Engineer and not in compliance with the Contract.

- The UDBE's owner dies or becomes disabled with the result that the UDBE is unable to complete its Work on the Contract.

Good cause does not exist if:

- The Contractor seeks to terminate a COA UDBE so that the Contractor can self-perform the Work.

- The Contractor seeks to terminate a COA UDBE so the Contractor can substitute another DBE contractor or non-DBE contractor after Contract Award.

- The failure or refusal of the COA UDBE to perform its Work on the subcontract results from the bad faith or discriminatory action of the Contractor (e.g., the failure of the Contractor to make timely payments or the unnecessary placing of obstacles in the path of the UDBE's Work).

Prior to requesting termination, the Contractor shall give notice in writing to the UDBE with a copy to the Engineer of its intent to request to terminate UDBE Work and the reasons for doing so. The UDBE shall have five (5) days to respond to the Contractor's notice. The UDBE's response shall either support the termination or advise the Engineer and the Contractor of the reasons it objects to the termination of its subcontract.

When a COA UDBE is terminated, or fails to complete its work on the Contract for any reason, the Contractor shall substitute with another UDBE or provide documentation of GFE. A plan to achieve the COA UDBE Commitment shall be submitted to the Engineer within 2 days of the approval of termination or the Contract shall be suspended until such time the substitution plan is submitted.

**Decertification**

When a DBE is "decertified" from the DBE program during the course of the Contract, the participation of that DBE shall continue to count as DBE participation as long as the subcontract with the DBE was executed prior to the decertification notice. The Contractor is obligated to substitute when a DBE does not have an executed subcontract agreement at the time of decertification.

**Consequences of Non-Compliance**

**Breach of Contract**

Each contract with a Contractor (and each subcontract the Contractor signs with a Subcontractor) must include the following assurance clause:

The Contractor, subrecipient, or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

(1) Withholding monthly progress payments;

(2) Assessing sanctions;

(3) Liquidated damages; and/or

(4) Disqualifying the Contractor from future bidding as non-responsible.

**Notice**

If the Contractor or any Subcontractor, Consultant, Regular Dealer, or service provider is deemed to be in non-compliance, the Contractor will be informed in writing, by certified mail by the Engineer that sanctions will be imposed for failure to meet the UDBE COA Commitment and/or submit documentation of good faith efforts. The notice will state the specific sanctions to be imposed which may include impacting a Contractor or other entity's ability to participate in future contracts.

**Sanctions**

If it is determined that the Contractor's failure to meet all or part of the UDBE COA Commitment is due to the Contractor's inadequate good faith efforts throughout the life of the Contract, including failure to submit timely, required Good Faith Efforts information and documentation, the Contractor may be required to pay DBE penalty equal to the amount of the unmet Commitment, in addition to the sanctions outlined in Section 1-07.11(5).

**Payment**

Compensation for all costs involved with complying with the conditions of this Specification and any other associated DBE requirements is included in payment for the associated Contract items of Work, except otherwise provided in the Specifications.

1-07.11.OPT4.FR1

***(April 3, 2017)***

***Special Training Provisions***

**General Requirements**

The Contractor's equal employment opportunity, affirmative action program shall include the requirements set forth below. The Contractor shall provide on-the-job training aimed at developing trainees to journeyman status in the trades involved. The number of training hours shall be *** $$1$$ ***. Trainees shall not be assigned

less than 400 hours. The Contractor may elect to accomplish training as part of the work of a subcontractor, however, the Prime Contractor shall retain the responsibility for complying with these Special Provisions. The Contractor shall also ensure that this training provision is made applicable to any subcontract that includes training.

**Trainee Approval**

The Federal government requires Contracting Agencies to include these training provisions as a condition attached to the receipt of Federal highway funding. The Federal government has determined that the training and promotion of members of certain minority groups and women is a primary objective of this training provision. The Contractor shall make every effort to enroll minority groups and women trainees to the extent such persons are available within a reasonable recruitment area. This training provision is not intended and shall not be used to discriminate against any applicant for training, whether that person is a minority, woman or otherwise. A non-minority male trainee or apprentice may be approved provided the following requirements are met:

1. The Contractor is otherwise in compliance with the contract's Equal Employment Opportunity and On-the-Job Training requirements and provides documentation of the efforts taken to fill the specific training position with either minorities or females

2. or, if not otherwise in compliance, furnishes evidence of his/her systematic and direct recruitment efforts in regard to the position in question and in promoting the enrollment and/or employment of minorities and females in the craft which the proposed trainee is to be trained

3. and the Contractor has made a good faith effort towards recruiting of minorities and women. As a minimum this good faith effort shall consist of the following:

    - Distribution of written notices of available employment opportunities with the Contractor and enrollment opportunities with its unions. Distribution should include but not be limited to; minority and female recruitment sources and minority and female community organizations;

    - Records documenting the Contractor's efforts and the outcome of those efforts, to employ minority and female applicants and/or refer them to unions;

    - Records reflecting the Contractor's efforts in participating in developing minority and female on-the-job training opportunities, including upgrading programs and apprenticeship opportunities;

    - Distribution of written notices to unions and training programs disseminating the Contractor's EEO policy and requesting cooperation in achieving EEO and OJT obligations.

No employee shall be employed as a trainee in any classification in which the employee has successfully completed a training course leading to journeyman status or in which the employee has been employed as a journeyman. The Contractor's

records shall document the methods for determining the trainee's status and findings in each case. When feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

For the purpose of this specification, acceptable training programs are those employing trainees/apprentices registered with the following:

1. Washington State Department of Labor & Industries — State Apprenticeship Training Council (SATC) approved apprenticeship agreement:

    a. Pursuant to RCW 49.04.060, an apprenticeship agreement shall be;

        i. an individual written agreement between an employer and apprentice
        ii. a written agreement between (an employer or an association of employers) and an organization of employees describing conditions of employment for apprentices
        iii. a written statement describing conditions of employment for apprentices in a plant where there is no bona fide employee organization.

    All such agreements shall conform to the basic standards and other provisions of RCW Chapter 49.

2. Apprentices must be registered with U.S. Department of Labor — Apprenticeship Training, Employer, and Labor Services (ATELS) approved program.

    Or

3. Trainees participating in a non-ATELS/SATC program, which has been approved by the contracting agency for the specific project.

4. For assistance in locating trainee candidates, the Contractor may call WSDOT's OJT Support Services Technical Advisor at (360) 704-6314.

**Obligation to Provide Information**

Upon starting a new trainee, the Contractor shall furnish the trainee a copy of the approved program the Contractor will follow in providing the training. Upon completion of the training, the Contractor shall provide the Contracting Agency with a certification showing the type and length of training satisfactorily completed by each trainee.

**Training Program Approval**

The Training Program shall meet the following requirements:

1. The Training Program (DOT Form 272-049) must be submitted to the Engineer for approval prior to commencing contract work and shall be resubmitted when modifications to the program occur.

2. The minimum length and type of training for each classification will be as established in the training program as approved by the Contracting Agency.

3. The Training Program shall contain the trades proposed for training, the number of trainees, the hours assigned to the trade and the estimated beginning work date for each trainee.

4. Unless otherwise specified, Training Programs will be approved if the proposed number of training hours equals the training hours required by contract and the trainees are not assigned less than 400 hours each.

5. After approval of the training program, information concerning each individual trainee and good faith effort documentation shall be submitted on (DOT Form 272-050.)

6. In King County, laborer trainees or apprentices will not be approved on contracts containing less than 2000 training hours as specified in this Section. In King County, no more than twenty percent (20%) of hours proposed for trainees or apprentices shall be in the laborer classification when the contract contains 2000 or more hours of training as specified in this Section. Trainees shall not be assigned less than 400 hours.

7. Flagging programs will not be approved. Other programs that include flagging training will only be approved if the flagging portion is limited to an orientation of not more than 20 hours.

8. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Some off-site training is permissible as long as the training is an integral part of an approved training program.

9. It is normally expected that a trainee will begin training on the project as soon as feasible after start of work, utilizing the skill involved and remain on the project as long as training opportunities exist in the work classification or upon completion of the training program. It is not required that all trainees be on board for the entire length of the contract. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

10. Wage Progressions: Trainees will be paid at least the applicable ratios or wage progressions shown in the apprenticeship standards published by the Washington State Department of Labor and Industries. In the event that no training program has been established by the Department of Labor and Industries, the trainee shall be paid in accordance with the provisions of RCW 39.12.021 which reads as follows:

> Apprentice workmen employed upon public works projects for whom an apprenticeship agreement has been registered and approved with the State Apprenticeship Council pursuant to RCW 49.04, must be paid

at least the prevailing hourly rate for an apprentice of that trade. Any workman for whom an apprenticeship agreement has not been registered and approved by the State Apprenticeship Council shall be considered to be a fully qualified journeyman, and, therefore, shall be paid at the prevailing hourly rate for journeymen.

**Compliance**

In the event that the Contractor is unable to accomplish the required training hours but can demonstrate a good faith effort to meet the requirements as specified, then the Contracting Agency will adjust the training goals accordingly.

**Requirements for Non ATELS/SATC Approved Training Programs**

Contractors who are not affiliated with a program approved by ATELS or SATC may have their training program approved provided that the program is submitted for approval on DOT Form 272-049, and the following standards are addressed and incorporated in the Contractor's program:

- The program establishes minimum qualifications for persons entering the training program.

- The program shall outline the work processes in which the trainee will receive supervised work experience and training on-the-job and the allocation of the approximate time to be spent in each major process. The program shall include the method for recording and reporting the training completed shall be stated.

- The program shall include a numeric ratio of trainees to journeymen consistent with proper supervision, training, safety, and continuity of employment. The ratio language shall be specific and clear as to application in terms of job site and workforce during normal operations (normally considered to fall between 1:10 and 1:4).

- The terms of training shall be stated in hours. The number of hours required for completion to journeyman status shall be comparable to the apprenticeship hours established for that craft by the SATC. The following are examples of programs that are currently approved:

| CRAFT | HOURS |
|---|---|
| Laborer | 4,000 |
| Ironworker | 6,000 |
| Carpenter | 5,200-8,000 |
| Construction Electrician | 8,000 |
| Operating Engineer | 6,000-8,000 |
| Cement Mason | 5,400 |
| Teamster | 2,100 |

- The method to be used for recording and reporting the training completed shall be stated.

**Measurement**

The Contractor may request that the total number of "training" hours for the contract be increased subject to approval by the Contracting Agency. This reimbursement will

be made even though the Contractor receives additional training program funds from other sources, provided such other sources do not prohibit other reimbursement. Reimbursement to the Contractor for off-site training as indicated previously may only be made when the Contractor does one or more of the following and the trainees are concurrently employed on a Federal-aid project:

- contributes to the cost of the training,
- provides the instruction to the trainee,
- pays the trainee's wages during the off- site training period.

Reimbursement will be made upon receipt of a certified invoice that shows the related payroll number, the name of trainee, total hours trained under the program, previously paid hours under the contract, hours due this estimate, and dollar amount due this estimate. The certified invoice shall show a statement indicating the Contractor's effort to enroll minorities and women when a new enrollment occurs. If a trainee is participating in a SATC/ATELS approved apprenticeship program, a copy of the certificate showing apprenticeship registration must accompany the first invoice on which the individual appears. Reimbursement for training occurring prior to approval of the training program will be allowed if the Contractor verbally notifies the Engineer of this occurrence at the time the apprentice/trainee commences work. A trainee/apprentice, regardless of craft, must have worked on the contract for at least 20 hours to be eligible for reimbursement.

**Payment**

The Contractor will be reimbursed under the item "Training" per hour for each hour of training for each employee.

1-07.11.OPT5.GR1

***(January 7, 2019)***

***Voluntary Minority, Small, Veteran and Women's Business Enterprise (MSVWBE) Participation***

**General Statement**

The participation of minority, small, veteran, and women business enterprises (MSVWBE) is an important strategic objective for the State of Washington. Voluntary goals for minority, small, veteran and women business enterprises are included in this Contract. The Contractor is encouraged to utilize MSVWBEs in accordance with these Specifications, RCW 39.19 and Executive Order 13-01 (issued by the Governor of Washington on May 10, 2013).

The goals are voluntary; efforts to provide MSVWBEs maximum practicable opportunities are encouraged.

**Non-Discrimination**

Contractors shall not create barriers to open and fair opportunities for all businesses, including MSVWBEs, to participate in the Work on this Contract. This includes the opportunity to compete for subcontracts as sources of supplies, equipment, construction or services.

The Contractor shall make Voluntary MSVWBE Participation a part of all subcontracts and agreements entered into as a result of this Contract.

**Voluntary MSVWBE Participation Goals**

Goals for voluntary MSVWBE participation have been established as a percentage of Contractor's total Bid amount.

The Contracting Agency has established the following voluntary goals:

| | |
|---|---|
| Minority | 10% |
| Small | 5% |
| Veteran | 5% |
| Women | 6% |

Amounts paid to an MSVWBE will be credited to every voluntary goal in which they are eligible. In other words, participation may be credited for participation in more than one category. If the Contractor is a MSVWBE, their Work will be credited to the voluntary goals in which they are eligible.

**MSVWBE Abbreviations and Definitions**

**Broker** – A business firm that provides a bona fide service, such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for the performance of the Contract; or, persons/companies who arrange or expedite transactions.

**Commercially Useful Function (CUF)**

A MSVWBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MSVWBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

The MSVWBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or Project through which the funds are passed in order to obtain the appearance of MSVWBE participation.

**Manufacturer (MSVWBE)** – A MSVWBE firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract. A MSVWBE Manufacturer shall produce finished goods or products from raw or unfinished material or purchase and substantially alters goods and materials to make them suitable for construction use before reselling them.

**Minority Business Enterprise (MBE)** – A minority owned business meeting the requirements of RCW 39.19 and WAC 326-20 and certified by the Washington State Office of Minority & Women's Business Enterprises.

**Pass Through** – When the MSVWBE firm participates as an extra participant in a transaction, through which funds are passed in order to give the appearance of participation by the MSVWBE firm and count toward the voluntary goal.

**Small Business** – A business meeting the Washington State requirements for a "Small business", "Minibusiness" or "Microbusiness as defined in RCW 39.26.010 and included on the WSDOT Office of Equal Opportunity list of Small Businesses at http://www.wsdot.wa.gov/equalopportunity/bddirectory.htm

**Supplier (MSVWBE)** – A MSVWBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of a Contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a Supplier, the MSVWBE firm must be an established business that engages in as its principal business and in its own name the purchase and sale of the products in question. A Supplier in such items as steel, cement, gravel, stone, and petroleum products need not own, operate or maintain a place of business if it both owns and operates distribution equipment for the products. Any supplementing of suppliers' own distribution equipment shall be by long-term formal lease agreements and not on an ad-hoc basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as Suppliers within the meaning of this definition.

**Veteran Business** – A veteran owned business meeting the requirements of RCW 43.60A.010 and included on the WSDOT Office of Equal Opportunity list of Veteran Businesses at http://www.wsdot.wa.gov/equalopportunity/bddirectory.htm

**Women Business Enterprise (WBE)** – A women owned business meeting the requirements of RCW 39.19 and WAC 326-20 and certified by the Washington State Office of Minority & Women's Business Enterprises.

**Crediting MSVWBE Participation**

Subcontractors proposed as counting toward the MSVWBE goal must be certified and be performing a CUF during the execution of the Work.

MSVWBE participation cannot be counted toward the Contractor's MSVWBE Voluntary Goal until the amount being counted has actually been paid to the MSVWBE.

The following are some examples of what may be counted as MSVWBE participation:

**MSVWBE Prime Contractor**

Only take credit for that portion of the total dollar value of the Contract equal to the distinct, clearly defined portion of the Work that the MSVWBE Prime Contractor performs with its own forces and is credited to perform.

**MSVWBE Subcontractor**

Only take credit for that portion of the total dollar value of the subcontract that is equal to the distinct, clearly defined portion of the Work that the MSVWBE performs with its own forces. The value of work performed by the MSVWBE includes the cost of supplies and materials purchased by the MSVWBE and equipment leased by the MSVWBE, for its work on the Contract. Supplies, materials or equipment obtained by a MSVWBE that are not utilized or incorporated in the Contract work by the MSVWBE will not be eligible for

MSVWBE credit unless the MSVWBE is certified as a supplier or equipment leasing company.

The supplies, materials, and equipment purchased or leased from the Contractor or its affiliate, including any Contractor's resources available to MSVWBE subcontractors at no cost, shall not be credited toward the MSVWBE Voluntary Goals.

MSVWBE credit will not be given in instances where the equipment lease includes the operator. The MSVWBE is expected to operate the equipment used in the performance of its work under the contract with its own forces.

If a MSVWBE subcontracts a portion of the Work of its contract to another firm, the value of the subcontracted Work may be counted toward the MSVWBE Voluntary Goal only if the MSVWBE's Lower-Tier Subcontractor is also a MSVWBE.

**MSVWBE Subcontract and Lower Tier Subcontract Documents**

There must be a subcontract agreement that fully describes the distinct elements of Work committed to be performed by the MSVWBE. The subcontract agreement shall incorporate requirements of the Contract. Subcontract agreements of all tiers, including lease agreements, shall be readily available at the Project site for the Engineer's review.

**MSVWBE Service Provider**

When a MSVWBE participates as a service provider or consultant and provides a bona fide services such as professional, technical, consultant, or managerial services, 100 percent of the total cost counts toward the MSVWBE Voluntary Goal if the firm performs a CUF.

**MSVWBE Broker**

When a MSVWBE participates as a broker (i.e. arranging a transaction or service but does not provide a work product or enhancement), only the dollar value of the fee or commission charged or 20 percent of the total dollar value of expenditures by the MSVWBE (whichever is greater) counts toward the MSVWBE Voluntary Goal if the firm performs a CUF.

**Trucking**

A MSVWBE trucking firm's participation will be credited to MSVWBE Voluntary Goal if the MSVWBE trucking firm has one leased or owned truck working on the project and the MSVWBE trucking firm performs a CUF. MSVWBE trucking companies may lease trucks from other MSVWBE firms and non-MSVWBE firms and count this work toward the MSVWBE Voluntary Goal.

A MSVWBE trucking firm that is also a supplier or manufacturer of the materials or goods being transported can count 100 percent of the dollar value toward the MSVWBE Voluntary Goal. For an MSVWBE that is not a supplier or manufacturer, only the fee charged to deliver the goods or materials can be counted toward the MSVWBE Voluntary Goal.

**MSVWBE Manufacturer and MSVWBE Supplier**

If materials or supplies are obtained from a MSVWBE Manufacturer, one hundred percent (100%) of the cost of materials or supplies can count toward the MSVWBE Voluntary Goal.

One hundred percent (100%) of the cost of materials or supplies purchased from a MSVWBE Supplier may be credited toward meeting the MSVWBE Voluntary Goal. If the role of the MSVWBE Supplier is determined to be that of a pass-through, then no MSVWBE credit will be given for its services. If the role of the MSVWBE Supplier is determined to be that of a Broker, then MSVWBE credit shall be limited to the fee or commission it receives for its services.

**Procedures after Execution**

**Commercially Useful Function (CUF)**

The Contractor may only take credit for the payments made for Work performed by a MSVWBE that is determined to be performing a CUF. Payment must be commensurate with the work actually performed by the MSVWBE, if the Contractor wants to receive credit for their participation. If a MSVWBE does not perform “all” of its responsibilities on a contract, it has not performed a CUF and their Work cannot be counted toward MSVWBE Voluntary Goal.

To determine whether an MSVWBE is performing a CUF, the Contractor shall evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the MSVWBE credit claimed for its performance of the work, and other relevant factors.

**Leasing of Equipment**

Leasing of equipment from a leasing company is allowed. However, leasing/purchasing equipment from the Contractor is not allowed. Lease agreements shall be readily available for review by the Engineer.

**Traffic Control**

In order for a MSVWBE traffic control company to be considered to be performing a CUF, the MSVWBE must be in control of its work inclusive of supervision. The MSVWBE shall employ a Traffic Control Supervisor who is directly involved in the management and supervision of the traffic control employees and services.

**Joint Checks**

Joint checks will only be allowed for the purpose of purchasing supplies and materials. The MSVWBE Subcontractor must submit a request to the Engineer and receive approval from the Engineer prior to using a joint check to pay for supplies and materials. Supplies and materials purchased with an approved joint check shall count toward the voluntary goals.

Joint checks that did not receive prior approval from the Engineer or used for purposes other than the purchase of supplies and materials shall not count towards the voluntary goals.

**Prompt Payment**
Prompt payment to all subcontractors shall be in accordance with Section 1-08.1. Prompt payment requirements apply to progress payments as well as return of retainage.

Refer to Section 1-08.1 for additional reporting requirements associated with this contract.

**Removal from MSVWBE Program**
When a MSVWBE is "removed" from the MSVWBE program during the course of the Contract, the participation of that MSVWBE shall continue to count towards the MSVWBE Voluntary Goal as long as the subcontract with the MSVWBE was executed prior to the removal notice.

**MSVWBE Participation Plan**
A MSVWBE Participation Plan shall be submitted to the Engineer prior to the start of Work on the project. The plan is submitted for the Contracting Agency's information. The plan shall include the information identified in the guidelines at http://www.wsdot.wa.gov/EqualOpportunity/MSVWBE.htm.

Approval of the plan is not required; however, an incomplete plan will be returned for correction and resubmittal. An updated MSVWBE Participation Plan will be submitted for Review and Comment annually on the date the original Participation Plan was submitted. The Contractor shall provide a 30 Calendar Day review period for WSDOT Review and Comment on all MSVWBE Participation Plan submittals.

**MSVWBE Reporting**
The Contractor shall report payments to all firms that were used as Subcontractors, lower tier Subcontractors, manufactures, regular dealers, or service providers on the Contract Work each month between Execution of the Contract and when the Contract final estimate is processed, using the application available at https://wsdot.diversitycompliance.com. The monthly report is due 20 Calendar Days following the end of the month, whether payments were made or work occurred.

The monthly report shall include payments to all businesses regardless of their listing on the MSVWBE Inclusion Plan. If the Contractor is a MSVWBE, the amounts paid by WSDOT for Work performed by the certified Contractor shall also be reported.

After Execution of the Contract, the Contractor shall send an email to CRP@wsdot.wa.gov containing the following information: the first and last name, email address, title, and phone number of the person who will be submitting the above reports for their company. The email shall include the WSDOT contract number they will be reporting on. After receipt of this information by WSDOT, the Contractor will receive an email providing information about their assignment. Training and instructions are available in the application.

Refer to Section 1-08.1 for additional reporting requirements associated with this contract.

**MSVWBE Payment**
All costs for implementation of the requirements for Voluntary MSVWBE Participation shall be included in the associated items of Contract Work.

1-07.11.OPT7.FR1

***(November 4, 2019)***

## *Federal Small Business Enterprise Participation*

The Federal Small Business Enterprise (FSBE) Program is an element of the Disadvantaged Business Enterprise (DBE) in accordance with the requirements of 49 CFR Part 26.39. Failure to comply with the requirements of this Specification may result in sanctions as provided by the Contract.

### FSBE Abbreviations and Definitions

**Broker** – A business firm that provides a bona fide service, such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for the performance of the Contract; or, persons/companies who arrange or expedite transactions.

**Certified Business Description** – Specific descriptions of work the FSBE is certified to perform, as identified in the Certified Firm Directory, under the Vendor Information page.

**Certified Firm Directory** – A database of all Minority, Women, and Disadvantaged Business Enterprises, including those identified as a FSBE, currently certified by Washington State. The on-line Directory is available to Bidders for their use in identifying and soliciting interest from FSBE firms. The database is located under the Firm Certification section of the Diversity Management and Compliance System web page at: https://omwbe.diversitycompliance.com.

Firms certified by OMWBE as SBE, DBE (including UDBEs), can be used to fulfill the FSBE mandatory goal on a project.

**Commercially Useful Function (CUF)** – 49 CFR 26.55(c)(1) defines commercially useful function as: "A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, you must evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors."

**FSBE** – A firm certified by OMWBE as meeting Federal requirements of a small business enterprise. All firms on the OMWBE Certified Firm Directory with the designation of SBE, UDBE or DBE are FSBEs.

**Good Faith Efforts** – Efforts to achieve the FSBE Goal or other requirements of this part which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

**Manufacturer (FSBE)** – A FSBE firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract. A FSBE Manufacturer shall produce finished goods or products from raw or unfinished material or purchase and substantially alters goods and materials to make them suitable for construction use before reselling them.

**Reasonable Fee (FSBE)** – For purposes of Brokers or service providers a reasonable fee shall not exceed 5% of the total cost of the goods or services brokered.

**Regular Dealer (FSBE)** – A FSBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of a Contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a Regular Dealer, the FSBE firm must be an established regular business that engages in as its principal business and in its own name the purchase and sale of the products in question. A Regular Dealer in such items as steel, cement, gravel, stone, and petroleum products need not own, operate or maintain a place of business if it both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by long-term formal lease agreements and not on an ad-hoc basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as Regular Dealers within the meaning of this definition.

**FSBE Goal**

The Contracting Agency has established a FSBE Goal for this Contract in the amount of: *** $$1$$ ***

**Crediting FSBE Participation**

All FSBE Subcontractors shall be certified before the subcontract on which they are participating is executed.

FSBE participation is only credited upon payment to the FSBE.

The following are some definitions of what may be counted as FSBE participation.

**FSBE Prime Contractor**

Only take credit for that portion of the total dollar value of the Contract equal to the distinct, clearly defined portion of the Work that the FSBE Prime Contractor performs with its own forces and is certified to perform.

**FSBE Subcontractor**

Only take credit for that portion of the total dollar value of the subcontract that is equal to the distinct, clearly defined portion of the Work that the FSBE performs with its own forces and is certified to perform. The value of work performed by the FSBE includes the cost of supplies and materials purchased by the FSBE and equipment leased by the FSBE, for its work on the contract. Supplies, materials or equipment obtained by a FSBE that are not utilized or incorporated in the contract work by the FSBE will not be eligible for FSBE credit.

The supplies, materials, and equipment purchased or leased from the Contractor or its affiliate, including any Contractor's resources available to FSBE subcontractors at no cost, shall not be credited.

FSBE credit will not be given in instances where the equipment lease includes the operator. The FSBE is expected to operate the equipment used in the performance of its work under the contract with its own forces. Situations where equipment is leased and used by the FSBE, but payment is deducted from the Contractor's payment to the FSBE is not allowed.

When the subcontractor is a FSBE, the following apply:

1. If a FSBE subcontracts a portion of the Work of its contract to another firm, the value of the subcontracted Work may be counted toward the FSBE Goal only if the Lower-Tier Subcontractor is also a FSBE.

2. Work subcontracted to a non-FSBE does not count towards the FSBE Goal nor FSBE participation.

**FSBE Subcontract and Lower Tier Subcontract Documents**
There must be a subcontract agreement that complies with 49 CFR Part 26 and fully describes the distinct elements of Work committed to be performed by the FSBE.

**FSBE Service Provider**
The value of fees or commissions charged by a FSBE firm behaving in a manner of a Broker, or another service provider for providing a bona fide service, such as professional, technical, consultant, managerial services, or for providing bonds or insurance specifically required for the performance of the contract will only be credited as FSBE participation, if the fee/commission is determined by the Contracting Agency to be reasonable and the firm has performed a CUF.

**Temporary Traffic Control**
If the FSBE firm is being utilized in the capacity of only "Flagging", the FSBE firm must provide a Traffic Control Supervisor (TCS) and flagger, which are under the direct control of the FSBE. The FSBE firm shall also provide all flagging equipment (e.g. paddles, hard hats, and vests).

If the FSBE firm is being utilized in the capacity of "Traffic Control Services", the FSBE firm must provide a TCS, flaggers, and traffic control items (e.g., cones, barrels, signs, etc.) and be in total control of all items in implementing the traffic control for the project.

**Trucking**
FSBE trucking firm participation may only be credited as FSBE participation for the value of the hauling services, not for the materials being hauled unless the trucking firm is also certified as a supplier of those materials. In situations where the FSBE's work is priced per ton, the value of the hauling service must be calculated separately from the value of the materials in order to determine FSBE credit for hauling

The FSBE trucking firm must own and operate at least one licensed, insured and operational truck on the contract. The truck must be of the type that is necessary to perform the hauling duties required under the contract. The FSBE receives credit for the value of the transportation services it provides on the Contract using trucks it owns or leases, licenses, insures, and operates with drivers it employs.

The FSBE may lease additional trucks from another FSBE firm. The FSBE who leases additional trucks from another FSBE firm receives credit for the value of the transportation services the lessee FSBE provides on the Contract.

The trucking Work subcontracted to any non-FSBE trucking firm will not receive credit for Work done on the project.

The FSBE may lease trucks from a truck leasing company (recognized truck rental center), but can only receive credit towards FSBE participation if the FSBE uses its own employees as drivers.

**FSBE Manufacturer and FSBE Regular Dealer**

One hundred percent (100%) of the cost of the manufactured product obtained from a FSBE manufacturer can count as FSBE participation. If the manufacturer is a FSBE, participation may count towards the FSBE Goal.

Sixty percent (60%) of the cost of materials or supplies purchased from a FSBE Regular Dealer may be credited as FSBE Participation. If the role of the FSBE Regular Dealer is determined to be that of a Broker, then FSBE credit shall be limited to the fee or commission it receives for its services. Regular Dealer status and the amount of credit is determined on a Contract-by-Contract basis. If the regular dealer is a FSBE, participation may count towards the FSBE Goal.

FSBE firms proposed to be used as a Regular Dealer must be approved before being used on a project. The WSDOT Approved Regular Dealer list published on WSDOT's Office of Equal Opportunity (OEO) web site must include the specific project for which approval is being requested. For purposes of FSBE Goal participation, the Regular Dealer must submit the Regular Dealer Status Request form and receive approval prior to providing any equipment or materials or the signing of a purchase order, invoice, or subcontract.

Purchase of materials or supplies from a FSBE which is neither a manufacturer nor a regular dealer, (i.e. Broker) only the fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, can count as FSBE participation provided the fees are not excessive as compared with fees customarily allowed for similar services. Documentation will be required to support the fee/commission charged by the FSBE. The cost of the materials and supplies themselves cannot be counted toward as FSBE participation.

**Good Faith Effort Documentation**

GFE is evaluated prior to Physical Completion when determining whether the Contractor has satisfied its FSBE Goal.

The Contracting Agency will measure GFE using the guidance in 49 CFR Part 26, Appendix A. The following is a list of the types of actions which may be considered as part of the Contractor's GFE to achieve FSBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

1. Solicited through all reasonable and available means the interest of all certified FSBEs who had the capability to perform the Work of the Contract. The Contractor must have solicited this interest within sufficient time to allow the FSBEs to respond to the solicitation. The Contractor must have determined with certainty that the FSBEs were interested by taking appropriate steps to follow up initial solicitations with potential FSBEs.

2. Selected portions of the Work to be performed by FSBEs in order to increase the likelihood that the FSBE Goal would be achieved. This includes, where appropriate, breaking out contract Work items into economically feasible units to facilitate FSBE participation, even when the Contractor might otherwise prefer to perform these Work items with its own forces.

3. Provided interested FSBEs with adequate information about the Plans, Specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation.

    a. Negotiated in good faith with interested FSBEs. It is the Contractor's responsibility to make a portion of the Work available to FSBE subcontractors and suppliers and to select those portions of the Work or material needs consistent with the available FSBE subcontractors and suppliers, so as to facilitate FSBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of FSBEs that were contacted; a description of the information provided regarding the Plans and Specifications for the Work selected for subcontracting; and evidence as to why additional agreements could not be reached for FSBEs to perform the Work.

    b. A Contractor using good business judgment would consider a number of factors in negotiating with subcontractors, including FSBE subcontractors, and would take a firm's price and capabilities as well as the FSBE Goal into consideration. The fact that there may be some additional costs involved in finding and using FSBEs is not in itself sufficient reason for a Bidder's failure to meet the FSBE Goal, as long as such costs are reasonable. Also, the ability or desire of a Contractor to perform the Work of a Contract with its own organization does not relieve the Contractor of the responsibility to make Good Faith Efforts. Contractors are not, however, required to accept higher quotes from FSBEs if the price difference was excessive or unreasonable.

4. Not rejecting FSBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-

union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the Contractor's efforts to meet the FSBE Goal.

5. Made efforts to assist interested FSBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

6. Made efforts to assist interested FSBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

7. Effectively used the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of FSBEs.

8. Documentation of GFE must include copies of each FSBE and non-FSBE subcontractor quotes submitted to the Bidder when a non-FSBE subcontractor is selected over a FSBE for Work on the Contract.

**Procedures after Execution**

**Commercially Useful Function (CUF)**

The Contractor may only take credit for the payments made for Work performed by a FSBE that is determined to be performing a CUF. Payment must be commensurate with the work actually performed by the FSBE. This applies to all FSBEs performing Work on a project, if the Contractor wants to receive credit for their participation. The Engineer will conduct CUF reviews to ascertain whether FSBEs are performing a CUF. A FSBE performs a CUF when it is carrying out its responsibilities of its contract by actually performing, managing, and supervising the Work involved. The FSBE must be responsible for negotiating price; determining quality and quantity; ordering the material, installing (where applicable); and paying for the material itself. If a FSBE does not perform "all" of these functions on a furnish-and-install contract, it has not performed a CUF and the cost of materials cannot be counted toward FSBE Goal. Leasing of equipment from a leasing company is allowed. However, leasing/purchasing equipment from the Contractor is not allowed. Lease agreements shall be provided prior to the Subcontractor beginning Work. Any use of the Contractor's equipment by a FSBE may not be credited as countable participation.

The FSBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which the funds are passed in order to obtain the appearance of FSBE participation.

In order for a FSBE traffic control company to be considered to be performing a CUF, the FSBE must be in control of its work inclusive of supervision. The FSBE shall employ a Traffic Control Supervisor who is directly involved in the management and supervision of the traffic control employees and services.

The following are some of the factors that the Engineer will use in determining whether a FSBE trucking company is performing a CUF:

- The FSBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on the contract. The owner demonstrates business related knowledge, shows up on site and is determined to be actively running the business.

- The FSBE itself shall own and operate at least one fully licensed, insured, and operational truck used on the Contract. The drivers of the trucks owned and leased by the FSBE must be exclusively employed by the FSBE and reflected on the FSBE's payroll.

- Lease agreements for trucks shall indicate that the FSBE has exclusive use of and control over the truck(s). This does not preclude the leased truck from working for others provided it is with the consent of the FSBE and the lease provides the FSBE absolute priority for use of the leased truck.

- Leased trucks shall display the name and identification number of the FSBE.

**UDBE/DBE/FSBE Truck Unit Listing Log**

In addition to the subcontracting requirements of Section 1-08.1, each FSBE trucking firm shall submit supplemental information consisting of a completed Primary UDBE/DBE/FSBE Truck Unit Listing Log (WSDOT Form 350-077) and all Rental/Lease agreements (if applicable). The supplemental information shall be submitted in an electronic format to the Engineer prior to any trucking services being performed for FSBE credit. Incomplete or incorrect supplemental information will be returned for correction. The corrected Primary UDBE/DBE/FSBE Truck Unit Listing Log and any Updated Primary UDBE/DBE/FSBE Truck Unit Listing Logs shall be submitted and accepted by the Engineer no later than ten calendar days of utilizing applicable trucks. Failure to submit or update the DBE Truck Unit Listing Log may result in trucks not being credited as FSBE participation.

Each FSBE trucking firm shall complete a Daily UDBE/DBE/FSBE Truck Unit Listing Log for each day that the FSBE performs trucking services for FSBE credit. The Daily UDBE/DBE/FSBE Truck Unit Listing Log forms shall be submitted by Friday of the week after the Work was performed by email to the following email address for the region administering the Contract:

Eastern Region - ERegionOEO@wsdot.wa.gov
North Central Region - NCRegionOEO@wsdot.wa.gov
Northwest Region - NWRegionOEO@wsdot.wa.gov
Olympic Region - ORegionOEO@wsdot.wa.gov
South Central Region - SCRegionOEO@wsdot.wa.gov
Southwest Region - SWRegionOEO@wsdot.wa.gov
Washington State Ferries - FerriesOEO@wsdot.wa.gov

**Joint Checking**

A joint check is a check between a Subcontractor and the Contractor to the supplier of materials/supplies. The check is issued by the Contractor as payer to the Subcontractor and the material supplier jointly for items to be incorporated

into the project. The FSBE must release the check to the supplier, while the Contractor acts solely as the guarantor.

A joint check agreement must be approved by the Engineer and requested by the FSBE involved using the DBE Joint Check Request Form (form # 272-053) prior to its use. The form must accompany the FSBE Joint Check Agreement between the parties involved, including the conditions of the arrangement and expected use of the joint checks.

The approval to use joint checks and the use will be closely monitored by the Engineer. To receive FSBE credit for performing a CUF with respect to obtaining materials and supplies, a FSBE must "be responsible for negotiating price, determining quality and quantity, ordering the material, installing and paying for the material itself." The Contractor shall submit DBE Joint Check Request Form for the Engineer approval prior to using a joint check.

Material costs paid by the Contractor directly to the material supplier are not allowed. If proper procedures are not followed or the Engineer determines that the arrangement results in lack of independence for the FSBE involved, no FSBE credit will be given for the FSBE's participation as it relates to the material cost.

**Prompt Payment**

Prompt payment to all subcontractors shall be in accordance with Section 1-08.1. Prompt payment requirements apply to progress payments as well as return of retainage.

**Subcontracts**

Prior to a FSBE performing Work on the Contract, an executed subcontract between the FSBE and the Contractor shall be submitted to the Engineer. The executed subcontracts shall be submitted by email to the following email address for the region administering the Contract:

Eastern Region – ERegionOEO@wsdot.wa.gov
North Central Region – NCRegionOEO@wsdot.wa.gov
Northwest Region – NWRegionOEO@wsdot.wa.gov
Olympic Region – ORegionOEO@wsdot.wa.gov
South Central Region – SCRegionOEO@wsdot.wa.gov
Southwest Region – SWRegionOEO@wsdot.wa.gov
Washington State Ferries – FerriesOEO@wsdot.wa.gov

**Reporting**

The Contractor and all subcontractors/suppliers/service providers that utilize FSBEs to perform work on the project, shall maintain appropriate records that will enable the Engineer to verify FSBE participation throughout the life of the project.

Refer to Section 1-08.1 for additional reporting requirements associated with this contract.

**Decertification**

When a FSBE is "decertified" from the FSBE program during the course of the Contract, the participation of that FSBE shall continue to count as FSBE participation as long as the subcontract with the FSBE was executed prior to the decertification notice. The Contractor is obligated to substitute when a FSBE does not have an executed subcontract agreement at the time of decertification.

**Sanctions**

If it is determined that the Contractor's failure to meet all or part of the FSBE Goal is due to the Contractor's inadequate good faith efforts throughout the life of the Contract, including failure to submit timely, required Good Faith Efforts information and documentation, the Contractor may be required to pay FSBE penalty equal to the amount of the unmet Goal, in addition to the sanctions outlined in Section 1-07.11(5).

**Payment**

Compensation for all costs involved with complying with the conditions of this Specification and any other associated FSBE requirements is included in payment for the associated Contract items of Work, except otherwise provided in the Specifications.

1-07.11.OPT8.FR1

***(June 1, 2017)***

***Disadvantaged Business Enterprise Participation***

The Disadvantaged Business Enterprise (DBE) requirements of 49 CFR Part 26 and USDOT's official interpretations (i.e., Questions & Answers) apply to this Contract. Demonstrating compliance with these Specifications is a Condition of Award (COA) of this Contract. Failure to comply with the requirements of this Specification may result in your Bid being found to be nonresponsive resulting in rejection or other sanctions as provided by Contract.

**DBE Abbreviations and Definitions**

**Broker** – A business firm that provides a bona fide service, such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for the performance of the Contract; or, persons/companies who arrange or expedite transactions.

**Certified Business Description** – Specific descriptions of work the DBE is certified to perform, as identified in the Certified Firm Directory, under the Vendor Information page.

**Certified Firm Directory** – A database of all Minority, Women, and Disadvantaged Business Enterprises currently certified by Washington State. The on-line Directory is available to Contractors for their use in identifying and soliciting interest from DBE firms. The database is located under the Firm Certification section of the Diversity Management and Compliance System web page (https://wsdot.diversitycompliance.com).

**Commercially Useful Function (CUF)**

49 CFR 26.55(c)(1) defines commercially useful function as: "*A DBE performs a commercially useful function when it is responsible for execution of the work of*

*the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, you must evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.*"

**Contract** – For this provision only, this definition supplements Section 1-01.3. 49 CFR 26.5 defines contract as: "… a legally binding relationship obligating a seller to furnish supplies or services (including, but not limited to, construction and professional services) and the buyer to pay for them. For purposes of this part, a lease is considered to be a contract."

**Disadvantaged Business Enterprise (DBE)** – A business firm certified by the Washington State Office of Minority and Women's Business Enterprises, as meeting the criteria outlined in 49 CFR 26 regarding DBE certification.

**DBE Commitment** – The dollar amount the Contractor indicates they will be subcontracting to be applied towards the DBE Condition of Award Goal as shown on the DBE Utilization Certification Form for each DBE Subcontractor. This DBE Commitment amount will be incorporated into the Contract and shall be considered a Contract requirement. Any changes to the DBE Commitment shall require Engineer's approval.

**DBE Condition of Award (COA) Goal** – An assigned numerical percentage of the Bid amount of the Contract. This is the minimum amount that the Bidder must commit to by submission of the Utilization Certification Form and/or by Good Faith Effort (GFE). The DBE COA Goal will also be applied to change orders associated with this Contract.

**Force Account Work** – Work measured and paid in accordance with Section 1-09.6.

**Good Faith Efforts** – Efforts to achieve the DBE COA Goal or other requirements of this part which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

**Manufacturer (DBE)** – A DBE firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract. A DBE Manufacturer shall produce finished goods or products from raw or unfinished material or purchase and substantially alters goods and materials to make them suitable for construction use before reselling them.

**Regular Dealer (DBE)** – A DBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of a Contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a Regular Dealer, the DBE

firm must be an established regular business that engages in as its principal business and in its own name the purchase and sale of the products in question. A Regular Dealer in such items as steel, cement, gravel, stone, and petroleum products need not own, operate or maintain a place of business if it both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by long-term formal lease agreements and not on an ad-hoc basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as Regular Dealers within the meaning of this definition.

**DBE COA Goal**

The Contracting Agency has established a COA Contract Goal in the amount of: *** $$1$$ ***

**DBE Eligibility/Selection of DBEs**

In order to determine the distinct element(s) of work for which a DBE is certified, Contractors should refer to the Certified Business Description. The Contractor shall not use NAICS codes on the DBE Utilization Certification.

**Crediting DBE Participation**

Subcontractors proposed as COA must be certified prior to the due date for bids on the Contract. All non-COA DBE Subcontractors shall be certified before the subcontract on which they are participating is executed.

Be advised that although a firm is listed in the Certified Firm Directory, there are cases where the listed firm is in a temporary suspension status. The Contractor shall review the OMWBE Suspended DBE Firms list. A DBE firm that is included on this list may not enter into new contracts that count towards participation.
DBE participation cannot be counted toward the Contractor's contract goal until the amount being counted has actually been paid to the DBE including return of retainage.

In all cases the DBE must be certified in advance for the work being considered and performing a CUF during the execution of the Work. The following are some examples of what may be counted as DBE participation.

**DBE Prime Contractor**

Only take credit for that portion of the total dollar value of the Contract equal to the distinct, clearly defined portion of the Work that the DBE Prime Contractor performs with its own forces and is credited to perform.

**DBE Subcontractor**

Only take credit for that portion of the total dollar value of the subcontract that is equal to the distinct, clearly defined portion of the Work that the DBE performs with its own forces. The value of work performed by the DBE includes the cost of supplies and materials purchased by the DBE and equipment leased by the DBE, for its work on the contract. Supplies, materials or equipment obtained by a DBE that are not utilized or incorporated in the contract work by the DBE will not be eligible for DBE credit unless the DBE is certified as a supplier or equipment leasing company.

The supplies, materials, and equipment purchased or leased from the Contractor or its affiliate, including any Contractor's resources available to DBE subcontractors at no cost, shall not be credited.

DBE credit will not be given in instances where the equipment lease includes the operator. The DBE is expected to operate the equipment used in the performance of its work under the contract with its own forces. Situations where equipment is leased and used by the DBE, but payment is deducted from the Contractor's payment to the DBE is not allowed.

If a DBE subcontracts a portion of the Work of its contract to another firm, the value of the subcontracted Work may be counted toward the DBE COA Goal only if the DBE's Lower-Tier Subcontractor is also a DBE. Work subcontracted to a non-DBE does not count towards the DBE COA Goal.

**DBE Subcontract and Lower Tier Subcontract Documents**

There must be a subcontract agreement that complies with 49 CFR Part 26 and fully describes the distinct elements of Work committed to be performed by the DBE. The subcontract agreement shall incorporate requirements of the primary Contract. Subcontract agreements of all tiers, including lease agreements shall be readily available at the project site for the Engineer's review.

**DBE Service Provider**

The value of fees or commissions charged by a DBE Broker, a DBE behaving in a manner of a Broker, or another service provider for providing a bona fide service, such as professional, technical, consultant, managerial services, or for providing bonds or insurance specifically required for the performance of the contract will only be credited towards meeting the DBE COA Goal if the fee/commission is determined by the Contracting Agency to be reasonable and the firm has performed a CUF. Documentation will be required to support the fee/commission charged by the DBE.

**Force Account Work**

When the Contractor elects to utilize force account Work to meet the DBE COA Goal, as demonstrated by listing this force account Work on the DBE Utilization Certification Form, for the purposes of meeting DBE COA Goal, only 50% of the Proposal amount shall be credited toward the Contractors Commitment to meet the DBE COA Goal.

One hundred percent of the actual amounts paid to the DBE for the force account Work shall be credited towards DBE COA Goal or DBE participation.

**Temporary Traffic Control**

If the DBE firm is being utilized in the capacity of only "Flagging", the DBE firm must provide a Traffic Control Supervisor (TCS) and flagger, which are under the direct control of the DBE. The DBE firm shall also provide all flagging equipment (e.g. paddles, hard hats, and vests).

If the DBE firm is being utilized in the capacity of "Traffic Control Services", the DBE firm must provide a TCS, flaggers, and traffic control items (e.g., cones, barrels, signs, etc.) and be in total control of all items in implementing the traffic control for the project. In addition if the DBE firm utilizes the Contractor's

equipment, such as Transportable Attenuators and Portable Changeable Message Signs (PCMS) no DBE credit can be taken for supplying and operating the items.

**Trucking**

DBE trucking firm participation may only be credited to the DBE COA Goal for the value of the hauling services, not for the materials being hauled unless the trucking firm is also certified as a supplier. In situations where the DBE's work is priced per ton, the value of the hauling service must be calculated separately from the value of the materials in order to determine DBE credit for hauling.

The DBE trucking firm must own and operate at least one licensed, insured and operational truck on the contract. The truck must be of the type that is necessary to perform the hauling duties required under the contract. The DBE receives credit for the value of the transportation services it provides on the Contract using trucks it owns or leases, licenses, insures, and operates with drivers it employs.

The DBE may lease additional trucks from another DBE firm.

The trucking Work subcontracted to any non-DBE trucking firm will not receive credit for Work done on the project. The DBE may lease trucks from a non-DBE truck leasing company, but can only receive credit towards DBE participation if the DBE uses its own employees as drivers.

DBE credit for a truck broker is limited to the fee/commission that the DBE receives for arranging transportation services.

Truck registration and lease agreements shall be readily available at the project site for the Engineer review.

**DBE Manufacturer and DBE Regular Dealer**

One hundred percent (100%) of the cost of the manufactured product obtained from a DBE manufacturer may count toward the DBE COA Goal. The DBE Manufacturer shall be certified as such by OMWBE.

Sixty percent (60%) of the cost of materials or supplies purchased from a DBE Regular Dealer may be credited toward meeting the DBE COA Goal. If the role of the DBE Regular Dealer is determined to be that of a pass-through, then no DBE credit will be given for its services. If the role of the DBE Regular Dealer is determined to be that of a Broker, then DBE credit shall be limited to the fee or commission it receives for its services. Regular Dealer status and the amount of credit is determined on a Contract-by-Contract basis.

Regular Dealer DBE firms must be approved before being used on a project. The WSDOT Approved Regular Dealer list published on WSDOT's Office of Equal Opportunity (OEO) web site must include the specific project for which approval is being requested. For purposes of the DBE COA Goal participation, the Regular Dealer must submit the Regular Dealer Status Request form a minimum of five days prior to bid opening.

Purchase of materials or supplies from a DBE which is neither a manufacturer nor a regular dealer, (i.e. Broker) only the fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, can count toward DBE COA Goal, provided the fees are not excessive as compared with fees customarily allowed for similar services. Documentation will be required to support the fee/commission charged by the DBE. The cost of the materials and supplies themselves cannot be counted toward DBE COA Goal.

Note: Requests to be listed as a Regular Dealer will only be processed if the requesting firm is a material supplier certified by the Office of Minority and Women's Business Enterprises in a NAICS code that falls within the 42XXXX NAICS Wholesale code section.

**Disadvantaged Business Enterprise Utilization**

To be eligible for award of the Contract, the Bidder shall properly complete and submit a Disadvantaged Business Enterprise Utilization Certification with the Bidder's sealed Bid Proposal, as specified in Section 1-02.9 Delivery of Proposal. The Bidder's Disadvantaged Business Enterprise Utilization Certification must clearly demonstrate how the Bidder intends to meet the DBE COA Goal. A Disadvantaged Business Enterprise Utilization Certification (WSDOT Form 272-056) is included in your Proposal package for this purpose as well as instructions on how to properly fill out the form.

The Bidder is advised that the items listed below when listed in the Utilization Certification must have their amounts reduced to the percentages shown and those reduced amounts will be the amount applied towards meeting the DBE COA Goal.

- Force account at 50%
- Regular dealer at 60%

In the event of arithmetic errors in completing the Disadvantaged Business Enterprise Utilization Certification the amount listed to be applied towards the DBE COA Goal for each DBE shall govern and the DBE total amount shall be adjusted accordingly.

Note: The Contracting Agency shall consider as non-responsive and shall reject any Bid Proposal submitted that does not contain a Disadvantaged Business Enterprise Utilization Certification Form that accurately demonstrates how the Bidder intends to meet the DBE COA Goal.

**Disadvantaged Business Enterprise Written Confirmation Document(s)**

The Bidder shall submit a Disadvantaged Business Enterprise Written Confirmation Document (completed and signed by the DBE) for each DBE firm listed in the Bidder's completed Disadvantaged Business Enterprise Utilization Certification submitted with the Bid. Failure to do so will result in the associated participation being disallowed, which may cause the Bid to be determined to be nonresponsive resulting in Bid rejection.

The Confirmation Documents provide confirmation from the DBEs that they are participating in the Contract as provided in the Contractor's Commitment. The Confirmation Documents must be consistent with the Utilization Certification.

A Disadvantaged Business Enterprise Written Confirmation Document (form No. 422-031) is included in your Proposal package for this purpose.

The form(s) shall be received as specified in the special provisions for Section 1-02.9 Delivery of Proposal.

It is prohibited for the Bidder to require a DBE to submit a Written Confirmation Document with any part of the form left blank. Should the Contracting Agency determine that an incomplete Written Confirmation Document was signed by a DBE, the validity of the document comes into question. The associated DBE participation may not receive credit.

**Selection of Successful Bidder/Good Faith Efforts (GFE)**

The successful Bidder shall be selected on the basis of having submitted the lowest responsive Bid, which demonstrates a good faith effort to achieve the DBE COA Goal. The Contracting Agency, at any time during the selection process, may request a breakdown of the bid items and amounts that are counted towards the overall contract goal for any of the DBEs listed on the DBE Utilization Certification.

Achieving the DBE COA Goal may be accomplished in one of two ways:

1. <u>By meeting the DBE COA Goal</u>
   Submission of the DBE Utilization Certification and supporting DBE Written Confirmation Document(s) showing the Bidder has obtained enough DBE participation to meet or exceed the DBE COA Goal.

2. <u>By documentation that the Bidder made adequate GFE to meet the DBE COA Goal</u>
   The Bidder may demonstrate a GFE in whole or part through GFE documentation ONLY IN THE EVENT a Bidder's efforts to solicit sufficient DBE participation have been unsuccessful. The Bidder must supply GFE documentation in addition to the Disadvantaged Business Enterprise Utilization Certification, and supporting Disadvantaged Business Enterprise (DBE) Written Confirmation Document(s).

Note: In the case where the Bidder was awarded the contract based on demonstrating adequate GFE the advertised DBE COA Goal will not be reduced. The Bidder shall demonstrate a GFE during the life of the Contract to attain the advertised DBE COA Goal.

GFE documentation shall be received, as specified in the special provisions for Section 1-02.9 Delivery of Proposal.

The Contracting Agency will review the GFE documentation and will determine if the Bidder made an adequate good faith effort.

**Good Faith Effort (GFE) Documentation**

GFE is evaluated when:

1. Determining award of a Contract that has COA goal,

2. When a COA DBE is terminated and substitution is required, and

3. Prior to Physical Completion when determining whether the Contractor has satisfied its DBE commitments.

49 CFR Part 26, Appendix A is intended as general guidance and does not, in itself, demonstrate adequate good faith efforts. The following is a list of types of actions, which would be considered as part of the Bidder's GFE to achieve DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

1. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the Work of the Contract. The Bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The Bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

2. Selecting portions of the Work to be performed by DBEs in order to increase the likelihood that the DBE COA Goal will be achieved. This includes, where appropriate, breaking out contract Work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these Work items with its own forces.

3. Providing interested DBEs with adequate information about the Plans, Specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation.

    a. Negotiating in good faith with interested DBEs. It is the Bidder's responsibility to make a portion of the Work available to DBE subcontractors and suppliers and to select those portions of the Work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the Plans and Specifications for the Work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the Work.

    b. A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as the DBE COA Goal into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a Bidder's failure to meet the DBE COA Goal, as long as such costs are reasonable. Also, the ability or desire of a Contractor to perform the Work of a Contract with its own organization does not relieve the Bidder of the responsibility to make

Good Faith Efforts. Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

4. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the Contractor's efforts to meet the DBE COA Goal.

5. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

6. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

7. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

8. Documentation of GFE must include copies of each DBE and non-DBE subcontractor quotes submitted to the Bidder when a non-DBE subcontractor is selected over a DBE for Work on the Contract. (ref. updated DBE regulations – 26.53(b)(2)(vi) & App. A)

**Administrative Reconsideration of GFE Documentation**

Any Bidder has the right to reconsideration but only for the purpose of reassessing the GFE documentation that was originally submitted with their Bid, and determined to be inadequate.

- The Bidder must request within 48 hours of notification of being nonresponsive or forfeit the right to reconsideration.

- The reconsideration decision on the adequacy of the Bidder's GFE documentation shall be made by an official who did not take part in the original determination.

- Only original GFE documentation submitted as a supplement to the Bid shall be considered. The Bidder shall not introduce new documentation at the reconsideration hearing.

- The Bidder shall have the opportunity to meet in person with the official for the purpose of setting forth the Bidder's position as to why the GFE documentation demonstrates a sufficient effort.

- The reconsideration official shall provide the Bidder with a written decision on reconsideration within five working days of the hearing explaining the basis for their finding.

**Procedures between Award and Execution**

After Award and prior to Execution, the Contractor shall provide the additional information described below. Failure to comply shall result in the forfeiture of the Bidder's Proposal bond or deposit.

1. A DBE Bid Item Breakdown is required which shall contain the following information for all DBEs as shown on the Disadvantaged Business Enterprise Utilization Certification:

    a. Correct business name, federal employee identification number (if available), and mailing address.

    b. List of all Bid items assigned to each DBE with a clear description of Work to be performed for each Bid item and the dollar value of the Work to be performed by the DBE.

    c. Description of partial items (if any) to be sublet to each DBE specifying the Work committed under each item to be performed and including the dollar value of the DBE portion.

    d. Total amounts shown for each DBE shall match the amount shown on the Disadvantaged Business Enterprise Utilization Certification. A DBE Bid Item Breakdown that does not conform to the Disadvantaged Business Enterprise Utilization Certification or that demonstrates a different amount of DBE participation than that included in the Disadvantaged Business Enterprise Utilization Certification will be returned for correction.

2. A list of all firms who submitted a bid or quote in attempt to participate in this project whether they were successful or not. Include the business name and mailing address.

Note: The firms identified by the Contractor may be contacted by the Contracting Agency to solicit general information as follows: age of the firm and average of its gross annual receipts over the past three-years.

**Procedures after Execution**

**Commercially Useful Function (CUF)**

The Contractor may only take credit for the payments made for Work performed by a DBE that is determined to be performing a CUF. Payment must be commensurate with the work actually performed by the DBE. This applies to all DBEs performing Work on a project, whether or not the DBEs are COA, if the Contractor wants to receive credit for their participation. The Engineer will conduct CUF reviews to ascertain whether DBEs are performing a CUF. A DBE performs a CUF when it is carrying out its responsibilities of its contract by actually performing, managing, and supervising the Work involved. The DBE must be responsible for negotiating price; determining quality and quantity; ordering the material, installing (where applicable); and paying for the material itself. If a DBE does not perform "all" of these functions on a furnish-and-install contract, it has not performed a CUF and the cost of materials cannot be counted toward DBE COA Goal. Leasing of equipment from a leasing company is

allowed. However, leasing/purchasing equipment from the Contractor is not allowed. Lease agreements shall be readily available for review by the Engineer.

In order for a DBE traffic control company to be considered to be performing a CUF, the DBE must be in control of its work inclusive of supervision. The DBE shall employ a Traffic Control Supervisor who is directly involved in the management and supervision of the traffic control employees and services.

The DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which the funds are passed in order to obtain the appearance of DBE participation.

The following are some of the factors that the Engineer will use in determining whether a DBE trucking company is performing a CUF:

- The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on the contract. The owner demonstrates business related knowledge, shows up on site and is determined to be actively running the business.

- The DBE shall with its own workforce, operate at least one fully licensed, insured, and operational truck used on the Contract. The drivers of the trucks owned and leased by the DBE must be exclusively employed by the DBE and reflected on the DBE's payroll.

- Lease agreements for trucks shall indicate that the DBE has exclusive use of and control over the truck(s). This does not preclude the leased truck from working for others provided it is with the consent of the DBE and the lease provides the DBE absolute priority for use of the leased truck.

- Leased trucks shall display the name and identification number of the DBE.

**DBE Utilization Plan**

The DBE Bid Item Breakdown is the initial plan for Bid Item work committed to DBE firms. When a Contractor identifies a change in the plan, an update shall be submitted within 7 calendar days between Execution and Physical Completion. Plan updates shall not make changes to the Commitment or the DBE Utilization Certification.

**Joint Checking**

A joint check is a check between a Subcontractor and the Contractor to the supplier of materials/supplies. The check is issued by the Contractor as payer to the Subcontractor and the material supplier jointly for items to be incorporated into the project. The DBE must release the check to the supplier, while the Contractor acts solely as the guarantor.

A joint check agreement must be approved by the Engineer and requested by the DBE involved using the DBE Joint Check Request Form (form # 272-053) prior to its use. The form must accompany the DBE Joint Check Agreement

between the parties involved, including the conditions of the arrangement and expected use of the joint checks.

The approval to use joint checks and the use will be closely monitored by the Engineer. To receive DBE credit for performing a CUF with respect to obtaining materials and supplies, a DBE must "be responsible for negotiating price, determining quality and quantity, ordering the material, installing and paying for the material itself." The Contractor shall submit DBE Joint Check Request Form for the Engineer approval prior to using a joint check.

Material costs paid by the Contractor directly to the material supplier are not allowed. If proper procedures are not followed or the Engineer determines that the arrangement results in lack of independence for the DBE involved, no DBE credit will be given for the DBE's participation as it relates to the material cost.

**Prompt Payment**

Prompt payment to all subcontractors shall be in accordance with Section 1-08.1. Prompt payment requirements apply to progress payments as well as return of retainage.

**Reporting**

The Contractor and all subcontractors/suppliers/service providers that utilize DBEs to perform work on the project, shall maintain appropriate records that will enable the Engineer to verify DBE participation throughout the life of the project.

Refer to Section 1-08.1 for additional reporting requirements associated with this contract.

**Changes in COA Work Committed to DBE**

The Contractor shall utilize the COA DBEs to perform the work and supply the materials for which each is committed unless a change is approved by the Engineer. The Contractor shall not be entitled to any payment for work or material completed by the Contractor or subcontractors that was committed to be completed by the COA DBEs.

**Owner Initiated Changes**

Where the Engineer makes changes that result in changes to Work that was committed to a COA DBE. The Contractor may be directed to substitute for the Work in such instances.

**Contractor Initiated Changes**

The Contractor cannot reduce the amount of work committed to a COA DBE without good cause. Reducing DBE Commitment is viewed as partial DBE termination, and therefore subject to the termination procedures below.

**Original Quantity Underruns**

In the event that Work committed to a DBE firm as part of the COA underruns the original planned quantities the Contractor may be required to substitute the remaining applicable Work to another DBE.

**Contractor Proposed DBE Substitutions**

Requests to substitute a COA DBE must be for good cause (see DBE termination process below), and requires prior written approval of the Engineer. After receiving a termination with good cause approval, the Contractor may only replace a DBE with another certified DBE. When any changes between Contract Award and Execution result in a substitution of COA DBE, the substitute DBE shall be certified prior to the bid opening on the Contract.

**DBE Termination**

Termination of a COA DBE (or an approved substitute DBE) is only allowed in whole or in part with prior written approval of the Engineer. If the Contractor terminates a COA DBE without the written approval of the Engineer, the Contractor shall not be entitled to credit towards the DBE COA Goal for any payment for work or material performed/supplied by the COA DBE. In addition sanctions may apply as described elsewhere in this specification.

The Contractor must have good cause to terminate a COA DBE.

Good cause typically includes situations where the DBE Subcontractor is unable or unwilling to perform the work of its subcontract. Good cause may exist if:

- The DBE fails or refuses to execute a written contract.
- The DBE fails or refuses to perform the Work of its subcontract in a way consistent with normal industry standards.
- The DBE fails or refuses to meet the Contractor's reasonable nondiscriminatory bond requirements.
- The DBE becomes bankrupt, insolvent, or exhibits credit unworthiness.
- The DBE is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to federal law or applicable State law.
- The DBE voluntarily withdraws from the project, and provides written notice of its withdrawal.
- The DBE's work is deemed unsatisfactory by the Engineer and not in compliance with the Contract.
- The DBE's owner dies or becomes disabled with the result that the DBE is unable to complete its Work on the Contract.

Good cause does not exist if:

- The Contractor seeks to terminate a COA DBE so that the Contractor can self-perform the Work.

- The Contractor seeks to terminate a COA DBE so the Contractor can substitute another DBE contractor or non-DBE contractor after Contract Award.

- The failure or refusal of the COA DBE to perform its Work on the subcontract results from the bad faith or discriminatory action of the Contractor (e.g., the failure of the Contractor to make timely payments or the unnecessary placing of obstacles in the path of the DBE's Work).

Prior to requesting termination, the Contractor shall give notice in writing to the DBE with a copy to the Engineer of its intent to request to terminate DBE Work and the reasons for doing so. The DBE shall have five (5) days to respond to the Contractor's notice. The DBE's response shall either support the termination or advise the Engineer and the Contractor of the reasons it objects to the termination of its subcontract.

When a COA DBE is terminated, or fails to complete its work on the Contract for any reason, the Contractor shall substitute with another DBE or provide documentation of GFE. A plan to achieve the COA DBE Commitment shall be submitted to the Engineer within 2 days of the approval of termination or the Contract shall be suspended until such time the substitution plan is submitted.

**Decertification**

When a DBE is "decertified" from the DBE program during the course of the Contract, the participation of that DBE shall continue to count towards the DBE COA Goal as long as the subcontract with the DBE was executed prior to the decertification notice. The Contractor is obligated to substitute when a DBE does not have an executed subcontract agreement at the time of decertification.

## Consequences of Non-Compliance

### Breach of Contract

Each contract with a Contractor (and each subcontract the Contractor signs with a Subcontractor) must include the following assurance clause:

The Contractor, subrecipient, or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

(1) Withholding monthly progress payments;

(2) Assessing sanctions;

(3) Liquidated damages; and/or

(4) Disqualifying the Contractor from future bidding as non-responsible.

**Notice**

If the Contractor or any Subcontractor, Consultant, Regular Dealer, or service provider is deemed to be in non-compliance, the Contractor will be informed in writing, by certified mail by the Engineer that sanctions will be imposed for failure to meet the DBE COA Commitment and/or submit documentation of good faith efforts. The notice will state the specific sanctions to be imposed which may include impacting a Contractor or other entity's ability to participate in future contracts.

**Sanctions**

If it is determined that the Contractor's failure to meet all or part of the DBE COA Commitment is due to the Contractor's inadequate good faith efforts throughout the life of the Contract, including failure to submit timely, required Good Faith Efforts information and documentation, the Contractor may be required to pay DBE penalty equal to the amount of the unmet Commitment, in addition to the sanctions outlined in Section 1-07.11(5).

**Payment**

Compensation for all costs involved with complying with the conditions of this Specification and any other associated DBE requirements is included in payment for the associated Contract items of Work, except otherwise provided in the Specifications.

1-07.12.GR1

## Federal Agency Inspection

1-07.12.INST1.GR1

Section 1-07.12 is supplemented with the following:

1-07.12.OPT1.GR1

***(January 25, 2016)***

***Required Federal Aid Provisions***

The Required Contract Provisions Federal Aid Construction Contracts (FHWA 1273) Revised May 1, 2012 and the amendments thereto supersede any conflicting provisions of the Standard Specifications and are made a part of this Contract; provided, however, that if any of the provisions of FHWA 1273, as amended, are less restrictive than Washington State Law, then the Washington State Law shall prevail.

The provisions of FHWA 1273, as amended, included in this Contract require that the Contractor insert the FHWA 1273 and amendments thereto in each Subcontract, together with the wage rates which are part of the FHWA 1273, as amended. Also, a clause shall be included in each Subcontract requiring the Subcontractors to insert the FHWA 1273 and amendments thereto in any lower tier Subcontracts, together with the wage rates. The Contractor shall also ensure that this section, REQUIRED FEDERAL AID PROVISIONS, is inserted in each Subcontract for Subcontractors and lower tier Subcontractors. For this purpose, upon request to the Engineer, the Contractor will be provided with extra copies of the FHWA 1273, the amendments thereto, the applicable wage rates, and this Special Provision.

1-07.12.OPT2.FR1

***(August 1, 2011)***

***Indian Preference and Tribal Ordinances***

This project is located on the *** $$1$$ ***. It is the Contractor's responsibility to contact the person and/or office listed in this special provision to determine whether any tribal laws or taxes apply. If the tribal laws and taxes do apply, the Contractor shall comply with them in accordance with Section 1-07.1. For informational purposes only, the Work on this project that falls within Tribal Lands is shown on the Summary of Quantities in Group(s) *** $$2$$ ***.

Tribal Employment Rights Ordinances (TEROs), may utilize a variety of tools to encourage Indian employment. These tools may include, but are not limited to, TERO fees, Indian hiring preference, Indian-owned business subcontracting preference and/or an Indian training requirement. Other requirements may be a Tribal business license, a required compliance plan and/or employee registration requirements. Every tribe is different and each may be willing to work cooperatively with the Contractor to develop a strategy that works for both parties. For specific details, the Contractor should contact *** $$3$$ ***.

The state recognizes the sovereign authority of the tribe and supports the tribe's efforts to enforce its rightful and legal ordinances and expects the Contractor to comply and cooperate with the tribe. The costs related to such compliance shall be borne solely by the Contractor, who is advised to contact the tribal representative listed above, prior to submitting a bid, to assess the impact of compliance on the project.

Although Indian preference cannot be compelled or mandated by the Contracting Agency, there is no limitation whereby voluntary Contractor or Subcontractor initiated preferences are given, if otherwise lawful. 41 CFR 60-1.5(a)7 provides as follows:

> Work on or near Indian reservations --- It shall not be a violation of the equal opportunity clause for a construction or non-construction Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation in connection with employment opportunities on or near an Indian reservation. The use of the word *near* would include all that area where a person seeking employment could reasonably be expected to commute to and from in the course of a work day. Contractors or Subcontractors extending such a preference shall not, however, discriminate among Indians on the basis of religion, sex, or tribal affiliation, and the use of such a preference shall not excuse a Contractor from complying with the other requirements as contained in the August 25, 1981 Department of Labor, Office of Federal Contract Compliance Programs, Government Contractors Affirmative Actions Requirements.

1-07.13.GR1

## Contractor's Responsibility for Work

1-07.13(4).GR1

***Repair of Damage***

1-07.13(4).INST1.GR1

Section 1-07.13(4) is revised to read:

1-07.13(4).OPT1.GR1

(August 6, 2001)

The Contractor shall promptly repair all damage to either temporary or permanent work as directed by the Engineer. For damage qualifying for relief under Sections 1-07.13(1), 1-07.13(2) or 1-07.13(3), payment will be made in accordance with Section 1-04.4. Payment will be limited to repair of damaged work only. No payment will be made for delay or disruption of work.

1-07.16.GR1

## Protection and Restoration of Property

1-07.16(2).GR1

### *Vegetation Protection and Restoration*

1-07.16(2).INST1.GR1

Section 1-07.16(2) is supplemented with the following:

1-07.16(2).OPT1.GR1

(August 2, 2010)

Vegetation and soil protection zones for trees shall extend out from the trunk to a distance of 1 foot radius for each inch of trunk diameter at breast height.

Vegetation and soil protection zones for shrubs shall extend out from the stems at ground level to twice the radius of the shrub.

Vegetation and soil protection zones for herbaceous vegetation shall extend to encompass the diameter of the plant as measured from the outer edge of the plant.

1-07.16(4).GR1

### *Archaeological and Historical Objects*

1-07.16(4).INST1.GR1

Section 1-07.16(4) is supplemented with the following:

1-07.16(4).OPT1.GR1

(December 6, 2004)

The project area potentially contains archaeological or historical objects that may have significance from a historical or scientific standpoint. To protect these objects from damage or destruction, the Contracting Agency, at its discretion and expense, may monitor the Contractor's operations, conduct various site testing and perform recovery and removal of such objects when necessary.

The Contractor may be required to conduct its operations in a manner that will accommodate such activities, including the reserving of portions of the work area for site testing, exploratory operations and recovery and removal of such objects as directed by the Engineer. If such activities are performed by consultants retained by the Contracting Agency, the Contractor shall provide them adequate access to the project site.

Added work necessary to uncover, fence, dewater, or otherwise protect or assist in such testing, exploratory operations and salvaging of the objects as ordered by the Engineer shall be paid by force account as provided in Section 1-09.6. If the

discovery and salvaging activities require the Engineer to suspend the Contractor's work, any adjustment in time will be determined by the Engineer pursuant to Section 1-08.8.

To provide a common basis for all bidders, the Contracting Agency has entered an amount for the item "Archaeological and Historical Salvage" in the Proposal to become a part of the total bid by the Contractor.

1-07.17.GR1

## Utilities and Similar Facilities

1-07.17.INST1.GR1

Section 1-07.17 is supplemented with the following:

1-07.17.OPT1.FR1

(April 2, 2007)

Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification.

The following addresses and telephone numbers of utility companies known or suspected of having facilities within the project limits are supplied for the Contractor's convenience:

*** $$1$$ ***

1-07.17.OPT2.FR1

(April 2, 2007)

Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification.

Public and private utilities, or their Contractors, will furnish all work necessary to adjust, relocate, replace, or construct their facilities unless otherwise provided for in the Plans or these Special Provisions. Such adjustment, relocation, replacement, or construction will be done during the prosecution of the work for this project. It is anticipated that utility adjustment, relocation, replacement or construction within the project limits will be completed as follows:

*** $$1$$ ***

The Contractor shall attend a mandatory utility preconstruction meeting with the Engineer, all affected Subcontractors, and all utility owners and their Contractors prior to beginning onsite work.

The following addresses and telephone numbers of utility companies or their Contractors that will be adjusting, relocating, replacing or constructing utilities within the project limits are supplied for the Contractor's use:

*** $$2$$ ***

*** $$3$$ ***

1-07.18.GR1

## Public Liability and Property Damage Insurance

1-07.18.INST1.GR1

Item No. 1 of the first paragraph of Section 1-07.18 is revised to read:

1-07.18.OPT1.FR1

(January 3, 2011)

1. Owners and Contractors Protective (OCP) Insurance providing bodily injury and property damage liability coverage, with limits of *** $$1$$ *** per occurrence and per project in the aggregate for each policy period, written on Insurance Services Office (ISO) form CG0009 1204, together with Washington State Department of Transportation amendatory endorsement CG 2908 1195, specifying the Contracting Agency, the State, the Governor, the Commission, the Secretary, the Department and all officers and employees of the State as named insured.

1-07.18.OPT2.GR1

(January 5, 2004)

Item number 1 in the first paragraph of Section 1-07.18 is deleted.

1-07.18.INST2.GR1

Item No. 2 of the first paragraph of Section 1-07.18 is revised to read:

1-07.18.OPT6.GR1

(January 3, 2011)

2. Commercial General Liability (CGL) Insurance written under ISO Form CG0001 or its equivalent with minimum limits of $1,000,000 per occurrence and in the aggregate for each one year policy period. Products and completed operations coverage shall be provided for a period of three years following Substantial Completion of the work.

1-07.18.OPT7.FR1

(April 1, 2013)

2. Commercial General Liability (CGL) Insurance written under ISO Form CG0001 or its equivalent, with minimum limits of *** $$1$$ *** per occurrence and in the aggregate for each 1-year policy period. This coverage may be any combination of primary, umbrella, or excess liability coverage affording total liability limits of not less than *** $$2$$ *** per occurrence and in the aggregate. Products and completed operations coverage shall be provided for a period of 3 years following Substantial Completion of the Work.

1-07.18.INST4.GR1

Section 1-07.18 is supplemented with the following:

1-07.18.OPT11.GR1

***(January 3, 2011)***

***Builder's Risk Insurance***

Builder's Risk Insurance providing Broad Perils (All Risk) coverage upon any work at the site, to the full insurable value thereof. This insurance shall include the Contractor, its Subcontractors of every tier, and the State of Washington as named insured on the policy. Coverage shall be included for all materials and supplies to be incorporated into the work at the jobsite, while in transit to the jobsite, or while stored away from the jobsite.

1-07.18.OPT14.FR1

(January 7, 2013)

The Contractor shall obtain Contractor's Pollution Liability Insurance (CPL) with minimum "per project" limits of *** $$1$$ *** per occurrence and in the aggregate for claims, including investigation, defense, or settlement costs and expenses for bodily injury and property damage (including natural resources damages and loss of use of tangible property that has not been physically injured) arising out of:

a. Pollution conditions caused or made worse by the Contractor's performance of the Work, including clean-up costs for a newly caused condition or a historical condition that is made worse; and;

b. The vicarious liability of Subcontractors of any tier.

The Contractor shall be Named Insured and the Contracting Agency, the State, the Governor, the Commission, the Secretary, the Department, all officers and employees of the State, and their respective members, directors, officers, employees, agents, and consultants (collectively the "Additional Insureds") shall be included as Additional Insureds, or, as appropriate, a Named Insured, under this policy and coverage.

1-07.18.OPT16.FR1

**(September 8, 2020)**

***Relations With Railroad***

The term Railroad Company, as used in these specifications shall be applicable to each of the following railroad companies:

*** $$1$$ ***

**Protection of Railroad Property**

The Contractor shall exercise care in all operations and shall, at the Contractor's expense, protect the property of the Railroad Company and the Company's appurtenances, property in its custody, or persons lawfully upon its right of way, from damage, destruction, interference or injury caused by the Contractor's operations. The Contractor shall prosecute the work to not interfere with the Railroad Company or its appurtenances, or any of the Railroad Company's trains or facilities, and shall complete the work to a condition that shall not interfere with or menace the integrity or safe and successful operations of the Railroad Company or its appurtenances, or any of the Railroad Company's trains or facilities.

The Contractor shall not transport equipment, machinery, or materials across the Railroad Company's tracks, except at a public crossing, without the written consent of the Railroad Company.

The Contractor shall keep the right of way and ditches of the Railroad Company open and clean from any deposits or debris resulting from its operations. The Contractor shall be responsible for the cost to clean and restore ballast of the Railroad Company which is disturbed or becomes fouled with dirt or materials when such deposits or damage result from the Contractor's operations, except as provided elsewhere.

The Contractor's work shall be conducted in such a manner that there will be a minimum of interference with the operation of the railroad. For Class 1 Railroads (BNSF and UPRR) the Railroad Company will specify what periods will be available

to the Contractor for executing any part of the work in which the Railroad Company's tracks will be obstructed or made unsafe for operation of the railroad. No interference with Class 1 Railroad Company operations will be permitted between October 1 and December 31. The Railroad Company may change these requirements to be more or less restrictive. Requests for extensions of time due to additional Railroad restrictions shall be in accordance with Section 1-08.8. Additional Railroad restrictions will not be eligible for a cost adjustment.

In the event that an emergency occurs in connection with the work specified, the Railroad Company reserves the right to do any and all work that may be necessary to maintain railroad traffic. If the emergency is caused by the Contractor, the Contractor shall be responsible for all Railroad Company costs associated with the emergency response.

Protective services to protect the Railroad Company's facilities, property, and movement of its trains or engines, including railroad flagging and other devices, may be required by the Railroad Company as a result of the Contractor's operations.

The nature and extent of protective services, personnel and other measures required will in all cases be determined by the Railroad Company. Nothing in these specifications will limit the Railroad Company's right to determine and assign the number of personnel, the classes of personnel for protective services, nor other protective measures it deems necessary.

When, in the opinion of the Railroad Company, the services of flaggers or inspectors are necessary for the protection of the Railroad Company's facilities by reason of the Contractor's operations, the Railroad Company will furnish such flaggers or inspectors as may be required. The Contractor shall notify the Railroad Company a minimum of *** $$2$$ *** in advance of whenever the Contractor is about to perform work within Railroad Company property or within 25 feet of the tracks to enable the Railroad Company to provide flagging or other protective services.

The Railroad Company’s contact to schedule flagging or other protective services is:

*** $$3$$ ***

No act of the Railroad Company in supervising or approving any work shall reduce or in any way affect the liability of the Contractor for damages, expense, or cost which may result to the Railroad Company from the construction of this Contract.

Unless otherwise provided, all personnel assigned by the Railroad Company, other than those engaged in performing work by the Railroad Company as listed under Construction Work by Railroad Company, will be considered protective personnel.

In general, the Railroad Company will furnish protective services whenever any of the Contractor's operations take place within or near railroad right of way and, in the opinion of the Railroad Company's representative, could endanger railroad facilities or create a hazard to railroad operations.

The Railroad Company’s policy for assignment of railroad flaggers requires that the flagging position is established for fixed work days and times. Any railroad flagging

performed outside of these parameters may be subject to overtime costs. The Contractor shall verify with the Railroad Company what categories of railroad flagging constitute overtime work, and obtain prior authorization from the Engineer before coordinating with the Railroad Company for flagging requiring overtime payments.

The Contractor shall submit to the Railroad Company and the Engineer, in writing, an itinerary of work within the Railroad Company's right of way or otherwise requiring a Railroad Company flagger for the following week. If such work spans multiple weeks, the itinerary shall be provided in advance of each work week.

There will be no cost to the Contractor for the railroad protective services, unless:

- Such services result from the Contractor's failure to comply with the terms and conditions of its contract with the Contracting Agency or with its Contractor's Right of Entry Agreements with the Railroad Company.

- The Contractor fails to obtain authorization from the Engineer prior to coordinating with the Railroad Company for any flagging requiring overtime payments.

- The Contractor arranges for assignment of a railroad flagger and alters Project work so that a flagger is no longer needed, and adequate advance notice is not provided to the Railroad Company of such change in the need for a flagger (*i.e.* causing the Railroad Company to dispatch a flagger billable to the Project when one is not required).

- The Contractor causes an emergency, as discussed above.

**Construction Work by Railroad Company**

The work by the Railroad Company as described below will be performed by the Railroad Company with its own forces at no cost to the Contractor:

*** $$4$$ ***

All work which is performed by the Railroad Company at the Contractor's request and which is for the Contractor's benefit or convenience shall be at the Contractor's expense and the Contractor shall reimburse the Railroad Company for all costs for such work.

The Contractor shall cooperate with the Railroad Company and so conduct operations that the necessary reconstruction of its facilities and the removal of existing facilities can be accomplished without interruption of service.

**Contractor's Right of Entry Agreement**

For all matters regarding the Contractor's Right of Entry Agreement, the Contractor shall contact:

*** $$5$$ ***

No work shall be commenced within the Railroad Company's Property until the Contractor has executed, delivered, and received in return the fully executed Contractor's Right-of-Entry Agreement from the Railroad Company, and has

obtained all of the insurance required by the Railroad Company as specified therein. All work within the Railroad Company's right of way or within 25 feet of a public railroad grade crossing shall be in accordance with Railroad's Contractor Requirements and the Contractor's Right of Entry Agreement. The Contracting Agency has furnished a draft Contractor's Right of Entry Agreement in Appendix *** $$6$$ ***. The draft Contractor's Right of Entry Agreement represents the Contracting Agency's assessment of the likely terms and conditions prior to Advertisement for Bids. The final terms and conditions will be determined by the Railroad Company after Contract Execution.

The Contractor, it subcontractors or agents, shall at its own expense, obtain and maintain in force all insurance required by Railroad until the completion date of the contract as described in Section 1-08.5 except as stated herein.

When all the work involving construction activities within or immediately adjacent to the railroad right of way is completed, the Contractor may make a written request to the Engineer to be relieved of the responsibility to continue all or part of the insurance specified above. If the Engineer deems the portion of the work in that area is complete, the Engineer may approve the Contractor's request. However, if for any reason the Contractor resumes or starts any new work in that area (including being ordered to do so by the Engineer), the insurance shall be reinstated by the Contractor before the work is started. If the insurance must be reinstated because of the Contractor's operations or failure of the Contractor to perform all the contract requirements, the costs shall be the responsibility of the Contractor. If the insurance must be reinstated because of changes to the contract, the costs will be considered in accordance with Section 1-04.4.

**Submittals and Working Drawings**

Unless specified elsewhere in the Contract, all submittals and Working Drawings prepared by the Contractor for review by the Railroad Company shall be Type 3 or 3E Working Drawings. The Contractor shall submit Working Drawings to the Project Engineer. The Contracting Agency will coordinate Working Drawing review with the Railroad Company. The Contractor shall develop a progress schedule that includes Working Drawing reviews by the Railroad Company.

1-07.18.OPT17.GR1

***(August 7, 2006)***

***Contractor's Right of Entry and Insurance Requirements - BNSF***

No work shall commence within BNSF Railway Company (BNSF) right of way until the Contractor has executed, delivered, and received in return the fully executed Contractor's Right-of-Entry Agreement from BNSF, and has obtained all of the insurance required by the Railroad. All work within BNSF's right of way shall be in accordance with BNSF's Contractor Requirements and the Contractor's Right of Entry Agreement (See Appendices).

The Contractor, its Subcontractors or agents, shall at its own expense, obtain and maintain in force all insurance required by BNSF until the completion date of the contract as described in Section 1-08.5 except as stated herein.

When all the work involving construction activities within or immediately adjacent to the Railroad right of way is completed, the Contractor may make a written request to the Engineer to be relieved of the responsibility to continue the insurance required by BNSF.

If the Engineer deems the portion of the work in that area is complete, the Engineer may approve the Contractor's request. However, if for any reason the Contractor resumes or starts any new work in that area (including being ordered to do so by the Engineer), the insurance shall be reinstated by the Contractor before the work is started. If the insurance must be reinstated because of the Contractor's activities or failure of the Contractor to perform all the contract requirements, the costs shall be the responsibility of the Contractor. If the insurance must be reinstated because of changes to the contract, the costs will be considered in accordance with Section 1-04.4.

1-07.18.OPT18.GR1

***(August 7, 2006)***

***Contractor's Right of Entry and Insurance Requirements - UPRR***

No work shall commence within Union Pacific Railroad right of way until the Contractor has executed, delivered, and received in return the fully executed Contractor's Right-of-Entry Agreement from Union Pacific Railroad, and has obtained all of the insurance required by the Railroad. All work within Union Pacific Railroad's right of way shall be in accordance with the Contractor's Right of Entry Agreement (See Appendixes).

The Contractor, its Subcontractors or agents, shall at its own expense, obtain and maintain in force all insurance required by Union Pacific Railroad until the completion date of the contract as described in Section 1-08.5 except as stated herein.

When all the work involving construction activities within or immediately adjacent to the railroad right of way is completed, the Contractor may make a written request to the Engineer to be relieved of the responsibility to continue the insurance required by Union Pacific Railroad. If the Engineer deems the portion of the work in that area is complete, the Engineer may approve the Contractor's request. However, if for any reason the Contractor resumes or starts any new work in that area (including being ordered to do so by the Engineer), the insurance shall be reinstated by the Contractor before the work is started. If the insurance must be reinstated because of the Contractors activities or failure of the Contractor to perform all the contract requirements, the costs shall be the responsibility of the Contractor. If the insurance must be reinstated because of changes to the contract, the costs will be considered in accordance with Section 1-04.4.

1-07.23.GR1

## Public Convenience and Safety

1-07.23(1).GR1

***Construction Under Traffic***

1-07.23(1).INST1.GR1

Section 1-07.23(1) is supplemented with the following:

1-07.23(1).OPT1.FB1

(March 13, 1995)

During the hours that cleaning and painting operations are actually in progress, traffic may be restricted as follows:

*** $$1$$ ***

Whenever the Contractor's operations require lane reductions restricting the flow of traffic on multiple lanes in the same direction, the Contractor shall furnish, maintain,

and operate a sequential arrow sign, for each lane closure, as specified in the Special Provision **SEQUENTIAL ARROW SIGN**.

If the Engineer determines that such lane restrictions are causing traffic congestion, the Contractor shall open all lanes to traffic until the congestion is eliminated.

For movable span structures, the Contractor's operations shall be arranged to permit the opening of the moveable span whenever required by marine traffic.

Bridge sidewalks shall be kept clear and open to maintain safe pedestrian traffic.

1-07.23(1).OPT2.GR1

**(February 3, 2020)**

**Work Zone Clear Zone**

The Work Zone Clear Zone (WZCZ) applies during working and nonworking hours. The WZCZ applies only to temporary roadside objects introduced by the Contractor's operations and does not apply to preexisting conditions or permanent Work. Those work operations that are actively in progress shall be in accordance with adopted and approved Traffic Control Plans, and other contract requirements.

During nonworking hours equipment or materials shall not be within the WZCZ unless they are protected by permanent guardrail or temporary concrete barrier. The use of temporary concrete barrier shall be permitted only if the Engineer approves the installation and location.

During actual hours of work, unless protected as described above, only materials absolutely necessary to construction shall be within the WZCZ and only construction vehicles absolutely necessary to construction shall be allowed within the WZCZ or allowed to stop or park on the shoulder of the roadway.

The Contractor's nonessential vehicles and employees private vehicles shall not be permitted to park within the WZCZ at any time unless protected as described above.

Deviation from the above requirements shall not occur unless the Contractor has requested the deviation in writing and the Engineer has provided written approval.

Minimum WZCZ distances are measured from the edge of traveled way and will be determined as follows:

| Regulatory Posted Speed | Distance From Traveled Way (Feet) |
|---|---|
| 35 mph or less | 10 |
| 40 mph | 15 |
| 45 to 50 mph | 20 |
| 55 to 60 mph | 30 |
| 65 mph or greater | 35 |

## Minimum Work Zone Clear Zone Distance

1-07.23(1).OPT4.GR1

(December 6, 2004)

The portion of Section 1-07.16(1) that prohibits the merging of construction vehicles with public traffic from an access gained through adjacent properties is rescinded, provided the Contractor's submittal is approved as required below.

**Access for Construction**

The Contractor may enter and leave the traveled way, auxiliary lanes or shoulders at approved locations other than established legal movements. To obtain approval of such an access location, the Contractor shall submit a request to the Engineer. The Contractor's request shall be submitted to the Engineer at least 30 calendar days prior to the time the use of the access will be required. This submittal shall include a vicinity map indicating the interstate stationing at the centerline of the access, distances from the end of ramp tapers of existing interchanges and a traffic control plan conforming with the requirements specified in Section 1-10.2(2). The access shall meet the following requirements:

- Access to and from the worksite adjacent to a multi-lane facility will only be allowed to and from a closed lane.

- The merging point of construction vehicles and public traffic shall provide a Decision Sight Distance for the traveling public of 1,640 ft in urban areas and 1,360 ft in rural areas.

- In urban areas the access shall not be located within 3,280 ft of the end of a ramp taper, or the centerline of a road approach. In rural areas the access shall not be located within 2,720 ft of the end of a ramp taper or the centerline of a road approach.

- Median crossings within 1.5 miles of the access point shall not be used in conjunction with the access.

- No new median crossings shall be created for use in conjunction within 1.5 miles of the access point.

- Short-duration shoulder stops in the construction zone, utilizing light vehicles properly equipped with warning flashers, will be allowed without a lane closure.

- When in use the access location shall have traffic control in place as per Section 1-10. Unauthorized use of the access from adjacent property is to be prohibited by the use of signing and/or flaggers as conditions warrant.

- The continuity of the existing drainage system shall be maintained through the access site.

- Air borne particulates created as a result of using the access shall be effectively controlled.

- The access location shall not adversely affect wetlands or other sensitive areas.

