

1 INTRO.GR1

2 **INTRODUCTION**

3
4 This Contract shall be constructed in accordance with the 2025 Standard Specifications for
5 Road, Bridge, and Municipal Construction.

6
7 **SPECIAL PROVISIONS**

8
9 Several types of Special Provisions are included in this contract; General, Region, Bridges
10 and Structures, and Project Specific. Special Provisions types are differentiated as follows:

11		
12	(date)	General Special Provision
13	(*****)	Notes a revision to a General Special Provision
14		and also notes a Project Specific Special
15		Provision.
16	(Regions ¹ date)	Region Special Provision

17
18 **General Special Provisions** are similar to Standard Specifications in that they typically apply
19 to many projects, usually in more than one Region. Usually, the only difference from one
20 project to another is the inclusion of variable project data, inserted as a “fill-in”.

21
22 **Region Special Provisions** are commonly applicable within the designated Region. Region
23 designations are as follows:

24		
25	<u>Regions¹</u>	
26	ER	Eastern Region
27	NCR	North Central Region
28	NWR	Northwest Region
29	OR	Olympic Region
30	SCR	South Central Region
31	SWR	Southwest Region
32		
33	WSF	Washington State Ferries Division

34
35 **Project Specific Special Provisions** normally appear only in the contract for which they
36 were developed.

37
38 DIVISION1.GR1

39 **Division 1**
40 **General Requirements**

41
42 DESWORK.GR1

43 **DESCRIPTION OF WORK**

44
45 DESWORK1.FR1

46 (March 13, 1995)

47 This Contract provides for the improvement of *** \$\$1\$\$ *** and other work, all in accordance
48 with the attached Contract Plans, these Contract Provisions, and the Standard Specifications.
49

1 DESWORK2.FB1
2 (August 3, 2015)
3 This contract provides for the improvement of *** \$\$1\$\$, *** by cleaning and painting the
4 metal surfaces of the following *** \$\$2\$\$ *** and other work, all in accordance with the
5 Contract Provisions and Standard Specifications.

6
7 Highway & Bridge Location Structure Element

8
9 *** \$\$3\$\$ ***

10
11 1-02.GR1

12 **Bid Procedures and Conditions**

13
14 1-02.1.GR1

15 **Prequalification of Bidders**

16
17 1-02.1.INST1.GR1

18 Section 1-02.1, including title, is deleted and replaced with the following:

19
20 1-02.1.OPT1.GR1

21 **(April 2, 2018)**
22 **Vacant**

23
24 1-02.4.GR1

25 **Examination of Plans, Specifications and Site of Work**

26
27 1-02.4(1).GR1

28 **General**

29
30 1-02.4(1).INST1.GR1

31 Section 1-02.4(1) is supplemented with the following:

32
33 1-02.4(1).OPT1.FR1

34 (September 3, 2019)

35 The Reference Information for this project is available for review by the bidder at the
36 following location:

37
38 *** \$\$1\$\$ ***

39
40 The Reference Information includes the following:

41
42 *** \$\$2\$\$ ***

43
44 1-02.5.GR1

45 **Proposal Forms**

46
47 1-02.5.INST1.GR1

48 The first sentence of the first paragraph of Section 1-02.5 is revised to read:

49

1 1-02.5.OPT1.2026.GR1

2 (January 6, 2025)

3 Bidders are authorized to access an electronic Proposal Form for submittal via Bidx.com
4 through AASHTOWare Project Bids™ software “BidExpress®”.

5
6 1-02.6.GR1

7 **Preparation of Proposal**

8
9 1-02.6.INST1.GR1

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

11
12 1-02.6.OPT1.FR1

13 (September 3, 2019)

14 The successful Bidder will be the Bidder submitting the lowest responsive Bid that does
15 not exceed the maximum funds available. The maximum funds available for this Contract
16 is *** \$\$1\$\$ ***.

17
18 Submitting a Proposal that exceeds the maximum funds available will result in the
19 Proposal being declared irregular and shall cause the Bid to be rejected by the
20 Contracting Agency. Submitted Proposals that exceed the maximum funds available will
21 be opened publicly in accordance with Section 1-02.12 prior to being rejected.

22
23 1-02.6.OPT2.GR1

24 (November 20, 2023)

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

26
27 1-02.6.INST2.GR1

28 The fourth paragraph of Section 1-02.6 is revised to read:

29
30 1-02.6.OPT8.2026.GR1

31 (September 3, 2024)

32 The Bidder shall submit with the Bid a Subcontractor List (WSDOT Form #271-015)
33 containing the following:

- 34
- 35 1. Subcontractors who will perform the work of structural steel installation, rebar
36 installation, heating, ventilation, air conditioning, and plumbing as described in
37 RCW 18.106 and electrical as described in RCW 19.28, and
 - 38
39 2. The Work those subcontractors will perform on the Contract as described in
40 RCW 39.30.060.
 - 41
42 3. No more than one subcontractor for each category of work identified, except,
43 when subcontractors vary with Bid alternates, in which case the Bidder shall
44 identify which subcontractor will be used for which alternate.
- 45

46 1-02.6.INST3.GR1

47 Section 1-02.6 is supplemented with the following:

48
49 1-02.6.OPT3.GR1

50 (September 3, 2024)

1 The Bidder shall submit the following supplemental documents with the Bid in accordance
2 with Section 1-02.9:

- 3
- 4 1. Disadvantaged Business Enterprise Utilization Certification (WSDOT Form 272-
5 056).
- 6
- 7 2. DBE Written Confirmation Form (WSDOT Form 422-031) - For each and every DBE
8 firm listed on the Bidder's completed Disadvantaged Business Enterprise Utilization
9 Certification, the Bidder shall submit written confirmation from that DBE firm that the
10 DBE is in agreement with the DBE participation commitment that the Bidder has
11 made in the Bidder's completed Disadvantaged Business Enterprise Utilization
12 Certification.
- 13
- 14 3. Good Faith Effort Documentation - Bidder must submit good faith effort
15 documentation with the Disadvantaged Business Enterprise Utilization Certification
16 only in the event the Bidder's efforts to solicit sufficient DBE participation have been
17 unsuccessful.
- 18
- 19 4. DBE Item Breakdown (WSDOT Form 272-054) The Bidder shall submit a DBE Item
20 Breakdown form defining the scope of work to be performed by each DBE listed on
21 the DBE Utilization Certification.
- 22

23 1-02.6.OPT4.GR1

24 (November 4, 2024)

25 The Bidder shall submit a completed Public Works Small and Veteran Business Plan
26 (SVB Plan, WSDOT Form 226-018) with the Bid, when required by the Special
27 Provisions.

28

29 For each and every Public Works Small Business Enterprise (PWSBE) or Veteran-
30 Owned Business (VOB) firm listed on the Bidder's completed SVB Plan, the Bidder shall
31 submit a completed PWSVB Subcontractor Written Confirmation Form (WSDOT Form
32 226-017) that confirms the listed firm is in agreement with the PWSVB participation
33 commitment that the Bidder has made in the Bidder's completed PWSVB Plan. Bidder
34 must submit good faith effort documentation only in the event the Bidder's efforts to solicit
35 sufficient participation have been unsuccessful.

36

37 Directions for delivery of the PWSVB Plan, PWSVB Subcontractor Written Confirmation,
38 and good faith effort documentation are included in Section 1-02.9.

39

40 1-02.6.OPT5.FR1

41 **(September 7, 2021)**

42 **Alternative Bids**

43 The bidding proposal on this project permits the Bidder to submit a Bid on one or more
44 alternatives for the construction *** \$1\$ \$***.

45

46 **Bid Proposal**

47 The bid proposal is composed of the following parts: Base Bid and Alternatives ***
48 \$2\$ \$*** i.e. A1, A2, etc.

49

50 The base bid includes all items that do not change as to quantity, dimension, or type
51 of construction, regardless of which alternative is Bid.

1
2 The Alternative portions of the bid proposal contain all items which change as to
3 quantity, dimension, or construction method, depending on which alternative is Bid.
4

5 **Alternative A1**

6 Alternative A1 is based on constructing the *** \$\$3\$\$ ***.
7

8 The bid items for Alternative A1 are as listed in the bid proposal.
9

10 **Alternative A2**

11 Alternative A2 is based on constructing the *** \$\$4\$\$ ***.
12

13 The bid items for Alternative A2 are as listed in the bid proposal.
14

15 **Bidding Procedures**

16 The Bidder shall submit a price on each and every item of Work included in the base
17 bid. The Bidder shall also submit prices on each and every item under the
18 alternative on which the Bidder chooses to bid, or, if the Bidder chooses to bid on
19 more than one alternative, the Bidder shall submit prices for each and every item
20 under each alternative chosen. If the Bidder chooses to bid on more than one
21 alternative, the Bidder shall submit their sealed Bid in the envelope provided by the
22 Contracting Agency using the Proposal Form provided. If the Bidder chooses to Bid
23 on more than one alternative, the Bid cannot be accepted electronically via
24 AASHTOWare Project Bids™ “BidExpress®.”
25

26 The successful Bidder will be determined by the lowest total of an alternative plus
27 the base bid. Award will be based on the lowest total subject to the requirements of
28 Section 1-03.
29

30 1-02.6.OPT6.FR1

31 **(August 3, 2015)**

32 ***Cumulative Alternates Bidding***

33 The Bid Proposal for this Contract requires the Bidder to bid cumulative Alternates as
34 part of the bid. As such the Bidder is required to submit a Base Bid and a bid for each of
35 the Alternate(s).
36

37 **Bid Proposal**

38 The Bid Proposal includes the following:
39

40 1. Base Bid

41 The Base Bid shall include constructing all items included in the Proposal
42 *except* those items contained in the Alternate(s).
43

44 2. Alternate(s)

45 a. Alternate A1

46 Based on constructing (*** \$\$1\$\$ ***)

47 The Bid items for Alternate A1 are as listed in the Bid Proposal.
48

49 b. Alternate A2

50 Based on constructing (*** \$\$2\$\$ ***)
51

1 The Bid items for Alternate A2 are as listed in the Bid Proposal.

2
3 c. Alternate A3

4 Based on constructing (** \$3\$ \$ **)

5 The Bid items for Alternate A3 are as listed in the Bid Proposal.

6
7 **Bidding Procedures**

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

10
11 The successful Bidder will be the Bidder submitting the lowest responsible Bid for
12 the highest order Preference that is within the amount of available funds for the
13 project. Available funds will be announced immediately prior to the opening of Bids.
14 The following are listed in order from highest to lowest Preference:

- 15
16 1. Preference 1: Lowest total for Base Bid plus Alternate A1 plus Alternate
17 A2 plus Alternate A3, plus etcetera.
- 18
19 2. Preference 2: Lowest total for Base Bid plus Alternate A1 plus Alternate
20 A2 plus Alternate A3.
- 21
22 3. Preference 3: Lowest total for Base Bid plus Alternate A1 plus Alternate
23 A2.
- 24
25 4. Preference 4: Lowest total for Base Bid plus Alternate A1.
- 26
27 5. Preference 5: Lowest total for Base Bid.

28
29 The Contracting Agency may, at their discretion, award a Contract for the Base Bid,
30 without any additional Alternates, in the event that all Bids exceed the available
31 funds announced. In any case, the award will be subject to the requirements of
32 Section 1-03.

33
34 1-02.6.OPT7.GR1

35 **(September 3, 2024)**

36 ***Bidder Questionnaire***

37 The Bidder shall submit with their Bid a completed Bidder Questionnaire form (WSDOT
38 Form #272-022). This shall be filled out for each firm who submitted a bid or quote in
39 attempt to participate in the project whether they were successful or not and include the
40 following information:

- 41
42 1. Firm name;
- 43
44 2. Firm address including ZIP code;
- 45
46 3. Firm's status as a DBE or non-DBE;
- 47
48 4. Race and gender information for the firm's majority owner;
- 49
50 5. NAICS code applicable to each scope of work the firm sought to perform in its
51 bid;

1
2 6. Age of the firm; and
3

4 7. The annual gross receipts of the firm. The Bidder may obtain this information
5 by asking each firm to indicate into what gross receipts bracket they fit (less
6 than \$1 million; \$1-3 million; \$3-6 million; \$6-10 million; etc.) rather than
7 requesting an exact figure from the firm.
8

9 Failure to return this completed form as part of the Bid Proposal package will cause this
10 Bid to be considered irregular in accordance with Section 1-02.13. A copy of this form is
11 included in the Proposal Forms.
12

13 1-02.9.GR1

14 **Delivery of Proposal**

15
16 1-02.9.INST1.GR1

17 Section 1-02.9 is supplemented with the following:
18

19 1-02.9.OPT1.GR1

20 **(September 3, 2024)**

21 **DBE Document Submittal Requirements**

22 **General**

23 The Bidder shall submit supplemental documents that are identified with the Bidder's
24 company name, Project title, Bid date, and description of all contents. (ie, DBE
25 Utilization Certification, DBE Written Confirmation Document, Good Faith Effort (GFE)
26 Documentation, and DBE Bid Item Breakdown Form)
27

28 Submissions must be made by one of the following methods:
29

- 30 1. Physically in a sealed envelope marked as "BID SUPPLEMENT"; or
31
32 2. By facsimile to the following FAX number: 360-705-6966; or
33
34 3. By e-mail to the following e-mail address: DBEDoc@wsdot.wa.gov; or
35
36 4. Mailed to: Washington State Department of Transportation
37 Room 2D20
38 310 Maple Park Avenue SE
39 Olympia WA 98501-2361
40

41 The only documents that can be accepted after the 11:00:59 am time for delivery of
42 Proposal are the Written Confirmation Document, the DBE Bid Item Breakdown Form,
43 and GFE Documentation (if applicable). Incomplete or inaccurate documents will be
44 rejected, except as detailed above for the DBE Bid Item Breakdown Form.
45

46 The Contracting Agency is not responsible for delayed, partial, failed, illegible or
47 partially legible FAX or e-mail document transmissions, and such documents may be
48 rejected as incomplete at the Bidder's risk.
49

1 **DBE Utilization Certification (WSDOT Form 272-056)**

2 The DBE Utilization Certification shall be received at the same location and no later
3 than the time required for delivery of the Proposal. The Contracting Agency will not
4 open or consider any Proposal when the DBE Utilization Certification is received after
5 the time specified for receipt of Proposals or received in a location other than that
6 specified for receipt of Proposals. The DBE Utilization Certification may be submitted
7 in the same envelope as the Bid deposit.
8

9 **DBE Written Confirmation Document (WSDOT Form 422-031) and GFE**
10 **Documentation, (if applicable)**

11 The DBE Written Confirmation Document(s) and/or GFE Documentation are not
12 required to be submitted with the Proposal. The DBE Written Confirmation
13 Document(s) and/or GFE Documentation (if applicable) shall be received either with
14 the Bid Proposal or as a Supplement to the Bid. Written confirmation and/or GFE
15 Documentation shall be received no later than 48 hours (not including Saturdays,
16 Sundays and Holidays) after the time for delivery of the Proposal. To be considered
17 responsive, Bidders shall submit a Written Confirmation Document from each DBE
18 firm listed on the Bidder's completed DBE Utilization Certification and/or the GFE
19 Documentation as required by Section 1-02.6.
20

21 **DBE Bid Item Breakdown Form (WSDOT Form 272-054)**

22 The DBE Bid Item Breakdown shall be received either with the Bid Proposal or as a
23 Supplement to the Bid. The documents shall be received no later than 48 hours (not
24 including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal.
25 The successful Bidder shall submit a completed DBE Bid Item Breakdown, however,
26 the Contractor may correct minor errors to the DBE Bid Item Breakdown for a period
27 up to five calendar days (not including Saturdays, Sundays and Holidays).
28

29 The DBE Bid Item Breakdown Form will not be included as part of the executed
30 Contract.
31

32 **NOTE: If the Bid is submitted electronically via AASHTOWare Project Bids™**
33 **software, "BidExpress," the DBE Utilization Certification may be attached to the**
34 **electronic bid or submitted as a supplemental document as defined above.**
35

36 1-02.9.OPT2.GR1

37 **(November 4, 2024)**

38 **PWSVB Document Submittal Requirements**

39 **General**

40 The Bidder shall submit supplemental documents that are identified with the
41 Bidder's company name, Project title, Bid date, and description of all contents (i.e.,
42 PWSVB Plan, PWSVB Subcontractor Written Confirmation Documents, and/or
43 PWSVB GFE Documentation).
44

45 Submissions must be made by one of the following methods:

- 46
- 47 1. Physically in a sealed envelope marked as "BID SUPPLEMENT"; or
- 48
- 49 2. By facsimile to the following FAX number: 360-705-6966; or
- 50

- 1 3. By e-mail to the following e-mail address: DBEDoc@wsdot.wa.gov; or
2
3 4. Mailed to: Washington State Department of Transportation
4 Room 2D20
5 310 Maple Park Avenue SE
6 Olympia WA 98501-2361
7

8 The Contracting Agency is not responsible for delayed, partial, failed, illegible or
9 partially legible FAX or e-mail document transmissions, and such documents may
10 be rejected as incomplete at the Bidder's risk.

11
12 **Public Works Small and Veteran Business Plan (SVB Plan) (WSDOT Form**
13 **226-018)**

14 The PWSVB Plan shall be received no later than the time required for delivery of
15 the Bid. The Contracting Agency will not open or consider any Bid when the PWSVB
16 Plan is received after the time specified for receipt of Bids or received as specified
17 by this Special Provision. The PWSVB Plan may be submitted in the same envelope
18 as the Bid deposit.

19
20 **PWSVB Subcontractor Written Confirmation (WSDOT Form 226-017) and/or**
21 **GFE Documentation**

22 The PWSVB Subcontractor Written Confirmation Documents and/or GFE
23 Documents are not required to be submitted with the Bid. The SVBE Subcontractor
24 Written Confirmation Document(s) and/or GFE (if any) shall be received either with
25 the Bid or as a Supplement to the Bid. The documents shall be received no later
26 than 48 hours (not including Saturdays, Sundays, and Holidays) after the time for
27 delivery of the Bid. To be considered responsive, Bidders shall submit Written
28 Confirmation Documentation from each SVBE firm listed on the Bidder's completed
29 SVB Plan and/or the GFE as required by Section 1-02.6.

30
31 **NOTE: If the Bid is submitted electronically via Bidx.com through**
32 **AASHTOWare Project Bids™ software "BidExpress®", the PWSVB Plan may**
33 **be attached to the electronic Bid or submitted as a supplemental document**
34 **as defined above.**
35

36 1-02.9.INST2.GR1

37 The first sentence of the first paragraph of Section 1-02.9 is revised to read:

38
39 1-02.9.OPT3.2026.GR1

40 (January 6, 2025)

41 For projects scheduled for Bid opening in Olympia, the Proposal shall be sealed and
42 submitted in the envelope provided with it to the address provided below or shall be
43 submitted electronically via Bidx.com through AASHTOWare Project Bids™ software
44 "BidExpress®".
45

46 1-02.12.GR1

47 **Public Opening of Proposals**

48
49 1-02.12.INST1.GR1

50 Section 1-02.12 is supplemented with the following:
51

1 1-02.12.OPT1.FR1

2 **(August 3, 2015)**

3 **Date of Opening Bids**

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

7 1-02.12.OPT2.FR1

8 **(October 3, 2022)**

9 **Date of Opening Bids**

10 Proposals will be received by in-person delivery or by courier at the *** \$\$1\$\$ ***
11 reception desk located at the *** \$\$2\$\$ *** on the Bid opening day.

13 The Bid opening date for this project is *** \$\$3\$\$ ***. Bids received will be publicly
14 opened and read after 11:00:59 A.M. on this date.

16 1-02.12.OPT3.GR1

17 (February 26, 2025)

18 The Bid opening date for this project is subject to change or cancellation, contingent
19 upon project funding resulting from the Washington State 2025 Legislative Session.
20 Bidders will be notified in writing a minimum of 28 days prior to the Bid opening date, of
21 the Contracting Agency's decision to proceed with accepting and opening Bids.

23 1-02.13.GR1

24 **Irregular Proposals**

26 1-02.13.INST1.GR1

27 Item 1 of Section 1-02.13 is supplemented with the following:

29 1-02.13.OPT1.2026.GR1

30 (January 13, 2025)

31 n. The Bidder fails to submit the Bidder Questionnaire (WSDOT Form 272-022), if
32 applicable, as required in Section 1-02.6, or if the documentation that is submitted
33 fails to meet the requirements of the Special Provisions.

35 1-02.13.INST2.GR1

36 Items 1k, 1l, and 1m of Section 1-02.13 are revised to read:

38 1-02.13.OPT2.2026.GR1

39 (November 4, 2024)

40 k. The Bidder fails to submit an PWSVB Plan (WSDOT Form #226-018) if applicable,
41 as required in Section 1-02.6;

43 l. The Bidder fails to submit Written Confirmations (WSDOT Form #226-017) from
44 each PWSBE or VOB firm listed on the Bidder's completed PWSVB Plan that they
45 are in agreement with the Bidder's PWSVBE participation commitment, if applicable,
46 as required in Section 1-02.6, or if the written confirmation that is submitted fails to
47 meet the requirements of the Special Provisions;

49 m. The Bidder fails to submit PWSVBE Good Faith Effort documentation, if applicable,
50 as required in Section 1-02.6, or if the documentation that is submitted fails to

1 demonstrate that a Good Faith Effort to meet the Condition of Award in accordance
2 with Section 1-07.11.

3
4 1-02.INST1.GR1

5 Section 1-02 is supplemented with the following:

6
7 1-02.OPT1.GR1

8 **(September 7, 2021)**

9 ***Protest Procedures***

10 **Form and Substance**

11 All protests regarding any contents or portion of the bid proposal must be submitted
12 to the Contracting Agency as soon as possible after the protestant becomes aware
13 of the reason(s) for the protest. All protests must be in writing and signed by the
14 protestant or an authorized agent. Such writing must state all facts and arguments
15 on which the protestant is relying as the basis for its action. Such protestant shall
16 also attach, or supply on demand by the Contracting Agency, any relevant exhibits
17 referenced in the writing. Copies of all protests and exhibits shall be submitted by
18 the protestant to the Bidder against whom the protest is made (if any) at the same
19 time such protest and exhibits are submitted to the Contracting Agency. All protests
20 shall be emailed to CAA@wsdot.wa.gov.

21
22 **Pre-award Protests**

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

29
30 The Contracting Agency shall consider all the facts available to the protest, and
31 issue a decision in writing within five (5) business days after receipt of the protest,
32 unless, in the Contracting Agency's sole discretion, more time is needed. The
33 protestant and the Bidder(s) against whom the protest is made will be notified if
34 additional time is necessary; and if the additional time required affects the bid
35 opening date or the award date, all bidders shall be notified.

36
37 The Contracting Agency's decision shall be final and conclusive. Selection of the
38 successful Bidder, if one is to be made, will be postponed until after the Contracting
39 Agency has issued its decision. The Contracting Agency shall provide the protestant
40 with written notice of this decision no later than two full working days prior to
41 execution of the contract.

42
43 **Post-award Protests**

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

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

3
4 1-03.GR1

5 **Award and Execution of Contract**

6
7 1-03.2.GR1

8 **Award of Contract**

9
10 1-03.2.INST1.GR1

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

12
13 1-03.2.OPT1.GR1

14 (April 7, 2008)

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

17
18 1-03.3.GR1

19 **Execution Of Contract**

20
21 1-03.3.INST1.GR1

22 Section 1-03.3 is supplemented with the following:

23
24 1-03.3.OPT1.GR1

25 **(October 3, 2022)**

26 ***Escrow Bid Documentation***

27 **Scope and Purpose**

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

31
32 The Contractor shall submit a legible copy of all documentation used to prepare the
33 Bid for this Contract to a escrow institution designated by the Contracting Agency.
34 Such documentation shall be placed in escrow with the escrow institution and
35 preserved by that institution as specified in the following sections of this
36 specification.

37
38 **Bid Documentation**

39 The term "bid documentation" as used in this specification means any writings,
40 working papers, computer printouts, charts, and any other data compilations which
41 contain or reflect all information, data, and calculations used by the Contractor to
42 determine the Bid in bidding for this project. The Contractor shall submit its
43 documentation in whatever format it was created and shall also provide electronic
44 copies. The term "bid documentation" includes but is not limited to Contractor
45 equipment rates, Contractor overhead rates, labor rates, efficiency or productivity
46 factors, arithmetic extensions, and quotations from subcontractors and material
47 providers to the extent that such rates and quotations were used by the Contractor
48 in formulating and determining the amount of the bid. The term "bid documentation"
49 also includes any manuals which are standard to the industry used by the Contractor
50 in determining the bid for this project. Such manuals (including year of publication)

1 may be included in the Bid Documentation by reference. The term does not include
2 bid documents provided by the Contracting Agency for use by the Contractor in
3 bidding on this project.
4

5 **Submittal of Bid Documentation**

6 The Contractor shall submit the bid documentation to the escrow institution. The bid
7 documentation shall be submitted to the escrow institution within seven calendar
8 days after the Contract for this project has been executed by the Contracting
9 Agency. The bid documentation shall be submitted in a sealed container. The
10 container shall be clearly marked "Bid Documentation" and shall also show on the
11 face of the container the Contractor's name, the date of submittal, the project title,
12 and the contract number.
13

14 **Affidavit**

15 The sealed container shall contain, in addition to the bid documentation, an affidavit
16 signed under oath by an individual authorized by the Contractor to execute bidding
17 proposals. The affidavit shall list each bid document with sufficient specificity so a
18 comparison can be made between the list and the bid documentation to ensure that
19 all of the bid documentation listed in the affidavit has been enclosed in the sealed
20 container. The affidavit shall show that the affiant has personally examined the bid
21 documentation and that the affidavit lists all of the documents used by the Contractor
22 to determine the Bid for this project and that all such bid documentation has been
23 enclosed in the sealed container.
24

25 **Verification**

26 The escrow institution upon receipt of the sealed container shall place the container
27 in a safety deposit box, vault, or other secure place, and immediately notify the
28 Contracting Agency in writing that the container has been received. Upon receipt of
29 such notice, the Contracting Agency will promptly notify the Contractor in writing that
30 the Contracting Agency will open the sealed container to verify that the affidavit has
31 been enclosed and to compare the bid documents listed in the affidavit with the bid
32 documents enclosed in the container to ensure that all of the bid documentation has
33 been submitted and that the copies are legible. The notification will advise the
34 Contractor of the date and time the container will be opened and the name of the
35 Contracting Agency employee who will verify the contents of the container. The
36 Contracting Agency employee verifying the contents of the escrow container will not
37 be involved or connected with the review, evaluation, or resolution of any claim by
38 the Contractor made to the Contracting Agency in connection with the contract for
39 which the verification was made. The Contractor may have representatives present
40 at the opening.
41

42 **Supplementation**

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

1
2 **Duration and Use**

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

- 25
26 1. To the Contracting Agency upon receipt of a letter from the Contractor
27 authorizing the release;
28
29 2. To the Contracting Agency upon receipt of a certified copy of a court order
30 directing the release of the documents;
31
32 3. To the court for an in camera examination pursuant to a certified copy of a
33 court order;
34
35 4. The bid documentation and affidavit shall be returned to the Contractor if
36 litigation is not commenced within the time period prescribed by law.
37

38 The Contractor agrees that the sealed container placed in escrow and any
39 supplemental sealed container placed in escrow contain all of the bid documentation
40 used to determine the Bid and that no other bid documentation shall be utilized by
41 the Contractor in litigation over Certified Claims brought by the Contractor arising
42 out of this Contract unless otherwise ordered by the court.
43

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

45 Failure or refusal to provide bid documentation shall be deemed a material breach
46 of this Contract. The Contracting Agency may at its option refuse to make payment
47 for progress estimates under Section 1-09.9 until the Contractor has submitted the
48 bid documentation required by this specification. The Contracting Agency may at its
49 option terminate the contract for default under Section 1-08.10. These remedies are
50 not exclusive and the Contracting Agency may take such other action as is available
51 to it under the law.

1
2 **Confidentiality of Bid Documentation**

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

13
14 **Cost and Escrow Instructions**

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

18
19 1-03.3.INST2.GR1

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

21
22 1-03.3.OPT3.GR1

23 (January 4, 2016)

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

26
27 1-04.GR1

28 **Scope of the Work**

29
30 1-04.2.GR1

31 **Coordination of Contract Documents, Plans, Special Provisions,
32 Specifications, and Addenda**

33
34 1-04.2.INST1.GR1

35 Section 1-04.2 is supplemented with the following:

36
37 1-04.2.OPT1.GR1

38 ***(November 20, 2023)***

39 ***Document Control***

40 This specification applies to project documentation and correspondence that occurs after
41 execution of the Contract. The Contractor shall submit all project documentation and
42 correspondence for this Contract in electronic format utilizing the WSDOT Unifier system.
43 Documents that are received by means other than the WSDOT Unifier system will be
44 rejected, except as allowed by this special provision or specifically approved by the
45 Engineer.

46
47 The Engineer may reject documents that are deemed unsuitable. This includes
48 documents that are illegible, unreadable, locked, etc. Forms that require further
49 information from WSDOT must be unlocked.
50

1 The Contractor shall submit to the Contracting Agency a Unifier Access Request Form
2 (WSDOT Form 134-092) to WSDOT e-Construction Support ([e-
3 ConstructionSupport@wsdot.wa.gov](mailto:ConstructionSupport@wsdot.wa.gov)) designating all individuals requiring access to
4 WSDOT Unifier no later than 5 days following Contract Award. Training for WSDOT
5 Unifier will be provided by WSDOT at no cost to the Contractor. Throughout the life of
6 the Project, all changes to the Contractor's personnel who require access to the WSDOT
7 Unifier system shall be submitted on a Unifier Access Request Form.

8
9 All signed documents shall be in PDF format and will require an electronic signature. An
10 electronic signature is defined as a symbol, or process attached to or logically associated
11 with a record and executed or adopted by a person with the intent to sign the record. All
12 signed documents shall be in PDF format.

13
14 WSDOT has provided an application to be used to apply electronic signatures to the
15 following documents:

16
17 Change Orders that are not Minor Change Orders
18 421-009 Release – Retained Percentage (Except Landscaping)
19 134-146 Final Contract Voucher Certificate

20
21 When the Contract specifies that documentation is to be submitted through other web-
22 based systems, such as the Diversity Management and Compliance System, or email
23 addresses, the Contractor shall utilize those systems and email addresses accordingly.

24
25 Before a Completion Date will be established by the Contracting Agency, all contractor
26 active tasks in Unifier shall be closed out or acknowledged.

27
28 All costs for submitting project documentation electronically shall be included in the
29 Contract prices for the Bid items of Work involved.

30
31 1-04.5.GR1

32 **Procedure and Protest by the Contractor**

33
34 1-04.5.INST1.GR1

35 Section 1-04.5 is supplemented with the following:

36
37 1-04.5.OPT1.GR1

38 ***(January 13, 2021)***

39 ***Project Partnering***

40 The Engineer and the Contractor's Project Manager (PM) will plan and host a Project
41 Partnering workshop as soon as practical after Contract execution. The objective of this
42 Partnering workshop is to promote open lines of communication and teamwork between
43 the Contracting Agency and Contractor staff for the effective completion of the work, and
44 to the standard of quality that will be a source of pride to both the Contracting Agency
45 and the Contractor. Commitments made by both parties shall be memorialized in a
46 Project Partnering Agreement at the conclusion of the Partnering workshop. The
47 Partnering agreement will not affect the terms of the Contract. It is intended only to
48 establish an environment of cooperation and mutual understanding between the parties.
49

1 The planning and execution of the Partnering process is intended to be a collaborative
2 effort between the Engineer and the PM. The length of the partnering workshop should
3 be commensurate with the size and complexity of the project, and familiarity of the
4 parties. For simple projects an expanded pre-construction meeting may suffice. The
5 partnering workshop may be facilitated by the Engineer, the Engineer and PM, or a
6 mutually agreeable Partnering Facilitator (PF). Selection of a PF, dates and location of
7 the workshops, materials needed for the workshop, frequency and location for follow up
8 meetings, and estimated cost associated with this effort should be discussed and agreed
9 to prior to moving forward with the Partnering process.

10
11 An initial 1 day (or half day) facilitated Project Partnering workshop is recommended to
12 initiate the partnering agreement. After the initial Partnering workshop, quarterly follow
13 up meetings on projects with over 120 working days shall be scheduled to evaluate how
14 the Partnering process is working, acknowledge successes and opportunities for
15 improvement.

16
17 The cost to retain the services of a Partnering Facilitator (if mutually selected as the PF),
18 locate and rent a neutral location to hold the workshop (if held offsite), and any additional
19 materials needed to host the workshop, will be paid by the Contractor. The Partnering
20 Field Guide is available as a resource to the Engineer and PM to assist in the planning
21 of the Partnering session(s) at the following link:

22
23 [https://wsdot.wa.gov/publications/fulltext/construction/WSDOTProjects-Partnering-
24 FieldGuide.pdf](https://wsdot.wa.gov/publications/fulltext/construction/WSDOTProjects-Partnering-FieldGuide.pdf)

25
26 The Contracting Agency will reimburse invoice cost for the Contractor provided
27 Partnering Facilitator, facilities and materials at a rate of 50% under the Bid item, "Project
28 Partnering".

29
30 ***Payment***

31 "Project Partnering", by calculation.

32 "Project Partnering" will be calculated and paid for as described above.

33
34 1-05.GR1

35 **Control of Work**

36
37 1-05.1.GR1

38 **Authority of the Engineer**

39
40 1-05.1(2).GR1

41 ***Requests for Information (RFI)***

42
43 1-05.1(2).INST1.GR1

44 The fourth paragraph of Section 1-05.1(2) is revised to read:

45
46 1-05.1(2).OPT1.2026.GR1

47 (November 4, 2024)

48 The Contractor may submit a RFI for one of the following reasons:

- 1 1. The Contractor believes there is information missing from the Contract
2 Documents (Missing Information).
- 3
- 4 2. The Contractor believes a clarification of one or more of the Contract
5 requirements is necessary (Clarification).
- 6
- 7 3. The Contractor needs to substitute a material that provides an equal or
8 better level of performance as the one specified in the Contract (RFC -
9 Material Substitution). Requests shall indicate the location(s), quantity, and
10 shall describe how the material provides an equal or better level of
11 performance as the material originally specified.
- 12
- 13 4. The Contractor requests a change to the Contract requirements for a
14 reason other than one listed in items 1-3 of this Section (RFC - Other). To
15 be considered, the request must not meet the requirements of a Value
16 Engineering Change Proposal. To be considered, the request shall qualify
17 as a Minor Change in accordance with Section 1-04.4(1) and shall describe
18 how the change is beneficial to the project.
- 19

20 1-05.3.GR1

21 **Working Drawings**

22

23 1-05.3.INST1.GR1

24 Section 1-05.3 is supplemented with the following:

25

26 1-05.3.OPT1.FR1

27 (September 3, 2019)

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

32

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

36

37 1-05.3.OPT2.GR1

38 **(October 3, 2022)**

39 **Right and Left Designation**

40 Any right or left designations used to locate Structures throughout the Plans and these
41 Special Provisions are made by facing offshore.

42

43 1-05.3.OPT3.GR1

44 **(October 3, 2022)**

45 **Work Plan**

46 The Contractor shall submit a Work Plan to the Engineer for review. The Work Plan shall
47 include the following minimum requirements:

- 48
- 49 1. The Work Plan shall describe the Contractor's proposed methods for
50 accomplishing the Work within the conditions and restrictions of the Contract. It

1 shall describe the nature, approach and sequence of the Work to be performed;
2 the type and location of cranes, barges and other equipment to be used; plans
3 for demolition, debris control and disposal of materials; temporary construction;
4 compliance with environmental provisions; and any unavoidable impacts,
5 necessary safeguards, and mitigating measures.
6

7 2. Where the Contractor's Work would impact the operation and safety of ferry
8 traffic and ferry pedestrian areas, the Work Plan shall detail the methods used
9 to either separate the Work from the ferry traffic or to maintain the area in a safe
10 condition while it is being utilized by ferry passengers.

11
12 3. The Work Plan shall be a Type 2 Working Drawing with attached drawings,
13 charts, diagrams and references to the Plans and Progress Schedule as
14 necessary.

15
16 4. The Work Plan shall be updated whenever conditions change or as directed by
17 the Engineer.
18

19 All costs associated with the Work Plan shall be included in the applicable items of Work.
20

21 1-05.4.GR1

22 **Conformity with and Deviations from Plans and Stakes**

23
24 1-05.4.INST1.GR1

25 Section 1-05.4 is supplemented with the following:
26

27 1-05.4.OPT1.GR1

28 ***(September 3, 2024)***

29 ***Contractor Surveying - Structure***

30 The Contracting Agency has provided primary survey control in the Plans.
31

32 The Contractor shall be responsible for setting, maintaining, and resetting all alignment
33 stakes, slope stakes, and grades necessary for the construction of bridges, noise walls,
34 retaining walls, buried structures, and marine structures. Except for the survey control
35 data to be furnished by the Contracting Agency, calculations, surveying, and measuring
36 required for setting and maintaining the necessary lines and grades shall be the
37 Contractor's responsibility.
38

39 The Contractor shall inform the Engineer when monuments are discovered that were not
40 identified in the Plans and construction activity may disturb or damage the monuments.
41 All monuments noted on the plans "DO NOT DISTURB" shall be protected throughout
42 the length of the project or be replaced at the Contractor's expense.
43

44 Detailed survey records shall be maintained, including a description of the work
45 performed on each shift, the methods utilized, and the control points used. The record
46 shall be adequate to allow the survey to be reproduced. A copy of each day's record shall
47 be provided to the Engineer within three working days after the end of the shift.
48

1 The meaning of words and terms used in this provision shall be as listed in "Definitions
2 of Surveying and Associated Terms" current edition, published by the American Congress
3 on Surveying and Mapping and the American Society of Civil Engineers.
4

5 The survey work by the Contractor shall include but not be limited to the following:
6

- 7 1. Verify the primary horizontal and vertical control furnished by the Contracting
8 Agency and expand into secondary control by adding stakes and hubs as well
9 as additional survey control needed for the project. Provide descriptions of
10 secondary control to the Contracting Agency. The description shall include
11 coordinates and elevations of all secondary control points.
12
- 13 2. Establish, by placing hubs and/or marked stakes, the location with offsets of
14 foundation shafts and piles.
15
- 16 3. Establish offsets to footing centerline of bearing for structure excavation.
17
- 18 4. Establish offsets to footing centerline of bearing for footing forms.
19
- 20 5. Establish wing wall, retaining wall, noise wall, and buried structure horizontal
21 alignment.
22
- 23 6. Establish retaining wall top of wall profile grade.
24
- 25 7. Establish buried structure profile grade.
26
- 27 8. Establish elevation benchmarks for all substructure formwork.
28
- 29 9. Check elevations at top of footing concrete line inside footing formwork
30 immediately prior to concrete placement.
31
- 32 10. Check column location and pier centerline of bearing at top of footing
33 immediately prior to concrete placement.
34
- 35 11. Establish location and plumbness of column forms, and monitor column
36 plumbness during concrete placement.
37
- 38 12. Establish pier cap and crossbeam top and bottom elevations and centerline of
39 bearing.
40
- 41 13. Check pier cap and crossbeam top and bottom elevations and centerline of
42 bearing prior to and during concrete placement.
43
- 44 14. Establish grout pad locations and elevations.
45
- 46 15. Establish structure bearing locations and elevations, including locations of
47 anchor bolt assemblies.
48
- 49 16. Establish box girder bottom slab grades and locations.
50
- 51 17. Establish girder and/or web wall profiles and locations.

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18. Establish diaphragm locations and centerline of bearing.
19. Establish roadway slab alignment, grades and provide dimensions from top of girder to top of roadway slab. Set elevations for deck paving machine rails.
20. Establish traffic barrier and curb profile.
21. Profile all girders prior to the placement of any deadload or construction live load that may affect the girder's profile.
22. Establish locations for marine structures including fixed and floating berthing structures, vehicle and pedestrian foundations and spans, and marine-based buildings.

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

The Contractor shall submit the computed elevations at the top of bridge decks as a Type 2 Working Drawing. To compute top of bridge deck elevations, elevations shall be taken at the tenth points along the centerline of each girder web from center-to-center of bearing. For girders exceeding 100 feet in length, the elevations shall be taken at equivalent intervals not to exceed 10 feet.

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

	<u>Vertical</u>	<u>Horizontal</u>
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.	

Buried structures shall be within the tolerances described in Section 6-20.3.

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

1 The Contractor shall calculate coordinates for the points associated with piles, shafts,
2 footings and columns. The Contracting Agency will verify these coordinates prior to
3 issuing approval to the Contractor for commencing with the survey work. The Contracting
4 Agency will require up to seven calendar days from the date the data is received to
5 issuing approval.
6

7 Contract work to be performed using contractor-provided stakes shall not begin until the
8 stakes are approved by the Contracting Agency. Such approval shall not relieve the
9 Contractor of responsibility for the accuracy of the stakes.
10

11 **Payment**

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

13 "Structure Surveying", lump sum.
14

15 The lump sum contract price for "Structure Surveying" shall be full pay for all labor,
16 equipment, materials, and supervision utilized to perform the Work specified, including
17 any resurveying, checking, correction of errors, replacement of missing or damaged
18 stakes, and coordination efforts.
19

20
21 1-05.4.OPT2.GR1

22 **(January 13, 2021)**

23 **Contractor Surveying - Roadway**

24 The Contracting Agency has provided primary survey control in the Plans.
25

26 The Contractor shall be responsible for setting, maintaining, and resetting all alignment
27 stakes, slope stakes, and grades necessary for the construction of the roadbed,
28 drainage, surfacing, paving, channelization and pavement marking, illumination and
29 signals, guardrails and barriers, and signing. Except for the survey control data to be
30 furnished by the Contracting Agency, calculations, surveying, and measuring required for
31 setting and maintaining the necessary lines and grades shall be the Contractor's
32 responsibility.
33

34 The Contractor shall inform the Engineer when monuments are discovered that were not
35 identified in the Plans and construction activity may disturb or damage the monuments.
36 All monuments noted on the plans "DO NOT DISTURB" shall be protected throughout
37 the length of the project or be replaced at the Contractors expense.
38

39 Detailed survey records shall be maintained, including a description of the work
40 performed on each shift, the methods utilized, and the control points used. The record
41 shall be adequate to allow the survey to be reproduced. A copy of each day's record
42 shall be provided to the Engineer within three working days after the end of the shift.
43

44 The meaning of words and terms used in this provision shall be as listed in "Definitions
45 of Surveying and Associated Terms" current edition, published by the American Congress
46 on Surveying and Mapping and the American Society of Civil Engineers.
47

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

1 changes to the Engineer for review and approval 10 days prior to the beginning
2 of work.

3
4 The Contractor shall provide the Contracting Agency copies of any calculations and
5 staking data when requested by the Engineer.

6
7 The Contractor shall ensure a surveying accuracy within the following tolerances:

	<u>Vertical</u>	<u>Horizontal</u>
8		
9		
10	Slope stakes	±0.10 feet
11	Subgrade grade stakes set	±0.10 feet
12	0.04 feet below grade	±0.01 feet
13		±0.5 feet
14		(parallel to alignment)
15		±0.1 feet
16		(normal to alignment)
17	Stationing on roadway	N/A
18	Alignment on roadway	±0.1 feet
19	Surfacing grade stakes	±0.04 feet
20		±0.5 feet
21		(parallel to alignment)
22		±0.1 feet
23		(normal to alignment)
24	Roadway paving pins for	
25	surfacing or paving	±0.01 feet
26		±0.2 feet
27		(parallel to alignment)
28		±0.1 feet
29		(normal to alignment)

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

32
33 When staking roadway alignment and stationing, the Contractor shall perform
34 independent checks from different secondary control to ensure that the points staked are
35 within the specified survey accuracy tolerances.

36
37 The Contractor shall calculate coordinates for the alignment. The Contracting Agency
38 will verify these coordinates prior to issuing approval to the Contractor for commencing
39 with the work. The Contracting Agency will require up to seven calendar days from the
40 date the data is received.

41
42 Contract work to be performed using contractor-provided stakes shall not begin until the
43 stakes are approved by the Contracting Agency. Such approval shall not relieve the
44 Contractor of responsibility for the accuracy of the stakes.

45
46 Stakes shall be marked in accordance with Standard Plan A10.10. When stakes are
47 needed that are not described in the Plans, then those stakes shall be marked, at no
48 additional cost to the Contracting Agency as ordered by the Engineer.

1 **Payment**

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

3
4 "Roadway Surveying", lump sum.

5
6 The lump sum contract price for "Roadway Surveying" shall be full pay for all labor,
7 equipment, materials, and supervision utilized to perform the Work specified, including
8 any resurveying, checking, correction of errors, replacement of missing or damaged
9 stakes, and coordination efforts.

10
11 1-05.4.OPT3.GR1

12 **(April 4, 2011)**

13 **Licensed Surveyors**

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

19
20 The Contractor shall brush out or clear and stake or mark the right-of-way lines as
21 designated by the Engineer.

22
23 The Contractor shall inform the Engineer when monuments are discovered that were not
24 identified in the Plans and construction activity may disturb or damage the monuments.
25 All monuments noted on the plans "DO NOT DISTURB" shall be protected throughout
26 the length of the project or be replaced at Contractors expense.

27
28 When required, the Contractor shall prepare and file a Record of Survey map in
29 accordance with RCW 58.09 and provide a recorded copy to the Contracting Agency.
30 The Contracting Agency will provide all existing base maps, existing horizontal and
31 vertical control, and other material available with Washington State Plane Coordinate
32 information to the Contractor. The Contracting Agency will also provide maps, plan
33 sheets, and/or aerial photographs clearly identifying the limits of the areas to be
34 surveyed. The Contractor shall establish Washington State Plane Coordinates on all
35 points required in the Record of Survey and other points designated in the Contract
36 documents.

37
38 Existing right of way documentation, existing base maps, existing horizontal and vertical
39 control descriptions, maps, plan sheets, aerial photographs and all other available
40 material may be viewed by prospective bidders at the office of the Engineer.

41
42 The Contractor shall perform all of the necessary calculations for the contracted survey
43 work and shall provide copies of these calculations to the Contracting Agency. Electronic
44 files of all survey data shall be provided and in a format acceptable to the Contracting
45 Agency.

46
47 All survey work performed by the Contractor shall conform to all applicable sections of
48 the Revised Code of Washington and the Washington Administrative Code.
49

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

3
4 **Payment**

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

7
8 "Licensed Surveying", Force Account.

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

12
13 1-05.4.OPT4.GR1

14 **(March 9, 2023)**

15 **Contractor Surveying – ADA Features**

16 **ADA Feature Staking Requirements**

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

23
24 **ADA Feature Contract Compliance**

25 The Contractor shall be responsible for completing measurements to verify all ADA
26 features comply with the Contract in the presence of the Engineer.

27
28 **ADA Feature As-Built Measurements**

29 The Contractor shall be responsible for providing the latitude and longitude of each
30 ADA feature as indicated on the ADA Inspection Form(s) (WSDOT Form 224-020).

31
32 The completed ADA Inspection Form(s) (WSDOT Form 224-020) shall be submitted
33 as a Type 3 Working Drawing and transmitted to the Engineer within 30 calendar
34 days of completing the ADA feature. After acceptance, the Contracting Agency will
35 submit the final form(s) to the WSDOT ADA Steward.

36
37
38 **Payment**

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

40
41 "ADA Features Surveying", lump sum.

42
43 The lump sum Contract price for "ADA Features Surveying" shall be full pay for all the
44 Work as specified.

45
46 In the instance where an ADA feature does not meet accessibility requirements, all work
47 to replace non-compliant work and then to measure, record the as-built measurements,
48 and transmit the electronic forms to the Engineer shall be completed at no additional cost
49 to the Contracting Agency.

1 1-05.7.GR1

2 **Removal of Defective and Unauthorized Work**

3
4 1-05.7.INST1.GR1

5 Section 1-05.7, including title and subsections, is deleted and replaced with the following:

6
7 1-05.7.OPT1.2026.GR1

8 ***(November 4, 2024)***

9 ***Nonconforming Work***

10 The Contracting Agency will not pay for Nonconforming Work.

11
12 Nonconforming Work is Work that in any way fails to meet the requirements of the
13 Contract. This includes, but is not limited to:

- 14
- 15 • Work that does not conform to Contract requirements
- 16
- 17 • Work that does not meet Contract requirements
- 18
- 19 • Work done beyond the lines and grades set by the Plans or the Engineer
- 20
- 21 • Extra Work and materials furnished without the Engineer's written approval
- 22
- 23 • Defective Work
- 24
- 25 • Noncompliant Work
- 26
- 27 • Nonconforming Work
- 28
- 29 • Out of specification Work
- 30
- 31 • Rejected Work
- 32
- 33 • Unacceptable Work
- 34
- 35 • Unauthorized Work
- 36
- 37 • Unsuitable Work
- 38
- 39 • Unsatisfactory Work
- 40

41 ***Identification of Nonconforming Work***

42 The Contractor is responsible for quality control and shall identify all Nonconforming
43 Work. The Contracting Agency may also identify Nonconforming Work during inspection
44 of Work that has been completed, is at an identified hold point, or has been identified by
45 the Contractor as ready for inspection. However, failure by the Contracting Agency to
46 identify Nonconforming Work shall not relieve the Contractor from their responsibility for
47 the quality of the Work, nor shall it constitute acceptance or approval of the
48 Nonconforming Work.
49

1 **Reporting of Nonconforming Work**

2 Unless otherwise specified, the Contractor shall immediately report all Nonconforming
3 Work to the Engineer along with any relevant information about how the Nonconforming
4 Work shall be remediated. The Contractor shall be responsible and bear all costs for
5 remediating Nonconforming Work.
6

7 If the Contract requires the use of the WSDOT Unifier system for Document Control in
8 accordance with Section 1-04.2, reporting and remediation submittals shall follow the
9 “Nonconformance Report” business process in Unifier.
10

11 **Remediation of Nonconforming Work**

12 Remediation to correct Nonconforming Work shall be completed as soon as possible.
13 However, unless otherwise specified, the Contractor shall not proceed with implementing
14 the remedy until the Engineer has accepted the Contractor’s proposed remedy. Any
15 remedial work done prior to the Engineer’s acceptance shall be at the Contractor’s sole
16 risk and will be subject to further rejection or remediation. The Engineer has the right to
17 reject all or part of the Nonconforming Work, and the Engineer’s decision is final and not
18 subject to protest.
19

20 Remediation shall be classified in one of the following categories:

- 21
- 22 1. Rework to Contract requirements
 - 23
 - 24 2. Remove and replace
 - 25
 - 26 3. Repair to acceptable standards
 - 27

28 When disputes occur over which category a remedy belongs, the Engineer’s decision
29 will be final and binding.
30

31 **Rework to Contract Requirements**

32 To be considered rework, the design and construction standards of the proposed
33 completed Work, in the sole judgment of the Engineer, shall meet the design and
34 construction standards applicable to the project.
35

36 Reporting of Nonconforming Work that is reworked is not required if all of the
37 following conditions are met:
38

- 39 1. The remediation shall be completed in the same shift as the
40 Nonconforming Work was identified.
- 41
- 42 2. It shall be remedied without damaging other Work.
- 43
- 44 3. It shall be remedied without putting the public at risk.
- 45
- 46 4. The Contractor’s proposed remedy is in accordance with the Contract
47 requirements.
- 48
- 49 5. The Engineer does not request the Nonconforming Work be reported.
- 50

51 Examples of Nonconforming Work that may not need reported if reworked include:

- Missing dobies prior to concrete pouring
- Rebar spacing and missing rebar
- Out of plumb luminaire or sign pole/post

For all other rework the Contractor shall submit all relevant information to the Engineer. The Contractor shall include Type 2 Working Drawings. The Type 2 Working Drawings shall explain how the nonconforming work will be reworked including repairs that will achieve the Contract requirements. For preapproved repair procedures, Type 1 Working drawings shall be included in lieu of the Type 2 Working Drawings.

Remove and Replace

To be considered as remove and replace, the Nonconforming Work shall be removed and replaced and the design and construction standards of the proposed completed Work, in the sole judgment of the Engineer, shall meet the design and construction standards applicable to the project.

Reporting of Nonconforming Work that is removed and replaced is not required if all of the following conditions are met:

1. The remedy shall be completed in the same shift the Nonconforming Work was identified.
2. It shall be removed and replaced without damaging other Work.
3. Both the removal and the replacement meet all Contract requirements.
4. The Engineer does not request the Nonconforming Work be reported.

Examples of Nonconforming Work that may not need reported if removed and replaced include:

- Decompacting and recompacting a lift of embankment to meet compaction requirements
- Removing and replacing an installed and dented luminaire pole with a new one.

For all other remove and replace Work, the Contractor shall submit all relevant information, including Working Drawings of the Type requested by the Engineer.

The Working Drawings shall include how the nonconforming Work will be removed and replaced including protection of other Work if needed. Type 2 Working Drawings shall be required, unless the remediation requires engineering, in which case, Type 2E Working Drawings shall be provided.

1 **Repair to an Acceptable Standard**

2 At the Contractor's written request, the Engineer may approve remediation that
3 includes repairing to an acceptable standard that does not meet the Contract
4 requirements with an appropriate price reduction that may range from no reduction
5 to no payment.
6

7 To request to repair Nonconforming work to an acceptable standard, the Contractor
8 shall submit all relevant information. Remedies proposed for this category shall
9 include Type 2E Working Drawings. The Type 2E working drawings shall indicate
10 whether the Work, as repaired, will achieve the same load carrying capacity, and
11 shall assess the effects of the repair on the durability of the Work. Calculations shall
12 be provided to demonstrate that the Work, as repaired, will perform the intended
13 functions for its intended design life.
14

15 1-05.9.GR1

16 **Equipment**

17
18 1-05.9.INST1.GR1

19 Section 1-05.9 is supplemented with the following:
20

21 1-05.9.OPT1.FR1

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

23 **General**

24 This specification contains requirements for the use of machine control grading.
25

26 Instead of providing grade control through construction stakes, the Contractor may
27 control grade with equipment that is controlled by a machine control system.
28

29 The Contractor may use any type of equipment and machine control system that
30 produces results meeting the requirements of the Contract.
31

32 Electronic data is provided for the Contractor's convenience, and is not a part of the
33 Contract. No guarantee or warranty is made by the Contracting Agency that electronic
34 data provided to the Contractor: is compatible with any of the systems that are used by
35 the Contractor; is complete; is representative of actual conditions at the project site, or;
36 accurately reflects the quantities and character of the actual Work required. The
37 furnishing of electronic design data or documentation shall not relieve the Contractor
38 from any risks or of any duty to make examinations and investigations as required by
39 Section 1-02.4 or any other responsibility under the Contract or as required by law.
40 Except as provided above, no corrections, additions, or updates of any kind will be made
41 to electronic data provided to the Contractor.
42

43 The Engineer may perform spot checks of the Contractor's machine control grading
44 results, calculations, records, field procedures, and quality control measures. If the
45 Engineer determines that the Work being performed is not achieving results that will meet
46 the Contract requirements, the Contractor shall make corrections to the Work at no
47 additional cost to the Contracting Agency.
48

1 **WSDOT Responsibilities**

- 2 1. The Engineer will set the initial horizontal and vertical control points for the project
3 as shown in the Contract documents.
4
5 2. The Engineer will provide additional datum and scale factor information upon
6 request.
7
8 3. After execution of the Contract, the Engineer will make available upon written
9 request the following electronic data used to design the project:

10 *** \$\$1\$\$ ***
11

12
13 Data may be obtained by furnishing a written request to the Engineer at the following
14 address:

15 *** \$\$2\$\$ ***
16
17

18 **Contractor's Responsibilities**

- 19 1. The Contractor shall provide any information or data that is requested by the
20 Contracting Agency for the purpose of performing the verification of quantities, and
21 quality.
22
23 2. The Contractor shall be responsible for any edits or conversions of the Contracting
24 Agencies electronic data whether done by the Contractor or a vendor that is hired
25 by the Contractor to perform such edits or conversions.
26
27 3. The Contractor shall be responsible for the accuracy and usability of any data or
28 model that is developed from the Contracting Agencies data.
29
30 4. The Contractor shall be responsible for checking and recalibrating Machine Control
31 Equipment as required to achieve results that meet the requirements of the Contract.
32
33 5. The Contractor shall be responsible for establishing any additional control points
34 needed to achieve results that meet the requirements of the Contract.
35
36 6. The Contractor shall provide the Contracting Agency electronic as-built construction
37 data for the final Roadway surface model in a MicroStation format.
38
39 7. One week prior to the start of grading operations the Contractor shall meet with the
40 Engineers staff to review the grading plans, quality processes, and tolerance
41 requirements.
42

43 **Payment**

44 All costs associated with the use of machine control grading equipment are incidental to
45 related items of Work, and no additional payment will be provided.
46

47 1-05.9.OPT2.FR1

48 (March 9, 2023)

49 The Contracting Agency suspects that the following noxious weeds (aquatic or upland)
50 or aquatic invasive species exist within the project boundary:

1
2 *** \$\$1\$\$ ***

3
4 To prevent the spread of noxious weeds and aquatic invasive species, the Contractor
5 shall clean all equipment in accordance with the following:

- 6
7 1. Permits;
- 8
9 2. The current edition of the Washington Department of Fish and Wildlife's
10 publication, "Invasive Species Management Protocols"; and
- 11
12 3. *** \$\$2\$\$ ***

13
14 1-05.14.GR1

15 **Cooperation with Other Contractors**

16
17 1-05.14.INST1.GR1

18 Section 1-05.14 is supplemented with the following:

19
20 1-05.14.OPT1.FR1

21 **(March 13, 1995)**

22 **Other Contracts Or Other Work**

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

26
27 *** \$\$1\$\$ ***

28
29 1-05.14.OPT2.FR1

30 (March 13, 1995)

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

34
35 1-05.14.OPT3.GR1

36 **(March 20, 2025)**

37 **Speed Safety Camera System Vendor**

38 Coordination with a vendor managed by the Contracting Agency to provide portable
39 Speed Safety Camera Systems (SSCS) when workers are present within the work zone
40 may be required. If a SSCS is used on this Contract, the SSCS vendor's field personnel
41 will need to enter the temporary traffic control zone to place and remove required signage
42 and equipment to implement the automated speed enforcement. The SSCS vendor may
43 document the work zone traffic control setup provided by the Contractor to confirm
44 workers are present prior to commencing operations with the SSCS.

45
46 The Engineer will set up a coordination meeting between the Contractor's designated
47 traffic control manager, traffic control supervisor, the Contracting Agency, and the SSCS
48 vendor's field personnel a minimum of 5 working days prior to the first anticipated
49 implementation date of the SSCS. At a minimum, coordination will include the following:
50

1. The anticipated date and time the SSCS vendor will be on site.
2. The expected work area location and temporary traffic control or staged traffic plan that will be in place when the vendor will be on site, including the location(s) of any Contractor-provided Radar Speed Display Sign (RSDS) if included in the project.
3. Location for the SSCS vendor's enforcement unit, photo enforcement sign, and RSDS (may be vendor-provided if one is not provided by the Contractor).
4. Provide contact information between Contractor's traffic control manager, traffic control supervisor, Contracting Agency staff, and SSCS vendor.

1-06.GR1

Control of Material

1-06.INST1.GR1

Section 1-06 is supplemented with the following:

1-06.OPT2.GR1

Buy America Requirements

1-06.OPT2(A).GR1

(March 20, 2025)

General Requirements

In accordance with Buy America requirements contained in 23 CFR 635.410 and 2 CFR 184, the following materials must be produced in the United States:

1. All Iron or Steel Products used in the project. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2. All Manufactured Products used in the project. This means the manufactured product was manufactured in the United States.
3. All Construction Materials used in the project. This means that all manufacturing processes for the construction material occurred in the United States.

An article, material, or supply will be classified in one of four categories: 1) Iron or Steel Product, 2) Manufactured Product, 3) Construction Material, or 4) Excluded Material. Only a single category will apply to an item except as follows:

1. With respect to precast concrete products that are classified as Manufactured Products, the components of precast concrete products that consist wholly or predominantly of iron, steel, or combination of both shall meet the requirements for and be tracked as an Iron or Steel Product. The item shall also meet the requirements for a Manufactured Product, and the cost of the iron or steel components shall be included in determining if the Manufactured Product was produced in the United States.

- 1 2. With respect to intelligent transportation systems and other electronic hardware
2 systems that are classified as Manufactured Products, the cabinets or other
3 enclosures of such systems that consist wholly or predominantly of iron, steel,
4 or a combination of both, shall meet the requirements for and be tracked as an
5 Iron or Steel Products. The item shall also meet the requirements for a
6 Manufactured Product and the cost of the iron or steel components shall be
7 included in determining if the manufactured product was produced in the United
8 States.
9

10 Some contract items are composed of multiple parts that may fall into different
11 categories. Individual components will be categorized as a Construction Material, a
12 Manufactured Product, an Iron or Steel Product, or an excluded material based on their
13 composition when they arrive at the staging area or work site.
14

15 **Definitions**

- 16 1. Construction Material: Defined as any article, material, or supply brought to the
17 construction site for incorporation into the final product. Construction materials
18 include an article, material, or supply that is or consists primarily of:
19
- 20 a. Non-ferrous metals including all manufacturing processes, from initial smelting
21 or melting through final shaping, coating, and assembly;
22
 - 23 b. Plastic and polymer-based products including all manufacturing processes,
24 from initial combination of constituent plastic or polymer-based inputs, or, where
25 applicable, constituent composite materials, until the item is in its final form);
26
 - 27 c. Glass including all manufacturing processes, from initial batching and melting
28 of raw materials through annealing, cooling, and cutting);
29
 - 30 d. Fiber optic cable (includes drop cable) including all manufacturing processes,
31 from initial ribboning (if applicable), through buffering, fiber stranding and
32 jacketing, (fiber optic cable also includes the standards for glass and optical
33 fiber);
34
 - 35 e. Optical fiber including all manufacturing processes, from the initial preform
36 fabrication stage, though the completion of the draw;
37
 - 38 f. Lumber including all manufacturing processes, from initial debarking through
39 treatment and planing;
40
 - 41 g. Drywall including all manufacturing processes, from initial blending of mined or
42 synthetic gypsum plaster and additives through cutting and drying of
43 sandwiched panels; or
44
 - 45 h. Engineered wood including all manufacturing processes from the initial
46 combination of constituent materials until the wood product is in its final form.
47

48 If a Construction Material is not manufactured in the United States it shall be
49 considered a Foreign Construction Material.
50

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45
2. Excluded Material: A material where Buy America requirements do not apply. This includes the following:
 - a. Materials excluded by Section 70917(c) of the Buy America, Build America Act with respect to aggregates this includes cement and cementitious materials, aggregates such as stone, sand, or gravel or aggregate binding agents or additives. These materials shall be classified as excluded materials based on the composition when brought to the work site. It also includes combinations of these excluded materials when mixtures of Excluded Materials are delivered to the work site without final form for incorporation into the project (i.e. wet concrete and HMA). If they are formed prior to delivery, they are a Manufactured Product and not an Excluded Material.
 - b. Temporary materials that are not being permanently incorporated into the project.
 - c. Raw or minimal processed materials where the article, material, or supply does not fall into any of the categories, as it is not a Manufactured Product, an Iron or Steel Product, or a Construction Material and when these materials are delivered to the work site without final form for incorporation into the product (i.e. seed mix and topsoil). If they are formed prior to delivery, they are a Manufactured Product and not an Excluded Material.
 3. Iron or Steel Product: An article, material, or supply that consist of wholly or predominantly of iron or steel or a combination of both. To be considered predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is based on a good faith estimate of the cost of the iron or steel components.
 4. Manufactured Product: A Manufactured Product includes any item produced as a result of the manufacturing process. Items that should be treated as a manufactured product (rather than a construction material) are: 1) items that consist of two or more of the listed construction materials that have been combined together through a manufacturing process, and 2) items that include at least one of the listed construction materials as defined above, combined with a material that is not listed through a manufacturing process.

If a product is not an Iron or Steel Product, a Construction Material, or an Excluded Material, it is a Manufactured Product.
 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.

Iron or Steel Product Requirements

47 Iron or Steel Products that are permanently incorporated into the project shall consist of
48 American-made materials only. Buy America requirements do not apply to temporary
49 steel or iron items, e.g., temporary sheet piling, temporary bridges, steel scaffolding and
50 falsework.
51

1 Minor amounts of foreign steel and iron may be utilized in this project provided the cost
2 of the foreign material used does not exceed one-tenth of one percent of the total contract
3 cost or \$2,500.00, whichever is greater.
4

5 American-made material is defined as material having all manufacturing processes
6 occurring domestically.
7

8 If domestically produced steel billets or iron ingots are exported outside of the United
9 States, as defined above, for any manufacturing process then the resulting product does
10 not conform to the Buy America requirements. Additionally, products manufactured
11 domestically from foreign source steel billets or iron ingots do not conform to the Buy
12 America requirements because the initial melting and mixing of alloys to create the
13 material occurred in a foreign country.
14

15 Manufacturing begins with the initial melting and mixing and continues through the
16 coating stage. Any process which modifies the chemical content, the physical size or
17 shape, or the final finish is considered a manufacturing process. The processes include
18 rolling, extruding, machining, bending, grinding, drilling, welding, and coating. The action
19 of applying a coating to steel or iron is deemed a manufacturing process. Coating
20 includes epoxy coating, galvanizing, aluminizing, painting, and any other coating that
21 protects or enhances the value of steel or iron. Any process from the original reduction
22 from ore to the finished product constitutes a manufacturing process for iron.
23

24 Due to a nationwide waiver, Buy America requirements do not apply to raw materials
25 (iron ore and alloys), scrap (recycled steel or iron), and pig iron ore processed, pelletized,
26 and reduced iron ore.
27

28 The following are considered to be steel manufacturing processes:
29

- 30 1. Production of steel by any of the following processes:
 - 31 a. Open hearth furnace.
 - 32 b. Basic oxygen.
 - 33 c. Electric furnace.
 - 34 d. Direct reduction.
- 35 2. Rolling, heat treating, and any other similar processing.
- 36 3. Fabrication of the products:
 - 37 a. Spinning wire into cable or strand.
 - 38 b. Corrugating and rolling into culverts.
 - 39 c. Shop fabrication.

40 A certification of materials origin will be required for all iron or steel products prior to such
41 items being incorporated into the permanent work. The Contractor will not receive
42
43
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49
50
51

1 payment until the certification is received by the Engineer. The certification shall be on
2 WSDOT Form 350-109 provided by the Engineer, or such other form the Contractor
3 chooses, provided it contains the same information as WSDOT Form 350-109.
4

5 **Manufactured Products**

6 Due to a nationwide waiver, Buy America requirements do not apply to Manufactured
7 Products except as follows:
8

- 9 1. When a precast concrete product is classified as a Manufactured Product, the
10 components that are an Iron or Steel Product shall follow the “Iron and Steel
11 Requirements” of this Specification.
12
13 2. When an electronic hardware system such as an intelligent transportation
14 system is classified as a Manufactured Product, the cabinets and the other
15 enclosures of such systems that are an Iron or Steel Product shall follow the
16 “Iron and Steel Requirements” of this Specification.
17

18 **Construction Material Requirements**

19 A Contractor provided certification of materials origin will be required before each
20 progress estimate or payment. The Contractor will not receive payment until the
21 certification is received by the Engineer. The Contractor shall certify that all Construction
22 Materials installed during the current progress estimate period meet the Buy America
23 requirements. The certification shall be on WSDOT Form 350-111 provided by the
24 Engineer, or such other form the Contractor chooses, provided it contains the same
25 information as WSDOT Form 350-111.
26

27 **Waiver for De Minimis Costs**

28 Minor amounts of Foreign Construction Materials may be utilized in this project, provided
29 that the total cost of the Foreign Construction Materials does not exceed \$1,000,000 and
30 does not exceed 5 percent of the total applicable material costs calculated as follows:
31

32
$$\frac{\text{Total cost of Foreign Construction Materials}}{\text{Total applicable material costs}} < 0.05$$

33 The total applicable material costs shall be the sum of the costs all Construction
34 Materials, all Iron or Steel Products, and all Manufactured Products. Total applicable
35 material costs does not include Excluded Materials.
36
37

38 1-06.OPT2(B).FR1

39 (March 20, 2025)

40 The following items of work containing steel, iron or other construction materials are
41 considered to be temporary and are excluded from the Buy America requirements:
42

43 *** \$\$1\$\$ ***
44

45 1-06.OPT2(C).GR1

46 (March 20, 2025)

47 **Waiver for Small Grants**

48 Because the federal financial assistance is less than \$500,000, this project is considered
49 a Small Grant. Therefore, the Waiver of Buy America Requirements for De Minimis Costs

1 and Small Grants applies to this project. This waiver removes the domestic preferences
2 for Iron or Steel Products, Manufactured Products, and Construction Materials
3 requirements contained in 2 CFR 184 and 23 CFR 635.410.
4

5 1-06.OPT3.GR1

6 **FTA Buy America Requirements**

7
8 1-06.OPT3(A).GR1

9 **(March 20, 2025)**

10 **General Requirements**

11 Construction materials used in the Project are subject to the domestic preference
12 requirement of the Build America, Buy America Act, Pub. L. 117-58, div. G, tit. IX, §§
13 70911 - 70927 (2021) and 2 CFR 184 as implemented by the U.S. Office of Management
14 and Budget, the U.S. Department of Transportation, and FTA.

15
16 This Contract is subject to the Federal Transit Administration's (FTA's) Buy America
17 requirements in 49 C.F.R. Part 661 and 49 U.S.C. 5323(j).
18

19 In accordance with Buy America Preferences for Infrastructure Projects requirements
20 contained in 2 CFR 184 and Division G, Title IX - Build America, Buy America Act (BABA),
21 of Public Law 117-58 (Infrastructure Investment and Jobs Act), the following materials
22 must be American-made:
23

- 24 1. All steel and iron used in the project are produced in the United States. This
25 means all manufacturing processes, from the initial melting stage through the
26 application of coatings, occurred in the United States.
27
- 28 2. For manufactured products to be considered produced in the United States, (1)
29 all the manufacturing processes for the product must take place in the United
30 States; and (2) all the components of the product must be of U.S. origin. A
31 component is considered of U.S. origin if it is manufactured in the United States,
32 regardless of the origin of its subcomponents.
33
- 34 3. All construction materials are manufactured in the United States. This means
35 that all manufacturing processes for the construction material occurred in the
36 United States.
37

38 An article, material, or supply will be classified in one of three categories: 1) Steel and
39 Iron, 2) Manufactured Product, or 3) Construction Material. Only a single category will
40 apply to an item and be subject to the requirements of the Buy America requirements of
41 that category. Some contract items are composed of multiple parts that may fall into
42 different categories. Individual components will be categorized as a construction
43 material, manufactured product, or steel and iron based on their composition when they
44 arrive at the staging area or work site. The steel and iron requirements of this
45 specification apply to all construction materials made primarily of steel or iron and used
46 in infrastructure projects. These items include, but are not limited to, structural steel or
47 iron, steel or iron beams and columns, running rail and contact rail. These requirements
48 do not apply to steel or iron used as components or subcomponents of other
49 manufactured products or rolling stock, or to bimetallic power rail incorporating steel or
50 iron components.

1
2 **Definitions**

3 1. Construction Material: Defined as any article, material, or supply brought to the
4 construction site for incorporation into the final product. Construction materials
5 include an article, material, or supply that is or consists primarily of:
6

- 7 a. Non-ferrous metals: including all manufacturing processes, from initial smelting
8 or melting through final shaping, coating, and assembly.
9
10 b. Plastic and polymer-based products (including all manufacturing processes,
11 from initial combination of constituent plastic or polymer-based inputs, or, where
12 applicable, constituent composite materials, until the item is in its final form.
13
14 c. Glass (including all manufacturing processes, from initial batching and melting
15 of raw materials through annealing, cooling, and cutting);
16
17 d. Fiber optic cable (includes drop cable) including all manufacturing processes,
18 from initial ribboning (if applicable), through buffering, fiber stranding and
19 jacketing, (fiber optic cable also includes the standards for glass and optical
20 fiber);
21
22 e. Optical fiber including all manufacturing processes, from the initial preform
23 fabrication stage, though the completion of the draw;
24
25 f. Lumber including all manufacturing processes, from initial debarking through
26 treatment and planing;
27
28 g. Drywall including all manufacturing processes, from initial blending of mined or
29 synthetic gypsum plaster and additives through cutting and drying of
30 sandwiched panels; or
31
32 h. Engineered wood including all manufacturing processes from the initial
33 combination of constituent materials until the wood product is in its final form.
34

35 Construction Materials do not include items of primarily iron or steel; manufactured
36 products; cement and cementitious materials; aggregates such as stone, sand, or gravel;
37 or aggregate binding agents or additives.
38

39 If a Construction Material is not manufactured in the United States it shall be considered
40 a Foreign Construction Material.
41

42 2. Manufactured Product: A Manufactured product includes any item produced as a
43 result of the manufacturing process. Items that consist of two or more of the listed
44 construction materials that have been combined together through a manufacturing
45 process, and items that include at least one of the listed materials combined with a
46 material that is not listed through a manufacturing process, should be treated as
47 manufactured products, rather than as construction materials.
48

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

- 1
2 4. Structural Steel: Defined as all structural steel products included in the project.
3
4 5. United States: To further define the coverage, a domestic product is a manufactured
5 steel construction material that was produced in one of the 50 states, the District of
6 Columbia, Puerto Rico, or in the territories and possessions of the United States.
7

8 ***Steel and Iron Requirements***

9 All steel and iron construction materials that are permanently incorporated into the
10 project shall consist of American-made materials only. Buy America requirements do not
11 apply to temporary steel or iron items, e.g., temporary sheet piling, temporary bridges,
12 steel scaffolding and falsework.
13

14 For iron and steel to be considered as American-made material, all steel and iron
15 manufacturing processes must take place in the United States, except metallurgical
16 processes involving refinement of steel additives.
17

18 If domestically produced steel billets or iron ingots are exported outside of the area of
19 coverage, as defined above, for any manufacturing process then the resulting product
20 does not conform to the Buy America requirements. Additionally, products manufactured
21 domestically from foreign source steel billets or iron ingots do not conform to the Buy
22 America requirements because the initial melting and mixing of alloys to create the
23 material occurred in a foreign country.
24

25 A bidder/proposer must submit to the contracting agency the appropriate Buy America
26 certification with all bids/proposals on FTA-funded contracts, except those subject to a
27 general waiver. A bid/proposal that is not accompanied by a completed Buy America
28 certification must be rejected as non-responsive. This requirement does not apply to
29 lower-tier subcontractors.
30

31 A certification of materials origin will be required for all items comprised of, or containing,
32 steel or iron construction materials prior to such items being incorporated into the
33 permanent work. The Contractor will not receive payment until the certification is received
34 by the Engineer. The certification shall be on WSDOT Form 350-109A provided by the
35 Engineer, or such other form the Contractor chooses, provided it contains the same
36 information as WSDOT Form 350-109A.
37

38 ***Manufactured Products Requirements***

39 Manufactured products that contain steel and iron will follow “Steel and Iron
40 Requirements” of this Specification.
41

42 ***Construction Material Requirements***

43 A Contractor provided certification of materials origin will be required before each
44 progress estimate or payment. The Contractor will not receive payment until the
45 certification is received by the Engineer. The Contractor shall certify that all construction
46 materials installed during the current progress estimate period meets the Build America,
47 Buy America Act. The certification shall be on WSDOT Form 350-111A, or such other
48 form the Contractor chooses, provided it contains the same information as WSDOT Form
49 350-111A.
50

1 **Waiver for De Minimis Costs**

2 Minor amounts of Foreign Iron and Steel, Manufactured products and Construction
3 Materials may be utilized in this project, provided that the total cost of the Iron and Steel,
4 Manufactured products and Construction Materials is no more than the lesser of
5 \$1,000,000 or 5 percent of the total applicable material costs calculated as follows:
6
7

8
$$\frac{\textit{Total cost of Foreign Iron Steel, Manufactured Products,}}{\textit{and Construction Materials}} < 0.05$$

9
$$\textit{Total applicable material costs}$$

10 The total applicable material costs shall be the sum of the costs all Iron and Steel,
11 Manufactured products and Construction Materials, Total applicable material costs does
12 not include the cost of cement and cementitious materials; aggregates such as stone,
13 sand, or gravel; or aggregate binding agents or additives.
14

15 1-06.OPT3(B).GR1

16 **(March 20, 2025)**

17 **General Requirements**

18 Construction materials used in the Project are subject to the domestic preference
19 requirement of the Build America, Buy America Act, Pub. L. 117-58, div. G, tit. IX, §§
20 70911 - 70927 (2021) and 2 CFR 184 as implemented by the U.S. Office of Management
21 and Budget, the U.S. Department of Transportation, and FTA.
22

23 This Contract is subject to the Federal Transit Administration's (FTA's) Buy America
24 requirements in 49 C.F.R. Part 661 and 49 U.S.C. 5323(j).
25

26 In accordance with Buy America Preferences for Infrastructure Projects requirements
27 contained in 2 CFR 184 and Division G, Title IX - Build America, Buy America Act (BABA),
28 of Public Law 117-58 (Infrastructure Investment and Jobs Act), must be American-made:
29

- 30 1. All steel and iron used in the project are produced in the United States. This
31 means all manufacturing processes, from the initial melting stage through the
32 application of coatings, occurred in the United States.
33
- 34 2. For manufactured products to be considered produced in the United States, (1)
35 all the manufacturing processes for the product must take place in the United
36 States; and (2) all the components of the product must be of U.S. origin. A
37 component is considered of U.S. origin if it is manufactured in the United States,
38 regardless of the origin of its subcomponents.
39
- 40 3. All construction materials are manufactured in the United States. This means
41 that all manufacturing processes for the construction material occurred in the
42 United States.
43

44 **Waiver for De Minimis Costs**

45 Because the federal financial assistance is less than \$500,000, this project is considered
46 a Small Grant and the Waiver of Buy America Requirements for De Minimis Costs and
47 Small Grants applies to this project. This waiver removes the domestic preferences for

1 iron and steel, manufactured products, and construction materials used in infrastructure
2 projects for this Project.

3
4 1-06.1.GR1

5 **Approval of Materials Prior to Use**

6
7 1-06.1.INST1.GR1

8 Section 1-06.1 is supplemented with the following:

9
10 1-06.1.OPT1.GR1

11 (April 3, 2017)

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

21
22 1-07.GR1

23 **Legal Relations and Responsibilities to the Public**

24
25 1-07.1.GR1

26 **Laws to be Observed**

27
28 1-07.1.INST1.GR1

29 Section 1-07.1 is supplemented with the following:

30
31 1-07.1.OPT1.GR1

32 **(October 3, 2022)**

33 ***Ferry Tolls and Service***

34 No gratuity of tolls or special service will be granted to the Contractor. Contractor use of
35 ferry service shall be in accordance with the published rates, tolls, and schedules for the
36 general public.

37
38 1-07.1.OPT2.GR1

39 **(October 3, 2022)**

40 ***Ferry Terminal Access and Security***

41 The Contractor shall comply with the following access and security requirements when
42 performing the Work.

43
44 ***Contractor Employee Identification Lists***

45 The Contractor shall submit to the Engineer a list of all personnel who will be working on
46 WSF property or within 300 feet of the WSF marine structures. This list shall contain the
47 Contract number, WSF property, contract description, date site work begins, company
48 name, main office phone number, contact person(s), contact phone number(s), on site
49 personnel employees' names and photo ID numbers.

1 **Contractor Employee I.D. Cards**

2 Contractor employees shall present photo identification to WSF Terminal personnel
3 every time they seek entry onto WSF property for the purpose of performing work or
4 providing services. The same Contractor employee shall be listed on the Contractor
5 Employee Identification List as submitted. The photo ID shall:

- 6
- 7 • Contain the full name of the individual.
 - 8
 - 9 • Contain a photograph clearly depicting the person’s current facial features.
10 (Driver’s license is not acceptable.)
 - 11
 - 12 • Contain the name of the issuing Contractor organization.
 - 13
 - 14 • Shall be laminated or constructed of material so as to be tamper resistant.
 - 15
 - 16 • Shall bear a photo ID number issued by the issuing Contractor’s organization.
 - 17

18 Employees shall wear their photo ID in a visible location at all times while on WSF
19 properties or working area.

20

21 **Contractor Parking Pass**

22 If parking is allowed in the Contract, the Contractor will be issued a disposable parking
23 pass that allows the vehicle to be parked at a designated location at the terminal on the
24 day of issue and for the period during which services are provided. A pass shall be
25 obtained each day the Contractor’s vehicle enters the facility. Any vehicle not displaying
26 a parking pass is subject to being towed at the owner’s risk and expense. All vehicles
27 entering WSF facilities are subject to security screening and inspection by Washington
28 State Patrol (WSP) personnel.

29

30 **Restricted Areas and Employee Areas**

31 All areas on WSF terminals and vessels that are not considered public access areas will
32 be designated with conspicuous signs as “**Restricted Areas**” or “**Employee Only**
33 **Areas**”. Areas will be locked, barricaded, or otherwise physically delineated as needed.
34 Contractor employees who need to enter restricted or employee areas shall obtain
35 permission/direction from WSF personnel. “**Restricted Areas**” require that one person
36 for every five people be in possession of Transportation Workers Identification Card
37 (TWIC) issued by the Transportation Security Administration as required under the
38 Maritime Transportation Security Act. If the Contractor’s work will involve extended
39 amounts of time in these areas, they will be required to have personnel with TWIC
40 identification. An unauthorized person in a restricted area constitutes a reportable
41 “Breach of Security” that will be reported by the Contracting Agency to the U.S. Coast
42 Guard National Response Center in Washington, D.C.

43

44 Note: “**Restricted Areas**” are Terminal Supervisor’s office, security communication
45 rooms, vehicle slips and overhead loading when security gate is closed and vessel
46 is tied up.

47

48 Access to the vessel when the traffic arm is down is allowed only with permission from
49 WSF personnel.

1 **Material Delivery**

2 Material deliveries to WSF property shall be pre-arranged with the Engineer.

3
4 **Equipment Identification**

5 Contractor's derricks, skiffs, and trailers shall be clearly identified with the company's
6 name or logo. At the end of the work shift, all equipment and construction materials shall
7 be picked up and secured in a way that readily identifies the material as belonging to the
8 Contractor.

9
10 **Payment**

11 All costs associated with conforming to terminal ferry access security requirements shall
12 be included in the unit Contract prices for the associated items of Work.

13
14 1-07.1.OPT3.FR1

15 **(April 3, 2006)**

16 **Confined Space**

17 Confined spaces are known to exist at the following locations:

18
19 *** \$1\$\$ ***

20
21 The Contractor shall be fully responsible for the safety and health of all on-site workers
22 and compliant with Washington Administrative Code (WAC 296-809).

23
24 The Contractor shall prepare and implement a confined space program for each of the
25 confined spaces identified above. The Contractors Confined Space program shall be
26 sent to the Contracting Agency at least 30 days prior to the Contractor beginning work in
27 or adjacent to the confined space. No work shall be performed in or adjacent to the
28 confined space until the plan is submitted to the Engineer as required. The Contractor
29 shall communicate with the Engineer to ensure a coordinated effort for providing and
30 maintaining a safe worksite for both the Contracting Agency's and Contractor's workers
31 when working in or near a confined space.

32
33 All costs to prepare and implement the confined space program shall be included in the
34 bid prices for the various items associated with the confined space work.

35
36 1-07.1.OPT4.FR1

37 **(October 3, 2022)**

38 **Noise Exemption/Variance Conditions**

39 The jurisdiction(s) listed below has granted a nighttime noise exemption and/or variance
40 to its respective noise control code and WAC 173-60 to allow Contracting Agency
41 representatives to perform nighttime Work under the conditions as listed below.

Jurisdiction	Nights	Expiration Date
*** \$1\$\$ ***	*** \$2\$\$***	*** \$3\$\$ ***

42
43
44
45
46 This exemption/variance allows the Contractor to exceed the local noise ordinance
47 levels. All nighttime Work activities require approved noise exemptions or variances from
48 the listed jurisdiction(s) including nighttime Work within the Contracting Agency's Right-
49 of-Way.

1 The Contractor shall perform the following measures to minimize construction noise:
2

- 3 1. All trucks performing export haul shall have well maintained bed liners as
4 inspected and accepted by the Engineer.
- 5
- 6 2. Truck tailgate banging is prohibited. All truck tailgates shall be secured to
7 prevent excessive noise from banging.
- 8
- 9 3. A copy of the noise exemption and/or variance shall be kept on the project site
10 at all times.
- 11
- 12 4. The Contractor shall mail Nighttime Work Mail Notifications to residents located
13 within *** \$\$4\$\$ *** feet of Contracting Agency Right-of-Way within the
14 nighttime Work zone.