At the completion of the project, the Contractor shall restore the area of the access site to its original, pre-contract, condition. Any damage to the traveled way, shoulders, auxiliary lanes, side slopes or other items caused by the access shall be repaired. All work to comply with this provision or to build, maintain, provide erosion control, control airborne particulates, ensure that drainage continues through the access site, provide traffic control when necessary, remove the temporary access and restore the surrounding area when no longer required for use are the responsibility of the Contractor. The Contractor shall include all related costs in the bid prices of the contract.

1-07.23(1).OPT5.FR1

(January 5, 2015)

Lane closures are subject to the following restrictions:

*** $$1$$ ***

If the Engineer determines the permitted closure hours adversely affect traffic, the Engineer may adjust the hours accordingly. The Engineer will notify the Contractor in writing of any change in the closure hours.

Lane closures are not allowed on any of the following:

1. A holiday,

2. A holiday weekend; holidays that occur on Friday, Saturday, Sunday or Monday are considered a holiday weekend. A holiday weekend includes Saturday, Sunday, and the holiday.

3. After *** $$2$$ *** on the day prior to a holiday or holiday weekend, and

4. Before *** $$3$$ *** on the day after the holiday or holiday weekend.

1-07.23(1).OPT6.GR1

(April 14, 2014)

Physical reductions of the width of thru travelling lanes are subject to the following restrictions:

The Contractor shall not reduce the travelled way to a single lane with a clear width of less than 16 feet for a duration that exceeds 4 calendar days without prior approval of the Engineer. The Contractor shall submit a request for a width reduction that exceeds 4 calendar days to the Engineer no later than 30 calendar days prior to the start of the proposed width reduction. At a minimum, this request shall include:

1. Schedule showing the planned beginning date and end date of the width reduction.
2. Plans showing the limits and cross-sections showing the clear distance provided during the width reduction.

3. Details of available detour routes.
4. Plan to provide temporary windows of a minimum 16 foot width periodically during the width reduction, where possible.

The Engineer will reply, in writing, to the request within 7 calendar days. The Contractor shall immediately notify the Engineer if there are any changes to the schedule for the width reduction.

1-07.23(1).INST2.GR1

The last paragraph of Section 1-07.23(1) is revised to read:

1-07.23(1).OPT7.GR1

(September 30, 2020)

The Contractor shall conduct all operations to minimize any drop-offs (abrupt changes in roadway elevation) left exposed to traffic during nonworking hours. Unless otherwise specified in the Traffic Control Plan, drop-offs left exposed to traffic during nonworking hours shall be protected as follows with an accepted traffic control plan submittal in accordance with Section 1-10.2(2):

1. Drop-offs up to 0.20 foot, unless otherwise ordered by the Engineer, may remain exposed with appropriate warning signs alerting motorists of the condition.

2. Drop-offs more than 0.20 foot that are in the Traveled Way or Auxiliary Lane will not be allowed unless protected with appropriate warning signs and further protected as indicated in 3b or 3c below.

3. Drop-offs more than 0.20 foot, but no more than 0.50 foot, that are not within the Traveled Way shall be protected with appropriate warning signs and further protected by having one of the following:

   a. A wedge of compacted stable material placed at a slope of 4:1 or flatter.

   b. Channelizing devices (Type I barricades, plastic safety drums, or other devices 36 inches or more in height) placed along the traffic side of the drop-off and a new edge of pavement stripes placed a minimum of 3 feet from the drop-off. The maximum spacing between the devices in feet shall be the posted speed in miles per hour. Pavement drop-off warning signs shall be placed in advance and throughout the drop-off treatment.

   c. A temporary concrete barrier, temporary steel barrier, or other approved traffic barrier installed on the traffic side of a drop-off with a new edge line placed a minimum of 2-feet from the traffic face of the barrier. The barrier shall have a lateral offset from the edge of the drop-off to the back of the barrier as follows:

      i. A minimum offset of 3-feet for temporary Type F or Type 2 concrete barrier when not anchored.

ii. A minimum offset of 1-foot for temporary Type F or Type 2 concrete barrier when anchored on hot mix asphalt pavement as shown on WSDOT Standard Plans C-60.10 or K-80.35.

iii. A minimum offset of 1-foot for temporary Type F concrete barrier when anchored on cement concrete pavement as shown on WSDOT Standard Plan C-60.10.

iv. A minimum offset of 9-inches for temporary Type F or Type 2 concrete barrier when anchored on cement concrete pavement and/or concrete bridge decks as shown on WSDOT Standard Plan K-80.35.

v. A minimum offset of 6-inches or 9-inches for temporary Type F or Type 2 narrow base concrete barrier when anchored on cement concrete pavement and concrete bridge decks as shown on WSDOT Standard Plan K-80.37.

vi. A minimum offset following manufacturer recommendations for temporary steel barrier when not anchored; or when anchored on hot mix asphalt pavement, cement concrete pavement, or concrete bridge decks.

vii. A minimum offset as directed by the Engineer for any barrier type or configuration not shown in this Section.

An approved terminal, flare, or impact attenuator is required at the approach end of the barrier run, and is required at the trailing end of a barrier run in two-way operations when shown in the plans or as directed by the Engineer.

4. Drop-offs more than 0.50 foot not within the Traveled Way or Auxiliary Lane shall be protected with appropriate warning signs and further protected as indicated in 3a, 3b, or 3c if all of the following conditions are met:

   a. The drop-off is less than 2 feet;

   b. The total length throughout the project is less than 1 mile;

   c. The drop-off does not remain for more than 3 working days;

   d. The drop-off is not present on any of the holidays listed in Section 1-08.5; and

   e. The drop-off is only on one side of the Roadway.

5. Drop-offs more than 0.50 foot that are not within the Traveled Way or Auxiliary Lane and are not otherwise covered by No. 4 above shall be protected with appropriate warning signs and further protected as indicated in 3a or 3c.

6. Open trenches within the Traveled Way or Auxiliary Lane shall have a steel-plate cover placed and anchored over them. A wedge of suitable material, if required, shall be placed for a smooth transition between the pavement and the steel plate. Warning signs shall be used to alert motorists of the presence of the steel plates.

1-07.24.GR1

## Rights of Way

1-07.24.INST1.GR1

Section 1-07.24 is supplemented with the following:

1-07.24.OPT1.FR1

(March 13, 1995)

The Contracting Agency has not completed the acquisition of title to the following described property:

*** $$1$$ ***

The Contractor shall not perform any work within these limits until ordered to do so by the Engineer. The Contracting Agency has estimated that the above described property will be available *** $$2$$ ***.

1-08.GR1

## Prosecution and Progress

1-08.1.GR1

## Subcontracting

1-08.1.INST1.GR1

Section 1-08.1 is supplemented with the following:

1-08.1.OPT1.GR1

(June 3, 2019)

Prior to any subcontractor or lower tier subcontractor beginning work, the Contractor shall submit to the Engineer a certification (WSDOT Form 420-004) that a written agreement between the Contractor and the subcontractor or between the subcontractor and any lower tier subcontractor has been executed. This certification shall also guarantee that these subcontract agreements include all the documents required by the Special Provision **Federal Agency Inspection**.

A Subcontractor or lower tier Subcontractor will not be permitted to perform any work under the contract until the following documents have been completed and submitted to the Engineer:

1. Request to Sublet Work (WSDOT Form 421-012), and
2. Contractor and Subcontractor or Lower Tier Subcontractor Certification for Federal-aid Projects (WSDOT Form 420-004).

The Contractor shall submit a completed Monthly Retainage Report (WSDOT Form 272-065) within 15 calendar days after receipt of every monthly progress payment until every Subcontractor and lower tier Subcontractor's retainage has been released. This form

shall be submitted to the Engineer by email to the following email address for the region administering the Contract:

Eastern Region – ERegionOEO@wsdot.wa.gov
North Central Region – NCRegionOEO@wsdot.wa.gov
Northwest Region – NWRegionOEO@wsdot.wa.gov
Olympic Region – ORegionOEO@wsdot.wa.gov
South Central Region – SCRegionOEO@wsdot.wa.gov
Southwest Region – SWRegionOEO@wsdot.wa.gov
Washington State Ferries – FerriesOEO@wsdot.wa.gov

The Contractor's records pertaining to the requirements of this Special Provision shall be open to inspection or audit by representatives of the Contracting Agency during the life of the contract and for a period of not less than three years after the date of acceptance of the contract. The Contractor shall retain these records for that period. The Contractor shall also guarantee that these records of all Subcontractors and lower tier Subcontractors shall be available and open to similar inspection or audit for the same time period.

1-08.1.OPT2.FR1

***(March 13, 1995)***

***Specialty Items***

For the purpose of determining the percentage of work that may be subcontracted, the following items on this contract are designated as Specialty Items:

*** $$1$$ ***

1-08.1.OPT3.GR1

***(March 13, 1995)***

***Qualifications of Building Contractor***

If the Contractor is not prequalified for building construction or cannot demonstrate satisfactory experience in constructing the general type of building included in the project, it will be mandatory that the building work be subcontracted to a firm which can meet one or both of these criteria.

1-08.3.GR1

## Progress Schedule

1-08.3(1).GR1

***General Requirements***

1-08.3(1).INST1.GR1

The first sentence of Section 1-08.3(1) is revised to read:

1-08.3(1).OPT1.GR1

(August 6, 2006)

The Contractor shall submit Type C Progress Schedules and Schedule Updates to the Engineer for approval.

1-08.3(2).GR1

***Progress Schedule Types***

1-08.3(2).INST2.GR1

Section 1-08.3(2) is revised to read:

1-08.3(2).OPT1.GR1

(August 1, 2011)

Type A Progress Schedules are required on all projects that do not contain the bid item for Type B or Type C Progress Schedules. Type B or Type C Progress Schedules are required on all projects that contain the bid item for Type B or Type C Progress Schedule. Weekly Look-Ahead Schedules and Schedule Updates are required on all projects.

1-08.3(2).INST3.GR1

Section 1-08.3(2) is supplemented with the following:

1-08.3(2).OPT2.GR1

**(August 1, 2016)**

**Type C Progress Schedule**

Type C Progress Schedules shall conform to all of the requirements of Section 1-08.3(2)B and this Section.

The Contractor shall submit a printed copy of a preliminary Type C Progress Schedule no later than the first working day as defined in Section 1-08.5. The preliminary schedule shall comply with all of these requirements and the requirements of Section 1-08.3(1), except that it may be limited to only those activities occurring within the first 60 working days of the project.

The Contractor shall submit a printed copy of a Type C Progress Schedule no later than 60 calendar days after the date the contract is executed.

Each time that a preliminary schedule, Progress Schedule, or Schedule Update is submitted, the Contractor shall provide the Engineer with an electronic copy (.xer file type extension) of that schedule. Each submitted progress and update schedule shall have a unique file name and date identifier. Regardless of the type of software used, the schedule data provided to the Engineer shall be saved on a CD-ROM in Primavera Project Manager Enterprise Version, P6 7.0 compatible format.

Type C Progress Schedules shall display at least the following additional information:

1. A time scaled logic diagram.
2. Activities for traffic detours and closures.
3. Milestones for required delivery of State furnished materials, if any.
4. Activities for State furnished traffic control resources, if any.
5. Activities for fabrication of materials longer than 90 calendar days lead time.
6. Fixed constraints shall be identified on the activity listing, supplemented with a written narrative describing why the constraint exists.
7. Milestones for interim or stage completion dates.
8. Activities for scheduled outages on illumination systems, ITS systems, traffic signal systems and other electrical service outages.

9. Nighttime activities shall be so coded.
10. Activities for all submittals requiring State review, including the allowable review duration.

All calendars used shall be created as project calendars, not global or resource calendars. If multiple calendars are applied to the Progress Schedule, the Contractor shall submit a written narrative describing each one's purpose.

Schedule files shall not contain User Defined Fields (UDF's), all activity codes shall be project level, no resources shall be assigned to activities and no project codes shall be assigned.

If requested by the Engineer, the Contractor shall supplement the Progress Schedule with written explanations for each lead and lag time used, and a written explanation describing the assumed production rates and planned resource allocations to support the activity durations provided in the schedule. The written explanations shall be documented as a notebook topic under "Assumptions and Basis".

1-08.3(3).GR1

***Schedule Updates***

1-08.3(3).INST1.GR1

Section 1-08.3(3) is revised to read:

1-08.3(3).OPT1.GR1

(January 2, 2012)

The Contractor shall submit a printed copy of a Type C Schedule Update to the Engineer by the first business day of each month, starting the month after the Progress Schedule is accepted, or some other mutually agreed upon submittal time.

In addition to the other requirements of this Section, Schedule Updates shall reflect at least the following information:

1. The actual duration and sequence of as-constructed work activities, including changed work.

2. Approved time extensions.

3. Any construction delays or other conditions that affect the progress of the work.

4. Any modifications to the as-planned sequence or duration of remaining activities, supplemented with a written narrative describing each change and the reason for the change.

5. The physical completion of all remaining work in the remaining contract time.

6. Progress on partially completed activities shall be indicated using percent complete.

Activity numbers on Schedule Updates shall be the same as the Progress Schedule, with the exception of deleted or added activities.

Unresolved requests for time extensions shall be reflected in the Schedule Update by assuming no time extension will be granted, and by showing the effects to follow-on activities necessary to physically complete the project within the currently authorized time for completion.

1-08.3(4).GR1

***Measurement***

1-08.3(4).INST1.GR1

Section 1-08.3(4) is revised to read:

1-08.3(4).OPT1.GR1

(August 5, 2013)

Schedule Updates will be measured per each for each update submitted and approved per the requirements of Section 1-08.3(3). Schedule updates that are returned for correction will not be measured.

1-08.3(5).GR1

***Payment***

1-08.3(5).INST1.GR1

Section 1-08.3(5) is revised to read:

1-08.3(5).OPT1.GR1

(August 7, 2017)

Payment will be made for the following bid item when it is included in the proposal:

"Type C Progress Schedule", lump sum.

The Lump Sum price for "Type C Progress Schedule" shall be full payment for all costs for furnishing the Type C Progress Schedule and preliminary Type C Progress Schedule.

"Schedule Update", per each.

The unit Contract price per each "Schedule Update" shall be full payment for all costs required to complete the work specified in Section 1-08.3(3).

All costs for providing Weekly Look-Ahead Schedules are considered incidental to the contract and are to be included with other bid items.

1-08.4.GR1

## Prosecution of Work

1-08.4.INST1.GR1

The first sentence of Section 1-08.4 is revised to read:

1-08.4.OPT1.FR1

(August 3, 2015)

The Contractor shall commence onsite work on or before *** $$1$$ *** and shall notify the Engineer in writing a minimum of 10 calendar days in advance of the date on which the Contractor intends to begin work.

1-08.4.OPT2.GR1
(August 7, 2006)
The Contractor shall begin work no earlier than the begin work date stated in the written notice provided by the Engineer. The Engineer will provide a minimum of 10 calendar days written notice for the date identified as the first working day.

1-08.4.OPT3.FR1
(August 7, 2006)
The Contractor shall begin work no earlier than *** $$1$$ ***.

1-08.5.GR1
## Time for Completion

1-08.5.INST1.GR1
The third paragraph of Section 1-08.5 is revised to read:

1-08.5.OPT1.FR1
(August 7, 2006)
Contract time shall begin on the date stated in the written notice provided to the Contractor. In no case shall the beginning of contract time be prior to ***$$1$$*** or later than *** $$2$$ ***.

1-08.5.OPT2.FR1
(August 7, 2006)
Contract time shall begin on the first working day. The first working day shall be *** $$1$$ ***.

1-08.5.INST2.GR1
Section 1-08.5 is supplemented with the following:

1-08.5.OPT7.FR1
(March 13, 1995)
This project shall be physically completed within *** $$1$$ *** working days.

1-08.5.OPT8.FR1
(March 13, 1995)
This project shall be physically completed in its entirety within *** $$1$$ *** working days and the temporary traffic signal portion of the project shall be physically completed within the first *** $$2$$ *** working days.

1-08.5.OPT9.FR1
(December 4, 2006)
This project shall be physically completed within *** $$1$$ *** working days.

Contract time shall begin on the first working day the Contractor starts onsite work or *** $$2$$ ***, whichever occurs first.

1-08.5.OPT10.FR1

(March 13, 1995)

This project shall be physically completed within *** $$1$$ *** working days. Contract time shall commence on the first working day:

1. Following 60 calendar days after contract execution; or,

2. That the Engineer and the Contractor agree to start work after approval of construction materials is obtained, whichever occurs first.

The Contractor is allowed a maximum of 60 calendar days after execution of the contract to obtain approvals for construction materials

1-08.5.OPT11.FR1

***(August 4, 2003)***

***Incentive for Early Completion***

It is essential that the Contracting Agency has full and unrestricted use of the facilities at the earliest possible time. As an incentive to the Contractor, the Contracting Agency will pay the Contractor *** $$1$$ *** for each working day remaining in the contract prior to the established *** $$2$$ *** completion date, but not to exceed an amount equal to *** $$3$$ ***.

The days eligible for the incentive will be calculated by subtracting the working days elapsed through the date of *** $$4$$ *** completion from the total working days established in the Special Provision **TIME FOR COMPLETION**.

1-08.6.GR1

## Suspension of Work

1-08.6.INST1.GR1

Section 1-08.6 is supplemented with the following:

1-08.6.OPT1.FR1

(January 3, 2017)

Contract time may be suspended for the HMA mix design evaluation report or for procurement of critical materials (Procurement Suspension). In order to receive a Procurement Suspension, the Contractor shall within 21 calendar days after execution by the Contracting Agency, submit all HMA mix designs not already on the QPL according to Section 5-04.2(1) or place purchase orders for all materials deemed critical by the Contracting Agency for Physical Completion of the Contract. The Contractor shall provide a copy of the completed WSDOT Form 350-042 indicating the date the mix design was submitted, or copies of purchase orders for the critical materials. Such purchase orders shall disclose the purchase order date and estimated delivery dates for such critical material.

The Contractor shall show the HMA mix design evaluation report or procurement of the critical materials listed below as activities in the Progress Schedule. If the approved Progress Schedule indicates that acceptance of the HMA mix designs or materials procurement are critical activities, and if the Contractor has provided documentation that purchase orders are placed for the critical materials within the prescribed 21 calendar days, then Contract time will be suspended upon Physical Completion of all critical work except that work dependent upon the below listed critical materials:

*** $$1$$ ***

Charging of Contract time will resume upon the Contractor's receipt of a WSDOT mix design evaluation report or delivery of the critical materials to the Contractor, notification that the critical materials are ready for delivery to the Contractor from the Contracting Agency's Materials Laboratory, or *** $$2$$ *** calendar days after execution by the Contracting Agency, whichever occurs first.

No additional Procurement Suspension will be provided if the Contractor's HMA mix designs did not meet Contract requirements and are resubmitted.

1-08.6.OPT2.FR1
(January 2, 2018)
Contract time may be suspended for procurement of critical materials (Procurement Suspension). In order to receive a Procurement Suspension, the Contractor shall within 21 calendar days after execution by the Contracting Agency, place purchase orders for all materials deemed critical by the Contracting Agency for physical completion of the contract. The Contractor shall provide copies of purchase orders for the critical materials. Such purchase orders shall disclose the purchase order date and estimated delivery dates for such critical material.

The Contractor shall show procurement of the materials listed below as activities in the Progress Schedule. If the approved Progress Schedule indicates that the materials procurement are critical activities, and if the Contractor has provided documentation that purchase orders are placed for the critical materials within the prescribed 21 calendar days, then contract time will be suspended upon physical completion of all critical work except that work dependent upon the below listed critical materials:

*** $$1$$ ***

Charging of contract time will resume upon delivery of the critical materials to the Contractor or 120 calendar days after execution by the Contracting Agency, whichever occurs first.

1-08.9.GR1
## Liquidated Damages

1-08.9.INST2.GR1
Section 1-08.9 is revised to read:

1-08.9.OPT1.FR1
(March 13, 1995)
Liquidated damages in the amount of *** $$1$$ *** per working day will be assessed for failure to physically complete the temporary traffic signal portion of the contract within the physical completion time specified. Liquidated damages in an amount based upon the original contract amount and original time, will be assessed for failure to physically complete the entire project within the physical completion time specified. Such damages will accrue separately for each phase or stage of work. In the event damages occur on a concurrent date, the larger of the two damages will apply for such days.

1-08.9.OPT2.FR1

(April 6, 2009)

Delayed completion of *** $$1$$ *** will result in impacts to the traveling public, increase fuel consumption, increase vehicle operating costs, increase pollution, and cause other inconveniences and harm.

Accordingly, the Contractor agrees:

1. To pay *** $$2$$ *** liquidated damages per *** $$3$$ *** for each *** $$4$$ *** prorated to the nearest *** $$5$$ *** that the work is not completed as specified in *** $$6$$ ***.

2. To authorize the Engineer to deduct these liquidated damages from any money due or coming due the Contractor.

1-08.9.INST3.GR1

Section 1-08.9 is supplemented with the following:

1-08.9.OPT3.FR1

(September 8, 2020)

Liquidated damages in the amount of *** $$1$$ *** per working day will be assessed for failure to physically complete the Contract within the physical completion time specified.

1-09.GR1

## Measurement and Payment

1-09.2.GR1

## Weighing Equipment

1-09.2(1).GR1

### *General Requirements for Weighing Equipment*

1-09.2(1).INST1.GR1

Section 1-09.2(1) is revised to read as follows:

1-09.2(1).OPT1.GR1

(January 3, 2011)

Unless otherwise specified any highway or bridge construction materials to be proportioned or measured and paid for by weight, shall be weighed on scales. The Contractor shall provide, set up, operate and maintain the scales necessary to perform the weighing or shall designate permanently installed, certified commercial scales for the purpose. Each truck to be weighed shall bear a unique identification number. This number shall be legible and in plain view of both the scale operator and the person receiving the material at the jobsite.

Scales provided or designated by the Contractor shall be accurate to within one-half of one percent of the correct weight throughout the range of use. If platform scales are used, each platform scale shall be able to weigh the entire hauling vehicle or combination of connected vehicles at one time. No part of the vehicle or vehicle combination will be permitted off the platform as it is weighed.

An agent of the scale manufacturer shall test and service any scale before its use at each new site and then at 6-month intervals. The Contractor shall provide the Engineer a copy of the final results after each test.

All initial weighing at the dispatch site or at another site approved by the Engineer shall be performed by a Contractor employee or by another person designated by the Contractor. The designated weigher shall prepare a weigh or load ticket to accompany each load. Each ticket shall contain the truck identification number, the date and time of weighing the load, a description of the material being weighed and the signature or initials of the weigher.

Each weigh or load ticket shall also contain a determination of the net weight of the load. This shall be a reading from any device which weighs as material is loaded or a calculation including gross weight and tare weight when the method of loading does not include weighing. It shall also identify the weighed material. When used, tare weights shall be taken of each hauling vehicle at least once each day. The ticket shall be provided to the inspector at the jobsite immediately after the material is delivered. A record of each day's tare weights shall be furnished to the Engineer daily using Form 422-027 EF, or on an alternate form approved by the Engineer.

The vehicle operator shall deliver the ticket to the material receiver at the material delivery point. The material delivery point is defined as the location where the material is incorporated into the permanent work.

Except as noted below, all weighing shall be subject to confirmation testing through random checks made with a second, separate scale. The secondary scale shall be described in the contract provisions, either as a designated independent commercial scale or as a platform scale installed by the Contractor at a location named in the provisions. The inspector will select loaded trucks at random and weigh them with the secondary scale. The same trucks will be weighed empty when the tested load has been delivered.

The frequency of confirmation testing will be such that at least one test weekly is performed for each weighed contract item of work being performed during that week. Confirmation testing will not be routinely conducted for small quantities of weighed material. A small quantity shall be defined as one who's estimated proposal quantity, multiplied by its unit price, has a value of less than $20,000. The inspector may choose to apply confirmation testing to a minor quantity item if, in the inspector's judgment, there is reason to suspect that the ticket weight might be incorrect.

1-09.2(1).INST2.GR1

Section 1-09.2(1) is supplemented with the following:

1-09.2(1).OPT7.FR1

(August 6, 2001)

The Contracting Agency has selected the following independent commercial scale for the purpose of conducting confirmation testing for weighed materials on this project. The Agency will pay any fees required by the owner of the scale. All other costs associated with complying with the confirmation testing requirement shall be borne by the Contractor and shall be included in the bid price for the material being hauled.

*** $$1$$ ***.

1-09.2(1).OPT8.GR1

(January 3, 2011)

The Contractor shall install a platform scale on or near the jobsite at a specific location to be designated by the Engineer. The Contractor shall provide, set up, operate and maintain the scales. Scales shall:

1. Be accurate to within one-half of one percent of the correct weight throughout the range of use;

2. Not include spring balances;

3. Include beams, dials, or other reliable readout equipment;

4. Be arranged so that operators and inspectors can safely and easily see the dials, beams, rods, and operating scale mechanisms;

5. Be built to prevent scale parts from binding, vibrating, or being displaced and to protect all working parts, and

6. Be carefully maintained, with bunkers and platforms kept clear of accumulated materials that could cause errors.

The scale shall be able to weigh, at one time, any hauling vehicle or combination of connected vehicles that will be utilized for weighed materials on the project. No part of a vehicle or vehicle combination will be permitted off the platform as it is weighed.

The scale shall be installed and maintained with the platform level and with rigid bulkheads at either end to prevent binding or shifting. The readout device shall be marked at intervals of no more than 40 pounds. Test records shall show results to the nearest 20 pounds.

Before use at its new location and then at 6-month intervals, the scale shall be: (a) approved under rules of the Washington State Department of Agriculture's Weights and Measures Section, or (b) serviced and tested with at least 10,000 pounds by an agent of its manufacturer. In either case, the Contractor shall provide the Engineer with a copy of the final test results.

When notified by the Engineer that all confirmation testing has been completed for the project and that the scale is no longer needed, the Contractor shall remove the equipment and restore the site to a satisfactory condition. The scale equipment shall be removed from the jobsite and shall remain the property of the Contractor.

1-09.2(2).GR1

***Specific Requirements for Batching and Hopper Scales***

1-09.2(2).OPT1.GR1

(August 6, 2001)

Section 1-09.2(2) is deleted.

1-09.2(3).GR1

***Specific Requirements for Platform Scales***

1-09.2(3).OPT1.GR1

(August 6, 2001)

Section 1-09.2(3) is deleted.

1-09.2(4).GR1

***Specific Requirements for Belt Conveyor Scales***

1-09.2(4).OPT1.GR1

(August 6, 2001)

Section 1-09.2(4) is deleted.

1-09.2(5).GR1

***Measurement***

1-09.2(5).INST1.GR1

Section 1-09.2(5) is revised to read as follows:

1-09.2(5).OPT1.GR1

(January 3, 2011)

If confirmation testing shows the initial scale has been underweighing, the on-site representative of the Contractor shall be notified. The Contractor shall not be compensated for any loss from underweighing.

If the initial scale has been overweighing, the on-site representative of the Contractor shall be notified and the Contracting Agency will calculate a price adjustment as follows:

The combined weight of all materials weighed after the last test showing accurate results through the load preceding the next confirmation test shall be calculated. This combined weight will then be reduced by the percentage of weighing error that exceeds one-half of one percent. If subsequent confirmation tests continue to show overweighing, then the highest correction factor calculated from all tests shall be applied to all loads weighed after the last successful test and before a new confirmation test that shows accurate results.

If the specifications and plans require weight measurement for minor construction items, the Contractor may request permission to convert volume to weight. If the Engineer approves, an agreed factor may be used to make this conversion.

1-09.2(6).GR1

***Payment***

1-09.2(6).INST1.GR1

Section 1-09.2(6) is revised to read as follows:

1-09.2(6).OPT1.GR1

(January 3, 2011)

Unless otherwise specified, the Contracting Agency will pay for no materials received by weight unless they have been weighed in accordance with the requirements of this section.

Unit contract prices for the various pay items of the project cover all costs related to weighing and proportioning materials for payment. These costs include those for furnishing, installing, certifying, maintaining and operating scales for initial weighing, those for extra haul distance and time involved in complying with confirmation testing requirements, and those for any other related item specified in this section.

1-09.2(6).INST2.GR1

Section 1-09.2(6) is supplemented with the following:

1-09.2(6).OPT7.GR1

(August 7, 2017)

Payment will be made for the following bid item when included in the proposal:

"Confirmation Scale," Lump Sum

The lump sum payment for this item shall be full compensation for all costs related to the procurement, installation, testing, maintenance, operation and removal of the scale in accordance with the provisions.

1-09.3.GR1

## Scope of Payment

1-09.3.INST1.GR1

Section 1-09.3 is supplemented with the following:

1-09.3.OPT1.FR1

***(August 7, 2017)***

***Fuel Cost Adjustment***

**General**

The Contracting Agency will make a fuel cost adjustment, either a credit or a payment, for qualifying changes in the index price of on-highway diesel fuel. The adjustment will be applied to partial payments made according to Section 1-09.9.

The adjustment is not a guarantee of full compensation for fuel price changes. Any adjustment provided by this provision shall not obligate the Contracting Agency for any costs due solely to changes in fuel costs beyond the amount adjusted by this provision. The Contracting Agency does not guarantee that fuel will be available at the base fuel cost or monthly fuel cost. No additional adjustment will be made for rates of fuel consumption or actual fuel types that differ from those specified for the purpose of determining the adjustment.

For the purpose of calculating the adjustment, the Base Fuel Cost shall be the *Weekly* fuel price from the ***U.S. Energy Information Administration*** website. The website location and directions are as follows:

- http://www.eia.gov/petroleum/gasdiesel/
- On the web page, click on the ***West Coast less California***, listed under the heading ***U.S On-Highway Diesel Fuel Prices*(dollar per gallon)*** at the lower end of the web page.

- In the pull down box labeled ***Period*** pull down ***Weekly.***
- Click on the fuel price history found under the column heading ***View History*** for the line ***Diesel (On-Highway***) ***– All Types***.
- On this web page obtain the nearest weekly fuel cost for the Monday occurring three weeks prior to the date that bids are opened. This weekly fuel cost becomes the Base Fuel Cost and is fixed for the duration of the Contract and will be used in calculating all adjustments.

The Monthly Fuel Cost shall be the most recent *Monthly* fuel price from the U.S. Energy Information Administration website. The website location and directions are as follows:

- http://www.eia.gov/petroleum/gasdiesel/
- On the web page, click on the ***West Coast less California***, listed under the heading ***U.S On-Highway Diesel Fuel Prices*(dollar per gallon)*** at the lower end of the web page***.***
- In the pull down box labeled ***Period*** pull down ***Monthly.***
- Click on the fuel price history found under the column heading ***View History*** for the line ***Diesel (On-Highway***) ***– All Types***.
- On this web page obtain the most current monthly fuel price.

If the specified index ceases to be available for any reason, the Contracting Agency at its discretion will select and begin using a substitute price source or index to establish the Monthly Fuel Cost.

**Measurement**

No adjustment will be made if the Monthly Fuel Cost is within 10 percent of the Base Fuel Cost. No adjustment will be made for work performed after the authorized Time for Completion.

If the Monthly Fuel Cost is greater than or equal to 110% of the Base Fuel Cost, then:

Adjustment = (Monthly Fuel Cost – (1.10 x Base Fuel Cost)) x Q

If the Monthly Fuel Cost is less than or equal to 90% of the Base Fuel Cost, then:

Adjustment = (Monthly Fuel Cost – (0.90 x Base Fuel Cost)) x Q

Where Q = Σ ((Fuel Usage Factor for each Eligible Bid Item) x (Quantity paid in the current months progress estimate for each Eligible Bid Item)) for all Eligible Bid Items listed below:

| Eligible Bid Item | Fuel Usage Factor |
|---|---|
| *** $$1$$ *** | *** $$2$$ *** |
| *** $$3$$ *** | *** $$4$$ *** |

**Payment**

Payment will be made for the following bid item when included in the bid proposal:

"Fuel Cost Adjustment", by calculation.

To provide a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the Contractor's total bid.

1-09.3.OPT2.FR1

***(August 6, 2018)***

***Steel Cost Adjustment***

The Contractor may elect to participate in the steel cost adjustments for work permanently incorporated into this Contract. Steel cost adjustment is not a guarantee of full compensation for changes to the cost of steel items; not eligible for all items with steel; and any adjustment provided by this provision will not obligate the Contracting Agency for any costs beyond the amount adjusted by this provision.

This Special Provision provides the option to opt-in to steel cost adjustments for eligible Bid items. The Contractor is provided one opportunity to opt-in and there are no future opt-out provisions. The steel cost adjustment requirements of this Special Provision apply for the duration of the Contract.

**General**

The Contractor may select Bid items from the list below to be included in the steel cost adjustment. The Contractor is not obligated to select any Bid items or to participate in the steel cost adjustment program. The steel cost adjustment will apply only to the Bid items selected by the Contractor.

Prior to Contract execution the Contractor shall submit the Steel Cost Adjustment Opt-In Bid Item List, WSDOT Form 410-031, to the WSDOT Contract Ad and Award Office. The form is to be received at the WSDOT Bid Room, located at the Transportation Building, 310 Maple Park Avenue SE, Room 2D20, Olympia, WA 98501-2361 or may be submitted by facsimile to the following FAX number, (360) 705-6966. The Steel Cost Adjustment Opt-In Bid Item List shall be signed by an authorized representative of the Contractor. Should the Contractor fail to return this document as required no Bid items will be eligible for steel cost adjustment.

**Steel Index Values**

The Contracting Agency will use the Bureau of Labor Statistics (BLS) producer price index (PPI) series Id: WPUSISTEEL1 index value for steel cost adjustments.

The Base Steel Materials Index Value (BV) will be the most recent value published on the BLS website on the day of bid opening. This value will be fixed on the day of bid opening even if the BLS lists this as a preliminary value. The Monthly Steel Materials Index Value (MV) will be the final index value published on the BLS website for any month during the Contract.

**Measurement**

The Contracting Agency has determined the initial cost basis (ICB) of steel to be *** $$1$$ ***. This cost basis is reflected in the steel cost adjustment calculations below, is non-negotiable and will be taken as a fixed value for the duration of the Contract.

For each month that steel material is incorporated into the permanent Work of the Contract or paid for as Materials on Hand and the MV is more than 110 percent or less than 90 percent of the BV the Contractor shall provide the Engineer with the following for each eligible Bid item by the end of the following month:

1. The weight of steel material for the month, and

2. Documentation of the weight and shipment to the Contractor of the steel material by bills of lading, invoices, or purchase orders.

Should the Contractor not provide the required documentation as specified the following shall apply:

1. Steel material that has an MV that is more than 110 percent of the BV will not be eligible for a steel cost adjustment.

2. The steel cost adjustment for a Bid item with an MV that is less than 90 percent of the BV will be calculated using a weight of steel determined by the Engineer.

Steel materials will not be eligible for cost adjustments until all requirements of the Contract have been met. Steel added to a Contract as part of a Value Engineering Change Proposal will not be eligible for steel cost adjustment. Steel cost adjustments made in accordance with this Special Provision will not be reflected on payments made to the Contractor until after the index value required for the calculation becomes final. Preliminary index values may be used to establish the BV, but will not be used to establish the MV in calculations.

For each Bid Item selected by the Contractor on the Steel Cost Adjustment Opt-In Bid Item List form a cost adjustment evaluation will be made. A cost adjustment will only be made if the MV for the month the Work associated with the Bid Item is performed differs by more than ten-percent from the BV.

The steel cost adjustment will be determined as follows:

1. If the MV is within ten-percent of the BV, there will be no adjustment.

2. If the MV is more than 110-percent of the BV, then

$$CA = (((MV - BV) \div BV) - 0.10) \times (ICB \times WS)$$

3. If the MV is less than 90-percent of the BV, then

$$CA = (((MV - BV) \div BV) + 0.10) \times (ICB \times WS)$$

Where:

CA = Cost Adjustment, dollars
MV = Monthly Steel Materials Index Value from BLS for the month determined above
BV = Base Steel Materials Index Value taken as the most recent value published on the BLS website on the day of bid opening.
ICB = Initial Cost Basis of steel per pound
WS = Weight of steel (in pounds) eligible for cost adjustment

The following Bid Items are eligible for the steel cost adjustment program for this Project:

*** $$2$$ ***

**Payment**

Payment will be made for the following bid item when included in the bid proposal:

"Steel Cost Adjustment", by calculation.

To provide a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the Contractor's total bid.

1-09.8.GR1

## Payment For Material On Hand

1-09.8.INST1.GR1

The last paragraph of Section 1-09.8 is revised to read:

1-09.8.OPT1.GR1

(August 3, 2009)

The Contracting Agency will not pay for material on hand when the invoice cost is less than $2,000. As materials are used in the work, credits equaling the partial payments for them will be taken on future estimates. Each month, no later than the estimate due date, the Contractor shall submit a letter to the Engineer that clearly states: 1) the amount originally paid on the invoice (or other record of production cost) for the items on hand, 2) the dollar amount of the material incorporated into each of the various work items for the month, and 3) the amount that should be retained in material on hand items. If work is performed on the items and the Contractor does not submit a letter, all of the previous material on hand payment will be deducted on the estimate. Partial payment for materials on hand shall not constitute acceptance. Any material will be rejected if found to be faulty even if partial payment for it has been made.

1-09.9.GR1

## Payments

1-09.9.INST1.GR1

Section 1-09.9 is supplemented with the following:

1-09.9.OPT1.FB1

(March 13, 1995)

The quantity of the following items to be paid for on this project shall be the quantity shown in the Proposal, unless changes are made in accordance with Section 1-04.4 which affect this quantity. The quantity shown in the Proposal will be adjusted by the amount of the change and will be paid for as specified in Section 1-04.4.

*** $$1$$ ***

The quantities in the Proposal are listed only for the convenience of the Contractor in determining the volume of work involved and are not guaranteed to be accurate. The prospective bidders shall verify these quantities before submitting a bid. No adjustments other than for approved changes will be made in the quantity even though the actual quantities required may deviate from those listed.

The unit contract price for these items shall be full pay to construct and complete this portion of the work.

1-09.9(1).GR1

***Retainage***

1-09.9(1).INST1.GR1

Section 1-09.9(1) content and title is deleted and replaced with the following:

1-09.9(1).OPT1.GR1

**(June 27, 2011)**

**Vacant**

1-10.GR1

## Temporary Traffic Control

1-10.1.GR1

## General

1-10.1.INST1.GR1

Section 1-10.1 is supplemented with the following:

1-10.1.OPT1.FR1

(April 1, 2013)

The Contracting Agency will provide the following labor, equipment and/or materials resources to the Contractor for use on the project.

*** $$1$$ ***

The Contractor shall notify the Engineer when each resource is to be utilized and shall provide a minimum of *** $$2$$ *** working days advance notice to allow any necessary arrangements to be made.

1-10.1.OPT2.FR1

(May 20, 2020)

The Contracting Agency has arranged for the Washington State Patrol (WSP) to perform the following tasks during the project:

*** $$1$$ ***

There shall be no entitlement for any impacts for any reason as a result of WSP personnel.

WSP personnel may not be used for any other work without prior acceptance from the Engineer. The acceptance will identify the added work allowed, the terms under which the WSP personnel may be used for the added work, and how the cost of the added work will be shared by the Contractor and Contracting Agency.

This resource is provided at no additional cost to the Contractor for the initial *** $$2$$ *** hours and includes all costs (e.g., WSP labor, vehicle miles, etc.). Additional hours of WSP personnel may be requested by the Contractor. If allowed by the Engineer, the cost for these hours will be shared by the Contracting Agency and the Contractor. The

Contractor's share of the cost for additional hours will be one-half of the amount billed by the law enforcement agency.

All costs for cancelled work due to unsuitable weather will be shared by the Contracting Agency and the Contractor. The Contractor's share of the cost for cancelled work will be one-half of the amount billed by the law enforcement agency, regardless of when the actual work occurs. All costs for cancelled work for any other reason shall be the full responsibility of the Contractor.

The Contractor's share of costs for additional hours of uniformed law enforcement personnel will be credited to the Contracting Agency under the bid item "WSP Reimbursement", by calculation.

1-10.1(1).GR1

***Materials***

1-10.1(1).INST1.GR1

Section 1-10.1(1) is supplemented with the following:

1-10.1(1).OPT1.GR1

**(April 7, 2014)**

**Automated Flagger Assistance Devices**

Automated Flagger Assistance Devices (AFADs) shall meet the requirements of the MUTCD.

1-10.2.GR1

## Traffic Control Management

1-10.2(1).GR1

***General***

1-10.2(1).INST1.GR1

Section 1-10.2(1) is supplemented with the following:

1-10.2(1).OPT1.GR1

(January 3, 2017)

Only training with WSDOT TCS card and WSDOT training curriculum is recognized in the State of Washington. The Traffic Control Supervisor shall be certified by one of the following:

The Northwest Laborers-Employers Training Trust
27055 Ohio Ave.
Kingston, WA 98346
(360) 297-3035

Evergreen Safety Council
12545 135th Ave. NE
Kirkland, WA 98034-8709
1-800-521-0778

The American Traffic Safety Services Association
15 Riverside Parkway, Suite 100

Fredericksburg, Virginia 22406-1022
Training Dept. Toll Free (877) 642-4637
Phone: (540) 368-1701

1-10.2(1).OPT2.GR1
(January 5, 2015)
The primary TCS shall have a minimum of 500 hours of experience providing traffic control as a TCS or traffic control labor on multilane highways with a speed limit of 55 mph or greater. The Contractor shall submit a certification of the TCS's experience with the TCS designation. Documentation of experience shall be available upon request by the Engineer.

1-10.3.GR1
## Traffic Control Labor, Procedures and Devices

1-10.3.INST1.GR1
Section 1-10.3 is supplemented with the following:

1-10.3.OPT1.FR1
***(May 20, 2020)***
***Contractor Provided Uniformed Police Officers***
The Contractor shall provide, direct, and monitor Uniformed Police Officers having jurisdiction to control traffic in accordance with the Plans. A uniformed police officer (UPO) is a sworn police officer from a local law enforcement agency or a Washington State Patrol officer. The UPO shall provide traffic control as shown in an accepted traffic control plan.

The following contact information for potential service providers is supplied for the Contractor's convenience:

*** $$1$$ ***

1-10.3(3).GR1
***Traffic Control Devices***

1-10.3(3).INST1.GR1
Section 1-10.3(3) is supplemented with the following:

1-10.3(3).OPT1.GR1
**(April 7, 2014)**
**Automated Flagger Assistance Devices**
Where shown on an approved traffic control plan, the Contractor shall provide, operate and maintain AFADs.

An AFAD is a self-contained, portable traffic control system that enable a flagger to be positioned out of the lane of traffic and is used to control road users through temporary traffic control zones for short-term lane closures, on two-lane highways. The Contractor shall submit the manufacturers' specifications for each AFAD to the Engineer a minimum of two weeks prior to use. A manufacturers' representative shall be required to demonstrate the capabilities of each device prior to its use and provide training to the certified flaggers that will be operating the device. Each AFAD shall require a flagger near enough to the device to see the device and remotely operate it. Only a qualified flagger who has been trained on the operation of the AFAD shall

operate the AFAD. The flagger operating the AFAD shall not leave the device unattended at any time while the AFAD is being used to control traffic.

An AFAD shall only be used in situations where there is only one lane of approaching traffic in the direction to be controlled. When used at night, the AFAD location shall be illuminated in accordance with Section 1-10.3(1)A.

During the setup and take down operation of the work area, the AFAD display shall be set to a yellow flash mode when the signal heads are deployed into normal operating position.

If repairs are required the Contractor shall respond immediately and provide flagger traffic control and the unit shall be either repaired or replaced with a backup unit within 48 hours.

The Engineer may order adjustments to the location as needed based on traffic and field conditions.

1-10.3(3).OPT2.GR1

**(January 2, 2018)**

**Radar Speed Display Sign**

Where shown on an approved traffic control plan or where ordered by the Engineer, the Contractor shall provide, operate, and maintain radar speed display signs (RSDS). A RSDS shall be placed with a minimum of 4 ft. of lateral clearance to edge of a travelled lane and be delineated by channelization devices. The Contractor shall remove the RSDS from the clear zone when not in use unless protected by barrier or guardrail.

1-10.3(3).OPT3.FR1

**(May 20, 2020)**

**Smart Work Zone System**

Where shown on an approved traffic control plan, the Contractor shall provide, operate, maintain, and remove a Smart Work Zone System. A Smart Work Zone System (SWZS) uses portable roadside sensor information to display real-time dynamic work zone traffic information and instructions to motorists on a series of Portable Changeable Message Signs (PCMSs) approaching a work zone.

The SWZS shall be capable of communicating three types of work zone traffic information:

1. **Queue detection warning** for slowed or queued traffic ahead.

2. **Dynamic lane merge** guidance to use all open lanes up to the lane closure tapers and zipper merge instructions during times of congestion.

3. **Work zone travel delay** for current work zone delays in minutes.

In locations with multiple SWZS setups each setup shall be capable of operating independently. One SWZS Technician may operate all systems concurrently.

**Vendor**

The Contractor shall select an independent vendor listed below to provide the SWZS as shown on an approved SWZS Plan:

**Hill and Smith Inc.**
Phone: (302) 328-3220
Website: https://www.hillandsmith.com/portfolio_category/its-smart-work-zone/

**ICONE by ICONE Products**
Phone: (315) 626-6800
Website: http://iconeproducts.com/

**Road-Tech Safety Services, Inc.**
Phone: (888) 762-3832
Website: https://www.road-tech.com/

**Salander LLC**
Phone: (812) 777-5637
Website: https://www.slndrtech.com/

**SolarTech**
Phone: (610) 391-8600
Website: http://solartechnology.com/

**Ver-Mac**
Phone: (888) 488-7446
Website: https://www.ver-mac.com/en/jamlogic-software/smart-work-zones

**Devices and Communications**

The Contractor and/or Vendor shall provide all devices necessary to operate the system in accordance with the approved traffic control plans and these specifications.

A vendor website or other wireless remote system is required for monitoring SWZS functions and remote management of PCMS messages.

**Technician**

The Vendor shall provide a technician skilled in the operation of all system equipment and software. The technician may be an employee of the Vendor or someone trained and authorized by the Vendor to operate the system. The technician shall be independent of the Contractor and Traffic Control Supervisor but shall collaborate and coordinate as appropriate. The technician shall be on site while the SWZS is in use and able to respond to system issues in person.

Duties of the Technician include, but are not limited to, the following:

1. Program the automated, real-time operation of the SWZS with traffic sensor trigger speed thresholds and PCMS messages shown on the approved SWZS Plan.

2. Service, debug, troubleshoot, and maintain all SWZS components.

3. Maintain SWZS equipment maintenance logs.

4. Collect and process system data and provide data as described below:

    a. **System Data** – System data shall include:

        i. Graph of traffic volume and traffic speed versus time organized by Day and Hour of day for each SWZS implementation.

        ii. Day and Hour of day each traffic sensor was triggered and the message displayed on each PCMS while the SWZS is in use.

    b. **Agency Access to System Data** – Provide password protected access to the Engineer and identified Agency personnel to the System Data via a dedicated website.

    c. **Provide System Data to Agency** – At the completion of the Project, provide System Data logs in an electronic format approved by the Engineer.

5. Immediately respond to all system failures in accordance with the **Smart Work Zone System Failure Protocol** section of these Specifications.

**Operation**

Operate the SWZS according to the following:

**Scheduled Use**

Use a dynamic lane merge, queue detection warning, and work zone travel delay system on the following roadway(s), locations, and work operations:

*** $$1$$ ***

**Installation, Relocation, Removal, and Storage**

The Contractor shall store, install, relocate, and remove all the SWZS components as follows:

1. Install all components with the SWZS Technician's concurrence at least 30 minutes prior to commencing the first lane closure

2. Relocate components as necessary with the SWZS Technician's concurrence

3. Assist the Technician as needed when the Smart Work Zone System Failure Protocol occurs

4. Remove all components within the Work Zone Clear Zone within 60 minutes when no longer required unless components are placed behind guardrail or barrier.

**Initial SWZS Turn-On Meeting**

The Contractor shall arrange a meeting at least one week before the initial system turn-on.

The meeting shall include the Contractor, Traffic Control Manager, Traffic Control Supervisor, Alternative Traffic Control Supervisor (if applicable), SWZS Technician, and WSDOT Project Engineering Office staff.

During this meeting, the following topics should be discussed at a minimum:

1. Provide and review the approved traffic control plans, including lane closure plans and the associated SWZS plan that will be used.

2. Review roles and responsibilities for implementation of the SWZS.

3. Provide contact information for critical personnel.

4. Provide a schedule of the anticipated operation times, dates and durations for the initial operation.

5. Review Measurement and Payment for duties related to SWZS installation, operation, and removal.

**SWZS Operation Coordination and Collaboration**

The Contractor shall notify the Engineer at least 72 hours in advance of using the SWZS including providing a schedule of the anticipated operation times, dates and durations for each subsequent operation.

The Contractor's Traffic Control Management shall coordinate and collaborate as needed for the successful implementation of the SWZS and associated lane closures. Any delays and associated costs due to implementing the SWZS shall be at the Contractor's expense.

**Smart Work Zone System Failure Protocol**

In the event of a failure, perform the following protocol:

1. **SWZS Technician** – Upon discovery of the malfunction, perform the following:

   a. Immediately notify Contractor Traffic Control Management.

   b. Begin troubleshooting the SWZS to address the malfunction.

   c. If the malfunction is not resolved within 15 minutes, notify Contractor Traffic Control Management. The SWZS shall be taken out of service and repaired within 12 hours of the malfunction.

2. **Contractor Traffic Management** – After receiving the initial notification of the malfunction, perform the following:

   a. Notify the Traffic Control Supervisor.

   b. Prepare crews to immediately implement the Emergency PCMS Implementation if the malfunction is not resolved within 15 minutes.

   c. Notify the Engineer of the malfunction and failure protocol status.

d. Collaborate with SWZS Technician to provide replacement parts needed to make repairs to the SWZS within 12 hours of the system or a system component malfunction.

3. **Emergency PCMS Implementation** – If the SWZS Technician has not resolved the issue within 15 minutes, perform following failure protocol:

a. Install two PCMSs as described below until the SWZS is repaired, functioning properly, and back in service or until all lane closures have been reopened. The PCMSs may be from the SWZS if needed.

i. PCMS #1: Maintain positioned 0.5 ± mile in advance of traffic queue, relocated as necessary, except when no traffic queue is present. PCMS #1 may be truck-mounted.

| Phase 1 | Phase 2 |
|---|---|
| SLOW OR | NEXT |
| STOPPED | # |
| TRAFFIC | MILES |

Where "#" is the approximate queue length rounded up to the nearest mile

ii. PCMS #2: Place 1.5 ± mile in advance of first lane closure taper. Program message as appropriate. Phase 1 is to describe the current lane closure in place. Phase 2 is to describe the distance ahead to the beginning of the first lane closure rounded up to the nearest 0.5 mile interval. For example, if a double right lane closure is 1.5 mile ahead, the PCMS message would be: "2 RIGHT LANES CLOSED" / "1.5 MILE AHEAD".

1-10.3(3)(9-35.8).GR1

***Vacant***

Section 9-35.8 is revised to read:

1-10.3(3)(9-35.8).OPT1.GR1

**(April 1, 2019)**

**Radar Speed Display Sign**

Radar Speed Display Signs (RSDS) shall consist of a fully self-contained see-through trailer with power supply and an LED speed indicator display with a one-direction radar. Above or below the display shall be the message "YOUR SPEED" or "YOUR SPEED IS" in letters of 5 to 8 inches in height. The lowest portion of the display shall be high enough to be visible over concrete barriers or safety drums and a 36"x48" speed limit sign as shown on the approved traffic control plan shall be mounted above the speed display.

The radar speed measurement shall provide a minimum detection distance of 1000 ft. and have an accuracy of +/ - 1 mile per hour. The radar shall be mounted so detection will function when located behind concrete barrier or drums.

The numeric speed display range shall be 0 to 99 MPH with numerals of 18 inches in height minimum, amber in color with a black background with automatic dimming for nighttime operations.

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the work zone posted speed limit is exceeded. The speed indicator shall have a maximum speed cutoff. Detected speeds more than 25 MPH over the posted speed shall not be displayed and speeds under 25 MPH shall not be displayed.

The unit shall have traffic data collection capabilities. Traffic data shall be collected and transmitted to the Engineer upon request.

1-10.4.GR1

## Measurement

1-10.4(1).GR1

### *Lump Sum Bid for Project (No Unit Items)*

1-10.4(1).INST1.GR1

Section 1-10.4(1) is supplemented with the following:

1-10.4(1).OPT1.GR1

(August 2, 2004)

The proposal contains the item “Project Temporary Traffic Control”, lump sum. The provisions of Section 1-10.4(1) shall apply.

1-10.4(2).GR1

### *Item Bids With Lump Sum for Incidentals*

1-10.4(2).INST1.GR1

Section 1-10.4(2) is supplemented with the following:

1-10.4(2).OPT1.GR1

(August 2, 2004)

The bid proposal does not contain the item “Project Temporary Traffic Control,” lump sum. The provisions of Section 1-10.4(2) shall apply.

1-10.4(2).OPT2.GR1

(April 7, 2014)

“Automated Flagger Assistance Device” will be measured per each one time only for each automated flagger assistance device used on the project. The final pay quantity shall be the maximum number of such devices in place at any one time as approved by the Engineer.

1-10.4(2).OPT3.GR1

(January 2, 2018)

“Radar Speed Display Sign” will be measured by the hour for the time that each sign is operating as shown on an approved Traffic Control Plan.

1-10.4(2).OPT5.GR1

(May 20, 2020)

For “Smart Work Zone System Mobilization”, there will be no measurement of unit items for Work.

“Operation of Smart Work Zone System” will be measured by the hour the system is actively operating as defined in Section 1-10.3(3) as supplemented in these special provisions. When the smart work zone system malfunctions for longer than 15-minutes or if the smart work zone system is not used in accordance with the applicable approved Smart Work Zone System traffic control plan, no measurement will be made for the smart work zone system for that hour.

“Other Traffic Control Labor”, per hour will be measured in accordance with Section 1-10.4(2) for installing, removing, relocating smart work zone system components by the Contractor or the Work Zone Traffic Control subcontractor.

1-10.4(2).OPT6.GR1
(May 20, 2020)
"Contractor Provided Uniformed Police Officer" will be measured by the hour.

1-10.4(2).INST2.GR1
The sixth bullet of the third paragraph in Section 1-10.4(2) is revised to read:

1-10.4(2).OPT4.GR1
(January 2, 2018)

- Relocation of Portable Changeable Message Signs or Radar Speed Display Signs within the project limits.

1-10.4(3).GR1

***Reinstating Unit Items With Lump Sum Traffic Control***

1-10.4(3).INST1.GR1
Section 1-10.4(3) is supplemented with the following:

1-10.4(3).OPT1.FR1
(August 2, 2004)
The bid proposal contains the item “Project Temporary Traffic Control,” lump sum and the additional temporary traffic control items listed below. The provisions of Section 1-10.4(1), Section 1-10.4(3), and Section 1-10.5(3) shall apply.

*** $$1$$ ***

1-10.4(3).OPT2.GR1
(May 20, 2020)
The bid proposal contains the item “Project Temporary Traffic Control,” lump sum and the additional temporary traffic control items listed below. The provisions of Section 1-10.4(1), Section 1-10.4(3), and Section 1-10.5(3) shall apply.

For “Smart Work Zone System Mobilization”, there will be no measurement of unit items for Work.

“Operation of Smart Work Zone System” will be measured by the hour the system is actively operating as defined in the “Smart Work Zone System – Scheduled Use” specification. When the smart work zone system malfunctions for longer than 15-

minutes or if the smart work zone system is not used in accordance with the applicable approved Smart Work Zone System traffic control plan, no measurement will be made for the smart work zone system for that hour.

1-10.5.GR1

## Payment

1-10.5(2).GR1

### *Item Bids with Lump Sum for Incidentals*

1-10.5(2).INST1.GR1

Section 1-10.5(2) is supplemented with the following:

1-10.5(2).OPT1.GR1

(April 7, 2014)

"Automated Flagger Assistance Device", per each.

The unit Contract price per each for "Automated Flagger Assistance Device", when applied to the number of units measured for this item in accordance with Section 1-10.4(2), shall be full pay to provide, maintain and remove the AFAD as described including transporting, installing and resetting the devices.

All costs associated with operating Automated Flagger Assistance Devices shall be included in the unit Contract price per hour for "Flaggers".

1-10.5(2).OPT2.GR1

(January 2, 2018)

"Radar Speed Display Sign", per hour.

The unit Contract price, when applied to the number of units measured for this item in accordance with Section 1-10.4(2), shall be full compensation for all costs incurred by the Contractor in performing the Work for procuring all radar speed display signs required for the project and for transporting these signs to and from the project.

1-10.5(2).OPT3.GR1

(May 20, 2020)

"Smart Work Zone System Mobilization", lump sum.

The lump sum Contract price shall be full compensation for all costs incurred by the Vendor in mobilizing and demobilizing the smart work zone components. Based on the Contract price for this bid item, partial payments will be made as follows:

- When all Smart Work Zone System components specified in these Special Provisions have been delivered to the project and the initial system turn on has been successful, 80 percent of the amount bid for mobilization will be paid.

- When all Smart Work Zone System components specified in these Special Provisions have been removed from the project and the system is no longer needed as defined in the "Scheduled Use for a Smart Work Zone System", the final 20 percent of the amount bid for mobilization will be paid.

"Operation of Smart Work Zone System", per hour.

The unit Contract price, when applied to the number of units measured for this item in accordance with Section 1-10.4(2) shall be full compensation for all costs incurred

by the SWZS Vendor, and Technician for the hardware, software, PCMSs, traffic sensors, and other required Smart Work Zone equipment; maintenance data logs; traffic data logs; Contracting Agency access to Smart Work Zone System data; wireless system operations including Contracting Agency access.

1-10.5(2).OPT4.GR1

(May 20, 2020)

“Smart Work Zone System Mobilization”, lump sum.

The lump sum Contract price shall be full compensation for all costs incurred by the Contractor in mobilizing and demobilizing the smart work zone components. Based on the Contract price for this bid item, partial payments will be made as follows:

- When all Smart Work Zone System components specified in these Special Provisions have been delivered to the project and the initial system turn on has been successful, 80 percent of the amount bid for mobilization will be paid.

- When all Smart Work Zone System components specified in these Special Provisions have been removed from the project and the system is no longer needed as defined in the “Scheduled Use for a Smart Work Zone System”, the final 20 percent of the amount bid for mobilization will be paid.

“Operation of Smart Work Zone System”, per hour.

The unit Contract price, when applied to the number of units measured for this item in accordance with Section 1-10.4(2) shall be full compensation for all costs incurred by the Vendor and Smart Work Zone System Technician for the hardware, software, PCMSs, traffic sensors, and other required Smart Work Zone equipment; maintenance data logs; traffic data logs; Contracting Agency access to Smart Work Zone System data; wireless system operations including Contracting Agency access.

1-10.5(2).OPT5.GR1

(May 20, 2020)

"Contractor Provided Uniformed Police Officer", per hour.

The unit Contract price per hour for "Contractor Provided Uniformed Police Officer" shall be full pay for performing the Work as specified and as shown in the Plans, including all costs for arrangement for and supervision of a uniformed law enforcement personnel and vehicles to participate in the Contractor's traffic control activities.

DIVISION2.GR2

# Division 2
# Earthwork

2-01.GR2

## Clearing, Grubbing, and Roadside Cleanup

2-01.1.GR2

### Description

2-01.1.INST1.GR2

Section 2-01.1 is supplemented with the following:

2-01.1.OPT1.FR2
(March 13, 1995)
Clearing and grubbing on this project shall be performed within the following limits:

*** $$1$$ ***

2-01.3.GR2
## Construction Requirements

2-01.3(1).GR2
### *Clearing*

2-01.3(1).INST1.GR2
Item number 1 of Section 2-01.3(1) is revised to read:

2-01.3(1).OPT1.GR2
(April 2, 2018)
1. Trees identified for removal shall be felled into the Contracting Agency right of way or areas that will be cleared of vegetation.

2-01.3(4).GR2
### *Roadside Cleanup*

2-01.3(4).INST1.GR2
Section 2-01.3(4) is supplemented with the following:

2-01.3(4).OPT1.FR2
(January 5, 1998)
*** $$1$$ ***

2-01.5.GR2
## Payment

2-01.5.INST1.GR2
The first and second paragraphs of Section 2-01.5 are revised to read:

2-01.5.OPT1.FR2
(August 7, 2017)
Payment will be made for the following bid items when they are included in the proposal:

All costs for clearing and grubbing on this project shall be included in the *** $$1$$ ***.

2-02.GR2
## Removal of Structures and Obstructions

2-02.1.GR2
## Description

2-02.1.INST1.GR2
Section 2-02.1 is supplemented with the following:

2-02.1.OPT1.GR2

(March 13, 1995)

This work shall consist of removing miscellaneous traffic items.

2-02.1.OPT2.FR2

(March 13, 1995)

This work shall consist of removing, handling, and disposing of asbestos in the following areas:

*** $$1$$ ***

2-02.1.OPT3.GR2

(March 13, 1995)

This work shall consist of removing portions of an existing box culvert in preparation for extending the box culvert.

2-02.1.OPT4.GR2

(September 30, 1996)

The Contractor is advised that asbestos may be present on this project.

2-02.3.GR2

## Construction Requirements

2-02.3.INST1.GR2

Section 2-02.3 is supplemented with the following:

2-02.3.OPT1.FR2

***(February 17, 1998)***

***Removal of Obstructions***

*** $$1$$ ***

2-02.3.OPT2.FR2

***(March 13, 1995)***

***Removing Miscellaneous Traffic Items***

The following miscellaneous traffic items shall be removed and disposed of:

*** $$1$$ ***

2-02.3.OPT3.FR2

***(August 1, 2005)***

***Removal and Disposal of Hazardous Material***

Hazardous material is suspected to exist on this project. Approximate limits of contamination are identified in the Plans. The site history, prior studies and/or test results indicate a potential for encountering *** $$1$$ ***.

Copies of the environmental reports are available for review at the Engineer's office. All necessary permits for this work will be furnished by the Contracting Agency. The Contractor is responsible for all work, records, and reports required to perform the work described in this section. The Contracting Agency will perform all testing of suspected hazardous or contaminated material.

The Contractor shall notify the Engineer 10 working days prior to beginning work in the area identified in the Plans as contaminated. The Contractor shall notify the Engineer immediately if contamination is discovered in areas other than those identified in the Plans, or is suspected through observations such as an oily sheen or discolored soils that may or may not emit strong chemical odors.

***Contaminated Soil and Hazardous Material***

The Engineer will determine the limits of excavation required. All material that is designated by the Engineer to be removed shall be handled and stored in a manner that prevents the spread of contamination to adjacent soil or water. Separate stockpiles shall be maintained for known hazardous or contaminated material and for suspected hazardous or contaminated material. The Contractor shall transport hazardous or contaminated material and dispose of it at a permitted facility. The Contractor shall provide the Engineer with a copy of the shipping manifest or bill of lading indicating the amount of material hauled to disposal, and bearing the disposal site operator's confirmation for receipt of the material.

***Contaminated Water***

All water that is removed from the areas of contamination, including free water that leaches from contaminated soil stockpiles or water that is suspected of being contaminated, shall be collected, handled and stored in a manner that prevents the spread of contamination to adjacent soil or water. The Contractor shall transport contaminated water and dispose of it at a permitted facility. The Contractor shall provide the Engineer with a copy of the shipping manifest or bill of lading indicating the amount of material hauled to disposal, and bearing the disposal site operator's confirmation for receipt of the material.

2-02.3.OPT4.GR2

***(September 30, 1996)***

***Asbestos Handling And Disposal***

Prior to and during, the performance of any contract work, the Contractor shall verify that no asbestos containing materials are involved or will be disturbed. When asbestos is encountered, the Contractor shall be responsible for obtaining all permits from, and provide notification to, the Washington State Department of Labor and Industries, the U.S. EPA, the local air pollution control agency, and other permitting and regulatory agencies with jurisdiction over the work involving asbestos as the law requires.

Prior to commencing asbestos related work, the Contractor shall provide the Engineer with written verification of approvals and notifications that have been given and/or obtained from the required jurisdictional agencies, and the Contractor's schedule for all work involving asbestos removal. The schedule shall include the sequencing and scheduling of asbestos related work, and coordination with subcontractors. The Contractor shall notify the Engineer when all approvals have been received and notifications have been made, as required by the agencies involved.

The Contractor shall ensure the safety of all workers, visitors to the site, and the general public in accordance with all applicable laws, rules, and regulations.

The Contractor shall designate a Washington State Certified Asbestos Supervisor (CAS) to personally supervise the asbestos removal and to ensure that the handling and removal of asbestos is accomplished by certified asbestos workers, pursuant to Washington State Department of Labor and Industries standards. The Contractor shall ensure that the

removal and disposal of asbestos meets the requirements of EPA regulations 40 CFR Part 61, local health department regulations, and all other applicable regulations.

2-02.3.OPT5.GR2

***(September 30, 1996)***

***Asbestos Handling And Disposal***

Prior to performance of any contract work, the Contractor shall obtain all permits from, and provide notification to, the Washington State Department of Labor and Industries, the U.S. EPA, the local air pollution control agency, and other permitting and regulatory agencies with jurisdiction over the work involving asbestos as the law requires.

Prior to commencing asbestos related work, the Contractor shall provide the Engineer with written verification of approvals and notifications that have been given and/or obtained from the required jurisdictional agencies, and the Contractor's schedule for all work involving asbestos removal. The schedule shall include the sequencing and scheduling of asbestos related work, and coordination with subcontractors. The Contractor shall notify the Engineer when all approvals have been received and notifications have been made, as required by the agencies involved.

The Contractor shall ensure the safety of all workers, visitors to the site, and the general public in accordance with all applicable laws, rules, and regulations.

The Contractor shall designate a Washington State Certified Asbestos Supervisor (CAS) to personally supervise the asbestos removal and to ensure that the handling and removal of asbestos is accomplished by certified asbestos workers, pursuant to Washington State Department of Labor and Industries standards. The Contractor shall ensure that the removal and disposal of asbestos meets the requirements of EPA regulation 40 CFR Part 61, local health department regulations, and all other applicable regulations.

2-02.3.OPT6.FB2

***(June 26, 2000)***

***Salvage of Removed Structure Items***

All *** $$1$$ *** of the existing bridge or structure being removed shall remain the property of the Contracting Agency.

The Contractor shall transport the specified salvaged items to the following location:

***$$2$$***

The Contractor shall stack the material where directed by the Engineer. The Contractor shall contact the Engineer at least five working days prior to scheduled delivery of the items to confirm delivery arrangements.

2-02.3(2).GB2

***Removal of Bridges, Box Culverts, and other Drainage Structures***

2-02.3(2).INST1.GB2

Section 2-02.3(2) is supplemented with the following:

2-02.3(2).OPT1.FB2

(June 26, 2000)

The Contractor shall remove existing Bridge *** $$1$$ *** after routing traffic onto *** $$2$$ ***.

2-02.3(2).OPT2.FB2
(June 26, 2000)
The Contractor shall remove existing Bridge ***$$1$$*** in stages as shown in the Plans.

2-02.3(2).OPT3.FB2
(June 26, 2000)
The Contractor shall remove the following portions of Bridge *** $$1$$ ***, as shown in the Plans:

*** $$2$$ ***

2-02.3(2).OPT7.FB2
**(June 26, 2000)**
**Removal Limits in Water**
The existing piers of Bridge *** $$1$$ *** within the wetted perimeter of the *** $$2$$ *** which do not conflict with new construction shall be removed to elevation *** $$3$$ ***. All broken concrete, and other bridge removal debris shall be removed from the bottom of the *** $$4$$ ***.

2-02.3(2).OPT10.GB2
**Use of Explosives**

2-02.3(2).OPT10(B).FB2
(January 2, 2018)
The Contractor may use explosives in the demolition of *** $$1$$ ***.

If explosives are used for any removal operation, the Contractor shall:

1. Conform with Section 1-07.22, including providing notice of the time and duration of the blasting operation to all residents and property owners within the safety zone.

2. Submit a Type 2 Working Drawing consisting of a detailed blasting plan.

3. Perform a pre-blast survey to document the pre-blast condition of all structures within the safety zone, and provide copies of the pre-blast survey to the Engineer.

4. Obtain permits and approvals from all applicable governmental agencies.

The blasting plan shall include, at a minimum, the following:

1. Show all stages of the demolition work.

2. Show details of all “pre-weakening” of the bridge, including locations and extent of the Structure modifications.

3. Specify the explosive and charge type and quantity.

4. Specify the firing sequence.

5. Specify the fall direction and fall sequence of the bridge, and show locations and details of all cables and structure attachments used for control.

6. Show details of drill holes and explosive placement.

7. Specify types of ground vibration monitoring equipment and show the locations of such equipment.

8. Specify how noise and shock waves are kept to a minimum.

9. Specify fragment, dust, and debris control.

10. Name, address, and phone number(s) of the licensed explosives expert supervising the operation.

11. Specify safety and security procedures, including, but not limited to, the following:

    a. Methods of storage and transportation.

    b. Measures taken to secure the blasting materials at all times, including all non-working hours.

    c. Measures taken to secure the bridge site at all times during and after installation of all charges and after blasting.

    d. Safeguards against accidental discharge.

    e. Safety zone limits.

    f. Barricade locations.

    g. Location of firing device, warning signals, warning signs.

    h. Communication procedures for notifying the Engineer, nearby residents, and all personnel of impending blasting.

The Contractor shall enlist a licensed, experienced explosives expert to supervise all stages of explosive work, including hole drilling and explosive placement, safety procedures, and blasting operations.

At least five to ten working days prior to the scheduled blast, a pre-blast conference shall be held to discuss the blasting plan, all pre-blast preparations of the bridge, the pre-blast, blast, and post-blast procedures, and the responsibilities and activities of the personnel and equipment involved. Those attending shall include, at a minimum, the project superintendent, the licensed explosives expert assigned to supervise the work, and the work crew leaders responsible for performing the pre-blast and post-blast activities.

Traffic shall not be allowed in the vicinity during blasting operations.

All damage as a result of the Contractor's blasting operations shall be repaired by the Contractor at no additional expense to the Contracting Agency in accordance with Sections 1-07.13 and 1-07.14.

2-02.3(2).OPT11.GB2

**(January 2, 2018)**

**Requirements for Closing Bridge to Traffic Prior to Beginning Removal**

The Contractor shall not close the existing bridge to traffic, and shall not begin bridge removal operations, until the following conditions are met:

1. The Contractor's bridge demolition plan Working Drawing submittal has been processed and all comments from the Engineer have been addressed.

2. The Contractor has received the Engineer's acceptance of all shop drawings and materials submittals for materials required for the work to be executed during the closure.

3. The Contractor has submitted a Type 1 Working Drawing consisting of a report on the status of material delivery. The report shall specify the materials already available at the site, the materials yet to arrive at the site, and the scheduled delivery dates of the materials yet to arrive at the site, with written verification from the supplier or copies of confirmed purchase orders indicating the delivery dates of the materials yet to arrive at the site.

4. The Contractor shall provide an updated progress schedule in accordance with Section 1-08.3 confirming that the scheduled delivery of materials will meet the schedule to complete the work within the allowed time. The Contractor shall supplement the progress schedule with a written narrative describing the assumed production rates and planned resource allocations that support the bridge construction activity durations provided in the progress schedule.

5. The Contractor has received the Engineer's concurrence to proceed.

2-02.3(2).OPT12.GR2

**(June 26, 2000)**

**Removing Portions of Existing Box Culvert**

The Contractor shall remove, to the limits shown in the Plans, the existing wingwalls, wingwall footings, aprons, and parapet walls of the box culvert to be extended.

2-02.3(3).GR2

### *Removal of Pavement, Sidewalks, Curbs, and Gutters*

2-02.3(3).INST1.GR2

Section 2-02.3(3) is supplemented with the following:

2-02.3(3).OPT1.FR2

(September 8, 1997)

The approximate thickness of the *** $$1$$ *** pavement is *** $$2$$ ***.

2-02.4.GR2

## Measurement

2-02.4.INST1.GR2

Section 2-02.4 is supplemented with the following:

2-02.4.OPT1.GR2

(December 4, 2006)

Hazardous material excavation including haul will be measured by the cubic yard. All excavated material will be measured in the position it occupied before the excavation was performed. An original ground measurement will be taken using cross-section or digital terrain modeling survey techniques. The original ground will be compared with a survey of the excavation area taken after the work is completed.

2-02.4.OPT2.GR2

(September 8, 1997)

Pavement removal will be measured by the square yard.

2-02.4.OPT3.GR2

(October 25, 1999)

Sidewalk removal will be measured by the square yard.

2-02.4.OPT4.GR2

(September 8, 1997)

Curb removal will be measured by the linear foot.

2-02.5.GR2

## Payment

2-02.5.INST1.GR2

Section 2-02.5 is revised by the following:

2-02.5.OPT1.FR2

(August 7, 2017)

Payment will be made for the following bid item when it is included in the proposal.

All costs for the removal of structures and obstructions shall be included in *** $$1$$ ***.

2-02.5.INST2.GR2

Section 2-02.5 is supplemented with the following:

2-02.5.OPT7.GR2

(December 4, 2006)

“Hazardous Material Handling And Disposal”, by force account as provided in Section 1-09.6.

All costs associated with storing stockpiled hazardous waste and contaminated soils, collecting, handling and storing contaminated water, loading the stockpiled material into the hauling conveyance for transport to the disposal site, and transporting and disposing of hazardous or contaminated materials at an approved facility will be paid by force account under the item “Hazardous Material Handling And Disposal”.

To provide a common basis for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the Contractor's total bid.

"Hazardous Material Excavation Incl. Haul", per cubic yard.
The unit contract price for "Hazardous Material Excavation Incl. Haul" shall be full pay for all costs associated with excavating the material designated to be removed, hauling it to the stockpile location, and stockpiling the excavated material.

2-02.5.OPT8.GR2
(September 30, 1996)
"Removing Miscellaneous Traffic Item", lump sum.

2-02.5.OPT11.GR2
(September 30, 1996)
"Removal and Disposal of Asbestos Material", lump sum.

2-02.5.OPT12.GR2
(June 26, 2000)
"Removing Portion of Conc. Box Culv.", lump sum.

The lump sum contract price for "Removing Portion of Conc. Box Culv." shall be full pay for preparing the box culvert for the extension by removing and disposing of all concrete and other debris specified.

2-02.5.OPT13.FR2
(September 30, 1996)
"Removing *** $$1$$ *** Pavement", per square yard.

2-02.5.OPT14.GR2
(September 30, 1996)
Payment for asbestos removal, handling, disposal, cost of permits, and all other work will be as provided in Section 1-04.7, unless such work is explicitly included as a part of another pay item in the contract.

2-02.5.OPT15.GR2
(June 26, 2000)
All costs in connection with removing the box culvert wingwalls, footings, aprons, and parapet wall and disposing of concrete and other debris as specified shall be included in the unit contract prices for the items of work involved in the extension of the box culvert(s).

2-02.5.OPT16.FR2
(November 3, 1999)
"Removing *** $$1$$ *** Sidewalk", per square yard.

2-02.5.OPT17.FR2
(September 8, 1997)
"Removing *** $$1$$ *** Curb", per linear foot.

2-03.GR2
## Roadway Excavation and Embankment

2-03.3.GR2

## Construction Requirements

2-03.3(2).GR2

### *Rock Cuts*

2-03.3(2).INST1.GR2

Section 2-03.3(2) is supplemented with the following:

2-03.3(2).OPT1.GR2

**(April 5, 2010)**

**Rock Slope Scaling and Removal and Disposal of Rock Slope Scaling Debris**

The Contractor shall remove loose rock and soil from the existing rock slope locations shown in the Plans or as specified by the Engineer, and shall remove and dispose of all rock slope scaling debris generated by the work.

**Equipment**

Rock slope scaling shall be performed with scaling bars, portable hydraulic wedges, air pillows, hand drills, splitters, and other mechanical or hand tools demonstrated to be effective in performing the work to the satisfaction of the Engineer.

**Submittals**

The Contractor shall submit a rock slope scaling plan to the Engineer for approval in accordance with Section 1-05.3. The rock slope scaling plan shall include, but not be limited to, the following:

1. Documented work experience of all rock slope scaling foremen and scalers scheduled to be working on the project. Rock slope scaling foremen shall have at least 1,500 hours of documented experience as a rock slope scaler. Rock slope scalers shall have at least 1,000 hours of documented experience as a rock slope scaler.

2. The proposed construction sequence and schedule.

3. The type of tools and equipment to be used for rock scaling purposes.

4. The number of rock slope scaling crews to be employed on the project, with a rock slope scaling crew defined as one qualified foreman and two qualified scalers.

5. Operation plan for collection, removal and disposal of all rock slope scaling debris generated by the rock slope scaling work.

6. Operation plan for protection of roadway surface, railroad facilities, structures, utilities, and other facilities adjacent to the rock slope scaling locations.

7. If the roadway is exposed to the collection of rock slope scaling debris, the submittal shall include the equipment and procedure to be

used to clear the roadway for public use between rock slope scaling operations.

The Contractor shall not begin rock slope scaling operations until receiving the Engineer's approval of the rock slope scaling plan.

**Rock Slope Scaling Construction Requirements**

As a first item of work, the Contractor shall clear the rock slope of trees and woody vegetation within the work zone within 15 feet of the slope crest or as otherwise specified by the Engineer. Clearing shall conform to Sections 2-01.1 and 2-01.3(1), and the requirement that the vegetation shall be close cut, leaving the root wad intact.

The Contractor shall conduct rock slope scaling operations in accordance with the details shown in the Plans, the traffic control restrictions and requirements shown in the Plans and specified in the Special Provisions, and the rock slope scaling plan as approved by the Engineer. The size and work experience of the rock slope scaling crew as defined above shall be maintained at all times.

Rock slope scaling shall begin at the top of the rock slope and work shall proceed down slope, removing loose rock and soil as the work progresses. The extent of rock slope scaling shall be as shown in the Plans and as adjusted in the field by the Engineer.

**Rock Slope Scaling Debris Collection and Removal**

The Contractor shall collect, remove and dispose of all rock slope scaling debris generated by the work, including all rock debris within the limits of the project present at the base of the slope at the beginning of the project. Ditches and benches shall be cleared of all rock slope scaling debris and returned to original functional condition as specified by the Engineer

The Contractor shall break up any rocks that are too large to transport into manageable sized pieces for haul.

Rock slope scaling debris collection and removal shall be conducted in accordance with the traffic control restrictions and requirements shown in the Plans and specified in the Special Provisions, and the rock slope scaling plan as approved by the Engineer.

Except when the Plans or Special Provisions specify a Contracting Agency provided site for disposal of all or specific portions of the rock slope scaling debris, all rock slope scaling debris shall be disposed of at a site conforming to Section 2-03.3(7)C.

2-03.3(7).GR2

***Disposal Of Surplus Material***

2-03.3(7).INST1.GR2

Section 2-03.3(7) is supplemented with the following:

2-03.3(7).OPT1.FR2

(March 13, 1995)

Surplus materials may be disposed of within the Contracting Agency furnished site, as detailed in the Plans. For informational purposes the maximum capacity of this site is *** $$1$$ *** cubic yards, neat line measurement.

2-03.3(7).OPT2.FR2
(March 13, 1995)
Surplus materials may be disposed of by widening embankments at the following locations, as may be designated by the Engineer :

*** $$1$$ ***

For informational purposes the maximum capacity of the embankment widening sites is *** $$2$$ *** cubic yards, neat line measurement

2-03.3(7).OPT3.GR2
(March 13, 1995)
The Contractor is not required to utilize the Contracting Agency provided site(s), and may make arrangements, at the Contractor's expense, for the disposal of waste materials, and shall protect the Contracting Agency from all damages arising from the Contractor's waste disposal operations.

2-03.3(7).OPT4.GR2
(March 13, 1995)
It is anticipated that the waste site(s) provided by the Contracting Agency will not be of sufficient size or capacity to dispose of all excess materials. Therefore, it will be necessary for the Contractor to make arrangements, at the Contractor's expense, for the disposal of excess waste materials and shall protect the Contracting Agency from all damages that may arise from the waste disposal operations.

2-03.3(14).GR2
***Embankment Construction***

2-03.3(14)C.GR2
**Compacting Earth Embankments**

2-03.3(14)C.INST1.GR2
Section 2-03.3(14)C is supplemented with the following:

2-03.3(14)C.OPT1.GR2
(March 13, 1995)
All embankments, except waste embankments, shall be compacted using Method A.

2-03.3(14)I.GB2
**Embankments at Bridge And Trestle Ends**

2-03.3(14)I.INST1.GB2
Section 2-03.3(14)I is supplemented with the following:

2-03.3(14)I.OPT1.FB2
(March 13, 1995)

The approach embankments at the ends of *** $$1$$ *** shall be constructed *** $$2$$ *** before undertaking the construction of the end piers.

2-03.4.GR2

## Measurement

2-03.4.INST1.GR2

Section 2-03.4 is supplemented with the following:

2-03.4.OPT1.GR2

(March 13, 1995)

The embankment widening for guardrail will be measured by the cubic yard, between the original roadway slope and the neat lines of the widened embankment.

2-03.4.OPT2.GR2

(March 13, 1995)

Only one determination of the original ground elevation will be made on this project. Measurement for roadway excavation and embankment will be based on the original ground elevations recorded previous to the award of this contract.

If discrepancies are discovered in the ground elevations which will materially affect the quantities of earthwork, the original computations of earthwork quantities will be adjusted accordingly.

Earthwork quantities will be computed, either manually or by means of electronic data processing equipment, by use of the average end area method or by the finite element analysis method utilizing digital terrain modeling techniques.

Copies of the ground cross-section notes will be available for the bidder's inspection, before the opening of bids, at the Engineer's office and at the Region office.

Upon award of the contract, copies of the original ground cross-sections will be furnished to the successful bidder on request to the Engineer.

2-03.4.OPT3.GR2

(March 13, 1995)

Only one determination of the original ground elevation will be made on this project. Measurement for roadway excavation and embankment will be based on the original ground elevations recorded previous to the award of this contract. Control stakes will be set during construction to provide the Contractor with all essential information for the construction of excavation and embankments.

If discrepancies are discovered in the ground elevations which will materially affect the quantities of earthwork, the original computations of earthwork quantities will be adjusted accordingly.

Earthwork quantities will be computed, either manually or by means of electronic data processing equipment, by use of the average end area method or by the finite element analysis method utilizing digital terrain modeling techniques.

Copies of the ground cross-section notes will be available for the bidder's inspection, before the opening of bids, at the Engineer's office and at the Region office.

Upon award of the contract, copies of the original ground cross-sections will be furnished to the successful bidder on request to the Engineer.

2-03.4.OPT4.GR2
(April 5, 2010)
Rock slope scaling will be measured by the crew hour.

Rock slope scaling debris removal including haul will be measured by the cubic yard in the hauling conveyance at the point of removal from the work site.

2-03.5.GR2
## Payment

2-03.5.INST1.GR2
Section 2-03.5 is supplemented with the following:

2-03.5.OPT1.GR2
(September 30, 1996)
"Embankment in Place", per cubic yard.

The unit contract price per cubic yard shall be full pay to perform the work as specified, including terracing the existing slope.

2-03.5.OPT2.FR2
(March 13, 1995)
All costs in connection with the preparation of waste sites and waste deposits shall be included in the *** $$1$$ ***.

2-03.5.OPT3.GR2
(April 5, 2010)
"Rock Slope Scaling", per crew hour.
The unit contract price per crew hour for "Rock Slope Scaling" shall be full pay for performing the work as specified.

"Rock Slope Scaling Debris Removal Incl. Haul", per cubic yard.
The unit contract price per cubic yard for "Rock Slope Scaling Debris Removal Incl. Haul" shall be full pay for performing the work as specified, including collection, removal and disposal of all rock debris within the limits of the project present at the base of the slope at the beginning of the project.

All costs in connection with felling of trees and woody vegetation from the site as specified, and collection, removal and disposal of all trees and woody vegetation cut and removed from the slope, shall be included in the lump sum contract price for "Clearing and Grubbing".

2-06.GR2
## Subgrade Preparation

2-06.3.GR2
## Construction Requirements

2-06.3(1).GR2

### *Subgrade For Surfacing*

2-06.3(1).INST1.GR2

Section 2-06.3(1) is supplemented with the following:

2-06.3(1).OPT1.GR2

(March 13, 1995)

The subgrade shall be trimmed with an automatically controlled machine.

2-06.3(1).OPT2.GR2

(March 13, 1995)

A subgrade trimmer is not required but all portions of Section 2-03 shall apply as though a subgrade trimmer were specified.

2-09.GR2

## Structure Excavation

2-09.3.GR2

## Construction Requirements

2-09.3(1).GR2

### *General Requirements*

2-09.3(1)C.GR2

**Removal of Unstable Base Material**

2-09.3(1)C.INST1.GR2

Section 2-09.3(1)C is supplemented with the following:

2-09.3(1)C.OPT1.FB2

(September 8, 2020)

If the soil in the footing excavation *** $$1$$ *** is disturbed and becomes unsuitable before placement of the concrete footing, the Contractor shall excavate below the plan grade a maximum of 1 foot, as determined by the Engineer, and backfill with gravel backfill for foundations.

2-09.3(3).GR2

### *Construction Requirements, Structure Excavation, Class A*

2-09.3(3)B.GR2

**Excavation Using Open Pits – Extra Excavation**

2-09.3(3)B.INST1.GR2

Section 2-09.3(3)B is supplemented with the following:

2-09.3(3)B.OPT1.FB2

(April 3, 2017)

Extra excavation and open pit excavation, as defined in this section, will not be allowed at the following location(s):

*** $$1$$ ***

Shoring for the excavation sites specified above shall be Structural Shoring in accordance with Section 2-09.3(3)D. The Contractor shall submit Type 3E Working Drawings consisting of shoring plans in accordance with Section 2-09.3(3)D.

2-09.3(3)B.OPT2.FR2

(April 1, 2019)

The Contracting Agency has identified the following areas where the Contractor may dig open pits or perform extra excavation without shoring or cofferdams provided slope stability is evaluated using limit equilibrium methods:

*** $$1$$ ***

**Submittals and Design Requirements**

At the locations identified above, the temporary excavation slopes shall be designed by an engineer or engineering geologist licensed in Washington State. The Contractor shall submit Type 2E Working Drawings for the areas identified above. The Type 2E Working Drawings may address each site individually, as groups, or in entirety. The design shall use limit equilibrium slope stability methods and software and shall be completed in conformance with the WSDOT *Geotechnical Design Manual* M 46-03. The design shall be based on site specific conditions and shall include a stability assessment of interim or intermediate stages if they are used and shall include all applicable surcharge loads including those from construction equipment or stock piled materials. Required submittal elements include, at a minimum, the following:

1. A plan view showing the limits of the excavation and its relationship to traffic, Structures, utilities and other pertinent project elements. If the stability of the excavation requires no-load zones or equipment setback distances, those shall be shown on the plan view.

2. A typical or controlling cross section showing the proposed excavation, original ground line, and locations of traffic, existing Structures, utilities, site constraints, surcharge loads, or other conditions that could affect the stability of the slope. If the stability of the excavation requires no-load zones or equipment setback distances, those shall be shown in cross section.

3. A summary clearly describing subsurface conditions and groundwater conditions, sequencing considerations, and governing assumptions.

4. Supporting calculations for the design of the excavation, the soil and material properties selected for design, and the justification for the selection for those properties, in accordance with the WSDOT *Geotechnical Design Manual* M 46-03.

5. Safety factors, or load and resistance factors used, and justification for their selection, in accordance with the WSDOT *Geotechnical Design Manual* M 46-03, and referenced AASHTO design manuals.

6. A monitoring plan to evaluate the excavation performance throughout its design life.

7. Any supplemental subsurface explorations made by the Contractor to meet the requirements for geotechnical design of excavation slopes, in accordance with the WSDOT *Geotechnical Design Manual* M 46-03.

2-09.3(3)D.GR2

**Shoring And Cofferdams**

2-09.3(3)D.INST1.GR2

Section 2-09.3(3)D is supplemented with the following:

2-09.3(3)D.OPT1.GB2

(March 13, 1995)

The Contractor shall protect the existing pavement from damage due to the Contractor's operations and shall shore all excavation adjacent to the existing pavement.

2-09.3(3)D.OPT2.GB2

(August 2, 2010)

The Contractor shall protect the existing track and facilities of the Railroad Company from damage due to the Contractor's operations, and shall shore all excavation adjacent to the existing railroad track. Shoring shall be steel sheet piling designed for a Cooper E-80 loading according to the American Railway Engineering and Maintenance Association (AREMA) Manual For Railway Engineering. Damage to the railroad track or railroad facilities, due to the Contractor's operations, will be repaired by the Railroad at the Contractor's expense.

2-09.3(3)D.OPT3.FB2

(March 13, 1995)

Because of the nearness of the work to the existing *** $$1$$, *** the Contractor shall protect the *** $$2$$ *** during the *** $$3$$ ***.

2-09.4.GR2

## Measurement

2-09.4.INST1.GR2

The subsection **Lower Limits** of Section 2-09.4 is supplemented with the following:

2-09.4.OPT1.GB2

(January 4, 2010)

Under girders, at end pier embankments, the lower limit will follow a line parallel to the bottom of the girders and three feet below them.

2-12.GR2

## Construction Geosynthetic

2-12.1.GR2

## Description

2-12.1.INST1.GR2

Section 2-12.1 is supplemented with the following:

2-12.1.OPT1.GR2

***(November 17, 1997)***

***Geosynthetic Reinforced Slope***

The Contractor shall furnish and construct geosynthetic reinforced slopes in accordance with the details shown in the Plans, these specifications, or as directed by the Engineer.