15 *** \$\$5\$\$ ***
16

17
18 The Contracting Agency will provide the Nighttime Work Mail Notification, and the
19 Contractor shall submit the following information to the Contracting Agency 20 working
20 days prior to the start of nighttime Work:
21

- 22 • Start date and duration of the nighttime Work.
- 23
- 24 • List of the expected nighttime noise sources.
- 25
- 26 • List of noise mitigation measures to be implemented.
- 27

28 The Contractor shall obtain the mailing distribution list of residents and property owners.
29 The Contractor shall hire a Mailing Service to print and distribute by mail the Contracting
30 Agency's provided Nighttime Work Mail Notification to the required residences *** \$\$6\$\$
31 *** working days prior to the start of the night Work.
32

33 The Contractor shall not proceed with nighttime Work unless all conditions listed in this
34 Contract are in place and the Affidavit of Service by Mailing is received by the Contracting
35 Agency 24 hours prior to the start of nighttime Work.
36

37 The Affidavit of Service by Mailing is a notarized document from the Mailing Service
38 stating that the Nighttime Work Mail Notifications were mailed. A list of addresses
39 obtained by the Contractor for the mailing shall be included with the Affidavit.
40

41 **General**

42 Failure of the Contractor to perform all obligations under this Special Provision will result
43 in the suspension of all night Work until a corrective Work plan is accepted by the
44 Engineer. Working days will continue to accrue during the period of suspension.
45

46 The Contractor shall be responsible for obtaining all exemptions or variances to perform
47 nighttime Work outside the project limits such as staging areas. A copy of each exemption
48 or variance obtained by the Contractor shall be provided to the Contracting Agency
49 before proceeding with the nighttime Work.
50

1 Other noise mitigation measures may be required, and it is understood that the
2 Contractor is responsible for devising methods that comply with all ordinances.
3 Compliance with the above noise mitigation measures shall not be considered a warranty
4 that the equipment or the activity will comply with all local regulations.
5

6 **Payment**

7 All costs to comply with the above noise exemption/variance requirements shall be
8 included in the associated items of Work.
9

10 1-07.1.OPT5.FR1

11 **(October 3, 2022)**

12 **Nighttime Construction Work Requirements**

13 The Contractor shall perform nighttime Work within the Contracting Agency's Right-of-
14 Way under the measures listed below to minimize construction noise:

- 15 1. All trucks performing export haul shall have well maintained bed liners as
16 inspected and accepted by the Engineer.
17
- 18 2. Truck tailgate banging is prohibited. All truck tailgates shall be secured to
19 prevent excessive noise from banging.
20
- 21 3. The Contractor shall mail Nighttime Work Mail Notifications to residents located
22 within *** \$1\$\$ *** feet of Contracting Agency Right-of-Way within the
23 nighttime Work zone.
24

25 *** \$2\$\$ ***
26

27
28 The Contracting Agency will provide the Nighttime Work Mail Notification and the
29 Contractor shall submit the following information to the Contracting Agency 20 working
30 days prior to the start of nighttime Work:

- 31 • Start date and duration of the nighttime Work.
32
- 33 • List of the expected nighttime noise sources.
34
- 35 • List of noise mitigation measures to be implemented.
36

37
38 The Contractor shall obtain the mailing distribution list of residents and property owners.
39 The Contractor shall hire a Mailing Service to print and distribute by mail the Contracting
40 Agency's provided Nighttime Work Mail Notification to the required residences *** \$\$\$
41 *** working days prior to the start of the night Work.
42

43 The Contractor shall not proceed with nighttime Work unless all conditions listed in this
44 Contract are in place and the Affidavit of Service by Mailing is received by the Contracting
45 Agency 24 hours prior to the start of nighttime Work.
46

47 The Affidavit of Service by Mailing is a notarized document from the Mailing Service
48 stating that the Nighttime Work Mail Notifications were mailed. A list of addresses
49 obtained by the Contractor for the mailing shall be included with the Affidavit.
50

1 **General**

2 Failure of the Contractor to perform all obligations under this Special Provision will result
3 in the suspension of all night Work until a corrective Work plan is accepted by the
4 Engineer. Working days will continue to accrue during the period of suspension.
5

6 The Contractor shall be responsible for obtaining all exemptions or variances to perform
7 nighttime Work outside the project limits such as staging areas. A copy of each exemption
8 or variance obtained by the Contractor shall be provided to the Contracting Agency
9 before proceeding with the nighttime Work.
10

11 Other noise mitigation measures may be required, and it is understood that the
12 Contractor is responsible for devising methods that comply with all ordinances.
13 Compliance with the above noise mitigation measures shall not be considered a warranty
14 that the equipment or the activity will comply with all local regulations.
15

16 **Payment**

17 All costs to comply with the above nighttime Work requirements shall be included in the
18 associated items of Work.
19

20 1-07.1.OPT6.FR1

21 **(October 3, 2022)**

22 ***** \$1\$\$ *** Noise Exemption/Variance Conditions**

23 The jurisdiction(s) listed below has granted a nighttime noise exemption and/or variance
24 to its respective noise control code and WAC 173-60 to allow Contracting Agency
25 representatives to perform nighttime Work under the conditions as listed below.
26

Jurisdiction	Nights	Expiration Date
*** \$2\$\$ ***	*** \$3\$\$***	*** \$4\$\$ ***

27
28
29
30
31 This exemption/variance allows the Contractor to exceed the local noise ordinance
32 levels. All nighttime Work activities require approved noise exemptions or variances from
33 the listed jurisdiction(s) including nighttime Work within the Contracting Agency's Right-
34 of-Way.
35

36 The Contractor shall perform the following measures to minimize construction noise:
37

1. All trucks performing export haul shall have well maintained bed liners as inspected and accepted by the Engineer.
2. Truck tailgate banging is prohibited. All truck tailgates shall be secured to prevent excessive noise from banging.
3. A copy of the noise exemption and/or variance shall be kept on the project site at all times.

46
47 ***** \$5\$\$ *****
48

1 **General**

2 Failure of the Contractor to perform all obligations under this Special Provision will result
3 in the suspension of all night Work until a corrective Work plan is accepted by the
4 Engineer. Working days will continue to accrue during the period of suspension.
5

6 The Contractor shall be responsible for obtaining all exemptions or variances to perform
7 nighttime Work outside the project limits such as staging areas. A copy of each exemption
8 or variance obtained by the Contractor shall be provided to the Contracting Agency
9 before proceeding with the nighttime Work.
10

11 Other noise mitigation measures may be required, and it is understood that the
12 Contractor is responsible for devising methods that comply with all ordinances.
13 Compliance with the above noise mitigation measures shall not be considered a warranty
14 that the equipment or the activity will comply with all local regulations.
15

16 **Payment**

17 All costs to comply with the above noise exemption/variance requirements shall be
18 included in the associated items of Work.
19

20 1-07.1(2).GR1

21 **Health and Safety**

22
23 1-07.1(2).INST1.GR1

24 Section 1-07.1(2) is supplemented with the following:
25

26 1-07.1(2).OPT2.GR1

27 **(October 3, 2022)**

28 **Diving and Workboat Safety Requirements**

29 The Contractor shall comply with the requirements of WAC 296-37, “Standards for
30 Commercial Diving Operations” and the requirements contained herein as
31 applicable. The Contractor shall give the Engineer 24 hours advance notice of any
32 planned diving or workboat activity.
33

34 **General Requirements for Communications and Safety**

35 The following requirements shall be followed whenever diving or workboat activity
36 is performed at the ferry terminal:
37

- 38 • Prior to diving and workboat activity, the Contractor shall obtain approval
39 from the Engineer.
- 40
- 41 • Notification shall be made no less than one hour prior to the Diver entering
42 the water.
- 43
- 44 • The Engineer or designee will be responsible for notifying each vessel of
45 the upcoming day’s diving or workboat activity.
- 46
- 47 • The Engineer will request that the vessels depart under low power (slow
48 bell) unless otherwise necessary due to weather conditions.
49

- 1 • The diving team and workboat operations shall not disrupt the ferry service
2 schedule.
- 3
- 4 • Communications between the Diver and the Diver's Tender shall be
5 maintained at all times.
- 6
- 7 • The Engineer and Masters shall be notified at the completion of diving and
8 workboat activity each day.
- 9

10 **Slip-Specific Diving Requirements**

11 The following safety rules shall be followed when diving activities are performed
12 within the diving envelope of the ferry slip. The diving envelope is defined as
13 occurring in an active ferry slip being used for vessel operations:

- 14 • It includes the area around all of the slip landing aid structures.
- 15
- 16 • A 50-yard by 50-yard box which is bisected by the centerline of the slip and
17 runs from the off-shore portion of the apron toward shore.
- 18

19
20 A three-member minimum diving team will be required when diving within the diving
21 envelope. The duties of the team members shall include:

- 22 • One member shall be diving.
- 23
- 24 • One member shall be in a skiff, on the trestle or on the transfer span acting
25 as the Diver's Tender. The Diver's Tender shall maintain communication
26 with the Diver, and the Safety Technician, at all times. In addition, the
27 Diver's Tender shall ensure that the diver has safely surfaced and cleared
28 the diving area five minutes prior to the vessel landing, unless the Diver is
29 outside the envelope.
- 30
- 31 • One member shall act as a Safety Technician. The Safety Technician shall
32 be in a skiff or on shore and shall maintain constant communication with
33 the Diver's Tender.
- 34

35
36 Upon completion of diving activity, the Safety Technician shall notify the Engineer
37 and Masters. Once the diver has cleared the diving area, the Safety Technician shall
38 directly radio the Master on each arriving vessel and relay the message "DIVER
39 CLEAR". The Engineer will provide the Safety Technician a hand-held radio for this
40 purpose.

41 **Slip-Specific Workboat Requirements**

42 The following safety rules shall be followed when operating workboats at the ferry
43 terminal:

- 44 • The workboat shall not pass in front of a ferry vessel when it is closer than
45 500 yards from the terminal on approach (33 CFR 165.1317).
- 46
- 47 • While the ferry vessel is making the landing approach to the ferry terminal,
48 workboats shall maintain a 100-yard distance unless moored to a larger
49
- 50

1 anchored vessel or to a landing structure for other than the active slip (33
2 CFR 165.1317).

- 3
- 4 • Workboats shall maintain a 25-yard distance from any ferry vessel while
5 ferry vessels are moored at the ferry terminal unless approved by the
6 vessel Master (33 CFR 165.1317).
- 7
- 8 • Operators of workboats shall be aware of the slip and any vessels that are
9 or will be using the slip.
- 10
- 11 • Operators of workboats shall be aware of the ferry schedule and when ferry
12 vessels will be departing so that they can position their workboat in a safe
13 operating location in compliance with the requirements noted above.
- 14
- 15 • The workboat **shall not** cross under the active occupied slip unless the
16 Master has been notified and agrees.
- 17
- 18 • Workboats shall be moored in locations that will provide visibility to vessel
19 approaches and/or protection from any prop wash that may occur by ferry
20 vessel approaches and departures.
- 21

22 **Payment**

23 All costs to comply with this Special Provision covering diver and workboat safety
24 shall be included in related items of Work.

25

26 1-07.1(2).OPT3.FR1

27 **(March 9, 2023)**

28 **Lead Health Protection Program**

29 The following Structural and non-structural materials located at the project site
30 contain lead-based products:

31

32 *** \$\$1\$\$ ***

33

34 The Contractor shall be fully responsible for the safety and health of all on-site
35 workers and maintain strict compliance with Washington Administrative Code (WAC
36 296-155-176). The Contractor's Lead Health Protection Program shall be submitted
37 to the Contracting Agency as a Type 2 Working Drawing prior to the Contractor
38 beginning Work involving exposure to materials containing lead. The Contractor
39 shall communicate with the Engineer to ensure a coordinated effort for providing and
40 maintaining a safe worksite for both the Contracting Agency's and Contractor's
41 workers.

42

43 Contracting Agency personnel shall be given free and full access to all hygiene and
44 housekeeping facilities including, but not limited to, change areas, showers, and
45 handwashing and eating facilities.

46

47 **Payment**

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

1 1-07.3.GR1

2 **Fire Prevention and Merchantable Timber Requirements**

3
4 1-07.3.INST1.GR1

5 Section 1-07.3 is supplemented with the following:

6
7 1-07.3.OPT1.GR1

8 (August 2, 2004)

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

12
13 **1-07.3(2).GR1**

14 ***Merchantable Timber Requirements***

15
16 1-07.3(2).INST1.GR1

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

18
19 1-07.3(2).OPT1.GR1

20 (April 7, 2008)

21 This project contains merchantable timber.

22
23 *Export Restrictions* - DOT Form 410-100, Purchaser Certification for Export
24 Restricted Timber, will be included when the contract is sent to the Contractor for
25 execution. The form shall be completed and signed by the Contractor. The
26 Contractor shall send the original signed form and one copy of the signed form
27 directly to the Washington State Department of Revenue at the address on the form.
28 The Contractor shall send one signed copy along with the other documents required
29 by Section 1-03.3 to the Contracting Agency with the executed contract.

30
31 *State Tax Requirements* - It shall be the Contractor's responsibility to pay to the
32 State Department of Revenue all taxes on harvested timber.

33
34 1-07.4.GR1

35 **Sanitation**

36
37 1-07.4(2).GR1

38 ***Health Hazards***

39
40 1-07.4(2).INST1.GR1

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

42
43 1-07.4(2).OPT1.FR1

44 (August 7, 2017)

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

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

5
6 The Contractor shall ensure that the public, including persons who may be non-
7 English speaking or those who may not be able to recognize potential safety and
8 health hazards within the project area, are not harmed by the Contractors activities.
9

10 Nothing required by this Specification shall operate as a waiver of the Contractor's
11 responsibility for taking all steps necessary to ensure the safety of the public under
12 Section 1-07.23 or responsibility for liability and damages under Section 1-07.14 or
13 for any other responsibility under the Contract or as may be required by law.
14

15 **Health and Safety Plan**

16 The Contractor shall prepare a written Health and Safety Plan. The plan shall
17 be prepared under the supervision of a certified industrial hygienist and shall
18 incorporate all required County, State, and Federal health and safety
19 provisions. The plan shall include requirements of the Federal Occupational
20 Safety and Health Act of 1970 (OSHA), all amendments, and all other
21 applicable health regulations.
22

23 Preparation of the Health and Safety Plan shall include an initial site
24 assessment by the industrial hygienist. The plan shall break initial cleanup of
25 the project into identifiable construction areas. The plan shall be submitted to
26 the Engineer prior to commencing cleanup Work. At least one copy of the plan
27 shall be posted at the work site while cleanup Work is in progress. The
28 industrial hygienist shall perform one or more follow-up site assessments as
29 needed to approve the site following completion of the initial site cleanup.
30

31 **Public Notification**

32 The Contractor shall furnish and install the "No Trespassing" signs shown in the
33 Plans at locations staked by the Engineer at least 72 hours prior to performing
34 site cleanup or any potentially hazardous Work (such as clearing or operating
35 equipment).
36

37 At the same time that "No Trespassing" signs are posted, provide written
38 notification of the following to the Engineer and to the chief law enforcement
39 officer of the local governmental entity where the Work will occur:
40

- 41 1. The precise location of each area that is posted "No Trespassing";
- 42 2. The date and time that each site was posted "No Trespassing";
- 43 3. The date, time, description and duration of the Work to be performed
44 at each site.
45
46
47

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

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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,

1 foam, canvas, mats, blankets, pillows, medication, personal papers,
2 photographs, books and other reading materials, luggage, backpacks or other
3 storage containers, clothing, towels, shoes, toiletries and cosmetics, clocks and
4 watches, and eye glasses. Personal property does not include building
5 materials such as wood products, metal, or rigid plastic.
6

7 Personal property items that are not refuse, contaminated, illegal or hazardous
8 shall be removed from the Work area and stored at a location near the project
9 site for return to the property owner. Items shall be placed in large transparent
10 plastic bags and stored in a manner that protects them from adverse weather
11 and theft. Reasonable efforts shall be made to place all items from each
12 encampment into a separate bag. Each bag shall be labeled with an inventory
13 to include a brief description of the contents, a description of the location that it
14 was removed from, and the date that it was removed from the Work area. The
15 Contractor shall not open closed items of personal property unless, in its
16 determination, it is necessary to do so to protect public safety.
17

18 The Contractor shall retain the property for 70-days.

19
20 If the name and contact information of the owner of a personal property item is
21 identified on that item, then for a period of not less than 10-days after removing
22 the property from the Work area, the Contractor shall attempt to notify the
23 apparent owner of the property and make arrangements for the owner to claim
24 the property.
25

26 The Contractor shall release the property to any individual who claims
27 ownership provided they are able to establish ownership by identifying the
28 property and its approximate location. The Contractor shall maintain a record
29 of all property that is claimed. The record shall include a description of the
30 property, the date claimed, and the name of the claimant.
31

32 If personal property is not claimed within 70-days of removal from the
33 encampment, then the property shall become the property of the Contractor
34 and shall be removed from the project.
35

36 **Site Preservation**

37 The Contractor shall preserve the site after initial cleanup of biological and
38 physical hazards.
39

40 On a daily basis and prior to performing any Work in areas where pedestrians
41 or encampments may be present, the Contractor shall verify that the Work area
42 is cleared of all persons not associated with the project. Individuals may seek
43 shelter in dumpsters, equipment, under blankets, or other places hidden from
44 view. Individuals may be disabled, or under the influence of alcohol or drugs
45 and it should not be assumed that loud construction noise will wake them.
46

47 If the worksite becomes unsanitary or unsafe due to new encampments or new
48 biological and associated physical hazards after initial cleanup is completed,
49 then the Contractor shall perform additional site assessment, additional
50 notification and additional cleanup.
51

1 The Engineer may authorize additional site preservation measures. The nature
2 and frequency of these measures will be as agreed to by the Engineer.
3 Additional site preservation measures may include the use of fencing, lighting,
4 or security, provided it is approved in advance by the Engineer. Work performed
5 without Engineer authorization will not be eligible for payment.
6

7 **Measurement**

8 No trespassing signs will be measured per each.
9

10 **Payment**

11 Payment will be made for the following bid items when they are included in the
12 proposal:
13

14 "No Trespassing Sign", per each.

15 The unit contract price per each "No Trespassing Sign" shall be full payment for
16 all Work required to furnish, install, maintain and remove the signs.
17

18 "Health and Safety Plan", lump sum.

19 The lump sum unit contract price for "Health and Safety Plan" shall be full
20 payment for all Work associated with the preparation and implementation of the
21 Health and Safety Plan including the initial and follow up assessment(s) for
22 initial site cleanup, worker training and personal protective equipment, and
23 providing required notifications.
24

25 "FA-Site Cleanup of Bio. And Physical Hazards", by force account as provided
26 in Section 1-09.6.
27

28 Removal and disposal of biological and physical hazards; removal of individuals
29 and encampments; removal, storage, and return of personal property; disposal
30 of unclaimed personal property; additional site assessment, notifications,
31 worker training and personal protective equipment required after the initial site
32 cleanup is completed; and site preservation Work authorized by the Engineer
33 will be paid for by force account in accordance with Section 1-09.6.
34

35 For the purpose of providing a common proposal for all bidders, the Contracting
36 Agency has entered an amount for the item "FA-Site Cleanup of Bio. And
37 Physical Hazards" in the bid proposal to become a part of the total bid by the
38 Contractor.
39

40 1-07.5.GR1

41 **Environmental Regulations**

42
43 1-07.5.INST1.GR1

44 Section 1-07.5 is supplemented with the following:
45

46 1-07.5.OPT1.GR1

47 **(September 20, 2010)**

48 **Environmental Commitments**

49 The following Provisions summarize the requirements, in addition to those required
50 elsewhere in the Contract, imposed upon the Contracting Agency by the various

1 documents referenced in the Special Provision **Permits and Licenses**. Throughout the
2 work, the Contractor shall comply with the following requirements:

3
4 1-07.5.OPT1(A).FR1

5 (August 4, 2014)

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

10
11 1-07.5.OPT1(B).FR1

12 (April 1, 2019)

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

16
17 1-07.5.OPT1(C).FR1

18 (April 1, 2019)

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

20
21 1-07.5.OPT2.GR1

22 **(August 3, 2009)**

23 **Payment**

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

27
28 1-07.5(1).GR1

29 **General**

30
31 1-07.5(1).INST1.GR1

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

33
34 1-07.5(1).OPT1.FR1

35 **(October 3, 2022)**

36 **In-Water Operations Along Marine Shorelines**

37 In-Water Operations along Marine Shorelines shall meet the requirements from ***
38 \$\$1\$\$ **.

39
40 The Contractor's vessels and equipment operating in support of the Work shall be
41 in adequate water depth and shall use the minimum required propulsion to prevent
42 impacts from propeller wash and grounding to seagrass, kelp, and forage fish
43 spawning beds as shown in the Plans. The Contractor shall not conduct activities
44 that may cause scouring within, or other types of sediment transfer out of or into the
45 seagrass, kelp, and forage fish spawning beds. At no time shall any vessel or
46 temporary floating work contact the ground.

47
48 The Contractor shall not deploy anchors or spuds in seagrass or kelp. The
49 Contractor shall maintain anchor cable tension, set and retrieve anchors vertically,
50 and prevent mooring cables from dragging to avoid impacts to seagrass and kelp.

1
2 To minimize shading of seagrass, the Contractor shall relocate vessels moored over
3 seagrass every fourth day when working within the allowed working dates listed in
4 *** \$\$2\$\$ ***.

5
6 The Contractor shall not allow debris or any type of fuel, solvent or lubricant to enter
7 the water.

8
9 1-07.5(2).GR1

10 **State Department of Fish And Wildlife**

11
12 1-07.5(2).INST1.GR1

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

14
15 1-07.5(2).OPT1.GR1

16 (April 2, 2018)

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

21
22 1-07.5(2).OPT1(A).FR1

23 (April 2, 2018)

24 The Contractor may begin Work below the Ordinary High Water Line on ***
25 \$\$1\$\$ *** and must complete all the Work by *** \$\$2\$\$ ***.

26
27 1-07.5(2).OPT2.GR1

28 (April 2, 2018)

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

32
33 1-07.5(3).INST1.GR1

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

35
36 1-07.5(3).OPT1.GR1

37 (April 2, 2018)

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

42
43 1-07.5(3).OPT1(A).FR1

44 (August 3, 2009)

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

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

2 (April 1, 2019)

3 Stormwater, dewatering water, or other authorized non-stormwater discharges
4 that has come into contact with pH modifying substances such as concrete
5 rubble, cast concrete or amended soils, need to be maintained between 6.5 –
6 8.5 standard units (su). If pH exceeds 8.5 su, the Contractor shall immediately
7 discontinue work and initiate treatment to prevent discharges outside the
8 acceptable range from occurring. All neutralization methods used shall be in
9 accordance with the permit. Work may resume once treatment has been
10 implemented and pH of the stormwater or authorized non-stormwater discharge
11 is between 6.5 - 8.5 su or it can be demonstrated that high pH waters will not
12 discharge to surface waters.

13
14 Stormwater, dewatering water, and other authorized non-stormwater
15 discharges are monitored weekly for compliance with the turbidity benchmark
16 (25 nephelometric turbidity units (ntu)) and the phone reporting trigger value
17 (250 ntu) by the Contracting Agency. When the turbidity benchmark is
18 breached, the best management practices (BMPs) installed on-site are not
19 working adequately and need to be adapted, maintained or more BMPs shall
20 be installed. When the turbidity phone reporting trigger value is breached,
21 immediate action is required in order to lower the turbidity to ≤ 25 ntu or to
22 eliminate the discharge. Daily follow-up discharge samples will be collected at
23 all locations where a discharge of 250 ntu or higher was collected unless the
24 discharge was stopped or eliminated.

25
26 1-07.5(3).OPT2.GR1

27 (April 2, 2018)

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

31
32 1-07.5(4).GR1

33 ***Air Quality***

34
35 1-07.5(4)C.GR1

36 **Asbestos Containing Material**

37
38 1-07.5(4)C.INST1.GR1

39 Section 1-07.5(4)C is supplemented with the following:

40
41 1-07.5(4)C.OPT1.FR1

42 **(October 4, 2021)**

43 **Asbestos Good Faith Investigation**

44 An asbestos Good Faith Investigation (GFI) has been conducted for this project
45 and it has been determined that known Asbestos Containing Material (ACM),
46 and/or Presumed Asbestos Containing Material (PACM), will be disturbed by
47 the work on this project. The asbestos GFI has been provided in Appendix ***
48 \$\$1\$\$ ***.

1 1-07.5(4)C.OPT2.FR1

2 **(October 4, 2021)**

3 **Asbestos Good Faith Investigation**

4 An asbestos Good Faith Investigation (GFI) has been conducted for this project
5 and it has been determined to a reasonable certainty that no known Asbestos
6 Containing Material (ACM) will be disturbed by the work on this project. The
7 asbestos GFI has been provided as Appendix *** \$\$1\$\$ ***.

8
9 1-07.5(5).GR1

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

11
12 1-07.5(5).INST1.GR1

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

14
15 1-07.5(5).OPT1.GR1

16 (April 2, 2018)

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

21
22 1-07.5(5).OPT1(B).FR1

23 (February 25, 2013)

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

29
30 1-07.5(5).OPT1(C).GR1

31 (February 25, 2013)

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

35
36 1-07.5(5).OPT1(D).GR1

37 (August 3, 2009)

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

41
42 1-07.5(5).OPT1(F).GR1

43 (February 6, 2023)

44 The Contractor shall dispose of all creosoted timber, creosote piling and
45 associated debris as shown in the Plans in accordance with current federal,
46 state, and local regulations and provisions, and following Best Management
47 Practices. Handling shall meet the Minimum Functional Standards for Solid
48 Waste Handling, Chapter 173-304 WAC. Disposal shall be made in a landfill
49 which meets the liner and leachate standards of the Criteria for Municipal Solid
50 Waste Landfills, Chapter 173-351 WAC. The Contractor shall provide receipts
51 from the disposal facility to the Engineer. If the material is transported to a

1 transfer station, the Contractor shall obtain documentation indicating that final
2 disposal will comply with the standards referenced above.

3
4 1-07.5(5).OPT2.GR1

5 (April 2, 2018)

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

9
10 1-07.5(6).GR1

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

12
13 1-07.5(6).INST1.GR1

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

15
16 1-07.5(6).OPT1.GR1

17 (April 2, 2018)

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

22
23 1-07.5(6).OPT1(B).GR1

24 (April 2, 2018)

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

31
32 1-07.5(6).OPT1(C).FR1

33 (April 2, 2018)

34 The Contractor shall not allow temporary floating work platforms to run aground.
35 Anchors and chains shall never contact fish spawning areas in freshwater or
36 eelgrass, kelp, macro algae, or intertidal wetlands as indicated in the Plans.
37 Shading eelgrass, kelp, or macro algae beds by work platforms shall not exceed
38 *** \$\$1\$\$ *** days.

39
40 1-07.5(6).OPT1(D).GR1

41 (April 2, 2018)

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

45
46 1-07.5(6).OPT1(E).GR1

47 (April 2, 2018)

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

- 1 1-07.5(6).OPT1(F).GR1
2 (April 2, 2018)
3 The Contractor shall remove piles by directly pulling, using vibratory devices,
4 or by cutting the piles below ground level to minimize localized turbidity. If use
5 of a clamshell bucket is necessary due to pile breakage, turbidity curtains will
6 be employed by the Contractor.
7
- 8 1-07.5(6).OPT1(G).GR1
9 (April 2, 2018)
10 The Contractor shall remove piles and place them directly into a receptacle that
11 prevents sediment or other material from entering waters of the state.
12
- 13 1-07.5(6).OPT1(H).FR1
14 (April 2, 2018)
15 Contracting Agency staff will monitor sound pressure during in-water pile driving
16 of steel piles, including H-piles, and sheet piles. Results that exceed *** \$\$1\$\$
17 *** will require the Contractor to adjust work methods or employ additional best
18 practices to safely proceed.
19
- 20 1-07.5(6).OPT1(I).FR1
21 (April 2, 2018)
22 The Contractor shall direct temporary lights for night work away from *** \$\$1\$\$
23 ***.
24
- 25 1-07.5(6).OPT1(J).FR1
26 (April 2, 2018)
27 The Contractor shall conduct night Work only during the period from 2 hours
28 after sunset to 2 hours before sunrise. Setting up and taking down traffic control
29 are exempt from these time restrictions. Refer to the following website, using
30 the City of *** \$\$1\$\$ *** for sunrise and sunset times:
31
32 <http://www.sunrisesunset.com/usa/washington.asp>
33
- 34 1-07.5(6).OPT1(K).FR1
35 (April 2, 2018)
36 The Contractor shall conduct night Work only during the period from 1 hour after
37 sunset to 1 hour before sunrise. Setting up and taking down traffic control are
38 exempt from these time restrictions. Refer to the following website, using the
39 City of *** \$\$1\$\$ *** for sunrise and sunset times:
40
41 <http://www.sunrisesunset.com/usa/washington.asp>
42
- 43 1-07.5(6).OPT1(L).FR1
44 (April 2, 2018)
45 The Contractor must cease Work 2 hours before sunrise. Setting up and taking
46 down traffic control are exempt from these time restrictions. Refer to the
47 following website, using the City of *** \$\$1\$\$ *** for sunrise times:
48
49 <http://www.sunrisesunset.com/usa/washington.asp>
50

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

2 (April 2, 2018)

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

8
9 <http://www.sunrisesunset.com/usa/washington.asp>

10
11 1-07.5(6).OPT1(N).FR1

12 (April 2, 2018)

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

17
18 <http://www.sunrisesunset.com/usa/washington.asp>

19
20 1-07.5(6).OPT1(O).GR1

21 (April 2, 2018)

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

25
26 1-07.5(6).OPT1(P).FR1

27 (September 3, 2019)

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

32
33 <http://www.sunrisesunset.com/usa/washington.asp>

34
35 1-07.5(6).OPT1(Q).GR1

36 (September 7, 2021)

37 Galvanizing and zinc coatings shall not be used below the 100 year mean
38 recurrence interval water surface.

39
40 1-07.5(6).OPT2.GR1

41 (April 2, 2018)

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

45
46 1-07.5(6).OPT3.FR1

47 **(November 2, 2022)**

48 **Bird Protection and Monitoring**

49 **Description**

50 This Work includes preparing a Project-specific Bird Protection Plan,
51 implementation of the Bird Protection Plan, updating the Bird Protection Plan,

1 surveying, monitoring, and reporting of bird activity, actions required in the
2 event nests and species are surveyed and encountered, and Contractor
3 training.
4

5 **Construction Requirements**

6 No onsite Work may begin on the Project until the Bird Protection Plan has been
7 accepted by the Engineer.
8

9 The Contractor shall maintain a copy of the Bird Protection Plan at the Work
10 site and update as necessary to reflect the conditions as the Work progresses.
11

12 The Contractor shall take precautions to prevent birds from nesting on bridges,
13 structures, equipment, or other nesting habitat that would be modified or
14 disturbed by Project construction.
15

16 The Contractor shall conduct site monitoring and shall report the results of their
17 inspections. From March 15 to September 15, the Contractor shall conduct, at
18 minimum, three inspections during the work week; once on Monday,
19 Wednesday, and Friday, to identify nest starts. The Contractor shall indicate
20 their intended inspection schedule in their Bird Protection Plan.
21

22 The Contractor shall remove nest starts as soon as they are discovered in
23 accordance with their Project-specific Bird Protection Plan. If an active nest
24 (i.e., one that has eggs or chicks) is found, the Contractor must immediately
25 stop all associated Work and contact the Engineer before implementing the
26 relevant Project-specific Bird Protection Plan measures. Active nest removal
27 shall not proceed prior to notifying to and receiving approval from the Engineer.
28

29 The Contractor shall notify the Engineer if a bird nest is discovered or
30 suspected. The Contractor shall also notify the Engineer if a breeding raptor (or
31 nest or nest start) is suspected or discovered. If a raptor nest (including
32 unoccupied ones outside the breeding season) is found, it shall not be removed.
33

34 From September 16 to March 14, the Contractor may discontinue weekly
35 inspections and reports, but shall remove old nests in accordance with the
36 Project-specific Bird Protection Plan. In the rare instance that an active nest is
37 discovered during this time, the Migratory Bird Treaty Act (MBTA) requirements
38 apply and the Contractor must adhere to the Project-specific Bird Protection
39 Plan and applicable Contract provisions. However, the Contractor shall not be
40 responsible for the removal of active nests during this time period.
41

42 The Contractor shall train all project staff. The Contractor shall provide a list of
43 training for all Project staff as part of their Bird Protection Plan. The Contractor
44 training shall include an overview of the MBTA and the Bald and Golden Eagle
45 Protection Act, how to identify nesting activity, and what to do if a nest is
46 discovered.
47

48 **Submittals**

49 The Contractor shall prepare a Project-specific Bird Protection Plan and submit
50 it to the Engineer no later than 10 days after the execution of the Contract. The

1 Plan shall be a Type 2 Working Drawing and apply to *** \$\$1\$\$ *** during the
2 active nesting season described as March 15 to September 15.
3

4 The Contractor's Project-specific Bird Protection Plan shall be prepared and
5 implemented by a qualified biologist. The biologist shall be available to work
6 during day or night to lead, direct, or carry out monitoring, inspection, and
7 activities described in the Project-specific Bird Protection Plan. The Bird
8 Protection Plan shall include the following information on the biologist:
9

- 10 1. Evidence of the qualification for the designated Biologist and a
11 backup Biologist. The evidence of qualification will include at a
12 minimum a bachelor's degree in biology, zoology, natural resource
13 management, environmental science, or a related degree with a
14 science emphasis.
- 15 2. Resumé of each biologists' work experience including:
 - 16 a. Description of applicable projects over a five-year period to
17 include a description of the work experience to identify birds and
18 bird nests with the associated projects.
 - 19 b. Duration of each project including start date and finish date.
 - 20 c. Position held for each applicable project.
 - 21 d. Location of each project to include 2 years in the Pacific
22 Northwest.
 - 23 e. References, including the name and contact information for each
24 project.

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31
32 The Project-specific Bird Protection Plan shall also include:

- 33 1. Bird species identified by the Contracting Agency in the MBTA
34 Assessment Report (Appendix *** \$\$2\$\$ ***).
- 35 2. Precautions and timeframes taken or to be taken to prevent birds
36 from nesting on bridges, structures, equipment or other nesting
37 habitat that would be modified or disturbed by project construction.
- 38 3. Methods, materials, and equipment used to remove nest starts,
39 which are described as partial or complete nests that don't contain
40 eggs or chicks.
- 41 4. Containment methods to prevent removed nesting materials from
42 contributing to air or water pollution.
- 43 5. Disposal of nesting materials removed in accordance with Section 2-
44 03.3(7)C.
- 45 6. Communicating, notifying, and documenting:
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- a. Name and contact information of the Contractor's qualified biologist and one qualified emergency back-up biologist.
 - b. Name and contact information of the Engineer.
 - c. Describe notification, communication, and documentation procedures to follow in the event an active nest (i.e., one that has eggs or chicks) or unanticipated species upon the discovery of a nest.
 - d. Describe notification to follow in the event a raptor nest (even unoccupied ones outside the breeding season) is discovered.
7. The list of Contractor employees that have received Bird Protection training.

Once a week, the Contractor shall submit a Type 1 Working Drawing to the Engineer, detailing their findings from the prior week's inspections.

Payment

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

"Bird Protection and Monitoring", Lump Sum.
The lump sum Contract price for "Bird Protection and Monitoring" shall be full pay for all the Work as specified.

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 1-07.6.OPT3.GB1

2 **United States Coast Guard**

3
4 1-07.6.OPT3(A).FB1

5 (September 3, 2019)

6 The Contracting Agency has obtained a United States Coast Guard Bridge Permit ***
7 \$\$1\$\$ *** for this project.

8
9 The Contractor shall furnish, install, maintain, and remove all temporary navigation lights,
10 signs, signals, and any other warning devices required by the Coast Guard and as
11 required for public safety on all falsework, cofferdams, or other temporary structure in
12 the waterway.

13
14 The Contractor shall comply with all Coast Guard requirements inclusive of the following
15 Bridge Permit conditions:

- 16
17 1. The construction of falsework, cofferdams or other obstructions, if required,
18 shall be in accordance with plans submitted to and approved by the
19 Commander, 13th Coast Guard District, prior to construction of the bridge. All
20 work shall be so conducted that the free navigation of the waterway is not
21 unreasonably interfered with and the present navigable depths are not
22 impaired. Timely notice of any and all events that may affect navigation shall
23 be given to the District Commander during construction of the bridge. The
24 channel or channels through the structure shall be promptly cleared of all
25 obstructions placed therein or caused by the construction of the bridge to the
26 satisfaction of the District Commander, when in the District Commander's
27 judgment the construction work has reached a point where such action should
28 be taken, but in no case later than 90 calendar days after the bridge has been
29 opened to traffic.
30
31 2. *** \$\$2\$\$ ***

32
33 The Contractor shall notify the Coast Guard in writing, with a copy to the Engineer, of the
34 work start date at least seven calendar days before beginning any site work and shall at
35 that time designate the Contractor's authorized representative, and work phone number,
36 for coordination on matters that relate to Coast Guard approvals and requirements.

37
38 The Contractor's applications for required Coast Guard construction approvals for this
39 project shall include, but not be limited to, cofferdams, falsework, temporary navigation
40 lighting, work bridges, and other obstructions. These applications shall be submitted to
41 the Coast Guard by the Contractor, with a copy to the Engineer, a minimum of 30
42 calendar days in advance of the scheduled work. A schedule of when the work is to be
43 performed and when the obstructions are to be permanently removed shall be a part of
44 the Contractor's application.

45
46 The Contractor shall provide the Coast Guard and the Engineer with prompt verbal
47 notice, followed by written notice, of any subsequent changes to this proposed schedule.

48
49 A copy of all Coast Guard approvals shall be provided to the Engineer upon receipt but
50 not later than prior to beginning work on the items of work involved.
51

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

5
6 The Coast Guard contact is:

7
8 Bridge Administrator
9 Thirteenth Coast Guard District
10 915 Second Avenue Suite 3510
11 Seattle, WA 98174-1067
12 D13-pf-d13bridges@uscg.mil
13 Telephone: (206) 220-7282
14

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

18
19 All costs incurred in obtaining the required Coast Guard approvals and in complying with
20 all requirements specified herein shall be included in the contract prices for the items of
21 work involved.

22
23 All costs in connection with delays in the construction caused by the Contractor's failure
24 to obtain the necessary Coast Guard approvals shall be at the Contractor's expense.
25

26 1-07.6.OPT3(B).GB1

27 (September 3, 2019)

28 The Contractor shall comply with all United States Coast Guard requirements.
29

30 The Contractor shall submit a Type 3 Working Drawing consisting of a Navigation Work
31 Plan at least 60-calendar days prior to beginning activities and operations affecting any
32 part of the waterway in the vicinity of the bridge work. The Navigation Work Plan shall
33 include, at a minimum, the following:
34

- 35 1. Lead Contractor contact for the project, with associated email and phone
36 number.
- 37
38 2. Scheduled on-site start work date and finish work date.
- 39
40 3. Days and times of operation over the nominal work week.
- 41
42 4. Dates and times of stages of work, as applicable for operations involving
43 sequential or staged activities.
- 44
45 5. Location of the Work by latitude and longitude, river mile, and geographic point
46 of land, with latitude and longitude expressed in degrees, minutes, seconds,
47 and thousandths of seconds.
- 48
49 6. Identification and description of barges, vessels and equipment present in the
50 waterway, if any, to facilitate operations. The description shall include vessel
51 type, vessel name (as applicable), means of voice contact (VHF frequencies,

1 cell phone number, etc.) to the vessel, means of anchoring and mooring the
2 vessel and the location of such anchoring and mooring, the extent to which the
3 vessel is encroaching into the defined navigation channel, and lighting support
4 vessels in accordance with the Coast Guard Rules of the Road as applicable.
5

- 6 7. Point of contact phone number available for 24-hour-seven-days-a-week
7 contact from local mariners through the duration of the project.
8
9 8. Detailed identification of work operation hazards to mariners, if any, created by
10 operations (cables, buoys, machinery, tools, tows, containment and platform
11 structures, falling debris, etc.), including details such as size, diameter, color as
12 applicable.
13
14 9. Precautions regarding the in-water vessels, equipment, and work operation
15 hazards, if any, affecting local mariners such as operating speed and wake,
16 clearance distance, etc.
17
18 10. Systems and equipment causing a reduction in the available vertical clearance
19 beneath the bridge, if any, such as containment and platform systems and
20 supports and the equipment necessary to install, maintain, and remove such
21 systems, and the identification of any falling debris hazard to waterway traffic.
22
23 11. Description of advisory signage and lighting to be implemented by the
24 Contractor to advise local mariners of the operations, reduced clearances, and
25 presence of work operation hazards, as applicable. The description shall
26 include the advisory message, and placement and orientation of the signage
27 and flashing amber lighting (4-seconds/15 per minute).
28

29 The Engineer will submit the Navigation Work Plan to the US Coast Guard contact
30 identified below for concurrent review. Approval from the US Coast Guard and the
31 Engineer is required prior to the US Coast Guard issuing a Local Notice to Mariners
32 advising of the operations, and allowing the operations to commence.
33

34 The Contractor shall contact the US Coast Guard for requirements related to the mooring
35 of barges, placement of log booms, and all other equipment that could be a hazard to
36 waterway users.
37

38 Provisions shall be made for the removal, on 2 hours notice, of all equipment that would
39 block or partially block, the navigable portion of the waterway.
40

41 The US Coast Guard contact is:

42
43 Bridge Administrator
44 Thirteenth Coast Guard District
45 915 Second Avenue Suite 3510
46 Seattle, WA 98174-1067
47 D13-pf-d13bridges@uscg.mil
48 Telephone: (206) 220-7282
49

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

4
5 All costs in connection with delays in the construction caused by the Contractor's failure
6 to contact the US Coast Guard shall be at the Contractor's expense.

7
8 1-07.7.GR1

9 **Load Limits**

10
11 1-07.7.INST1.GR1

12 Section 1-07.7 is supplemented with the following:

13
14 1-07.7.OPT3.FR1

15 (March 13, 1995)

16 The State has made arrangements with *** \$\$1\$\$ *** for the Contractor's use of the ***
17 \$\$2\$\$ *** shown in the Plans as a haul route for materials coming from *** \$\$3\$\$ *** Site
18 *** \$\$4\$\$ *** and used on this project. The Contractor shall comply with all existing legal
19 restrictions.

20
21 If the Contractor selects different haul routes than those designated, the Contractor shall,
22 at the Contractor's expense, make all arrangements for the use of the haul routes.

23
24 1-07.7.OPT4.FR1

25 (March 13, 1995)

26 The Contractor shall also comply with the further restrictions imposed by the owner of
27 the roads as follows:

28
29 *** \$\$1\$\$ ***

30
31 1-07.7.OPT5.GR1

32 (March 13, 1995)

33 Whenever the Contractor obtains materials from a source other than that provided by the
34 Contracting Agency, or provides a source for materials not designated to come from a
35 source provided by the State and the location of the source necessitates hauling on other
36 than State Highways, the Contractor shall, at the Contractor's expense, make all
37 arrangements for the use of the haul routes.

38
39 1-07.7.OPT6.GR1

40 (March 13, 1995)

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

44
45 1-07.8.GR1

46 **High-Visibility Apparel**

47
48 1-07.8.INST1.GR1

49 The third and fourth paragraphs of Section 1-07.8 are revised to read

50

1 1-07.8.OPT1.2026.GR1

2 (November 4, 2024)

3 High-visibility garments shall always be the outermost garments worn in a manner to
4 ensure 360 degrees of uninterrupted background and retroreflective material encircling
5 the torso.

6
7 High-visibility garments shall be labeled as, and in a condition compliant with the
8 ANSI/ISEA 107-2015 publication entitled "American National Standard for High-Visibility
9 Safety Apparel and Accessories," or equivalent revisions.

10
11 1-07.8(1).GR1

12 **Traffic Control Personnel**

13
14 1-07.8(1).INST1.GR1

15 Section 1-07.8(1) is revised to read:

16
17 1-07.8(1).OPT1.2026.GR1

18 (November 4, 2024)

19 All personnel performing the Work described in Section 1-10 (including traffic control
20 supervisors, flaggers, and others performing traffic control labor of any kind) shall
21 comply with the following:

- 22
- 23 1. During daylight hours with clear visibility, workers shall wear a high-visibility
24 ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that
25 are fluorescent yellow-green, fluorescent orange-red, or fluorescent red in
26 color; and a high visibility hardhat that is white, yellow, yellow-green,
27 orange, or red in color; and
28
 - 29 2. During hours of darkness (½ hour before sunset to ½ hour after sunrise)
30 or other low-visibility conditions (snow, fog, etc.), workers shall wear a high-
31 visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background
32 material that are fluorescent yellow-green, fluorescent orange-red, or
33 fluorescent red in color; a high-visibility lower garment meeting ANSI/ISEA
34 107 Class E, and a high visibility hardhat marked with at least 12 square
35 inches of retroreflective material applied to provide 360 degrees of visibility.
36

37 1-07.9.GR1

38 **Wages**

39
40 1-07.9(1).GR1

41 **General**

42
43 1-07.9(1).INST1.GR1

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

45
46 1-07.9(1).OPT1.GR1

47 (January 6, 2025)

48 The Federal wage rates incorporated in this contract have been established by the
49 Secretary of Labor under United States Department of Labor General Decision No.
50 WA20250001.

1
2 The State rates incorporated in this contract are applicable to all construction
3 activities associated with this contract.
4

5 1-07.9(1).OPT2.FR1

6 (January 6, 2025)

7 The Federal wage rates for Highway Construction incorporated in this contract have
8 been established by the Secretary of Labor under United States Department of
9 Labor General Decision No. WA20250001. These rates are applicable to highway
10 construction.
11

12 The Federal wage rates for Building Construction incorporated in this contract have
13 been established by the Secretary of Labor under United States Department of
14 Labor General Decision No. *** \$1\$\$ ***. These rates are applicable to building
15 construction.
16

17 The State rates incorporated in this contract are applicable to all construction
18 activities associated with this contract.
19

20 1-07.9(1).OPT3.FR1

21 (May 11, 2010)

22 The Federal wage rates for Building Construction incorporated in this contract have
23 been established by the Secretary of Labor under United States Department of
24 Labor General Decision No. *** \$1\$\$ ***. These rates are applicable to building
25 construction.
26

27 The State rates incorporated in this contract are applicable to all construction
28 activities associated with this contract.
29

30 1-07.9(1).OPT5.FR1

31 (January 6, 2025)

32 The Federal wage rates for Highway Construction incorporated in this contract have
33 been established by the Secretary of Labor under United States Department of
34 Labor General Decision No. WA20250001. These rates are applicable to highway
35 construction.
36

37 The Federal wage rates for Heavy Construction incorporated in this contract have
38 been established by the Secretary of Labor under United States Department of
39 Labor General Decision No. *** \$1\$\$ ***. These rates are applicable to heavy
40 construction.
41

42 The State rates incorporated in this contract are applicable to all construction
43 activities associated with this contract.
44

45 1-07.9(1).OPT6.FR1

46 (January 6, 2025)

47 The Federal wage rates for Highway Construction incorporated in this contract have
48 been established by the Secretary of Labor under United States Department of
49 Labor General Decision No. WA20250001. These rates are applicable to highway
50 construction.
51

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

5
6 The Federal wage rates for Building Construction incorporated in this contract have
7 been established by the Secretary of Labor under United States Department of
8 Labor General Decision No. *** \$2\$ \$ ***. These rates are applicable to building
9 construction

10
11 The State rates incorporated in this contract are applicable to all construction
12 activities associated with this contract.

13
14 1-07.9(3).GR1
15 **Apprentices**

16
17 1-07.9(3).INST1.GR1
18 Section 1-07.9(3) is supplemented with the following:

19
20 1-07.9(3).OPT1.GR1
21 **(September 3, 2024)**
22 **Apprentice Utilization**

23 This Contract includes an Apprentice Utilization Requirement. Fifteen percent or
24 more of project Labor Hours shall be performed by Apprentices. Apprentice
25 Utilization will be determined using the L&I online Prevailing Wage Intent & Affidavit
26 (PWIA) system.

27
28 **Definitions**

29 For the purposes of this specification the following definitions apply:

- 30
31 1. Apprentice is a person enrolled in a State-approved Apprenticeship
32 Training Program.
33
34 2. Apprentice Utilization is the Apprentice labor hours expressed as a
35 percentage of the project Labor Hours based on certified payrolls or the
36 affidavit of wages paid, whichever is least. The percentage is not rounded
37 up.
38
39 3. Apprentice Utilization Requirement is the minimum percentage of
40 apprentice labor hours required by the Contract.
41
42 4. Good Faith Efforts (GFE) describes the Contractor's efforts to meet the
43 Apprentice Utilization Requirement including but not limited to the specific
44 steps as described elsewhere in this specification.
45
46 5. Labor Hours are the total hours performed by all workers receiving an
47 hourly wage who are subject to prevailing wage requirements for Work
48 performed on the Contract as defined by RCW 39.04.310. Labor Hours are
49 determined based on the scope of work performed by the individuals,
50 rather than the title of their occupations in accordance with WAC 296-127.
51

- 1 6. State-approved Apprenticeship Training Program is an apprenticeship
2 training program approved by the Washington State Apprenticeship
3 Council.
4

5 **Electronic Reporting**

6 The Contractor shall use the PWIA System to submit the “Apprentice Utilization
7 Plan” and GFE documentation. Reporting instructions are available in the
8 application.
9

10 **Apprentice Utilization Plan**

11 The Contractor shall submit an “Apprentice Utilization Plan” by filling out the
12 Apprentice Utilization Plan form (WSDOT Form 424-004) within 30 calendar days of
13 execution, demonstrating how and when they intend to achieve the Apprentice
14 Utilization Requirement. The Plan shall be in sufficient detail for the Engineer to track
15 the Contractor’s progress in meeting the utilization requirements and be updated
16 and resubmitted as the Work progresses or when ordered by the Engineer.
17

18 If the Contractor is unable to demonstrate ability to meet the Apprentice Utilization
19 Requirement in their Apprentice Utilization Plan, they must use the PWIA system to
20 submit GFE documentation for review and comment with their Apprentice Utilization
21 Plan. The Contractor shall actively seek out opportunities to meet the Apprentice
22 Utilization Requirement during the construction Work.
23

24 **Contacts**

25 The Contractor may obtain information on State-approved Apprenticeship Training
26 Programs at:
27

28 <https://secure.lni.wa.gov/arts-public/#/program-search>
29

30 **Compliance**

31 In the event the Contractor is unable to achieve the Apprentice Utilization
32 Requirement, the Contractor shall use the PWIA system to submit GFE
33 documentation for review and approval. If GFE documentation was previously
34 submitted as part of the Apprentice Utilization Plan, it shall be updated and
35 resubmitted. The GFE documentation for Apprentice Utilization based on certified
36 payrolls shall be submitted after Substantial Completion but no later than 30 days
37 after Physical Completion. After all affidavits of wages paid have been submitted, if
38 the Apprentice Utilization based on the affidavits of wages paid is less than that of
39 the Apprentice Utilization based on certified payrolls, a GFE shall be submitted
40 based on the lower Apprentice Utilization.
41

42 If the Contractor fails to submit GFE documentation or if the Engineer does not
43 approve the GFE, the Contractor will be subject to disciplinary actions as allowed
44 under WAC 468-16-180.
45

46 **Good Faith Efforts**

47 The GFE shall describe in detail why the Contractor is not or was not able to attain
48 the Apprentice Utilization Requirement. The GFE documentation shall include:
49

- 50 1. Documentation of ongoing correspondence for solicitation of Apprentices
51 from a State-approved Apprenticeship Training Program(s). To be

1 considered ongoing, the correspondence shall be not less than once a
2 quarter, beginning at the start of Work and continuing every three months
3 thereafter. The response from the solicited State-Approved Apprenticeship
4 Training Program(s) when there is a lack of availability of Apprentices shall
5 be included in the correspondence.
6

7 And one or more of the following:
8

- 9 2. Documentation that shows Contract requirements for TERO, Special
10 Training or Disadvantage Business Enterprise requirements affect the
11 ability to obtain Apprentice Labor Hours on the Contract.
12
- 13 3. Documentation demonstrating what efforts the Contractor has taken to
14 require subcontractors to solicit and employ Apprentices. Documentation
15 could be posters placed on site, emphasis in subcontracts about employing
16 Apprentices, letters, memos or other correspondence from Contractor to
17 subcontractor that put an emphasis on employing Apprentices.
18
- 19 4. Documentation of other obstacles the Contractor faced that may
20 demonstrate or solidify a satisfactory explanation of not meeting the
21 Apprenticeship Utilization Requirement.
22

23 Contractors may receive a GFE credit for graduated Apprentice hours through the
24 end of the calendar year for all projects worked on as long as the Apprentice remains
25 continuously employed with the same Contractor they were working for when they
26 graduated. If an Apprentice graduates during employment on a project of significant
27 duration, they may be counted towards a GFE credit for up to one year after their
28 graduation or until the end of the project (whichever comes first). Determination of
29 whether or not Contract requirements were met in good faith will be made by
30 subtracting the hours from the journeyman total reported hours for the project and
31 adding them to the apprentice hour total. If the new utilization percentage meets the
32 Contract requirement, the Contractor will be reported as meeting the requirement in
33 good faith.
34

35 **Payment**

36 All costs incurred by the Contractor for complying with this specification shall be
37 included in the Contract prices for the Bid items of Work involved.
38

39 1-07.11.GR1

40 **Requirements for Nondiscrimination**

41
42 1-07.11.INST1.GR1

43 Section 1-07.11 is supplemented with the following:
44

45 1-07.11.OPT1.GR1

46 (May 5, 2025)

47 Requirement for Affirmative Action to Ensure Equal Employment Opportunity

48
49 In accordance with 41 CFR § 60-4.2, the clauses contained in 1-4 below are required to
50 be included in this Contract. Nothing in this contract alters the Contractor's responsibility

1 to comply with all applicable Federal regulations, including but not limited to 41 CFR part
2 60 as currently existing or later amended.

- 3
4 1. The Contractor's attention is called to the "Equal Opportunity Clause and the
5 Standard Federal Equal Employment Opportunity Construction Contract
6 Specifications" set forth herein.
7
8 2. The goals and timetables for minority and female participation set by the Office of
9 Federal Contract Compliance Programs, expressed in percentage terms for the
10 Contractor's aggregate work force in each construction craft and in each trade on all
11 construction work in the covered area, are as follows:
12

13 Women - Statewide

<u>Timetable</u>	<u>Goal</u>
Until further notice	6.9%

18 Minorities - by Standard Metropolitan Statistical Area (SMSA)

19
20 Spokane, WA:

21 SMSA Counties:

Spokane, WA	2.8
WA Spokane.	

24 Non-SMSA Counties 3.0

25 WA Adams; WA Asotin; WA Columbia; WA Ferry; WA Garfield; WA
26 Lincoln, WA Pend Oreille; WA Stevens; WA Whitman.
27

28 Richland, WA

29 SMSA Counties:

Richland Kennewick, WA	5.4
WA Benton; WA Franklin.	

32 Non-SMSA Counties 3.6

33 WA Walla Walla.
34

35 Yakima, WA:

36 SMSA Counties:

Yakima, WA	9.7
WA Yakima.	

39 Non-SMSA Counties 7.2

40 WA Chelan; WA Douglas; WA Grant; WA Kittitas; WA Okanogan.
41

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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 timetables 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 goals 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

1 90 – 7th Street, Suite 18-300
2 San Francisco, CA 94103(415) 625-7800 Phone
3 (415) 625-7799 Fax
4

- 5 4. As used in this Notice, and in the contract resulting from this solicitation, the Covered
6 Area is as designated herein.
7

8 In accordance with 41 CFR § 60-4.3, the clauses contained in 1-15 below are required
9 to be included in this Contract. Nothing in this Contract alters the Contractor's
10 responsibility to comply with all applicable Federal regulations, including but not limited
11 to 41 CFR part 60 as currently existing or later amended.
12

13 Standard Federal Equal Employment Opportunity Construction Contract Specifications
14

- 15 1. As used in these specifications:
16

- 17 a. "Covered Area" means the geographical area described in the solicitation from
18 which this contract resulted;
19
20 b. "Director" means Director, Office of Federal Contract Compliance Programs,
21 United States Department of Labor, or any person to whom the Director
22 delegates authority;
23
24 c. "Employer Identification Number" means the Federal Social Security number
25 used on the Employer's Quarterly Federal Tax Return, U.S. Treasury
26 Department Form 941;
27
28 d. "Minority" includes:
29
30 (1) Black (all persons having origins in any of the Black African racial groups
31 not of Hispanic origin);
32
33 (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central American,
34 South American, or other Spanish culture or origin, regardless of race);
35
36 (3) Asian and Pacific Islander (all persons having origins in any of the original
37 peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the
38 Pacific Islands); and
39
40 (4) American Indian or Alaskan Native (all persons having origins in any of the
41 original peoples of North America and maintaining identifiable tribal
42 affiliations through membership and participation or community
43 identification.)
44

- 45 2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of
46 the work involving any construction trade, it shall physically include in each
47 subcontract in excess of \$10,000 the provisions of these specifications and the
48 Notice which contains the applicable goals for minority and female participation and
49 which is set forth in the solicitations from which this contract resulted.
50

- 1 3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan
2 approved by the U.S. Department of Labor in the covered area either individually or
3 through an association, its affirmative action obligations on all work in the Plan area
4 (including goals and timetables) shall be in accordance with that Plan for those
5 trades which have unions participating in the Plan. Contractors must be able to
6 demonstrate their participation in and compliance with the provisions of any such
7 Hometown Plan. Each Contractor or subcontractor participating in an approved
8 Plan is individually required to comply with its obligations under the EEO clause,
9 and to make a good faith effort to achieve each goal under the Plan in each trade in
10 which it has employees. The overall good faith performance by other Contractors or
11 subcontractors toward a goal in an approved Plan does not excuse any covered
12 Contractor's or subcontractor's failure to take good faith efforts to achieve the Plan
13 goals and timetables.
14
- 15 4. The Contractor shall implement the specific affirmative action standards provided in
16 paragraphs 7a through 7p of this Special Provision. The goals set forth in the
17 solicitation from which this contract resulted are expressed as percentages of the
18 total hours of employment and training of minority and female utilization the
19 Contractor should reasonably be able to achieve in each construction trade in which
20 it has employees in the covered area. Covered construction contractors performing
21 construction work in geographical areas where they do not have a Federal or
22 federally assisted construction contract shall apply the minority and female goals
23 established for the geographical area where the work is being performed. The
24 Contractor is expected to make substantially uniform progress in meeting its goals
25 in each craft during the period specified.
26
- 27 5. Neither the provisions of any collective bargaining agreement, nor the failure by a
28 union with whom the Contractor has a collective bargaining agreement, to refer
29 either minorities or women shall excuse the Contractor's obligations under these
30 specifications, Executive Order 11246, or the regulations promulgated pursuant
31 thereto.
32
- 33 6. In order for the nonworking training hours of apprentices and trainees to be counted
34 in meeting the goals, such apprentices and trainees must be employed by the
35 Contractor during the training period, and the Contractor must have made a
36 commitment to employ the apprentices and trainees at the completion of their
37 training, subject to the availability of employment opportunities. Trainees must be
38 trained pursuant to training programs approved by the U.S. Department of Labor.
39
- 40 7. The Contractor shall take specific affirmative actions to ensure equal employment
41 opportunity. The evaluation of the Contractor's compliance with these specifications
42 shall be based upon its effort to achieve maximum results from its actions. The
43 Contractor shall document these efforts fully, and shall implement affirmative action
44 steps at least as extensive as the following:
45
- 46 a. Ensure and maintain a working environment free of harassment,
47 intimidation, and coercion at all sites, and in all facilities at which the
48 Contractor's employees are assigned to work. The Contractor, where
49 possible, will assign two or more women to each construction project. The
50 Contractor shall specifically ensure that all foremen, superintendents, and
51 other on-site supervisory personnel are aware of and carry out the

1 Contractor's obligation to maintain such a working environment, with
2 specific attention to minority or female individuals working at such sites or
3 in such facilities.
4

5 b. Establish and maintain a current list of minority and female recruitment
6 sources, provide written notification to minority and female recruitment
7 sources and to community organizations when the Contractor or its unions
8 have employment opportunities available, and maintain a record of the
9 organizations' responses.
10

11 c. Maintain a current file of the names, addresses and telephone numbers of
12 each minority and female off-the-street applicant and minority or female
13 referral from a union, a recruitment source or community organization and
14 of what action was taken with respect to each such individual. If such
15 individual was sent to the union hiring hall for referral and was not referred
16 back to the Contractor by the union or, if referred, not employed by the
17 Contractor, this shall be documented in the file with the reason therefor,
18 along with whatever additional actions the Contractor may have taken.
19

20 d. Provide immediate written notification to the Director when the union or
21 unions with which the Contractor has a collective bargaining agreement
22 has not referred to the Contractor a minority person or woman sent by the
23 Contractor, or when the Contractor has other information that the union
24 referral process has impeded the Contractor's efforts to meet its
25 obligations.
26

27 e. Develop on-the-job training opportunity and/or participate in training
28 programs for the area which expressly include minorities and women,
29 including upgrading programs and apprenticeship and trainee programs
30 relevant to the Contractor's employment needs, especially those programs
31 funded or approved by the U.S. Department of Labor. The Contractor shall
32 provide notice of these programs to the sources compiled under 7b above.
33

34 f. Disseminate the Contractor's EEO policy by providing notice of the policy
35 to unions and training programs and requesting their cooperation in
36 assisting the Contractor in meeting its EEO obligations; by including it in
37 any policy manual and collective bargaining agreement; by publicizing it in
38 the company newspaper, annual report, etc.; by specific review of the
39 policy with all management personnel and with all minority and female
40 employees at least once a year; and by posting the company EEO policy
41 on bulletin boards accessible to all employees at each location where
42 construction work is performed.
43

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

1 meetings, persons attending, subject matter discussed, and disposition of
2 the subject matter.

- 3
4 h. Disseminate the Contractor's EEO policy externally by including it in any
5 advertising in the news media, specifically including minority and female
6 news media, and providing written notification to and discussing the
7 Contractor's EEO policy with other Contractors and Subcontractors with
8 whom the Contractor does or anticipates doing business.
9
10 i. Direct its recruitment efforts, both oral and written, to minority, female and
11 community organizations, to schools with minority and female students and
12 to minority and female recruitment and training organizations serving the
13 Contractor's recruitment area and employment needs. Not later than one
14 month prior to the date for the acceptance of applications for
15 apprenticeship or other training by any recruitment source, the Contractor
16 shall send written notification to organizations such as the above,
17 describing the openings, screening procedures, and tests to be used in the
18 selection process.
19
20 j. Encourage present minority and female employees to recruit other minority
21 persons and women and where reasonable, provide after school, summer
22 and vacation employment to minority and female youth both on the site
23 and in other areas of a Contractor's work force.
24
25 k. Validate all tests and other selection requirements where there is an
26 obligation to do so under 41 CFR Part 60-3.
27
28 l. Conduct, at least annually, an inventory and evaluation of all minority and
29 female personnel for promotional opportunities and encourage these
30 employees to seek or to prepare for, through appropriate training, etc.,
31 such opportunities.
32
33 m. Ensure that seniority practices, job classifications, work assignments and
34 other personnel practices, do not have a discriminatory effect by
35 continually monitoring all personnel and employment related activities to
36 ensure that the EEO policy and the Contractor's obligations under these
37 specifications are being carried out.
38
39 n. Ensure that all facilities and company activities are nonsegregated except
40 that separate or single-user toilet and necessary changing facilities shall
41 be provided to assure privacy between the sexes.
42
43 o. Document and maintain a record of all solicitations of offers for
44 subcontracts from minority and female construction contractors and
45 suppliers, including circulation of solicitations to minority and female
46 contractor associations and other business associations.
47
48 p. Conduct a review, at least annually, of all supervisors' adherence to and
49 performance under the Contractor's EEO policies and affirmative action
50 obligations.
51

- 1 8. Contractors are encouraged to participate in voluntary associations which assist in
2 fulfilling one or more of their affirmative action obligations (7a through 7p). The
3 efforts of a contractor association, joint contractor-union, contractor-community, or
4 other similar group of which the Contractor is a member and participant, may be
5 asserted as fulfilling any one or more of the obligations under 7a through 7p of this
6 Special Provision provided that the Contractor actively participates in the group,
7 makes every effort to assure that the group has a positive impact on the employment
8 of minorities and women in the industry, ensure that the concrete benefits of the
9 program are reflected in the Contractor's minority and female work-force
10 participation, makes a good faith effort to meet its individual goals and timetables,
11 and can provide access to documentation which demonstrate the effectiveness of
12 actions taken on behalf of the Contractor. The obligation to comply, however, is the
13 Contractor's and failure of such a group to fulfill an obligation shall not be a defense
14 for the Contractor's noncompliance.
15
- 16 9. A single goal for minorities and a separate single goal for women have been
17 established. The Contractor, however, is required to provide equal employment
18 opportunity and to take affirmative action for all minority groups, both male and
19 female, and all women, both minority and non-minority. Consequently, the
20 Contractor may be in violation of the Executive Order if a particular group is
21 employed in substantially disparate manner (for example, even though the
22 Contractor has achieved its goals for women generally, the Contractor may be in
23 violation of the Executive Order if a specific minority group of women is
24 underutilized).
25
- 26 10. The Contractor shall not use the goals and timetables or affirmative action standards
27 to discriminate against any person because of race, color, religion, sex, sexual
28 orientation, gender identity, or national origin.
29
- 30 11. The Contractor shall not enter into any subcontract with any person or firm debarred
31 from Government contracts pursuant to Executive Order 11246.
32
- 33 12. The Contractor shall carry out such sanctions and penalties for violation of these
34 specifications and of the Equal Opportunity Clause, including suspensions,
35 terminations and cancellations of existing subcontracts as may be imposed or
36 ordered pursuant to Executive Order 11246, as amended, and its implementing
37 regulations, by the Office of Federal Contract Compliance Programs. Any
38 Contractor who fails to carry out such sanctions and penalties shall be in violation
39 of these specifications and Executive Order 11246, as amended.
40
- 41 13. The Contractor, in fulfilling its obligations under these specifications, shall implement
42 specific affirmative action steps, at least as extensive as those standards prescribed
43 in paragraph 7 of this Special Provision, so as to achieve maximum results from its
44 efforts to ensure equal employment opportunity. If the Contractor fails to comply with
45 the requirements of the Executive Order, the implementing regulations, or these
46 specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
47
- 48 14. The Contractor shall designate a responsible official to monitor all employment
49 related activity to ensure that the company EEO policy is being carried out, to submit
50 reports relating to the provisions hereof as may be required by the government and
51 to keep records. Records shall at least include, for each employee, their name,

1 address, telephone numbers, construction trade, union affiliation if any, employee
2 identification number when assigned, social security number, race, sex, status (e.g.,
3 mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours
4 worked per week in the indicated trade, rate of pay, and locations at which the work
5 was performed. Records shall be maintained in an easily understandable and
6 retrievable form; however, to the degree that existing records satisfy this
7 requirement, the Contractors will not be required to maintain separate records.
8

- 9 15. Nothing herein provided shall be construed as a limitation upon the application of
10 other laws which establish different standards of compliance or upon the application
11 of requirements for the hiring of local or other area residents (e.g., those under the
12 Public Works Employment Act of 1977 and the Community Development Block
13 Grant Program).
14

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

18
19 Washington State Dept. of Transportation
20 Office of Equity and Civil Rights
21 PO Box 47314
22 310 Maple Park Ave. SE
23 Olympia WA
24 98504-7314
25 Ph: 360-705-7090
26 Fax: 360-705-6801
27 <http://www.wsdot.wa.gov/equalopportunity/default.htm>
28

29 1-07.11.OPT3.FR1

30 **(September 3, 2024)**

31 ***Disadvantaged Business Enterprise Participation***

32 **General**

33 The Disadvantaged Business Enterprise (DBE) requirements of 49 CFR Part 26 and
34 USDOT's official interpretations (i.e., Questions & Answers) apply to this Contract.
35 Demonstrating compliance with these Specifications is a Condition of Award (COA)
36 of this Contract. Failure to comply with the requirements of this Specification may
37 result in your Bid being found to be irregular in accordance with Section 1-02.13,
38 resulting in rejection or other sanctions as provided by the Contract.
39

40 **DBE Abbreviations and Definitions**

41 **Certified Business Description** - The approved business description that
42 supplements the North American Industry Classification System (NAICS) code
43 listed in OMWBE's directory of certified firms.
44

45 **Certified Business Directory** - A database of all Minority, Women, and
46 Disadvantaged Business Enterprises currently certified by Washington State.
47 The on-line Directory is available to Bidders for their use in identifying and
48 soliciting interest from DBE firms. The database is located under the Firm
49 Certification section of the Diversity Management and Compliance System web
50 page at: <https://omwbe.diversitycompliance.com>.
51

1 **Commercially Useful Function (CUF)** - A firm performs a commercially useful
2 function when it is responsible for execution of the work of the contract and is
3 carrying out its responsibilities by performing, managing, and supervising the
4 work involved as defined in 49 CFR 26.55(c)(1). To perform a commercially
5 useful function, the firm must also be responsible, with respect to materials and
6 supplies used on the contract, for ordering, negotiating price, paying for,
7 determining quality and quantity, and installing (where applicable) for the
8 material itself.

9
10 The DBE firm does not perform a CUF if its role is limited to that of an extra
11 participant in a transaction, contract, or Project through which the funds are
12 passed to obtain the appearance of DBE participation.

13
14 **Consultant, DBE** – An individual, partnership, firm, or corporation who meet
15 the definition of a DBE which has been retained under a contract to provide
16 technical or professional services.

17
18 **DBE Commitment** - The dollar amount and scope of work the Bidder indicates
19 on each line of their DBE Utilization Certification (WSDOT Form 272-056) for
20 each DBE firm. These Commitments will be incorporated into the Contract and
21 shall be considered Contract requirements.

22
23 **DBE Condition of Award (COA) Goal** - An assigned numerical amount
24 specified as a percentage of the Contract. At Bid, this is the minimum amount
25 that the Bidder must commit to by submission of the DBE Utilization
26 Certification form and, if necessary, by GFE Documentation.

27
28 **Disadvantaged Business Enterprise (DBE)** - A business that is owned and
29 operated independently from other businesses and is certified by the
30 Washington State Office of Minority and Women's Business Enterprises, as
31 meeting the criteria outlined in 49 CFR 26 regarding DBE certification.

32
33 **Force Account Work** - Work measured and paid in accordance with Section
34 1-09.6.

35
36 **Good Faith Efforts (GFE)** - Efforts to achieve the DBE COA Goal or other
37 requirements of this Provision which, by their scope, intensity, and
38 appropriateness to the objective, can reasonably be expected to fulfill the
39 program requirement.

40
41 **Subcontractor, DBE** - An individual, partnership, firm, corporation, or joint
42 venture who meet the definition of a DBE and who is sublet part of the Contract.

43
44 **Supplier, DBE** - A Manufacturer, Regular Dealer, Distributor, or Transaction
45 Facilitator who provides supplies or materials for the Contract. The role a
46 Supplier performs is determined on a contract-by contract basis.

47
48 **Manufacturer, DBE** - A DBE firm that operates or maintains a factory or
49 establishment that produces on the premises the materials, supplies,
50 articles, or equipment required under the Contract. A DBE Manufacturer
51 shall produce finished goods or products from raw or unfinished material

1 or purchase and substantially alters goods and materials to make them
2 suitable for construction use before reselling them.

3
4 **Regular Dealer, DBE** - A DBE firm that owns, operates, or maintains a
5 store, warehouse, or other establishment in which the materials or supplies
6 required for the performance of a Contract are bought, kept in stock, and
7 regularly sold to the public in the usual course of business. To be a Regular
8 Dealer, the DBE firm must be an established regular business that engages
9 in as its principal business and in its own name the purchase and sale of
10 the products in question. A Regular Dealer in such items as steel, cement,
11 gravel, stone, and petroleum products need not own, operate or maintain
12 a place of business if it both owns and operates distribution equipment for
13 the products. Any supplementing of regular dealers' own distribution
14 equipment shall be by long-term formal lease agreements and not on an
15 ad-hoc basis. Brokers, packagers, manufacturers' representatives, or other
16 persons who arrange or expedite transactions shall not be regarded as
17 Regular Dealers within the meaning of this definition.

18
19 **Distributor, DBE** - An established DBE firm that engages in the regular
20 sale or lease of the items specified by the contract. A DBE Distributor
21 assumes responsibility for the items it purchases once they leave the point
22 of origin, making it liable for any loss or damage not covered by the carrier's
23 insurance. The Distributor must demonstrate ownership of the items in
24 question and assure all risk for loss or damage during transportation,
25 evidenced by the terms of the purchase order or bill of lading from a third
26 party, indicating Free on Board (FOB) at the point of origin or similar terms
27 that transfer responsibility of the items in question to the DBE distributors.

28
29 **Transaction Facilitator, DBE** - A DBE firm (packagers, brokers,
30 manufacturer's representatives, etc.) who provides a bona fide service
31 arranging, facilitating, or expediting transactions but does not qualify as a
32 Manufacturer, a Regular Dealer, or a Distributor.

33
34 **DBE COA Goal**

35 The Contracting Agency has established a DBE COA Goal for this Contract in the
36 amount of: *** \$\$1\$\$ **, which applies to the final Contract Amount.

37
38 If the Contractor cannot meet the DBE COA Goal, GFE Documentation is required.

39
40 Demonstrating compliance with the DBE COA Goal is a Condition of Award of this
41 Contract.

42
43 **Procedures Prior to Award**

44 **Approval of Regular Dealers and Distributors**

45 DBE firms proposed to be used as either a Regular Dealer or a Distributor must
46 be approved before being listed as a COA/used on a project. The Approved
47 Regular Dealer list published on WSDOT's Office of Equity and Civil Rights
48 (OECR) web site must include the specific project for which approval is being
49 requested. For purposes of the DBE COA Goal participation, the Regular
50 Dealer/Distributor must submit the DBE Regular Dealer/Distributor Affirmation

1 Form (USDOT OMB Control 508v3) a minimum of five calendar days prior to
2 bid opening. The DBE Regular Dealer/Distributor Affirmation Form is located at:

3
4 [https://www.transportation.gov/mission/civil-rights/dbe-regular-dealer-](https://www.transportation.gov/mission/civil-rights/dbe-regular-dealer-distributor-affirmation)
5 [distributor-affirmation](https://www.transportation.gov/mission/civil-rights/dbe-regular-dealer-distributor-affirmation)
6

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

11
12 **Disadvantaged Business Enterprise Utilization**

13 To be eligible for award of the Contract, the Bidder shall properly complete and
14 submit a Disadvantaged Business Enterprise (DBE) Utilization Certification with
15 the Bidder's sealed Bid Proposal, as specified in Section 1-02.9 Delivery of
16 Proposal. The Bidder's DBE Utilization Certification must clearly demonstrate
17 how the Bidder intends to meet the DBE COA Goal. A DBE Utilization
18 Certification (WSDOT Form 272-056) is included in the Proposal package for
19 this purpose as well as instructions on how to properly fill out the form.
20

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

- 25
- 26 1. Force account at 50%
 - 27
 - 28 2. Regular dealer at 60%
 - 29
 - 30 3. Distributor at 40% of the cost of the materials or supplies
 - 31
 - 32 4. Transaction Facilitator not more than 5% of the goods or services
 - 33

34 In the event of arithmetic errors in completing the DBE Utilization Certification,
35 the amount listed to be applied towards the DBE COA Goal for each DBE shall
36 govern and the DBE total amount shall be adjusted accordingly.
37

38 Note: Bid Proposals submitted that do not contain a DBE Utilization
39 Certification Form that demonstrates how the Bidder intends to meet
40 the DBE COA Goal will be considered irregular in accordance with
41 Section 1-02.13 and will be rejected.
42

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

44 The Bidder shall submit a Disadvantaged Business Enterprise (DBE) Written
45 Confirmation Document (completed and signed by the DBE) for each DBE firm
46 listed in the Bidder's completed DBE Utilization Certification. Failure to do so
47 will result in the associated participation being disallowed, which will cause the
48 Bid to be considered irregular in accordance with Section 1-02.13 and will be
49 rejected.
50

1 The Confirmation Documents provide confirmation from the DBEs that they are
2 participating in the Contract as provided in the Bidder's Commitment. The
3 Confirmation Documents must be consistent with the Utilization Certification.
4

5 A DBE Written Confirmation Document (WSDOT Form 422-031) is included in
6 the Proposal package for this purpose. The form(s) shall be received as
7 specified in the special provisions for Section 1-02.9 Delivery of Proposal.
8

9 It is prohibited for the Bidder to require a DBE to submit a Written Confirmation
10 Document with any part of the form left blank. Should the Contracting Agency
11 determine that an incomplete Written Confirmation Document was signed by a
12 DBE, the associated DBE participation may not be allowed.
13

14 **DBE Bid Item Breakdown**

15 The Bidder shall submit a DBE Bid Item Breakdown Form (WSDOT Form 272-
16 054) as specified in the Special Provisions for Section 1-02.9, Delivery of
17 Proposal.
18

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

20 The successful Bidder shall be selected on the basis of having submitted the
21 lowest responsive Bid, which demonstrates a good faith effort to achieve the
22 DBE COA Goal. The Contracting Agency, at any time during the selection
23 process, may request a breakdown of the bid items and amounts that are
24 counted towards the overall contract goal for any of the DBEs listed on the DBE
25 Utilization Certification.
26

27 GFE to achieve the DBE COA Goal may be accomplished in one of two ways:
28

- 29 1. By meeting the DBE COA Goal
30 Submission of the DBE Utilization Certification, supporting DBE
31 Written Confirmation Document(s) showing the Bidder has obtained
32 enough DBE participation to meet or exceed the DBE COA Goal and
33 the DBE Bid Item Breakdown.
34
- 35 2. By documentation that the Bidder made adequate GFE to meet the
36 DBE COA Goal
37 The Bidder may demonstrate a GFE in whole or part through GFE
38 Documentation only in the event a Bidder's efforts to solicit sufficient
39 DBE participation have been unsuccessful. The Bidder must supply
40 GFE Documentation in addition to the DBE Utilization Certification,
41 supporting DBE Written Confirmation Document(s) and the DBE Bid
42 Item Breakdown form.
43

44 In the case where a Bidder is awarded the contract based on demonstrating
45 adequate GFE Documentation, the advertised DBE COA Goal will not be
46 reduced. The Bidder shall demonstrate a GFE during the life of the Contract to
47 attain the advertised DBE COA Goal.
48

49 The Contracting Agency will review the GFE Documentation and will determine
50 if the Bidder made an adequate good faith effort.
51

1 **Procedures Between Award and Execution**

2 **DBE Trucking Credit Form**

3 The Bidder shall submit a DBE Trucking Credit Form (WSDOT Form 272-058),
4 as specified in the Special Provisions for Section 1-03.3.

5
6 The DBE Trucking Credit Form is required for all DBE Firms performing as a
7 subcontractor for “Trucking” or “Hauling” and are performing a part of a bid item.
8 For example, if the item of Work is Structure Excavation including Haul, and
9 another firm is doing the excavation and the DBE Trucking firm is doing the
10 haul, the form is required. For a DBE subcontractor that is responsible for an
11 entire item of work that may require some use of trucks, the form is not required.

12
13 **Procedures after Execution**

14 **Commercially Useful Function (CUF)**

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

32
33 The DBE does not perform a CUF if its role is limited to that of an extra
34 participant in a transaction, contract, or project through which the funds are
35 passed in order to obtain the appearance of DBE participation.

36
37 In order for a DBE traffic control company to be considered to be performing a
38 CUF, the DBE must be in control of its work inclusive of supervision. The DBE
39 shall employ a Traffic Control Supervisor who is directly involved in the
40 management and supervision of the traffic control employees and services.

41
42 The following are some of the factors that the Engineer will use in determining
43 whether a DBE trucking company is performing a CUF:

- 44
45 1. The DBE shall be responsible for the management and supervision
46 of the entire trucking operation for which it is responsible on the
47 contract. The owner demonstrates business related knowledge,
48 shows up on site and is determined to be actively running the
49 business.

2. 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.
3. 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.
4. Leased trucks shall display the name and identification number of the DBE.

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 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 Truck Unit Listing Log and any Updated Primary 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 DBE/FSBE Truck Unit Listing Log (WSDOT Form 350-077) for each day that the DBE performs trucking services for DBE credit. The Daily 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 - ERRegionOEO@wsdot.wa.gov
North Central Region - NCRRegionOEO@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 (WSDOT Form #272-053) prior to its use. The form must accompany the DBE Joint Check

1 Agreement between the parties involved, including the conditions of the
2 arrangement and expected use of the joint checks.

3
4 The approval to use joint checks and the use will be closely monitored by the
5 Engineer. To receive DBE credit for performing a CUF with respect to obtaining
6 materials and supplies, a DBE must “be responsible for negotiating price,
7 determining quality and quantity, ordering the material, installing and paying for
8 the material itself.” The Contractor shall submit DBE Joint Check Request Form
9 to the Engineer and be in receipt of written approval prior to using a joint check.

10
11 Material costs paid by the Contractor directly to the material supplier are not
12 allowed. If proper procedures are not followed or the Engineer determines that
13 the arrangement results in lack of independence for the DBE involved, no DBE
14 credit will be given for the DBE’s participation as it relates to the material cost.

15
16 **Prompt Payment**

17 Prompt payment to all subcontractors shall be in accordance with Section 1-
18 08.1. Prompt payment requirements apply to progress payments as well as
19 return of retainage.

20
21 **Reporting**

22 The Contractor and all subcontractors of any tier, suppliers, service providers,
23 and professional services that utilize DBEs to perform work on the project, shall
24 maintain appropriate records that will enable the Engineer to verify DBE
25 participation throughout the life of the project.

26
27 Refer to Section 1-08.1 for additional reporting requirements associated with
28 this Contract.

29
30 **Crediting DBE Participation**

31 **General**

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

35
36 DBE participation is only credited upon payment to the DBE.

37
38 **DBE Prime Contractor and Subcontractor Participation**

39 Only take credit for the Work that the DBE contractor performs with its own
40 forces and is certified to perform.

41
42 If the Prime Contractor, subcontractor, or lower tier subcontractor DBE
43 subcontracts a portion of the Work of its contract to another firm, the value of
44 the subcontracted Work may be counted toward the DBE Commitments only if
45 the lower-tier subcontractor is also a DBE.

46
47 Work subcontracted to a lower-tier subcontractor that is a DBE may be counted
48 toward the DBE Commitments only if the lower-tier subcontractor self performs
49 a minimum of 30 percent of the Work subcontracted to them.

1 Work subcontracted by a DBE contractor to a non-DBE does not count towards
2 the DBE COA Goal.

3
4 **DBE Consultants**

5 A DBE firm providing a bona fide service, such as professional, technical, or
6 managerial services, specifically required for the performance of the contract
7 will be credited as DBE participation

8
9 **Force Account Work**

10 When the Bidder elects to utilize force account Work to meet the DBE COA
11 Goal, as demonstrated by listing this force account Work on the DBE Utilization
12 Certification form, for the purposes of meeting DBE COA Goal, only 50% of the
13 Proposal amount shall be credited toward the Bidder's Commitment to meet the
14 DBE COA Goal.

15
16 One hundred percent of the actual amounts paid to the DBE for the force
17 account Work shall be credited towards the DBE COA Goal or DBE
18 participation.

19
20 **Temporary Traffic Control Participation**

21 If the DBE firm only provides "Flagging", the DBE firm must provide a traffic
22 control supervisor (TCS) and flagger(s), which are under the direct control of
23 the DBE. The DBE firm shall also provide all flagging equipment for its
24 employees (e.g., paddles, hard hats, and vests).

25
26 If the DBE firm provides "Traffic Control Services", the DBE firm must provide a
27 TCS, flaggers, and traffic control items (e.g., cones, barrels, signs, etc.) and be
28 in total control of all items in implementing the traffic control for the project.

29
30 **Trucking Participation**

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

37
38 The DBE trucking firm must own and operate at least one licensed, insured and
39 operational truck on the contract. The truck must be of the type that is necessary
40 to perform the hauling duties required under the contract. The DBE receives
41 credit for the value of the transportation services it provides on the Contract
42 using trucks it owns or leases, licenses, insures, and operates with drivers it
43 employs.

44
45 The DBE may lease additional trucks from another DBE firm. The DBE who
46 leases additional trucks from another DBE firm receives credit for the value of
47 the transportation services the lessee DBE provides on the Contract.

48
49 The trucking Work subcontracted to any non-DBE trucking firm will not receive
50 credit for Work done on the project.

1 The DBE may lease trucks from a truck leasing company (recognized truck
2 rental center) but can only receive credit towards DBE participation if the DBE
3 uses its own employees as drivers.
4

5 **DBE Supplier**

6 The credit of a DBE Supplier is decided on a contract-by-contract basis based
7 on what the role the proposed DBE Supplier will be performing. OECR will make
8 determinations on whether a Supplier qualifies as a Regular Dealer, Distributor,
9 or Transaction Facilitator based on their role for the Contract.
10

11 **Manufacturer** - One hundred percent (100%) of the cost of the
12 manufactured product obtained from a DBE manufacturer may count
13 towards the DBE COA Goal.
14

15 **Regular Dealer** - Sixty percent (60%) of the cost of materials or supplies
16 purchased from a DBE Regular Dealer may be credited toward the DBE
17 Goal.

18 **Distributor** – Forty percent (40%) of the cost of materials or supplies
19 purchased from a DBE Distributor may be credited toward the DBE Goal.
20

21 **Transaction Facilitator** - only the fees or commissions charged for
22 assistance in the procurement of the materials and supplies, or fees or
23 transportation charges for the delivery of materials or supplies required on
24 the job site, may toward the DBE COA Goal provided the fees are not
25 excessive as compared with fees customarily allowed for similar services.
26 The reasonable fee shall not exceed 5 percent of the total cost of the goods
27 or services. Documentation will be required to support the fee/commission
28 charged by the DBE. The cost of the materials and supplies themselves
29 cannot be counted toward the DBE Goal.
30

31 **Changes in COA Work Committed to DBE**

32 The Contractor shall utilize the COA DBEs to perform the work and supply the
33 materials for which each is committed unless prior written approval by the Engineer
34 has been received by the Contractor. The Contractor shall not be entitled to any
35 payment for work or material completed by the Contractor or subcontractors that
36 was committed to be completed by the COA DBEs in the DBE Utilization Certification
37 form.
38

39 **Changes**

40 In the event a change results in a reduction to Work committed to a COA DBE,
41 the Contractor shall substitute other remaining Work to that COA DBE, if
42 possible, to avoid a change to the total dollar amount to be applied towards the
43 goal committed to that COA DBE. If there is a reduction to the total dollar
44 amount to be applied towards the goal for a COA DBE Commitment, regardless
45 of the reason, it shall be viewed as DBE termination, and subject to the
46 termination procedures below. A notification to the DBE shall occur as soon as
47 possible but no later than two weeks after the Contractor is aware of the
48 upcoming change.
49

1 **Original Quantity Underruns**

2 In the event that Work committed to a DBE firm as part of the COA underruns
3 the original planned quantities the Contractor may be required to substitute
4 other remaining Work to another DBE.
5

6 **Contractor Proposed DBE Substitutions**

7 Requests to substitute a COA DBE must be for good cause (see DBE
8 termination process below) and requires prior written approval of the Engineer.
9 After receiving a termination with good cause approval, the Contractor may only
10 replace a DBE with another certified DBE. When any changes between
11 Contract Award and Execution result in a substitution of COA DBE, the
12 substitute DBE shall be certified prior to the bid opening on the Contract.
13

14 **DBE Termination**

15 Termination of a COA DBE (or an approved substitute DBE) is only allowed in
16 whole or in part for good cause and with prior written approval of the Contracting
17 Agency. If the Contractor terminates a COA DBE without the prior written
18 approval of the Contracting Agency, the Contractor shall not be entitled to
19 payment for work or material committed to, but not performed/supplied by the
20 COA DBE. In addition, sanctions may apply as described elsewhere in this
21 specification.
22

23 Prior to requesting approval to terminate a COA DBE, the Contractor shall give
24 notice in writing to the DBE with a copy to the Engineer of its intent to request
25 to terminate DBE Work and the reasons for doing so. The DBE shall have five
26 (5) days to respond to the Contractor's notice. The DBE's response shall either
27 support the termination or advise the Engineer and the Contractor of the
28 reasons it objects to the termination of its subcontract.
29

30 If the request for termination is approved, the Contractor is required to
31 substitute with another DBE to perform at least the same amount of work as the
32 DBE that was terminated (or provide GFE Documentation). A plan to replace
33 the COA DBE Commitment amount shall be submitted to the Engineer within 2
34 days of the approval of termination. The plan to replace the Commitment shall
35 provide the same detail as that required in the DBE Utilization Certification.
36

37 As mentioned above, the Contractor must have good cause to terminate a COA
38 DBE.
39

40 Good cause typically includes situations where the DBE subcontractor is unable
41 or unwilling to perform the work of its subcontract. Good cause may exist if:
42

- 43 1. The DBE fails or refuses to execute a written contract.
- 44
- 45 2. The DBE fails or refuses to perform the Work of its subcontract in a
46 way consistent with normal industry standards.
- 47
- 48 3. The DBE fails or refuses to meet the Contractor's reasonable
49 nondiscriminatory bond requirements.
50

- 1 4. The DBE becomes bankrupt, insolvent, or exhibits credit
2 unworthiness.
- 3
- 4 5. The DBE is ineligible to work on public works projects because of
5 suspension and debarment proceedings pursuant to federal law or
6 applicable State law.
- 7
- 8 6. The DBE is ineligible to receive DBE credit for the type of work
9 involved.
- 10
- 11 7. The DBE voluntarily withdraws from the project and provides written
12 notice of its withdrawal.
- 13
- 14 8. The DBE's work is deemed unsatisfactory by the Engineer and not in
15 compliance with the Contract.
- 16
- 17 9. The DBE's owner dies or becomes disabled with the result that the
18 DBE is unable to complete its Work on the Contract.
- 19

20 Good cause does not exist if:

- 21
- 22 1. The Contractor seeks to terminate a COA DBE so that the
23 Contractor can self-perform the Work.
- 24
- 25 2. The Contractor seeks to terminate a COA DBE so the Contractor can
26 substitute another DBE contractor or non-DBE contractor after
27 Contract Award.
- 28
- 29 3. The failure or refusal of the COA DBE to perform its Work on the
30 subcontract results from the bad faith or discriminatory action of the
31 Contractor (e.g., the failure of the Contractor to make timely
32 payments or the unnecessary placing of obstacles in the path of the
33 DBE's Work).
- 34

35 **Decertification**

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

41 **Good Faith Effort (GFE) Documentation**

42 GFE Documentation is required and will be evaluated whenever the Contractor
43 is unable to fulfill the program requirement. This evaluation may need to be
44 repeated when:

- 45
- 46
- 47 1. Determining award of a Contract that has COA goal,
- 48
- 49 2. When a COA DBE is terminated and substitution is required, and
- 50

1 3. Prior to Physical Completion when determining whether the
2 Contractor has satisfied its DBE commitments.
3

4 49 CFR Part 26, Appendix A is intended as general guidance and does not, in
5 itself, demonstrate adequate good faith efforts. The following is a list of types of
6 actions, which would be considered as part of the Bidder's GFE Documentation
7 to achieve DBE participation. It is not intended to be a mandatory checklist, nor
8 is it intended to be exclusive or exhaustive. Other factors or types of efforts may
9 be relevant in appropriate cases.
10

- 11 1. Soliciting through all reasonable and available means (e.g.
12 attendance at pre-bid meetings, advertising and/or written notices)
13 the interest of all certified DBEs who have the capability to perform
14 the Work of the Contract. The Bidder must solicit this interest within
15 sufficient time to allow the DBEs to respond to the solicitation. The
16 Bidder must determine with certainty if the DBEs are interested by
17 taking appropriate steps to follow up initial solicitations.
18
- 19 2. Selecting portions of the Work to be performed by DBEs in order to
20 increase the likelihood that the DBE COA Goal will be achieved. This
21 includes, where appropriate, breaking out contract Work items into
22 economically feasible units to facilitate DBE participation, even when
23 the Bidder might otherwise prefer to perform these Work items with
24 its own forces.
25
- 26 3. Providing interested DBEs with adequate information about the
27 Plans, Specifications, and requirements of the Contract in a timely
28 manner to assist them in responding to a solicitation.
29
 - 30 a. Negotiating in good faith with interested DBEs. It is the Bidder's
31 responsibility to make a portion of the Work available to DBE
32 subcontractors and suppliers and to select those portions of the
33 Work or material needs consistent with the available DBE
34 subcontractors and suppliers, so as to facilitate DBE participation.
35 Evidence of such negotiation includes the names, addresses, and
36 telephone numbers of DBEs that were considered; a description
37 of the information provided regarding the Plans and
38 Specifications for the Work selected for subcontracting; and
39 evidence as to why additional agreements could not be reached
40 for DBEs to perform the Work.
41
 - 42 b. A Bidder using good business judgment would consider a number
43 of factors in negotiating with subcontractors, including DBE
44 subcontractors, and would take a firm's price and capabilities as
45 well as the DBE COA Goal into consideration. However, the fact
46 that there may be some additional costs involved in finding and
47 using DBEs is not in itself sufficient reason for a Bidder's failure
48 to meet the DBE COA Goal, as long as such costs are
49 reasonable. Also, the ability or desire of a Bidder to perform the
50 Work of a Contract with its own organization does not relieve the
51 Bidder of the responsibility to make Good Faith Efforts. Bidders

1 are not, however, required to accept higher quotes from DBEs if
2 the price difference is excessive or unreasonable.

- 3
4 4. Not rejecting DBEs as being unqualified without sound reasons
5 based on a thorough investigation of their capabilities. The Bidder's
6 standing within its industry, membership in specific groups,
7 organizations, or associations and political or social affiliations (for
8 example union vs. non-union employee status) are not legitimate
9 causes for the rejection or non-solicitation of bids in the Bidder's
10 efforts to meet the DBE COA Goal.
11
12 5. Making efforts to assist interested DBEs in obtaining bonding, lines
13 of credit, or insurance as required by the recipient or Bidder.
14
15 6. Making efforts to assist interested DBEs in obtaining necessary
16 equipment, supplies, materials, or related assistance or services.
17
18 7. Effectively using the services of available minority/women community
19 organizations; minority/women contractors' groups; local, State, and
20 Federal minority/women business assistance offices; and other
21 organizations as allowed on a case-by-case basis to provide
22 assistance in the recruitment and placement of DBEs.
23
24 8. GFE Documentation must include copies of each DBE and non-DBE
25 subcontractor quotes submitted to the Bidder when a non-DBE
26 subcontractor is selected over a DBE for Work on the Contract. (ref.
27 updated DBE regulations - 26.53(b)(2)(vi) & App. A)
28

29 **Administrative Reconsideration of GFE Documentation**

30 A Bidder has the right to request reconsideration if the GFE Documentation
31 submitted with their Bid was determined to be inadequate or without merit. If,
32 during the life of the Contract, the Contractor submits an additional GFE
33 Documentation and the Contracting Agency's GFE Documentation review
34 determines a GFE Documentation is inadequate or has no merit, the Contractor
35 has the right to request reconsideration of the Contracting Agency's
36 determination.
37

- 38 1. The Bidder must request reconsideration within 48 hours of
39 notification of GFE Documentation being inadequate or without
40 merit, or the Bidder forfeits the right to reconsideration.
41
42 2. The reconsideration decision on the adequacy or merit of the
43 Bidder's GFE Documentation shall be made by an official who did
44 not take part in the original determination.
45
46 3. Only original GFE Documentation submitted as a supplement to the
47 Bid will be considered. The Bidder shall not introduce new
48 documentation at the reconsideration hearing.
49

- 1 4 The Bidder shall have the opportunity to meet in person with the
2 official for the purpose of setting forth the Bidder's position as to why
3 the GFE Documentation demonstrates a sufficient effort.
4
5 5 The reconsideration official shall provide the Bidder with a written
6 decision on reconsideration within five working days of the hearing
7 explaining the basis for their finding.
8

9 **Consequences of Non-Compliance**

10 **Breach of Contract**

11 Each contract with a Contractor (and each subcontract the Contractor signs
12 with a subcontractor) must include the following assurance clause:
13

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

- 21 (1) Withholding monthly progress payments;
22 (2) Assessing sanctions;
23 (3) Liquidated damages; and/or
24 (4) Disqualifying the Contractor from future bidding as non-responsible.
25
26
27
28
29

30 If the Contractor or any subcontractor, of any tier, supplier, service providers, or
31 professional services is deemed to be in non-compliance, the Contractor will be
32 informed in writing by the Engineer that sanctions will be imposed for failure to
33 meet the DBE COA Commitment and/or submit documentation of good faith
34 efforts. The notice will state the specific sanctions to be imposed which may
35 include impacting a Contractor or other entity's ability to participate in future
36 contracts.
37

38 **Sanctions**

39 If it is determined that the Contractor's failure to meet all or part of the DBE COA
40 Commitment is due to the Contractor's inadequate good faith efforts throughout the
41 life of the Contract, including failure to submit timely, required Good Faith Efforts
42 information and documentation, the Contractor may be required to pay DBE penalty
43 equal to the amount of the unmet Commitment, in addition to the sanctions outlined
44 in Section 1-07.11(5).
45

46 **Payment**

47 Compensation for all costs involved with complying with the conditions of this
48 Specification and any other associated DBE requirements is included in payment
49 for the associated Contract items of Work, except otherwise provided in the
50 Specifications.
51

2 **(November 2, 2022)**

3 **Special Training Provisions**

4 **General Requirements**

5 The Contractor's equal employment opportunity, affirmative action program shall
6 include the requirements set forth below. The Contractor shall provide on-the-job
7 training aimed at developing trainees to journey-level status in the trades involved.
8 The number of training hours shall be *** \$\$1\$\$ ***. Trainees shall not be assigned
9 less than 400 hours per individual per Contract. The Contractor may elect to
10 accomplish training as part of the work of a subcontractor, however, the Prime
11 Contractor shall retain the responsibility for complying with these Special Provisions
12 (achieving the training goal). When the Contractor's training plan includes trainees
13 for subcontractors or lower-tier subcontractors, this special provision shall be
14 included in the subcontract.

15
16 **Trainee Approval**

17 The Contractor shall make every effort to employ/enroll minority and women trainees
18 to the extent such persons are available within a reasonable recruitment area. This
19 training provision is not intended and shall not be used to discriminate against any
20 applicant for training, whether that person is a minority, woman or otherwise. A non-
21 minority male trainee or apprentice may be approved provided the following
22 requirements are met:

- 23
24
- 25 1. The Contractor is otherwise in compliance with the contract's Equal
26 Employment Opportunity (EEO) and On-the-Job Training (OJT)
27 requirements and provides documentation of the efforts taken to fill the
28 specific training position with either minorities or females
 - 29 2. or, if not otherwise in compliance, furnishes evidence of his/her systematic
30 and direct recruitment efforts in regard to the position in question and in
31 promoting the enrollment and/or employment of minorities and females in
32 the craft which the proposed trainee is to be trained
 - 33 3. and the Contractor has made a good faith effort towards recruiting of
34 minorities and women. As a minimum good faith efforts shall consist of the
35 following:
36
37
 - 38 a. Distribution of written notices of available employment opportunities
39 with the Contractor and enrollment opportunities with its unions.
40 Distribution should include but not be limited to; minority and female
41 recruitment sources, WSDOT's OJT Support Services Coordinator,
42 and minority and female community organizations.
 - 43
44 b. Records documenting the Contractor's efforts and the outcome of
45 those efforts, to employ minority and female applicants and/or refer
46 them to unions.
 - 47
48 c. Records reflecting the Contractor's efforts in participating in
49 developing minority and female on-the-job training opportunities,
50 including upgrading programs and apprenticeship opportunities.
51

- 1 d. Distribution of written notices to unions and training programs
2 disseminating the Contractor's EEO policy and requesting
3 cooperation in achieving EEO and OJT obligations (and their written
4 responses). For assistance in locating trainee candidates, the
5 Contractor may call WSDOT's OJT Support Services Coordinator at
6 (360) 705-7090 or email ojtssinfo@wsdot.wa.gov.
7

8 No employee shall be employed as a trainee in any classification in which the
9 employee has successfully completed a training course leading to journey-level
10 worker status or in which the employee has been employed as a journey-level
11 worker. The Contractor's records shall document the methods for determining the
12 trainee's status and findings in each case. When feasible, 25 percent of apprentices
13 or trainees in each occupation shall be in their first year of apprenticeship or training.
14

15 For the purpose of this specification, acceptable training programs are those
16 employing trainees/apprentices registered with the following:
17

- 18 1. Washington State Department of Labor & Industries — State
19 Apprenticeship Training Council (SATC) approved apprenticeship
20 agreement:
21
- 22 a. Pursuant to RCW 49.04.060, an apprenticeship agreement shall
23 be;
24
 - 25 i. an individual written agreement between an employer
26 and apprentice
 - 27 ii. a written agreement between (an employer or an
28 association of employers) and an organization of
29 employees describing conditions of employment for
30 apprentices
 - 31 iii. a written statement describing conditions of
32 employment for apprentices in a plant where there is no
33 bona fide employee organization.
34

35 All such agreements shall conform to the basic standards and other
36 provisions of RCW Chapter 49.04.
37

- 38 2. Apprentices must be registered with U.S. Department of Labor —
39 Apprenticeship Training, Employer, and Labor Services (ATELS) approved
40 program.
41

42 Or
43

- 44 3. Non-ATELS/SATC programs that have been submitted to the Contracting
45 Agency for approval by the FHWA for the specific project.
46

47 **Obligation to Provide Information**

48 Upon starting a new trainee, the Contractor shall furnish the trainee a copy of the
49 approved program the Contractor will follow in providing the training. Upon
50 completion of the training, the Contractor shall provide the Contracting Agency with

1 a certification showing the type and length of training satisfactorily completed by
2 each trainee.

3
4 **Training Program Approval**

5 The Training Program shall meet the following requirements:
6

- 7 1. The Training Program (DOT Form 272-049) must be submitted to the
8 Engineer for approval **prior to commencing contract work** and shall be
9 resubmitted when modifications to the program occur.
- 10
11 2. The minimum length and type of training for each classification will be as
12 established in the training program as approved by the Contracting
13 Agency.
- 14
15 3. The Training Program shall contain the trades proposed for training, the
16 number of trainees, the hours assigned to the trade and the estimated
17 beginning work date for each trainee.
- 18
19 4. Unless otherwise specified, Training Programs will be approved if the
20 proposed number of training hours equals the training hours required by
21 contract and the trainees are not assigned less than 400 hours each.
- 22
23 5. After approval of the training program, information concerning each
24 individual trainee and good faith effort documentation shall be submitted
25 (on DOT Form 272-050).
- 26
27 6. Flagging programs will not be approved. Other programs that include
28 flagging training will only be approved if the flagging portion is limited to an
29 orientation of not more than 20 hours.
- 30
31 7. It is the intention of these provisions that training is to be provided in the
32 construction crafts rather than clerk-typists or secretarial-type positions.
33 Training is permissible in lower-level management positions such as office
34 engineers, estimators, timekeepers, etc., where the training is oriented
35 toward construction applications. Some off-site training is permissible as
36 long as the training is an integral part of an approved training program.
- 37
38 8. It is normally expected that a trainee will begin training on the project as
39 soon as feasible after start of work, utilizing the skill involved and remain
40 on the project as long as training opportunities exist in the work
41 classification or the trainee reaches journey-level status. It is not required
42 that all trainees be on board for the entire length of the contract. The
43 number trained shall be determined on the basis of the total number
44 enrolled on the contract for a significant period.
- 45
46 9. Wage Progressions: Trainees will be paid at least the applicable ratios or
47 wage progressions shown in the apprenticeship standards published by
48 the Washington State Department of Labor and Industries. In the event that
49 no training program has been established by the Department of Labor and
50 Industries, the trainee shall be paid in accordance with the provisions of
51 RCW 39.12.021, which reads as follows:

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Apprentice workers 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 worker for whom an apprenticeship agreement has not been registered and approved by the State Apprenticeship Council shall be considered to be a fully qualified journey-level worker, and, therefore, shall be paid at the prevailing hourly rate for journey-level worker.

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.

Noncompliance and Sanctions

When a contractor violates EEO provisions of the contract, the Contracting Agency may impose damages in accordance with WSDOT's Equal Opportunity Compliance Program and the FHWA 1273. These damages consist of additional administrative costs including, but not limited to, the inspection, supervision, engineering, compliance, and legal staff time and expenses necessary for investigating, reporting, and correcting violations, as well as loss of federal funding, if any. Damages attributable to a contractor's violations of the EEO provisions may be deducted from progress payments due the Contractor. Before any money is withheld, the Contractor will be provided with a notice of the basis of the violations, the amount to be withheld and provided an opportunity to respond. The monetary value of the sanction will be calculated on a case-by-case basis and based on the damages incurred by the Contracting Agency.

The Contracting Agency's decision to recover damages for an EEO violation does not limit its ability to suspend or revoke the contractor's pre-qualification status or seek other remedies as allowed by federal or state law. In appropriate circumstances, the Contracting Agency may also refer the Contractor to other state or federal authorities for additional sanctions.

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 (by FHWA) 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:

1. The program establishes minimum qualifications for persons entering the training program.
2. 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.

1 3. The program shall include a numeric ratio of trainees to journey-level
2 worker consistent with proper supervision, training, safety, and continuity
3 of employment. The ratio language shall be specific and clear as to
4 application in terms of job site and workforce during normal operations
5 (normally considered to fall between 1:10 and 1:4).
6

7 4. The terms of training shall be stated in hours. The number of hours
8 required for completion to journey-level worker status shall be comparable
9 to the apprenticeship hours established for that craft by the SATC. The
10 following are examples of programs that are currently approved:
11

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

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21 5. The method to be used for recording and reporting the training completed
22 shall be stated.
23

24 **Measurement**

25 The Contractor may request that the total number of "training" hours for the contract
26 be increased subject to approval by the Contracting Agency. This reimbursement
27 will be made even though the Contractor receives additional training program funds
28 from other sources, provided such other sources do not prohibit other
29 reimbursement. Reimbursement to the Contractor for off-site training as indicated
30 previously may only be made when the Contractor does one or more of the following
31 and the trainees are concurrently employed on a Federal-aid project:
32

- 33 1. contributes to the cost of the training,
- 34 2. provides the instruction to the trainee,
- 35 3. pays the trainee's wages during the off- site training period.
36
37
38

39 Reimbursement will be made upon receipt of a certified invoice that shows the
40 related payroll number, the name of trainee, total hours trained under the program,
41 previously paid hours under the contract, hours due this estimate, and dollar amount
42 due this estimate. The certified invoice shall show a statement indicating the
43 Contractor's effort to enroll minorities and women when a new enrollment occurs. If
44 a trainee is participating in a SATC/ATELS approved apprenticeship program, a
45 copy of the certificate showing apprenticeship registration must accompany the first
46 invoice on which the individual appears. Reimbursement for training occurring prior
47 to approval of the training program will be allowed if the Contractor verbally notifies
48 the Engineer of this occurrence at the time the apprentice/trainee commences work.
49 A trainee/apprentice, regardless of craft, must have worked on the contract for at
50 least 20 hours to be eligible for reimbursement.
51

1 Training hours that are not in compliance with the approved training plan will not be
2 measured.

3
4 **Payment**

5 The Contractor will be reimbursed under the item "Training" per hour for each hour
6 of approved training provided under the Contract.
7

8 1-07.11.OPT6.FR1

9 **(March 20, 2025)**

10 **Public Works Small and Veteran Businesses (PWSVB) and Minority and**
11 **Women's Business Enterprises (MWBE) Participation**

12 **General Statement**

13 The participation of minority, public works small, veteran-owned, and women
14 business enterprises are an important strategic objective for the State of
15 Washington. Contractors shall not create barriers to open and fair opportunities for
16 all businesses, including MWBEs and PWSVBs, to participate in the Work on this
17 Contract.
18

19 **PWSVB and MWBE Abbreviations and Definitions**

20 **Broker** - A business firm that provides a bona fide service, that assists in the
21 procurement of personnel, facilities, equipment, materials, or supplies required for
22 the performance of the Contract; or persons/companies who arrange or expedite
23 transactions (i.e., arranging a transaction or service but does not provide a work
24 product or enhancement).
25

26 **Commercially Useful Function (CUF)** – A firm performs a commercially useful
27 function when it is responsible for execution of the work of the contract and is
28 carrying out its responsibilities by performing, managing, and supervising the work
29 involved. To perform a commercially useful function, the firm must also be
30 responsible, with respect to materials and supplies used on the contract, for
31 ordering, negotiating price, paying for, determining quality and quantity, and
32 installing (where applicable) for the material itself.
33

34 The PWSVB or MWBE firm does not perform a CUF if its role is limited to that of an
35 extra participant in a transaction, contract, or Project through which the funds are
36 passed to obtain the appearance of PWSVB or MWBE participation.
37

38 **Good Faith Efforts** – Efforts to achieve either the PWSVB Condition of Award
39 (COA) goals at the time of Bid or the PWSVB Commitments in the PWSVB Plan at
40 the completion of the project. The efforts will demonstrate, by their scope, intensity,
41 and appropriateness to the objective, that the bidder can reasonably be expected to
42 fulfill the program requirement.
43

44 **Manufacturer (PWSVB or MWBE)** – An PWSVB or MWBE firm that operates or
45 maintains a factory or establishment that produces on the premises the materials,
46 supplies, articles, or equipment required under the Contract. A Manufacturer shall
47 produce finished goods or products from raw or unfinished material or purchase and
48 substantially alters goods and materials to make them suitable for construction use
49 before reselling them.
50

1 **Minority Business Enterprise (MBE)** – A minority owned business meeting the
2 requirements of RCW 39.19 and WAC 326-20 and certified by the Washington State
3 Office of Minority & Women’s Business Enterprises.
4

5 Minority owned businesses can be located by searching the directory:
6

7 <https://omwbe.wa.gov/directory-certified-businesses>
8

9 **Minority and Women’s Business Enterprises (MWBE)** - The combined term to
10 refer to both a Minority Business Enterprises (MBEs) and Women’s Business
11 Enterprises (WBEs).
12

13 **MWBE Goals (Voluntary)** – Efforts to provide MWBE opportunities are encouraged
14 in accordance with these Specifications and RCW 39.19.
15

16 Goals for voluntary MWBE participation have been established as a percentage of
17 Contractor’s total Bid amount.
18

19 The Contracting Agency has established the following two voluntary goals:
20

21	Minority	10%
22	Women	6%

23
24 **Public Works Small Business Enterprise (PWSBE)** – A public works small
25 business meeting the requirements of RCW 39.19 and WAC 326-20 and certified by
26 the Washington State Office of Minority & Women’s Business Enterprises. Public
27 Works Small businesses can be located by searching the directory:
28

29 <https://omwbe.wa.gov/directory-certified-businesses>
30

31 **Public Works Small and Veteran Businesses (PWSVB)** – The combined term to
32 refer to both Public Works Small Business Enterprises (PWSBEs) and Veteran-
33 Owned businesses (VOBs).
34

35 **PWSVB COA Goals** – At the time of bid, this is the minimum dollar amount of
36 participation that the Bidder must commit to by submission of the PWSVB Plan
37 and/or by Good Faith Effort (GFE). Each goal is expressed as a percentage of the
38 Bid amount (as shown on the Proposal). There are two separate COA Goals that
39 must be met: one for Public Works Small Business Enterprises and one for Veteran-
40 Owned Businesses.
41

42 The Contracting Agency has established the following two enforceable COA Goals:
43

44	Public Works Small Business Enterprise (PWSBE) Goal	*** \$\$1\$\$ ***
45	Veteran-Owned Business (VOB) Goal	*** \$\$2\$\$ ***

46 **PWSVB Commitment** – The dollar amount and scope of work the Bidder indicates
47 on each line of their PWSVB Plan (WSDOT Form 226-018) for each PWSBE or VOB
48 firm. These Commitments will be incorporated into the Contract and shall be
49 considered Contract requirements.
50

1 **Public Works Small and Veteran Business Plan (PWSVB Plan)** - The Plan that
2 shows the dollar amount of the commitments for both Public Works Small Business
3 Enterprises and Veteran-Owned Businesses to meet the PWSVB COA Goals.
4

5 **Subcontractor, PWSVB or MWBE** – An individual, partnership, firm, corporation,
6 or joint venture who meet the definition of a Minority, Public Works Small, Women,
7 or Veteran-Owned Business and who is sublet part of the Contract.
8

9 **Supplier, PWSVB or MWBE** – A firm that owns, operates, or maintains a store,
10 warehouse, or other establishment in which the materials or supplies required for
11 the performance of a Contract are bought, kept in stock, and regularly sold to the
12 public in the usual course of business. To be a Supplier, the PWSVB or MWBE firm
13 must be an established business that engages in as its principal business and in its
14 own name the purchase and sale of the products in question. A Supplier in such
15 items as steel, cement, gravel, stone, and petroleum products need not own,
16 operate, or maintain a place of business if it both owns and operates distribution
17 equipment for the products. Any supplementing of suppliers' own distribution
18 equipment shall be by long-term formal lease agreements and not on an ad-hoc
19 basis. Brokers, packagers, manufacturers' representatives, or other persons who
20 arrange or expedite transactions shall not be regarded as Suppliers within the
21 meaning of this definition.
22

23 **Veteran-Owned Business (VOB)** – A veteran-owned business meeting the
24 requirements of RCW 43.60A.010 and certified by the Department of Veterans
25 Affairs. Veteran-Owned businesses can be located at:
26

27 [https://www.dva.wa.gov/veterans-service-members-and-their-families/veteran-](https://www.dva.wa.gov/veterans-service-members-and-their-families/veteran-owned-businesses)
28 [owned-businesses](https://www.dva.wa.gov/veterans-service-members-and-their-families/veteran-owned-businesses)
29

30 **Women Business Enterprise (WBE)** – A women owned business meeting the
31 requirements of RCW 39.19 and WAC 326-20 and certified by the Washington State
32 Office of Minority & Women's Business Enterprises.
33

34 Women owned businesses can be located by searching the directory:
35

36 <https://omwbe.wa.gov/directory-certified-businesses>
37

38 **Procedures Prior to Award**

39 **PWSVB Goals (Enforceable)**

40 **PWSVB COA Goals**

41 The Contractor shall submit their PWSVB Plan (WSDOT Form 226-018) to
42 demonstrate attainment of the PWSBE and VOB COA Goals. PWSBE and
43 VOB Goals are independent. Work shown in the PWSVB Plan shall not
44 apply to both PWSBE and VOB Goals. If the Contractor cannot meet these
45 goals, a Good Faith Effort (GFE) is required.
46

47 Demonstrating compliance with the PWSBE and VOB COA Goals is a
48 Condition of Award of this Contract. Failure to comply with these
49 requirements may result in the Bid being found nonresponsive.
50

1 **PWSVB Commitment**

2 The Contractor is required to utilize each PWSBE or VOB firm identified on
3 their PWSVB Plan (WSDOT Form 226-018) for each scope of work and
4 dollar amount listed. A firm that is registered as both a PWSBE and VOB
5 may split the total commitment between VOB and PWSBE to attain the
6 PWSBE and VOB COA Goals.
7

8 **PWSVB Plan**

9 To be eligible for award of the Contract, the Bidder shall properly complete and
10 submit a Public Works Small and Veteran Business Plan (PWSVB Plan). The
11 PWSVB Plan shall be submitted on WSDOT Form 226-018. The Bidder's
12 PWSVB Plan shall be submitted as specified in Section 1-02.9. The PWSVB
13 Plan must clearly demonstrate how the Bidder intends to meet both the PWSBE
14 and VOB COA Goals. A PWSVB Plan (WSDOT Form 226-018) and instructions
15 on how to properly fill out the form are included in the Proposal package.
16

17 When the Bidder elects to utilize force account Work to meet the PWSBE or
18 VOB COA Goals, as shown on its PWSVB Plan, the Bidder shall not commit
19 more than 50% of the force account bid item amount.
20

21 In the event of arithmetic errors in completing the PWSVB Plan, the amount
22 listed to be applied towards the PWSBE or VOB Goals for each PWSVB firm
23 shall govern and the PSSVB total amount shall be adjusted accordingly.
24

25 To be eligible for inclusion in the PWSVB Plan, PWSBE or VOB firms committed
26 must be certified as described herein prior to the due date for bids on the
27 Contract.
28

29 **Written Confirmation**

30 Prior to the award of the Contract and as specified in Section 1-02.9, the
31 Contractor shall submit the PWSVB Subcontractor Written Confirmation Form
32 (WSDOT Form 226-017) documentation from each PSSVB firm listed on the
33 PWSVB Plan confirming their participation on the Contract for each amount
34 listed in the PWSVB Plan.
35

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

37 The Contracting Agency will consider as non-responsive and will reject any Bid
38 Proposal submitted that does not contain a properly completed PWSVB Plan
39 that shows compliance with the PWSBE and VOB COA goals.
40

41 Compliance with the PWSVB COA Goals requirements may be accomplished
42 in one of two ways:
43

- 44 1. By meeting the PWSVB COA Goals
45 Submission of the PWSVB Plan, showing the Bidder has obtained
46 enough PWSBE or VOB participation to meet or exceed each of the
47 PWSVB COA Goals
48
- 49 2. By documentation that the Bidder made adequate GFE to meet the
50 PWSVB COA Goals
51

1 The Bidder may demonstrate a GFE in whole or part through GFE
2 documentation ONLY IN THE EVENT a Bidder's efforts to solicit sufficient
3 PWSVB participation have been unsuccessful. The Bidder must supply GFE
4 documentation in addition to the PWSVB Plan.
5

6 GFE documentation shall be submitted as specified in Section 1-02.9.
7

8 **Document Submittal Requirements**

9 The Contracting Agency will review the GFE documentation and will determine
10 if the Bidder made an adequate GFE.
11

12 **GFE Documentation Prior to Award**

13 GFE is evaluated when determining award of a Contract that has PWSVB COA
14 Goals. The efforts employed by the Bidder should be commercially reasonable
15 and demonstrate they are actively and aggressively trying to fulfill the
16 established PWSVB COA Goals. Mere pro forma efforts are not commensurate
17 with a GFE.
18

19 The following is a list of types of actions, which would be considered as part of
20 the Bidder's GFE to achieve PWSVB participation. It is not intended to be a
21 mandatory checklist, nor is it intended to be exclusive or exhaustive. Other
22 factors or types of efforts may be relevant in appropriate cases:
23

- 24 1. Soliciting through all reasonable and available means (e.g.,
25 attendance at pre-bid meetings, advertising and/or written notices)
26 the interest of all certified PWSVB firms who have the capability to
27 perform the Work of the Contract. The Bidder must solicit this
28 interest within sufficient time to allow the PWSVB to respond to the
29 solicitation. The Bidder must determine with certainty if the PWSVB
30 firms are interested by taking appropriate steps to follow up initial
31 solicitations.
32
- 33 2. Selecting portions of the Work to be performed by PWSVBs to
34 increase the likelihood that the PWSVB COA Goals will be achieved.
35 This includes, where appropriate, breaking out Contract Work items
36 into economically feasible units to facilitate PWSVB participation,
37 even when the Bidder might otherwise prefer to perform these Work
38 items with its own forces.
39
- 40 3. Providing interested PWSVBs with adequate information about the
41 Plans, Specifications, and requirements of the Contract in a timely
42 manner to assist them in responding to a solicitation.
43
- 44 a. Negotiating in good faith with interested PWSVBs. It is the
45 Bidder's responsibility to make a portion of the Work available to
46 PWSVBs and to select those portions of the Work or material
47 needs consistent with the available PWSVBs, to facilitate PWSVB
48 participation. Evidence of such negotiation includes the names,
49 addresses, and telephone numbers of PWSVBs that were
50 considered; a description of the information provided regarding
51 the Plans and Specifications for the Work selected for

1 subcontracting; and evidence as to why additional agreements
2 could not be reached for PWSVB firms to perform the Work.

3
4 b. A Bidder using good business judgment would consider a number
5 of factors in negotiating with subcontractors, including PWSVB
6 subcontractors, and would take a firm's price and capabilities as
7 well as the PWSVB COA Goals into consideration. However, the
8 fact that there may be some additional costs involved in finding
9 and using PWSVBs is not in itself sufficient reason for a Bidder's
10 failure to meet the PWSVB COA Goals, as long as such costs are
11 reasonable. Also, the ability or desire of a Bidder to perform the
12 Work of a Contract with its own organization does not relieve the
13 Bidder of the responsibility to make a GFE. Bidders are not,
14 however, required to accept higher quotes from PWSVB firms if
15 the price difference is excessive or unreasonable.

- 16
17 4. Not rejecting PWSVB firms as being unqualified without sound
18 reasons based on a thorough investigation of their capabilities. The
19 Bidder's standing within its industry, membership in specific groups,
20 organizations, or associations and political or social affiliations (for
21 example union vs. non-union employee status) are not legitimate
22 causes for the rejection or non-solicitation of bids in the Bidder's
23 efforts to meet the PWSVB COA Goals.
24
25 5. Making efforts to assist interested PWSVB firms in obtaining
26 bonding, lines of credit, or insurance as required by the recipient or
27 Bidder.
28
29 6. Making efforts to assist interested PWSVB firms in obtaining
30 necessary equipment, supplies, materials, or related assistance or
31 services.
32
33 7. Effectively using the services of available organizations as allowed
34 on a case-by-case basis to provide assistance in the recruitment and
35 placement of PWSVB firms.
36
37 8. Documentation of GFE must include copies of each PWSVB and
38 non-PWSVB subcontractor quotes submitted to the Bidder when a
39 non-PWSVB subcontractor is selected over a PWSVB for Work on
40 the Contract.

41
42 **Administrative Reconsideration of GFE Documentation Prior to Award**
43 A Bidder has the right to request reconsideration if the GFE documentation
44 submitted with their Bid was determined to be inadequate:

- 45
46 1. The Bidder must request within 48 hours of notification of being
47 nonresponsive or forfeit the right to reconsideration.
48
49 2. The reconsideration decision on the adequacy of the Bidder's GFE
50 documentation shall be made by an official who did not take part in
51 the original determination.

3. 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.
4. 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.
5. 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 and at least 48 hours prior to award.

Procedures After Execution

MWBE Plan

The Contractor shall submit a MWBE Participation Plan as a Type 2 Working Drawing within 21 days after execution. The plan shall include the information identified in the guidelines at:

<https://wsdot.wa.gov/sites/default/files/2021-10/OEOWSDOTParticipationPlanDraftingGuidelines.pdf>

The Contractor shall submit an updated MWBE Participation Plan 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 MWBE Participation Plan submittals.

Commercially Useful Function (CUF)

For PWSVB and MWBE subcontractor and lower tier subcontractors, a valid subcontract must fully describe the Scope of Work committed to be performed by the firm. The subcontract shall incorporate requirements of the Contract. Subcontracts of all tiers, including lease agreements, shall be made available upon request.

The Contractor may only take credit for the payments made for work performed by a PWSVB or MWBE that is determined to be performing a CUF. Payment must be commensurate with the work performed by the PWSVB or MWBE. A PWSVB or MWBE that does not perform all of its responsibilities on a contract has not performed a CUF and their work cannot be counted toward PWSVB or MWBE Goals.

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.

For a PWSVB or MWBE traffic control company to be considered to be performing a CUF, the firm must be in control of its work inclusive of supervision. The firm shall employ a Traffic Control Supervisor who is directly involved in the supervision of the traffic control employees and services.

1 **Crediting Participation**

2 Participation will be evaluated to determine if the Contractor has met both the
3 PWSVB Commitments and MWBE Goals at completion of the project.
4

5 All non-COA PWSVB firms and MWBE firms shall be certified before the
6 subcontract on which they are participating is executed.
7

8 When a PWSVB or MWBE firm loses its certification, the participation of that
9 PWSVB or MWBE firm shall continue to count as PWSVB or MWBE
10 participation as long as the subcontract with the PWSVB or MWBE firm was
11 executed prior to the date the PWSVBE or MWBE firm lost its certification.
12

13 Only take credit for that portion of the total dollar value of the work that is equal
14 to the distinct, clearly defined portion of the Work that the PWSVB or MWBE
15 performs with its own forces. The value of work performed by the PWSVB or
16 MWBE includes the cost of supplies and materials purchased by the PWSVB
17 or MWBE and equipment leased by the PWSVB or MWBE, for its work on the
18 Contract. Supplies, materials, or equipment obtained by a PWSVB or MWBE
19 that are not utilized or incorporated in the Contract work by the PWSVB or
20 MWBE will not be eligible for PWSVB or MWBE credit.
21

22 The supplies, materials, and equipment purchased or leased from the Prime
23 Contractor or its affiliate, including any Contractor's resources available to
24 PWSVB or MWBE subcontractors at no cost, shall not be credited.
25

26 PWSVB or MWBE credit will not be given in instances where the equipment
27 lease includes the operator. The PWSVB or MWBE is expected to operate the
28 equipment used in the performance of its work under the contract with its own
29 forces. Situations where equipment is leased and used by the PWSVB or
30 MWBE, but payment is deducted from the Contractor's payment to the PWSVB
31 or MWBE is not allowed.
32

33 **PWSVB Commitment**

34 Payments to each PWSBE or VOB firm shall demonstrate that the
35 Commitments amounts have been met as shown on the SVB Plan.
36

37 Participation is credited to the PWSVB Commitments upon payment to
38 the PWSBE or VOB.
39

40 **MWBE Goals**

41 Amounts paid to a MWBE will be credited to every MWBE Goal for which
42 they are eligible. Participation may be credited for more than one
43 category.
44

45 Participation is credited to the MWBE Goals upon payment to the eligible
46 MWBE.
47

48 **Prime Contractor Credit for Participation (PWSVB or MWBE)**

49 Only take credit for that portion of the Work performed that the PWSVB
50 or MWBE Prime Contractor did not sublet to other firms.
51

1 **Subcontractor Credit for Participation**

2 When the Prime contractor, subcontractor or lower tier subcontractor are
3 part of a PWSVB or MWBE Plan, the following apply:
4

- 5 1. If a Prime Contractor, subcontractor, or lower tier subcontractor
6 subcontracts a portion of the Work of its contract to another firm,
7 the value of the subcontracted Work may be counted toward the
8 PWSBE or VOB Commitments based on the following conditions:
9
- 10 a. If a PWSBE Prime Contractor, subcontractor, or lower tier
11 subcontractor subcontracts to a PWSBE the value can count
12 toward the PWSBE Commitment.
13
 - 14 b. If a PWSBE Prime Contractor, subcontractor or lower tier
15 subcontractor subcontracts to a non-PWSBE, the value
16 cannot count toward the PWSBE Commitment.
17
 - 18 c. If a VOB Prime Contractor, subcontractor, or lower tier
19 subcontractor subcontracts with a VOB the value can count
20 toward the VOB Commitment.
21
 - 22 d. If a VOB Prime Contractor, subcontractor, or lower tier
23 subcontractor subcontracts with a non-VOB the value cannot
24 count toward the VOB Commitment.
25
 - 26 e. Work subcontracted to a non-PWSVB does not count
27 towards the PWSVB Commitments.
28
- 29 2. If a Prime Contractor, subcontractor, or lower tier subcontractor
30 subcontracts a portion of the Work of its contract to another firm,
31 the value of the subcontracted Work may be counted toward the
32 MWBE Goals based on the following conditions:
33
- 34 a. Work subcontracted to a non-MWBE cannot be counted
35 toward the MWBE goals.
36
 - 37 b. Work subcontracted to another MWBE can be counted
38 toward every MWBE goal for which the firm holds a
39 certification.
40
 - 41 c. Work subcontracted by a MWBE firm who also is a PWSVB,
42 will be credited toward the PWSVB Commitment as described
43 in section 1.
44
 - 45 d. Work subcontracted to a non-MWBE cannot be counted
46 toward the MWBE goals.
47

48 **Broker Credit for Participation**

49 When a PWSVB or MWBE participates as a broker (i.e., arranging a
50 transaction or service but does not provide a work product or
51 enhancement), only the dollar value of the reasonable fee may count

1 toward the PWSVB Commitments or MWBE Goals. For purposes of
2 PWSVB or MWBE Brokers, a reasonable fee shall not exceed 5 percent of
3 the total cost of the goods or services brokered.
4

5 **Manufacturer and Supplier Credit for Participation**

6 If materials or supplies are obtained from a PWSVB or MWBE
7 Manufacturer, one hundred percent (100%) of the cost of materials or
8 supplies can count toward the PWSVB Commitments or MWBE Goals.
9

10 One hundred percent (100%) of the cost of materials or supplies purchased
11 from a PWSVB or MWBE Supplier may be credited toward meeting the
12 PWSVB Commitments or MWBE Goals. If the role of the PWSVB or MWBE
13 Supplier is determined to be that of a pass-through, then no credit will be
14 given for its services. If the role of the PWSVB or MWBE Supplier is
15 determined to be that of a Broker, then credit shall be limited to the fee or
16 commission it receives for its services, subject to the provision listed in
17 "Broker Credit for Participation."
18

19 **Force Account Work**

20 One hundred percent (100%) of the actual amounts paid to a PWSVB or
21 MWBE shall count toward the PWSVB Commitments or MWBE Goals.
22

23 **Service Provider Credit for Participation**

24 When a PWSVB or MWBE participates as a service provider or consultant
25 and provides a bona fide service such as professional, technical,
26 consultant, or managerial services, 100% of the total cost counts toward
27 the PWSVB Commitments or MWBE Goals if the firm performs a CUF.
28

29 **Trucking Credit for Participation**

30 PWSVB or MWBE trucking firm participation may only be credited as
31 participation for the value of the hauling services, not for the materials
32 being hauled unless the trucking firm is also certified as a supplier. In
33 situations where the firm's work is priced per ton, the value of the hauling
34 service must be calculated separately from the value of the materials in
35 order to determine credit for hauling.
36

37 The PWSVB or MWBE trucking firm must own and operate at least one
38 licensed, insured, and operational truck on the contract. The truck must be
39 of the type that is necessary to perform the hauling duties required under
40 the contract. The firm receives credit for the value of the transportation
41 services it provides on the Contract using trucks it owns or leases, licenses,
42 insures, and operates with drivers it employs.
43

44 The PWSVB or MWBE firm may lease additional trucks from another SVBE
45 or MWBE firm. The Work that a PWSVB or MWBE trucking firm performs
46 with trucks it leases from other certified trucking firms qualify for 100%
47 credit.
48

49 The trucking Work subcontracted to any non-PWSVB or MWBE trucking
50 firm will not receive credit for Work done on the project. The PWSVB or
51 MWBE trucking firm may lease trucks from a non-PWSVB or MWBE truck

1 leasing company but can only receive credit as PWSVB or MWBE
2 participation if the PWSVB or MWBE firm uses its own employees as
3 drivers.

4
5 PWSVB or MWBE credit for a truck broker is limited to the fee/commission
6 that the firm receives for arranging transportation services, subject to the
7 provision listed in "Broker Credit for Participation."

8
9 **Reporting Participation for Credit**

10 The Contractor and any subcontractor, supplier, service provider, broker,
11 or manufacturer of any tier that utilize PWSVB or MWBE firms to perform
12 Work on the project, shall maintain appropriate records that will enable the
13 Engineer to verify PWSVB and MWBE participation throughout the life of
14 the project.

15
16 Refer to Section 1-08.1 for additional reporting requirements associated
17 with this contract. The Contractor shall report amounts paid in accordance
18 with Section 1-08.1 in order to receive credit for participation.

19
20 **Joint Checks**

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

26
27 A joint check agreement must be approved by the Engineer and requested by
28 the PWSVB or MWBE involved using the DBE Joint Check Request Form
29 (WSDOT Form #272-053) prior to its use. The form must accompany the
30 PWSVB or MWBE Joint Check Agreement between the parties involved,
31 including the conditions of the arrangement and expected use of the joint
32 checks.

33
34 The approval to use joint checks and the use will be closely monitored by the
35 Engineer. To receive PWSVB or MWBE credit for performing a CUF with
36 respect to obtaining materials and supplies, the PWSVB or MWBE must "be
37 responsible for negotiating price, determining quality and quantity, ordering the
38 material, installing and paying for the material itself." The Contractor shall
39 submit DBE Joint Check Request Form for the Engineer approval prior to using
40 a joint check.

41
42 Material costs paid by the Contractor directly to the material supplier are not
43 allowed. If proper procedures are not followed or the Engineer determines that
44 the arrangement results in lack of independence for the SVBE or MWBE
45 involved, no SVBE or MWBE credit will be given for the participation as it relates
46 to the material cost.

47
48 **Changes in PWSVB Commitment**

49 The Contractor shall utilize the PWSVB Commitment (COA) firms to perform all
50 of the Work and supply all of the materials for which each is committed unless
51 otherwise approved in writing by the Engineer. Any reduction in the Work

1 committed to any PWSVB Commitment (COA) firm, or performance of Work
2 previously designated for a PWSVB Commitment (COA) firm by any other firm
3 or by the Contractor's own forces, shall be considered a termination, and
4 requires the prior written consent of the Engineer. Termination requests shall be
5 submitted in writing to the Engineer, who shall either grant or deny such request
6 in writing. No termination shall become effective unless and until the Engineer
7 provides written approval. Changes to PWSVB Commitments will be
8 documented in accordance with Section 1-04.4 and shall be considered
9 amendments to the Contractor's PWSVB Plan.

10 **Approval of PWSBE Termination**

11 Termination of a PWSVB Commitment (COA) firm is only allowed in whole
12 or in part for good cause and with written approval of the Engineer. If a
13 PWSVB Commitment (COA) firm is terminated without the written approval
14 of the Engineer, the Contractor shall not be entitled to payment for Work or
15 material committed to, but not performed/supplied by, the PWSVB
16 Commitment (COA) firm. In addition, the Contractor may be subject to the
17 remedies set forth elsewhere in this Special Provision.

18
19
20 Prior to requesting approval to terminate a PWSVB Commitment (COA)
21 firm, the Contractor shall give notice in writing to the PWSVB Commitment
22 (COA) firm with a copy to the Engineer of its intent to request to terminate
23 PWSVB Commitment (COA) Work and shall cite the cause for doing so,
24 with supporting documentation. The PWSVB Commitment (COA) firm shall
25 have five (5) days to respond to the Contractor's notice. The PWSVB
26 Commitment (COA) firm's response shall either support the termination or
27 advise the Engineer and the Contractor of the reasons it objects to the
28 termination.

29 **Cause for Termination**

30 The Contractor must have good cause to terminate a PWSVB Commitment
31 (COA) firm. Good cause includes situations where the PWSVB
32 Commitment (COA) firm is unable or unwilling to perform the work of its
33 subcontract. Good cause may exist if:

- 34 1. The PWSVB Commitment (COA) firm fails or refuses to execute
35 a written contract.
- 36 2. The PWSVB Commitment (COA) firm fails or refuses to perform
37 the work of its subcontract in a way consistent with normal
38 industry standards.
- 39 3. The PWSVB Commitment (COA) firm fails or refuses to meet the
40 Contractor's reasonable nondiscriminatory bond requirements.
- 41 4. The PWSVB Commitment (COA) firm becomes bankrupt,
42 insolvent, or exhibits credit unworthiness.
- 43 5. The PWSVB Commitment (COA) firm is ineligible to work on
44 public works projects because of suspension and debarment
45 proceedings pursuant to federal law or applicable State law.
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6. The PWSVB Commitment (COA) firm is ineligible to receive PWSVB COA credit for the type of work involved.
7. The PWSVB Commitment (COA) firm voluntarily withdraws from the project and provides written notice of its withdrawal.
8. The PWSVB Commitment (COA) firm's work is deemed unsatisfactory by the Engineer and not in compliance with the Contract.
9. The PWSVB Commitment (COA) firm's owner dies or becomes disabled with the result that the PWSVB Commitment (COA) firm is unable to complete its work on the Contract.

Good cause does not exist if:

1. The Contractor seeks to terminate a PWSVB Commitment (COA) firm so that the Contractor can self-perform the work.
2. The Contractor seeks to terminate a PWSVB Commitment (COA) firm so the Contractor can substitute another PWSVB firm or non-PWSVB firm after Contract Award.
3. The failure or refusal of the PWSVB Commitment (COA) firm 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 PWSVB Commitment (COA) firm's Work).

Owner-Initiated Changes

In instances where the Engineer makes changes that result in changes to Work that was part of a PWSVB Commitment, the Contractor may be directed to substitute for the Work. The Contractor shall notify the Engineer if any owner-initiated change impacts the PWSVB commitment, prior to any changes to the Contract. Changes will be addressed in accordance with Section 1-04.4.

Contractor-Initiated Changes

The Contractor cannot change the scope or reduce the amount of Work as part of a PWSVB Commitment without good cause. Reducing a PWSVB Commitment is viewed as a partial termination, and therefore subject to the termination procedures above.

Quantity Underruns

If a variation in estimated quantities occurs that affects a PWSVB Commitment, that unmet Commitment will not be considered a termination, provided that the Contractor can demonstrate that the variation in quantities directly impacted the Commitment. The Contractor shall provide such documentation if requested by the Engineer.

1
2 The Contractor may be required to substitute other remaining Work to
3 another PWSVB firm to meet the dollar amounts committed to in their
4 PWSVB Plan.
5

6 **Good Faith Effort (GFE) Documentation After Execution**

7 If the Contractor fails to fulfill the PWSVB Commitment to in their PWSVB Plan,
8 a Good Faith Effort shall be submitted for approval. GFE documentation shall
9 follow the requirements for GFE Documentation Prior to Award.
10

11 In addition, the GFE shall address the impact of overruns and underruns on the
12 ability of the Contractor to meet the dollar amounts committed to in their
13 PWSVB Plan. Overruns and underruns may be considered a reason for not
14 attaining the PWSVB dollar amounts committed to in their PWSVB Plan. The
15 GFE shall include enough information for the Engineer to evaluate the impact
16 the overrun or underrun had on the PWSVB participation.
17

18 **Administrative Reconsideration of GFE Documentation After Execution**

19 When the Contracting Agency's GFE documentation review determines a GFE
20 has no merit, the Contractor has the right to request reconsideration of the
21 Contracting Agency's determination.
22

- 23 1. The Contractor must request reconsideration within five (5) working
24 days of notification of GFE documentation being deemed
25 inadequate.
26
- 27 2. The reconsideration decision on the adequacy of the Contractor's
28 GFE documentation shall be made by an official who did not take
29 part in the original determination.
30
- 31 3. Only original GFE documentation submitted shall be considered. The
32 Contractor shall not introduce new documentation at the
33 reconsideration hearing.
34
- 35 4. The Contractor shall have the opportunity to meet in person with the
36 official for the purpose of setting forth the Contractor's position as to
37 why the GFE documentation demonstrates a sufficient effort.
38
- 39 5. The reconsideration official shall provide the Contractor with a written
40 decision on reconsideration within five (5) working days of the
41 hearing, explaining the basis for their finding.
42

43 **Remedies for Failure to Meet PWSVB Requirements**

44 Upon completion of a project, a Prime Contractor Performance Report will
45 document whether the Contractor met the Commitments in their PWSVB Plan
46 or GFE. Failure to meet the Commitments in the PWSVB Plan or provide an
47 acceptable GFE may lead to the following:
48

- 49 1. Suspension of a Contractor's prequalification; and/or
50

1 2. Withholding from the Contractor of an amount up to the value of the
2 un-met PWSBE or VOB Commitments
3

4 Failure to utilize the PWSVB Commitment (COA) firms listed in the PWSVB
5 Plan for the Work for which they were listed, unless termination was approved
6 in in writing by the Contracting Agency, will be reflected on the Prime Contractor
7 Performance Report.
8

9 **Payment**

10 Compensation for all costs involved with complying with the conditions of this
11 Special Provision and any other associated PWSVB or MWBE requirements
12 are included in payment for the associated Contract items of Work, except
13 otherwise provided in the Specifications.
14

15 1-07.11.OPT7.FR1

16 **(October 3, 2022)**

17 **Federal Small Business Enterprise Participation**

18 The Federal Small Business Enterprise (FSBE) Program is an element of the
19 Disadvantaged Business Enterprise (DBE) in accordance with the requirements of 49
20 CFR Part 26.39. Failure to comply with the requirements of this Specification may result
21 in sanctions as provided by the Contract.
22

23 **FSBE Abbreviations and Definitions**

24 **Broker** – A business firm that provides a bona fide service, such as
25 professional, technical, consultant or managerial services and assistance in the
26 procurement of essential personnel, facilities, equipment, materials, or supplies
27 required for the performance of the Contract; or, persons/companies who
28 arrange or expedite transactions.
29

30 **Certified Business Description** – Specific descriptions of work the FSBE is
31 certified to perform, as identified in the Certified Firm Directory, under the
32 Vendor Information page.
33

34 **Certified Firm Directory** – A database of all Minority, Women, and
35 Disadvantaged Business Enterprises, including those identified as a FSBE,
36 currently certified by Washington State. The on-line Directory is available to
37 Bidders for their use in identifying and soliciting interest from FSBE firms. The
38 database is located under the Firm Certification section of the Diversity
39 Management and Compliance System web page at:
40 <https://omwbe.diversitycompliance.com>.
41

42 Firms certified by OMWBE as SBE, DBE can be used to fulfill the FSBE
43 mandatory goal on a project.
44

45 **Commercially Useful Function (CUF)** – 49 CFR 26.55(c)(1) defines
46 commercially useful function as: “A DBE performs a commercially useful
47 function when it is responsible for execution of the work of the contract and is
48 carrying out its responsibilities by actually performing, managing, and
49 supervising the work involved. To perform a commercially useful function, the
50 DBE must also be responsible, with respect to materials and supplies used on
51 the contract, for negotiating price, determining quality and quantity, ordering the

1 material, and installing (where applicable) and paying for the material itself. To
2 determine whether a DBE is performing a commercially useful function, you
3 must evaluate the amount of work subcontracted, industry practices, whether
4 the amount the firm is to be paid under the contract is commensurate with the
5 work it is actually performing and the DBE credit claimed for its performance of
6 the work, and other relevant factors.”
7

8 **FSBE** – A firm certified by OMWBE as meeting Federal requirements of a small
9 business enterprise. All firms on the OMWBE Certified Firm Directory with the
10 designation of SBE or DBE are FSBEs.
11

12 **Good Faith Efforts** – Efforts to achieve the FSBE Goal or other requirements
13 of this part which, by their scope, intensity, and appropriateness to the objective,
14 can reasonably be expected to fulfill the program requirement.
15

16 **Manufacturer (FSBE)** – A FSBE firm that operates or maintains a factory or
17 establishment that produces on the premises the materials, supplies, articles,
18 or equipment required under the Contract. A FSBE Manufacturer shall produce
19 finished goods or products from raw or unfinished material or purchase and
20 substantially alters goods and materials to make them suitable for construction
21 use before reselling them.
22

23 **Reasonable Fee (FSBE)** – For purposes of Brokers or service providers a
24 reasonable fee shall not exceed 5% of the total cost of the goods or services
25 brokered.
26

27 **Regular Dealer (FSBE)** – A FSBE firm that owns, operates, or maintains a
28 store, warehouse, or other establishment in which the materials or supplies
29 required for the performance of a Contract are bought, kept in stock, and
30 regularly sold to the public in the usual course of business. To be a Regular
31 Dealer, the FSBE firm must be an established regular business that engages in
32 as its principal business and in its own name the purchase and sale of the
33 products in question. A Regular Dealer in such items as steel, cement, gravel,
34 stone, and petroleum products need not own, operate or maintain a place of
35 business if it both owns and operates distribution equipment for the products.
36 Any supplementing of regular dealers’ own distribution equipment shall be by
37 long-term formal lease agreements and not on an ad-hoc basis. Brokers,
38 packagers, manufacturers’ representatives, or other persons who arrange or
39 expedite transactions shall not be regarded as Regular Dealers within the
40 meaning of this definition.
41

42 **FSBE Goal**

43 The Contracting Agency has established a FSBE Goal for this Contract in the
44 amount of: *** \$\$1\$\$ ***
45

46 **Crediting FSBE Participation**

47 All FSBE subcontractors shall be certified before the subcontract on which they are
48 participating is executed.
49

50 FSBE participation is only credited upon payment to the FSBE.
51

1 The following are some definitions of what may be counted as FSBE participation.
2

3 **FSBE Prime Contractor**

4 Only take credit for that portion of the total dollar value of the Contract equal to
5 the distinct, clearly defined portion of the Work that the FSBE Prime Contractor
6 performs with its own forces and is certified to perform.
7

8 **FSBE Subcontractor**

9 Only take credit for that portion of the total dollar value of the subcontract that
10 is equal to the distinct, clearly defined portion of the Work that the FSBE
11 performs with its own forces and is certified to perform. The value of work
12 performed by the FSBE includes the cost of supplies and materials purchased
13 by the FSBE and equipment leased by the FSBE, for its work on the contract.
14 Supplies, materials or equipment obtained by a FSBE that are not utilized or
15 incorporated in the contract work by the FSBE will not be eligible for FSBE
16 credit.
17

18 The supplies, materials, and equipment purchased or leased from the
19 Contractor or its affiliate, including any Contractor's resources available to
20 FSBE subcontractors at no cost, shall not be credited.
21

22 FSBE credit will not be given in instances where the equipment lease includes
23 the operator. The FSBE is expected to operate the equipment used in the
24 performance of its work under the contract with its own forces. Situations where
25 equipment is leased and used by the FSBE, but payment is deducted from the
26 Contractor's payment to the FSBE is not allowed.
27

28 When the subcontractor is a FSBE, the following apply:
29

- 30 1. If a FSBE subcontracts a portion of the Work of its contract to
31 another firm, the value of the subcontracted Work may be counted
32 toward the FSBE Goal only if the lower-tier subcontractor is also a
33 FSBE.
34
- 35 2. Work subcontracted to a non-FSBE does not count towards the
36 FSBE Goal nor FSBE participation.
37

38 **FSBE Subcontract and Lower Tier Subcontract Documents**

39 There must be a subcontract agreement that complies with 49 CFR Part 26 and
40 fully describes the distinct elements of Work committed to be performed by the
41 FSBE.
42

43 **FSBE Service Provider**

44 The value of fees or commissions charged by a FSBE firm behaving in a
45 manner of a Broker, or another service provider for providing a bona fide
46 service, such as professional, technical, consultant, managerial services, or for
47 providing bonds or insurance specifically required for the performance of the
48 contract will only be credited as FSBE participation, if the fee/commission is
49 determined by the Contracting Agency to be reasonable and the firm has
50 performed a CUF.
51

1 **Temporary Traffic Control**

2 If the FSBE firm is being utilized in the capacity of only “Flagging”, the FSBE
3 firm must provide a Traffic Control Supervisor (TCS) and flagger, which are
4 under the direct control of the FSBE. The FSBE firm shall also provide all
5 flagging equipment (e.g. paddles, hard hats, and vests).
6

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

11 **Trucking**

12 FSBE trucking firm participation may only be credited as FSBE participation for
13 the value of the hauling services, not for the materials being hauled unless the
14 trucking firm is also certified as a supplier of those materials. In situations
15 where the FSBE’s work is priced per ton, the value of the hauling service must
16 be calculated separately from the value of the materials in order to determine
17 FSBE credit for hauling
18

19 The FSBE trucking firm must own and operate at least one licensed, insured
20 and operational truck on the contract. The truck must be of the type that is
21 necessary to perform the hauling duties required under the contract. The FSBE
22 receives credit for the value of the transportation services it provides on the
23 Contract using trucks it owns or leases, licenses, insures, and operates with
24 drivers it employs.
25

26 The FSBE may lease additional trucks from another FSBE firm. The FSBE who
27 leases additional trucks from another FSBE firm receives credit for the value of
28 the transportation services the lessee FSBE provides on the Contract.
29

30 The trucking Work subcontracted to any non-FSBE trucking firm will not receive
31 credit for Work done on the project.
32

33 The FSBE may lease trucks from a truck leasing company (recognized truck
34 rental center), but can only receive credit towards FSBE participation if the
35 FSBE uses its own employees as drivers.
36

37 **FSBE Manufacturer and FSBE Regular Dealer**

38 One hundred percent (100%) of the cost of the manufactured product obtained
39 from a FSBE manufacturer can count as FSBE participation. If the manufacturer
40 is a FSBE, participation may count towards the FSBE Goal.
41

42 Sixty percent (60%) of the cost of materials or supplies purchased from a FSBE
43 Regular Dealer may be credited as FSBE Participation. If the role of the FSBE
44 Regular Dealer is determined to be that of a Broker, then FSBE credit shall be
45 limited to the fee or commission it receives for its services. Regular Dealer
46 status and the amount of credit is determined on a Contract-by-Contract basis.
47 If the regular dealer is a FSBE, participation may count towards the FSBE Goal.
48

49 FSBE firms proposed to be used as a Regular Dealer must be approved before
50 being used on a project. The WSDOT Approved Regular Dealer list published
51

1 on WSDOT's Office of Equal Opportunity (OEO) web site must include the
2 specific project for which approval is being requested. For purposes of FSBE
3 Goal participation, the Regular Dealer must submit the Regular Dealer Status
4 Request form and receive approval prior to providing any equipment or
5 materials or the signing of a purchase order, invoice, or subcontract.
6

7 Purchase of materials or supplies from a FSBE which is neither a manufacturer
8 nor a regular dealer, (i.e. Broker) only the fees or commissions charged for
9 assistance in the procurement of the materials and supplies, or fees or
10 transportation charges for the delivery of materials or supplies required on a job
11 site, can count as FSBE participation provided the fees are not excessive as
12 compared with fees customarily allowed for similar services. Documentation will
13 be required to support the fee/commission charged by the FSBE. The cost of
14 the materials and supplies themselves cannot be counted toward as FSBE
15 participation.
16

17 **Good Faith Effort Documentation**

18 GFE is evaluated prior to Physical Completion when determining whether the
19 Contractor has satisfied its FSBE Goal.
20

21 The Contracting Agency will measure GFE using the guidance in 49 CFR Part 26,
22 Appendix A. The following is a list of the types of actions which may be considered
23 as part of the Contractor's GFE to achieve FSBE participation. It is not intended to
24 be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other
25 factors or types of efforts may be relevant in appropriate cases.
26

- 27 1. Solicited through all reasonable and available means the interest of all
28 certified FSBEs who had the capability to perform the Work of the Contract.
29 The Contractor must have solicited this interest within sufficient time to
30 allow the FSBEs to respond to the solicitation. The Contractor must have
31 determined with certainty that the FSBEs were interested by taking
32 appropriate steps to follow up initial solicitations with potential FSBEs.
33
- 34 2. Selected portions of the Work to be performed by FSBEs in order to
35 increase the likelihood that the FSBE Goal would be achieved. This
36 includes, where appropriate, breaking out contract Work items into
37 economically feasible units to facilitate FSBE participation, even when the
38 Contractor might otherwise prefer to perform these Work items with its own
39 forces.
40
- 41 3. Provided interested FSBEs with adequate information about the Plans,
42 Specifications, and requirements of the Contract in a timely manner to
43 assist them in responding to a solicitation.
44
- 45 a. Negotiated in good faith with interested FSBEs. It is the Contractor's
46 responsibility to make a portion of the Work available to FSBE
47 subcontractors and suppliers and to select those portions of the
48 Work or material needs consistent with the available FSBE
49 subcontractors and suppliers, so as to facilitate FSBE participation.
50 Evidence of such negotiation includes the names, addresses, and
51 telephone numbers of FSBEs that were contacted; a description of

1 the information provided regarding the Plans and Specifications for
2 the Work selected for subcontracting; and evidence as to why
3 additional agreements could not be reached for FSBEs to perform
4 the Work.

5
6 b. A Contractor using good business judgment would consider a
7 number of factors in negotiating with subcontractors, including FSBE
8 subcontractors, and would take a firm's price and capabilities as well
9 as the FSBE Goal into consideration. The fact that there may be
10 some additional costs involved in finding and using FSBEs is not in
11 itself sufficient reason for a Bidder's failure to meet the FSBE Goal,
12 as long as such costs are reasonable. Also, the ability or desire of a
13 Contractor to perform the Work of a Contract with its own
14 organization does not relieve the Contractor of the responsibility to
15 make Good Faith Efforts. Contractors are not, however, required to
16 accept higher quotes from FSBEs if the price difference was
17 excessive or unreasonable.

- 18
19 4. Not rejecting FSBEs as being unqualified without sound reasons based on
20 a thorough investigation of their capabilities. The Contractor's standing
21 within its industry, membership in specific groups, organizations, or
22 associations and political or social affiliations (for example union vs. non-
23 union employee status) are not legitimate causes for the rejection or non-
24 solicitation of bids in the Contractor's efforts to meet the FSBE Goal.
25
26 5. Made efforts to assist interested FSBEs in obtaining bonding, lines of
27 credit, or insurance as required by the recipient or Contractor.
28
29 6. Made efforts to assist interested FSBEs in obtaining necessary equipment,
30 supplies, materials, or related assistance or services.
31
32 7. Effectively used the services of available minority/women community
33 organizations; minority/women contractors' groups; local, State, and
34 Federal minority/women business assistance offices; and other
35 organizations as allowed on a case-by-case basis to provide assistance in
36 the recruitment and placement of FSBEs.
37
38 8. Documentation of GFE must include copies of each FSBE and non-FSBE
39 subcontractor quotes submitted to the Bidder when a non-FSBE
40 subcontractor is selected over a FSBE for Work on the Contract.

41 **Procedures after Execution**

42 **Commercially Useful Function (CUF)**

43 The Contractor may only take credit for the payments made for Work performed
44 by a FSBE that is determined to be performing a CUF. Payment must be
45 commensurate with the work actually performed by the FSBE. This applies to
46 all FSBEs performing Work on a project, if the Contractor wants to receive credit
47 for their participation. The Engineer will conduct CUF reviews to ascertain
48 whether FSBEs are performing a CUF. A FSBE performs a CUF when it is
49 carrying out its responsibilities of its contract by actually performing, managing,
50 and supervising the Work involved. The FSBE must be responsible for
51

1 negotiating price; determining quality and quantity; ordering the material,
2 installing (where applicable); and paying for the material itself. If a FSBE does
3 not perform “all” of these functions on a furnish-and-install contract, it has not
4 performed a CUF and the cost of materials cannot be counted toward FSBE
5 Goal. Leasing of equipment from a leasing company is allowed. However,
6 leasing/purchasing equipment from the Contractor is not allowed. Lease
7 agreements shall be provided prior to the Subcontractor beginning Work. Any
8 use of the Contractor’s equipment by a FSBE may not be credited as countable
9 participation.

10
11 The FSBE does not perform a CUF if its role is limited to that of an extra
12 participant in a transaction, contract, or project through which the funds are
13 passed in order to obtain the appearance of FSBE participation.

14
15 In order for a FSBE traffic control company to be considered to be performing
16 a CUF, the FSBE must be in control of its work inclusive of supervision. The
17 FSBE shall employ a Traffic Control Supervisor who is directly involved in the
18 management and supervision of the traffic control employees and services.

19
20 The following are some of the factors that the Engineer will use in determining
21 whether a FSBE trucking company is performing a CUF:

- 22
23 • The FSBE shall be responsible for the management and supervision
24 of the entire trucking operation for which it is responsible on the
25 contract. The owner demonstrates business related knowledge,
26 shows up on site and is determined to be actively running the
27 business.
- 28
29 • The FSBE itself shall own and operate at least one fully licensed,
30 insured, and operational truck used on the Contract. The drivers of
31 the trucks owned and leased by the FSBE must be exclusively
32 employed by the FSBE and reflected on the FSBE’s payroll.
- 33
34 • Lease agreements for trucks shall indicate that the FSBE has
35 exclusive use of and control over the truck(s). This does not preclude
36 the leased truck from working for others provided it is with the
37 consent of the FSBE and the lease provides the FSBE absolute
38 priority for use of the leased truck.
- 39
40 • Leased trucks shall display the name and identification number of
41 the FSBE.

42 43 **Truck Unit Listing Log**

44 In addition to the subcontracting requirements of Section 1-08.1, each FSBE
45 trucking firm shall submit supplemental information consisting of a completed
46 Primary UDBE/DBE/FSBE Truck Unit Listing Log (WSDOT Form 350-077) and
47 all Rental/Lease agreements (if applicable). The supplemental information
48 shall be submitted in an electronic format to the Engineer prior to any trucking
49 services being performed for FSBE credit. Incomplete or incorrect supplemental
50 information will be returned for correction. The corrected Primary Truck Unit
51 Listing Log and any Updated Primary Truck Unit Listing Logs shall be submitted

1 and accepted by the Engineer no later than ten calendar days of utilizing
2 applicable trucks. Failure to submit or update the DBE Truck Unit Listing Log
3 may result in trucks not being credited as FSBE participation.
4

5 Each FSBE trucking firm shall complete a Daily Truck Unit Listing Log for each
6 day that the FSBE performs trucking services for FSBE credit. The Daily Truck
7 Unit Listing Log forms shall be submitted by Friday of the week after the Work
8 was performed by email to the following email address for the region
9 administering the Contract:
10

11 Eastern Region - ERRegionOEO@wsdot.wa.gov
12 North Central Region - NCRRegionOEO@wsdot.wa.gov
13 Northwest Region - NWRegionOEO@wsdot.wa.gov
14 Olympic Region - ORegionOEO@wsdot.wa.gov
15 South Central Region - SCRRegionOEO@wsdot.wa.gov
16 Southwest Region - SWRegionOEO@wsdot.wa.gov
17 Washington State Ferries - FerriesOEO@wsdot.wa.gov
18

19 **Joint Checking**

20 A joint check is a check between a subcontractor and the Contractor to the
21 supplier of materials/supplies. The check is issued by the Contractor as payer
22 to the subcontractor and the material supplier jointly for items to be incorporated
23 into the project. The FSBE must release the check to the supplier, while the
24 Contractor acts solely as the guarantor.
25

26 A joint check agreement must be approved by the Engineer and requested by
27 the FSBE involved using the DBE Joint Check Request Form (WSDOT Form
28 #272-053) prior to its use. The form must accompany the FSBE Joint Check
29 Agreement between the parties involved, including the conditions of the
30 arrangement and expected use of the joint checks.
31

32 The approval to use joint checks and the use will be closely monitored by the
33 Engineer. To receive FSBE credit for performing a CUF with respect to obtaining
34 materials and supplies, a FSBE must “be responsible for negotiating price,
35 determining quality and quantity, ordering the material, installing and paying for
36 the material itself.” The Contractor shall submit DBE Joint Check Request Form
37 for the Engineer approval prior to using a joint check.
38

39 Material costs paid by the Contractor directly to the material supplier are not
40 allowed. If proper procedures are not followed or the Engineer determines that
41 the arrangement results in lack of independence for the FSBE involved, no
42 FSBE credit will be given for the FSBE’s participation as it relates to the material
43 cost.
44

45 **Prompt Payment**

46 Prompt payment to all subcontractors shall be in accordance with Section 1-
47 08.1. Prompt payment requirements apply to progress payments as well as
48 return of retainage.
49

1 **Subcontracts**

2 Prior to a FSBE performing Work on the Contract, an executed subcontract
3 between the FSBE and the Contractor shall be submitted to the Engineer. The
4 executed subcontracts shall be submitted by email to the following email
5 address for the region administering the Contract:
6

- 7 Eastern Region – ERRegionOEO@wsdot.wa.gov
- 8 North Central Region – NCRRegionOEO@wsdot.wa.gov
- 9 Northwest Region – NWRegionOEO@wsdot.wa.gov
- 10 Olympic Region – ORegionOEO@wsdot.wa.gov
- 11 South Central Region – SCRegionOEO@wsdot.wa.gov
- 12 Southwest Region – SWRegionOEO@wsdot.wa.gov
- 13 Washington State Ferries – FerriesOEO@wsdot.wa.gov

14
15 **Reporting**

16 The Contractor and all subcontractors/suppliers/service providers that utilize
17 FSBEs to perform work on the project, shall maintain appropriate records that
18 will enable the Engineer to verify FSBE participation throughout the life of the
19 project.

20
21 Refer to Section 1-08.1 for additional reporting requirements associated with
22 this contract.

23
24 **Decertification**

25 When a FSBE is “decertified” from the FSBE program during the course of the
26 Contract, the participation of that FSBE shall continue to count as FSBE
27 participation as long as the subcontract with the FSBE was executed prior to
28 the decertification notice. The Contractor is obligated to substitute when a
29 FSBE does not have an executed subcontract agreement at the time of
30 decertification.

31
32 **Sanctions**

33 If it is determined that the Contractor’s failure to meet all or part of the FSBE Goal
34 is due to the Contractor’s inadequate good faith efforts throughout the life of the
35 Contract, including failure to submit timely, required Good Faith Efforts information
36 and documentation, the Contractor may be required to pay FSBE penalty equal to
37 the amount of the unmet Goal, in addition to the sanctions outlined in Section 1-
38 07.11(5).

39
40 **Payment**

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

45
46 1-07.12.GR1

47 **Federal Agency Inspection**

48
49 1-07.12.INST1.GR1

50 Section 1-07.12 is supplemented with the following:
51

1 1-07.12.OPT1.GR1

2 **(October 3, 2023)**

3 **Required Federal Aid Provisions**

4 The Required Contract Provisions Federal Aid Construction Contracts (FHWA 1273)
5 Revised October 23, 2023 and the amendments thereto supersede any conflicting
6 provisions of the Standard Specifications and are made a part of this Contract; provided,
7 however, that if any of the provisions of FHWA 1273, as amended, are less restrictive
8 than Washington State Law, then the Washington State Law shall prevail.

9
10 The provisions of FHWA 1273, as amended, included in this Contract require that the
11 Contractor insert the FHWA 1273 and amendments thereto in each subcontract, together
12 with the wage rates which are part of the FHWA 1273, as amended. Also, a clause shall
13 be included in each subcontract requiring the subcontractors to insert the FHWA 1273
14 and amendments thereto in any lower tier subcontracts, together with the wage rates.
15 The Contractor shall also ensure that this section, REQUIRED FEDERAL AID
16 PROVISIONS, is inserted in each subcontract for subcontractors and lower tier
17 subcontractors. For this purpose, upon request to the Engineer, the Contractor will be
18 provided with extra copies of the FHWA 1273, the amendments thereto, the applicable
19 wage rates, and this Special Provision.

20
21 1-07.12.OPT2.FR1

22 **(October 3, 2022)**

23 **Indian Preference and Tribal Ordinances**

24 This project is located on the *** \$\$1\$\$ ***. It is the Contractor's responsibility to contact
25 the person and/or office listed in this special provision to determine whether any tribal
26 laws or taxes apply. If the tribal laws and taxes do apply, the Contractor shall comply with
27 them in accordance with Section 1-07.1. For informational purposes only, the Work on
28 this project that falls within Tribal Lands is shown on the Summary of Quantities in
29 Group(s) *** \$\$2\$\$ ***.

30
31 Tribal Employment Rights Ordinances (TEROs) may utilize a variety of tools to
32 encourage Indian employment. These tools may include, but are not limited to, TERO
33 fees, Indian hiring preference, Indian-owned business subcontracting preference and/or
34 an Indian training requirement. Other requirements may be a Tribal business license, a
35 required compliance plan and/or employee registration requirements. Every tribe is
36 different and each may be willing to work cooperatively with the Contractor to develop a
37 strategy that works for both parties. For specific details, the Contractor should contact
38 *** \$\$3\$\$ ***.

39
40 The state recognizes the sovereign authority of the tribe and supports the tribe's efforts
41 to enforce its rightful and legal ordinances and expects the Contractor to comply and
42 cooperate with the tribe. The costs related to such compliance shall be borne solely by
43 the Contractor, who is advised to contact the tribal representative listed above, prior to
44 submitting a bid, to assess the impact of compliance on the project.

45
46 Although Indian preference cannot be compelled or mandated by the Contracting
47 Agency, there is no limitation whereby voluntary Contractor or subcontractor-initiated
48 preferences are given, if otherwise lawful. 41 CFR 60-1.5(a)7 provides as follows:

1 Work on or near Indian reservations --- It shall not be a violation of the equal
2 opportunity clause for a construction or non-construction Contractor to extend a
3 publicly announced preference in employment to Indians living on or near an Indian
4 reservation in connection with employment opportunities on or near an Indian
5 reservation. The use of the word *near* would include all that area where a person
6 seeking employment could reasonably be expected to commute to and from in the
7 course of a work day. Contractors or subcontractors extending such a preference
8 shall not, however, discriminate among Indians on the basis of religion, sex, or tribal
9 affiliation, and the use of such a preference shall not excuse a Contractor from
10 complying with the other requirements as contained in the August 25, 1981
11 Department of Labor, Office of Federal Contract Compliance Programs,
12 Government Contractors Affirmative Actions Requirements.

13
14 1-07.15.GR1

15 **Temporary Water Pollution Prevention**

16
17 1-07.15(1).GR1

18 ***Spill Prevention, Control, and Countermeasures Plan***

19
20 1-07.15(1).INST1.GR1

21 Section 1-07.15(1) is supplemented with the following:

22
23 1-07.15(1).OPT1.GR1

24 (November 2, 2022)

25 The Contractor shall immediately notify the Engineer and the WSF Terminal
26 Supervisor of any spill, including, but not limited to, petroleum products, hydraulic
27 fluid, chemical materials or liquids, and sewage. If neither the Engineer nor the WSF
28 Terminal Supervisor is available, the Contractor shall immediately notify the WSF
29 Operations Center at (206) 515-3456.

30
31 1-07.16.GR1

32 **Protection and Restoration of Property**

33
34 1-07.16(1).GR1

35 ***Private/Public Property***

36
37 1-07.16(1)C.GR1

38 **Private Property**

39
40 1-07.16(1)C.INST1.GR1

41 Section 1-07.16(1)C is supplemented with the following:

42
43 1-07.16(1)C.OPT1.GR1

44 (October 3, 2022)

45 The Contractor shall not access the worksite from adjacent properties without
46 permission from the Engineer. The Contractor shall submit a Type 2 Working
47 Drawing to the Engineer in accordance with Section 1-05.3 prior to accessing
48 the project site from adjacent properties. The Working Drawing shall include the
49 methods, materials, equipment, and restoration measures used to access the
50 worksite.

1
2 1-07.16(1)C.OPT2.GR1

3 (October 3, 2022)

4 The Contractor is not to use adjoining property without first obtaining written
5 permission from adjacent property owner(s), and notifying the Engineer, in
6 writing, when such permission has been granted prior to occupying or using
7 adjoining property.

8
9 1-07.16(2).GR1

10 ***Vegetation Protection and Restoration***

11
12 1-07.16(2).INST1.GR1

13 Section 1-07.16(2) is supplemented with the following:

14
15 1-07.16(2).OPT1.GR1

16 (August 2, 2010)

17 Vegetation and soil protection zones for trees shall extend out from the trunk to a
18 distance of 1 foot radius for each inch of trunk diameter at breast height.

19
20 Vegetation and soil protection zones for shrubs shall extend out from the stems at
21 ground level to twice the radius of the shrub.

22
23 Vegetation and soil protection zones for herbaceous vegetation shall extend to
24 encompass the diameter of the plant as measured from the outer edge of the plant.

25
26 1-07.16(4).GR1

27 ***Archaeological and Historical Objects***

28
29 1-07.16(4).INST1.GR1

30 Section 1-07.16(4) is supplemented with the following:

31
32 1-07.16(4).OPT1.GR1

33 (December 6, 2004)

34 The project area potentially contains archaeological or historical objects that may
35 have significance from a historical or scientific standpoint. To protect these objects
36 from damage or destruction, the Contracting Agency, at its discretion and expense,
37 may monitor the Contractor's operations, conduct various site testing and perform
38 recovery and removal of such objects when necessary.

39
40 The Contractor may be required to conduct its operations in a manner that will
41 accommodate such activities, including the reserving of portions of the work area
42 for site testing, exploratory operations and recovery and removal of such objects as
43 directed by the Engineer. If such activities are performed by consultants retained
44 by the Contracting Agency, the Contractor shall provide them adequate access to
45 the project site.

46
47 Added work necessary to uncover, fence, dewater, or otherwise protect or assist in
48 such testing, exploratory operations and salvaging of the objects as ordered by the
49 Engineer shall be paid by force account as provided in Section 1-09.6. If the
50 discovery and salvaging activities require the Engineer to suspend the Contractor's

1 work, any adjustment in time will be determined by the Engineer pursuant to Section
2 1-08.8.

3
4 To provide a common basis for all bidders, the Contracting Agency has entered an
5 amount for the item "Archaeological and Historical Salvage" in the Proposal to
6 become a part of the total bid by the Contractor.
7

8 1-07.17.GR1

9 **Utilities and Similar Facilities**

10
11 1-07.17.INST1.GR1

12 Section 1-07.17 is supplemented with the following:

13
14 1-07.17.OPT1.FR1

15 (April 2, 2007)

16 Locations and dimensions shown in the Plans for existing facilities are in accordance
17 with available information obtained without uncovering, measuring, or other verification.
18

19 The following addresses and telephone numbers of utility companies known or
20 suspected of having facilities within the project limits are supplied for the Contractor's
21 convenience:

22
23 *** \$\$1\$\$ ***
24

25 1-07.17.OPT2.FR1

26 (October 3, 2022)

27 Locations and dimensions shown in the Plans for existing facilities are in accordance
28 with available information obtained without uncovering, measuring, or other verification.
29

30 Public and private utilities, or their Contractors, will furnish all work necessary to adjust,
31 relocate, replace, or construct their facilities unless otherwise provided for in the Plans
32 or these Special Provisions. Such adjustment, relocation, replacement, or construction
33 will be done during the prosecution of the work for this project. It is anticipated that utility
34 adjustment, relocation, replacement, or construction within the project limits will be
35 completed as follows:

36
37 *** \$\$1\$\$ ***
38

39 The Contractor shall attend a mandatory utility preconstruction meeting with the
40 Engineer, all affected subcontractors, and all utility owners and their Contractors prior to
41 beginning onsite work.
42

43 The following addresses and telephone numbers of utility companies or their Contractors
44 that will be adjusting, relocating, replacing or constructing utilities within the project limits
45 are supplied for the Contractor's use:

46
47 *** \$\$2\$\$ ***
48

49 *** \$\$3\$\$ ***
50

1 1-07.18.GR1

2 **Public Liability and Property Damage Insurance**

3
4 1-07.18(5).GR1

5 **Required Insurance Policies**

6
7 1-07.18(5).INST1.GR1

8 The first sentence of Item No. 1 of Section 1-07.18(5) is revised to read:

9
10 1-07.18(5).OPT1.FR1

11 (November 20,2023)

- 12 1. Owners and Contractors Protective (OCP) Insurance providing bodily injury and
13 property damage liability coverage, with limits of *** \$\$1\$\$ *** per occurrence
14 and per project in the aggregate for each policy period, which will be written
15 solely on Insurance Services Office (ISO) form CG0009 1204, together with
16 Washington State Department of Transportation amendatory endorsement CG
17 2908 0999, specifying the Contracting Agency, the State, the Governor, the
18 Commission, the Secretary, the Department and all officers and employees of
19 the State as named insured.

20
21 1-07.18(5).OPT2.GR1

22 (September 7, 2021)

23 Item number 1 of Section 1-07.18(5) is deleted.

24
25 1-07.18(5).INST2.GR1

26 The first sentence of Item No. 2 of Section 1-07.18(5) is revised to read:

27
28 1-07.18(5).OPT3.GR1

29 (September 7, 2021)

- 30 2. Commercial General Liability (CGL) Insurance written under ISO Form CG0001
31 with minimum limits of \$1,000,000 per occurrence and in the aggregate for each
32 one-year policy period.

33
34 1-07.18(5).OPT4.FR1

35 (September 7, 2021)

- 36 2. Commercial General Liability (CGL) Insurance written under ISO Form CG0001
37 with minimum limits of *** \$\$1\$\$ *** per occurrence and in the aggregate for
38 each 1-year policy period.

39
40 1-07.18(5).INST3.GR1

41 Section 1-07.18(5) is supplemented with the following:

42
43 1-07.18(5).OPT5.GR1

44 **(October 3, 2022)**

45 **Builder's Risk Insurance**

46 Builder's Risk Insurance providing Broad Perils (All Risk) coverage upon any work
47 at the site, to the full insurable value thereof. This insurance shall include the
48 Contractor, its subcontractors of every tier, and the State of Washington as named
49 insured on the policy. Coverage shall be included for all materials and supplies to
50 be incorporated into the work at the jobsite, while in transit to the jobsite, or while
51 stored away from the jobsite.

1
2 1-07.18(5).OPT6.FR1

3 (October 3, 2022)

4 The Contractor shall obtain Contractor's Pollution Liability Insurance (CPL) with
5 minimum "per project" limits of *** \$\$1\$\$ *** per occurrence and in the aggregate
6 for claims, including investigation, defense, or settlement costs and expenses for
7 bodily injury and property damage (including natural resources damages and loss
8 of use of tangible property that has not been physically injured) arising out of:
9

10 a. Pollution conditions caused or made worse by the Contractor's
11 performance of the Work, including clean-up costs for a newly caused
12 condition or a historical condition that is made worse; and;

13
14 b. The vicarious liability of subcontractors of any tier.

15
16 The Contractor shall be Named Insured and the Contracting Agency, the State, the
17 Governor, the Commission, the Secretary, the Department, all officers and
18 employees of the State, and their respective members, directors, officers,
19 employees, agents, and consultants (collectively the "Additional Insureds") shall be
20 included as Additional Insureds, or, as appropriate, a Named Insured, under this
21 policy and coverage.
22

23 1-07.23.GR1

24 **Public Convenience and Safety**

25
26 1-07.23(1).GR1

27 ***Construction Under Traffic***

28
29 1-07.23(1).INST1.GR1

30 Section 1-07.23(1) is supplemented with the following:

31
32 1-07.23(1).OPT1.FB1

33 (March 13, 1995)

34 During the hours that cleaning and painting operations are actually in progress,
35 traffic may be restricted as follows:

36
37 *** \$\$1\$\$ ***

38
39 Whenever the Contractor's operations require lane reductions restricting the flow of
40 traffic on multiple lanes in the same direction, the Contractor shall furnish, maintain,
41 and operate a sequential arrow sign, for each lane closure, as specified in the
42 Special Provision **SEQUENTIAL ARROW SIGN**.

43
44 If the Engineer determines that such lane restrictions are causing traffic congestion,
45 the Contractor shall open all lanes to traffic until the congestion is eliminated.

46
47 For movable span structures, the Contractor's operations shall be arranged to permit
48 the opening of the moveable span whenever required by marine traffic.

49
50 Bridge sidewalks shall be kept clear and open to maintain safe pedestrian traffic.
51

1 1-07.23(1).OPT4.GR1

2 (December 6, 2004)

3 The portion of Section 1-07.16(1) that prohibits the merging of construction vehicles
4 with public traffic from an access gained through adjacent properties is rescinded,
5 provided the Contractor's submittal is approved as required below.
6

7 **Access for Construction**

8 The Contractor may enter and leave the traveled way, auxiliary lanes or
9 shoulders at approved locations other than established legal movements. To
10 obtain approval of such an access location, the Contractor shall submit a
11 request to the Engineer. The Contractor's request shall be submitted to the
12 Engineer at least 30 calendar days prior to the time the use of the access will
13 be required. This submittal shall include a vicinity map indicating the interstate
14 stationing at the centerline of the access, distances from the end of ramp tapers
15 of existing interchanges and a traffic control plan conforming with the
16 requirements specified in Section 1-10.2(2). The access shall meet the
17 following requirements:
18

- 19 • Access to and from the worksite adjacent to a multi-lane facility will
20 only be allowed to and from a closed lane.
21
- 22 • The merging point of construction vehicles and public traffic shall
23 provide a Decision Sight Distance for the traveling public of 1,640 ft
24 in urban areas and 1,360 ft in rural areas.
25
- 26 • In urban areas the access shall not be located within 3,280 ft of the
27 end of a ramp taper, or the centerline of a road approach. In rural
28 areas the access shall not be located within 2,720 ft of the end of a
29 ramp taper or the centerline of a road approach.
30
- 31 • Median crossings within 1.5 miles of the access point shall not be
32 used in conjunction with the access.
33
- 34 • No new median crossings shall be created for use in conjunction
35 within 1.5 miles of the access point.
36
- 37 • Short-duration shoulder stops in the construction zone, utilizing light
38 vehicles properly equipped with warning flashers, will be allowed
39 without a lane closure.
40
- 41 • When in use the access location shall have traffic control in place as
42 per Section 1-10. Unauthorized use of the access from adjacent
43 property is to be prohibited by the use of signing and/or flaggers as
44 conditions warrant.
45
- 46 • The continuity of the existing drainage system shall be maintained
47 through the access site.
48
- 49 • Air borne particulates created as a result of using the access shall be
50 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

(November 4, 2024)

Lane, ramp, shoulder, and roadway closures are only permitted as follows:

*** \$\$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. Exceptions to these restrictions are listed below and when applicable take precedence over closures listed above. The Engineer may also consider on a case-by-case basis additional exceptions following a written request by the Contractor.