2-12.2.GR2

## Materials

2-12.2(9-03.14).GR2

***Borrow***

Section 9-03.14 is supplemented with the following:

2-12.2(9-03.14).OPT1.FR2

**(November 17, 1997)**

**Borrow for Geosynthetic Reinforced Slope**

All backfill material used in the reinforced soil zone of the geosynthetic reinforced slope shall be free draining, free from organic or otherwise deleterious material and shall conform to the gradation for *** $$1$$ *** borrow, except that the percent passing a No. 200 sieve shall be 7 to 12 percent, and the SE shall be 15 minimum. The material shall be substantially free of shale or other soft, poor durability particles, and shall not contain recycled materials, such as glass, shredded tires, portland cement concrete rubble, or asphaltic concrete rubble. The backfill material shall meet the following requirements:

| Property | Test Method | Allowable Test Value |
|---|---|---|
| Los Angeles Wear, 500 rev. | AASHTO T 96 | 35 percent max. |
| Degradation | WSDOT Test Method 113 | 15 min. |
| pH | AASHTO T 289-91 | 4.5 to 9 |

Reinforced slope backfill material satisfying these gradation, durability and chemical requirements shall be classified as nonaggressive.

2-12.2(9-07.9).GR2

***Cold Drawn Wire***

Section 9-07.9 is supplemented with the following:

2-12.2(9-07.9).OPT1.GR2

(November 17, 1997)

Welded wire fabric for the slope facing, including all facing anchor pins and tie-bars, shall conform to the requirements of AASHTO M55. Welded wire fabric, anchor pins, and tie-bars shall be galvanized after fabrication in accordance with ASTM A 641 (2 oz./ft$^2$ minimum). All damage to galvanizing shall be repaired with formula A-9-73 Galvanizing Repair Paint in accordance with Section 9-08.2.

2-12.2(9-33.2(2)).GR2

***Geosynthetic Properties For Retaining Walls and Reinforced Slopes***

Section 9-33.2(2) is supplemented with the following:

2-12.2(9-33.2(2)).OPT1.FR2

**(January 2, 2012)**

**Geosynthetic Properties for Reinforced Slopes**

Geotextile reinforcement (primary and secondary) in geosynthetic reinforced slopes shall conform to the properties specified in Tables 7 and 11.

If geogrid reinforcement is used for wrapped face reinforced slope construction, the geotextile material placed at the wall face to retain the backfill material as shown in the Plans shall conform to the properties of Table 7.

Wide strip geosynthetic strengths are minimum average roll values (i.e., the average test results for any sampled roll in a lot shall meet or exceed the values shown in the table). These wide strip strength requirements apply only in the geosynthetic direction perpendicular to the slope face. Wide width tensile strength testing is in conformance with the most recently approved ASTM geosynthetic test procedure (ASTM D4595 for geotextiles, and ASTM D6637 for geogrids), except for geosynthetic sampling and specimen conditioning, which are in accordance with WSDOT Test Methods 914 and 915, respectively.

**Table 11:** Long-term tensile strength, $T_{al}$, required for geosynthetic reinforcement used in geosynthetic reinforced slopes.

| [3]Slope Location | Vertical Spacing of Primary Reinforcement Layers | Primary Reinforcement Layer Distance from Top of Reinforced slope | [1,2]Minimum Long-Term Tensile Strength, $T_{al}$, for Primary Reinforcement | [1]Minimum Ultimate Tensile Strength (ASTM D4595 or D6637) for Secondary Reinforcement |
|---|---|---|---|---|
| ***$$1$$*** | ***$$2$$*** | ***$$3$$*** | ***$$4$$*** | 1300 lbs/ft. |

[1]These long-term tensile strength requirements apply only in the geosynthetic direction perpendicular to the slope face.

[2]$T_{al}$.shall be determined in accordance with WSDOT Standard Practice T925.

[3]Reinforced slopes ***$$5$$*** are classified as Class ***$$6$$*** structures.

2-12.2(9-33.2(2)).OPT2.GR2

**(August 4, 2014)**

**Geosynthetic Properties for Turf Reinforcement Mat**

The turf reinforcement mat shall be a three-dimensional non-degradable polymer mat conforming to the properties indicated in Table 12. All geosynthetic properties are minimum average roll values. The average test results for any sampled roll in a lot shall meet or exceed the values shown in the table.

**Table 12:** Turf Reinforcement Mat Property Requirements.

| Property | Test Method | Minimum Property Requirements |
|---|---|---|
| Tensile Strength, Minimum in Machine and X-Machine direction | ASTM D 6818 | 10 lbs/in. |
| Thickness | ASTM D 6525 | 0.5 inch |
| UV Resistance | ASTM D 4355 @ 500 hours | 70% |

2-12.2(9-33.4(1)).GR2

***Source Approval***

Section 9-33.4(1) is supplemented with the following:

2-12.2(9-33.4(1)).OPT1.GR2

**(April 5, 2004)**

**Geosynthetic Reinforced Slope Primary Reinforcement**

Geosynthetic products which are qualified for use in geosynthetic reinforced structures for primary reinforcement (Classes 1, 2, or both) are listed in the current Qualified Products List (QPL).

For geosynthetic products proposed for use as primary reinforcement which are not listed in the current QPL, the Contractor shall submit test information and the calculations used in the determination of $T_{al}$ performed in accordance with WSDOT Test Method 925 to the Olympia Service Center Materials Laboratory in Tumwater for evaluation. The Contracting Agency will require up to 30 calendar days after receipt of the information to complete the evaluation.

Source approval for reinforced slope primary reinforcement geosynthetic materials listed in the current QPL, or as approved based on data developed and submitted in accordance with WSDOT Test Method 925, will be based on conformance to the applicable values in Tables 7 and 11.

2-12.2(9-33.4(1)).OPT2.GR2

**(April 5, 2004)**

**Geosynthetic Reinforced Slope Secondary Reinforcement**

The Contractor shall submit to the Engineer the following information regarding the geosynthetic secondary reinforcement product(s) proposed for use:

Manufacturer's name and current address,
Full product name,
Geosynthetic structure, including fiber/yarn type, and
Geosynthetic polymer type(s).

If the geosynthetic source has not been previously evaluated or included in the QPL, a sample of each proposed geosynthetic shall be submitted to the Olympia Service Center Materials Laboratory in Tumwater for evaluation. A maximum of 14 calendar days will be required for this testing once the samples and required product information arrive at the Materials Laboratory. Source approval will be based on conformance to the applicable values in Tables 7 and 11. Source approval will not be the basis of acceptance of specific lots of material unless the lot sampled can be

clearly identified, and the number of samples tested and approved meet the requirements of WSDOT Test Method 914.

2-12.2(9-33.4(1)).OPT3.GR2

**(November 17, 1997)**

**Geosynthetic Reinforced Slope Turf Reinforcement Mat**

Approval of source for turf reinforcement mat will be by Manufacturer's Certificate of Compliance.

2-12.2(9-33.4(3)).GR2

***Acceptance Samples***

Section 9-33.4(3) is supplemented with the following:

2-12.2(9-33.4(3)).OPT1.GR2

**(November 17, 1997)**

**Geosynthetic Reinforced Slope Primary Reinforcement**

Geotextile acceptance testing shall meet the requirements of Table 7, and both geotextile and geogrid acceptance testing shall meet the required ultimate tensile strength $T_{ult}$ as provided in the QPL for the selected product(s). If the selected product(s) are not listed in the current QPL, the result of the testing for $T_{ult}$ must be greater than or equal to $T_{ult}$ as determined from the product data submitted and approved by the Olympia Service Center Materials Laboratory during source approval. If the results of the testing show that the reinforced slope primary geosynthetic reinforcement lot does not meet the specified properties, the roll or rolls which were sampled will be rejected, and additional sampling and testing will be performed as specified.

2-12.2(9-33.4(3)).OPT2.GR2

**(April 5, 2004)**

**Geosynthetic Reinforced Slope Secondary Reinforcement**

If the results of the testing show that the reinforced slope secondary reinforcement geosynthetic lot does not meet the properties specified in Table 7 (geotextiles only) and Table 11 (geotextiles and geogrids), the roll or rolls which were sampled will be rejected, and additional sampling and testing will be performed as specified.

2-12.2(9-33.4(3)).OPT3.GR2

**(November 17, 1997)**

**Geosynthetic Reinforced Slope Turf Reinforcement Mat**

Acceptance of turf reinforcement mat will be by Manufacturer's Certificate of Compliance.

2-12.2(9-33.4(4)).GR2

***Acceptance by Certificate of Compliance***

Section 9-33.4(4) is supplemented with the following:

2-12.2(9-33.4(4)).OPT1.GR2

**(November 17, 1997)**

**Reinforced Slope**

The Contractor shall provide a Manufacturer's Certificate of Compliance to the Engineer, including polymer type in addition to all information as specified, for all quantities of reinforced slope geosynthetic material, including primary and secondary reinforcement materials, and erosion mat material when specified in the Plans.

2-12.3.GR2

## Construction Requirements

2-12.3.INST1.GR2

Section 2-12.3 is supplemented with the following:

2-12.3.OPT1.GR2

***(November 17, 1997)***

***Geosynthetic Reinforced Slope Construction Requirements***

**Submittals**

The Contractor shall submit to the Engineer, a minimum of 14 calendar days prior to beginning construction of each reinforced slope, detailed plans for each reinforced slope and as a minimum, the submittals shall include the following:

1. Detailed reinforced slope plans showing the actual lengths proposed for the geosynthetic reinforcing layers and the locations of each geosynthetic product proposed for use in each of the geosynthetic reinforcing layers.

2. The Contractor's proposed reinforced slope construction method, including any proposed forming systems, types of equipment to be used and proposed erection sequence.

3. Manufacturer's Certificate of Compliance, samples of the reinforced slope geosynthetic(s) and sewn seams for the purpose of acceptance as specified.

4. Details of geosynthetic reinforced slope corner construction, including details of the positive connection between the slope sections on both sides of the corner.

5. Details of terminating a top layer of reinforced slope geosynthetic and backfill due to a changing reinforced slope profile.

Approval of the Contractor's proposed reinforced slope construction details and methods shall not relieve the Contractor of their responsibility to construct the reinforced slopes in accordance with the requirements of these Specifications.

**Reinforced Slope Construction**

The Contractor shall excavate for the reinforced slope in accordance with Section 2-09, and conforming to the limits and construction stages shown in the Plans.

The Contractor shall direct all surface runoff from adjacent areas away from the reinforced slope construction site.

The Contractor shall begin reinforced slope construction at the lowest portion of the excavation and shall place each layer horizontally as shown in the Plans. The Contractor shall complete each layer entirely before beginning the next layer.

Geotextile splices shall consist of a sewn seam or a minimum 1 ft overlap. Geogrid splices shall consist of adjacent geogrid strips butted together and fastened using hog rings, or other methods approved by the Engineer, in such a manner to prevent

the splices from separating during geogrid installation and backfilling. The Contractor shall offset geosynthetic splices in one layer from those in the other layers such that the splices shall not line up vertically. Splices parallel to the slope face will not be allowed, as shown in the Plans.

Primary reinforcing geosynthetic shall be cut to the length shown in the Plans. For geogrids, the end of the primary reinforcing located at the face of the slope shall be cut so that the cut ribs extend no more than 0.6 inch but not less than 0.2 inch from the cross ribs. For geogrids, the length of the reinforcement required as shown in the Plans shall be defined as the distance between the geosynthetic facing and the last geogrid node at the end of the reinforcement in the slope backfill.

The Contractor shall stretch out the geosynthetic in the direction perpendicular to the slope face to ensure that no slack or wrinkles exist in the geosynthetic prior to backfilling. Soil piles or the geosynthetic manufacturer's recommended method shall be used to hold the geosynthetic in place until the specified cover material is placed.

The Contractor shall place fill material on the geosynthetic in lifts such that 6 inches minimum of fill material is between the vehicle or equipment tires or tracks and the geosynthetic at all times. The Contractor shall remove all particles within the backfill material greater than 3 inches in size. Turning of vehicles on the first lift above the geosynthetic will not be permitted. The Contractor shall not end dump fill material directly on the geosynthetic without the prior approval of the Engineer.

Should the geosynthetic be damaged or the splices disturbed, the backfill around the damaged or displaced area shall be removed and the damaged strip of geosynthetic replaced by the Contractor at no expense to the Contracting Agency.

The Contractor shall place and compact the reinforced slope backfill in accordance with the reinforced slope construction sequence detailed in the Plans. The minimum compacted backfill lift thickness of the first lift above each geosynthetic layer shall be 6 inches. The maximum compacted lift thickness anywhere within the reinforced slope shall be 10 inches.

The Contractor shall compact each layer to 95 percent of maximum density. The water content of the reinforced slope backfill shall not exceed the optimum water content by more than 3 percent. The Contractor shall not use sheepsfoot rollers or rollers with protrusions. Rollers which weigh more than 6,000 lbs shall be used with the vibrator turned off. The Contractor may use rollers which weigh 6,000 lbs or less with the vibrator turned on with the prior approval of the Engineer.

The Contractor shall construct slope corners at the locations shown in the Plans, and in accordance with the reinforced slope corner construction sequence and method submitted by the Contractor and approved by the Engineer. Slope angle points with an interior angle of less than 150 degrees shall be considered to be a corner. The slope corner shall provide a positive connection between the sections of the reinforced slope on each side of the corner such that the slope backfill material cannot spill out through the corner at any time during the design life of the reinforced slope. The Contractor shall construct the slope corner such that the reinforced slope sections on both sides of the corner attain the full geosynthetic layer embedment lengths shown in the Plans.

Where required by reinforced slope profile grade, the Contractor shall terminate top layers of reinforced slope geosynthetic and backfill in accordance with the method submitted by the Contractor and approved by the Engineer. The end of each layer at the top of the slope shall be constructed in a manner which prevents slope backfill material from spilling out the face of the slope throughout the life of the reinforced slope. If the profile of the top of the slope changes at a rate of 1V:1H or steeper, this change in top of slope profile shall be considered to be a corner.

**Tolerances**

The Contractor shall complete the base of the reinforced slope excavation to within plus or minus 3 inches of the staked elevations unless otherwise directed by the Engineer. The Contractor shall place the external slope dimensions to within plus or minus 2 inches of that staked on the ground. The Contractor shall space the reinforcement layers vertically to within plus or minus 1 inch of that shown in the Plans.

The completed reinforced slope(s) shall meet the following tolerances:

| | Tolerance |
|---|---|
| Deviation from the design slope and horizontal alignment for the slope face, when measured along a 10-foot straight edge at the midpoint of each reinforced slope layer, shall not exceed: | 5 inches |
| Deviation from the overall design slope per 10 feet of reinforced slope height shall not exceed: | 3 inches |

2-12.3.OPT2.FR2

***(August 2, 2010)***

***Turf Reinforced Mat Installation***

Splices in the Turf Reinforced Mat shall be butted together and the splice shall be held together with hog rings, or other methods approved by the Engineer, in a manner that will prevent the splice from separating during installation and backfilling.

The face of the reinforced slope shall be cleared of all rocks, dirt clods, vegetation, trash and other obstructions that may cause the mat to bridge the ground surface. The mat shall be unrolled in the direction of water flow with the flat side against the ground.

The turf reinforcement mat shall be anchored at the shoulder of the slope in an anchor trench a minimum of 12 inches deep and 6 inches wide. The anchor trench shall be excavated prior to placing the erosion mat on the slope. Heavy duty steel pins or polyethylene pegs shall be used to anchor the mat to the slope face. Steel pins shall be a minimum 0.2 inch diameter, with a 1.5 inch diameter steel washer secured at the head of the pin. Polyethylene pegs shall be “T” type or have a 1.5 inch diameter washer secured at the head of the peg. All pins or pegs shall be 12 inches long minimum. Hog rings, or other methods approved by the Engineer, shall be used to attach the turf reinforcement mat to the cross ribs of the primary reinforcing at the face of the slope. The ties shall be as durable and strong as the material to which they are tied. The turf

reinforcement mat shall be securely attached to the cross ribs by tie(s) centered between the pins or pegs.

Upon completion of the mat installation, *** $$1$$ *** inch(es) of Topsoil Type *** $$2$$ *** shall be spread over the turf reinforcement mat by drop spreader, blower truck, cyclone spreader, or by shovels, rakes, and brooms. The Topsoil shall be lightly raked or brushed into the mat apertures to completely fill the mat thickness. The slope shall be seeded with grass seed by broadcast or hydroseeding in accordance with Sections 8-01 and 9-14, and as specified in the Contract Provisions.

2-12.3.OPT3.GR2

***(November 17, 1997)***

***Geosynthetic Wrapped Slope Facing Construction***

The Contractor shall use a temporary form system to minimize sagging of the geosynthetic facing elements during construction. A typical example of a temporary form system and sequence of reinforced slope construction required when using this form are detailed in the Plans.

Geosynthetic reinforcement splices exposed at the slope face shall prevent loss of backfill material through the face. The splicing material exposed at the slope face shall be as durable and strong as the material to which the splices are tied.

The Contractor shall compact the zone within 3 ft of the slope face without causing damage or distortion to the slope face or reinforcing layers by using light mechanical tampers approved by the Engineer.

The wall face shall be stepped vertically rather than using a battered forming system. Boston Ivy shall be placed in the slope face through the geosynthetic reinforcement layers in the horizontal portion of each step as indicated in the Plans. The first row of ivy plants shall be placed in the bottom layer of the reinforced slope. Rows of plants shall be spaced vertically no more than 16 ft apart. Plants within a row shall be spaced horizontally 6 to 7 ft apart. Holes placed through the reinforcement shall be the minimum size necessary to install the plants.

2-12.3.OPT4.GR2

***(November 17, 1997)***

***Welded Wire Facing Construction***

The Contractor shall install welded wire facing as shown in the Plans. Horizontally adjacent facing panels shall be butted together such that no gap between facing panels exists. Butted together facing panel splices shall be offset from each other in adjacent layers so that the splices do not line up with one another from layer to layer.

If secondary geosynthetic reinforcement is specified, secondary reinforcement splices transverse to the slope shall be butted together and the splice shall be held together with hog rings, or other methods approved by the Engineer in the manner that will prevent the splice from separating during geosynthetic installation and backfilling.

The front 3 inches to 6 inches of reinforced slope backfill at the slope face, as shown in the Plans, shall be thoroughly mixed with lime, 16-16-16 fertilizer, and grass seed to create a vegetated face. Lime shall be applied at a rate 6.0 lbs/cy, fertilizer at a rate of 0.7 lbs/cy, and grass seed at a rate of 0.4 lbs/cy.

The Contractor shall compact the zone within one meter of the slope face without causing damage or distortion to the slope face or reinforcing layers by using light mechanical tampers approved by the Engineer. The maximum outward bulge of the face between primary reinforcement layers shall not exceed 3 inches.

2-12.3.OPT5.GR2

***(November 17, 1997)***

***Installing Guardrail Posts in Geosynthetic Reinforced Slopes***

The Contractor shall install guardrail posts as shown in the Plans after completing the reinforced slopes. The Contractor shall install the posts in a manner that prevents bulging of the slope face and prevents ripping, tearing, or pulling of the geosynthetic reinforcement. Holes through the geosynthetic reinforcement shall be the minimum size necessary for the post. The Contractor shall demonstrate to the Engineer prior to beginning guardrail post installation that the installation method will not rip, tear, or pull the geosynthetic reinforcement.

2-12.4.GR2

## Measurement

2-12.4.INST1.GR2

Section 2-12.4 is supplemented with the following:

2-12.4.OPT1.FR2

(January 5, 1998)

Geosynthetic reinforced slope will be measured by the square foot of face of completed reinforced slope, measured in the plane of the slope.

***$$1$$*** borrow including haul will be measured as specified in Section 2-03.4.

Structure excavation Class B including haul will be measured as specified in Section 2-09.4 and to the limits shown in the Plans.

2-12.5.GR2

## Payment

2-12.5.INST1.GR2

Section 2-12.5 is supplemented with the following:

2-12.5.OPT1.FR2

(November 17, 1997)

"Geosynthetic Reinforced Slope", per square foot.

“*** $$1$$ *** Borrow Incl. Haul”, per ton or per cubic yard.

“Structure Excavation Class B Incl. Haul”, per cubic yard.

The unit contract price per square foot for "Geosynthetic Reinforced Slope" shall be full pay to perform the work as specified, including compaction of the backfill material, and furnishing and installing the facing materials, plantings, and any temporary forming system used.

DIVISION3.GR3

# Division 3
# Aggregate Production and Acceptance

3-01.GR3

## Production From Quarry and Pit Sites

3-01.2.GR3

## Material Sources, General Requirements

3-01.2.INST1.GR3

Section 3-01.2 is supplemented with the following:

3-01.2.OPT1.GR3

***(March 13, 1995)***

***Permits For Pit Operations In King County***

The Contractor is advised that King County may require the Contractor to meet any or all of the following listed conditions before considering issuance of a temporary permit for pit operations within King County:

1. Security fences and locking gates shall be installed where deemed necessary by the King County Department of Building. Cable or wire gates are not acceptable.

2. Hours of operation shall be limited to: 7:00 a.m. to 7:00 p.m.

3. Access roads shall be improved and maintained to the satisfaction of the King County Department of Public Works. A haul road agreement for County road maintenance may be required.

   All roads shall be swept, washed, or both, by the Contractor at the Contractor's expense as often as the Department of Building deems necessary.

   Property shall have functional access to an arterial level street.

4. All operations will have to be approved by King County Flood Control for drainage plans, Washington State Department of Ecology, and Puget Sound Air Pollution Control Authority.

   Those properties near or adjacent to any water body shall have written approval from the State of Washington Department of Fisheries.

   The Contractor shall obtain a mining reclamation permit from the State of Washington Department of Natural Resources for sites of over three acres in size of disturbed land or resulting in pit walls more than thirty feet high and steeper than one to one slope.

5. No stockpiling of foreign excavated material is permitted on the site except for those materials to be used in the land rehabilitation of the subject property.

6. No signs other than signs required by Chapter 24.42, King County Zoning Code are authorized as a result of the temporary permit.

7. Plans required:

a. Scale of Plot Plans

| | | |
|---|---|---|
| Site Size: | less than 10 acres | 1 inch = 50 feet |
| | 10 to 100 acres | 1 inch = 100 feet |
| | over 100 acres | 1 inch = 200 feet |

b. Contours

Show existing and proposed contours at 5-foot intervals. If existing and proposed contours are superimposed upon one another it must be clear as to which is which. Plans which incorporate a screening process may be required by the County to distinguish said contours.

Finished contours must show how the property can be used under the existing zoning. Plans showing daylighting of property to road grade or below with high 2:1 slope walls will no longer be permitted within the R, S, or G zones. The plans must contain large terraces which will permit the lot sizes and roads that are permitted within the zone.

c. Sections

Show a minimum of two sections in each direction.

d. Maximum Slope

Cuts shall not be steeper in slope than two horizontal to one vertical unless the owner furnishes a soils engineering or an engineering geology report certifying that the site has been investigated and indicating that the proposed deviation will not endanger any private property or result in the deposition of debris on any public way or interfere with any existing drainage course.

e. Fill Slopes

No fill shall be made which creates an exposed surface steeper in slope than two horizontal to one vertical.

f. Benches on Slopes

There shall be a 10 foot wide bench sloped into the hillside for every 50 feet in height.

g. Setbacks

Material and vegetation shall be left in its natural state:

50 feet from any FP, A, G, S, or R zoned property;

20 foot setback which includes a 6 foot high planted berm along any public right-of-way;

20 feet from M, B, or CG zoned property;

10 feet from QM or FR zoned property.

Plans shall show type of vegetation existing within the buffer zones.

h. Drainage

All drainage facilities shall be designed to carry surface waters to the nearest practical street, storm drain, or natural water-course. Adequate provision shall be made to prevent any surface waters from damaging the face of an excavation or fill. All slopes shall be protected from surface water runoff from above by berms or swales.

The Contractor is further advised that King County may require conditions which are in addition to the foregoing list and that the County may reject permit applications at its discretion because of the proposed operations proximity to schools, residential neighborhoods, hospitals, arterials, or for other environmental conditions.

When there are discrepancies between the requirements of the State and the County the more stringent specifications shall apply.

Should the Contractor fail to comply with any requirements of a temporary permit obtained in the Contracting Agency's name, the Contracting Agency will take the necessary action to meet these requirements and any costs incurred by the Contracting Agency will be deducted from monies due or to become due the Contractor.

3-01.3.GR3

## State Furnished Material Sources

3-01.3.INST1.GR3

Section 3-01.3 is supplemented with the following:

3-01.3.OPT1.FR3

(March 13, 1995)

The following source of stockpiled materials is made available at no cost to the Contractor:

Stockpile Site *** $$1$$, a source for $$2$$, *** is located in the *** $$3$$ of Section $$4$$, Township $$5$$ North, Range $$6$$, *** W.M., as shown in the Plans.

3-01.3.OPT2.FR3

(June 26, 2000)

The following source of materials is made available at no cost to the Contractor:

*** $$1$$ Site $$2$$ *** a source for the production of *** $$3$$ *** is located in the *** $$4$$ of Section $$5$$, Township $$6$$ North, Range $$7$$ *** W.M., as shown in the Plans.

In the event that the Contractor proposes to provide these materials from another source, adjustment of quantities shall be made in accordance with Section 3-01.4(1). Such adjustment will be based on the relative specific gravity of the sources. A specific gravity of *** $$8$$ *** for the State-provided source will be used for comparative purposes. The comparative specific gravity of Contractor provided sources will be determined by AASHTO Test Method T-85 on the Saturated Surface Dry Basis by the Headquarters Materials Laboratory.

3-01.6.GR3

## Payment

3-01.6.INST1.GR3

The second paragraph of Section 3-01.6 is supplemented with the following:

3-01.6.OPT1.FR3

(June 03, 1996)

If the Contractor elects not to use the Contracting Agency furnished source(s) of material, the following items of work shall not be performed on this project.

*** $$1$$ ***.

If the Contractor submits unit price(s) in the amount of zero for the above item(s) of work that do not have an estimated amount included in the proposal, the Contracting Agency will accept the Contractor's proposal as being notice of the Contractor's intent not to utilize the Contracting Agency furnished source.

After execution of the contract, should the Contractor decide to utilize the source(s) furnished by the Contracting Agency, the Contractor will be permitted to do so, provided that for those items listed above for which zero has been entered on the proposal, the work required shall be performed at the Contractor's expense.

3-01.6.OPT2.FR3

(March 13, 1995)

The Contractor is advised that while use of the Contracting Agency-furnished materials source(s) is not mandatory, the following items of work in *** $$1$$ Site $$2$$ *** must be performed:

*** $$3$$ ***

3-01.6.OPT3.FR3

(March 13, 1995)

The use of *** $$1$$ Site $$2$$ *** is mandatory and that all work in the site shall be performed.

3-02.GR3

## Stockpiling Aggregates

3-02.2.GR3

## General Requirements

3-02.2(7).GR3

***Removing Aggregates From Stockpiles***

3-02.2(7).INST1.GR3

Section 3-02.2(7) is supplemented with the following:

3-02.2(7).OPT1.FR3

(March 13, 1995)

Materials for use on this project are being produced and stockpiled under another contract. The material being produced is shown in the Plans as existing in stockpile at the following location:

*** $$1$$ ***

It is expected that the material will be available to the Contractor in ample time for the Contractor's use. However, any delay shall not constitute a claim by the Contractor against the Contracting Agency for additional compensation. Should the Contractor be delayed by reason of insufficient material in the stockpile, the Contractor will be granted an extension of time equal to the time actually lost by reason of such delay.

3-02.2(7).OPT2.FR3

(March 13, 1995)

*** $$1$$ *** are existing in stockpiles at the location and in the amounts shown in the Plans.

The Contractor may obtain material from other sources provided they are approved by the Engineer and provided the Contractor makes all arrangements and pays all expenses required for the acquisition of the materials.

If the Contractor chooses to use the materials existing in stockpiles, the Contractor shall pay promptly to the Treasurer of *** $$2$$ *** County, as may come due, a sum owing at the rates specified below based on the quantity of materials allowed by the Engineer on the final or periodic estimates:

*** $$3$$ ***

3-02.5.GR3

**Payment**

3-02.5.INST1.GR3

Section 3-02.5 is supplemented with the following:

3-02.5.OPT1.FR3

(March 13, 1995)

The unit contract price per cubic yard for *** $$1$$ *** shall be full pay for the purchase, loading, hauling, and placing of materials provided in stockpile or, if so chosen by the Contractor, for the furnishing, hauling, and placing of materials obtained by the Contractor from an approved source of the Contractor's own choice and acquisition.

Payment of money due the Contractor on the final estimate will not be made until the Engineer has furnished the Secretary of Transportation with a certificate to verify that all sums due *** $$2$$ *** from the Contractor for materials have been paid in full.

3-03.GR3
## Site Reclamation

3-03.2.GR3
### General Requirements

3-03.2(1).GR3
#### *Contracting Agency-Provided Sites*

3-03.2(1).INST1.GR3
Section 3-03.2(1) is supplemented with the following:

3-03.2(1).OPT1.GR3
(March 13, 1995)
Site reclamation will be performed by the Contracting Agency on all sites furnished by the Contracting Agency.

DIVISION4.GR4
# Division 4
# Bases

4-04.GR4
## Ballast and Crushed Surfacing

4-04.3.GR4
### Construction Requirements

4-04.3(5).GR4
#### *Shaping and Compaction*

4-04.3(5).INST1.GR4
Section 4-04.3(5) is supplemented with the following:

4-04.3(5).OPT1.GR4
(March 13, 1995)
The top surface of the final lift of surfacing material on each mainline roadway shall be trimmed using a trimming machine that maintains grade and transverses slopes automatically, through sensors that respond to reference lines on both edges of each roadway.

The minimum width to be trimmed shall be the travelled way plus sufficient width for the treads of the paving machine.

The trimmed surface shall be smooth and uniform with no chatter or ripples.

DIVISION5.GR5

# Division 5
# Surface Treatments and Pavements

5-01.GR5

## Cement Concrete Pavement Rehabilitation

5-01.3.GR5

## Construction Requirements

5-01.3(5).GR5

### *Partial Depth Spall Repair*

5-01.3(5).INST1.GR5

Section 5-01.3(5) is revised to read:

5-01.3(5).OPT1.GR5

**(September 8, 2020)**

**Partial Depth Spall Repair**

**Description**

This work consists of repairing partial depth spalls using either epoxy concrete or polyester concrete.

**Partial Depth Spall Repair – Epoxy Concrete**

**Materials**

**Epoxy Resin Binder**

Epoxy resin binder shall meet the requirements of ASTM C881 Type III Grade 1 or 2, Class A, B, or C.

**Aggregate**

The aggregate shall be thoroughly washed and kiln dried.

The aggregate for epoxy concrete shall conform to Section 9-03.1 and the following requirements for grading except that ASR mitigation will not apply to aggregate for epoxy concrete:

| Sieve Size | Percent Passing | |
|---|---|---|
| | Gradation 1 | Gradation 2 |
| ½” | | 100 |
| ⅜” | 100 | 83-100 |
| #4 | 62-85 | 65-82 |
| #8 | 45-67 | 45-65 |
| #16 | 29-50 | 27-48 |
| #30 | 16-36 | 12-30 |
| #50 | 5-20 | 6-17 |
| #100 | 0-7 | 0-7 |
| #200 | 0-3 | 0-3 |

All percentages are by weight.

The combined aggregate shall have a maximum of 45 percent crushed particles.

The surface of the aggregate shall be dry and the moisture content of the combined aggregate shall not exceed 1.0 percent when tested in accordance with AASHTO T255. The aggregate temperature shall be between 40°F and 100°F at the time of mixing.

**Sand for Abrasive Finish**

The sand for abrasive finish shall be commercial quality blast sand having at least 95 percent passing the No. 8 sieve and at least 95 percent retained on the No. 20 sieve when tested in accordance with AASHTO T 27. The moisture content of the sand shall not exceed 1.0 percent.

## Construction Requirements

**Manufacturer's Technical Representative**

The Contractor shall have the services of a qualified epoxy resin binder manufacturer's technical representative physically present at the job site during the first shift of epoxy concrete placement. The manufacturer's technical representative shall assist the Contractor in training the Contractor's personnel and providing technical assistance in preparing the concrete surface, applying primer, and mixing, placing, and curing the epoxy concrete. If the epoxy concrete Work is unsatisfactory, or additional training or technical assistance is needed the Contractor shall have the services of the manufacturer's at the job site for additional time as deemed necessary by the Engineer.

**Mix Design**

Epoxy concrete shall be composed of epoxy resin binder and aggregate. The Contractor shall prepare and submit a Type 1 Working Drawing consisting of the epoxy concrete mix proportions and mixing procedure. The epoxy resin binder in the epoxy concrete shall be between 11 to 13 percent by weight of the dry aggregate. The mix design shall include the proportion of epoxy resin binder as a percentage of the dry weight of aggregate, the approximate set time and the time for opening to traffic for the temperature ranges expected during epoxy concrete placement.

**Delivery and Storage of Materials**

All materials shall be delivered in their original containers bearing the manufacturer's label, specifying date of manufacturing, batch number, trade name brand, and quantity. Each shipment shall be accompanied by a Materials Safety Data Sheet (MSDS) for each component of the resin binder.

The material shall be stored in accordance with the manufacturer's recommendations.

**Surface Preparation**

Removal of the existing pavement shall not damage any pavement to be left in place. Any existing pavement that is to remain that has been damaged shall be repaired at the Contractor's expense. If

jackhammers are used for removing pavement, they shall not weigh more than 30 pounds, and chipping hammers shall not weigh more than 15 pounds. All power driven hand tools used for the removal of pavement shall be operated at angles less than 45 degrees as measured from the surface of the pavement to the tool. The patch limits shall extend beyond the spalled area a minimum of 3 inches. Repair areas shall be kept square, rectangular or circular. Repair areas that are within 12 inches of another repair area shall be combined.

A vertical cut shall be made to a minimum depth of 2 inches around the perimeter to be patched using a saw or core drill as marked by the Engineer. The Contractor shall remove material within the perimeter of the saw cut to a depth of 2 inches, or to sound concrete as determined by the Engineer.

The concrete surfaces shall be prepared by removing all material which may act as a bond breaker between the surface and the epoxy concrete. The surfaces to receive the epoxy concrete shall be sand blasted and all loose material removed. All sandblasting residue shall be removed.

Spall repair shall not be done in areas where dowel bars are encountered.

When a partial depth repair is placed directly against an adjacent longitudinal joint, a bond-breaking material such as polyethylene film, roofing paper, or other material as accepted by the Engineer shall be placed between the existing concrete and the area to be patched.

Working transverse joints or cracks adjacent to or within the repair area require placement of a compressible insert. The new joint or crack shall be formed to the same width as the existing joint or crack. The compressible joint material shall be placed into the existing joint 1 inch below the depth of repair. The compressible insert shall extend at least 3 inches beyond each end of the patch boundaries.

Patches that abut the Lane/Shoulder joint require placement of a formed edge, along the slab edge, even with the surface.

If the concrete surfaces become contaminated, the contaminated areas shall be re-cleaned by abrasive blasting at the Contractor's expense.

Precautions shall be taken to ensure that no dust or debris leaves the roadway and that all traffic is protected from rebound and dust. Appropriate shielding shall be provided as required at no additional cost to the Contracting Agency and shall be approved by the Engineer. The Contractor shall reseal all joints in accordance with Section 5-05.3(8)B.

**Application of Prime Coat**

Application of the prime coat and the epoxy concrete shall not begin if rain is forecast within 12-hours of completion of the Work. The area receiving the prime coat shall be dry and had no rain within the past 12 hours. Immediately prior to applying the prime coat, loose material shall be removed using oil and moisture free compressed air. The concrete surface shall be between 40°F and 100°F when applying the prime coat.

Immediately before placing epoxy concrete, the prepared concrete surface shall be given a prime coat consisting of one coat of the epoxy resin binder.

The prime coat shall be worked into the concrete in a manner to assure complete coverage of the area receiving epoxy concrete.

If the primed surface becomes contaminated, the contaminated area shall be cleaned by abrasive blasting and re-primed.

The prime coat shall not be allowed to run into drainage structures, joints or working cracks.

**Mixing Components**

The components of the epoxy resin binder shall be thoroughly blended just prior to mixing with the aggregate. The epoxy concrete shall be thoroughly mixed prior to placing.

The Contractor shall prevent any cleaning chemicals from reaching the epoxy concrete mix during the mixing operations.

**Epoxy Concrete Placement**

Under no circumstances shall any epoxy resin or epoxy concrete be allowed to run into drainage structures, joints or working cracks.

The epoxy concrete shall be placed on the liquid prime coat and consolidated in accordance with the manufacturer's recommendations.

**Finished Epoxy Concrete Surface**

All repair areas shall be struck off level with the adjacent concrete. Forms shall be coated with suitable bond release agent to permit ready release of forms.

Sand for abrasive finish shall be broadcast onto surface to uniformly cover any smooth or glossy areas immediately after finishing and before resin gelling occurs. The completed surface shall be free of any smooth or glossy areas. After the epoxy concrete has cured any smooth or glossy areas shall be repaired by the Contractor in the manner recommended by the System Provider and approved by the Engineer at no additional cost.

The surface texture of epoxy concrete shall be uniform and impervious to moisture.

**Curing**

The epoxy concrete shall be cured in accordance with the manufacturer's recommendations. The Contractor shall measure the compressive strength of the cured epoxy concrete with a rebound hammer in accordance with ASTM C 805. Traffic and equipment shall not be permitted on the epoxy concrete until it achieves a compressive strength of 2,500 psi based on the rebound hammer manufactures correlation of rebound number to compressive strength for the rebound hammer used.

**Partial Depth Spall Repair – Polyester Concrete**

**Materials**

The components of the polyester concrete including the polyester resin binder, aggregate, and high molecular weight methacrylate resin surface primer shall be provided through a single system provider.

**Polyester Resin Binder**

Polyester resin binder shall be an unsaturated isophthalic polyester-styrene co-polymer.

Prior to adding the initiator, the resin shall conform to the following requirements:

| | | |
|---|---|---|
| Viscosity: | 75 to 200 cps<br>(20 rpm at 77°F, RVT No. 1 spindle) | ASTM D2196 |
| Specific Gravity: | 1.05 to 1.10 at 77°F | ASTM D1475 |
| Styrene Content: | 40% to 50% by weight of polyester styrene resin | ASTM D2369 |

The hardened resin shall conform to the following requirements:

| | | |
|---|---|---|
| Elongation: | 35% minimum, type I specimen, thickness 0.25" ± 0.03", Rate – 0.45 in./min. | ASTM D638 |
| Tensile Strength: | 2,500 psi minimum, type I Specimen thickness 0.25" ± 0.03", Rate – 0.45 in./min. | ASTM D 638 |
| Conditioning: | 18 hours/77°F/50% + 5 hours/158°F | ASTM D618 |
| Silane Coupler: | 1.0% minimum (by weight of polyester-styrene resin) | |

The silane coupler shall be an organosilane ester, gammamethacryloxypropyltrimethoxysilane. The promoter/hardeners shall be compatible with suitable methyl ethyl ketone peroxide (MEKP) and cumene hydroperoxide

(CHP) initiators. MEKP and CHP initiators shall be used as recommended by the manufacturer.

Polyester resin binder will be accepted based on submittal to the Engineer of a Manufacturer's Certificate of Compliance.

**High Molecular Weight Methacrylate (HMWM) Resin**
HMWM resin shall be wax-free, low odor and consist of a resin, initiator and promotor conforming to the following requirements:

| | | |
|---|---|---|
| Viscosity | <25 cps (Brookfield RVT with UL adaptor, 50 rpm at 77°F) | ASTM D2196 |
| Flash Point: | 180°F minimum | ASTM D3278 |
| Tack-Free Time: | 400 minutes maximum | California Test 551 |
| SSD Bond Strength | 700 PSI minimum at 24 hours and 70 ± 1°F | California Test 551 |
| Specific Gravity | 0.90 minimum at 77°F | ASTM D1475 |
| Volatile Content | 30 percent, maximum. | ASTM D2369 |
| Vapor Pressure | 0.04 inches Hg, maximum at 77°F | ASTM D323 |

The promoter/initiator system for the methacrylate resin shall consist of a metal drier and peroxide.

If supplied separately from the resin, the drier shall not be mixed directly with the peroxide. The containers shall not be stored in a manner that allows leakage or spilling to contact the containers or materials of the other.

HMWM resin will be accepted based on submittal to the Engineer of a Manufacturer's Certificate of Compliance.

**Aggregate**
The aggregate shall be thoroughly washed and kiln dried.

The aggregate for polyester concrete shall meet the requirements of Section 9-03.1 except that ASR mitigation will not apply to aggregate for polyester concrete. Polyester concrete aggregate shall conform to the following requirements for gradation:

| Sieve Size | Percent Passing | |
|---|---|---|
| | | |
| ½" | | 100 |
| ⅜" | 100 | 83-100 |
| #4 | 62-85 | 65-82 |
| #8 | 45-67 | 45-65 |

| | | |
|---|---|---|
| #16 | 29-50 | 27-48 |
| #30 | 16-36 | 12-30 |
| #50 | 5-20 | 6-17 |
| #100 | 0-7 | 0-7 |
| #200 | 0-3 | 0-3 |

All percentages are by weight.

The combined aggregate shall have a maximum of 45 percent crushed particles.

The surface of the aggregate shall be dry and the absorption shall not exceed 1.0. The moisture content of the combined aggregate shall not exceed one-half of the aggregate absorption when tested in accordance with AASHTO T255. The aggregate temperature shall be between 40°F and 100°F at the time of mixing.

**Sand for Abrasive Finish**

The sand for abrasive finish shall be commercial quality blast sand having at least 95 percent passing the No. 8 sieve and at least 95 percent retained on the No. 20 sieve when tested in accordance with AASHTO T 27. The moisture content of the sand shall not exceed 0.5 percent.

**Construction Requirements**

**Manufacturer's Technical Representative**

The Contractor shall have the services of a qualified polyester concrete manufacturer's technical representative physically present at the job site during the first shift of polyester concrete placement. The manufacturer's technical representative shall assist the Contractor in training the Contractor's personnel and providing technical assistance in preparing the concrete surface, applying primer, and mixing, placing, and curing the polyester concrete. If the polyester concrete Work is unsatisfactory, or additional training or technical assistance is needed the Contractor shall have the services of the manufacturer's at the job site for additional time as deemed necessary by the Engineer to correct the deficiency.

**Mix Design**

Polyester concrete shall be composed of a polyester resin binder and aggregate. The Contractor shall prepare and submit a Type 1 Working Drawing consisting of the polyester concrete mix proportions and mixing procedure. The polyester resin binder in the polyester concrete shall be between 11 to 13 percent by weight of the dry aggregate. The mix design shall include the proportion of polyester resin binder as a percentage of the dry weight of aggregate, the approximate set time and time for opening to traffic for the temperature ranges expected during polyester concrete placement.

**Delivery and Storage of Materials**

All materials shall be delivered in their original containers bearing the manufacturer's label, specifying date of manufacturing, batch number, trade name brand, and quantity. Each shipment shall be accompanied

by a Materials Safety Data Sheet (MSDS) for each component of the resin binder.

The material shall be stored in accordance with the manufacturer's recommendations.

**Surface Preparation**

Removal of the existing pavement shall not damage any pavement to be left in place. Any existing pavement that is to remain that has been damaged shall be repaired at the Contractor's expense. If jackhammers are used for removing pavement, they shall not weigh more than 30 pounds, and chipping hammers shall not weigh more than 15 pounds. All power driven hand tools used for the removal of pavement shall be operated at angles less than 45 degrees as measured from the surface of the pavement to the tool. The patch limits shall extend beyond the spalled area a minimum of 3 inches. Repair areas shall be kept square, rectangular or circular. Repair areas that are within 12 inches of another repair area shall be combined.

A vertical cut shall be made to a minimum depth of 2 inches around the perimeter to be patched using a saw or core drill as marked by the Engineer. The Contractor shall remove material within the perimeter of the saw cut to a depth of 2 inches, or to sound concrete as determined by the Project Engineer.

The concrete surfaces shall be prepared by removing all material which may act as a bond breaker between the surface and the polyester concrete. The surfaces to receive the polyester concrete shall be sand blasted and all loose material removed. All sandblasting residue shall be removed.

Spall repair shall not be done in areas where dowel bars are encountered.

When a partial depth repair is placed directly against an adjacent longitudinal joint, a bond-breaking material such as polyethylene film, roofing paper, or other material as accepted by the Engineer shall be placed between the existing concrete and the area to be patched.

Working transverse joints or cracks adjacent to or within the repair area require placement of a compressible insert. The new joint or crack shall be formed to the same width as the existing joint or crack. The compressible joint material shall be placed into the existing joint 1 inch below the depth of repair. The compressible insert shall extend at least 3 inches beyond each end of the patch boundaries.

Patches that abut the Lane/Shoulder joint require placement of a formed edge, along the slab edge, even with the surface.

If the concrete surfaces become contaminated, the contaminated areas shall be re-cleaned by abrasive blasting at the Contractor's expense.

Precautions shall be taken to ensure that no dust or debris leaves the roadway and that all traffic is protected from rebound and dust. Appropriate shielding shall be provided as required at no additional cost to the Contracting Agency and shall be approved by the Engineer. The Contractor shall reseal all joints in accordance with Section 5-05.3(8)B.

**Application of Prime Coat**

Application of the prime coat and the polyester concrete shall not begin if rain is forecast within 12-hours of completion of the Work. The area receiving the prime coat shall be dry and had no rain within the past 12 hours. Immediately prior to applying the prime coat, loose material shall be removed using oil and moisture free compressed air.

The concrete surface shall be between 40°F and 100°F when applying the prime coat.

The Contractor shall apply a prime coat consisting of one coat of promoted/initiated wax-free HMWM resin to the prepared concrete and steel surfaces immediately before placing the polyester concrete.

The prime coat shall be worked into the concrete in a manner to assure complete coverage of the area receiving polyester concrete.

If the primed surface becomes contaminated, the contaminated area shall be cleaned by abrasive blasting and re-primed.

The prime coat shall not be allowed to run into drainage structures, joints or working cracks.

**Mixing Components**

The components of the polyester resin binder shall be thoroughly blended just prior to mixing with the aggregate. The polyester concrete shall be thoroughly mixed prior to placing.

The Contractor shall prevent any cleaning chemicals from reaching the polyester concrete mix during the mixing operations.

**Polyester Concrete Placement**

Under no circumstances shall any polyester resin or polyester concrete be allowed to run into drainage structures, joints or working cracks.

Place polyester concrete within two hours of placing the HMWM prime coat.

Polyester concrete shall be placed within 15 minutes following initiation. Polyester concrete that is not placed within this time shall be discarded.

The surface temperature of the area receiving the polyester concrete shall be the same as specified above for the HMWM prime coat.

The polyester concrete shall be consolidated in accordance with the manufacturer's recommendations.

**Finished Polyester Concrete Surface**
All repair areas shall be struck off level with the adjacent concrete. Forms shall be coated with suitable bond release agent to permit ready release of forms.

Sand for abrasive finish shall be broadcast onto surface to uniformly cover any smooth or glossy areas immediately after finishing and before resin gelling occurs. The completed surface shall be free of any smooth or glossy areas. After the polyester concrete has cured, any smooth or glossy areas shall be repaired by the Contractor in the manner recommended by the System Provider and approved by the Engineer at no additional cost. The surface texture of polyester concrete shall be uniform and impervious to moisture.

**Curing**
The polyester concrete shall be cured in accordance with the manufacturer's recommendations. The Contractor shall measure the compressive strength of the cured polyester concrete with a rebound hammer in accordance with ASTM C 805. Traffic and equipment shall not be permitted on the polyester concrete until it achieves a compressive strength of 2,500 psi based on the rebound hammer manufactures correlation of rebound number to compressive strength for the rebound hammer used.

5-01.3(9).GR5
***Cement Concrete Pavement Grinding***

5-01.3(9).INST1.GR5
Section 5-01.3(9) is supplemented with the following:

5-01.3(9).OPT1.GR5
(April 1, 2013)
The Contractor shall grind a test section 1500 foot long across the full width of a lane for evaluation by the Engineer to determine if the Work meets the Specifications. If the Specifications have been met the Contractor may proceed with the remaining cement concrete pavement grinding. If the Specifications have not been met, the Contractor shall make adjustments and another test section shall be completed.

5-02.GR5
## Bituminous Surface Treatment

5-02.3.GR5
## Construction Requirements

5-02.3(3).GR5
***Application of Emulsified Asphalt and Aggregate***

5-02.3(3).INST1.GR5

Section 5-02.3(3) is supplemented with the following:

5-02.3(3).OPT1.FR5

(August 5, 2013)

The grades of emulsified asphalt to be used for New Construction bituminous surface treatments shall be *** $$1$$ *** for the first application and *** $$2$$ *** for the second application.

5-02.3(3).OPT2.FR5

(August 5, 2013)

The grade of emulsified asphalt to be used for bituminous surface treatment Seal Coats shall be *** $$1$$. ***.

5-02.4.GR5

## Measurement

5-02.4.INST1.GR5

Section 5-02.4 is supplemented with the following:

5-02.4.OPT2.GR5

(March 13, 1995)

The additional cost involved in the construction of bituminous surface treatment for road approach will be measured per each for each road approach treated, regardless of location, length, width or design.

5-02.5.GR5

## Payment

5-02.5.INST1.GR5

Section 5-02.5 is supplemented with the following:

5-02.5.OPT2.GR5

(February 5, 2001)

"Bituminous Surface Treatment For Road Approach", per each.

The unit contract price per each for "Bituminous Surface Treatment For Road Approach" shall be in addition to payments made for the mineral aggregate and asphalt.

5-02.5.OPT3.GR5

***(August 5, 2013)***

***CRS-2P Cost Price Adjustment***

The Contracting Agency will make a CRS-2P Cost Price Adjustment, either a credit or a payment, for qualifying changes in the reference cost of asphalt binder. The adjustment will be applied to partial payments made according to Section 1-09.9 for the following bid items when they are included in the proposal:

“Emulsified Asphalt CRS-2P”

The adjustment is not a guarantee of full compensation for changes in the cost of emulsified asphalt CRS-2P. The Contracting Agency does not guarantee that emulsified asphalt CRS-2P will be available at the reference cost.

The Contracting Agency will establish the asphalt binder reference cost twice each month and post the information on the Agency website at: http://www.wsdot.wa.gov/Business/Construction/EscalationClauses.htm. The reference cost will be determined using posted prices furnished by Poten & Partners, Inc. If the selected price source ceases to be available for any reason, then the Contracting Agency will select a substitute price source to establish the reference cost.

The base cost established for this contract is the reference cost posted on the Agency website for the period immediately preceding the bid opening date.

Adjustments will be based on the most current reference cost for Western Washington or Eastern Washington as posted on the Agency website, depending on where the work is performed. For work completed after all authorized working days are used, the adjustment will be based on the posted reference cost during which contract time was exhausted. The adjustment will be calculated as follows:

No adjustment will be made if the reference cost is within 5% of the base cost.

If the reference cost is greater than or equal to 105% of the base cost, then
Adjustment = (Current Reference Cost – (1.05 x Base Cost)) x (Q x 0.65).

If the reference cost is less than or equal to 95% of the base cost, then
Adjustment = (Current Reference Cost – (0.95 x Base Cost)) x (Q x 0.65).

Where Q = total tons of Emulsified Asphalt CRS-2P paid in the current month's progress payment.

"CRS-2P Cost Price Adjustment", by calculation.

"CRS-2P Cost Price Adjustment" will be calculated and paid for as described in this section. For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the total bid by the Contractor.

5-02.5.OPT4.GR5

***(January 3, 2017)***

***AC-15P Cost Price Adjustment***

The Contracting Agency will make an AC-15P Cost Price Adjustment, either a credit or a payment, for qualifying changes in the reference cost of asphalt binder. The adjustment will be applied to partial payments made according to Section 1-09.9 for the following bid items when they are included in the proposal:

"Modified Asphalt Cement AC-15P"

The adjustment is not a guarantee of full compensation for changes in the cost of modified asphalt cement AC-15P. The Contracting Agency does not guarantee that modified asphalt cement AC-15P will be available at the reference cost.

The Contracting Agency will establish the asphalt binder reference cost twice each month and post the information on the Agency website at: http://www.wsdot.wa.gov/Business/Construction/EscalationClauses.htm. The

reference cost will be determined using posted prices furnished by Poten & Partners, Inc. If the selected price source ceases to be available for any reason, then the Contracting Agency will select a substitute price source to establish the reference cost.

The base cost established for this contract is the reference cost posted on the Agency website for the period immediately preceding the bid opening date.

Adjustments will be based on the most current reference cost for Western Washington or Eastern Washington as posted on the Agency website, depending on where the work is performed. For work completed after all authorized working days are used, the adjustment will be based on the posted reference cost during which contract time was exhausted. The adjustment will be calculated as follows:

No adjustment will be made if the reference cost is within 5% of the base cost.

If the reference cost is greater than or equal to 105% of the base cost, then
Adjustment = (Current Reference Cost – (1.05 x Base Cost)) x Q .

If the reference cost is less than or equal to 95% of the base cost, then
Adjustment = (Current Reference Cost – (0.95 x Base Cost)) x Q .

Where Q = total tons of Modified Asphalt Cement AC-15P paid in the current month's progress payment.

"AC-15P Cost Price Adjustment", by calculation.

"AC-15P Cost Price Adjustment" will be calculated and paid for as described in this section. For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the total bid by the Contractor.

5-04.GR5
## Hot Mix Asphalt

5-04.2.GR5
### Materials

5-04.2.INST1.GR5
The sixth and seventh materials listed in Section 5-04.2 are revised to read:

5-04.2.OPT1.GR5
(May 20, 2020)

| | |
|---|---|
| Reclaimed Asphalt Pavement (RAP) | 9-03.8(3)B, 9-03.21 |
| Reclaimed Asphalt Shingles (RAS) | 9-03.8(3)B, 9-03.21 |

5-04.2(2).GR5
#### *Mix Design – Obtaining Project Approval*

5-04.2(2).INST1.GR5
Section 5-04.2(2) is supplemented with the following:

5-04.2(2).OPT1.FR5

**(January 3, 2011)**

**ESAL's**

The number of ESAL's for the design and acceptance of the HMA shall be *** $$1$$ *** million.

5-04.2(9-03.8(7)).GR5

*Error! Bookmark not defined.**HMA Tolerances, Specification Limits and Adjustments***

The second paragraph of item number 1 of Section 9-03.8(7) is revised to read:

5-04.2(9-03.8(7)).OPT1.GR5

(September 8, 2020)

These tolerance and specification limits constitute the allowable limits as described in Section 1-06.2. The tolerance limit for aggregate shall not exceed the limits of the control points, except the No. 8 tolerance is ± 4% from the JMF, the No. 200 tolerance is ± 2.0% from the JMF with a minimum of 2% and a maximum of 8.0% passing the No. 200 sieve, other tolerance limits for sieves designated as 100 percent passing will be 99-100.

5-04.3.GR5

## Construction Requirements

5-04.3.INST1.GR5

Section 5-04.3 is supplemented with the following:

5-04.3.OPT4.FR5

(January 3, 2017)

The expected percentage of new asphalt binder in the HMA is *** $$1$$ ***. Should the actual percentage of new asphalt binder required by the job mix formula for HMA produced with Agency-provided aggregate vary by more than plus or minus 0.3-percent an adjustment in payment will be made. The adjustment in payment (plus or minus) will be based on the invoice cost to the Contractor. When RAP and/or RAS are used in the production of HMA the adjustment will be reduced by the percentage of RAP and/or RAS asphalt binder. No adjustment will be made when the Contractor elects not to use a Contracting Agency provided source.

5-04.3(1).GR5

***Weather Limitations***

5-04.3(1).INST1.GR5

The first sentence of Section 5-04.3(1) is revised to read:

5-04.3(1).OPT1.FR5

(August 3, 2009)

HMA for wearing course shall not be placed on any travelled way from *** $$1$$ *** and through March 31st of the following year without written approval from the Engineer.

5-04.3(3).GR5

***Equipment***

5-04.3(3).INST1.GR5

Section 5-04.3(3) is supplemented with the following:

5-04.3(3).OPT1.GR5

(March 13, 1995)

Reference lines will be required for both outer edges of the traveled way for each mainline roadway for vertical control in accordance with Section 5-04.3(3).

5-04.3(3)C.GR5

**Pavers**

5-04.3(3)C.INST1.GR5

Section 5-04.3(3)C is supplemented with the following:

5-04.3(3)C.OPT1.GR5

(April 4, 2016)

Reference lines will be required for both outer edges of the traveled way for each mainline roadway for vertical control in accordance with Section 5-04.3(3)C.

5-04.3(3)D.GR5

**Material Transfer Device or Material Transfer Vehicle**

5-04.3(3)D.OPT1.GR5

(April 4, 2016)

Section 5-04.3(3)D is deleted in its entirety.

5-04.3(3)D.INST1.GR5

Section 5-04.3(3)D including title is revised to read:

5-04.3(3)D.OPT2.GR5

**(August 1, 2011)**

**Material Transfer Vehicle**

Direct transfer of HMA from the hauling equipment to the paving machine will not be allowed in the top 0.30-feet of the pavement section of hot mix asphalt (HMA) used in traffic lanes with a depth of 0.08-feet or greater. A material transfer vehicle (MTV) shall be used to deliver the HMA from the hauling equipment to the paving machine. HMA placed in irregularly shaped and minor areas such as road approaches, tapers, and turn lanes are excluded from this requirement.

The MTV shall mix the HMA after delivery by the hauling equipment and prior to lay down by the paving machine. Mixing of the HMA shall be sufficient to obtain a uniform temperature throughout the mixture

5-04.3(8).GR5

***Aggregate Acceptance Prior to Incorporation in HMA***

5-04.3(8).INST1.GR5

The third sentence of the second paragraph of Section 5-04.3(8) is revised to read:

5-04.3(8).OPT1.GR5

(September 8, 2020)

The Contractor may request aggregate specific gravity (Gsb) testing be performed by the Contracting Agency twice per project for the first 10,000 HMA tons produced, and once thereafter.

5-04.3(9).GR5

***HMA Mixture Acceptance***

5-04.3(9).INST1.GR5

Section 5-04.3(9) is supplemented with the following:

5-04.3(9).OPT1.FR5

**(August 1, 2016)**

**Visual Evaluation**

The following HMA will be accepted by visual evaluation:

*** $$1$$ ***

5-04.3(10).GR5

***HMA Compaction Acceptance***

5-04.3(10).INST1.GR5

The column in Table 14 of Section 5-04.3(10), titled “Statistical Evaluation of HMA Compaction is Required for”, is supplemented with the following:

5-04.3(10).OPT1.GR5

(April 3, 2017)

- Any HMA for which the specified course thickness is greater than 0.10 feet and the HMA is placed in the shoulder.

5-04.3(10)D.GR5

**HMA Compaction – Visual Evaluation**

5-04.3(10)D.INST2.GR5

The last sentence in Section 5-04.3(10)D is revised to read:

5-04.3(10)D.OPT1.GR5

(April 4, 2016)

HMA that is used for preleveling shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

5-04.3(12).GR5

***Joints***

5-04.3(12).INST1.GR5

Section 5-04.3(12) is supplemented with the following:

5-04.3(12).OPT1.GR5

(January 5, 2004)

The HMA overlay shall be feathered to produce a smooth riding connection to the existing pavement.

HMA utilized in the construction of the feathered connections shall be modified by eliminating the coarse aggregate from the mix at the Contractor's plant or the commercial source or by raking the joint on the roadway, to the satisfaction of the Engineer.

5-04.3(13).GR5

***Surface Smoothness***

5-04.3(13).INST1.GR5

The first four paragraphs of Section 5-04.3(13) are revised to read:

5-04.3(13).OPT1.FR5

(January 5, 2015)

Pavement surface smoothness for this project will include International Roughness Index (IRI) testing that will be completed by the Contracting Agency. The Contracting Agency will perform the IRI testing on each through lane, climbing lane, and passing lane, greater than one mile in length and these lanes will be subject to incentive/disincentive adjustments. IRI testing for a lane will be reported every 0.01 mile by averaging the IRI data for the left and right wheelpath within the section.

Bridge approaches and bridge decks that are located within the lanes specified to be tested and are paved with HMA will be included in the IRI testing. Bridge structures, approach slabs and 0.02 miles on either side of the bridge structures and approach slabs will be eligible for price adjustment incentives and excluded from disincentive adjustments.

Ramps, shoulders and tapers will not be included in IRI testing for pavement smoothness and will not be subject to incentive adjustments. They will be subject to parallel and transverse 10-foot surface requirements, corrective work and disincentive adjustments.

Upon completion of the paving operation the Contractor shall notify the Engineer that the roadway is ready for IRI testing. Notification shall not take place until the following conditions are met for all lanes to be tested on the project:

1. All lanes are open to traffic, unrestricted and in their final configuration.

2. All permanent pavement markings are in place or temporary pavement markings to the satisfaction of the Engineer.

If requested by the Engineer the Contractor shall sweep the roadway immediately prior to testing. If the sweeping is needed as a result of the Contractor’s operation it shall be the responsibility and expense of the Contractor. Should the Contracting Agency not be able to complete the testing as a result of the Contractor’s Work the testing will be rescheduled and any additional costs to the Contracting Agency will be deducted from monies due or that may become due the Contractor.

It is the intent that the testing will be completed and the results provided to the Contractor within 30 calendar days of the Contractor’s notification that the roadway is ready for testing. If weather or other conditions exist which are determined by the

Engineer to be unsuitable for IRI testing of the pavement then the testing will be deferred until favorable conditions are available and the 30 calendar days extended.

Provided that all other Work required for Substantial Completion has been completed; the day following the Contractor's notification that the roadway is ready for IRI testing through the day the IRI data is provided to the Contractor will be nonworking days in accordance with Section 1-08.5.

Corrective work for pavement smoothness may be taken by the Contractor prior to IRI testing. After completion of the IRI testing the Contractor shall measure the smoothness of each 0.01 mile section with an IRI greater than 125 with a 10-foot straightedge within 14 calendar days or as approved by the Engineer. The Contractor shall identify all locations that require corrective work and provide the straight edge measurements at each location that exceeds the allowable limit to the Engineer. If all measurements in a 0.01 section comply with the smoothness requirements the Contractor shall provide the maximum measurement to the Engineer and a statement that corrective work is not required. Unless approved by the Engineer, corrective work shall be taken by the Contractor for pavement identified by the Contractor or Engineer that does not meet the following requirements:

1. The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds.

2. The completed surface of the wearing course shall not vary more than ⅛ inch from the lower edge of a 10-foot straightedge placed on the surface parallel to the centerline.

3. The completed surface of the wearing course shall vary not more than ¼ inch in 10 feet from the rate of transverse slope shown in the Plans.

All corrective work shall be completed at no additional expense, including traffic control, to the Contracting Agency. Pavement shall be repaired by one or more of the following methods:

1. Diamond grinding; repairs shall not reduce pavement thickness by more than ¼ inch.

2. Removal and replacement of the HMA wearing course.

3. By other method approved by the Engineer.

For repairs following IRI testing the repaired area shall be checked by the Contractor with a 10-foot straightedge to ensure it no longer requires corrective work. With approval of the Engineer a lightweight profiler, California profilograph or other device may be used in place of the 10-foot straight edge.

If correction of the roadway as listed above either will not or does not produce satisfactory results as to smoothness or serviceability the Engineer may accept the completed pavement and a credit will be calculated in accordance with Section 5-04.5(1). Under these circumstances the decision whether to accept the completed pavement or to require corrective work as described above shall be vested entirely in the Engineer.

During the last review of this roadway, which was conducted on *** $$1$$ ***, by the Contracting Agency the following IRI (inches/mile) values were obtained. The IRI values are informational only and are average IRI values for 0.10 mile sections. Additional information may be available for review at the Engineer's Office.

***

| SR | Begin Milepost | End Milepost | IRI Running Avg NB/EB (Inch/mile) | IRI Running Avg SB/WB (Inch/mile) |
|---|---|---|---|---|
| $$2$$ | $$3$$ | $$4$$ | $$5$$ | $$6$$ |

***

5-04.3(13).INST2.GR5

The second sentence of Section 5-04.3(13) is deleted and replaced with the following:

5-04.3(13).OPT2.FR5

(March 13, 1995)

The completed surface of the wearing course of the following sections of Roadway shall not vary more than 1/4 inch from the lower edge of a 10-foot straightedge placed on the surface parallel to centerline:

1. *** $$1$$ ***

The completed surface of the wearing course of all other sections of Roadway shall not vary more than 1/8 inch from the lower edge of a 10-foot straightedge placed on the surface parallel to centerline.

5-04.3(13).INST3.GR5

The second sentence of Section 5-04.3(13) is revised to read:

5-04.3(13).OPT3.GR5

(January 5, 2004)

The completed surface of the wearing course shall not vary more than 1/4 inch from the lower edge of a 10-foot straightedge placed on the surface parallel to centerline.

5-04.3(14).GR5

***Planing Bituminous Pavement***

5-04.3(14).INST1.GR5

Section 5-04.3(14) is supplemented with the following:

5-04.3(14).OPT1.FR5

(January 5, 2004)

The Contractor shall perform the planing operations no more than *** $$1$$ *** calendar days ahead of the time the planed area is to be paved with HMA, unless otherwise allowed by the Engineer in writing.

5-04.3(14).OPT2.GR5

(January 5, 2004)

At the start of the planing operation the Contractor shall plane a 500 foot test section to be evaluated by the Engineer for compliance with the surface tolerance requirements. The test section shall have a minimum width of 10 feet. If the planing is in accordance with the surface tolerance requirements, the Contractor may begin production planing. If the planing is not in conformance with the surface tolerance requirements, the Contractor shall make adjustments to the planing operation and then plane another test section.

If at any time during the planing operation the Engineer determines the required surface tolerance is not being achieved, the Contractor shall stop planing. Planing shall not resume until the Engineer is satisfied that specification planing can be produced or until successful completion of another test section. The forward speed during production planing shall not exceed the speed used for the test section.

The completed surface after planing and prior to paving shall not vary more than 1/4 inch from the lower edge of a 10-foot straightedge placed on the surface parallel or transverse to the centerline. The planed surface shall have a matted texture and the difference between the high and low of the matted surface shall not exceed 1/8 inch.

Pavement repair operations, when required, shall be accomplished prior to planing.

5-04.3(14).OPT3.GR5

**(March 13, 1995)**

**Vertical Edge Planing**

During planing of bituminous pavement in the travelled lanes, the Contractor shall coordinate the planing and paving operations such that the planed roadway surface shall not remain unpaved at the end of the work day. The Contractor shall have a contingency plan to ensure that no planed areas remain unpaved due to equipment breakdown or other emergency.

5-04.3(14).OPT4.GR5

**(August 3, 2009)**

**Beveled Edge Planing**

A beveled edge shall be constructed in areas that will not be paved during the same work shift.

The Contractor shall use a beveled cutter on the mandrel of the planing equipment, or other approved method(s), to eliminate the vertical edge(s). The beveled edge(s) shall be constructed at a 4:1 slope.

5-04.5.GR5

## Payment

5-04.5.INST2.GR5
Section 5-04.5 is supplemented with the following:

5-04.5.OPT1.FR5
(January 5, 2015)
"Smoothness Compliance Adjustment" by calculation.

***Smoothness Compliance Adjustments***
Section 5-04.5(1) is supplemented with the following:

Smoothness Compliance Adjustments will be based on the requirements in Section 5-04.3(13) and the following calculations:

1. Final IRI acceptance and incentive/disincentive payments for pavement smoothness will be calculated on an IRI value per 0.10 mile in accordance with the price adjustment schedule.

    a. For sections of a lane that are a minimum of 0.01 mile and less than 0.10 mile, the price adjustment will be calculated using the average of the 0.01 mile IRI values and the price adjustment prorated for the length of the section.

    b. For bridges, approach slabs and 0.02 miles on either side the price adjustment will be calculated independently from other measured lanes.

    c. IRI values per 0.01 miles that were measured prior to corrective work will be included in the 0.10 mile price adjustment for sections with corrective work.

2. A smoothness compliance adjustment will be calculated in the sum of minus $250.00 for each and every section of single traffic lane 0.01 miles in length in that does not meet the 10-foot straight edge requirements in Section 5-04.3(13).

The price adjustment schedule for this contract shall be *** $$1$$ ***.

**Price Adjustment Schedule**

| IRI for each 0.10 mi. section | Pay Adjustment Schedule 1 | Pay Adjustment Schedule 2 | Pay Adjustment Schedule 3 |
|---|---|---|---|
| **in. / mi.** | **$ / 0.10 mi.** | **$ / 0.10 mi.** | **$ / 0.10 mi.** |
| < 30 | 600 | 600 | 600 |
| 30 | 600 | 600 | 600 |
| 31 | 580 | 580 | 580 |
| 32 | 560 | 560 | 560 |
| 33 | 540 | 540 | 540 |
| 34 | 520 | 520 | 520 |
| 35 | 500 | 500 | 500 |
| 36 | 480 | 480 | 480 |

| | | | |
|---|---|---|---|
| 37 | 460 | 460 | 460 |
| 38 | 440 | 440 | 440 |
| 39 | 420 | 420 | 420 |
| 40 | 400 | 400 | 400 |
| 41 | 380 | 380 | 380 |
| 42 | 360 | 360 | 360 |
| 43 | 340 | 340 | 340 |
| 44 | 320 | 320 | 320 |
| 45 | 300 | 300 | 300 |
| 46 | 280 | 280 | 280 |
| 47 | 260 | 260 | 260 |
| 48 | 240 | 240 | 240 |
| 49 | 220 | 220 | 220 |
| 50 | 200 | 200 | 200 |
| 51 | 180 | 180 | 180 |
| 52 | 160 | 160 | 160 |
| 53 | 140 | 140 | 140 |
| 54 | 120 | 120 | 120 |
| 55 | 100 | 100 | 100 |
| 56 | 80 | 80 | 80 |
| 57 | 60 | 60 | 60 |
| 58 | 40 | 40 | 40 |
| 59 | 20 | 20 | 20 |
| 60 | 0 | 0 | 0 |
| 61 | 0 | 0 | 0 |
| 62 | 0 | 0 | 0 |
| 63 | 0 | 0 | 0 |
| 64 | 0 | 0 | 0 |
| 65 | 0 | 0 | 0 |
| 66 | -20 | 0 | 0 |
| 67 | -40 | 0 | 0 |
| 68 | -60 | 0 | 0 |
| 69 | -80 | 0 | 0 |
| 70 | -100 | 0 | 0 |
| 71 | -120 | 0 | 0 |
| 72 | -140 | 0 | 0 |
| 73 | -160 | 0 | 0 |
| 74 | -180 | 0 | 0 |
| 75 | -200 | 0 | 0 |
| 76 | -220 | -20 | 0 |
| 77 | -240 | -40 | 0 |
| 78 | -260 | -60 | 0 |
| 79 | -280 | -80 | 0 |
| 80 | -300 | -100 | 0 |
| 81 | -320 | -120 | 0 |
| 82 | -340 | -140 | 0 |
| 83 | -360 | -160 | 0 |
| 84 | -380 | -180 | 0 |
| 85 | -400 | -200 | 0 |
| 86 | -420 | -220 | 0 |

| | | | |
|---|---|---|---|
| 87 | -440 | -240 | 0 |
| 88 | -460 | -260 | 0 |
| 89 | -480 | -280 | 0 |
| 90 | -500 | -300 | 0 |
| 91 | -520 | -320 | 0 |
| 92 | -540 | -340 | 0 |
| 93 | -560 | -360 | 0 |
| 94 | -580 | -380 | 0 |
| 95 | -600 | -400 | 0 |
| 96 | -620 | -420 | 0 |
| 97 | -640 | -440 | 0 |
| 98 | -660 | -460 | 0 |
| 99 | -680 | -480 | 0 |
| 100 | -700 | -500 | 0 |
| 101 | -720 | -520 | 0 |
| 102 | -740 | -540 | 0 |
| 103 | -760 | -560 | 0 |
| 104 | -780 | -580 | 0 |
| 105 | -800 | -600 | 0 |
| 106 | -820 | -620 | 0 |
| 107 | -840 | -640 | 0 |
| 108 | -860 | -660 | 0 |
| 109 | -880 | -680 | 0 |
| 110 | -900 | -700 | 0 |
| 111 | -920 | -720 | 0 |
| 112 | -940 | -740 | 0 |
| 113 | -960 | -760 | 0 |
| 114 | -980 | -780 | 0 |
| 115 | -1000 | -800 | 0 |
| 116 | -1020 | -820 | 0 |
| 117 | -1040 | -840 | 0 |
| 118 | -1060 | -860 | 0 |
| 119 | -1080 | -880 | 0 |
| 120 | -1100 | -900 | 0 |
| 121 | -1120 | -920 | 0 |
| 122 | -1140 | -940 | 0 |
| 123 | -1160 | -960 | 0 |
| 124 | -1180 | -980 | 0 |
| ≥125 | -1200 | -1000 | 0 |

5-04.5.OPT2.GR5

***(January 2, 2018)***

***Asphalt Cost Price Adjustment***

The Contracting Agency will make an Asphalt Cost Price Adjustment, either a credit or a payment, for qualifying changes in the reference cost of asphalt binder. The adjustment will be applied to partial payments made according to Section 1-09.9 for the following bid items when they are included in the proposal:

"HMA Cl. ___ PG ___"
"HMA for Approach Cl. ___ PG ___"
"HMA for Preleveling Cl. ___ PG ___"
"HMA for Pavement Repair Cl. ___ PG ___"
"Commercial HMA"

The adjustment is not a guarantee of full compensation for changes in the cost of asphalt binder. The Contracting Agency does not guarantee that asphalt binder will be available at the reference cost.

The Contracting Agency will establish the asphalt binder reference cost twice each month and post the information on the Agency website at:

http://www.wsdot.wa.gov/Business/Construction/EscalationClauses.htm
The reference cost will be determined using posted prices furnished by Poten & Partners, Inc. If the selected price source ceases to be available for any reason, then the Contracting Agency will select a substitute price source to establish the reference cost.

The base cost established for this contract is the reference cost posted on the Agency website with an effective date immediately preceding the bid opening date.

Adjustments will be based on the most current reference cost for Western Washington or Eastern Washington as posted on the Agency website, depending on where the work is performed. For work completed after all authorized working days are used, the adjustment will be based on the posted reference cost during which contract time was exhausted. The adjustment will be calculated as follows:

No adjustment will be made if the reference cost is within 5% of the base cost.

If the reference cost is greater than or equal to 105% of the base cost, then
Adjustment = (Current Reference Cost – (1.05 x Base Cost)) x (Q x 0.056).

If the reference cost is less than or equal to 95% of the base cost, then
Adjustment = (Current Reference Cost – (0.95 x Base Cost)) x (Q x 0.056).

Where Q = total tons of all classes of HMA paid in the current month's progress payment.

"Asphalt Cost Price Adjustment", by calculation.

"Asphalt Cost Price Adjustment" will be calculated and paid for as described in this section. For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the total bid by the Contractor.

5-04.5.OPT3.GR5
(April 4, 2016)
"Asphalt Binder Revision" by calculation.
"Asphalt Binder Revision" shall be calculated and paid for as described in Section 5-04.3.

5-05.GR5
## Cement Concrete Pavement

**5-05.1.GR5**

## Description

5-05.1.INST1.GR5
Section 5-05.1 is supplemented with the following:

5-05.1.OPT1.GR5
(August 6, 2012)
This Work consists of furnishing and placing pigmented, textured, or textured and pigmented cement concrete pavement at the locations and depth as shown in the Plans.

**5-05.2.GR5**

## Materials

5-05.2.INST1.GR5
Section 5-05.2 is supplemented with the following:

5-05.2.OPT1.FR5
(August 6, 2012)
Pigment color for cement concrete pavement shall be one chosen from the manufactures and colors listed below:

*** $$1$$ ***

The pigment shall be incorporated in accordance with the manufacturer's recommendations.

5-05.3.GR5

## Construction Requirements

5-05.3.INST1.GR5
Section 5-05.3 is supplemented with the following:

5-05.3.OPT1.GR5
***(August 6, 2012)***
***Pigmented Cement Concrete***
Curing shall be in accordance with Section 5-05.3(13) and be applied to the surface in accordance with the manufacturer's recommendations. If liquid membrane-forming concrete curing compound is used it shall meet the requirements of ASTM C 309 Type 1-D.

The Contractor shall provide a 2 foot by 2 foot sample panel, that has been cured a minimum seven days, showing the color of cement concrete to the Engineer for acceptance before placing any pigmented cement concrete pavement.

5-05.3.OPT2.FR5
***(August 6, 2012)***
***Textured Cement Concrete***
Textured cement concrete pavement pattern shall be one chosen from the manufactures and patterns listed below:

*** $$1$$ ***

A mat or stamp shall be used to imprint the pattern into the concrete surface.

Curing shall be in accordance with Section 5-05.3(13) and be applied to the surface in accordance with the manufacturer's recommendations. If liquid membrane-forming concrete curing compound is used it shall meet the requirements of ASTM C 309 Type 1-D.

5-05.3(1).GR5

***Concrete Mix Design for Paving***

5-05.3(1).INST1.GR5

Item number 1 of Section 5-05.3(1) is supplemented with the following:

5-05.3(1).OPT1.GR5

(January 2, 2018)

Coarse aggregate derived from the recycling of Cement Concrete Pavement removed from the project may be used as coarse aggregate or blended with coarse aggregate for Cement Concrete Pavement. The Contractor shall remove all bituminous material, joint sealant and backer material from the existing pavement prior to removal for recycling. The recycled concrete aggregates shall meet the requirements of Section 9-03.21(1)B. Cement Concrete Pavement experiencing carbonate silica reaction, sulfate reaction, D cracking or any other conditions that may affect concrete durability shall not be used. Cement Concrete Pavement mix designs using recycled concrete aggregates will require the use of Low Alkali Cement or 25 percent Class F fly ash by total weight of the cementitious materials or the Contractor shall submit evidence that other ASR mitigating measures control expansion in accordance with Section 9-03.1(1).

5-05.3(1).INST2.GR5

Section 5-05.3(1) is supplemented with the following:

5-05.3(1).OPT8.GR5

**(August 6, 2012)**

**Aggregate for Textured Cement Concrete Pavement**

Coarse aggregate for Textured Cement Concrete Pavement shall conform to Section 9-03.1(4), AASHTO grading No. 7. An alternate for combined gradation for Textured Cement Concrete Pavement conforming to Section 9-03.1(5) may be proposed, that has a nominal maximum aggregate size of ½ inch sieve.

5-05.3(17).GR5

***Opening to Traffic***

5-05.3(17).INST2.GR5

Section 5-05.3(17) is revised to read:

5-05.3(17).OPT1.GR5

**(August 7, 2017)**

**Maturity Testing for Concrete Pavement**

The pavement shall not be opened to traffic until the Strength-Maturity Relationship (SMR) demonstrates the pavement has a minimum compressive strength of 2,500

psi and approval of the Engineer. The pavement shall be cleaned prior to opening to traffic.

The Contractor shall establish a Maturity Value on the approved concrete mix through the use of a testing program following the WSDOT Maturity Method Test Procedure for estimating concrete strength.

The Contractor shall establish the SMR at least 14 calendar days prior to the production pours. The Contractor shall notify the Engineer 7 days prior to performing the SMR as to the time, date and location where the SMR will be performed. The Contractor shall allow WSDOT the opportunity to place maturity loggers in the test cylinders in order to calibrate the WSDOT maturity meter. A SMR shall be developed for each mix used on the project. Referenced SMRs from previous projects will not be allowed.

The Contractor shall be responsible for the installation of the maturity logger/sensors within the concrete pavement pour area. For panel replacements performed under Section 5-01, place a minimum of four loggers/sensors at two different locations. Two in one of the first few panel replacements and two in the last panel replacement of the day, each day. For continuous concrete paving operations performed under Section 5-05, place a minimum of four loggers/sensors, two at the beginning and two at the end of the concrete pour, each day. The Contractor shall maintain the integrity of the logger/sensors and wires during concrete pouring, finishing and curing operations or until the maturity information is no longer needed.

The Contractor shall perform the Quality Control Procedure to Verify the Strength-Maturity Relationship on days 1 and 2 of concrete placement as indicated in the test procedure.

The Contractor shall develop a Quality Control Plan based on the Strength-Maturity Relationship to monitor and provide remedial action to ensure the concrete meets design strengths.

Any alteration in mix proportions or source or type of any material, in excess of those tolerable by batching variability shall require the development of a new SMR prior to its use at the Contractors time and expense. Alterations include a change in type, source, or proportion of cement, fly ash, coarse aggregate, fine aggregate, or admixtures. A change in water-to-cementitious material ratio greater than 5.0 percent requires the development of a new SMR.

**Maturity Method Test Procedure**

This test method provides a procedure for estimating concrete strength by means of the maturity method. The maturity method is based on strength gain as a function of temperature and time. This method is a modification of ASTM C1074 covering the procedures for estimating concrete strength by means of the maturity method.

The maturity method consists of three steps:

- Develop Strength-Maturity Relationship
- Estimate in-place strength
- Verify Strength-Maturity Relationship.

The Nurse-Saul "temperature-time factor (TTF)" maturity index shall be used in this test method, with a datum temperature of 0 ºC (32 ºF).

**Apparatus**

- If the maturity meter has input capability for datum temperature, verify that the proper value of the datum temperature has been selected prior to each use.
- Intellirock maturity system (or approved equivalent). This system shall include the logger/sensor, handheld reader, and software.
- The data obtained from the maturity meter shall be unalterable and un-interruptible.
- The same brand and type of maturity meters shall be used in the field as those used to develop and verify the strength-maturity relationship.
- Logger/sensor wire grade shall be larger than or equal to 20 awg.

**Contractors Procedure to Develop Strength-Maturity Relationship**

| Step | Action |
|---|---|
| 1 | For every concrete design that will be evaluated by the maturity method, prepare a minimum of 21 cylinders in accordance with FOP for AASHTO T 23. Additional cylinders should be cast to avoid having to repeat the procedure. The mixture proportions and constituents of the concrete shall be the same as those of the job concrete whose strength will be estimated using this practice. The minimum size of each batch shall be approximately 3 $m^3$ (4 $yd^3$). A mobile mixer may be used for batching provided it is to be used on the project. Calibration documentation shall be provided to the Engineer prior to batching. |
| 2 | Fresh concrete testing for each batch shall include concrete placement temperature, slump, and air content in accordance with FOP for AASHTO T 309, FOP for AASHTO T 119, and FOP for AASHTO T 152. |
| 3 | Embed loggers/sensors in at least two cylinders. Loggers/sensors shall be placed 2-4 inches from any surface. Activate the loggers/sensors. |
| 4 | Cure the cylinders in accordance with FOP for AASHTO T 23. |
| 5 | Perform compression strength tests in accordance with FOP for AASHTO T 22 to target 2,500 psi for opening to traffic. In targeting the opening to traffic requirement and to properly characterize and validate the maturity calibration curve at least three target cylinder breaks must be broken prior to 2,500 psi. Test three cylinders at each age and compute the average strength. The cylinders with loggers/sensors may be tested if additional cylinders are needed.<br><br>If a cylinder is obviously defective (for example, out of round, not square, damaged due to handling), the cylinder shall be discarded. If an individual cylinder strength is greater than 10 percent outside the average of three cylinders, the cylinder can be considered defective and be discarded. When two of the three cylinders are defective, a new batch must be evaluated unless additional acceptable cylinders are available. |
| 6 | At each test age, record the individual and average values of maturity and strength for each batch on a permanent data sheet |
| 7 | Plot the average strengths as a function of the average maturity values, with data points shown. Using a computer spreadsheet program such as Microsoft Excel, calculate a point-to-point interpolation through the data. |

| | |
|---|---|
| | The resulting curve is the strength-maturity relationship to be used for estimating the strength of the concrete mixture placed in the field.<br><br>When developing the SMR, the spreadsheet software allows the Contractor to develop the corresponding maturity equation, which defines the SMR. The Engineer should carefully examine the data for “outliers”, faulty cylinder breaks, or faulty maturity readings. The Engineer should use judgment to determine if certain points should be discarded, or retested, or whether the entire SMR should be regenerated. |

**Contractors Procedure to Estimate In-Place Strength**

| Step | Action |
|---|---|
| 1 | Prior to or at the time of concrete placement, install loggers/sensors at the frequency specified. Loggers/sensors shall be placed a minimum of 2 ft. from a panel edge 4 to 5 inches from the panel surface. Loggers/sensors may be tied to reinforcing steel, but should not be in direct contact with the reinforcing steel or formwork. |
| 2 | As soon as practical after concrete placement, connect and activate the maturity meter(s). |
| 3 | The Contractor shall provide to the Engineer, prior to opening the pavement to traffic, encrypted data files (with software to read the files) of the maturity data from the loggers/sensors. Data shall be provided until the maturity is at a value that is equal to or greater than the required strength for that concrete mixture, as determined by the SMR. Additionally, data shall be provided on a record log. |

**Contractors Quality Control Procedure to Verify Strength-Maturity Relationship**

| Step | Action |
|---|---|

| | |
|---|---|
| 1 | At the specified verification interval make three cylinders in accordance with FOP for AASHTO T 23. |
| 2 | Embed a logger/sensor in one cylinder. Loggers/sensors shall be placed 2-4 inches from any surface. Activate the logger/sensor as soon as possible. |
| 3 | Cure the cylinders in accordance with FOP for AASHTO T 23. |
| 4 | Perform compression strength tests on all three of the cylinders in accordance with FOP for AASHTO T 22 to verify strength and time to reach 2,500 psi for opening to traffic. Compute the average strength of the cylinders. If a cylinder is obviously defective (for example, out of round, not square, damaged due to handling), the cylinder shall be discarded. If any individual cylinder strength is greater than 10 percent outside the average of three cylinders, that cylinder will be considered defective and be discarded. When two of the three cylinders are defective, the verification procedure will have to be repeated starting at step 1. |
| 5 | Record on a permanent data sheet the maturity value at the time of compression testing and individual and average strengths established from the cylinder breaks. Also record the predicted strength based on the SMR established for that particular concrete design, and the percent difference between average and predicted values. The SMR is verified when the predicted strength established from the average SMR and the cylinder breaks are within 10 percent. A copy of the data sheet and an encrypted file for the maturity data shall be provided to the Engineer on a daily basis. |

5-05.4.GR5

## Measurement

5-05.4.INST1.GR5

Section 5-05.4 is supplemented with the following:

5-05.4.OPT1.GR5

(August 6, 2012)

Pigmented, textured, or textured and pigmented cement concrete pavement will be measured by the square yard placed.

5-05.5.GR5

## Payment

5-05.5.INST1.GR5

Section 5-05.5 is supplemented with the following:

5-05.5.OPT2.GR5

(August 6, 2012)

“Pigmented Cement Concrete Pavement”, per square yard

The unit Contract price per square yard for Pigmented Cement Concrete Pavement shall be full pay for all costs incurred to perform the Work in this Specification.

5-05.5.OPT3.GR5

(August 6, 2012)

"Textured Cement Concrete Pavement", per square yard

The unit Contract price per square yard for Textured Cement Concrete Pavement shall be full pay for all costs incurred to perform the Work in this Specification.

5-05.5.OPT4.GR5

(August 6, 2012)

"Textured and Pigmented Cement Concrete Pavement", per square yard

The unit Contract price per square yard for Textured and Pigmented Cement Concrete Pavement shall be full pay for all costs incurred to perform the Work in this Specification.

5-05.5.OPT5.GR5

(August 5, 2013)

All costs in connection with conducting concrete pavement maturity testing and surface cleaning prior to opening to traffic shall be included in the unit Contract price per cubic yard for "Cement Conc. Pavement" and per square yard for "Replace Cement Concrete Panel", if either or both of the items are included in the Contract.

5-SA1.FR5

**(August 7, 2017)**

## JUST IN TIME TRAINING

### Description

Just In Time Training (JITT) is a formal class for the joint training of Contractor and Contracting Agency employees that will be associated with the construction or rehabilitation of Cement Concrete Pavement.

### Construction Requirements

#### *Training*

The Contractor shall provide a JITT instructor who is experienced with the specified pavement construction methods, materials, and tests. The instructor shall not be an employee of the Contractor or the Contracting Agency. JITT shall be at a facility provided by the Contractor unless otherwise agreed to by the Engineer.

The following personnel are required to attend the JITT:

1. Representing the Contractor: The Superintendent, foremen and key construction personnel associated with the work.
2. Representing the Contracting Agency: Up to ***$$1$$*** Contracting Agency staff selected by the Engineer.

JITT shall meet the following requirements:

1. At least 4 hours long or a length agreed to by the Engineer.
2. Cover all aspects of work methods, equipment and materials the Contractor is proposing to use.
3. Conducted within 3 miles of the job site or at a mutually agreed to location.
4. Completed before the start of paving.
5. Conducted during normal working hours.
6. At the Contractors option, JITT may be an extension of a prepaving conference.

***Submittals***

A minimum of 5 calendar days before JITT the Contractor shall submit to the Engineer the instructor's name and qualifications, the JITT facility's location, and 1 copy each of any course, handout, and presentation materials.

## Payment

Payment will be made for each of the following items that are included in the Proposal:

"Just In Time Training", lump sum.

The lump sum Contract payment shall be full compensation for all costs incurred by the Contractor in providing "Just In Time Training".

DIVISION6.GR6

# Division 6
# Structures

6-01.GR6

## General Requirements for Structures

6-01.5.GR6

## Work Access and Temporary Structures

6-01.5.INST1.GR6

Section 6-01.5 is re-titled and revised to read:

6-01.5.OPT1.FB6

***(April 1, 2019)***

***Work Access***

The Contractor shall construct work access to accommodate all work within the wetted perimeter, or vertically above the sensitive area, of *** $$1$$ ***, as shown in the plans or staked by the Engineer. The Contractor shall construct and remove the work access in accordance with all environmental regulations and permits, including those specified in Sections 1-07.5 and 1-07.6.