Lane, ramp, shoulder, and roadway 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.
5. The two-hour period prior to and the two-hour period after the following special events:

*** \$\$4\$\$ ***

It shall be the Contractor's responsibility to obtain the dates and times of all events.

Traffic Delays

When Automated Flagger Assistance Devices (AFADs) or flaggers are used to control traffic, traffic shall not be stopped for more than *** \$\$5\$\$ *** minutes at any time. All traffic congestion shall be allowed to clear before traffic is delayed again.

1
2 If the delay becomes greater than *** \$\$6\$\$ *** minutes, the Contractor shall
3 immediately begin to take action to cease the operations that are causing the delays.
4 If the *** \$\$7\$\$ *** minute delay limit has been exceeded, as determined by the
5 Engineer, the Contractor shall provide to the Engineer, a written proposal to revise
6 their work operations to meet the *** \$\$8\$\$ *** minute limit. This proposal shall be
7 accepted by the Engineer prior to resuming any work requiring traffic control.
8

9 There shall be no delay to medical, fire, or other emergency vehicles. The Contractor
10 shall alert all flaggers and personnel of this requirement.
11

12 **General Restrictions**

13 Construction vehicles using a closed traffic lane shall travel only in the normal
14 direction of traffic flow unless expressly allowed in an accepted traffic control plan.
15 Construction vehicles shall be equipped with flashing or rotating amber lights.
16

17 No two consecutive on-ramps, off-ramps, or intersections shall be closed at the
18 same time and only one ramp at an interchange shall be closed, unless specifically
19 shown in the Plans.
20

21 Roads or ramps that are designated as part of a detour shall not be closed or
22 restricted during the implementation of that detour, unless specifically shown in the
23 Plans.
24

25 **Controlled Access**

26 No special access or egress shall be allowed by the Contractor other than normal
27 legal movements or as shown in the Plans.
28

29 Contractor's vehicles of 10,000 GVW or greater shall not exit or enter a lane open
30 to public traffic except as follows:
31

32 Egress and ingress shall only occur during the hours of allowable lane closures,
33 and:
34

- 35 1. For exiting an open lane of traffic, by decelerating in a lane that is
36 closed during the allowable hours for lane closures.
- 37 2. For entering an open lane of traffic, by accelerating in a closed lane
38 during the allowable hours for lane closures.
39

40
41 Traffic control vehicles are excluded from the gross vehicle weight requirement. If
42 placing construction signs will restrict traveled lanes, then the work will be permitted
43 during the hours of allowable lane closures.
44

45 **Advance Notification**

46 The Contractor shall notify the Engineer in writing of any traffic impacts related to
47 lane closure, shoulder closure, sidewalk closure, or any combination for the week
48 by 12:00 p.m. (noon) Wednesday the week prior to the stated impacts.
49

50 The Contractor shall notify the Engineer in writing ten working days in advance of
51 any traffic impacts related to full roadway closure, ramp closure, or both.

1
2 The Contractor shall notify the Engineer in writing of any changes to the stated traffic
3 impacts a minimum of 48 hours prior to the traffic impacts.
4

5 1-07.23(1).OPT6.GR1

6 (April 14, 2014)

7 Physical reductions of the width of thru travelling lanes are subject to the following
8 restrictions:
9

10 The Contractor shall not reduce the travelled way to a single lane with a clear
11 width of less than 16 feet for a duration that exceeds 4 calendar days without
12 prior approval of the Engineer. The Contractor shall submit a request for a width
13 reduction that exceeds 4 calendar days to the Engineer no later than 30
14 calendar days prior to the start of the proposed width reduction. At a minimum,
15 this request shall include:
16

- 17 1. Schedule showing the planned beginning date and end date of the
18 width reduction.
- 19 2. Plans showing the limits and cross-sections showing the clear
20 distance provided during the width reduction.
- 21 3. Details of available detour routes.
- 22 4. Plan to provide temporary windows of a minimum 16 foot width
23 periodically during the width reduction, where possible.
24

25 The Engineer will reply, in writing, to the request within 7 calendar days. The
26 Contractor shall immediately notify the Engineer if there are any changes to the
27 schedule for the width reduction.
28

29 1-07.23(1).OPT7.FR1

30 **(October 3, 2022)**

31 **Public Notification**

32 The Contractor shall furnish and install information signs that provide advance
33 notification of a ramp closure, roadway closure, or both, a minimum of *** \$1\$\$ ***
34 working days prior to the closure. Sign locations, messages, letter sizes, and sign
35 sizes are shown in the Plans.
36

37 The Contractor shall notify *** \$2\$\$ ***, in writing, a minimum of *** \$3\$\$ ***
38 working days prior to each closure. The Contractor shall furnish copies of these
39 notifications to the Engineer.
40

41 1-07.23(1).OPT8.FR1

42 **(October 3, 2022)**

43 **Maintenance and Protection of Ferry Traffic**

44 *** \$1\$\$ *** is a single-slip terminal. The slip must remain fully operational during
45 all phases of construction.
46

47 The Contractor shall not interfere with terminal or vessel operations of the slips such
48 that ferries do not arrive or depart on time. Every effort shall be made to ensure that
49 construction materials and equipment remain within the bounds of designated
50 staging areas as outlined in the Special Provisions.
51

1 The Contractor shall promptly and diligently remove any equipment, workers, or
2 materials from the traveled way and shall promptly and diligently move any vessels,
3 equipment, materials, or workers from the slip a minimum of 10 minutes prior to the
4 scheduled or anticipated arrival of a ferry until 5 minutes subsequent to the
5 departure of the ferry.
6

7 A safe environment for ferry operations, including vessels, vehicles, Washington
8 State Ferries employees, and passengers — both offshore and on the dock — shall
9 be maintained at all times.
10

11 The Contractor shall shield welding activities from ferries to protect the vision of the
12 captains to the satisfaction of the Engineer. Welding activities shall be shielded to
13 protect the safety of all persons in the area. Shielding is defined as surrounding the
14 work area with a material through which light or spark are not transmitted.
15

16 The Contractor shall assign one employee to monitor approaching vessels and alert
17 other workers to evacuate the work area if required. The worker will be equipped
18 with an air horn or similar device suitable to warn workers and a radio capable of
19 communicating with the ferry vessel captains.
20

21 Temporary steel plates shall not be used on the vehicle or pedestrian traveled way
22 in any location for more than three calendar days.
23

24 **Payment**

25 All costs associated with maintenance and protection of traffic shall be incidental to
26 and included in all other items of work.
27

28 1-07.23(1).OPT9.GR1

29 **(October 3, 2022)**

30 **Maintenance and Protection of Ferry Traffic**

31 The Contractor shall maintain access to and from the ferry vessels for both
32 pedestrian and vehicular traffic at all times. The Contractor shall promptly and
33 diligently remove any equipment, employees, or materials that would impede or
34 delay ferry vessel arrivals or departures. The Contractor shall provide and maintain
35 such barriers, barricades, signs, and lighting necessary to protect and safeguard
36 pedestrians and vehicles as shown in the Plans. The Contractor shall keep all
37 sidewalks, crosswalks, and other pedestrian routes and access points open and
38 clear at all times unless permitted otherwise by the Engineer in an approved traffic
39 control plan.
40

41 Temporary steel plates shall not be used on the vehicle or pedestrian traveled way
42 in any location for more than three calendar days.
43

44 **Payment**

45 All costs associated with maintenance and protection of traffic shall be incidental to
46 and included in other items of work.
47

48 1-07.23(1).OPT10.GR1

49 (September 3, 2024)

1 If July 4 occurs on a Tuesday, the prior Monday is considered to be part of a holiday
2 weekend. If July 4 occurs on a Thursday, the following Friday is considered to be
3 part of a holiday weekend.
4

5 1-07.24.GR1

6 **Rights of Way**
7

8 1-07.24.INST1.GR1

9 Section 1-07.24 is supplemented with the following:
10

11 1-07.24.OPT1.FR1

12 (March 13, 1995)

13 The Contracting Agency has not completed the acquisition of title to the following
14 described property:

15 *** \$\$1\$\$ ***
16
17

18 The Contractor shall not perform any work within these limits until ordered to do so by
19 the Engineer. The Contracting Agency has estimated that the above described property
20 will be available *** \$\$2\$\$ ***.
21

22 1-07.24.OPT2.GR1

23 **(October 3, 2022)**

24 **Sundry Site Plan**

25 The Sundry Site Plan is included in the Plans for the benefit of the Contractor. It is meant
26 to give a graphical representation of the properties in the vicinity of the project site.
27

28 The Sundry Site Plan gives information necessary for locating Right-of-Way (R/W) lines,
29 construction permit boundaries and permanent or construction easements.
30

31 Areas identified within R/W are made available to the Contractor for use as indicated in
32 the Plans and Special Provisions.
33

34 1-07.28.GR1

35 **Railroads**
36

37 1-07.28.INST1.GR1

38 Section 1-07.28 is supplemented with the following:
39

40 1-07.28.OPT1.FR1

41 **(October 3, 2022)**

42 **Additional Requirements for Working with the Railroad**

43 The term Railroad Company shall be understood to mean each of the following railroad
44 companies:
45

46 *** \$\$1\$\$ ***
47

48 The Contractor shall keep the right of way and ditches of the Railroad Company open
49 and clean from any deposits or debris resulting from its operations. The Contractor shall
50 be responsible for the cost to clean and restore ballast of the Railroad Company which

1 is disturbed or becomes fouled with dirt or materials when such deposits or damage
2 result from the Contractor's operations, except as provided elsewhere.

3
4 The Contractor shall cooperate with the Railroad Company and so conduct operations
5 that the necessary reconstruction of its facilities and the removal of existing facilities can
6 be accomplished without interruption of service.

7
8 1-07.28.OPT2.FR1

9 (October 3, 2022)

10 The Contracting Agency has or will enter into an agreement with the Railroad Company
11 as specified in these provisions as contained in Appendix *** \$\$1\$\$ ***.

12
13 1-07.28.OPT3.FR1

14 **(October 3, 2022)**

15 **Construction Work by Railroad Company**

16 The work by the Railroad Company as described below will be performed by the Railroad
17 Company with its own forces at no cost to the Contractor:

18
19 *** \$\$1\$\$ ***

20
21 1-07.28(1).GR1

22 **General**

23
24 1-07.28(1).INST1.GR1

25 Section 1-07.28(1) is supplemented with the following:

26
27 1-07.28(1).OPT1.FR1

28 **(October 3, 2022)**

29 **Contractor's Right of Entry Agreement**

30 The Contractor shall obtain a Right of Entry Agreement from the railroad. For all
31 matters regarding the Contractor's Right of Entry Agreement, the Contractor shall
32 contact:

33
34 *** \$\$1\$\$ ***

35
36 The Contracting Agency has furnished a SAMPLE Contractor's Right of Entry
37 Agreement in Appendix *** \$\$2\$\$ ***. The SAMPLE Contractor's Right of Entry
38 Agreement is an example which represents the Contracting Agency's assessment
39 of the likely terms and conditions prior to Advertisement for Bids. The final terms and
40 conditions will be determined by the Railroad Company after Contract Execution.

41
42 The Contractor is at sole risk for the amount of time it takes to obtain the Right of
43 Entry Agreement from the Railroad Company. Delays in obtaining the right of entry
44 agreement shall not be eligible for a time extension or an equitable adjustment.

45
46 1-07.28(2).GR1

47 **Submittals and Working Drawings**

48
49 1-07.28(2).INST1.GR1

50 Section 1-07.28(2) is supplemented with the following:

1
2 1-07.28(2).OPT1.FR1

3 (October 3, 2022)

4 The Engineer will require up to *** \$\$1\$\$ *** calendar days from the date a Working
5 Drawing is received until it is returned to the Contractor. If a submittal is returned
6 unapproved and then resubmitted, then an additional review time for each
7 subsequent resubmittal of up to *** \$\$2\$\$ *** calendar days will be required.

8
9 1-07.28(6).GR1

10 **Railroad Protective Services**

11
12 1-07.28(6).INST1.GR1

13 Section 1-07.28(6) is supplemented with the following:

14
15 1-07.28(6).OPT1.FR1

16 (October 3, 2022)

17 The Contractor shall notify the Railroad Company a minimum of *** \$\$1\$\$ *** in
18 advance of whenever the Contractor is about to perform Work within Railroad
19 Company property or within 25 feet of the centerline of tracks to enable the Railroad
20 Company to provide flagging or other protective services.

21
22 The Railroad Company's contact to schedule flagging or other protective services
23 is:

24
25 *** \$\$2\$\$ ***

26
27 1-07.28(8).GR1

28 **Measurement and Payment**

29
30 1-07.28(8).INST1.GR1

31 Section 1-07.28(8) is revised to read:

32
33 1-07.28(8).OPT1.GR1

34 (October 3, 2022)

35 The Contracting Agency will make payments to the Railroad for protective services
36 unless:

- 37
38 1. Such services result from the Contractor's failure to comply with the terms
39 and conditions of its contract with the Contracting Agency or with its
40 Contractor's Right of Entry Agreements with the Railroad Company.
41
42 2. The Contractor fails to obtain authorization from the Engineer prior to
43 coordinating with the Railroad Company for any flagging requiring overtime
44 payments as specified under Railroad Safety and Flagging.
45
46 3. The Contractor arranges for assignment of a railroad flagger and alters
47 project work so that a flagger is no longer needed, and adequate advance
48 notice is not provided to the Railroad Company of such change in the need
49 for a flagger (i.e., causing the Railroad Company to dispatch a flagger
50 billable to the project when one is not required).
51

- 1 4. The Contractor causes an emergency, as specified under Railroad
2 Operations.
3
4 5. Protective services are required as a result of a request to the Railroad
5 Company for the Contractor's convenience.
6
7 6. The Contract provides for a bid item in the Contract.
8

9 All costs to comply with this Section, unless otherwise stated, are incidental to the
10 Contract and are the responsibility of the Contractor. The Contractor shall include
11 all related costs in the unit Bid prices of the Contract.
12

13 1-08.GR1

14 **Prosecution and Progress**

15
16 1-08.1.GR1

17 **Subcontracting**

18
19 1-08.1.INST1.GR1

20 Section 1-08.1 is supplemented with the following:
21

22 1-08.1.OPT1.GR1

23 (October 3, 2022)

24 Prior to any subcontractor or lower-tier subcontractor beginning work, the Contractor
25 shall submit to the Engineer a certification (WSDOT Form 420-004) that a written
26 agreement between the Contractor and the subcontractor or between the subcontractor
27 and any lower tier subcontractor has been executed. This certification shall also
28 guarantee that these subcontract agreements include all the documents required by the
29 Special Provision **Federal Agency Inspection**.
30

31 A subcontractor or lower-tier subcontractor will not be permitted to perform any work
32 under the contract until the following documents have been completed and submitted to
33 the Engineer:
34

- 35 1. Request to Sublet Work (WSDOT Form 421-012), and
- 36 2. Contractor and Subcontractor or Lower Tier Subcontractor Certification for
37 Federal-aid Projects (WSDOT Form 420-004).
38

39 The Contractor shall submit a completed Monthly Retainage Report (WSDOT Form 272-
40 065) within 15 calendar days after receipt of every monthly progress payment until every
41 subcontractor and lower tier subcontractor's retainage has been released. This form shall
42 be submitted to the Engineer by email to the following email address for the region
43 administering the Contract:
44

45 Eastern Region – ERRegionOEO@wsdot.wa.gov

46 North Central Region – NCRegionOEO@wsdot.wa.gov

47 Northwest Region – NWRegionOEO@wsdot.wa.gov

48 Olympic Region – ORegionOEO@wsdot.wa.gov

49 South Central Region – SCRegionOEO@wsdot.wa.gov

50 Southwest Region – SWRegionOEO@wsdot.wa.gov

51 Washington State Ferries – FerriesOEO@wsdot.wa.gov

1
2 The Contractor's records pertaining to the requirements of this Special Provision shall be
3 open to inspection or audit by representatives of the Contracting Agency during the life
4 of the contract and for a period of not less than three years after the date of acceptance
5 of the contract. The Contractor shall retain these records for that period. The Contractor
6 shall also guarantee that these records of all subcontractors and lower-tier
7 subcontractors shall be available and open to similar inspection or audit for the same
8 time period.
9

10 1-08.1.OPT3.GR1

11 **(March 13, 1995)**

12 **Qualifications of Building Contractor**

13 If the Contractor is not prequalified for building construction or cannot demonstrate
14 satisfactory experience in constructing the general type of building included in the
15 project, it will be mandatory that the building work be subcontracted to a firm which can
16 meet one or both of these criteria.
17

18 1-08.1(2).GR1

19 **Self-Performance Requirements**

20
21 1-08.1(2).INST1.GR1

22 The third paragraph of Section 1-08.1(2) is revised to read:
23

24 1-08.1(2).OPT1.2026.GR1

25 (November 4, 2024)

26 Self-performance requirements of other subcontractors, such as DBE, PWSVB, or
27 MWBE, shall apply only when included elsewhere in the Contract. In the event of a
28 conflict between specifications, the highest required minimum percentage for self-
29 performance shall take precedence.
30

31 1-08.1(3).GR1

32 **Subcontractor Approval**

33
34 1-08.1(3).INST1.GR1

35 The second sentence in the first paragraph of Section 1-08.1(3) is revised to read:
36

37 1-08.1(3).OPT1.GR1

38 (November 4, 2024)

39 Each request to subcontract shall be submitted through Unifier, Request to Sublet.
40

41 1-08.1(9).GR1

42 **Required Subcontract Clauses**

43
44 1-08.1(9).INST1.GR1

45 The last sentence of Section 1-08.1(9) is revised to read:
46

47 1-08.1(9).OPT1.GR1

48 (May 5, 2025)

49 The executed subcontracts shall be submitted with the Request to Sublet, through
50 Unifier.

1
2 1-08.3.GR1
3 **Progress Schedule**
4
5 1-08.3(1).GR1
6 **Progress Schedule Types**
7
8 1-08.3(2).GR1
9 **General Requirements**
10
11 1-08.3(2)B.GR1
12 **Type B Progress Schedules**
13
14 1-08.3(2)B.INST1.GR1
15 Section 1-08.3(2)B is supplemented with the following:
16
17 1-08.3(2)B.OPT1.FR1
18 (November 20, 2023)
19 In addition to information required in Items 1 through 13, the Progress Schedule
20 shall include the following milestones and/or activities:
21
22 *** \$\$1\$\$ ***
23
24 1-08.4.GR1
25 **Prosecution of Work**
26
27 1-08.4.INST1.GR1
28 The first sentence of Section 1-08.4 is revised to read:
29
30 1-08.4.OPT1.FR1
31 (August 3, 2015)
32 The Contractor shall commence onsite work on or before *** \$\$1\$\$ *** and shall notify
33 the Engineer in writing a minimum of 10 calendar days in advance of the date on which
34 the Contractor intends to begin work.
35
36 1-08.4.OPT2.GR1
37 (August 7, 2006)
38 The Contractor shall begin work no earlier than the begin work date stated in the written
39 notice provided by the Engineer. The Engineer will provide a minimum of 10 calendar
40 days written notice for the date identified as the first working day.
41
42 1-08.4.OPT3.FR1
43 (August 7, 2006)
44 The Contractor shall begin work no earlier than *** \$\$1\$\$ ***.
45
46 1-08.4.OPT4.GR1
47 (*****)
48 The Contractor shall begin Work within 21 calendar days from the date of execution of
49 the Contract by the Contracting Agency or on July 1, 2025, whichever is later, unless

1 otherwise approved in writing. The Contractor shall not begin work earlier than July 1,
2 2025.

3
4 1-08.5.GR1

5 **Time for Completion**

6
7 1-08.5.INST1.GR1

8 The third paragraph of Section 1-08.5 is revised to read:

9
10 1-08.5.OPT1.FR1

11 (August 7, 2006)

12 Contract time shall begin on the date stated in the written notice provided to the
13 Contractor. In no case shall the beginning of contract time be prior to ***\$\$1\$\$*** or later
14 than *** \$\$2\$\$ ***.

15
16 1-08.5.OPT2.FR1

17 (August 7, 2006)

18 Contract time shall begin on the first working day. The first working day shall be ***
19 \$\$1\$\$ ***.

20
21 1-08.5.OPT3.GR1

22 (*****)

23 Contract time shall begin on the first working day following the 21st calendar day after the
24 date the Contracting Agency executes the Contract or on July 1, 2025, whichever is later.
25 If the Contractor starts Work on the project at an earlier date, then Contract time shall
26 begin on the first working day when on-site Work begins.

27
28 1-08.5.INST2.GR1

29 Section 1-08.5 is supplemented with the following:

30
31 1-08.5.OPT7.FR1

32 (March 13, 1995)

33 This project shall be physically completed within *** \$\$1\$\$ *** working days.

34
35 1-08.5.OPT8.FR1

36 (March 13, 1995)

37 This project shall be physically completed in its entirety within *** \$\$1\$\$ *** working days
38 and the temporary traffic signal portion of the project shall be physically completed within
39 the first *** \$\$2\$\$ *** working days.

40
41 1-08.5.OPT9.FR1

42 (December 4, 2006)

43 This project shall be physically completed within *** \$\$1\$\$ *** working days.

44
45 Contract time shall begin on the first working day the Contractor starts onsite work or ***
46 \$\$2\$\$ *** , whichever occurs first.

47
48 1-08.5.OPT10.FR1

49 (March 13, 1995)

50 This project shall be physically completed within *** \$\$1\$\$ *** working days. Contract
51 time shall commence on the first working day:

- 1
- 2
- 3
- 4 1. Following 60 calendar days after contract execution; or,
- 5
- 6
- 7 2. That the Engineer and the Contractor agree to start work after approval of
- 8 construction materials is obtained, whichever occurs first.

9 The Contractor is allowed a maximum of 60 calendar days after execution of the contract
10 to obtain approvals for construction materials

11 1-08.5.OPT11.FR1

12 **(July 2, 2024)**

13 ***Incentive for Early Completion***

14 It is essential that the Contracting Agency has full and unrestricted use of the facilities at
15 the earliest possible time. As an incentive to the Contractor, the Contracting Agency will
16 pay the Contractor *** \$\$1\$\$ *** for each working day remaining in the contract after the
17 established *** \$\$2\$\$ *** Completion Date, but not to exceed an amount equal to ***
18 \$\$3\$\$ ***.

19 The days eligible for the incentive will be calculated by subtracting the working days
20 elapsed through the date of *** \$\$4\$\$ *** completion from the total working days
21 established in the Special Provision **TIME FOR COMPLETION**.

22

23 1-08.6.GR1

24 **Suspension of Work**

25

26 1-08.6.INST1.GR1

27 Section 1-08.6 is supplemented with the following:

28

29 1-08.6.OPT1.FR1

30 (January 3, 2017)

31 Contract time may be suspended for the HMA mix design evaluation report or for
32 procurement of critical materials (Procurement Suspension). In order to receive a
33 Procurement Suspension, the Contractor shall within 21 calendar days after execution
34 by the Contracting Agency, submit all HMA mix designs not already on the QPL according
35 to Section 5-04.2(1) or place purchase orders for all materials deemed critical by the
36 Contracting Agency for Physical Completion of the Contract. The Contractor shall provide
37 a copy of the completed WSDOT Form 350-042 indicating the date the mix design was
38 submitted, or copies of purchase orders for the critical materials. Such purchase orders
39 shall disclose the purchase order date and estimated delivery dates for such critical
40 material.

41

42 The Contractor shall show the HMA mix design evaluation report or procurement of the
43 critical materials listed below as activities in the Progress Schedule. If the approved
44 Progress Schedule indicates that acceptance of the HMA mix designs or materials
45 procurement are critical activities, and if the Contractor has provided documentation that
46 purchase orders are placed for the critical materials within the prescribed 21 calendar
47 days, then Contract time will be suspended upon Physical Completion of all critical work
48 except that work dependent upon the below listed critical materials:

49

50 *** \$\$1\$\$ ***

1
2 Charging of Contract time will resume upon the Contractor's receipt of a WSDOT mix
3 design evaluation report or delivery of the critical materials to the Contractor, notification
4 that the critical materials are ready for delivery to the Contractor from the Contracting
5 Agency's Materials Laboratory, or *** \$\$2\$\$ *** calendar days after execution by the
6 Contracting Agency, whichever occurs first.
7

8 No additional Procurement Suspension will be provided if the Contractor's HMA mix
9 designs did not meet Contract requirements and are resubmitted.
10

11 1-08.6.OPT2.FR1

12 (February 6, 2023)

13 Contract time may be suspended for procurement of critical materials (Procurement
14 Suspension). In order to receive a Procurement Suspension, the Contractor shall within
15 21 calendar days after execution by the Contracting Agency, place purchase orders for
16 all materials deemed critical by the Contracting Agency for physical completion of the
17 contract. The Contractor shall provide copies of purchase orders for the critical materials.
18 Such purchase orders shall disclose the purchase order date and estimated delivery
19 dates for such critical material.
20

21 The Contractor shall show procurement of the materials listed below as activities in the
22 Progress Schedule. If the approved Progress Schedule indicates that the materials
23 procurement are critical activities, and if the Contractor has provided documentation that
24 purchase orders are placed for the critical materials within the prescribed 21 calendar
25 days, then contract time will be suspended upon physical completion of all critical work
26 except that work dependent upon the below listed critical materials:
27

28 *** \$\$1\$\$ ***

29
30 Charging of contract time will resume upon delivery of the critical materials to the
31 Contractor or *** \$\$2\$\$ *** calendar days after execution by the Contracting Agency,
32 whichever occurs first.
33

34 1-08.9.GR1

35 **Liquidated Damages**

36
37 1-08.9.INST1.GR1

38 Section 1-08.9 is supplemented with the following:
39

40 1-08.9.OPT1.FR1

41 (September 8, 2020)

42 Liquidated damages in the amount of *** \$\$1\$\$ *** per working day will be assessed for
43 failure to physically complete the Contract within the physical completion time specified.
44

45 1-08.9.OPT2.FR1

46 (March 13, 1995)

47 Liquidated damages in the amount of *** \$\$1\$\$ *** per working day will be assessed for
48 failure to physically complete the temporary traffic signal portion of the contract within
49 the physical completion time specified. Liquidated damages in an amount based upon
50 the original contract amount and original time, will be assessed for failure to physically
51 complete the entire project within the physical completion time specified. Such damages

1 will accrue separately for each phase or stage of work. In the event damages occur on
2 a concurrent date, the larger of the two damages will apply for such days.

3
4 1-08.9.OPT3.FR1

5 (April 6, 2009)

6 Delayed completion of *** \$\$1\$\$ *** will result in impacts to the traveling public, increase
7 fuel consumption, increase vehicle operating costs, increase pollution, and cause other
8 inconveniences and harm.

9
10 Accordingly, the Contractor agrees:

- 11
12 1. To pay *** \$\$2\$\$ *** liquidated damages per *** \$\$3\$\$ *** for each *** \$\$4\$\$
13 *** prorated to the nearest *** \$\$5\$\$ *** that the work is not completed as
14 specified in *** \$\$6\$\$ ***.
- 15
16 2. To authorize the Engineer to deduct these liquidated damages from any money
17 due or coming due the Contractor.

18
19 1-09.GR1

20 **Measurement and Payment**

21
22 1-09.3.GR1

23 **Scope of Payment**

24
25 1-09.3.INST1.GR1

26 Section 1-09.3 is supplemented with the following:

27
28 1-09.3.OPT1.FR1

29 **(August 7, 2017)**

30 **Fuel Cost Adjustment**

31 **General**

32 The Contracting Agency will make a fuel cost adjustment, either a credit or a
33 payment, for qualifying changes in the index price of on-highway diesel fuel. The
34 adjustment will be applied to partial payments made according to Section 1-09.9.

35
36 The adjustment is not a guarantee of full compensation for fuel price changes. Any
37 adjustment provided by this provision shall not obligate the Contracting Agency for
38 any costs due solely to changes in fuel costs beyond the amount adjusted by this
39 provision. The Contracting Agency does not guarantee that fuel will be available at
40 the base fuel cost or monthly fuel cost. No additional adjustment will be made for
41 rates of fuel consumption or actual fuel types that differ from those specified for the
42 purpose of determining the adjustment.

43
44 For the purpose of calculating the adjustment, the Base Fuel Cost shall be the
45 Weekly fuel price from the **U.S. Energy Information Administration** website. The
46 website location and directions are as follows:

- 47
48 • <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:

$$\text{Adjustment} = (\text{Monthly Fuel Cost} - (1.10 \times \text{Base Fuel Cost})) \times Q$$

If the Monthly Fuel Cost is less than or equal to 90% of the Base Fuel Cost, then:

$$\text{Adjustment} = (\text{Monthly Fuel Cost} - (0.90 \times \text{Base Fuel Cost})) \times Q$$

Where $Q = \sum ((\text{Fuel Usage Factor for each Eligible Bid Item}) \times (\text{Quantity paid in the current months progress estimate for each Eligible Bid Item}))$ for all Eligible Bid Items listed below:

<u>Eligible Bid Item</u>	<u>Fuel Usage Factor</u>
*** \$\$1\$\$ ***	*** \$\$2\$\$ ***
*** \$\$3\$\$ ***	*** \$\$4\$\$ ***

1 **Payment**

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

3
4 “Fuel Cost Adjustment”, by calculation.

5
6 To provide a common proposal for all bidders, the Contracting Agency has entered
7 an amount in the proposal to become a part of the Contractor’s total bid.

8
9 1-09.3.OPT2.FR1

10 **(August 6, 2018)**

11 **Steel Cost Adjustment**

12 The Contractor may elect to participate in the steel cost adjustments for work
13 permanently incorporated into this Contract. Steel cost adjustment is not a guarantee of
14 full compensation for changes to the cost of steel items; not eligible for all items with
15 steel; and any adjustment provided by this provision will not obligate the Contracting
16 Agency for any costs beyond the amount adjusted by this provision.

17
18 This Special Provision provides the option to opt-in to steel cost adjustments for eligible
19 Bid items. The Contractor is provided one opportunity to opt-in and there are no future
20 opt-out provisions. The steel cost adjustment requirements of this Special Provision
21 apply for the duration of the Contract.

22
23 **General**

24 The Contractor may select Bid items from the list below to be included in the steel
25 cost adjustment. The Contractor is not obligated to select any Bid items or to
26 participate in the steel cost adjustment program. The steel cost adjustment will apply
27 only to the Bid items selected by the Contractor.

28
29 Prior to Contract execution the Contractor shall submit the Steel Cost Adjustment
30 Opt-In Bid Item List, WSDOT Form 410-031, to the WSDOT Contract Ad and Award
31 Office. The form is to be received at the WSDOT Bid Room, located at the
32 Transportation Building, 310 Maple Park Avenue SE, Room 2D20, Olympia, WA
33 98501-2361 or may be submitted by facsimile to the following FAX number, (360)
34 705-6966. The Steel Cost Adjustment Opt-In Bid Item List shall be signed by an
35 authorized representative of the Contractor. Should the Contractor fail to return this
36 document as required no Bid items will be eligible for steel cost adjustment.

37
38 **Steel Index Values**

39 The Contracting Agency will use the Bureau of Labor Statistics (BLS) producer price
40 index (PPI) series Id: WPUSISTEEL1 index value for steel cost adjustments.

41
42 The Base Steel Materials Index Value (BV) will be the most recent value published
43 on the BLS website on the day of bid opening. This value will be fixed on the day of
44 bid opening even if the BLS lists this as a preliminary value. The Monthly Steel
45 Materials Index Value (MV) will be the final index value published on the BLS website
46 for any month during the Contract.

47
48 **Measurement**

49 The Contracting Agency has determined the initial cost basis (ICB) of steel to be ***
50 \$\$1\$\$ ***. This cost basis is reflected in the steel cost adjustment calculations below,
51 is non-negotiable and will be taken as a fixed value for the duration of the Contract.

1
2 For each month that steel material is incorporated into the permanent Work of the
3 Contract or paid for as Materials on Hand and the MV is more than 110 percent or
4 less than 90 percent of the BV the Contractor shall provide the Engineer with the
5 following for each eligible Bid item by the end of the following month:
6

- 7 1. The weight of steel material for the month, and
- 8
- 9 2. Documentation of the weight and shipment to the Contractor of the steel
10 material by bills of lading, invoices, or purchase orders.
11

12 Should the Contractor not provide the required documentation as specified the
13 following shall apply:
14

- 15 1. Steel material that has an MV that is more than 110 percent of the BV will
16 not be eligible for a steel cost adjustment.
17
- 18 2. The steel cost adjustment for a Bid item with an MV that is less than 90
19 percent of the BV will be calculated using a weight of steel determined by
20 the Engineer.
21

22 Steel materials will not be eligible for cost adjustments until all requirements of the
23 Contract have been met. Steel added to a Contract as part of a Value Engineering
24 Change Proposal will not be eligible for steel cost adjustment. Steel cost
25 adjustments made in accordance with this Special Provision will not be reflected on
26 payments made to the Contractor until after the index value required for the
27 calculation becomes final. Preliminary index values may be used to establish the
28 BV, but will not be used to establish the MV in calculations.
29

30 For each Bid Item selected by the Contractor on the Steel Cost Adjustment Opt-In
31 Bid Item List form a cost adjustment evaluation will be made. A cost adjustment will
32 only be made if the MV for the month the Work associated with the Bid Item is
33 performed differs by more than ten-percent from the BV.
34

35 The steel cost adjustment will be determined as follows:
36

- 37 1. If the MV is within ten-percent of the BV, there will be no adjustment.
38
- 39 2. If the MV is more than 110-percent of the BV, then

$$40 \quad CA = (((MV - BV) \div BV) - 0.10) \times (ICB \times WS)$$

- 41
- 42
- 43 3. If the MV is less than 90-percent of the BV, then

$$44 \quad CA = (((MV - BV) \div BV) + 0.10) \times (ICB \times WS)$$

45
46
47 Where:

48 CA = Cost Adjustment, dollars

49 MV = Monthly Steel Materials Index Value from BLS for the month determined
50 above
51

1 BV = Base Steel Materials Index Value taken as the most recent value
2 published on the BLS website on the day of bid opening.
3 ICB = Initial Cost Basis of steel per pound
4 WS = Weight of steel (in pounds) eligible for cost adjustment
5

6 The following Bid Items are eligible for the steel cost adjustment program for this
7 Project:

8
9 *** \$\$2\$\$ ***

10
11 **Payment**

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

13
14 "Steel Cost Adjustment", by calculation.

15
16 To provide a common proposal for all bidders, the Contracting Agency has entered
17 an amount in the proposal to become a part of the Contractor's total bid.

18
19 1-09.8.GR1

20 **Payment For Material On Hand**

21
22 1-09.8.INST1.GR1

23 The last paragraph of Section 1-09.8 is revised to read:

24
25 1-09.8.OPT1.GR1

26 (August 3, 2009)

27 The Contracting Agency will not pay for material on hand when the invoice cost is less
28 than \$2,000. As materials are used in the work, credits equaling the partial payments for
29 them will be taken on future estimates. Each month, no later than the estimate due date,
30 the Contractor shall submit a letter to the Engineer that clearly states: 1) the amount
31 originally paid on the invoice (or other record of production cost) for the items on hand,
32 2) the dollar amount of the material incorporated into each of the various work items for
33 the month, and 3) the amount that should be retained in material on hand items. If work
34 is performed on the items and the Contractor does not submit a letter, all of the previous
35 material on hand payment will be deducted on the estimate. Partial payment for
36 materials on hand shall not constitute acceptance. Any material will be rejected if found
37 to be faulty even if partial payment for it has been made.

38
39 1-09.9.GR1

40 **Payments**

41
42 1-09.9(1).GR1

43 ***Retainage***

44
45 1-09.9(1).INST1.GR1

46 Section 1-09.9(1) content and title is deleted and replaced with the following:
47

1 1-09.9(1).OPT1.GR1
2 (June 27, 2011)
3 Vacant
4

5 1-10.GR1
6 **Temporary Traffic Control**
7

8 1-10.1.GR1
9 **General**
10

11 1-10.1.INST1.GR1
12 Section 1-10.1 is supplemented with the following:
13

14 1-10.1.OPT1.FR1
15 (April 1, 2013)

16 The Contracting Agency will provide the following labor, equipment and/or materials
17 resources to the Contractor for use on the project.
18

19 *** \$\$1\$\$ ***
20

21 The Contractor shall notify the Engineer when each resource is to be utilized and shall
22 provide a minimum of *** \$\$2\$\$ *** working days advance notice to allow any necessary
23 arrangements to be made.
24

25 1-10.1.OPT2.FR1
26 (May 20, 2020)

27 The Contracting Agency has arranged for the Washington State Patrol (WSP) to perform
28 the following tasks during the project:
29

30 *** \$\$1\$\$ ***
31

32 There shall be no entitlement for any impacts for any reason as a result of WSP
33 personnel.
34

35 WSP personnel may not be used for any other work without prior acceptance from the
36 Engineer. The acceptance will identify the added work allowed, the terms under which
37 the WSP personnel may be used for the added work, and how the cost of the added work
38 will be shared by the Contractor and Contracting Agency.
39

40 This resource is provided at no additional cost to the Contractor for the initial *** \$\$2\$\$
41 *** hours and includes all costs (e.g., WSP labor, vehicle miles, etc.). Additional hours of
42 WSP personnel may be requested by the Contractor. If allowed by the Engineer, the cost
43 for these hours will be shared by the Contracting Agency and the Contractor. The
44 Contractor's share of the cost for additional hours will be one-half of the amount billed
45 by the law enforcement agency.
46

47 All costs for cancelled work due to unsuitable weather will be shared by the Contracting
48 Agency and the Contractor. The Contractor's share of the cost for cancelled work will be
49 one-half of the amount billed by the law enforcement agency, regardless of when the
50 actual work occurs. All costs for cancelled work for any other reason shall be the full
51 responsibility of the Contractor.

1
2 The Contractor's share of costs for additional hours of uniformed law enforcement
3 personnel will be credited to the Contracting Agency under the bid item "WSP
4 Reimbursement", by calculation.

5
6 1-10.1(1).GR1

7 **Materials**

8
9 1-10.1(1)(9-35).GR1

10 **Temporary Traffic Control Materials**

11 Section 9-35 is supplemented with the following:

12
13 1-10.1(1)(9-35).OPT1.GR1

14 **(January 10, 2022)**

15 **Automated Flagger Assistance Devices**

16 Automated Flagger Assistance Devices (AFADs) shall meet the requirements of the
17 MUTCD Red/Yellow Lens Automated Flagger Assistance Devices.

18
19 1-10.1(1)(9-35).OPT2.GR1

20 (October 3, 2022)

21 Temporary portable transverse rumble strips must be either the black RoadQuake 2
22 or the black RoadQuake 2F Folding Temporary Portable Rumble Strip manufactured
23 by Plastic Safety Systems, Inc., all black Traffix Alert High Speed Rumble Strip
24 manufactured by Traffix Devices or an approved equal.

25
26 Devices submitted for approval shall meet the following criteria:

- 27
- 28 1. Length will be a minimum of 11 feet long.
 - 29
 - 30 2. Width will be a minimum of 10 inches.
 - 31
 - 32 3. Provides a bevel on leading edge.
 - 33
 - 34 4. Weighs a minimum of 100 lbs.
 - 35
 - 36 5. No greater than 3/4-inch profile height.
 - 37
 - 38 6. Flexible along the length of the strip to facilitate conformity to the road
39 surface.
 - 40
 - 41 7. Withstands temperatures 0 to 180 degrees Fahrenheit without degradation
42 in deployment, use or safety.
 - 43
 - 44 8. Function on roads with posted speed limits up to 70 mph; and retain
45 original placement with minimal movement such that performance is not
46 compromised.
 - 47
 - 48 9. Deemed safe by the manufacturer for use by motorcycles.
 - 49

1 1-10.1(1)(9-35).OPT3.GR1

2 **(November 4, 2024)**

3 **Mobile Barrier Trailer System**

4 Mobile Barrier Trailer (MBT) system shall be as manufactured by Mobile Barriers
5 LLC.

6
7 The MBT system submitted for approval shall meet the following criteria:

- 8
9 1. Be a MASH Test Level 3 compliant rigid wall barrier trailer that can be used
10 with a standard semi-tractor.
11
12 2. Be equipped with an impact attenuator that is MASH Test Level 3
13 compliant.
14
15 3. Provide protection of a work area of up to 100 feet, excluding the impact
16 attenuator and semi-tractor.
17
18 4. Include a minimum 9.5kW generator, integrated work area lighting, and
19 120/240V power outlets throughout the barrier.
20
21 5. Include a programmable matrix message/arrow board.
22
23 6. Have LED clearance and side-marker lights mounted on the barrier trailer.
24
25 7. Be colored safety yellow or orange.
26
27 8. Have flashing or rotating amber lights.

28
29 Contact information for MBT systems:

30
31 Mobile Barriers LLC
32 24918 Genesee Trail Road
33 Golden, CO 80401
34 Phone: (303) 526-5995
35 E-mail: sales@mobilebarriers.com
36 Website: www.mobilebarriers.com
37

38 1-10.1(1)(9-35).OPT4.FR1

39 **(November 4, 2024)**

40 **Road Zipper System™**

41 The Road Zipper System™ shall be a Lindsay Transportation Solutions LLCs Road
42 Zipper System consisting of one Barrier Transfer Machine (BTM) and *** \$\$1\$\$ ***
43 linear feet of 18" CRTS concrete barrier (BARRIER).
44

45 The system shall be leased from:

46
47 Lindsay Transportation Solutions, LLC.
48 18135 Burke Street, Suite 100
49 Omaha, NE 68002
50 Phone 402-889-5453
51 Toll Free: 866-404-5049

1 Website: <https://www.lindsay.com/usca/en/infrastructure/>

2
3 1-10.1(1)(9-35.4).GR1

4 **Sequential Arrow Signs**

5 Section 9-35.4 is supplemented with the following:

6
7 1-10.1(1)(9-35.4).OPT1.GR1

8 **(January 6, 2025)**

9 **GPS and Remote Communications Requirements**

10 Sequential Arrow Signs (Arrow Boards) on this project shall also have the following
11 communication abilities:

- 12
13 1. Arrow Boards capable of transmitting or providing Work Zone Data
14 Exchange (WZDx) Specification compliant data feeds from the arrow board
15 or the Arrow Boards central server to the Contracting Agency.
- 16
17 2. Arrow Boards shall transmit its GPS coordinates (latitude and longitude)
18 with an accuracy of 30-foot diameter of its actual location.
- 19
20 3. Arrow Boards shall transmit its GPS coordinates and display mode of
21 operation data to a compatible publicly accessible navigation app service.
22
- 23 4. Arrow Boards shall transmit status and location as follows:
24
 - 25 a. Mode change within 2 minutes.
 - 26
27 b. Location (if moved more than 500 feet) within 2 minutes.
 - 28
29 c. Health checks every 60 minutes.
 - 30
31 d. Current display mode posted on Board (e.g., left or right chevron,
32 arrow direction, four corner flash, etc.).
 - 33
34 e. Transport vs Display mode.

35
36 1-10.1(1)(9-35.8).GR1

37 **Vacant**

38 Section 9-35.8 is revised to read:

39
40 1-10.1(1)(9-35.8).OPT1.GR1

41 **(March 20, 2025)**

42 **Radar Speed Display Sign**

43 Radar Speed Display Signs (RSDS) shall consist of a fully self-contained see-
44 through trailer with power supply and an LED speed indicator display with a one-
45 direction radar. Above or below the display shall be the message "YOUR SPEED"
46 or "YOUR SPEED IS" in letters of 5 to 8 inches in height. The lowest portion of the
47 display shall be high enough to be visible over concrete barriers or safety drums and
48 a 36"x48" speed limit sign as shown on the approved traffic control plan shall be
49 mounted above the speed display.
50

1 The radar speed measurement shall provide a minimum detection distance of 1000
2 ft. and have an accuracy of +/- 1 mile per hour. The radar shall be mounted so
3 detection will function when located behind concrete barrier or drums.
4

5 The numeric speed display range shall be 0 to 99 MPH with numerals of 18 inches
6 in height minimum, amber in color with a black background with automatic dimming
7 for nighttime operations.
8

9 A speed indicator display violation alert shall not be displayed. Flashing of the
10 displayed detected speed is not allowed. The speed indicator shall have a maximum
11 speed cutoff. Detected speeds more than 25 MPH over the posted speed shall not
12 be displayed and speeds under 25 MPH shall not be displayed.
13

14 The unit shall have traffic data collection capabilities. Traffic data shall be collected
15 and transmitted to the Engineer upon request.
16

17 1-10.1(1)(9-35.14).GR1

18 ***Portable Temporary Traffic Control Signal***

19
20 1-10.1(1)(9-35.14).INST1.GR1

21 The first sentence of the second paragraph of Section 9-35.14 is revised to read:
22

23 1-10.1(1)(9-35.14).OPT1.2026.GR1

24 (November 4, 2024)

25 The PTSS shall be capable of operating under traffic actuated, fixed time, and
26 manual control.
27

28 1-10.1(1)(9-35.14).INST2.GR1

29 The first sentence of the sixth paragraph of Section 9-35.14 is revised to read:
30

31 1-10.1(1)(9-35.14).OPT2.2026.GR1

32 (November 4, 2024)

33 Each PTSS shall include vehicle detection.
34

35 1-10.1(1)(9-35.14).INST3.GR1

36 Section 9-35.14 is supplemented with the following:
37

38 1-10.1(1)(9-35.14).OPT3.GR1

39 **(May 5, 2025)**

40 **Residential Driveway Temporary Signal**

41 The Residential Driveway Temporary Signal (RDTS) shall be manufactured by the
42 same company as the Portable Temporary Traffic Control Signals.
43

44 The cart or trailer platform shall have ample batteries and solar charging capabilities
45 to ensure extended run times without external charging. The platforms shall be
46 equipped with 110v charger to facilitate external charging. The platform shall be
47 painted highway safety orange.
48

49 The RDTS shall consist of a three-section signal face in an inverted "T" configuration
50 comprising a 12-inch steady circular red signal indication on top and two adjacent
51 8-inch or 12-inch flashing yellow arrow indications below. The device shall include a

1 NO TURN ON RED sign (R10-11b) with a regulatory plaque displaying the legend
2 TURN ONLY IN DIRECTION OF ARROW. The RDTS shall be used only for
3 residential driveways and should be positioned on the near side of the residential
4 driveway.

5
6 1-10.2.GR1

7 **Traffic Control Management**

8
9 1-10.2.INST1.GR1

10 Section 1-10.2 is supplemented with the following:

11
12 1-10.2.OPT1.GR1

13 **(November 2, 2022)**

14 **Work Zone Safety Contingency**

15 Enhancements to improve the effectiveness of the accepted traffic control plans to
16 increase the safety of the work zones shall be discussed on a weekly basis between the
17 Contractor and the Contracting Agency. Enhancements shall be mutually agreed upon
18 by the Contractor and Engineer prior to performing any Work to implement the
19 enhancement.

20
21 Enhancements do not include the use of Uniformed Police Officers or WSP, address
22 changes to the allowed work hour restrictions, or changes to the staging plans in the
23 Contract (if applicable). If allowed by the Engineer, these items will be addressed in
24 accordance with Section 1-04.4.

25
26 The Contractor shall be solely responsible for submitting any traffic control plan revision
27 to implement the enhancement in accordance with Section 1-10.2(2).

28
29 1-10.2(1).GR1

30 **General**

31
32 1-10.2(1).INST1.GR1

33 Section 1-10.2(1) is supplemented with the following:

34
35 1-10.2(1).OPT1.GR1

36 (October 3, 2022)

37 The Traffic Control Supervisor shall be certified by one of the following:

38
39 The Northwest Laborers-Employers Training Trust
40 27055 Ohio Ave.
41 Kingston, WA 98346
42 (360) 297-3035
43 <https://www.nwlett.edu>

44
45 Evergreen Safety Council
46 12545 135th Ave. NE
47 Kirkland, WA 98034-8709
48 1-800-521-0778
49 <https://www.esc.org>

1 The American Traffic Safety Services Association
2 15 Riverside Parkway, Suite 100
3 Fredericksburg, Virginia 22406-1022
4 Training Dept. Toll Free (877) 642-4637
5 Phone: (540) 368-1701
6 <https://atssa.com/training>
7

8 Integrity Safety
9 13912 NE 20th Ave.
10 Vancouver, WA 98686
11 (360) 574-6071
12 <https://www.integritysafety.com>
13

14 US Safety Alliance
15 (904) 705-5660
16 <https://www.ussafetyalliance.com>
17

18 K&D Services Inc.
19 2719 Rockefeller Ave.
20 Everett, WA 98201
21 (800) 343-4049
22 <https://www.kndservices.net>
23

24 1-10.2(1).OPT2.GR1

25 (January 5, 2015)

26 The primary TCS shall have a minimum of 500 hours of experience providing traffic
27 control as a TCS or traffic control labor on multilane highways with a speed limit of
28 55 mph or greater. The Contractor shall submit a certification of the TCS's
29 experience with the TCS designation. Documentation of experience shall be
30 available upon request by the Engineer.
31

32 1-10.3.GR1

33 **Traffic Control Labor, Procedures and Devices**
34

35 1-10.3.INST1.GR1

36 Section 1-10.3 is supplemented with the following:
37

38 1-10.3.OPT1.FR1

39 **(May 20, 2020)**

40 **Contractor Provided Uniformed Police Officers**

41 The Contractor shall provide, direct, and monitor Uniformed Police Officers having
42 jurisdiction to control traffic in accordance with the Plans. A uniformed police officer
43 (UPO) is a sworn police officer from a local law enforcement agency or a Washington
44 State Patrol officer. The UPO shall provide traffic control as shown in an accepted traffic
45 control plan.
46

47 The following contact information for potential service providers is supplied for the
48 Contractor's convenience:
49

50 *** \$\$1\$\$ ***

1
2 1-10.3(3).GR1

3 **Traffic Control Devices**

4
5 1-10.3(3).INST1.GR1

6 Section 1-10.3(3) is supplemented with the following:

7
8 1-10.3(3).OPT1.GR1

9 **(January 10, 2022)**

10 **Automated Flagger Assistance Devices**

11 **General**

12 Where shown on an accepted traffic control plan, the Contractor shall provide,
13 operate and maintain AFADs.

14
15 An AFAD is a self-contained, portable traffic control system that enables a
16 flagger to avoid standing on the roadway while still controlling road users
17 alternating through a single open lane.

18
19 **AFAD Operation**

20 Each AFAD shall be controlled only by a flagger who has been trained on the
21 operation of the AFADs by a manufacturer or supplier representative in addition
22 to the requirements in accordance with Section 1-10.3(1)A. The flagger shall be
23 positioned to visually see both the AFAD and approaching traffic. When this is
24 not feasible, digital alternatives are allowable. The flagger is prohibited from
25 leaving the AFAD unattended at any time while the AFAD is in operation and
26 controlling traffic.

27
28 If AFAD repairs are required, the Contractor shall control traffic with flaggers
29 and stop/slow paddles and the AFAD shall be repaired or replaced within 48
30 hours.

31
32 **AFAD Location and Use**

33 An AFAD shall only be used in situations where there is only one lane of
34 approaching traffic in the direction to be controlled. AFADs shall not be used
35 within 1500 feet of existing or temporary traffic signals. When used at night, the
36 AFAD location shall be illuminated in accordance with Section 1-10.3(1)A.

37
38 The AFAD may be positioned up to the edge of the open travel lane without any
39 lateral clearance, but only the AFAD gate arm can be within the open travel lane
40 when traffic is being stopped. The AFAD shall be delineated by at least 3
41 transverse channelization devices in advance when not within a closed lane or
42 shoulder.

43
44 The "STOP HERE ON RED" R10-6 (24"x36", B/W) or R10-6a (24"x36", B/W)
45 sign may be attached to the AFAD below the Red/Yellow lens. The AFAD may
46 have a supplemental amber LED changeable message sign with minimum 10-
47 inch characters attached to provide road users additional information, provided
48 it does not block any signal display or signage.

1 The Engineer may order adjustments to the location as needed based on traffic
2 and field conditions. The Contractor shall avoid placing the AFAD within or
3 immediately following horizontal and/or vertical curves when feasible.
4

5 **Setup and Takedown**

6 During the setup and take down operation of the work area, the AFAD display
7 shall be set to a yellow flash mode when the signal heads are deployed into
8 normal operating position.
9

10 Except during setup prior to use and removal after use, the AFAD shall be
11 removed from the work zone clear zone when not in use unless protected by
12 barrier or guardrail.
13

14 1-10.3(3).OPT2.GR1

15 **(January 2, 2018)**

16 **Radar Speed Display Sign**

17 Where shown on an approved traffic control plan or where ordered by the Engineer,
18 the Contractor shall provide, operate, and maintain radar speed display signs
19 (RSDS). A RSDS shall be placed with a minimum of 4 ft. of lateral clearance to edge
20 of a travelled lane and be delineated by channelization devices. The Contractor shall
21 remove the RSDS from the clear zone when not in use unless protected by barrier
22 or guardrail.
23

24 1-10.3(3).OPT3.FR1

25 **(April 15, 2024)**

26 **Smart Work Zone System**

27 Where shown on an approved traffic control plan, the Contractor shall provide,
28 operate, maintain, and remove a Smart Work Zone System. A Smart Work Zone
29 System (SWZS) uses portable roadside sensor information to display real-time
30 dynamic work zone traffic information and instructions to motorists on a series of
31 Portable Changeable Message Signs (PCMSs) approaching a work zone.
32

33 The SWZS shall be capable of communicating three types of work zone traffic
34 information:
35

- 36 1. **Queue detection warning** for slowed or queued traffic ahead.
- 37 2. **Dynamic lane merge** guidance to use all open lanes up to the lane closure
38 tapers and zipper merge instructions during times of congestion.
- 39 3. **Work zone travel delay** for current work zone delays in minutes.
40
41

42
43 In locations with multiple SWZS setups each setup shall be capable of operating
44 independently. One SWZS Technician may operate all systems concurrently.
45

46 **Vendor**

47 The Contractor shall select an independent vendor listed below to provide the SWZS
48 as shown on an approved SWZS Plan:
49

50 **Highway Specialties LLC**

51 Phone: (360) 437-1900

1 Website: <https://www.highwayspecialties.com>

2
3 **Hill and Smith Inc.**

4 Phone: (302) 328-3220

5 Website: https://www.hillandsmith.com/portfolio_category/its-smart-work-zone/

6
7 **ICONE by ICONE Products**

8 Phone: (315) 626-6800

9 Website: <http://iconeproducts.com/>

10
11 **Road-Tech Safety Services, Inc.**

12 Phone: (888) 762-3832

13 Website: <https://www.road-tech.com/>

14
15 **SolarTech**

16 Phone: (610) 391-8600

17 Website: <http://solartechnology.com/>

18
19 **Street Smart**

20 Phone: (888) 653-6800

21 Website: <https://www.streetsmartrental.com/smart-work-zones/>

22
23 **Superior Traffic Services**

24 Phone: (888) 928-5999

25 <https://www.superiortrafficservices.com/>

26
27 **Ver-Mac**

28 Phone: (888) 488-7446

29 Website: <https://www.ver-mac.com/en/jamlogic-software/smart-work-zones>

30
31 **WANCO**

32 Phone: (800) 972-0755

33 Website: <https://www.wanco.com>

34
35 **Devices and Communications**

36 The Contractor and/or Vendor shall provide all devices necessary to operate the
37 system in accordance with the accepted traffic control plans and these
38 specifications.

39
40 The traffic sensors shown in the traffic control plans in advance of lane closure
41 tapers are used to operate the SWZS by detecting vehicle speed approaching the
42 lane closures, where queuing is expected. Typically, these traffic sensors use
43 Doppler radar technology.

44
45 Separate side-fire traffic sensor(s), Wavetronix SmartSensor HD or similar accepted
46 by the Engineer, shall be post-mounted or trailer-mounted to obtain traffic
47 volume/speed data where shown in the traffic control plans. If not shown, then the
48 side-fire traffic sensor shall be placed after the final lane closure taper but before
49 lanes are reopened or any open on-ramps to measure the following:

- 50
51 1. Traffic volume, in vehicles per hour per open lane

- 1
2 2. Speed – time graph used to determine the median & 85th percentile speed
3 in each open lane
4

5 The Contractor shall use and relocate as necessary side-fire traffic sensor(s) at
6 locations compatible with lane closures. As an alternative, multiple side-fire traffic
7 sensors can be used throughout the project limits provide the traffic volume/speed
8 data remains accurate.
9

10 A vendor website or other wireless remote system is required for monitoring SWZS
11 functions and remote management of PCMS messages.
12

13 **Technician**

14 The Vendor shall provide a technician skilled in the operation of all system
15 equipment and software. The technician may be an employee of the Vendor or
16 someone trained and authorized by the Vendor to operate the system. The
17 technician shall be independent of the Contractor and Traffic Control Supervisor but
18 shall collaborate and coordinate as appropriate. The technician shall be on site while
19 the SWZS is in use and able to respond to system issues in person.
20

21 Duties of the Technician include, but are not limited to, the following:
22

- 23 1. Program the automated, real-time operation of the SWZS with traffic
24 sensor trigger speed thresholds and PCMS messages shown on the
25 approved SWZS Plan.
26
27 2. Service, debug, troubleshoot, and maintain all SWZS components.
28
29 3. Maintain SWZS equipment maintenance logs.
30
31 4. Collect and process system data and provide data as described below:
32
33 a. **System Data** – System data shall include:
34
35 i. Data in table format of traffic volume (vehicles per hour per each
36 open lane), 50th-percentile traffic speed of all open lanes, and
37 85th-percentile traffic speed of all open lanes for 15-minute
38 intervals organized by Day and Hour of day for each SWZS
39 implementation measured by the side-fire traffic sensor.
40
41 ii. Day and Hour of day each traffic sensor was triggered, and the
42 message displayed on each PCMS while the SWZS is in use.
43
44 b. **Agency Access to System Data** – Provide password protected
45 access to the Engineer and identified Agency personnel to the
46 System Data via a dedicated website or other wireless remote
47 system.
48
49 c. **Provide System Data to Agency** – At the completion of the Project,
50 provide System Data logs in an electronic format approved by the
51 Engineer.

- 1
2 5. Immediately respond to all system failures in accordance with the **Smart**
3 **Work Zone System Failure Protocol** section of these Specifications.
4

5 **Operation**

6 Operate the SWZS according to the following:
7

8 **Scheduled Use**

9 Use a dynamic lane merge, queue detection warning, and work zone travel
10 delay system on the following roadway(s), locations, and work operations:
11

12 *** \$\$1\$\$ ***
13

14 **Installation, Relocation, Removal, and Storage**

15 The Contractor shall store, install, relocate, and remove all the SWZS
16 components as follows:
17

- 18 1. Install all components with the SWZS Technician's concurrence at
19 least 30 minutes prior to commencing the first lane closure
- 20 2. Relocate components as necessary with the SWZS Technician's
21 concurrence
- 22 3. Assist the Technician as needed when the Smart Work Zone System
23 Failure Protocol occurs
- 24 4. Remove all components within the Work Zone Clear Zone within 60
25 minutes when no longer required unless components are placed
26 behind guardrail or barrier.
27

28 **Initial SWZS Turn-On Meeting**

29 The Contractor shall arrange a meeting at least one week before the initial
30 system turn-on.
31

32 The meeting shall include the Contractor, Traffic Control Manager, Traffic
33 Control Supervisor, Alternative Traffic Control Supervisor (if applicable), SWZS
34 Technician, and WSDOT Project Engineering Office staff.
35

36 During this meeting, the following topics should be discussed at a minimum:
37

- 38 1. Provide and review the approved traffic control plans, including lane
39 closure plans and the associated SWZS plan that will be used.
- 40 2. Review roles and responsibilities for implementation of the SWZS.
41
- 42 3. Provide contact information for critical personnel.
43
- 44 4. Provide a schedule of the anticipated operation times, dates and
45 durations for the initial operation.
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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.

- 1 i. PCMS #1: Maintain positioned 0.5 ± mile in advance of traffic
2 queue, relocated as necessary, except when no traffic queue is
3 present. PCMS #1 may be truck-mounted.
4

<u>Phase 1</u>	<u>Phase 2</u>
SLOW OR	NEXT
STOPPED	#
TRAFFIC	MILES

Where “#” is the approximate queue length rounded up to the nearest mile

- 5
6 ii. PCMS #2: Place 1.5 ± mile in advance of first lane closure taper.
7 Program message as appropriate. Phase 1 is to describe the
8 current lane closure in place. Phase 2 is to describe the distance
9 ahead to the beginning of the first lane closure rounded up to the
10 nearest 0.5 mile interval. For example, if a double right lane
11 closure is 1.5 mile ahead, the PCMS message would be: “2
12 RIGHT LANES CLOSED” / “1.5 MILE AHEAD”.
13

14 1-10.3(3).OPT4.FR1

15 **(April 15, 2024)**

16 **Queue Warning System**

17 Where shown on an accepted traffic control plan, the Contractor shall provide,
18 operate, maintain, and remove a Queue Warning System. A Queue Warning System
19 (QWS) uses portable roadside sensor information to display real-time traffic queue
20 information to motorists on Portable Changeable Message Signs (PCMS)
21 approaching a work zone. QWS is a simplified smart work zone system intended for
22 work zone queues up to 2 miles, measured from the first lane closure taper, but may
23 be modified for queuing up to 3 miles by extending spacing between the two PCMSs
24 from 1± mile to 1.5 ± mile spacing and adjusting the PCMS messages. Traffic sensor
25 placement remains unchanged.
26

27 The QWS shall be capable of communicating two types of work zone traffic
28 information:

- 29
- 30 1. **Queue detection warning** for slowed or queued traffic ahead.
 - 31 2. **Dynamic lane merge** guidance to use all open lanes up to the lane closure
32 tapers and to take turns at merges during times of congestion.
33

34
35 In locations with multiple QWS setups each setup shall be capable of operating
36 independently. One QWS Technician may operate all systems concurrently.
37

38 **Vendors**

39 The Contractor shall select an independent vendor listed below to provide a QWS
40 as shown on an accepted traffic control plan:
41

42 **Highway Specialties LLC**

43 Phone: (360) 437-1900

44 Website: <https://www.highwayspecialties.com>
45

1 **Hill and Smith Inc.**

2 Phone: (302) 328-3220

3 Website: https://www.hillandsmith.com/portfolio_category/its-smart-work-zone/

4
5 **ICONE by ICONE Products**

6 Phone: (315) 626-6800

7 Website: <http://iconeproducts.com/>

8
9 **Road-Tech Safety Services, Inc.**

10 Phone: (888) 762-3832

11 Website: <https://www.road-tech.com/>

12
13 **SolarTech**

14 Phone: (610) 391-8600

15 Website: <http://solartechnology.com/>

16
17 **Street Smart**

18 Phone: (888) 653-6800

19 Website: <https://www.streetSMARTrental.com/smart-work-zones/>

20
21 **Superior Traffic Services**

22 Phone: (888) 928-5999

23 Website: <https://www.superiortrafficservices.com>

24
25 **Ver-Mac**

26 Phone: (888) 488-7446

27 Website: <https://www.ver-mac.com/en/jamlogic-software/smart-work-zones>

28
29 **WANCO**

30 Phone: (800) 972-0755

31 Website: <https://www.wanco.com>

32
33 **Devices and Communications**

34 The Contractor and/or Vendor shall provide all devices necessary to operate the
35 system in accordance with the accepted traffic control plans and these
36 specifications.

37
38 The traffic sensors shown in the traffic control plans in advance of lane closure
39 tapers are used to operate the SWZS by detecting vehicle speed approaching the
40 lane closures, where queuing is expected. Typically, these traffic sensors use
41 Doppler radar technology.

42
43 A vendor website or other wireless remote system is required for monitoring QWS
44 functions and remote management of PCMS messages.

45
46 **Technician**

47 The Vendor shall provide a technician skilled in the operation of all system
48 equipment and software. The technician may be an employee of the Vendor or
49 someone trained and authorized by the Vendor to operate the system. The
50 technician may be Contractor or subcontractor personnel, including the Traffic

1 Control Supervisor. The technician is not required be on site while the QWS is in
2 use but must be able to respond to any system issues remotely.

3
4 Duties of the Technician or trained traffic control personnel include, but are not
5 limited to, the following:
6

- 7 1. Program the automated, real-time operation of the QWS with traffic sensor
8 trigger speed thresholds and PCMS messages shown on the accepted
9 traffic control plan or in these Specifications.
- 10
11 2. Service, debug, troubleshoot, and maintain all QWS components.
- 12
13 3. Maintain QWS equipment maintenance logs.
- 14
15 4. Immediately respond to all system failures in accordance with the **Queue**
16 **Warning System Failure Protocol** section of these Specifications.
- 17

18 **Operation**

19 Operate the QWS according to the following:

20 **Scheduled Use**

21 Use the QWS on the following roadway(s), locations, and work operations:
22

23 *** \$\$1\$\$ ***
24
25

26 **Installation, Relocation, Removal, and Storage**

27 The Contractor or subcontractor shall store, install, relocate, and remove all the
28 QWS components as follows:
29

- 30 1. Install all QWS components with the QWS Technician's concurrence
31 prior to commencing the first lane closure.
- 32
33 2. Relocate components as necessary with the QWS Technician's
34 concurrence.
- 35
36 3. Assist the Technician as needed when the Queue Warning System
37 Failure Protocol occurs.
- 38
39 4. Remove all components within the Work Zone Clear Zone when no
40 longer required unless components are placed behind guardrail or
41 barrier.
- 42

43 **QWS Operation Coordination and Collaboration**

44 The Contractor shall notify the Engineer at least 72 hours in advance of using
45 the QWS including providing a schedule of the anticipated operation times,
46 dates and durations for each subsequent operation.
47

48 The Contractor's Traffic Control Management shall coordinate and collaborate
49 as needed for the successful implementation of the QWS and associated lane
50 closures. Any delays and associated costs due to implementing the QWS shall
51 be at the Contractor's expense.

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Queue Warning System Failure Protocol

In the event of a failure that is not resolved within 15 minutes, reprogram QWS PCMSs to display the following message for the remainder of the Scheduled Use duration:

PCMS 1		PCMS 2	
<u>Phase 1</u>	<u>Phase 2</u>	<u>Phase 1</u>	<u>Phase 2</u>
WATCH	NEXT	(Lane)	1
FOR SLOW	2	(Closure)	MILE
TRAFFIC	MILES	(Description)	AHEAD
2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC

PCMS 1 placed 2± miles from first lane closure taper

PCMS 2 placed 1± mile from first lane closure taper

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14

(Lane Closure Description) message is similar to LEFT LANE CLOSED or LEFT 2 LANES CLOSED.

If the QWS as modified for queuing up to 3 miles, then modify the messaging as follows:

PCMS 1		PCMS 2	
<u>Phase 1</u>	<u>Phase 2</u>	<u>Phase 1</u>	<u>Phase 2</u>
WATCH	NEXT	(Lane)	1.5
FOR SLOW	3	(Closure)	MILES
TRAFFIC	MILES	(Description)	AHEAD
2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC

PCMS 1 placed 3± miles from first lane closure taper

PCMS 2 placed 1.5± miles from first lane closure taper

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1-10.3(3).OPT5.GR1

(October 3, 2022)

Temporary Portable Transverse Rumble Strips

Where shown on a traffic control plan, the Contractor shall provide, install, and maintain temporary portable transverse rumble strips.

Temporary portable transverse rumble strips may be used on two-way, two-lane roadways in conditions requiring traffic to stop.

Do not place temporary portable transverse rumble strips on sharp horizontal or vertical curves, through pedestrian crossings or on bicycle routes. When placed on roadways used by bicyclists a minimum clear path of 4 feet shall be provided at each edge of the roadway or on each paved shoulder if feasible.

The Contractor shall remove the temporary portable transverse rumble strips in their entirety when they are no longer needed.

1 All damage caused by removing temporary portable transverse rumble strips shall
2 be repaired by the Contractor at no additional cost to the Contracting Agency.
3

4 1-10.3(3).OPT6.GR1

5 **(November 4, 2024)**

6 **Mobile Barrier Trailer System**

7 As shown on a traffic control plan or directed by the Engineer, the Contractor shall
8 provide, transport, install, relocate, and maintain a mobile barrier trailer (MBT)
9 system. The mobile barrier system shall be available, on-site, for the entire duration
10 of their projected use.
11

12 The Contractor shall provide a semi-tractor truck operator to haul and operate the
13 MBT system and a MBT system technician qualified to set up and operate the
14 features of the MBT system. Both workers shall have completed a minimum of 4
15 hours of training on use and operation of the MBT system from the MBT system
16 manufacturer within the past 2 years.
17

18 Placement, movement, and removal of a MBT system shall be within a stationary
19 lane closure. The MBT system shall be placed in a closed lane adjacent to the active
20 work space. The MBT shall be placed parallel to the adjacent open lane.
21

22 The wall of the mobile barrier shall not encroach into the adjacent open lane. Work
23 area lights shall not produce any glare to traffic. Channelizing devices shown
24 adjacent to the mobile barrier shall be removed. Place the channelizing devices back
25 as the mobile barrier moves within the work zone.
26

27 Do not use the MBT to guide traffic across lanes or shoulders.
28

29 When the MBT system is not in use, it shall be located outside the work zone clear
30 zone or placed behind a barrier or guardrail.
31

32 **Submittals**

33 Within 21 calendar days of execution of the contract, the Contractor shall submit
34 proof of rental agreement or ownership documentation for the MBT system.
35

36 **Working Drawings**

37 The Contractor shall submit the MBT system information, as a Type 1
38 Working Drawing. The information shall include the following:
39

- 40 1. FHWA's acceptance letter for compliance with MASH Test Level
41 3
- 42
- 43 2. Manufacturer's instructions
44

45 1-10.3(3).OPT7.GR1

46 **(November 4, 2024)**

47 **Road Zipper System™**

48 This Work consists of supplying, transporting, installing, relocating, and maintaining
49 the Road Zipper System as shown on the traffic control plans.
50

1 The Contractor shall notify the Engineer in writing a minimum of 15 working days in
2 advance of the pick up date. The Contractor shall load the Road Zipper System on
3 trailers, lowboys, or similar conveyances and haul it between the pickup location
4 and the job site.

5
6 The Contractor shall be responsible for furnishing the accepted personnel and
7 equipment necessary for loading and unloading the Road Zipper System. The
8 locations for initial placement of the system shall be accepted by the Engineer. When
9 the Engineer determines that the Road Zipper System is no longer required, the
10 Contractor shall return the system to Lindsay Transportation Solutions, LLC.

11
12 The Contractor shall submit Type 1 Working Drawing listing the Road Zipper System
13 operators and mechanics certified by Lindsay to the Engineer for acceptance.
14 Certified operators and mechanics shall have been trained in the manufacturer's
15 recommended operations, maintenance, and repair procedures for the Road Zipper
16 System. Training shall be obtained through Lindsay and be completed prior to the
17 initial pickup date. Only accepted personnel shall operate, maintain, or repair the
18 Road Zipper System.

19
20 On-site storage locations for the BTM are shown on the accepted traffic control
21 plans. The BTM shall be stored at these locations when not actively moving the
22 BARRIER.

23
24 **Road Zipper System Operation**

25 All proposed positions of the BARRIER will be shown on the accepted traffic control
26 plans. The BTM shall be used to move the BARRIER for access to the construction
27 or to change traffic lane configuration site only during the lane closure or traffic
28 switch hours specified in the subsection Public Convenience and Safety of the
29 Special Provision LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC.
30 Traffic control devices shown on the accepted traffic control plans shall be in place
31 prior to the BARRIER shift.

32
33 **Road Zipper System Maintenance and Repair**

34 The Contractor shall be responsible for fueling, lubricating, and performing all
35 maintenance on the BTM recommended by the manufacturer. BARRIER shall be
36 inspected daily for cracks, chips, spalls, dirt, and traffic marks. The Contractor shall
37 be responsible for the repair or replacement of the BTM and any section of
38 BARRIER damaged while in the Contractor's possession at no cost to the
39 Contracting Agency.

40
41 1-10.3(3)B.GR1

42 **Sequential Arrow Signs (Arrow Boards)**

43
44 1-10.3(3)B.INST1.GR1

45 Section 1-10.3(3)B is supplemented with the following:

46
47 1-10.3(3)B.OPT1.GR1

48 **(January 6, 2025)**

49 **Initial Arrow Board Turn-On Meeting**

50 The Contractor shall arrange a meeting at least one week before the initial
51 Arrow Board turn-on.

1
2 The meeting shall include the Contractor, Traffic Control Manager, Traffic
3 Control Supervisor, Alternative Traffic Control Supervisor (if applicable), and
4 WSDOT Project Engineering Office staff.

5
6 During this meeting, the Contractor shall perform the following:

- 7
8 1. A complete and thorough demonstration to show that communication
9 elements listed in Section 9-35.4 are operating properly.
10
11 2. A complete and thorough demonstration to show the data feed is
12 being received by the Contracting Agency.
13

14 **Arrow Board Failure**

15 If Arrow Board repairs are required, the Contractor shall control traffic with
16 Arrow Board without GPS and remote communication abilities, and the Arrow
17 Board needing repairs shall be repaired or replaced within 48 hours.

18
19 Arrow Boards shall be deactivated immediately when the unit is not in use in
20 accordance with the accepted traffic control plan.

21
22 Any data service costs for communications will be included in the unit cost per
23 hour for Sequential Arrow Sign.
24

25 1-10.3(3)K.GR1

26 **Portable Temporary Traffic Control Signal**

27
28 1-10.3(3)K.INST1.GR1

29 Section 1-10.3(3)K is supplemented with the following:

30
31 1-10.3(3)K.OPT1.GR1

32 **(May 5, 2025)**

33 **Residential Driveway Temporary Signal (RDTS)**

34 The PTSS shall include a residential driveway temporary signal (RDTS) when
35 a residential driveway falls between mainline portable temporary traffic control
36 signals used for alternating one-lane two-way traffic control.
37

38 Where shown on an accepted traffic control plan or where ordered by the
39 Engineer, the Contractor shall provide, operate and maintain a RDTS. The
40 RDTS shall only be used as part of a complete PTSS conforming to the
41 requirements of the NEMA TS 5 Standard. Each RDTS unit shall be
42 programmable as part of the PTSS to serve approaches without a dedicated
43 phase. In the event multiple RDTS units are required, all units shall be capable
44 of being programmed with individual timing programs based on their placement
45 within the work zone.
46

47 Each RDTS and the mainline portable temporary traffic control signals shall be
48 programmed with a malfunction management system that monitors active
49 signal and RDTS indications and verifies safe and proper operation. If a
50 malfunction is detected, a fault mode shall be triggered and set the RDTS
51 signals to flashing red mode. A fault mode shall be detected when:

- A conflicting or potential unsafe signal indication scenario occurs
- Communication between the RDTS and the rest of the PTSS is lost for more than 1,000 milliseconds
- A signal lamp is lost for more than 1,000 milliseconds, unless one instance of signal indication at the signal loss location is active and functioning properly

Upon a fault mode detection, the malfunction management system shall text the primary and alternate Traffic Control Supervisor (TCS) via text message or email.

The Contractor shall perform repairs and adjustments as necessary. For fault modes, the Contractor shall respond immediately replacing the RTDS with flagger traffic control until repairs can be made. The Contractor shall either repair the PTSS including the RDTS or replace with a backup within 24 hours.

Each RDTS shall have a mechanism for monitoring battery voltage. In the event of low battery condition, the RDTS shall text to alert the primary and alternate TCS.

The PTSS, including all RDTSs, shall be equipped to an interface with a Remote Monitoring System (RMS) capable of reporting signal location, battery voltage, and system faults. The active timing program operating the PTSS shall always be available and viewable through the RMS website. The RMS shall maintain a history of each signal in the PTSS including total operating hours, alerts, and the location of the PTSS trailer.

The PTSS, including all RDTSs, shall have the ability to communicate via 900 MHz wireless radio as a primary data communication method between units. If wireless connectivity is not feasible, hardwired connectivity is an acceptable alternative; however, the communication cable shall not intrude into the direct work area or obstruct vehicular and pedestrian traffic. The communication system shall work for a minimum distance of one (1) mile under normal operating conditions with a clear line of sight. The radio system shall conform to the applicable Federal Communication Commission requirements and all applicable state and local requirements.

1-10.4.GR1

Measurement

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).OPT2.GR1

(January 10, 2022)

1 "Automated Flagger Assistance Device" will be measured by the hour for the time
2 that each AFAD is operating as shown on the accepted traffic control plan.
3
4 1-10.4(2).OPT3.GR1
5 (January 2, 2018)
6 "Radar Speed Display Sign" will be measured by the hour for the time that each sign
7 is operating as shown on an approved Traffic Control Plan.
8
9 1-10.4(2).OPT5.GR1
10 (September 7, 2021)
11 "Operation of Smart Work Zone System" will be measured by the hour the system
12 is actively operating as defined in Section 1-10.3(3) as supplemented in these
13 special provisions. When the smart work zone system malfunctions for longer than
14 15-minutes or if the smart work zone system is not used in accordance with the
15 applicable approved Smart Work Zone System traffic control plan, no measurement
16 will be made for the smart work zone system for that hour. Payment for all other
17 Work to implement and decommission the SWZS will be made under the applicable
18 items shown in the Proposal.
19
20 1-10.4(2).OPT6.GR1
21 (May 20, 2020)
22 "Contractor Provided Uniformed Police Officer" will be measured by the hour.
23
24 1-10.4(2).OPT7.GR1
25 (September 7, 2021)
26 "Operation of Queue Warning System" will be measured by the hour each system is
27 actively operating as defined in Section 1-10.3(3) as supplemented in these special
28 provisions. When the Queue Warning System malfunctions for longer than 15
29 minutes or is not used in accordance with the applicable accepted traffic control
30 plan, no measurement will be made for the queue warning system for that hour.
31 Payment for all other Work to implement and decommission the Queue Warning
32 System will be made under the applicable items shown in the Proposal.
33
34 1-10.4(2).OPT8.GR1
35 (October 3, 2022)
36 "Temporary Portable Transverse Rumble Strips" will be measured per each one time
37 for each array consisting of three rumble strips in operation at any one time. This
38 price shall include installation, maintaining, and relocating throughout the life of the
39 project and final removal from the project site.
40
41 1-10.4(2).OPT9.GR1
42 (November 4, 2024)
43 "Mobile Barrier Trailer System" will be measured by the day for the time that mobile
44 barrier system is installed as shown on a traffic control plan. A day will begin at
45 midnight (12:00 AM) and end at 11:59 PM. Portions of a day will be rounded up.
46
47 1-10.4(2).OPT10.GR1
48 (November 4, 2024)
49 "Operating the BTM" will be measured by the hour for the time that the BTM is
50 operating on the job site as shown on the accepted traffic control plans.
51

1 1-10.4(3).GR1

2 **Reinstating Unit Items With Lump Sum Traffic Control**

3
4 1-10.4(3).INST1.GR1

5 The first sentence of the first paragraph of Section 1-10.4(3) is revised to read:

6
7 1-10.4(3).OPT1.2026.GR1

8 (March 20, 2025)

9 The Bid Proposal may establish the project as lump sum, in accordance with Section
10 1-10.4(1) and also include one or more of the items included above in Section 1-
11 10.4(2).

12
13 1-10.5.GR1

14 **Payment**

15
16 1-10.5(1).GR1

17 **Lump Sum Bid for Project (No Unit Items)**

18
19 1-10.5(1).INST1.GR1

20 In Section 1-10.5(1), the paragraph following the bid item "Project Temporary Traffic
21 Control", lump sum is revised to read:

22
23 1-10.5(1).OPT1.2026.GR1

24 (November 4, 2024)

25 The lump sum Contract payment shall be full compensation for all costs incurred by
26 the Contractor in performing the Contract Work defined in Section 1-10 except for
27 costs compensated by Bid Proposal items reinstated as described in Section 1-
28 10.5(3).

29
30 1-10.5(2).GR1

31 **Item Bids with Lump Sum for Incidentals**

32
33 1-10.5(2).INST1.GR1

34 Section 1-10.5(2) is supplemented with the following:

35
36 1-10.5(2).OPT1.GR1

37 (November 20, 2023)

38 "Automated Flagger Assistance Device", per hour.

39 The unit Contract price, when applied to the number of hours measured for this item
40 in accordance with Section 1-10.4(2), shall be full pay to provide, maintain and
41 remove the AFAD as described including transporting, installing and resetting the
42 devices.

43
44 All costs for controlling AFADs shall be included in the unit Contract price per hour
45 for "Flaggers".

46
47 1-10.5(2).OPT2.GR1

48 (January 2, 2018)

49 "Radar Speed Display Sign", per hour.

1 The unit Contract price, when applied to the number of units measured for this item
2 in accordance with Section 1-10.4(2), shall be full compensation for all costs
3 incurred by the Contractor in performing the Work for procuring all radar speed
4 display signs required for the project and for transporting these signs to and from
5 the project.
6

7 1-10.5(2).OPT3.GR1

8 (September 7, 2021)

9 "Operation of Smart Work Zone System", per hour.

10 The unit Contract price, when applied to the number of units measured for this item
11 in accordance with Section 1-10.4(2) shall be full compensation for all costs incurred
12 by the Contractor, SWZS Vendor, and SWZS Technician for mobilizing and
13 demobilizing the smart work zone system components; the hardware, software,
14 traffic sensors, and other required equipment; maintenance data logs; traffic data
15 logs; Contracting Agency access to Smart Work Zone System data; and wireless
16 system operations including Contracting Agency access. Payment for all other Work
17 to implement and decommission the SWZS will be made under the applicable items
18 shown in the Proposal.
19

20 1-10.5(2).OPT4.GR1

21 (September 7, 2021)

22 "Operation of Queue Warning System", per hour.

23 The unit Contract price, when applied to the number of units measured for this item
24 in accordance with Section 1-10.4(2) shall be full compensation for all costs incurred
25 by the Contractor, Vendor, and/or Queue Warning System Technician for mobilizing
26 and demobilizing the queue warning system components; the hardware, software,
27 traffic sensors, and other required Queue Warning System equipment; maintenance
28 data logs; traffic data logs; and wireless system operations including Contracting
29 Agency access. Payment for all other Work to implement and decommission the
30 Queue Warning System will be made under the applicable items shown in the
31 Proposal.
32

33 1-10.5(2).OPT5.GR1

34 (May 20, 2020)

35 "Contractor Provided Uniformed Police Officer", per hour.

36
37 The unit Contract price per hour for "Contractor Provided Uniformed Police Officer"
38 shall be full pay for performing the Work as specified and as shown in the Plans,
39 including all costs for arrangement for and supervision of a uniformed law
40 enforcement personnel and vehicles to participate in the Contractor's traffic control
41 activities.
42

43 1-10.5(2).OPT6.GR1

44 (October 3, 2022)

45 "Temporary Portable Transverse Rumble Strips", per each.

46 The unit Contract price, when applied to the number of units measured for this item
47 in accordance with Section 1-10.4(2), shall be full compensation for all costs
48 incurred by the Contractor in performing the Work as described.
49

50 1-10.5(2).OPT7.GR1

51 (November 2, 2022)

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“Work Zone Safety Contingency”, by force account.

All costs as authorized by the Engineer will be paid for by force account as specified in Section 1-09.6.

For purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item “Work Zone Safety Contingency” in the Proposal to become a part of the Contractor’s total bid.

The Engineer may choose to use existing bid items for the implementation of the agreed upon enhancement.

1-10.5(2).OPT8.GR1

(July 2, 2024)

“WSP Reimbursement”, by calculation.

“WSP Reimbursement” will be calculated and paid for as described in Section 1-10.1.

1-10.5(2).OPT9.GR1

(November 4, 2024)

“Mobile Barrier Trailer System”, per day.

The unit Contract price shall be full compensation for all costs incurred by the Contractor in performing the Work.

1-10.5(2).OPT10.GR1

(November 4, 2024)

"The Road Zipper System", lump sum.

The lump sum Contract payment for “The Road Zipper System” shall be full pay for all costs associated with leasing the system, transporting the system to the jobsite, placing the BARRIER in its initial position in accordance with the accepted traffic control plans, fueling, lubricating, and performing maintenance of BTM, and returning the system to Lindsay upon completion of the project.

"Operating the BTM", per hour.

The unit Contract price per hour for "Operating the BTM" shall be full pay for operating the BTM to move the BARRIER as shown on the accepted traffic control plans.

DIVISION2.GR2

**Division 2
Earthwork**

2-01.GR2

Clearing, Grubbing, and Roadside Cleanup

2-01.1.GR2

Description

1 2-01.1.INST1.GR2
2 Section 2-01.1 is supplemented with the following:
3
4 2-01.1.OPT1.FR2
5 (March 13, 1995)
6 Clearing and grubbing on this project shall be performed within the following limits:
7
8 *** \$\$1\$\$ ***
9
10 2-01.3.GR2
11 **Construction Requirements**
12
13 2-01.3(1).GR2
14 **Clearing**
15
16 2-01.3(1).INST1.GR2
17 Item number 1 of Section 2-01.3(1) is revised to read:
18
19 2-01.3(1).OPT1.GR2
20 (April 2, 2018)
21 1. Trees identified for removal shall be felled into the Contracting Agency right of
22 way or areas that will be cleared of vegetation.
23
24 2-01.3(4).GR2
25 **Roadside Cleanup**
26
27 2-01.3(4).INST1.GR2
28 Section 2-01.3(4) is supplemented with the following:
29
30 2-01.3(4).OPT1.FR2
31 (January 5, 1998)
32 *** \$\$1\$\$ ***
33
34 2-01.5.GR2
35 **Payment**
36
37 2-01.5.INST1.GR2
38 The first and second paragraphs of Section 2-01.5 are revised to read:
39
40 2-01.5.OPT1.FR2
41 (August 7, 2017)
42 Payment will be made for the following bid items when they are included in the proposal:
43
44 All costs for clearing and grubbing on this project shall be included in the *** \$\$1\$\$
45 ***.
46
47 2-02.GR2
48 **Removal of Structures and Obstructions**
49

1 2-02.1.GR2

2 **Description**

3

4 2-02.1.INST1.GR2

5 Section 2-02.1 is supplemented with the following:

6

7 2-02.1.OPT1.GR2

8 (March 13, 1995)

9 This work shall consist of removing miscellaneous traffic items.

10

11 2-02.1.OPT2.GR2

12 **(October 4, 2021)**

13 **Removal and Disposal of Asbestos Material**

14 This work shall consist of removing, handling, and disposing of Asbestos Containing
15 Material and Presumed Asbestos Containing Material identified in the Good Faith
16 Investigation (GFI). The Contractor shall remove and dispose of asbestos in any and all
17 areas as identified in the GFI.