**Submittals**

The Contractor shall submit Type 2 Working Drawings of the work access, except that if the Contractor chooses an access alternative using a work trestle structure, the Working Drawings shall be Type 2E. The Contractor shall design the work access structure to withstand all applicable loads in accordance with accepted design codes. The Contractor shall specify the design code(s) in the design calculations and working drawings.

The Contractor shall include information with the work access submittal on the construction equipment that will use the work access. The Contractor shall specify the type and model of construction equipment to be used, and shall include equipment catalogue cuts with capacities and geometry. The Contractor shall include anticipated wheel or track loads, axle spacings, outrigger geometry and reactions, crane pick angles and reach, and other equipment details.

6-01.5.OPT1(A).FB6

**(April 6, 2015)**

**Waterway Clearance Requirements**

One span of the work access structure shall provide more than *** $$1$$ *** horizontal clearance between supporting piers. The bottom of the superstructure of the work access structure shall be at elevation *** $$2$$ *** or higher. All waterborne debris that accumulates against the work access structure shall be removed by the Contractor.

6-01.5.OPT1(B).GB6

**(April 6, 2015)**

**Payment**

Payment will be made in accordance with Section 1-09.3 for the following bid item:

"Work Access - ___", lump sum.

6-01.5.OPT2.FB6

***(August 6, 2018)***

***Temporary Bridge***

The Contractor shall design, furnish, erect, maintain, and remove a temporary bridge, including substructure, in accordance with this Special Provision and the details shown in the Plans unless otherwise accepted by the Engineer.

**Geometric Requirements**

The temporary bridge shall conform to the following geometric requirements:

1. The temporary bridge shall be an overall minimum length of *** $$1$$ ***.

2. The minimum width on the temporary bridge between barriers or railings shall be *** $$2$$ ***.

3. The temporary bridge superstructure shall provide a minimum vertical clearance of *** $$3$$ *** to *** $$4$$ ***.

**Design Requirements**

The temporary bridge shall conform to the following design requirements:

1. The temporary bridge, including the barriers or railings, shall be designed in accordance with the latest edition of the AASHTO LRFD Bridge Design Specifications. Barriers or railings shall be designed to TL-2, minimum, with a minimum height of 32-inches, except where the Plans require a higher test level and railing height. Seismic design shall conform to AASHTO LRFD Seismic Guide Specification Section 3.6.

2. The minimum vehicular live load used for design shall be 75 percent of HL-93, unless otherwise specified in the Contract Plans.

3. The driving surface of the temporary bridge shall be durable, skid resistant deck, with an initial skid number of at least 35 and maintaining a skid number of 26 minimum, in accordance with AASHTO T 242.

4. Notwithstanding the requirements of Section 1-06.1, the materials used by the Contractor to compose the temporary bridge may be salvaged steel, provided that the use of such salvaged steel shall be subject to inspection and approval by the Contractor's engineer of record and acceptance by the Engineer. For salvaged steel materials where the grade of steel cannot be positively identified, the design stresses for the steel shall conform to Section 6-02.3(17)B3.

5. In addition to the criteria specified in Item 1, the temporary bridge substructure shall be designed in accordance with the WSDOT Geotechnical Design Manual (M46-03).

**Submittals**

The Contractor shall submit Type 3E Working Drawings of the temporary bridge including an erection plan and procedure conforming to Section 6-03.3(7)A.

If the temporary bridge is to be in place for greater than 90 calendar days, the Contractor shall submit a Type 2E Working Drawing consisting of a load rating report prepared in accordance with the AASHTO *Manual for Bridge Evaluation* and WSDOT *Bridge Design Manual LRFD* M23-50 Chapter 13.

**Construction and Removal**

The Contractor shall construct the temporary bridge in accordance with the working drawings and erection plan as accepted by the Engineer, environmental permit conditions specified in Section 1-07.5 as supplemented in these Special Provisions and as shown in the Plans, and in accordance with the details shown in the Plans. The Contractor shall maintain the temporary bridge, including the driving surface, for the life of the temporary bridge in this project.

All welding, repair welding, and welding inspection, of steel components of the temporary bridge shall conform to the Section 6-03.3(25) and 6-03.3(25)A requirements specified for steel bridges.

After the temporary bridge is no longer needed the Contractor shall remove the temporary bridge.

**Payment**

Payment will be made in accordance with Section 1-09.3 for the following bid item:

"Temporary Bridge___", lump sum.

6-02.GR6

## Concrete Structures

6-02.2.GR6

## Materials

6-02.2.INST1.GR6

Section 6-02.2 is supplemented with the following:

6-02.2.OPT1.GR6

***(April 1, 2013)***

***Resin Bonded Anchors***

The resin bonded anchor system shall include the nut, washer, and threaded anchor rod which is installed into hardened concrete with a resin bonding material.

Resin bonding material used in overhead and horizontal application shall be specifically recommended by the resin manufacturer for those applications.

Resin bonding material used in submerged liquid environment shall be specifically recommended by the resin manufacturer for this application.

The resin bonded anchor system shall conform to the following requirements:

1. Threaded Anchor Rod and Nuts

   Threaded anchor rods shall conform to ASTM A 193 Grade B7 or ASTM A 449, except as otherwise noted, and be fully threaded. Threaded anchor rods for stainless steel resin bonded anchor systems shall conform to ASTM F 593 and shall be Type 304 unless otherwise specified.

   Nuts shall conform to ASTM A 563, Grade DH, except as otherwise noted. Nuts for stainless steel resin bonded anchor systems shall conform to ASTM F 594 and shall be Type 304 unless otherwise specified.

   Washers shall conform to ASTM F 436, and shall meet the same requirements as the supplied anchor rod, except as otherwise noted. Washers for stainless steel resin bonded anchor systems shall conform to ASTM A 240 and the geometric requirements of ASME B18.21.1 and shall be Type 304 Stainless Steel unless otherwise specified.

   Nuts and threaded anchor rods, except those manufactured of stainless steel, shall be galvanized in accordance with AASHTO M 232. Galvanized threaded anchor rods shall be tested for embrittlement after galvanizing, in accordance with Section 9-29.6(5).

   Threaded anchor rods used with resin capsules shall have the tip of the rod chiseled in accordance with the resin capsule manufacturer's recommendations. Galvanized threaded rods shall have the tip chiseled prior to galvanizing.

2. Resin Bonding Material

   Resin bonding material shall be a two component epoxy resin conforming to Type IV ASTM C 881 or be one of the following:

   a. Vinyl ester resin.

   b. Polyester resin.

   c. Methacrylate resin.

3. Ultimate Anchor Tensile Capacity

Resin bonded anchors shall be tested in accordance with ASTM E 488 to have the following minimum ultimate tensile load capacity when installed in concrete having a maximum compressive strength of 6000 pounds per square inch (psi) at the embedment specified below:

| Anchor Diameter (inch) | Tensile Capacity (lbs.) | Embedment (inch) |
|---|---|---|
| 3/8 | 7,800 | 3-3/8 |
| 1/2 | 12,400 | 4-1/2 |
| 5/8 | 19,000 | 5-5/8 |
| 3/4 | 27,200 | 6-3/4 |
| 7/8 | 32,000 | 7-7/8 |
| 1 | 41,000 | 9 |
| 1-1/4 | 70,000 | 11-1/4 |

The Contractor shall submit items 1 and 2 below to the Engineer for all resin bonded anchor systems. If the resin bonded anchor system and anchor diameter are not listed in the current WSDOT Qualified Products List, the Contractor shall also submit item 3 below to the Engineer.

For resin bonded anchor systems that are installed in a submerged liquid environment the Contractor shall submit items 1, 2, and 4 below. If the resin bonded anchor system and anchor diameter are not listed in the current WSDOT Qualified Products List, the Contractor shall also submit item 3 below to the Engineer.

1 The resin manufacturer's written installation procedure for the anchors.

2. The manufacturer's certificate of compliance for the threaded anchor rod certifying that the anchor rod meets these requirements.

3. Test results by an independent laboratory certifying that the threaded anchor rod system meets the ultimate anchor tensile load capacity specified in the above table. The tests shall be performed in accordance with ASTM E 488.

4. For threaded anchors intended to be installed in submerged liquid environments the Contractor shall submit tests performed by an independent laboratory within the past 24 months which certifies that anchors installed in a submerged environment meet the strength requirements specified in the above table.

6-02.2.OPT2.GB6

***(September 8, 2020)***

***Epoxy Bonding Agent For Surfaces And For Steel Reinforcing Bar Dowels***

Epoxy bonding agent for surfaces shall be Type II, as specified in Section 9-26.1. Epoxy bonding agent for steel reinforcing bar dowels shall be either Type I or Type IV, as specified in Section 9-26.1. The grade and class of epoxy bonding agent shall be as recommended by the resin manufacturer.

6-02.2.OPT4.GB6

***(August 3, 2015)***

***Epoxy Crack Sealing Materials***

Epoxy sealing paste shall be a thixotropic compound.

Epoxy injection resin shall be a moisture-insensitive, two-component material capable of restoring the structural integrity of a structure by structurally bonding cracks, delaminations and hollow planes. Resin formulations shall be hydrophilic with variable viscosity to allow full depth penetration in cracks having a width of 6 mils and greater.

Epoxy injection resin, when mixed with the hardener in accordance with the manufacturer's written instructions, shall cure to a non-shrink solid material. The material shall have a normal curing time of less than 24 hours.

Epoxy injection resin shall have the following physical properties:

| | | |
|---|---|---|
| Solids Content, by weight (minimum) | 98 | percent |
| Viscosity (maximum) at 77F (Brookfield) | 700 | cps |
| Compressive Yield Strength (minimum) | 12,000 | psi |
| Minimum Flexural Strength (ASTM D 790) | 10,000 | psi |
| Bond Strength (minimum) | 500 | psi |

The Contractor shall submit a Type 2 Working Drawing consisting of sample of the material of the epoxy sealing paste and epoxy injection resin together with sufficient directions and technical data for its use.

The Contractor shall submit a Type 1 Working Drawing consisting of the Materials Safety Data Sheet (MSDS) for each type of epoxy sealing paste and epoxy injection resin.

6-02.2.OPT26.GB6

***(April 6, 2015)***

***Rapid Cure Silicone Sealant***

Rapid cure silicone sealant shall be Dow Corning 902 RCS Joint Sealant.

The Contractor shall deliver the joint sealant to the job site in the sealant manufacturer's original sealed container. Each container shall be marked with the sealant manufacturer's name and lot or batch number. Each lot or batch shall be accompanied by the manufacturer's Materials Safety Data Sheet (MSDS), and Manufacturer’s Certificate of Compliance, identifying the lot or batch number, and certifying that the materials conform to the properties stated on the product data sheet.

The backer rod shall be closed cell expanded polyethylene foam as recommended by the sealant manufacturer. The diameter of the backer rod shall be as recommended by the sealant manufacturer for the expansion joint opening at the time of installation.

6-02.2.OPT27.GB6

***(April 6, 2015)***

***Polyester Concrete***

**Polyester Resin Binder**

The resin shall be an unsaturated isophthalic polyester-styrene co-polymer.

Prior to adding the initiator, the resin shall conform to the following requirements:

| | | |
|---|---|---|
| Viscosity: | 75 to 200 cps<br>(20 rpm at 77F, RVT No. 1 spindle) | ASTM D 2196 |
| Specific Gravity: | 1.05 to 1.10 at 77F | ASTM D 1475 |
| Styrene Content: | 45% to 50% by weight<br>of polyester styrene resin | ASTM D2369 |

The hardened resin shall conform to the following requirements:

| | | |
|---|---|---|
| Elongation: | 35% minimum<br>w/ thickness 0.25" ± 0.04" | ASTM D 638 |
| Tensile Strength: | 2,500 psi minimum<br>w/ thickness 0.25" ± 0.04" | ASTM D 638 |
| Conditioning | 18 hours/77F/50% + 5 hours/158F | ASTM D 618 |
| Silane Coupler: | 1.0% minimum (by weight of polyester-styrene resin) | |

The silane coupler shall be an organosilane ester, gammamethacryloxypropyltrimethoxysilane. The promoter/hardeners shall be compatible with suitable methyl ethyl ketone peroxide (MEKP) and cumene hydroperoxide (CHP) initiators. MEKP and CHP initiators shall be used as recommended by the manufacturer.

Polyester resin binder will be accepted based on submittal to the Engineer of a Manufacturer's Certificate of Compliance.

**High Molecular Weight Methacrylate (HMWM) Resin**

In addition to the viscosity and density properties, and the promoter/initiator system, specified in Section 6-09.2, the HMWM resin for polyester concrete shall conform to the following requirements:

| | | |
|---|---|---|
| Flash Point: | 180F minimum | ASTM D 3278 |
| Tack-Free Time: | 400 minutes maximum | California Test 551 |

Prior to adding initiator, the HMWM resin shall have a maximum volatile content of 30 percent, when tested in conformance with ASTM D 2369.

HMWM resin will be accepted based on submittal to the Engineer of a Manufacturer's Certificate of Compliance.

**Aggregate**

The aggregate shall be from a WSDOT approved pit site and shall be thoroughly washed and kiln dried.

The aggregate shall conform to Section 9-03.1(5)B for either 1/2-inch or 3/8-inch maximum nominal aggregate size.

The combined aggregate shall have a maximum of 45 percent crushed particles. Fine aggregate shall conform to Section 9-03.13.

Aggregate absorption shall not exceed 1.0 percent. The moisture content of the aggregate shall not exceed one half of the aggregate absorption at the time of mixing with the polyester resin binder. The aggregate temperature shall be between 45F and 100F at the time of mixing.

**Sand for Abrasive Finish**

The sand for abrasive finish shall conform to Section 6-09.2, and the aggregate moisture content requirements specified above.

6-02.2.OPT28.GB6

***(April 6, 2015)***

***Elastomeric Concrete***

Elastomeric concrete shall be one of the following three products:

BASF/Watson Bowman Acme Wabo Crete II

D. S. Brown Delcrete

R. J. Watson Poly-Tron

The elastomeric concrete aggregate shall be as specified, gradated, and packaged by the elastomeric concrete manufacturer.

The primer shall be as recommended by the elastomeric concrete manufacturer.

The Contractor shall deliver the elastomeric concrete components to the job site in the elastomeric concrete manufacturer's original sealed containers. Each container shall be marked with the sealant manufacturer's name and lot or batch number. Each lot or batch shall be accompanied by the manufacturer's Materials Safety Data Sheet (MSDS), and Manufacturer’s Certificate of Compliance, identifying the elastomeric concrete manufacturer and the lot or batch number, and certifying that the materials conform to the properties stated in the product data sheet.

6-02.2.OPT46.GB6

***Bridge Supported Utilities***

6-02.2.OPT46(A).GB6

(June 26, 2000)

Inserts shall be of the type and model specified in the Plans. Inserts shall be galvanized in accordance with AASHTO M 111.

6-02.2.OPT46(B).GB6

(September 3, 2019)

Hanger rods, and associated nuts and washers, shall conform to Section 9-06.5(1), and shall be galvanized in accordance with ASTM F2329.

Steel bars and plates shall conform to ASTM A 36 and shall be galvanized in accordance with AASHTO M 111.

6-02.2.OPT46(C).GB6

(September 3, 2019)

Horizontal strut bolts or threaded rods, and associated nuts and washers, shall conform to Section 9-06.5(1), and shall be galvanized in accordance with ASTM F2329.

Pre-formed fabric pads shall be composed of multiple layers of duck, impregnated and bound with high quality oil resistant synthetic rubber, compressed into resilient pads. The pre-formed fabric pads shall conform to latest edition of MIL C 882 and the following requirements. The number of plies shall be as required to produce the specified thickness, after compression and vulcanizing.

Pre-formed fabric pads shall have a shore A hardness of 90±5 in accordance with ASTM D 2240.

Pre-formed fabric pads for bridge utility supports will be accepted based on the Manufacturer's Certificate of Compliance that the material furnished conforms to these specifications.

6-02.2.OPT46(D).GB6

(June 26, 2000)

Pipe rolls or pipe saddles shall be of the type and model specified in the Plans.

6-02.2.OPT46(E).GB6

(September 3, 2019)

Anchor straps shall conform to ASTM A 36 and shall be galvanized after fabrication in accordance with AASHTO M 111.

Anchor bolts, and associated nuts and washers, shall conform to Section 9-06.5(4), and shall be galvanized in accordance with ASTM F2329.

6-02.2.OPT48.GB6

***(April 30, 2001)***

***Bridge Drain Risers***

Spacer bars and riser bars for the drain riser assembly shall conform to ASTM A 36.

6-02.2.OPT58.GB6

***(September 8, 2020)***

***Core Drilled Bridge Deck Drain***

Bridge deck drain pipe sleeve shall be any smooth wall, non-perforated, PVC pipe of the diameter and minimum wall thickness specified in the Plans.

Epoxy bonding agent shall be Type II conforming to Section 9-26.1. The grade and class of the epoxy bonding agent shall be as recommended by the bonding agent manufacturer.

6-02.2.OPT60.GB6

***(April 6, 2015)***

***Seismic Retrofit Materials***

Components fabricated and constructed for seismic retrofit work shall conform to the following requirements:

6-02.2.OPT60(B).GB6

(April 6, 2015)

Steel pipe shall conform to ASTM A 53, Grade B, Type E or S, galvanized. The pipe shall be Schedule 40, except as otherwise specified in the Plans.

PVC pipe shall be any smooth wall, non-perforated, PVC pipe of the diameter and minimum wall thickness or Schedule specified in the Plans.

6-02.2.OPT60(C).GB6

(September 8, 2020)

Steel bars, plates and shapes shall conform to ASTM A 36 except that structural shapes may conform to ASTM A 992.

Epoxy bonding agent, where shown in the Plans for bonding steel components to concrete, shall be Type II as specified in Section 9-26.1. The grade and class of epoxy bonding agent shall be as recommended by the bonding agent manufacturer.

All steel components and assemblies for seismic restrainers, except as otherwise specified, shall be galvanized after fabrication in accordance with AASHTO M 111.

Bolts, nuts, and washers shall conform to Section 9-06.5(3), and shall be galvanized after fabrication in accordance with ASTM F2329.

Resin bonded anchors shall conform to Section 6-02.2 as supplemented in these Special Provisions. Additionally, the threaded anchor rods for seismic retrofit elements shall conform to either ASTM A 193 Grade B7 or ASTM F 1554 Grade 105, and shall conform to the appropriate supplemental requirements for grade and manufacturer's identification, and charpy impact testing (15-foot-pounds minimum at 40F). Results of the charpy impact testing for the production lot(s) including the anchor rods furnished for seismic retrofit components and assemblies shall be submitted to the Engineer along with the Manufacturer's Certificate of Compliance.

6-02.2.OPT60(D).GB6

(September 8, 2020)

High-strength steel rods for longitudinal seismic restrainer assemblies shall conform to ASTM F 1554 Grade 105, including Supplemental Requirements S2, S3, and S5. Nuts, and couplers if required, shall conform to ASTM A 563 Grade DH. Washers shall conform to ASTM F 436.

High-strength steel rods and associated couplers, nuts and washers shall be galvanized after fabrication in accordance with ASTM F2329.

6-02.2.OPT60(F).GB6

**(September 8, 2020)**

**Column Jacketing Materials**

All metal components shall conform to ASTM A 36, and shall be painted in accordance with Section 6-07.3(9), and Section 6-03.3(30) as supplemented in these Special Provisions. Metal surfaces in contact with grout shall be considered in contact with concrete for the purposes of Section 6-07.3(9).

Grout shall conform to the requirements of Section 9-20.3(4) and the following requirements:

> The grout shall be a pumpable mix capable of filling the annulus between the concrete column and steel column jacket assembly. The grout shall be free of lumps and undispersed cement, and shall not show any visible signs of separation of water and cement during pumping operations.

Aggregate conforming to Section 9-03.1(5) with a maximum aggregate size of 3/8 inch may be used to extend the grout. Mortar shall conform to Section 9-20.4(2).

Epoxy bonding agent for filling grout voids shall be Type II, as specified in Section 9-26.1. The grade and class of epoxy bonding agent shall be as recommended by the bonding agent manufacturer.

6-02.2.OPT61.GB6

***(September 8, 2020)***

***Precast Prestressed Concrete Stay-In-Place Panels***

Concrete shall have an initial strength at strand release of at least 5,000 psi, and a 28 day minimum compressive strength as specified in the Plans.

Prestressing reinforcement strand shall conform to Section 9-07.10, except that the diameter shall be as specified in the Plans. The strand shall be provided by a manufacturer and facility capable of producing ½" diameter strand with an average bond pull-out force of 16.0 kips when tested in accordance with ASTM A1081. Test reports for ASTM A1081 shall be submitted with the Manufacturer's Certificate of Compliance, and testing shall have been performed on strand produced within the previous 36 months.

Grout shall conform to Section 9-20.3(2).

Leveling bolts shall conform to Section 9-06.5(1), and shall be galvanized after fabrication in accordance with AASHTO M 232.

Backer rod shall be closed cell expanded polyethylene foam.

6-02.3.GR6

## Construction Requirements

6-02.3.INST1.GR6

Section 6-02.3 is supplemented with the following:

6-02.3.OPT1.GB6

***(August 3, 2015)***

***Epoxy Crack Sealing***

The materials being used may be dermatetic. The Contractor's contact with and use of the materials shall conform to the requirements specified in the MSDS for each material, and all personnel shall be provided with appropriate clothing and protective garments.

All materials shall be stored and protected from ignition sources as recommended by the material manufacturer.

The cracks shall be cleaned of efflorescence, deteriorated concrete and other surface debris, by vacuuming, flushing, routing, sawing or other means as required.

Entry ports shall consist of tubes, tees or other valve devices as recommended by the resin manufacturer. The ports shall be placed at intervals along each crack in accordance with the manufacturer's written instructions for the resin being used. The holes for the entry ports shall be drilled with a hollow bit with an attached vacuum chuck to prevent concrete dust from becoming embedded in the crack.

The exposed crack surfaces and the areas around the entry ports shall be sealed with epoxy sealing paste and cured in accordance with the resin manufacturer's written instructions, to attain a seal capable of withstanding the applied injection pressures.

The Contractor shall furnish the services of a factory trained technical representative to perform the epoxy crack sealing injection.

Injection shall be accomplished with a pressure or injection machine compatible with the resin selected for use and shall begin at the lowest port and continue until there is evidence of the resin at the entry port directly above and adjacent to the port being pumped. When material travel is indicated, the nozzle shall be moved to the port that shows resin. The previously pumped port shall be sealed. Injection shall continue until the crack is completely filled. On wide cracks where resin travel between ports will be rapid, two or more ports may be pumped simultaneously. On exceptionally large cracks, a formulation (dependent upon crack width, ambient temperature, modulus requirements and other variables) of epoxy resin and fine sands shall be used as recommended by the resin manufacturer.

After all ports have been pumped and the crack is full, the epoxy resin shall be cured without disturbance in accordance with the resin manufacturer's written instructions as necessary to ensure development of the full bond capacity of the material.

After the epoxy has cured completely, the epoxy sealing paste and port stems shall be ground flush with the original surface of the concrete.

At the discretion of the Engineer, cores shall be taken after the repair is completed to confirm penetration and bonding. The number and locations of such cores will be as specified by the Engineer. These cores shall be submitted to the Engineer for testing in the WSDOT Materials Laboratory.

6-02.3.OPT2.GB6

***Bridge Supported Utilities***

6-02.3.OPT2(A).GB6

(August 3, 2015)

The Contractor shall furnish and install inserts for the bridge utility supports as shown in the Plans. The Contractor shall verify that the hanger rods freely hang plumb in their inserts, and shall make adjustments to the inserts as necessary and as accepted by the Engineer prior to utility installation.

6-02.3.OPT2(B).GB6

(June 26, 2000)

The Contractor shall furnish and install the bridge utility supports, and the utility pipe or conduit pipe, as shown in the Plans.

6-02.3.OPT2(C).FB6

(June 26, 2000)

The Utility Company will furnish material for and install *** $$1$$ ***. The Contractor shall install *** $$2$$ *** furnished by the *** $$3$$ ***.

The Contractor shall notify the utility company a sufficient time in advance and shall cooperate with the utility company in order that the utility furnished items may be installed in the structure.

6-02.3.OPT8.GB6

***Seismic Retrofit***

6-02.3.OPT8(B).GB6

**(April 6, 2015)**

**Seismic Retrofit Demolition Plan**

The Contractor shall submit Type 2 Working Drawings showing the method of removing the specified portions of the existing bridges required by the seismic retrofit work. The Working Drawings shall show the sequence of demolition and removal, the type of equipment to be used in all demolition and removal operations, and details of the methods and equipment used for containment, collection, and disposal of all debris. The Working Drawings shall show all stages of demolition.

6-02.3.OPT8(C).GB6

**(April 6, 2015)**

**Column Jacket Installation Plan**

The Contractor shall submit Type 2E Working Drawings describing the column jacket installation plan. The submittal shall include at a minimum, the following:

1. Step by step installation procedure.

2. The methods of cleaning and preparing the existing column surfaces prior to installing the column jacket assembly.

3. The methods of containing, collecting, and disposing of the debris generated by cleaning and preparing the existing column surfaces.

4. The methods of containing, collecting, and disposing of all excess grout generated during the grouting process.

5. The locations of grout injection valves, and the methods and materials used to remove them following use, and to fill the void following removal.

6. The method of sealing the gap between the existing column surface and the column jacket assembly prior to grouting.

7. The method and materials used to clamp and brace the column jacket assembly in place during field assembly and grouting.

8. The proposed grout mix with manufacturer's data sheets.

9. The equipment used to pump the grout and monitor the grout pressure and the quantity of grout injected.

10. The method, materials, and equipment used to fill grout voids within the column jacket assembly, and to finish the exposed surface flush after repair.

11. The method, materials, and equipment used to field repair all damaged primer coatings, and to field apply the intermediate and finish coats of paint.

6-02.3.OPT8(D).GB6

**(April 6, 2015)**

**Column Jacket Shop Drawings**

The Contractor shall submit column jacket shop drawings as Type 2 Working Drawings. The shop drawings shall include, at a minimum, the following:

1. Plan, elevation, and sections of the jacket system and all components, with all dimensions and tolerances.

2. Field measurements of the existing column(s).

3. All material designations.

4. Location of horizontal and vertical splices.

5. Location of spacers and method of attachment.

6. Welds and welding procedures.

6-02.3.OPT8(E).GB6

**(September 8, 2020)**

**Field Measuring Existing Bridge Columns**

The Contractor shall field measure the dimensions (diameter, or width and thickness, as appropriate for column shape) of the existing bridge columns receiving column jackets prior to preparing column jacket assembly shop drawings. The following locations shall be field measured as a minimum for each column:

1. Top of footing or footing pedestal.

2. Bottom of crossbeam.

3. Mid-height of column.

The Contractor shall field measure the column height from top of footing or footing pedestal to bottom of crossbeam for each column.

The Contractor shall tabulate these field measured dimensions and submit them to the Engineer along with the column jacket assembly shop drawings.

Where site conditions, such as traffic control requirements or deeply buried foundations, create difficulties for field measuring buried portions of the bridge columns, the Contractor may request a waiver of the pre-fabrication field measuring requirements for specific columns. If the Engineer concurs with the Contractor's request for a waiver of the pre-fabrication field measuring requirement for specific columns, and for columns identified in the Special Provisions as already designated with a waiver, the Contractor shall:

1. Field measure the diameter, or width and thickness, as appropriate for the column shape, of the above ground portion of the column receiving the waiver.

2. Fabricate the column jacket to a length exceeding the column height (2'-0" or ten percent of the estimated column height, whichever is greater) based on the original plans and other available site data. The shop drawing details shall specify the column jacket fabrication length, and the assumed column height based on the available information.

3. Submit the method, template, and equipment used to field cut the top of the column jacket assembly at installation.

The Contractor shall submit the request for a waiver of the pre-fabrication field measuring requirement prior to preparing column jacket assembly shop drawings, and shall not submit shop drawings until receiving the Engineer's confirmation of the waiver request and completing all field measurements still required.

6-02.3.OPT8(F).FB6

(April 6, 2015)

The column(s) at the Bridge and Pier location(s) specified below has (have) received a waiver of the pre-fabrication field measuring requirement, and no separate waiver request from the Contractor is required for this (these) specific column(s):

*** $$1$$ ***

However, the Contractor shall conform to all other requirements specified above for columns receiving a waiver of the pre-fabrication field measuring requirement.

6-02.3.OPT8(G).FB6

**(April 6, 2015)**

**Field Measuring for Seismic Retrofit Components**

The Contractor shall field measure dimensions of existing items and members of Bridge No(s). *** $$1$$ *** prior to preparing shop drawings for fabricated steel components and assemblies.

The Contractor shall field measure dimensions of the following items:

*** $$2$$ ***

The Contractor shall tabulate these field measured dimensions and submit them to the Engineer along with the shop drawing submittals for the corresponding steel components and assemblies.

6-02.3.OPT8(H).GB6

**(April 6, 2015)**

**Removing Portions of Existing Concrete**

The Contractor shall remove portions of existing concrete required by the seismic retrofit work in accordance with Section 2-02.3(2)A2 and as shown in the Plans.

The Contractor shall dispose of all materials removed by the demolition operations in accordance with Section 2-02.3.

The Contractor shall roughen, clean, and saturate the existing concrete surfaces bonding to the fresh concrete in accordance with Section 6-02.3(12).

6-02.3.OPT8(J).GB6

**(April 6, 2015)**

**Drilling Holes and Setting Steel Reinforcing Bars, and Placing Concrete**

The Contractor shall drill holes for, and set, steel reinforcing bars into the existing concrete as shown in the Plans in accordance with Section 6-02.3(24)C as supplemented in these Special Provisions.

6-02.3.OPT8(K).GB6

**(April 6, 2015)**

**Installing and Tensioning High-Strength Steel Bar Reinforcement**

The Contractor shall furnish and install high-strength steel bars as shown in the Plans. The hole through existing concrete shall be core drilled. The concrete surface in contact with the high-strength steel bar bearing plate shall be coated with epoxy bonding agent just prior to stressing the high-strength steel bar. After stressing, the high-strength steel bar shall be grouted in accordance with Section 6-02.3(26)H.

6-02.3.OPT8(L).GB6

**(April 6, 2015)**

**Longitudinal Seismic Restrainers**

The Contractor shall submit Type 1 Working Drawings consisting of shop drawings of the steel components of the longitudinal seismic restrainer assemblies in accordance with Section 6-03.3(7).

The Contractor shall core drill holes through the pier diaphragm for the high-strength steel bar as shown in the Plans. The Contractor shall set the PVC pipe in place with epoxy bonding agent as shown in the Plans.

Holes for the resin bonded anchors for the longitudinal seismic restrainer anchorages shall be located and drilled in accordance with Section 6-02.3(18) as supplemented in these Special Provisions, and as follows:

1. The bottom layer of steel reinforcing bars in the slab in the vicinity of the longitudinal seismic restrainer anchorage as shown in the Plans shall be located and marked on the concrete surface.

2. Using the anchorage assembly as a template, the Contractor shall align and slightly shift the anchorage assembly as required so that the holes avoid the existing steel reinforcing bars.

3. The Contractor shall drill holes for the resin bonded anchors with the anchorage assembly in position as a template.

4. If, after shifting the anchorage assembly, conflicts still exist between hole locations and existing steel reinforcing bars, the Contractor may, with the Engineer's approval, core drill holes at the conflict locations.

The surface of the concrete in contact with the anchorage assembly shall be coated with Type II epoxy bonding agent conforming to Section 9-26.2, with the grade and class as recommended by the epoxy bonding agent manufacturer. The longitudinal seismic restrainer anchorage assembly shall be set in place within the set time specified in the manufacturer's data sheet for the epoxy bonding agent.

All longitudinal seismic restrainers at a pier shall be installed so that the free end (the end with the gap as shown in the Plans) shall be on the same side of the pier.

6-02.3.OPT8(M).GB6

**(September 8, 2020)**

**Column Jacketing**

The steel column jacket assembly for each column shown in the Plans shall be fabricated in accordance with the shop drawings.

The Contractor shall excavate and shore as required to expose the column surface below ground to the top of the existing footing or footing pedestal. Dirt, debris and any surface attachments shall be removed from the surface of the column in accordance with the Contractor's column jacket installation plan.

For specific columns for which the Engineer confirms a waiver of the pre-fabrication field measuring of the column height dimension, the Contractor shall field measure the column height upon completion of the excavation. The Contractor shall field cut the top of the column jacket assembly using the method, template, and equipment as specified in the pre-fabrication field measuring waiver request submittal.

The Contractor shall position the steel column jacket around the existing column using spacers to center the assembly. The spacers may be welded to the inside of the jacket and, if used, shall be placed and attached as shown in the shop drawings.

Field welded complete penetration groove welds of the column jacket assemblies shall be inspected in accordance with Section 6-03.3(25)A. Field weld inspection shall be performed by a certified welding inspector (CWI). The Contractor shall not begin welding until receiving acceptance of the joint fit-up from the CWI. The CWI shall randomly monitor the intermediate stages of welding. The CWI's daily reports and nondestructive testing reports indicating compliance with contract requirements

shall be submitted as a Type 1 Working Drawing upon completion of the last column jacket in the Contract.

The Contractor shall install external grout injection valves for use in filling the cavity with grout. The valves shall be spaced such that the grout will uniformly fill the gap between the jacket assembly and the column surface. The grout pump shall be equipped with a pressure gauge to monitor grout pressures. The grouting equipment shall be sized to enable the grout to be pumped in one continuous operation. The mixer shall be capable of continuously agitating the grout.

The production grout compressive strength shall be measured using four inch diameter by eight inch cylinders, cast and cured in accordance with Section 6-02.3(5)H. The cylinders shall attain a 7-day minimum compressive strength of 4,000 psi.

The gap between the column jacket assembly and the existing column surface at the base of the assembly shall be sealed in accordance with the column jacket installation plan.

The grouting operation shall conform to Section 6-02.3(6)A.

The grouting operation shall begin from the base of the assembly and from the base of each successive lift. The Contractor shall pump grout into the assembly while maintaining a uniform level grout head around the column.

The Contractor shall limit the height of each lift of grout to minimize undulations and displacements of the surface of the column jacket assembly during grouting. For column jacket assemblies of circular (constant radius) cross section, the height of each lift of grout shall be limited to 20 feet maximum, except as otherwise accepted by the Engineer. For column jacket assemblies with cross sections of all other shapes, the height of each lift of grout shall be limited to 8 feet maximum, except as otherwise accepted by the Engineer.

The Contractor may restrain the column jacket assembly within the specified tolerances during grouting operations by using a bracing system in accordance with the column jacket installation plan. Except as otherwise shown in the Plans, restraints for the bracing system shall not pass through the column. Except when a bracing system is used, placement of the next grout lift shall not begin until the previous grout lift has hardened.

The Contractor shall contain and collect all grout outside the column jacket assembly.

When the assembly is completely grouted to the top, the Contractor shall place mortar conforming to Section 9-20.4(2) over the top of the grout at the top of the assembly, and shall slope the mortar to drain.

All clamps, valves, injection ports, lifting ears, and other attachments shall be removed not less than 24 hours after completing grouting operations at the column. The Contractor shall fill all voids with mortar conforming to Section 9-20.4(2), and shall finish them flush with the exterior surface of the column jacket assembly. The Contractor shall not remove the attachments by flame cutting.

Seven calendar days after completing the grouting of a column jacket assembly, the Engineer will inspect the assembly for voids between the steel casing and the grout. The Contractor shall completely fill all voids detected by the Engineer by injecting epoxy bonding agent into the lowest point of each void and venting at the highest point. The exposed epoxy bonding agent shall be finished flush with the exterior surface of the column jacket assembly.

After inspection for voids and epoxy injection of voids is complete, steel surfaces with damaged primer coat shall be repaired with field primer in accordance with Section 6-07.3(9). The primer repair shall be followed by application of the intermediate and finish field coats of paint to all exposed steel surfaces in accordance with Section 6-07.3(9) and Section 6-03.3(30) as supplemented in these Special Provisions.

Backfill shall not be placed against the column jacket assembly until the finish coat of paint is completely cured, based on the cure duration recommended by the paint manufacturer. The Contractor shall fill and compact the excavation with native backfill, except as otherwise specified in the Plans, in accordance with Section 2-09.3(1)E.

6-02.3.OPT9.GB6

***(January 7, 2019)***

***Polyester Concrete***

**Manufacturer's Technical Representative**

The Contractor shall have the services of a qualified polyester concrete manufacturer's technical representative physically present at the job site. The manufacturer's technical representative shall assist the Contractor in training the Contractor's personnel and providing technical assistance in preparing the header blockout surface, applying primer, and mixing, placing, and curing the polyester concrete.

**Mix Design**

Polyester concrete shall be composed of the following three components – polyester resin binder, high molecular weight methacrylate (HMWM) resin, and aggregate, in accordance with Section 6-02.2 as supplemented in these Special Provisions.

The Contractor shall prepare and submit a Type 1 Working Drawing consisting of the polyester concrete design mix and mixing procedure. The mix design shall include a recommended initiator percentage for the expected application temperature, and the recommended amount of polyester resin binder as a percentage of the dry weight of aggregate. The amount of peroxide initiator used shall result in a polyester concrete set time between 30 and 120 minutes during placement as determined by California Test 551, Part 2, "Method of Test For Determination of Set Time of Concrete Overlay and Patching Materials", by Gilmore Needles. Accelerators or inhibitors may be required as recommended by the polyester resin binder supplier.

**Delivery and Storage of Materials**

All materials shall be delivered in their original containers bearing the manufacturer's label, specifying date of manufacturing, batch number, trade name brand, and quantity. Each shipment of polyester resin binder and HMWM resin shall be accompanied by a Materials Safety Data Sheet (MSDS).

The material shall be stored in accordance with the manufacturer's recommendations.

Sufficient material to perform the entire polyester concrete application shall be in storage at the site prior to any field preparation.

**Equipment and Containment**

The Contractor shall submit a Type 1 Working Drawing consisting of all equipment for cleaning the concrete and steel surfaces, and mixing and applying the polyester concrete.

The HMWM resin, and abrasive blasting materials, shall be contained and restricted to the surface receiving the polyester concrete only, and shall not escape to the surrounding environment. The Contractor shall submit a Type 1 Working Drawing consisting of the method and materials used to collect and contain the HMWM resin, and abrasive blasting materials.

**Surface Preparation**

The concrete and steel surfaces shall be prepared by removing all material which may act as a bond breaker between the surface and the polyester concrete. Surface cleaning shall be by abrasive blasting. Precautions shall be taken to ensure that no dust or debris leaves the bridge deck and that all traffic is protected from rebound and dust.

If the concrete or steel surfaces become contaminated, the contaminated areas shall be recleaned by abrasive blasting.

**Application of Prime Coat**

Application of the HMWM prime coat and the polyester concrete shall not begin if rain is forecast within 12-hours of completion of the Work. The area receiving the prime coat shall be dry and had no rain within the past 12 hours. Immediately prior to applying the prime coat, the surfaces shall be cleaned to remove accumulated dust and any other loose material.

The concrete bridge deck surface shall be between 50F and 85F when applying the prime coat.

The Contractor shall apply one coat of promoted/initiated wax-free HMWM resin to the prepared concrete and steel surfaces immediately before placing the polymer concrete. The promoted/initiated resin shall be worked into the concrete in a manner to assure complete coverage of the area receiving polyester concrete. A one pint sample of each batch of promoted/initiated HMWM resin shall be retained and submitted to the Engineer at the time of primer application.

The prime coat shall cure for 30 minutes minimum before beginning placement of the polyester concrete. Placement of the polymer concrete shall not proceed until the Engineer verifies that the HMWM resin was properly promoted and initiated, as evidenced by the HMWM batch sample.

If the primed surface becomes contaminated, the contaminated area shall be cleaned by abrasive blasting and reprimed.

**Mixing Equipment for Polyester Concrete**

Polyester concrete shall be mixed in mechanically operated mixers in accordance with the mix design as approved by the Engineer. The mixer size shall be limited to a nine cubic yard maximum capacity, unless otherwise approved by the Engineer.

The aggregate and resin volumes shall be recorded for each batch along with the date of each recording. A printout of the recordings shall be furnished to the Engineer at the end of each work shift.

The Contractor shall prevent any cleaning chemicals from reaching the polyester mix during the mixing operations.

**Mixing Components**

The polyester resin binder in the polyester modified concrete shall be approximately 12 percent by weight of the dry aggregate. The Contractor shall specify the exact percentage in the mix design Working Drawing submittal.

The polyester resin binder shall be initiated and thoroughly blended just prior to mixing the aggregate and binder. The polyester concrete shall be thoroughly mixed prior to placing.

**Polyester Concrete Placement**

The polyester concrete shall be placed within two hours of placing the prime coat.

Polyester concrete shall be placed within 15 minutes following initiation. Polyester concrete that is not placed within this time shall be discarded.

The surface temperature of the area receiving the polyester concrete shall be the same as specified above for the HMWM prime coat.

The polyester concrete shall be consolidated in accordance with the manufacturer's recommendations.

**Finished Polyester Concrete Surface**

The finished surface of the polyester concrete shall smooth and uniform as to crown and grade in accordance with Section 6-02.3(10)D3.

Finishing equipment used shall strike off the polyester concrete to the established grade and cross section.

The polyester concrete shall receive an abrasive sand finish. The sand finish shall be applied by hand immediately after strike-off and before gelling occurs. Sand shall be broadcast onto the surface to affect a uniform coverage of a minimum of 0.8 pounds per square yard.

**Curing**

The polyester concrete shall be cured in accordance with the manufacturer's recommendations. The Contractor shall measure the compressive strength of the cured polyester concrete with a rebound hammer in accordance with ASTM C 805. The readings of the rebound hammer used shall be correlated to the compressive strength of the polyester concrete product in accordance with ASTM C 805 Section 5.4, and the Contractor shall submit a Type 1 Working Drawing of this correlation.

Traffic and equipment shall not be permitted on the polyester concrete until it achieves a compressive strength of 2500 psi based on the rebound hammer readings and the correlation chart for the rebound hammer used.

6-02.3.OPT10.GB6

***(January 7, 2019)***

***Elastomeric Concrete***

Elastomeric concrete shall be composed of the following three components – two-component polyurethane resin binder, and aggregate, in accordance with Section 6-02.2 as supplemented in these Special Provisions.

**Manufacturer's Technical Representative**

The Contractor shall have the services of a qualified elastomeric concrete manufacturer's technical representative physically present at the job site. The manufacturer's technical representative shall assist the Contractor in training the Contractor's personnel and providing technical assistance in preparing the header blockout surface, applying primer, and mixing, placing, and curing the elastomeric concrete.

**Delivery and Storage of Materials**

All materials shall be delivered in their original containers bearing the manufacturer's label, specifying date of manufacturing, batch number, trade name brand, and quantity. Each shipment of polyurethane resin binder shall be accompanied by a Materials Safety Data Sheet (MSDS).

The materials shall be stored in accordance with the manufacturer's recommendations.

Sufficient material to perform the entire elastomeric concrete application shall be in storage at the site prior to any field preparation.

**Equipment and Containment**

The Contractor shall submit a Type 1 Working Drawing consisting of all equipment for cleaning the concrete and steel surfaces, and mixing and applying the elastomeric concrete.

The abrasive blasting materials, shall be contained and restricted to the surface receiving the elastomeric concrete only, and shall not escape to the surrounding environment. The Contractor shall submit a Type 1 Working Drawing consisting of the method and materials used to collect and contain the abrasive blasting materials.

**Surface Preparation**

The concrete and steel surfaces shall be prepared by removing all material which may act as a bond breaker between the surface and the elastomeric concrete, including the removal of all loose, deteriorated, or otherwise unsound concrete. Steel surfaces shall be cleaned and prepared to an SSPC SP-10 surface condition. Surface cleaning shall be by abrasive blasting.

Precautions shall be taken to ensure that no dust or debris leaves the bridge deck and that all traffic is protected from rebound and dust.

If the concrete or steel surfaces become contaminated, the contaminated areas shall be recleaned by abrasive blasting.

Freshly placed concrete shall be cured for a minimum of 14 calendar days before application of primer and elastomeric concrete.

**Application of Prime Coat**

Application of the prime coat and the elastomeric concrete shall not begin if rain is forecast within 12-hours of completion of the Work. The area receiving the prime coat shall be dry and had no rain within the past 12 hours. Immediately prior to applying the prime coat, the surfaces shall be cleaned to remove accumulated dust and any other loose material.

The concrete bridge deck surface shall be between 50F and 85F when applying the prime coat.

The Contractor shall apply primer in accordance with the elastomeric concrete manufacturer's recommendations, and shall limit the extent of primer application to that surface area that can be covered by a layer of elastomeric concrete before primer cure.

If the primed surface becomes contaminated, the contaminated area shall be cleaned by abrasive blasting and reprimed.

**Mixing Components**

The Contractor shall mix the elastomeric concrete components and the resultant mixture in accordance with the equipment and procedure recommended by the elastomeric concrete manufacturer.

**Elastomeric Concrete Placement**

The elastomeric concrete shall be placed on the liquid prime coat within the time limits specified by the manufacturer. Elastomeric concrete shall be placed in layers not to exceed the maximum depth recommended by the elastomeric concrete manufacturer. At locations deep enough to require placement of multiple layers of elastomeric concrete, each layer shall be cured, and the top of the previous layer roughened, as recommended by the elastomeric concrete manufacturer before placement of the next layer.

Elastomeric concrete shall be placed within five minutes of initiation.

The surface temperature of the area receiving the elastomeric concrete shall be the same as specified above for the prime coat.

**Finished Elastomeric Concrete Surface**

The finished surface of the elastomeric concrete shall be smooth and uniform as to crown and grade in accordance with Section 6-02.3(10)D3.

Finishing tools or equipment used shall strike off the elastomeric concrete to the established grade and cross section.

The finished surface of elastomeric concrete shall receive an abrasive sand finish. The sand finish shall be applied by hand immediately after strike-off and before

gelling occurs. Sand shall be broadcast onto the surface to affect a uniform coverage of a minimum of 0.8 pounds per square yard.

**Curing**

The elastomeric concrete shall be cured in accordance with the manufacturer's recommendations. The Contractor shall measure the compressive strength of the cured elastomeric concrete with a rebound hammer in accordance with ASTM C 805. The readings of the rebound hammer used shall be correlated to the compressive strength of the elastomeric concrete product in accordance with ASTM C 805 Section 5.4, and the Contractor shall submit a Type 1 Working Drawing of this correlation.

Traffic and equipment shall not be permitted on the elastomeric concrete until it achieves a compressive strength of 2500 psi based on the rebound hammer readings and the correlation chart for the rebound hammer used.

6-02.3(2).GR6

## *Proportioning Materials*

6-02.3(2).INST1.GR6

Section 6-02.3(2) is supplemented with the following:

6-02.3(2).OPT1.GB6

**(September 8, 2020)**

**Expansion Joint Header Concrete**

Expansion joint header concrete shall have a minimum compressive strength of 4,000 psi at 28 days. Unless the Plans or Special Provisions specify a different strength, the concrete shall achieve a minimum compressive strength of 2,500 psi based on early break cylinders prior to allowing traffic to pass across the expansion joint.

Type III cement conforming to Section 9-01.2(1) may be used.

The nominal maximum size aggregate shall be 1-1/2 inch.

Section 6-02.3(3) notwithstanding, non-chloride accelerating admixtures conforming to the following specifications may be used:

| **Admixture** | **Specifications** |
|---|---|
| Accelerating | Section 9-23.6(4) |
| Water Reducing/Accelerating | Section 9-23.6(6) |

6-02.3(6).GR6

## *Placing Concrete*

6-02.3(6)B.GR6

**Placing Concrete in Foundation Seals**

6-02.3(6)B.INST1.GR6

Section 6-02.3(6)B is supplemented with the following:

6-02.3(6)B.OPT1.GB6

(June 26, 2000)

If, in the opinion of the Engineer, water conditions at the time of construction do not require seals for footing construction, the Engineer may specify that the seals be omitted. In such a case the Contractor shall lower and construct the footing, as shown in the Plans, at the elevation shown in the Plans for the bottom of seal. The height of the pier shaft or columns shall be adjusted accordingly.

No adjustment will be allowed in the unit contract prices for concrete, steel reinforcing bar, and excavation by reason of any increase or decrease in quantities involved due to the deletion of seals.

6-02.3(6)B.OPT2.GB6

(June 26, 2000)

If, in the opinion of the Engineer, water conditions at the time of construction do not require seals for construction, the Engineer may specify that the seals be omitted. In such a case, the Contractor shall excavate only to the bottom of footing elevation and shall construct the footing as shown in the Plans.

No adjustment will be allowed in the unit contract prices for concrete, steel reinforcing bar, and excavation by reason of any increase or decrease in quantities involved due to the deletion of seals.

6-02.3(9).GR6

## *Precast Concrete Panels*

6-02.3(9)A.GR6

### Shop Drawings

6-02.3(9)A.INST2.GR6

The list included in the third paragraph of Section 6-02.3(9)A is supplemented with the following:

6-02.3(9)A.OPT6.GB6

(September 8, 2020)

7. Construction sequence and method of forming the precast prestressed concrete stay-in-place panels.

8. Details of additional reinforcement, if any, provided at lifting and support locations.

9. Method and equipment used to support the precast prestressed concrete stay-in-place panels during storage, transporting, and erection.

10. Method used to identify the precast prestressed concrete stay-in-place panel's location for calculating its position accounting for profile grade and transverse slope, and for ensuring correct placement during erection.

11. Erection sequence, including the method of lifting the panels, placing and adjusting the panels to proper alignment and grade, and supporting the panels during leveling and grouting operations.

12. Method for forming the grout pad on the exterior face of the prestressed concrete girder flange, if an alternative method is proposed, and at the interior face of the stay-in-place panel to the dimensions detailed in the Plans.

6-02.3(9)E.GR6

**Finishing**

6-02.3(9)E.INST1.GR6

Section 6-02.3(9)E is supplemented with the following:

6-02.3(9)E.OPT6.GB6

(September 8, 2020)

The Contractor shall furnish a Class 2 surface finish, as specified in Section 6-02.3(14)B, on all surfaces of the precast prestressed concrete stay-in-place panels, except as otherwise noted. The top surface of all panels shall be textured using a metal tined comb. It shall leave striations in the fresh concrete ¼-inch deep by at least 1/8-inch wide, spaced at 2 to 3 times the groove width apart, and oriented perpendicular to the prestressing strand. The timing and method used shall produce the required texture without displacing larger particles of aggregate. Areas of mortar buildup more than 1/4 inch above the top surface of the panel shall be removed.

6-02.3(9)F.GR6

**Tolerances**

6-02.3(9)F.INST1.GR6

Section 6-02.3(9)F is supplemented with the following:

6-02.3(9)F.OPT1.GB6

(September 8, 2020)

The precast prestressed concrete stay-in-place panels shall not exceed the following scalar tolerances:

| | |
|---|---|
| Length (perpendicular to strands): | ± 3/16 inch |
| Width (parallel to strands): | ± 1/4 inch |
| Thickness: | + 1/4, -1/8 inch |
| Squareness (difference in diagonal lengths): | ± 1/4 inch per 5 feet, ± 1/2" max. |
| Vertical location of strand group C.G.: | ± 1/16 inch |
| Vertical location of individual strands: | ± 1/8 inch |
| Horizontal location of strands: | ± 1/4 inch |
| Strand or bar projection from ends: | ± 1/2 inch |

| | |
|---|---|
| Camber (either upward or downward) at time of placement on structure: | ± 1/4 inch per ten feet |

Precast prestressed concrete stay-in-place panels with tolerances exceeding those specified above, or with hairline cracks visibly apparent radiating from the strand at the end of the panel and extending more than three inches along the panel will be subject to evaluation by the Engineer for possible rejection.

6-02.3(9)G.GR6

**Handling and Storage**

6-02.3(9)G.INST1.GR6

Section 6-02.3(9)G is supplemented with the following:

6-02.3(9)G.OPT6.GB6

(September 8, 2020)

Precast prestressed concrete stay-in-place panels shall be maintained in a flat and level position, without any twisting, at all times. Supports shall be oriented transverse to the prestressed strands, extend the full width of the panel, and be located in a manner to minimize elastic and time-dependent deformation of the panels.

Unloading and reloading at a site other than the bridge site will be permitted only under the direct supervision of the Engineer. The panels shall not be stacked, unless otherwise allowedby the Engineer. If such permission is granted, the panel supports shall be in the same vertical plane and shall be of sufficient height to prevent damage to the lifting bar loops. The Contractor shall have received the Engineer's verification that the bottom panel of the stack is flat and level, without any twisting, prior to stacking additional panels. The Contractor shall not stack panels on top of adjacent girders of the structure.

6-02.3(9)I.GR6

**Erection**

6-02.3(9)I.INST1.GR6

Section 6-02.3(9)I is supplemented with the following:

6-02.3(9)I.OPT6.GB6

(September 8, 2020)

The precast prestressed concrete stay-in-place panels shall be at least 60 days old at the time of placing bridge deck concrete. The Contractor shall place the panels atop the prestressed girders as shown in the Plans, adjusting the leveling bolts as required to match the level of adjacent panels and accommodate camber.

The grout pad shall be placed after the panels have been fully adjusted for grade and camber. The exposed portion of the grout pad forms that are intended to be left in place permanently shall be tinted to match the color of the adjacent concrete surfaces and shall be secured with an acceptedadhesive or other method as acceptedby the Engineer.

Prior to placing the bridge deck steel reinforcing bars and concrete, the Contractor shall place a backer rod at the intersection between panels as shown in the Plans. All intersections between panels shall be sealed to prevent leakage during concrete placement. Prior to placing the bridge deck concrete, the surface of the panels shall be cleaned of all foreign materials and saturated with water for a minimum of 4 hours before fresh concrete is placed.

6-02.3(10).GR6

***Bridge Decks and Bridge Approach Slabs***

6-02.3(10)D.GR6

**Concrete Placement, Finishing, and Texturing**

6-02.3(10)D.INST1.GR6

Section 6-02.3(10)D is supplemented with the following:

6-02.3(10)D.OPT1.GB6

**(August 4, 2008)**

**Repairing Slab Left Exposed After Removing Existing Curb or Sidewalk**

The concrete exposed by the removal of the existing curb or sidewalk shall be removed to a depth of 1-inch below finished grade or to the top of the existing roadway deck steel reinforcing bars, whichever is less. The Contractor shall not remove concrete below the top of the existing steel reinforcing bars. The Contractor shall not damage the bond between the existing steel reinforcing bars and the concrete.

After roughening, cleaning and wetting the surface in accordance with Section 6-02.3(12), the Contractor shall place concrete over the surface to the finish grade of the adjacent concrete roadway deck using a modified Class 4000 concrete mix. The maximum aggregate size in the modified Class 4000 concrete mix shall be 3/8 inch. The finished portion of the deck shall have the same texture, slope and grade as that of the existing deck.

6-02.3(10)D.OPT2.GB6

**(August 4, 2008**

**Repairing Slab Left Exposed After Removing Existing Curb and Railbase**

After roughening and cleaning the concrete exposed by the removal of the existing curb and railbase, that portion of the exposed surface not covered by the new traffic barrier shall be coated with epoxy mortar and finished to have the same texture, slope and grade as that of the existing deck.

6-02.3(10)D.OPT3.GB6

**(August 3, 2015)**

**Bridge Drain Risers**

The Contractor shall submit a Type 2 Working Drawing consisting of the method of removing the bridge drain grate nipple extrusion, the method of grinding the existing curb as necessary for bridge drain riser installation, and the method of cleaning the existing drain casting surfaces in contact with the drain risers. The shop drawings and weld procedures for the drain riser assemblies shall be submitted in accordance with Sections 6-03.3(7) and 6-03.3(25).

The existing bridge drain grate bolt, debris from removing the nipple extrusion and cleaning the drain casting contact surfaces, and all debris in the bridge drain cavity, shall be disposed of in accordance with Section 2-02.3.

After cleaning the bridge drain casting contact surfaces, the Contractor shall install the spacer bars and riser bars of the bridge drain riser assembly as shown in the Plans.

All exposed surfaces of the spacer bars and riser bars following installation shall be painted with two coats of paint conforming to Section 9-08.1(2)F. Each coat shall have a minimum dry film thickness of two mils.

6-02.3(10)D.OPT3(A).GB6

(August 4, 2008)

A minimum of four slotted holes, each 2 inches long and 3/4 inches high, shall be provided on each bridge drain riser. The slotted holes shall be located at the bottom of the riser, two on the traffic side of the assembly and one each on the short ends of the assembly. Risers shall be installed to be flush with the proposed roadway profile and shall maintain uniform contact with the existing drain. This portion of work shall be completed prior to the installation of the membrane waterproofing.

The membrane waterproofing shall extend to the bottom of and all around the bridge drain riser, except that the Contractor shall ensure that the slotted holes of the bridge drain riser assembly remain open and unplugged by the membrane waterproofing. Water seeping under the overlay shall be allowed to drain through the slotted holes and into the bridge drains.

After all the items of work on this project have been completed, the Contractor shall clean and flush all the bridge drains.

6-02.3(10)D.OPT5.GB6

**(August 3, 2015)**

**Plugging Existing Bridge Drain**

The Contractor shall submit a Type 2 Working Drawing consisting of the method and materials used to plug the existing bridge drains specified in the Plans to be plugged. The submittal shall include the following:

1. Material used to plug the drain outlet, and method of securing the plug in position.

2. The type of concrete material used to fill the drain cavity.

3. The method used to remove the exposed drainpipe, if removal is specified in the Plans.

All cut, damaged, and exposed metal surfaces to remain, including the drain outlet plug if metal components are used, shall be painted with two coats of paint conforming to Section 9-08.1(2)F. Each coat shall have a minimum dry film thickness of two mils.

When the removal of exposed drainpipe is specified in the Plans, the Contractor shall remove the embedded anchors a minimum of one inch beneath the existing concrete surface. The void left by removal of the embedded anchors shall be filled with mortar conforming to Section 9-20.4(2). The mortar shall match the color of the existing concrete surface as near as practicable.

All materials removed from the bridge drains specified in the Plans to be plugged shall be disposed of as specified in Section 2-02.3.

6-02.3(10)D.OPT12.GB6

**(April 6, 2015)**

**Core Drilled Bridge Deck Drain**

The Contractor shall core drill drain holes through the bridge deck of the bridges and in the locations shown in the Plans. The Contractor shall grind the concrete bridge deck to provide a taper at the top of the cored hole if shown in the Plans. The Contractor shall contain, collect and dispose of the concrete cores and debris in accordance with Section 2-02.3.

The Contractor shall coat the surfaces of the cored holes with epoxy bonding agent, and shall set a bridge deck drain pipe sleeve in place as shown in the Plans. The Contractor shall ensure that the void between the cored hole surface and the outside of the pipe sleeve is completely filled with epoxy bonding agent. The Contractor shall take appropriate measures to prevent the epoxy bonding agent from escaping from the void and shall secure the pipe sleeve in position until the epoxy bonding agent is cured.

6-02.3(10)F.GR6

**Bridge Approach Slab Orientation and Anchors**

6-02.3(10)F.INST1.GR6

Section 6-02.3(10)F is supplemented with the following:

6-02.3(10)F.OPT2.GB6

(August 4, 2008)

The pavement end of the bridge approach slab shall be constructed parallel to the pavement seat.

6-02.3(10)F.OPT3.FB6

(August 4, 2008)

The pavement end of the bridge approach slab shall be constructed parallel to the pavement seat for bridge(s) No. *** $$1$$ ***. The pavement end of the bridge approach slab shall be constructed normal to the roadway center line for bridge(s) No. *** $$2$$ ***.

6-02.3(13).GR6

***Expansion Joints***

6-02.3(13).INST1.GR6

Section 6-02.3(13) is supplemented with the following:

6-02.3(13).OPT7.GB6

**Expansion Joint Modification**

6-02.3(13).OPT7(B).GB6

**(April 6, 2015)**

**Expansion Joint Demolition Plan**

The Contractor shall submit Type 2 Working Drawings showing the method of removing the specified portions of the existing bridge expansion joints. The Working Drawings shall show the sequence of demolition and removal, the type of equipment to be used in all demolition and removal operations, and details of the methods and equipment used for containment, collection, and disposal of all debris. The Working Drawings shall show all stages of demolition.

6-02.3(13).OPT7(C).GB6

**(April 6, 2015)**

**Joint Preparation and Installation Procedure**

The Contractor shall submit a Type 1 Working Drawing consisting of the sealant manufacturer's recommended joint preparation and installation procedure.

6-02.3(13).OPT7(D).FB6

**(April 6, 2015)**

**Field Measuring Existing Bridge Expansion Joints**

The Contractor shall field measure the following dimensions of the existing bridge expansion joints of Bridge No(s). *** $$1$$ ***:

1. Length along the roadway surface and the horizontal and vertical surfaces of the concrete curb.

2. Opening width at both curb lines and at the centerline of the roadway surface.

The Contractor shall submit a Type 1 Working Drawing consisting of the field measured dimensions.

6-02.3(13).OPT7(E).FB6

**(April 6, 2015)**

**Removing Portions of Existing Bridge Expansion Joints**

The Contractor shall remove all concrete, expansion joint materials, overlay, dirt and debris at the bridge expansion joints of Bridge No(s). *** $$1$$ *** within the blockout dimensions shown in the Plans.

Concrete removal shall conform to Section 2-02.3(2)A2 and the following restriction on power driven tools:

1. Jack hammers no heavier than the nominal 30 pound class.

2. Chipping hammers no heavier than the nominal 15 pound class.

No other power driven equipment shall be used to remove concrete in the vicinity of the bridge expansion joints. The power driven tools shall be operated at angles less than 45 degrees as measured from the surface of the deck to the tool.

The Contractor shall dispose of all materials removed from the bridge expansion joints in accordance with Section 2-02.3.

For polyester concrete headers, or elastomeric concrete headers, the Contractor shall clean and prepare all existing concrete surfaces bonding to the header in accordance with the ***Polyester Concrete*** or ***Elastomeric Concrete*** subsection, respectively, to Section 6-02.3 as supplemented in these Special Provisions. For concrete headers, the Contractor shall clean and prepare all existing concrete surfaces bonding to the header in accordance with Section 6-02.3(12)B.

6-02.3(13).OPT7(F).GB6

**(April 6, 2015)**

**Drilling Holes and Setting Steel Reinforcing Bars**

The Contractor shall drill holes for, and set, steel reinforcing bars into the existing concrete as shown in the Plans in accordance with Section 6-02.3(24)C as supplemented in these Special Provisions.

6-02.3(13).OPT7(G).GB6

**(April 6, 2015)**

**Placing Polyester Concrete or Elastomeric Concrete Headers**

The Contractor shall form the polyester concrete or the elastomeric concrete headers in accordance with either the ***Polyester Concrete*** or the ***Elastomeric Concrete*** subsection to Section 6-02.3 as supplemented in these Special Provisions. The Contractor shall remove all forms from the bridge expansion joints after casting and curing the polyester concrete or the elastomeric concrete headers.

6-02.3(13).OPT7(H).GB6

**(September 8, 2020)**

**Placing Concrete Headers**

The Contractor shall form, cast, and cure, the concrete headers in accordance with Section 6-02.3 and as shown in the Plans. Unless the Plans or Special Provisions specify a different strength, the concrete headers shall have attained a minimum compressive strength of 2,500 psi before the Contractor may allow traffic to pass across the expansion joint.

6-02.3(13).OPT7(I).GB6

**(September 8, 2020)**

**Placing Expansion Joint Sealant**

The Contractor shall have the services of a qualified sealant manufacturer's technical representative physically present at the job site to assist in assuring the proper installation of the rapid cure silicone sealant, provide technical assistance for the use of the joint sealant, train the Contractor's personnel installing the joint sealant, and to observe and inspect the installation of at least the first complete joint.

The joint sealant shall not be placed against concrete until at least seven days after concrete placement. The joint sealant shall not be placed against polyester concrete or elastomeric concrete until a time period recommended by the sealant manufacturer.

The Contractor shall clean the bridge expansion joints of all forms, dirt, form oil, grease, and other deleterious material. The Contractor shall clean and prepare the entire joint surface receiving the joint sealant in accordance with the manufacturer’s joint preparation procedure, and as recommended by the sealant manufacturer's technical representative, including two stage abrasive blasting surface preparation and compressed air cleaning. All steel surfaces to be in contact with the joint sealant shall be cleaned to an SSPC-SP10 condition. The joint receiving the sealant shall be sound, clean, dry, and frost free.

After the cleaned and prepared joint has received the Engineer's acceptance for joint dimensions, alignment, and preparation, the Contractor shall apply the primer, as recommended by the sealant manufacturer, to all surfaces to be in contact with the joint sealant. The primer shall dry and cure for the time period recommended by the sealant manufacturer for the surface type.

After the primer is cured, the Contractor shall place the backer rod, and place the rapid cure silicone sealant in accordance with the joint installation procedure.

If the joint width at the time of installation is less than 1-inch or greater than three inches, the Contractor shall not proceed with the expansion joint modification until the installation procedure is revised as recommended by the sealant manufacturer's technical representative.

After installing the rapid cure silicone sealant, the Contractor shall flood the joint area with water. If leakage is detected, the bridge expansion joint system shall be repaired by the Contractor, as recommended by the sealant manufacturer.

6-02.3(13).OPT7(J).GB6

**(September 8, 2020)**

**Placing Expansion Joint Sealant**

The Contractor shall have the services of a qualified sealant manufacturer's technical representative physically present at the job site to assist in assuring the proper installation of the rapid cure silicone sealant, provide technical assistance for the use of the joint sealant, train the Contractor's personnel installing the joint sealant, and to observe and inspect the installation of at least the first complete joint.

Prior to scarifying the concrete deck for the modified concrete overlay, the Contractor shall remove all expansion joint materials and debris from the existing expansion joints, and shall dispose of these materials and debris as specified in Section 2-02.3.

Prior to placing the modified concrete overlay, the Contractor shall install a temporary form as shown in the Plans to fill the expansion joint gap. The temporary form shall preserve the expansion joint gap during the modified concrete overlay placement, and shall not damage the joint or the concrete overlay upon removal. The Contractor shall submit Type 2 Working Drawing consisting of the type of temporary form material, and the method of installation and removal.

The joint sealant shall not be placed against concrete (including concrete overlay except for polyester concrete overlay) until at least seven days after concrete placement.

After placing the modified concrete overlay and rounding the corner of the overlay at the joints with a 3/8 inch radius, the Contractor shall clean the bridge expansion joints of all temporary forms, dirt, form oil, grease, and other deleterious material. The Contractor shall clean and prepare the entire joint surface receiving the joint sealant in accordance with the manufacturer's joint preparation procedure, and as recommended by the sealant manufacturer's technical representative, including two stage abrasive blasting surface preparation and compressed air cleaning. All steel surfaces to be in contact with the joint sealant shall be cleaned to an SSPC-SP10 condition. The joint receiving the sealant shall be sound, clean, dry, and frost free.

After the cleaned and prepared joint has received the Engineer's acceptance for joint dimensions, alignment, and preparation, the Contractor shall apply the primer, as recommended by the sealant manufacturer, to all surfaces to be in contact with the joint sealant. The primer shall dry and cure for the time period recommended by the sealant manufacturer for the surface type.

After the primer is cured, the Contractor shall place the backer rod, and place the rapid cure silicone sealant in accordance with the joint installation procedure.

If the joint width at the time of installation is less than 1-inch or greater than three inches, the Contractor shall not proceed with the expansion joint modification until the installation procedure is revised as recommended by the sealant manufacturer's technical representative and as approved by the Engineer.

After installing the rapid cure silicone sealant, the Contractor shall flood the joint area with water. If leakage is detected, the bridge expansion joint system shall be repaired by the Contractor, as recommended by the sealant manufacturer.

6-02.3(13)C.GR6

**Modular Expansion Joint System**

6-02.3(13)C.INST1.GR6

Section 6-02.3(13)C is supplemented with the following:

6-02.3(13)C.OPT1.FB6

**(September 8, 2020)**

**Acceptable Manufacturers**

The following manufacturers are known to have prequalified modular expansion joint system details by successfully completing fatigue testing in accordance with Section 6-02.3(13)C:

1. The D.S. Brown Company
   P.O. Box 158
   300 E. Cherry Street
   North Baltimore, Ohio 45872-0158
   Tel. (419) 257-3561
   Fax (419) 257-2200

www.dsbrown.com

2. Watson Bowman ACME Corporation
95 Pineview Drive
Amherst, New York 14228-2166
Tel. (716) 691-7566
Fax (716) 691-9239
www.wbacorp.com

3. Mageba USA, LLC
575 Lexington Ave FI-4
New York, New York 10022-6146
Tel. (212) 644-3335
Fax (212) 644-3339
www.magebausa.com

**Design Axle Loads and Impact Factors**

The vertical load range for fatigue design shall be a 32.0 kip tandem. This tandem shall be taken as two 16.0 kip axles spaced four feet apart. Only one of these tandem axles must be considered in the design, unless the joint opening exceeds four feet. The load range shall be increased by the dynamic load allowance (Impact Factor) of 75%. Load factors shall be applied in accordance with Table 3.4.1-1 of the AASHTO LRFD Bridge Design Specifications, current edition and latest interims.

The vertical load for strength design shall be a 50.0 kip tandem. This tandem shall be taken as two 25.0 kip axles spaced four feet apart. Only one of these tandem axles must be considered in the design, unless the joint opening exceeds four feet. This load shall be increased by the dynamic load allowance (Impact Factor) of 75%. Load factors shall be applied in accordance with Table 3.4.1-1 of the AASHTO LRFD Bridge Design Specifications, current edition and latest interims.

The horizontal load range for fatigue design shall be *** $$1$$ *** percent of the amplified vertical load range (LL+IM) specified above. For modular expansion joint systems installed on vertical grades in excess of five percent, the horizontal component of the amplified vertical load range (LL+IM) specified above shall be added to this horizontal load range.

The horizontal load for strength design shall be 20 percent of the amplified vertical load (LL+IM) specified above. For modular expansion joint systems installed on vertical grades in excess of five percent, the horizontal component of the amplified vertical load (LL+IM) specified above shall be added to this horizontal load.

**Fatigue Testing Laboratory**

The following facilities are known to be capable of performing the fatigue testing specified in Section 6-02.3(13)C:

1. Structural Engineering Testing Laboratory (SETL)
University of Washington
Seattle, WA

SETL Director:
Dr. Dawn Lehman: (206) 715-2108
SETL Manager
Vince Chaijaroen: (206) 543-7433

2. Bowen Laborabory
Purdue University
West Lafayette, IN
Director of Bowen Laboratory:
Dr. Amit Varma: (765) 496-3419

3. ATLSS Engineering Research Center
Lehigh University
Bethlehem, PA
ATLSS Engineering Research Center Director:
Dr. Richard Sause: (610) 758-3565
ATLSS Engineering Research Center Administrative Director:
Dr. Chad Kusco: (610) 758-5299

6-02.3(14).GR6

***Finishing Concrete Surfaces***

6-02.3(14)C.GR6

**Pigmented Sealer Materials**

6-02.3(14)C.INST1.GR6

Section 6-02.3(14)C is supplemented with the following:

6-02.3(14)C.OPT1.GB6

(April 6, 2009)

The color of the pigmented sealer shall be Washington Gray.

6-02.3(14)C.OPT2.GB6

(April 6, 2009)

The color of the pigmented sealer shall be Mt. St. Helens Gray.

6-02.3(14)C.OPT3.GB6

(April 6, 2009)

The color of the pigmented sealer shall be Mt. Baker Gray.

6-02.3(14)C.OPT4.GB6

(April 6, 2009)

The color of the pigmented sealer shall be Cascade Green.

6-02.3(14)C.OPT5.FB6

(April 6, 2009)

The color for the following structure feature(s) shall match the specified color(s):

| Structure and Feature | Pigmented Sealer Color |
|---|---|
| *** $$1$$ *** | *** $$2$$ *** |

6-02.3(17).GR6

## *Falsework and Formwork*

6-02.3(17)C.GR6

### Falsework and Formwork at Special Locations

6-02.3(17)C.INST1.GR6

Section 6-02.3(17)C is supplemented with the following:

6-02.3(17)C.OPT1.FB6

(September 3, 2019)

The Contractor shall obtain permission from the Railroad Company for the Contractor's falsework openings over railroad tracks. The Contractor shall notify the Railroad Company at least *** $$1$$ *** working days prior to erecting falsework over a track, and shall include the dimensions of the opening and the duration of the restricted clearance in the submittal.

6-02.3(17)K.GR6

### Concrete Forms on Steel Spans

6-02.3(17)K.INST1.GR6

The first paragraph of Section 6-02.3(17)K is revised to read as follows:

6-02.3(17)K.OPT1.GB6

(August 3, 2015)

Except as otherwise specified, concrete forms on all steel structures shall be removable and shall not remain in place. Where needed, the forms shall have openings for truss or girder members. Each opening shall be large enough to leave at least 1-1/2 inches between the concrete and steel on all sides of the steel member after the forms have been removed. Unit contract prices cover all costs related to these openings.

Permanent metal forms may be used to form that portion of the concrete slab inside the webs of the steel box girders, subject to the following requirements:

1. Metal forms shall be 18 gage minimum thickness, zinc coated, steel sheet conforming to ASTM A 653 Coating Designation G 210. All accessories shall conform to ASTM A 36 or Section 9-06.1 with a zinc coating of 2.0 ounces per square foot.

2. Forms shall be designed by the Contractor to support the plastic concrete, metal forms, steel reinforcing bars, and a construction live load of 60 pounds per square foot. Deflection of the metal form shall not exceed 1/360 of the span. Camber of the metal form shall not exceed the anticipated deflection. The working unit stress shall not exceed 0.725 of the specified yield strength of the metal form material.

3. The metal forms shall provide for the full depth of the deck slab above the uppermost portions of the form. Bottom transverse steel reinforcing bars of the deck slab shall be at least 1 inch clear of the

metal forms at all points. Forms or supports shall not be welded to girder flanges.

4. The bridge deck concrete shall be placed continuously between the transverse construction joints shown in the Plans, except in an emergency when the Engineer authorizes an interruption in the concrete placement. In such an emergency, the Contractor shall construct a transverse joint at the bottom of a flute and shall field drill 1/4 inch weep holes through the metal form at 12 inch centers along the line of the joint.

5. All zinc coating on exposed metal form damaged or removed during construction shall be repaired with one coat of paint conforming to Section 9-08.1(2)B, two mils minimum dry film thickness.

6. Should the Engineer determine that inspection of the underside of the hardened slab is warranted, the Contractor shall remove at least one section of metal form in each span at no extra cost to the Contracting Agency. If excessive honeycomb or other defects are found, the Contractor shall, if required by the Engineer, remove additional form sections at no additional expense to the Contracting Agency, and shall revise concrete placing methods as required to produce sound concrete. All unacceptable concrete shall be removed or repaired.

7. Complete layout, details, and a description of materials, for the permanent metal forms shall be included in the Contractor's falsework and formwork submittal as specified in Section 6-02.3(16).

8. No adjustment will be made to the lump sum contract price for "Bridge Deck - ____" for additional quantities of materials required because of the use of the permanent forms.

6-02.3(18).GR6

***Placing Anchor Bolts***

6-02.3(18).INST1.GR6

Section 6-02.3(18) is supplemented with the following:

6-02.3(18).OPT1.GR6

**(January 3, 2011)**

**Resin Bonded Anchors**

The embedment depth of the anchors shall be as specified in the Plans. If the embedment depth of the anchor is not specified in the Plans then the embedment depth shall be as specified in the table of minimum and maximum torque below.

The anchors shall be installed in accordance with the resin manufacturer's written procedure.

Holes shall be drilled as specified in the Plans. Holes may be drilled with a rotary hammer drill when core drilling is not specified in the Plans. If holes are core drilled, the sides of the holes shall be roughened with a rotary hammer drill after core drilling.

Holes shall be prepared in accordance with the resin manufacturer's recommendations and shall meet the minimum requirements as specified herein. Holes drilled into concrete shall be thoroughly cleaned of debris, dust, and laitance prior to installing the threaded rod and resin bonding material. Holes shall not have any standing liquid at the time of installation of the threaded anchor rod.

The anchor nuts shall be tightened to the following torques when the embedment equals or exceeds the minimum embedment specified.

| Anchor Diameter (inch) | Minimum Torque (ft-lbs) | Maximum Torque (ft-lbs) | Minimum Embedment (Inch) |
|---|---|---|---|
| 3/8 | 12 | 18 | 3-3/8 |
| 1/2 | 22 | 35 | 4-1/2 |
| 5/8 | 55 | 80 | 5-5/8 |
| 3/4 | 106 | 140 | 6-3/4 |
| 7/8 | 165 | 190 | 7-7/8 |
| 1 | 195 | 225 | 9 |
| 1-1/4 | 370 | 525 | 11-1/4 |

When the anchor embedment depth is less than the minimum values specified, the anchor nuts shall be tightened to the torque values specified in the Plans, or as recommended by the resin bonded anchor system manufacturer and approved by the Engineer.

6-02.3(24).GR6

***Reinforcement***

6-02.3(24)C.GR6

**Placing and Fastening**

6-02.3(24)C.INST1.GR6

Section 6-02.3(24)C is supplemented with the following:

6-02.3(24)C.OPT1.GB6

**(September 8, 2020)**

**Drilling Holes for, and Setting, Steel Reinforcing Bar Dowels**

Where called for in the Plans, holes shall be drilled into existing concrete to the size and dimension shown in the Plans. The Contractor may use any method for drilling the holes provided the method selected does not damage the concrete and the steel reinforcing bar that is to remain. Core drilling will be required when specifically noted in the Plans.

The Contractor shall exercise care in locating and drilling the holes to avoid damage to existing steel reinforcing bars and concrete. Location of the holes may be shifted slightly with the acceptance of the Engineer in order to avoid damaging the existing steel reinforcing bars. All damage caused by the Contractor's operations shall be repaired by the Contractor in accordance with Section 1-07.13.

Steel reinforcing bars shall be set into the holes noted in the Plans with epoxy resin. The holes shall be cleaned before placing the resin.

The Contractor shall demonstrate, to the satisfaction of the Engineer, that the method used for setting the steel reinforcing bars completely fills the void between the steel reinforcing bar and the concrete with epoxy resin. Dams shall be placed at the front of the holes to confine the epoxy and shall not be removed until the epoxy has cured in the hole.

6-02.3(25).GR6

***Prestressed Concrete Girders***

6-02.3(26).GR6

***Cast-in-Place Prestressed Concrete***

6-02.3(26).INST1.GR6

The third paragraph of Section 6-02.3(26) is revised to read as follows:

6-02.3(26).OPT1.GB6

(January 4, 2010)

Before tensioning, the Contractor shall remove all side forms from the girders. The Contractor shall not release the falsework supporting the superstructure, and shall not place construction loads and other live loads on the superstructure, until the job-cured 2-inch grout cubes, fabricated in accordance with WSDOT TM 813, reach a minimum compressive strength of 800 psi in accordance with WSDOT FOP for AASHTO T 106.

6-02.4.GR6

## Measurement

6-02.4.INST1.GR6

Section 6-02.4 is supplemented with the following:

6-02.4.OPT1.FB6

(August 2, 2010)

*** $$1$$ *** contains the following approximate quantities of materials and work:

*** $$2$$ ***

The quantities are listed only for the convenience of the Contractor in determining the volume of work involved and are not guaranteed to be accurate. The prospective bidders shall verify these quantities before submitting a bid. No adjustments other than for accepted changes will be made in the lump sum Contract price for *** $$3$$ *** even though the actual quantities required may deviate from those listed.

6-02.4.OPT3.FB6

(September 8, 2020)

“Modular Expansion Joint System___” contains the following approximate quantities of materials and work:

*** $$1$$ ***

The quantities are listed only for the convenience of the Contractor in determining the volume of work involved and are not guaranteed to be accurate. The prospective bidders shall verify these quantities before submitting a bid. No adjustments other than for accepted changes will be made in the applicable modular expansion joint system lump sum Contract price for “Modular Expansion Joint System___” even though the actual quantities required may deviate from those listed.

6-02.4.OPT8.FB6

(September 8, 2020)

Expansion joint modification contains the following approximate quantities of materials and work:

*** $$1$$ ***

The quantities are listed only for the convenience of the Contractor in determining the volume of work involved and are not guaranteed to be accurate. The prospective bidders shall verify these quantities before submitting a bid. No adjustments other than for accepted changes will be made in the lump sum Contract price for “Expansion Joint Modification___” even though the actual quantities required may deviate from those listed.

6-02.4.OPT24.GB6

(August 6, 2012)

Epoxy crack sealing will be measured by the linear foot along the sealed crack at the concrete surface.

6-02.4.OPT26.GB6

(June 26, 2000)

Modify bridge drain will be measured per each for each bridge drain modified.

6-02.4.OPT27.GB6

(June 26, 2000)

Plugging existing bridge drain will be measured per each for each bridge drain plugged.

6-02.4.OPT32.GB6

(April 6, 2015)

Core drilled bridge deck drain will be measured per each for each bridge deck drain core drilled and completed with a PVC pipe sleeve.

6-02.4.OPT43.GB6

(April 6, 2015)

Longitudinal seismic restrainer will be measured per each.

6-02.4.OPT44.FB6

(September 8, 2020)

Seismic retrofit contains the following approximate quantities of materials and work:

*** $$1$$ ***

The quantities are listed only for the convenience of the Contractor in determining the volume of work involved and are not guaranteed to be accurate. The prospective bidders shall verify these quantities before submitting a bid. No adjustments other than for

accepted changes will be made in the lump sum Contract price for “Seismic Retrofit - _____” even though the actual quantities required may deviate from those listed.

6-02.4.OPT45.FB6
(September 8, 2020)
Column jacketing contains the following approximate quantities of materials and work:

*** $$1$$ ***

The quantities are listed only for the convenience of the Contractor in determining the volume of work involved and are not guaranteed to be accurate. The prospective bidders shall verify these quantities before submitting a bid. No adjustments other than for accepted hanges will be made in the lump sum Contract price for “Column Jacketing - _____” even though the actual quantities required may deviate from those listed.

6-02.5.GR6
## Payment

6-02.5.INST3.GR6
The fifth and sixth bid items under Section 6-02.5 are supplemented with the following:

6-02.5.OPT20.GB6
(April 6, 2015)
The contract quantity specified for “Steel Reinf. Bar for Bridge” includes the quantity for the epoxy-coated steel reinforcing bars located in the substructure of the bridge(s) included in this project.

6-02.5.INST4.GR6
Section 6-02.5 is supplemented with the following:

6-02.5.OPT26.FB6
(August 2, 2010)
“Bridge Deck - _____”, lump sum.
The lump sum contract price for “Bridge Deck - _____” shall be full pay for constructing the reinforced concrete portions of the steel bridge superstructure, including *** $$1$$ ***.

6-02.5.OPT33.GB6
(April 6, 2015)
“Expansion Joint Modification ___”, lump sum.

6-02.5.OPT49.GB6
(August 1, 2011)
“Epoxy Crack Sealing”, per linear foot.

Payment for taking and submitting cores to the Engineer for testing, as specified by the Engineer, will be by force account in accordance with Section 1-09.6. For the purpose of providing a common Proposal for all Bidders, the Contracting Agency has entered an amount for the item “Force Account Epoxy Crack Sealing Cores” in the bid proposal to become a part of the total bid by the Contractor.

6-02.5.OPT51.GB6
(June 26, 2000)
"Modify Bridge Drain", per each.

6-02.5.OPT52.GB6
(June 26, 2000)
"Plugging Existing Bridge Drain", per each.

6-02.5.OPT53.FB6
(June 26, 2000)
All costs in connection with *** $$1$$ *** bridge drains as specified shall be included in the unit contract price per square yard for *** $$2$$ ***.

6-02.5.OPT58.GB6
(April 6, 2015)
"Core Drilled Bridge Deck Drain", per each.

6-02.5.OPT59.FB6
(April 6, 2015)
All costs in connection with constructing the core drilled bridge deck drains as specified shall be included in the ***$$1$$***.

6-02.5.OPT71.GB6
(April 6, 2015)
"Longitudinal Seismic Restrainer", per each.

6-02.5.OPT72.GB6
(April 6, 2015)
"Seismic Retrofit - _____", lump sum.

6-02.5.OPT73.GB6
(April 6, 2015)
"Column Jacketing - _____", lump sum.

6-02.5.OPT91.FB6
***(June 26, 2000)***
***Bridge and Structures Minor Items***
For the purpose of payment, such bridge and structures items as *** $$1$$ *** etc., for which there is no pay item included in the proposal, are considered as bridge and structures minor items. All costs in connection with furnishing and installing these bridge and structures minor items as shown and noted in the Plans and as outlined in these specifications and in the Standard Specifications shall be included in the *** $$2$$ ***

6-02.5.OPT92.FB6
***(June 26, 2000)***
***Bridge Supported Utilities***
All costs in connection with placing *** $$1$$ *** through the superstructure of *** $$2$$ *** as shown in the Plans, including all *** $$3$$ ***, shall be included in the *** $$4$$. ***

6-02.5.OPT93.GB6
(June 26, 2000)

No additional compensation will be made by reason of any delay or other expense to the Contractor caused by coordination with the utility company or by installing utility company furnished items. However, any unavoidable delays to the Contractor caused by coordination with the utility company or resulting from installing utility company furnished items will be adjusted in accordance with Section 1-08.8.

6-03.GR6

## Steel Structures

6-03.3.GR6

## Construction Requirements

6-03.3(7).GR6

### *Shop Plans*

6-03.3(7)A.GR6

**Erection Methods**

6-03.3(7)A.INST1.GR6

The list in the second paragraph of Section 6-03.3(7)A is supplemented with the following:

6-03.3(7)A.OPT1.GB6

(April 6, 2015)

8. If the Contractor selects a girder launching method as the erection procedure, the Contractor shall submit plan details of the nose beam, roller assemblies, jacks, blocking, tow lines and control lines, and shall prepare an erection procedure that describes the method and equipment involved in the launching procedure, the elevation and alignment control and corrective measures enforced during the launching process, the methods of monitoring and adjusting the tow line and control line loads during the launching process, and the spare jacks, tow lines, control lines, and other critical field erection equipment provided to ensure a continuous and safe operations.

6-03.3(7)A.OPT2.GB6

(April 6, 2015)

8. The method and equipment used to drill holes, and ream existing rivet holes following rivet removal, through and in the existing gusset plates and steel members.

6-03.3(25).GR6

### *Welding and Repair Welding*

6-03.3(25).INST1.GR6

Section 6-03.3(25) is supplemented with the following:

6-03.3(25).OPT2.GB6

**(April 6, 2015)**

**Electroslag Welding - Narrow Gap (ESW-NG) Procedure**

The ESW-NG procedure may be used for groove welds in bridge members and member components up to four inches thick subject to the following requirements:

**Qualification Testing**

Unless the Contractor submits previously performed qualification testing documents, the Contractor shall provide the opportunity for Contracting Agency representatives to witness all qualification testing.

**HAZ Specimens, Type and Number of Tests for ESW-NG**

For all compression members including ESW-NG of compression members, CVN testing of the HAZ is not required. However, for welds deposited by ESW-NG on tension and reversal members, additional CVN tests of the HAZ shall be performed to qualify the process. The CVN tests for the HAZ shall be the following:

1. Five specimens shall be removed from the quarter-thickness section of the HAZ on each side of the procedure qualification welded joint in accordance with the ESW-NG Tension Member CVN Test Plate Detail as shown in the Plans.

2. The weld fusion line shall be revealed by etching the transverse-to-weld section.

3. The notch location shall be in the base metal within 1/16 inch from the weld fusion line. If the weld curvature does not permit the entire notch to be placed within 1/16 inch from the fusion line, then one end of the notch shall be placed on the fusion line while the remaining portion of the notch extends away from the fusion line into the base metal.

If different grades of steel such as 36 and 50 or 50 and 50W are joined by ESW-NG, the procedure qualification tests shall be conducted on the same two grades of steel. If transition joints between thick and thin members are made, the WPS shall be conducted on the same joint preparation (having the same thicknesses and joint transition slope). The heat affected zone CVN toughness specimens shall be extracted from both sides of the transition joint.

**Test Results Required for ESW-NG**

**HAZ**

For CVN toughness determination in welds carrying applied tensile stress, five specimens taken at the quarter-thickness location on both sides of the ESW-NG weld shall be tested. The highest and lowest values shall be discarded. The test is successful if the following criteria are achieved for the three remaining tests:

1. The average CVN toughness shall be a minimum of 15 foot-pounds at 40F.

2. No more than one specimen shall have a CVN toughness less than 15 foot-pounds at 40F.

3. No specimen shall have a CVN toughness value below 10 foot-pounds at 40F.

6-03.3(27).GR6

## *High Strength Bolt Holes*

6-03.3(27)B.GR6

### Reamed and Drilled Holes

6-03.3(27)B.INST1.GR6

The second sentence of the first paragraph of Section 6-03.3(27)B is revised to read:

6-03.3(27)B.OPT1.FB6

(September 8, 2020)

Reamers and drills shall be directed mechanically, non hand-held, except as otherwise noted. The Contractor may ream and drill holes through *** $$1$$ *** of Bridge No(s) *** $$2$$ *** using hand-held reamers and drills, provided that the method and equipment used conforms to the erection plan as accepted by the Engineer in accordance with Section 6-03.3(7)A as supplemented in these Special Provisions. Unless otherwise shown in the Plans, all holes reamed and drilled for bolted connections with existing gusset plates and steel members shall be 1/16 inch larger than the bolt diameter specified in the Plans for the connection.

6-03.3(28).GR6

## *Shop Assembly*

6-03.3(28)A.GR6

### Method of Shop Assembly

6-03.3(28)A.INST1.GR6

Section 6-03.3(28)A is supplemented with the following:

6-03.3(28)A.OPT1.GB6

(August 5, 2013)

The girders shall also be shop assembled either completely or progressively in the transverse direction. The transverse shop assembly shall consist of a minimum of two adjacent girders, with pier diaphragms, intermediate diaphragms and cross bracing, and temporary bracing between girders at the end of the shop assembly (longitudinally). Staging of the transverse shop assembly shall proceed along with the longitudinal shop assembly. Each next stage of the transverse shop assembly shall be assembled to one of the previous transverse shop assemblies, repositioned if necessary, and pinned to ensure accurate alignment. Unless otherwise specified, the girders shall be blocked or supported in the no-load position.

After acceptance of the shop assembly by the Engineer, pier diaphragms, intermediate diaphragms and cross bracing utilized in the transverse shop assembly shall be removed from the girders and shipped to the bridge construction site each as individual units. Shop bolted connections in the diaphragms and cross bracing shall be completed and fully tightened to the minimum tension specified during the shop assembly. Fully tightened connections shall be inspected prior to shipping.

6-03.3(28)B.GR6

**Check of Shop Assembly**

6-03.3(28)B.INST1.GR6

Section 6-03.3(28)B is supplemented with the following:

6-03.3(28)B.OPT1.GB6

(August 3, 2015)

If an assembly or stage of assembly is not accepted by the Engineer, deficiencies shall be corrected and the assembly or stage of assembly shall be resubmitted to the Engineer for acceptance.

6-03.3(30).GR6

***Painting***

6-03.3(30).INST1.GR6

Section 6-03.3(30) is supplemented with the following:

6-03.3(30).OPT1.FB6

(August 3, 2009)

Paint for the new steel shall be applied in accordance with Section 6-07.3(9). The color of the top coat, when dry, shall match *** $$1$$ ***.

6-03.3(30).OPT6.FB6

(April 6, 2015)

The Contractor shall paint all galvanized structural steel components of the following specified items in accordance with Section 6-07.3(11):

*** $$1$$ ***

The color of the top coat, when dry, shall match *** $$2$$ ***.

6-03.3(38).GR6

***Placing Superstructure***

6-03.3(38).INST1.GR6

Section 6-03.3(38) is supplemented with the following:

6-03.3(38).OPT1.GB6

(August 3, 2015)

All concrete located below the permanent location of the steel girders shall be completely covered to protect the concrete from staining from rusty water.

The Contractor shall submit a Type 2 Working Drawing consisting of a concrete surface protection plan. The submittal shall include, but not be limited to, describing all material components of the surface protection system, including material specifications and thicknesses of all components, dimensions of all sub-units and details of how the sub-units are assembled to create the combined system, the method of installing the system, including all means of fastening the system to or holding the system against the concrete surfaces, the methods of maintaining the system in place during superstructure construction, and the methods of repairing damage to the system during superstructure construction.

Removal of the concrete surface protection system will be performed by Contracting Agency forces at a later date.

6-03.3(39).GR6

***Swinging the Span***

6-03.3(39).INST1.GR6

Section 6-03.3(39) is supplemented with the following:

6-03.3(39).OPT1.GB6

(June 26, 2000)

The Contractor shall measure and submit to the Engineer camber values at the points indicated in the Plans at each of the following times:

1. After the spans are swung.

2. After roadway slab placement.

6-03.4.GR6

## Measurement

6-03.4.INST1.GR6

Section 6-03.4 is supplemented with the following:

6-03.4.OPT1.FB6

(August 6, 2007)

Structural low alloy steel contains the following approximate steel quantities:

| Bridge | Quantity |
|---|---|
| *** $$1$$ *** | *** $$2$$ *** |

6-03.5.GR6

## Payment

6-03.5.INST1.GR6

The second bid item under Section 6-03.5 is supplemented with the following:

6-03.5.OPT1.GB6

(August 6, 2007)

All costs in connection with furnishing and installing steel girder pipe railing as shown in the Plans shall be included in the lump sum Contract price for “Structural Low Alloy Steel”.

6-03.5.INST2.GR6

Section 6-03.5 is supplemented with the following:

6-03.5.OPT7.FB6

(June 26, 2000)

All costs in connection with furnishing, installing, and maintaining the concrete surface protection system as specified shall be included in the *** $$1$$ ***.

6-04.GR6

## Timber Structures

6-04.3.GR6

## Construction Requirements

6-04.3(1).GR6

### *Storing and Handling Material*

6-04.3(1).INST1.GR6

Section 6-04.3(1) is supplemented with the following:

6-04.3(1).OPT1.GB6

(March 6, 2000)

The Contractor shall provide and maintain a water pump or pumps, and associated equipment adequate for use in fire control, on the project at all times. This requirement does not relieve the Contractor of responsibility as specified in Section 1-07.14.

6-04.3(1).OPT2.GB6

(January 2, 2018)

After removing the existing timber deck and prior to installing the replacement timber deck, the Contractor shall clean the top contact surfaces of the supporting timber and steel stringers and floorbeams. After cleaning, the top contact surfaces shall be prepared as follows:

**Steel Supporting Members**

The top flanges of the steel stringers and floor beams shall be uniformly covered with a heavy coat of hot asphalt binder (Grade PG 58-22 or Grade PG 64-22 for Western Washington (west of the Cascade Mountain Crest), and Grade PG 64-28 for Eastern Washington (east of the Cascade Mountain Crest)) conforming to Section 9-02.1(4).

**Timber Supporting Members**

The Contractor shall furnish and install asphalt roofing felt over the top contact surface of all timber stringers, bridging, and blocking. The asphalt roofing felt shall be attached to the timber with 7/8 inch long galvanized roofing nails spaced at 2'-0" centers, unless otherwise shown in the Plans. The asphalt roofing felt shall weigh at least 65 pounds per one-hundred square feet and extend at least 2 inches on each side of the member being covered.

6-04.5.GR6

## Payment

6-04.5.INST1.GR6

Section 6-04.5 is supplemented with the following:

6-04.5.OPT1.FB6

(March 6, 2000)

All costs in connection with providing and maintaining fire control equipment at the construction and material storage site as specified shall be included in the *** $$1$$ ***.

6-04.5.OPT2.FB6

(March 6, 2000)

All costs in connection with cleaning and preparing the top contact surfaces of the supporting timber and steel members as specified prior to redecking shall be included in the *** $$1$$ ***.

6-05.GR6

## Piling

6-05.2.GR6

## Materials

6-05.2.INST1.GR6

Section 6-05.2 is supplemented with the following:

6-05.2.OPT1.GB6

***(April 6, 2015)***

***Micropiles***

Materials for micropiles shall consist of the following:

Admixtures for grout shall conform to Section 9-23.6. Admixtures that control bleed, improve flowability, reduce water content, and retard set may be used in the grout, subject to the review and acceptance of the Engineer. Admixtures shall be compatible with the grout and mixed in accordance with the manufacturer's recommendations. Accelerators are not permitted. Admixtures containing chlorides are not permitted.

All cement shall be Portland cement conforming to Section 9-01.2(1).

Centralizers and spacers shall be fabricated from schedule 40 PVC pipe or tube, steel. Wood shall not be used. Centralizers and spacers shall be securely attached to the reinforcement; sized to position the reinforcement within 3/8 inch of plan location from center of micropile; sized to allow grout tremie pipe insertion to the bottom of the drillhole; and sized to allow grout.to freely flow up the drillhole and casing and between adjacent reinforcing bars.

Encapsulation (double corrosion protection) shall be shop fabricated using high-density, corrugated polyethylene tubing conforming to the requirements of AASHTO M 252 with a nominal wall thickness of 1/32 inch. The inside annulus between the reinforcing bars and the encapsulating tube shall be a minimum of 1/4 inch and be fully grouted with grout as defined below.

Epoxy coating shall conform to Section 9-07.3. Bearing plates and nuts encased in the micropile concrete footing need not be epoxy coated.

Fine aggregate for sand-cement grout shall be sand conforming to AASHTO M 45.

Grout shall be a neat cement or sand/cement mixture with a minimum seven day compressive strength of 4,000 psi in accordance with Section 9-20.3(4).

Steel pipe casing for micropiles shall have the diameter and at least the minimum wall thickness shown in the Working Drawings. Steel pipe casing shall conform to one of the following:

1. ASTM A 252, Grade 2 or 3. If the casing is to be welded, the carbon equivalency (CE) as defined in AWS D 1.1, Section XI 5.1, shall not exceed 0.45, and the sulfur content shall not exceed 0.05 percent.

2. API 5L Grade X52 or better.

3. API 5CT Grade N80 or better.

4. Another equivalent steel pipe specification acceptable to the Engineer.

The manufacturer or fabricator of steel piling shall furnish a certificate of compliance in accordance with Section 1-06.3 stating that the piling being supplied conforms to these specifications. The certificate of compliance shall include test reports for tensile and chemical tests. Samples for testing shall be taken from the base metal, steel, coil or from the manufactured or fabricated piling. The certificate of compliance shall be in English units. As an alternative to steel pipe with mill certificate of compliance documentation, new structural grade or mill secondary steel pipe may be furnished for micropile casing without certified mill test reports under the following conditions:

1. The steel pipe shall meet or exceed the mechanical requirements of API 5L Grade X52 or better or API 5CT Grade N80 or better.

2. The CE shall not exceed 0.45 and the sulfur content shall not exceed 0.05 percent, if welding of the casing is required.

3. Two unique coupon tests with reports, conforming to ASTM A 370, including Annex A2, shall be provided for each truckload of pipe supplied.

4. The pipe shall be free of defects (dents, cracks, and tears).

The alternate testing for non-mill certified steel pipe is not permitted if domestic steel is required for the project.

Welded circumferential joints in pipe shall develop the strength of the pipe section. Threaded pipe joints shall develop at least the nominal resistance used in the design of the micropile.

Structural steel plates and shapes for micropile top attachments shall conform to either ASTM A 36 or ASTM A 572 Grade 50.

Reinforcing steel shall be deformed bars in accordance with Sections 9-07.4 or 9-07.11. When a bearing plate and nut are required to be threaded onto the top end of reinforcing bars for the micropile top to footing anchorage, the threading may be continuous spiral deformed ribbing provided by the bar deformations or may be cut into a reinforcing bar. If threads are cut into a reinforcing bar, the next larger bar number designation from that shown on the Plans shall be provided, at no additional cost to the Contracting Agency. Reinforcing bars for micropiles shall be epoxy coated in accordance with Section 6-02.3(24)H and 9-07.3.

Bar tendon couplers, if required, shall develop the ultimate tensile strength of the bars.

6-05.3.GR6

## Construction Requirements

6-05.3.INST1.GR6

Section 6-05.3 is supplemented with the following:

6-05.3.OPT1.FB6

***(September 8, 2020)***

***Micropiles***

**General Requirements**

The Contractor is responsible for the design, installation and testing of micropiles and micropile top attachments for this project. The Contractor shall select the micropile type, size, micropile top attachment, installation means and methods, shall estimate the ground-to-grout bond value, and shall determine the required grout bond length and final micropile diameter. The Contractor shall design and install micropiles that will develop the load capacities specified in the Plans. The micropile load capacities shall be verified by verification and proof load testing, and shall meet the test acceptance criteria specified in this Special Provision.

**Contractor's Experience Requirements and Submittal**

The micropile Contractor shall be experienced in the construction and load testing of micropiles and have successfully constructed at least three projects in the last five years involving construction totaling at least 50 micropiles of equal or greater capacity than required for this project. The Contractor shall submit construction details, structural details and load test results for at least three previous successful micropile load tests from different projects of similar scope to this project.

The micropile Contractor shall design the micropile system. The micropile system shall be designed by a Professional Engineer, licensed under Title 18 RCW State of Washington, with experience in the design and construction of at least three successfully completed micropile projects over the past five years, with micropiles of equal or greater capacity than required in these plans and specifications. The on-site foremen and drill rig operators shall also have experience on at least three projects over the past five years installing micropiles of equal or greater capacity than required for this project.

The Contractor shall submit a Type 2 Working Drawing consisting of the completed project reference list, including a brief project description with the owner's name and current phone numbers. This Working Drawing submittal shall also include a personnel list for the micropile system designer, supervising Engineer, drill rig operators and on-site foremen to be assigned to the project. The personnel list shall contain a summary of each individual's experience and be complete enough for the Engineer to determine whether each individual satisfies the required qualifications.

**Definitions**

*Alignment Load* (AL): A minimum initial load (5 percent FDL) applied to micropile during testing to keep the testing equipment correctly positioned.

*Factored Design Load* (FDL): The factored design load expected to be applied to the micropile. The factored design load (FDL) is as specified in the bridge Plans.

*Maximum Test Load*: The maximum load to which the micropile is subjected during testing. The load shall be 1.5 *x* FDL for verification load tests and 1.0 *x* FDL for proof load tests.

*Proof Load Test*: Incremental loading of a production micropile, recording the total movement at each increment.

*Verification Load Test*: Non-production micropile load test performed to verify the design of the micropile system and the construction methods proposed, prior to installation of production micropiles.

**Micropile Design Requirements**

The micropiles shall be designed to meet the specified loading conditions, as shown in the Plans. The Contractor shall design the micropiles, and the micropile top to footing connections using the Load and Resistance Factor Design (LRFD) method.

Steel pipe used for micropile permanent casing shall incorporate an additional 1/16 inch thickness of sacrificial steel for corrosion protection. Where required as shown in the Plans, corrosion protection of the internal steel reinforcing bars, consisting of encapsulation (double corrosion protection), epoxy coating, or grout, shall be provided in accordance with Section 6-05.2 as supplemented in these Special Provisions. Where permanent casing is used for a portion of the micropile, encapsulation shall extend at least five feet into the casing.

**Micropile Design Submittals**

The Contractor shall submit Type 3E Working Drawings consisting of complete design calculations and working drawings with all details, dimensions, quantities, ground profiles, and cross-sections necessary to construct the micropile structure. The Contractor shall verify the limits of the micropile structure and ground survey data before preparing the detailed working drawings.

**Design Calculations**

Design calculations shall include the following items:

1. A written summary report which describes the overall micropile design and its compatibility with the anticipated subsurface conditions as described by the contract test hole boring logs, the Summary of Geotechnical Conditions provided in the Appendix to the Special Provisions, and the geotechnical report(s) prepared for this project.

2. Applicable code requirements and design references.

3. Micropile structure critical design cross-section(s) geometry including soil strata and piezometric levels and location, magnitude and direction of design applied loadings, including slope or external surcharge loads.

4. Design criteria including, soil shear strengths (friction angle and cohesion), unit weights, and ground-to-grout bond values and micropile drillhole diameter assumptions for each soil strata.

5. Load and resistance factors (for Load and Resistance Factor Design) used in the design of the ground-to-grout bond values, the ground-to-grout bond

length, surcharges, soil/rock and material unit weights, steel, grout, and concrete materials.

The bond zone for micropiles shall be below the following elevations:

*** $$1$$ ***

6. Design calculation sheets with the project number, micropile structure location, designation, date of preparation, initials of designer and checker, and page number at the top of each page. An index page shall be included with the design calculations.

7. Design notes including an explanation of any symbols and computer programs used in the design.

8. Other design calculations as required.

**Working Drawings**

The Contractor shall submit Type 3E Working Drawings.

The working drawings shall include all information required for the construction and quality control of the piling. Working drawings shall include the following items:

1. A plan view of the micropile structure identifying:

    a. A reference baseline and elevation datum.

    b. The offset from the construction centerline or baseline to the face of the micropile structure at all changes in horizontal alignment.

    c. Beginning and end of micropile structure stations.

    d. Right-of-way and permanent or temporary construction easement limits, location of all known active and abandoned existing utilities, adjacent structures or other potential interference. The centerline of any drainage structure or drainage pipe behind, passing through, or passing under the micropile structure.

    e. Subsurface exploration locations shown on a plan view of the proposed micropile structure alignment with appropriate reference base lines to fix the locations of the explorations relative to the micropile structure.

2. An elevation view of the micropile structure(s) identifying:

    a. Elevation view showing micropile locations and elevations; vertical and horizontal spacing; batter and alignment and the location of drainage elements (if applicable).

    b. Existing and finish grade profiles both behind and in front of the micropile structure.

3. Design parameters and applicable codes.

4. General notes for constructing the micropile structure including the overall construction sequence, micropile installation sequence, means and methods to prevent damage to existing adjacent piles and micropiles, installation tolerances, and other special construction requirements.

5. Start date and time schedule and micropile installation schedule providing the following:

   Micropile number
   Micropile Factored Design Load
   Type and size of reinforcing steel
   Type and size of steel casing
   Minimum total bond length
   Total micropile length
   Micropile top attachment

6. Micropile structure typical sections including micropile spacing and inclination; minimum drill hole diameter; pipe casing and reinforcing bar sizes and details; splice types and locations; centralizers and spacers; grout bond zone and casing plunge lengths and corrosion protection details; and connection details to the substructure footing, anchorage, plates, etc.

7. A typical detail of verification and production proof test micropiles defining the micropile length, minimum drill hole diameter, inclination, and load test bonded and unbonded test lengths.

8. Details, dimensions, and schedules for all micropiles, casing and reinforcing steel, including reinforcing bar bending details.

9. Details and dimensions for micropile structure appurtenances such as barriers, coping, drainage gutters, fences, etc. (if applicable).

10. Details for constructing micropile structures around drainage facilities (if applicable).

11. Details for terminating micropile structures and adjacent slope construction (if applicable).

When plan dimensions are changed due to field conditions or for other reasons, the Contractor shall submit revised Type 3E Working Drawings, including supporting design calculations. Within 30 days after completion of the work, the Contractor shall submit as-built drawings to the Engineer, conforming to the requirements specified for Type 3E Working Drawings in Section 1-05.3.

**Construction Submittals**

The Contractor shall submit Type 2E Working Drawings consisting of the following for the micropile system or systems to be constructed:

1. Discussion of how the Contractor's construction methods accommodate and are compatible with the anticipated subsurface conditions as described

in the contract test hole boring logs, the Summary of Geotechnical Conditions provided in the Appendix to the Special Provisions, and the geotechnical report(s) prepared for this project.

2. If welding of casing is proposed, the Contractor shall submit the proposed welding procedure in accordance with Section 6-03.3(25).

3. Manufacturer's information, model, size, and type of equipment to be used for installing micropiles, with appropriate manufacturer's literature for review. Include detailed description of the drilling equipment and methods proposed to be used to provide drillhole support and prevent detrimental ground movements.

4. Information on headroom and space requirements for installation equipment that verify the proposed equipment can perform at the site. Plan describing how surface water, drill flush, and excess waste grout will be controlled, contained, collected, and disposed of.

5. Certified mill test reports for the reinforcing steel and certified mill test reports or independent test reports for non-mill certified steel casing used in micropile installation. The ultimate strength, yield strength, elongation, and material properties composition shall be included.

6. Grouting Plan. The plan shall include complete descriptions, details, and supporting calculations for the following:

    a. Grout mix design and type of materials to be used in the grout including certified test data and trial batch reports.

    b. Grouting equipment, including capacity and relation to the grouting demand and working conditions as well as provisions for back-up equipment and spare parts.

    c. Types and sizes of grout hoses, connections, and grout delivery systems.

    d. Methods and equipment for placing, positioning, and supporting the steel pipe casing and reinforcing bars. Centralizers and spacers shall permit the free flow of grout without misalignment of the reinforcing bar(s) and permanent casing.

    e. Methods and equipment for accurately monitoring and recording the grout depth, grout volume and grout pressure as the grout is being placed. The Contractor shall estimate the grout take. There will be no extra payment for grout overruns.

    f. Procedures and schedules for grout batching, mixing, and pumping including provisions for handling drilling fluid and for post grouting.

    g. Grouting rate calculations, when requested by the Engineer. The calculations shall be based on the initial pump pressures or static

head on the grout and losses throughout the placing system, including anticipated head of drilling fluid to be displaced.

h. Contingency procedures for handling blockage of ducts or equipment breakdowns.

i. Estimated curing time for grout to achieve specified strength. During production, grout shall be tested in accordance with the **Grout Testing** subsection of this Special Provision.

j. Procedure and equipment for Contractor monitoring of grout quality.

7. Detailed plans for the proposed micropile load testing method. This shall include all drawings, details, and structural design calculations necessary to describe the proposed test method, reaction load system capacity and equipment setup, types and accuracy of apparatus to be used for applying and measuring the test loads and micropile top movements in accordance with the **Micropile Load Tests** subsection of this Special Provision.

8. Calibration reports and data for each test jack, pressure gauge and master pressure gauge and electronic load cell to be used. The calibration tests shall have been performed by an independent testing laboratory within 90 calendar days of the date submitted.

9. Discussion of the Contractor's contingency plan if a verification load test or a proof load test fails.

**Pre-construction Meeting**

A pre-construction meeting will be scheduled by the Engineer and held prior to the start of micropile construction. The prime Contractor, micropile specialty Contractor, and excavation Contractor shall attend the meeting. The pre-construction meeting will be conducted to clarify the construction requirements for the work, to coordinate the construction schedule and activities, and to identify contractual relationships and delineation of responsibilities amongst the prime Contractor and the various Subcontractors - specifically those pertaining to excavation for micropile structures, anticipated subsurface conditions, micropile installation and testing, micropile structure survey control and site drainage control.

**Site Drainage Control**

The Contractor shall control and properly dispose of drill flush and construction related waste, including excess grout, in accordance with Section 1-07.5(3) as supplemented in these Special Provisions and all applicable local codes and regulations. The Contractor shall provide positive control and discharge of all surface water that will affect construction of the micropile installation. The Contractor shall maintain all pipes or conduits used to control surface water during construction. The Contractor shall repair damage caused by surface water in accordance with Section 1-07.13. Upon substantial completion of the work, the Contractor shall remove surface water control pipes or conduits from the site. Alternatively, with the concurrence of the Engineer, pipes or conduits that are left in place may be fully grouted and abandoned or left in a way that protects the structure and all adjacent facilities from migration of fines through the pipe or conduit and potential ground loss.

**Excavation**

The Contractor shall coordinate the work and the excavation so the micropile structures are safely constructed. The Contractor shall perform the micropile construction and related excavation in accordance with the Plans and approved submittals.

**Micropile Allowable Construction Tolerances**

The centerline of piling shall not be more than 3 inches from indicated plan location.

The pile-hole alignment of vertical micropiles shall be plumb within 2 percent of total-length plan alignment. The pile-hole alignment of micropiles inclined up to 1:6 shall be within 4-percent of plan alignment. The pile-hole alignment of micropiles inclined greater than 1:6 shall be within 7-percent of plan alignment.

The top elevation of micropile shall be ± 1 inch maximum from vertical elevation indicated.

The centerline of reinforcing steel shall not be more than 1/2 inch from indicated location.

**Drilling**

The drilling equipment and methods shall be suitable for drilling through the conditions to be encountered, without causing damage to any overlying or adjacent structures or services. The drill hole shall be open along its full length to at least the design minimum drill hole diameter prior to placing grout and reinforcement. Temporary casing or other approved method of micropile drill hole support will be required in caving or unstable ground to permit the micropile shaft to be formed to the minimum design drill hole diameter. The Contractor's proposed method(s) to provide drill hole support and to prevent ground movements shall have received the concurrence of the Engineer. Use of drilling fluid containing bentonite is not allowed.

**Ground Heave or Subsidence**

During construction, the Contractor shall observe the conditions in the vicinity of the micropile construction site on a daily basis for signs of ground heave or subsidence. The Contractor shall immediately notify the Engineer if signs of movements are observed. The Contractor shall immediately suspend or modify drilling or grouting operations if ground heave or subsidence is observed, if the micropile structure is adversely affected, or if adjacent structures are damaged from the drilling or grouting. If the Engineer determines that the movements require corrective action, the Contractor shall take corrective actions necessary to stop the movement or perform repairs.

When due to the Contractor's methods or operations or failure to follow the specified/approved construction sequence, the costs of providing corrective actions will be borne by the Contractor in accordance with Section 1-07.13.

**Pipe Casing and Reinforcing Bars Placement and Splicing**

Reinforcement may be placed either prior to grouting or placed into the grout-filled drill hole before temporary casing (if used) is withdrawn. Reinforcement surface shall be free of deleterious substances such as soil, mud, grease or oil. Micropile cages and reinforcement groups, if used, shall be sufficiently robust to withstand the

installation and grouting process and the withdrawal of the drill casings without damage or disturbance. Grout shall provide one inch minimum cover over bare or epoxy coated bars (1/4-inch on bar couplers) or 1/2 inch minimum cover over the encapsulation of encapsulated bars.

The Contractor shall check micropile top elevations and adjust all installed micropiles to the planned elevations.

Permanent casing, if specified, shall be installed to the minimum tip elevations shown in the Plans.

Centralizers and spacers shall be provided at 10 feet centers maximum spacing. The upper and lower most centralizer shall be located a maximum of 5 feet from the top and bottom of the micropile. The central reinforcement bars with centralizers shall be lowered into the stabilized drill hole and set. The reinforcing steel shall be inserted into the drill hole to the desired depth. Bars shall not be driven or forced into the hole. The Contractor shall re-drill and reinsert reinforcing steel when necessary to facilitate insertion.

Lengths of casing and reinforcing bars to be spliced shall be secured in proper alignment and in a manner to avoid eccentricity or angle between the axes of the two lengths to be spliced. Splices and threaded joints shall meet the requirements of Section 6-05.2 as supplemented in these Special Provisions. Threaded pipe casing joints shall be located at least two casing diameters (OD) from a splice in any reinforcing bar. When multiple bars are used, bar splices shall be staggered at least one foot.

**Grouting**

Micropiles shall be primary grouted the same day the load transfer bond length is drilled. The Contractor shall complete the load transfer bond length drilling and primary grouting of a micropile before beginning work on another micropile in the same footing or pile cap.

Prior to grouting, the drill hole shall be flushed with water and/or air to remove drill cuttings.

The grouting equipment shall be colloidal mixers only and shall produce a grout free of lumps and undispersed cement. Contractor shall have means and methods of measuring the grout quantity and pumping pressure during the grouting operations. The grout pump shall be equipped with a pressure gauge to monitor grout pressures. A second pressure gauge shall be placed at the point of injection into the micropile top. The pressure gauges shall be capable of measuring pressures of 150 psi or twice the actual grout pressures used, whichever is greater. The grout shall be kept in agitation prior to mixing. Grout shall be placed within one hour of mixing. The grouting equipment shall be sized to enable each micropile to be grouted in one continuous operation.

The grout shall be injected from the lowest point of the drill hole and injection shall continue until uncontaminated grout flows from the top of the micropile. The grout may be pumped through grout tubes, casing, hollow-stem augers, or drill rods. Temporary casing, if used, shall be extracted in stages ensuring that after each length of casing is removed the grout level is brought back up to the ground level before the

next length is removed. Additional grout shall be placed by the use of a tremie pipe at all times. The tremie pipe shall always extend below the level of the existing grout in the drill hole. The grout pressures and grout takes shall be controlled to prevent excessive heave or fracturing of rock or soil formations. Upon completion of grouting, the grout tube may remain in the hole, but must be filled with grout.

If the Contractor elects to use a postgrouting system, working drawings and details shall be submitted to the Engineer for review in accordance with the **Construction Submittals** subsection of this Special Provision.

**Grout Testing**

Grout within the micropile verification and proof test micropiles shall attain the minimum specified seven day design compressive strength prior to load testing. During placement of initial verification micropiles, proof test micropiles, and production micropiles, micropile grout will be sampled and tested by the Engineer for compressive strength in accordance with WSDOT Test Method 813 and AASHTO T 106 at a frequency of no less than one set of three 2 inch grout cubes from each grout plant each day of operation or per every 10 micropiles, whichever occurs more frequently. The compressive strength will be the average of the 3 cubes tested. The Contractor is responsible for sampling and testing additional grout cubes as necessary for early breaks prior to verification and proof testing.

If a compressive strength test fails, the Engineer may require the Contractor to proof test some or all of the production micropiles installed since the last grout batch that met the specified compressive strength.

Grout consistency, as measured by grout density, shall be tested by the Contractor just prior to the start of micropile grouting in accordance with API RP-13B-1 at a frequency of at least one test per micropile. For the grout to be approved for use, the specific gravity reported by the test shall be between 1.8 and 1.9. The Contractor's grout consistency test equipment shall be calibrated by an independent testing laboratory. The Contractor shall not use test equipment greater than 180-calendar days past the most recent calibration date, until such equipment is recalibrated by an independent testing laboratory.

**Micropile Installation Records**

The Contractor shall prepare and submit Type 1 Working Drawings consisting of full-length installation records for each micropile installed, including all grout volumes, pressures, and installation methods used. The records shall be submitted no later than the end of each work week and within 24 hours after all micropile installation is completed. The data shall be recorded in the micropile installation log. A separate log shall be provided for each micropile.

**Micropile Load Tests**

The Contractor shall perform verification and proof testing of micropiles at the locations specified in this Special Provision, the Plans or as otherwise specified by the Engineer. Tests shall be performed using a tension load test in accordance with ASTM D 3689 or a compression load test in accordance with ASTM D 1143, except as modified by this Special Provision.

Completed production micropiles may be used as part of the reaction frame for proof load testing. No reaction bearing elements of the load test frame for verification and proof load testing of micropiles shall bear on existing structure elements.

**Verification Load Tests**

The Contractor shall perform pre-production verification micropile testing to verify the design of the micropile system and the construction methods proposed prior to installing anyproduction micropiles. Sacrificial verification test micropiles shall be constructed in conformance with the Working Drawing submittal. Verification test micropiles shall be installed at the following locations:

*** $$2$$ ***

Verification load tests shall be performed to verify that the Contractor installed micropiles will meet the required compression and tension load capacities and load test acceptance criteria and to verify that the length of the micropile load transfer bond zone is adequate. The Contractor shall submit Type 2 Working Drawings consisting of the micropile verification load test results for the Engineer's acceptance prior to the installation of production micropiles.

The drilling-and-grouting method, casing length and outside diameter, reinforcing bar lengths, reinforcing bar size and strength, and depth of embedment for the verification test micropile(s) shall be identical to those specified for the production micropiles at the given locations. The verification test micropile structural steel sections shall be sized to safely resist the maximum test load.

The jack, bearing plates, and stressing anchorage shall be positioned at the beginning of the test such that unloading and repositioning during the test will not be required.

**Testing Equipment and Data Recording**

Testing equipment shall include dial gauges, dial gauge support, jack and pressure gauge, electronic load cell, and a reaction frame. The load cell is required only for the creep test portion of the verification test. The Contractor shall provide a description of test setup and jack, pressure gauge and load cell calibration curves in accordance with the **Working Drawings** subsection of this Special Provision. Additionally, the Contractor shall not use test jacks, pressure gauges and master pressure gauges, and electronic load cells greater than 90 calendar days past their most recent calibration date, until such items are recalibrated by an independent testing laboratory.

The Contractor shall design the testing reaction frame to be sufficiently rigid and of adequate dimensions such that excessive deformation of the testing equipment does not occur.

The Contractor shall apply and measure the test load with a hydraulic jack and pressure gauge. The pressure gauge shall be graduated in 75 psi increments or less. The jack and pressure gauge shall have a pressure range of no more than twice the anticipated maximum test pressure. Jack ram travel shall be sufficient to allow the test to be done without resetting the equipment. The Contractor shall monitor the creep test load hold during verification tests with both the pressure gauge and the

electronic load cell. The Contractor shall use the load cell to accurately maintain a constant load hold during the creep test load hold increment of the verification test.

The Contractor shall measure the micropile top movement with a dial gauge capable of measuring to 1 mil (0.001 inch). The dial gauge shall have a travel sufficient to allow the test to be done without having to reset the gauge. The Contractor shall visually align the gauge to be parallel with the axis of the micropile and support the gauge independently from the jack, micropile or reaction frame. The Contractor shall use two dial gauges when the test setup requires reaction against the ground or single reaction micropiles on each side of the test micropile.

The required load test data shall be recorded by the Contractor.

**Verification Test Loading Schedule**

The Contractor shall test the verification micropiles to a maximum test load of 1.5 times the micropile Factored Design Load shown in the Plans. The verification micropile load tests shall be made by incrementally loading the micropile in accordance with the following cyclic load schedule:

AL = Alignment Load FDL = Factored Design Load

| LOAD | HOLD TIME |
|---|---|
| AL | 1 minute |
| 0.075 FDL | 4 minutes |
| 0.150 FDL | 4 minutes |
| 0.225 FDL | 4 minutes |
| 0.300 FDL | 4 minutes |
| 0.375 FDL | 4 minutes |
| AL | 1 minute |
| 0.150 FDL | 1 minute |
| 0.300 FDL | 1 minute |
| 0.375 FDL | 1 minute |
| 0.450 FDL | 4 minutes |
| 0.525 FDL | 4 minutes |
| 0.600 FDL | 4 minutes |
| 0.675 FDL | 4 minutes |
| 0.750 FDL | 4 minutes |
| AL | 1 minute |
| 0.300 FDL | 1 minute |
| 0.600 FDL | 1 minute |
| 0.675 FDL | 1 minute |
| 0.750 FDL | 1 minute |
| 0.825 FDL | 4 minutes |
| 0.900 FDL | 4 minutes |
| 1.00 FDL | 60 minutes (Creep Test Load Hold) |
| AL | 1 minute |
| 0.300 FDL | 1 minute |
| 0.600 FDL | 1 minute |
| 0.900 FDL | 1 minute |
| 0.975 FDL | 4 minutes |
| 1.050 FDL | 4 minutes |

| | |
|---|---|
| 1.125 FDL | 4 minutes |
| 1.200 FDL | 4 minutes |
| 1.275 FDL | 4 minutes |
| 1.350 FDL | 4 minutes |
| 1.425 FDL | 4 minutes |
| 1.500 FDL | 4 minutes |
| | (Maximum Test Load) |
| 1.200 FDL | 4 minutes |
| 0.900 FDL | 4 minutes |
| 0.600 FDL | 4 minutes |
| 0.300 FDL | 4 minutes |
| AL | 15 minutes |

After the hold time at each load, Micropile top movement shall be measured and recorded. The verification test micropile shall be monitored for creep at the 1.000 Factored Design Load (FDL). Micropile movement during the creep test shall be measured and recorded at 1, 2, 3, 4, 5, 6, 10, 20, 30, 50, and 60 minutes. The alignment load shall not exceed 5 percent of the FDL load. Dial gauges shall be reset to zero after the initial AL is applied.

The acceptance criteria for micropile verification load tests are:

1. The micropile shall sustain the first 1.000 FDL test load with no more than the following total vertical movement at the top of the micropile, relative to the position of the top of the micropile prior to testing.

*** $$3$$ ***

2. At the end of the 1.000 FDL creep test load increment, test micropiles shall have a creep rate not exceeding 0.040 inch/log cycle time (1 to 10 minutes) or 0.080 inch/log cycle time (6 to 60 minutes). The creep rate shall be linear or decreasing throughout the creep load hold period.

3. Failure does not occur at the maximum test load of 1.005 FDL. Failure is defined as a slope of the load versus deflection curve (at end of increment) exceeding 0.025 inches/kips or at which attempts to further increase the test load simply result in continued micropile movement.

The Engineer will provide the Contractor written acceptance or rejection of the verification load tests within five working days.

**Verification Test Micropile Rejection**

If a verification tested micropile fails to meet the acceptance criteria, the Contractor shall modify the design, the construction procedure, or both, and shall perform another verification test incorporating the revisions. These modifications may include modifying the installation methods, increasing the bond length, or changing the micropile type. Any modification that necessitates changes to the structure will require the Engineer's review and acceptance. Any modifications of design or construction procedures or cost of additional verification test micropiles and load testing shall be at no additional expense to the Contracting Agency. At the completion of verification testing, test micropiles shall be removed down to an elevation two feet

below finished ground line, except as otherwise specified in the Plans or by the Engineer.

**Proof Load Tests**

The Contractor shall proof load test the specified number of production micropiles at locations specified by the Engineer. Additional proof tests will be required if modifications are made in the micropile installation methods subsequent to the first production micropile, or if any of the proof tests fail.

**Proof Test Loading Schedule**

Proof tests shall be conducted by incrementally loading the micropile in accordance with the following schedule:

AL = Alignment Load FDL = Factored Design Load

| LOAD | HOLD TIME |
|---|---|
| AL | 1 minute |
| 0.10 FDL | 4 minutes |
| 0.20 FDL | 4 minutes |
| 0.30 FDL | 4 minutes |
| 0.40 FDL | 4 minutes |
| 0.50 FDL | 4 minutes |
| 0.60 FDL | 4 minutes |
| 0.70 FDL | 4 minutes |
| 0.80 FDL | 4 minutes |
| 0.90 FDL | 4 minutes |
| 1.00 FDL | 10 or 60 minutes (Creep Test) |
| 0.75 FDL | 4 minutes |
| 0.50 FDL | 4 minutes |
| 0.25 FDL | 4 minutes |
| AL | 4 minutes |

Depending on performance, either a 10 minute or 60 minute creep test shall be performed at the maximum test load of 1.0067 FDL. Where the micropile top movement between 1 and 10 minutes exceeds 0.040 inch, the maximum test load shall be maintained an additional 50 minutes. Movements shall be recorded at 1, 2, 3, 5, 6, 10, 20, 30, 50 and 60 minutes. The alignment load shall not exceed 5 percent of FDL. Dial gauges shall be reset to zero after the initial AL is applied.

The acceptance criteria for micropile proof load tests are:

1. The micropile shall sustain the maximum test load of 1.00 FDL with no more than the following total vertical movement at the top of the micropile, relative to the position of the top of the micropile prior to testing.

*** $$4$$ ***

2. At the end of the 1.00 FDL creep test load increment, test micropiles shall have a creep rate not exceeding 0.040 inch/log cycle time (1 to 10 minutes) or 0.080 inch/log cycle time (6 to 60 minutes). The creep rate shall be linear or decreasing throughout the creep load hold period.

**Proof Test Micropile Rejection**

If a proof-tested micropile fails to meet the acceptance criteria, the Contractor shall proof test another micropile as selected by the Engineer. For failed micropiles the Contractor shall submit a Type 2 Working Drawing consisting of a repair procedure. For further construction of subsequent micropiles, the Contractor shall modify the design, the construction procedure, or both. These modifications may include installing replacement micropiles, incorporating failed micropiles at not more than 50 percent of the maximum load attained, post grouting, modifying installation methods, increasing the bond length, or changing the micropile type. Any modification that necessitates changes to the structure design will require the Engineer's review and acceptance.

6-05.3(5).GR6

## *Manufacture of Steel Piles*

6-05.3(5).INST1.GR6

Section 6-05.3(5) is supplemented with the following:

6-05.3(5).OPT1.GB6

**(September 8, 2020)**

**Furnishing St. Piling**

Welding for steel pipe piling shall conform to AWS D1.1/D1.1M, latest edition, Structural Welding Code, and Section 6-03.3(25), except that all weld filler metal shall be low hydrogen material selected from Table 4.1 in AASHTO/AWS D1.5M/D1.5:2020 Bridge Welding Code.

Welding and joint geometry for the seam, whether it be longitudinal or helical, shall be qualified in accordance with Clause 4, Qualification, of the AWS D1.1/D1.1M, latest edition, Structural Welding Code. In addition, charpy V-notch (CVN) testing in accordance with Clause 4, Part D, of the AWS D1.1/D1.1M, latest edition, Structural Welding Code, shall be performed. CVN testing shall include five tests at 0°F. The acceptance threshold for the five samples shall meet an average value of 20-foot-pounds CVN for the set of test coupons and a minimum value of 15-foot-pounds CVN for any individual test coupon. The Contractor may submit documentation of prior qualification to the Engineer to satisfy this requirement.

Dimensional tolerances shall conform to the material specification that the steel pipe piling is manufactured under, and, at a minimum, the following requirements:

1. Out-of-roundness shall be within 1-percent of the nominal outside diameter.

2. Deviation from a straight line, parallel to the centerline of the pile, shall not exceed 0.001 times the length of the pile.

3. The maximum radial offset of the strip/plate edges shall be 1/8-inch. The offset shall be transitioned with a taper weld and the slope shall not be less than a 1 in 2.5 taper.

4. The bead height of weld reinforcement shall not exceed 3/16-inch.

5. Misalignment of weld beads for double-sided welded pipe shall not exceed 1/8-inch.

6. The wall thickness shall not be less than 95-percent or greater than 110-percent of the specified nominal thickness.

All seams and skelp splices shall be complete penetration welds. Skelp splices in spiral welded (helical seam) pipe shall not be located within 12 inches of a girth shop or field weld.

All skelp splices shall be 100 percent radiographically or ultrasonically inspected in accordance with either API 5L Annex E Section E.4 or E.5, or Table 6.2 and Clause 6 Part E, F or G in AWS D1.1/D1.1M, latest edition, Structural Welding Code. Additionally, 10-percent of the total length of seam welds for both longitudinal and helical welded pipe, and one pipe diameter length of seam centered on any skelp splice intersection, shall be randomly inspected as specified above. If repairs are required in more than 10-percent of the welds examined, additional inspection shall be performed. The additional inspection shall be made on both sides of the repair for a length equal to 10-percent of the length of the pipe outside circumference. If repairs are required in more than 10-percent of welds examined in the second sample, 100-percent of the entire seam on the pile shall be inspected.

All seams and splices shall be 100 percent visually inspected in accordance with the acceptance criteria for statically loaded non-tubular connections in Table 6.1 of the AWS D1.1/D1.1M, latest edition, Structural Welding Code. Repairs shall conform to Section 5.26 of the AWS D1.1/D1.1M, latest edition, Structural Welding Code, using approved repair and weld procedures.

Each length of steel pipe pile shall be marked with paint stencil, no closer than six inches to the end of the pipe, with the name of the manufacturer, material specification and grade of pipe, steel heat number, nominal pipe diameter, and wall thickness.

6-05.3(6).GR6

***Splicing Steel Casings and Steel Piles***

6-05.3(6).INST1.GR6

Section 6-05.3(6) is supplemented with the following:

6-05.3(6).OPT1.GB6

**(September 8, 2020)**

**Furnishing St. Piling**

Welding for steel pipe piling shall conform to AWS D1.1/D1.1M, latest edition, Structural Welding Code, and Section 6-03.3(25), except that all weld filler metal shall be low hydrogen material selected from Table 4.1 in AASHTO/AWS D1.5M/D1.5:2020 Bridge Welding Code.

Welding and joint geometry for splices shall be qualified in accordance with Clause 4, Qualification, of the AWS D1.1/D1.1M, latest edition, Structural Welding Code. In addition, charpy V-notch (CVN) testing in accordance with Clause 4, Part D, of the AWS D1.1/D1.1M, latest edition, Structural Welding Code, shall be performed. CVN testing shall include five tests at 0°F. The acceptance threshold for the five samples

shall meet an average value of 20-foot-pounds CVN for the set of test coupons and a minimum value of 15-foot-pounds CVN for any individual test coupon. The Contractor may submit documentation of prior qualification to the Engineer to satisfy this requirement.

Ends of steel pipe piling shall be prepared for splicing in accordance with AWS D1.1/D1.1M, latest edition, Structural Welding Code.

All splices shall be complete penetration groove welds using continuous backing rings of 1/4 inch minimum thickness. Tack welds shall be located in the root of the complete penetration groove weld.

Shop splices shall be 100 percent visually and ultrasonically inspected in accordance with the acceptance criteria for statically loaded non-tubular connections in Table 6.1 and the acceptance criteria in Table 6.2 in AWS D1.1/D1.1M, latest edition, Structural Welding Code. Repairs for shop and field splices shall conform to Section 5.26 of AWS D1.1/D1.1M, latest edition, Structural Welding Code, using approved repair and weld procedures.

Field splice welds and welders shall be further qualified, tested and inspected as follows:

1. Welder qualification shall be performed on sample full girth sections of steel pipe pile to be used, in the same position and using the same weld joint as for production pile splicing. At the Contractor's option, these tests may be performed on the test piles during test pile installation.

2. Weld qualification tests shall be conducted in the presence of the Contractor's CWI and a representative of the Contracting Agency.

3. Field welded test joints for welder qualification shall be inspected as specified above for shop splices.

4. Production pile field splices shall be inspected as specified above for shop splices, within the limits designated for UT inspection as shown in the Plans. All welds shall be 100 percent visually inspected. The Engineer and the Contractor's CWI reserve the right to request UT inspection of splices in any pile location.

Quality control for field welding shall be conducted by an AWS Certified Welding Inspector (CWI). The Contractor shall not begin pile splicing operations until receiving the CWI's approval of the joint fit-up. The CWI shall inspect 100 percent of all field welds in accordance with the criteria and requirements specified above. All field splices shall have received the CWI's approval prior to Engineer acceptance.

The CWI shall prepare a Type 1 Working Drawing documenting the results of the nondestructive quality control inspection of all field welds, and shall submit the report to the Engineer within five working days of the completion of the final pile splice in the project or as otherwise requested by the Engineer.

6-05.3(10).GR6

***Test Piles***

6-05.3(10).INST1.GR6

Section 6-05.3(10) is supplemented with the following:

6-05.3(10).OPT1.FB6

(March 6, 2000)

The Contractor shall furnish and drive *** $$1$$ *** test piles at the following locations or at locations designated by the Engineer:

*** $$2$$ ***

The *** $$3$$ *** test piles shall be driven in the location of permanent piles and the number of permanent *** $$4$$ *** piles required for this project has been reduced by the appropriate number.

6-05.3(11).GR6

***Driving Piles***

6-05.3(11)D.GR6

**Achieving Minimum Tip Elevation and Bearing**

6-05.3(11)D.INST1.GR6

Section 6-05.3(11)D is supplemented with the following:

6-05.3(11)D.OPT2.GB6

(August 3, 2015)

The areas where piles are to be driven are adjacent to highly developed areas. It is essential that vibration and noise resulting from pile driving be held to a minimum. Unless otherwise allowed by the Engineer, pile driving shall be done during regular daytime working hours. The Contractor shall select pile driving equipment which will minimize noise and vibration. When, in the opinion of the Engineer, noise or vibration are excessive, the Contractor will be required to use a hammer that does not exceed the minimum specifications by more than 10 percent for the type and capacity of piling being driven. If pre-boring, jetting, or other special methods are not specified elsewhere in the contract and are ordered by the Engineer to reduce noise or vibration, such change in method shall be considered a change, subject to the terms of Section 1-04.4.

6-05.3(11)D.OPT3.FB6

(August 3, 2015)

The *** $$1$$ *** piles *** $$2$$ *** shall be placed in prebored holes drilled to elevation ***$$3$$***.

The holes shall be of adequate diameter to isolate the pile from skin friction. The hole around the pile due to oversize boring shall be filled with dry sand or pea gravel after the pile is placed.

6-05.3(11)D.OPT4.FB6

(August 3, 2015)

The *** $$1$$ *** piles ***$$2$$*** shall be prebored to elevation *** $$3$$ ***.

The diameter of the preboring shall be adjusted to provide for full contact between the pile casing and the surrounding soil without shattering the soil formation. It is estimated that the required diameter for preboring will be approximately 1 inch less than the pile diameter; however, the diameter shall be adjusted by the Contractor as specified by the Engineer to accomplish the results described above. Jetting will not be permitted. The Contractor shall follow preboring immediately with the placing of the pile casing to prevent sloughing into the excavated hole.

6-05.3(11)D.OPT9.FB6
(April 6, 2015)
The Contractor is advised that overdriving is anticipated for piles driven at the following location(s):

| **Location(s)** | **Approx. Magnitude of Overdriving Anticipated to Reach Minimum Tip Elev.** |
|---|---|
| *** $$1$$ *** | *** $$2$$ *** |

The Contractor shall size the hammer and pile to accommodate overdriving of this magnitude without premature refusal or pile damage.

6-05.4.GR6
## Measurement

6-05.4.INST1.GR6
Section 6-05.4 is supplemented with the following:

6-05.4.OPT1.FB6
(March 6, 2000)
Measurement for preboring for *** $$1$$ *** pile will be per linear foot of hole drilled.

6-05.4.OPT6.GB6
(April 6, 2015)
Micropiles will be measured per each, for each micropile installed and accepted.

Micropile verification load testing will be measured per each for each successfully completed and accepted micropile verification load test.

Micropile proof load testing will be measured per each for each successfully completed and accepted micropile proof load test.

6-05.5.GR6
## Payment

6-05.5.INST1.GR6
Section 6-05.5 is supplemented with the following:

6-05.5.OPT1.FB6
(March 6, 2000)
“Preboring For ***$$1$$*** Pile”, per linear foot.

The unit contract price per linear foot for “Preboring For ***$$2$$*** Pile” shall be full pay for performing the work as specified, including removal and disposal of excavated soils from preboring, and backfilling.

6-05.5.OPT6.GB6
(April 6, 2015)
“Micropile”, per each.
The unit contract price per each for "Micropile" shall be full pay for performing the Work as specified.

“Micropile Verification Load Testing”, per each.
“Micropile Proof Load Testing”, per each.
The unit contract price per each for “Micropile Verification Load Testing” and “Micropile Proof Load Testing” shall be full pay for performing the Work as specified.

6-06.GR6
## Bridge Railings

6-06.2.GR6
### Materials

6-06.2.INST1.GR6
Section 6-06.2 is supplemented with the following:

6-06.2.OPT1.GB6
(January 5, 2004)
Chain link fence fabric shall conform to the Section 9-16.1(1)B requirements for Type 1 fence.

Fittings, fabric bands, stretcher bars, tie wire, and other fence hardware, shall conform to Section 9-16.1.

Pipe for posts and longitudinal members shall conform to ASTM A 53, Grade B, Type E or S, galvanized, and shall be Schedule 40 unless otherwise shown in the Plans.

Steel bars, plates, and shapes shall conform to ASTM A 36, and shall be galvanized in accordance with AASHTO M 111, except that structural shapes may conform to ASTM A 992.

Bolts, nuts, and washers shall conform to Section 9-06.5(3), and shall be galvanized after fabrication in accordance with AASHTO M 232.

Resin bonded anchors shall conform to Section 6-02.2 as supplemented in these Special Provisions.

6-06.2.OPT2.GB6
(March 6, 2000)
Epoxy resin shall conform to Section 9-26.1.

6-06.2.OPT7.GB6

***(April 6, 2015)***

***Tamper Proof Nuts for steel Bridge Railing Type BP***

Tamper proof nuts for steel Bridge Railing Type BP shall be one of the following products from one of the following manufacturers:

Vandlgard-Nut VCN151-6 (zinc)

| Manufactured by | Local Supplier |
|---|---|
| Simi Fastening Systems | Northwest Fasteners Inc. |
| 4615 Industrial St. Bldg. No. 1-P | 15127 Washington Avenue SW |
| Simi Valley, CA 93063 | Lakewood, WA 98498 |
| (800) 959-8256 | (253) 582-1671 |
| FAX (805) 581-9162 | FAX (253) 581-3131 |
| www.simifast.com | |

Trigroove Nut ZTRN37C (Zamak 5 zinc alloy AC41A)
Breakaway Nut ZNB37C (Zamak 5 zinc alloy AC41A)

| Manufactured by | Local Supplier |
|---|---|
| Screw & Supply Inc. | Tacoma Screw Products Inc. |
| 1712 Church Street | 2001 Center Street |
| Holbrook, NY 11741 | Tacoma, WA 98409 |
| (800) 223-1316 | (800) 562-8192 |
| FAX (631) 567-3057 | FAX (253) 272-2719 |
| www.screwsupply.com | |

Spanner Nut 1N.386 (zinc alloy)
Manufactured by
TamperProof Screw Company Inc.
30 Laurel Street
Hicksville, NY 11801
(516) 931-1616
FAX (516) 931-1654
www.tamperproof.com

Trident Tamper Resistant Nut 37CNTNZ (Zamak 5 zinc alloy AC41A)
Breakaway Nut 37CNBAWZ (Zamak 5 zinc alloy AC41A)
Breakaway Nut 37CNBAWS (stainless steel alloy 304)
Manufactured by
Tanner Bolt & Nut Company
4302 Glenwood Road
Brooklyn, NY 11210
(800) 456-2658
FAX (888) 434-3215
www.tannerbolt.com

6-06.2.OPT8.FB6

***(May 28, 2020)***

***Bridge Railing Type Snow Fence and Bridge Railing Type Wire Fabric Fence***

Wire fabric shall be 8 gage diameter, 2 inch square wire mesh conforming to ASTM F 2453 Type 2 and galvanized after fabrication in accordance with AASHTO M 111.

HSS tubes shall conform to ASTM A 500, Grade B.

Steel bars, plates, and shapes shall conform to either ASTM A 36 or ASTM A 992.

The railing assembly shall be galvanized after fabrication in accordance with AASHTO M 111.

Anchor rods shall be fully threaded, conforming to ASTM F593 Type 302. Washers shall conform to ASTM A193 Grade B7, galvanized in accordance with AASHTO M 232. Nuts shall be tamper proof, as one of the following products from one of the associated manufacturers:

Vandlgard-Nut VCN151-6 (zinc)

| Manufactured by | Local Supplier |
|---|---|
| Simi Fastening Systems | Northwest Fasteners Inc. |
| 4615 Industrial St. Bldg. No. 1-P | 15127 Washington Avenue SW |
| Simi Valley, CA 93063 | Lakewood, WA 98498 |
| (800) 959-8256 | (253) 582-1671 |
| FAX (805) 581-9162 | FAX (253) 581-3131 |
| www.simifast.com | |

Trigroove Nut ZTRN37C (Zamak 5 zinc alloy AC41A)
Breakaway Nut ZNB37C (Zamak 5 zinc alloy AC41A)

| Manufactured by | Local Supplier |
|---|---|
| Screw & Supply Inc. | Tacoma Screw Products Inc. |
| 1712 Church Street | 2001 Center Street |
| Holbrook, NY 11741 | Tacoma, WA 98409 |
| (800) 223-1316 | (800) 562-8192 |
| FAX (631) 567-3057 | FAX (253) 272-2719 |
| www.screwsupply.com | |

Spanner Nut 1N.386 (zinc alloy)
Manufactured by
TamperProof Screw Company Inc.
30 Laurel Street
Hicksville, NY 11801
(516) 931-1616
FAX (516) 931-1654
www.tamperproof.com

Trident Tamper Resistant Nut 37CNTNZ (Zamak 5 zinc alloy AC41A)
Breakaway Nut 37CNBAWZ (Zamak 5 zinc alloy AC41A)
Breakaway Nut 37CNBAWS (stainless steel alloy 304)
Manufactured by
Tanner Bolt & Nut Company
4302 Glenwood Road
Brooklyn, NY 11210
(800) 456-2658
FAX (888) 434-3215
www.tannerbolt.com

Resin bonded anchors shall conform to Section 6-02.2 as supplemented in these Special Provisions.

The railing assembly shall be shop painted or powder coated after galvanizing in accordance with Section 6-07.3(11). The color of the finish coat, when dry, shall match the color *** $$1$$ ***.

6-06.3.GR6

## Construction Requirements

6-06.3(2).GR6

### *Metal Railings*

6-06.3(2).INST1.GR6

Section 6-06.3(2) is supplemented with the following:

6-06.3(2).OPT1.GB6

**(March 6, 2000)**

**Bridge Railing Type Chain Link Fence**

The Contractor shall install anchor bolts for each post anchorage as shown in the Plans. Alternatively, the Contractor may install resin bonded anchors at each post anchorage, in accordance with Section 6-02 as supplemented in these Special Provisions.

Longitudinal members shall be connected to the steel posts as shown in the Plans.

The Contractor shall install the chain link fence fabric in accordance with Section 8-12.3(1)D, except as otherwise noted. The chain link fence fabric shall be fastened to the posts and longitudinal members at a maximum spacing of 14 inches.

6-06.3(2).OPT2.GB6

**(March 6, 2000)**

**Bridge Railing Type Chain Link Fence**

The post blockouts shall be formed with a steel sleeve of the diameter and thickness specified in the Plans. The steel sleeve shall be galvanized after fabrication in accordance with AASHTO M 111. The Contractor shall fill the bottom portion of the railing post with expanded polystyrene as shown in the Plans.

The Contractor shall install the steel posts in the post blockouts as shown in the Plans. The posts shall be installed vertically, set in position with epoxy resin, and braced to maintain the vertical position until the epoxy resin hardens.

Longitudinal members shall be connected to the steel posts as shown in the Plans.

The Contractor shall install the chain link fence fabric in accordance with Section 8-12.3(1)D, except as otherwise noted. The chain link fence fabric shall be fastened to the posts and longitudinal members at a maximum spacing of 14 inches.

6-06.3(2).OPT7.GB6

**(May 28, 2020)**

**Bridge Railing Type Snow Fence and Bridge Railing Type Wire Fabric Fence**

The railing shall be fabricated and installed in accordance with the shop drawings. The railing panels shall be installed parallel to the top of the associated concrete surface and the railing posts shall be installed perpendicular to the associated concrete surface.

The Contractor shall install anchor bolts for each post anchorage as shown in the Plans. Alternatively, the Contractor may install resin bonded anchors at each post anchorage, in accordance with Section 6-02.3(18) as supplemented in these Special Provisions.

After completing erection, the Contractor shall repair all metal surfaces with damaged paint or powder coatings and exposed metal with a field repair coating in accordance with Section 6-07.3(9)I and Section 6-07.3(11)A (for paint) or Section 6-07.3(11)B (for powder coating). The color of the finish coat of the field repair coating, when dry, shall match the color specified in Section 6-06.2 as supplemented in these Special Provisions.

6-06.5.GR6

## Payment

6-06.5.INST1.GR6

Section 6-06.5 is supplemented with the following:

6-06.5.OPT1.FB6

(March 6, 2000)

All costs in connection with constructing Bridge Railing Type *** $$1$$ *** shall be included in the *** $$2$$ ***.

6-07.GR6

## Painting

6-07.1.GR6

## Description

6-07.1.INST1.GR6

Section 6-07.1 is supplemented with the following:

6-07.1.OPT1.FB6

(August 3, 2009)

This work shall consist of cleaning and painting all exposed metal surfaces of Bridge No(s). *** $$1$$ ***, in accordance with Section 6-07.3(10), except as otherwise noted below.

Portions of the structure(s) excluded from this work include:

*** $$2$$ ***

6-07.1.OPT2.FB6

(August 3, 2009)

This work shall consist of cleaning and painting the exposed timber surfaces of Bridge No(s). *** $$1$$ ***, in accordance with Section 6-07.3(13) as supplemented in these Special Provisions and as specified below:

*** $$2$$ ***

6-07.3.GR6

## Construction Requirements

6-07.3(10).GR6

### *Painting Existing Steel Structures*

6-07.3(10).INST1.GR6

Section 6-07.3(10) is supplemented with the following:

6-07.3(10).OPT1.FB6

(August 3, 2009)

The Contractor *** $$1$$ *** paint the existing utility company conduits attached to the structure, such as sewer, water, gas and telephone. The Contractor shall protect the utilities from damage due to operations on the bridges.

6-07.3(10).OPT2.GB6

(August 3, 2009)

Light fixtures and lenses, including navigation, aircraft, flag pole luminaire, and luminaire light fixtures and lenses, shall not be painted and shall be kept clean from paint. The Contractor shall remove all paint from the light fixtures and lenses due to the painting operation.

6-07.3(10).OPT3.GB6

(August 3, 2009)

A portion of the work involved in this project is located over or near railroad facilities. The Contractor shall exercise great care in all operations in order that no interruptions or damage will occur to the railroad trains or facilities. The Contractor shall contact the Railroad Company regarding the times and the conditions under which cleaning and painting work over or adjacent to railroad tracks may be accomplished.

6-07.3(10).OPT4.GB6

(August 3, 2015)

In the cleaning operation, particular attention shall be paid to cleaning the grid deck. Any means acceptable to the Engineer, in addition to flushing, as required to clean dirt, oil and grease from the grid surfaces in accordance with SSPC-SP 1 shall be used.

6-07.3(10)A.GR6

**Containment**

6-07.3(10)A.INST1.GR6

Section 6-07.3(10)A is supplemented with the following:

6-07.3(10)A.OPT1.GB6

(August 3, 2009)

The Contractor shall adequately protect all gears, machinery, mechanical equipment, electrical equipment, navigation and clearance light lenses, motors, sheaves and cables and all other equipment which might become damaged by and during the cleaning and painting operations. Should the Contractor's operation foul or otherwise contaminate the lubricated surfaces, the Contractor shall, if directed by the Engineer, clean and relubricate the surfaces at the Contractor's expense.

6-07.3(10)A.OPT2.FB6

(January 2, 2018)

The following bridge(s) have a wind speed/gust threshold:

| Bridge | Wind Speed/Gust Threshold (miles per hour) |
|---|---|
| Bridge No(s). *** $$1$$ *** | *** $$2$$ *** |

Each day, the Contractor shall review the five-day wind speed/gust forecast for each bridge site from the Western Region Headquarters of the National Weather Service at www.wrh.noaa.gov. The Contractor shall lower or withdraw tarps, plastic exterior, and other containment components presenting an exposed face to the wind when either of the following apply:

1. When wind speeds or gusts exceeding the threshold are forecast by the National Weather Service.

2. When the structure site weather station records wind speeds or gusts exceeding the threshold.

The containment system may be restored after 2 hours without winds or gusts exceeding the threshold, and no forecast of such wind speeds or gusts to return within 24 hours.

**Weather Station**

Prior to installing any components of a containment system on a bridge with a specified wind speed/gust threshold, the Contractor shall install a wireless weather station on the bridge at a location acceptable to the Engineer. The Contractor shall provide one of the following wireless weather station systems, or an accepted equal:

1. Davis Instruments Vantage Pro2 model 06163.

2. Weather Hawk 916 Wireless Weather Station.

3. Columbia Weather Systems Capricom FLX.

The Contractor shall submit a Type 2 Working Drawing consisting of details of the selected wireless weather station system, including installation and operation details. The Contractor shall install wireless display console units for both the Contracting Agency's and the Contractor's use at locations acceptable to the Engineer. The Contractor shall protect the wireless weather station system from damage during all paint removal, surface cleaning, and paint application operations.

The Contractor shall maintain a log of daily weather data updated on a daily basis. The log shall be available to the Engineer for review at any time during the project. The weather data shall be tabulated in the form of a spreadsheet. At a minimum, the weather data shall indicate the high and low temperature, relative humidity, maximum wind speed and direction, wind gusts, and rainfall. If requested by the Engineer, the Contractor shall submit a Type 1 Working Drawing of weather data.

At the end of the Contract, the wireless weather station and all associated system components shall be removed from the bridge and become the property of the Contractor.

6-07.3(10)D.GR6

**Surface Preparation Prior to Overcoat Painting**

6-07.3(10)D.INST1.GR6

Section 6-07.3(10)D is supplemented with the following:

6-07.3(10)D.OPT1.FB6

(April 6, 2015)

The following steel surfaces of Bridge No(s). *** $$1$$ *** shall receive surface preparation in accordance with SSPC SP1 followed by cleaning in accordance with this Section:

*** $$2$$ ***

6-07.3(10)E.GR6

**Surface Preparation - Full Paint Removal**

6-07.3(10)E.INST1.GR6

Section 6-07.3(10)E is supplemented with the following:

6-07.3(10)E.OPT1.FB6

(April 5, 2010)

The following steel surfaces of Bridge No(s). *** $$1$$ *** shall receive full paint removal surface preparation in accordance with this Section:

*** $$2$$ ***

6-07.3(10)I.GR6

**Paint Color**

6-07.3(10)I.INST1.GR6

Section 6-07.3(10)I is supplemented with the following:

6-07.3(10)I.OPT1.FB6

(August 3, 2009)

The color of the top coat, when dry, shall match *** $$1$$ ***.

6-07.3(10)N.GR6

**Field Coating Application Methods**

6-07.3(10)N.INST1.GR6

Section 6-07.3(10)N is supplemented with the following:

6-07.3(10)N.OPT1.GB6

(August 3, 2009)

Spray painting will be permitted for the application of paint to the surfaces of the steel grid roadway decking and steel grid catwalks, provided every precaution or means necessary to prevent any damage due to spraying operations or from wind borne paint is taken, provided further that if satisfactory results are not, in the opinion of the Engineer, obtained with the spraying application, the Contractor shall revert to the use of brushes. In the event spray painting is used on the steel grid roadway decking, the application shall be made only from the underside of the roadway, and then only at such times as traffic has been diverted to other lanes. A protective covering shall be placed immediately over areas of the roadway decking being spray painted to prevent damage from wind borne paint.

6-07.3(11).GR6

***Painting or Powder Coating of Galvanized Surfaces***

6-07.3(11).INST1.GR6

Section 6-07.3(11) is supplemented with the following:

6-07.3(11).OPT1.FB6

(August 3, 2009)

The color of the finish coat, when dry, shall match *** $$1$$ ***

6-08.GR6

## Bituminous Surfacing on Structure Decks

6-08.3.GR6

## Construction Requirements

6-08.3.INST1.GR6

Section 6-08.3 is supplemented with the following:

6-08.3.OPT1.FB6

***(January 2, 2018)***

***Surfacing Removal and Paving Equipment Load and Spacing Restrictions***

The following bridge(s) is (are) subject to the requirements and restrictions of this Special Provision:

*** $$1$$ ***

The gross vehicle weight (GVW) of the surfacing removal and paving train vehicles (planers, scrapers, haul trucks, asphalt pavers, MTD/V, and rollers) allowed on the bridge shall not exceed the maximum GVW specified in the Plans and the spacing of the vehicles shall not be less than that specified in the Plans unless otherwise accepted as described in the **Submittal of Alternative Surfacing Removal and HMA Paving Trains** subsection

of this Special Provision. The 35-percent overload allowance specified in item 1 of Section 1-07.7(2) does not apply.

The Contractor shall submit a Type 2 Working Drawing consisting of the proposed methods and equipment to be used to remove surfacing and apply HMA overlay to the bridge deck. The Working Drawing shall include catalogue cuts, make, model, axle spacing, and gross weights of all surfacing removal equipment, pavers, rollers, and haul trucks used to conduct surfacing removal and paving operations on the bridge. The Working Drawing shall show the surfacing removal train units and paving train units and associated support equipment that is simultaneously on the bridge, in longitudinal section. The longitudinal section shall show the units in operational order. The details shall show or specify means of confirming in the field that the equipment units conform to and do not exceed the load limits specified in the Plans.

***Submittal of Alternative Surfacing Removal and HMA Paving Trains***

During the Bid period, prospective Bidders may submit a maximum of two surfacing removal and HMA paving trains for review and comment. The submittal shall consist of the maximum gross vehicle weights including loaded weights for removal equipment, haul trucks, rollers, pavers, etc., the axle spacing of the equipment and the minimum spacing between adjacent pieces of equipment. Submittals must be received by the Contracting Agency's representative identified in the Notice to All Planholders by 5:00 PM one week prior to Bid opening. Electronic submittals will be accepted. All submittals received by the required date and time, both accepted and not accepted, will be posted on the Contract Ad & Award information page no later than the Friday prior to Bid opening.

6-08.3(2).GR6

***Contractor Survey for Grade Controlled Structure Decks***

6-08.3(2).INST1.GR6

Section 6-08.3(2) is supplemented with the following:

6-08.3(2).OPT1.FB6

(January 3, 2017)

The Contractor survey requirements specified in this Section and associated Sections 6-08.3(2)A, 6-08.3(2)B and 6-08.3(2)C do not apply to the following Grade Controlled Structures in this Contract:

*** $$1$$ ***

6-08.3(5).GR6

***Full Depth Removal of Bituminous Pavement from Structure Decks***

6-08.3(5).INST1.GR6

Section 6-08.3(5) is supplemented with the following:

6-08.3(5).OPT1.FB6

(January 2, 2018)

Rotary milling/planing equipment shall not be used to remove the existing surfacing from the bridge deck of the following bridge(s):

*** $$1$$ ***

6-08.3(5).OPT2.FB6

(January 2, 2018)

Rotary milling/planing equipment conforming to Section 6-08.3(5)B may be used to remove all but the bottom 0.10-foot layer of existing surfacing from the bridge deck of the following bridge(s):

*** $$1$$ ***

Rotary milling/planing equipment shall not be used to remove the bottom 0.10-foot layer of existing surfacing from the bridge deck of these bridges.

6-09.GR6

## Modified Concrete Overlays

6-09.2.GR6

## Materials

6-09.2.INST1.GR6

Section 6-09.2 is supplemented with the following:

6-09.2.OPT8.BSP.GB6

***(******)***

### *Materials for Polyester Concrete*

**Polyester Resin Binder**

The resin shall be an unsaturated isophthalic polyester-styrene co-polymer.

Prior to adding the initiator, the resin shall conform to the following requirements:

| | | |
|---|---|---|
| Viscosity: | 75 to 200 cps<br>(20 rpm at 77F, RVT No. 1 spindle) | ASTM D 2196 |
| Specific Gravity: | 1.05 to 1.10 at 77F | ASTM D 1475 |
| Styrene Content: | 45% to 50% by weight<br>of polyester styrene resin | ASTM D2369 |

After adding the initiator, the resin shall conform to the following requirements:

| | | |
|---|---|---|
| Elongation: | 35% minimum<br>w/ thickness 0.25" ± 0.04" | ASTM D 638 |
| Tensile Strength: | 2,500 psi minimum<br>w/ thickness 0.25" ± 0.04" | ASTM D 638 |
| Conditioning | 18 hours/77F/50% + 5 hours/158F | ASTM D 618 |
| Silane Coupler: | 1.0% minimum (by weight of polyester-styrene resin) | |

The silane coupler shall be an organosilane ester, gammamethacryloxypropyltrimethoxysilane. The promoter/hardeners shall be compatible with suitable methyl ethyl ketone peroxide (MEKP) and cumene hydroperoxide (CHP) initiators. MEKP initiators shall be used when the surrounding concrete

temperatures are above 60F. A blend of initiators may be used as approved by the Engineer when the surrounding concrete temperature is 50F to 60F.

Polyester resin binder will be accepted based on submittal to the Engineer of a Manufacturer's Certificate of Compliance conforming to Section 1-06.3.

**High Molecular Weight Methacrylate (HMWM) Resin**

In addition to the viscosity and density properties, and the promoter/initiator system, already specified in this Section, the HMWM resin for polyester concrete overlays shall conform to the following requirements:

| | | |
|---|---|---|
| Flash Point: | 180F minimum | ASTM D 3278 |
| Tack-Free Time: | 400 minutes maximum | California Test 551 |

Prior to adding initiator, the HMWM resin shall have a maximum volatile content of 30 percent, when tested in conformance with ASTM D 2369.

HMWM resin will be accepted based on submittal to the Engineer of a Manufacturer's Certificate of Compliance conforming to Section 1-06.3.

**Aggregate**

The aggregate shall be from a WSDOT approved pit site and shall be thoroughly washed and kiln dried.

The aggregate shall conform to Section 9-03, and one of the following combined aggregate gradings:

Combined Aggregate

| Sieve Size | 1/2" Max. % Passing | 3/8" Max. % Passing |
|---|---|---|
| 1/2" | 100 | 100 |
| 3/8" | 83-100 | 100 |
| U.S. No. 4 | 65-82 | 62-85 |
| U.S. No. 8 | 45-64 | 45-67 |
| U.S. No. 16 | 27-48 | 29-50 |
| U.S. No. 30 | 12-30 | 16-36 |
| U.S. No. 50 | 6-17 | 5-20 |
| U.S. No. 100 | 0-7 | 0-7 |
| U.S. No. 200 | 0-3 | 0-3 |

The combined aggregate shall have a maximum of 45 percent crushed particles. Fine aggregate shall consist of natural sand only.

Aggregate absorption shall not exceed 1.0 percent. The moisture content of the aggregate shall not exceed one half of the aggregate absorption at the time of mixing with the polyester resin binder. The aggregate temperature shall be between 45F and 100F at the time of mixing.

**Sand for Abrasive Finish**

The sand for abrasive finish shall conform to Section 6-09.2, and the aggregate moisture content requirements specified above.

6-09.3.GR6

## Construction Requirements

6-09.3(1).GR6

### *Equipment*

6-09.3(1).INST1.GR6

Section 6-09.3(1) is supplemented with the following:

6-09.3(1).OPT1.BSP.GB6

**(******)**

**Mobile Mixer for Polyester Concrete**

The mixer shall be equipped to be calibrated to automatically proportion and blend all components of the specified mix on a continuous or intermittent basis as required by the finishing operation, and shall discharge mixed material directly into the finishing machine.

The mixer shall be equipped with a metering device that automatically measures and records the aggregate volumes and the corresponding resin volumes. The metering device shall have a readout display gage visible at all times, and shall be capable of printing out the volumes being recorded for each material.

The aggregate and resin volumes shall be recorded at no greater than five minute intervals along with the date of each recording. A printout of the recordings shall be furnished to the Engineer at the end of each work shift.

The Contractor shall prevent any cleaning chemicals from reaching the polyester mix during the overlay applications.

6-09.3(2).GR6

### *Submittals*

6-09.3(2).INST1.GR6

Section 6-09.3(2) is supplemented with the following:

6-09.3(2).OPT1.BSP.GB6

**(******)**

**Submittals for Polyester Concrete**

The Contractor shall submit the following items to the Engineer for approval in accordance with Section 6-01.9:

1. The type of shot blasting machine selected by the Contractor for use in this project to scarify concrete surfaces.

2. The method and materials used to contain, collect, and dispose of all concrete debris generated by the scarifying process, including provisions for protecting adjacent traffic from flying debris.

3. The qualifications of on-site supervisors, mobile mixer operators, and finishing machine operators, in accordance with Section 6-09.3(8) as supplemented in these Special Provisions.

4. The polyester concrete mix design in accordance with Section 6-09.3(3) as supplemented in these Special Provisions.

5. Samples, as specified below, shall be submitted to the Engineer at least 15 working days prior to placing the polyester overlay:

    a. One gallon minimum of the polyester resin binder.

    b. One pint minimum of the HMWM resin.

    c. 100 pounds minimum of aggregate.

    d. Representative samples from each lot of prepackaged deck repair material and aggregate extenders, if selected for use in this project, as specified in Section 6-09.3(3) as supplemented in these Special Provisions.

6. The method and materials used to contain HMWM resin and polyester concrete within the deck area specified to receive the overlay.

7. Paving equipment specifications and details of the screed rail support system, including details of anchoring the rails and providing rail continuity.

The Contractor shall not begin scarifying operations until receiving the Engineer's approval of Items 1 and 2. The Contractor shall not begin placing polyester concrete overlay until receiving the Engineer's approval of Items 3 through 7.

6-09.3(3).GR6

***Concrete Overlay Mixes***

6-09.3(3).INST1.GR6

Section 6-09.3(3) is supplemented with the following:

6-09.3(3).OPT1.GB6

(January 7, 2002)

The Contractor may use either fly ash modified concrete (FMC), latex modified concrete (LMC), or microsilica modified concrete (MMC) for the concrete overlay. The Contractor shall select one type of concrete for the overlay, provide a mix for the selected concrete to the Engineer in accordance with Item 5 of Section 6-09.3(2), and use that type for the total concrete overlay operation. Use of a combination of types will not be allowed.

6-09.3(3).OPT2.GB6

(January 7, 2002)

The Contractor may use either fly ash modified concrete (FMC), or latex modified concrete (LMC) for the concrete overlay. The Contractor shall select one type of concrete for the overlay, provide a mix for the selected concrete to the Engineer in accordance with Item 5 of Section 6-09.3(2), and use that type for the total concrete

overlay operation. Use of a combination of types will not be allowed. Use of microsilica modified concrete (MMC) will not be allowed.

6-09.3(3).OPT3.GB6

(January 7, 2002)

The Contractor shall use latex modified concrete (LMC) for the total concrete overlay operation, and shall provide a concrete mix to the Engineer in accordance with Item 5 of Section 6-09.3(2). Use of fly ash modified concrete (FMC) or microsilica modified concrete (MMC) will not be allowed.

6-09.3(3).OPT9.BSP.GB6

**(******)**

**Polyester Concrete**

The Contractor shall use polyester concrete for the total concrete overlay operation. Use of latex modified concrete (LMC), fly ash modified concrete (FMC) or microsilica modified concrete (MMC) will not be allowed.

Polyester concrete shall consist of the following three components – polyester resin binder, HMWM resin, and combined aggregate, in accordance with Section 6-09.2 as supplemented in these Special Provisions. The Contractor shall submit the mix design for the polyester concrete to the Engineer for approval. The mix design shall include a recommended initiator percentage for the expected application temperature. The polyester resin binder shall be approximately 12 percent by weight of the dry combined aggregate. The Contractor shall not begin the trial overlay of the polyester concrete, as specified in Section 6-09.3(8) as supplemented in these Special Provisions, until receiving the Engineer's approval of the polyester concrete mix design.

6-09.3(3).OPT10.BSP.GB6

**(******)**

**Deck Repair Concrete for Polyester Concrete Overlays**

Patching concrete for further deck preparation in accordance with Section 6-09.3(6) shall be the polyester concrete mix used for the overlay.

6-09.3(4).GR6

***Storing and Handling***

6-09.3(4).INST1.GR6

Section 6-09.3(4) is supplemented with the following:

6-09.3(4).OPT1.BSP.GB6

**(******)**

**Storing and Handling of Polyester Concrete Materials**

All materials shall be delivered in their original containers bearing the manufacturer's label, specifying date of manufacturing, batch number, trade name brand, quantity, and mixing ratio. Each shipment of polyester resin binder and HMWM resin shall be accompanied by a Materials Safety Data Sheet (MSDS).

The material shall be stored to prevent damage by the elements and to ensure the preservation of their quality and fitness for the work. The storage space shall be kept clean and dry, and shall contain a high-low thermometer. The temperatures of the

storage space shall not fall below nor rise above that recommended by the manufacturer. Every precaution shall be taken to avoid contact with flame.

Stored materials shall be inspected prior to their use, and shall meet the requirements of these Special Provisions at the time of use.

Any material which is rejected because of failure to meet the required tests or that has been damaged so as to cause rejections shall be immediately replaced at no additional expense to the Contracting Agency.

Sufficient material to perform the entire polyester concrete overlay application shall be in storage at the site prior to any field preparation, so that there shall be no delay in procuring the materials for each day's application.

Appropriate impermeable protective garments shall be used by all workers who may contact the resin or initiators to prevent skin contact. If skin contact occurs, the resin or initiators shall be immediately washed off. Clothing that becomes saturated with resin shall be removed immediately.

All personnel working with the polyester concrete shall be issued suitable approved organic vapor respirators in addition to other appropriate protection equipment.

6-09.3(5).GR6

***Scarifying Concrete Surface***

6-09.3(5).INST1.GR6

Section 6-09.3(5) is supplemented with the following:

6-09.3(5).OPT1.GB6

(January 7, 2002)

The Contractor may use either a rotary milling machine, hydro-demolition machine, or shot blasting machine for scarifying concrete surfaces. The Contractor shall inform the Engineer of the type of machine selected in accordance with Item 1 of Section 6-09.3(2).

6-09.3(5).OPT2.GB6

(January 7, 2002)

The Contractor may use either a hydro-demolition machine or shot blasting machine for scarifying concrete surfaces. The use of a rotary milling machine will not be allowed. The Contractor shall inform the Engineer of the type of machine selected in accordance with Item 1 of Section 6-09.3(2).

6-09.3(5).OPT7.GB6

(April 6, 2015)

The Contractor shall use a hydro-demolition machine for scarifying concrete surfaces. The use of a rotary milling or shot blasting machines will not be allowed. The Contractor shall inform the Engineer of the type of machine selected in accordance with Item 1 of Section 6-09.3(2).

6-09.3(5).OPT8.BSP.GB6

(******)

The Contractor shall use a shot blasting machine for scarifying concrete surfaces. The use of a rotary milling or hydro-demolition machines will not be allowed. The Contractor shall inform the Engineer of the type of machine selected in accordance with Item 1 of Section 6-09.3(2).

6-09.3(5).OPT9.BSP.GB6

(******)

The scarification depth for all concrete decks receiving polyester concrete overlay shall be 1/4 inch, and all references to scarification depth in Sections 6-09.3(5)A and 6-09.3(5)B shall be revised accordingly.

6-09.3(5).OPT10.BSP.GB6

(******)

Steel reinforcing bars used in deck repair operations, in accordance with Sections 6-09.3(5)F and 6-09.3(6)B, shall be epoxy-coated in accordance with Section 6-02.3(24)H.

6-09.3(6).GR6

## *Further Deck Preparation*

6-09.3(6)B.GR6

**Deck Repair Preparation**

6-09.3(6)B.INST1.GR6

Section 6-09.3(6)B is supplemented with the following:

6-09.3(6)B.OPT1.GB6

(April 6, 2015)

The Contractor shall not remove the bottom two inches of the existing concrete deck, unless otherwise directed by the Engineer. If the existing concrete bridge deck is punctured by the removal operations, the Contractor shall form the bottom surface prior to placing the patching concrete. The Contractor shall submit the method and materials to be used for such forming as a Type 2E Working Drawing in accordance with Section 6-02.3(16).

6-09.3(6)C.GR6

**Placing Deck Repair Concrete**

6-09.3(6)C.INST1.GR6

Section 6-09.3(6)C is supplemented with the following:

6-09.3(6)C.OPT2.BSP.GB6

**(******)**

**Placing Patching Concrete For Polyester Concrete Overlay**

Patching concrete shall be polyester concrete, as specified in Section 6-09.3(3) as supplemented in these Special Provisions. Concrete Class M shall not be used.

Polyester concrete for deck repair shall be placed and cured in accordance with Sections 6-09.3(11) and 6-09.3(13), respectively, as supplemented in these Special Provisions.

All deck repair material that fails to achieve a minimum compressive strength of 3,000 psi in six hours as verified by the rebound number determined in accordance with ASTM C 805 shall be removed and replaced with new deck repair material by the Contractor, at no additional expense to the Contracting Agency.

6-09.3(8).GR6

***Quality Assurance***

6-09.3(8).INST1.GR6

Section 6-09.3(8) is supplemented with the following:

6-09.3(8).OPT3.BSP.GB6

**(******)**

**Quality Assurance For Polyester Concrete Overlay**

The Contractor shall arrange to have the suppliers of the polyester resin binder and HMWM resin furnish technical service relating to application of material and health and safety training for personnel who are to handle the polyester concrete and the HMWM resin prime coat.

On-site supervisors, and all personnel operating the mobile mixer and finishing machines, shall have successful previous experience in mixing and placing polyester concrete overlay. Documentation of project experience with polyester concrete overlay shall include the name and location of the project, the Contracting Agency of the project, the area quantity of overlay placed, and the name and current phone number of the Contracting Agency's contact person for the referenced project.

6-09.3(8).OPT4.BSP.GB6

**(******)**

**Polyester Concrete Trial Overlay**

The Contractor shall place a trial overlay of polyester concrete using the equipment selected by the Contractor and the production mix and procedure as approved by the Engineer in accordance with Section 6-09.3(3). The Contractor shall notify the Engineer of the time and location of the trial overlay at least seven calendar days prior to the scheduled trial overlay.

The trial overlay shall be placed on a previously cast and cured concrete pad at a location selected by the Contractor. The plan area of the concrete pad shall be 12 feet minimum in width and 15 feet minimum in length.

The Contractor shall clean the concrete pad surface, mix, place, finish, and cure the polyester concrete overlay, and check the trial overlay for bond, in accordance with Section 6-09.3 as supplemented in these Special Provisions, except as otherwise noted. The Contractor need not scarify the concrete surface and perform further deck preparation on the concrete pad surface provided that all other conditions of Section 6-09.3(7) are satisfied. The trial overlay shall be 12 feet wide, 15 feet long, and 3/4 inches thick.

The Contractor shall perform three pull-off tests on the trial overlay in accordance with American Concrete Institute 503R - Appendix A. The Contractor shall record the pull-off test results and the amount of (if any) failure into the base concrete, and shall provide written documentation of the test results to the Engineer.

The Contractor shall not begin placing polyester concrete overlay at the bridge site(s) receiving the polyester concrete overlay until receiving the Engineer's approval of the completed trial overlay.

After receiving the Engineer's approval of the completed trial overlay, the concrete pad and trial overlay shall become the Contractor's property and shall be removed and disposed of in accordance with Section 2-02.3.

6-09.3(9).GR6

### *Mixing Concrete for Concrete Overlay*

6-09.3(9).INST1.GR6

Section 6-09.3(9) is supplemented with the following:

6-09.3(9).OPT2.BSP.GB6

**(******)**

**Mixing Polyester Concrete**

Polyester concrete shall be mixed in mobile mixers conforming to Section 6-09.3(1) as supplemented in these Special Provisions, and in accordance with the mix design approved by the Engineer.

The polyester resin binder in the polyester concrete shall be approximately 12 percent by weight of the dry aggregate. The Contractor shall determine the exact percentage as approved by the Engineer.

The amount of peroxide initiator used shall result in a polyester concrete set time between 30 and 120 minutes during placement as determined by California Test 551, Part 2, "Method of Test For Determination of Set Time of Concrete Overlay and Patching Materials", by Gilmore Needles. Accelerators or inhibitors may be required as recommended by the polyester resin binder supplier and as approved by the Engineer.

The polyester resin binder shall be initiated and thoroughly blended just prior to mixing the aggregate and binder. The polyester concrete shall be thoroughly mixed prior to placing.

6-09.3(10).GR6

### *Overlay Profile and Screed Rails*

6-09.3(10).INST1.GR6

Section 6-09.3(10) is supplemented with the following:

6-09.3(10).OPT1.BSP.GB6

(******)

The minimum thickness of polyester concrete overlay shall be 3/4 inches, except as otherwise shown in the Plans or adjusted by the Engineer.

6-09.3(11).GR6

### *Placing Concrete Overlay*

6-09.3(11).INST1.GR6

Section 6-09.3(11) is supplemented with the following:

6-09.3(11).OPT2.BSP.GB6

**(******)**

**Placing Polyester Concrete Overlay**

Application of the HMWM prime coat and the polyester concrete overlay shall not begin if rain is expected. The area receiving the prime coat shall be dry and had no rain for at least 24 hours. Immediately prior to applying the prime coat, the surface receiving the prime coat shall be swept clean by compressed air to remove accumulated dust and any other loose material. If the surface receiving the HMWM prime coat and polyester concrete has been exposed to moisture within the previous 12 hours, it shall be thoroughly dried using a heat lance prior to placement of the HMWM prime coat.

The concrete bridge deck surface temperature shall be between 50F and 85F when the prime coat is applied.

The prepared concrete surface shall receive one coat of promoted/initiated wax-free HMWM resin. The promoted/initiated HMWM resin primer shall be worked into the concrete in a manner to effect complete coverage of the area. A one pint sample of each batch of promoted/initiated HMWM resin shall be retained and submitted to the Engineer at the time of primer application to verify proper catalyzation. Under no circumstances shall any resin be allowed to run into drains and expansion joints, or otherwise escape the Contractor's collection and containment system.

If the HMWM primed surface becomes contaminated, the contaminated area shall be cleaned by abrasive blasting and reprimed at no additional expense to the Contracting Agency.

The HMWM prime coat shall cure for a minimum of 30 minutes before placing the polyester concrete overlay. Placement of the polymer concrete shall not proceed until the Engineer verifies that the HMWM resin was properly promoted and initiated, as evidenced by the HMWM batch sample.

The polyester concrete shall be placed on the liquid or hardened HMWM prime coat within two hours of placing the prime coat. Polyester concrete shall be placed prior to gelling and within 15 minutes following initiation, whichever occurs first. Polyester concrete that is not placed within this time shall be discarded.

If, for any reason, polyester concrete is not placed over the prime coat within the two hour time limit, the Contractor shall apply a fresh coat of HMVM resin primer immediately followed by an abrasive sand finish coating. The abrasive sand finish shall be broadcast onto the surface to affect a uniform coverage of a minimum of 0.8 pounds per square yard. Prior to applying the polyester concrete overlay, the surface shall be re-cleaned in accordance with Section 6-09.3(7).

Expansion joints shall be adequately isolated prior to placing the overlay as approved by the Engineer. Saw cutting at bridge expansion joints will not be allowed.

The surface temperature of the area receiving the polyester concrete shall be the same as specified above for the HMWM prime coat.

The polyester concrete shall be consolidated to a relative compaction of not less than 97 percent.

6-09.3(12).GR6

***Finishing Concrete Overlay***

6-09.3(12).INST1.GR6

Section 6-09.3(12) is supplemented with the following:

6-09.3(12).OPT2.BSP.GB6

**(******)**

**Finishing Polyester Concrete Overlay**

The finished surface of the polyester concrete overlay shall conform to Section 6-02.3(10).

The polyester concrete shall be struck off to the established grade and cross section and consolidated to the required compaction. No further texturing and grooving of the finish overlay surface will be required. Forms shall be coated with suitable bond release agent to permit ready release of forms.

The polyester concrete overlay shall receive an abrasive sand finish. The sand finish shall be applied immediately after overlay strike-off and before gelling occurs.

The surface texture of polyester concrete surface shall be uniform and shall have a friction number of not less than 35 as determined by ASTM E 274.

After initial finishing, the polyester overlay may require grinding of rough areas as determined by the Engineer. The grinding shall be done in a manner that will not damage the existing bridge deck. Rotary milling machines are not allowed.

The Contractor shall demonstrate to the satisfaction of the Engineer that the method and equipment for grinding the polyester overlay are adequate for the intended purpose and will provide satisfactory results. The removal shall not commence until the Contractor receives the Engineer's approval of the grinding equipment.

The bridge deck areas specified by the Engineer to receive grinding shall be ground in a longitudinal direction. The grinding equipment shall use diamond tipped saw blades mounted on a power driven, self-propelled machine that is specifically designed to texture concrete surfaces. The grinding equipment shall have a blade spacing to provide grooves that are between 0.10 and 0.15 inches wide. The land area between the grooves shall be approximately 0.125 inches.