18

19 2-02.1.OPT3.GR2

20 (March 13, 1995)

21 This work shall consist of removing portions of an existing box culvert in preparation for
22 extending the box culvert.

23

24 2-02.1.OPT5.GR2

25 **(February 25, 2021)**

26 **Decommissioning Wells**

27 The Contractor shall decommission wells at the locations as shown in the Plans.

28

29 2-02.GR2

30 **Removal of Structures and Obstructions**

31

32 2-02.2.INST1.GR2

33 Section 2-02.2 is supplemented with the following:

34

35 2-02.2.OPT1.GR2

36 (February 25, 2021)

37 Materials shall conform to WAC 173-160-381 for the type of well scheduled for
38 decommissioning.

39

40 2-02.3.GR2

41 **Construction Requirements**

42

43 2-02.3.INST1.GR2

44 Section 2-02.3 is supplemented with the following:

45

46 2-02.3.OPT1.FR2

47 **(September 7, 2021)**

48 **Removal of Obstructions**

49 The following miscellaneous Obstructions shall be removed and disposed of:

50

1 *** \$\$1\$\$ ***

2
3 2-02.3.OPT2.FR2

4 **(March 13, 1995)**

5 **Removing Miscellaneous Traffic Items**

6 The following miscellaneous traffic items shall be removed and disposed of:

7
8 *** \$\$1\$\$ ***

9
10 2-02.3.OPT3.FR2

11 **(June 6, 2022)**

12 **Removal and Disposal of Hazardous Material**

13 Hazardous material is suspected to exist on this project. Approximate limits of
14 contamination are identified in the Plans. The site history, prior studies and/or test results
15 indicate a potential for encountering *** \$\$1\$\$ ***.

16
17 Copies of the environmental reports are available for review at
18 <https://ftp.wsdot.wa.gov/contracts/>. All necessary permits for this work will be furnished
19 by the Contracting Agency. The Contractor is responsible for all work, records, and
20 reports required to perform the work described in this section. The Contracting Agency
21 will perform all testing of suspected hazardous or contaminated material.

22
23 The Contractor shall notify the Engineer 10 working days prior to beginning work in the
24 area identified in the Plans as contaminated. The Contractor shall notify the Engineer
25 immediately if contamination is discovered in areas other than those identified in the
26 Plans or is suspected through observations such as an oily sheen or discolored soils that
27 may or may not emit strong chemical odors.

28
29 **Contaminated Soil and Hazardous Material**

30 The Engineer will determine the limits of excavation required. All material that is
31 designated by the Engineer to be removed shall be handled and stored in a manner that
32 prevents the spread of contamination to adjacent soil or water. Separate stockpiles shall
33 be maintained for known hazardous or contaminated material and for suspected
34 hazardous or contaminated material. The Contractor shall transport hazardous or
35 contaminated material and dispose of it at a permitted facility. The Contractor shall
36 provide the Engineer with a copy of the shipping manifest or bill of lading indicating the
37 amount of material hauled to disposal and bearing the disposal site operator's
38 confirmation for receipt of the material. Manifests shall be submitted in accordance with
39 Section 1-07.5(7).

40
41 **Contaminated Water**

42 All water that is removed from the areas of contamination, including free water that
43 leaches from contaminated soil stockpiles or water that is suspected of being
44 contaminated, shall be collected, handled and stored in a manner that prevents the
45 spread of contamination to adjacent soil or water. The Contractor shall transport
46 contaminated water and dispose of it at a permitted facility. The Contractor shall provide
47 the Engineer with a copy of the shipping manifest or bill of lading indicating the amount
48 of material hauled to disposal and bearing the disposal site operator's confirmation for
49 receipt of the material. Manifests shall be submitted in accordance with Section 1-
50 07.5(7).

1
2 2-02.3.OPT4.GR2

3 **(October 4, 2021)**

4 ***Removal and Disposal of Asbestos Material***

5 Prior to performance of any contract work, the Contractor shall obtain all permits from
6 and provide notification to, the Washington State Department of Labor and Industries,
7 the Washington State Department of Ecology, the local clean air agency, and other
8 permitting and regulatory agencies with jurisdiction over the work involving asbestos as
9 the laws, rules, and regulations require.

10
11 Prior to commencing asbestos related work, the Contractor shall submit as a Type 1
12 Working Drawing any and all written verification of approvals and notifications that have
13 been given and/or obtained from the required jurisdictional agencies. The Contractor
14 shall include a schedule of activities for all work involving asbestos removal as part of
15 the Type 1 Working Drawing. Asbestos related work shall also be shown on the
16 Contractor's project progress schedule.

17
18 The Contractor shall designate a Washington State Certified Asbestos Supervisor (CAS),
19 certified in accordance with WAC 295-65-012, to supervise the asbestos removal and to
20 ensure that the handling and removal of asbestos is accomplished by certified asbestos
21 workers, pursuant to Washington State Department of Labor and Industries standards.
22 The Contractor shall ensure that the removal and disposal of asbestos meets the
23 requirements of EPA regulation 40 CFR Part 61, local health department regulations, and
24 all other applicable regulations.

25
26 The Contractor shall ensure the safety of all workers, visitors to the site, and the public
27 in accordance with all applicable laws, rules, and regulations.

28
29 2-02.3.OPT5.GR2

30 **(October 4, 2021)**

31 ***Removal and Disposal of Asbestos Material***

32 In the event suspected Asbestos Containing Material (ACM) is encountered, the
33 Contractor shall immediately notify the Engineer and the provisions of Section 1-04.7
34 shall apply. Prior to commencing asbestos related work, the Contractor shall obtain all
35 permits from and provide notification to, the Washington State Department of Labor and
36 Industries, the Washington State Department of Ecology, the local clean air agency, and
37 other permitting and regulatory agencies with jurisdiction over the work involving
38 asbestos as the laws, rules, and regulations require.

39
40 The ACM shall only be disturbed under the supervision of a Washington State Certified
41 Asbestos Supervisor (CAS). The CAS shall be certified in accordance with WAC 295-65-
42 012.

43
44 The CAS shall supervise the asbestos removal and ensure that the handling and removal
45 of asbestos is accomplished by certified asbestos workers and in accordance with
46 Washington State Department of Labor and Industries standards. The Contractor shall
47 ensure that the removal and disposal of asbestos meets the requirements of EPA
48 regulation 40 CFR Part 61, local health department regulations, and all other applicable
49 regulations.

1 No asbestos is expected to be encountered. However, if the Contractor believes they
2 have encountered asbestos, they shall immediately notify the Engineer in accordance
3 with Section 1-04.7.
4

5 2-02.3.OPT6.FB2

6 **(June 26, 2000)**

7 **Salvage of Removed Structure Items**

8 All *** \$\$1\$\$ *** of the existing bridge or structure being removed shall remain the
9 property of the Contracting Agency.

10
11 The Contractor shall transport the specified salvaged items to the following location:

12
13 ***\$\$2\$\$***
14

15 The Contractor shall stack the material where directed by the Engineer. The Contractor
16 shall contact the Engineer at least five working days prior to scheduled delivery of the
17 items to confirm delivery arrangements.
18

19 2-02.3.OPT7.GR2

20 **(February 25, 2021)**

21 **Decommissioning of Wells**

- 22 1. Protect the well in place until decommissioned.
- 23
- 24 2. The Contractor shall provide the Department of Ecology (Ecology) a Notice of Intent
25 (NOI) prior to decommissioning a well. A pdf of the NOI shall be provided to the
26 Engineer within 24 hours of submittal to Ecology. A pdf of any Ecology required well
27 reports shall be provided to the Engineer within 24 hours of submittal to the Ecology.
28 Well reports shall include tag numbers, coordinates or other data required by
29 Ecology for incorporation into the Ecology database for wells.
- 30
- 31 3. Licensed well drillers shall be utilized in accordance with Chapter 18.104 RCW, the
32 Washington Well Construction Act.
- 33
- 34 4. The Contractor shall comply with WAC 173-160-381 which describes the standards
35 for decommissioning a well.
- 36
- 37 5. The Contractor shall comply with WAC 173-160-261 requiring all dug wells to have
38 a proper cap to prevent injury and contamination.
- 39
- 40 6. The Contractor shall comply with local laws pertaining to the decommissioning of
41 wells.
- 42
- 43 7. This Work shall be completed prior to physical completion of the project or as agreed
44 upon with the Engineer.
45

46 2-02.3(2).GB2

47 **Removal of Bridges, Box Culverts, and other Drainage Structures**

48
49 2-02.3(2).INST1.GB2

50 Section 2-02.3(2) is supplemented with the following:

1
2 2-02.3(2).OPT1.FB2
3 (June 26, 2000)
4 The Contractor shall remove existing Bridge *** \$\$1\$\$ *** after routing traffic onto
5 *** \$\$2\$\$ ***.

6
7 2-02.3(2).OPT2.FB2
8 (June 26, 2000)
9 The Contractor shall remove existing Bridge ***\$\$1\$\$\$*** in stages as shown in the
10 Plans.

11
12 2-02.3(2).OPT3.FB2
13 (June 26, 2000)
14 The Contractor shall remove the following portions of Bridge *** \$\$1\$\$ *** , as shown
15 in the Plans:

16
17 *** \$\$2\$\$ ***

18
19 2-02.3(2).OPT7.FB2
20 **(June 26, 2000)**
21 **Removal Limits in Water**
22 The existing piers of Bridge *** \$\$1\$\$ *** within the wetted perimeter of the *** \$\$2\$\$
23 *** which do not conflict with new construction shall be removed to elevation ***
24 \$\$3\$\$ ***. All broken concrete, and other bridge removal debris shall be removed
25 from the bottom of the *** \$\$4\$\$ ***.

26
27 2-02.3(2).OPT10.GB2
28 **Use of Explosives**

29
30 2-02.3(2).OPT10(B).FB2
31 (January 2, 2018)
32 The Contractor may use explosives in the demolition of *** \$\$1\$\$ ***.

33
34 If explosives are used for any removal operation, the Contractor shall:

- 35
36 1. Conform with Section 1-07.22, including providing notice of the time and
37 duration of the blasting operation to all residents and property owners
38 within the safety zone.
39
40 2. Submit a Type 2 Working Drawing consisting of a detailed blasting plan.
41
42 3. Perform a pre-blast survey to document the pre-blast condition of all
43 structures within the safety zone, and provide copies of the pre-blast
44 survey to the Engineer.
45
46 4. Obtain permits and approvals from all applicable governmental agencies.

47
48 The blasting plan shall include, at a minimum, the following:

- 49
50 1. Show all stages of the demolition work.
51

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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,

1 the pre-blast, blast, and post-blast procedures, and the responsibilities and activities
2 of the personnel and equipment involved. Those attending shall include, at a
3 minimum, the project superintendent, the licensed explosives expert assigned to
4 supervise the work, and the work crew leaders responsible for performing the pre-
5 blast and post-blast activities.
6

7 Traffic shall not be allowed in the vicinity during blasting operations.
8

9 All damage as a result of the Contractor's blasting operations shall be repaired by
10 the Contractor at no additional expense to the Contracting Agency in accordance
11 with Sections 1-07.13 and 1-07.14.
12

13 2-02.3(2).OPT11.GB2

14 **(January 2, 2018)**

15 **Requirements for Closing Bridge to Traffic Prior to Beginning Removal**

16 The Contractor shall not close the existing bridge to traffic, and shall not begin bridge
17 removal operations, until the following conditions are met:
18

- 19 1. The Contractor's bridge demolition plan Working Drawing submittal has
20 been processed and all comments from the Engineer have been
21 addressed.
22
- 23 2. The Contractor has received the Engineer's acceptance of all shop
24 drawings and materials submittals for materials required for the work to be
25 executed during the closure.
26
- 27 3. The Contractor has submitted a Type 1 Working Drawing consisting of a
28 report on the status of material delivery. The report shall specify the
29 materials already available at the site, the materials yet to arrive at the site,
30 and the scheduled delivery dates of the materials yet to arrive at the site,
31 with written verification from the supplier or copies of confirmed purchase
32 orders indicating the delivery dates of the materials yet to arrive at the site.
33
- 34 4. The Contractor shall provide an updated progress schedule in accordance
35 with Section 1-08.3 confirming that the scheduled delivery of materials will
36 meet the schedule to complete the work within the allowed time. The
37 Contractor shall supplement the progress schedule with a written narrative
38 describing the assumed production rates and planned resource allocations
39 that support the bridge construction activity durations provided in the
40 progress schedule.
41
- 42 5. The Contractor has received the Engineer's concurrence to proceed.
43

44 2-02.3(2).OPT12.GR2

45 **(June 26, 2000)**

46 **Removing Portions of Existing Box Culvert**

47 The Contractor shall remove, to the limits shown in the Plans, the existing wingwalls,
48 wingwall footings, aprons, and parapet walls of the box culvert to be extended.
49

1 2-02.3(3).GR2

2 **Removal of Pavement, Sidewalks, Curbs, and Gutters**

3

4 2-02.3(3).INST1.GR2

5 Section 2-02.3(3) is supplemented with the following:

6

7 2-02.3(3).OPT1.FR2

8 (September 8, 1997)

9 The approximate thickness of the *** \$\$1\$\$ *** pavement is *** \$\$2\$\$ ***.

10

11 2-02.4.GR2

12 **Measurement**

13

14 2-02.4.INST1.GR2

15 Section 2-02.4 is supplemented with the following:

16

17 2-02.4.OPT1.GR2

18 (December 4, 2006)

19 Hazardous material excavation including haul will be measured by the cubic yard. All
20 excavated material will be measured in the position it occupied before the excavation
21 was performed. An original ground measurement will be taken using cross-section or
22 digital terrain modeling survey techniques. The original ground will be compared with a
23 survey of the excavation area taken after the work is completed.

24

25 2-02.4.OPT2.GR2

26 (September 8, 1997)

27 Pavement removal will be measured by the square yard.

28

29 2-02.4.OPT3.GR2

30 (October 25, 1999)

31 Sidewalk removal will be measured by the square yard.

32

33 2-02.4.OPT4.GR2

34 (September 8, 1997)

35 Curb removal will be measured by the linear foot.

36

37 2-02.5.GR2

38 **Payment**

39

40 2-02.5.INST1.GR2

41 Section 2-02.5 is revised by the following:

42

43 2-02.5.OPT1.FR2

44 (August 7, 2017)

45 Payment will be made for the following bid item when it is included in the proposal.

46

47 All costs for the removal of structures and obstructions shall be included in *** \$\$1\$\$ ***.

48

49 2-02.5.INST2.GR2

50 Section 2-02.5 is supplemented with the following:

1
2 2-02.5.OPT2.GR2
3 (February 25, 2021)
4 "Decommissioning Wells", lump sum including all Work as specified and payment to
5 regulatory agencies for any associated fees for monitoring or decommissioning of wells.
6
7 2-02.5.OPT7.GR2
8 (December 4, 2006)
9 "Hazardous Material Handling And Disposal", by force account as provided in Section 1-
10 09.6.
11
12 All costs associated with storing stockpiled hazardous waste and contaminated soils,
13 collecting, handling and storing contaminated water, loading the stockpiled material into
14 the hauling conveyance for transport to the disposal site, and transporting and disposing
15 of hazardous or contaminated materials at an approved facility will be paid by force
16 account under the item "Hazardous Material Handling And Disposal".
17
18 To provide a common basis for all bidders, the Contracting Agency has entered an
19 amount in the proposal to become a part of the Contractor's total bid.
20
21 "Hazardous Material Excavation Incl. Haul", per cubic yard.
22 The unit contract price for "Hazardous Material Excavation Incl. Haul" shall be full pay for
23 all costs associated with excavating the material designated to be removed, hauling it to
24 the stockpile location, and stockpiling the excavated material.
25
26 2-02.5.OPT8.GR2
27 (September 30, 1996)
28 "Removing Miscellaneous Traffic Item", lump sum.
29
30 2-02.5.OPT11.GR2
31 (September 30, 1996)
32 "Removal and Disposal of Asbestos Material", lump sum.
33
34 2-02.5.OPT12.GR2
35 (June 26, 2000)
36 "Removing Portion of Conc. Box Culv.", lump sum.
37
38 The lump sum contract price for "Removing Portion of Conc. Box Culv." shall be full pay
39 for preparing the box culvert for the extension by removing and disposing of all concrete
40 and other debris specified.
41
42 2-02.5.OPT13.FR2
43 (September 30, 1996)
44 "Removing *** \$\$1\$\$ *** Pavement", per square yard.
45
46 2-02.5.OPT15.GR2
47 (June 26, 2000)
48 All costs in connection with removing the box culvert wingwalls, footings, aprons, and
49 parapet wall and disposing of concrete and other debris as specified shall be included in
50 the unit contract prices for the items of work involved in the extension of the box
51 culvert(s).

1
2 2-02.5.OPT16.FR2
3 (November 3, 1999)
4 "Removing *** \$\$1\$\$ *** Sidewalk", per square yard.

5
6 2-02.5.OPT17.FR2
7 (September 8, 1997)
8 "Removing *** \$\$1\$\$ *** Curb", per linear foot.

9
10 2-03.GR2

11 **Roadway Excavation and Embankment**

12
13 2-03.3.GR2

14 **Construction Requirements**

15
16 2-03.3(2).GR2

17 ***Rock Cuts***

18
19 2-03.3(2).INST1.GR2

20 Section 2-03.3(2) is supplemented with the following:

21
22 2-03.3(2).OPT1.GR2

23 **(September 7, 2021)**

24 **Rock Slope Scaling and Removal and Disposal of Rock Slope Scaling Debris**

25 The Contractor shall remove loose rock and soil from the existing rock slope
26 locations shown in the Plans or as specified by the Engineer, and shall remove and
27 dispose of all rock slope scaling debris generated by the work.

28 **Equipment**

29 Rock slope scaling shall be performed with scaling bars, portable hydraulic
30 wedges, air pillows, hand drills, splitters, and other mechanical or hand tools
31 demonstrated to be effective in performing the work to the satisfaction of the
32 Engineer.
33

34 **Submittals**

35 The Contractor shall submit a rock slope scaling plan as a Type 2 Working
36 Drawing. The rock slope scaling plan shall include, but not be limited to, the
37 following:
38

- 39
40 1. Documented work experience of all rock slope scaling supervisors
41 and scalers scheduled to be working on the project. Rock slope
42 scaling supervisors shall have at least 1,500 hours of documented
43 experience as a rock slope scaler. Rock slope scalers shall have at
44 least 1,000 hours of documented experience as a rock slope scaler.
45
- 46 2. The proposed construction sequence and schedule.
47
- 48 3. The type of tools and equipment to be used for rock scaling
49 purposes.
50

- 1 4. The number of rock slope scaling crews to be employed on the
2 project, with a rock slope scaling crew defined as one qualified
3 scaling supervisor and two qualified scalers.
4
- 5 5. Operation plan for collection, removal and disposal of all rock slope
6 scaling debris generated by the rock slope scaling work.
7
- 8 6. Operation plan for protection of roadway surface, railroad facilities,
9 structures, utilities, and other facilities adjacent to the rock slope
10 scaling locations.
11
- 12 7. If the Roadway is exposed to the collection of rock slope scaling
13 debris, the submittal shall include the equipment and procedure to
14 be used to clear the Roadway for public use between rock slope
15 scaling operations.
16

17 The Contractor shall not begin rock slope scaling operations until receiving the
18 Engineer's approval of the rock slope scaling plan.
19

20 **Rock Slope Scaling Construction Requirements**

21 As a first item of work, the Contractor shall clear the rock slope of trees and
22 woody vegetation within the work zone within 15 feet of the slope crest or as
23 otherwise specified by the Engineer. Clearing shall conform to Sections 2-01.1
24 and 2-01.3(1), and the requirement that the vegetation shall be close cut,
25 leaving the root wad intact.
26

27 The Contractor shall conduct rock slope scaling operations in accordance with
28 the details shown in the Plans, the traffic control restrictions and requirements
29 shown in the Plans and specified in the Special Provisions, and the rock slope
30 scaling plan as approved by the Engineer. The size and work experience of the
31 rock slope scaling crew as defined above shall be maintained at all times.
32

33 Rock slope scaling shall begin at the top of the rock slope and work shall
34 proceed down slope, removing loose rock and soil as the work progresses. The
35 extent of rock slope scaling shall be as shown in the Plans and as adjusted in
36 the field by the Engineer.
37

38 **Rock Slope Scaling Debris Collection and Removal**

39 The Contractor shall collect, remove and dispose of all rock slope scaling debris
40 generated by the work, including all rock debris within the limits of the project
41 present at the base of the slope at the beginning of the project. Ditches and
42 benches shall be cleared of all rock slope scaling debris and returned to original
43 functional condition as specified by the Engineer
44

45 The Contractor shall break up any rocks that are too large to transport into
46 manageable sized pieces for haul.
47

48 Rock slope scaling debris collection and removal shall be conducted in
49 accordance with the traffic control restrictions and requirements shown in the
50 Plans and specified in the Special Provisions, and the rock slope scaling plan
51 as approved by the Engineer.

1
2 Except when the Plans or Special Provisions specify a Contracting Agency
3 provided site for disposal of all or specific portions of the rock slope scaling
4 debris, all rock slope scaling debris shall be disposed of at a site conforming to
5 Section 2-03.3(7)C.
6

7 2-03.3(7).GR2

8 **Disposal Of Surplus Material**
9

10 2-03.3(7).INST1.GR2

11 Section 2-03.3(7) is supplemented with the following:
12

13 2-03.3(7).OPT1.FR2

14 (March 13, 1995)

15 Surplus materials may be disposed of within the Contracting Agency furnished site,
16 as detailed in the Plans. For informational purposes the maximum capacity of this
17 site is *** \$\$1\$\$ *** cubic yards, neat line measurement.
18

19 2-03.3(7).OPT2.FR2

20 (March 13, 1995)

21 Surplus materials may be disposed of by widening embankments at the following
22 locations, as may be designated by the Engineer :
23

24 *** \$\$1\$\$ ***
25

26 For informational purposes the maximum capacity of the embankment widening
27 sites is *** \$\$2\$\$ *** cubic yards, neat line measurement
28

29 2-03.3(7).OPT3.GR2

30 (March 13, 1995)

31 The Contractor is not required to utilize the Contracting Agency provided site(s), and
32 may make arrangements, at the Contractor's expense, for the disposal of waste
33 materials, and shall protect the Contracting Agency from all damages arising from
34 the Contractor's waste disposal operations.
35

36 2-03.3(7).OPT4.GR2

37 (March 13, 1995)

38 It is anticipated that the waste site(s) provided by the Contracting Agency will not be
39 of sufficient size or capacity to dispose of all excess materials. Therefore, it will be
40 necessary for the Contractor to make arrangements, at the Contractor's expense,
41 for the disposal of excess waste materials and shall protect the Contracting Agency
42 from all damages that may arise from the waste disposal operations.
43

44 2-03.3(14).GR2

45 **Embankment Construction**
46

47 2-03.3(14)C.GR2

48 **Compacting Earth Embankments**
49

50 2-03.3(14)C.INST1.GR2

51 Section 2-03.3(14)C is supplemented with the following:

1
2 2-03.3(14)C.OPT1.GR2
3 (March 13, 1995)
4 All embankments, except waste embankments, shall be compacted using
5 Method A.
6
7 2-03.3(14)I.GB2
8 **Embankments at Bridge And Trestle Ends**
9
10 2-03.3(14)I.INST1.GB2
11 Section 2-03.3(14)I is supplemented with the following:
12
13 2-03.3(14)I.OPT1.FB2
14 (March 13, 1995)
15 The approach embankments at the ends of *** \$\$1\$\$ *** shall be constructed
16 *** \$\$2\$\$ *** before undertaking the construction of the end piers.
17
18 2-03.4.GR2
19 **Measurement**
20
21 2-03.4.INST1.GR2
22 Section 2-03.4 is supplemented with the following:
23
24 2-03.4.OPT1.GR2
25 (March 13, 1995)
26 The embankment widening for guardrail will be measured by the cubic yard, between the
27 original roadway slope and the neat lines of the widened embankment.
28
29 2-03.4.OPT2.GR2
30 (September 3, 2024)
31 Only one determination of the original ground elevation will be made on this project.
32 Measurement for roadway excavation and embankment will be based on the original
33 ground elevations recorded previous to the award of this contract.
34
35 If discrepancies are discovered in the ground elevations which will materially affect the
36 quantities of earthwork, the original computations of earthwork quantities will be adjusted
37 accordingly.
38
39 Earthwork quantities will be computed, either manually or by means of electronic data
40 processing equipment, by use of the average end area method or by the finite element
41 analysis method utilizing digital terrain modeling techniques.
42
43 Electronic Design Files will be available by request for the Bidder's inspection before the
44 opening of Bids.
45
46 2-03.4.OPT3.GR2
47 (March 13, 1995)
48 Only one determination of the original ground elevation will be made on this project.
49 Measurement for roadway excavation and embankment will be based on the original
50 ground elevations recorded previous to the award of this contract. Control stakes will be

1 set during construction to provide the Contractor with all essential information for the
2 construction of excavation and embankments.

3
4 If discrepancies are discovered in the ground elevations which will materially affect the
5 quantities of earthwork, the original computations of earthwork quantities will be adjusted
6 accordingly.

7
8 Earthwork quantities will be computed, either manually or by means of electronic data
9 processing equipment, by use of the average end area method or by the finite element
10 analysis method utilizing digital terrain modeling techniques.

11
12 Copies of the ground cross-section notes will be available for the bidder's inspection,
13 before the opening of bids, at the Engineer's office and at the Region office.

14
15 Upon award of the contract, copies of the original ground cross-sections will be furnished
16 to the successful bidder on request to the Engineer.

17
18 2-03.4.OPT4.GR2

19 (April 5, 2010)

20 Rock slope scaling will be measured by the crew hour.

21
22 Rock slope scaling debris removal including haul will be measured by the cubic yard in
23 the hauling conveyance at the point of removal from the work site.

24
25 2-03.5.GR2

26 **Payment**

27
28 2-03.5.INST1.GR2

29 Section 2-03.5 is supplemented with the following:

30
31 2-03.5.OPT1.GR2

32 (September 30, 1996)

33 "Embankment in Place", per cubic yard.

34
35 The unit contract price per cubic yard shall be full pay to perform the work as specified,
36 including terracing the existing slope.

37
38 2-03.5.OPT2.FR2

39 (March 13, 1995)

40 All costs in connection with the preparation of waste sites and waste deposits shall be
41 included in the *** \$\$1\$\$ ***.

42
43 2-03.5.OPT3.GR2

44 (April 5, 2010)

45 "Rock Slope Scaling", per crew hour.

46 The unit contract price per crew hour for "Rock Slope Scaling" shall be full pay for
47 performing the work as specified.

48
49 "Rock Slope Scaling Debris Removal Incl. Haul", per cubic yard.

50 The unit contract price per cubic yard for "Rock Slope Scaling Debris Removal Incl. Haul"
51 shall be full pay for performing the work as specified, including collection, removal and

1 disposal of all rock debris within the limits of the project present at the base of the slope
2 at the beginning of the project.

3
4 All costs in connection with felling of trees and woody vegetation from the site as
5 specified, and collection, removal and disposal of all trees and woody vegetation cut and
6 removed from the slope, shall be included in the lump sum contract price for "Clearing
7 and Grubbing".

8
9 2-06.GR2

10 **Subgrade Preparation**

11
12 2-06.3.GR2

13 **Construction Requirements**

14
15 2-06.3(1).GR2

16 ***Subgrade For Surfacing***

17
18 2-06.3(1).INST1.GR2

19 Section 2-06.3(1) is supplemented with the following:

20
21 2-06.3(1).OPT1.GR2

22 (March 13, 1995)

23 The subgrade shall be trimmed with an automatically controlled machine.

24
25 2-06.3(1).OPT2.GR2

26 (March 13, 1995)

27 A subgrade trimmer is not required but all portions of Section 2-03 shall apply as
28 though a subgrade trimmer were specified.

29
30 2-09.GR2

31 **Structure Excavation**

32
33 2-09.3.GR2

34 **Construction Requirements**

35
36 2-09.3(1).GR2

37 ***General Requirements***

38
39 2-09.3(1)C.GR2

40 **Removal of Unstable Base Material**

41
42 2-09.3(1)C.INST1.GR2

43 Section 2-09.3(1)C is supplemented with the following:

44
45 2-09.3(1)C.OPT1.FB2

46 (September 8, 2020)

47 If the soil in the footing excavation *** \$\$1\$\$ *** is disturbed and becomes
48 unsuitable before placement of the concrete footing, the Contractor shall
49 excavate below the plan grade a maximum of 1 foot, as determined by the
50 Engineer, and backfill with gravel backfill for foundations.

1
2 2-09.3(3).GR2

3 **Construction Requirements, Structure Excavation, Class A**

4
5 2-09.3(3)B.GR2

6 **Excavation Using Open Pits – Extra Excavation**

7
8 2-09.3(3)B.INST1.GR2

9 Section 2-09.3(3)B is supplemented with the following:

10
11 2-09.3(3)B.OPT1.FB2

12 (September 7, 2021)

13 Extra excavation and open pit excavation, as defined in this section, will not be
14 allowed at the following location(s):

15
16 *** \$\$1\$\$ ***

17
18 Shoring for the excavation sites specified above shall be Structural Shoring in
19 accordance with Section 2-09.3(3)D. The Contractor shall submit Type 2E
20 Working Drawings consisting of shoring plans in accordance with Section 2-
21 09.3(3)D.

22
23 2-09.3(3)B.OPT2.FR2

24 (April 1, 2019)

25 The Contracting Agency has identified the following areas where the Contractor
26 may dig open pits or perform extra excavation without shoring or cofferdams
27 provided slope stability is evaluated using limit equilibrium methods:

28
29 *** \$\$1\$\$ ***

30
31 **Submittals and Design Requirements**

32 At the locations identified above, the temporary excavation slopes shall be
33 designed by an engineer or engineering geologist licensed in Washington
34 State. The Contractor shall submit Type 2E Working Drawings for the areas
35 identified above. The Type 2E Working Drawings may address each site
36 individually, as groups, or in entirety. The design shall use limit equilibrium slope
37 stability methods and software and shall be completed in conformance with the
38 WSDOT *Geotechnical Design Manual* M 46-03. The design shall be based on
39 site specific conditions and shall include a stability assessment of interim or
40 intermediate stages if they are used and shall include all applicable surcharge
41 loads including those from construction equipment or stock piled materials.
42 Required submittal elements include, at a minimum, the following:

- 43
44 1. A plan view showing the limits of the excavation and its relationship
45 to traffic, Structures, utilities and other pertinent project elements. If
46 the stability of the excavation requires no-load zones or equipment
47 setback distances, those shall be shown on the plan view.
- 48
49 2. A typical or controlling cross section showing the proposed
50 excavation, original ground line, and locations of traffic, existing
51 Structures, utilities, site constraints, surcharge loads, or other

1 conditions that could affect the stability of the slope. If the stability of
2 the excavation requires no-load zones or equipment setback
3 distances, those shall be shown in cross section.
4

- 5 3. A summary clearly describing subsurface conditions and
6 groundwater conditions, sequencing considerations, and governing
7 assumptions.
8
9 4. Supporting calculations for the design of the excavation, the soil and
10 material properties selected for design, and the justification for the
11 selection for those properties, in accordance with the WSDOT
12 *Geotechnical Design Manual* M 46-03.
13
14 5. Safety factors, or load and resistance factors used, and justification
15 for their selection, in accordance with the WSDOT *Geotechnical*
16 *Design Manual* M 46-03, and referenced AASHTO design manuals.
17
18 6. A monitoring plan to evaluate the excavation performance
19 throughout its design life.
20
21 7. Any supplemental subsurface explorations made by the Contractor
22 to meet the requirements for geotechnical design of excavation
23 slopes, in accordance with the WSDOT *Geotechnical Design Manual*
24 M 46-03.
25

26 2-09.3(3)D.GR2

27 **Shoring And Cofferdams**
28

29 2-09.3(3)D.INST1.GR2

30 Section 2-09.3(3)D is supplemented with the following:
31

32 2-09.3(3)D.OPT1.GB2

33 (March 13, 1995)

34 The Contractor shall protect the existing pavement from damage due to the
35 Contractor's operations and shall shore all excavation adjacent to the existing
36 pavement.
37

38 2-09.3(3)D.OPT2.GB2

39 (August 2, 2010)

40 The Contractor shall protect the existing track and facilities of the Railroad
41 Company from damage due to the Contractor's operations, and shall shore all
42 excavation adjacent to the existing railroad track. Shoring shall be steel sheet
43 piling designed for a Cooper E-80 loading according to the American Railway
44 Engineering and Maintenance Association (AREMA) Manual For Railway
45 Engineering. Damage to the railroad track or railroad facilities, due to the
46 Contractor's operations, will be repaired by the Railroad at the Contractor's
47 expense.
48

49 2-09.3(3)D.OPT3.FB2

50 (March 13, 1995)

1 Because of the nearness of the work to the existing *** \$\$1\$\$, *** the Contractor
2 shall protect the *** \$\$2\$\$ *** during the *** \$\$3\$\$ ***.

3
4 2-09.4.GR2

5 **Measurement**

6
7 2-09.4.INST1.GR2

8 The subsection **Lower Limits** of Section 2-09.4 is supplemented with the following:

9
10 2-09.4.OPT1.GB2

11 (January 4, 2010)

12 Under girders, at end pier embankments, the lower limit will follow a line parallel to the
13 bottom of the girders and three feet below them.

14
15 2-12.GR2

16 **Construction Geosynthetic**

17
18 2-12.1.GR2

19 **Description**

20
21 2-12.1.INST1.GR2

22 Section 2-12.1 is supplemented with the following:

23
24 2-12.1.OPT1.GR2

25 **(November 17, 1997)**

26 **Geosynthetic Reinforced Slope**

27 The Contractor shall furnish and construct geosynthetic reinforced slopes in accordance
28 with the details shown in the Plans, these specifications, or as directed by the Engineer.

29
30 2-12.2.GR2

31 **Materials**

32
33 2-12.2(9-03.14).GR2

34 **Borrow**

35 Section 9-03.14 is supplemented with the following:

36
37 2-12.2(9-03.14).OPT1.FR2

38 **(November 17, 1997)**

39 **Borrow for Geosynthetic Reinforced Slope**

40 All backfill material used in the reinforced soil zone of the geosynthetic reinforced
41 slope shall be free draining, free from organic or otherwise deleterious material and
42 shall conform to the gradation for *** \$\$1\$\$ *** borrow, except that the percent
43 passing a No. 200 sieve shall be 7 to 12 percent, and the SE shall be 15 minimum.
44 The material shall be substantially free of shale or other soft, poor durability
45 particles, and shall not contain recycled materials, such as glass, shredded tires,
46 portland cement concrete rubble, or asphaltic concrete rubble. The backfill material
47 shall meet the following requirements:
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<u>Property</u>	<u>Test Method</u>	<u>Allowable Test Value</u>
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(9-07.7).GR2

Welded Wire Reinforcement

Section 9-07.7 is supplemented with the following:

2-12.2(9-07.7).OPT1.GR2

(February 6, 2023)

Welded wire fabric for the slope facing, including all facing anchor pins and tie-bars, shall conform to the requirements of AASHTO M 336. Welded wire fabric, anchor pins, and tie-bars shall be galvanized after fabrication in accordance with ASTM A641 (2 oz./ft² minimum). All damage to galvanizing shall be repaired with Galvanizing Repair Paint in accordance with Section 9-08.1(2)B.

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.

¹These long-term tensile strength requirements apply only in the geosynthetic direction perpendicular to the slope face.

²T_{al} shall be determined in accordance with WSDOT Standard Practice T925.

³Reinforced 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

1 Test Method 925 to the State Materials Laboratory in Tumwater for evaluation. The
2 Contracting Agency will require up to 30 calendar days after receipt of the
3 information to complete the evaluation.
4

5 Source approval for reinforced slope primary reinforcement geosynthetic materials
6 listed in the current QPL, or as approved based on data developed and submitted
7 in accordance with WSDOT Test Method 925, will be based on conformance to the
8 applicable values in Tables 7 and 11.
9

10 2-12.2(9-33.4(1)).OPT2.GR2

11 **(April 5, 2004)**

12 **Geosynthetic Reinforced Slope Secondary Reinforcement**

13 The Contractor shall submit to the Engineer the following information regarding the
14 geosynthetic secondary reinforcement product(s) proposed for use:
15

16 Manufacturer's name and current address,
17 Full product name,
18 Geosynthetic structure, including fiber/yarn type, and
19 Geosynthetic polymer type(s).
20

21 If the geosynthetic source has not been previously evaluated or included in the QPL,
22 a sample of each proposed geosynthetic shall be submitted to the State Materials
23 Laboratory in Tumwater for evaluation. A maximum of 14 calendar days will be
24 required for this testing once the samples and required product information arrive at
25 the Materials Laboratory. Source approval will be based on conformance to the
26 applicable values in Tables 7 and 11. Source approval will not be the basis of
27 acceptance of specific lots of material unless the lot sampled can be clearly
28 identified, and the number of samples tested and approved meet the requirements
29 of WSDOT Test Method 914.
30

31 2-12.2(9-33.4(1)).OPT3.GR2

32 **(November 17, 1997)**

33 **Geosynthetic Reinforced Slope Turf Reinforcement Mat**

34 Approval of source for turf reinforcement mat will be by Manufacturer's Certificate of
35 Compliance.
36

37 2-12.2(9-33.4(3)).GR2

38 **Acceptance Samples**

39 Section 9-33.4(3) is supplemented with the following:
40

41 2-12.2(9-33.4(3)).OPT1.GR2

42 **(November 17, 1997)**

43 **Geosynthetic Reinforced Slope Primary Reinforcement**

44 Geotextile acceptance testing shall meet the requirements of Table 7, and both
45 geotextile and geogrid acceptance testing shall meet the required ultimate tensile
46 strength T_{ult} as provided in the QPL for the selected product(s). If the selected
47 product(s) are not listed in the current QPL, the result of the testing for T_{ult} must be
48 greater than or equal to T_{ult} as determined from the product data submitted and
49 approved by the State Materials Laboratory during source approval. If the results of
50 the testing show that the reinforced slope primary geosynthetic reinforcement lot

1 does not meet the specified properties, the roll or rolls which were sampled will be
2 rejected, and additional sampling and testing will be performed as specified.
3

4 2-12.2(9-33.4(3)).OPT2.GR2

5 **(April 5, 2004)**

6 **Geosynthetic Reinforced Slope Secondary Reinforcement**

7 If the results of the testing show that the reinforced slope secondary reinforcement
8 geosynthetic lot does not meet the properties specified in Table 7 (geotextiles only)
9 and Table 11 (geotextiles and geogrids), the roll or rolls which were sampled will be
10 rejected, and additional sampling and testing will be performed as specified.
11

12 2-12.2(9-33.4(3)).OPT3.GR2

13 **(November 17, 1997)**

14 **Geosynthetic Reinforced Slope Turf Reinforcement Mat**

15 Acceptance of turf reinforcement mat will be by Manufacturer's Certificate of
16 Compliance.
17

18 2-12.2(9-33.4(4)).GR2

19 ***Acceptance by Certificate of Compliance***

20 Section 9-33.4(4) is supplemented with the following:
21

22 2-12.2(9-33.4(4)).OPT1.GR2

23 **(November 17, 1997)**

24 **Reinforced Slope**

25 The Contractor shall provide a Manufacturer's Certificate of Compliance to the
26 Engineer, including polymer type in addition to all information as specified, for all
27 quantities of reinforced slope geosynthetic material, including primary and
28 secondary reinforcement materials, and erosion mat material when specified in the
29 Plans.
30

31 2-12.3.GR2

32 **Construction Requirements**

33
34 2-12.3.INST1.GR2

35 Section 2-12.3 is supplemented with the following:
36

37 2-12.3.OPT1.GR2

38 ***(November 17, 1997)***

39 ***Geosynthetic Reinforced Slope Construction Requirements***

40 **Submittals**

41 The Contractor shall submit to the Engineer, a minimum of 14 calendar days prior
42 to beginning construction of each reinforced slope, detailed plans for each reinforced
43 slope and as a minimum, the submittals shall include the following:
44

- 45 1. Detailed reinforced slope plans showing the actual lengths proposed for
46 the geosynthetic reinforcing layers and the locations of each geosynthetic
47 product proposed for use in each of the geosynthetic reinforcing layers.
48

- 1 2. The Contractor's proposed reinforced slope construction method, including
2 any proposed forming systems, types of equipment to be used and
3 proposed erection sequence.
- 4
- 5 3. Manufacturer's Certificate of Compliance, samples of the reinforced slope
6 geosynthetic(s) and sewn seams for the purpose of acceptance as
7 specified.
- 8
- 9 4. Details of geosynthetic reinforced slope corner construction, including
10 details of the positive connection between the slope sections on both sides
11 of the corner.
- 12
- 13 5. Details of terminating a top layer of reinforced slope geosynthetic and
14 backfill due to a changing reinforced slope profile.
- 15

16 Approval of the Contractor's proposed reinforced slope construction details and
17 methods shall not relieve the Contractor of their responsibility to construct the
18 reinforced slopes in accordance with the requirements of these Specifications.
19

20 **Reinforced Slope Construction**

21 The Contractor shall excavate for the reinforced slope in accordance with Section
22 2-09, and conforming to the limits and construction stages shown in the Plans.
23

24 The Contractor shall direct all surface runoff from adjacent areas away from the
25 reinforced slope construction site.
26

27 The Contractor shall begin reinforced slope construction at the lowest portion of the
28 excavation and shall place each layer horizontally as shown in the Plans. The
29 Contractor shall complete each layer entirely before beginning the next layer.
30

31 Geotextile splices shall consist of a sewn seam or a minimum 1 ft overlap. Geogrid
32 splices shall consist of adjacent geogrid strips butted together and fastened using
33 hog rings, or other methods approved by the Engineer, in such a manner to prevent
34 the splices from separating during geogrid installation and backfilling. The
35 Contractor shall offset geosynthetic splices in one layer from those in the other
36 layers such that the splices shall not line up vertically. Splices parallel to the slope
37 face will not be allowed, as shown in the Plans.
38

39 Primary reinforcing geosynthetic shall be cut to the length shown in the Plans. For
40 geogrids, the end of the primary reinforcing located at the face of the slope shall be
41 cut so that the cut ribs extend no more than 0.6 inch but not less than 0.2 inch from
42 the cross ribs. For geogrids, the length of the reinforcement required as shown in
43 the Plans shall be defined as the distance between the geosynthetic facing and the
44 last geogrid node at the end of the reinforcement in the slope backfill.
45

46 The Contractor shall stretch out the geosynthetic in the direction perpendicular to
47 the slope face to ensure that no slack or wrinkles exist in the geosynthetic prior to
48 backfilling. Soil piles or the geosynthetic manufacturer's recommended method
49 shall be used to hold the geosynthetic in place until the specified cover material is
50 placed.
51

1 The Contractor shall place fill material on the geosynthetic in lifts such that 6 inches
2 minimum of fill material is between the vehicle or equipment tires or tracks and the
3 geosynthetic at all times. The Contractor shall remove all particles within the backfill
4 material greater than 3 inches in size. Turning of vehicles on the first lift above the
5 geosynthetic will not be permitted. The Contractor shall not end dump fill material
6 directly on the geosynthetic without the prior approval of the Engineer.
7

8 Should the geosynthetic be damaged or the splices disturbed, the backfill around
9 the damaged or displaced area shall be removed and the damaged strip of
10 geosynthetic replaced by the Contractor at no expense to the Contracting Agency.
11

12 The Contractor shall place and compact the reinforced slope backfill in accordance
13 with the reinforced slope construction sequence detailed in the Plans. The minimum
14 compacted backfill lift thickness of the first lift above each geosynthetic layer shall
15 be 6 inches. The maximum compacted lift thickness anywhere within the reinforced
16 slope shall be 10 inches.
17

18 The Contractor shall compact each layer to 95 percent of maximum density. The
19 water content of the reinforced slope backfill shall not exceed the optimum water
20 content by more than 3 percent. The Contractor shall not use sheepsfoot rollers or
21 rollers with protrusions. Rollers which weigh more than 6,000 lbs shall be used with
22 the vibrator turned off. The Contractor may use rollers which weigh 6,000 lbs or less
23 with the vibrator turned on with the prior approval of the Engineer.
24

25 The Contractor shall construct slope corners at the locations shown in the Plans,
26 and in accordance with the reinforced slope corner construction sequence and
27 method submitted by the Contractor and approved by the Engineer. Slope angle
28 points with an interior angle of less than 150 degrees shall be considered to be a
29 corner. The slope corner shall provide a positive connection between the sections
30 of the reinforced slope on each side of the corner such that the slope backfill material
31 cannot spill out through the corner at any time during the design life of the reinforced
32 slope. The Contractor shall construct the slope corner such that the reinforced slope
33 sections on both sides of the corner attain the full geosynthetic layer embedment
34 lengths shown in the Plans.
35

36 Where required by reinforced slope profile grade, the Contractor shall terminate top
37 layers of reinforced slope geosynthetic and backfill in accordance with the method
38 submitted by the Contractor and approved by the Engineer. The end of each layer
39 at the top of the slope shall be constructed in a manner which prevents slope backfill
40 material from spilling out the face of the slope throughout the life of the reinforced
41 slope. If the profile of the top of the slope changes at a rate of 1V:1H or steeper,
42 this change in top of slope profile shall be considered to be a corner.
43

44 **Tolerances**

45 The Contractor shall complete the base of the reinforced slope excavation to within
46 plus or minus 3 inches of the staked elevations unless otherwise directed by the
47 Engineer. The Contractor shall place the external slope dimensions to within plus
48 or minus 2 inches of that staked on the ground. The Contractor shall space the
49 reinforcement layers vertically to within plus or minus 1 inch of that shown in the
50 Plans.
51

1 The completed reinforced slope(s) shall meet the following tolerances:
2

3 Tolerance

4
5 Deviation from the design slope and 5 inches
6 horizontal alignment for the slope face,
7 when measured along a 10-foot straight
8 edge at the midpoint of each reinforced
9 slope layer, shall not exceed:

10
11 Deviation from the overall design slope 3 inches
12 per 10 feet of reinforced slope height shall
13 not exceed:
14

15 2-12.3.OPT2.FR2

16 **(August 2, 2010)**

17 ***Turf Reinforced Mat Installation***

18 Splices in the Turf Reinforced Mat shall be butted together and the splice shall be held
19 together with hog rings, or other methods approved by the Engineer, in a manner that
20 will prevent the splice from separating during installation and backfilling.
21

22 The face of the reinforced slope shall be cleared of all rocks, dirt clods, vegetation, trash
23 and other obstructions that may cause the mat to bridge the ground surface. The mat
24 shall be unrolled in the direction of water flow with the flat side against the ground.
25

26 The turf reinforcement mat shall be anchored at the shoulder of the slope in an anchor
27 trench a minimum of 12 inches deep and 6 inches wide. The anchor trench shall be
28 excavated prior to placing the erosion mat on the slope. Heavy duty steel pins or
29 polyethylene pegs shall be used to anchor the mat to the slope face. Steel pins shall be
30 a minimum 0.2 inch diameter, with a 1.5 inch diameter steel washer secured at the head
31 of the pin. Polyethylene pegs shall be "T" type or have a 1.5 inch diameter washer
32 secured at the head of the peg. All pins or pegs shall be 12 inches long minimum. Hog
33 rings, or other methods approved by the Engineer, shall be used to attach the turf
34 reinforcement mat to the cross ribs of the primary reinforcing at the face of the slope.
35 The ties shall be as durable and strong as the material to which they are tied. The turf
36 reinforcement mat shall be securely attached to the cross ribs by tie(s) centered between
37 the pins or pegs.
38

39 Upon completion of the mat installation, *** \$\$1\$\$ *** inch(es) of Topsoil Type *** \$\$2\$\$
40 *** shall be spread over the turf reinforcement mat by drop spreader, blower truck,
41 cyclone spreader, or by shovels, rakes, and brooms. The Topsoil shall be lightly raked or
42 brushed into the mat apertures to completely fill the mat thickness. The slope shall be
43 seeded with grass seed by broadcast or hydroseeding in accordance with Sections 8-01
44 and 9-14, and as specified in the Contract Provisions.
45

46 2-12.3.OPT3.GR2

47 **(November 17, 1997)**

48 ***Geosynthetic Wrapped Slope Facing Construction***

49 The Contractor shall use a temporary form system to minimize sagging of the
50 geosynthetic facing elements during construction. A typical example of a temporary form

1 system and sequence of reinforced slope construction required when using this form are
2 detailed in the Plans.

3
4 Geosynthetic reinforcement splices exposed at the slope face shall prevent loss of
5 backfill material through the face. The splicing material exposed at the slope face shall
6 be as durable and strong as the material to which the splices are tied.
7

8 The Contractor shall compact the zone within 3 ft of the slope face without causing
9 damage or distortion to the slope face or reinforcing layers by using light mechanical
10 tampers approved by the Engineer.

11
12 The wall face shall be stepped vertically rather than using a battered forming system.
13 Boston Ivy shall be placed in the slope face through the geosynthetic reinforcement
14 layers in the horizontal portion of each step as indicated in the Plans. The first row of ivy
15 plants shall be placed in the bottom layer of the reinforced slope. Rows of plants shall
16 be spaced vertically no more than 16 ft apart. Plants within a row shall be spaced
17 horizontally 6 to 7 ft apart. Holes placed through the reinforcement shall be the minimum
18 size necessary to install the plants.
19

20 2-12.3.OPT4.GR2

21 **(November 17, 1997)**

22 **Welded Wire Facing Construction**

23 The Contractor shall install welded wire facing as shown in the Plans. Horizontally
24 adjacent facing panels shall be butted together such that no gap between facing panels
25 exists. Butted together facing panel splices shall be offset from each other in adjacent
26 layers so that the splices do not line up with one another from layer to layer.
27

28 If secondary geosynthetic reinforcement is specified, secondary reinforcement splices
29 transverse to the slope shall be butted together and the splice shall be held together with
30 hog rings, or other methods approved by the Engineer in the manner that will prevent the
31 splice from separating during geosynthetic installation and backfilling.
32

33 The front 3 inches to 6 inches of reinforced slope backfill at the slope face, as shown in
34 the Plans, shall be thoroughly mixed with lime, 16-16-16 fertilizer, and grass seed to
35 create a vegetated face. Lime shall be applied at a rate 6.0 lbs/cy, fertilizer at a rate of
36 0.7 lbs/cy, and grass seed at a rate of 0.4 lbs/cy.
37

38 The Contractor shall compact the zone within one meter of the slope face without causing
39 damage or distortion to the slope face or reinforcing layers by using light mechanical
40 tampers approved by the Engineer. The maximum outward bulge of the face between
41 primary reinforcement layers shall not exceed 3 inches.
42

43 2-12.3.OPT5.GR2

44 **(November 17, 1997)**

45 **Installing Guardrail Posts in Geosynthetic Reinforced Slopes**

46 The Contractor shall install guardrail posts as shown in the Plans after completing the
47 reinforced slopes. The Contractor shall install the posts in a manner that prevents
48 bulging of the slope face and prevents ripping, tearing, or pulling of the geosynthetic
49 reinforcement. Holes through the geosynthetic reinforcement shall be the minimum size
50 necessary for the post. The Contractor shall demonstrate to the Engineer prior to

1 beginning guardrail post installation that the installation method will not rip, tear, or pull
2 the geosynthetic reinforcement.

3
4 2-12.4.GR2

5 **Measurement**

6
7 2-12.4.INST1.GR2

8 Section 2-12.4 is supplemented with the following:

9
10 2-12.4.OPT1.FR2

11 (January 5, 1998)

12 Geosynthetic reinforced slope will be measured by the square foot of face of completed
13 reinforced slope, measured in the plane of the slope.

14
15 ***\$\$1\$\$*** borrow including haul will be measured as specified in Section 2-03.4.

16
17 Structure excavation Class B including haul will be measured as specified in Section 2-
18 09.4 and to the limits shown in the Plans.

19
20 2-12.5.GR2

21 **Payment**

22
23 2-12.5.INST1.GR2

24 Section 2-12.5 is supplemented with the following:

25
26 2-12.5.OPT1.FR2

27 (November 17, 1997)

28 "Geosynthetic Reinforced Slope", per square foot.

29 "*** \$\$1\$\$ *** Borrow Incl. Haul", per ton or per cubic yard.

30 "Structure Excavation Class B Incl. Haul", per cubic yard.

31
32 The unit contract price per square foot for "Geosynthetic Reinforced Slope" shall be full
33 pay to perform the work as specified, including compaction of the backfill material, and
34 furnishing and installing the facing materials, plantings, and any temporary forming
35 system used.

36
37 DIVISION3.GR3

38 **Division 3**

39 **Aggregate Production and Acceptance**

40
41 3-01.GR3

42 **Production From Quarry and Pit Sites**

43
44 3-01.2.GR3

45 **Material Sources, General Requirements**

46
47 3-01.2.INST1.GR3

48 Section 3-01.2 is supplemented with the following:

49

1 3-01.2.OPT1.GR3

2 **(March 13, 1995)**

3 **Permits For Pit Operations In King County**

4 The Contractor is advised that King County may require the Contractor to meet any or
5 all of the following listed conditions before considering issuance of a temporary permit
6 for pit operations within King County:
7

- 8 1. Security fences and locking gates shall be installed where deemed necessary
9 by the King County Department of Building. Cable or wire gates are not
10 acceptable.
11
- 12 2. Hours of operation shall be limited to: 7:00 a.m. to 7:00 p.m.
13
- 14 3. Access roads shall be improved and maintained to the satisfaction of the King
15 County Department of Public Works. A haul road agreement for County road
16 maintenance may be required.
17

18 All roads shall be swept, washed, or both, by the Contractor at the Contractor's
19 expense as often as the Department of Building deems necessary.
20

21 Property shall have functional access to an arterial level street.
22

- 23 4. All operations will have to be approved by King County Flood Control for
24 drainage plans, Washington State Department of Ecology, and Puget Sound Air
25 Pollution Control Authority.
26

27 Those properties near or adjacent to any water body shall have written approval
28 from the State of Washington Department of Fisheries.
29

30 The Contractor shall obtain a mining reclamation permit from the State of
31 Washington Department of Natural Resources for sites of over three acres in
32 size of disturbed land or resulting in pit walls more than thirty feet high and
33 steeper than one to one slope.
34

- 35 5. No stockpiling of foreign excavated material is permitted on the site except for
36 those materials to be used in the land rehabilitation of the subject property.
37
- 38 6. No signs other than signs required by Chapter 24.42, King County Zoning Code
39 are authorized as a result of the temporary permit.
40

- 41 7. Plans required:
42

43 a. Scale of Plot Plans

44	Site Size:	less than 10 acres	1 inch = 50 feet
45		10 to 100 acres	1 inch = 100 feet
46		over 100 acres	1 inch = 200 feet
47			
48			
49			
50			

51 b. Contours

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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

1
2 All drainage facilities shall be designed to carry surface waters to the
3 nearest practical street, storm drain, or natural water-course.
4 Adequate provision shall be made to prevent any surface waters from
5 damaging the face of an excavation or fill. All slopes shall be protected
6 from surface water runoff from above by berms or swales.
7

8 The Contractor is further advised that King County may require conditions which are in
9 addition to the foregoing list and that the County may reject permit applications at its
10 discretion because of the proposed operations proximity to schools, residential
11 neighborhoods, hospitals, arterials, or for other environmental conditions.
12

13 When there are discrepancies between the requirements of the State and the County the
14 more stringent specifications shall apply.
15

16 Should the Contractor fail to comply with any requirements of a temporary permit
17 obtained in the Contracting Agency's name, the Contracting Agency will take the
18 necessary action to meet these requirements and any costs incurred by the Contracting
19 Agency will be deducted from monies due or to become due the Contractor.
20

21 3-01.3.GR3

22 **State Furnished Material Sources**

23
24 3-01.3.INST1.GR3

25 Section 3-01.3 is supplemented with the following:
26

27 3-01.3.OPT1.FR3

28 (March 13, 1995)

29 The following source of stockpiled materials is made available at no cost to the
30 Contractor:
31

32 Stockpile Site *** \$\$1\$\$, a source for \$\$2\$\$, *** is located in the *** \$\$3\$\$ of Section
33 \$\$4\$\$, Township \$\$5\$\$ North, Range \$\$6\$\$, *** W.M., as shown in the Plans.
34

35 3-01.3.OPT2.FR3

36 (June 26, 2000)

37 The following source of materials is made available at no cost to the Contractor:
38

39 *** \$\$1\$\$ Site \$\$2\$\$ *** a source for the production of *** \$\$3\$\$ *** is located in the
40 *** \$\$4\$\$ of Section \$\$5\$\$, Township \$\$6\$\$ North, Range \$\$7\$\$ *** W.M., as
41 shown in the Plans.
42

43 In the event that the Contractor proposes to provide these materials from another source,
44 adjustment of quantities shall be made in accordance with Section 3-01.4(1). Such
45 adjustment will be based on the relative specific gravity of the sources. A specific gravity
46 of *** \$\$8\$\$ *** for the State-provided source will be used for comparative purposes.
47 The comparative specific gravity of Contractor provided sources will be determined by
48 AASHTO Test Method T-85 on the Saturated Surface Dry Basis by the Headquarters
49 Materials Laboratory.
50

1 3-01.6.GR3

2 **Payment**

3
4 3-01.6.INST1.GR3

5 The second paragraph of Section 3-01.6 is supplemented with the following:

6
7 3-01.6.OPT1.FR3

8 (June 03, 1996)

9 If the Contractor elects not to use the Contracting Agency furnished source(s) of material,
10 the following items of work shall not be performed on this project.

11
12 *** \$\$1\$\$ ***.

13
14 If the Contractor submits unit price(s) in the amount of zero for the above item(s) of work
15 that do not have an estimated amount included in the proposal, the Contracting Agency
16 will accept the Contractor's proposal as being notice of the Contractor's intent not to
17 utilize the Contracting Agency furnished source.

18
19 After execution of the contract, should the Contractor decide to utilize the source(s)
20 furnished by the Contracting Agency, the Contractor will be permitted to do so, provided
21 that for those items listed above for which zero has been entered on the proposal, the
22 work required shall be performed at the Contractor's expense.

23
24 3-01.6.OPT2.FR3

25 (March 13, 1995)

26 The Contractor is advised that while use of the Contracting Agency-furnished materials
27 source(s) is not mandatory, the following items of work in *** \$\$1\$\$ Site \$\$2\$\$ *** must
28 be performed:

29
30 *** \$\$3\$\$ ***

31
32 3-01.6.OPT3.FR3

33 (March 13, 1995)

34 The use of *** \$\$1\$\$ Site \$\$2\$\$ *** is mandatory and that all work in the site shall be
35 performed.

36
37 3-02.GR3

38 **Stockpiling Aggregates**

39
40 3-02.2.GR3

41 **General Requirements**

42
43 3-02.2(7).GR3

44 ***Removing Aggregates From Stockpiles***

45
46 3-02.2(7).INST1.GR3

47 Section 3-02.2(7) is supplemented with the following:

48
49 3-02.2(7).OPT1.FR3

50 (March 13, 1995)

1 Materials for use on this project are being produced and stockpiled under another
2 contract. The material being produced is shown in the Plans as existing in stockpile
3 at the following location:

4
5 *** \$\$1\$\$ ***
6

7 It is expected that the material will be available to the Contractor in ample time for
8 the Contractor's use. However, any delay shall not constitute a claim by the
9 Contractor against the Contracting Agency for additional compensation. Should the
10 Contractor be delayed by reason of insufficient material in the stockpile, the
11 Contractor will be granted an extension of time equal to the time actually lost by
12 reason of such delay.

13
14 3-02.2(7).OPT2.FR3

15 (March 13, 1995)

16 *** \$\$1\$\$ *** are existing in stockpiles at the location and in the amounts shown in
17 the Plans.

18
19 The Contractor may obtain material from other sources provided they are approved
20 by the Engineer and provided the Contractor makes all arrangements and pays all
21 expenses required for the acquisition of the materials.

22
23 If the Contractor chooses to use the materials existing in stockpiles, the Contractor
24 shall pay promptly to the Treasurer of *** \$\$2\$\$ *** County, as may come due, a
25 sum owing at the rates specified below based on the quantity of materials allowed
26 by the Engineer on the final or periodic estimates:

27
28 *** \$\$3\$\$ ***
29

30 3-02.5.GR3

31 **Payment**

32
33 3-02.5.INST1.GR3

34 Section 3-02.5 is supplemented with the following:

35
36 3-02.5.OPT1.FR3

37 (March 13, 1995)

38 The unit contract price per cubic yard for *** \$\$1\$\$ *** shall be full pay for the purchase,
39 loading, hauling, and placing of materials provided in stockpile or, if so chosen by the
40 Contractor, for the furnishing, hauling, and placing of materials obtained by the
41 Contractor from an approved source of the Contractor's own choice and acquisition.

42
43 Payment of money due the Contractor on the final estimate will not be made until the
44 Engineer has furnished the Secretary of Transportation with a certificate to verify that all
45 sums due *** \$\$2\$\$ *** from the Contractor for materials have been paid in full.

46
47 3-03.GR3

48 **Site Reclamation**

1 3-03.2.GR3
2 **General Requirements**

3
4 3-03.2(1).GR3
5 **Contracting Agency-Provided Sites**

6
7 3-03.2(1).INST1.GR3
8 Section 3-03.2(1) is supplemented with the following:

9
10 3-03.2(1).OPT1.GR3
11 (March 13, 1995)
12 Site reclamation will be performed by the Contracting Agency on all sites furnished
13 by the Contracting Agency.

14
15 3-04.GR3
16 **Acceptance of Aggregate**

17
18 3-04.2.GR3
19 **Materials**

20
21 3-04.2(9-03.21(1)C1).GR3
22 **Recycled Concrete Aggregate Approval and Acceptance**
23 Section 9-03.21(1)C1 is supplemented with the following:

24
25 3-04.2(9-03.21(1)C1).OPT1.2026.GR3
26 (March 20, 2025)

Tier 4: For Recycled Concrete Aggregates from Stockpiles of Unknown Sources for Specific Applications	
Approval Requirements	<p>The Reclamation Facility shall be listed on the WSDOT Qualified Products List. The Reclamation Facility shall have a Quality Control Plan (QCP) in accordance with WSDOT QC 10 "Standard Practice for Approval of Reclamation Facilities of Recycled Concrete Aggregates from Stockpiles of Unknown Sources". The Reclamation Facility's QCP shall be submitted through the QPL Engineer and approved by the WSDOT State Materials Laboratory. Once accepted, changes to the QCP will require a new QCP to be submitted for acceptance.</p> <p>The evaluation shall include all requirements associated with the natural occurring aggregate specifications (i.e. an application for Crushed Surfacing shall meet all requirements of Section 9-03.9(3) Crushed Surfacing) including but not limited to aggregate source properties (LA Wear and Degradation) and deleterious material requirements.</p> <p>The Reclamation Facility shall only supply the material type(s) as listed on the Reclamation Facilities QPL page.</p>
Acceptance Requirements	<p>Certification of toxicity characteristics in accordance with Section 9-03.21(1) is required.</p>

	Field acceptance testing in accordance with Section 3-04 is required. Provide certification in accordance with WSDOT QC 10 for every lot. A lot shall be no larger than 10,000 tons.
Approved to provide one or more of the following Aggregate Materials as listed on the Reclamation Facilities Tier 4 QPL page:	
Tier 1 aggregate materials 9-03.1 Coarse Aggregate for Commercial Concrete, Concrete class 3000, or Cement Concrete Pavement 9-03.9(1) Ballast 9-03.9(2) Permeable Ballast 9-03.9(3) Crushed Surfacing 9-03.12(1)A Gravel Backfill for Foundations Class A	

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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

1 5-01.1.GR5

2 **Description**

3
4 5-01.1.INST1.GR5

5 Section 5-01.1 is supplemented with the following:

6
7 5-01.1.OPT1.GR5

8 (September 7, 2021)

9 This work consists of repairing partial depth spalls using polyester concrete.

10
11 5-01.2.GR5

12 **Materials**

13
14 5-01.2.INST1.GR5

15 Section 5-01.2 is supplemented with the following:

16
17 5-01.2.OPT1.GR5

18 **(November 4, 2024)**

19 ***Partial Depth Spall Repair – Polyester Concrete***

20 The components of the polyester concrete system shall be provided through a single
21 system provider. The polyester concrete system will be accepted based on submittal to
22 the Engineer of a Manufacturer’s Certificate of Compliance conforming to Section 1-06.3.

23
24 **Polyester Concrete Binder**

25 Polyester concrete binder shall have the following properties:

- 26 1. Be an unsaturated isophthalic polyester-styrene co-polymer.
- 27 2. The binder content shall be 12% +/- 1% of the weight of the dry aggregate.
- 28 3. Be used with a promoter that is compatible with suitable methyl ethyl
29 ketone peroxide and cumene hydroperoxide initiators.
- 30 4. Meet the requirements of the following tables.

Resin		
Property	Requirement	Test Method
Viscosity	75 - 200 cps (RVT No.1 Spindle, 20 RPM at 77°F)	ASTM D2196
Specific Gravity	1.05 to 1.10 at 77°F	ASTM D1475

Resin with Initiator		
Property	Requirement	Test Method
Contain gamma-methacryloxypropyltrimethoxysilane, an organosilane ester silane coupler	>1%	Nuclear Magnetic Resonance
Elongation	35 percent, minimum Type I specimen, thickness 0.25 ± 0.03"	ASTM D638

	at Rate = 0.45 inch/minute.	
	Sample Conditioning: 18/25/50+5/70	ASTM D618
Tensile Strength	2,500 psi, minimum Type I specimen, thickness 0.25 ± 0.03" at Rate = 0.45 inch/minute.	ASTM D638
	2,500 psi, minimum Type I specimen, thickness 0.25 ± 0.03" at Rate = 0.45 inch/minute.	ASTM D618

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Primer

Primer for the substrate concrete surface shall be a wax-free low odor, high molecular weight methacrylate primer, and consist of a resin, initiator, and promoter. The primer shall conform to the following requirements:

Resin		
Property	Requirement	Test Method
Viscosity	25 cps maximum (Brookfield RVT with UL adapter, 50 RPM at 77°F)	ASTM D2196
Volatile Content	30% maximum	ASTM D2369
Specific Gravity	0.90 minimum at 77°F	ASTM D1475
Vapor Pressure	1.0 mm Hg, maximum at 77°F	ASTM D 323

7

Resin with Initiator		
Property	Requirement	Test Method
Flash Point	180°F minimum	ASTM D 3278
Initiator for the methacrylate resin shall consist of a metal drier and peroxide. If supplied separately from the resin, the metal drier shall not be mixed with the peroxide directly; a VIOLENT EXOTHERMIC REACTION will occur.		

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11

The primer shall be stored in a cool dry place and protected from freezing and exposure to temperature in excess of 100°F.

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14
15

Aggregates

The polyester concrete aggregate (coarse and fine) shall be thoroughly washed and kiln dried.

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19

Polyester concrete aggregates shall be manufactured from sand and gravel in accordance with the provisions of Section 3-01. Fine aggregate shall consist of natural sand only. Reclaimed Portland cement concrete aggregate shall not be used.

20
21

Polyester concrete aggregate shall have the following properties:

Polyester Concrete Aggregate Gradation	
Sieve Size	Percent Passing
1/2"	100
3/8"	98 minimum
#4	62-85
#8	45-67
#16	29-50
#30	16-36
#50	5-20
#100	0-7
#200	0-3

1

Properties of Polyester Concrete Aggregate		
Property	Test Method	Requirement
Los Angeles Wear	AASHTO T96	35% max at 500 rev
Degradation Factor	WSDOT T113	30 minimum
Clay lumps and Friable Particles	AASHTO M6	3.0% by weight
Coal and lignite	AASHTO M6	0.25% by weight
Particles of specific gravity less than 2.0	AASHTO M6	1.0% by weight
Crushed particles	AASHTO T335	<45% Crushed Particles, retained on the No. 8 Sieve
Weighted-average aggregate absorption	AASHTO T84 and T85	<1%
Mohs Hardness	Mohs Hardness Test	≥7
Aggregate shall comply with the following properties at the time of mixing the polyester concrete: The combined aggregate shall have a maximum of 45 percent crushed particles. Fine aggregate shall conform to Section 9-03.13.		

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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.

Sand for Abrasive Finish

Sand for abrasive sand finish shall have the following properties:

1. Be commercial-quality blast sand.
2. Have a minimum of 85 percent passing the No. 8 sieve and a maximum of 10 percent passing the No. 20 sieve when tested under AASHTO Test Method T27.
3. Be kiln dried and protected from moisture until time of placement. At the time of application on the polyester concrete, the moisture content of the sand for abrasive finish shall not exceed 0.5 percent.

5-01.3.GR5

Construction Requirements

1 5-01.3(5).GR5

2 **Partial Depth Spall Repair**

3
4 5-01.3(5).INST1.GR5

5 Section 5-01.3(5) is supplemented with the following:

6
7 5-01.3(5).OPT1.GR5

8 **(November 4, 2024)**

9 **Partial Depth Spall Repair - Polyester Concrete**

10 **Manufacturer's Technical Representative**

11 The Contractor shall have the services of a qualified polyester concrete
12 manufacturer's technical representative physically present at the job site during
13 the first shift of polyester concrete placement. The manufacturer's technical
14 representative shall assist the Contractor in training the Contractor's personnel
15 and providing technical assistance in preparing the concrete surface, applying
16 primer, and mixing, placing, and curing the polyester concrete. If the polyester
17 concrete Work is unsatisfactory, or additional training or technical assistance is
18 needed the Contractor shall have the services of the manufacturer's at the job
19 site for additional time as deemed necessary by the Engineer to correct the
20 deficiency.

21
22 **Mix Design**

23 The properties of the polyester concrete, when the polyester resin binder and
24 polyester concrete aggregates are combined in the proportions of the approved
25 mix design, shall be as follows:
26

Property	Test Method	Requirement
Portland Cement Concrete Saturated Surface Dry Bond Strength	California Test 551	500 psi minimum at 24 hrs. and 70°F ± 1°F (without primer, at 12% resin content by weight of the dry aggregate, on Saturated Surface Dry Specimen)
PCC Saturated Surface-Dry Bond Strength (Adhesive)	California Test 551	700 psi, minimum at 24 hours and 70°F ± 1°F (at 12% resin content by weight of the dry aggregate), HMWM primed surface
Abrasion Resistance	California Test 550	<2g weight loss (at 12% resin content by weight of the dry aggregate)
Modulus of Elasticity	ASTM C 469	1,000,000 psi to 2,000,000 psi (at 12% resin content by weight of the dry aggregate)
Portland Cement Concrete Dry Surface Bond Strength (Adhesive) – Primer	California Test 551	700 psi, minimum at 24 hours and 70° ± 1°F (at 12% resin content by

installation window verification		weight of the dry aggregate), HMWM primed surface. polyester concrete placed against primed surface two hours after Primer application.
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The Contractor shall prepare and submit a Type 2 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.

Delivery and Storage of Materials

All components shall be shipped in strong, substantial containers bearing the manufacturers label specifying batch/lot number, brand name, and quantity. If bulk resin is to be used, the Contractor shall notify the Engineer in writing 10 days prior to the delivery of the bulk resin to the job site. Bulk resin is any resin that is stored in containers in excess of 250 gallons.

All components shall be shipped in strong, substantial containers bearing the manufacturers label specifying batch/lot number, brand name, and quantity. If bulk resin is to be used, the Contractor shall notify the Engineer in writing 10 days prior to the delivery of the bulk resin to the job site. Bulk resin is any resin that is stored in containers in excess of 250 gallons.

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 concrete binder and primer shall be accompanied by a Safety Data Sheet (SDS). Bulk resin containers shall be identified by one of the following methods

1. A label on each container as specified above, or
2. A marking on each container that uniquely identifies the container, accompanied by documentation that unequivocally identifies the Manufacturer's Certificate of Compliance that is associated with the material in that container.

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 primer, 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 primer, and abrasive blasting materials.

1 **Surface Preparation**

2 Removal of the existing pavement shall not damage any pavement to be left in
3 place. Any existing pavement that is to remain that has been damaged shall be
4 repaired at the Contractor's expense. If jackhammers are used for removing
5 pavement, they shall not weigh more than 30 pounds, and chipping hammers
6 shall not weigh more than 15 pounds. All power driven hand tools used for the
7 removal of pavement shall be operated at angles less than 45 degrees as
8 measured from the surface of the pavement to the tool. The patch limits shall
9 extend beyond the spalled area a minimum of 3 inches. Repair areas shall be
10 kept square, rectangular or circular. Repair areas that are within 12 inches of
11 another repair area shall be combined.

12
13 A vertical cut shall be made to a minimum depth of 2 inches around the
14 perimeter to be patched using a saw or core drill as marked by the Engineer.
15 The Contractor shall remove material within the perimeter of the saw cut to a
16 depth of 2 inches, or to sound concrete as determined by the Project Engineer.

17
18 The concrete surfaces shall be prepared by removing all material which may
19 act as a bond breaker between the surface and the polyester concrete. The
20 surfaces to receive the polyester concrete shall be sand blasted and all loose
21 material removed. All sandblasting residue shall be removed.

22
23 Spall repair shall not be done in areas where dowel bars are encountered.

24
25 When a partial depth repair is placed directly against an adjacent longitudinal
26 joint, a bond-breaking material such as polyethylene film, roofing paper, or other
27 material as accepted by the Engineer shall be placed between the existing
28 concrete and the area to be patched.

29
30 Working transverse joints or cracks adjacent to or within the repair area require
31 placement of a compressible insert. The new joint or crack shall be formed to
32 the same width as the existing joint or crack. The compressible joint material
33 shall be placed into the existing joint 1 inch below the depth of repair. The
34 compressible insert shall extend at least 3 inches beyond each end of the patch
35 boundaries.

36
37 Patches that abut the Lane/Shoulder joint require placement of a formed edge,
38 along the slab edge, even with the surface.

39
40 If the concrete surfaces become contaminated, the contaminated areas shall
41 be re-cleaned by abrasive blasting at the Contractor's expense.

42
43 Precautions shall be taken to ensure that no dust or debris leaves the roadway
44 and that all traffic is protected from rebound and dust. Appropriate shielding
45 shall be provided as required at no additional cost to the Contracting Agency
46 and shall be approved by the Engineer. The Contractor shall reseal all joints in
47 accordance with Section 5-05.3(8)B.

48
49 **Primer Application**

50 Application of the primer and the polyester concrete shall not begin if rain is
51 forecast within 12-hours of completion of the Work. The area receiving the

1 primer shall be dry and had no rain within the past 12 hours. Immediately prior
2 to applying the primer, loose material shall be removed using oil and moisture
3 free compressed air.
4

5 The Contractor shall apply the primer to the prepared concrete and steel
6 surfaces before placing the polyester concrete.
7

8 The primer shall be worked into the concrete in a manner to assure complete
9 coverage of the area receiving polyester concrete.
10

11 If the primed surface becomes contaminated, the contaminated area shall be
12 cleaned by abrasive blasting and re-primed.
13

14 The primer shall not be allowed to run into drainage structures, joints or working
15 cracks.
16

17 **Mixing Components**

18 The components of the polyester concrete binder shall be thoroughly blended
19 just prior to mixing with the aggregate. The polyester concrete shall be
20 thoroughly mixed prior to placing.
21

22 The Contractor shall prevent any cleaning chemicals from reaching the
23 polyester concrete mix during the mixing operations.
24

25 **Polyester Concrete Placement**

26 Under no circumstances shall any primer or polyester concrete be allowed to
27 run into drainage structures, joints or working cracks.
28

29 Place polyester concrete within two hours of placing the primer.
30

31 Polyester concrete shall be placed within 15 minutes following initiation.
32 Polyester concrete that is not placed within this time shall be discarded.
33

34 The surface temperature of the area receiving the polyester concrete shall be
35 the same as specified for the primer.
36

37 The polyester concrete shall be consolidated in accordance with the
38 manufacturer's recommendations.
39

40 **Finished Polyester Concrete Surface**

41 All repair areas shall be struck off level with the adjacent concrete. Forms shall
42 be coated with suitable bond release agent to permit ready release of forms.
43

44 Sand for abrasive finish shall be broadcast onto surface to uniformly cover any
45 smooth or glossy areas immediately after finishing and before resin gelling
46 occurs. The completed surface shall be free of any smooth or glossy areas.
47 After the polyester concrete has cured, any smooth or glossy areas shall be
48 repaired by the Contractor in the manner recommended by the System Provider
49 and approved by the Engineer at no additional cost. The surface texture of
50 polyester concrete shall be uniform and impervious to moisture.
51

1 **Curing**

2 The polyester concrete shall be cured in accordance with the manufacturer's
3 recommendations. The Contractor shall measure the compressive strength of
4 the cured polyester concrete with a rebound hammer in accordance with ASTM
5 C 805.

6
7 The readings of the rebound hammer used shall be correlated to the
8 compressive strength of the polyester concrete product in accordance with
9 ASTM C 805 Section 5.4, and the Contractor shall submit a Type 1 Working
10 Drawing of this correlation.

11
12 Traffic and equipment shall not be permitted on the polyester concrete until it
13 achieves a compressive strength of 2,500 psi (or higher, if specified in the plans)
14 based on the rebound hammer manufactures correlation of rebound number to
15 compressive strength for the rebound hammer used.

16
17 5-01.3(9).GR5

18 ***Cement Concrete Pavement Grinding***

19
20 5-01.3(9).INST1.GR5

21 Section 5-01.3(9) is supplemented with the following:

22
23 5-01.3(9).OPT1.GR5

24 (April 1, 2013)

25 The Contractor shall grind a test section 1500 foot long across the full width of a
26 lane for evaluation by the Engineer to determine if the Work meets the
27 Specifications. If the Specifications have been met the Contractor may proceed with
28 the remaining cement concrete pavement grinding. If the Specifications have not
29 been met, the Contractor shall make adjustments and another test section shall be
30 completed.

31
32 5-01.3(10).GR5

33 ***Pavement Smoothness***

34
35 5-01.3(10).INST1.GR5

36 Section 5-01.3(10) is supplemented with the following:

37
38 5-01.3(10).OPT1.GR5

39 (February 6, 2023)

40 This Contract includes Weigh-in-Motion (WIM) sensors and additional surface
41 smoothness requirements within the WIM evaluation area.

42
43 The WIM evaluation area is 400 feet in length, beginning 275 feet before the WIM
44 Site Index Station. The width of the WIM evaluation area includes all lanes where
45 sensors are present and extends 0.75 feet beyond the edge of the lane(s).

46
47 The completed surface shall be sufficiently smooth such that a 6-inch diameter
48 circular plate, 0.125 inches thick, cannot be passed beneath a 16-foot straightedge
49 placed on the surface parallel to the centerline of the roadway, when evaluated as
50 described in ASTM E1318-09 (2017), Section 6.1.5.

1 Deviations within the WIM evaluation area that are in excess of these requirements
2 will not be accepted and shall be corrected by one of the following methods:

- 3
- 4 1. Remove and replace the final roadway surface layer, or
- 5
- 6 2. Remove material from high places by grinding with an accepted grinding
7 machine, or
- 8
- 9 3. By other method accepted by the Engineer.

10
11 Correct defects until there are no deviations anywhere within the WIM evaluation
12 area that are greater than allowable tolerances.

13
14 5-02.GR5

15 **Bituminous Surface Treatment**

16
17 5-02.3.GR5

18 **Construction Requirements**

19
20 5-02.3(3).GR5

21 ***Application of Emulsified Asphalt and Aggregate***

22
23 5-02.3(3).INST1.GR5

24 Section 5-02.3(3) is supplemented with the following:

25
26 5-02.3(3).OPT1.FR5

27 (August 5, 2013)

28 The grades of emulsified asphalt to be used for New Construction bituminous
29 surface treatments shall be *** \$1\$\$ *** for the first application and *** \$2\$\$ ***
30 for the second application.

31
32 5-02.3(3).OPT2.FR5

33 (August 5, 2013)

34 The grade of emulsified asphalt to be used for bituminous surface treatment Seal
35 Coats shall be *** \$1\$\$ ***.

36
37 5-02.4.GR5

38 **Measurement**

39
40 5-02.4.INST1.GR5

41 Section 5-02.4 is supplemented with the following:

42
43 5-02.4.OPT2.GR5

44 (March 13, 1995)

45 The additional cost involved in the construction of bituminous surface treatment for road
46 approach will be measured per each for each road approach treated, regardless of
47 location, length, width or design.

1 5-02.5.GR5

2 **Payment**

3
4 5-02.5.INST1.GR5

5 Section 5-02.5 is supplemented with the following:

6
7 5-02.5.OPT2.GR5

8 (February 5, 2001)

9 "Bituminous Surface Treatment For Road Approach", per each.

10 The unit contract price per each for "Bituminous Surface Treatment For Road Approach"
11 shall be in addition to payments made for the mineral aggregate and asphalt.

12
13 5-02.5.OPT3.GR5

14 **(August 5, 2013)**

15 **CRS-2P Cost Price Adjustment**

16 The Contracting Agency will make a CRS-2P Cost Price Adjustment, either a credit or a
17 payment, for qualifying changes in the reference cost of asphalt binder. The adjustment
18 will be applied to partial payments made according to Section 1-09.9 for the following bid
19 items when they are included in the proposal:

20
21 "Emulsified Asphalt CRS-2P"

22
23 The adjustment is not a guarantee of full compensation for changes in the cost of
24 emulsified asphalt CRS-2P. The Contracting Agency does not guarantee that
25 emulsified asphalt CRS-2P will be available at the reference cost.

26
27 The Contracting Agency will establish the asphalt binder reference cost twice each
28 month and post the information on the Agency website at:
29 [https://wsdot.wa.gov/business-wsdot/contracts/about-public-works-](https://wsdot.wa.gov/business-wsdot/contracts/about-public-works-contracts/payments-reporting/asphalt-binder-reference-cost)
30 [contracts/payments-reporting/asphalt-binder-reference-cost](https://wsdot.wa.gov/business-wsdot/contracts/about-public-works-contracts/payments-reporting/asphalt-binder-reference-cost). The reference cost
31 will be determined using posted prices furnished by Poten & Partners, Inc. If the
32 selected price source ceases to be available for any reason, then the Contracting
33 Agency will select a substitute price source to establish the reference cost.

34
35 The base cost established for this contract is the reference cost posted on the
36 Agency website for the period immediately preceding the bid opening date.

37
38 Adjustments will be based on the most current reference cost for Western
39 Washington or Eastern Washington as posted on the Agency website, depending
40 on where the work is performed. For work completed after all authorized working
41 days are used, the adjustment will be based on the posted reference cost during
42 which contract time was exhausted. The adjustment will be calculated as follows:

43
44 No adjustment will be made if the reference cost is within 5% of the base cost.

45
46 If the reference cost is greater than or equal to 105% of the base cost, then
47 Adjustment = (Current Reference Cost – (1.05 x Base Cost)) x (Q x 0.65).

48
49 If the reference cost is less than or equal to 95% of the base cost, then
50 Adjustment = (Current Reference Cost – (0.95 x Base Cost)) x (Q x 0.65).

1
2 Where Q = total tons of Emulsified Asphalt CRS-2P paid in the current month's
3 progress payment.

4
5 "CRS-2P Cost Price Adjustment", by calculation.

6
7 "CRS-2P Cost Price Adjustment" will be calculated and paid for as described in this
8 section. For the purpose of providing a common proposal for all bidders, the
9 Contracting Agency has entered an amount in the proposal to become a part of the
10 total bid by the Contractor.

11
12 5-02.5.OPT4.GR5

13 **(January 3, 2017)**

14 **AC-15P Cost Price Adjustment**

15 The Contracting Agency will make an AC-15P Cost Price Adjustment, either a credit or a
16 payment, for qualifying changes in the reference cost of asphalt binder. The adjustment
17 will be applied to partial payments made according to Section 1-09.9 for the following bid
18 items when they are included in the proposal:

19
20 "Modified Asphalt Cement AC-15P"

21
22 The adjustment is not a guarantee of full compensation for changes in the cost of
23 modified asphalt cement AC-15P. The Contracting Agency does not guarantee that
24 modified asphalt cement AC-15P will be available at the reference cost.

25
26 The Contracting Agency will establish the asphalt binder reference cost twice each
27 month and post the information on the Agency website at:
28 [https://wsdot.wa.gov/business-wsdot/contracts/about-public-works-
30 contracts/payments-reporting/asphalt-binder-reference-cost](https://wsdot.wa.gov/business-wsdot/contracts/about-public-works-
29 contracts/payments-reporting/asphalt-binder-reference-cost). The reference cost
31 will be determined using posted prices furnished by Poten & Partners, Inc. If the
32 selected price source ceases to be available for any reason, then the Contracting
33 Agency will select a substitute price source to establish the reference cost.

34 The base cost established for this contract is the reference cost posted on the
35 Agency website for the period immediately preceding the bid opening date.

36
37 Adjustments will be based on the most current reference cost for Western
38 Washington or Eastern Washington as posted on the Agency website, depending
39 on where the work is performed. For work completed after all authorized working
40 days are used, the adjustment will be based on the posted reference cost during
41 which contract time was exhausted. The adjustment will be calculated as follows:

42
43 No adjustment will be made if the reference cost is within 5% of the base cost.

44
45 If the reference cost is greater than or equal to 105% of the base cost, then
46 Adjustment = (Current Reference Cost – (1.05 x Base Cost)) x Q .

47
48 If the reference cost is less than or equal to 95% of the base cost, then
49 Adjustment = (Current Reference Cost – (0.95 x Base Cost)) x Q .
50

1 Where Q = total tons of Modified Asphalt Cement AC-15P paid in the current month's
2 progress payment.

3
4 "AC-15P Cost Price Adjustment", by calculation.

5
6 "AC-15P Cost Price Adjustment" will be calculated and paid for as described in this
7 section. For the purpose of providing a common proposal for all bidders, the
8 Contracting Agency has entered an amount in the proposal to become a part of the
9 total bid by the Contractor.

10
11 5-04.GR5

12 **Hot Mix Asphalt**

13
14 5-04.2.GR5

15 **Materials**

16
17 5-04.2(2).GR5

18 ***Mix Design – Obtaining Project Approval***

19
20 5-04.2(2).INST1.GR5

21 Section 5-04.2(2) is supplemented with the following:

22
23 5-04.2(2).OPT1.FR5

24 **(January 3, 2011)**

25 **ESAL's**

26 The number of ESAL's for the design and acceptance of the HMA shall be ***
27 \$\$1\$\$ *** million.

28
29 5-04.2(9-03.8(7)).GR5

30 ***HMA Tolerances, Specification Limits and Adjustments***

31 The second paragraph of item number 1 of Section 9-03.8(7) is revised to read:

32
33 5-04.2(9-03.8(7)).OPT1.GR5

34 (September 8, 2020)

35 These tolerance and specification limits constitute the allowable limits as described
36 in Section 1-06.2. The tolerance limit for aggregate shall not exceed the limits of the
37 control points, except the No. 8 tolerance is $\pm 4\%$ from the JMF, the No. 200
38 tolerance is $\pm 2.0\%$ from the JMF with a minimum of 2% and a maximum of 8.0%
39 passing the No. 200 sieve, other tolerance limits for sieves designated as 100
40 percent passing will be 99-100.