The Contractor shall contain, collect, and dispose of all concrete debris generated by the grinding operation in accordance with Item 2 of the polyester concrete submittal in Section 6-09.3(2) as supplemented in these Special Provisions.

Prior to opening the overlay area to vehicular traffic the finished overlay shall be power swept to remove excess loose aggregate and abrasive sand. The Contractor shall demonstrate to the satisfaction of the Engineer that the power broom equipment will not damage the finished overlay. Any damage to the finished overlay caused by

the power broom shall be repaired at no additional expense to the Contracting Agency.

6-09.3(13).GR6

### *Curing Concrete Overlay*

6-09.3(13).INST1.GR6

Section 6-09.3(13) is supplemented with the following:

6-09.3(13).OPT2.BSP.GB6

**(******)**

**Curing Polyester Concrete**

Traffic and equipment shall not be permitted on the polyester overlay for at least four hours and until the polyester overlay has reached a minimum compressive strength of 3,000 psi as verified by the rebound number determined in accordance with ASTM C 805.

Areas in the polyester concrete that do not totally cure, or that fail to attain the minimum compressive strength specified above, shall be removed and replaced with new polyester concrete material by the Contractor, at no additional expense to the Contracting Agency.

6-09.3(14).GR6

### *Checking For Bond*

6-09.3(14).INST1.GR6

Section 6-09.3(14) is supplemented with the following:

6-09.3(14).OPT1.BSP.GB6

**(******)**

**Checking Polyester Concrete For Bond**

After the requirements for curing have been met, the entire overlaid surface shall be sounded by the Contractor, in a manner approved by and in the presence of the Engineer, to ensure total bond of the concrete to the bridge deck. Polyester concrete in unbonded areas shall be removed and replaced with polyester concrete by the Contractor, at no additional expense to the Contracting Agency.

All cracks, except those that are significant enough to require removal as determined by the Engineer, shall be thoroughly filled and sealed with HMWM resin. Cracks 1/16 inch and greater in width shall receive two applications of HMWM resin. Immediately following the application of HMWM resin, the wetted surface shall be coated with sand for abrasive finish.

6-09.4.GR6

## Measurement

6-09.4.INST1.GR6

Section 6-09.4 is supplemented with the following:

6-09.4.OPT2.BSP.GB6

(******)

Polyester concrete overlay will be measured by the square yard of overlay surface actually placed, finished, and cured.

6-09.5.GR6

## Payment

6-09.5.INST2.GR6

Section 6-09.5 is supplemented with the following:

6-09.5.OPT7.BSP.GB6

(******)

“Polyester Concrete Trial Overlay”, lump sum.

The lump sum contract price for “Polyester Concrete Trial Overlay” shall be full pay for performing the work as specified, including establishing a location for the trial overlay, and construction, removal, and disposal of the concrete pad and trial overlay.

6-09.5.OPT8.BSP.GB6

(******)

“Force Account Grinding Polyester Conc. Overlay”, force account.

Grinding polyester concrete overlay as specified will be paid by force account in accordance with Section 1-09.6. For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Force Account Grinding Polyester Conc. Overlay" in the bid proposal to become a part of the total bid by the Contractor.

6-09.5.OPT9.BSP.GB6

(******)

“Polyester Concrete Overlay”, per square yard.

The unit contract price per square yard for “Polyester Concrete Overlay” shall be full pay for performing the work as specified, including placing, finishing, and curing the overlay, and checking for bond.

6-09.5.OPT11.GB6

(April 6, 2015)

"Force Account Forms For Full Depth Deck Repair", force account

Payment for "Force Account Forms For Full Depth Deck Repair" will be by force account in accordance with Section 1-09.6. For the purpose of providing a common proposal to all bidders, the Contracting Agency has entered an amount for the item "Force Account Forms For Full Depth Deck Repair" in the bid proposal to become a part of the total bid by the Contractor.

6-10.GR6

## Concrete Barrier

6-10.3.GR6

## Construction Requirements

6-10.3(5).GR6

### *Temporary Barrier*

6-10.3(5).INST1.GR6

The first paragraph of Section 6-10.3(5) is revised to read:

6-10.3(5).OPT1.GR6

(February 3, 2020)

For temporary barrier, the Contractor shall use precast concrete barrier type F. Temporary concrete barrier type F shall comply with Standard Plan requirements and cross-sectional dimensions, except that: (1) it may be made in other lengths than those shown in the Standard Plan, and (2) it may have permanent lifting holes no larger than 4 inches in diameter or lifting loops.

6-10.3(5).INST2.GR6

The following sentence is inserted before the second to last sentence of the first paragraph of Section 6-10.3(5):

6-10.3(5).OPT2.GR6

(September 30, 2020)

New Type 2 and Type 4 temporary precast concrete barrier shall not be fabricated after December 31, 2019.

6-10.3(6).GR6

***Placing Concrete Barrier***

6-10.3(6).INST1.GR6

Section 6-10.3(6) is supplemented with the following:

6-10.3(6).OPT1.GR6

(March 13, 1995)

Precast barrier intended for permanent placement may be used at temporary locations and will be considered temporary barrier until installed at a permanent location.

Barrier damaged while being used at a temporary location shall not be reused at a permanent location even though it has been repaired, and when no longer required at a temporary location, shall become the property of the Contractor and removed from the project.

6-10.5.GR6

## Payment

6-10.5.INST1.GR6

Section 6-10.5 is supplemented with the following:

6-10.5.OPT1.GR6

(August 1, 2016)

The following paragraph is added immediately following the bid item, “Temporary Barrier”:

The unit contract price per linear foot for "Temporary Barrier" shall include all costs for furnishing, placing, maintaining, replacing, and cleaning barrier delineation.

6-10.5.OPT2.FB6

(March 6, 2000)

All costs in connection with constructing *** $$1$$ *** barrier shall be included in the *** $$2$$ ***.

## 6-12.GR6
## Noise Barrier Walls

6-12.2.GR6
### Materials

6-12.2.INST1.GR6
Section 6-12.2 is supplemented with the following:

6-12.2.OPT1.GB6
***(September 8, 2020)***
***Precast Concrete Noise Barrier Walls***
Grout for encapsulating dowel bars shall conform to Section 6-02.3(26)H.

Grout pads at the bases of precast concrete panels shall conform to Section 6-02.3(20).

Base plates and anchor bolt templates shall conform to ASTM A 36. Base plates shall be corrosion protected by one of the following methods:

1. One coat of paint conforming to Section 9-08.1(2)F.

2. Galvanized after fabrication in accordance with AASHTO M 111.

3. Galvanized after fabrication in accordance with ASTM B 695, Class 5, Type 1.

Anchor rods shall conform to ASTM F 1554 Grade 105. Nuts shall conform to ASTM A 563. Washers shall conform to ASTM F 436, except that plate washers conforming to ASTM A 36 may be used. Nuts and washers, and a minimum of 1'-0" of the exposed end of the anchor rod, shall be corrosion protected by one of the following methods:

1. One coat of paint conforming to Section 9-08.1(2)F.

2. Galvanized after fabrication in accordance with ASTM F2329.

3. Galvanized after fabrication in accordance with ASTM B 695, Class 5, Type 1.

The cone head end, 1'-0" minimum, of Rod A and steel reinforcing Bar B, as identified in the Standard Plans, shall be painted with one coat paint conforming to Section 9-08.1(2)F.

The sealant system for the vertical joint between precast concrete panels shall consist of a polyurethane sealant conforming to Section 9-04.2(3) and a closed cell foam backer rod conforming to ASTM C 1330 Type C. The polyurethane sealant shall be tested for compatibility with the closed cell foam backer road in accordance with Section 9-04.2(3).

6-12.2.OPT2.FB6
***(September 8, 2020)***
***Masonry Noise Barrier Walls***
Concrete masonry units (CMU's) shall conform to ASTM C 90, Grade N, Type 1. Concrete masonry units shall have a density between 100 and 115 pounds per cubic foot. Shrinkage shall not exceed 0.065 percent.

CMU's will be accepted based on a Manufacturer's Certificate of Compliance. The Manufacturer's Certificate of Compliance shall include test results, conducted within the previous twelve months, as required to document compliance with the material requirements specified in these Special Provisions.

The concrete masonry unit faces shall be nominal 8 by 16 inches with thicknesses as specified in the Plans. Concrete masonry unit surface texture and color shall be as follows:

*** $$1$$ ***

Special shapes shall be provided to complete the work as specified in the Plans.

The Contractor shall submit Type 2 Working Drawings consisting of four samples of each type of concrete masonry unit block specified for use on the project.

Grout for concrete masonry units shall conform to ASTM C 476 for fine grout.

Mortar for concrete masonry units shall conform to ASTM C 270, Type S. The color shall be natural gray. The Contractor shall mix the mortar in a mechanical mixer of one sack minimum capacity for a minimum of three minutes after all materials have been added before using the mortar.

Masonry sealer shall be a silane based water repellent selected from one of the following, or an accepted equal:

1. Baracade Silane 40, manufactured by Euclid.
2. MasterProtect H 200, manufactured by Master Builder Solutions.
3. Florok Enviro-Shield 40, manufactured by Chargar.

The Contractor shall submit Type 1 Working Drawings consisting of the manufacturer's recommended masonry sealer application procedure.

The parge coating applied to the top of the masonry wall shall be a waterproof cement-base coating selected from one of the following, or an accepted equal:

1. Conproseal, manufactured by Chargar.
2. MasterSeal 581, manufactured by Master Builder Solutions.
3. Tamoseal, manufactured by Euclid.

The sealant system for the vertical expansion joints shall consist of a polyurethane sealant conforming to Section 9-04.2(3) and a closed cell foam backer rod conforming to Section 9-04.2(3)A.

6-12.3.GR6

## Construction Requirements

6-12.3(1).GR6

### *Submittals*

6-12.3(1).INST1.GR6

Section 6-12.3(1) is supplemented with the following:

6-12.3(1).OPT1.GB6

(August 3, 2015)

The Contractor shall submit a field survey of the existing groundline along each noise barrier wall alignment. The Contractor shall obtain field topographical information for the existing ground within ten feet of the noise barrier wall alignment, except as further limited by the Contracting Agency Right of Way and construction easements for this project. The Contractor shall ensure a vertical survey accuracy of 0.1 foot. The Contractor shall establish horizontal survey control at ten foot intervals, or at six inches differential vertical elevation from the adjacent point on the alignment, whichever is less.

The Contractor shall submit Type 2 Working Drawings consisting of the field survey, including all field notes. If the Engineer confirms that the groundline condition along the noise barrier wall alignment at the time of construction requires revisions to the noise barrier wall details shown in the Plans, the Engineer will provide revised noise barrier wall Plan details to the Contractor within 14 calendar days.

The Contractor shall complete the field survey as a first item of noise barrier wall work.

6-12.3(6).GR6

***Precast Concrete Panel Fabrication and Erection***

6-12.3(6).INST1.GR6

Section 6-12.3(6) is supplemented with the following:

6-12.3(6).OPT1.FB6

(April 5, 2004)

The Contractor shall form a *** $$1$$ *** finish, as specified in the Plans and Section 6-02.3(14) as supplemented in these Special Provisions, on the surface of the precast concrete panel facing the traffic side.

The Contractor shall form a *** $$1$$ *** finish, as specified in the Plans and Section 6-02.3(14) as supplemented in these Special Provisions, on the surface of the precast concrete panel facing the residential area, except as otherwise noted. The surfaces of the pilaster shall receive either a Class 2 surface finish in accordance with Section 6-02.3(14)B, if pigmented sealer is being applied, or a Class 1 surface finish in accordance with Section 6-02.3(14)A, if pigmented sealer is not being applied.

6-12.3(7).GR6

***Masonry Wall Construction***

6-12.3(7).INST1.GR6

Section 6-12.3(7) is supplemented with the following:

6-12.3(7).OPT1.GB6

**(August 3, 2015)**

**Masonry Wall Workmanship**

The Contractor shall construct the masonry wall in accordance with the standards of masonry installation specified in Chapter 21 of the International Building Code.

All masonry wall construction workers shall be thoroughly trained and experienced in the necessary crafts, shall be completely familiar with the specified requirements and methods needed for proper completion of the work, and shall be supervised at the construction site at all times by the supervising journeyman masons.

**Sample Masonry Wall Panel**

The Contractor shall demonstrate workmanship by constructing a 48 inch by 48 inch sample panel of each type of masonry wall and submitting them as Type 2 Working Drawings. The sample panel shall be constructed by the supervising journeyman mason specified by the Contractor. The sample panel shall show the general construction and appearance of the installed concrete masonry units. The Contractor shall construct the sample panel on a transportable platform, and shall relocate the sample panel as specified by the Engineer as construction progresses.

If any of the supervising journeyman masons are replaced during the project, each replacement supervising journeyman mason shall construct another sample panel as a requirement for being accepted by the Engineer for the supervising position.

The Contractor shall construct all masonry walls in accordance with the quality of the sample panel. All masonry wall construction not consistent with the quality of the accepted sample panel shall be reconstructed by the Contractor at no additional cost to the Contracting Agency.

The Contractor shall maintain the sample panel at the project site until all the noise barrier walls are accepted by the Engineer, at which time all sample panels shall become the property of the Contractor and shall be disposed of in accordance with Section 2-02.3.

**General Requirements**

All masonry materials stored on the project site shall be stored off the ground and protected from weather. Concrete masonry units that are chipped, cracked, or spalled on the faces or edges shall not be used.

The Contractor shall lay up all walls in running bond, unless otherwise shown in the Plans, and all walls shall be plumb, level, and true to the lines and dimensions as shown in the Plans. All head and bed joints shall be solidly filled with mortar for a distance in from the face of the wall or unit not less than the thickness of the longitudinal face shells.

**Mortar**

Mortar joints shall be of uniform thickness, ½ inch maximum. The Contractor shall not change coursing or bonding after beginning work on a wall. The Contractor shall tool all joints flush with adjacent surfaces to a dense brushed finish. The split face side of wall shall have a concave smooth joint. The scored split faces shall have a rake joint to match the depth of the scores.

**Temperature**

When air temperatures fall below 40F, grout mixing water and aggregate shall be heated to produce a grout temperature between 40F and 120F. While grouting the concrete masonry units, and for at least 24 hours after grouting the units, the Contractor shall maintain the temperature of the concrete masonry units above

freezing. When atmospheric temperatures fall below 20F, the Contractor shall erect enclosures around the concrete masonry units being grouted, and shall maintain the enclosures for at least 24 hours after grouting the units.

The Contractor shall not perform masonry wall work when the air temperature is below 40F on a falling thermometer, or when it is likely that the temperature will fall below 40F before the mortar has set, except when appropriate provisions have been made to heat and enclose the concrete masonry units and the work area. The Contractor may begin masonry wall work at 34F on a rising thermometer.

**Grouting Cells**

Cells with steel reinforcing bars shall be grouted solid and compacted. Vertical cells with steel reinforcing bars shall be aligned and filled to provide a continuous unobstructed opening of the dimensions indicated, but in no case less than two inches by three inches. The Contractor shall provide cleanout openings at the bottom of all cells to be filled at each stage of grout placement where the height of grout placement is greater than four feet. The Contractor shall remove all overhanging mortar and other obstructions and debris from the insides of the cells being grouted. The Contractor shall seal all cleanouts, after the Engineer has inspected and accepted the cells. The Contractor shall place grout in lifts of eight feet or less.

**Top Course**

The Contractor shall cover the tops of all exposed walls not being worked on with a waterproof membrane, secured in place. All unfinished work shall be stepped back for joining to new work. Toothing shall not be performed.

The top course shall be a solid grouted bond beam unit. The Contractor shall apply a parge coat to the top of the wall.

**Cleaning Exposed Surfaces**

The Contractor shall clean all exposed masonry at the end of each day's work. After final pointing, the Contractor shall remove all mortar spots and droppings. The Contractor shall cut out all defective joints and repoint the joints solidly with mortar. The Contractor shall protect all work from damage, stain, and discoloring.

The Contractor shall perform additional final cleaning prior to applying the pigmented sealer. The Contractor shall remove all large particles of mortar before wetting the wall. The Contractor shall saturate the concrete masonry units with clean water and shall flush all loose mortar and dirt from the wall surface. The Contractor shall scrub the wall surface with a stiff brush and a masonry cleaning solution, in accordance with the cleaning solution manufacturer's instructions. The Contractor shall thoroughly wash the wall surface of all cleaning solution, dirt, and mortar crumbs with clean pressurized water. The Contractor shall not use acid cleaning solutions to clean the wall surface. The Contractor shall protect all wall surfaces adjacent to the sections of wall being cleaned.

**Masonry Sealer**

All exposed masonry surfaces shall receive two coats of masonry sealer, applied to either one foot minimum below finish ground line or to the base of the bottom row of masonry blocks, whichever is higher, from one of the masonry sealer products specified in Section 6-12.2 as supplemented in these Special Provisions. The

masonry sealer shall be applied in accordance with the manufacturer's recommendations.

6-12.5.GR6

## Payment

6-12.5.INST1.GR6

Section 6-12.5 is supplemented with the following:

6-12.5.OPT1.GB6

(April 5, 2004)

All costs in connection with performing the field survey of the existing groundline of the noise barrier wall alignment, and submitting the field survey to the Engineer, shall be included in the lump sum contract price for "Structure Surveying".

6-13.GR6

## Structural Earth Walls

6-13.2.GR6

## Materials

6-13.2.INST1.GR6

Section 6-13.2 is supplemented with the following:

6-13.2.OPT1.GB6

***(June 4, 2020)***

***Welded Wire Faced Structural Earth Wall Materials***

**Welded Wire Mats and Backing Mats**

Welded wire fabric for welded wire mats, welded wire form facing units, and backing mats shall conform to AASHTO M 32, and shall be fabricated from smooth wire fabric conforming to AASHTO M 55.

The minimum clear opening dimension of the backing mat, or the combination of welded wire form facing unit with geosynthetic wall facing wrap, shall not exceed the minimum particle size of the wall facing backfill as specified below.

Welded wire fabric for welded wire mats, welded wire form facing units, and backing mats shall be galvanized after fabrication in accordance with either ASTM A 641 (two ounces minimum per square foot) or AASHTO M 111. All damage to the galvanizing shall be repaired with one coat of paint conforming to Section 9-08.1(2)B.

**Backfill for Welded Wire Faced Structural Earth Wall**

The coarse, granular material used for the wall facing backfill placed immediately behind the wall face, as shown in the Plans, shall conform to the following gradation requirements:

1. The minimum particle size shall be no less than the width of the minimum opening dimension in the backing mat or the geosynthetic wall facing wrap.

2. The maximum particle size shall be no greater than six inches for welded wire reinforced walls, and no greater than four inches for geosynthetic reinforced walls.

## Proprietary Materials

### Hilfiker Welded Wire Retaining Wall (WWW) System

Welded wire fabric wire size for backing mats shall be W2.5 minimum for wall face backing layers of 1'-6" maximum thickness, and shall be W2.5 minimum for wall face backing layers between 1'-6" and 2'-0".

Construction geotextile for wall facing shall conform to the requirements in Section 9-33.1 for Construction Geotextile for Underground Drainage, Moderate Survivability, Class A.

### Tensar Wire Form Retaining Wall System

Wire support struts shall conform to AASHTO M 32, and shall be galvanized after fabrication in accordance with either ASTM A 641 (two ounces minimum per square foot) or AASHTO M 111. All damage to the galvanizing shall be repaired with one coat of paint conforming to Section 9-08.1(2)B.

Geosynthetic connection rods shall be manufactured from high-density polyethylene with either fiberglass inclusions or oriented polypropylene, as recommended by Tensar Earth Technologies, Inc.

Geosynthetic separating the wall facing backfill from the welded wire faced structural earth wall backfill shall conform to the requirements in Section 9-33.1 for Construction Geotextile for Underground Drainage, Moderate Survivability, Class A.

#### Tensar Geogrid Materials

Geogrid reinforcement and geosynthetic wall facing wrap shall conform to Section 9-33.1, and shall be a product listed in Appendix D of the current WSDOT Qualified Products List (QPL). The values of $T_{al}$ and $T_{ult}$ as listed in the QPL for the products used shall meet or exceed the values required for the wall manufacturer's reinforcement design as specified in the structural earth wall design calculation and working drawing submittal.

The minimum ultimate tensile strength of the geogrid shall be a minimum average roll value (the average test results for any sampled roll in a lot shall meet or exceed the values shown in Appendix D of the current WSDOT QPL). The strength shall be determined in accordance with ASTM D 6637 for multi-rib specimens.

For geogrid reinforcement and geosynthetic wall facing wrap, the ultraviolet (UV) radiation stability, in accordance with ASTM D 4355, shall be a minimum of 70 percent strength retained after 500 hours in the weatherometer.

The longitudinal (i.e., in the direction of loading) and transverse (i.e., parallel to the wall or slope face) ribs that make up the geogrid shall be perpendicular to one another.

The Engineer will take random samples of the geogrid materials at the job site. Approval of the geogrid materials will be based on testing of samples from each lot. A "lot" shall be defined as all geogrid rolls sent to the project

site produced by the same manufacturer during a continuous period of production at the same manufacturing plant having the same product name. The Contracting Agency will require 14 calendar days maximum for testing the samples after their arrival at the WSDOT Materials Laboratory in Tumwater, WA.

The geogrid samples will be tested for conformance to the specified material properties. If the test results indicate that the geogrid lot does not meet the specified properties, the roll or rolls which were samples will be rejected. Two additional rolls for each roll tested which failed from the lot previously tested will then be selected at random by the Engineer for sampling and retesting. If the retesting shows that any of the additional rolls tested do not meet the specified properties, the entire lot will be rejected. If the test results from all the rolls retested meet the specified properties, the entire lot minus the roll(s) which failed will be accepted.

All geogrid materials which have defects, deterioration, or damage, as determined by the Engineer, will be rejected. All rejected geogrid materials shall be replaced at no expense to the Contracting Agency.

Except as otherwise noted, geogrid identification, storage and handling shall conform to the requirements specified in Section 2-12.2. The geogrid materials shall not be exposed to temperatures less than -20°F and greater than 122°F.

6-13.2.OPT2.GB6

***(January 2, 2018)***

***Precast Concrete Panel Faced Structural Earth Wall Materials***

**General Materials**

**Concrete Leveling Pad**

Leveling pad concrete shall be commercial concrete in accordance with Section 6-02.3(2)B.

**Proprietary Materials**

**ARES Modular Panel Wall System**

**Tensar Geogrid Materials**

Geogrid reinforcement shall conform to Section 9-33.1, and shall be a product listed in Appendix D of the current WSDOT Qualified Products List (QPL). The values of $T_{al}$ and $T_{ult}$ as listed in the QPL for the products used shall meet or exceed the values required for the wall manufacturer's reinforcement design as specified in the structural earth wall design calculation and working drawing submittal.

The minimum ultimate tensile strength of the geogrid shall be a minimum average roll value (the average test results for any sampled roll in a lot shall meet or exceed the values shown in Appendix D of the current WSDOT QPL). The strength shall be determined in accordance with ASTM D 6637 for multi-rib specimens.

The ultraviolet (UV) radiation stability, in accordance with ASTM D 4355, shall be a minimum of 70 percent strength retained after 500 hours in the weatherometer.

The longitudinal (i.e., in the direction of loading) and transverse (i.e., parallel to the wall or slope face) ribs that make up the geogrid shall be perpendicular to one another. The maximum deviation of the cross-rib from being perpendicular to the longitudinal rib (skew) shall be no more than 1 inch in 5 feet of geogrid width. The maximum deviation of the cross-rib at any point from a line perpendicular to the longitudinal ribs located at the cross-rib (bow) shall be 0.5 inches.

The Engineer will take random samples of the geogrid materials at the job site. Approval of the geogrid materials will be based on testing of samples from each lot. A "lot" shall be defined as all geogrid rolls sent to the project site produced by the same manufacturer during a continuous period of production at the same manufacturing plant having the same product name. The Contracting Agency will require 14 calendar days maximum for testing the samples after their arrival at the WSDOT Materials Laboratory in Tumwater, WA.

The geogrid samples will be tested for conformance to the specified material properties. If the test results indicate that the geogrid lot does not meet the specified properties, the roll or rolls which were samples will be rejected. Two additional rolls for each roll tested which failed from the lot previously tested will then be selected at random by the Engineer for sampling and retesting. If the retesting shows that any of the additional rolls tested do not meet the specified properties, the entire lot will be rejected. If the test results from all the rolls retested meet the specified properties, the entire lot minus the roll(s) which failed will be accepted.

All geogrid materials which have defects, deterioration, or damage, as determined by the Engineer, will be rejected. All rejected geogrid materials shall be replaced at no expense to the Contracting Agency.

Except as otherwise noted, geogrid identification, storage and handling shall conform to the requirements specified in Section 2-12.2. The geogrid materials shall not be exposed to temperatures less than –20F and greater than 122F.

Rubber bearing pads shall be a type and grade as recommended by Tensar Earth Technologies, Inc.

Geosynthetic joint cover for all horizontal and vertical joints shall be a non-woven geosynthetic as recommended by Tensar Earth Technologies, Inc. Adhesive used to attach the geosynthetic to the rear of the precast concrete facing panel shall be as recommended by Tensar Earth Technologies, Inc.

**Reinforced Earth Wall**

Reinforcing strips shall be shop fabricated from hot rolled steel conforming to ASTM A 572 Grade 65 or approved equal, and shall be galvanized after fabrication in accordance with AASHTO M 111. Damage to the galvanizing shall be repaired with one coat of paint conforming to Section 9-08.1(2)B.

Bolts and nuts shall conform to Section 9-06.5(3), and shall be galvanized in accordance with ASTM F 2329.

Rubber bearing pads shall be a type and grade as recommended by the Reinforced Earth Company.

Vertical joint filler between panels, when specified in the structural earth wall working drawings, shall be two inch square, flexible open cell polyether foam strips, Grade UU-34, as recommended by the Reinforced Earth Company.

Filter fabric joint cover for all horizontal and vertical joints, when specified in the structural earth wall working drawings, shall be a pervious woven polypropylene filter fabric as recommended by the Reinforced Earth Company. Adhesive used to attach the fabric material to the rear of the precast concrete facing panel shall be as recommended by the Reinforced Earth Company.

**Reinforced Soil Wall**

Reinforcing mesh shall be shop fabricated of cold drawn steel wire conforming to AASHTO M 32, and shall be welded into finished mesh fabric conforming to AASHTO M 55. Reinforcing mesh shall be galvanized after fabrication in accordance with AASHTO M 111. Damage to the galvanizing shall be repaired with one coat of paint conforming to Section 9-08.1(2)B.

**MSE Plus Wall**

Pins connecting the soil reinforcing mesh to the precast concrete panels shall conform to AASHTO M 32 and shall be galvanized after fabrication in accordance with AASHTO M 111. Damage to the galvanizing shall be repaired with one coat of paint conforming to Section 9-08.1(2)B.

Bearing pads shall be serrated high-density polyethylene (HDPE) copolymer pads as recommended by SSL, LLC.

Filter fabric joint cover for all horizontal and vertical joints shall be non-woven geosynthetic conforming to AASHTO M 288. Adhesive used to bond the geosynthetic to the rear of the precast concrete facing panel shall be as recommended by SSL, LLC.

6-13.2.OPT2(A).GB6

**(August 3, 2015)**

**Lock + Load Retaining Wall System**

Stainless steel wire and wire rods shall conform to ASTM A 580.

Stainless steel bars, plates and shapes shall conform to ASTM A 276 Type 304.

The maximum particle size of the backfill material within 1’-6” of the back face of the precast concrete facing panel shall not exceed 3/4 inches.

6-13.2.OPT3.GB6

***(January 2, 2018)***

***Concrete Block Faced Structural Earth Wall Materials***

**General Materials**

**Concrete Block**

Acceptability of the blocks will be determined based on the following:

1. Visual inspection.

2. Compressive strength tests, conforming to Section 6-13.3(4).

3. Water absorption tests, conforming to Section 6-13.3(4).

4. Manufacturer's Certificate of Compliance in accordance with Section 1-06.3.

5. Freeze-thaw tests conducted on the lot of blocks produced for use in this project, as specified in Section 6-13.3(4).

6. Copies of results from tests conducted on the lot of blocks produced for this project by the concrete block fabricator in accordance with the quality control program required by the structural earth wall manufacturer.

The blocks shall be considered acceptable regardless of curing age when compressive test results indicate that the compressive strength conforms to the 28-day requirements, and when all other acceptability requirements specified above are met.

Testing and inspection of dry cast concrete blocks shall conform to ASTM C 140, and shall include block fabrication plant approval by WSDOT prior to the start of block production for this project.

**Mortar**

Mortar shall conform to ASTM C 270, Type S, with an integral water repellent admixture as accepted by the Engineer. The amount of admixture shall be as recommended by the admixture manufacturer. To ensure uniform color, texture, and quality, all mortar mix components shall be obtained from one manufacturer for each component, and from one source and producer for each aggregate.

**Geosynthetic Soil Reinforcement**

Geogrid reinforcement shall conform to Section 9-33.1, and shall be a product listed in Appendix D of the current WSDOT Qualified Products List (QPL). The values of $T_{al}$ and $T_{ult}$ as listed in the QPL for the products used shall meet or exceed the values required for the wall manufacturer's reinforcement design as specified in the structural earth wall design calculation and working drawing submittal.

The minimum ultimate tensile strength of the geogrid shall be a minimum average roll value (the average test results for any sampled roll in a lot shall meet or exceed the values shown in Appendix D of the current WSDOT QPL).

The strength shall be determined in accordance with ASTM D 6637, for multi-rib specimens.

The ultraviolet (UV) radiation stability, in accordance with ASTM D 4355, shall be a minimum of 70 percent strength retained after 500 hours in the weatherometer.

The longitudinal (i.e., in the direction of loading) and transverse (i.e., parallel to the wall or slope face) ribs that make up the geogrid shall be perpendicular to one another. The maximum deviation of the cross-rib from being perpendicular to the longitudinal rib (skew) shall be no more than 1 inch in 5 feet of geogrid width. The maximum deviation of the cross-rib at any point from a line perpendicular to the longitudinal ribs located at the cross-rib (bow) shall be 0.5 inches.

The gap between the connector and the bearing surface of the connector tab cross-rib shall not exceed 0.5 inches. A maximum of 10 percent of connector tabs may have a gap between 0.3 inches and 0.5 inches. Gaps in the remaining connector tabs shall not exceed 0.3 inches.

The Engineer will take random samples of the geogrid materials at the job site. Acceptance of the geogrid materials will be based on testing of samples from each lot. A “lot” shall be defined as all geogrid rolls sent to the project site produced by the same manufacturer during a continuous period of production at the same manufacturing plant having the same product name. The Contracting Agency will require 14 calendar days maximum for testing the samples after their arrival at the WSDOT Materials Laboratory in Tumwater, WA.

The geogrid samples will be tested for conformance to the specified material properties. If the test results indicate that the geogrid lot does not meet the specified properties, the roll or rolls which were sampled will be rejected. Two additional rolls for each roll tested which failed from the lot previously tested will then be selected at random by the Engineer for sampling and retesting. If the retesting shows that any of the additional rolls tested do not meet the specified properties, the entire lot will be rejected. If the test results from all the rolls retested meet the specified properties, the entire lot minus the roll(s) which failed will be accepted.

All geogrid materials which have defects, deterioration, or damage, as determined by the Engineer, will be rejected. All rejected geogrid materials shall be replaced at no expense to the Contracting Agency.

Except as otherwise noted, geogrid identification, storage and handling shall conform to the requirements specified in Section 2-12.2. The geogrid materials shall not be exposed to temperatures less than –20F and greater than 122F.

**Drainage Geosynthetic Fabric**

Drainage geosynthetic fabric shall be a non-woven geosynthetic conforming to the requirements in Section 9-33.1, for Construction Geotextile for Underground Drainage, Moderate Survivability, Class B.

## Proprietary Materials

### Allan Block Wall

Wall backfill material placed in the open cells of the precast concrete blocks and placed in the one to three foot zone immediately behind the precast concrete blocks shall be crushed granular material conforming to Section 9-03.9(3).

### GEOWALL Structural Earth Retaining Wall System

Connection pins shall be fiberglass conforming to the requirements of Basalite Concrete Products, LLC.

### KeyGrid Wall

KeyStone connection pins shall be fiberglass conforming to the requirements of Keystone Retaining Wall Systems, Inc.

### Landmark Retaining Wall

Lock bars shall be made of a rigid polyvinyl chloride polymer conforming to the following requirements:

| Property | Value | Specification |
|---|---|---|
| Specific Gravity | 1.4 minimum | ASTM D 792 |
| Tensile Strength at yield | 2,700 psi minimum | ASTM D 638 |

Lock bars shall remain sealed in their shipping containers until placement into the wall. Lock bars exposed to direct sunlight for a period exceeding two months shall not be used for construction of the wall.

### Mesa Wall

Block connectors for block courses with geogrid reinforcement shall be glass fiber reinforced high-density polypropylene conforming to the following minimum material specifications:

| Property | Specification | Value |
|---|---|---|
| Polypropylene | ASTM D 4101 Group 1 Class 1 Grade 2 | 73 ± 2 percent |
| Fiberglass Content | ASTM D 2584 | 25 ± 3 percent |
| Carbon Black | ASTM D 4218 | 2 percent minimum |
| Specific Gravity | ASTM D 792 | 1.08 ± 0.04 |
| Tensile Strength at yield | ASTM D 638 | 8,700 ± 1,450 psi |
| Melt Flow Rate | ASTM D 1238 | 0.37 ± 0.16 ounces/10 min. |

Block connectors for block courses without geogrid reinforcement shall be glass fiber reinforced high-density polyethylene (HDPE) conforming to the following minimum material specifications:

| Property | Specification | Value |
|---|---|---|
| HDPE | ASTM D 1248 Type III Class A Grade 5 | 68 ± 3 percent |
| Fiberglass Content | ASTM D 2584 | 30 ± 3 percent |
| Carbon Black | ASTM D 4218 | 2 percent minimum |
| Specific Gravity | ASTM D 792 | 1.16 ± 0.06 |
| Tensile Strength | ASTM D 638 | |

| | | |
|---|---|---|
| at yield | | 8,700 ± 725 psi |
| Melt Flow Rate | ASTM D 1238 | 0.11 ± 0.07 ounces/10 min. |

6-13.3.GR6

## Construction Requirements

6-13.3.INST1.GR6

Section 6-13.3 is supplemented with the following:

6-13.3.OPT1.GB6

***(April 4, 2011)***

***Welded Wire Faced Structural Earth Wall***

Welded wire faced structural earth walls shall be constructed of only one of the following wall systems.

The Contractor shall make arrangements to purchase the welded wire mats, welded wire form facing units, geogrid reinforcement, backing mats, facing elements, fasteners, geosynthetic connection rods, construction geotextile for wall facing, and all necessary incidentals from the source identified for each wall system:

Hilfiker Welded Wire Retaining Wall (WWW) System

Hilfiker is a registered trademark of Hilfiker Retaining Walls.

Hilfiker Retaining Walls
1902 Hilfiker Lane
Eureka, CA 95503-5711
(707) 443-5093
FAX (707) 443-2891
www.hilfiker.com

Tensar Wire Form Retaining Wall System

Tensar is a registered trademark of Tensar Corporation

Tensar Corporation
2500 Northwinds Parkway Suite 500
Atlanta, GA 30009
(770) 344-2090
FAX (678) 281-8546
www.tensarcorp.com

6-13.3.OPT2.GB6

***(January 7, 2019)***

***Precast Concrete Panel Faced Structural Earth Wall***

Precast concrete panel faced structural earth walls shall be constructed of only one of the following wall systems. The Contractor shall make arrangements to purchase the precast concrete panels, soil reinforcement, attachment devices, joint filler, and all necessary incidentals from the source identified with each wall system:

ARES Modular Panel Wall System

ARES Modular Panel Wall System is a registered trademark of Tensar Corporation

Tensar Corporation
2500 Northwinds Parkway Suite 500
Atlanta, GA 30009
(770) 344-2090
FAX (678) 281-8546
www.tensarcorp.com

MSE Plus Wall

MSE Plus Wall is a registered trademark of SSL, LLC

SSL, LLC
4740 Scotts Valley Drive Suite E
Scotts Valley, CA 95066
(831) 430-9300
FAX (831) 430-9340
www.mseplus.com

Reinforced Earth Wall

Reinforced Earth is a registered trademark of the Reinforced Earth Company.

The Reinforced Earth Company
9025 East Kenyon Ave. Suite 200
Denver, CO 80237
(303) 790-1481
FAX (303) 790-1461
www.reinforcedearth.com

Reinforced Soil Wall

Reinforced Soil is a registered trademark of Hilfiker Retaining Walls.

Hilfiker Retaining Walls
1902 Hilfiker Lane
Eureka, CA 95503-5711
(707) 443-5093
FAX (707) 443-2891
www.hilfiker.com

6-13.3.OPT2(A).GB6

(August 3, 2015)

Lock + Load Retaining Wall System

Lock + Load is a registered trademark of Lock + Load Retaining Walls, Ltd.

Lock + Load Retaining Walls, Ltd.
1681 Chestnut Street Suite 400
Vancouver, BC V6J 4M6 Canada
(604) 732-9990
FAX: (604) 676-2705
www.lock-load.com

6-13.3.OPT3.GB6

***(January 2, 2018)***

***Concrete Block Faced Structural Earth Wall***

Concrete block faced structural earth walls shall be constructed of only one of the following wall systems. The Contractor shall make arrangements to purchase the concrete blocks, soil reinforcement, attachment devices, joint filler, and all necessary incidentals from the source identified with each wall system:

Allan Block Wall

Allan Block Wall is a registered trademark of the Allan Block Corporation

Allan Block Corporation
7424 W 78th Street
Bloomington, MN 55439
(800) 899-5309
FAX (952) 835-0013
www.allanblock.com

GEOWALL Structural Earth Retaining Wall System

GEOWALL is a registered trademark of Basalite Concrete Products, LLC

Basalite Concrete Products LLC
3299 International Place
Du Pont, WA 98327-7707
(800) 964-9424
FAX: (253) 964-5005
www.basalite.com

Redi-Rock Positive Connection System

Redi-Rock Positive Connection System is a registered trademark of Redi-Rock International, LLC

Redi-Rock International, LLC
05481 US 31 South
Charlevoix, MI 49720
(866) 222-8400
FAX (231) 237-9521
www.redi-rock.com

Mesa Wall

Mesa Wall is a registered trademark of Tensar Corporation

Tensar Corporation
2500 Northwinds Parkway Suite 500
Atlanta, GA 30009
(770) 334-2090
FAX (678) 281-8546
www.tensarcorp.com

Landmark Retaining Wall System

Landmark Retaining Wall System is a registered trademark of Anchor Wall Systems, Inc.

Anchor Wall Systems, Inc.
5959 Baker Road, Suite 390
Minnetonka, MN 55345-5996
(877) 295-5415
FAX (952) 979-8454
www.anchorwall.com

KeyGrid Wall
KeyGrid is a registered trademark of Keystone Retaining Wall Systems, Inc.

Keystone Retaining Wall Systems, Inc.
4444 West 78th Street
Minneapolis, MN 55435
(800) 747-8971
FAX (952) 897-3858
www.keystonewalls.com

6-13.3(2).GR6

***Submittals***

6-13.3(2).INST1.GR6

Section 6-13.3(2) is supplemented with the following:

6-13.3(2).OPT1.FB6

(January 3, 2011)

The following geotechnical design parameters shall be used for the design of the structural earth wall(s):

Wall Name or No.: *** $$1$$ ***

| Soil Properties | Wall Backfill | Retained Soil | Foundation Soil |
|---|---|---|---|
| Unit Weight (pcf) | ***$$2$$*** | ***$$3$$*** | ***$$4$$*** |
| Friction Angle (deg) | ***$$5$$*** | ***$$6$$*** | ***$$7$$*** |
| Cohesion (psf) | ***$$8$$*** | ***$$9$$*** | ***$$10$$*** |

For the Service Limit State, the wall shall be designed to accommodate a differential settlement of *** $$11$$ *** per 100 feet of wall length.

For the Extreme Event I Limit State, the wall shall be designed for a horizontal seismic acceleration coefficient $k_h$ of *** $$12$$ *** g and a vertical seismic acceleration coefficient $k_v$ of *** $$13$$ *** g.

6-13.3(4).GR6

***Precast Concrete Facing Panel and Concrete Block Fabrication***

6-13.3(4).INST1.GR6

Section 6-13.3(4) is supplemented with the following:

6-13.3(4).OPT1.GB6

**(April 3, 2017)**

**Specific Fabrication Requirements for Precast Concrete Panel Faced Structural Earth Walls**

**ARES Modular Panel Wall System**

The concrete mix for precast concrete facing panels shall be a Contractor mix design in accordance with Section 6-02.3(2)A, producing a minimum compressive strength at 28 days of 4,500 psi. The Contractor mix design for precast concrete facing panels shall not include Type III cement unless otherwise allowed by the Engineer.

6-13.3(4).OPT1(A).GB6

**(August 3, 2015)**

**Lock + Load Retaining Wall System**

Concrete for precast concrete panels and counterfort members shall conform to ASTM C 1116 Type III, with cement and aggregate gradation as recommended by Lock + Load Retaining Walls, Ltd, slump and air content as specified in this Section, and a minimum compressive strength at 28 days of 5,500 psi. The fiber reinforcement shall be mixed in the concrete at a minimum reinforcement ratio of 3.0 pounds per cubic yard and as specified by Lock + Load Retaining Walls, Ltd.

Full size precast concrete facing panels for Lock + Load retaining walls shall be 2’-8" wide and 1’-4” tall.

Precast concrete counterfort members shall be fabricated, handled, stored, and shipped in accordance with the requirements specified in this Section for precast concrete facing panels.

6-13.3(5).GR6

***Precast Concrete Facing Panel and Concrete Block Erection***

6-13.3(5).INST1.GR6

Section 6-13.3(5) is supplemented with the following:

6-13.3(5).OPT2.GB6

**(April 2, 2012)**

**Specific Erection Requirements for Precast Concrete Block Faced Structural Earth Walls**

**Landmark Retaining Wall**

When placing each course of concrete blocks, the Contractor shall pull the blocks towards the front face of the wall until the male key of the bottom face of the upper block contacts and fits into the female key of the top face of the supporting block below.

A maximum gap of 1/8-inch is allowed between adjacent concrete blocks, except for the base course set of concrete blocks placed on the leveling pad. A maximum gap of 1-inch is allowed between adjacent base course concrete blocks, provided geosynthetic reinforcement for drains is in place over the gap at the back face of the concrete blocks.

Lock bars shall be installed in the female key of the top face of all concrete block courses receiving geogrid reinforcement. Gaps between adjacent lock bars in the key shall not exceed 3-inches. The lock bar shall be installed flat side up, with the angled side to the back of the concrete block, as shown in the shop drawings.

Geogrid reinforcement shall be placed and connected to concrete block courses specified to receive soil reinforcement. The leading edge of the geogrid reinforcement shall be maintained within 1-inch of the front face of the supporting concrete blocks below. Geogrid panels shall be abutted for 100 percent backfill coverage with less than a 4-inch gap between adjacent panels.

Backfill shall be placed and compacted level with the top of each course of concrete blocks, and geogrid reinforcement placed and connected to concrete block courses specified to receive soil reinforcement, before the Contractor may continue placing the next course of concrete blocks.

**Mesa Wall**

For all concrete block courses receiving geogrid reinforcement, the fingers of the block connectors shall engage the geogrid reinforcement apertures, both in the connector slot in the block, and across the block core. For all concrete block courses with intermittent geogrid coverage, a #3 steel reinforcing bar shall be placed, butt end to butt end, in the top block groove, with the butt ends being placed at a center of a concrete block.

6-13.3(7).GR6

***Backfill***

6-13.3(7).INST1.GR6

Section 6-13.3(7) is supplemented with the following:

6-13.3(7).OPT1.GB6

**(August 3, 2015)**

**Specific Backfill Requirements for Precast Concrete Panel Faced Structural Earth Walls**

**Lock + Load Retaining Wall System**

The Contractor shall begin placement and compaction of backfill above the tail of the counterfort member first, then towards the back face of the precast concrete facing panel, followed by placement and compaction of the remainder of the backfill layer. The zone for compaction by plate compactor equipment only, with no soil density testing requirement, shall be within 1’-4” of the back face of the precast concrete facing panel.

## 6-14.GR6
## Geosynthetic Retaining Walls

6-14.2.GR6

### Materials

6-14.2(9-33.2(2)).GR6

***Geosynthetic Properties For Retaining Walls and Reinforced Slopes***

Section 9-33.2(2) is supplemented with the following:

6-14.2(9-33.2(2)).OPT1.FB6

**(August 7, 2006)**

**Geosynthetic Properties For Temporary Geosynthetic Retaining Walls**

Wide strip geosynthetic strengths provided in Table 10 are minimum average roll values. The average test results for any sampled roll in a lot shall meet or exceed the values shown in the table. These wide strip strength requirements apply only in the geosynthetic direction perpendicular to the wall face. The test procedures specified in the table are in conformance with the most recently approved ASTM geosynthetic test procedures, except for geosynthetic sampling and specimen conditioning, which are in accordance with WSDOT Test Methods 914 and 915, respectively.

**Table 10:** Wide strip tensile strength required for the geosynthetic reinforcement used in geosynthetic retaining walls.

| Wall Location | Vertical Spacing of Reinforcement Layers | Reinforcement Layer Distance from Top of Wall | Minimum Tensile Strength Based on ASTM D4595 for Geotextiles and ASTM D6637 for Geogrids |
|---|---|---|---|
| ***$$1$$*** | ***$$2$$*** | ***$$3$$*** | ***$$4$$*** |

6-15.GR6

## Soil Nail Walls

6-15.2.GR6

### Materials

6-15.2.INST1.GR6

Section 6-15.2 is supplemented with the following:

6-15.2.OPT1.GB6

***(August 3, 2015)***

***Permanent Soil Nail Materials and Components***

A soil nail system is a structural system used to transfer tensile loads to soil. A soil nail system may also be specified in the Plans as a nail. A soil nail system includes all steel reinforcing bars, anchorage devices, grout, coatings, sheathings and couplers if used.

The Contractor shall either select a soil nail system from the Qualified Products List, or submit a Type 2 Working Drawing consisting of the following information:

1. Catalogue cuts or Manufacturer's Certificates of Compliance for centralizers and grout admixtures.

2. Manufacturer's Certificate of Compliance for bearing plates, nuts, steel reinforcing bars, tendon encapsulation tubing, and welded shear studs. The Manufacturer's Certificate of Compliance for the nuts shall confirm compliance with the specified strength requirements.

If the Contractor selects a permanent soil nail system from the Qualified Products List (QPL), the Contractor shall submit a Type 1 Working Drawing consisting of a certificate from the permanent soil nail system fabricator/supplier confirming that the material specifications of the permanent soil nail system components as furnished conform to those specified in the QPL.

**Component Material Specifications**

Bearing plates shall conform to ASTM A 36, ASTM A 529, ASTM A 536, ASTM A 572, ASTM A 588, or AASHTO M 270.

Centralizers shall be fabricated from plastic, steel, or material which is nondetrimental to the prestressing steel. Wood shall not be used.

Grout shall be a neat cement grout or a sand-cement grout conforming to Section 9-20.3(4). The compressive strength for the grout shall be as required by the soil nail manufacturer. Grout components shall be as follows:

Admixtures shall conform to the requirements of Section 9-23.6. Expansive admixtures and accelerators will not be permitted. Admixtures shall be mixed in accordance with the manufacturer's recommendations.

Aggregates shall conform to the requirements of Section 9-03.

Cement shall conform to the requirements of Section 9-01, and shall not contain lumps or other indications of hydration.

Nuts shall conform to either ASTM A 563, Grade B, Hexagonal, ASTM A 536 Grade 100-70-03, ASTM A 29 Grades 12L14, 1215, or C1045, AASHTO M 169 Grades 1117 or 12L14, ASTM A 513 Type 5 Grade 1026, ASTM A 521 Class CF, ASTM A 897 Grade 125/80/10M, or ASTM A 519 Grade 1026, and shall be capable of developing 100 percent of the GUTS of the soil nail. The nuts shall be fitted, where necessary, with a special wedge washer or spherical seat such that the nut bears uniformly on the bearing plate.

Washers shall conform to either ASTM F 436, ASTM A 536 Grade 80-55-06 or ASTM A 47 Grade 32510.

Soil nails shall be deformed steel reinforcing bars conforming to AASHTO M 31, Grade 60 minimum, and Section 9-07.2. All soil nails, except those specified in the Plans to be encapsulated, shall be epoxy-coated in accordance with Sections 6-02.3(24)H and 9-07.3. The soil nails shall be of the type and size specified in the Plans. The soil nails shall not be spliced. The soil nails shall be threaded at the bearing plate end a minimum of six inches. The threading shall be continuous spiral deformed ribbing. Alternatively, threads may be cut into the soil nail if the bar size is increased to the next larger size from the size specified in the Plans at no additional cost to the Contracting Agency.

Tendon encapsulation, when specified in the Plans to provide additional corrosion protection, shall be fabricated from one of the following:

1. High density corrugated polyethylene (PE) tubing conforming to the requirements of ASTM D 3350 Class PE335520C or Class PE335400C,

ASTM D 1248, and AASHTO M 252 and having a nominal wall thickness of 40 mils.

2. Corrugated, polyvinyl chloride (PVC) tubing conforming to ASTM D 1784, Class 13464-B, and having a nominal wall thickness of 40 mils.

The soil nails shall be centralized within the sheathing with a minimum 0.2 inch grout cover over the soil nail inside the sheath. The encapsulation shall be constructed at the factory under controlled conditions. Field construction of the encapsulation will not be permitted.

Welded shear studs shall conform to Section 9-06.15, and shall be welded in accordance with Section 6-03.3(25).

6-15.3.GR6

## Construction Requirements

6-15.3(8).GR6

### *Soil Nail Testing And Acceptance*

6-15.3(8)A.GR6

#### Verification Testing

6-15.3(8)A.INST1.GR6

Section 6-15.3(8)A is supplemented with the following:

6-15.3(8)A.OPT1.FB6

(April 5, 2004)

Soil nail verification tests shall be conducted as follows:

| Verification Test Limits | Soil Nail Row | Number of Successful Verification Tests Required |
|---|---|---|
| ***$$1$$*** | ***$$2$$*** | ***$$3$$*** |

6-17.GR6

## Permanent Ground Anchors

6-17.1.GR6

## Description

6-17.1.INST1.GR6

Section 6-17.1 is supplemented with the following:

6-17.1.OPT1.GB6

(January 7, 2013)

This work also consists of furnishing, field locating, installing, stressing and testing rock bolts and rock dowels.

6-17.2.GR6

## Materials

6-17.2.INST1.GR6
Section 6-17.2 is supplemented with the following:

6-17.2.OPT1.GB6

***(September 8, 2020)***

***Permanent Ground Anchor Materials and Components***

A permanent ground anchor system is a structural system used to transfer tensile loads to soil or rock. A permanent ground anchor system may also be specified in the Plans as an anchor, a ground anchor, or a tieback. A permanent ground anchor system includes all prestressing steel, anchorage devices, grout, coatings, sheathings and couplers if used.

The Contractor shall either select a permanent ground anchor system from the Qualified Products List or submit a Type 2 Working Drawing consisting of the following information:

1. Catalogue cuts or Manufacturer's Certificates of Compliance for anchorage covers, bond breaker, centralizers, corrosion inhibiting grease, end caps, grout admixtures, and strand tendon spacers.

2. Manufacturer's Certificates of Compliance for anchor heads, anchor head wedges, bar tendon nuts, bar tendon couplers, tendon encapsulation tubing, trumpet assemblies, and bar tendons or strand tendons. The Manufacturer's Certificates of Compliance for the anchorhead wedges (grippers), and bar tendon nuts and couplers, shall confirm compliance with the specified strength requirements.

If the Contractor selects a permanent ground anchor system from the Qualified Products List (QPL), the Contractor shall submit a Type 1 Working Drawing consisting of a certificate from the permanent ground anchor system fabricator/supplier confirming that the material specifications of the permanent ground anchor system components as furnished conform to those specified in the QPL.

**Component Material Specifications**

Anchorage covers shall have a minimum thickness of 0.20 inches and shall conform to either ASTM A 53 for pipe, or ASTM A 500 for tubing, or ASTM A 36, ASTM A 529, ASTM A 572, ASTM A 588, or AASHTO M 270 for fabricated steel.

Anchorheads shall conform to either ASTM A 36, AASHTO M 169 Grades 1040 or 1045, ASTM A 521 Grade 1045, ASTM A 576 Grade 1045, or ASTM A 536 Grade 80-55-06.

Bearing plates shall conform to either ASTM A 36, ASTM A 572, ASTM A 588, AASHTO M 270, ASTM A 529, or ASTM A 536.

Anchorhead wedges (grippers) shall conform to AASHTO M 169 Grade 12L14, case hardened 0.012 to 0.015 inches deep to Rockwell C 59 to 65.

Bar tendon nuts shall conform to either ASTM A 29 Grade C1045, ASTM A 521 Class CF, AASHTO M 169 Grades 1117 or 1144, or ASTM A 536 Grade 100-70-03, and shall be capable of developing 100 percent of the GUTS of the bar tendon.

Bondbreaker shall conform to the requirements of Section 4.7 of the Post-Tensioning Institute “Recommendations for Prestressed Rock and Soil Anchors”, and shall be fabricated from a smooth plastic tube or pipe having the following properties:

1. Resistant to chemical attack from aggressive environments, grout or grease;
2. Resistant to aging by ultra-violet light;
3. Fabricated from material nondetrimental to the tendon;
4. Capable of withstanding abrasion, impact, and bending during handling and installation;
5. Enable the tendon to elongate during testing and stressing; and
6. Allow the tendon to remain unbonded after lock-off.

Centralizers shall be fabricated from plastic, steel, or material which is nondetrimental to the prestressing steel. Wood shall not be used.

Corrosion inhibiting grease shall conform to the requirements of Section 3.2.5 of the Post-Tensioning Institute, "Specification For Unbonded Single Strand Tendons".

Couplers for bar tendons, if required, shall be furnished by the manufacturer of the bar tendons and shall be AASHTO M 169 Grades 1045, 1117 or 1144, ASTM A 519 Grade 1026, or equivalent steel developing 100 percent of the GUTS of the bar tendon without evidence of any failure. Couplers shall be placed in the bond zone. Couplers for strand tendons will not be allowed.

End caps shall conform to ASTM D 3350 Class PE324420C, Class PE334410C, or Class PE335400C, ASTM D 1248, and AASHTO M 252, ASTM D 1784 Class 1346B, ASTM A 653, or ASTM A 36.

Grout shall be a neat cement grout or a sand-cement grout conforming to Section 9-20.3(4). The compressive strength for the grout shall be as required by the tieback manufacturer. Grout components shall be as follows:

Admixtures shall conform to the requirements of Section 9-23.6. Expansive admixtures shall only be added to the grout used for filling sealed encapsulations, trumpets and anchorage covers. Accelerators will not be permitted. Admixtures shall be compatible with prestressing steels and mixed in accordance with the manufacturer's recommendations.

Aggregates shall conform to the requirements of Section 9-03.

Cement shall conform to the requirements of Section 9-01, and shall not contain lumps or other indications of hydration.

Prestressing steel shall consist of either bar tendons with an ultimate tensile strength of 150 ksi conforming to AASHTO M 275 Type II, or strand tendons with an ultimate tensile strength of 270 ksi conforming to AASHTO M 203. The Contractor shall submit Type 1 Working Drawings consisting of certified mill test results and typical stress-strain curves along with samples from each heat, properly marked, for the prestressing steel. The typical stress-strain curve shall be obtained by conventional industry standard practices. The guaranteed ultimate strength, yield strength, elongation, and composition shall be specified.

Strand tendon spacers shall be fabricated from plastic, steel, or material which is nondetrimental to the prestressing steel. Wood shall not be used.

Tendon encapsulation, when specified in the Plans to provide additional corrosion protection, shall be fabricated from one of the following:

1. High density corrugated polyethylene (PE) tubing conforming to the requirements of ASTM D 3350 Class PE334410C, Class PE335520C or Class PE335400C, ASTM D 1248, and AASHTO M 252 and having a nominal wall thickness of 40 mils or greater.

2. Corrugated, polyvinyl chloride (PVC) tubing conforming to ASTM D 1784, Class 13464-B, and having a nominal wall thickness of 40 mils or greater.

Trumpet providing the transition from the bearing plate to the unbonded length corrosion protection shall be fabricated from a steel pipe or tube conforming to the requirements of ASTM A 53 for pipe or ASTM A 500 for tubing. The trumpet shall have a minimum wall thickness of 0.20 inches, and shall be seal welded to the bearing plate. The seal weld shall be visually inspected only, in accordance with Section 6-03.3(25)A.

6-17.2.OPT2.GB6

***(September 8, 2020)***

***Rock Bolt and Rock Dowel Materials***

Rock bolts shall be continuously threaded steel reinforcement bars conforming to either; AASHTO M 31 Grade 60 or 75 deformed bar, ASTM 615 Grade 60 or 75 deformed bar, ASTM A 706 Grade 60 or 80 deformed bar, ASTM A 722 Grade 150 Type II, or AASHTO M 275 Grade 150 Type II and shall be capable of being post-tensioned to the design loads, performance test loads, and proof loads specified. The bending requirements of AASHTO M 31, ASTM 615, and ASTM 706 shall be waived.

Rock dowels shall be continuously threaded steel reinforcement bars conforming to either; AASHTO M 31 Grade 60 or 75 deformed bar, ASTM A 615 Grade 60 or 75 deformed bar, or ASTM A 706 Grade 60 or 80 deformed bar with a minimum size of a No. 7 bar for Type 1 rock dowels, and a minimum size of a No.11 bar for Type 2 rock dowels. The bending requirements of AASHTO M 31, ASTM 615, and ASTM 706 shall be waived.

Anchor bar steel for rock bolts and dowels shall be provided with epoxy coating in accordance with either AASHTO M 284, ASTM A 775, or ASTM A 934. The patching material, compatible with coating material and inert in grout selected for use, shall be supplied with each shipment.

Bearing plated shall be galvanized in accordance with either AASHTO M 111, AASHTO M 232, ASTM A 123, or ASTM A 153, and shall conform to ASTM A 36 Grade 36 or ASTM A 572 Grade 50. Bearing plate size will be reviewed and approved by the Engineer in accordance with Section 6.10 of Post Tensioning Institute “Recommendations for Prestressed Rock and Soil Anchors”. Bearing plate thickness shall be not less than ¾ inch and its dimensions not less than 2 inches greater than the drill hole diameter.

Nuts and couplers shall be galvanized in accordance with either AASHTO M 232 or ASTM A 153 and exceed 100 percent of the MUTS (Minimum Ultimate Tensile Strength) of the

bar. For Grades 60, 75, and 80 bar the nuts and coupler shall conform to either AASHTO M 169 or ASTM A 108. For Grade 150 bar the nuts shall conform to either ASTM A 29 or ASTM A 536, couplers shall conform to ASTM A 29.

Washers shall be galvanized in accordance with AASHTO M 232 or ASTM A 153 and conform to ASTM F 436. Spherical and beveled washers shall be galvanized in accordance with AASHTO M 232 or ASTM A 153 and conform to ASTM A 536 or ASTM A 47.

Centralizers shall be fabricated from plastic or material which is non-detrimental to the pre-stressing steel. Wood shall not be used.

Grout shall conform to Section 9-20.3(2).

Sleeved bondbreakers for rock bolts shall be fabricated from plastic tube or pipe having the following properties:

1. Restistant to chemical attack from aggressive environment, grout or corrosion inhibiting compound.

2. Resistant to aging by ultra-violet light.

3. Non-detrimental to bolt. Resistant to damage caused by abrasion, impact, crushing and bending during handling and installation.

4. Enable the bolt to elongate during testing.

5. Resistant to distortion caused by heat generated by the curing of the grout.

The wall thickness of sleeved bondbreaker shall meet the following:

| Type | Nominal | Minimum |
|---|---|---|
| HDPE/PP | 0.060 in. (1.5 mm) | 0.050 in. (1.25 mm) |
| PVC | 0.040 in. (1.0 mm) | 0.035 in. (0.9 mm) |

Corrosion inhibiting compounds shall be provided by the manufacturer or shall be either a grease, wax, or gel and conforms to the following:

| Properties | Test Method | Criteria | | |
|---|---|---|---|---|
| | | Grease | Wax[1] | Gel[1] |
| Dropping Point, °F min. | ASTM D 566 | 300° | N/A | N/A |
| Melting Point, °F min. | ASTM D 127[(2)] | N/A | 145° | 500° |
| Oil Separation @160°F, max. | FTMS 791B Method 321.2 | 0.5 | N/A (product is liquid) | 0.5 |
| Water, % max. | ASTM D 95 | 0.1 | 0.4 | 0.4 |
| Flash Point °F, min. | ASTM D 92 | 300° | 300° | |
| Accelerated Corrosion Test: Salt Fog @ 100°F @ 5 mils, hrs. min. | ASTM B 117 | 1000 | 1000 | 1000 |

| | | | | |
|---|---|---|---|---|
| Water Soluble Ions, ppm max.<br>a. Chloride<br>b. Sulfides<br>c. Nitrates<br>Soak Test: Salt Fog 50/50 Immersion, hrs. | <br><br>ASTM D 512<br>APHA 4500S$^2$-E<br>ASTM D 3867<br>ASTM B 117 Modified | <br><br>10<br>10<br>10<br>720+ | <br><br>10<br>10<br>10<br>720+ | <br><br>10<br>10<br>10<br>720+ |
| Sheathing Compatibility @150°F<br>a. Hardness % max change<br>b. Volume % max change<br>c. Tensile Strength % max change | <br>ASTM D 4289<br>ASTM D 4289<br>ASTM D 638 | <br>15% change<br>10% change<br>30% change | <br>15% change<br>10% change<br>30% change | <br>15% change<br>10% change<br>30% change |
| Note 1: A combination of wax and gel is possible when approved by the Engineer.<br>Note 2: ASTM D 566 may be used when the wax product consistency warrant it. | | | | |

Anchorage covers for rock bolts shall be galvanized in accordance with either AASHTO M 111 or ASTM F2329 as applicable, and have a minimum thickness of 0.20 inches; and shall conform to either ASTM A 53 for pipe, or ASTM A 500 for tubing, or ASTM A 36, ASTM A 529, ASTM A 572, ASTM A 588, or AASHTO M 270 for fabricated steel.

6-17.3.GR6

## Construction Requirements

6-17.3.INST1.GR6

Section 6-17.3 is supplemented with the following:

6-17.3.OPT1.GB6

***(September 8, 2020)***

***Rock Bolt and Rock Dowel Construction Requirements***

**Rock Bolt and Rock Dowel Installation Experience Requirements**

The Contractor's foreman supervising the rock bolt and rock dowel work shall have installed a minimum of 3,000 linear feet of post-tensioned rock bolts or rock dowels on a minimum of five projects within the past five years.

The Contractor's rock bolt and rock dowel drill operators shall have installed a minimum of 1,000 linear feet of post-tensioned rock bolts or rock dowels on a minimum of three projects within the past five years.

The Contractor shall submit a Type 2 Working Drawing consisting of a list documenting the rock bolt and rock dowel work experience of the foreman and drill operators working on the project. This list shall include a brief description of each project and a reference shall be included for each project listed. As a minimum, the reference shall include an individual's name and current phone number.

**Rock Bolt and Rock Dowel Submittals**

The Contractor shall submit Type 2 Working Drawings consisting of a rock bolt and rock dowel plan. The rock bolt and rock dowel plan shall include the following:

1. The proposed construction sequence and schedule.

2. The proposed drilling method and equipment.

3. The proposed drill hole diameter.

4. The minimum bond zone length for the rock bolts.

5. The proposed anchor steel bars, couplers, nut, bearing plate, flat washer, and beveled washer specifications, including manufacturer's data sheets and mill certificates. Manufacturer's verification for the bearing plate thickness for the specified rock bolt and rock dowel capacities.

6. The proposed grout mix design, including manufacturer's certificate of compliance and the procedures for placing the grout. For rock bolts, if two-stage grouting is used, the means for determining the level of the primary grout for the bond zone. If single-stage grouting is used, the fabrication details for the bondbreaker in the free-stressing length, including corrosion inhibiting compounds.

7. The proposed corrosion protection for the rock bolt and rock dowel systems.

8. The proposed stressing procedures and stressing equipment.

9. The proposed construction method for upwardly inclined anchors.

10. The proposed equipment for measuring and recording the volume of grout injected for production rock bolts and rock dowels.

11. The calibration data for each load cell, test jack, pressure gauge and master pressure gauge to be used in the proof testing, in accordance with the calibration requirements specified in Section 6-17.3(3).

**Rock Bolt and Rock Dowel Preconstruction Conference**

A rock bolt and rock dowel preconstruction conference may be held at the discretion of the Engineer in accordance with Section 6-17.3(4).

**Rock Bolt and Rock Dowel Storage and Handling**

Rock bolt and rock dowel storage and handling shall conform to the Section 6-17.3(6) requirements for permanent ground anchor tendons.

Field handling procedures for epoxy-coated rock bolts and rock dowels shall conform to Sections 6-02.3(24)H, including providing padding between contact points during storage and lifting, and covering epoxy-coated rock bolts and rock dowels to minimize ultraviolet exposure.

**Rock Bolt and Rock Dowel Grout**

Grout shall meet the requirements of Section 9-20.3(2).

The use of epoxy or polyester resin as bonding agents will not be allowed.

**Rock Bolt and Rock Dowel Installation**

**General Requirements**

The Contractor shall install rock bolts and rock dowels at the location and orientation in accordance with the rock bolt and rock dowel plan accepted by the Engineer. For rock bolts, the Engineer will designate the required free-stressing length. For rock dowels, the Engineer will designate the minimum length.

The rock bolts and rock dowels shall be installed within five degrees of the orientation angle specified by the Engineer. Unless otherwise specified by the Engineer, the angle of installation shall be perpendicular to the rock face and inclined slightly downward at the rock bolt and rock dowel location.

In all cases, at least three-quarters of the bearing plate shall be in contact with the rock face. The orientation of the bearing plate against the rock surface should be within twenty degrees of normal to the bar. Beveled washers shall be used to accommodate all non-perpendicular installations, but should not exceed twenty degrees. If the axis of the anchor is not within five degrees of perpendicular to the rock surface, or within the angle provided by the beveled washer up to a maximum of twenty degrees, or if the rock beneath the bearing plate is not sound or is highly irregular as determined by the Engineer, a bearing pad accepted by the Engineer shall be constructed so that the bar is not bent when the nut is torqued during lock-off of the anchor. The Engineer may also require the use of over-sized bearing plates, when the rock surface is weak or highly weathered.

The use of hand drills for advancing the hole will not be allowed without the written permission of the Engineer and demonstrated effectiveness by the Contractor. The drill hole shall be sized to provide a minimum of 1/2 inches of grout cover around the rock bolt or rock dowel. The Contractor shall flush the drill hole of all drill cuttings and debris prior to installing the rock bolt or rock dowel. Holes determined by the Engineer to be unacceptable for rock bolt and rock dowel installation shall be re-drilled by the Contractor at no additional expense to the Contracting Agency.

Rock bolts and rock dowels shall not be precut at the factory to lengths shown in the Plans, but rather shall be delivered to the job site in bulk lengths and field cut to the appropriate lengths. Each rock bolt and rock dowel shall be fitted with a bearing plate, nut, and washers. Prior to placing rock bolts and rock dowels in the drilled holes, all mill scale, flaking rust and grease shall be removed from the rock bolt and rock dowel.

Centralizers shall be placed along the rock bolt or rock dowel at ten foot centers prior to grouting, with a minimum of one centralizer per rock bolt or rock dowel. The lowermost centralizer shall be located within 12 inches of the end of the rock bolt or rock dowel. Centralizers shall be of sufficient strength to support the weight of the anchor bar in the drilled hole and provide a minimum of 0.5 inches of grout cover.

The grout equipment shall produce a grout free of lumps and undispersed cement. The pump shall be equipped with a pressure gauge near the discharge end to monitor grout pressures. The grouting equipment shall be sized to enable the grout to be pumped in one continuous operation. The grout shall be injected from the lowest point of the drill hole. Sufficient grout shall be placed in the drill hole to ensure full encapsulation of the rock bolt or rock dowel. The volume of grout injected, and the corresponding grout injection pressure, for each production rock bolt and rock dowel shall be measured using the methods and equipment specified in the rock bolt and rock dowel plan.

The entire length of the rock bolt and rock dowel shall be corrosion-protected with grout. Bare steel from field cutting of the anchor bar and any damaged galvanizing on the bearing plates, nuts and washers shall be painted in accordance with Section 6-07.3(10)P with one coat of galvanizing repair paint conforming to Section 9-08.1(2)B.

**Specific Rock Dowel Requirements**

The Contractor shall install Type 1 rock dowels to achieve the design load specified in the Plans; if the design load is not specified in the Plans a 25 kip design load should be used. When the grout has reached final set, the Contractor shall install the bearing plate, washers and nut. The nut shall be torqued to a nominal 100 foot-pounds to ensure proper seating against the rock face. The end of the completed rock dowel shall be trimmed to within six inches of the rock face.

**Specific Rock Bolt Requirements**

The Contractor shall select the type of rock bolt and construction method to be used. The Contractor shall embed and install rock bolts to achieve the design load specified in the Plans. The rock bolt shall be sized so that the design load does not exceed 60 percent of the minimum ultimate tensile strength (MUTS) of the rock bolt. In addition, the rock bolt shall be sized so that the maximum test load does not exceed 80 percent of the MUTS for Grade 150 bar or 90 percent of the minimum yield strength for Grade 75 bar. The end of the completed rock bolt shall be trimmed to within six inches of the rock face, and fitted with a galvanized steel anchorage cover filled with a corrosion-inhibiting compound.

6-17.3(8).GR6

## *Testing And Stressing*

6-17.3(8).INST1.GR6

Section 6-17.3(8) is supplemented with the following:

6-17.3(8).OPT1.GB6

**(January 7, 2013)**

**Rock Dowel Proof Testing**

At the discretion of the Engineer, up to five percent, but not less than three installed production rock dowels as selected by the Engineer shall be proof tested. The Contractor shall conduct the proof test, and the Engineer will interpret the results.

The rock dowel shall be tensioned to 25 kips for Type 1 rock dowels, with a calibrated hollow-ram hydraulic jack using a bar extension and coupler attached to the rock dowel. The test load specified for the particular type of rock dowel shall be held for

ten minutes. If no loss of load occurs over the ten minute hold period, the rock dowel is acceptable.

The Engineer may require additional proof testing above the specified five percent maximum if rock dowels fail the proof testing. All failed rock dowels shall be replaced with an additional rock dowel installed in a separate hole at no additional expense to the Contracting Agency.

Upon acceptance by the Engineer, the Contractor shall permanently stamp or etch the bearing plate of or otherwise label each rock dowel with a unique number assigned by the Engineer, the installation date and the total anchor length.

**Rock Bolt Testing**

The Contractor shall conduct rock bolt testing in accordance with the requirements specified in this Section for permanent ground anchors, including testing equipment, and test load monitoring, recording and documentation.

**Rock Bolt Performance Testing**

At the Engineer's discretion, the Contractor shall conduct up to three performance tests to demonstrate the effectiveness of the construction method for each rock bolt design, and when a significant change is proposed in the construction method.

Rock bolts shall be tensioned to 120 percent of the design load of the rock bolt for a holding time period of not more than 60 minutes. The Contractor shall monitor the test load and shall document the results in accordance with the requirements specified in this Section.

The Engineer will analyze the rock bolt performance test results and determine whether the rock bolt is acceptable. A rock bolt is acceptable if both the following conditions are satisfied:

1. The total elastic movement obtained at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the stressing length.

2. The rock bolt carries the maximum test load with a creep rate that does not exceed 0.04 inches between one and ten minutes, or 0.08 inches per log cycle of time between the six and 60 minute readings.

If the Contractor fails to successfully achieve these testing criteria, the Engineer may require additional rock bolt performance tests to be completed at no additional expense to the Contracting Agency.

Production rock bolting shall not begin until the Contractor has completed performance testing of the design rock bolts and the test results have been accepted by the Engineer.

**Rock Bolt Proof Testing**

Each production rock bolt shall be proof tested. Proof testing shall consist of tensioning the rock bolt to 120 percent of the design load and holding that load for ten minutes. If no loss of load occurs in this time period, the rock bolt is

accepted. If a rock bolt fails this proof test, the rock bolt shall be replaced with an additional rock bolt installed in a separate hole.

After tensioning and achieving a successful rock bolt proof test, the load shall be locked off at 100 percent of the design load and the remaining portion of the rock bolt grouted, if appropriate. The end of the completed rock bolt shall be trimmed to within six inches of the rock face.

Upon acceptance by the Engineer, the Contractor shall permanently stamp or etch the bearing plate of or otherwise label each rock bolt with a unique number assigned by the Engineer, the installation date, the stressing load, and the total anchor length.

6-17.3(8)A.GR6

**Verification Testing**

6-17.3(8)A.INST1.GR6

Section 6-17.3(8)A is supplemented with the following:

6-17.3(8)A.OPT1.GB6

(August 3, 2015)

Verification tests shall be performed to verify the design of the anchor system. These ground anchor test results shall verify the Contractor's design and be accepted by the Engineer prior to ordering anchor material for the tieback retaining walls. The tests shall be performed on sacrificial test anchors. A minimum of two successful verification tests shall be conducted. The locations shall be close to the anchor location of the production anchors. The test locations shall be selected by the Contractor and accepted by the Engineer, except where specific permanent ground anchor rows between specific station limits are shown in the Plans.

Verification test anchors shall be constructed using the same procedures and anchor geometry (drill hole diameter, bond length, unbounded length) as the production anchors.

The anchor tested shall be loaded to 150 percent of the factored design load (FDL). The prestressing tendon shall be proportioned such that the maximum stress does not exceed 80 percent of the ultimate strength of the steel. The jack shall be positioned at the beginning of the test such that unloading and repositioning of the jack during the test will not be required.

The verification tests shall be made by incrementally loading the anchors in accordance with the following schedule.

AL - Anchor Alignment Load
FDL - Factored Design Load

| Load | Hold Time |
|---|---|
| AL | 1 Min. |
| 0.25FDL | 10 Min. |
| 0.50FDL | 10 Min. |
| 0.75FDL | 10 Min. |

| | |
|---|---|
| 1.00FDL | 10 Min. |
| 1.15FDL | 60 Min. |
| 1.25FDL | 10 Min. |
| 1.50FDL | 10 Min. |
| AL | 1 Min. |

The test load shall be applied in increments of 25 percent of the factored design load. Each load increment shall be held for at least 10 minutes. Measurement of anchor movement shall be obtained at each load increment. The load-hold period shall start as soon as the test load is applied and the anchor movement, with respect to a fixed reference, shall be measured and recorded at 1 minute, 2, 3, 4, 5, 6, 10, 20, 30, 40, 50, and 60 minutes.

The verification test will be considered successful if the anchor meets the criteria for a performance tested ground anchor in Section 6-17.3(9), and in addition, a pull-out failure does not occur at the 1.50FDL maximum load.

The Engineer will give the Contractor a written order concerning ground anchor construction within seven working days after completion of the verification tests. This written order will either confirm the bond lengths as shown in the Contractor's plans for ground anchors or reject the anchors based upon the result of the verification tests.

6-17.3(8)B.GR6

**Performance Testing**

6-17.3(8)B.INST1.GR6

The performance test schedule following the second paragraph of Section 6-17.3(8)B is revised to read:

6-17.3(8)B.OPT1.GB6

(January 3, 2011)

Performance Test Schedule

| Load |
|---|
| AL |
| 0.25FDL |
| AL |
| 0.25FDL |
| 0.50FDL |
| AL |
| 0.25FDL |
| 0.50FDL |
| 0.75FDL |
| AL |
| 0.25FDL |
| 0.50FDL |
| 0.75FDL |
| 1.00FDL |
| AL |
| 0.25FDL |

0.50FDL
0.75FDL
1.00FDL
1.15FDL
AL
Jack to lock-off load

Where: AL - is the alignment load
FDL - is the factored design load.

6-17.3(8)C.GR6

**Proof Testing**

6-17.3(8)C.INST1.GR6

The proof test schedule following the first paragraph of Section 6-17.3(8)C is revised to read:

6-17.3(8)C.OPT1.GB6

(January 3, 2011)

Proof Test Schedule

Load

AL
0.25FDL
0.50FDL
0.75FDL
1.00FDL
1.15FDL
Jack to lock-off load

Where: AL - is the alignment load
FDL - is the factored design load

6-17.4.GR6

## Measurement

6-17.4.INST1.GR6

Section 6-17.4 is supplemented with the following:

6-17.4.OPT1.GB6

(January 4, 2010)

Rock bolts will be measured by the linear foot of rock bolt (unbonded plus bonded length) installed, successfully proof tested, and accepted.

Rock dowels will be measured by the linear foot of rock dowel installed and accepted.

6-17.5.GR6

## Payment

6-17.5.INST1.GR6
Section 6-17.5 is supplemented with the following:

6-17.5.OPT1.GB6
(January 4, 2010)
"Rock Bolt", per linear foot.
The unit contract price per linear foot for "Rock Bolt" shall be full pay for performing the work as specified, including all performance and proof testing, and all grout injection up to 200 percent of that calculated at each production rock bolt location.

"Rock Dowel Type _", per linear foot.
The unit contract price per linear foot for "Rock Dowel Type _" shall be full pay for performing the work as specified, including all proof testing, and all grout injection up to 200 percent of that calculated at each production rock dowel location.

"Force Account Rock Bolt & Rock Dowel Grout Exceedance", force account.
Payment for "Force Account Rock Bolt & Rock Dowel Grout Exceedance", for all grout injection over 200 percent of that calculated at each production rock bolt and rock dowel location, will be by force account as provided in Section 1-09.6. Wasted grout will not be measured for payment.

For the purposes of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Force Account Rock Bolt & Rock Dowel Grout Exceedance" in the bid proposal to become a part of the total bid by the Contractor.

6-18.GR6
## Shotcrete Facing

6-18.2.GR6
### Materials

6-18.2.INST1.GR6
Section 6-18.2 is supplemented with the following:

6-18.2.OPT1.GB6
***(August 1, 2005)***
***Shotcrete Facing***
Portland cement shall be Type I or II in accordance with Section 9-01.2(1).

Air entrainment shall be 6.0 percent, ± 1.5 percent.

Water for mixing and curing shall be clean and free from substances which may be injurious to concrete or steel, and shall be free of elements which would cause staining.

Aggregate for shotcrete shall meet the following gradation requirements:

| Sieve Size | Percent Passing by Weight |
|---|---|
| 1/2 inch | 100 |
| 3/8 inch | 90 to 100 |
| U.S. No. 4 | 70 to 85 |
| U.S. No. 8 | 50 to 70 |

| | |
|---|---|
| U.S. No. 16 | 35 to 55 |
| U.S. No. 30 | 20 to 35 |
| U.S. No. 50 | 8 to 20 |
| U.S. No. 100 | 2 to 10 |
| U.S. No. 200 | 0 to 2.5 |

6-18.2.OPT2.GB6

***(August 3, 2015)***

***Coloration for Shotcrete Facing Finishing Alternative C***

If shotcrete facing finishing Alternative C is specified, the Contractor shall provide shotcrete coloration for finishing the sculptured shotcrete to match the color of the natural surroundings. Acceptance of the final appearance of the coloration will be based on the pre-production test panel. Acceptance of the long-term properties of the coloration material will be based on a manufacturer's certification, submitted as a Type 1 Working Drawing which verifies the following to be true about the product:

1. Resistance to alkalis in accordance with ASTM D 543.

2. Demonstrates no change in coloration after 1,000 hours of testing in accordance with ASTM D 822.

3. Does not oxidize when tested in accordance with ASTM D 822.

4. Demonstrates resistance to gasoline and mineral spirits when tested in accordance with ASTM D 543.

Additionally, the certification shall provide the product name, proposed mix design and application method, and evidence of at least one project where the product, using the proposed mix and application method, was applied and which has provided at least five years or more of acceptable durability and color permanency.

6-18.2.OPT3.GB6

***(August 3, 2015)***

***Fiber Reinforcement for Shotcrete Facing***

Fiber reinforcement for shotcrete facing shall be either steel fibers or macro synthetic fibers.

Steel fibers shall be cold drawn, deformed steel Type 1 or Type 4 fibers conforming to ASTM A 820 with a minimum tensile strength of 120 ksi. Steel fibers shall have a length between 1.0 and 1.50 inches and shall have a length to diameter ratio of less than 80. The steel fibers used shall be manufactured specifically for shotcrete applications.

Macro synthetic fibers shall be deformed polyolefin Type 3 fibers conforming to ASTM C 1116. Macro synthetic fibers shall have a length between 1.0 and 2.0 inches and shall be between 0.02 and 0.04 inches in diameter. The macro synthetic fibers used shall be manufactured specifically for shotcrete applications.

Fiber reinforcement will be accepted based on the Manufacturer's Certificate of Compliance.

6-18.3.GR6

## Construction Requirements

6-18.3.INST1.GR6

Section 6-18.3 is supplemented with the following:

6-18.3.OPT1.GB6

***(August 3, 2015)***

***Shotcrete Facing for Rock/Soil Slope Stabilization***

**Qualifications of Contractor's Personnel**

The shotcrete crew members shall have work experience conforming to Section 6-18.3(4), except that the nozzle operators and pumping equipment operators shall have placed a minimum of 100 cubic yards of shotcrete on a minimum of three projects of similar slope heights and orientations as in this project within the last five years.

All nozzle operators shall be qualified by test in accordance with Section 6-18.3(4).

**Testing**

Pre-production and production testing shall conform to Section 6-18.3(3) and the following additional requirements:

Fiber reinforcement shall be included in the shotcrete mix used for all pre-production and production testing.

The Contractor shall make at least two 12 inch square production test panels, where one section is defined as one day's placement. One additional 12 inch square production test panel shall be made whenever a nozzle operator or equipment is changed during the daily work period.

In addition to compressive strength testing, cores taken from the pre-production and production test panels will be tested for density, absorption and voids in accordance with ASTM C 642.

Absorption shall not exceed 8 percent and void content shall not exceed 17 percent.

**Mix Design**

Unless otherwise specified in the Plans, the fiber reinforced shotcrete used for rock/soil slope stabilization shall have a minimum compressive strength of 2,500 psi at seven days and 4,000 psi at 28 days.

Microsilica shall be included in the shotcrete mix, but shall not exceed 8 percent by mass of the mix.

The minimum steel fiber content in the shotcrete mix shall be 100 pounds per cubic yard. The minimum macro synthetic fiber content in the shotcrete mix shall be 10 pounds per cubic yard.

**Surface Preparation**

Immediately prior to shotcrete application, rock and soil surfaces within the section being shot shall be scaled of all loose material and be thoroughly cleaned by use of

air or water jets or other means acceptable to the Engineer. Shotcrete shall not be placed on any surface which is frozen, spongy, or where there is free water. The surface receiving shotcrete shall be dampened not more than one hour prior to shotcrete application.

**Alignment Control**

Thickness control pins shall conform to Section 6-18.3(6) and shall be placed on a maximum five foot square grid pattern.

**Drainage**

Unless otherwise shown in the Plans, weep holes shall be provided throughout the shotcrete facing at 10-foot centers maximum, horizontal and vertical. The weep holes shall consist of 24-inch long, two inch diameter Schedule 40 PVC slotted drain pipe placed within predrilled holes and sloped to drain. The weep hole drains shall be installed prior to placement of the shotcrete facing. The weep hole drains shall extend one to three inches beyond the final finished surface of the shotcrete facing. During placement of the shotcrete facing, the exposed open ends of the weep hole drains shall be covered or plugged to prevent shotcrete intrusion. The Contractor shall remove the covers or plugs after completing shotcrete placement.

Prefabricated drainage mat, if shown in the Plans or specified by the Engineer, shall be placed on the slope face prior to placement of the shotcrete facing in accordance with Section 6-15.3(7) and the details shown in the Plans, and shall be secured to the slope face by methods acceptable to the Engineer to ensure permanent and full contact with the slope.

**Anchor Bars**

Unless otherwise shown in the Plans, steel reinforcing bar anchor bars shall be placed at approximately 10-foot centers maximum, horizontal and vertical. The bars shall be L shaped #5 bars with the short leg measuring 8 inches and the long leg 24 inches. The bars shall be placed in 1-1/4 inch diameter, 24-inch deep holes. The bars shall be set either with grout conforming to Section 9-20.3, or with Type II epoxy bonding agent conforming to Section 9-26.1, with the grade and class as recommended by the epoxy bonding agent manufacturer. The bars shall be placed such that the short leg of the L shaped bar points upward and is approximately 1-1/2 inches clear of the slope surface.

**Mixing of Production Fiber Reinforced Shotcrete**

Fiber reinforced shotcrete can be mixed by either a dry mix or wet mix process. If the dry mix process is selected, the fiber reinforcement used shall only be steel fibers. If the wet mix process is selected, the fiber reinforcement may be either steel fibers or macro synthetic fibers.

The method and equipment used for batch mixing shall be as submitted in accordance with Section 6-18.3(1). The frequency and procedure for equipment inspection, cleaning and maintenance shall be as recommended by the equipment manufacturer.

**Dry Mix Process**

The cement and aggregate shall be batched by weight. Pre-dampening shall be done prior to flow into the main hopper and immediately after flow out of the packaging in order to ensure that the premix will flow at a uniform rate (without

slugs) through the main hopper, delivery hose and nozzle to form uniform shotcrete free of dry pockets. Pre-dampened cement and aggregate mix shall not be used if allowed to stand more than 90 minutes.

**Wet Mix Process**

The batching and mixing shall conform to ASTM C 94.

**Batching and Mixing Fiber Reinforcement**

If fiber addition takes place in the field after batching and mixing the shotcrete, the procedure used to add the fibers to the shotcrete mix shall be demonstrated by the Contractor for the Engineer's acceptance.

If fibers are added during the batching and mixing process, a screen having a mesh of 1.5 to 2.5 inches shall be used to prevent any fiber balls from entering the shotcrete line. Batching through a screen will not be required if the Contractor successfully demonstrates to the Engineer that fiber balls are not being formed.

Fibers shall not be added to the dry or wet mix at a rate faster than they can be blended with the other ingredients without forming balls or clumps. Bulk fibers showing a tendency to tangle together shall pass through a vibrating screen or be carefully sifted into the mix so that they enter the mix as individual elements and not as clumps.

**Shotcrete Application**

Shotcrete application shall conform to Section 6-18.3(7) and the following requirements:

Unless otherwise shown in the Plans, the minimum finished thickness of the shotcrete facing shall be four inches.

Shotcrete shall be applied from the lower portion of the area upwards to prevent rebound from accumulating on surfaces yet to be covered. Rebound, defined as shotcrete constituents that fail to adhere to the applied surface, shall not be worked into the finished shotcrete facing and shall not be salvaged or recycled for inclusion in later batches.

Shotcrete application shall be suspended if any of the following conditions are present:

1. High winds prevent proper application of the shotcrete.

2. The ambient temperature is, or is forecast to be, outside the temperature range of 40F to 90F during placement or initial curing.

3. Rain or seepage is washing cement out of the freshly placed shotcrete or is causing sloughs in the work.

Construction joints shall be tapered over a minimum distance of 12 inches to the thin edge. Square construction joints will not be permitted.

**Shotcrete Finishing**

Unless otherwise shown in the Plans or specified in the Special Provisions, the shotcrete facing shall be finished in accordance with Finish Alternative A in Section 6-18.3(8). Colorization, if required, shall conform to the requirements specified in Section 6-18.2 as supplemented in these Special Provisions.

6-18.4.GR6

## Measurement

6-18.4.INST1.GR6

Section 6-18.4 is supplemented with the following:

6-18.4.OPT1.GB6

(April 5, 2010)

Shotcrete facing for rock/soil slope stabilization will be measured by the cubic yard of shotcrete placed.

6-18.5.GR6

## Payment

6-18.5.INST1.GR6

Section 6-18.5 is supplemented with the following:

6-18.5.OPT1.GB6

(April 5, 2010)

"Shotcrete Facing For Rock/Soil Slope Stabilization", per cubic yard.

The unit contract price per cubic yard for "Shotcrete Facing For Rock/Soil Slope Stabilization" shall be full pay for performing the work as specified, including pre-production and production testing, surface preparation, weep hole drains, steel anchor bars, and shotcrete, mixing, application, curing and finishing, and, if required, shotcrete colorization.

6-19.GR6

## Shafts

6-19.2.GR6

## Materials

6-19.2(9-36.2(2)).GR6

***Shaft Slurry***

**Synthetic Slurry**

Section 9-36.2(2) is supplemented with the following:

6-19.2(9-36.2(2)).OPT1.GB6

(January 2, 2012)

Salt water shall not be used with synthetic slurry for shafts. Fresh water only shall be used.

6-19.3.GR6

## Construction Requirements

6-19.3(3).GR6

***Shaft Excavation***

6-19.3(3).INST1.GR6

Section 6-19.3(3) is supplemented with the following:

6-19.3(3).OPT1.GB6

(January 2, 2012)

Variations in the bearing layer elevation from that shown in the Plans are anticipated. The Contractor shall have equipment on-site capable of excavating an additional 20 percent of depth below that shown in the Plans.

6-19.3(3)B.GR6

**Temporary and Permanent Shaft Casing**

6-19.3(3)B.INST1.GR6

Section 6-19.3(3)B is supplemented with the following:

6-19.3(3)B.OPT2.GB6

(January 2, 2012)

Shaft casing shall be equipped with cutting teeth or a cutting shoe, and installed by either rotating or oscillating the casting. Installing the casing by vibratory means will not be allowed.

6-19.3(3)B4.GR6

**Temporary Telescoping Shaft Casing**

6-19.3(3)B4.INST1.GR6

The second paragraph of Section 6-19.3(3)B4 is revised to read as follows:

6-19.3(3)B4.OPT1.GB6

(January 2, 2012)

Temporary telescoping casing will not be allowed for bridge end pier shafts.

6-19.3(3)I.GR6

**Required Use of Slurry in Shaft Excavation**

6-19.3(3)I.INST1.GR6

Section 6-19.3(3)I is supplemented with the following:

6-19.3(3)I.OPT1.GB6

(August 3, 2015)

If the Contractor is utilizing casing that is adequately sealed into competent soils such that the water cannot enter the excavation, the Contractor may, with the Engineer's permission, continue excavation in wet soils without slurry provided the water level within the casing does not rise or exhibit flow.

6-19.3(4).GR6

***Slurry Installation Requirements***

6-19.3(4)A.GR6

**Slurry Technical Assistance**

6-19.3(4)A.INST1.GR6

Section 6-19.3(4)A is supplemented with the following:

6-19.3(4)A.OPT1.FB6

(January 2, 2012)

The slurry manufacturer's representative shall be present during construction and completion of the first shaft excavated at the following specific shaft sites:

*** $$1$$ ***

6-19.3(5).GR6

***Assembly and Placement of Reinforcing Steel***

6-19.3(5).INST1.GR6

Section 6-19.3(5) is supplemented with the following:

6-19.3(5).OPT1.GB6

(August 1, 2016)

For those shafts with a specified minimum penetration into the bearing layer and no specified tip elevation, the Contractor shall furnish each shaft steel reinforcing bar cage, including access tubes for non-destructive QA testing in accordance with Section 6-19.3(6), 20 percent longer than specified in the Plans. The Contractor shall add the increased length to the bottom of the cage. The Contractor shall trim the shaft steel reinforcing bar cage to the proper length prior to placing it into the excavation. If trimming the cage is required and access tubes are attached to the cage, the Contractor shall either shift the access tubes up the cage, or cut the access tubes provided that the cut tube ends are adapted to receive the watertight cap as specified.

6-19.3(6).GR6

***Contractor Furnished Accessories for Nondestructive QA Testing***

6-19.3(6)E.GR6

**Thermal Wire and Thermal Access Points (TAPs)**

6-19.3(6)E.INST1.GR6

Section 6-19.3(6)E is supplemented with the following:

6-19.3(6)E.OPT1.GB6

(January 2, 2018)

The thermal wire and associated couplers shall be obtained from the following source:

Pile Dynamics, Inc.
30724 Aurora Road
Cleveland, OH 44139
(216) 831-6131
FAX: (216) 831-0916
www.pile.com

6-19.3(7).GR6

### *Placing Concrete*

6-19.3(7)D.GR6

**Requirements for Placing Concrete Underwater**

6-19.3(7)D.INST1.GR6

Section 6-19.3(7)D is supplemented with the following:

6-19.3(7)D.OPT1.GB6

(January 2, 2012)

The Contractor may use a tremie instead of a concrete pump, subject to the following conditions:

1. The tremie shall have a hopper at the top that empties into a watertight tube at least eight inches in diameter.

2. The discharge end of the tube on the tremie shall include a device to seal out water while the tube is first filled with concrete.

6-19.4.GR6

## Measurement

6-19.4.INST2.GR6

Section 6-19.4 is supplemented with the following:

6-19.4.OPT3.GB6

(January 2, 2012)

Fresh water for shaft slurry will be measured in accordance with Section 2-07.4.

6-19.5.GR6

## Payment

6-19.5.INST1.GR6

Section 6-19.5 is supplemented with the following:

6-19.5.OPT2.GB6

(January 2, 2012)

“Fresh Water for Shaft Slurry”, per M gal.

DIVISION7.GR7

# Division 7
# Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits

7-06.GR7

## Vacant

7-06.SA1.FR7
**(January 2, 2018)**

# 7-06 Temporary Stream Diversion

## 7-06.1 Description

This work shall include designing, installing, operating, maintaining, removing, and disposing of the temporary stream diversion, environmental compliance and other Work as detailed in these Specifications.

## 7-06.2 Materials

All materials shall be as detailed in the Contractor's Temporary Stream Diversion (TSD) Plan.

## 7-06.3 Construction Requirements

### *7-06.3(1) General*

The Work shall include compliance with Washington State Water Quality Standards in WAC 173-201A, project permits, environmental commitments and these Provisions.

The temporary stream diversion may be either a gravity or a pumped system. Pump screens must comply with the requirements in Section 7-06.3(4) of these Special Provisions. Once a pumped diversion begins, the pump must run continuously until it is no longer necessary to bypass flows. The Contractor shall have back-up pumps on site and shall provide twenty-four hour monitoring of the pumping operation. Monitoring can be achieved by providing monitoring personnel on site or through remote sensing and instrumentation to verify operation of the bypass. If the Contractor elects to monitor by remote sensing and instrumentation, a Type 2 Working Drawing shall be submitted outlining how system operation will be monitored, how alerts will be made and how personnel will respond to a diversion system failure.

The temporary stream diversion including water that is retained by the temporary stream diversion and any dewatering system shall be located within the permitted impact areas as shown in the Plans. The upstream diversion dam shall be constructed to a height sufficient to prevent stream flow from entering the work area. Scour protection shall be provided at the outfall of the temporary stream diversion systems and dewatering system to prevent flow re-entering the stream channel from mobilizing streambed and embankment sediments. When a temporary stream diversion is located in or near an intertidal zone the temporary stream diversion design shall take tidal influence into consideration.

For each temporary stream diversion the Contractor shall arrange a meeting with the Engineer prior to implementation of the TSD Plan. At this meeting the Contractor shall explain to the Engineer the Work to be completed for the temporary stream diversion. The meeting shall be a minimum of 7 calendar days prior to start of the temporary stream diversion work.

The TSD shall be operational prior to performing any other work below the Ordinary High Water Line.

### *7-06.3(2) Temporary Stream Diversion Plan*

#### 7-06.3(2)A General Plan Requirements

The Contractor shall submit a Temporary Stream Diversion Plan in accordance with the requirements of a Type 2E Working Drawing and these Specifications. A separate

TSD Plan shall be prepared and submitted for each temporary stream diversion that is required. The TSD Plan shall consist of a narrative and drawings detailing all temporary stream diversion requirements and shall encompass and protect all the areas affected by the Contractor's temporary stream diversion Work.

The Contractor shall fully implement the TSD Plan throughout the duration of the associated Work. The Contractor shall update the TSD Plan throughout project construction to reflect actual site conditions and the Contractor's Work. Changes to plan shall comply with WAC 196-23-020. At the request of the Engineer an updated TSD Plan shall be submitted as a Type 2E Working Drawing. A copy of the TSD Plan shall be on the project site at all times.

The TSD Plan shall describe measures that will be taken to comply with Washington State Water Quality Standards in WAC 173-201A, applicable permits, environmental commitments and these Provisions.

The Contractor shall incorporate the Diversion Schedule and Sequence into their Progress Schedule.

**7-06.3(2)B Stream Flows**

**Minimum Stream Flows**

At all times of operation the Contractor's temporary stream diversion shall be designed to convey the following minimum flow rate of water in cubic feet per second:

*** $$1$$ ***

During all phases of the bypass installation and decommissioning, the Contractor shall maintain flows downstream of the project site.

**7-06.3(2)C Plan Requirements**

The TSD Plan shall provide the following information in the following order:

1. Description and Location of the temporary stream diversion

    a. Identify the name of the water body where the temporary stream diversion will be placed. Provide a description of the temporary stream diversion.

    b. Provide drawings showing the location of the temporary stream diversion, including proposed access routes and equipment to be used to construct the diversion.

2. Schedule and Sequence

    a. Provide a sequence of Work, dates, and durations for when the following will occur, in accordance with the in-water work window in the Special Provisions:

        i. Fish exclusion (performed by the Contracting Agency).

        ii. TSD Plan Implementation Meeting

iii. TSD installation.

iv. Dewatering of the isolated Work area.

v. Restoration and stabilization of the temporary stream diversion Work area to prevent erosion.

vi. Any relocations of the temporary stream diversion to accommodate the Work sequence (if needed).

vii. Channel rewatering.

viii. Removal of the TSD.

ix. Fish block removal (performed by Contracting Agency).

b. Include other Work that needs to be coordinated with the TSD (e.g., temporary erosion control).

3. Calculations and Materials

a. Detail all elements of the temporary stream diversion; including but not limited to pipes, pumps, and other equipment.

b. Calculations shall demonstrate the diversion system conveys the minimum peak flow specified by the Contracting Agency and include tidal influence where applicable.

c. Temporary stream diversion shall include a water conveyance system to be used for dewatering and rewatering that is capable of conveying the flow required for the temporary stream diversion.

d. Methods for anchoring temporary stream diversion pipe and associated hardware; include calculations to demonstrate the devices ability to anchor the pipe and associated hardware.

e. Specifications for all materials and equipment to be used as part of the diversion including pump or diversion capacities and hose sizes. For example, provide the type, profile, and size of pipe.

f. Provide the size of fish screens (mesh size and surface area) to be used, in accordance with Section 7-06.3(5) of these Special Provisions.

4. Stream Flow Blocking and Dewatering

a. Provide the method(s), including locations and details (narrative and drawings) for blocking both the upstream and downstream ends of the diversion. Describe how minor leakage from upstream and downstream will be addressed.

b. Include provisions for scour protection at the temporary stream diversion outfalls.

c. Identify the means and methods for dewatering water and disposal of the water.

5. Inspection and Maintenance

a. Provide the schedule and frequency for inspection of the temporary stream diversion; include weekends and holidays.

b. Describe how maintenance will be conducted when inspections identify deficiencies in the temporary stream diversion. These include, but are not limited to removal and disposal of trapped sediment or debris and repairing leaks.

c. The Contractor shall keep a record of all inspections and maintenance of the temporary stream diversion.

6. Rewatering the Stream Channel

a. Detail how the stream channel will be rewatered to comply with water quality requirements.

b. Identify measures that will prevent the stranding of fish during rewatering (i.e. describe methods, rates, and durations of the rewatering process knowing that flows downstream of the fish block must be maintained to protect fish).

7. Removal of the Temporary Stream Diversion

a. Describe the sequence that will be used for removing the temporary stream diversion and methods to prevent water quality impacts.

b. Describe how disturbed soil will be permanently stabilized.

c. Describe any temporary pipes to remain (requires approval of the Engineer): their type, pipe class, size, location, and plugging procedure.

8. Other Work required for the Contractor's temporary stream diversion

### *7-06.3(3) Fish and Aquatic Species Exclusion and Notifications*

Prior to installing a temporary stream diversion, the Contractor shall allow 7 calendar days after the beginning of the in-water work window defined in the Special Provisions, in their schedule for the Contracting Agency: (1) to install fish block nets upstream and downstream of the in-water Work area; and (2) safely capture and relocate any fish and other aquatic organisms that become trapped between the block nets. No Work within the limits of the Ordinary High Water Line will be allowed prior to installation of fish block nets and completion of fish exclusion activities.

As specified by the Engineer the Contractor shall assist the Contracting Agency with fish and aquatic species exclusion. The Contracting Agency will pay for this Work by the force account item “Fish Exclusion”.

### *7-06.3(4) Dewatering Work Area*

Dewatering the isolated in-water Work area (between the upstream and downstream diversion dams) shall occur at a rate slow enough to allow the Contracting Agency to safely capture and relocate all fish species and other aquatic organisms to avoid stranding, as determined by the Engineer.

All pumps used for dewatering shall have an intake covered with a fish screen, operated, and maintained in accordance with RCW 77.57.010 and RCW 77.57.070. Appropriate fish screens are as follows:

1. Perforated plate: 0.094 inch (maximum opening diameter);

2. Profile bar: 0.069 inch (maximum width opening); or

3. Woven wire: 0.094 inch (maximum opening measured on the diagonal).

The minimum open area for all types of fish screens is twenty-seven percent. The screened intake facility must have enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. The fish screen must remain in place whenever water is withdrawn until the Contracting Agency Biologists confirm all fish have been removed. At that point, the Contractor may remove the fish screen to finish dewatering the work area.

### *7-06.3(5) Inspection and Maintenance*

At a minimum, the Contractor shall perform the following activities once per day (including weekends and holidays):

1. Check for and correct leaks;

2. Ensure the fish block nets remain sealed to the channel substrate.

The fish block nets shall be kept clear of debris that could jeopardize the integrity of the nets. The Contractor shall perform the following activities a minimum of three times per day or when requested by the Engineer. On working days, these activities shall be performed at the start, middle, and at the end of the working day. On non-working days, these activities shall be performed between 6:00 am and 8:00 am, between 11:00 am and 1:00 pm, and between 4:00 pm and 6:00 pm:

1. Inspect the upstream and downstream fish block nets and remove debris;

2. Inspect the upstream fish block net and all screens and similar facilities for impinged fish;

    a. The Contractor shall immediately notify the Contracting Agency when impinged fish are discovered.

    b. Removal of impinged fish will be performed by the Contracting Agency.

The Contractor shall maintain a written record of all inspection and maintenance activities; record to be available at the request of the Engineer.

### *7-06.3(6) Rewatering the Stream Channel*

The Contractor shall notify the Engineer a minimum of 7 calendar days in advance of rewatering the stream channel.

The Contractor shall introduce water to the new stream channel section and trap sediments until the stream section meets the requirements of these Provisions. Rewatering shall occur at a rate to avoid loss of surface water downstream while the new channel section is rewatered.

### *7-06.3(7) Removal of the Temporary Stream Diversion*

The Contractor shall notify the Engineer two business days in advance of beginning the temporary stream diversion removal sequence.

Once the water in the new stream channel will meet the applicable turbidity standards the Contractor may begin removal of the temporary stream diversion and the stream channel opened to flows.

The Contractor shall immediately take all corrective actions necessary to prevent the water from exceeding the turbidity standards should the stream turbidity increase. All Work within the channel, except for removal of the temporary erosion control items, shall be completed before the temporary stream diversion is removed. The Contractor must finish all construction activities within the limits of the Ordinary High Water Line, including but not limited to culvert installation and creek bed channel restoration, before the Contracting Agency will remove the fish block nets.

All materials used for the diversion shall become the property of the Contractor and removed from the project limits, with the exception of any materials supplied by the Contracting Agency, unless otherwise specified by the Engineer.

## 7-06.4 Vacant

## 7-06.5 Payment

Payment will be made for the following Bid items when included in the proposal:

"Temporary Stream Diversion", lump sum.
The lump sum Contract price for "Temporary Stream Diversion" shall be full payment to perform the Work as specified. Progress payments for the lump sum item "Temporary Stream Diversion" will be made as follows:

1. Twenty-five percent of the bid amount will be paid following completion of the TSD Plan including resolution of all Contracting Agency review comments.

2. The remaining seventy-five percent of the bid amount shall be paid in accordance with Section 1-09.9.

"Fish Exclusion", by force account as provided in Section 1-09.6.

To provide a common Proposal for all Bidders, the Contracting Agency has entered an amount in the Proposal to become a part of the Contractor's total Bid.

7-06.SA2.FR7
**(January 2, 2018)**

# 7-06 Temporary Stream Diversion

## 7-06.1 Description

This work shall include designing, installing, operating, maintaining, removing, and disposing of the temporary stream diversion, environmental compliance and other Work as detailed in these Specifications.

## 7-06.2 Materials

All materials shall be as detailed in the Contractor's Temporary Stream Diversion (TSD) Plan.

## 7-06.3 Construction Requirements

### *7-06.3(1) General*

The Work shall include compliance with Washington State Water Quality Standards in WAC 173-201A, project permits, environmental commitments and these Provisions.

The temporary stream diversion may be either a gravity or a pumped system. Pump screens must comply with the requirements in Section 7-06.3(4) of these Special Provisions. Once a pumped diversion begins, the pump must run continuously until it is no longer necessary to bypass flows. The Contractor shall have back-up pumps on site and shall provide twenty-four hour monitoring of the pumping operation. Monitoring can be achieved by providing monitoring personnel on site or through remote sensing and instrumentation to verify operation of the bypass. If the Contractor elects to monitor by remote sensing and instrumentation, a Type 2 Working Drawing shall be submitted outlining how system operation will be monitored, how alerts will be made and how personnel will respond to a diversion system failure.

The temporary stream diversion including water that is retained by the temporary stream diversion and any dewatering system shall be located within the permitted impact areas as shown in the Plans. The upstream diversion dam shall be constructed to a height sufficient to prevent stream flow from entering the work area. Scour protection shall be provided at the outfall of the temporary stream diversion systems and dewatering system to prevent flow re-entering the stream channel from mobilizing streambed and embankment sediments. When a temporary stream diversion is located in or near an intertidal zone the temporary stream diversion design shall take tidal influence into consideration.

The Contractor shall have a contingency plan for each temporary stream diversion to be used in the event of a storm producing streamflow in excess of the design flow requirement, equipment failure, vandalism, or other incident. The equipment and materials for the contingency system shall be exclusive to a specific temporary stream diversion. The Contractor shall immediately implement the contingency system when required or specified by the Engineer. The contingency system shall be designed to be fully operational within 2 hours.

For each temporary stream diversion the Contractor shall arrange a meeting with the Engineer prior to implementation of the TSD Plan. At this meeting the Contractor shall explain to the Engineer the Work to be completed for the temporary stream diversion. The meeting shall be a minimum of 7 calendar days prior to start of the temporary stream diversion work.

The TSD shall be operational prior to performing any other work below the Ordinary High Water Line.

### *7-06.3(2) Temporary Stream Diversion Plan*

#### 7-06.3(2)A General Plan Requirements

The Contractor shall submit a Temporary Stream Diversion Plan in accordance with the requirements of a Type 2E Working Drawing and these Specifications. A separate TSD Plan shall be prepared and submitted for each temporary stream diversion that is required. The Contractor shall include the details of the contingency system in the TSD Plan as described in Section 7-06.3(2)C of these Special Provisions. The TSD Plan shall consist of a narrative and drawings detailing all temporary stream diversion requirements and shall encompass and protect all the areas affected by the Contractor's temporary stream diversion Work.

The Contractor shall fully implement the TSD Plan throughout the duration of the associated Work. The Contractor shall update the TSD Plan throughout project construction to reflect actual site conditions and the Contractor's Work. Changes to plan shall comply with WAC 196-23-020. At the request of the Engineer an updated TSD Plan shall be submitted as a Type 2E Working Drawing. A copy of the TSD Plan shall be on the project site at all times.

The TSD Plan shall describe measures that will be taken to comply with Washington State Water Quality Standards in WAC 173-201A, applicable permits, environmental commitments and these Provisions.

The Contractor shall incorporate the Diversion Schedule and Sequence into their Progress Schedule.

#### 7-06.3(2)B Stream Flows

**Minimum Stream Flows**

At all times of operation the Contractor's temporary stream diversion shall be designed to convey the following minimum flow rate of water in cubic feet per second:

*** $$1$$ ***

During all phases of the bypass installation and decommissioning, the Contractor shall maintain flows downstream of the project site.

A Contingency System is required for this Project. The capacity of the combined temporary stream diversion system and the Contingency System shall be designed to convey the following minimum flow rate of water in cubic feet per second:

*** $$2$$ ***

#### 7-06.3(2)C Plan Requirements

The TSD Plan shall provide the following information in the following order:

1. Description and Location of the temporary stream diversion

a. Identify the name of the water body where the temporary stream diversion will be placed. Provide a description of the temporary stream diversion.

b. Provide drawings showing the location of the temporary stream diversion, including proposed access routes and equipment to be used to construct the diversion.

2. Schedule and Sequence

a. Provide a sequence of Work, dates, and durations for when the following will occur, in accordance with the in-water work window in the Special Provisions:

i. Fish exclusion (performed by the Contracting Agency).

ii. TSD Plan Implementation Meeting

iii. TSD installation.

iv. Dewatering of the isolated Work area.

v. Restoration and stabilization of the temporary stream diversion Work area to prevent erosion.

vi. Any relocations of the temporary stream diversion to accommodate the Work sequence (if needed).

vii. Channel rewatering.

viii. Removal of the TSD.

ix. Fish block removal (performed by Contracting Agency).

b. Include other Work that needs to be coordinated with the TSD (e.g., temporary erosion control).

3. Calculations and Materials

a. Detail all elements of the temporary stream diversion; including but not limited to pipes, pumps, and other equipment.

b. Calculations shall demonstrate the diversion system conveys the minimum peak flow specified by the Contracting Agency and include tidal influence where applicable.

c. Temporary stream diversion shall include a water conveyance system to be used for dewatering and rewatering that is capable of conveying the flow required for the temporary stream diversion.

d. Methods for anchoring temporary stream diversion pipe and associated hardware; include calculations to demonstrate the devices ability to anchor the pipe and associated hardware.

e. Specifications for all materials and equipment to be used as part of the diversion including pump or diversion capacities and hose sizes. For example, provide the type, profile, and size of pipe.

f. Provide the size of fish screens (mesh size and surface area) to be used, in accordance with Section 7-06.3(5) of these Special Provisions.

4. Stream Flow Blocking and Dewatering

a. Provide the method(s), including locations and details (narrative and drawings) for blocking both the upstream and downstream ends of the diversion. Describe how minor leakage from upstream and downstream will be addressed.

b. Include provisions for scour protection at the temporary stream diversion outfalls.

c. Identify the means and methods for dewatering water and disposal of the water.

5. Contingency Plan

a. The Contractor shall include the details of the system in the TDS Plan sections that are applicable.

b. Describe the Work that will be implemented to prevent the work area from becoming inundated.

c. Provide the type and size of materials that will be used in the event of the Work area becoming inundated, including fish exclusion coordination with Contracting Agency if the block nets are compromised.

d. Describe how the contingency equipment and materials will be stored, inspected and maintained so they are ready for use if required.

e. Describe how the contingency system will deployed and operational within 2 hours.

6. Inspection and Maintenance

a. Provide the schedule and frequency for inspection of the temporary stream diversion; include weekends and holidays.

b. Describe how maintenance will be conducted when inspections identify deficiencies in the temporary stream diversion. These

include, but are not limited to removal and disposal of trapped sediment or debris and repairing leaks.

c. The Contractor shall keep a record of all inspections and maintenance of the temporary stream diversion.

7. Rewatering the Stream Channel

a. Detail how the stream channel will be rewatered to comply with water quality requirements.

b. Identify measures that will prevent the stranding of fish during rewatering (i.e. describe methods, rates, and durations of the rewatering process knowing that flows downstream of the fish block must be maintained to protect fish).

8. Removal of the Temporary Stream Diversion

a. Describe the sequence that will be used for removing the temporary stream diversion and methods to prevent water quality impacts.

b. Describe how disturbed soil will be permanently stabilized.

c. Describe any temporary pipes to remain (requires approval of the Engineer): their type, pipe class, size, location, and plugging procedure.

9. Other Work required for the Contractor's temporary stream diversion

### *7-06.3(3) Fish and Aquatic Species Exclusion and Notifications*

Prior to installing a temporary stream diversion, the Contractor shall allow 7 calendar days after the beginning of the in-water work window defined in the Special Provisions, in their schedule for the Contracting Agency: (1) to install fish block nets upstream and downstream of the in-water Work area; and (2) safely capture and relocate any fish and other aquatic organisms that become trapped between the block nets. No Work within the limits of the Ordinary High Water Line will be allowed prior to installation of fish block nets and completion of fish exclusion activities.

As specified by the Engineer the Contractor shall assist the Contracting Agency with fish and aquatic species exclusion. The Contracting Agency will pay for this Work by the force account item "Fish Exclusion".

### *7-06.3(4) Dewatering Work Area*

Dewatering the isolated in-water Work area (between the upstream and downstream diversion dams) shall occur at a rate slow enough to allow the Contracting Agency to safely capture and relocate all fish species and other aquatic organisms to avoid stranding, as determined by the Engineer.

All pumps used for dewatering shall have an intake covered with a fish screen, operated, and maintained in accordance with RCW 77.57.010 and RCW 77.57.070. Appropriate fish screens are as follows:

1. Perforated plate: 0.094 inch (maximum opening diameter);

2. Profile bar: 0.069 inch (maximum width opening); or

3. Woven wire: 0.094 inch (maximum opening measured on the diagonal).

The minimum open area for all types of fish screens is twenty-seven percent. The screened intake facility must have enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. The fish screen must remain in place whenever water is withdrawn until the Contracting Agency Biologists confirm all fish have been removed. At that point, the Contractor may remove the fish screen to finish dewatering the work area.

### *7-06.3(5) Inspection and Maintenance*

At a minimum, the Contractor shall perform the following activities once per day (including weekends and holidays):

1. Check for and correct leaks;

2. Ensure the fish block nets remain sealed to the channel substrate.

The fish block nets shall be kept clear of debris that could jeopardize the integrity of the nets. The Contractor shall perform the following activities a minimum of three times per day or when requested by the Engineer. On working days, these activities shall be performed at the start, middle, and at the end of the working day. On non-working days, these activities shall be performed between 6:00 am and 8:00 am, between 11:00 am and 1:00 pm, and between 4:00 pm and 6:00 pm:

1. Inspect the upstream and downstream fish block nets and remove debris;

2. Inspect the upstream fish block net and all screens and similar facilities for impinged fish;

    a. The Contractor shall immediately notify the Contracting Agency when impinged fish are discovered.

    b. Removal of impinged fish will be performed by the Contracting Agency.

The Contractor shall maintain a written record of all inspection and maintenance activities; record to be available at the request of the Engineer.

### *7-06.3(6) Rewatering the Stream Channel*

The Contractor shall notify the Engineer a minimum of 7 calendar days in advance of rewatering the stream channel.

The Contractor shall introduce water to the new stream channel section and trap sediments until the stream section meets the requirements of these Provisions. Rewatering shall occur at a rate to avoid loss of surface water downstream while the new channel section is rewatered.

### *7-06.3(7) Removal of the Temporary Stream Diversion*

The Contractor shall notify the Engineer two business days in advance of beginning the temporary stream diversion removal sequence.

Once the water in the new stream channel will meet the applicable turbidity standards the Contractor may begin removal of the temporary stream diversion and the stream channel opened to flows.

The Contractor shall immediately take all corrective actions necessary to prevent the water from exceeding the turbidity standards should the stream turbidity increase. All Work within the channel, except for removal of the temporary erosion control items, shall be completed before the temporary stream diversion is removed. The Contractor must finish all construction activities within the limits of the Ordinary High Water Line, including but not limited to culvert installation and creek bed channel restoration, before the Contracting Agency will remove the fish block nets.

All materials used for the diversion shall become the property of the Contractor and removed from the project limits, with the exception of any materials supplied by the Contracting Agency, unless otherwise specified by the Engineer.

## 7-06.4 Vacant

## 7-06.5 Payment

Payment will be made for the following Bid items when included in the proposal:

"Temporary Stream Diversion", lump sum.
The lump sum Contract price for "Temporary Stream Diversion" shall be full payment to perform the Work as specified. Progress payments for the lump sum item "Temporary Stream Diversion" will be made as follows:

1. Twenty-five percent of the bid amount will be paid following completion of the TSD Plan including resolution of all Contracting Agency review comments.

2. The remaining seventy-five percent of the bid amount shall be paid in accordance with Section 1-09.9.

"Fish Exclusion", by force account as provided in Section 1-09.6.

To provide a common Proposal for all Bidders, the Contracting Agency has entered an amount in the Proposal to become a part of the Contractor's total Bid.

DIVISION8.GR8

# Division 8
# Miscellaneous Construction

8-01.GR8

## Erosion Control and Water Pollution Control

8-01.3.GR8

## Construction Requirements

8-01.3(1).GR8

***General***

8-01.3(1).INST1.GR8

The tenth paragraph of Section 8-01.3(1) is revised to read:

8-01.3(1).OPT1.GR8

**(January 25, 2010)**

**Erodible Soil Eastern Washington**

Erodible soil not being worked whether at final grade or not, shall be covered within the following time period using an approved soil cover practice:

| | |
|---|---|
| July 1 through September 30 | 30 days |
| October 1 through June 30 | 15 days |

8-01.3(1).INST2.GR8

Section 8-01.3(1) is supplemented with the following:

8-01.3(1).OPT8.FR8

**(April 1, 2002)**

**Side Slope Treatment**

Slopes shall be compacted within *** $$1$$ *** days of exposure of a new section of cut and construction of a new portion of an embankment.

8-01.3(1)B.GR8

**Erosion and Sediment Control (ESC) Lead**

8-01.3(1)B.INST1.GR8

Section 8-01.3(1)B is revised to read:

8-01.3(1)B.OPT1.GR8

(May 28, 2020)

The Contractor shall identify the ESC Lead at the preconstruction discussions and in the TESC Plan. The ESC Lead shall have, for the life of the Contract, a current Certificate of Training in Construction Site Erosion and Sediment Control from a course approved by the Washington State Department of Ecology. The ESC Lead must be onsite or on call at all times throughout construction. The ESC Lead shall be listed on the Emergency Contact List required under Section 1-05.13(1).

The ESC Lead shall implement the TESC Plan. Implementation shall include, but is not limited to:

1. Installing, adaptively managing, and maintaining temporary erosion and sediment control BMPs to assure continued performance of their intended function. Damaged or inadequate BMPs shall be corrected immediately.

2. Updating the TESC Plan to reflect current field conditions.

3. Inspecting and reporting on all areas disturbed by construction activities, all on-site erosion and sediment control BMPs, and all

storm water discharge points every calendar week and within 24 hours of runoff events in which storm water discharges from the site or as directed by the Engineer.

4. Submit to the Engineer no later than the end of the next working day following the inspection a TESC Inspection Report that includes:

   a. When, where, and how BMPs were installed, maintained, modified, and removed.

   b. Observations of BMP effectiveness and proper placement.

   c. Recommendations for improving future BMP performance with upgraded or replacement BMPs when inspections reveal TESC BMP deficiencies.

   d. Identify for each discharge point location whether there is compliance with state water quality standards in WAC 173-201A for turbidity and pH.

Inspection of temporarily stabilized, or inactive sites may be reduced to once every calendar month if allowed by the Engineer.

8-01.3(1)C4.GR8

**Management of Off-Site Water**

8-01.3(1)C4.INST1.GR8

Section 8-01.3(1)C4 is supplemented with the following:

8-01.3(1)C4.OPT1.FR8

**(August 6, 2012)**

**Off-site Stormwater**

Stormwater is known to enter the project site at the following locations:

*** $$1$$ ***

8-01.3(2).GR8

***Temporary Seeding and Mulching***

8-01.3(2)B.GR8

**Temporary Seeding**

8-01.3(2)B.INST1.GR8

Section 8-01.3(2)B is supplemented with the following:

8-01.3(2)B.OPT1.FR8

(August 4, 2014)

Seed of the following mix, rate, and analysis shall be applied at the rates shown below on all areas requiring ***$$1$$*** seeding within the project:

| Seed by Common Name and (Botanical name) | Pounds Pure Live Seed (PLS) Per Acre |
|---|---|

| | |
|---|---|
| *** $$2$$ | $$ |
| $$ | $$ |
| $$ | $$ |
| Total | $$ *** |

The seed shall be certified in accordance with WAC 16-302 and meet the following requirements:

| | |
|---|---|
| Prohibited Weed | 0% max. |
| Noxious Weed | 0% max. |
| Other Weed | 0.20% max. |
| Other Crop | 0.40% max. |

8-01.3(2)B.OPT2.FR8

(August 4, 2014)

Seed of the following mix, rate, and analysis shall be applied at the rates shown below on all areas requiring ***$$1$$*** seeding within the project:

| Seed by Common Name, (Botanical Name), and "Source Identification" | Pounds Pure Live Seed (PLS) Per Acre |
|---|---|
| *** $$2$$ | $$ |
| $$ | $$ |
| $$ | $$ |
| Total | $$ *** |

Source Identified seed shall be generation four or less. Non-Source Identified seed shall meet or exceed Washington State Department of Agriculture Certified Seed Standards and be from within the appropriate genetic zones of the *** $$3$$ *** Ecoregion(s) as defined by the US Environmental Protection Agency (EPA).

The seed certification class shall be Certified (blue tag) in accordance with WAC 16-302 and meet the following requirements:

| | |
|---|---|
| Prohibited Weed | 0% max. |
| Noxious Weed | 0% max. |
| Other Weed | 0.20% max. |
| Other Crop | 0.40% max. |

The Contractor shall document all Source Identified seed by providing the Association of Official Seed Certifying Agents (AOSCA) yellow seed label for

each species in the mix. Site Identification Logs can be supplied for collections where the AOSCA yellow label is not available.

8-01.3(2)B.OPT3.GR8

(September 3, 2019)

Grass seed shall be a commercially prepared mix, made up of low growing species which will grow without irrigation at the project location, and approved by the Engineer. The application rate shall be two pounds per 1000 square feet. Fertilizer shall be a commercially prepared mix of 10-20-20 and shall be applied at the rate of 10 pounds per 1000 square feet.

8-01.3(2)B.OPT4.FR8

(January 3, 2006)

Sufficient quantities of fertilizer shall be applied to supply the following amounts of nutrients:

Total Nitrogen as N - *** $$1$$ *** pounds per acre.

Available Phosphoric Acid as $P_2O_5$ - *** $$2$$ *** pounds per acre.

Soluble Potash as $K_2O$ - *** $$3$$ *** pounds per acre.

*** $$4$$ *** pounds of nitrogen applied per acre shall be derived from isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release, polyurethane coated source with a minimum release time of 6 months. The remainder may be derived from any source.

The fertilizer formulation and application rate shall be approved by the Engineer before use.

8-01.3(2)B.OPT8.FR8

(August 4, 2014)

Seed of the following mix, rate, and analysis shall be applied at the rates shown below on all areas requiring *** $$1$$ *** seeding within the project:

| Seed by Common Name, (Botanical Name), and "Source Identification" | Pure Live Seed Pounds (PLS) Per Acre |
|---|---|
| *** $$2$$ | $$ |
| $$ | $$ |
| $$ | $$ |
| Total | $$ *** |

Seed shall meet or exceed Washington State Department of Agriculture Certified Seed Standards and be from within the *** $$3$$ *** Ecoregion(s) as defined by the US Environmental Protection Agency (EPA).

The seed certification class shall be Certified (blue tag) in accordance with WAC 16-302 and meet the following requirements:

| | |
|---|---|
| Prohibited Weed | 0% max. |
| Noxious Weed | 0% max. |
| Other Weed | 0.20% max. |
| Other Crop | 0.40% max. |

8-01.3(2)D.GR8

**Temporary Mulching**

8-01.3(2)D.INST1.GR8

Section 8-01.3(2)D is supplemented with the following:

8-01.3(2)D.OPT1.FR8

(January 5, 2015)

*** $$1$$ *** shall be applied at a rate of *** $$2$$ *** pounds per acre with no more than *** $$3$$ *** pounds per acre applied in a single lift.

8-02.GR8

## Roadside Restoration

8-02.1.GR8

### Description

8-02.1.INST1.GR8

Section 8-02.1 is supplemented with the following:

8-02.1.OPT1.GR8

(August 4, 2014)

This work shall consist of removing and disposing of buried man-made debris that may be encountered during soil amendment incorporation or excavation for irrigation systems.

8-02.1.OPT2.GR8

(April 1, 2019)

This Work consists of supplying and applying a Biotic Soil Amendment (BSA) in accordance with these Specifications and as shown in the Plans or as designated by the Engineer.

8-02.2.GR8

### Materials

8-02.2.INST1.GR8

Section 8-02.2 is supplemented with the following:

8-02.2.OPT1.GR8

***(January 3, 2011)***

***Conservation Grade Plant Material***

Conservation grade plant material is defined as healthy plants that do not meet aesthetic standards as defined in ASNS. The plants have healthy, well-developed roots and in all other ways meet standards for healthy and vigorous growth. However, these plants may

have multiple leaders, damaged or missing leaders, Y crotches, bent branches, or other unusual shapes or forms. These plants may be used where shown in the plans.

8-02.2.OPT2.GR8

(April 1, 2019)

Biotic Soil Amendments (BSAs), also known as biotic soil media and hydraulic growth medium, shall be soil amendments engineered to improve the development of deficient soils and to facilitate sustainable vegetation. BSAs shall consist of a blend of organic material, nutrient sources, soil building and biostimulant components. BSAs shall increase the water and nutrient holding capacity of the soil and promote the growth of beneficial microorganisms. BSAs shall provide for enhanced seed germination and vegetative establishment.

Biotic Soil Amendment shall be certified to be free of weed seeds and pathogens, free of plastic, composed of non-toxic materials, and be a pre-mixed formulation unaltered by synthetic materials.

The biotic soil amendment shall have a minimum of 90% organic matter (organic growth medium) and contain other materials designed to improve seed germination, vegetation establishment and overall soil health. In addition to organic growth medium BSA shall include mycorrhizal fungi and a minimum of three of the following ingredients:

- Biochar
- Humus/Humic Acid
- Porous Ceramics or Water-holding Organic Polymers
- Seaweed Extract
- Beneficial Bacteria
- Micronutrients

The Contractor shall provide test results dated within 3 years prior to the date of application from an independent, accredited laboratory that has been recognized by an accrediting organization to test and evaluate products to product safety standards. The independent, accredited lab shall be free from commercial, financial, and other pressures that may influence the results of the testing and evaluation process. Test results shall show that the product meets the following table requirements:

Table 1: Biotic Soil Amendment Requirements

| BSA Properties | Test Methods | Requirements |
|---|---|---|
| **Physical** | | |
| Organic Matter | ASTM D586 | 90% minimum |
| pH | ASTM D1293 | 5.0 - 8.5 |
| C:N Ratio | ASTM E1508 | 10:1 minimum 50:1 maximum |
| Water-Holding Capacity[1] | ASTM D7367 | 400% minimum |
| Moisture Content | ASTM 2974 | 10% minimum, 50% maximum |
| **Environmental** | | |
| Acute Toxicity | EPA Method 2021.0 | Non-toxic |
| EPA Metal Limits | SW846-6020 04.06 | Pass |
| **Performance** | | |
| Growth Enhancement | ASTM D7322 | 500% minimum |

[1]Water holding capacity of the pre-packaged material without the addition of ancillary amendments.

***Submittal Requirements***

At the time of delivery, the Contractor shall submit the specific biotic soil amendment packing list to the Engineer for acceptance. The packing list shall include complete identification including, but not limited to, the following information:

- Manufacturer name and location,
- Manufacturer telephone number and fax number,
- Manufacturer's e-mail address and web address, and
- BSA name.
- Certification that the specific BSA meets the physical, environmental and performance criteria of this specification and test results.

***Acceptance***

Acceptance of the materials shall be based on:

1. Certificate of Compliance demonstrating adherence to the Specifications,
2. Visual inspection ensuring the material is free of plastic.

8-02.2(9-14).GR8

***Erosion Control and Roadside Planting***

8-02.2(9-14).INST1.GR8

Section 9-14 is supplemented with the following:

8-02.2(9-14).OPT1.FR8

**(January 3, 2011)**

**Weed Barrier Mats**

Weed Barrier Mats shall be 3 feet square. They shall be made of UV stabilized geotextile colored with carbon black and shall provide a minimum of 3 years of weed control. Weed Barrier Mats shall be 2.5 mils thick with a minimum of 400 micropores per square inch. Staples shall be a minimum of 11 gauge wire and be *** $$1$$ *** inches in length.

Acceptance will be based on a catalog cut.

8-02.3.INST1.GR8

Section 8-02.3 is supplemented with the following:

8-02.3.OPT1.GR8

***(April 1, 2019)***

***Storage and Handling***

Biotic soil amendments in accordance with the above requirements shall be furnished by the manufacturer in pre-packaged, standard unopened containers with weight, name of plant nutrients and manufacturer's guaranteed statement of analysis clearly marked in accordance with State and Federal laws. Field mixing of BSA components will not be permitted. Containers shall be kept safe in storage protected from weather, excessive temperatures, and construction operations. Products shall be handled in compliance with any instructions or recommendations stated by the manufacturer. Any spills shall be promptly cleaned.

***Installation of Biotic Soil Amendment***

The Contractor shall comply with the equipment manufacturer's installation instructions and recommendations. Biotic soil amendment shall be hydraulically applied at the rate of 4000 pounds per acre with no more than 2500 pounds applied in any single lift. Lifts shall be applied from opposing directions to soil surface for uniform coverage. If recommended by the BSA manufacturer, seed, tackifier and/or fertilizer shall be added to the slurry as recommended by manufacturer or BSA shall be applied within 48 hours of the seeding operation. A continuous and uniform cover shall be provided to the depth specified by the manufacturer. Thin areas or areas of bare soil will not be allowed, and supplemental biotic soil amendment applied by the Contractor shall be at no additional cost to the Contracting Agency.

8-02.3(4).GR8

***Topsoil***

8-02.3(4)A.GR8

**Topsoil Type A**

8-02.3(4)A.INST1.GR8

Section 8-02.3(4)A is supplemented with the following:

8-02.3(4)A.OPT1.FR8

(August 3, 2015)

Topsoil Type A shall be placed to a non-compacted depth of *** $$1$$ *** inches. The topsoil shall be thoroughly blended prior to placement.

The Contractor shall submit a Type 1 Working Drawing consisting of independent test results from an accredited laboratory demonstrating the Topsoil Type A meets the requirements of Section 9-14.1(1). The Type 1 Working Drawing shall also include the Request for Approval of Material in accordance with Section 1-06.1(2).

8-02.3(5).GR8

***Roadside Seeding, Lawn and Planting Area Preparation***

8-02.3(5).INST1.GR8

Section 8-02.3(5) is supplemented with the following:

8-02.3(5).OPT1.FR8

(August 5, 2013)

After the initial planting area weed control, soil placement, grading, and the installation of irrigation lines are completed, and prior to planting, all designated planting areas shall be covered with compost.

Prior to placement of compost, the application methods shall be approved by the Engineer.

Compost shall not be placed when a condition exists, such as frozen or water saturated soil that may be detrimental to successful application or soil structure.

The Contractor shall notify the Engineer a minimum of five working days prior to the start of compost work.

Compost shall be uniformly and evenly placed in all designated areas at a depth of *** $$1$$ *** inches.

8-02.3(5).OPT2.FR8

(August 5, 2013)

After the initial planting area weed control, soil placement, and grading are completed, and prior to the installation of irrigation lines and planting, all designated planting areas shall be covered with compost.

Prior to placement and incorporation of compost, the application and incorporation methods shall be approved by the Engineer.

Compost shall not be placed when a condition exists, such as frozen soil or water saturated soil that may be detrimental to successful application, incorporation, or soil structure.

The Contractor shall notify the Engineer a minimum of five working days prior to the start of compost work.

Compost shall be uniformly and evenly placed in all designated areas at a depth of *** $$1$$ *** inches.

After placement of the compost, the Contractor shall incorporate the layer uniformly into the existing soil to a depth of *** $$2$$ *** inches.

8-02.3(5).OPT3.FR8

(August 5, 2013)

After initial area weed control, grading, and soil placement are completed, all soil shall be covered with compost.

Prior to the placement and incorporation of compost, the application and incorporation methods shall be approved by the Engineer.

Compost shall not be placed when a condition exists, such as frozen or water saturated soil that may be detrimental to successful application, incorporation, or soil structure.

The Contractor shall notify the Engineer a minimum of five working days prior to the start of compost work.

Compost shall be uniformly and evenly placed in all designated areas at a depth of *** $$1$$ *** inches.

After placement of the compost, the Contractor shall incorporate the layer uniformly into the existing soil to a depth of *** $$2$$ *** inches.

8-02.3(5).OPT4.GR8

**(August 4, 2014)**

**Removal of Buried Man-Made Debris**

The Contractor shall remove buried man-made debris as directed by the Engineer to a maximum depth of two feet. The excavated debris shall be removed from the project site to a disposal facility approved by the Engineer.

8-02.3(6).GR8

## *Soil Amendments*

8-02.3(6)B.GR8

**Fertilizers**

8-02.3(6)B.INST1.GR8

Section 8-02.3(6)B is supplemented with the following:

8-02.3(6)B.OPT1.FR8

(September 3, 2019)

Sufficient quantities of fertilizer shall be applied to supply the following amounts of nutrients:

Total Nitrogen as N - *** $$1$$ *** pounds per acre.

Available Phosphoric Acid as $P_2O_5$ - *** $$2$$ *** pounds per acre.

Soluble Potash as $K_2O$ - *** $$3$$ *** pounds per acre.

*** $$4$$ *** pounds of nitrogen applied per acre shall be derived from isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release, polyurethane coated source with a minimum release time of 6 months. The remainder may be derived from any source.

The fertilizer formulation and application rate shall be approved by the Engineer before use.

8-02.3(6)B.OPT2.FR8

**(September 3, 2019)**

**First Application of Fertilizer**

Sufficient quantities of fertilizer shall be applied to supply the following amounts of nutrients:

Total Nitrogen as N - *** $$1$$ *** pounds per acre.

Available Phosphoric Acid as $P_2O_5$ - *** $$2$$ *** pounds per acre.

Soluble Potash as $K_2O$ - *** $$3$$ *** pounds per acre.

The fertilizer formulation and application rate shall be approved by the Engineer before use.

**Second Application of Fertilizer**

A second application of fertilizer shall be applied during the period of March 1 to April 15 or November 15 to December 15. In no instance shall the second application of fertilizer occur less than 90 days after the first fertilizer application.

Sufficient quantities of fertilizer shall be applied to supply the following amounts of nutrients:

Total Nitrogen as N - *** $$4$$ *** pounds per acre.

Available Phosphoric Acid as $P_2O_5$ - *** $$5$$ *** pounds per acre.

Soluble Potash as $K_20$ - *** $$6$$ *** pounds per acre.

*** $$7$$ *** pounds of nitrogen applied per acre shall be derived from isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release, polyurethane coated source with a minimum release time of 6 months. The remainder may be derived from any source.

The fertilizer formulation and application rate shall be approved by the Engineer before use.

8-02.3(6)B.OPT3.GR8

(September 3, 2019)

Fertilizer shall be a commercially prepared mix of 10-20-20 and shall be applied at the rate of 10 pounds per 1000 square feet.

8-02.3(6)B.OPT4.FR8

(September 3, 2019)

Sufficient quantities of fertilizer shall be applied to supply the following amounts of nutrients:

Total Nitrogen as N – *** $$1$$ *** pounds per acre.

Sulfur – *** $$2 $$ ***pounds per acre.

*** $$3$$ *** pounds of nitrogen applied per acre shall be derived from isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release, polyurethane coated source with a minimum release time of 6 months. The remainder may be derived from any source.

The fertilizer formulation and application rate shall be approved by the Engineer before use.

8-02.3(8).GR8

***Planting***

8-02.3(8).INST1.GR8

Section 8-02.3(8) is supplemented with the following:

8-02.3(8).OPT1.FR8

(February 25, 2013)

When work requiring disturbance within planting area(s) *** $$1$$ *** is complete, the Contractor shall perform planting work within the next available planting window.

8-02.3(9).GR8

## *Seeding, Fertilizing, and Mulching*

8-02.3(9)B.GR8

### Seeding and Fertilizing

8-02.3(9)B.INST1.GR8

Section 8-02.3(9)B is supplemented with the following:

8-02.3(9)B.OPT1.FR8

(September 3, 2019)

Seed of the following mix, rate, and analysis shall be applied at the rates shown below on all areas requiring ***$$1$$*** seeding within the project:

| Seed by Common Name, (Botanical Name), and "Source Identification" | Pounds Pure Live Seed (PLS) Per Acre |
|---|---|
| *** $$2$$ | $$ |
| $$ | $$ |
| $$ | $$ |
| Total | $$ *** |

Source Identified seed shall be generation four or less. Non-Source Identified seed shall meet or exceed Washington State Department of Agriculture Certified Seed Standards and be from within the appropriate genetic zones of the *** $$3$$ *** Ecoregion(s) as defined by the US Environmental Protection Agency (EPA).

The seed certification class shall be Certified (blue tag) in accordance with WAC 16-302 and meet the following requirements:

| | |
|---|---|
| Prohibited Weed | 0% max. |
| Noxious Weed | 0% max. |
| Other Weed | 0.20% max. |
| Other Crop | 0.40% max. |

The Contractor shall document all Source Identified seed by providing the Association of Official Seed Certifying Agents (AOSCA) yellow seed label for each species in the mix. Site Identification Logs can be supplied for collections where the AOSCA yellow label is not available.

8-02.3(9)B.OPT2.GR8

(September 3, 2019)

Grass seed shall be a commercially prepared mix, made up of low growing species which will grow without irrigation at the project location, and accepted by the Engineer. The application rate shall be two pounds per 1000 square feet.

8-02.3(9)B.OPT3.FR8

(September 3, 2019)

Seed of the following mix, rate, and analysis shall be applied at the rates shown below on all areas requiring *** $$1$$ *** seeding within the project:

| Seed by Common Name, (Botanical Name), and "Source Identification" | Pure Live Seed Pounds (PLS) Per Acre |
|---|---|
| *** $$2$$ | $$ |
| $$ | $$ |
| $$ | $$ |
| Total | $$ *** |

Seed shall meet or exceed Washington State Department of Agriculture Certified Seed Standards and be from within the *** $$3$$ *** Ecoregion(s) as defined by the US Environmental Protection Agency (EPA).

The seed certification class shall be Certified (blue tag) in accordance with WAC 16-302 and meet the following requirements:

| | |
|---|---|
| Prohibited Weed | 0% max. |
| Noxious Weed | 0% max. |
| Other Weed | 0.20% max. |
| Other Crop | 0.40% max. |

8-02.3(11).GR8

***Mulch***

8-02.3(11).INST1.GR8

Section 8-02.3(11) is supplemented with the following:

8-02.3(11).OPT1.FR8

(April 2, 2012)

Bark mulch or wood chip mulch shall be placed to a uniform non-compacted depth of *** $$1$$ *** over all planting areas.

Bark or wood chip mulch shall not be placed in areas of standing or flowing water.

8-02.3(11)A.GR8

**Mulch for Seeding Areas**

8-02.3(11)A.INST1.GR8

Section 8-02.3(11)A is supplemented with the following:

8-02.3(11)A.OPT1.FR8

(September 3, 2019)

*** $$1$$ *** shall be applied at a rate of *** $$2$$ *** pounds per acre with no more than *** $$3$$ *** pounds per acre applied in a single lift.

8-02.3(13).GR8

***Plant Establishment***

8-02.3(13).INST1.GR8

Section 8-02.3(13) is supplemented with the following:

8-02.3(13).OPT1.GR8

(January 5, 2015)

Subsequent year plant establishment periods shall begin immediately at the completion of the preceding year's plant establishment period. Each subsequent year plant establishment period shall be 1 full calendar year in duration.

During the plant establishment period(s) after first year plant establishment, the Contractor shall perform all Work necessary for the continued healthy and vigorous growth of all plant material as directed by the Engineer.

8-02.4.GR8

## Measurement

8-02.4.INST1.GR8

Section 8-02.4 is supplemented with the following:

8-02.4.OPT1.GR8

(January 5, 2015)

Topsoil, mulch and soil amendments will be measured by the square yard along the grade and slope of the area covered after application.

Compost will be measured by the square yard along the grade and slope of the area covered after application.

8-02.4.OPT2.GR8

(April 1, 2019)

Biotic Soil Amendment will be measured by the acre along the grade and slope of the area covered immediately after application.

8-02.5.GR8

## Payment

8-02.5.INST1.GR8

Section 8-02.5 is supplemented with the following:

8-02.5.OPT1.GR8

(January 5, 2015)

"Plant Establishment ___ Year", will be paid in accordance with Section 1-09.6.

8-02.5.OPT2.GR8

(August 4, 2014)

"Removal of Buried Man-Made Debris" will be paid for by force account as specified in Section 1-09.6. The payment for removal of buried man-made debris shall be full compensation for all costs for the specified Work to include removing, loading, hauling, and all associated disposal costs.

For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the Contractor's total Bid.

8-02.5.OPT3.GR8
(January 5, 2015)
"Fine Compost ", per square yard.

"Medium Compost", per square yard.

"Coarse Compost", per square yard.

The unit Contract price per square yard for "Fine Compost", or "Medium Compost" or "Coarse Compost" shall be full pay for furnishing and spreading the compost onto the existing soil.

"Soil Amendment", per square yard.

The unit Contract price per square yard for "Soil Amendment" shall be full pay for furnishing and incorporating the soil amendment into the existing soil.

"Bark or Wood Chip Mulch", per square yard.

The unit Contract price per square yard for "Bark or Wood Chip Mulch" shall be full pay for furnishing and spreading the mulch onto the existing soil.

"Topsoil Type ____", per square yard.

The unit Contract price per square yard for "Topsoil Type ____" shall be full pay for all costs for the specified Work.

8-02.5.OPT4.FR8
(April 1, 2019)
"Biotic Soil Amendment", per acre.

The unit Contract price per acre for "Biotic Soil Amendment" shall be full pay to perform the Work as specified. When seed is mixed into, and applied with the biotic soil amendment, payment for seed will be made under the Bid item *** $$1$$ ***.

8-10.GR8
## Guide Posts

8-10.1.GR8
## Description

8-10.1.INST1.GR8
Section 8-10.1 is supplemented with the following:

8-10.1.OPT1.GR8
(April 1, 2002)
This Work shall consist of furnishing and installing barrier delineators on concrete barrier when barrier runs concurrent with guide post locations.

8-10.2.GR8
## Materials

8-10.2.INST1.GR8
Section 8-10.2 is supplemented with the following:

8-10.2.OPT1.GR8
(August 6, 2018)
Barrier delineators shall consist of a flat plastic reflector lens or reflective sheeting attached to a housing or bracket to facilitate the mounting of the delineator on concrete traffic barrier. The reflective surface shall be rectangular or trapezoidal shape with a minimum area of 9 square inches for reflectors and 12 square inches for reflective sheeting. The housing or bracket can be flexible or rigid, molded from a durable plastic or other durable material approved by the engineer. Barrier delineators shall be one sided for single direction or two sided for bi-directional.

Reflectors shall be acrylic or polycarbonate and shall conform to AASHTO M 290. Reflectors shall equal or exceed the following minimum values of specific intensity:

| **Observation Angle (Degrees)** | **Entrance Angle (Degrees)** | **Specific Intensity cd/ft-c** | |
|---|---|---|---|
| | | **White** | **Yellow** |
| 0.1 | 0 | 126 | 75 |
| 0.1 | 20 | 50 | 30 |

Reflective sheeting for barrier delineators shall be type III, IV, V or XI and selected from approved materials listed in the Qualified Products List, or shall be accepted through the Request for Materials (RAM) process in accordance with Section 1-06.1(2).

8-10.3.GR8
## Construction Requirements

8-10.3.INST1.GR8
Section 8-10.3 is supplemented with the following:

8-10.3.OPT1.GR8
(April 1, 2002)
Barrier delineators shall be placed on the traffic face of the barrier six inches down from the top. Spacing shall be as shown in the plans. Delineator color shall be white on the right of traffic and yellow on the left of traffic. The surface of the barrier where the delineator is applied shall be free of dirt, curing compound, moisture, paint, or any other material that would adversely affect the bond of the adhesive. Install delineators with an adhesive recommended by the manufacturer.

8-10.3.OPT2.GR8
(April 1, 2002)

Barrier delineators shall be placed on the top of the barrier. Spacing shall be as shown in the plans. Delineator color shall be white on the right of traffic and yellow on the left of traffic. The surface of the barrier where the delineator is applied shall be free of dirt, curing compound, moisture, paint, or any other material that would adversely affect the bond of the adhesive. Install delineators with an adhesive recommended by the manufacturer.

8-10.4.GR8

## Measurement

8-10.4.INST1.GR8

Section 8-10.4 is supplemented with the following:

8-10.4.OPT1.GR8

(April 1, 2002)

Barrier delineators will be measured by the unit for each delineator furnished and installed.

8-10.5.GR8

## Payment

8-10.5.INST1.GR8

Section 8-10.5 is supplemented with the following:

8-10.5.OPT1.GR8

(April 1, 2002)

"Barrier Delineator", per each

8-11.GR8

## Guardrail

8-11.1.GR8

## Description

8-11.1.INST1.GR8

Section 8-11.1 is supplemented with the following:

8-11.1.OPT1.GR8

***(February 3, 2020)***

***High-Tension Cable Barrier System (4 Cable)***

This work consists of supplying and constructing high-tension cable barrier systems (cable, posts, compensating devices, fittings, and hardware), terminals, and transitions in conformity with the lines and grades as staked.

8-11.1.OPT2.GR8

(April 1, 2019)

This Work shall consist of applying an aesthetic treatment, either a powder coating or reactive coloring agent, to galvanized beam guardrail, galvanized guardrail posts, terminal ends and associated hardware that provides a “non-reflective” and “earth” tone colored finish (dark brown) that visually blends with the natural environment.

8-11.2.GR8

## Materials

8-11.2.INST1.GR8

Section 8-11.2 is supplemented with the following:

8-11.2.OPT2.GR8

***(September 3, 2019)***

### *High-Tension Cable Barrier System (4 Cable)*

The Contractor shall furnish a high-tension 4-cable barrier system, terminals, and transitions that meet the requirements of NCHRP Report 350 Test Level 3 or 4 that are designed for a minimum cable tension of 3,000-pounds at an ambient air temperature of 70 degrees F . All fittings and connecting hardware shall have a minimum breaking strength of 36,000-pounds. The maximum allowable barrier system post spacing is 17.0-feet. Barrier system post spacing provided by the Contractor shall limit lateral deflection to the value shown in the Contract documents.

The Contractor shall submit a Type 2 Working Drawing consisting of fabrication drawings and installation procedures. The Working Drawings shall specify all components used in the entire barrier system, as well as the post spacing required to achieve the deflection value shown in the Contract documents.

The barrier system will be accepted based on a Manufacturer's Certificate of Compliance provided by the Contractor. The Manufacturer's Certificate of Compliance shall consist of a Contract specific letter from the manufacturer stating the system is NCHRP 350 Test Level 3 or 4 compliant, a copy of the original FHWA eligibility letter(s) for the barrier system, documentation from the manufacturer describing any and all modifications that have been made to the system since the letter(s) were issued, and a statement from the manufacturer certifying that those modifications do not affect the performance of the original system.

8-11.2.OPT4.GR8

***(April 1, 2019)***

### *Powder Coating*

Powder coating materials for coating galvanized surfaces shall be in accordance with Section 9-08.2. The color shall match SAE AMS Standard 595, color number 30045.

### *Reactive Coloring Agent*

The reactive coloring agent shall consist of a stable, "non-reflective" "earth" tone (dark brown) colored finish on the surface of the galvanized materials. The reactive coloring agent shall only utilize oxidizers, metals, metal salts, and/or other trace elements applied directly to the galvanized surfaces to obtain the desired color. The chemical components of the reactive coloring agent shall have no adverse reactions or effects on soils, plants, or animals and shall not contain corrosive by-products once the product has been applied. Only nitrate fertilizer products are permitted to be present as soluble residues.

The reactive coloring agent shall be provided by either the following manufacturer or an accepted equal:

NATINA manufactured by Natina Products, LLC
1577 First Street
Coachella, CA 92236

Telephone: (877) 762-8462
www.natinaproducts.com

8-11.2(9-16.3).GR8

***Beam Guardrail***

8-11.2(9-16.3(2)).GR8

**Posts and Blocks**

8-11.2(9-16.3(2)).INST1.GR8

Section 9-16.3(2) is supplemented with the following:

8-11.2(9-16.3(2)).OPT1.GB8

(April 6, 2015)

Shear plates and backing plates shall conform to ASTM A 36, and shall be galvanized after fabrication in accordance with AASHTO M 111.

8-11.2(9-16.3(2)).OPT2.GB8

(April 6, 2015)

Grout for post bases shall conform to Section 9-20.3(2).

8-11.2(9-16.3(2)).OPT3.GB8

(April 6, 2015)

Steel angles connecting the timber blockout to the existing steel truss members shall conform to either ASTM A 36 or ASTM A 992, and shall be galvanized in accordance with AASHTO M 111.

8-11.2(9-16.3(2)).OPT4.GB8

(April 6, 2015)

HSS steel tubing shall conform to ASTM A 500 Grade B, and shall be galvanized after fabrication in accordance with AASHTO M 111.

Steel bars, plates, and shapes shall conform to ASTM A 36, and shall be galvanized after fabrication in accordance with AASHTO M 111, except that structural shapes may conform to ASTM A 992.

Galvanized sheet metal shall conform to ASTM A 653, Coating Designation G 235.

Paving bulkheads, timber blocking, and custom cut shims shall be Douglas Fir-Larch No. 2 or better, and shall be treated as specified in this Section.

Rubberized asphalt shall conform to ASTM D 6690 (Type 1 for bridge locations in Western Washington, and Type 2 for bridge locations in Eastern Washington).

8-11.2(9-16.3(4)).GB8

**Hardware**

Section 9-16.3(4) is supplemented with the following:

8-11.2(9-16.3(4)).OPT1.GB8

(April 6, 2015)

Resin bonded anchors shall conform to Sections 6-02.2 and 6-02.3(18) as supplemented in these Special Provisions.

8-11.2(9-16.3(4)).OPT2.GB8
(April 6, 2015)
Lag screws shall conform to Section 9-06.22.

8-11.3.GR8
## Construction Requirements

8-11.3.INST1.GR8
Section 8-11.3 is supplemented with the following:

8-11.3.OPT1.GR8
***(August 6, 2018)***
***Box Culvert Guardrail Steel Post***
The Contractor shall remove surfacing materials from the top of the box culvert and shall determine the length of the posts. The Engineer will verify the dimensions before the posts may be fabricated.

All surfacing material must be removed from the box culverts in an area extensive enough to allow installation of the baseplate. Before the grout that conforms to Section 9-20.3(2) is placed, the concrete surface shall be thoroughly cleaned of all dirt, oil and debris.

The posts shall be installed to the box culvert in accordance with Standard Plan C-20.41.

After the posts are installed on the box culverts, the excavated areas shall be backfilled and compacted in 6-inch lifts. Compaction shall be accomplished with three passes with a mechanical tamper.

8-11.3.OPT2.FR8
***(February 3, 2020)***
***High-Tension Cable Barrier System (4 Cable)***
A manufacturer's representative, or an installer who has been trained and certified by the unit's manufacturer within the last 5 years and for the specific system(s) being installed, shall supervise assembly and installation at all times. Provide a copy of the installer's certification to the Engineer prior to installation.

Assemble and install high-tension cable barrier according to the manufacturer's recommendations. This shall include the connection to guardrail and the transition and terminal sections identified in the Plans. Submit any Contractor proposed modification in barrier location, type, terminal or transition to the Engineer for approval a minimum of 10-days prior to any work in the affected section.

Unless otherwise stated in the Plans, all posts shall be a socket type assembly; with the actual cable barrier post being inserted into a sleeve encased in a cast in place or precast reinforced concrete post foundation and will be installed as recommended by the manufacturer. On every 6th-post, install yellow retro-reflective sheeting that conforms to AASHTO M268 Type 4 adhesive sheeting on both sides of the post.

### *Terminal Placement*

Unless otherwise stated in the Plans, the foundations for the high tension cable barrier terminals shall be cast in place or precast concrete and shall be installed in accordance with manufacturer's recommendations. If a precast concrete foundation is installed, the bottom of the unit shall have a full and even bearing on the surface under it. If there is a need for backfilling an excavation, use Controlled Density Fill (CDF) in accordance with Section 2-09.3(1) E. Delineate the anchor posts for approach traffic with Type 3 lateral clearance markers (object markers) that are made with type III or type IV sheeting.

### *Additional High-Tension Cable Barrier Components*

Furnish and deliver one complete set of High-Tension Cable Barrier to each of the Contracting Agency sites listed below:

*** $$1$$ ***

Include the following components with each complete set:

One-hundred line posts and all associated hardware including but not limited to spacers, connectors, straps, caps and covers. If the system has a special post to accommodate turnbuckles, then 5 of the line posts shall be these special posts.

Twenty sockets except when concrete sockets are used.

One 50 foot long section of cable used for the contract.

Three cable splices and 3 turnbuckle assemblies for a 3-cable system or 4 cable splices and 4 turnbuckle assemblies for a 4-cable system (1-assembly consists of a left and right hand threaded end with a turnbuckle).

One tension measuring device as recommended by the manufacturer.

One anchor post designed for use with the foundations installed.

Ten line terminal posts and all associated hardware.

Provide 48-hours notice to both the Engineer and the maintenance contact listed above prior to delivery. Damaged items will not be accepted and shall be replaced at no cost to the Contracting Agency.

8-11.3.OPT4.GR8

(April 1, 2019)

Aesthetic treatments to the galvanized W-beam guardrail, galvanized guardrail posts, galvanized guardrail terminals, and associated galvanized hardware shall be performed using either a powder coating or reactive coloring agent. The Contractor shall apply powder coating or reactive coloring agent to all galvanized steel rail, posts, other galvanized steel parts, and impact head components of the beam guardrail as specified in the Plans. Confirm that the manufacturer of proprietary guardrail terminals allows the use of powder coatings or reactive coloring agents prior to applying them.

Only the top 30 inches on any guardrail post length to be exposed above ground shall receive aesthetic treatment.

The color of the finish coat shall be a dark brown. The Contractor shall furnish a one-foot minimum length test section of galvanized W-beam guardrail treated with the proposed aesthetic treatment product to the Engineer for acceptance. The test section shall be prepared in accordance with the manufacturer's instructions.

The Engineer will provide acceptance in writing accepting the color of the test section prior to acceptance of any permanently incorporated material into the project.

***Powder Coating***

Powder coating of galvanized surfaces shall be in accordance with Section 6-07.3(11)B.

***Reactive Coloring Agent***

Application of the reactive coloring agent to galvanized surfaces shall be in accordance with the following:

The reactive coloring agent shall be applied using the same methods used for the accepted test section. The treated material shall develop full coloration within two weeks of application and achieve a color consistent with the color of the authorized test section.

The Contractor shall apply the reactive coloring agent prior to delivering the steel components to the project site. The reactive coloring agent manufacturer or the manufacturer’s authorized application contractor shall apply the reactive coloring agent for both the test section and production applications. Application of the reactive coloring agent shall fully coat the galvanized steel in accordance with the manufacturer’s written instructions and achieve the accepted surface color. Once the reactive coloring agent is applied, the Contractor shall protect the steel pieces from abrasion that would remove the brown color.

After the various guardrail components have been installed, the Contractor shall apply the reactive coloring agent to any steel products that did not receive adequate coloring, or where the color was removed during the shipment or the construction process. This remedial action shall coat the affected area. Any reactive coloring agent applied in the field shall be cured according to manufacturer’s specifications, and shall be applied while protecting soil, plants, and surrounding natural surfaces.

8-11.3(1).GR8

***Beam Guardrail***

8-11.3(1).INST1.GR8

Section 8-11.3(1) is supplemented with the following:

8-11.3(1).OPT1.GR8

(April 5, 2010)

This project may contain a mixture of steel and wood posts. The bidder is advised that post selection will be as detailed in the plans and these specifications.

8-11.3(1)A.GR8

**Erection of Posts**

8-11.3(1)A.INST1.GR8

Section 8-11.3(1)A is supplemented with the following:

8-11.3(1)A.OPT1.GB8

**(April 6, 2015)**

**Timber Blockouts for Beam Guardrail Type Thrie Beam**

The Contractor shall cut and trim the timber blocks as necessary to conform to the shape of the existing concrete baluster rail, and to align the beam guardrail element, as shown in the Plans.

When the specified timber blockout spacing places a block at an existing concrete end post or intermediate post, the Contractor shall core drill holes into the existing concrete as shown in the Plans and as follows. The Contractor shall not shatter or damage the concrete adjacent to the holes. Location of blockout assemblies may be shifted slightly within the tolerance specified in the Plans in order to reduce the risk of damage to existing steel reinforcing bars. However, once a blockout assembly position is established, damage to existing steel reinforcing bars caused by subsequent core drilling operations at that assembly location is acceptable.

8-11.3(1)A.OPT2.GB8

**(January 4, 2016)**

**Steel Posts for Beam Guardrail Type Thrie Beam**

The Contractor shall field measure the dimension of the existing curb above the existing wearing surface at each curb line for each bridge receiving beam guardrail Type Thrie Beam. The field measured dimensions, and all adjustments to the field measurements required by planing and paving operations included in this project, shall be included in the steel post assembly shop drawings submitted in accordance with Section 8-11.3(1)G.

8-11.3(1)A.OPT3.GB8

**(September 8, 2020)**

**Beam Guardrail Type WP Thrie Beam**

The Contractor shall field measure the depth of the existing ballast and wearing course at both wheel guard lines, and shall include the dimensions at both wheel guard lines in the steel post mounting bracket shop drawings submitted in accordance with Section 8-11.3(1)G.

The Contractor shall remove the existing ballast and wearing course to the top of existing timber deck in the vicinity of the steel post anchorage locations, and shall dispose of the removed surfacing materials in accordance with Section 2-02.3.

As shown in the Plans, the Contractor shall place a timber block beneath the timber deck at each steel post anchorage location and against the existing exterior timber stringer.

The Contractor shall install the steel post anchorage assembly, including the deck plate, distribution plate, bearing plate, base plate, backing plate, and HSS steel tube post, as shown in the Plans. Timber deck shims shall be cut and trimmed as necessary to align the top of the vertical webs of the steel post anchorage 1/2 inch below the top of the surrounding wearing course surfacing, in accordance with the existing timber deck transverse slope and existing ballast and wearing course depth specified in the shop drawings.

The Contractor may field drill holes through the steel components in accordance with Section 6-03.3(27) except as otherwise noted. The Contractor shall identify all holes to be field drilled in the steel fabrication shop drawings. The Contractor may field drill the holes using hand held drills provided that the Contractor submits the method and equipment used to the Engineer for approval, and that the Contractor receives the Engineer's acceptance of the submittal prior to beginning hand drilling. The Contractor shall repair all galvanized steel surfaces damaged by field drilling operations by painting the damaged areas with one coat of paint conforming to Section 9-08.1(2)B.

The Contractor shall replace all existing ballast and wearing course removed in the vicinity of the steel post anchorage locations to the top of the surrounding surfacing. The Contractor shall fill the void with an HMA surfacing material accepted by the Engineer.

8-11.3(1)B.GR8

**Erection of Rail**

8-11.3(1)B.INST1.GR8

Section 8-11.3(1)B is supplemented with the following:

8-11.3(1)B.OPT6.GB8

**(April 6, 2015)**

**Field Measuring to Existing Type 3 Anchors**

The Contractor shall field measure the dimension from the centerline of the existing Type 3 anchors specified for reuse to the end of the existing concrete curb and railbase or concrete baluster railing end blocks of the adjacent bridge. The Contractor shall submit these dimensions to the Engineer along with a Type 2 Working Drawing showing the arrangement of the thrie beam guardrail elements and approach guardrail elements relative to the existing Type 3 anchors and concrete curb and railbase or concrete baluster railing end blocks for each bridge as applicable.

8-11.3(1)B.OPT7.GB8

**(April 6, 2015)**

**Attaching Beam Guardrail Type Thrie Beam to Timber Blockouts**

The Contractor shall fasten the thrie beam element to the timber blockout assemblies such that the steel shear plates fit snug against the surface forming the opening through the concrete baluster rail.

The Contractor may field drill the holes through the thrie beam elements in accordance with Section 6-03.3(27), except as otherwise noted. The Contractor may field drill the holes using hand held drills.

The Contractor shall repair all galvanized steel surfaces damaged by field drilling operations by painting the damaged areas with one coat of paint conforming to Section 9-08.1(2)B.

8-11.3(1)B.OPT8.GB8

**(April 6, 2015)**

**Thrie Beam Expansion Joint Element**

Where beam guardrail Type Thrie Beam crosses bridge expansion joints, the Contractor shall place a thrie beam expansion section element conforming to Standard Plan C-1a.

8-11.3(1)B.OPT9.GB8

**(April 6, 2015)**

**Beam Guardrail Type WP Thrie Beam**

The Contractor may field drill the holes through the thrie beam elements in accordance with Section 6-03.3(27), except as otherwise noted. The Contractor may field drill the holes using hand held drills.

The Contractor shall repair all galvanized steel surfaces damaged by field drilling operations by painting the damaged areas with one coat of paint conforming to Section 9-08.1(2)B.

After completing the beam guardrail retrofit and replacing the surfacing at the steel post anchorage locations on the bridge up to the level of the surrounding surfacing, the Contractor shall install the sheet metal water barrier, when the water barrier is shown in the Plans. A bonding layer of rubberized asphalt shall be applied to the surfacing contact area immediately prior to installing the water barrier assembly. The direction of overlap of adjacent water barrier segments shall be as directed by the Engineer.

8-11.3(1)D.GR8

**Removing Guardrail and Guardrail Anchor**

8-11.3(1)D.INST1.GR8

Section 8-11.3(1)D is supplemented with the following:

8-11.3(1)D.OPT1.GB8

**(September 8, 2020)**

**Beam Guardrail Type WP Thrie Beam**

The Contractor shall remove the existing bridge guardrail posts and railing, the existing timber wheel guards, all associated fasteners, and the existing ballast and wearing course in the vicinity of the steel post anchorage assemblies of the bridges being retrofitted with beam guardrail Type WP Thrie Beam as shown in the Plans

The items specified above shall be removed as follows:

1. The Contractor shall remove the existing timber wheel guards before beginning the beam guardrail retrofit work.

2. The Contractor shall not remove any section of the existing bridge railing system on the bridge until completing the beam guardrail retrofit within that section of the bridge, except as otherwise specified. The Contractor may remove portions of the existing bridge railing system on the bridge which conflict with the anchorages, posts, and rail elements of the retrofit, provided:

a. The Contractor installs as much of the beam guardrail retrofit as possible in the section that does not conflict with the existing bridge railing system elements.

b. After removing the conflicting element of the existing bridge railing system, the Contractor shall immediately complete the beam guardrail retrofit in the section.

c. The Contractor receives the Engineer's acceptance for removing the conflicting element of the existing bridge railing system before proceeding.

8-11.3(1)H.GR8

**Guardrail Construction Exposed to Traffic**

8-11.3(1)H.INST1.GR8

Section 8-11.3(1)H is supplemented with the following:

8-11.3(1)H.OPT1.GB8

**(April 6, 2015)**

**Beam Guardrail Type WP Thrie Beam**

Whenever the Contractor is not actively working on the beam guardrail retrofit, the Contractor shall ensure that all guardrail ends are securely fastened to the rail posts and existing bridge railing system, including temporary terminal end sections as required. The Contractor shall conduct retrofit operations such that no gaps occur between the existing bridge railing system and the beam guardrail retrofit at any time.

The Contractor shall submit Type 2 Working Drawings detailing the temporary connections between the existing guardrail system and the thrie beam guardrail system, and the temporary terminal end sections.

8-11.4.GR8

## Measurement

8-11.4.INST1.GR8

Section 8-11.4 is supplemented with the following:

8-11.4.OPT1.GR8

(March 13, 1995)

Box culvert guardrail steel posts will be measured per each, for each post installed.

8-11.4.OPT2.GR8

(February 3, 2020)

Measurement of high-tension cable barrier (4 Cable) will be by the linear foot along the line of the completed barrier from end to end including transition sections, terminals, cable barrier to guardrail terminals, foundations, sockets, concrete, compensating devices, tensioning device, slip base post, sleeves, caps, and all hardware.

8-11.4.OPT4.GR8

(April 2, 2018)

Measurement of Aesthetic Treatment for beam guardrail will be by the linear foot measured along the line of the completed guardrail, including expansion sections and the end section for F connections.

Measurement for Aesthetic Treatment for beam guardrail transition section will be per each for the type of transition section installed.

Measurement for Aesthetic Treatment for beam guardrail anchor type specified will be per each for the completed anchor, including the attachment of the anchor to the guardrail.

Measurement of Aesthetic Treatment beam guardrail ____ terminal will be per each for the completed terminal.

Measurement of Aesthetic Treatment beam guardrail Type 31 buried terminal Type 2 will be per linear foot for the completed terminal.

8-11.5.GR8

## Payment

8-11.5.INST2.GR8

Section 8-11.5 is supplemented with the following:

8-11.5.OPT1.GR8

(April 2, 2018)

"Aes. Tr. Beam Guardrail Type ___", per linear foot

"Aes Tr. Beam Guardrail Type 1- ____ Ft. Long Post", per linear foot.

"Aes Tr. Beam Guardrail Type 31- ____ Ft. Long Post", per linear foot.

The unit Contract price per linear foot for "Aes. Tr. Beam Guardrail Type____", "Aes Tr. Beam Guardrail Type 1- ____ Ft. Long Post", and "Aes Tr. Beam Guardrail Type 31- ____ Ft. Long Post", shall be full payment for all costs to perform the Work as specified.

"Aes. Tr. Beam Guardrail Transition Section Type ____", per each

The unit Contract price per each for "Aes. Tr. Beam Guardrail Transition Section Type ____" shall be full payment for all costs to perform the Work as described in Section 8-11.3.

"Aes. Tr. Beam Guardrail Anchor Type ____", per each.

"Aes. Tr. Beam Guardrail ____ Terminal", per each.

The unit Contract price per each for "Aes. Tr. Beam Guardrail Anchor Type ____" and "Aes. Tr. Beam Guardrail ___ Terminal" shall be full payment for all costs to perform the Work as specified.

"Aes. Tr. Beam Guardrail Type 31 Buried Term. Type 2", per linear foot.

The unit Contract price per linear foot for "Aes. Tr. Beam Guardrail Type 31 Buried Term. Type 2" shall be full payment for all costs to perform the Work as specified.

8-11.5.OPT6.GR8

(August 6, 2018)

"Box Culvert Guardrail Steel Post Type 31", per each.

The unit contract price per each for "Box Culvert Guardrail Steel Post Type 31" shall be full pay for completing the installation of the posts, including furnishing, placing and compacting the backfill material.

8-11.5.OPT7.GR8

(February 3, 2020)

"High-Tension Cable Barrier System (4 Cable)", per linear foot.

"Additional High-Tension Cable Barrier Components", lump sum.

The unit contract price per linear foot for "High-Tension Cable Barrier (4 Cable)" shall be full pay to complete the work as specified.

8-11.5.OPT8.GR8

(February 3, 2020)

The lump sum contract price for "Additional High-Tension Cable Barrier Components" shall be full pay to complete the work as specified for a 4 Cable system.

8-12.GR8

## Chain Link Fence and Wire Fence

8-12.2.GR8

### Materials

8-12.2.INST1.GR8

Section 8-12.2 is supplemented with the following:

8-12.2.OPT1.FR8

***(September 8, 2020)***

***Coated Chain Link Fence***

Chain link fence fabric shall be hot-dip galvanized with a minimum of 0.8 ounce per square foot of surface area.

Fencing materials shall be coated with an ultraviolet-insensitive plastic or other inert material at least 2 mils in thickness. Any pretreatment or coating shall be applied in accordance with the manufacturer's written instructions. The Contractor shall provide the Engineer with the manufacturer's written specifications detailing the product and method of fabrication. The color shall match SAE AMS Standard 595 color number *** $$1$$ ***.

Samples of the coated fencing materials shall have received the Engineer's acceptance prior to installation on the project.

The Contractor shall supply the Engineer with 10 aerosol spray cans containing a minimum of 14 ounces each of paint of the color specified above. The touch-up paint shall be compatible with the coating system used.

8-12.2.OPT6.GB8

***(September 3, 2019)***

***Cable Fence***

Steel pipe shall conform to ASTM A 53, Grade B, Type E or S.

Steel bars, plates, and shapes shall conform to ASTM A 36.

Steel components shall be galvanized after fabrication in accordance with AASHTO M 111.

Resin bonded anchors shall conform to Section 6-02.2 as supplemented in these Special Provisions.

Proof coil chain shall conform to ASTM A413 Grade 30.

Spelter sockets and turnbuckles shall conform to the size and breaking strength requirements specific in the Plans, shall be compatible with the wire rope selected by the Contractor, and shall be galvanized after fabrication in accordance with AASHTO M 232.

Wire rope shall conform to one of the following:

1. ASTM A 603 with Class A weight zinc-coated wires throughout.

2. ASTM A 1023 with drawn galvanized wires throughout in accordance with ASTM A 1007. Acceptance of ASTM A 1023 wire rope is contingent upon the Contractor furnishing a Type 1 Working Drawing certifying that the lot of supplied wire rope has a minimum modulus of elasticity of 15,000 ksi when tested in accordance with ASTM A 931 Section 3.2.17.

3. Phillystran HPTG 27000 I as manufactured by:

   Phillystran, Inc.
   151 Commerce Drive
   Montgomeryville, PA 18936-9628
   (215) 368-6611
   www.phillystran.com

8-12.3.GR8

## Construction Requirements

8-12.3.INST1.GR8

Section 8-12.3 is supplemented with the following:

8-12.3.OPT1.GB8

***Cable Fence***

8-12.3.OPT1(A).GB8

(April 6, 2015)

The Contractor shall field measure the slope of the top of the existing retaining wall at each location of cable fence end post and intermediate brace. The Contractor shall submit Type 1 Working Drawings consisting of the tabulated field measured slope data.

8-12.3.OPT1(B).GB8
(April 6, 2015)
The Contractor shall submit shop drawings of the cable fence in accordance with Section 6-03.3(7). The shop drawings shall include, at a minimum, the following:

1. Plan, elevation, and section views of the cable fence and all components, with dimensions and tolerances.

2. Material designations for all components.

3. Socketing procedure for the spelter sockets.

4. Erection plan for installing the posts, installing and connecting the cable to the posts, and tensioning the cable.

The Contractor shall install resin bonded anchors in accordance with Section 6-02.3(18) as supplemented in these Special Provisions.

The cable shall be tensioned to 400 pounds with six inches minimum of take up still available in the turnbuckle.

8-12.3.OPT1(C).GB8
(January 2, 2018)
After erecting the cable fence posts, but prior to installing the cable, the Contractor shall clean, prepare, and paint all exposed galvanized surfaces in accordance with Section 6-07.3(11)A. The color of the finish coat, when dry, shall match SAE AMS Standard 595 Color No. 20045.

8-12.4.GR8
## Measurement

8-12.4.INST1.GR8
Section 8-12.4 is supplemented with the following:

8-12.4.OPT1.GB8
(April 6, 2015)
Cable fence will be measured by the linear foot along the line and slope at the base of the completed fence.

8-12.5.GR8
## Payment

8-12.5.INST1.GR8
Section 8-12.5 is supplemented with the following:

8-12.5.OPT1.GR8
(April 1, 2002)
“Coated Chain Link Fence Type ___”, per linear foot.
Payment for clearing of fence line for “Coated Chain Link Fence Type ___” shall be in accordance with Section 2-01.5.
“Coated End, Gate, Corner, Pull Post for Chain Link Fence”, per each.
“Double 14 Ft. Coated Chain Link Gate”, per each.

“Double 20 Ft. Coated Chain Link Gate”, per each.
“Single 6 Ft. Coated Chain Link Gate”, per each.

8-12.5.OPT6.GB8
(April 6, 2015)
“Cable Fence”, per linear foot.

8-13.GR8
## Monument Cases

8-13.1.GR8
## Description

8-13.1.INST1.GR8
Section 8-13.1 is deleted and replaced by the following:

8-13.1.OPT1.GR8
(March 13, 1995)
This work shall consist of furnishing and placing monument cases, covers, and pipes in accordance with the Standard Plans and these Specifications, in conformity with the lines and locations shown in the Plans or as staked by the Engineer.

8-13.2.GR8
## Materials

8-13.2.INST1.GR8
Section 8-13.2 is supplemented with the following:

8-13.2.OPT1.GR8
(March 13, 1995)
The pipe shall be Schedule 40 galvanized pipe.

8-13.3.GR8
## Construction Requirements

8-13.3.INST1.GR8
The last paragraph of Section 8-13.3 is revised to read:

8-13.3.OPT1.GR8
(March 13, 1995)
The Engineer will be responsible for placing the concrete core and tack or wire inside the pipe.

8-13.4.GR8
## Measurement

8-13.4.INST1.GR8
Section 8-13.4 is deleted and replaced by the following:

8-13.4.OPT1.GR8
(March 13, 1995)

Measurement of monument case, cover, and pipe will be by the unit for each monument case, cover, and pipe furnished and set.

8-13.5.GR8

## Payment

8-13.5.INST1.GR8

Section 8-13.5 is supplemented with the following:

8-13.5.OPT1.GR8

(April 28, 1997)

"Monument Case, Cover, and Pipe", per each.

8-14.GR8

## Cement Concrete Sidewalks

8-14.1.GR8

## Description

8-14.1.INST1.GR8

Section 8-14.1 is revised to read:

8-14.1.OPT1.GR8

(April 3, 2017)

This Work consists of constructing cement concrete sidewalks, curb ramps, bus stop shelter foundations, masonry sidewalks, and ramp grinding in accordance with details shown in the Plans, Standard Plans, these Specifications, and in conformity to the lines and grades shown in the Plans, Standard Plans, and as established by the Engineer.

8-14.3.GR8

## Construction Requirements

8-14.3.INST1.GR8

Section 8-14.3 is supplemented with the following:

8-14.3.OPT1.GR8

(April 3, 2017)

The Contractor shall request a pre-construction meeting with the Engineer to be held two to five working days before any work can start on cement concrete sidewalks, curb ramps or other pedestrian access routes to discuss construction requirements. Those attending shall include:

1. The Contractor and Subcontractor in charge of constructing forms, and placing, and finishing the cement concrete.

2. Engineer (or representative) and Project Inspectors for the cement concrete sidewalk, curb ramp or pedestrian access route Work.

Items to be discussed in this meeting shall include, at a minimum, the following:

1. Slopes shown on the Plans.

2. Inspection

3. Traffic control

4. Pedestrian control, access routes and delineation

5. Accommodating utilities

6. Form work

7. Installation of detectable warning surfaces

8. Contractor ADA survey and ADA Feature as-built requirements

9. Cold Weather Protection

8-14.3.OPT2.GR8

***(January 7, 2019)***

***Timing Restrictions***

Curb ramps shall be constructed on one leg of the intersection at a time. The curb ramps shall be completed and open to traffic within five calendar days before construction can begin on another leg of the intersection unless otherwise allowed by the Engineer.

Unless otherwise allowed by the Engineer, the five calendar day time restriction begins when an existing curb ramp for the quadrant or traffic island/median is closed to pedestrian use and ends when the quadrant or traffic island/median is fully functional and open for pedestrian access.

8-14.3.OPT3.GR8

***(January 7, 2019)***

***Layout and Conformance to Grades***

Using the information provided in the Contract documents, the Contractor shall lay out, grade, and form each new curb ramp, sidewalk, and curb and gutter.

8-15.GR8

## Riprap

8-15.4.GR8

## Measurement

8-15.4.INST1.GR8

Section 8-15.4 is supplemented with the following:

8-15.4.OPT3.GR8

(March 13, 1995)

Special excavation will be measured by the cubic yard. Quantities will be computed to the neat lines from the top of the seals to the existing stream bed or ground line for the area outside the limits of structure excavation.

8-15.4.OPT5.GR8

(February 5, 2001)

The last paragraph of Section 8-15.4 is deleted.

8-15.5.GR8

## Payment

8-15.5.INST1.GR8

The first sentence of the second paragraph of Section 8-15.5 is revised to read:

8-15.5.OPT1.GR8

(March 13, 1995)

The unit contract price per ton or cubic yard for the class or kind of riprap specified shall be full pay for furnishing all labor, tools, equipment, and materials required to construct the riprap, including excavation.

8-15.5.INST2.GR8

Section 8-15.5 is supplemented with the following:

8-15.5.OPT8.GR8

(September 30, 1996)

"Special Excavation", per cubic yard.

8-16.GR8

## Concrete Slope Protection

8-16.3.GR8

## Construction Requirements

8-16.3(2).GR8

### *Placing Semi-Open Concrete Masonry Units*

8-16.3(2).INST1.GR8

Section 8-16.3(2) is supplemented with the following:

8-16.3(2).OPT1.GR8

(December 19, 2005)

The Contractor shall round and treat the areas between the bridge end slopes and the edges of the shoulders to the satisfaction of the Engineer.

Upon completion of the installation of the units, the voids shall be filled full with top soil. All excess fill shall be removed and the exposed concrete surfaces swept clean. The slope protection shall be seeded to grass in accordance with Section 8-01.3(2)A.

8-16.5.GR8

## Payment

8-16.5.INST1.GR8

Section 8-16.5 is supplemented with the following:

8-16.5.OPT1.GR8

(September 30, 1996)

"Semi-Open Conc. Masonry Slope Protection", per square yard.

8-20.GR8

## Illumination, Traffic Signal Systems, Intelligent Transportation Systems, and Electrical

8-20.2.GR8

### Materials

8-20.2.INST1.GR8

Section 8-20.2 is supplemented with the following:

8-20.2.OPT1.GB8

***(April 6, 2015)***

***Traffic Signal Standard Foundation Shaft Casing***

All permanent casing shall be a smooth wall non corrugated structure of steel base metal. All permanent casing shall be of ample strength to resist damage and deformation from transportation and handling, installation stresses, and all pressures and forces acting on the casing. The casing shall be clean prior to placement in the excavation. The permanent casing may be telescoped, but the outside diameter of the casing shall not be less than the specified diameter of the shaft.

8-20.2(9-29.2).GR8

***Junction Boxes, Cable Vaults, and Pull Boxes***

Section 9-29.2 is supplemented with the following:

8-20.2(9-29.2).OPT1.GR8

**(September 3, 2019)**

**Slip-Resistant Surfacing for Junction Boxes, Cable Vaults, and Pull Boxes**

Where slip-resistant junction boxes, cable vaults, or pull boxes are required, each box or vault shall have slip-resistant surfacing material applied to the steel lid and frame of the box or vault. Where the exposed portion of the frame is ½ inch wide or less, slip-resistant surfacing material may be omitted from that portion of the frame.