41
42 5-04.3.GR5

43 **Construction Requirements**

44
45 5-04.3.INST1.GR5

46 Section 5-04.3 is supplemented with the following:

47
48 5-04.3.OPT4.FR5

49 (January 3, 2017)

1 The expected percentage of new asphalt binder in the HMA is *** \$\$1\$\$ ***. Should the
2 actual percentage of new asphalt binder required by the job mix formula for HMA
3 produced with Agency-provided aggregate vary by more than plus or minus 0.3-percent
4 an adjustment in payment will be made. The adjustment in payment (plus or minus) will
5 be based on the invoice cost to the Contractor. When RAP and/or RAS are used in the
6 production of HMA the adjustment will be reduced by the percentage of RAP and/or RAS
7 asphalt binder. No adjustment will be made when the Contractor elects not to use a
8 Contracting Agency provided source.
9

10 5-04.3(1).GR5

11 ***Weather Limitations***

12
13 5-04.3(1).INST1.GR5

14 The first sentence of Section 5-04.3(1) is revised to read:

15
16 5-04.3(1).OPT1.FR5

17 (August 3, 2009)

18 HMA for wearing course shall not be placed on any travelled way from *** \$\$1\$\$ ***
19 and through March 31st of the following year without written approval from the
20 Engineer.
21

22 5-04.3(3).GR5

23 ***Equipment***

24
25 5-04.3(3)C.GR5

26 ***Pavers***

27
28 5-04.3(3)C.INST1.GR5

29 Section 5-04.3(3)C is supplemented with the following:

30
31 5-04.3(3)C.OPT1.GR5

32 (April 4, 2016)

33 Reference lines will be required for both outer edges of the traveled way
34 for each mainline roadway for vertical control in accordance with Section
35 5-04.3(3)C.
36

37 5-04.3(3)D.GR5

38 ***Material Transfer Device or Material Transfer Vehicle***

39
40 5-04.3(3)D.OPT1.GR5

41 (April 4, 2016)

42 Section 5-04.3(3)D is deleted in its entirety.
43

44 5-04.3(3)D.INST1.GR5

45 Section 5-04.3(3)D including title is revised to read:
46

1 5-04.3(3)D.OPT2.GR5

2 **(August 1, 2011)**

3 **Material Transfer Vehicle**

4 Direct transfer of HMA from the hauling equipment to the paving machine will
5 not be allowed in the top 0.30-feet of the pavement section of hot mix asphalt
6 (HMA) used in traffic lanes with a depth of 0.08-feet or greater. A material
7 transfer vehicle (MTV) shall be used to deliver the HMA from the hauling
8 equipment to the paving machine. HMA placed in irregularly shaped and minor
9 areas such as road approaches, tapers, and turn lanes are excluded from this
10 requirement.

11
12 The MTV shall mix the HMA after delivery by the hauling equipment and prior
13 to lay down by the paving machine. Mixing of the HMA shall be sufficient to
14 obtain a uniform temperature throughout the mixture.

15
16 5-04.3(9).GR5

17 ***HMA Mixture Acceptance***

18
19 5-04.3(9).INST1.GR5

20 Section 5-04.3(9) is supplemented with the following:

21
22 5-04.3(9).OPT1.FR5

23 **(August 1, 2016)**

24 **Visual Evaluation**

25 The following HMA will be accepted by visual evaluation:

26
27 *** \$\$1\$\$ ***

28
29 5-04.3(10).GR5

30 ***HMA Compaction Acceptance***

31
32 5-04.3(10).INST1.GR5

33 The column in Table 14 of Section 5-04.3(10), titled "Statistical Evaluation of HMA
34 Compaction is Required for", is supplemented with the following:

35
36 5-04.3(10).OPT1.GR5

37 (April 3, 2017)

- 38 • Any HMA for which the specified course thickness is greater than 0.10 feet and
39 the HMA is placed in the shoulder.

40
41 5-04.3(10)D.GR5

42 **HMA Compaction – Visual Evaluation**

43
44 5-04.3(10)D.INST2.GR5

45 The last sentence in Section 5-04.3(10)D is revised to read:

46
47 5-04.3(10)D.OPT1.GR5

48 (April 4, 2016)

49 HMA that is used for preleveling shall be compacted with a pneumatic tire
50 roller unless otherwise approved by the Engineer.

1 5-04.3(12).GR5

2 **Joins**

3
4 5-04.3(12).INST1.GR5

5 Section 5-04.3(12) is supplemented with the following:

6
7 5-04.3(12).OPT1.GR5

8 (January 5, 2004)

9 The HMA overlay shall be feathered to produce a smooth riding connection to the
10 existing pavement.

11
12 HMA utilized in the construction of the feathered connections shall be modified by
13 eliminating the coarse aggregate from the mix at the Contractor's plant or the
14 commercial source or by raking the joint on the roadway, to the satisfaction of the
15 Engineer.

16
17 5-04.3(13).GR5

18 **Surface Smoothness**

19
20 5-04.3(13).INST1.GR5

21 The first four paragraphs of Section 5-04.3(13) are revised to read:

22
23 5-04.3(13).OPT1.FR5

24 (January 5, 2015)

25 Pavement surface smoothness for this project will include International Roughness
26 Index (IRI) testing that will be completed by the Contracting Agency. The
27 Contracting Agency will perform the IRI testing on each through lane, climbing lane,
28 and passing lane, greater than one mile in length and these lanes will be subject to
29 incentive/disincentive adjustments. IRI testing for a lane will be reported every 0.01
30 mile by averaging the IRI data for the left and right wheelpath within the section.

31
32 Bridge approaches and bridge decks that are located within the lanes specified to
33 be tested and are paved with HMA will be included in the IRI testing. Bridge
34 structures, approach slabs and 0.02 miles on either side of the bridge structures and
35 approach slabs will be eligible for price adjustment incentives and excluded from
36 disincentive adjustments.

37
38 Ramps, shoulders and tapers will not be included in IRI testing for pavement
39 smoothness and will not be subject to incentive adjustments. They will be subject
40 to parallel and transverse 10-foot surface requirements, corrective work and
41 disincentive adjustments.

42
43 Upon completion of the paving operation the Contractor shall notify the Engineer
44 that the roadway is ready for IRI testing. Notification shall not take place until the
45 following conditions are met for all lanes to be tested on the project:

- 46
47 1. All lanes are open to traffic, unrestricted and in their final configuration.
48
49 2. All permanent pavement markings are in place or temporary pavement
50 markings to the satisfaction of the Engineer.
51

1 If requested by the Engineer the Contractor shall sweep the roadway immediately
2 prior to testing. If the sweeping is needed as a result of the Contractor's operation
3 it shall be the responsibility and expense of the Contractor. Should the Contracting
4 Agency not be able to complete the testing as a result of the Contractor's Work the
5 testing will be rescheduled and any additional costs to the Contracting Agency will
6 be deducted from monies due or that may become due the Contractor.
7

8 It is the intent that the testing will be completed and the results provided to the
9 Contractor within 30 calendar days of the Contractor's notification that the roadway
10 is ready for testing. If weather or other conditions exist which are determined by the
11 Engineer to be unsuitable for IRI testing of the pavement then the testing will be
12 deferred until favorable conditions are available and the 30 calendar days extended.
13

14 Provided that all other Work required for Substantial Completion has been
15 completed; the day following the Contractor's notification that the roadway is ready
16 for IRI testing through the day the IRI data is provided to the Contractor will be
17 nonworking days in accordance with Section 1-08.5.
18

19 Corrective work for pavement smoothness may be taken by the Contractor prior to
20 IRI testing. After completion of the IRI testing the Contractor shall measure the
21 smoothness of each 0.01 mile section with an IRI greater than 125 with a 10-foot
22 straightedge within 14 calendar days or as approved by the Engineer. The
23 Contractor shall identify all locations that require corrective work and provide the
24 straight edge measurements at each location that exceeds the allowable limit to the
25 Engineer. If all measurements in a 0.01 section comply with the smoothness
26 requirements the Contractor shall provide the maximum measurement to the
27 Engineer and a statement that corrective work is not required. Unless approved by
28 the Engineer, corrective work shall be taken by the Contractor for pavement
29 identified by the Contractor or Engineer that does not meet the following
30 requirements:
31

- 32 1. The completed surface of all courses shall be of uniform texture, smooth,
33 uniform as to crown and grade, and free from defects of all kinds.
34
- 35 2. The completed surface of the wearing course shall not vary more than $\frac{1}{8}$
36 inch from the lower edge of a 10-foot straightedge placed on the surface
37 parallel to the centerline.
38
- 39 3. The completed surface of the wearing course shall vary not more than $\frac{1}{4}$
40 inch in 10 feet from the rate of transverse slope shown in the Plans.
41

42 All corrective work shall be completed at no additional expense, including traffic
43 control, to the Contracting Agency. Pavement shall be repaired by one or more of
44 the following methods:
45

- 46 1. Diamond grinding; repairs shall not reduce pavement thickness by more
47 than $\frac{1}{4}$ inch.
48
- 49 2. Removal and replacement of the HMA wearing course.
50
- 51 3. By other method approved by the Engineer.

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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\$\$

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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:

1 5-04.3(13).OPT3.GR5

2 (January 5, 2004)

3 The completed surface of the wearing course shall not vary more than 1/4 inch from
4 the lower edge of a 10-foot straightedge placed on the surface parallel to centerline.

5
6 5-04.3(13).INST4.GR5

7 Section 5-04.3(13) is supplemented with the following:

8
9 5-04.3(13).OPT4.GR5

10 (February 6, 2023)

11 This Contract includes Weigh-in-Motion (WIM) sensors and additional surface
12 smoothness requirements within the WIM evaluation area.

13
14 The WIM evaluation area is 400 feet in length, beginning 275 feet before the WIM
15 Site Index Station. The width of the WIM evaluation area includes all lanes where
16 sensors are present and extends 0.75 feet beyond the edge of the lane(s).

17
18 The completed surface shall be sufficiently smooth such that a 6-inch diameter
19 circular plate, 0.125 inches thick, cannot be passed beneath a 16-foot straightedge
20 placed on the surface parallel to the centerline of the roadway, when evaluated as
21 described in ASTM E1318-09 (2017), Section 6.1.5.

22
23 Deviations within the WIM evaluation area that are in excess of these requirements
24 will not be accepted and shall be corrected by one of the following methods:

- 25
26 1. Remove and replace the final roadway surface layer, or
27
28 2. Remove material from high places by grinding with an accepted grinding
29 machine, or
30
31 3. By other method accepted by the Engineer.

32
33 Correct defects until there are no deviations anywhere within the WIM evaluation
34 area that are greater than allowable tolerances.

35
36 5-04.3(14).GR5

37 ***Planing Bituminous Pavement***

38
39 5-04.3(14).INST1.GR5

40 Section 5-04.3(14) is supplemented with the following:

41
42 5-04.3(14).OPT1.FR5

43 (January 5, 2004)

44 The Contractor shall perform the planing operations no more than *** \$\$1\$\$ ***
45 calendar days ahead of the time the planed area is to be paved with HMA, unless
46 otherwise allowed by the Engineer in writing.

47
48 5-04.3(14).OPT2.GR5

49 (January 5, 2004)

50 At the start of the planing operation the Contractor shall plane a 500 foot test section
51 to be evaluated by the Engineer for compliance with the surface tolerance

1 requirements. The test section shall have a minimum width of 10 feet. If the planing
2 is in accordance with the surface tolerance requirements, the Contractor may begin
3 production planing. If the planing is not in conformance with the surface tolerance
4 requirements, the Contractor shall make adjustments to the planing operation and
5 then plane another test section.
6

7 If at any time during the planing operation the Engineer determines the required
8 surface tolerance is not being achieved, the Contractor shall stop planing. Planing
9 shall not resume until the Engineer is satisfied that specification planing can be
10 produced or until successful completion of another test section. The forward speed
11 during production planing shall not exceed the speed used for the test section.
12

13 The completed surface after planing and prior to paving shall not vary more than 1/4
14 inch from the lower edge of a 10-foot straightedge placed on the surface parallel or
15 transverse to the centerline. The planed surface shall have a matted texture and
16 the difference between the high and low of the matted surface shall not exceed 1/8
17 inch.
18

19 Pavement repair operations, when required, shall be accomplished prior to planing.
20

21 5-04.3(14).OPT3.GR5

22 **(March 13, 1995)**

23 **Vertical Edge Planing**

24 During planing of bituminous pavement in the travelled lanes, the Contractor shall
25 coordinate the planing and paving operations such that the planed roadway surface
26 shall not remain unpaved at the end of the work day. The Contractor shall have a
27 contingency plan to ensure that no planed areas remain unpaved due to equipment
28 breakdown or other emergency.
29

30 5-04.3(14).OPT4.GR5

31 **(August 3, 2009)**

32 **Beveled Edge Planing**

33 A beveled edge shall be constructed in areas that will not be paved during the same
34 work shift.
35

36 The Contractor shall use a beveled cutter on the mandrel of the planing equipment,
37 or other approved method(s), to eliminate the vertical edge(s). The beveled edge(s)
38 shall be constructed at a 4:1 slope.
39

40 5-04.5.GR5

41 **Payment**

42
43 5-04.5.INST2.GR5

44 Section 5-04.5 is supplemented with the following:
45

46 5-04.5.OPT1.FR5

47 (January 5, 2015)

48 "Smoothness Compliance Adjustment" by calculation.
49

50 **Smoothness Compliance Adjustments**

51 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

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5-04.5.OPT2.GR5

(January 13, 2021)

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”

1
2 The adjustment is not a guarantee of full compensation for changes in the cost of asphalt
3 binder. The Contracting Agency does not guarantee that asphalt binder will be available
4 at the reference cost.

5
6 The Contracting Agency will establish asphalt binder reference costs twice each month
7 and post the information on the Agency website at: [https://wsdot.wa.gov/business-
8 wsdot/contracts/about-public-works-contracts/payments-reporting/asphalt-binder-
9 reference-cost](https://wsdot.wa.gov/business-wsdot/contracts/about-public-works-contracts/payments-reporting/asphalt-binder-reference-cost). The reference cost will be determined using posted prices furnished by
10 Poten & Partners, Inc. If the selected price source ceases to be available for any reason,
11 then the Contracting Agency will select a substitute price source to establish the
12 reference cost.

13
14 Price adjustments will be calculated one time per month. No price adjustment will be
15 made if the Current Reference Cost is within +/-5% of the Base Cost. Reference costs
16 for projects located in Eastern versus Western Washington shall be selected from the
17 column in the WSDOT website table labeled "Eastern", or "Western", accordingly. The
18 adjustment will be calculated as follows:

19
20 If the reference cost is greater than or equal to 105% of the base cost, then
21 Asphalt Cost Price Adjustment = (Current Reference Cost – (1.05 x Base Cost)) x
22 (Q x 0.056).

23
24 If the reference cost is less than or equal to 95% of the base cost, then
25 Asphalt Cost Price Adjustment = (Current Reference Cost – (0.95 x Base Cost)) x
26 (Q x 0.056).

27
28 Where: **Current Reference Cost** is selected from the website table based on
29 the "Date Effective" that immediately precedes the current month's
30 progress estimate end date. For work completed after all authorized
31 working days are used, the adjustment will be based on the posted
32 reference cost during which contract time was exhausted.

33
34 **Base Cost** is selected from the website table based on the "Date
35 Effective" that immediately precedes the contract bid opening date,
36 and shall be a constant for all monthly adjustments.

37
38 **Q** = total tons of all classes of HMA paid in the current month's progress
39 payment.

40
41 "Asphalt Cost Price Adjustment", by calculation.

42 "Asphalt Cost Price Adjustment" will be calculated and paid for as described in this
43 section. For the purpose of providing a common proposal for all bidders, the Contracting
44 Agency has entered an amount in the proposal to become a part of the total bid by the
45 Contractor.

46
47 5-04.5.OPT3.GR5

48 (April 4, 2016)

49 "Asphalt Binder Revision" by calculation.

50 "Asphalt Binder Revision" shall be calculated and paid for as described in Section 5-04.3.

1 5-05.GR5
2 **Cement Concrete Pavement**

3
4 **5-05.1.GR5**
5 **Description**

6
7 5-05.1.INST1.GR5
8 Section 5-05.1 is supplemented with the following:

9
10 5-05.1.OPT1.GR5
11 (August 6, 2012)
12 This Work consists of furnishing and placing pigmented, textured, or textured and
13 pigmented cement concrete pavement at the locations and depth as shown in the Plans.

14
15 **5-05.2.GR5**
16 **Materials**

17
18 5-05.2.INST1.GR5
19 Section 5-05.2 is supplemented with the following:

20
21 5-05.2.OPT1.GR5
22 (November 20, 2023)
23 Pigment color for "brick red" cement concrete pavement shall match SAE AMS-STD-595
24 Color #32169. The pigment shall be incorporated in accordance with the manufacturer's
25 recommendations.

26
27 5-05.2.OPT2.FR5
28 (November 20, 2023)
29 Pigment color for cement concrete pavement shall match SAE-AMS-STD-595 Color #
30 *** \$\$1\$\$ ***

31
32 The pigment shall be incorporated in accordance with the manufacturer's
33 recommendations.

34
35 5-05.3.GR5
36 **Construction Requirements**

37
38 5-05.3.INST1.GR5
39 Section 5-05.3 is supplemented with the following:

40
41 5-05.3.OPT1.GR5
42 **(August 6, 2012)**
43 **Pigmented Cement Concrete**
44 Curing shall be in accordance with Section 5-05.3(13) and be applied to the surface in
45 accordance with the manufacturer's recommendations. If liquid membrane-forming
46 concrete curing compound is used it shall meet the requirements of ASTM C 309 Type
47 1-D.

48

1 The Contractor shall provide a 2 foot by 2 foot sample panel, that has been cured a
2 minimum seven days, showing the color of cement concrete to the Engineer for
3 acceptance before placing any pigmented cement concrete pavement.
4

5 5-05.3.OPT2.FR5

6 **(August 6, 2012)**

7 **Textured Cement Concrete**

8 Textured cement concrete pavement pattern shall be one chosen from the manufacturers
9 and patterns listed below:

10 *** \$\$1\$\$ ***
11

12 A mat or stamp shall be used to imprint the pattern into the concrete surface.
13

14
15 Curing shall be in accordance with Section 5-05.3(13) and be applied to the surface in
16 accordance with the manufacturer's recommendations. If liquid membrane-forming
17 concrete curing compound is used it shall meet the requirements of ASTM C 309 Type
18 1-D.
19

20 5-05.3.OPT3.FR5

21 **(September 3, 2024)**

22 **Textured Cement Concrete with Colored Release Agent**

23 Textured cement concrete pavement pattern shall be one chosen from the manufacturers
24 and patterns listed below:

25 *** \$\$1\$\$ ***
26

27
28 A dark gray release agent shall be used with the mat or stamp to imprint the pattern into
29 the concrete surface in accordance with the manufacturer's recommendations.
30

31 Curing shall be in accordance with Section 5-05.3(13)A and be applied to the surface in
32 accordance with the manufacturer's recommendations. The liquid membrane-forming
33 concrete curing compound shall meet the requirements of ASTM C 309 Type 1-D.
34

35 5-05.3(1).GR5

36 **Concrete Mix Design for Paving**
37

38 5-05.3(1).INST1.GR5

39 Item number 1 of Section 5-05.3(1) is supplemented with the following:
40

41 5-05.3(1).OPT1.GR5

42 (January 2, 2018)

43 Coarse aggregate derived from the recycling of Cement Concrete Pavement
44 removed from the project may be used as coarse aggregate or blended with coarse
45 aggregate for Cement Concrete Pavement. The Contractor shall remove all
46 bituminous material, joint sealant and backer material from the existing pavement
47 prior to removal for recycling. The recycled concrete aggregates shall meet the
48 requirements of Section 9-03.21(1)B. Cement Concrete Pavement experiencing
49 carbonate silica reaction, sulfate reaction, D cracking or any other conditions that
50 may affect concrete durability shall not be used. Cement Concrete Pavement mix

1 designs using recycled concrete aggregates will require the use of Low Alkali
2 Cement or 25 percent Class F fly ash by total weight of the cementitious materials
3 or the Contractor shall submit evidence that other ASR mitigating measures control
4 expansion in accordance with Section 9-03.1(1).
5

6 5-05.3(1).INST2.GR5

7 Section 5-05.3(1) is supplemented with the following:
8

9 5-05.3(1).OPT2.GR5

10 **(November 20, 2023)**

11 **Aggregate for Textured Cement Concrete Pavement**

12 Fine aggregate and coarse aggregate shall be a combined gradation in accordance
13 with Section 9-03.1(5) and have a nominal maximum aggregate size equal to ½-
14 inch, ¾-inch, 1-inch, or 1-½-inch sieve.
15

16 The Contractor shall select the nominal maximum aggregate size that allows the
17 specified textured cement concrete pavement pattern to be imprinted into the
18 concrete surface to the depth specified for the textured pattern. If the textured
19 cement concrete pattern is unsatisfactory, the Contractor shall remove and replace
20 the concrete pavement at no expense to the Contracting Agency.
21

22 5-05.3(12).GR5

23 **Surface Smoothness**
24

25 5-05.3(12).INST1.GR5

26 The third paragraph of Section 5-05.3(12) is replaced with the following:
27

28 5-05.3(12).OPT1.GR5

29 (January 7, 2019)

30 Operate the inertial profiler in accordance with AASHTO R 57. Collect two
31 longitudinal traces, one in each wheel path. Collect profile data in a continuous pass
32 including areas excluded from pay adjustments for each section paved. The
33 Contractor shall determine when each section is to be tested except that the
34 minimum length to be tested shall be 528 feet unless accepted by the Engineer.
35 Where a completed section of concrete pavement abuts a segment to be completed
36 later in the project, the 50 feet adjacent to uncompleted section shall be included in
37 the testing and incentive/disincentive for the uncompleted segment. Provide seven
38 calendar days notice to the Engineer prior to testing.
39

40 5-05.3(12).INST2.GR5

41 Section 5-05.3(12) is supplemented with the following:
42

43 5-05.3(12).OPT2.GR5

44 (February 6, 2023)

45 This Contract includes Weigh-in-Motion (WIM) sensors and additional surface
46 smoothness requirements within the WIM evaluation area.
47

48 The WIM evaluation area is 400 feet in length, beginning 275 feet before the WIM
49 Site Index Station. The width of the WIM evaluation area includes all lanes where
50 sensors are present and extends 0.75 feet beyond the edge of the lane(s).
51

1 The completed surface shall be sufficiently smooth such that a 6-inch diameter
2 circular plate, 0.125 inches thick, cannot be passed beneath a 16-foot straightedge
3 placed on the surface parallel to the centerline of the roadway, when evaluated as
4 described in ASTM E1318-09 (2017), Section 6.1.5.

5
6 Deviations within the WIM evaluation area that are in excess of these requirements
7 will not be accepted and shall be corrected by one of the following methods:

- 8
9 1. Remove and replace the final roadway surface layer, or
- 10
11 2. Remove material from high places by grinding with an accepted grinding
12 machine, or
- 13
14 3. By other method accepted by the Engineer.

15
16 Correct defects until there are no deviations anywhere within the WIM evaluation
17 area that are greater than allowable tolerances.

18
19 5-05.3(17).GR5

20 ***Opening to Traffic***

21
22 5-05.3(17).INST2.GR5

23 Section 5-05.3(17) is revised to read:

24
25 5-05.3(17).OPT1.GR5

26 **(August 7, 2017)**

27 **Maturity Testing for Concrete Pavement**

28 The pavement shall not be opened to traffic until the Strength-Maturity Relationship
29 (SMR) demonstrates the pavement has a minimum compressive strength of 2,500
30 psi and approval of the Engineer. The pavement shall be cleaned prior to opening
31 to traffic.

32
33 The Contractor shall establish a Maturity Value on the approved concrete mix
34 through the use of a testing program following the WSDOT Maturity Method Test
35 Procedure for estimating concrete strength.

36
37 The Contractor shall establish the SMR at least 14 calendar days prior to the
38 production pours. The Contractor shall notify the Engineer 7 days prior to performing
39 the SMR as to the time, date and location where the SMR will be performed. The
40 Contractor shall allow WSDOT the opportunity to place maturity loggers in the test
41 cylinders in order to calibrate the WSDOT maturity meter. A SMR shall be developed
42 for each mix used on the project. Referenced SMRs from previous projects will not
43 be allowed.

44
45 The Contractor shall be responsible for the installation of the maturity logger/sensors
46 within the concrete pavement pour area. For panel replacements performed under
47 Section 5-01, place a minimum of four loggers/sensors at two different locations.
48 Two in one of the first few panel replacements and two in the last panel replacement
49 of the day, each day. For continuous concrete paving operations performed under
50 Section 5-05, place a minimum of four loggers/sensors, two at the beginning and
51 two at the end of the concrete pour, each day. The Contractor shall maintain the

1 integrity of the logger/sensors and wires during concrete pouring, finishing and
2 curing operations or until the maturity information is no longer needed.

3
4 The Contractor shall perform the Quality Control Procedure to Verify the Strength-
5 Maturity Relationship on days 1 and 2 of concrete placement as indicated in the test
6 procedure.

7
8 The Contractor shall develop a Quality Control Plan based on the Strength-Maturity
9 Relationship to monitor and provide remedial action to ensure the concrete meets
10 design strengths.

11
12 Any alteration in mix proportions or source or type of any material, in excess of those
13 tolerable by batching variability shall require the development of a new SMR prior to
14 its use at the Contractors time and expense. Alterations include a change in type,
15 source, or proportion of cement, fly ash, coarse aggregate, fine aggregate, or
16 admixtures. A change in water-to-cementitious material ratio greater than 5.0
17 percent requires the development of a new SMR.

18
19 **Maturity Method Test Procedure**

20 This test method provides a procedure for estimating concrete strength by means
21 of the maturity method. The maturity method is based on strength gain as a function
22 of temperature and time. This method is a modification of ASTM C1074 covering the
23 procedures for estimating concrete strength by means of the maturity method.

24
25 The maturity method consists of three steps:

- 26
27
 - 28 ■ Develop Strength-Maturity Relationship
 - 29 ■ Estimate in-place strength
 - 30 ■ Verify Strength-Maturity Relationship.

31 The Nurse-Saul “temperature-time factor (TTF)” maturity index shall be used in this
32 test method, with a datum temperature of 0 °C (32 °F).

33
34 **Apparatus**

- 35
 - 36 ■ If the maturity meter has input capability for datum temperature, verify
37 that the proper value of the datum temperature has been selected
38 prior to each use.
 - 39 ■ Intellirock maturity system (or approved equivalent). This system shall
40 include the logger/sensor, handheld reader, and software.
 - 41 ■ The data obtained from the maturity meter shall be unalterable and un-
42 interruptible.
 - 43 ■ The same brand and type of maturity meters shall be used in the field
44 as those used to develop and verify the strength-maturity relationship.
 - 45 ■ Logger/sensor wire grade shall be larger than or equal to 20 awg.

46
47 **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	<p>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.</p> <p>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.</p>
6	At each test age, record the individual and average values of maturity and strength for each batch on a permanent data sheet
7	<p>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.</p> <p>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.</p>

1
2
3

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.

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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
6

1 5-05.4.GR5

2 **Measurement**

3

4 5-05.4.INST1.GR5

5 Section 5-05.4 is supplemented with the following:

6

7 5-05.4.OPT1.GR5

8 (August 6, 2012)

9 Pigmented, textured, or textured and pigmented cement concrete pavement will be
10 measured by the square yard placed.

11

12 5-05.5.GR5

13 **Payment**

14

15 5-05.5.INST1.GR5

16 Section 5-05.5 is supplemented with the following:

17

18 5-05.5.OPT2.GR5

19 (August 6, 2012)

20 "Pigmented Cement Concrete Pavement", per square yard

21 The unit Contract price per square yard for Pigmented Cement Concrete Pavement shall
22 be full pay for all costs incurred to perform the Work in this Specification.

23

24 5-05.5.OPT3.GR5

25 (August 6, 2012)

26 "Textured Cement Concrete Pavement", per square yard

27 The unit Contract price per square yard for Textured Cement Concrete Pavement shall
28 be full pay for all costs incurred to perform the Work in this Specification.

29

30 5-05.5.OPT4.GR5

31 (August 6, 2012)

32 "Textured and Pigmented Cement Concrete Pavement", per square yard

33 The unit Contract price per square yard for Textured and Pigmented Cement Concrete
34 Pavement shall be full pay for all costs incurred to perform the Work in this Specification.

35

36 5-05.5.OPT5.GR5

37 (August 5, 2013)

38 All costs in connection with conducting concrete pavement maturity testing and surface
39 cleaning prior to opening to traffic shall be included in the unit Contract price per cubic
40 yard for "Cement Conc. Pavement" and per square yard for "Replace Cement Concrete
41 Panel", if either or both of the items are included in the Contract.

42

43 5-SA1.FR5

44 **(August 7, 2017)**

45 **JUST IN TIME TRAINING**

46 **Description**

47 Just In Time Training (JITT) is a formal class for the joint training of Contractor and Contracting
48 Agency employees that will be associated with the construction or rehabilitation of Cement
49 Concrete Pavement.

1
2 **Construction Requirements**

3 **Training**

4 The Contractor shall provide a JITT instructor who is experienced with the specified
5 pavement construction methods, materials, and tests. The instructor shall not be an
6 employee of the Contractor or the Contracting Agency. JITT shall be at a facility provided
7 by the Contractor unless otherwise agreed to by the Engineer.
8

9 The following personnel are required to attend the JITT:

- 10
11 1. Representing the Contractor: The Superintendent, foremen and key
12 construction personnel associated with the work.
13 2. Representing the Contracting Agency: Up to ***\$\$1\$\$*** Contracting Agency
14 staff selected by the Engineer.
15

16 JITT shall meet the following requirements:

- 17
18 1. At least 4 hours long or a length agreed to by the Engineer.
19 2. Cover all aspects of work methods, equipment and materials the Contractor is
20 proposing to use.
21 3. Conducted within 3 miles of the job site or at a mutually agreed to location.
22 4. Completed before the start of paving.
23 5. Conducted during normal working hours.
24 6. At the Contractors option, JITT may be an extension of a prepaving conference.
25

26 **Submittals**

27 A minimum of 5 calendar days before JITT the Contractor shall submit to the Engineer
28 the instructor's name and qualifications, the JITT facility's location, and 1 copy each of
29 any course, handout, and presentation materials.
30

31 **Payment**

32 Payment will be made for each of the following items that are included in the Proposal:

33
34 "Just In Time Training", lump sum.
35

36 The lump sum Contract payment shall be full compensation for all costs incurred by the
37 Contractor in providing "Just In Time Training".
38

39 DIVISION6.GR6

40 **Division 6**
41 **Structures**
42

43 6-01.GR6

44 **General Requirements for Structures**
45

46 6-01.5.GR6

47 **Work Access and Temporary Structures**
48

49 6-01.5.INST1.GR6

50 Section 6-01.5 is re-titled and revised to read:

1
2 6-01.5.OPT1.FB6

3 **(April 1, 2019)**

4 **Work Access**

5 The Contractor shall construct work access to accommodate all work within the wetted
6 perimeter, or vertically above the sensitive area, of *** \$\$1\$\$ ***, as shown in the plans
7 or staked by the Engineer. The Contractor shall construct and remove the work access
8 in accordance with all environmental regulations and permits, including those specified
9 in Sections 1-07.5 and 1-07.6.

10
11 **Submittals**

12 The Contractor shall submit Type 2 Working Drawings of the work access, except
13 that if the Contractor chooses an access alternative using a work trestle structure,
14 the Working Drawings shall be Type 2E. The Contractor shall design the work
15 access structure to withstand all applicable loads in accordance with accepted
16 design codes. The Contractor shall specify the design code(s) in the design
17 calculations and working drawings.

18
19 The Contractor shall include information with the work access submittal on the
20 construction equipment that will use the work access. The Contractor shall specify
21 the type and model of construction equipment to be used, and shall include
22 equipment catalogue cuts with capacities and geometry. The Contractor shall
23 include anticipated wheel or track loads, axle spacings, outrigger geometry and
24 reactions, crane pick angles and reach, and other equipment details.

25
26 6-01.5.OPT1(A).FB6

27 **(April 6, 2015)**

28 **Waterway Clearance Requirements**

29 One span of the work access structure shall provide more than *** \$\$1\$\$ **
30 horizontal clearance between supporting piers. The bottom of the superstructure of
31 the work access structure shall be at elevation *** \$\$2\$\$ ** or higher. All waterborne
32 debris that accumulates against the work access structure shall be removed by the
33 Contractor.

34
35 6-01.5.OPT1(B).GB6

36 **(April 6, 2015)**

37 **Payment**

38 Payment will be made in accordance with Section 1-09.3 for the following bid item:

39
40 "Work Access - ___", lump sum.

41
42 6-01.5.OPT2.FB6

43 **(August 6, 2018)**

44 **Temporary Bridge**

45 The Contractor shall design, furnish, erect, maintain, and remove a temporary bridge,
46 including substructure, in accordance with this Special Provision and the details shown
47 in the Plans unless otherwise accepted by the Engineer.

48
49 **Geometric Requirements**

50 The temporary bridge shall conform to the following geometric requirements:

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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

1 and as shown in the Plans, and in accordance with the details shown in the Plans.
2 The Contractor shall maintain the temporary bridge, including the driving surface,
3 for the life of the temporary bridge in this project.
4

5 All welding, repair welding, and welding inspection, of steel components of the
6 temporary bridge shall conform to the Section 6-03.3(25) and 6-03.3(25)A
7 requirements specified for steel bridges.
8

9 After the temporary bridge is no longer needed the Contractor shall remove the
10 temporary bridge.
11

12 **Payment**

13 Payment will be made in accordance with Section 1-09.3 for the following bid item:
14

15 "Temporary Bridge____", lump sum.
16

17 6-02.GR6

18 **Concrete Structures**

19
20 6-02.2.GR6

21 **Materials**

22
23 6-02.2.INST1.GR6

24 Section 6-02.2 is supplemented with the following:
25

26 6-02.2.OPT2.GB6

27 ***(September 8, 2020)***

28 ***Epoxy Bonding Agent For Surfaces And For Steel Reinforcing Bar Dowels***

29 Epoxy bonding agent for surfaces shall be Type II, as specified in Section 9-26.1. Epoxy
30 bonding agent for steel reinforcing bar dowels shall be either Type I or Type IV, as
31 specified in Section 9-26.1. The grade and class of epoxy bonding agent shall be as
32 recommended by the resin manufacturer.
33

34 6-02.2.OPT4.GB6

35 ***(November 2, 2022)***

36 ***Epoxy Crack Sealing Materials***

37 Epoxy sealing paste shall be a thixotropic compound.
38

39 Epoxy injection resin shall be a moisture-insensitive, two-component material capable of
40 restoring the structural integrity of a structure by structurally bonding cracks,
41 delaminations and hollow planes. Resin formulations shall be hydrophilic with variable
42 viscosity to allow full depth penetration in cracks having a width of 6 mils and greater.
43

44 Epoxy injection resin, when mixed with the hardener in accordance with the
45 manufacturer's written instructions, shall cure to a non-shrink solid material. The material
46 shall be capable of curing in less than 24 hours.
47

48 Epoxy injection resin shall have the following physical properties:
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50 Solids Content, by weight (minimum) 98 percent

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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 Safety Data Sheet (SDS) 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 Safety Data Sheet (SDS), 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 (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 of polyester styrene resin	ASTM D2369

The hardened resin shall conform to the following requirements:

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Elongation:	35% minimum w/ thickness 0.25" ± 0.04"	ASTM D 638
Tensile Strength:	2,500 psi minimum 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.

1 **Sand for Abrasive Finish**

2 The sand for abrasive finish shall conform to Section 6-09.2, and the aggregate
3 moisture content requirements specified above.
4

5 6-02.2.OPT28.GB6

6 ***(April 6, 2015)***

7 ***Elastomeric Concrete***

8 Elastomeric concrete shall be one of the following three products:
9

10 BASF/Watson Bowman Acme Wabo Crete II

11
12 D. S. Brown Delcrete

13
14 R. J. Watson Poly-Tron
15

16 The elastomeric concrete aggregate shall be as specified, gradated, and packaged by
17 the elastomeric concrete manufacturer.

18
19 The primer shall be as recommended by the elastomeric concrete manufacturer.
20

21 The Contractor shall deliver the elastomeric concrete components to the job site in the
22 elastomeric concrete manufacturer's original sealed containers. Each container shall be
23 marked with the sealant manufacturer's name and lot or batch number. Each lot or batch
24 shall be accompanied by the manufacturer's Safety Data Sheet (SDS), and
25 Manufacturer's Certificate of Compliance, identifying the elastomeric concrete
26 manufacturer and the lot or batch number, and certifying that the materials conform to
27 the properties stated in the product data sheet.
28

29 6-02.2.OPT46.GB6

30 ***Bridge Supported Utilities***

31
32 6-02.2.OPT46(A).GB6

33 (June 26, 2000)

34 Inserts shall be of the type and model specified in the Plans. Inserts shall be galvanized
35 in accordance with AASHTO M 111.
36

37 6-02.2.OPT46(B).GB6

38 (September 3, 2019)

39 Hanger rods, and associated nuts and washers, shall conform to Section 9-06.5(1), and
40 shall be galvanized in accordance with ASTM F2329.
41

42 Steel bars and plates shall conform to ASTM A 36 and shall be galvanized in accordance
43 with AASHTO M 111.
44

45 6-02.2.OPT46(C).GB6

46 (September 3, 2019)

47 Horizontal strut bolts or threaded rods, and associated nuts and washers, shall conform
48 to Section 9-06.5(1), and shall be galvanized in accordance with ASTM F2329.
49

1 Pre-formed fabric pads shall be composed of multiple layers of duck, impregnated and
2 bound with high quality oil resistant synthetic rubber, compressed into resilient pads. The
3 pre-formed fabric pads shall conform to latest edition of MIL C 882 and the following
4 requirements. The number of plies shall be as required to produce the specified
5 thickness, after compression and vulcanizing.
6

7 Pre-formed fabric pads shall have a shore A hardness of 90 ± 5 in accordance with ASTM
8 D 2240.
9

10 Pre-formed fabric pads for bridge utility supports will be accepted based on the
11 Manufacturer's Certificate of Compliance that the material furnished conforms to these
12 specifications.
13

14 6-02.2.OPT46(D).GB6
15 (June 26, 2000)

16 Pipe rolls or pipe saddles shall be of the type and model specified in the Plans.
17

18 6-02.2.OPT46(E).GB6
19 (September 3, 2019)

20 Anchor straps shall conform to ASTM A 36 and shall be galvanized after fabrication in
21 accordance with AASHTO M 111.
22

23 Anchor bolts, and associated nuts and washers, shall conform to Section 9-06.5(4), and
24 shall be galvanized in accordance with ASTM F2329.
25

26 6-02.2.OPT48.GB6
27 **(April 30, 2001)**

28 **Bridge Drain Risers**

29 Spacer bars and riser bars for the drain riser assembly shall conform to ASTM A 36.
30

31 6-02.2.OPT58.GB6
32 **(September 8, 2020)**

33 **Core Drilled Bridge Deck Drain**

34 Bridge deck drain pipe sleeve shall be any smooth wall, non-perforated, PVC pipe of the
35 diameter and minimum wall thickness specified in the Plans.
36

37 Epoxy bonding agent shall be Type II conforming to Section 9-26.1. The grade and class
38 of the epoxy bonding agent shall be as recommended by the bonding agent
39 manufacturer.
40

41 6-02.2.OPT60.GB6
42 **(April 6, 2015)**

43 **Seismic Retrofit Materials**

44 Components fabricated and constructed for seismic retrofit work shall conform to the
45 following requirements:
46

47 6-02.2.OPT60(B).GB6
48 (April 6, 2015)

49 Steel pipe shall conform to ASTM A 53, Grade B, Type E or S, galvanized. The pipe
50 shall be Schedule 40, except as otherwise specified in the Plans.

1
2 PVC pipe shall be any smooth wall, non-perforated, PVC pipe of the diameter and
3 minimum wall thickness or Schedule specified in the Plans.
4

5 6-02.2.OPT60(C).GB6

6 (November 20, 2023)

7 Steel bars, plates and shapes shall conform to ASTM A36 except that structural
8 shapes may conform to ASTM A992.
9

10 Epoxy bonding agent, where shown in the Plans for bonding steel components to
11 concrete, shall be Type II as specified in Section 9-26.1. The grade and class of
12 epoxy bonding agent shall be as recommended by the bonding agent manufacturer.
13

14 All steel components and assemblies for seismic restrainers, except as otherwise
15 specified, shall be galvanized after fabrication in accordance with AASHTO M 111.
16

17 Bolts, nuts, and washers shall conform to Section 9-06.5(3) and shall be galvanized
18 after fabrication in accordance with ASTM F2329.
19

20 Resin bonded anchors shall conform to Sections 6-02.3(18)A and 9-06.4.
21 Additionally, the threaded anchor rods for seismic retrofit elements shall conform to
22 either ASTM A193 Grade B7 or ASTM F1554 Grade 105, and shall conform to the
23 appropriate supplemental requirements for grade and manufacturer's identification,
24 and charpy impact testing (15-foot-pounds minimum at 40F). Results of the charpy
25 impact testing for the production lot(s) including the anchor rods furnished for
26 seismic retrofit components and assemblies shall be submitted to the Engineer
27 along with the Manufacturer's Certificate of Compliance.
28

29 6-02.2.OPT60(D).GB6

30 (September 8, 2020)

31 High-strength steel rods for longitudinal seismic restrainer assemblies shall conform
32 to ASTM F 1554 Grade 105, including Supplemental Requirements S2, S3, and S5.
33 Nuts, and couplers if required, shall conform to ASTM A 563 Grade DH. Washers
34 shall conform to ASTM F 436.
35

36 High-strength steel rods and associated couplers, nuts and washers shall be
37 galvanized after fabrication in accordance with ASTM F2329.
38

39 6-02.2.OPT60(F).GB6

40 **(September 8, 2020)**

41 **Column Jacketing Materials**

42 All metal components shall conform to ASTM A 36, and shall be painted in
43 accordance with Section 6-07.3(9), and Section 6-03.3(30) as supplemented in
44 these Special Provisions. Metal surfaces in contact with grout shall be considered
45 in contact with concrete for the purposes of Section 6-07.3(9).
46

47 Grout shall conform to the requirements of Section 9-20.3(4) and the following
48 requirements:
49

50 The grout shall be a pumpable mix capable of filling the annulus between the
51 concrete column and steel column jacket assembly. The grout shall be free of

1 lumps and undispersed cement, and shall not show any visible signs of
2 separation of water and cement during pumping operations.

3
4 Aggregate conforming to Section 9-03.1(5) with a maximum aggregate size of 3/8
5 inch may be used to extend the grout. Mortar shall conform to Section 9-20.4(2).
6

7 Epoxy bonding agent for filling grout voids shall be Type II, as specified in Section
8 9-26.1. The grade and class of epoxy bonding agent shall be as recommended by
9 the bonding agent manufacturer.

10
11 6-02.2.OPT61.GB6

12 **(September 8, 2020)**

13 **Precast Prestressed Concrete Stay-In-Place Panels**

14 Concrete shall have an initial strength at strand release of at least 5,000 psi, and a 28
15 day minimum compressive strength as specified in the Plans.

16
17 Prestressing reinforcement strand shall conform to Section 9-07.10, except that the
18 diameter shall be as specified in the Plans. The strand shall be provided by a
19 manufacturer and facility capable of producing 1/2" diameter strand with an average bond
20 pull-out force of 16.0 kips when tested in accordance with ASTM A1081. Test reports for
21 ASTM A1081 shall be submitted with the Manufacturer's Certificate of Compliance, and
22 testing shall have been performed on strand produced within the previous 36 months.

23
24 Grout shall conform to Section 9-20.3(2).

25
26 Leveling bolts shall conform to Section 9-06.5(1), and shall be galvanized after
27 fabrication in accordance with AASHTO M 232.

28
29 Backer rod shall be closed cell expanded polyethylene foam.

30
31 6-02.2(9-06.4).GR6

32 **Resin Bonded Anchor System**

33 Item number 2 of the first paragraph of Section 9-06.4 is revised to read:

34
35 6-02.2(9-06.4).OPT1.2026.GR6

36 (May 5, 2025)

37 2. Resin Bonding Material

38 Resin bonding material shall be a two-component epoxy resin conforming
39 with ASTM C881 Type IV or be one of the following:

- 40
41 a. Vinyl ester resin.
42
43 b. Polyester resin.
44
45 c. Methacrylate resin.
46

47 6-02.3.GR6

48 **Construction Requirements**

1 6-02.3.INST1.GR6

2 Section 6-02.3 is supplemented with the following:

3
4 6-02.3.OPT1.GB6

5 **(September 7, 2021)**

6 **Epoxy Crack Sealing**

7 The materials being used may be dermatetic. The Contractor's contact with and use of
8 the materials shall conform to the requirements specified in the SDS for each material,
9 and all personnel shall be provided with appropriate clothing and protective garments.

10
11 All materials shall be stored and protected from ignition sources as recommended by the
12 material manufacturer.

13
14 The cracks shall be cleaned of efflorescence, deteriorated concrete and other surface
15 debris, by vacuuming, flushing, routing, sawing or other means as required.

16
17 Entry ports shall consist of tubes, tees or other valve devices as recommended by the
18 resin manufacturer. The ports shall be placed at intervals along each crack in
19 accordance with the manufacturer's written instructions for the resin being used. The
20 holes for the entry ports shall be drilled with a hollow bit with an attached vacuum chuck
21 to prevent concrete dust from becoming embedded in the crack.

22
23 The exposed crack surfaces and the areas around the entry ports shall be sealed with
24 epoxy sealing paste and cured in accordance with the resin manufacturer's written
25 instructions, to attain a seal capable of withstanding the applied injection pressures.

26
27 The Contractor shall furnish the services of a factory trained technical representative to
28 perform the epoxy crack sealing injection.

29
30 Injection shall be accomplished with a pressure or injection machine compatible with the
31 resin selected for use and shall begin at the lowest port and continue until there is
32 evidence of the resin at the entry port directly above and adjacent to the port being
33 pumped. When material travel is indicated, the nozzle shall be moved to the port that
34 shows resin. The previously pumped port shall be sealed. Injection shall continue until
35 the crack is completely filled. On wide cracks where resin travel between ports will be
36 rapid, two or more ports may be pumped simultaneously. On exceptionally large cracks,
37 a formulation (dependent upon crack width, ambient temperature, modulus requirements
38 and other variables) of epoxy resin and fine sands shall be used as recommended by
39 the resin manufacturer.

40
41 After all ports have been pumped and the crack is full, the epoxy resin shall be cured
42 without disturbance in accordance with the resin manufacturer's written instructions as
43 necessary to ensure development of the full bond capacity of the material.

44
45 After the epoxy has cured completely, the epoxy sealing paste and port stems shall be
46 ground flush with the original surface of the concrete.

47
48 At the discretion of the Engineer, cores shall be taken after the repair is completed to
49 confirm penetration and bonding. The number and locations of such cores will be as
50 specified by the Engineer. These cores shall be submitted to the Engineer for testing in

1 the State Materials Laboratory. The Contractor shall submit a Working Drawing for repair
2 of core holes in accordance with Section 6-01.16.

3
4 6-02.3.OPT2.GB6

5 **Bridge Supported Utilities**

6
7 6-02.3.OPT2(A).GB6

8 (August 3, 2015)

9 The Contractor shall furnish and install inserts for the bridge utility supports as shown in
10 the Plans. The Contractor shall verify that the hanger rods freely hang plumb in their
11 inserts, and shall make adjustments to the inserts as necessary and as accepted by the
12 Engineer prior to utility installation.

13
14 6-02.3.OPT2(B).GB6

15 (June 26, 2000)

16 The Contractor shall furnish and install the bridge utility supports, and the utility pipe or
17 conduit pipe, as shown in the Plans.

18
19 6-02.3.OPT2(C).FB6

20 (June 26, 2000)

21 The Utility Company will furnish material for and install *** \$\$1\$\$ **. The Contractor
22 shall install *** \$\$2\$\$ ** furnished by the *** \$\$3\$\$ **.

23
24 The Contractor shall notify the utility company a sufficient time in advance and shall
25 cooperate with the utility company in order that the utility furnished items may be installed
26 in the structure.

27
28 6-02.3.OPT8.GB6

29 **Seismic Retrofit**

30
31 6-02.3.OPT8(B).GB6

32 **(April 6, 2015)**

33 **Seismic Retrofit Demolition Plan**

34 The Contractor shall submit Type 2 Working Drawings showing the method of
35 removing the specified portions of the existing bridges required by the seismic
36 retrofit work. The Working Drawings shall show the sequence of demolition and
37 removal, the type of equipment to be used in all demolition and removal operations,
38 and details of the methods and equipment used for containment, collection, and
39 disposal of all debris. The Working Drawings shall show all stages of demolition.

40
41 6-02.3.OPT8(C).GB6

42 **(April 6, 2015)**

43 **Column Jacket Installation Plan**

44 The Contractor shall submit Type 2E Working Drawings describing the column
45 jacket installation plan. The submittal shall include at a minimum, the following:

- 46
47 1. Step by step installation procedure.
48
49 2. The methods of cleaning and preparing the existing column surfaces prior
50 to installing the column jacket assembly.
51

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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.

1 6-02.3.OPT8(E).GB6

2 **(September 8, 2020)**

3 **Field Measuring Existing Bridge Columns**

4 The Contractor shall field measure the dimensions (diameter, or width and
5 thickness, as appropriate for column shape) of the existing bridge columns receiving
6 column jackets prior to preparing column jacket assembly shop drawings. The
7 following locations shall be field measured as a minimum for each column:

- 8
- 9 1. Top of footing or footing pedestal.
 - 10
 - 11 2. Bottom of crossbeam.
 - 12
 - 13 3. Mid-height of column.
 - 14

15 The Contractor shall field measure the column height from top of footing or footing
16 pedestal to bottom of crossbeam for each column.

17

18 The Contractor shall tabulate these field measured dimensions and submit them to
19 the Engineer along with the column jacket assembly shop drawings.

20

21 Where site conditions, such as traffic control requirements or deeply buried
22 foundations, create difficulties for field measuring buried portions of the bridge
23 columns, the Contractor may request a waiver of the pre-fabrication field measuring
24 requirements for specific columns. If the Engineer concurs with the Contractor's
25 request for a waiver of the pre-fabrication field measuring requirement for specific
26 columns, and for columns identified in the Special Provisions as already designated
27 with a waiver, the Contractor shall:

- 28
- 29 1. Field measure the diameter, or width and thickness, as appropriate for the
30 column shape, of the above ground portion of the column receiving the
31 waiver.
 - 32
 - 33 2. Fabricate the column jacket to a length exceeding the column height (2'-0"
34 or ten percent of the estimated column height, whichever is greater) based
35 on the original plans and other available site data. The shop drawing
36 details shall specify the column jacket fabrication length, and the assumed
37 column height based on the available information.
 - 38
 - 39 3. Submit the method, template, and equipment used to field cut the top of
40 the column jacket assembly at installation.
 - 41

42 The Contractor shall submit the request for a waiver of the pre-fabrication field
43 measuring requirement prior to preparing column jacket assembly shop drawings,
44 and shall not submit shop drawings until receiving the Engineer's confirmation of the
45 waiver request and completing all field measurements still required.

46

47 6-02.3.OPT8(F).FB6

48 **(April 6, 2015)**

49 The column(s) at the Bridge and Pier location(s) specified below has (have) received
50 a waiver of the pre-fabrication field measuring requirement, and no separate waiver
51 request from the Contractor is required for this (these) specific column(s):

1
2 *** \$\$1\$\$ ***
3

4 However, the Contractor shall conform to all other requirements specified above for
5 columns receiving a waiver of the pre-fabrication field measuring requirement.
6

7 6-02.3.OPT8(G).FB6

8 **(April 6, 2015)**

9 **Field Measuring for Seismic Retrofit Components**

10 The Contractor shall field measure dimensions of existing items and members of
11 Bridge No(s). *** \$\$1\$\$ *** prior to preparing shop drawings for fabricated steel
12 components and assemblies.
13

14 The Contractor shall field measure dimensions of the following items:
15

16 *** \$\$2\$\$ ***
17

18 The Contractor shall tabulate these field measured dimensions and submit them to
19 the Engineer along with the shop drawing submittals for the corresponding steel
20 components and assemblies.
21

22 6-02.3.OPT8(H).GB6

23 **(April 6, 2015)**

24 **Removing Portions of Existing Concrete**

25 The Contractor shall remove portions of existing concrete required by the seismic
26 retrofit work in accordance with Section 2-02.3(2)A2 and as shown in the Plans.
27

28 The Contractor shall dispose of all materials removed by the demolition operations
29 in accordance with Section 2-02.3.
30

31 The Contractor shall roughen, clean, and saturate the existing concrete surfaces
32 bonding to the fresh concrete in accordance with Section 6-02.3(12).
33

34 6-02.3.OPT8(J).GB6

35 **(April 6, 2015)**

36 **Drilling Holes and Setting Steel Reinforcing Bars, and Placing Concrete**

37 The Contractor shall drill holes for, and set, steel reinforcing bars into the existing
38 concrete as shown in the Plans in accordance with Section 6-02.3(24)C as
39 supplemented in these Special Provisions.
40

41 6-02.3.OPT8(K).GB6

42 **(April 6, 2015)**

43 **Installing and Tensioning High-Strength Steel Bar Reinforcement**

44 The Contractor shall furnish and install high-strength steel bars as shown in the
45 Plans. The hole through existing concrete shall be core drilled. The concrete surface
46 in contact with the high-strength steel bar bearing plate shall be coated with epoxy
47 bonding agent just prior to stressing the high-strength steel bar. After stressing, the
48 high-strength steel bar shall be grouted in accordance with Section 6-02.3(26)H.
49

1 6-02.3.OPT8(L).GB6

2 **(November 20, 2023)**

3 **Longitudinal Seismic Restrainers**

4 The Contractor shall submit Type 1 Working Drawings consisting of shop drawings
5 of the steel components of the longitudinal seismic restrainer assemblies in
6 accordance with Section 6-03.3(7).
7

8 The Contractor shall core drill holes through the pier diaphragm for the high-strength
9 steel bar as shown in the Plans. The Contractor shall set the PVC pipe in place with
10 epoxy bonding agent as shown in the Plans.
11

12 Holes for the resin bonded anchors for the longitudinal seismic restrainer
13 anchorages shall be located and drilled in accordance with Section 6-02.3(18)A, and
14 as follows:
15

- 16 1. The bottom layer of steel reinforcing bars in the slab in the vicinity of the
17 longitudinal seismic restrainer anchorage as shown in the Plans shall be
18 located and marked on the concrete surface.
19
- 20 2. Using the anchorage assembly as a template, the Contractor shall align
21 and slightly shift the anchorage assembly as required so that the holes
22 avoid the existing steel reinforcing bars.
23
- 24 3. The Contractor shall drill holes for the resin bonded anchors with the
25 anchorage assembly in position as a template.
26
- 27 4. If, after shifting the anchorage assembly, conflicts still exist between hole
28 locations and existing steel reinforcing bars, the Contractor may, with the
29 Engineer's approval, core drill holes at the conflict locations.
30

31 The surface of the concrete in contact with the anchorage assembly shall be coated
32 with Type II epoxy bonding agent conforming to Section 9-26.2, with the grade and
33 class as recommended by the epoxy bonding agent manufacturer. The longitudinal
34 seismic restrainer anchorage assembly shall be set in place within the set time
35 specified in the manufacturer's data sheet for the epoxy bonding agent.
36

37 All longitudinal seismic restrainers at a pier shall be installed so that the free end
38 (the end with the gap as shown in the Plans) shall be on the same side of the pier.
39

40 6-02.3.OPT8(M).GB6

41 **(September 8, 2020)**

42 **Column Jacketing**

43 The steel column jacket assembly for each column shown in the Plans shall be
44 fabricated in accordance with the shop drawings.
45

46 The Contractor shall excavate and shore as required to expose the column surface
47 below ground to the top of the existing footing or footing pedestal. Dirt, debris and
48 any surface attachments shall be removed from the surface of the column in
49 accordance with the Contractor's column jacket installation plan.
50

1 For specific columns for which the Engineer confirms a waiver of the pre-fabrication
2 field measuring of the column height dimension, the Contractor shall field measure
3 the column height upon completion of the excavation. The Contractor shall field cut
4 the top of the column jacket assembly using the method, template, and equipment
5 as specified in the pre-fabrication field measuring waiver request submittal.
6

7 The Contractor shall position the steel column jacket around the existing column
8 using spacers to center the assembly. The spacers may be welded to the inside of
9 the jacket and, if used, shall be placed and attached as shown in the shop drawings.
10

11 Field welded complete penetration groove welds of the column jacket assemblies
12 shall be inspected in accordance with Section 6-03.3(25)A. Field weld inspection
13 shall be performed by a certified welding inspector (CWI). The Contractor shall not
14 begin welding until receiving acceptance of the joint fit-up from the CWI. The CWI
15 shall randomly monitor the intermediate stages of welding. The CWI's daily reports
16 and nondestructive testing reports indicating compliance with contract requirements
17 shall be submitted as a Type 1 Working Drawing upon completion of the last column
18 jacket in the Contract.
19

20 The Contractor shall install external grout injection valves for use in filling the cavity
21 with grout. The valves shall be spaced such that the grout will uniformly fill the gap
22 between the jacket assembly and the column surface. The grout pump shall be
23 equipped with a pressure gauge to monitor grout pressures. The grouting equipment
24 shall be sized to enable the grout to be pumped in one continuous operation. The
25 mixer shall be capable of continuously agitating the grout.
26

27 The production grout compressive strength shall be measured using four inch
28 diameter by eight inch cylinders, cast and cured in accordance with Section 6-
29 02.3(5)H. The cylinders shall attain a 7-day minimum compressive strength of 4,000
30 psi.
31

32 The gap between the column jacket assembly and the existing column surface at
33 the base of the assembly shall be sealed in accordance with the column jacket
34 installation plan.
35

36 The grouting operation shall conform to Section 6-02.3(6)A.
37

38 The grouting operation shall begin from the base of the assembly and from the base
39 of each successive lift. The Contractor shall pump grout into the assembly while
40 maintaining a uniform level grout head around the column.
41

42 The Contractor shall limit the height of each lift of grout to minimize undulations and
43 displacements of the surface of the column jacket assembly during grouting. For
44 column jacket assemblies of circular (constant radius) cross section, the height of
45 each lift of grout shall be limited to 20 feet maximum, except as otherwise accepted
46 by the Engineer. For column jacket assemblies with cross sections of all other
47 shapes, the height of each lift of grout shall be limited to 8 feet maximum, except as
48 otherwise accepted by the Engineer.
49

50 The Contractor may restrain the column jacket assembly within the specified
51 tolerances during grouting operations by using a bracing system in accordance with

1 the column jacket installation plan. Except as otherwise shown in the Plans,
2 restraints for the bracing system shall not pass through the column. Except when a
3 bracing system is used, placement of the next grout lift shall not begin until the
4 previous grout lift has hardened.

5
6 The Contractor shall contain and collect all grout outside the column jacket
7 assembly.

8
9 When the assembly is completely grouted to the top, the Contractor shall place
10 mortar conforming to Section 9-20.4(2) over the top of the grout at the top of the
11 assembly, and shall slope the mortar to drain.

12
13 All clamps, valves, injection ports, lifting ears, and other attachments shall be
14 removed not less than 24 hours after completing grouting operations at the column.
15 The Contractor shall fill all voids with mortar conforming to Section 9-20.4(2), and
16 shall finish them flush with the exterior surface of the column jacket assembly. The
17 Contractor shall not remove the attachments by flame cutting.

18
19 Seven calendar days after completing the grouting of a column jacket assembly, the
20 Engineer will inspect the assembly for voids between the steel casing and the grout.
21 The Contractor shall completely fill all voids detected by the Engineer by injecting
22 epoxy bonding agent into the lowest point of each void and venting at the highest
23 point. The exposed epoxy bonding agent shall be finished flush with the exterior
24 surface of the column jacket assembly.

25
26 After inspection for voids and epoxy injection of voids is complete, steel surfaces
27 with damaged primer coat shall be repaired with field primer in accordance with
28 Section 6-07.3(9). The primer repair shall be followed by application of the
29 intermediate and finish field coats of paint to all exposed steel surfaces in
30 accordance with Section 6-07.3(9) and Section 6-03.3(30) as supplemented in these
31 Special Provisions.

32
33 Backfill shall not be placed against the column jacket assembly until the finish coat
34 of paint is completely cured, based on the cure duration recommended by the paint
35 manufacturer. The Contractor shall fill and compact the excavation with native
36 backfill, except as otherwise specified in the Plans, in accordance with Section 2-
37 09.3(1)E.

38
39 6-02.3.OPT9.GB6

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

41 ***Polyester Concrete***

42 **Manufacturer's Technical Representative**

43 The Contractor shall have the services of a qualified polyester concrete
44 manufacturer's technical representative physically present at the job site. The
45 manufacturer's technical representative shall assist the Contractor in training the
46 Contractor's personnel and providing technical assistance in preparing the header
47 blockout surface, applying primer, and mixing, placing, and curing the polyester
48 concrete.

1 **Mix Design**

2 Polyester concrete shall be composed of the following three components – polyester
3 resin binder, high molecular weight methacrylate (HMWM) resin, and aggregate, in
4 accordance with Section 6-02.2 as supplemented in these Special Provisions.
5

6 The Contractor shall prepare and submit a Type 1 Working Drawing consisting of
7 the polyester concrete design mix and mixing procedure. The mix design shall
8 include a recommended initiator percentage for the expected application
9 temperature, and the recommended amount of polyester resin binder as a
10 percentage of the dry weight of aggregate. The amount of peroxide initiator used
11 shall result in a polyester concrete set time between 30 and 120 minutes during
12 placement as determined by California Test 551, Part 2, “Method of Test For
13 Determination of Set Time of Concrete Overlay and Patching Materials”, by Gilmore
14 Needles. Accelerators or inhibitors may be required as recommended by the
15 polyester resin binder supplier.
16

17 **Delivery and Storage of Materials**

18 All materials shall be delivered in their original containers bearing the manufacturer's
19 label, specifying date of manufacturing, batch number, trade name brand, and
20 quantity. Each shipment of polyester resin binder and HMWM resin shall be
21 accompanied by a Safety Data Sheet (SDS).
22

23 The material shall be stored in accordance with the manufacturer's
24 recommendations.
25

26 Sufficient material to perform the entire polyester concrete application shall be in
27 storage at the site prior to any field preparation.
28

29 **Equipment and Containment**

30 The Contractor shall submit a Type 1 Working Drawing consisting of all equipment
31 for cleaning the concrete and steel surfaces, and mixing and applying the polyester
32 concrete.
33

34 The HMWM resin, and abrasive blasting materials, shall be contained and restricted
35 to the surface receiving the polyester concrete only, and shall not escape to the
36 surrounding environment. The Contractor shall submit a Type 1 Working Drawing
37 consisting of the method and materials used to collect and contain the HMWM resin,
38 and abrasive blasting materials.
39

40 **Surface Preparation**

41 The concrete and steel surfaces shall be prepared by removing all material which
42 may act as a bond breaker between the surface and the polyester concrete. Surface
43 cleaning shall be by abrasive blasting. Precautions shall be taken to ensure that no
44 dust or debris leaves the bridge deck and that all traffic is protected from rebound
45 and dust.
46

47 If the concrete or steel surfaces become contaminated, the contaminated areas shall
48 be re-cleaned by abrasive blasting.
49

1 **Application of Prime Coat**

2 Application of the HMWM prime coat and the polyester concrete shall not begin if
3 rain is forecast within 12-hours of completion of the Work. The area receiving the
4 prime coat shall be dry and had no rain within the past 12 hours. Immediately prior
5 to applying the prime coat, the surfaces shall be cleaned to remove accumulated
6 dust and any other loose material.
7

8 The concrete bridge deck surface shall be between 50F and 85F when applying the
9 prime coat.
10

11 The Contractor shall apply one coat of promoted/initiated wax-free HMWM resin to
12 the prepared concrete and steel surfaces immediately before placing the polymer
13 concrete. The promoted/initiated resin shall be worked into the concrete in a manner
14 to assure complete coverage of the area receiving polyester concrete. A one pint
15 sample of each batch of promoted/initiated HMWM resin shall be retained and
16 submitted to the Engineer at the time of primer application.
17

18 The prime coat shall cure for 30 minutes minimum before beginning placement of
19 the polyester concrete. Placement of the polymer concrete shall not proceed until
20 the Engineer verifies that the HMWM resin was properly promoted and initiated, as
21 evidenced by the HMWM batch sample.
22

23 If the primed surface becomes contaminated, the contaminated area shall be
24 cleaned by abrasive blasting and reprimed.
25

26 **Mixing Equipment for Polyester Concrete**

27 Polyester concrete shall be mixed in mechanically operated mixers in accordance
28 with the mix design as approved by the Engineer. The mixer size shall be limited to
29 a nine cubic yard maximum capacity, unless otherwise approved by the Engineer.
30

31 The aggregate and resin volumes shall be recorded for each batch along with the
32 date of each recording. A printout of the recordings shall be furnished to the Engineer
33 at the end of each work shift.
34

35 The Contractor shall prevent any cleaning chemicals from reaching the polyester
36 mix during the mixing operations.
37

38 **Mixing Components**

39 The polyester resin binder in the polyester modified concrete shall be approximately
40 12 percent by weight of the dry aggregate. The Contractor shall specify the exact
41 percentage in the mix design Working Drawing submittal.
42

43 The polyester resin binder shall be initiated and thoroughly blended just prior to
44 mixing the aggregate and binder. The polyester concrete shall be thoroughly mixed
45 prior to placing.
46

47 **Polyester Concrete Placement**

48 The polyester concrete shall be placed within two hours of placing the prime coat.
49

50 Polyester concrete shall be placed within 15 minutes following initiation. Polyester
51 concrete that is not placed within this time shall be discarded.

1
2 The surface temperature of the area receiving the polyester concrete shall be the
3 same as specified above for the HMWM prime coat.
4

5 The polyester concrete shall be consolidated in accordance with the manufacturer's
6 recommendations.
7

8 **Finished Polyester Concrete Surface**

9 The finished surface of the polyester concrete shall be smooth and uniform as to
10 crown and grade in accordance with Section 6-02.3(10)D3.
11

12 Finishing equipment used shall strike off the polyester concrete to the established
13 grade and cross section.
14

15 The polyester concrete shall receive an abrasive sand finish. The sand finish shall
16 be applied by hand immediately after strike-off and before gelling occurs. Sand shall
17 be broadcast onto the surface to affect a uniform coverage of a minimum of 0.8
18 pounds per square yard.
19

20 **Curing**

21 The polyester concrete shall be cured in accordance with the manufacturer's
22 recommendations. The Contractor shall measure the compressive strength of the
23 cured polyester concrete with a rebound hammer in accordance with ASTM C 805.
24 The readings of the rebound hammer used shall be correlated to the compressive
25 strength of the polyester concrete product in accordance with ASTM C 805 Section
26 5.4, and the Contractor shall submit a Type 1 Working Drawing of this correlation.
27

28 Traffic and equipment shall not be permitted on the polyester concrete until it
29 achieves a compressive strength of 2500 psi based on the rebound hammer
30 readings and the correlation chart for the rebound hammer used.
31

32 6-02.3.OPT10.GB6

33 *(January 7, 2019)*

34 **Elastomeric Concrete**

35 Elastomeric concrete shall be composed of the following three components – two-
36 component polyurethane resin binder, and aggregate, in accordance with Section 6-02.2
37 as supplemented in these Special Provisions.
38

39 **Manufacturer's Technical Representative**

40 The Contractor shall have the services of a qualified elastomeric concrete
41 manufacturer's technical representative physically present at the job site. The
42 manufacturer's technical representative shall assist the Contractor in training the
43 Contractor's personnel and providing technical assistance in preparing the header
44 blockout surface, applying primer, and mixing, placing, and curing the elastomeric
45 concrete.
46

47 **Delivery and Storage of Materials**

48 All materials shall be delivered in their original containers bearing the manufacturer's
49 label, specifying date of manufacturing, batch number, trade name brand, and
50 quantity. Each shipment of polyurethane resin binder shall be accompanied by a
51 Safety Data Sheet (SDS).

1
2 The materials shall be stored in accordance with the manufacturer's
3 recommendations.

4
5 Sufficient material to perform the entire elastomeric concrete application shall be in
6 storage at the site prior to any field preparation.

7
8 **Equipment and Containment**

9 The Contractor shall submit a Type 1 Working Drawing consisting of all equipment
10 for cleaning the concrete and steel surfaces, and mixing and applying the
11 elastomeric concrete.

12
13 The abrasive blasting materials shall be contained and restricted to the surface
14 receiving the elastomeric concrete only and shall not escape to the surrounding
15 environment. The Contractor shall submit a Type 1 Working Drawing consisting of
16 the method and materials used to collect and contain the abrasive blasting materials.

17
18 **Surface Preparation**

19 The concrete and steel surfaces shall be prepared by removing all material which
20 may act as a bond breaker between the surface and the elastomeric concrete,
21 including the removal of all loose, deteriorated, or otherwise unsound concrete.
22 Steel surfaces shall be cleaned and prepared to an SSPC SP-10 surface condition.
23 Surface cleaning shall be by abrasive blasting.

24
25 Precautions shall be taken to ensure that no dust or debris leaves the bridge deck
26 and that all traffic is protected from rebound and dust.

27
28 If the concrete or steel surfaces become contaminated, the contaminated areas shall
29 be re-cleaned by abrasive blasting.

30
31 Freshly placed concrete shall be cured for a minimum of 14 calendar days before
32 application of primer and elastomeric concrete.

33
34 **Application of Prime Coat**

35 Application of the prime coat and the elastomeric concrete shall not begin if rain is
36 forecast within 12-hours of completion of the Work. The area receiving the prime
37 coat shall be dry and had no rain within the past 12 hours. Immediately prior to
38 applying the prime coat, the surfaces shall be cleaned to remove accumulated dust
39 and any other loose material.

40
41 The concrete bridge deck surface shall be between 50F and 85F when applying the
42 prime coat.

43
44 The Contractor shall apply primer in accordance with the elastomeric concrete
45 manufacturer's recommendations and shall limit the extent of primer application to
46 that surface area that can be covered by a layer of elastomeric concrete before
47 primer cure.

48
49 If the primed surface becomes contaminated, the contaminated area shall be
50 cleaned by abrasive blasting and reprimed.

1 **Mixing Components**

2 The Contractor shall mix the elastomeric concrete components and the resultant
3 mixture in accordance with the equipment and procedure recommended by the
4 elastomeric concrete manufacturer.

5
6 **Elastomeric Concrete Placement**

7 The elastomeric concrete shall be placed on the liquid prime coat within the time
8 limits specified by the manufacturer. Elastomeric concrete shall be placed in layers
9 not to exceed the maximum depth recommended by the elastomeric concrete
10 manufacturer. At locations deep enough to require placement of multiple layers of
11 elastomeric concrete, each layer shall be cured, and the top of the previous layer
12 roughened, as recommended by the elastomeric concrete manufacturer before
13 placement of the next layer.

14
15 Elastomeric concrete shall be placed within five minutes of initiation.

16
17 The surface temperature of the area receiving the elastomeric concrete shall be the
18 same as specified above for the prime coat.

19
20 **Finished Elastomeric Concrete Surface**

21 The finished surface of the elastomeric concrete shall be smooth and uniform as to
22 crown and grade in accordance with Section 6-02.3(10)D3.

23
24 Finishing tools or equipment used shall strike off the elastomeric concrete to the
25 established grade and cross section.

26
27 The finished surface of elastomeric concrete shall receive an abrasive sand finish.
28 The sand finish shall be applied by hand immediately after strike-off and before
29 gelling occurs. Sand shall be broadcast onto the surface to affect a uniform coverage
30 of a minimum of 0.8 pounds per square yard.

31
32 **Curing**

33 The elastomeric concrete shall be cured in accordance with the manufacturer's
34 recommendations. The Contractor shall measure the compressive strength of the
35 cured elastomeric concrete with a rebound hammer in accordance with ASTM C805.
36 The readings of the rebound hammer used shall be correlated to the compressive
37 strength of the elastomeric concrete product in accordance with ASTM C805 Section
38 5.4, and the Contractor shall submit a Type 1 Working Drawing of this correlation.

39
40 Traffic and equipment shall not be permitted on the elastomeric concrete until it
41 achieves a compressive strength of 2500 psi based on the rebound hammer
42 readings and the correlation chart for the rebound hammer used.

43
44 6-02.3(2).GR6

45 ***Proportioning Materials***

46
47 6-02.3(2).INST1.GR6

48 Section 6-02.3(2) is supplemented with the following:

1 6-02.3(2).OPT1.GB6

2 **(September 8, 2020)**

3 **Expansion Joint Header Concrete**

4 Expansion joint header concrete shall have a minimum compressive strength of
5 4,000 psi at 28 days. Unless the Plans or Special Provisions specify a different
6 strength, the concrete shall achieve a minimum compressive strength of 2,500 psi
7 based on early break cylinders prior to allowing traffic to pass across the expansion
8 joint.

9
10 Type III cement conforming to Section 9-01.2(1) may be used.

11
12 The nominal maximum size aggregate shall be 1-1/2 inch.

13
14 Section 6-02.3(3) notwithstanding, non-chloride accelerating admixtures conforming
15 to the following specifications may be used:

17 Admixture	17 Specifications
18 Accelerating	18 Section 9-23.6(4)
19 20 Water Reducing/Accelerating	20 Section 9-23.6(6)

21
22 6-02.3(6).GR6

23 **Placing Concrete**

24
25 6-02.3(6)B.GR6

26 **Placing Concrete in Foundation Seals**

27
28 6-02.3(6)B.INST1.GR6

29 Section 6-02.3(6)B is supplemented with the following:

30
31 6-02.3(6)B.OPT1.GB6

32 (June 26, 2000)

33 If, in the opinion of the Engineer, water conditions at the time of construction do
34 not require seals for footing construction, the Engineer may specify that the
35 seals be omitted. In such a case the Contractor shall lower and construct the
36 footing, as shown in the Plans, at the elevation shown in the Plans for the
37 bottom of seal. The height of the pier shaft or columns shall be adjusted
38 accordingly.

39
40 No adjustment will be allowed in the unit contract prices for concrete, steel
41 reinforcing bar, and excavation by reason of any increase or decrease in
42 quantities involved due to the deletion of seals.

43
44 6-02.3(6)B.OPT2.GB6

45 (June 26, 2000)

46 If, in the opinion of the Engineer, water conditions at the time of construction do
47 not require seals for construction, the Engineer may specify that the seals be
48 omitted. In such a case, the Contractor shall excavate only to the bottom of
49 footing elevation and shall construct the footing as shown in the Plans.

1 No adjustment will be allowed in the unit contract prices for concrete, steel
2 reinforcing bar, and excavation by reason of any increase or decrease in
3 quantities involved due to the deletion of seals.
4

5 6-02.3(9).GR6

6 **Precast Concrete Panels**
7

8 6-02.3(9)A.GR6

9 **Shop Drawings**
10

11 6-02.3(9)A.INST2.GR6

12 The list included in the third paragraph of Section 6-02.3(9)A is supplemented with
13 the following:
14

15 6-02.3(9)A.OPT6.GB6

16 (September 8, 2020)

- 17 7. Construction sequence and method of forming the precast prestressed
18 concrete stay-in-place panels.
- 19
- 20 8. Details of additional reinforcement, if any, provided at lifting and support
21 locations.
- 22
- 23 9. Method and equipment used to support the precast prestressed concrete
24 stay-in-place panels during storage, transporting, and erection.
- 25
- 26 10. Method used to identify the precast prestressed concrete stay-in-place
27 panel's location for calculating its position accounting for profile grade and
28 transverse slope, and for ensuring correct placement during erection.
- 29
- 30 11. Erection sequence, including the method of lifting the panels, placing and
31 adjusting the panels to proper alignment and grade, and supporting the
32 panels during leveling and grouting operations.
- 33
- 34 12. Method for forming the grout pad on the exterior face of the prestressed
35 concrete girder flange, if an alternative method is proposed, and at the
36 interior face of the stay-in-place panel to the dimensions detailed in the
37 Plans.
38

39 6-02.3(9)E.GR6

40 **Finishing**
41

42 6-02.3(9)E.INST1.GR6

43 Section 6-02.3(9)E is supplemented with the following:
44

45 6-02.3(9)E.OPT6.GB6

46 (September 8, 2020)

47 The Contractor shall furnish a Class 2 surface finish, as specified in Section 6-
48 02.3(14)B, on all surfaces of the precast prestressed concrete stay-in-place
49 panels, except as otherwise noted. The top surface of all panels shall be
50 textured using a metal tined comb. It shall leave striations in the fresh concrete
51 ¼-inch deep by at least 1/8-inch wide, spaced at 2 to 3 times the groove width

1 apart, and oriented perpendicular to the prestressing strand. The timing and
2 method used shall produce the required texture without displacing larger
3 particles of aggregate. Areas of mortar buildup more than 1/4 inch above the
4 top surface of the panel shall be removed.

5
6 6-02.3(9)F.GR6

7 **Tolerances**

8
9 6-02.3(9)F.INST1.GR6

10 Section 6-02.3(9)F is supplemented with the following:

11
12 6-02.3(9)F.OPT1.GB6

13 (September 8, 2020)

14 The precast prestressed concrete stay-in-place panels shall not exceed the
15 following scalar tolerances:

16		
17	Length (perpendicular to strands):	± 3/16 inch
18		
19	Width (parallel to strands):	± 1/4 inch
20		
21	Thickness:	+ 1/4, -1/8 inch
22		
23	Squareness (difference in diagonal lengths):	± 1/4 inch
24		per 5 feet,
25		± 1/2" max.
26		
27	Vertical location of strand group C.G.:	± 1/16 inch
28		
29	Vertical location of individual strands:	± 1/8 inch
30		
31	Horizontal location of strands:	± 1/4 inch
32		
33	Strand or bar projection from ends:	± 1/2 inch
34		
35	Camber (either upward or downward)	± 1/4 inch
36	at time of placement on structure:	per ten feet
37		

38 Precast prestressed concrete stay-in-place panels with tolerances exceeding
39 those specified above, or with hairline cracks visibly apparent radiating from the
40 strand at the end of the panel and extending more than three inches along the
41 panel will be subject to evaluation by the Engineer for possible rejection.

42
43 6-02.3(9)G.GR6

44 **Handling and Storage**

45
46 6-02.3(9)G.INST1.GR6

47 Section 6-02.3(9)G is supplemented with the following:

48
49 6-02.3(9)G.OPT6.GB6

50 (September 8, 2020)

1 Precast prestressed concrete stay-in-place panels shall be maintained in a flat
2 and level position, without any twisting, at all times. Supports shall be oriented
3 transverse to the prestressed strands, extend the full width of the panel, and be
4 located in a manner to minimize elastic and time-dependent deformation of the
5 panels.
6

7 Unloading and reloading at a site other than the bridge site will be permitted
8 only under the direct supervision of the Engineer. The panels shall not be
9 stacked, unless otherwise allowed by the Engineer. If such permission is
10 granted, the panel supports shall be in the same vertical plane and shall be of
11 sufficient height to prevent damage to the lifting bar loops. The Contractor shall
12 have received the Engineer's verification that the bottom panel of the stack is
13 flat and level, without any twisting, prior to stacking additional panels. The
14 Contractor shall not stack panels on top of adjacent girders of the structure.
15

16 6-02.3(9)I.GR6

17 **Erection**

18
19 6-02.3(9)I.INST1.GR6

20 Section 6-02.3(9)I is supplemented with the following:
21

22 6-02.3(9)I.OPT6.GB6

23 (September 8, 2020)

24 The precast prestressed concrete stay-in-place panels shall be at least 60 days
25 old at the time of placing bridge deck concrete. The Contractor shall place the
26 panels atop the prestressed girders as shown in the Plans, adjusting the
27 leveling bolts as required to match the level of adjacent panels and
28 accommodate camber.
29

30 The grout pad shall be placed after the panels have been fully adjusted for
31 grade and camber. The exposed portion of the grout pad forms that are
32 intended to be left in place permanently shall be tinted to match the color of the
33 adjacent concrete surfaces and shall be secured with an accepted adhesive or
34 other method as accepted by the Engineer.
35

36 Prior to placing the bridge deck steel reinforcing bars and concrete, the
37 Contractor shall place a backer rod at the intersection between panels as
38 shown in the Plans. All intersections between panels shall be sealed to prevent
39 leakage during concrete placement. Prior to placing the bridge deck concrete,
40 the surface of the panels shall be cleaned of all foreign materials and saturated
41 with water for a minimum of 4 hours before fresh concrete is placed.
42

43 6-02.3(10).GR6

44 ***Bridge Decks and Bridge Approach Slabs***

45
46 6-02.3(10)D.GR6

47 **Concrete Placement, Finishing, and Texturing**

48
49 6-02.3(10)D.INST1.GR6

50 Section 6-02.3(10)D is supplemented with the following:
51

1 6-02.3(10)D.OPT1.GB6

2 **(August 4, 2008)**

3 **Repairing Slab Left Exposed After Removing Existing Curb or Sidewalk**

4 The concrete exposed by the removal of the existing curb or sidewalk shall be
5 removed to a depth of 1-inch below finished grade or to the top of the existing
6 roadway deck steel reinforcing bars, whichever is less. The Contractor shall
7 not remove concrete below the top of the existing steel reinforcing bars. The
8 Contractor shall not damage the bond between the existing steel reinforcing
9 bars and the concrete.

10
11 After roughening, cleaning and wetting the surface in accordance with Section
12 6-02.3(12), the Contractor shall place concrete over the surface to the finish
13 grade of the adjacent concrete roadway deck using a modified Class 4000
14 concrete mix. The maximum aggregate size in the modified Class 4000
15 concrete mix shall be 3/8 inch. The finished portion of the deck shall have the
16 same texture, slope and grade as that of the existing deck.

17
18 6-02.3(10)D.OPT2.GB6

19 **(August 4, 2008)**

20 **Repairing Slab Left Exposed After Removing Existing Curb and Railbase**

21 After roughening and cleaning the concrete exposed by the removal of the
22 existing curb and railbase, that portion of the exposed surface not covered by
23 the new traffic barrier shall be coated with epoxy mortar and finished to have
24 the same texture, slope and grade as that of the existing deck.

25
26 6-02.3(10)D.OPT3.GB6

27 **(August 3, 2015)**

28 **Bridge Drain Risers**

29 The Contractor shall submit a Type 2 Working Drawing consisting of the method
30 of removing the bridge drain grate nipple extrusion, the method of grinding the
31 existing curb as necessary for bridge drain riser installation, and the method of
32 cleaning the existing drain casting surfaces in contact with the drain risers. The
33 shop drawings and weld procedures for the drain riser assemblies shall be
34 submitted in accordance with Sections 6-03.3(7) and 6-03.3(25).

35
36 The existing bridge drain grate bolt, debris from removing the nipple extrusion
37 and cleaning the drain casting contact surfaces, and all debris in the bridge
38 drain cavity, shall be disposed of in accordance with Section 2-02.3.

39
40 After cleaning the bridge drain casting contact surfaces, the Contractor shall
41 install the spacer bars and riser bars of the bridge drain riser assembly as
42 shown in the Plans.

43
44 All exposed surfaces of the spacer bars and riser bars following installation shall
45 be painted with two coats of paint conforming to Section 9-08.1(2)F. Each coat
46 shall have a minimum dry film thickness of two mils.

47
48 6-02.3(10)D.OPT3(A).GB6

49 **(August 4, 2008)**

50 A minimum of four slotted holes, each 2 inches long and 3/4 inches high, shall
51 be provided on each bridge drain riser. The slotted holes shall be located at

1 the bottom of the riser, two on the traffic side of the assembly and one each on
2 the short ends of the assembly. Risers shall be installed to be flush with the
3 proposed roadway profile and shall maintain uniform contact with the existing
4 drain. This portion of work shall be completed prior to the installation of the
5 membrane waterproofing.
6

7 The membrane waterproofing shall extend to the bottom of and all around the
8 bridge drain riser, except that the Contractor shall ensure that the slotted holes
9 of the bridge drain riser assembly remain open and unplugged by the
10 membrane waterproofing. Water seeping under the overlay shall be allowed to
11 drain through the slotted holes and into the bridge drains.
12

13 After all the items of work on this project have been completed, the Contractor
14 shall clean and flush all the bridge drains.
15

16 6-02.3(10)D.OPT5.GB6

17 **(August 3, 2015)**

18 **Plugging Existing Bridge Drain**

19 The Contractor shall submit a Type 2 Working Drawing consisting of the method
20 and materials used to plug the existing bridge drains specified in the Plans to
21 be plugged. The submittal shall include the following:
22

- 23 1. Material used to plug the drain outlet, and method of securing the
24 plug in position.
- 25 2. The type of concrete material used to fill the drain cavity.
- 26 3. The method used to remove the exposed drainpipe, if removal is
27 specified in the Plans.
28
29
30

31 All cut, damaged, and exposed metal surfaces to remain, including the drain
32 outlet plug if metal components are used, shall be painted with two coats of
33 paint conforming to Section 9-08.1(2)F. Each coat shall have a minimum dry
34 film thickness of two mils.
35

36 When the removal of exposed drainpipe is specified in the Plans, the Contractor
37 shall remove the embedded anchors a minimum of one inch beneath the
38 existing concrete surface. The void left by removal of the embedded anchors
39 shall be filled with mortar conforming to Section 9-20.4(2). The mortar shall
40 match the color of the existing concrete surface as near as practicable.
41

42 All materials removed from the bridge drains specified in the Plans to be
43 plugged shall be disposed of as specified in Section 2-02.3.
44

45 6-02.3(10)D.OPT12.GB6

46 **(April 6, 2015)**

47 **Core Drilled Bridge Deck Drain**

48 The Contractor shall core drill drain holes through the bridge deck of the bridges
49 and in the locations shown in the Plans. The Contractor shall grind the concrete
50 bridge deck to provide a taper at the top of the cored hole if shown in the Plans.

1 The Contractor shall contain, collect and dispose of the concrete cores and
2 debris in accordance with Section 2-02.3.

3
4 The Contractor shall coat the surfaces of the cored holes with epoxy bonding
5 agent, and shall set a bridge deck drain pipe sleeve in place as shown in the
6 Plans. The Contractor shall ensure that the void between the cored hole surface
7 and the outside of the pipe sleeve is completely filled with epoxy bonding agent.
8 The Contractor shall take appropriate measures to prevent the epoxy bonding
9 agent from escaping from the void and shall secure the pipe sleeve in position
10 until the epoxy bonding agent is cured.