Slip-resistant surfacing material shall be identified with a permanent marking on the underside of each box or vault lid where it is applied. The permanent marking shall be formed with a mild steel weld bead, with a line thickness of at least 1/8 inch. The marking shall include a two character identification code for the type of material used and the year of manufacture or application. The following materials are approved for application as slip-resistant material, and shall use the associated identification codes:

1. Harsco Industrial IKG, Mebac #1 - Steel: **M1**
2. W. S. Molnar Co., SlipNOT Grade 3 – Coarse: **S3**
3. Thermion, SafTrax TH604 Grade #1 – Coarse: **T1**

8-20.2(9-29.6).GR8

***Light And Signal Standards***

Section 9-29.6 is supplemented with the following:

8-20.2(9-29.6).OPT1.GR8

**(January 7, 2019)**

**Light Standards with Type 1 Luminaire Arms**

Lighting standards shall be fabricated in conformance with the methods and materials specified on the pre-approved Plans listed below, provided the following requirements have been satisfied:

(a) Light source to pole base distance (H1) shall be as noted in the Plans. Verification of H1 distances by the Engineer, prior to fabrication, is not required. Fabrication tolerance shall be ± 6 inches.

(b) All other requirements of the Special Provisions have been satisfied.

| Pre-Approved Plan | Fabricator | Mounting Hgt. |
|---|---|---|
| Drawing No. DB01164 Rev. B Sheets 1, 2, 3, 4 & 5 of 5 | Valmont Ind. Inc. | 30', 35', 40' & 50' |
| Drawing No. WA15LT3721 Rev. A Sheet 1 and 2 of 2 | Ameron Pole Prod. Div. | 20',25',30',35',40', 45' & 50' |

8-20.2(9-29.6).OPT2.GR8

**(January 7, 2019)**

**Light Standards with Type 1 Luminaire Arms**

Lighting standards shall be fabricated in conformance with the methods and materials specified on the pre-approved plans listed below, provided the following requirements have been satisfied:

(a) Mounting heights shall be as specified in the Plans.

(b) Light source to pole base distances (H1) shall be determined or verified by the Engineer prior to fabrication. Fabrication tolerance shall be ±6 inches.

(c) All other requirements of the Special Provisions have been satisfied.

| Pre-Approved Plan | Fabricator | Mounting Hgt. |
|---|---|---|
| Drawing No. DB01164 Rev. B Sheets 1, 2, 3, 4 & 5 of 5 | Valmont Ind. Inc. | 30', 35', 40' & 50' |
| Drawing No. WA15LT3721 Rev. A Sheet 1 and 2 of 2 | Ameron Pole Prod. Div. | 20',25',30',35',40' 45' & 50' |

8-20.2(9-29.6).OPT5.GR8

**(April 1, 2019)**

**Traffic Signal Standards**

Traffic signal standards shall be furnished and installed in accordance with the methods and materials noted in the applicable Standard Plans, pre-approved plans, or special design plans.

All welds shall comply with the latest AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. Welding inspection shall comply with Section 6-03.3(25)A Welding Inspection.

Hardened washers shall be used with all signal arm connecting bolts instead of lockwashers. All signal arm ASTM F 3125 Grade A325 connecting bolts tightening shall comply with Section 6-03.3(33).

Traffic signal standard types and applicable characteristics are as follows:

Type PPB Pedestrian push button posts shall conform to Standard Plan J-20.10 or to one of the following pre-approved plans:

| Fabricator | Drawing No. |
|---|---|
| Valmont Ind. Inc. | DB01165 Rev. B<br>Sheet's 1, 2, 3 & 4 of 4 |
| Ameron Pole Prod. Div. | WA15TR10-1 Rev. C and<br>WA15TR10-3 Rev. B |

Type PS Pedestrian signal standards shall conform to Standard Plan J-20.16 or to one of the following pre-approved plans:

| Fabricator | Drawing No. |
|---|---|
| Valmont Ind. Inc. | DB01165 Rev. B<br>Sht. 1, 2, 3 & 4 of 4 |
| Ameron Pole Prod. Div. | WA15TR10-1 Rev. C and<br>WA15TR10-2 Rev. C |

Type I Type I vehicle signal standards shall conform to Standard Plan J-21.15 or to one of the following pre-approved plans:

| Fabricator | Drawing No. |
|---|---|
| Valmont Ind. Inc. | DB01165 Rev. B<br>Sht. 1 2, 3 & 4 of 4 |
| Ameron Pole Prod. Div | WA15TR10-1 Rev. C and<br>WA15TR10-2 Rev. C |

Type FB Type FB flashing beacon standard shall conform to Standard Plan J-21.16 or the following pre-approved plan:

| Fabricator | Drawing No. |
|---|---|
| Valmont Ind. Inc. | DB01165 Rev. B<br>Sht. 1 2, 3 & 4 of 4 |
| Ameron Pole Prod. Div. | WA15TR10-1 Rev. C and<br>WA15TR10-2 Rev. C |

Type RM Type RM ramp meter standard shall conform to Standard Plan J-22.15 or the following pre-approved plan:

| Fabricator | Drawing No. |
|---|---|
| Valmont Ind. Inc. | DB01165 Rev. B<br>Sht. 1, 2, 3 & 4 of 4 |
| Ameron Pole<br>Prod. Div. | WA15TR10-1 Rev. C and<br>WA15TR10-2 Rev. C |

Type CCTV Type CCTV camera pole standards shall conform to one of the following pre-approved Plans:

| Fabricator | Drawing No. |
|---|---|
| Valmont Industries, Inc. | DB 01166 Rev. B<br>Sheet 1, 2, 3 and 4 of 4 |
| Ameron Pole Product Div. | WA15CCTV01 Rev. B<br>Sheet 1 and 2 of 2 |

Type II Characteristics:

| | |
|---|---|
| Luminaire mounting height | N.A. |
| Luminaire arms | N.A. |
| Luminaire arm length | N.A. |
| Signal arms | One Only |

Type II standards shall conform to one of the following pre-approved plans, provided all other requirements noted herein have been satisfied. Maximum (x) (y) (z) signal arm loadings in cubic feet are noted after fabricator.

| Signal Arm Length (max) | Fabricator-(x) (y) (z) | Drawing No. |
|---|---|---|
| 65 ft. | Valmont Ind. Inc.-(2894) | DB01162 Rev. B,<br>Shts. 1, 2,3, 4 & 5 of 5 |
| 65 ft. | Ameron Pole-(2900)<br>Prod. Div. | WA15TR3724-1 Rev. C and<br>WA15TR3724-2 Rev. D<br>Sheet 1 and 2 of 2 |

Type III Characteristics:

| | |
|---|---|
| Luminaire mounting height | 30 ft.,<br>35 ft.,<br>40 ft.,<br>or 50 ft. |
| Luminaire arms | One Only |
| Luminaire arm type | Type 1 |
| Luminaire arm length (max.) | 16 ft. |
| Signal arms | One Only |

Type III standards shall conform to one of the following pre-approved plans, provided all other requirements noted herein have been satisfied. Maximum (x) (y) (z) signal arm loadings in cubic feet are noted after fabricator.

| Signal Arm Length (max) | Fabricator-(x) (y) (z) | Drawing No. |
|---|---|---|
| 65 ft. | Valmont Ind. Inc.-(2947) | DB01162 Rev. B, Shts. 1, 2, 3, 4 & 5 of 5 and "J" luminaire arm |
| 65 ft. | Ameron Pole-(2900) Prod. Div. | WA3724-1 Rev. C and WA3724-2 Rev. D and "J" luminaire arm |

Type IV

Type IV strain pole standards shall be consistent with details in the plans and Standard Plan J-27.15 or one of the following pre-approved plans:

| Fabricator | Drawing No. |
|---|---|
| Valmont Industries, Inc. | DB01167, Rev. B Sheets 1 and 2 |
| Ameron Pole Prod. Div. | WA15TR15 Rev. A Sheet 1 and 2 of 2 |

Type V

Type V combination strain pole and lighting standards shall be consistent with details in the plans and Standard Plan J-27.15 or one of the following pre-approved plans:

| Fabricator | Drawing No. |
|---|---|
| Valmont Industries, Inc. | DB01167, Rev. B Sheets 1 and 2 |
| Ameron Pole Prod. Div. | WA 15TR15 Rev. A Sheet 1 and 2 of 2 |

The luminaire arm shall be Type 1, 16 foot maximum and the luminaire mounting height shall be 40 feet or 50 feet as noted in the plans.

Type SD

Type SD standards require special design. All special design shall be based on the latest AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and pre-approved plans and as follows:

1. A 115 mph wind loading shall be used.
2. The Mean Recurrence Interval shall be 1700 years.
3. Fatigue category shall be III.

Complete calculations for structural design, including anchor bolt details, shall be prepared by a Professional Engineer, licensed under Title 18 RCW, State of Washington, in the branch of Civil or Structural Engineering or by an individual holding valid registration in another state as a civil or structural Engineer.

All shop drawings and the cover page of all calculation submittals shall carry the Professional Engineer's original signature, date of signature, original seal, registration number, and date of expiration. The cover page shall include the contract number, contract title, and sequential index to calculation page numbers. Two copies of the associated design calculations shall be submitted for approval along with shop drawings.

Details for handholes and luminaire arm connections are available from the Bridges and Structures Office.

Foundations for various types of standards shall be as follows:

| | |
|---|---|
| Type PPB | As noted on Standard Plan J-20.10 |
| Type PS | As noted on Standard Plan J-21.10 |
| Type I | As noted on Standard Plan J-21.10 |
| Type FB | As noted on Standard Plan J-21.10 |
| Type RM | As noted on Standard Plan J-21.10 |
| Type CCTV | As noted on Standard Plan J-29.15 |
| Type II | As noted in the Plans. |
| Type III | As noted in the Plans. |
| Type IV | As noted in the Plans and Standard Plan J-27.10 |
| Type V | As noted in the Plans and Standard Plan J-27.10 |
| Type SD | As noted in the Plans. |

8-20.2(9-29.13).GR8

***Control Cabinet Assemblies***

Section 9-29.13 is supplemented with the following:

8-20.2(9-29.13).OPT1.GR8

**(January 2, 2018)**

**Uninterruptible Power Supply (UPS)**

Each UPS System shall provide battery backup power to the cabinet to which it is connected in the event of loss or failure of normal utility power. Each UPS system shall be constructed for full on line configuration (line interactive type), providing automatic voltage regulation and power conditioning when operating on normal utility power. The transfer between utility power and battery power shall not interfere with the normal operation of the connected downstream cabinet.

Each UPS System shall be capable of supplying a minimum 1000W load at 120 VAC for a minimum number of hours depending on the number of batteries specified:

- Four batteries: Minimum 4 hours run time.

- Eight batteries: Minimum 8 hours run time.

Each UPS System shall be composed of the following equipment:

**UPS Cabinet Construction**

Each UPS Cabinet shall be constructed as follows. The equipment shall be installed within the cabinet as shown in the Plans.

1. The cabinet shall be designated Type 331, consisting of Housing 1B and Mounting Cage 1 as described in the CalTrans TEES. The housing shall use 0.125 inch minimum thickness 5052 H32 ASTM B209 alloy aluminum, with bare mill finish. The exterior shall not be anodized or painted.

2. Each cabinet door shall be provided with:

   a. A three point latch system. Locks shall be spring loaded construction locks capable of accepting a Best 6 pin core. A 6 pin construction core of the type (blue, green, or red) specified in the contract shall be installed in each core lock. One core removal key and two standard keys shall be included with each cabinet and delivered to the Engineer.

   b. A one piece, closed cell, neoprene gasket.

   c. A two position doorstop assembly. The doorstops shall hold the door open at both 90 degrees and 180 +/- 10 degrees.

3. Cabinet lighting shall be provided by two LED light strips. Each LED light strip shall be approximately 12 inches long, have a minimum output of 320 lumens, and have a color temperature of 4000K (cool white) plus or minus 400K. Lighting shall not interfere with the proper operation of any other ceiling or shelf mounted equipment. All lighting fixtures shall energize whenever any door is opened. Each door switch shall be labeled “Light”. Both light strips shall be ceiling mounted - rack mounted lights are not allowed. One light strip shall be installed over the front face of the rack and the second shall be installed over the rear face of the rack. Each light strip shall be oriented parallel to the door face, and placed such that the associated face of the rack and the rack mounted equipment is illuminated.

4. Cabinet ventilation shall be as described in the TEES for a Type 332L cabinet. The door vent filter shall be a 12 inch by 16 inch by 1 inch thick (nominal) disposable paper filter.

5. A UPS Service Panel, installed on the left side of the cabinet as viewed from the front. This service panel shall include the following, positioned as shown in the Plans:

   a. Two three-position terminal blocks. Each terminal block shall be labeled “Power IN” or “Power OUT” as appropriate.

b. Two 120V 1P-15A circuit breakers, one each for the cabinet lighting and the cabinet ventilation (fan and thermostat).

c. A Tesco TES-10B (or equivalent) Surge Suppressor.

d. A HESCORLS LF60X (or equivalent) Line Filter.

e. A neutral (AC-) bus bar, with minimum 10 connections.

f. A ground bus bar, with minimum 10 connections.

6. Three battery shelves, each 0.5U (Rack Unit) in height. Each shelf shall be vented and capable of supporting three AlphaCell 240XTV batteries without visibly flexing. Each shelf shall span the full width and depth of the rack, and be secured to all of the rack verticals.

7. One drawer shelf, 1U in height.

8. A Generator Transfer Switch (GTS) and enclosure, meeting the requirements of Section 9-29.13(8). The GTS shall be installed in place of the Police Panel Switch enclosure as shown on a Type 332L cabinet. The lock shall have an aluminum rain shield cover riveted to the cabinet housing.

**UPS System Components**

The following UPS System Equipment shall be provided and installed within the cabinet as shown in the Plans. All equipment shall be from Alpha Technologies unless otherwise noted.

1. One UPS Controller, model FXM 2000 w/SNMP module operating at 120 VAC, Part Number (P/N) 017-232-31. The UPS Controller shall include the 19” EIA rack mount kit, P/N 740-697-21, and support shelf, P/N 3610030085.

2. One Universal Automatic Transfer Switch (UATS) Accessory Shelf Assembly (P/N 020-168-25), consisting of a Surge Arrestor Assembly (P/N 740-755-21), UATS (P/N 020-165-21), and 120V Single Duplex Plate (P/N 740-748-23).

3. Four or eight AlphaCell 240XTV Batteries, as required by the Contract. Where four batteries are required, they shall be installed with two each on the middle and lower battery shelves. Where eight batteries are required, the upper and middle battery shelves shall hold three batteries each, with the remaining two installed on the lower battery shelf. Batteries shall be labeled with their string ID and number in the string. The first four batteries shall be labeled A1 through A4, and the second four batteries (when required) shall be labeled B1 through B4.

4. Remote Battery Monitoring System Plus. Use P/N 03760260-002 for cabinets requiring four batteries. Use P/N 03760260-003 for cabinets requiring eight batteries.

5. 48V Battery Cable Kit, 10ft in length with 1/4-20 termination(s), P/N 740-628-27. Where eight batteries are required, a second battery cable kit and a Y-Connector (P/N 870-601-21) shall also be included.

6. Battery Heater Mats, one per shelf with batteries installed, sized for the number of batteries present on that shelf. Each mat shall run on 120VAC and be plugged into the duplex receptacle on the Accessory Shelf Assembly.

Three sets of cabinet drawings and maintenance and operations manuals shall be provided. Two sets shall be hard copies in paper format and placed in the cabinet drawer shelf. The third shall be electronic in PDF format and provided on a portable USB flash drive (stick) and placed in the cabinet drawer shelf.

Contact information for Alpha Technologies:

Alpha Technologies, Inc.
3767 Alpha Way
Bellingham, WA 98226
Phone: (360) 647-2360
E-mail: alpha@alpha.com
Website: www.alpha.ca

8-20.2(9-29.13(11)).GR8

**Traffic Data Accumulator and Ramp Meters**

Section 9-29.13(11) is supplemented with the following:

8-20.2(9-29.13(11)).OPT1.GR8

**(September 30, 2020)**

**Advanced Transportation Controller**

All new Traffic Data Accumulator (Data Station) and Ramp Meter cabinets shall be provided with a Type ATC 2070 Controller as shown in the Plans. Each controller shall comply with Advanced Transportation Controller (ATC) Standard Version 06 (ATC 5201 v06.25), and shall support both C12S serial bus operation and C1S (104 pin) parallel bus operation. Each controller shall be supplied with the following options and equipment:

1. Board Support Package, in electronic format (see ATC 5201, Paragraph 3.3.1)
2. 2070-3B or 2070-3D Front Panel
3. 2070-1C Engine Board (CPU Module)
4. 2070-2E Field I/O Module
5. One Spare Blank Cover (4X wide) to replace the 2070-2E Field I/O Module

ATC Controllers are required to be preapproved by WSDOT to ensure compatibility with WSDOT ITS operating software. The following controllers have been verified compatible with WSDOT ITS operating software:

1. Model: **Intelight 2070-LDX**

Manufacturer:
**Q-Free America**
5962 La Place Ct SE, Ste. 150
Carlsbad, CA 92008
(833) MAXHELP (833-629-4357)
info@intelight-its.com
www.intelight-its.com

2. Model: **McCain ATC 2070LX**

Manufacturer:
**McCain, Inc.**
2365 Oak Ridge Way
Vista, CA 92801
(888) 262-2246
info@mccain-inc.com
www.mccain-inc.com

8-20.2(9-29.19).GR8

***Pedestrian Push Buttons***

Section 9-29.19 is supplemented with the following:

8-20.2(9-29.19).OPT1.FR8

**(September 30, 2020)**

**Accessible Pedestrian Signal (APS) Pushbuttons**

When required in the Contract, APS Pushbuttons shall be provided. Each accessible pedestrian signal (APS) shall be a complete APS pushbutton system at each pedestrian pushbutton location shown in the Plans. Equipment shall be one of the following systems:

1. Campbell Company: Guardian Accessible Pedestrian Station; Part Number: 501-0811T/512

2. Novax / Pelco Products: IntelliCross Intelligent Pedestrian System APS; Part Number: SE-2901-P30 9x15

Only one brand of equipment shall be used for the entire Contract.

Each pushbutton station shall include the following:

1. Flat dark green colored housing.

2. High contrast pushbutton arrow (dark on a light background or light on a dark background). White on silver or silver on white are not acceptable as high contrast.

3. Integral 9” x 15” R10-3e Sign. Braille shall not be included. Adaptor plates shall be included if required to accommodate the sign.

4. Appropriate interface unit for installation in associated pedestrian display:

   a. Campbell: Signal Power Interface (SPI) Unit

b. Novax/Pelco: Power Interface Module (PIM)

5. Percussive tone / rapid tick walk indication.

6. Voice messages, as specified below, pre-installed. Voice shall be male.

7. Interconnect cable for installation between pushbutton station and pedestrian display interface unit. Unless otherwise specified in the Contract, cable shall be provided by the pushbutton manufacturer. Cable may be standard four conductor cable meeting the requirements of Standard Specification 9-29.3(2)B if it meets the pushbutton manufacturers requirements.

The following shall be provided at each intersection:

1. One USB flash drive with copies of all voice message audio files for that intersection, placed in the traffic signal cabinet drawer or drawing envelope. A separate flash drive is required for each intersection.

2. One USB cable of the appropriate type (A to A, A to B, male/female, etc.), placed in the traffic signal cabinet drawer or drawing envelope.

Any other equipment or software required by the manufacturer for setup, operation, and maintenance of the pushbutton stations shall be provided.

Dual button adaptor brackets are required for all installations with two APS pushbuttons on the same Type PPB, Type PS, or Type I Signal Standard. Where dual button adaptor brackets or extension brackets are required, they shall be obtained from the same manufacturer as the pushbutton station. Brackets and extensions from other manufacturers shall not be used.

**APS Speech Messages**

Speech messages shall be provided in the following format:

- “Wait.”
- “Wait to cross ___ _(A)_____ at _____(B)_____.”
- “Walk sign is on to cross ___ _(A)_____.”

The following table lists the entries for (A) and (B) above, as well as quantities for button and arrow orientations:

*** $$1$$ ***

Order forms shall be completed by the Contractor using the information presented above.

8-20.2(1).GR8

***Equipment List And Drawings***

8-20.2(1).INST1.GR8

Section 8-20.2(1) is supplemented with the following:

8-20.2(1).OPT1.GR8

(March 13, 1995)

Pole base to light source distances (H1) for lighting standards with pre-approved plans shall be as noted in the Plans.

Pole base to light source distances (H1) for lighting standards without pre-approved plans will be furnished by the Engineer as part of the final approved shop drawings, prior to fabrication.

8-20.2(1).OPT2.GR8

(March 13, 1995)

Pole base to light source distances (H1) for lighting standards with pre-approved plans will be determined or verified by the Engineer at the request of the Contractor prior to fabrication.

Pole base to light source distances (H1) for lighting standards without pre-approved plans and for combination traffic signal and lighting standards will be furnished by the Engineer as part of the final approved shop drawings prior to fabrication.

8-20.2(1).OPT3.GR8

(March 13, 1995)

If traffic signal standards, strain pole standards, or combination traffic signal and lighting standards are required, final verified dimensions including pole base to signal mast arm connection point, pole base to light source distances (H1), mast arm length, offset distances to mast arm mounted appurtenances, and orientations of pole mounted appurtenances will be furnished by the Engineer as part of the final approved shop drawings prior to fabrication.

8-20.3.GR8

## Construction Requirements

8-20.3(4).GR8

### *Foundations*

8-20.3(4).INST1.GR8

Section 8-20.3(4) is supplemented with the following:

8-20.3(4).OPT1.FB8

**(August 7, 2017)**

**Shafts For Signal Standard Foundations**

Shaft foundations for the traffic signal standards at the following location(s) shall be constructed in accordance with the following requirements:

*** $$1$$ ***

Shaft foundations for traffic signal standards shall be constructed in accordance with Section 6-19.3, except as follows:

**Quality Assurance**

The tolerance for placing the center at the top of shaft under Section 6-19.3(1)A is revised for traffic signal standard foundation shafts to be within 4-inches of the Plan location.

Non-destructive testing of shafts under Sections 6-19.3(1)B and 6-19.3(9) and associated Work under Section 6-19.3(6) does not apply.

**Shaft Excavation**

Permanent casing advanced during excavation operations is required full depth for all traffic signal standard shaft foundation locations specified at the beginning of this Special Provision. Excavation in advance of the casing tip shall not exceed three feet. In no case shall shaft excavation and casing placement extend below the bottom of shaft excavation as shown in the Plans.

When efforts to advance past the obstruction to the design shaft tip elevation result in the rate of advance of the shaft drilling equipment being significantly reduced relative to the rate of advance for the portion of the shaft excavation in the geological unit that contains the obstruction, then the Contractor shall remove, break-up, or push aside, the obstruction under the provisions of Section 8-20.5 as supplemented in these Special Provisions.

**Placing Concrete**

Traffic signal standard foundation shaft concrete shall be Class 4000P.

**Casing Removal**

Tops of permanent casing for the shafts shall be removed to at least 6-inches beneath the finish groundline, unless otherwise specified by the Engineer.

8-20.3(8).GR8

***Wiring***

8-20.3(8).INST1.GR8

Section 8-20.3(8) is supplemented with the following:

8-20.3(8).OPT1.GR8

**(March 13, 1995)**

**Field Wiring Chart**

| | | |
|---|---|---|
| 501 | AC+ Input | 516-520 Railroad Pre-empt |
| 502 | AC- Input | 5A1-5D5 Emergency Pre-empt |
| 503-510 | Control-Display | 541-580 Coordination |
| 511-515 | Sign Lights | 581-599 Spare |

| Movement Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Vehicle Head | | | | | | | | | |
| Red | 611 | 621 | 631 | 641 | 651 | 661 | 671 | 681 | 691 |
| Yellow | 612 | 622 | 632 | 642 | 652 | 662 | 672 | 682 | 692 |
| Green | 613 | 623 | 633 | 643 | 653 | 663 | 673 | 683 | 693 |
| Spare | 614 | 624 | 634 | 644 | 654 | 664 | 674 | 684 | 694 |
| Spare | 615 | 625 | 635 | 645 | 655 | 665 | 675 | 685 | 695 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| AC- | 616 | 626 | 636 | 646 | 656 | 666 | 676 | 686 | 696 |
| Red Auxiliary | 617 | 627 | 637 | 647 | 657 | 667 | 677 | 687 | 697 |
| Yellow Auxiliary | 618 | 628 | 638 | 648 | 658 | 668 | 678 | 688 | 698 |
| Green Auxiliary | 619 | 629 | 639 | 649 | 659 | 669 | 679 | 689 | 699 |
| Pedestrian Heads & Dets. | | | | | | | | | |
| Hand | 711 | 721 | 731 | 741 | 751 | 761 | 771 | 781 | 791 |
| Man | 712 | 722 | 732 | 742 | 752 | 762 | 772 | 782 | 792 |
| AC- | 713 | 723 | 733 | 743 | 753 | 763 | 773 | 783 | 793 |
| Detection | 714 | 724 | 734 | 744 | 754 | 764 | 774 | 784 | 794 |
| Common-Detection | 715 | 725 | 735 | 745 | 755 | 765 | 775 | 785 | 795 |
| Spare | 716 | 726 | 736 | 746 | 756 | 766 | 776 | 786 | 796 |
| Spare | 717 | 727 | 737 | 747 | 757 | 767 | 777 | 787 | 797 |
| Spare | 718 | 728 | 738 | 748 | 758 | 768 | 778 | 788 | 798 |
| Spare | 719 | 729 | 739 | 749 | 759 | 769 | 779 | 789 | 799 |
| Detection | | | | | | | | | |
| AC+ | 811 | 821 | 831 | 841 | 851 | 861 | 871 | 881 | 891 |
| AC- | 812 | 822 | 832 | 842 | 852 | 862 | 872 | 882 | 892 |
| Common-Detection | 813 | 823 | 833 | 843 | 853 | 863 | 873 | 883 | 893 |
| Detection A | 814 | 824 | 834 | 844 | 854 | 864 | 874 | 884 | 894 |
| Detection B | 815 | 825 | 835 | 845 | 855 | 865 | 875 | 885 | 895 |
| Loop 1 Out | 816 | 826 | 836 | 846 | 856 | 866 | 876 | 886 | 896 |
| Loop 1 In | 817 | 827 | 837 | 847 | 857 | 867 | 877 | 887 | 897 |
| Loop 2 Out | 818 | 828 | 838 | 848 | 858 | 868 | 878 | 888 | 898 |
| Loop 2 In | 819 | 829 | 839 | 849 | 859 | 869 | 879 | 889 | 899 |
| Supplemental Detection | | | | | | | | | |
| Loop 3 Out | 911 | 921 | 931 | 941 | 951 | 961 | 971 | 981 | 991 |
| Loop 3 In | 912 | 922 | 932 | 942 | 952 | 962 | 972 | 982 | 992 |
| Loop 4 Out | 913 | 923 | 933 | 943 | 953 | 963 | 973 | 983 | 993 |
| Loop 4 In | 914 | 924 | 934 | 944 | 954 | 964 | 974 | 984 | 994 |
| Loop 5 Out | 915 | 925 | 935 | 945 | 955 | 965 | 975 | 985 | 995 |
| Loop 5 In | 916 | 926 | 936 | 946 | 956 | 966 | 976 | 986 | 996 |
| Loop 6 Out | 917 | 927 | 937 | 947 | 957 | 967 | 977 | 987 | 997 |
| Loop 6 In | 918 | 928 | 938 | 948 | 958 | 968 | 978 | 988 | 998 |
| Spare | 919 | 929 | 939 | 949 | 959 | 969 | 979 | 989 | 999 |

8-20.3(14).GR8

***Signal Systems***

8-20.3(14).INST1.GR8

Section 8-20.3(14) is supplemented with the following:

8-20.3(14).OPT1.GR8

**(January 2, 2018)**

**Uninterruptible Power Supply (UPS)**

UPS Systems shall be tested before and after field installation.

**Contractor Quality Control Testing**

Prior to delivery of the UPS system to the Washington State Department of Transportation Materials Laboratory (State Materials Laboratory), all components and equipment, including the batteries shall be fully installed in the cabinet and the UPS system operations shall be successfully tested by the Contractor's

representative. A testing certification (letter or similar) shall be provided with the cabinet.

After the UPS system has been successfully tested, the batteries shall be removed from the cabinet and the cabinet and batteries shall be delivered, independently, to the State Materials Laboratory, located in Tumwater, Washington, for pre-installation testing.

**UPS System Laboratory Testing**

The UPS system testing shall simulate the operations as installed in the field. The tests shall check the operation of each individual component as well as the overall operation of the system.

The State Materials Laboratory testing of the UPS system will consist of the following four separate stages:

1. Delivery and Assembly

2. Documentation

3. Demonstration

4. Performance Test

Testing will follow in the listed order with no time gaps between stages unless mutually agreed upon by the Contractor and State Materials Laboratory.

The Contractor shall designate a qualified representative for these tests. All communications and actions regarding testing of all equipment submitted to the State Materials Laboratory shall be made through this representative. These communications and actions shall include, but not be limited to, all notifications of failure or rejection, demonstration of the equipment, and the return of rejected equipment.

**Stage 1: Delivery and Assembly**

The Contractor shall provide all Work necessary to assemble the UPS system and make ready for demonstration at the State Materials Laboratory. Upon delivery, the batteries shall be reinstalled in the cabinet and the UPS system shall be made fully operational. All components for the complete UPS system, including the necessary test equipment, shall be ready for testing within 14 calendar days of delivery to the State Materials Laboratory.

**Stage 2: Documentation**

All documentation shall be furnished with the UPS system equipment prior to the start of testing. The documents to be supplied shall consist of the following:

1. Serial numbers when applicable.

2. Wiring diagrams for all equipment in the required quantities and formats.

3. Complete operations and maintenance manuals in the required quantities and formats.

4. A description of the functions and the capabilities of individual components and of the overall UPS system.

**Stage 3: Demonstration**
The Contractor shall provide the following:

1. A presentation on how to operate the system.

2. A complete and thorough demonstration to show that all components of the UPS system are in good condition and operating properly.

The demonstration shall be performed by the Contractor's representative in the presence of State Materials Laboratory personnel.

**Stage 4: Performance Test**
The performance test will be conducted by State Personnel to determine if the UPS system performs correctly. The performance test shall include the testing of the following specifications:

1. Battery Discharge Rate

2. Battery Recharge Rate

3. Power Transfer Rate

4. Operational Duration

Test results for items 1-3 shall be within the manufacturers recommended values in order for the tests to be considered successful. For item 4, the test is considered successful if the system maintains the test load for the required minimum duration for the battery configuration.

**Equipment Failure or Rejection**
All component or system failures shall be documented. This documentation shall provide the following information:

1. A detailed description of the failure.

2. The steps undertaken to correct the failure.

3. A list of parts that were replaced, if any.

All failed or rejected equipment shall be removed from the Materials Laboratory within three calendar days following notification; otherwise, the failed or rejected equipment will be returned, freight collect, to the Contractor.

Following final approval by the State Materials Laboratory, all equipment shall be removed from the State Materials Laboratory by the Contractor and delivered to the appropriate site(s) as designated elsewhere in this Contract.

**UPS System Field Testing**

After installation, the Contractor shall field test the UPS system to ensure the system operates in accordance with Plans, Specifications and manufacturer's instructions. The test shall ensure that that all components are operational within manufacturer's tolerances. The Contractor shall provide a testing procedure to the Engineer for approval. The testing procedure shall provide for operational testing of the following:

1. UPS Power Module

2. Surge Suppressor

3. Automatic Transfer Switch

4. Generator Power Transfer Switch

The field test shall demonstrate the loss of utility power and the switch over to battery power without interference with the normal operation of the connected downstream cabinet. For traffic signal systems, this this includes the traffic signal controller including conflict monitor and any other peripheral devices within the traffic controller assembly.

8-20.3(14)A.GR8

**Signal Controllers**

8-20.3(14)A.INST1.GR8

Section 8-20.3(14)A is supplemented with the following:

8-20.3(14)A.OPT1.GR8

**(August 2, 2010)**

**Testing**

All signal control equipment shall be tested at the Washington State Department of Transportation Materials Laboratory located in Tumwater, Washington, prior to final delivery. The tests shall check the operation of each individual component as well as the overall operation of the system.

The Contractor shall designate a qualified representative for these tests. Notification of this representative shall be submitted for approval, in writing, to the State Materials Laboratory, 14 calendar days prior to any equipment deliveries. The Engineer shall also receive a copy of this notification, which includes the representative's name, address, and telephone number. All communications and actions regarding testing of all equipment submitted to the State Materials Laboratory shall be made through this representative. These communications and actions shall include, but not be limited to, the following:

All notifications of failure or rejection, demonstration of the equipment, and the return of rejected equipment.

The State Materials Laboratory testing process will consist of the following four separate stages:

a. Delivery and Assembly
b. Demonstration and Documentation
c. Performance Test
d. Operational Test

Testing will follow in the correct order with no time gaps between stages unless mutually agreed upon by the Contractor and State Materials Laboratory.

**Stage 1 Delivery Assembly**

All components for the complete traffic control systems, including the necessary test equipment, shall be assembled and ready for demonstration within ten working days of delivery to the Materials Laboratory. The systems shall simulate the operations as installed in the field.

Equipment and prerequisites necessary to complete this stage shall include:

a. Detection Simulator:
The detection simulator shall provide at least one detector per phase and variable traffic volumes. One simulator shall be required for every two controllers tested.

b. Communications Network:
Locations, specified for coordinating communications equipment and cable, shall be completely wired to provide an operational communications system between all local and master controllers.

The Contractor shall provide labor, equipment, and materials necessary to assemble all control equipment complete and ready for demonstration. Materials and equipment used for this stage that are not required for field installation shall remain the property of the Contractor. Failure to complete this stage within ten working days will result in rejection of the entire system.

**Stage 2 Demonstration and Documentation**

This stage shall be completed within seven working days following the completion of Stage 1. Failure to do so shall result in rejection of the entire shipment.

All documentation shall be furnished with the control equipment prior to the start of testing. If corrections to any document are deemed necessary by the State, the Contractor shall submit this updated version prior to the final approval by the State Materials Laboratory. The documents to be supplied shall consist of or provide the following:

a. A Complete accounting of all the control and test equipment required.

b. A complete set of documents which shall include:

1. Serial numbers when applicable.

2. Written certification that equipment of the same make and model has been tested according to NEMA Environmental Standards and Test Procedures, and has met or exceeded these standards. The certificate shall include equipment model number and where, when, and by whom the tests were conducted. This certificate shall accompany each shipment of controllers.

3. Reproducible mylar wiring diagrams and two blue-tone prints for each controller and cabinet supplied. The sheet size shall be 24 inches by 36 inches.

4. Wiring diagrams for all auxiliary equipment furnished. One set per cabinet.

5. Complete operations and maintenance manuals including complete and correct software listing and flow charts. One set of operations and maintenance manuals per cabinet; at least four but no more than ten. Five sets of software listings and flow charts.

6. Complete operations and maintenance manuals for all auxiliary equipment. One set per cabinet.

c. A description of the functions and the capabilities of individual components and of the overall control system.

d. A presentation on how to operate the system.

e. A complete and thorough demonstration to show that all components of the control system are in good condition and operating properly, and proof that the controller and cabinet are functioning correctly.

f. Detailed instructions for installing and operating the controller(s), including explanations on the use of all features of the controller(s).

g. The operational and maintenance manuals for each traffic signal controller supplied including as a minimum, but not to be limited to the following:

1. Detailed instructions for maintaining all hardware components, controller, and auxiliary equipment.

2. A complete parts list detailing all manufacturer's identification codes.

3. Detailed wiring diagrams and schematics indicating voltage levels and pictorial description, part name, and location for all hardware components, controller, and auxiliary equipment.

The demonstration shall include the following:

a. Phasing per plans and all phase timing.

b. Detection including any special detector functions.

c. Conflict Monitor and Load Switches.

d. Special Coordination including communication equipment.

This demonstration shall be performed by the Contractor in the presence of State Materials personnel. The Contractor shall supply any item not accounted for within five working days of the accounting. Controllers and cabinets that remain incomplete five working days after notification shall be rejected and returned freight collect to the Contractor.

**Stage 3 Unit Performance Test**

A minimum of ten working days shall be allowed for one or two cabinet assemblies and five working days for each additional assembly.

The unit performance test will be conducted by State Personnel to determine if each and every controller cabinet assembly complies with NEMA Environmental Standards as stated in NEMA publication No. TS 1-1976, Part 2.

Any unit submitted, whose failure has been corrected, shall be retested from the beginning of this stage.

**Stage 4 Operational Test**

All control and auxiliary equipment shall operate without failure for a minimum of ten consecutive days. If an isolated controller is specified, it shall operate as an isolated controller. If a coordinated system is specified, it shall operate as a total coordinated system with the master and all local controllers operating in all coordinated modes.

If any failure occurs during this stage, all equipment for this stage shall be restarted following completion of repairs.

**Equipment Failure Or Rejection**

Equipment failures shall be defined as set forth in NEMA Publication No. TS 1-1976. Failure of load switches, detector amplifiers, and conflict monitors shall not result in rejection of the controller or cabinet. However, the Contractor shall stock, as replacements, approximately 30 percent more than the total for these three items. All excess material shall remain the property of the Contractor following completion of all tests.

If a failure occurs during Stages 3 or 4, repairs shall be made and completed within ten working days following notification of the malfunction. The Contractor shall have the option of making onsite repairs or repair them at a site selected by the Contractor. Failure to complete repairs within the

allotted time shall result in rejection of the controller or cabinet assembly under test.

A total of two failures will be allowed from the start of Stage 3 to the end of Stage 4. If three failures occur during this time period, the equipment will be rejected. New equipment of different serial numbers submitted as replacement shall be received by the Materials Laboratory for testing under Stage 3 within ten working days following notification of rejection. Failure to meet this requirement within the allotted time will result in rejection of the entire system. Software errors will be considered as failures and, if not corrected within ten working days, the entire system will be subject to rejection. Following rejection of any equipment, the Contractor shall be responsible for all costs incurred. This shall include but not be limited to all shipping costs.

When the traffic control program is supplied by the State, the Contractor shall prove that any failures are, in fact, caused by that program and not the hardware.

All component or system failures, except load switches and detector amplifiers, shall be documented. This documentation shall be submitted prior to commencing the test or stage in which the failure was found and shall provide the following information:

a. A detailed description of the failure.
b. The steps undertaken to correct the failure.
c. A list of parts that were replaced, if any.

Upon completion of the tests, the equipment will be visually inspected. If material changes are observed which adversely affect the life of the equipment, the cause and conditions shall be noted. The Contractor will immediately be given notice to correct these conditions. If not repaired within ten working days of notification, the equipment will be subject to rejection. A final accounting shall be made of all equipment prior to approval.

All failed or rejected equipment shall be removed from the Materials Laboratory within three working days following notification; otherwise, the failed or rejected equipment will be returned, freight collect, to the Contractor.

Following final approval by the State Materials Laboratory, all equipment shall be removed from the State Materials Laboratory and delivered to sites as designated elsewhere in this contract.

**Guarantees**

Guarantees and warranties shall be in accordance with Section 1-05.10.

8-20.5.GR8

## Payment

8-20.5.INST1.GR8
Section 8-20.5 is supplemented with the following:

8-20.5.OPT1.GB8
(April 6, 2015)
"Removing Traffic Signal Shaft Obstructions", estimated.
Payment for removing obstructions, as defined in Section 8-20.3(4) as supplemented in these Special Provisions, will be made for the changes in shaft construction methods necessary to remove the obstruction. The Contractor and the Engineer shall evaluate the effort made and reach agreement on the equipment and employees utilized, and the number of hours involved for each. Once these cost items and their duration have been agreed upon, the payment amount will be determined using the rate and markup methods specified in Section 1-09.6. For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Removing Traffic Signal Shaft Obstructions" in the bid proposal to become a part of the total bid by the Contractor.

If the shaft construction equipment is idled as a result of the obstruction removal work and cannot be reasonably reassigned within the project, then standby payment for the idled equipment will be added to the payment calculations. If labor is idled as a result of the obstruction removal work and cannot be reasonably reassigned within the project, then all labor costs resulting from Contractor labor agreements and established Contractor policies will be added to the payment calculations.

The Contractor shall perform the amount of obstruction work estimated by the Contracting Agency within the original time of the contract. The Engineer will consider a time adjustment and additional compensation for costs related to the extended duration of the shaft construction operations, provided:

1. the dollar amount estimated by the Contracting Agency has been exceeded, and

2. the Contractor shows that the obstruction removal work represents a delay to the completion of the project based on the current progress schedule provided in accordance with Section 1-08.3.

8-21.GR8
## Permanent Signing

8-21.2.GR8
## Materials

8-21.2(9-06.16).GR8
***Roadside Sign Structures***
Section 9-06.16 is supplemented with the following:

8-21.2(9-06.16).OPT1.GR8
**(January 3, 2011)**
**Perforated Steel Square Sign Post System**
Where noted in the Plans, steel sign post systems shall be square, pre-punched galvanized steel tubing, that are NCHRP 350 Test Level 3 Certified and FHWA approved. The steel sign post system shall include all anchor sleeves, and other hardware required for a complete sign installation.

**System Acceptance**

Systems listed in the current QPL will be accepted per the QPL approval code. Systems not listed in the QPL will be accepted based on a Supplier's Certificate of Compliance. The Supplier's Certificate of Compliance will be a contract specific letter from the supplier stating the system is NCHRP 350 Test Level 3 compliant.

8-21.2(9-28.11).GR8

***Hardware***

Section 9-28.11 is supplemented with the following:

8-21.2(9-28.11).OPT1.GB8

(August 3, 2015)

Locknuts shown in the Plans specifying a locknut or locknut with nylon insert shall conform to one of the following:

1. ANCO Pin Locknut, with stainless steel locking pin, as manufactured by Lok-Mor, Inc.

2. Tri-lock Locknut, as manufactured by Lok-Mor, Inc.

3. Grade DH or 2H hex or heavy hex nuts conforming to one of the ASTM material specifications in the Locknut category of the Hardware table of this Section may be modified by installing a nylon insert washer. A minimum of 60-percent of the original number of threads shall meet the requirements of the applicable ASTM material specification after insertion of the nylon insert washer.

4. Hex or heavy hex nuts conforming to one of the ASTM material specifications in the Locknut category of the Hardware table of this Section may be modified by adding one of the following products to a minimum of one-half of the internal threads of the nut and the entire exterior top surface of the nut:

    a. Nylok Blue Torq-Patch Locknut.

    b. Nylok Precote 30.

    c. ND Patch 360 Ring Patch.

    The nuts with any of the three listed products are permitted for a single use only and shall have a maximum of two nut widths of thread extending beyond the nut after installation.

The alternatives to locknuts specified in Standard Plans G-90.20, G-90.30, and J-75.41 are deleted and replaced with the four options specified above.

8-21.2(9-28.14).GR8

***Sign Support Structures***

Section 9-28.14 is supplemented with the following:

8-21.2(9-28.14).OPT6.GR8

**(September 8, 2020)**

**Manufacturers for Steel Roadside Sign Supports**

The Standard Plans lists several steel sign support types. These supports are patented devices and many are sole-source. All of the sign support types listed below are acceptable when shown in the Plans.

| Steel Sign Support Type | Manufacturer |
|---|---|
| Type TP-A & TP-B | Transpo Industries, Inc. |
| Type PL, PL-T & PL-U | Northwest Pipe Co. |
| Type AS | Transpo Industries, Inc. |
| Type AP | Transpo Industries, Inc. |
| Type ST 1, ST 2, ST 3, & ST 4 | Ultimate Highway Solutions, Inc.,<br>Allied Tube & Conduit Corp. (Mechanical Division),<br>Trinity Highway Products, LLC. |
| Type SB-1, SB-2, & SB-3 | Ultimate Highway Solutions, Inc.,<br>Xcessories Squared Development and Manufacturing Incorporated,<br>Trinity Highway Products, LLC. |

8-21.3.GR8

## Construction Requirements

8-21.3(9).GR8

### *Sign Structures*

8-21.3(9)E.GR8

**Bridge Mounted Sign Brackets**

8-21.3(9)E.INST1.GR8

Section 8-21.3(9)E is supplemented with the following:

8-21.3(9)E.OPT1.FB8

(April 6, 2015)

Bridge Mounted Sign Bracket No(s). *** $$1$$ *** include the following quantities of structural carbon steel:

*** $$2$$ ***

For bridge mounted sign brackets mounted with resin bonded anchors, the Contractor shall install resin bonded anchors in accordance with Section 6-02.3(18) as supplemented in these Special Provisions. For this type of mounting, Bridge Mounted Sign Bracket No(s). *** $$3$$ *** include the following quantities of drilled holes:

*** $$4$$ ***

8-21.4.GR8

## Measurement

8-21.4.INST1.GR8

Section 8-21.4 is supplemented with the following:

8-21.4.OPT1.FB8

(September 8, 2020)

*** $$1$$ *** contain(s) the following approximate quantities of material and work:

*** $$2$$ ***

The quantities are listed only for the convenience of the Contractor in determining the volume of work involved and are not guaranteed to be accurate. The prospective bidders shall verify these quantities before submitting a bid. No adjustments other than for accepted changes will be made in the applicable sign structure lump sum Contract price even though the actual quantities required may deviate from those listed.

8-24.GR8

## Rock and Gravity Block Wall and Gabion Cribbing

8-24.2.GR8

## Materials

8-24.2.INST1.GR8

Section 8-24.2 is supplemented with the following:

8-24.2.OPT1.GR8

***(January 7, 2002)***

***Gravity Block Wall***

Gravity block wall blocks shall be rectangular prisms with dimensions 2'-5 1/2" by 2'-5 1/2" by 4'-11", except for special blocks which shall be as dimensioned in the Plans. All dimensions shall be ± 1/2".

Except as otherwise specified, gravity block wall blocks will be accepted by the Engineer based on visual inspection only, with no minimum compressive strength and no air content requirements for the concrete used in the block.

Gravity block wall blocks for permanent walls of heights greater than six feet and less than 15 feet shall be cast with Class 3000 concrete, conforming to the air content requirements of Section 6-02.3(2)A. Commercial concrete shall not be used. Gravity block wall blocks for permanent walls of these heights will be accepted based on visual inspection, and conformance to Section 6-02.3(27) and the specified concrete strength and air content requirements.

8-24.3.GR8

## Construction Requirements

8-24.3(2).GR8

## *Gravity Block Wall*

8-24.3(2).INST1.GR8

Section 8-24.3(2) is supplemented with the following:

8-24.3(2).OPT1.GR8

**(January 7, 2002)**

**Definitions**

Temporary Gravity Block Wall: A gravity block wall that is constructed and removed under the same contract. Temporary gravity block walls shall not exceed ten feet in height, measured from the bottom of the bottom row of blocks to the top of the highest block.

Permanent Gravity Block Wall: A gravity block wall that remains in place after the conclusion of the contract under which the gravity block wall was constructed. Permanent gravity block walls shall not exceed 15 feet in height, measured from the bottom of the bottom row of blocks to the top of the highest block.

**Submittals**

The Contractor shall submit working drawings of the gravity block wall to the Engineer for approval in accordance with Section 6-01.9. The working drawings shall include, but not be limited to, the following:

1. Plan, elevation, and section views of the wall, showing the layout, batter, and orientation of the blocks.

2. Dimensions and details of the blocks, including details and locations of block erection lifting loops and inserts, and the features designed to interlock blocks together if the blocks have such features.

3. Method and equipment used to erect the blocks.

4. Erection sequence.

The Contractor shall not begin fabricating gravity block wall blocks until receiving the Engineer's approval of the working drawing submittal.

**Gravity Block Wall Erection**

After excavating for the wall base, the Contractor shall grade the excavation for a width equal to or exceeding the width of the bottom row of blocks. The base shall be graded to the base elevation shown in the Plans and working drawings as approved by the Engineer, and shall accommodate the batter of the bottom row of blocks.

The Contractor shall erect the gravity block wall and place the backfill in accordance with the erection sequence as approved by the Engineer. The top of the gravity block wall shall be within two inches of the line and grade shown in the Plans. The backfill shall be compacted in accordance with Section 2-03.3(14)C, Method C.

The Contractor shall repair all large blemishes, honeycombed areas, and chipped surfaces, (25 square inches and larger) on the exposed face of the erected wall using methods and materials as approved by the Engineer.

8-25.GR8

## Glare Screen

8-25.1.GR8

### Description

8-25.1.INST1.GR8

Section 8-25.1 is supplemented with the following:

8-25.1.OPT1.GR8

(April 1, 2002)

This work shall consist of furnishing and constructing permanent and temporary barrier glare screen on concrete barrier in accordance with the Plans, these Specifications, and as directed by the Engineer.

8-25.2.GR8

### Materials

8-25.2.INST1.GR8

Section 8-25.2 is supplemented with the following:

8-25.2.OPT1.GR8

***(April 1, 2002)***

***Barrier Glare Screen***

Barrier glare screen shall consist of modular units with vertical blades mounted on a horizontal base rail. Base rails and blades shall be made of non-warping, non metallic durable polymeric materials; shall be resistant to damage due to impacts, ultraviolet light, ozone, hydrocarbons, and other effects of atmosphere weathering; shall resist stiffening with age; and shall be designed for a minimum life equaling 60 months of outdoor service.

The color of blades shall be gray or green. Only one color shall be used throughout the project. The height of the blade shall be 24 inches. The blade width and spacing shall provide for a minimum 22 degree sight cutoff angle. The length of the unit shall be the same as the length of the concrete barrier that the unit is mounted on. The unit can be composed of smaller sub-units as long as the competed assembly is the same length as the concrete barrier. The unit shall not exceed 4.5 pounds per linear foot.

Brackets and mounting hardware may be metallic or non-metallic. Metallic brackets and anchor hardware shall be stainless steel or galvanized in accordance with ASTM A-153. Anchors shall be a stud mechanical system and shall include the necessary washers. The blade to rail base separation strength shall be a minimum of 1,500 pounds. Anchors shall have a minimum 3,000 pound pull-out and shear strength.

Barrier glare screen shall be selected from approved materials listed in the Qualified Products List.

***Laboratory Tests***

Three blades shall be cycled at 1000 hours in a weatherometer in accordance with ASTM G 53 (3 hr. 60C UV, 3 hr. 50C CON). The blades shall show no signs of delamination, distress, or discoloration. Physical properties of tensile strength and rigidity shall be maintained within 80 percent of the unconditioned values.

An impact test shall be performed on three partial sections of the modular unit consisting of the base rail and one blade. The temperature shall be 45 F. The modular unit shall be fastened in a similar fashion as to how the system would be used in the field. Each blade shall receive three impacts with a horizontal steel bar traveling at 50 MPH impacting at mid-height on the blade. After impact, the screening unit (blades and base) shall be inspected for the following criteria:

1. Any cracking, splitting, or delamination, other than surface cracking evident on only one face of the blade, is considered a failure.

2. If the blade leans more than 10 degrees from the vertical it is considered a failure.

3. Any separation of the blade from the base is considered a failure.

4. Any separation of the base from the attachment is considered a failure.

If an individual blade or base fails any of the above criteria, the product is unacceptable.

### *Pre-approval*

In order for a particular model of temporary barrier glare screen to become pre-approved, the following conditions must be met:

1. The manufacturer must submit a written request for pre-approval along with samples for each model to be tested to: Materials Engineer, Department of Transportation Material Laboratory, P.O. Box 47365, Olympia, WA 98504-7365. Samples shall be complete with blades, base rail, and mounting hardware and shall be accompanied by the manufacture's written installation procedures.

2. The barrier screen will be field impact tested by the State Materials Laboratory to verify compliance with these specifications.

3. In lieu of State Materials Laboratory testing, the Lab will accept the results of pre-approved testing performed by the manufacturer or other agencies under the following conditions:

    a. The State Materials Laboratory is informed of the pre-approval testing sufficiently in advance in order to attend and observe. Attendance will be at the discretion of the Materials Laboratory.

    b. The results of the testing shall be reported in sufficient detail to enable the State Materials Laboratory to evaluate compliance with these specifications.

The Manufacturer must submit a certified test report, including test data developed by an approved testing laboratory, which demonstrates that the barrier screening complies with the requirements of the specifications. Certified test data supplied by the manufacturer shall be subject to verification by appropriate tests conducted by the State Materials Laboratory.

Frequency of field testing, evaluation, and pre-approval updating shall be at the sole discretion of the Materials Laboratory.

8-25.3.GR8

## Construction Requirements

8-25.3.INST1.GR8

Section 8-25.3 is supplemented with the following:

8-25.3.OPT1.GR8

***(April 1, 2002)***

***Barrier Glare Screen***

The vertical blades shall be attached to the rail base in a positive mechanical manner to prevent unintentional blade rotation or dislocation. Barrier glare screen shall be attached to the top of the barrier using approved anchors and following the manufacturer's recommendations. Each modular unit of 10 feet or less shall be secured to the concrete barrier with anchors at a minimum of three points. Modular units greater than 10 feet in length shall be secured at a minimum of four points. Spanning the joint between concrete barrier sections will not be allowed.

When the temporary screening is no longer required, the Contractor shall remove the screening units. When noted in the contract that the screening will become the property of the Contracting Agency, the Contractor shall deliver and stockpile the screening units at the location noted in the contract.

8-25.4.GR8

## Measurement

8-25.4.INST1.GR8

Section 8-25.4 is supplemented with the following:

8-25.4.OPT1.GR8

(April 1, 2002)

Barrier glare screen and temporary barrier glare screen will be measured by the linear foot along its completed line and slope.

8-25.5.GR8

## Payment

8-25.5.INST1.GR8

Section 8-25.5 is supplemented with the following:

8-25.5.OPT1.GR8

(April 1, 2002)

“Barrier Glare Screen", per linear foot.

"Temporary Barrier Glare Screen", per linear foot.

8-29.GR8

## Wire Mesh Slope Protection

8-29.1.GR8

## Description

8-29.1.INST1.GR8

Section 8-29.1 is supplemented with the following:

8-29.1.OPT1.GR8

(April 5, 2010)

This work also consists of furnishing and installing cable net slope protection.

8-29.2.GR8

## Materials

8-29.2.INST1.GR8

Section 8-29.2 is supplemented with the following:

8-29.2.OPT1.GR8

***(January 2, 2018)***

***Cable Net Slope Protection Materials***

Except where the Plans specify only one type of wire mesh backing material, wire mesh shall consist of either of the following:

1. 8x10 double-twisted, hexagonal wire mesh conforming to ASTM A 975

2. Chain link fabric conforming to Section 9-16.4(2) except that the chain link mesh grid shall be two inch square.

Unless otherwise specified, wire mesh shall be PVC coated. The color of the PVC coating shall be SAE AMS Standard 595 color number 20045, unless otherwise specified in the Plans.

Wire rope for cable net panels specified in the Plans to be 5/16 inch nominal diameter shall be galvanized aircraft cable (GAC) construction, EIP steel, 7x7 or 7x19, having a nominal breaking strength of at least 9,200 pounds. 5/16 inch wire rope shall be fabricated and galvanized in accordance with Federal Specification RR-W-410E and ASTM A 1023.

Wire rope for cable anchors, and for other wire ropes specified in the Plans to be 3/4 inch nominal diameter or larger, shall be independent wire rope class (IWRC) construction, EIP steel, 6x19, and shall be galvanized in accordance with ASTM A 603 Class A.

Hardware shall conform to Section 9-16.4(4), with appropriate adjustments for the actual wire rope diameter used for the cable net slope protection. Jaw end swivels shall be galvanized after fabrication in accordance with Federal Specification RR-C-271D Type VII Class 3. Screw pin anchor shackles shall be galvanized after fabrication in accordance with Federal Specification RR-C-271D Type IVA Grade A Class 2.

Lacing wire for seaming the double-twisted wire mesh shall conform to Section 9-16.4(5).

Pressed ring fasteners for seaming the double-twisted wire mesh and fastening the mesh to the cable nets shall be made of high tensile steel.

Threaded bar ground anchors used for anchoring the top cable net support rope and steel post anchor assemblies to the ground surface as shown in the Plans shall be deformed continuously threaded steel reinforcement bars conforming to either Section 9-07.2 or Section 9-07.11 (Grade 60 or better). Threaded bar ground anchors shall be either epoxy-coated in accordance with Sections 6-02.3(24)H and 9-07.3 or galvanized after fabrication in accordance with ASTM A 767 Class I.

Bearing plates shall conform to ASTM A 572 Grade 50 and shall be galvanized after fabrication in accordance with AASHTO M 111. Nuts shall conform to either ASTM A 563 Grade B, hexagonal, or Section 9-07.11. Washers shall conform to AASHTO M 293, except that plate washers shall conform to ASTM A 36. Nuts and washers shall be galvanized after fabrication in accordance with AASHTO M 111 for plate washers and AASHTO M 232 for all other hardware.

Steel posts shall conform to ASTM A 992 and shall be galvanized after fabrication in accordance with AASHTO M 111. Bars and plates welded to steel posts shall conform to ASTM A 572 Grade 50 and shall be galvanized after fabrication in accordance with AASHTO M 111.

Grout for soil anchors and ground anchors shall conform to Section 9-16.4(6).

Concrete for soil anchor deadmen shall be either commercial concrete conforming to Section 6-02.3(2)B or Class 3000 conforming to Section 6-02.

Steel reinforcing bars for soil anchor deadmen shall conform to Section 9-07.2, and shall be epoxy-coated in accordance with Sections 6-02.3(24)H and 9-07.3.

8-29.3.GR8

## Construction Requirements

8-29.3.INST1.GR8

Section 8-29.3 is supplemented with the following:

8-29.3.OPT1.GR8

***(January 3, 2011)***

***Cable Net Slope Protection Construction Requirements***

**Submittals**

The Contractor shall submit a cable net slope protection plan to the Engineer for approval in accordance with Section 6-01.9. The cable net slope protection plan shall include the following:

1. Identification of the supplier of the cable nets. The cable net supplier shall either be listed in the WSDOT Qualified Products List (QPL) or the WSDOT New Products List, or if not listed in the WSDOT QPL or WSDOT New Products List, the submittal shall include written documentation demonstrating satisfactory performance of cable nets furnished by this supplier in projects completed for other agencies in similar site conditions.

2. An inclusive list with catalogue cuts for the appurtenances to be used for the anchors, support system, seaming panels, wire mesh fasteners, anchor

bars, grout, wire rope, clips, thimbles, ferrules, steel rings and other fastening hardware.

3. Mill certificates for the wire rope.

4. A 3'-0" square physical sample of the PVC coated wire mesh in the specified color.

5. The Contractor's plan for installing anchors for the cable net slope protection, and the equipment and process to be used to confirm the capacity of the constructed anchors. The calibration data for the stressing devices used to proof test the anchors, as completed by an independent testing laboratory within 60 calendar days of the submittal date of the cable net slope protection plan to the Engineer, shall be included.

6. Working drawings for the temporary yoke or load frame to be used for anchor proof testing.

7. The Contractor's plan for assembling the cable nets and wire mesh, and erecting the assembled nets on the slope.

The Contractor shall not begin cable net slope protection operations until receiving the Engineer's approval of the cable net slope protection plan.

**Cable Net Slope Protection Assembly**

The cable net panels shall conform to the following criteria:

| | |
|---|---|
| Panel Size: | approximately 12 feet by 25 feet |
| Grid Size: | no larger than 12 inches by 12 inches |
| Interior and Perimeter Rope: | no smaller than 5/16 inch diameter |

Cable nets shall be fabricated with a perimeter rope. Interior wire rope junctions shall be bound with either double knots of 1/8 inch diameter corrosion resistant wire, or high-strength, corrosion resistant clips with slotted bottoms made from 0.08 inch thick plate. All perimeter-interior wire rope junctions shall be bound with corrosion resistant ferrules.

Clips and ferrules shall be pressed on and tie wires knotted so as not to slip when manually stretched or during the placement of the nets. Clips and ferrules shall be secured in the manner intended by the manufacturer while not damaging the wire ropes. Cable net assemblies showing signs of slight damage as determined by the Engineer will be subject to rejection.

**Cable Net Slope Protection Installation**

Cable net slope protection shall be installed in accordance with the details shown in the Plans.

Anchors and the top horizontal support rope shall be located a minimum of 15 feet beyond the slope crest, at locations receiving the Engineer's approval.

Anchors shall achieve the specified anchor capacity in vertical pullout. If double anchors are used, they shall be installed to ensure equal load distribution to both

anchors, and each anchor shall achieve 60 percent of the specified anchor capacity in vertical pullout. For vertical pullout proof testing, an anchor is acceptable if it sustains the specified capacity for 10 minutes with no loss of load. Anchors that fail this criterion shall be replaced and retested at no additional expense to the Contracting Agency. For Type 1 cable net slope protection, up to 25 percent of the support rope anchors shall be proof tested. For Type 2 cable net slope protection, all support rope anchors shall be proof tested. Up to 25 percent of the side and back anchors shall be proof tested at the discretion of the Engineer. If more than three anchors fail, the Contractor shall proof test all anchors.

Proof testing of anchors shall be performed against a temporary yoke or load frame. No part of the temporary yoke or load frame shall bear within three feet of the anchor being tested.

Unless otherwise specified in the Plans, the wire mesh shall be placed on the outside of the cable net panels, and lapped and fastened as detailed in the Plans. With the exception of vertical seaming of the net panels, the wire mesh shall be connected to the cable net panels as shown in the Plans prior to placement on the slope.

All galvanized steel with exposed steel or damaged galvanizing shall be repaired in place after erection of the cable net slope protection in accordance with Section 6-07.3(9)I with paint conforming to Section 9-08.1(2)B.

8-29.4.GR8

## Measurement

8-29.4.INST1.GR8

Section 8-29.4 is supplemented with the following:

8-29.4.OPT1.GR8

(April 5, 2010)

Cable net slope protection will be measured by the square foot of cable net panels erected on the slope.

8-29.5.GR8

## Payment

8-29.5.INST1.GR8

Section 8-29.5 is supplemented with the following:

8-29.5.OPT1.GR8

(January 3, 2011)

"Cable Net Slope Protection Type ___", per square foot.

The unit contract price per square foot for "Cable Net Slope Protection Type ___" shall be full pay for performing the work as specified, including fabrication and installation of all steel posts and anchors and all anchor proof testing.

8-SA1.GR8

## (August 7, 2017)

## FIELD OFFICE BUILDING

### Description

This work shall consist of furnishing and setting-up a temporary office building for the sole use of the Contracting Agency.

**Construction Requirements**

The building shall be set-up, at the location designated by the Engineer, within the first 10 working days, unless the Engineer has approved a different schedule.

The building shall be weather-tight, installed plumb and level, and provided with the following as a minimum:

1. 240 square feet of floor space
2. Above ground floor
3. Heat
4. Electric lights
5. Telephone
6. Adequate windows
7. Six square feet of shelving
8. Plan table: 3 feet 6 inches deep by 6 feet wide by 3 feet 3 inches high
9. Drafting stool
10. Conference table: 4 foot by 8 foot
11. Four chairs
12. Cylinder door lock and six keys
13. Sanitary facilities (unless existing facilities are available)

The building shall remain the property of the Contractor and removed from the site upon physical completion of the contract, or when designated by the Engineer.

**Payment**

Payment will be made for the following bid item when included in the proposal:

"Field Office Building", lump sum.

The lump sum contract price for "Field Office Building" shall be full pay for furnishing, installing, maintaining, and removing the facility, including all costs associated with all required utility hook-ups and disconnects, and monthly utility charges for all utilities except telephone.

The monthly telephone costs will be paid by the Contracting Agency.

8-SA2.GR8

## (January 2, 2018)

## BOLLARDS

### Description

This work shall consist of furnishing and installing steel bollards in accordance with the Plans, Standard Plans, and these Specifications, at the locations shown in the Plans or as staked by the Engineer.

## Materials

### *Posts and Hardware*

Type 1 and Type 2 bollard posts shall be ASTM A 53, NPS 3 (3” Nom.) schedule 80 steel pipe. Post sleeves shall be ASTM A 53, NPS 4 (4”Nom.) schedule 40 steel pipe.

Type 3 bollard posts shall be steel structural tubing per ASTM A 500 Gr B.

Steel plate shall be per ASTM A 36.

All steel parts shall be hot-dip galvanized after fabrication in accordance with AASHTO M 111.

### *Reflective Tape*

Reflective tape shall be one of the following or an approved equal:

Scotchlite High Intensity Grade Series 2870
Reflexite AP-1000
Scotchlite Diamond Grade LDP Series 3970
T-6500 High Intensity (Type IV)

### *Concrete*

Footings shall be constructed using concrete Class 3000.

## Construction Requirements

Bollards shall be constructed in accordance with the Standard Plans.

Bollards shall not vary more than 1/2 inch in 30 inches from a vertical plane.

Bollard posts and the exposed parts of the base assembly shall be painted in accordance with Section 6-07.3(11) for galvanized surfaces. The top coat shall match SAE AMS Standard 595, Color No. 33538 Traffic Signal Yellow.

## Measurement

Measurement for bollards will be by the unit for each type of bollard furnished and installed.

## Payment

Payment will be made for the following bid items when included in the proposal:

"Bollard Type ___", per each.

8-SA3.GR8
**(August 6, 2018)**

# Environmental Compliance

## Description

It is the Contractor’s responsibility to conduct and perform all Work in accordance with Environmental Regulations, Environmental Commitments, permits, and Plans that the Work is subject to. The Environmental Compliance Lead (ECL) shall be the Contractor’s representative that is responsible for management of the Contractor’s environmental compliance.

## Construction Requirements

### *Environmental Compliance Lead (ECL)*

The Contractor shall designate a primary ECL and an alternate ECL to perform the duties of the ECL. The Contractor shall provide the Engineer with a copy of the formal assignment in writing prior to the start of construction. The Contractor's superintendent and/or foreman cannot be designated as the primary or alternate ECL.

The ECL shall represent all Contractor work actions for the project, regardless of whether the work is performed by the Contractor or one of the subcontractors. The ECL shall have the authority to direct work to expeditiously correct any environmental compliance deficiency and coordinate these measures with the Engineer, and to order the Contractor's on-site personnel to stop work that is not being performed in compliance with the permits.

The ECL shall be on-site during all work activities unless otherwise approved by the Engineer. The Contractor shall maintain 24-hour telephone numbers at which the Contractor's designated ECL can be contacted and be available upon the Engineer's request during other than normal working hours. ECL and alternate(s) shall be listed on the Emergency Contact List required under Section 1-05.13(1).

The ECLs shall have, for the life of the Contract, a current Certificate of Training in Construction Site Erosion and Sediment Control (CESCL) from a course approved by the Washington State Department of Ecology.

The primary responsibilities of the ECL are to assist the Contractor's superintendent in planning and scheduling work activities to achieve environmental compliance; and be present on-site to observe work activities and resolve environmental compliance issues as they may develop.

The duties of the ECL shall also include the following requirements:

- Erosion and Sediment Control (ESC) Lead, Section 8-01.3(1)B,
- Updating the Spill Prevention, Control and Countermeasures Plan, Section 1-07.15(1),
- Attending the preconstruction conference (ECL and alternates),
- Evaluation of the Contractor's work operations and schedule in regard to environmental risks,
- Providing advanced notification to the Engineer of work activities that may create environmental compliance concerns.

## Payment

Payment will be made for each of the following Bid items that are included in the Proposal:

"Environmental Compliance Lead", lump sum.

The lump sum Contract price for "Environmental Compliance Lead" shall be full payment for all costs for the Work. When the proposal includes an item for Environmental Compliance Lead all costs for ESC Lead in Section 8-01 shall be included in the lump sum price.

DIVISION9.GR9

# Division 9
# Materials

APPENDIX1.FR9

**Appendices**
**(January 2, 2012)**

The following appendix is attached and made a part of this contract:

*** $$1$$ ***

[Fill-in is the name, title, and if necessary the page numbers of the appendix, formatted as shown in the following sample:]

APPENDIX A:
Summary of Geotechnical Conditions, Page __ through Page __.

APPENDIX2.FR9

**Appendices**
**(January 2, 2012)**

The following appendices are attached and made a part of this contract:

*** $$1$$ ***

[Fill-in is the name, title, and if necessary the page numbers of the appendices, formatted as shown in the following sample:]

APPENDIX A:
Summary of Geotechnical Conditions, Page __ through Page __.

APPENDIX B:
(Name of Report or Document), Page __ through Page __.

STDPLANS.GR9

**(September 30, 2020)**
**Standard Plans**

The State of Washington Standard Plans for Road, Bridge and Municipal Construction M21-01 transmitted under Publications Transmittal No. PT 16-048, effective September 3, 2019 is made a part of this contract.

The Standard Plans are revised as follows:

<u>A-50.10</u>
DELETED

<u>A-50.20</u>
DELETED

<u>A-50.30</u>

DELETED

A-50.40
DELETED

B-90.40
Valve Detail – DELETED

C-1a
DELETED

C-8
Add new Note 5, “5. Type 2 Barrier and Barrier Terminals are allowed in temporary installations only. New Type 2 Barrier and Barrier Terminals are not allowed to be fabricated after December 31, 2019. The plan is provided as a means to verify that any Type 2 barrier and Barrier Terminals fabricated prior to December 31, 2019 meets the plan requirements and cross-sectional dimensions as specified in Standard Specifications 6-10.3(5).”

C-8a
Add new Note 2, “2. Type 4 Barrier and Barrier Transition are allowed in temporary installations only. New Type 4 Barrier and Barrier Transition are not allowed to be fabricated after December 31, 2019. The plan is provided as a means to verify that any Type 4 barrier and Barrier Transition fabricated prior to December 31, 2019 meets the plan requirements and cross-sectional dimensions as specified in Standard Specifications 6-10.3(5).”

C-8b
DELETED

C-8e
DELETED

C-8f
DELETED

C-16a
DELETED

C-20.10
The following table is added:

| **SLOPE \ EMBANKMENT TABLE (FOR 8’, 9’, 11’ LONG POSTS)** | | |
|---|---|---|
| **POST LENGTH** | **SLOPE** | **W (FT)** |
| 8-FOOT | 1H : 1V OR FLATTER | 2.5 MIN. |
| 8-FOOT | 2H : 1V OR FLATTER | 0 (FACE OF BARRIER AT SLOPE BREAK POINT) |
| 9-FOOT | 1.5H : 1V OR FLATTER | 0 (FACE OF BARRIER AT SLOPE BREAK POINT) |
| 11-FOOT | 1H : 1V OR FLATTER | 0 |

| | | |
|---|---|---|
| | | (FACE OF BARRIER AT SLOPE BREAK POINT) |

C-20.11
DELETED

C-20.19
DELETED

C-40.16
DELETED

C-40.18
DELETED

C-80.50
DELETED

C-85.14
DELETED

D-2.14
DELETED

D-2.16
DELETED

D-2.18
DELETED

D-2.20
DELETED

D-2.42
DELETED

D-2.44
DELETED

D-2.46
DELETED

D-2.48
DELETED

D-2.82
DELETED

D-2.86
DELETED

D-10.10

Wall Type 1 may be used if no traffic barrier is attached on top of the wall. Walls with traffic barriers attached on top of the wall are considered non-standard and shall be designed in accordance with the current WSDOT Bridge Design Manual (BDM) and the revisions stated in the 11/3/15 Bridge Design memorandum.

D-10.15

Wall Type 2 may be used if no traffic barrier is attached on top of the wall. Walls with traffic barriers attached on top of the wall are considered non-standard and shall be designed in accordance with the current WSDOT BDM and the revisions stated in the 11/3/15 Bridge Design memorandum.

D-10.30

Wall Type 5 may be used in all cases.

D-10.35

Wall Type 6 may be used in all cases.

D-10.40

Wall Type 7 may be used if no traffic barrier is attached on top of the wall. Walls with traffic barriers attached on top of the wall are considered non-standard and shall be designed in accordance with the current WSDOT BDM and the revisions stated in the 11/3/15 Bridge Design memorandum.

D-10.45

Wall Type 8 may be used if no traffic barrier is attached on top of the wall. Walls with traffic barriers attached on top of the wall are considered non-standard and shall be designed in accordance with the current WSDOT BDM and the revisions stated in the revisions stated in the 11/3/15 Bridge Design memorandum.

D-15.10

STD Plans D-15 series “Traffic Barrier Details for Reinforced Concrete Retaining Walls” are withdrawn. Special designs in accordance with the current WSDOT BDM are required in place of these STD Plans.

D-15.20

STD Plans D-15 series “Traffic Barrier Details for Reinforced Concrete Retaining Walls” are withdrawn. Special designs in accordance with the current WSDOT BDM are required in place of these STD Plans.

D-15.30

STD Plans D-15 series “Traffic Barrier Details for Reinforced Concrete Retaining Walls” are withdrawn. Special designs in accordance with the current WSDOT BDM are required in place of these STD Plans.

G-20.10

SIGN INSTALLATION BEHIND TRAFFIC BARRIER detail, dimension callout “3’ MIN.”, is revised to read “5’ MIN.”.

H-70.20

Sheet 2, Spacing Detail, Mailbox Support Type 1, reference to Standard Plan I-70.10 is revised to H-70.10

H-70.30
DELETED

J-20.26
Add Note 1, "1. One accessible pedestrian pushbutton station per pedestrian pushbutton post."

J-20.16
View A, callout, was – LOCK NIPPLE, is revised to read; CHASE NIPPLE

J-21.10
Sheet 1, Elevation View, Round Concrete Foundation Detail, callout – "ANCHOR BOLTS ~ ¾" (IN) x 30" (IN) FULL THREAD ~ THREE REQ'D. PER ASSEMBLY" IS REVISED TO READ: "ANCHOR BOLTS ~ ¾" (IN) x 30" (IN) FULL THREAD ~ FOUR REQ'D. PER ASSEMBLY"
Sheet 1 of 2, Elevation view (Round), add dimension depicting the distance from the top of the foundation to find 2 #4 reinforcing bar shown, to read; 3" CLR.. Delete "(TYP.)" from the 2 ½" CLR. dimension, depicting the distance from the bottom of the foundation to find 2 # 4 reinf. Bar.
Sheet 1 of 2, Elevation view (Square), add dimension depicting the distance from the top of the foundation to find 1 #4 reinforcing bar shown, to read; 3" CLR. Delete "(TYP.)" from the 2 ½" CLR. dimension, depicting the distance from the bottom of the foundation to find 1 # 4 reinf. Bar.
Sheet 2 of 2, Elevation view (Round), add dimension depicting the distance from the top of the foundation to find 2 #4 reinforcing bar shown, to read; 3" CLR. Delete "(TYP.)" from the 2 ½" CLR. dimension, depicting the distance from the bottom of the foundation to find 2 # 4 reinf. Bar.
Sheet 2 of 2, Elevation view (Square), add dimension depicting the distance from the top of the foundation to find 1 #4 reinforcing bar shown, to read; 3" CLR. Delete "(TYP.)" from the 2 ½" CLR. dimension, depicting the distance from the bottom of the foundation to find 1 # 4 reinf. Bar.
Detail F, callout, "Heavy Hex Clamping Bolt (TYP.) ~ 3/4" (IN) Diam. Torque Clamping Bolts (see Note 3)" is revised to read; "Heavy Hex Clamping Bolt (TYP.) ~ 3/4" (IN) Diam. Torque Clamping Bolts (see Note 1)"
Detail F, callout, "3/4" (IN) x 2' – 6" Anchor Bolt (TYP.) ~ Four Required (See Note 4)" is revised to read; "3/4" (IN) x 2' – 6" Anchor Bolt (TYP.) ~ Three Required (See Note 2)"

J-21.15
Partial View, callout, was – LOCK NIPPLE ~ 1 ½" DIAM., is revised to read; CHASE NIPPLE ~ 1 ½" (IN) DIAM.

J-21.16
Detail A, callout, was – LOCKNIPPLE, is revised to read; CHASE NIPPLE

J-22.15
Ramp Meter Signal Standard, elevation, dimension 4' - 6" is revised to read; 6'-0"
(2x) Detail A, callout, was – LOCK NIPPLE ~ 1 ½" DIAM. is revised to read; CHASE NIPPLE ~ 1 ½" (IN) DIAM.

J-40.10

Sheet 2 of 2, Detail F, callout, “12 – 13 x 1 ½” S.S. PENTA HEAD BOLT AND 12” S. S. FLAT WASHER” is revised to read; “12 – 13 x 1 ½” S.S. PENTA HEAD BOLT AND 1/2” (IN) S. S. FLAT WASHER”

J-75.20

Key Notes, note 16, second bullet point, was: “1/2” (IN) x 0.45” (IN) Stainless Steel Bands”, add the following to the end of the note: “Alternate: Stainless steel cable with stainless steel ends, nuts, bolts, and washers may be used in place of stainless steel bands and associated hardware.”

J-81.10

All references to “Type 170 Controller” are replaced with “Controller”.

L-40.10

DELETED

The following are the Standard Plan numbers applicable at the time this project was advertised. The date shown with each plan number is the publication approval date shown in the lower right-hand corner of that plan. Standard Plans showing different dates shall not be used in this contract.

A-10.10-00.....8/7/07
A-10.20-00.....10/5/07
A-10.30-00.....10/5/07
A-20.10-00.....8/31/07
A-30.10-00.....11/8/07
A-30.30-01.....6/16/11
A-30.35-00.....10/12/07
A-40.00-00.....8/11/09
A-40.10-04.....7/31/19
A-40.15-00.....8/11/09
A-40.20-04.....1/18/17
A-40.50-02.....12/23/14
A-60.10-03.....12/23/14
A-60.20-03.....12/23/14
A-60.30-01.....6/28/18
A-60.40-00.....8/31/07

B-5.20-03.....9/9/20
B-5.40-02.....1/26/17
B-5.60-02.....1/26/17
B-10.20-02.....3/2/18
B-10.40-01.....1/26/17
B-10.70-01……9/9/20
B-15.20-01.....2/7/12
B-15.40-01.....2/7/12
B-15.60-02.....1/26/17
B-20.20-02.....3/16/12
B-20.40-04.....2/27/18
B-20.60-03.....3/15/12
B-25.20-02.....2/27/18
B-25.60-02.....2/27/18
B-30.05-00……..9/9/20
B-30.10-03.....2/27/18
B-30.15-00……..2/27/18
B-30.20-04.....2/27/18
B-30.30-03.....2/27/18
B-30.40-03.....2/27/18
B-30.50-03.....2/27/18
B-30.60-00……..9/9/20
B-30.70-04.....2/27/18
B-30.80-01.....2/27/18
B-30.90-02.....1/26/17
B-35.20-00.....6/8/06
B-35.40-00.....6/8/06
B-40.20-00.....6/1/06
B-40.40-02.....1/26/17
B-45.20-01.....7/11/17
B-45.40-01.....7/21/17
B-50.20-00.....6/1/06
B-55.20-02.....2/27/18
B-60.20-02.....9/9/20
B-60.40-01.....2/27/18
B-65.20-01.....4/26/12
B-65.40-00.....6/1/06
B-70.20-00.....6/1/06
B-70.60-01.....1/26/17
B-75.20-02.....2/27/18
B-75.50-01.....6/10/08
B-75.60-00.....6/8/06
B-80.20-00.....6/8/06
B-80.40-00.....6/1/06
B-85.10-01.....6/10/08
B-85.20-00.....6/1/06
B-85.30-00.....6/1/06
B-85.40-00.....6/8/06
B-85.50-01.....6/10/08
B-90.10-00…....6/8/06
B-90.20-00.....6/8/06
B-90.30-00.....6/8/06
B-90.40-01.....1/26/17
B-90.50-00.....6/8/06
B-95.20-01.....2/3/09
B-95.40-01.....6/28/18

C-1.....9/9/20
C-1b.....9/9/20
C-20.42-05.....7/14/15
C-20.45.02.....8/12/19
C-70.10-02.....9/16/20
C-75.10-02.....9/16/20

C-1d.....10/31/03
C-2c.....8/12/19
C-4f.....8/12/19
C-6a.....10/14/09
C-7.....6/16/11
C-7a.....6/16/11
C-8.....2/10/09
C-8a.....7/25/97
C-20.10-06.....9/16/20
C-20.14-04.....8/12/19
C-20.15-02.....6/11/14
C-20.18-03.....8/12/19
C-20.40-07.....8/12/19
C-20.41-02.....8/12/19
C-22.16-07.....9/16/20
C-22.40-08.....9/16/20
C-22.45-05.....9/16/20
C-23.60-04.....7/21/17
C.24.10-02.....8/12/19
C-25.20-06.....7/14/15
C-25.22-05.....7/14/15
C-25.26-04.....8/12/19
C-25.30-00…….6/28/18
C-25.80-05.....8/12/19
C-60.10-01…….9/24/20
C-60.20-00……9/24/20
C-60.30-00……9/24/20
C-60.70-00……9/24/20
C-75.20-02.....9/16/20
C-75.30-02.....9/16/20
C-80.10-02.....9/16/20
C-80.20-01.....6/11/14
C-80.30-01.....6/11/14
C-80.40-01.....6/11/14
C-85.10-00.....4/8/12
C-85.11-01.....9/16/20
C-85.15-01.....6/30/14
C-85.16-01.....6/17/14
C-85-18-01.....6/11/14
C-85.20-01.....6/11/14

1

D-2.04-00.....11/10/05
D-2.06-01.....1/6/09
D-2.08-00.....11/10/05
D-2.32-00.....11/10/05
D-2.34-01.....1/6/09
D-2.36-03.....6/11/14
D-2.60-00.....11/10/05
D-2.62-00.....11/10/05
D-2.64-01.....1/6/09
D-2.66-00.....11/10/05
D-2.68-00.....11/10/05
D-2.80-00.....11/10/05
D-2.84-00.....11/10/05
D-2.88-00.....11/10/05
D-2.92-00.....11/10/05
D-3.09-00.....5/17/12
D-3.10-01……5/29/13
D-3.11-03……6/11/14
D-3.15-02……6/10/13
D-3.16-02……5/29/13
D-3.17-02……5/9/16
D-4.....12/11/98
D-6.....6/19/98
D-10.10-01.....12/2/08
D-10.15-01.....12/2/08
D-10.20-01.....8/7/19
D-10.25-01.....8/7/19
D-10.30-00.....7/8/08
D-10.35-00.....7/8/08
D-10.40-01.....12/2/08
D-10.45-01.....12/2/08

2

E-1.....2/21/07
E-2.....5/29/98
E-4.....8/27/03
E-4a.....8/27/03

3

F-10.12-04.....9/24/20
F-10.16-00.....12/20/06
F-10.18-02.....9/24/20
F-10.40-04.....9/24/20
F-10.42-00.....1/23/07
F-10.62-02.....4/22/14
F-10.64-03.....4/22/14
F-30.10-04.....9/25/20
F-40.12-03.....6/29/16
F-40.14-03.....6/29/16
F-40.15-04.....9/25/20
F-40.16-03.....6/29/16
F-45.10-02.....7/15/16
F-80.10-04.....7/15/16

4

G-10.10-00.....9/20/07
G-20.10-02.....6/23/15
G-22.10-04.....6/28/18
G-24.10-00.....11/8/07
G-24.20-01.....2/7/12
G-24.30-02.....6/28/18
G-24.40-07.....6/28/18
G-24.50-05.....8/7/19
G-24.60-05.....6/28/18
G-25.10-05.....9/16/20
G-26.10-00……7/31/19
G-30.10-04.....6/23/15
G-50.10-03.....6/28/18
G-90.10-03……7/11/17
G-90.11-00……4/28/16
G-90.20-05……7/11/17
G-90.30-04……7/11/17
G-90.40-02……4/28/16
G-95.10-02.....6/28/18
G-95.20-03.....6/28/18
G-95.30-03.....6/28/18

5

H-10.10-00.....7/3/08
H-10.15-00.....7/3/08
H-30.10-00.....10/12/07
H-32.10-00.....9/20/07
H-60.10-01.....7/3/08
H-60.20-01.....7/3/08
H-70.10-01.....2/7/12
H-70.20-01.....2/16/12

6

I-10.10-01.....8/11/09
I-30.20-00.....9/20/07
I-40.20-00.....9/20/07

I-30.10-02.....3/22/13
I-30.15-02.....3/22/13
I-30.16-01.....7/11/19
I-30.17-01.....6/12/19
I-30.30-02.....6/12/19
I-30.40-02.....6/12/19
I-30.60-02.....6/12/19
I-40.10-00.....9/20/07
I-50.20-01.....6/10/13
I-60.10-01.....6/10/13
I-60.20-01.....6/10/13
I-80.10-02.....7/15/16

1

J-10.....7/18/97
J-10.10-04……9/16/20
J-10.12-00……9/16/20
J-10.14-00……9/16/20
J-10.15-01.....6/11/14
J-10.16-01……9/16/20
J-10.17-01……9/16/20
J-10.18-01……9/16/20
J-10.20-03……9/16/20
J-10.21-01……9/16/20
J-10.22-01.....9/16/20
J-10.25-00……7/11/17
J-12.15-00……6/28/18
J-12.16-00……6/28/18
J-15.10-01.....6/11/14
J-15.15-02……7/10/15
J-20.10-04.....7/31/19
J-20.11-03.....7/31/19
J-20.15-03.....6/30/14
J-20.16-02.....6/30/14
J-20.20-02.....5/20/13
J-20.26-01.....7/12/12
J-21.10-04.....6/30/14
J-21.15-01.....6/10/13
J-21.16-01.....6/10/13
J-21.17-01.....6/10/13
J-21.20-01.....6/10/13
J-22.15-02.....7/10/15
J-22.16-03.....7/10/15
J-26.10-03…..7/21/16
J-26.15-01…..5/17/12
J-26.20-01…..6/28/18
J-27.10-01…..7/21/16
J-27.15-00…..3/15/12
J-28.10-02.....8/7/19
J-28.22-00.....8/07/07
J-28.24-02.....9/16/20
J-28.26-01.....12/02/08
J-28.30-03.....6/11/14
J-28.40-02.....6/11/14
J-28.42-01.....6/11/14
J-28.43-01.....6/28/18
J-28.45-03.....7/21/16
J-28.50-03.....7/21/16
J-28.60-02.....7/21/16
J-28.70-03.....7/21/17
J-29.10-01.....7/21/16
J-29.15-01.....7/21/16
J-29.16-02.....7/21/16
J-30.10-00…...6/18/15
J-40.05-00……7/21/16
J-40.10-04…...4/28/16
J-40.20-03…...4/28/16
J-40.30-04……4/28/16
J-40.35-01……5/29/13
J-40.36-02……7/21/17
J-40.37-02……7/21/17
J-40.38-01.....5/20/13
J-40.39-00……5/20/13
J-40.40-02……7/31/19
J-45.36-00……7/21/17
J-50.05-00……7/21/17
J-50.10-01…….7/31/19
J-50.11-02…….7/31/19
J-50.12-02…….8/7/19
J-50.13-00…….8/22/19
J-50.15-01…….7/21/17
J-50.16-01…….3/22/13
J-50.18-00…….8/7/19
J-50.19-00…….8/7/19
J-50.20-00…….6/3/11
J-50.25-00…….6/3/11
J-50.30-00…….6/3/11
J-60.05-01…….7/21/16
J-60.11-00…....5/20/13
J-60.12-00…....5/20/13
J-60.13-00…....6/16/10
J-60.14-01……7/31/19
J-75.10-02……7/10/15
J-75.20-01……7/10/15
J-75.30-02…….7/10/15
J-75.40-02……6/1/16
J-75.41-01……6/29/16
J-75.45-02……6/1/16
J-80.10-00……6/28/18
J-80.15-00……6/28/18
J-81.10-01……9/16/20
J-86.10-00……6/28/18
J-90.10-03…….6/28/18
J-90.20-03…….6/28/18
J-90.21-02……6/28/18
J-90.50-00……6/28/18

2

K-70.20-01.....6/1/16
K-80.10-02.....9/25/20
K-80.20-00.....12/20/06
K-80.35-01.....9/16/20
K-80.37-01.....9/16/20

3

L-10.10-02.....6/21/12
L-70.10-01.....5/21/08

L-20.10-03.....7/14/15
L-30.10-02.....6/11/14
L-40.15-01.....6/16/11
L-40.20-02.....6/21/12
L-70.20-01.....5/21/08

M-1.20-04.....9/25/20
M-1.40-03.....9/25/20
M-1.60-03.....9/25/20
M-1.80-03.....6/3/11
M-2.20-03.....7/10/15
M-2.21-00……7/10/15
M-3.10-04.....9/25/20
M-3.20-03.....9/25/20
M-3.30-04.....9/25/20
M-3.40-04.....9/25/20
M-3.50-03.....9/25/20
M-5.10-03.....9/25/20
M-7.50-01.....1/30/07
M-9.50-02.....6/24/14
M-9.60-00……..2/10/09
M-11.10-03.....8/7/19
M-12.10-02……9/25/20
M-15.10-01.....2/6/07
M-17.10-02.....7/3/08
M-20.10-03.....9/25/20
M-20.20-02.....4/20/15
M-20.30-04.....2/29/16
M-20.40-03.....6/24/14
M-20.50-02.....6/3/11
M-24.20-02.....4/20/15
M-24.40-02.....4/20/15
M-24.60-04.....6/24/14
M-24.65-00……7/11/17
M-24.66-00……7/11/17
M-40.10-03.....6/24/14
M-40.20-00...10/12/07
M-40.30-01.....7/11/17
M-40.40-00.....9/20/07
M-40.50-00.....9/20/07
M-40.60-00.....9/20/07
M-60.10-01.....6/3/11
M-60.20-02.....6/27/11
M-65.10-02.....5/11/11
M-80.10-01.....6/3/11
M-80.20-00.....6/10/08
M-80.30-00.....6/10/08