11
12 6-02.3(10)F.GR6

13 **Bridge Approach Slab Orientation and Anchors**

14
15 6-02.3(10)F.INST1.GR6

16 Section 6-02.3(10)F is supplemented with the following:

17
18 6-02.3(10)F.OPT2.GB6

19 (August 4, 2008)

20 The pavement end of the bridge approach slab shall be constructed parallel to
21 the pavement seat.

22
23 6-02.3(10)F.OPT3.FB6

24 (August 4, 2008)

25 The pavement end of the bridge approach slab shall be constructed parallel to
26 the pavement seat for bridge(s) No. *** \$\$1\$\$ **. The pavement end of the
27 bridge approach slab shall be constructed normal to the roadway center line for
28 bridge(s) No. *** \$\$2\$\$ **.

29
30 6-02.3(13).GR6

31 **Expansion Joints**

32
33 6-02.3(13).INST1.GR6

34 Section 6-02.3(13) is supplemented with the following:

35
36 6-02.3(13).OPT7.GB6

37 **Expansion Joint Modification**

38
39 6-02.3(13).OPT7(B).GB6

40 (April 6, 2015)

41 **Expansion Joint Demolition Plan**

42 The Contractor shall submit Type 2 Working Drawings showing the method of
43 removing the specified portions of the existing bridge expansion joints. The
44 Working Drawings shall show the sequence of demolition and removal, the type
45 of equipment to be used in all demolition and removal operations, and details
46 of the methods and equipment used for containment, collection, and disposal
47 of all debris. The Working Drawings shall show all stages of demolition.
48

1 6-02.3(13).OPT7(C).GB6

2 **(April 6, 2015)**

3 **Joint Preparation and Installation Procedure**

4 The Contractor shall submit a Type 1 Working Drawing consisting of the sealant
5 manufacturer's recommended joint preparation and installation procedure.
6

7 6-02.3(13).OPT7(D).FB6

8 **(April 6, 2015)**

9 **Field Measuring Existing Bridge Expansion Joints**

10 The Contractor shall field measure the following dimensions of the existing
11 bridge expansion joints of Bridge No(s). *** \$\$1\$\$ ***:
12

- 13 1. Length along the roadway surface and the horizontal and vertical
14 surfaces of the concrete curb.
- 15
- 16 2. Opening width at both curb lines and at the centerline of the roadway
17 surface.
18

19 The Contractor shall submit a Type 1 Working Drawing consisting of the field
20 measured dimensions.
21

22 6-02.3(13).OPT7(E).FB6

23 **(April 6, 2015)**

24 **Removing Portions of Existing Bridge Expansion Joints**

25 The Contractor shall remove all concrete, expansion joint materials, overlay,
26 dirt and debris at the bridge expansion joints of Bridge No(s). *** \$\$1\$\$ ***
27 within the blockout dimensions shown in the Plans.
28

29 Concrete removal shall conform to Section 2-02.3(2)A2 and the following
30 restriction on power driven tools:
31

- 32 1. Jack hammers no heavier than the nominal 30 pound class.
- 33
- 34 2. Chipping hammers no heavier than the nominal 15 pound class.
35

36 No other power driven equipment shall be used to remove concrete in the
37 vicinity of the bridge expansion joints. The power driven tools shall be operated
38 at angles less than 45 degrees as measured from the surface of the deck to the
39 tool.
40

41 The Contractor shall dispose of all materials removed from the bridge
42 expansion joints in accordance with Section 2-02.3.
43

44 For polyester concrete headers, or elastomeric concrete headers, the
45 Contractor shall clean and prepare all existing concrete surfaces bonding to the
46 header in accordance with the **Polyester Concrete** or **Elastomeric Concrete**
47 subsection, respectively, to Section 6-02.3 as supplemented in these Special
48 Provisions. For concrete headers, the Contractor shall clean and prepare all
49 existing concrete surfaces bonding to the header in accordance with Section 6-
50 02.3(12)B.
51

1 6-02.3(13).OPT7(F).GB6

2 **(April 6, 2015)**

3 **Drilling Holes and Setting Steel Reinforcing Bars**

4 The Contractor shall drill holes for, and set, steel reinforcing bars into the
5 existing concrete as shown in the Plans in accordance with Section 6-02.3(24)C
6 as supplemented in these Special Provisions.
7

8 6-02.3(13).OPT7(G).GB6

9 **(April 6, 2015)**

10 **Placing Polyester Concrete or Elastomeric Concrete Headers**

11 The Contractor shall form the polyester concrete or the elastomeric concrete
12 headers in accordance with either the ***Polyester Concrete*** or the ***Elastomeric***
13 ***Concrete*** subsection to Section 6-02.3 as supplemented in these Special
14 Provisions. The Contractor shall remove all forms from the bridge expansion
15 joints after casting and curing the polyester concrete or the elastomeric
16 concrete headers.
17

18 6-02.3(13).OPT7(H).GB6

19 **(September 8, 2020)**

20 **Placing Concrete Headers**

21 The Contractor shall form, cast, and cure, the concrete headers in accordance
22 with Section 6-02.3 and as shown in the Plans. Unless the Plans or Special
23 Provisions specify a different strength, the concrete headers shall have attained
24 a minimum compressive strength of 2,500 psi before the Contractor may allow
25 traffic to pass across the expansion joint.
26

27 6-02.3(13).OPT7(I).GB6

28 **(September 8, 2020)**

29 **Placing Expansion Joint Sealant**

30 The Contractor shall have the services of a qualified sealant manufacturer's
31 technical representative physically present at the job site to assist in assuring
32 the proper installation of the rapid cure silicone sealant, provide technical
33 assistance for the use of the joint sealant, train the Contractor's personnel
34 installing the joint sealant, and to observe and inspect the installation of at least
35 the first complete joint.
36

37 The joint sealant shall not be placed against concrete until at least seven days
38 after concrete placement. The joint sealant shall not be placed against polyester
39 concrete or elastomeric concrete until a time period recommended by the
40 sealant manufacturer.
41

42 The Contractor shall clean the bridge expansion joints of all forms, dirt, form oil,
43 grease, and other deleterious material. The Contractor shall clean and prepare
44 the entire joint surface receiving the joint sealant in accordance with the
45 manufacturer's joint preparation procedure, and as recommended by the
46 sealant manufacturer's technical representative, including two stage abrasive
47 blasting surface preparation and compressed air cleaning. All steel surfaces to
48 be in contact with the joint sealant shall be cleaned to an SSPC-SP10 condition.
49 The joint receiving the sealant shall be sound, clean, dry, and frost free.
50

1 After the cleaned and prepared joint has received the Engineer's acceptance
2 for joint dimensions, alignment, and preparation, the Contractor shall apply the
3 primer, as recommended by the sealant manufacturer, to all surfaces to be in
4 contact with the joint sealant. The primer shall dry and cure for the time period
5 recommended by the sealant manufacturer for the surface type.
6

7 After the primer is cured, the Contractor shall place the backer rod, and place
8 the rapid cure silicone sealant in accordance with the joint installation
9 procedure.
10

11 If the joint width at the time of installation is less than 1-inch or greater than
12 three inches, the Contractor shall not proceed with the expansion joint
13 modification until the installation procedure is revised as recommended by the
14 sealant manufacturer's technical representative.
15

16 After installing the rapid cure silicone sealant, the Contractor shall flood the joint
17 area with water. If leakage is detected, the bridge expansion joint system shall
18 be repaired by the Contractor, as recommended by the sealant manufacturer.
19

20 6-02.3(13).OPT7(J).GB6

21 **(September 8, 2020)**

22 **Placing Expansion Joint Sealant**

23 The Contractor shall have the services of a qualified sealant manufacturer's
24 technical representative physically present at the job site to assist in assuring
25 the proper installation of the rapid cure silicone sealant, provide technical
26 assistance for the use of the joint sealant, train the Contractor's personnel
27 installing the joint sealant, and to observe and inspect the installation of at least
28 the first complete joint.
29

30 Prior to scarifying the concrete deck for the modified concrete overlay, the
31 Contractor shall remove all expansion joint materials and debris from the
32 existing expansion joints, and shall dispose of these materials and debris as
33 specified in Section 2-02.3.
34

35 Prior to placing the modified concrete overlay, the Contractor shall install a
36 temporary form as shown in the Plans to fill the expansion joint gap. The
37 temporary form shall preserve the expansion joint gap during the modified
38 concrete overlay placement, and shall not damage the joint or the concrete
39 overlay upon removal. The Contractor shall submit Type 2 Working Drawing
40 consisting of the type of temporary form material, and the method of installation
41 and removal.
42

43 The joint sealant shall not be placed against concrete (including concrete
44 overlay except for polyester concrete overlay) until at least seven days after
45 concrete placement.
46

47 After placing the modified concrete overlay and rounding the corner of the
48 overlay at the joints with a 3/8 inch radius, the Contractor shall clean the bridge
49 expansion joints of all temporary forms, dirt, form oil, grease, and other
50 deleterious material. The Contractor shall clean and prepare the entire joint
51 surface receiving the joint sealant in accordance with the manufacturer's joint

1 preparation procedure, and as recommended by the sealant manufacturer's
2 technical representative, including two stage abrasive blasting surface
3 preparation and compressed air cleaning. All steel surfaces to be in contact with
4 the joint sealant shall be cleaned to an SSPC-SP10 condition. The joint
5 receiving the sealant shall be sound, clean, dry, and frost free.
6

7 After the cleaned and prepared joint has received the Engineer's acceptance
8 for joint dimensions, alignment, and preparation, the Contractor shall apply the
9 primer, as recommended by the sealant manufacturer, to all surfaces to be in
10 contact with the joint sealant. The primer shall dry and cure for the time period
11 recommended by the sealant manufacturer for the surface type.
12

13 After the primer is cured, the Contractor shall place the backer rod, and place
14 the rapid cure silicone sealant in accordance with the joint installation
15 procedure.
16

17 If the joint width at the time of installation is less than 1-inch or greater than
18 three inches, the Contractor shall not proceed with the expansion joint
19 modification until the installation procedure is revised as recommended by the
20 sealant manufacturer's technical representative and as approved by the
21 Engineer.
22

23 After installing the rapid cure silicone sealant, the Contractor shall flood the joint
24 area with water. If leakage is detected, the bridge expansion joint system shall
25 be repaired by the Contractor, as recommended by the sealant manufacturer.
26

27 6-02.3(13)C.GR6

28 **Modular Expansion Joint System**

29
30 6-02.3(13)C.INST1.GR6

31 Section 6-02.3(13)C is supplemented with the following:
32

33 6-02.3(13)C.OPT1.FB6

34 **(September 8, 2020)**

35 **Acceptable Manufacturers**

36 The following manufacturers are known to have prequalified modular expansion
37 joint system details by successfully completing fatigue testing in accordance
38 with Section 6-02.3(13)C:
39

- 40 1. The D.S. Brown Company
41 P.O. Box 158
42 300 E. Cherry Street
43 North Baltimore, Ohio 45872-0158
44 Tel. (419) 257-3561
45 Fax (419) 257-2200
46 www.dsbrown.com
47
- 48 2. Watson Bowman ACME Corporation
49 95 Pineview Drive
50 Amherst, New York 14228-2166
51 Tel. (716) 691-7566

1 Fax (716) 691-9239

2 www.wbacorp.com

- 3
- 4 3. Mageba USA, LLC
- 5 575 Lexington Ave Fl-4
- 6 New York, New York 10022-6146
- 7 Tel. (212) 644-3335
- 8 Fax (212) 644-3339
- 9 www.magebausa.com

10

11 **Design Axle Loads and Impact Factors**

12 The vertical load range for fatigue design shall be a 32.0 kip tandem. This

13 tandem shall be taken as two 16.0 kip axles spaced four feet apart. Only one

14 of these tandem axles must be considered in the design, unless the joint

15 opening exceeds four feet. The load range shall be increased by the dynamic

16 load allowance (Impact Factor) of 75%. Load factors shall be applied in

17 accordance with Table 3.4.1-1 of the AASHTO LRFD Bridge Design

18 Specifications, current edition and latest interims.

19

20 The vertical load for strength design shall be a 50.0 kip tandem. This tandem

21 shall be taken as two 25.0 kip axles spaced four feet apart. Only one of these

22 tandem axles must be considered in the design, unless the joint opening

23 exceeds four feet. This load shall be increased by the dynamic load allowance

24 (Impact Factor) of 75%. Load factors shall be applied in accordance with Table

25 3.4.1-1 of the AASHTO LRFD Bridge Design Specifications, current edition and

26 latest interims.

27

28 The horizontal load range for fatigue design shall be *** \$\$1\$\$ *** percent of

29 the amplified vertical load range (LL+IM) specified above. For modular

30 expansion joint systems installed on vertical grades in excess of five percent,

31 the horizontal component of the amplified vertical load range (LL+IM) specified

32 above shall be added to this horizontal load range.

33

34 The horizontal load for strength design shall be 20 percent of the amplified

35 vertical load (LL+IM) specified above. For modular expansion joint systems

36 installed on vertical grades in excess of five percent, the horizontal component

37 of the amplified vertical load (LL+IM) specified above shall be added to this

38 horizontal load.

39

40 **Fatigue Testing Laboratory**

41 The following facilities are known to be capable of performing the fatigue testing

42 specified in Section 6-02.3(13)C:

- 43
- 44 1. Structural Engineering Testing Laboratory (SETL)
- 45 University of Washington
- 46 Seattle, WA
- 47 SETL Director:
- 48 Dr. Dawn Lehman: (206) 715-2108
- 49 SETL Manager
- 50 Vince Chaijaroen: (206) 543-7433
- 51

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- 2. Bowen Laboratory
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 for Concrete Surfaces

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

*** \$\$1\$\$ ***

Pigmented Sealer Color

*** \$\$2\$\$ ***

6-02.3(4)D.GR6

Temperature and Time For Placement

6-02.3(4)D.INST1.GR6

Section 6-02.3(4)D is revised to read:

1
2 6-02.3(4)D.OPT1.2026.GR6

3 (March 20, 2025)

4 The maximum allowed time to discharge for all concrete is the time from when
5 the cement is added to the concrete mixture until it is discharged from the transit
6 vehicle or placed in the forms at a precasting facility.
7

8 Concrete used in precast items, regardless of concrete class, shall remain
9 between 50°F and 90°F and be discharged within 1.5 hours of mixing. All other
10 concrete shall be placed within the following temperature limits and the
11 specified discharge times.
12

Concrete Class	Concrete Temperature (Fahrenheit)	Maximum Discharge Time (Hours)
4000D	55° min. to 75°	1.75
	76° to 80° max.	1.5
All Other Classes of Structural Concrete and Self-Consolidating Concrete	55° min. to 75°	1.75
	76° to 90° max.	1.5
Commercial Concrete, Lean Concrete, and Class EA	55° min. to 90° max.	1.75

13
14 When conditions are such that the concrete may experience an accelerated
15 initial set, the Engineer may require a shorter time to discharge. The time to
16 discharge in the above table may be extended 15 minutes upon request from
17 the Contractor and concurrence of the Engineer. Time extensions greater than
18 15 minutes require a Type 3 Working Drawing submittal. The submittal shall
19 include:

- 20
21 1. An explanation of why an extended placement time is necessary for
22 the Work.
- 23
24 2. The proposed concrete mix design, including the specified dosage of
25 chemical admixtures for the anticipated range of concrete
26 temperatures and details regarding when the admixtures are to be
27 introduced into the mix. Type B (retarding) or Type D (water-reducing
28 and retarding) chemical admixtures are required for structural or self-
29 consolidating concrete.
- 30
31 3. Technical data sheets and supporting information from the admixture
32 supplier indicating the appropriate chemical admixture dosage for
33 the anticipated concrete temperatures, haul times, and working
34 times.
- 35
36 4. The haul distance and estimated range of haul times.
- 37
38 5. The estimated number of drum rotations during haul. Rotations shall
39 not exceed 400.
40

- 1 6. The proposed maximum time to discharge for the mix(es) not to
2 exceed 3 hours.

3
4 6-02.3(17).GR6

5 ***Falsework and Formwork***

6
7 6-02.3(17)C.GR6

8 **Falsework and Formwork at Special Locations**

9
10 6-02.3(17)C.INST1.GR6

11 Section 6-02.3(17)C is supplemented with the following:

12
13 6-02.3(17)C.OPT1.FB6

14 (October 3, 2022)

15 Falsework opening over railroad tracks shall be approved by the Railroad
16 Company in accordance with Section 1-07.28 and the Special Provisions. The
17 Contractor shall notify the Railroad Company at least *** \$\$1\$\$ *** working
18 days prior to erecting falsework over a track, and shall include the dimensions
19 of the opening and the duration of the restricted clearance in the submittal.

20
21 6-02.3(17)K.GR6

22 **Concrete Forms on Steel Spans**

23
24 6-02.3(17)K.INST1.GR6

25 The first paragraph of Section 6-02.3(17)K is revised to read as follows:

26
27 6-02.3(17)K.OPT1.GB6

28 (August 3, 2015)

29 Except as otherwise specified, concrete forms on all steel structures shall be
30 removable and shall not remain in place. Where needed, the forms shall have
31 openings for truss or girder members. Each opening shall be large enough to
32 leave at least 1-1/2 inches between the concrete and steel on all sides of the
33 steel member after the forms have been removed. Unit contract prices cover
34 all costs related to these openings.

35
36 Permanent metal forms may be used to form that portion of the concrete slab
37 inside the webs of the steel box girders, subject to the following requirements:

- 38
39 1. Metal forms shall be 18 gage minimum thickness, zinc coated, steel
40 sheet conforming to ASTM A 653 Coating Designation G 210. All
41 accessories shall conform to ASTM A 36 or Section 9-06.1 with a
42 zinc coating of 2.0 ounces per square foot.
43
44 2. Forms shall be designed by the Contractor to support the plastic
45 concrete, metal forms, steel reinforcing bars, and a construction live
46 load of 60 pounds per square foot. Deflection of the metal form shall
47 not exceed 1/360 of the span. Camber of the metal form shall not
48 exceed the anticipated deflection. The working unit stress shall not
49 exceed 0.725 of the specified yield strength of the metal form
50 material.
51

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(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(25)L.GR6

Handling and Storage

6-02.3(25)L2.GR6

Girder Lateral Stability and Stress Analysis

6-02.3(25)L2.INST1.GR6

The table in item number 4 of the first paragraph is revised to read:

6-02.3(25)L2.OPT1.2026.GR6

(January 6, 2025)

Condition	Stress	Location	Allowable Stress (ksi)
Temporary Stress at Transfer and Lifting from Casting Bed	Tensile	In areas without bonded reinforcement sufficient to resist the tensile force in the concrete	$0.0948\lambda\sqrt{f'_{ci}} \leq 0.2$
		In areas with bonded reinforcement sufficient to resist the tensile force in the concrete	$0.24\lambda\sqrt{f'_{ci}}$

	Compressive	All areas except at Section extremities when lateral bending is explicitly considered.	$0.65f'_{ci}$
		At section extremities (i.e., flange tips) during handling when lateral bending is explicitly considered	$0.70f'_{ci}$
Temporary Stress at Shipping and Erection	Tensile	In areas without bonded reinforcement sufficient to resist the tensile force in the concrete	$0.0948\lambda\sqrt{f'_c}(ksi)$
		In areas with bonded reinforcement sufficient to resist the tensile force in the concrete	$0.24\lambda\sqrt{f'_c}$
	Compressive	All areas except at section extremities when lateral bending is explicitly considered	$0.65f'_c$
		At section extremities (i.e., flange tips) during handling when lateral bending is explicitly considered	$0.70f'_c$
Final Stresses at Service Limit State	Tensile	All locations	0.0
	Compressive	All areas due to effective prestress and permanent loads	$0.45f'_c$
		All areas due to effective prestress, permanent loads and transient (live) loads	$0.60f'_c$

Final Stresses at Fatigue Limit State	Compressive	All areas due to the Fatigue I Load Combination plus one-half the sum of effective prestress and permanent loads in accordance with AASHTO LRFD Section 5.5.3.1	$0.40f'_c$
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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

(September 8, 2020)

*** \$\$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 *** \$\$1\$\$ ***

2
3 The quantities are listed only for the convenience of the Contractor in determining the
4 volume of work involved and are not guaranteed to be accurate. The prospective bidders
5 shall verify these quantities before submitting a bid. No adjustments other than for
6 accepted changes will be made in the applicable modular expansion joint system lump
7 sum Contract price for “Modular Expansion Joint System____” even though the actual
8 quantities required may deviate from those listed.

9
10 6-02.4.OPT8.FB6

11 (September 8, 2020)

12 Expansion joint modification contains the following approximate quantities of materials
13 and work:

14 *** \$\$1\$\$ ***

15
16
17 The quantities are listed only for the convenience of the Contractor in determining the
18 volume of work involved and are not guaranteed to be accurate. The prospective bidders
19 shall verify these quantities before submitting a bid. No adjustments other than for
20 accepted changes will be made in the lump sum Contract price for “Expansion Joint
21 Modification____” even though the actual quantities required may deviate from those
22 listed.

23
24 6-02.4.OPT24.GB6

25 (August 6, 2012)

26 Epoxy crack sealing will be measured by the linear foot along the sealed crack at the
27 concrete surface.

28
29 6-02.4.OPT26.GB6

30 (June 26, 2000)

31 Modify bridge drain will be measured per each for each bridge drain modified.

32
33 6-02.4.OPT27.GB6

34 (June 26, 2000)

35 Plugging existing bridge drain will be measured per each for each bridge drain plugged.

36
37 6-02.4.OPT32.GB6

38 (April 6, 2015)

39 Core drilled bridge deck drain will be measured per each for each bridge deck drain core
40 drilled and completed with a PVC pipe sleeve.

41
42 6-02.4.OPT43.GB6

43 (April 6, 2015)

44 Longitudinal seismic restrainer will be measured per each.

45
46 6-02.4.OPT44.FB6

47 (September 8, 2020)

48 Seismic retrofit contains the following approximate quantities of materials and work:

49 *** \$\$1\$\$ ***

1 The quantities are listed only for the convenience of the Contractor in determining the
2 volume of work involved and are not guaranteed to be accurate. The prospective bidders
3 shall verify these quantities before submitting a bid. No adjustments other than for
4 accepted changes will be made in the lump sum Contract price for "Seismic Retrofit -
5 _____" even though the actual quantities required may deviate from those listed.
6

7 6-02.4.OPT45.FB6

8 (September 8, 2020)

9 Column jacketing contains the following approximate quantities of materials and work:

10 *** \$\$1\$\$ ***
11

12
13 The quantities are listed only for the convenience of the Contractor in determining the
14 volume of work involved and are not guaranteed to be accurate. The prospective bidders
15 shall verify these quantities before submitting a bid. No adjustments other than for
16 accepted changes will be made in the lump sum Contract price for "Column Jacketing -
17 _____" even though the actual quantities required may deviate from those listed.
18

19 6-02.5.GR6

20 **Payment**

21
22 6-02.5.INST3.GR6

23 The fifth and sixth bid items under Section 6-02.5 are supplemented with the following:
24

25 6-02.5.OPT20.GB6

26 (April 6, 2015)

27 The contract quantity specified for "Steel Reinf. Bar for Bridge" includes the quantity for
28 the epoxy-coated steel reinforcing bars located in the substructure of the bridge(s)
29 included in this project.
30

31 6-02.5.INST4.GR6

32 Section 6-02.5 is supplemented with the following:
33

34 6-02.5.OPT26.FB6

35 (August 2, 2010)

36 "Bridge Deck - _____", lump sum.

37 The lump sum contract price for "Bridge Deck - _____" shall be full pay for constructing
38 the reinforced concrete portions of the steel bridge superstructure, including *** \$\$1\$\$
39 ***.
40

41 6-02.5.OPT33.GB6

42 (April 6, 2015)

43 "Expansion Joint Modification ____", lump sum.
44

45 6-02.5.OPT49.GB6

46 (August 1, 2011)

47 "Epoxy Crack Sealing", per linear foot.
48

49 Payment for taking and submitting cores to the Engineer for testing, as specified by the
50 Engineer, will be by force account in accordance with Section 1-09.6. For the purpose of
51 providing a common Proposal for all Bidders, the Contracting Agency has entered an

1 amount for the item "Force Account Epoxy Crack Sealing Cores" in the bid proposal to
2 become a part of the total bid by the Contractor.

3
4 6-02.5.OPT51.GB6
5 (June 26, 2000)
6 "Modify Bridge Drain", per each.

7
8 6-02.5.OPT52.GB6
9 (June 26, 2000)
10 "Plugging Existing Bridge Drain", per each.

11
12 6-02.5.OPT53.FB6
13 (June 26, 2000)
14 All costs in connection with *** \$\$1\$\$ *** bridge drains as specified shall be included in
15 the unit contract price per square yard for *** \$\$2\$\$ ***.

16
17 6-02.5.OPT58.GB6
18 (April 6, 2015)
19 "Core Drilled Bridge Deck Drain", per each.

20
21 6-02.5.OPT59.FB6
22 (April 6, 2015)
23 All costs in connection with constructing the core drilled bridge deck drains as specified
24 shall be included in the ***\$\$1\$\$***.

25
26 6-02.5.OPT71.GB6
27 (April 6, 2015)
28 "Longitudinal Seismic Restrainer", per each.

29
30 6-02.5.OPT72.GB6
31 (April 6, 2015)
32 "Seismic Retrofit - _____", lump sum.

33
34 6-02.5.OPT73.GB6
35 (April 6, 2015)
36 "Column Jacketing - _____", lump sum.

37
38 6-02.5.OPT91.FB6
39 **(June 26, 2000)**

40 ***Bridge and Structures Minor Items***

41 For the purpose of payment, such bridge and structures items as *** \$\$1\$\$ *** etc., for
42 which there is no pay item included in the proposal, are considered as bridge and
43 structures minor items. All costs in connection with furnishing and installing these bridge
44 and structures minor items as shown and noted in the Plans and as outlined in these
45 specifications and in the Standard Specifications shall be included in the *** \$\$2\$\$ ***

46

1 6-02.5.OPT92.FB6
2 **(June 26, 2000)**
3 **Bridge Supported Utilities**
4 All costs in connection with placing *** \$\$1\$\$ *** through the superstructure of *** \$\$2\$\$
5 *** as shown in the Plans, including all *** \$\$3\$\$ ***, shall be included in the *** \$\$4\$\$.
6 ***
7
8 6-02.5.OPT93.GB6
9 (June 26, 2000)
10 No additional compensation will be made by reason of any delay or other expense to the
11 Contractor caused by coordination with the utility company or by installing utility company
12 furnished items. However, any unavoidable delays to the Contractor caused by
13 coordination with the utility company or resulting from installing utility company furnished
14 items will be adjusted in accordance with Section 1-08.8.
15
16 6-03.GR6
17 **Steel Structures**
18
19 6-03.3.GR6
20 **Construction Requirements**
21
22 6-03.3(7).GR6
23 **Shop Plans**
24
25 6-03.3(7)A.GR6
26 **Erection Methods**
27
28 6-03.3(7)A.INST1.GR6
29 The list in the second paragraph of Section 6-03.3(7)A is supplemented with the
30 following:
31
32 6-03.3(7)A.OPT1.GB6
33 (April 6, 2015)
34 8. If the Contractor selects a girder launching method as the erection
35 procedure, the Contractor shall submit plan details of the nose beam, roller
36 assemblies, jacks, blocking, tow lines and control lines, and shall prepare
37 an erection procedure that describes the method and equipment involved
38 in the launching procedure, the elevation and alignment control and
39 corrective measures enforced during the launching process, the methods
40 of monitoring and adjusting the tow line and control line loads during the
41 launching process, and the spare jacks, tow lines, control lines, and other
42 critical field erection equipment provided to ensure a continuous and safe
43 operations.
44
45 6-03.3(7)A.OPT2.GB6
46 (April 6, 2015)
47 8. The method and equipment used to drill holes, and ream existing rivet
48 holes following rivet removal, through and in the existing gusset plates and
49 steel members.
50

1 6-03.3(25).GR6

2 **Welding and Repair Welding**

3
4 6-03.3(25).INST1.GR6

5 Section 6-03.3(25) is supplemented with the following:

6
7 6-03.3(25).OPT2.GB6

8 **(April 6, 2015)**

9 **Electroslag Welding - Narrow Gap (ESW-NG) Procedure**

10 The ESW-NG procedure may be used for groove welds in bridge members and
11 member components up to four inches thick subject to the following requirements:

12
13 **Qualification Testing**

14 Unless the Contractor submits previously performed qualification testing
15 documents, the Contractor shall provide the opportunity for Contracting Agency
16 representatives to witness all qualification testing.

17
18 **HAZ Specimens, Type and Number of Tests for ESW-NG**

19 For all compression members including ESW-NG of compression members,
20 CVN testing of the HAZ is not required. However, for welds deposited by ESW-
21 NG on tension and reversal members, additional CVN tests of the HAZ shall be
22 performed to qualify the process. The CVN tests for the HAZ shall be the
23 following:

- 24
25 1. Five specimens shall be removed from the quarter-thickness section
26 of the HAZ on each side of the procedure qualification welded joint in
27 accordance with the ESW-NG Tension Member CVN Test Plate
28 Detail as shown in the Plans.
- 29
30 2. The weld fusion line shall be revealed by etching the transverse-to-
31 weld section.
- 32
33 3. The notch location shall be in the base metal within 1/16 inch from
34 the weld fusion line. If the weld curvature does not permit the entire
35 notch to be placed within 1/16 inch from the fusion line, then one end
36 of the notch shall be placed on the fusion line while the remaining
37 portion of the notch extends away from the fusion line into the base
38 metal.

39
40 If different grades of steel such as 36 and 50 or 50 and 50W are joined by ESW-
41 NG, the procedure qualification tests shall be conducted on the same two
42 grades of steel. If transition joints between thick and thin members are made,
43 the WPS shall be conducted on the same joint preparation (having the same
44 thicknesses and joint transition slope). The heat affected zone CVN toughness
45 specimens shall be extracted from both sides of the transition joint.

46
47 **Test Results Required for ESW-NG**

48 **HAZ**

49 For CVN toughness determination in welds carrying applied tensile stress,
50 five specimens taken at the quarter-thickness location on both sides of the
51 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

1 previous transverse shop assemblies, repositioned if necessary, and pinned to
2 ensure accurate alignment. Unless otherwise specified, the girders shall be
3 blocked or supported in the no-load position.
4

5 After acceptance of the shop assembly by the Engineer, pier diaphragms,
6 intermediate diaphragms and cross bracing utilized in the transverse shop
7 assembly shall be removed from the girders and shipped to the bridge
8 construction site each as individual units. Shop bolted connections in the
9 diaphragms and cross bracing shall be completed and fully tightened to the
10 minimum tension specified during the shop assembly. Fully tightened
11 connections shall be inspected prior to shipping.
12

13 6-03.3(28)B.GR6

14 **Check of Shop Assembly**

15
16 6-03.3(28)B.INST1.GR6

17 Section 6-03.3(28)B is supplemented with the following:
18

19 6-03.3(28)B.OPT1.GB6

20 (August 3, 2015)

21 If an assembly or stage of assembly is not accepted by the Engineer,
22 deficiencies shall be corrected and the assembly or stage of assembly shall be
23 resubmitted to the Engineer for acceptance.
24

25 6-03.3(30).GR6

26 **Painting**

27
28 6-03.3(30).INST1.GR6

29 Section 6-03.3(30) is supplemented with the following:
30

31 6-03.3(30).OPT1.FB6

32 (August 3, 2009)

33 Paint for the new steel shall be applied in accordance with Section 6-07.3(9). The
34 color of the top coat, when dry, shall match *** \$\$1\$\$ ***.
35

36 6-03.3(30).OPT6.FB6

37 (April 6, 2015)

38 The Contractor shall paint all galvanized structural steel components of the following
39 specified items in accordance with Section 6-07.3(11):
40

41 *** \$\$1\$\$ ***
42

43 The color of the top coat, when dry, shall match *** \$\$2\$\$ ***.
44

45 6-03.3(38).GR6

46 **Placing Superstructure**

47
48 6-03.3(38).INST1.GR6

49 Section 6-03.3(38) is supplemented with the following:
50

1 6-03.3(38).OPT1.GB6

2 (August 3, 2015)

3 All concrete located below the permanent location of the steel girders shall be
4 completely covered to protect the concrete from staining from rusty water.

5
6 The Contractor shall submit a Type 2 Working Drawing consisting of a concrete
7 surface protection plan. The submittal shall include, but not be limited to, describing
8 all material components of the surface protection system, including material
9 specifications and thicknesses of all components, dimensions of all sub-units and
10 details of how the sub-units are assembled to create the combined system, the
11 method of installing the system, including all means of fastening the system to or
12 holding the system against the concrete surfaces, the methods of maintaining the
13 system in place during superstructure construction, and the methods of repairing
14 damage to the system during superstructure construction.

15
16 Removal of the concrete surface protection system will be performed by Contracting
17 Agency forces at a later date.

18
19 6-03.3(39).GR6

20 **Swinging the Span**

21
22 6-03.3(39).INST1.GR6

23 Section 6-03.3(39) is supplemented with the following:

24
25 6-03.3(39).OPT1.GB6

26 (June 26, 2000)

27 The Contractor shall measure and submit to the Engineer camber values at the
28 points indicated in the Plans at each of the following times:

- 29
30 1. After the spans are swung.
- 31
32 2. After roadway slab placement.

33
34 6-03.4.GR6

35 **Measurement**

36
37 6-03.4.INST1.GR6

38 Section 6-03.4 is supplemented with the following:

39
40 6-03.4.OPT1.FB6

41 (August 6, 2007)

42 Structural low alloy steel contains the following approximate steel quantities:

43
44

Bridge	Quantity
*** \$\$1\$\$ ***	*** \$\$2\$\$ ***

45
46

47 6-03.5.GR6

48 **Payment**

1 6-03.5.INST1.GR6

2 The second bid item under Section 6-03.5 is supplemented with the following:

3
4 6-03.5.OPT1.GB6

5 (August 6, 2007)

6 All costs in connection with furnishing and installing steel girder pipe railing as shown in
7 the Plans shall be included in the lump sum Contract price for "Structural Low Alloy
8 Steel".

9
10 6-03.5.INST2.GR6

11 Section 6-03.5 is supplemented with the following:

12
13 6-03.5.OPT7.FB6

14 (June 26, 2000)

15 All costs in connection with furnishing, installing, and maintaining the concrete surface
16 protection system as specified shall be included in the *** \$\$1\$\$ ***.

17
18 6-04.GR6

19 **Timber Structures**

20
21 6-04.3.GR6

22 **Construction Requirements**

23
24 6-04.3(1).GR6

25 ***Storing and Handling Material***

26
27 6-04.3(1).INST1.GR6

28 Section 6-04.3(1) is supplemented with the following:

29
30 6-04.3(1).OPT1.GB6

31 (March 6, 2000)

32 The Contractor shall provide and maintain a water pump or pumps, and associated
33 equipment adequate for use in fire control, on the project at all times. This
34 requirement does not relieve the Contractor of responsibility as specified in Section
35 1-07.14.

36
37 6-04.3(1).OPT2.GB6

38 (January 2, 2018)

39 After removing the existing timber deck and prior to installing the replacement timber
40 deck, the Contractor shall clean the top contact surfaces of the supporting timber
41 and steel stringers and floorbeams. After cleaning, the top contact surfaces shall be
42 prepared as follows:

43
44 **Steel Supporting Members**

45 The top flanges of the steel stringers and floor beams shall be uniformly covered
46 with a heavy coat of hot asphalt binder (Grade PG 58-22 or Grade PG 64-22
47 for Western Washington (west of the Cascade Mountain Crest), and Grade PG
48 64-28 for Eastern Washington (east of the Cascade Mountain Crest))
49 conforming to Section 9-02.1(4).
50

1 **Timber Supporting Members**

2 The Contractor shall furnish and install asphalt roofing felt over the top contact
3 surface of all timber stringers, bridging, and blocking. The asphalt roofing felt
4 shall be attached to the timber with 7/8 inch long galvanized roofing nails
5 spaced at 2'-0" centers, unless otherwise shown in the Plans. The asphalt
6 roofing felt shall weigh at least 65 pounds per one-hundred square feet and
7 extend at least 2 inches on each side of the member being covered.

8
9 6-04.5.GR6

10 **Payment**

11
12 6-04.5.INST1.GR6

13 Section 6-04.5 is supplemented with the following:

14
15 6-04.5.OPT1.FB6

16 (March 6, 2000)

17 All costs in connection with providing and maintaining fire control equipment at the
18 construction and material storage site as specified shall be included in the *** \$\$1\$\$ ***.

19
20 6-04.5.OPT2.FB6

21 (March 6, 2000)

22 All costs in connection with cleaning and preparing the top contact surfaces of the
23 supporting timber and steel members as specified prior to redecking shall be included in
24 the *** \$\$1\$\$ ***.

25
26 6-05.GR6

27 **Piling**

28
29 6-05.2.GR6

30 **Materials**

31
32 6-05.2.INST1.GR6

33 Section 6-05.2 is supplemented with the following:

34
35 6-05.2.OPT1.GB6

36 **(April 6, 2015)**

37 **Micropiles**

38 Materials for micropiles shall consist of the following:

39 Admixtures for grout shall conform to Section 9-23.6. Admixtures that control bleed,
40 improve flowability, reduce water content, and retard set may be used in the grout,
41 subject to the review and acceptance of the Engineer. Admixtures shall be compatible
42 with the grout and mixed in accordance with the manufacturer's recommendations.
43 Accelerators are not permitted. Admixtures containing chlorides are not permitted.

44
45 All cement shall be Portland cement conforming to Section 9-01.2(1).

46
47 Centralizers and spacers shall be fabricated from schedule 40 PVC pipe or tube, steel.
48 Wood shall not be used. Centralizers and spacers shall be securely attached to the
49 reinforcement; sized to position the reinforcement within 3/8 inch of plan location from
50 center of micropile; sized to allow grout tremie pipe insertion to the bottom of the drillhole;

1 and sized to allow grout to freely flow up the drillhole and casing and between adjacent
2 reinforcing bars.

3
4 Encapsulation (double corrosion protection) shall be shop fabricated using high-density,
5 corrugated polyethylene tubing conforming to the requirements of AASHTO M 252 with
6 a nominal wall thickness of 1/32 inch. The inside annulus between the reinforcing bars
7 and the encapsulating tube shall be a minimum of 1/4 inch and be fully grouted with grout
8 as defined below.

9
10 Epoxy coating shall conform to Section 9-07.3. Bearing plates and nuts encased in the
11 micropile concrete footing need not be epoxy coated.

12
13 Fine aggregate for sand-cement grout shall be sand conforming to AASHTO M 45.

14
15 Grout shall be a neat cement or sand/cement mixture with a minimum seven day
16 compressive strength of 4,000 psi in accordance with Section 9-20.3(4).

17
18 Steel pipe casing for micropiles shall have the diameter and at least the minimum wall
19 thickness shown in the Working Drawings. Steel pipe casing shall conform to one of the
20 following:

- 21
22 1. ASTM A 252, Grade 2 or 3. If the casing is to be welded, the carbon equivalency
23 (CE) as defined in AWS D 1.1, Section XI 5.1, shall not exceed 0.45, and the
24 sulfur content shall not exceed 0.05 percent.
- 25
26 2. API 5L Grade X52 or better.
- 27
28 3. API 5CT Grade N80 or better.
- 29
30 4. Another equivalent steel pipe specification acceptable to the Engineer.

31
32 The manufacturer or fabricator of steel piling shall furnish a certificate of compliance in
33 accordance with Section 1-06.3 stating that the piling being supplied conforms to these
34 specifications. The certificate of compliance shall include test reports for tensile and
35 chemical tests. Samples for testing shall be taken from the base metal, steel, coil or from
36 the manufactured or fabricated piling. The certificate of compliance shall be in English
37 units. As an alternative to steel pipe with mill certificate of compliance documentation,
38 new structural grade or mill secondary steel pipe may be furnished for micropile casing
39 without certified mill test reports under the following conditions:

- 40
41 1. The steel pipe shall meet or exceed the mechanical requirements of API 5L
42 Grade X52 or better or API 5CT Grade N80 or better.
 - 43
44 2. The CE shall not exceed 0.45 and the sulfur content shall not exceed 0.05
45 percent, if welding of the casing is required.
 - 46
47 3. Two unique coupon tests with reports, conforming to ASTM A 370, including
48 Annex A2, shall be provided for each truckload of pipe supplied.
 - 49
50 4. The pipe shall be free of defects (dents, cracks, and tears).
- 51

1 The alternate testing for non-mill certified steel pipe is not permitted if domestic steel is
2 required for the project.

3
4 Welded circumferential joints in pipe shall develop the strength of the pipe section.
5 Threaded pipe joints shall develop at least the nominal resistance used in the design of
6 the micropile.

7
8 Structural steel plates and shapes for micropile top attachments shall conform to either
9 ASTM A 36 or ASTM A 572 Grade 50.

10
11 Reinforcing steel shall be deformed bars in accordance with Sections 9-07.4 or 9-07.11.
12 When a bearing plate and nut are required to be threaded onto the top end of reinforcing
13 bars for the micropile top to footing anchorage, the threading may be continuous spiral
14 deformed ribbing provided by the bar deformations or may be cut into a reinforcing bar.
15 If threads are cut into a reinforcing bar, the next larger bar number designation from that
16 shown on the Plans shall be provided, at no additional cost to the Contracting Agency.
17 Reinforcing bars for micropiles shall be epoxy coated in accordance with Section 6-
18 02.3(24)H and 9-07.3.

19
20 Bar tendon couplers, if required, shall develop the ultimate tensile strength of the bars.

21
22 6-05.3.GR6

23 **Construction Requirements**

24
25 6-05.3.INST1.GR6

26 Section 6-05.3 is supplemented with the following:

27
28 6-05.3.OPT1.FB6

29 **(October 3, 2022)**

30 **Micropiles**

31 **General Requirements**

32 The Contractor is responsible for the design, installation and testing of micropiles
33 and micropile top attachments for this project. The Contractor shall select the
34 micropile type, size, micropile top attachment, installation means and methods, shall
35 estimate the ground-to-grout bond value, and shall determine the required grout
36 bond length and final micropile diameter. The Contractor shall design and install
37 micropiles that will develop the load capacities specified in the Plans. The micropile
38 load capacities shall be verified by verification and proof load testing, and shall meet
39 the test acceptance criteria specified in this Special Provision.

40 41 **Contractor's Experience Requirements and Submittal**

42 The micropile Contractor shall be experienced in the construction and load testing
43 of micropiles and have successfully constructed at least three projects in the last
44 five years involving construction totaling at least 50 micropiles of equal or greater
45 capacity than required for this project. The Contractor shall submit construction
46 details, structural details and load test results for at least three previous successful
47 micropile load tests from different projects of similar scope to this project.

48
49 The micropile Contractor shall design the micropile system. The micropile system
50 shall be designed by a Professional Engineer, licensed under Title 18 RCW State of

1 Washington, with experience in the design and construction of at least three
2 successfully completed micropile projects over the past five years, with micropiles
3 of equal or greater capacity than required in these plans and specifications. The on-
4 site foremen and drill rig operators shall also have experience on at least three
5 projects over the past five years installing micropiles of equal or greater capacity
6 than required for this project.
7

8 The Contractor shall submit a Type 2 Working Drawing consisting of the completed
9 project reference list, including a brief project description with the owner's name and
10 current phone numbers. This Working Drawing submittal shall also include a
11 personnel list for the micropile system designer, supervising Engineer, drill rig
12 operators and on-site foremen to be assigned to the project. The personnel list shall
13 contain a summary of each individual's experience and be complete enough for the
14 Engineer to determine whether each individual satisfies the required qualifications.
15

16 **Definitions**

17 Alignment Load (AL): A minimum initial load (5 percent FDL) applied to micropile
18 during testing to keep the testing equipment correctly positioned.
19

20 Factored Design Load (FDL): The factored design load expected to be applied to
21 the micropile. The factored design load (FDL) is as specified in the bridge Plans.
22

23 Maximum Test Load: The maximum load to which the micropile is subjected during
24 testing. The load shall be 1.5 x FDL for verification load tests and 1.0 x FDL for
25 proof load tests.
26

27 Proof Load Test: Incremental loading of a production micropile, recording the total
28 movement at each increment.
29

30 Verification Load Test: Non-production micropile load test performed to verify the
31 design of the micropile system and the construction methods proposed, prior to
32 installation of production micropiles.
33

34 **Micropile Design Requirements**

35 The micropiles shall be designed to meet the specified loading conditions, as shown
36 in the Plans. The Contractor shall design the micropiles, and the micropile top to
37 footing connections using the Load and Resistance Factor Design (LRFD) method.
38

39 Steel pipe used for micropile permanent casing shall incorporate an additional 1/16
40 inch thickness of sacrificial steel for corrosion protection. Where required as shown
41 in the Plans, corrosion protection of the internal steel reinforcing bars, consisting of
42 encapsulation (double corrosion protection), epoxy coating, or grout, shall be
43 provided in accordance with Section 6-05.2 as supplemented in these Special
44 Provisions. Where permanent casing is used for a portion of the micropile,
45 encapsulation shall extend at least five feet into the casing.
46

47 **Micropile Design Submittals**

48 The Contractor shall submit Type 3E Working Drawings consisting of complete
49 design calculations and working drawings with all details, dimensions, quantities,
50 ground profiles, and cross-sections necessary to construct the micropile structure.

1 The Contractor shall verify the limits of the micropile structure and ground survey
2 data before preparing the detailed working drawings.
3

4 **Design Calculations**

5 Design calculations shall include the following items:
6

- 7 1. A written summary report which describes the overall micropile design and
8 its compatibility with the anticipated subsurface conditions as described by
9 the contract test hole boring logs, the Summary of Geotechnical Conditions
10 provided in the Appendix to the Special Provisions, and the geotechnical
11 report(s) prepared for this project.
12
- 13 2. Applicable code requirements and design references.
14
- 15 3. Micropile structure critical design cross-section(s) geometry including soil
16 strata and piezometric levels and location, magnitude and direction of
17 design applied loadings, including slope or external surcharge loads.
18
- 19 4. Design criteria including, soil shear strengths (friction angle and cohesion),
20 unit weights, and ground-to-grout bond values and micropile drillhole
21 diameter assumptions for each soil strata.
22
- 23 5. Load and resistance factors (for Load and Resistance Factor Design) used
24 in the design of the ground-to-grout bond values, the ground-to-grout bond
25 length, surcharges, soil/rock and material unit weights, steel, grout, and
26 concrete materials.
27

28 The bond zone for micropiles shall be below the following elevations:
29

30 *** \$\$1\$\$ ***
31

- 32 6. Design calculation sheets with the project number, micropile structure
33 location, designation, date of preparation, initials of designer and checker,
34 and page number at the top of each page. An index page shall be included
35 with the design calculations.
36
- 37 7. Design notes including an explanation of any symbols and computer
38 programs used in the design.
39
- 40 8. Other design calculations as required.
41

42 **Working Drawings**

43 The Contractor shall submit Type 3E Working Drawings.
44

45 The working drawings shall include all information required for the construction and
46 quality control of the piling. Working drawings shall include the following items:
47

- 48 1. A plan view of the micropile structure identifying:
49
50 a. A reference baseline and elevation datum.
51

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- 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.

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- 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.

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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

1 shall have been performed by an independent testing laboratory within 90
2 calendar days of the date submitted.

- 3
4 9. Discussion of the Contractor's contingency plan if a verification load test or
5 a proof load test fails.
6

7 **Pre-construction Meeting**

8 A pre-construction meeting will be scheduled by the Engineer and held prior to the
9 start of micropile construction. The prime Contractor, micropile specialty Contractor,
10 and excavation Contractor shall attend the meeting. The pre-construction meeting
11 will be conducted to clarify the construction requirements for the work, to coordinate
12 the construction schedule and activities, and to identify contractual relationships and
13 delineation of responsibilities amongst the prime Contractor and the various
14 subcontractors - specifically those pertaining to excavation for micropile structures,
15 anticipated subsurface conditions, micropile installation and testing, micropile
16 structure survey control and site drainage control.
17

18 **Site Drainage Control**

19 The Contractor shall control and properly dispose of drill flush and construction
20 related waste, including excess grout, in accordance with Section 1-07.5(3) as
21 supplemented in these Special Provisions and all applicable local codes and
22 regulations. The Contractor shall provide positive control and discharge of all
23 surface water that will affect construction of the micropile installation. The Contractor
24 shall maintain all pipes or conduits used to control surface water during construction.
25 The Contractor shall repair damage caused by surface water in accordance with
26 Section 1-07.13. Upon substantial completion of the work, the Contractor shall
27 remove surface water control pipes or conduits from the site. Alternatively, with the
28 concurrence of the Engineer, pipes or conduits that are left in place may be fully
29 grouted and abandoned or left in a way that protects the structure and all adjacent
30 facilities from migration of fines through the pipe or conduit and potential ground
31 loss.

32 **Excavation**

33 The Contractor shall coordinate the work and the excavation so the micropile
34 structures are safely constructed. The Contractor shall perform the micropile
35 construction and related excavation in accordance with the Plans and approved
36 submittals.
37

38 **Micropile Allowable Construction Tolerances**

39 The centerline of piling shall not be more than 3 inches from indicated plan location.
40

41 The pile-hole alignment of vertical micropiles shall be plumb within 2 percent of total-
42 length plan alignment. The pile-hole alignment of micropiles inclined up to 1:6 shall
43 be within 4-percent of plan alignment. The pile-hole alignment of micropiles inclined
44 greater than 1:6 shall be within 7-percent of plan alignment.
45

46 The top elevation of micropile shall be \pm 1 inch maximum from vertical elevation
47 indicated.
48

49 The centerline of reinforcing steel shall not be more than 1/2 inch from indicated
50 location.
51

1 **Drilling**

2 The drilling equipment and methods shall be suitable for drilling through the
3 conditions to be encountered, without causing damage to any overlying or adjacent
4 structures or services. The drill hole shall be open along its full length to at least the
5 design minimum drill hole diameter prior to placing grout and reinforcement.
6 Temporary casing or other approved method of micropile drill hole support will be
7 required in caving or unstable ground to permit the micropile shaft to be formed to
8 the minimum design drill hole diameter. The Contractor's proposed method(s) to
9 provide drill hole support and to prevent ground movements shall have received the
10 concurrence of the Engineer. Use of drilling fluid containing bentonite is not allowed.

11
12 **Ground Heave or Subsidence**

13 During construction, the Contractor shall observe the conditions in the vicinity of the
14 micropile construction site on a daily basis for signs of ground heave or subsidence.
15 The Contractor shall immediately notify the Engineer if signs of movements are
16 observed. The Contractor shall immediately suspend or modify drilling or grouting
17 operations if ground heave or subsidence is observed, if the micropile structure is
18 adversely affected, or if adjacent structures are damaged from the drilling or
19 grouting. If the Engineer determines that the movements require corrective action,
20 the Contractor shall take corrective actions necessary to stop the movement or
21 perform repairs.

22
23 When due to the Contractor's methods or operations or failure to follow the
24 specified/approved construction sequence, the costs of providing corrective actions
25 will be borne by the Contractor in accordance with Section 1-07.13.

26
27 **Pipe Casing and Reinforcing Bars Placement and Splicing**

28 Reinforcement may be placed either prior to grouting or placed into the grout-filled
29 drill hole before temporary casing (if used) is withdrawn. Reinforcement surface shall
30 be free of deleterious substances such as soil, mud, grease or oil. Micropile cages
31 and reinforcement groups, if used, shall be sufficiently robust to withstand the
32 installation and grouting process and the withdrawal of the drill casings without
33 damage or disturbance. Grout shall provide one inch minimum cover over bare or
34 epoxy coated bars (1/4-inch on bar couplers) or 1/2 inch minimum cover over the
35 encapsulation of encapsulated bars.

36
37 The Contractor shall check micropile top elevations and adjust all installed
38 micropiles to the planned elevations.

39
40 Permanent casing, if specified, shall be installed to the minimum tip elevations
41 shown in the Plans.

42
43 Centralizers and spacers shall be provided at 10 feet centers maximum spacing.
44 The upper and lower most centralizer shall be located a maximum of 5 feet from the
45 top and bottom of the micropile. The central reinforcement bars with centralizers
46 shall be lowered into the stabilized drill hole and set. The reinforcing steel shall be
47 inserted into the drill hole to the desired depth. Bars shall not be driven or forced
48 into the hole. The Contractor shall re-drill and reinsert reinforcing steel when
49 necessary to facilitate insertion.
50

1 Lengths of casing and reinforcing bars to be spliced shall be secured in proper
2 alignment and in a manner to avoid eccentricity or angle between the axes of the
3 two lengths to be spliced. Splices and threaded joints shall meet the requirements
4 of Section 6-05.2 as supplemented in these Special Provisions. Threaded pipe
5 casing joints shall be located at least two casing diameters (OD) from a splice in any
6 reinforcing bar. When multiple bars are used, bar splices shall be staggered at least
7 one foot.

8 9 **Grouting**

10 Micropiles shall be primary grouted the same day the load transfer bond length is
11 drilled. The Contractor shall complete the load transfer bond length drilling and
12 primary grouting of a micropile before beginning work on another micropile in the
13 same footing or pile cap.

14
15 Prior to grouting, the drill hole shall be flushed with water and/or air to remove drill
16 cuttings.

17
18 The grouting equipment shall be colloidal mixers only and shall produce a grout free
19 of lumps and undispersed cement. Contractor shall have means and methods of
20 measuring the grout quantity and pumping pressure during the grouting operations.
21 The grout pump shall be equipped with a pressure gauge to monitor grout pressures.
22 A second pressure gauge shall be placed at the point of injection into the micropile
23 top. The pressure gauges shall be capable of measuring pressures of 150 psi or
24 twice the actual grout pressures used, whichever is greater. The grout shall be kept
25 in agitation prior to mixing. Grout shall be placed within one hour of mixing. The
26 grouting equipment shall be sized to enable each micropile to be grouted in one
27 continuous operation.

28
29 The grout shall be injected from the lowest point of the drill hole and injection shall
30 continue until uncontaminated grout flows from the top of the micropile. The grout
31 may be pumped through grout tubes, casing, hollow-stem augers, or drill rods.
32 Temporary casing, if used, shall be extracted in stages ensuring that after each
33 length of casing is removed the grout level is brought back up to the ground level
34 before the next length is removed. Additional grout shall be placed by the use of a
35 tremie pipe at all times. The tremie pipe shall always extend below the level of the
36 existing grout in the drill hole. The grout pressures and grout takes shall be
37 controlled to prevent excessive heave or fracturing of rock or soil formations. Upon
38 completion of grouting, the grout tube may remain in the hole, but must be filled with
39 grout.

40
41 If the Contractor elects to use a postgrouting system, working drawings and details
42 shall be submitted to the Engineer for review in accordance with the **Construction**
43 **Submittals** subsection of this Special Provision.

44 45 **Grout Testing**

46 Grout within the micropile verification and proof test micropiles shall attain the
47 minimum specified seven day design compressive strength prior to load testing.
48 During placement of initial verification micropiles, proof test micropiles, and
49 production micropiles, micropile grout will be sampled and tested by the Engineer
50 for compressive strength in accordance with WSDOT Test Method 813 and
51 AASHTO T 106 at a frequency of no less than one set of three 2 inch grout cubes

1 from each grout plant each day of operation or per every 10 micropiles, whichever
2 occurs more frequently. The compressive strength will be the average of the 3 cubes
3 tested. The Contractor is responsible for sampling and testing additional grout
4 cubes as necessary for early breaks prior to verification and proof testing.
5

6 If a compressive strength test fails, the Engineer may require the Contractor to proof
7 test some or all of the production micropiles installed since the last grout batch that
8 met the specified compressive strength.
9

10 Grout consistency, as measured by grout density, shall be tested by the Contractor
11 just prior to the start of micropile grouting in accordance with API RP-13B-1 at a
12 frequency of at least one test per micropile. For the grout to be approved for use,
13 the specific gravity reported by the test shall be between 1.8 and 1.9. The
14 Contractor's grout consistency test equipment shall be calibrated by an independent
15 testing laboratory. The Contractor shall not use test equipment greater than 180-
16 calendar days past the most recent calibration date, until such equipment is
17 recalibrated by an independent testing laboratory.
18

19 **Micropile Installation Records**

20 The Contractor shall prepare and submit Type 1 Working Drawings consisting of full-
21 length installation records for each micropile installed, including all grout volumes,
22 pressures, and installation methods used. The records shall be submitted no later
23 than the end of each work week and within 24 hours after all micropile installation is
24 completed. The data shall be recorded in the micropile installation log. A separate
25 log shall be provided for each micropile.
26

27 **Micropile Load Tests**

28 The Contractor shall perform verification and proof testing of micropiles at the
29 locations specified in this Special Provision, the Plans or as otherwise specified by
30 the Engineer. Tests shall be performed using a tension load test in accordance with
31 ASTM D 3689 or a compression load test in accordance with ASTM D 1143, except
32 as modified by this Special Provision.
33

34 Completed production micropiles may be used as part of the reaction frame for proof
35 load testing. No reaction bearing elements of the load test frame for verification and
36 proof load testing of micropiles shall bear on existing structure elements.
37

38 **Verification Load Tests**

39 The Contractor shall perform pre-production verification micropile testing to verify
40 the design of the micropile system and the construction methods proposed prior to
41 installing any production micropiles. Sacrificial verification test micropiles shall be
42 constructed in conformance with the Working Drawing submittal. Verification test
43 micropiles shall be installed at the following locations:
44

45 *** \$\$2\$\$ ***
46

47 Verification load tests shall be performed to verify that the Contractor installed
48 micropiles will meet the required compression and tension load capacities and load
49 test acceptance criteria and to verify that the length of the micropile load transfer
50 bond zone is adequate. The Contractor shall submit Type 2 Working Drawings

1 consisting of the micropile verification load test results for the Engineer's acceptance
2 prior to the installation of production micropiles.
3

4 The drilling-and-grouting method, casing length and outside diameter, reinforcing
5 bar lengths, reinforcing bar size and strength, and depth of embedment for the
6 verification test micropile(s) shall be identical to those specified for the production
7 micropiles at the given locations. The verification test micropile structural steel
8 sections shall be sized to safely resist the maximum test load.
9

10 The jack, bearing plates, and stressing anchorage shall be positioned at the
11 beginning of the test such that unloading and repositioning during the test will not
12 be required.
13

14 **Testing Equipment and Data Recording**

15 Testing equipment shall include dial gauges, dial gauge support, jack and pressure
16 gauge, electronic load cell, and a reaction frame. The load cell is required only for
17 the creep test portion of the verification test. The Contractor shall provide a
18 description of test setup and jack, pressure gauge and load cell calibration curves
19 in accordance with the **Working Drawings** subsection of this Special Provision.
20 Additionally, the Contractor shall not use test jacks, pressure gauges and master
21 pressure gauges, and electronic load cells greater than 90 calendar days past their
22 most recent calibration date, until such items are recalibrated by an independent
23 testing laboratory.
24

25 The Contractor shall design the testing reaction frame to be sufficiently rigid and of
26 adequate dimensions such that excessive deformation of the testing equipment
27 does not occur.
28

29 The Contractor shall apply and measure the test load with a hydraulic jack and
30 pressure gauge. The pressure gauge shall be graduated in 75 psi increments or
31 less. The jack and pressure gauge shall have a pressure range of no more than
32 twice the anticipated maximum test pressure. Jack ram travel shall be sufficient to
33 allow the test to be done without resetting the equipment. The Contractor shall
34 monitor the creep test load hold during verification tests with both the pressure
35 gauge and the electronic load cell. The Contractor shall use the load cell to
36 accurately maintain a constant load hold during the creep test load hold increment
37 of the verification test.
38

39 The Contractor shall measure the micropile top movement with a dial gauge capable
40 of measuring to 1 mil (0.001 inch). The dial gauge shall have a travel sufficient to
41 allow the test to be done without having to reset the gauge. The Contractor shall
42 visually align the gauge to be parallel with the axis of the micropile and support the
43 gauge independently from the jack, micropile or reaction frame. The Contractor shall
44 use two dial gauges when the test setup requires reaction against the ground or
45 single reaction micropiles on each side of the test micropile.
46

47 The required load test data shall be recorded by the Contractor.
48

49 **Verification Test Loading Schedule**

50 The Contractor shall test the verification micropiles to a maximum test load of 1.5
51 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
7	AL	1 minute
8	0.075 FDL	4 minutes
9	0.150 FDL	4 minutes
10	0.225 FDL	4 minutes
11	0.300 FDL	4 minutes
12	0.375 FDL	4 minutes
13	AL	1 minute
14	0.150 FDL	1 minute
15	0.300 FDL	1 minute
16	0.375 FDL	1 minute
17	0.450 FDL	4 minutes
18	0.525 FDL	4 minutes
19	0.600 FDL	4 minutes
20	0.675 FDL	4 minutes
21	0.750 FDL	4 minutes
22	AL	1 minute
23	0.300 FDL	1 minute
24	0.600 FDL	1 minute
25	0.675 FDL	1 minute
26	0.750 FDL	1 minute
27	0.825 FDL	4 minutes
28	0.900 FDL	4 minutes
29	1.00 FDL	60 minutes
30		(Creep Test Load Hold)
31	AL	1 minute
32	0.300 FDL	1 minute
33	0.600 FDL	1 minute
34	0.900 FDL	1 minute
35	0.975 FDL	4 minutes
36	1.050 FDL	4 minutes
37	1.125 FDL	4 minutes
38	1.200 FDL	4 minutes
39	1.275 FDL	4 minutes
40	1.350 FDL	4 minutes
41	1.425 FDL	4 minutes
42	1.500 FDL	4 minutes
43		(Maximum Test Load)
44	1.200 FDL	4 minutes
45	0.900 FDL	4 minutes
46	0.600 FDL	4 minutes
47	0.300 FDL	4 minutes
48	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

1 Factored Design Load (FDL). Micropile movement during the creep test shall be
2 measured and recorded at 1, 2, 3, 4, 5, 6, 10, 20, 30, 50, and 60 minutes. The
3 alignment load shall not exceed 5 percent of the FDL load. Dial gauges shall be
4 reset to zero after the initial AL is applied.
5

6 The acceptance criteria for micropile verification load tests are:
7

- 8 1. The micropile shall sustain the first 1.000 FDL test load with no more than
9 the following total vertical movement at the top of the micropile, relative to
10 the position of the top of the micropile prior to testing.

11 *** \$\$\$ \$\$ **

- 12
13
14 2. At the end of the 1.000 FDL creep test load increment, test micropiles shall
15 have a creep rate not exceeding 0.040 inch/log cycle time (1 to 10 minutes)
16 or 0.080 inch/log cycle time (6 to 60 minutes). The creep rate shall be linear
17 or decreasing throughout the creep load hold period.
- 18
19 3. Failure does not occur at the maximum test load of 1.005 FDL. Failure is
20 defined as a slope of the load versus deflection curve (at end of increment)
21 exceeding 0.025 inches/kips or at which attempts to further increase the
22 test load simply result in continued micropile movement.
23

24 The Engineer will provide the Contractor written acceptance or rejection of the
25 verification load tests within five working days.
26

27 **Verification Test Micropile Rejection**

28 If a verification tested micropile fails to meet the acceptance criteria, the Contractor
29 shall modify the design, the construction procedure, or both, and shall perform
30 another verification test incorporating the revisions. These modifications may
31 include modifying the installation methods, increasing the bond length, or changing
32 the micropile type. Any modification that necessitates changes to the structure will
33 require the Engineer's review and acceptance. Any modifications of design or
34 construction procedures or cost of additional verification test micropiles and load
35 testing shall be at no additional expense to the Contracting Agency. At the
36 completion of verification testing, test micropiles shall be removed down to an
37 elevation two feet below finished ground line, except as otherwise specified in the
38 Plans or by the Engineer.
39

40 **Proof Load Tests**

41 The Contractor shall proof load test the specified number of production micropiles
42 at locations specified by the Engineer. Additional proof tests will be required if
43 modifications are made in the micropile installation methods subsequent to the first
44 production micropile, or if any of the proof tests fail.
45

46 **Proof Test Loading Schedule**

47 Proof tests shall be conducted by incrementally loading the micropile in accordance
48 with the following schedule:
49

50 AL = Alignment Load

FDL = Factored Design Load

	LOAD	HOLD TIME
1	AL	1 minute
2	AL	1 minute
3	0.10 FDL	4 minutes
4	0.20 FDL	4 minutes
5	0.30 FDL	4 minutes
6	0.40 FDL	4 minutes
7	0.50 FDL	4 minutes
8	0.60 FDL	4 minutes
9	0.70 FDL	4 minutes
10	0.80 FDL	4 minutes
11	0.90 FDL	4 minutes
12	1.00 FDL	10 or 60 minutes
13		(Creep Test)
14	0.75 FDL	4 minutes
15	0.50 FDL	4 minutes
16	0.25 FDL	4 minutes
17	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.

*** \$\$\$\$\$\$ ***

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.

1 6-05.3(5).GR6

2 **Manufacture of Steel Piles**

3
4 6-05.3(5).INST1.GR6

5 Section 6-05.3(5) is supplemented with the following:

6
7 6-05.3(5).OPT1.GB6

8 **(September 8, 2020)**

9 **Furnishing St. Piling**

10 Welding for steel pipe piling shall conform to AWS D1.1/D1.1M, latest edition,
11 Structural Welding Code, and Section 6-03.3(25), except that all weld filler metal
12 shall be low hydrogen material selected from Table 4.1 in AASHTO/AWS
13 D1.5M/D1.5:2020 Bridge Welding Code.

14
15 Welding and joint geometry for the seam, whether it be longitudinal or helical, shall
16 be qualified in accordance with Clause 4, Qualification, of the AWS D1.1/D1.1M,
17 latest edition, Structural Welding Code. In addition, charpy V-notch (CVN) testing in
18 accordance with Clause 4, Part D, of the AWS D1.1/D1.1M, latest edition, Structural
19 Welding Code, shall be performed. CVN testing shall include five tests at 0°F. The
20 acceptance threshold for the five samples shall meet an average value of 20-foot-
21 pounds CVN for the set of test coupons and a minimum value of 15-foot-pounds
22 CVN for any individual test coupon. The Contractor may submit documentation of
23 prior qualification to the Engineer to satisfy this requirement.

24
25 Dimensional tolerances shall conform to the material specification that the steel pipe
26 piling is manufactured under, and, at a minimum, the following requirements:

- 27
- 28 1. Out-of-roundness shall be within 1-percent of the nominal outside
29 diameter.
 - 30
 - 31 2. Deviation from a straight line, parallel to the centerline of the pile, shall not
32 exceed 0.001 times the length of the pile.
 - 33
 - 34 3. The maximum radial offset of the strip/plate edges shall be 1/8-inch. The
35 offset shall be transitioned with a taper weld and the slope shall not be less
36 than a 1 in 2.5 taper.
 - 37
 - 38 4. The bead height of weld reinforcement shall not exceed 3/16-inch.
 - 39
 - 40 5. Misalignment of weld beads for double-sided welded pipe shall not exceed
41 1/8-inch.
 - 42
 - 43 6. The wall thickness shall not be less than 95-percent or greater than 110-
44 percent of the specified nominal thickness.

45
46 All seams and skelp splices shall be complete penetration welds. Skelp splices in
47 spiral welded (helical seam) pipe shall not be located within 12 inches of a girth shop
48 or field weld.

49
50 All skelp splices shall be 100 percent radiographically or ultrasonically inspected in
51 accordance with either API 5L Annex E Section E.4 or E.5, or Table 6.2 and Clause

1 6 Part E, F or G in AWS D1.1/D1.1M, latest edition, Structural Welding Code.
2 Additionally, 10-percent of the total length of seam welds for both longitudinal and
3 helical welded pipe, and one pipe diameter length of seam centered on any skelp
4 splice intersection, shall be randomly inspected as specified above. If repairs are
5 required in more than 10-percent of the welds examined, additional inspection shall
6 be performed. The additional inspection shall be made on both sides of the repair
7 for a length equal to 10-percent of the length of the pipe outside circumference. If
8 repairs are required in more than 10-percent of welds examined in the second
9 sample, 100-percent of the entire seam on the pile shall be inspected.

10
11 All seams and splices shall be 100 percent visually inspected in accordance with
12 the acceptance criteria for statically loaded non-tubular connections in Table 6.1 of
13 the AWS D1.1/D1.1M, latest edition, Structural Welding Code. Repairs shall
14 conform to Section 5.26 of the AWS D1.1/D1.1M, latest edition, Structural Welding
15 Code, using approved repair and weld procedures.

16
17 Each length of steel pipe pile shall be marked with paint stencil, no closer than six
18 inches to the end of the pipe, with the name of the manufacturer, material
19 specification and grade of pipe, steel heat number, nominal pipe diameter, and wall
20 thickness.

21
22 6-05.3(6).GR6

23 ***Splicing Steel Casings and Steel Piles***

24
25 6-05.3(6).INST1.GR6

26 Section 6-05.3(6) is supplemented with the following:

27
28 6-05.3(6).OPT1.GB6

29 **(September 8, 2020)**

30 **Furnishing St. Piling**

31 Welding for steel pipe piling shall conform to AWS D1.1/D1.1M, latest edition,
32 Structural Welding Code, and Section 6-03.3(25), except that all weld filler metal
33 shall be low hydrogen material selected from Table 4.1 in AASHTO/AWS
34 D1.5M/D1.5:2020 Bridge Welding Code.

35
36 Welding and joint geometry for splices shall be qualified in accordance with Clause
37 4, Qualification, of the AWS D1.1/D1.1M, latest edition, Structural Welding Code. In
38 addition, charpy V-notch (CVN) testing in accordance with Clause 4, Part D, of the
39 AWS D1.1/D1.1M, latest edition, Structural Welding Code, shall be performed. CVN
40 testing shall include five tests at 0°F. The acceptance threshold for the five samples
41 shall meet an average value of 20-foot-pounds CVN for the set of test coupons and
42 a minimum value of 15-foot-pounds CVN for any individual test coupon. The
43 Contractor may submit documentation of prior qualification to the Engineer to satisfy
44 this requirement.

45
46 Ends of steel pipe piling shall be prepared for splicing in accordance with AWS
47 D1.1/D1.1M, latest edition, Structural Welding Code.

48
49 All splices shall be complete penetration groove welds using continuous backing
50 rings of 1/4 inch minimum thickness. Tack welds shall be located in the root of the
51 complete penetration groove weld.

1
2 Shop splices shall be 100 percent visually and ultrasonically inspected in
3 accordance with the acceptance criteria for statically loaded non-tubular
4 connections in Table 6.1 and the acceptance criteria in Table 6.2 in AWS
5 D1.1/D1.1M, latest edition, Structural Welding Code. Repairs for shop and field
6 splices shall conform to Section 5.26 of AWS D1.1/D1.1M, latest edition, Structural
7 Welding Code, using approved repair and weld procedures.

8
9 Field splice welds and welders shall be further qualified, tested and inspected as
10 follows:

- 11
12 1. Welder qualification shall be performed on sample full girth sections of
13 steel pipe pile to be used, in the same position and using the same weld
14 joint as for production pile splicing. At the Contractor's option, these tests
15 may be performed on the test piles during test pile installation.
- 16
17 2. Weld qualification tests shall be conducted in the presence of the
18 Contractor's CWI and a representative of the Contracting Agency.
- 19
20 3. Field welded test joints for welder qualification shall be inspected as
21 specified above for shop splices.
- 22
23 4. Production pile field splices shall be inspected as specified above for shop
24 splices, within the limits designated for UT inspection as shown in the
25 Plans. All welds shall be 100 percent visually inspected. The Engineer
26 and the Contractor's CWI reserve the right to request UT inspection of
27 splices in any pile location.

28
29 Quality control for field welding shall be conducted by an AWS Certified Welding
30 Inspector (CWI). The Contractor shall not begin pile splicing operations until
31 receiving the CWI's approval of the joint fit-up. The CWI shall inspect 100 percent
32 of all field welds in accordance with the criteria and requirements specified above.
33 All field splices shall have received the CWI's approval prior to Engineer acceptance.

34
35 The CWI shall prepare a Type 1 Working Drawing documenting the results of the
36 nondestructive quality control inspection of all field welds, and shall submit the report
37 to the Engineer within five working days of the completion of the final pile splice in
38 the project or as otherwise requested by the Engineer.

39
40 6-05.3(10).GR6

41 **Test Piles**

42
43 6-05.3(10).INST1.GR6

44 Section 6-05.3(10) is supplemented with the following:

45
46 6-05.3(10).OPT1.FB6

47 (March 6, 2000)

48 The Contractor shall furnish and drive *** \$\$1\$\$ *** test piles at the following
49 locations or at locations designated by the Engineer:

50
51 *** \$\$2\$\$ ***

1
2 The *** \$\$\$ \$\$ test piles shall be driven in the location of permanent piles and the
3 number of permanent *** \$\$\$ \$\$ piles required for this project has been reduced
4 by the appropriate number.
5

6 6-05.3(11).GR6

7 **Driving Piles**
8

9 6-05.3(11)D.GR6

10 **Achieving Minimum Tip Elevation and Bearing**
11

12 6-05.3(11)D.INST1.GR6

13 Section 6-05.3(11)D is supplemented with the following:
14

15 6-05.3(11)D.OPT2.GB6

16 (August 3, 2015)

17 The areas where piles are to be driven are adjacent to highly developed areas.
18 It is essential that vibration and noise resulting from pile driving be held to a
19 minimum. Unless otherwise allowed by the Engineer, pile driving shall be done
20 during regular daytime working hours. The Contractor shall select pile driving
21 equipment which will minimize noise and vibration. When, in the opinion of the
22 Engineer, noise or vibration are excessive, the Contractor will be required to
23 use a hammer that does not exceed the minimum specifications by more than
24 10 percent for the type and capacity of piling being driven. If pre-boring, jetting,
25 or other special methods are not specified elsewhere in the contract and are
26 ordered by the Engineer to reduce noise or vibration, such change in method
27 shall be considered a change, subject to the terms of Section 1-04.4.
28

29 6-05.3(11)D.OPT3.FB6

30 (August 3, 2015)

31 The *** \$\$\$ \$\$ piles *** \$\$\$ \$\$ shall be placed in prebored holes drilled to
32 elevation *** \$\$\$ \$\$.

33
34 The holes shall be of adequate diameter to isolate the pile from skin friction.
35 The hole around the pile due to oversize boring shall be filled with dry sand or
36 pea gravel after the pile is placed.
37

38 6-05.3(11)D.OPT4.FB6

39 (August 3, 2015)

40 The *** \$\$\$ \$\$ piles *** \$\$\$ \$\$ shall be prebored to elevation *** \$\$\$ \$\$.

41
42 The diameter of the preboring shall be adjusted to provide for full contact
43 between the pile casing and the surrounding soil without shattering the soil
44 formation. It is estimated that the required diameter for preboring will be
45 approximately 1 inch less than the pile diameter; however, the diameter shall
46 be adjusted by the Contractor as specified by the Engineer to accomplish the
47 results described above. Jetting will not be permitted. The Contractor shall
48 follow preboring immediately with the placing of the pile casing to prevent
49 sloughing into the excavated hole.
50

1 6-05.3(11)D.OPT9.FB6

2 (April 6, 2015)

3 The Contractor is advised that overdriving is anticipated for piles driven at the
4 following location(s):

5
6 **Approx. Magnitude**
7 **of Overdriving**
8 **Anticipated to Reach**
9 **Minimum Tip Elev.**

10 **Location(s)**

11 *** \$\$1\$\$ ***

12 *** \$\$2\$\$ ***

13 The Contractor shall size the hammer and pile to accommodate overdriving of
14 this magnitude without premature refusal or pile damage.

15
16 6-05.4.GR6

17 **Measurement**

18
19 6-05.4.INST1.GR6

20 Section 6-05.4 is supplemented with the following:

21
22 6-05.4.OPT1.FB6

23 (March 6, 2000)

24 Measurement for preboring for *** \$\$1\$\$ *** pile will be per linear foot of hole drilled.

25
26 6-05.4.OPT6.GB6

27 (April 6, 2015)

28 Micropiles will be measured per each, for each micropile installed and accepted.

29
30 Micropile verification load testing will be measured per each for each successfully
31 completed and accepted micropile verification load test.

32
33 Micropile proof load testing will be measured per each for each successfully completed
34 and accepted micropile proof load test.

35
36 6-05.5.GR6

37 **Payment**

38
39 6-05.5.INST1.GR6

40 Section 6-05.5 is supplemented with the following:

41
42 6-05.5.OPT1.FB6

43 (March 6, 2000)

44 "Preboring For *** \$\$1\$\$ *** Pile", per linear foot.

45
46 The unit contract price per linear foot for "Preboring For *** \$\$2\$\$ *** Pile" shall be full pay
47 for performing the work as specified, including removal and disposal of excavated soils
48 from preboring, and backfilling.

49
50 6-05.5.OPT6.GB6

51 (April 6, 2015)

1 "Micropile", per each.
2 The unit contract price per each for "Micropile" shall be full pay for performing the Work
3 as specified.
4

5 "Micropile Verification Load Testing", per each.
6 "Micropile Proof Load Testing", per each.
7 The unit contract price per each for "Micropile Verification Load Testing" and "Micropile
8 Proof Load Testing" shall be full pay for performing the Work as specified.
9

10 6-06.GR6

11 **Bridge Railings**

12
13 6-06.2.GR6

14 **Materials**

15
16 6-06.2.INST1.GR6

17 Section 6-06.2 is supplemented with the following:

18
19 6-06.2.OPT1.GB6

20 (November 20, 2023)

21 Chain link fence fabric shall conform to the Section 9-16.1(1)B requirements for Type 1
22 fence.

23
24 Fittings, fabric bands, stretcher bars, tie wire, and other fence hardware, shall conform
25 to Section 9-16.1.

26
27 Pipe for posts and longitudinal members shall conform to ASTM A 53, Grade B, Type E
28 or S, galvanized, and shall be Schedule 40 unless otherwise shown in the Plans.

29
30 Steel bars, plates, and shapes shall conform to ASTM A36, and shall be galvanized in
31 accordance with AASHTO M 111, except that structural shapes may conform to ASTM
32 A992.

33
34 Bolts, nuts, and washers shall conform to Section 9-06.5(3) and shall be galvanized after
35 fabrication in accordance with AASHTO M 232.

36
37 Resin bonded anchors shall conform to Section 6-02.3(18)A and Section 9-06.4.
38

39 6-06.2.OPT2.GB6

40 (March 6, 2000)

41 Epoxy resin shall conform to Section 9-26.1.
42

43 6-06.2.OPT7.GB6

44 **(April 6, 2015)**

45 ***Tamper Proof Nuts for steel Bridge Railing Type BP***

46 Tamper proof nuts for steel Bridge Railing Type BP shall be one of the following products
47 from one of the following manufacturers:

48
49 Vandlgard-Nut VCN151-6 (zinc)
50 Manufactured by

Local Supplier

1 Simi Fastening Systems Northwest Fasteners Inc.
2 4615 Industrial St. Bldg. No. 1-P 15127 Washington Avenue SW
3 Simi Valley, CA 93063 Lakewood, WA 98498
4 (800) 959-8256 (253) 582-1671
5 FAX (805) 581-9162 FAX (253) 581-3131
6 www.simifast.com

7
8 Trigr groove Nut ZTRN37C (Zamak 5 zinc alloy AC41A)
9 Breakaway Nut ZNB37C (Zamak 5 zinc alloy AC41A)
10 Manufactured by Local Supplier
11 Screw & Supply Inc. Tacoma Screw Products Inc.
12 1712 Church Street 2001 Center Street
13 Holbrook, NY 11741 Tacoma, WA 98409
14 (800) 223-1316 (800) 562-8192
15 FAX (631) 567-3057 FAX (253) 272-2719
16 www.screwsupply.com

17
18 Spanner Nut 1N.386 (zinc alloy)
19 Manufactured by
20 TamperProof Screw Company Inc.
21 30 Laurel Street
22 Hicksville, NY 11801
23 (516) 931-1616
24 FAX (516) 931-1654
25 www.tamperproof.com

26
27 Trident Tamper Resistant Nut 37CNTNZ (Zamak 5 zinc alloy AC41A)
28 Breakaway Nut 37CNBAWZ (Zamak 5 zinc alloy AC41A)
29 Breakaway Nut 37CNBAWS (stainless steel alloy 304)
30 Manufactured by
31 Tanner Bolt & Nut Company
32 4302 Glenwood Road
33 Brooklyn, NY 11210
34 (800) 456-2658
35 FAX (888) 434-3215
36 www.tannerbolt.com

37
38 6-06.2.OPT8.FB6

39 **(November 20, 2023)**

40 **Bridge Railing Type Snow Fence and Bridge Railing Type Wire Fabric**
41 **Fence**

42 Wire fabric shall be 8 gage diameter, 2 inch square wire mesh conforming to ASTM
43 F2453 Type 2 and galvanized after fabrication in accordance with AASHTO M 111.

44
45 HSS tubes shall conform to ASTM A500, Grade B.

46
47 Steel bars, plates, and shapes shall conform to either ASTM A36 or ASTM A992.

48
49 The railing assembly shall be galvanized after fabrication in accordance with AASHTO
50 M 111.

1
2 Anchor rods shall be fully threaded, conforming to ASTM F593 Type 302. Washers shall
3 conform to ASTM A193 Grade B7, galvanized in accordance with AASHTO M 232. Nuts
4 shall be tamper proof, as one of the following products from one of the associated
5 manufacturers:
6

7 Vandlgard-Nut VCN151-6 (zinc)

8 Manufactured by

9 Simi Fastening Systems

10 4615 Industrial St. Bldg. No. 1-P

11 Simi Valley, CA 93063

12 (800) 959-8256

13 FAX (805) 581-9162

14 www.simifast.com

Local Supplier

Northwest Fasteners Inc.

15127 Washington Avenue SW

Lakewood, WA 98498

(253) 582-1671

FAX (253) 581-3131

16 Trigr groove Nut ZTRN37C (Zamak 5 zinc alloy AC41A)

17 Breakaway Nut ZNB37C (Zamak 5 zinc alloy AC41A)

18 Manufactured by

19 Screw & Supply Inc.

20 1712 Church Street

21 Holbrook, NY 11741

22 (800) 223-1316

23 FAX (631) 567-3057

24 www.screwsupply.com

Local Supplier

Tacoma Screw Products Inc.

2001 Center Street

Tacoma, WA 98409

(800) 562-8192

FAX (253) 272-2719

25
26 Spanner Nut 1N.386 (zinc alloy)

27 Manufactured by

28 TamperProof Screw Company Inc.

29 30 Laurel Street

30 Hicksville, NY 11801

31 (516) 931-1616

32 FAX (516) 931-1654

33 www.tamperproof.com

34
35 Trident Tamper Resistant Nut 37CNTNZ (Zamak 5 zinc alloy AC41A)

36 Breakaway Nut 37CNBAWZ (Zamak 5 zinc alloy AC41A)

37 Breakaway Nut 37CNBAWS (stainless steel alloy 304)

38 Manufactured by

39 Tanner Bolt & Nut Company

40 4302 Glenwood Road

41 Brooklyn, NY 11210

42 (800) 456-2658

43 FAX (888) 434-3215

44 www.tannerbolt.com

45
46 Resin bonded anchors shall conform to Section 6-02.3(18)A and Section 9-06.4.

47
48 The railing assembly shall be shop painted or powder coated after galvanizing in
49 accordance with Section 6-07.3(11). The color of the finish coat, when dry, shall match
50 the color *** \$1\$ \$***.
51

1 6-06.3.GR6

2 **Construction Requirements**

3
4 6-06.3(2).GR6

5 ***Metal Railings***

6
7 6-06.3(2).INST1.GR6

8 Section 6-06.3(2) is supplemented with the following:

9
10 6-06.3(2).OPT1.GB6

11 **(November 20, 2023)**

12 **Bridge Railing Type Chain Link Fence**

13 The Contractor shall install anchor bolts for each post anchorage as shown in the
14 Plans. Alternatively, the Contractor may install resin bonded anchors at each post
15 anchorage, in accordance with Section 6-02.3(18)A and Section 9-06.4.

16
17 Longitudinal members shall be connected to the steel posts as shown in the Plans.

18
19 The Contractor shall install the chain link fence fabric in accordance with Section 8-
20 12.3(1)D, except as otherwise noted. The chain link fence fabric shall be fastened
21 to the posts and longitudinal members at a maximum spacing of 14 inches.

22
23 6-06.3(2).OPT2.GB6

24 **(March 6, 2000)**

25 **Bridge Railing Type Chain Link Fence**

26 The post blockouts shall be formed with a steel sleeve of the diameter and thickness
27 specified in the Plans. The steel sleeve shall be galvanized after fabrication in
28 accordance with AASHTO M 111. The Contractor shall fill the bottom portion of the
29 railing post with expanded polystyrene as shown in the Plans.

30
31 The Contractor shall install the steel posts in the post blockouts as shown in the
32 Plans. The posts shall be installed vertically, set in position with epoxy resin, and
33 braced to maintain the vertical position until the epoxy resin hardens.

34
35 Longitudinal members shall be connected to the steel posts as shown in the Plans.

36
37 The Contractor shall install the chain link fence fabric in accordance with Section 8-
38 12.3(1)D, except as otherwise noted. The chain link fence fabric shall be fastened
39 to the posts and longitudinal members at a maximum spacing of 14 inches.

40
41 6-06.3(2).OPT7.GB6

42 **(November 20, 2023)**

43 **Bridge Railing Type Snow Fence and Bridge Railing Type Wire Fabric Fence**

44 The railing shall be fabricated and installed in accordance with the shop drawings.
45 The railing panels shall be installed parallel to the top of the associated concrete
46 surface and the railing posts shall be installed perpendicular to the associated
47 concrete surface.

48
49 The Contractor shall install anchor bolts for each post anchorage as shown in the
50 Plans. Alternatively, the Contractor may install resin bonded anchors at each post
51 anchorage, in accordance with Section 6-02.3(18)A and Section 9-06.4.

1
2 After completing erection, the Contractor shall repair all metal surfaces with
3 damaged paint or powder coatings and exposed metal with a field repair coating in
4 accordance with Section 6-07.3(9)I and Section 6-07.3(11)A (for paint) or Section 6-
5 07.3(11)B (for powder coating). The color of the finish coat of the field repair coating,
6 when dry, shall match the color specified in Section 6-06.2.
7

8 6-06.5.GR6

9 **Payment**

10
11 6-06.5.INST1.GR6

12 Section 6-06.5 is supplemented with the following:

13
14 6-06.5.OPT1.FB6

15 (March 6, 2000)

16 All costs in connection with constructing Bridge Railing Type *** \$1\$\$ *** shall be
17 included in the *** \$\$2\$\$ ***.

18
19 6-07.GR6

20 **Painting**

21
22 6-07.1.GR6

23 **Description**

24
25 6-07.1.INST1.GR6

26 Section 6-07.1 is supplemented with the following:

27
28 6-07.1.OPT1.FB6

29 (August 3, 2009)

30 This work shall consist of cleaning and painting all exposed metal surfaces of Bridge
31 No(s). *** \$1\$\$ ***, in accordance with Section 6-07.3(10), except as otherwise noted
32 below.

33
34 Portions of the structure(s) excluded from this work include:

35
36 *** \$\$2\$\$ ***

37
38 6-07.1.OPT2.FB6

39 (August 3, 2009)

40 This work shall consist of cleaning and painting the exposed timber surfaces of Bridge
41 No(s). *** \$1\$\$ ***, in accordance with Section 6-07.3(13) as supplemented in these
42 Special Provisions and as specified below:

43
44 *** \$\$2\$\$ ***

45
46 6-07.3.GR6

47 **Construction Requirements**

1 6-07.3(10).GR6

2 **Painting Existing Steel Structures**

3
4 6-07.3(10).INST1.GR6

5 Section 6-07.3(10) is supplemented with the following:

6
7 6-07.3(10).OPT1.FB6

8 (August 3, 2009)

9 The Contractor *** \$\$1\$\$ *** paint the existing utility company conduits attached to
10 the structure, such as sewer, water, gas and telephone. The Contractor shall protect
11 the utilities from damage due to operations on the bridges.

12
13 6-07.3(10).OPT2.GB6

14 (August 3, 2009)

15 Light fixtures and lenses, including navigation, aircraft, flag pole luminaire, and
16 luminaire light fixtures and lenses, shall not be painted and shall be kept clean from
17 paint. The Contractor shall remove all paint from the light fixtures and lenses due
18 to the painting operation.

19
20 6-07.3(10).OPT4.GB6

21 (August 3, 2015)

22 In the cleaning operation, particular attention shall be paid to cleaning the grid deck.
23 Any means acceptable to the Engineer, in addition to flushing, as required to clean
24 dirt, oil and grease from the grid surfaces in accordance with SSPC-SP 1 shall be
25 used.

26
27 6-07.3(10)A.GR6

28 **Containment**

29
30 6-07.3(10)A.INST1.GR6

31 Section 6-07.3(10)A is supplemented with the following:

32
33 6-07.3(10)A.OPT1.GB6

34 (August 3, 2009)

35 The Contractor shall adequately protect all gears, machinery, mechanical
36 equipment, electrical equipment, navigation and clearance light lenses, motors,
37 sheaves and cables and all other equipment which might become damaged by
38 and during the cleaning and painting operations. Should the Contractor's
39 operation foul or otherwise contaminate the lubricated surfaces, the Contractor
40 shall, if directed by the Engineer, clean and relubricate the surfaces at the
41 Contractor's expense.

42
43 6-07.3(10)A.OPT2.FB6

44 (September 7, 2021)

45 The following bridge(s) have a wind speed/gust threshold:

Bridge	Wind Speed/Gust Threshold (miles per hour)
Bridge No(s). *** \$\$1\$\$ ***	*** \$\$2\$\$ ***

1 Each day, the Contractor shall review the five-day wind speed/gust forecast for
2 each bridge site from the Western Region Headquarters of the National
3 Weather Service at www.wrh.noaa.gov. The Contractor shall lower or withdraw
4 tarps, plastic exterior, and other containment components presenting an
5 exposed face to the wind when either of the following apply:
6

- 7 1. When wind speeds or gusts exceeding the threshold are forecast by
8 the National Weather Service.
- 9
- 10 2. When the structure site weather station records wind speeds or
11 gusts exceeding the threshold.
12

13 The containment system may be restored after 2 hours without winds or gusts
14 exceeding the threshold, and no forecast of such wind speeds or gusts to return
15 within 24 hours.
16

17 **Weather Station**

18 Prior to installing any components of a containment system on a bridge with a
19 specified wind speed/gust threshold, the Contractor shall install a wireless
20 weather station on the bridge at a location acceptable to the Engineer. The
21 Contractor shall provide one of the following wireless weather station systems,
22 or an accepted equal:
23

- 24 1. Davis Instruments Vantage Pro2 model 06163.
- 25
- 26 2. Weather Hawk 916 Wireless Weather Station.
- 27
- 28 3. Columbia Weather Systems Capricorn FLX.
29

30 The Contractor shall submit a Type 2 Working Drawing consisting of details of
31 the selected wireless weather station system, including installation and
32 operation details. The Contractor shall install wireless display console units for
33 both the Contracting Agency's and the Contractor's use at locations acceptable
34 to the Engineer. The Contractor shall protect the wireless weather station
35 system from damage during all paint removal, surface cleaning, and paint
36 application operations.
37

38 The Contractor shall maintain a log of daily weather data updated on a daily
39 basis. The log shall be available to the Engineer for review at any time during
40 the project. The weather data shall be tabulated in the form of a spreadsheet.
41 At a minimum, the weather data shall indicate the high and low temperature,
42 relative humidity, maximum wind speed and direction, wind gusts, and rainfall.
43 If requested by the Engineer, the Contractor shall submit a Type 1 Working
44 Drawing of weather data. Upon request, the Contractor shall provide wireless
45 access to the weather station data.
46

47 At the end of the Contract, the wireless weather station and all associated
48 system components shall be removed from the bridge and become the property
49 of the Contractor.
50

1 6-07.3(10)D.GR6

2 **Surface Preparation Prior to Overcoat Painting**

3
4 6-07.3(10)D.INST1.GR6

5 Section 6-07.3(10)D is supplemented with the following:

6
7 6-07.3(10)D.OPT1.FB6

8 (April 6, 2015)

9 The following steel surfaces of Bridge No(s). *** \$\$1\$\$ *** shall receive surface
10 preparation in accordance with SSPC SP1 followed by cleaning in accordance
11 with this Section:

12
13 *** \$\$2\$\$ ***

14
15 6-07.3(10)E.GR6

16 **Surface Preparation - Full Paint Removal**

17
18 6-07.3(10)E.INST1.GR6

19 Section 6-07.3(10)E is supplemented with the following:

20
21 6-07.3(10)E.OPT1.FB6

22 (April 5, 2010)

23 The following steel surfaces of Bridge No(s). *** \$\$1\$\$ *** shall receive full paint
24 removal surface preparation in accordance with this Section:

25
26 *** \$\$2\$\$ ***

27
28 6-07.3(10)I.GR6

29 **Paint Color**

30
31 6-07.3(10)I.INST1.GR6

32 Section 6-07.3(10)I is supplemented with the following:

33
34 6-07.3(10)I.OPT1.FB6

35 (August 3, 2009)

36 The color of the top coat, when dry, shall match *** \$\$1\$\$ ***.

37
38 6-07.3(10)N.GR6

39 **Field Coating Application Methods**

40
41 6-07.3(10)N.INST1.GR6

42 Section 6-07.3(10)N is supplemented with the following:

43
44 6-07.3(10)N.OPT1.GB6

45 (August 3, 2009)

46 Spray painting will be permitted for the application of paint to the surfaces of
47 the steel grid roadway decking and steel grid catwalks, provided every
48 precaution or means necessary to prevent any damage due to spraying
49 operations or from wind borne paint is taken, provided further that if satisfactory
50 results are not, in the opinion of the Engineer, obtained with the spraying
51 application, the Contractor shall revert to the use of brushes. In the event spray

1 painting is used on the steel grid roadway decking, the application shall be
2 made only from the underside of the roadway, and then only at such times as
3 traffic has been diverted to other lanes. A protective covering shall be placed
4 immediately over areas of the roadway decking being spray painted to prevent
5 damage from wind borne paint.
6

7 6-07.3(11).GR6

8 ***Painting or Powder Coating of Galvanized Surfaces***
9

10 6-07.3(11).INST1.GR6

11 Section 6-07.3(11) is supplemented with the following:
12

13 6-07.3(11).OPT1.FB6

14 (August 3, 2009)

15 The color of the finish coat, when dry, shall match *** \$\$1\$\$ ***
16

17 6-08.GR6

18 **Bituminous Surfacing on Structure Decks**
19

20 6-08.3.GR6

21 **Construction Requirements**
22

23 6-08.3.INST1.GR6

24 Section 6-08.3 is supplemented with the following:
25

26 6-08.3.OPT1.FB6

27 ***(October 29, 2020)***

28 ***Surfacing Removal and Paving Equipment Load and Spacing Restrictions***

29 The following bridge(s) is (are) subject to the requirements and restrictions of this Special
30 Provision:
31

32 *** \$\$1\$\$ ***
33

34 The gross vehicle weight (GVW) of the surfacing removal and paving train vehicles
35 (planers, scrapers, haul trucks, asphalt pavers, MTD/V, and rollers) allowed on the bridge
36 shall not exceed the maximum GVW specified in the Plans and the spacing of the
37 vehicles shall not be less than that specified in the Plans unless otherwise accepted as
38 described in the **Submittal of Alternative Surfacing Removal and HMA Paving Trains**
39 subsection of this Special Provision.
40

41 The Contractor shall submit a Type 2 Working Drawing consisting of the proposed
42 methods and equipment to be used to remove surfacing and apply HMA overlay to the
43 bridge deck. The Working Drawing shall include catalogue cuts, make, model, axle
44 spacing, and gross weights of all surfacing removal equipment, pavers, rollers, and haul
45 trucks used to conduct surfacing removal and paving operations on the bridge. The
46 Working Drawing shall show the surfacing removal train units and paving train units and
47 associated support equipment that is simultaneously on the bridge, in longitudinal
48 section. The longitudinal section shall show the units in operational order. The details
49 shall show or specify means of confirming in the field that the equipment units conform
50 to and do not exceed the load limits specified in the Plans.

1
2 **Submittal of Alternative Surfacing Removal and HMA Paving Trains**

3 During the Bid period, prospective Bidders may submit a maximum of two surfacing
4 removal and HMA paving trains for review and comment. The submittal shall consist of
5 the maximum gross vehicle weights including loaded weights for removal equipment,
6 haul trucks, rollers, pavers, etc., the axle spacing of the equipment and the minimum
7 spacing between adjacent pieces of equipment. Submittals must be received by the
8 Contracting Agency's representative identified in the Notice to All Planholders by 5:00
9 PM one week prior to Bid opening. Electronic submittals will be accepted. All submittals
10 received by the required date and time, both accepted and not accepted, will be posted
11 on the Contract Ad & Award information page no later than the Friday prior to Bid
12 opening.

13
14 6-08.3(2).GR6

15 **Contractor Survey for Grade Controlled Structure Decks**

16
17 6-08.3(2).INST1.GR6

18 Section 6-08.3(2) is supplemented with the following:

19
20 6-08.3(2).OPT1.FB6

21 (January 3, 2017)

22 The Contractor survey requirements specified in this Section and associated
23 Sections 6-08.3(2)A, 6-08.3(2)B and 6-08.3(2)C do not apply to the following Grade
24 Controlled Structures in this Contract:

25
26 *** \$\$1\$\$ ***

27
28 6-08.3(5).GR6

29 **Full Depth Removal of Bituminous Pavement from Structure Decks**

30
31 6-08.3(5).INST1.GR6

32 Section 6-08.3(5) is supplemented with the following:

33
34 6-08.3(5).OPT1.FB6

35 (January 2, 2018)

36 Rotary milling/planing equipment shall not be used to remove the existing surfacing
37 from the bridge deck of the following bridge(s):

38
39 *** \$\$1\$\$ ***

40
41 6-08.3(5).OPT2.FB6

42 (January 2, 2018)

43 Rotary milling/planing equipment conforming to Section 6-08.3(5)B may be used to
44 remove all but the bottom 0.10-foot layer of existing surfacing from the bridge deck
45 of the following bridge(s):

46
47 *** \$\$1\$\$ ***

48
49 Rotary milling/planing equipment shall not be used to remove the bottom 0.10-foot
50 layer of existing surfacing from the bridge deck of these bridges.

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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.

6-10.5.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:

1 6-12.2.OPT1.GB6

2 **(September 8, 2020)**

3 **Precast Concrete Noise Barrier Walls**

4 Grout for encapsulating dowel bars shall conform to Section 6-02.3(26)H.

5
6 Grout pads at the bases of precast concrete panels shall conform to Section 6-02.3(20).

7
8 Base plates and anchor bolt templates shall conform to ASTM A 36. Base plates shall
9 be corrosion protected by one of the following methods:

- 10
11 1. One coat of paint conforming to Section 9-08.1(2)F.
12
13 2. Galvanized after fabrication in accordance with AASHTO M 111.
14
15 3. Galvanized after fabrication in accordance with ASTM B 695, Class 5, Type 1.

16
17 Anchor rods shall conform to ASTM F 1554 Grade 105. Nuts shall conform to ASTM A
18 563. Washers shall conform to ASTM F 436, except that plate washers conforming to
19 ASTM A 36 may be used. Nuts and washers, and a minimum of 1'-0" of the exposed
20 end of the anchor rod, shall be corrosion protected by one of the following methods:

- 21
22 1. One coat of paint conforming to Section 9-08.1(2)F.
23
24 2. Galvanized after fabrication in accordance with ASTM F2329.
25
26 3. Galvanized after fabrication in accordance with ASTM B 695, Class 5, Type 1.

27
28 The cone head end, 1'-0" minimum, of Rod A and steel reinforcing Bar B, as identified in
29 the Standard Plans, shall be painted with one coat paint conforming to Section 9-
30 08.1(2)F.

31
32 The sealant system for the vertical joint between precast concrete panels shall consist of a
33 polyurethane sealant conforming to Section 9-04.2(3) and a closed cell foam backer rod
34 conforming to ASTM C 1330 Type C. The polyurethane sealant shall be tested for
35 compatibility with the closed cell foam backer road in accordance with Section 9-04.2(3).

36
37 6-12.2.OPT2.FB6

38 **(September 8, 2020)**

39 **Masonry Noise Barrier Walls**

40 Concrete masonry units (CMU's) shall conform to ASTM C 90, Grade N, Type 1.
41 Concrete masonry units shall have a density between 100 and 115 pounds per cubic
42 foot. Shrinkage shall not exceed 0.065 percent.

43
44 CMU's will be accepted based on a Manufacturer's Certificate of Compliance. The
45 Manufacturer's Certificate of Compliance shall include test results, conducted within the
46 previous twelve months, as required to document compliance with the material
47 requirements specified in these Special Provisions.

1 The concrete masonry unit faces shall be nominal 8 by 16 inches with thicknesses as
2 specified in the Plans. Concrete masonry unit surface texture and color shall be as
3 follows:

4
5 *** ~~\$\$\$~~ ***

6
7 Special shapes shall be provided to complete the work as specified in the Plans.

8
9 The Contractor shall submit Type 2 Working Drawings consisting of four samples of each
10 type of concrete masonry unit block specified for use on the project.

11
12 Grout for concrete masonry units shall conform to ASTM C 476 for fine grout.

13
14 Mortar for concrete masonry units shall conform to ASTM C 270, Type S. The color shall
15 be natural gray. The Contractor shall mix the mortar in a mechanical mixer of one sack
16 minimum capacity for a minimum of three minutes after all materials have been added
17 before using the mortar.

18
19 Masonry sealer shall be a silane based water repellent selected from one of the following,
20 or an accepted equal:

- 21
22 1. Baracade Silane 40, manufactured by Euclid.
23 2. MasterProtect H 200, manufactured by Master Builder Solutions.
24 3. Florok Enviro-Shield 40, manufactured by Chargar.

25
26 The Contractor shall submit Type 1 Working Drawings consisting of the manufacturer's
27 recommended masonry sealer application procedure.

28
29 The parge coating applied to the top of the masonry wall shall be a waterproof cement-
30 base coating selected from one of the following, or an accepted equal:

- 31
32 1. Conproseal, manufactured by Chargar.
33 2. MasterSeal 581, manufactured by Master Builder Solutions.
34 3. Tamoseal, manufactured by Euclid.

35
36 The sealant system for the vertical expansion joints shall consist of a polyurethane
37 sealant conforming to Section 9-04.2(3) and a closed cell foam backer rod conforming
38 to Section 9-04.2(3)A.

39
40 6-12.3.GR6

41 **Construction Requirements**

42
43 6-12.3(1).GR6

44 **Submittals**

45
46 6-12.3(1).INST1.GR6

47 Section 6-12.3(1) is supplemented with the following:

48
49 6-12.3(1).OPT1.GB6

50 (August 3, 2015)

1 The Contractor shall submit a field survey of the existing groundline along each
2 noise barrier wall alignment. The Contractor shall obtain field topographical
3 information for the existing ground within ten feet of the noise barrier wall alignment,
4 except as further limited by the Contracting Agency Right of Way and construction
5 easements for this project. The Contractor shall ensure a vertical survey accuracy
6 of 0.1 foot. The Contractor shall establish horizontal survey control at ten foot
7 intervals, or at six inches differential vertical elevation from the adjacent point on the
8 alignment, whichever is less.
9

10 The Contractor shall submit Type 2 Working Drawings consisting of the field survey,
11 including all field notes. If the Engineer confirms that the groundline condition along
12 the noise barrier wall alignment at the time of construction requires revisions to the
13 noise barrier wall details shown in the Plans, the Engineer will provide revised noise
14 barrier wall Plan details to the Contractor within 14 calendar days.
15

16 The Contractor shall complete the field survey as a first item of noise barrier wall
17 work.
18

19 6-12.3(6).GR6

20 ***Precast Concrete Panel Fabrication and Erection***

21
22 6-12.3(6).INST1.GR6

23 Section 6-12.3(6) is supplemented with the following:
24

25 6-12.3(6).OPT1.FB6

26 (April 5, 2004)

27 The Contractor shall form a *** \$\$1\$\$ *** finish, as specified in the Plans and Section
28 6-02.3(14) as supplemented in these Special Provisions, on the surface of the
29 precast concrete panel facing the traffic side.
30

31 The Contractor shall form a *** \$\$1\$\$ *** finish, as specified in the Plans and Section
32 6-02.3(14) as supplemented in these Special Provisions, on the surface of the
33 precast concrete panel facing the residential area, except as otherwise noted. The
34 surfaces of the pilaster shall receive either a Class 2 surface finish in accordance
35 with Section 6-02.3(14)B, if pigmented sealer is being applied, or a Class 1 surface
36 finish in accordance with Section 6-02.3(14)A, if pigmented sealer is not being
37 applied.
38

39 6-12.3(7).GR6

40 ***Masonry Wall Construction***

41
42 6-12.3(7).INST1.GR6

43 Section 6-12.3(7) is supplemented with the following:
44

45 6-12.3(7).OPT1.GB6

46 (August 3, 2015)

47 ***Masonry Wall***

48 The Contractor shall construct the masonry wall in accordance with the standards
49 of masonry installation specified in Chapter 21 of the International Building Code.
50

1 All masonry wall construction workers shall be thoroughly trained and experienced
2 in the necessary crafts, shall be completely familiar with the specified requirements
3 and methods needed for proper completion of the work, and shall be supervised at
4 the construction site at all times by the supervising journey-level masons.
5

6 **Sample Masonry Wall Panel**

7 The Contractor shall demonstrate Work quality and methods by constructing a 48-
8 inch by 48-inch sample panel of each type of masonry wall and submitting them as
9 Type 2 Working Drawings. The sample panel shall be constructed by the
10 supervising journeyman mason specified by the Contractor. The sample panel shall
11 show the general construction and appearance of the installed concrete masonry
12 units. The Contractor shall construct the sample panel on a transportable platform
13 and shall relocate the sample panel as specified by the Engineer as construction
14 progresses.
15

16 If any of the supervising journeyman masons are replaced during the project, each
17 replacement supervising journeyman mason shall construct another sample panel
18 as a requirement for being accepted by the Engineer for the supervising position.
19

20 The Contractor shall construct all masonry walls in accordance with the quality of
21 the sample panel. All masonry wall construction not consistent with the quality of
22 the accepted sample panel shall be reconstructed by the Contractor at no additional
23 cost to the Contracting Agency.
24

25 The Contractor shall maintain the sample panel at the project site until all the noise
26 barrier walls are accepted by the Engineer, at which time all sample panels shall
27 become the property of the Contractor and shall be disposed of in accordance with
28 Section 2-02.3.
29

30 **General Requirements**

31 All masonry materials stored on the project site shall be stored off the ground and
32 protected from weather. Concrete masonry units that are chipped, cracked, or
33 spalled on the faces or edges shall not be used.
34

35 The Contractor shall lay up all walls in running bond, unless otherwise shown in the
36 Plans, and all walls shall be plumb, level, and true to the lines and dimensions as
37 shown in the Plans. All head and bed joints shall be solidly filled with mortar for a
38 distance in from the face of the wall or unit not less than the thickness of the
39 longitudinal face shells.
40

41 **Mortar**

42 Mortar joints shall be of uniform thickness, ½ inch maximum. The Contractor shall
43 not change coursing or bonding after beginning work on a wall. The Contractor shall
44 tool all joints flush with adjacent surfaces to a dense brushed finish. The split face
45 side of wall shall have a concave smooth joint. The scored split faces shall have a
46 rake joint to match the depth of the scores.
47

48 **Temperature**

49 When air temperatures fall below 40F, grout mixing water and aggregate shall be
50 heated to produce a grout temperature between 40F and 120F. While grouting the
51 concrete masonry units, and for at least 24 hours after grouting the units, the

1 Contractor shall maintain the temperature of the concrete masonry units above
2 freezing. When atmospheric temperatures fall below 20F, the Contractor shall erect
3 enclosures around the concrete masonry units being grouted and shall maintain the
4 enclosures for at least 24 hours after grouting the units.
5

6 The Contractor shall not perform masonry wall work when the air temperature is
7 below 40F on a falling thermometer, or when it is likely that the temperature will fall
8 below 40F before the mortar has set, except when appropriate provisions have been
9 made to heat and enclose the concrete masonry units and the work area. The
10 Contractor may begin masonry wall work at 34F on a rising thermometer.
11

12 **Grouting Cells**

13 Cells with steel reinforcing bars shall be grouted solid and compacted. Vertical cells
14 with steel reinforcing bars shall be aligned and filled to provide a continuous
15 unobstructed opening of the dimensions indicated, but in no case less than two
16 inches by three inches. The Contractor shall provide cleanout openings at the
17 bottom of all cells to be filled at each stage of grout placement where the height of
18 grout placement is greater than four feet. The Contractor shall remove all
19 overhanging mortar and other obstructions and debris from the insides of the cells
20 being grouted. The Contractor shall seal all cleanouts, after the Engineer has
21 inspected and accepted the cells. The Contractor shall place grout in lifts of eight
22 feet or less.
23

24 **Top Course**

25 The Contractor shall cover the tops of all exposed walls not being worked on with a
26 waterproof membrane, secured in place. All unfinished work shall be stepped back
27 for joining to new work. Tothing shall not be performed.
28

29 The top course shall be a solid grouted bond beam unit. The Contractor shall apply
30 a parge coat to the top of the wall.
31

32 **Cleaning Exposed Surfaces**

33 The Contractor shall clean all exposed masonry at the end of each day's work. After
34 final pointing, the Contractor shall remove all mortar spots and droppings. The
35 Contractor shall cut out all defective joints and repoint the joints solidly with mortar.
36 The Contractor shall protect all work from damage, stain, and discoloring.
37

38 The Contractor shall perform additional final cleaning prior to applying the pigmented
39 sealer. The Contractor shall remove all large particles of mortar before wetting the
40 wall. The Contractor shall saturate the concrete masonry units with clean water and
41 shall flush all loose mortar and dirt from the wall surface. The Contractor shall scrub
42 the wall surface with a stiff brush and a masonry cleaning solution, in accordance
43 with the cleaning solution manufacturer's instructions. The Contractor shall
44 thoroughly wash the wall surface of all cleaning solution, dirt, and mortar crumbs
45 with clean pressurized water. The Contractor shall not use acid cleaning solutions
46 to clean the wall surface. The Contractor shall protect all wall surfaces adjacent to
47 the sections of wall being cleaned.
48

49 **Masonry Sealer**

50 All exposed masonry surfaces shall receive two coats of masonry sealer, applied to
51 either one foot minimum below finish ground line or to the base of the bottom row of

1 masonry blocks, whichever is higher, from one of the masonry sealer products
2 specified in Section 6-12.2 as supplemented in these Special Provisions. The
3 masonry sealer shall be applied in accordance with the manufacturer's
4 recommendations.

5
6 6-12.5.GR6

7 **Payment**

8
9 6-12.5.INST1.GR6

10 Section 6-12.5 is supplemented with the following:

11
12 6-12.5.OPT1.GB6

13 (April 5, 2004)

14 All costs in connection with performing the field survey of the existing groundline of the
15 noise barrier wall alignment, and submitting the field survey to the Engineer, shall be
16 included in the lump sum contract price for "Structure Surveying".

17
18 **6-13.GR6**

19 **Structural Earth Walls**

20
21 6-13.2.GR6

22 **Materials**

23
24 6-13.2.INST1.GR6

25 Section 6-13.2 is supplemented with the following:

26
27 6-13.2.OPT1.GB6

28 **(February 6, 2023)**

29 ***Welded Wire Faced Structural Earth Wall Materials***

30 **Welded Wire Mats and Backing Mats**

31 Welded wire fabric for welded wire mats, welded wire form facing units, and backing
32 mats shall conform to AASHTO M 336, and shall be fabricated from plain wire fabric
33 conforming to AASHTO M 336 Grade 65.

34
35 The minimum clear opening dimension of the backing mat, or the combination of
36 welded wire form facing unit with geosynthetic wall facing wrap, shall not exceed the
37 minimum particle size of the wall facing backfill as specified below.

38
39 Welded wire fabric for welded wire mats, welded wire form facing units, and backing
40 mats shall be galvanized after fabrication in accordance with either ASTM A641 (two
41 ounces minimum per square foot) or AASHTO M 111. All damage to the galvanizing
42 shall be repaired with one coat of paint conforming to Section 9-08.1(2)B.

43
44 **Backfill for Welded Wire Faced Structural Earth Wall**

45 The coarse, granular material used for the wall facing backfill placed immediately
46 behind the wall face, as shown in the Plans, shall conform to the following gradation
47 requirements:

- 48
49 1. The minimum particle size shall be no less than the width of the minimum
50 opening dimension in the backing mat or the geosynthetic wall facing wrap.

- 1
2 2. The maximum particle size shall be no greater than six inches for welded
3 wire reinforced walls, and no greater than four inches for geosynthetic
4 reinforced walls.
5

6 **Proprietary Materials**

7 **Hilfiker Welded Wire Retaining Wall (WWW) System**

8 Welded wire fabric wire size for backing mats shall be W2.1 minimum for wall
9 face backing layers of 1'-6" maximum thickness, and shall be W2.5 minimum
10 for wall face backing layers between 1'-6" and 2'-0".
11

12 Construction geotextile for wall facing shall conform to the requirements in
13 Section 9-33.1 for Construction Geotextile for Underground Drainage,
14 Moderate Survivability, Class A.
15

16 **Tensar Wire Form Retaining Wall System**

17 Wire support struts shall conform to AASHTO M 336, and shall be galvanized
18 after fabrication in accordance with either ASTM A641 (two ounces minimum
19 per square foot) or AASHTO M 111. All damage to the galvanizing shall be
20 repaired with one coat of paint conforming to Section 9-08.1(2)B.
21

22 Geosynthetic connection rods shall be manufactured from high-density
23 polyethylene with either fiberglass inclusions or oriented polypropylene, as
24 recommended by Tensar Earth Technologies, Inc.
25

26 Geosynthetic separating the wall facing backfill from the welded wire faced
27 structural earth wall backfill shall conform to the requirements in Section 9-33.1
28 for Construction Geotextile for Underground Drainage, Moderate Survivability,
29 Class A.
30

31 **Tensar Geogrid Materials**

32 Geogrid reinforcement and geosynthetic wall facing wrap shall conform to
33 Section 9-33.1, and shall be a product listed in Appendix D of the current
34 WSDOT Qualified Products List (QPL). The values of T_{al} and T_{ult} as listed
35 in the QPL for the products used shall meet or exceed the values required
36 for the wall manufacturer's reinforcement design as specified in the
37 structural earth wall design calculation and working drawing submittal.
38

39 The minimum ultimate tensile strength of the geogrid shall be a minimum
40 average roll value (the average test results for any sampled roll in a lot shall
41 meet or exceed the values shown in Appendix D of the current WSDOT
42 QPL). The strength shall be determined in accordance with ASTM D6637
43 for multi-rib specimens.
44

45 For geogrid reinforcement and geosynthetic wall facing wrap, the ultraviolet
46 (UV) radiation stability, in accordance with ASTM D4355, shall be a
47 minimum of 70 percent strength retained after 500 hours in the
48 weatherometer.
49

1 The longitudinal (i.e., in the direction of loading) and transverse (i.e.,
2 parallel to the wall or slope face) ribs that make up the geogrid shall be
3 perpendicular to one another.
4

5 The Engineer will take random samples of the geogrid materials at the job
6 site. Approval of the geogrid materials will be based on testing of samples
7 from each lot. A "lot" shall be defined as all geogrid rolls sent to the project
8 site produced by the same manufacturer during a continuous period of
9 production at the same manufacturing plant having the same product
10 name. The Contracting Agency will require 14 calendar days maximum for
11 testing the samples after their arrival at the WSDOT Materials Laboratory
12 in Tumwater, WA.
13

14 The geogrid samples will be tested for conformance to the specified
15 material properties. If the test results indicate that the geogrid lot does not
16 meet the specified properties, the roll or rolls which were samples will be
17 rejected. Two additional rolls for each roll tested which failed from the lot
18 previously tested will then be selected at random by the Engineer for
19 sampling and retesting. If the retesting shows that any of the additional rolls
20 tested do not meet the specified properties, the entire lot will be rejected.
21 If the test results from all the rolls retested meet the specified properties,
22 the entire lot minus the roll(s) which failed will be accepted.
23

24 All geogrid materials which have defects, deterioration, or damage, as
25 determined by the Engineer, will be rejected. All rejected geogrid materials
26 shall be replaced at no expense to the Contracting Agency.
27

28 Except as otherwise noted, geogrid identification, storage and handling
29 shall conform to the requirements specified in Section 2-12.2. The geogrid
30 materials shall not be exposed to temperatures less than -20°F and greater
31 than 122°F.
32

33 6-13.2.OPT2.GB6

34 **(February 6, 2023)**

35 ***Precast Concrete Panel Faced Structural Earth Wall Materials***

36 **General Materials**

37 **Concrete Leveling Pad**

38 Leveling pad concrete shall be commercial concrete in accordance with Section
39 6-02.3(2)B.
40

41 **Proprietary Materials**

42 **ARES Modular Panel Wall System**

43 **Tensor Geogrid Materials**

44 Geogrid reinforcement shall conform to Section 9-33.1 and shall be a
45 product listed in Appendix D of the current WSDOT Qualified Products List
46 (QPL). The values of T_{al} and T_{ult} as listed in the QPL for the products used
47 shall meet or exceed the values required for the wall manufacturer's
48 reinforcement design as specified in the structural earth wall design
49 calculation and working drawing submittal.
50

1 The minimum ultimate tensile strength of the geogrid shall be a minimum
2 average roll value (the average test results for any sampled roll in a lot shall
3 meet or exceed the values shown in Appendix D of the current WSDOT
4 QPL). The strength shall be determined in accordance with ASTM D6637
5 for multi-rib specimens.
6

7 The ultraviolet (UV) radiation stability, in accordance with ASTM D4355,
8 shall be a minimum of 70 percent strength retained after 500 hours in the
9 weatherometer.
10

11 The longitudinal (i.e., in the direction of loading) and transverse (i.e.,
12 parallel to the wall or slope face) ribs that make up the geogrid shall be
13 perpendicular to one another. The maximum deviation of the cross-rib from
14 being perpendicular to the longitudinal rib (skew) shall be no more than 1
15 inch in 5 feet of geogrid width. The maximum deviation of the cross-rib at
16 any point from a line perpendicular to the longitudinal ribs located at the
17 cross-rib (bow) shall be 0.5 inches.
18

19 The Engineer will take random samples of the geogrid materials at the job
20 site. Approval of the geogrid materials will be based on testing of samples
21 from each lot. A "lot" shall be defined as all geogrid rolls sent to the project
22 site produced by the same manufacturer during a continuous period of
23 production at the same manufacturing plant having the same product
24 name. The Contracting Agency will require 14 calendar days maximum for
25 testing the samples after their arrival at the WSDOT Materials Laboratory
26 in Tumwater, WA.
27

28 The geogrid samples will be tested for conformance to the specified
29 material properties. If the test results indicate that the geogrid lot does not
30 meet the specified properties, the roll or rolls which were samples will be
31 rejected. Two additional rolls for each roll tested which failed from the lot
32 previously tested will then be selected at random by the Engineer for
33 sampling and retesting. If the retesting shows that any of the additional rolls
34 tested do not meet the specified properties, the entire lot will be rejected.
35 If the test results from all the rolls retested meet the specified properties,
36 the entire lot minus the roll(s) which failed will be accepted.
37

38 All geogrid materials which have defects, deterioration, or damage, as
39 determined by the Engineer, will be rejected. All rejected geogrid materials
40 shall be replaced at no expense to the Contracting Agency.
41

42 Except as otherwise noted, geogrid identification, storage and handling
43 shall conform to the requirements specified in Section 2-12.2. The geogrid
44 materials shall not be exposed to temperatures less than -20F and greater
45 than 122F.
46

47 Rubber bearing pads shall be a type and grade as recommended by Tensar
48 Earth Technologies, Inc.
49

50 Geosynthetic joint cover for all horizontal and vertical joints shall be a non-
51 woven geosynthetic as recommended by Tensar Earth Technologies, Inc.

1 Adhesive used to attach the geosynthetic to the rear of the precast concrete
2 facing panel shall be as recommended by Tensar Earth Technologies, Inc.
3

4 **Reinforced Earth Wall**

5 Reinforcing strips shall be shop fabricated from hot rolled steel conforming to
6 ASTM A572 Grade 65 or approved equal and shall be galvanized after
7 fabrication in accordance with AASHTO M 111. Damage to the galvanizing shall
8 be repaired with one coat of paint conforming to Section 9-08.1(2)B.
9

10 Bolts and nuts shall conform to Section 9-06.5(3) and shall be galvanized in
11 accordance with ASTM F2329.
12

13 Rubber bearing pads shall be a type and grade as recommended by the
14 Reinforced Earth Company.
15

16 Vertical joint filler between panels, when specified in the structural earth wall
17 working drawings, shall be two-inch square, flexible open cell polyether foam
18 strips, Grade UU-34, as recommended by the Reinforced Earth Company.
19

20 Filter fabric joint cover for all horizontal and vertical joints, when specified in the
21 structural earth wall working drawings, shall be a pervious woven polypropylene
22 filter fabric as recommended by the Reinforced Earth Company. Adhesive used
23 to attach the fabric material to the rear of the precast concrete facing panel shall
24 be as recommended by the Reinforced Earth Company.
25

26 **MSE Plus Wall**

27 Pins connecting the soil reinforcing mesh to the precast concrete panels shall
28 conform to AASHTO M 336, plain wire, and shall be galvanized after fabrication
29 in accordance with AASHTO M 111. Damage to the galvanizing shall be
30 repaired with one coat of paint conforming to Section 9-08.1(2)B.
31

32 Bearing pads shall be serrated high-density polyethylene (HDPE) copolymer
33 pads as recommended by SSL, LLC.
34

35 Filter fabric joint cover for all horizontal and vertical joints shall be non-woven
36 geosynthetic conforming to AASHTO M 288. Adhesive used to bond the
37 geosynthetic to the rear of the precast concrete facing panel shall be as
38 recommended by SSL, LLC.
39

40
41 6-13.2.OPT2(A).GB6

42 **(August 3, 2015)**

43 **Lock + Load Retaining Wall System**

44 Stainless steel wire and wire rods shall conform to ASTM A 580.
45

46 Stainless steel bars, plates and shapes shall conform to ASTM A 276 Type 304.
47

48 The maximum particle size of the backfill material within 1'-6" of the back face
49 of the precast concrete facing panel shall not exceed 3/4 inches.
50

1 6-13.2.OPT3.GB6

2 **(January 2, 2018)**

3 **Concrete Block Faced Structural Earth Wall Materials**

4 **General Materials**

5 **Concrete Block**

6 Acceptability of the blocks will be determined based on the following:

- 7
- 8 1. Visual inspection.
 - 9
 - 10 2. Compressive strength tests, conforming to Section 6-13.3(4).
 - 11
 - 12 3. Water absorption tests, conforming to Section 6-13.3(4).
 - 13
 - 14 4. Manufacturer's Certificate of Compliance in accordance with Section
 - 15 1-06.3.
 - 16
 - 17 5. Freeze-thaw tests conducted on the lot of blocks produced for use in
 - 18 this project, as specified in Section 6-13.3(4).
 - 19
 - 20 6. Copies of results from tests conducted on the lot of blocks produced
 - 21 for this project by the concrete block fabricator in accordance with
 - 22 the quality control program required by the structural earth wall
 - 23 manufacturer.
 - 24

25 The blocks shall be considered acceptable regardless of curing age when

26 compressive test results indicate that the compressive strength conforms to the

27 28-day requirements, and when all other acceptability requirements specified

28 above are met.

29

30 Testing and inspection of dry cast concrete blocks shall conform to ASTM C

31 140, and shall include block fabrication plant approval by WSDOT prior to the

32 start of block production for this project.

33

34 **Mortar**

35 Mortar shall conform to ASTM C 270, Type S, with an integral water repellent

36 admixture as accepted by the Engineer. The amount of admixture shall be as

37 recommended by the admixture manufacturer. To ensure uniform color, texture,

38 and quality, all mortar mix components shall be obtained from one manufacturer

39 for each component, and from one source and producer for each aggregate.

40

41 **Geosynthetic Soil Reinforcement**

42 Geogrid reinforcement shall conform to Section 9-33.1, and shall be a product

43 listed in Appendix D of the current WSDOT Qualified Products List (QPL). The

44 values of T_{al} and T_{ult} as listed in the QPL for the products used shall meet or

45 exceed the values required for the wall manufacturer's reinforcement design as

46 specified in the structural earth wall design calculation and working drawing

47 submittal.

48

49 The minimum ultimate tensile strength of the geogrid shall be a minimum

50 average roll value (the average test results for any sampled roll in a lot shall

51 meet or exceed the values shown in Appendix D of the current WSDOT QPL).

1 The strength shall be determined in accordance with ASTM D 6637, for multi-
2 rib specimens.

3
4 The ultraviolet (UV) radiation stability, in accordance with ASTM D 4355, shall
5 be a minimum of 70 percent strength retained after 500 hours in the
6 weatherometer.

7
8 The longitudinal (i.e., in the direction of loading) and transverse (i.e., parallel to
9 the wall or slope face) ribs that make up the geogrid shall be perpendicular to
10 one another. The maximum deviation of the cross-rib from being perpendicular
11 to the longitudinal rib (skew) shall be no more than 1 inch in 5 feet of geogrid
12 width. The maximum deviation of the cross-rib at any point from a line
13 perpendicular to the longitudinal ribs located at the cross-rib (bow) shall be 0.5
14 inches.

15
16 The gap between the connector and the bearing surface of the connector tab
17 cross-rib shall not exceed 0.5 inches. A maximum of 10 percent of connector
18 tabs may have a gap between 0.3 inches and 0.5 inches. Gaps in the remaining
19 connector tabs shall not exceed 0.3 inches.

20
21 The Engineer will take random samples of the geogrid materials at the job site.
22 Acceptance of the geogrid materials will be based on testing of samples from
23 each lot. A "lot" shall be defined as all geogrid rolls sent to the project site
24 produced by the same manufacturer during a continuous period of production
25 at the same manufacturing plant having the same product name. The
26 Contracting Agency will require 14 calendar days maximum for testing the
27 samples after their arrival at the WSDOT Materials Laboratory in Tumwater,
28 WA.

29
30 The geogrid samples will be tested for conformance to the specified material
31 properties. If the test results indicate that the geogrid lot does not meet the
32 specified properties, the roll or rolls which were sampled will be rejected. Two
33 additional rolls for each roll tested which failed from the lot previously tested will
34 then be selected at random by the Engineer for sampling and retesting. If the
35 retesting shows that any of the additional rolls tested do not meet the specified
36 properties, the entire lot will be rejected. If the test results from all the rolls
37 retested meet the specified properties, the entire lot minus the roll(s) which
38 failed will be accepted.

39
40 All geogrid materials which have defects, deterioration, or damage, as
41 determined by the Engineer, will be rejected. All rejected geogrid materials shall
42 be replaced at no expense to the Contracting Agency.

43
44 Except as otherwise noted, geogrid identification, storage and handling shall
45 conform to the requirements specified in Section 2-12.2. The geogrid materials
46 shall not be exposed to temperatures less than -20F and greater than 122F.

47
48 **Drainage Geosynthetic Fabric**

49 Drainage geosynthetic fabric shall be a non-woven geosynthetic conforming to
50 the requirements in Section 9-33.1, for Construction Geotextile for Underground
51 Drainage, Moderate Survivability, Class B.

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21

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

22
23
24
25
26
27
28
29
30
31

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:

<u>Property</u>	<u>Specification</u>	<u>Value</u>
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.

41
42
43
44
45
46
47
48

Block connectors for block courses without geogrid reinforcement shall be glass fiber reinforced high-density polyethylene (HDPE) conforming to the following minimum material specifications:

<u>Property</u>	<u>Specification</u>	<u>Value</u>
HDPE	ASTM D 1248 Type III Class A Grade 5	68 ± 3 percent

1	Fiberglass Content	ASTM D 2584	30 ± 3 percent
2	Carbon Black	ASTM D 4218	2 percent minimum
3	Specific Gravity	ASTM D 792	1.16 ± 0.06
4	Tensile Strength	ASTM D 638	
5	at yield		8,700 ± 725 psi
6	Melt Flow Rate	ASTM D 1238	0.11 ± 0.07 ounces/10 min.

7
8 6-13.3.GR6

9 **Construction Requirements**

10
11 6-13.3.INST1.GR6

12 Section 6-13.3 is supplemented with the following:

13
14 6-13.3.OPT1.GB6
15 **(April 4, 2011)**

16 **Welded Wire Faced Structural Earth Wall**

17 Welded wire faced structural earth walls shall be constructed of only one of the following
18 wall systems.

19
20 The Contractor shall make arrangements to purchase the welded wire mats, welded wire
21 form facing units, geogrid reinforcement, backing mats, facing elements, fasteners,
22 geosynthetic connection rods, construction geotextile for wall facing, and all necessary
23 incidentals from the source identified for each wall system:

24
25 Hilfiker Welded Wire Retaining Wall (WWW) System
26 Hilfiker is a registered trademark of Hilfiker Retaining Walls.

27
28 Hilfiker Retaining Walls
29 1902 Hilfiker Lane
30 Eureka, CA 95503-5711
31 (707) 443-5093
32 FAX (707) 443-2891
33 www.hilfiker.com

34
35 Tensar Wire Form Retaining Wall System
36 Tensar is a registered trademark of Tensar Corporation

37
38 Tensar Corporation
39 2500 Northwinds Parkway Suite 500
40 Atlanta, GA 30009
41 (770) 344-2090
42 FAX (678) 281-8546
43 www.tensarcorp.com

44
45 6-13.3.OPT2.GB6
46 **(January 10, 2022)**

47 **Precast Concrete Panel Faced Structural Earth Wall**

48 Precast concrete panel faced structural earth walls shall be constructed of only one of
49 the following wall systems. The Contractor shall make arrangements to purchase the

1 precast concrete panels, soil reinforcement, attachment devices, joint filler, and all
2 necessary incidentals from the source identified with each wall system:

3
4 ARES Modular Panel Wall System

5 ARES Modular Panel Wall System is a registered trademark of Tensar
6 Corporation

7
8 Tensar Corporation
9 2500 Northwinds Parkway Suite 500
10 Atlanta, GA 30009
11 (770) 344-2090
12 FAX (678) 281-8546
13 www.tensarcorp.com

14
15 MSE Plus Wall

16 MSE Plus Wall is a registered trademark of SSL, LLC

17
18 SSL, LLC
19 4740 Scotts Valley Drive Suite E
20 Scotts Valley, CA 95066
21 (831) 430-9300
22 FAX (831) 430-9340
23 www.mseplus.com

24
25 Reinforced Earth Wall

26 Reinforced Earth is a registered trademark of the Reinforced Earth Company.

27
28 The Reinforced Earth Company
29 9025 East Kenyon Ave. Suite 200
30 Denver, CO 80237
31 (303) 790-1481
32 FAX (303) 790-1461
33 www.reinforcedearth.com

34
35 6-13.3.OPT2(A).GB6

36 (August 3, 2015)

37 Lock + Load Retaining Wall System

38 Lock + Load is a registered trademark of Lock + Load Retaining Walls, Ltd.

39
40 Lock + Load Retaining Walls, Ltd.
41 1681 Chestnut Street Suite 400
42 Vancouver, BC V6J 4M6 Canada
43 (604) 732-9990
44 FAX: (604) 676-2705
45 www.lock-load.com

46
47 6-13.3.OPT3.GB6

48 **(January 2, 2018)**

49 **Concrete Block Faced Structural Earth Wall**

50 Concrete block faced structural earth walls shall be constructed of only one of the
51 following wall systems. The Contractor shall make arrangements to purchase the

1 concrete blocks, soil reinforcement, attachment devices, joint filler, and all necessary
2 incidentals from the source identified with each wall system:

3
4 Allan Block Wall

5 Allan Block Wall is a registered trademark of the Allan Block Corporation

6
7 Allan Block Corporation
8 7424 W 78th Street
9 Bloomington, MN 55439
10 (800) 899-5309
11 FAX (952) 835-0013
12 www.allanblock.com

13
14 GEOWALL Structural Earth Retaining Wall System

15 GEOWALL is a registered trademark of Basalite Concrete Products, LLC

16
17 Basalite Concrete Products LLC
18 3299 International Place
19 Du Pont, WA 98327-7707
20 (800) 964-9424
21 FAX: (253) 964-5005
22 www.basalite.com

23
24 Redi-Rock Positive Connection System

25 Redi-Rock Positive Connection System is a registered trademark of Redi-Rock
26 International, LLC

27
28 Redi-Rock International, LLC
29 05481 US 31 South
30 Charlevoix, MI 49720
31 (866) 222-8400
32 FAX (231) 237-9521
33 www.redi-rock.com

34
35 Mesa Wall

36 Mesa Wall is a registered trademark of Tensar Corporation

37
38 Tensar Corporation
39 2500 Northwinds Parkway Suite 500
40 Atlanta, GA 30009
41 (770) 334-2090
42 FAX (678) 281-8546
43 www.tensarcorp.com

44
45 Landmark Retaining Wall System

46 Landmark Retaining Wall System is a registered trademark of Anchor Wall
47 Systems, Inc.

48
49 Anchor Wall Systems, Inc.
50 5959 Baker Road, Suite 390
51 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.kestonewalls.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:

1 6-13.3(4).OPT1.GB6

2 **(April 3, 2017)**

3 **Specific Fabrication Requirements for Precast Concrete Panel Faced**
4 **Structural Earth Walls**

5 **ARES Modular Panel Wall System**

6 The concrete mix for precast concrete facing panels shall be a Contractor mix
7 design in accordance with Section 6-02.3(2)A, producing a minimum
8 compressive strength at 28 days of 4,500 psi. The Contractor mix design for
9 precast concrete facing panels shall not include Type III cement unless
10 otherwise allowed by the Engineer.

11
12 6-13.3(4).OPT1(A).GB6

13 **(August 3, 2015)**

14 **Lock + Load Retaining Wall System**

15 Concrete for precast concrete panels and counterfort members shall conform
16 to ASTM C 1116 Type III, with cement and aggregate gradation as
17 recommended by Lock + Load Retaining Walls, Ltd, slump and air content as
18 specified in this Section, and a minimum compressive strength at 28 days of
19 5,500 psi. The fiber reinforcement shall be mixed in the concrete at a minimum
20 reinforcement ratio of 3.0 pounds per cubic yard and as specified by Lock +
21 Load Retaining Walls, Ltd.

22
23 Full size precast concrete facing panels for Lock + Load retaining walls shall be
24 2'-8" wide and 1'-4" tall.

25
26 Precast concrete counterfort members shall be fabricated, handled, stored, and
27 shipped in accordance with the requirements specified in this Section for
28 precast concrete facing panels.

29
30 6-13.3(5).GR6

31 ***Precast Concrete Facing Panel and Concrete Block Erection***

32
33 6-13.3(5).INST1.GR6

34 Section 6-13.3(5) is supplemented with the following:

35
36 6-13.3(5).OPT2.GB6

37 **(April 2, 2012)**

38 **Specific Erection Requirements for Precast Concrete Block Faced Structural**
39 **Earth Walls**

40 **Landmark Retaining Wall**

41 When placing each course of concrete blocks, the Contractor shall pull the
42 blocks towards the front face of the wall until the male key of the bottom face of
43 the upper block contacts and fits into the female key of the top face of the
44 supporting block below.

45
46 A maximum gap of 1/8-inch is allowed between adjacent concrete blocks,
47 except for the base course set of concrete blocks placed on the leveling pad. A
48 maximum gap of 1-inch is allowed between adjacent base course concrete
49 blocks, provided geosynthetic reinforcement for drains is in place over the gap
50 at the back face of the concrete blocks.

1 Lock bars shall be installed in the female key of the top face of all concrete
2 block courses receiving geogrid reinforcement. Gaps between adjacent lock
3 bars in the key shall not exceed 3-inches. The lock bar shall be installed flat
4 side up, with the angled side to the back of the concrete block, as shown in the
5 shop drawings.
6

7 Geogrid reinforcement shall be placed and connected to concrete block
8 courses specified to receive soil reinforcement. The leading edge of the geogrid
9 reinforcement shall be maintained within 1-inch of the front face of the
10 supporting concrete blocks below. Geogrid panels shall be abutted for 100
11 percent backfill coverage with less than a 4-inch gap between adjacent panels.
12

13 Backfill shall be placed and compacted level with the top of each course of
14 concrete blocks, and geogrid reinforcement placed and connected to concrete
15 block courses specified to receive soil reinforcement, before the Contractor may
16 continue placing the next course of concrete blocks.
17

18 **Mesa Wall**

19 For all concrete block courses receiving geogrid reinforcement, the fingers of
20 the block connectors shall engage the geogrid reinforcement apertures, both in
21 the connector slot in the block, and across the block core. For all concrete block
22 courses with intermittent geogrid coverage, a #3 steel reinforcing bar shall be
23 placed, butt end to butt end, in the top block groove, with the butt ends being
24 placed at a center of a concrete block.
25

26 6-13.3(7).GR6

27 **Backfill**

28
29 6-13.3(7).INST1.GR6

30 Section 6-13.3(7) is supplemented with the following:
31

32 6-13.3(7).OPT1.GB6

33 **(August 3, 2015)**

34 **Specific Backfill Requirements for Precast Concrete Panel Faced Structural** 35 **Earth Walls**

36 **Lock + Load Retaining Wall System**

37 The Contractor shall begin placement and compaction of backfill above the tail
38 of the counterfort member first, then towards the back face of the precast
39 concrete facing panel, followed by placement and compaction of the remainder
40 of the backfill layer. The zone for compaction by plate compactor equipment
41 only, with no soil density testing requirement, shall be within 1'-4" of the back
42 face of the precast concrete facing panel.
43

44 **6-14.GR6**

45 **Geosynthetic Retaining Walls**

46
47 6-14.2.GR6

48 **Materials**

1 6-14.2(9-33.2(2)).GR6

2 **Geosynthetic Properties For Retaining Walls and Reinforced Slopes**

3 Section 9-33.2(2) is supplemented with the following:

4
5 6-14.2(9-33.2(2)).OPT1.FB6

6 **(August 7, 2006)**

7 **Geosynthetic Properties For Temporary Geosynthetic Retaining Walls**

8 Wide strip geosynthetic strengths provided in Table 10 are minimum average roll
9 values. The average test results for any sampled roll in a lot shall meet or exceed
10 the values shown in the table. These wide strip strength requirements apply only in
11 the geosynthetic direction perpendicular to the wall face. The test procedures
12 specified in the table are in conformance with the most recently approved ASTM
13 geosynthetic test procedures, except for geosynthetic sampling and specimen
14 conditioning, which are in accordance with WSDOT Test Methods 914 and 915,
15 respectively.

16
17 **Table 10:** Wide strip tensile strength required for the geosynthetic reinforcement
18 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\$***

20
21
22 6-15.GR6

23 **Soil Nail Walls**

24
25 6-15.2.GR6

26 **Materials**

27
28 6-15.2.INST1.GR6

29 Section 6-15.2 is supplemented with the following:

30
31 6-15.2.OPT1.GB6

32 **(August 3, 2015)**

33 **Permanent Soil Nail Materials and Components**

34 A soil nail system is a structural system used to transfer tensile loads to soil. A soil nail
35 system may also be specified in the Plans as a nail. A soil nail system includes all steel
36 reinforcing bars, anchorage devices, grout, coatings, sheathings and couplers if used.

37
38 The Contractor shall either select a soil nail system from the Qualified Products List, or
39 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.

- 1 2. Manufacturer's Certificate of Compliance for bearing plates, nuts, steel
2 reinforcing bars, tendon encapsulation tubing, and welded shear studs. The
3 Manufacturer's Certificate of Compliance for the nuts shall confirm compliance
4 with the specified strength requirements.
5

6 If the Contractor selects a permanent soil nail system from the Qualified Products List
7 (QPL), the Contractor shall submit a Type 1 Working Drawing consisting of a certificate
8 from the permanent soil nail system fabricator/supplier confirming that the material
9 specifications of the permanent soil nail system components as furnished conform to
10 those specified in the QPL.

11
12 **Component Material Specifications**

13 Bearing plates shall conform to ASTM A 36, ASTM A 529, ASTM A 536, ASTM A 572,
14 ASTM A 588, or AASHTO M 270.

15
16 Centralizers shall be fabricated from plastic, steel, or material which is
17 nondetrimental to the prestressing steel. Wood shall not be used.

18
19 Grout shall be a neat cement grout or a sand-cement grout conforming to Section
20 9-20.3(4). The compressive strength for the grout shall be as required by the soil
21 nail manufacturer. Grout components shall be as follows:

22
23 Admixtures shall conform to the requirements of Section 9-23.6. Expansive
24 admixtures and accelerators will not be permitted. Admixtures shall be mixed
25 in accordance with the manufacturer's recommendations.

26
27 Aggregates shall conform to the requirements of Section 9-03.

28
29 Cement shall conform to the requirements of Section 9-01, and shall not contain
30 lumps or other indications of hydration.

31
32 Nuts shall conform to either ASTM A 563, Grade B, Hexagonal, ASTM A 536 Grade
33 100-70-03, ASTM A 29 Grades 12L14, 1215, or C1045, AASHTO M 169 Grades
34 1117 or 12L14, ASTM A 513 Type 5 Grade 1026, ASTM A 521 Class CF, ASTM A
35 897 Grade 125/80/10M, or ASTM A 519 Grade 1026, and shall be capable of
36 developing 100 percent of the GUTS of the soil nail. The nuts shall be fitted, where
37 necessary, with a special wedge washer or spherical seat such that the nut bears
38 uniformly on the bearing plate.

39
40 Washers shall conform to either ASTM F 436, ASTM A 536 Grade 80-55-06 or ASTM
41 A 47 Grade 32510.

42
43 Soil nails shall be deformed steel reinforcing bars conforming to AASHTO M 31,
44 Grade 60 minimum, and Section 9-07.2. All soil nails, except those specified in the
45 Plans to be encapsulated, shall be epoxy-coated in accordance with Sections 6-
46 02.3(24)H and 9-07.3. The soil nails shall be of the type and size specified in the
47 Plans. The soil nails shall not be spliced. The soil nails shall be threaded at the
48 bearing plate end a minimum of six inches. The threading shall be continuous spiral
49 deformed ribbing. Alternatively, threads may be cut into the soil nail if the bar size
50 is increased to the next larger size from the size specified in the Plans at no
51 additional cost to the Contracting Agency.

1
2 Tendon encapsulation, when specified in the Plans to provide additional corrosion
3 protection, shall be fabricated from one of the following:
4

- 5 1. High density corrugated polyethylene (PE) tubing conforming to the
6 requirements of ASTM D 3350 Class PE335520C or Class PE335400C,
7 ASTM D 1248, and AASHTO M 252 and having a nominal wall thickness
8 of 40 mils.
9
10 2. Corrugated, polyvinyl chloride (PVC) tubing conforming to ASTM D 1784,
11 Class 13464-B, and having a nominal wall thickness of 40 mils.
12

13 The soil nails shall be centralized within the sheathing with a minimum 0.2 inch grout
14 cover over the soil nail inside the sheath. The encapsulation shall be constructed
15 at the factory under controlled conditions. Field construction of the encapsulation
16 will not be permitted.
17

18 Welded shear studs shall conform to Section 9-06.15, and shall be welded in
19 accordance with Section 6-03.3(25).
20

21 6-15.3.GR6

22 **Construction Requirements**
23

24 6-15.3(8).GR6

25 ***Soil Nail Testing And Acceptance***
26

27 6-15.3(8)A.GR6

28 **Verification Testing**
29

30 6-15.3(8)A.INST1.GR6

31 Section 6-15.3(8)A is supplemented with the following:
32

33 6-15.3(8)A.OPT1.FB6

34 (April 5, 2004)

35 Soil nail verification tests shall be conducted as follows:
36

37 Verification	38 Soil Nail	39 Number of Successful
38 Test Limits	40 Row	41 Verification Tests Required
42 ***\$1\$\$***	43 ***\$2\$\$***	44 ***\$3\$\$***

45 6-17.GR6

46 **Permanent Ground Anchors**
47

48 6-17.1.GR6

49 **Description**
50

51 6-17.1.INST1.GR6

52 Section 6-17.1 is supplemented with the following:
53
54
55

1 6-17.1.OPT1.GB6

2 (January 7, 2013)

3 This work also consists of furnishing, field locating, installing, stressing and testing rock
4 bolts and rock dowels.

5
6 6-17.2.GR6

7 **Materials**

8
9 6-17.2.INST1.GR6

10 Section 6-17.2 is supplemented with the following:

11
12 6-17.2.OPT1.GB6

13 **(November 2, 2022)**

14 ***Permanent Ground Anchor Materials and Components***

15 A permanent ground anchor system is a structural system used to transfer tensile loads
16 to soil or rock. A permanent ground anchor system may also be specified in the Plans as
17 an anchor, a ground anchor, or a tieback. A permanent ground anchor system includes
18 all prestressing steel, anchorage devices, grout, coatings, sheathings and couplers if
19 used.

20
21 The Contractor shall either select a permanent ground anchor system from the Qualified
22 Products List or submit a Type 2 Working Drawing consisting of the following information:

- 23
24 1. Catalogue cuts or Manufacturer's Certificates of Compliance for anchorage
25 covers, bond breaker, centralizers, corrosion inhibiting grease, end caps, grout
26 admixtures, and strand tendon spacers.
27
28 2. Manufacturer's Certificates of Compliance for anchor heads, anchor head
29 wedges, bar tendon nuts, bar tendon couplers, tendon encapsulation tubing,
30 trumpet assemblies, and bar tendons or strand tendons. The Manufacturer's
31 Certificates of Compliance for the anchorhead wedges (grippers), and bar
32 tendon nuts and couplers, shall confirm compliance with the specified strength
33 requirements.
34

35 If the Contractor selects a permanent ground anchor system from the Qualified Products
36 List (QPL), the Contractor shall submit a Type 1 Working Drawing consisting of a
37 certificate from the permanent ground anchor system fabricator/supplier confirming that
38 the material specifications of the permanent ground anchor system components as
39 furnished conform to those specified in the QPL.
40

41 **Component Material Specifications**

42 Anchorage covers shall have a minimum thickness of 0.20 inches and shall conform
43 to either ASTM A 53 for pipe, or ASTM A 500 for tubing, or ASTM A 36, ASTM A 529,
44 ASTM A 572, ASTM A 588, or AASHTO M 270 for fabricated steel.
45

46 Anchorheads shall conform to either ASTM A 36, AASHTO M 169 Grades 1040 or
47 1045, ASTM A 521 Grade 1045, ASTM A 576 Grade 1045, or ASTM A 536 Grade
48 80-55-06.
49

50 Bearing plates shall conform to either ASTM A 36, ASTM A 572, ASTM A 588,
51 AASHTO M 270, ASTM A 529, or ASTM A 536.

1
2 Anchorhead wedges (grippers) shall conform to AASHTO M 169 Grade 12L14, case
3 hardened 0.012 to 0.015 inches deep to Rockwell C 59 to 65.
4

5 Bar tendon nuts shall conform to either ASTM A 29 Grade C1045, ASTM A 521 Class
6 CF, AASHTO M 169 Grades 1117 or 1144, or ASTM A 536 Grade 100-70-03, and
7 shall be capable of developing 100 percent of the GUTS of the bar tendon.
8

9 Bondbreaker shall conform to the requirements of Section 4.7 of the Post-Tensioning
10 Institute "Recommendations for Prestressed Rock and Soil Anchors", and shall be
11 fabricated from a smooth plastic tube or pipe having the following properties:
12

- 13 1. Resistant to chemical attack from aggressive environments, grout or
14 grease;
- 15 2. Resistant to aging by ultra-violet light;
- 16 3. Fabricated from material nondetrimental to the tendon;
- 17 4. Capable of withstanding abrasion, impact, and bending during handling
18 and installation;
- 19 5. Enable the tendon to elongate during testing and stressing; and
- 20 6. Allow the tendon to remain unbonded after lock-off.
21

22 Centralizers shall be fabricated from plastic, steel, or material which is
23 nondetrimental to the prestressing steel. Wood shall not be used.
24

25 Corrosion inhibiting grease shall conform to the requirements of Section 3.2.5 of the
26 Post-Tensioning Institute, "Specification For Unbonded Single Strand Tendons".
27

28 Couplers for bar tendons, if required, shall be furnished by the manufacturer of the
29 bar tendons and shall be AASHTO M 169 Grades 1045, 1117 or 1144, ASTM A 519
30 Grade 1026, or equivalent steel developing 100 percent of the GUTS of the bar
31 tendon without evidence of any failure. Couplers shall not be placed in the bond
32 zone. Couplers for strand tendons will not be allowed.
33

34 End caps shall conform to ASTM D 3350 Class PE324420C, Class PE334410C, or
35 Class PE335400C, ASTM D 1248, and AASHTO M 252, ASTM D 1784 Class
36 1346B, ASTM A 653, or ASTM A 36.
37

38 Grout shall be a neat cement grout or a sand-cement grout conforming to Section
39 9-20.3(4). The compressive strength for the grout shall be as required by the tieback
40 manufacturer. Grout components shall be as follows:
41

42 Admixtures shall conform to the requirements of Section 9-23.6. Expansive
43 admixtures shall only be added to the grout used for filling sealed
44 encapsulations, trumpets and anchorage covers. Accelerators will not be
45 permitted. Admixtures shall be compatible with prestressing steels and mixed
46 in accordance with the manufacturer's recommendations.
47

48 Aggregates shall conform to the requirements of Section 9-03.
49

50 Cement shall conform to the requirements of Section 9-01, and shall not contain
51 lumps or other indications of hydration.

1
2 Prestressing steel shall consist of either bar tendons with an ultimate tensile strength
3 of 150 ksi conforming to AASHTO M 275 Type II, or strand tendons with an ultimate
4 tensile strength of 270 ksi conforming to AASHTO M 203. The Contractor shall
5 submit Type 1 Working Drawings consisting of certified mill test results and typical
6 stress-strain curves along with samples from each heat, properly marked, for the
7 prestressing steel. The typical stress-strain curve shall be obtained by conventional
8 industry standard practices. The guaranteed ultimate strength, yield strength,
9 elongation, and composition shall be specified.

10
11 Strand tendon spacers shall be fabricated from plastic, steel, or material which is
12 nondetrimental to the prestressing steel. Wood shall not be used.

13
14 Tendon encapsulation, when specified in the Plans to provide additional corrosion
15 protection, shall be fabricated from one of the following:

- 16
17 1. High density corrugated polyethylene (PE) tubing conforming to the
18 requirements of ASTM D 3350 Class PE334410C, Class PE335520C or
19 Class PE335400C, ASTM D 1248, and AASHTO M 252 and having a
20 nominal wall thickness of 40 mils or greater.
- 21
22 2. Corrugated, polyvinyl chloride (PVC) tubing conforming to ASTM D 1784,
23 Class 13464-B, and having a nominal wall thickness of 40 mils or greater.

24
25 Trumpet providing the transition from the bearing plate to the unbonded length
26 corrosion protection shall be fabricated from a steel pipe or tube conforming to the
27 requirements of ASTM A 53 for pipe or ASTM A 500 for tubing. The trumpet shall
28 have a minimum wall thickness of 0.20 inches, and shall be seal welded to the
29 bearing plate. The seal weld shall be visually inspected only, in accordance with
30 Section 6-03.3(25)A.

31
32 6-17.2.OPT2.GB6

33 **(September 8, 2020)**

34 ***Rock Bolt and Rock Dowel Materials***

35 Rock bolts shall be continuously threaded steel reinforcement bars conforming to either;
36 AASHTO M 31 Grade 60 or 75 deformed bar, ASTM 615 Grade 60 or 75 deformed bar,
37 ASTM A 706 Grade 60 or 80 deformed bar, ASTM A 722 Grade 150 Type II, or AASHTO
38 M 275 Grade 150 Type II and shall be capable of being post-tensioned to the design
39 loads, performance test loads, and proof loads specified. The bending requirements of
40 AASHTO M 31, ASTM 615, and ASTM 706 shall be waived.

41
42 Rock dowels shall be continuously threaded steel reinforcement bars conforming to
43 either; AASHTO M 31 Grade 60 or 75 deformed bar, ASTM A 615 Grade 60 or 75
44 deformed bar, or ASTM A 706 Grade 60 or 80 deformed bar with a minimum size of a
45 No. 7 bar for Type 1 rock dowels, and a minimum size of a No.11 bar for Type 2 rock
46 dowels. The bending requirements of AASHTO M 31, ASTM 615, and ASTM 706 shall
47 be waived.

48
49 Anchor bar steel for rock bolts and dowels shall be provided with epoxy coating in
50 accordance with either AASHTO M 284, ASTM A 775, or ASTM A 934. The patching

1 material, compatible with coating material and inert in grout selected for use, shall be
2 supplied with each shipment.

3
4 Bearing plated shall be galvanized in accordance with either AASHTO M 111, AASHTO
5 M 232, ASTM A 123, or ASTM A 153, and shall conform to ASTM A 36 Grade 36 or ASTM
6 A 572 Grade 50. Bearing plate size will be reviewed and approved by the Engineer in
7 accordance with Section 6.10 of Post Tensioning Institute "Recommendations for
8 Prestressed Rock and Soil Anchors". Bearing plate thickness shall be not less than 3/4
9 inch and its dimensions not less than 2 inches greater than the drill hole diameter.

10
11 Nuts and couplers shall be galvanized in accordance with either AASHTO M 232 or
12 ASTM A 153 and exceed 100 percent of the MUTS (Minimum Ultimate Tensile Strength)
13 of the bar. For Grades 60, 75, and 80 bar the nuts and coupler shall conform to either
14 AASHTO M 169 or ASTM A 108. For Grade 150 bar the nuts shall conform to either
15 ASTM A 29 or ASTM A 536, couplers shall conform to ASTM A 29.

16
17 Washers shall be galvanized in accordance with AASHTO M 232 or ASTM A 153 and
18 conform to ASTM F 436. Spherical and beveled washers shall be galvanized in
19 accordance with AASHTO M 232 or ASTM A 153 and conform to ASTM A 536 or ASTM
20 A 47.

21
22 Centralizers shall be fabricated from plastic or material which is non-detrimental to the
23 pre-stressing steel. Wood shall not be used.

24
25 Grout shall conform to Section 9-20.3(2).

26
27 Sleeved bondbreakers for rock bolts shall be fabricated from plastic tube or pipe having
28 the following properties:

- 29
- 30 1. Resistant to chemical attack from aggressive environment, grout or corrosion
31 inhibiting compound.
 - 32
 - 33 2. Resistant to aging by ultra-violet light.
 - 34
 - 35 3. Non-detrimental to bolt. Resistant to damage caused by abrasion, impact,
36 crushing and bending during handling and installation.
 - 37
 - 38 4. Enable the bolt to elongate during testing.
 - 39
 - 40 5. Resistant to distortion caused by heat generated by the curing of the grout.

41
42 The wall thickness of sleeved bondbreaker shall meet the following:

43

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)

44
45
46 Corrosion inhibiting compounds shall be provided by the manufacturer or shall be either
47 a grease, wax, or gel and conforms to the following:
48

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.				
a. Chloride	ASTM D 512	10	10	10
b. Sulfides	APHA 4500S ² -E	10	10	10
c. Nitrates	ASTM D 3867	10	10	10
Soak Test: Salt Fog 50/50 Immersion, hrs.	ASTM B 117 Modified	720+	720+	720+
Sheathing Compatibility @150°F				
a. Hardness % max change	ASTM D 4289	15% change	15% change	15% change
b. Volume % max change	ASTM D 4289	10% change	10% change	10% change
c. Tensile Strength % max change	ASTM D 638	30% change	30% change	30% change
Note 1: A combination of wax and gel is possible when approved by the Engineer.				
Note 2: ASTM D 566 may be used when the wax product consistency warrant it.				

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13

Anchorage covers for rock bolts shall be galvanized in accordance with either AASHTO M 111 or ASTM F 2329 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:

1 6-17.3.OPT1.GB6

2 **(September 8, 2020)**

3 **Rock Bolt and Rock Dowel Construction Requirements**

4 **Rock Bolt and Rock Dowel Installation Experience Requirements**

5 The Contractor's foreman supervising the rock bolt and rock dowel work shall have
6 installed a minimum of 3,000 linear feet of post-tensioned rock bolts or rock dowels
7 on a minimum of five projects within the past five years.

8
9 The Contractor's rock bolt and rock dowel drill operators shall have installed a
10 minimum of 1,000 linear feet of post-tensioned rock bolts or rock dowels on a
11 minimum of three projects within the past five years.

12
13 The Contractor shall submit a Type 2 Working Drawing consisting of a list
14 documenting the rock bolt and rock dowel work experience of the foreman and drill
15 operators working on the project. This list shall include a brief description of each
16 project and a reference shall be included for each project listed. As a minimum, the
17 reference shall include an individual's name and current phone number.

18
19 **Rock Bolt and Rock Dowel Submittals**

20 The Contractor shall submit Type 2 Working Drawings consisting of a rock bolt and
21 rock dowel plan. The rock bolt and rock dowel plan shall include the following:

- 22
23 1. The proposed construction sequence and schedule.
- 24
25 2. The proposed drilling method and equipment.
- 26
27 3. The proposed drill hole diameter.
- 28
29 4. The minimum bond zone length for the rock bolts.
- 30
31 5. The proposed anchor steel bars, couplers, nut, bearing plate, flat washer,
32 and beveled washer specifications, including manufacturer's data sheets
33 and mill certificates. Manufacturer's verification for the bearing plate
34 thickness for the specified rock bolt and rock dowel capacities.
- 35
36 6. The proposed grout mix design, including manufacturer's certificate of
37 compliance and the procedures for placing the grout. For rock bolts, if two-
38 stage grouting is used, the means for determining the level of the primary
39 grout for the bond zone. If single-stage grouting is used, the fabrication
40 details for the bondbreaker in the free-stressing length, including corrosion
41 inhibiting compounds.
- 42
43 7. The proposed corrosion protection for the rock bolt and rock dowel
44 systems.
- 45
46 8. The proposed stressing procedures and stressing equipment.
- 47
48 9. The proposed construction method for upwardly inclined anchors.
- 49
50 10. The proposed equipment for measuring and recording the volume of grout
51 injected for production rock bolts and rock dowels.

1
2 11. The calibration data for each load cell, test jack, pressure gauge and
3 master pressure gauge to be used in the proof testing, in accordance with
4 the calibration requirements specified in Section 6-17.3(3).
5

6 **Rock Bolt and Rock Dowel Preconstruction Conference**

7 A rock bolt and rock dowel preconstruction conference may be held at the discretion
8 of the Engineer in accordance with Section 6-17.3(4).
9

10 **Rock Bolt and Rock Dowel Storage and Handling**

11 Rock bolt and rock dowel storage and handling shall conform to the Section 6-
12 17.3(6) requirements for permanent ground anchor tendons.
13

14 Field handling procedures for epoxy-coated rock bolts and rock dowels shall
15 conform to Sections 6-02.3(24)H, including providing padding between contact
16 points during storage and lifting, and covering epoxy-coated rock bolts and rock
17 dowels to minimize ultraviolet exposure.
18

19 **Rock Bolt and Rock Dowel Grout**

20 Grout shall meet the requirements of Section 9-20.3(2).
21

22 The use of epoxy or polyester resin as bonding agents will not be allowed.
23

24 **Rock Bolt and Rock Dowel Installation**

25 **General Requirements**

26 The Contractor shall install rock bolts and rock dowels at the location and
27 orientation in accordance with the rock bolt and rock dowel plan accepted by
28 the Engineer. For rock bolts, the Engineer will designate the required free-
29 stressing length. For rock dowels, the Engineer will designate the minimum
30 length.
31

32 The rock bolts and rock dowels shall be installed within five degrees of the
33 orientation angle specified by the Engineer. Unless otherwise specified by the
34 Engineer, the angle of installation shall be perpendicular to the rock face and
35 inclined slightly downward at the rock bolt and rock dowel location.
36

37 In all cases, at least three-quarters of the bearing plate shall be in contact with
38 the rock face. The orientation of the bearing plate against the rock surface
39 should be within twenty degrees of normal to the bar. Beveled washers shall
40 be used to accommodate all non-perpendicular installations, but should not
41 exceed twenty degrees. If the axis of the anchor is not within five degrees of
42 perpendicular to the rock surface, or within the angle provided by the beveled
43 washer up to a maximum of twenty degrees, or if the rock beneath the bearing
44 plate is not sound or is highly irregular as determined by the Engineer, a bearing
45 pad accepted by the Engineer shall be constructed so that the bar is not bent
46 when the nut is torqued during lock-off of the anchor. The Engineer may also
47 require the use of over-sized bearing plates, when the rock surface is weak or
48 highly weathered.
49

50 The use of hand drills for advancing the hole will not be allowed without the
51 written permission of the Engineer and demonstrated effectiveness by the

1 Contractor. The drill hole shall be sized to provide a minimum of 1/2 inches of
2 grout cover around the rock bolt or rock dowel. The Contractor shall flush the
3 drill hole of all drill cuttings and debris prior to installing the rock bolt or rock
4 dowel. Holes determined by the Engineer to be unacceptable for rock bolt and
5 rock dowel installation shall be re-drilled by the Contractor at no additional
6 expense to the Contracting Agency.
7

8 Rock bolts and rock dowels shall not be precut at the factory to lengths shown
9 in the Plans, but rather shall be delivered to the job site in bulk lengths and field
10 cut to the appropriate lengths. Each rock bolt and rock dowel shall be fitted
11 with a bearing plate, nut, and washers. Prior to placing rock bolts and rock
12 dowels in the drilled holes, all mill scale, flaking rust and grease shall be
13 removed from the rock bolt and rock dowel.
14

15 Centralizers shall be placed along the rock bolt or rock dowel at ten foot centers
16 prior to grouting, with a minimum of one centralizer per rock bolt or rock dowel.
17 The lowermost centralizer shall be located within 12 inches of the end of the
18 rock bolt or rock dowel. Centralizers shall be of sufficient strength to support
19 the weight of the anchor bar in the drilled hole and provide a minimum of 0.5
20 inches of grout cover.
21

22 The grout equipment shall produce a grout free of lumps and undispersed
23 cement. The pump shall be equipped with a pressure gauge near the discharge
24 end to monitor grout pressures. The grouting equipment shall be sized to
25 enable the grout to be pumped in one continuous operation. The grout shall be
26 injected from the lowest point of the drill hole. Sufficient grout shall be placed
27 in the drill hole to ensure full encapsulation of the rock bolt or rock dowel. The
28 volume of grout injected, and the corresponding grout injection pressure, for
29 each production rock bolt and rock dowel shall be measured using the methods
30 and equipment specified in the rock bolt and rock dowel plan.
31

32 The entire length of the rock bolt and rock dowel shall be corrosion-protected
33 with grout. Bare steel from field cutting of the anchor bar and any damaged
34 galvanizing on the bearing plates, nuts and washers shall be painted in
35 accordance with Section 6-07.3(10)P with one coat of galvanizing repair paint
36 conforming to Section 9-08.1(2)B.
37

38 **Specific Rock Dowel Requirements**

39 The Contractor shall install Type 1 rock dowels to achieve the design load
40 specified in the Plans; if the design load is not specified in the Plans a 25 kip
41 design load should be used. When the grout has reached final set, the
42 Contractor shall install the bearing plate, washers and nut. The nut shall be
43 torqued to a nominal 100 foot-pounds to ensure proper seating against the rock
44 face. The end of the completed rock dowel shall be trimmed to within six inches
45 of the rock face.
46

47 **Specific Rock Bolt Requirements**

48 The Contractor shall select the type of rock bolt and construction method to be
49 used. The Contractor shall embed and install rock bolts to achieve the design
50 load specified in the Plans. The rock bolt shall be sized so that the design load
51 does not exceed 60 percent of the minimum ultimate tensile strength (MUTS)

1 of the rock bolt. In addition, the rock bolt shall be sized so that the maximum
2 test load does not exceed 80 percent of the MUTS for Grade 150 bar or 90
3 percent of the minimum yield strength for Grade 75 bar. The end of the
4 completed rock bolt shall be trimmed to within six inches of the rock face, and
5 fitted with a galvanized steel anchorage cover filled with a corrosion-inhibiting
6 compound.

7
8 6-17.3(8).GR6

9 **Testing And Stressing**

10
11 6-17.3(8).INST1.GR6

12 Section 6-17.3(8) is supplemented with the following:

13
14 6-17.3(8).OPT1.GB6

15 **(January 7, 2013)**

16 **Rock Dowel Proof Testing**

17 At the discretion of the Engineer, up to five percent, but not less than three installed
18 production rock dowels as selected by the Engineer shall be proof tested. The
19 Contractor shall conduct the proof test, and the Engineer will interpret the results.

20
21 The rock dowel shall be tensioned to 25 kips for Type 1 rock dowels, with a calibrated
22 hollow-ram hydraulic jack using a bar extension and coupler attached to the rock
23 dowel. The test load specified for the particular type of rock dowel shall be held for
24 ten minutes. If no loss of load occurs over the ten minute hold period, the rock dowel
25 is acceptable.

26
27 The Engineer may require additional proof testing above the specified five percent
28 maximum if rock dowels fail the proof testing. All failed rock dowels shall be replaced
29 with an additional rock dowel installed in a separate hole at no additional expense
30 to the Contracting Agency.

31
32 Upon acceptance by the Engineer, the Contractor shall permanently stamp or etch
33 the bearing plate of or otherwise label each rock dowel with a unique number
34 assigned by the Engineer, the installation date and the total anchor length.

35
36 **Rock Bolt Testing**

37 The Contractor shall conduct rock bolt testing in accordance with the requirements
38 specified in this Section for permanent ground anchors, including testing equipment,
39 and test load monitoring, recording and documentation.

40
41 **Rock Bolt Performance Testing**

42 At the Engineer's discretion, the Contractor shall conduct up to three
43 performance tests to demonstrate the effectiveness of the construction method
44 for each rock bolt design, and when a significant change is proposed in the
45 construction method.

46
47 Rock bolts shall be tensioned to 120 percent of the design load of the rock bolt
48 for a holding time period of not more than 60 minutes. The Contractor shall
49 monitor the test load and shall document the results in accordance with the
50 requirements specified in this Section.

1 The Engineer will analyze the rock bolt performance test results and determine
2 whether the rock bolt is acceptable. A rock bolt is acceptable if both the
3 following conditions are satisfied:
4

- 5 1. The total elastic movement obtained at the maximum test load
6 exceeds 80 percent of the theoretical elastic elongation of the
7 stressing length.
8
- 9 2. The rock bolt carries the maximum test load with a creep rate that
10 does not exceed 0.04 inches between one and ten minutes, or 0.08
11 inches per log cycle of time between the six and 60 minute readings.
12

13 If the Contractor fails to successfully achieve these testing criteria, the Engineer
14 may require additional rock bolt performance tests to be completed at no
15 additional expense to the Contracting Agency.
16

17 Production rock bolting shall not begin until the Contractor has completed
18 performance testing of the design rock bolts and the test results have been
19 accepted by the Engineer.
20

21 **Rock Bolt Proof Testing**

22 Each production rock bolt shall be proof tested. Proof testing shall consist of
23 tensioning the rock bolt to 120 percent of the design load and holding that load
24 for ten minutes. If no loss of load occurs in this time period, the rock bolt is
25 accepted. If a rock bolt fails this proof test, the rock bolt shall be replaced with
26 an additional rock bolt installed in a separate hole.
27

28 After tensioning and achieving a successful rock bolt proof test, the load shall
29 be locked off at 100 percent of the design load and the remaining portion of the
30 rock bolt grouted, if appropriate. The end of the completed rock bolt shall be
31 trimmed to within six inches of the rock face.
32

33 Upon acceptance by the Engineer, the Contractor shall permanently stamp or
34 etch the bearing plate of or otherwise label each rock bolt with a unique number
35 assigned by the Engineer, the installation date, the stressing load, and the total
36 anchor length.
37

38 6-17.3(8)A.GR6

39 **Verification Testing**

40
41 6-17.3(8)A.INST1.GR6

42 Section 6-17.3(8)A is supplemented with the following:
43

44 6-17.3(8)A.OPT1.GB6

45 (August 3, 2015)

46 Verification tests shall be performed to verify the design of the anchor system.
47 These ground anchor test results shall verify the Contractor's design and be
48 accepted by the Engineer prior to ordering anchor material for the tieback
49 retaining walls. The tests shall be performed on sacrificial test anchors. A
50 minimum of two successful verification tests shall be conducted. The locations
51 shall be close to the anchor location of the production anchors. The test

1 locations shall be selected by the Contractor and accepted by the Engineer,
2 except where specific permanent ground anchor rows between specific station
3 limits are shown in the Plans.
4

5 Verification test anchors shall be constructed using the same procedures and
6 anchor geometry (drill hole diameter, bond length, unbonded length) as the
7 production anchors.
8

9 The anchor tested shall be loaded to 150 percent of the factored design load
10 (FDL). The prestressing tendon shall be proportioned such that the maximum
11 stress does not exceed 80 percent of the ultimate strength of the steel. The
12 jack shall be positioned at the beginning of the test such that unloading and
13 repositioning of the jack during the test will not be required.
14

15 The verification tests shall be made by incrementally loading the anchors in
16 accordance with the following schedule.
17

18 AL - Anchor Alignment Load
19 FDL - Factored Design Load
20

<u>Load</u>	<u>Hold Time</u>
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.

21
22
23
24
25
26
27
28
29
30
31
32 The test load shall be applied in increments of 25 percent of the factored design
33 load. Each load increment shall be held for at least 10 minutes. Measurement
34 of anchor movement shall be obtained at each load increment. The load-hold
35 period shall start as soon as the test load is applied and the anchor movement,
36 with respect to a fixed reference, shall be measured and recorded at 1 minute,
37 2, 3, 4, 5, 6, 10, 20, 30, 40, 50, and 60 minutes.
38

39 The verification test will be considered successful if the anchor meets the
40 criteria for a performance tested ground anchor in Section 6-17.3(9), and in
41 addition, a pull-out failure does not occur at the 1.50FDL maximum load.
42

43 The Engineer will give the Contractor a written order concerning ground anchor
44 construction within seven working days after completion of the verification tests.
45 This written order will either confirm the bond lengths as shown in the
46 Contractor's plans for ground anchors or reject the anchors based upon the
47 result of the verification tests.
48
49

1 6-17.3(8)B.GR6

2 **Performance Testing**

3
4 6-17.3(8)B.INST1.GR6

5 The performance test schedule following the second paragraph of Section 6-
6 17.3(8)B is revised to read:

7
8 6-17.3(8)B.OPT1.GB6

9 (January 3, 2011)

10 Performance Test Schedule

11
12 Load

13 AL

14 0.25FDL

15 AL

16 0.25FDL

17 0.50FDL

18 AL

19 0.25FDL

20 0.50FDL

21 0.75FDL

22 AL

23 0.25FDL

24 0.50FDL

25 0.75FDL

26 1.00FDL

27 AL

28 0.25FDL

29 0.50FDL

30 0.75FDL

31 1.00FDL

32 1.15FDL

33 AL

34 Jack to lock-off load

35
36 Where: AL - is the alignment load
37 FDL - is the factored design load.
38
39

40 6-17.3(8)C.GR6

41 **Proof Testing**

42
43 6-17.3(8)C.INST1.GR6

44 The proof test schedule following the first paragraph of Section 6-17.3(8)C is revised
45 to read:

46
47 6-17.3(8)C.OPT1.GB6

48 (January 3, 2011)

49 Proof Test Schedule

50
51 Load

1
2 AL
3 0.25FDL
4 0.50FDL
5 0.75FDL
6 1.00FDL
7 1.15FDL
8 Jack to lock-off load
9

10 Where: AL - is the alignment load
11 FDL - is the factored design load
12

13 6-17.4.GR6

14 **Measurement**

15
16 6-17.4.INST1.GR6

17 Section 6-17.4 is supplemented with the following:
18

19 6-17.4.OPT1.GB6

20 (January 4, 2010)

21 Rock bolts will be measured by the linear foot of rock bolt (unbonded plus bonded length)
22 installed, successfully proof tested, and accepted.
23

24 Rock dowels will be measured by the linear foot of rock dowel installed and accepted.
25

26 6-17.5.GR6

27 **Payment**

28
29 6-17.5.INST1.GR6

30 Section 6-17.5 is supplemented with the following:
31

32 6-17.5.OPT1.GB6

33 (January 4, 2010)

34 "Rock Bolt", per linear foot.

35 The unit contract price per linear foot for "Rock Bolt" shall be full pay for performing the
36 work as specified, including all performance and proof testing, and all grout injection up
37 to 200 percent of that calculated at each production rock bolt location.
38

39 "Rock Dowel Type _", per linear foot.

40 The unit contract price per linear foot for "Rock Dowel Type _" shall be full pay for
41 performing the work as specified, including all proof testing, and all grout injection up to
42 200 percent of that calculated at each production rock dowel location.
43

44 "Force Account Rock Bolt & Rock Dowel Grout Exceedance", force account.

45 Payment for "Force Account Rock Bolt & Rock Dowel Grout Exceedance", for all grout
46 injection over 200 percent of that calculated at each production rock bolt and rock dowel
47 location, will be by force account as provided in Section 1-09.6. Wasted grout will not be
48 measured for payment.
49

1 For the purposes of providing a common proposal for all bidders, the Contracting Agency
2 has entered an amount for the item "Force Account Rock Bolt & Rock Dowel Grout
3 Exceedance" in the bid proposal to become a part of the total bid by the Contractor.
4

5 6-18.GR6

6 **Shotcrete Facing**

7
8 6-18.2.GR6

9 **Materials**

10
11 6-18.2.INST1.GR6

12 Section 6-18.2 is supplemented with the following:
13

14 6-18.2.OPT2.GB6

15 **(August 3, 2015)**

16 ***Coloration for Shotcrete Facing Finishing Alternative C***

17 If shotcrete facing finishing Alternative C is specified, the Contractor shall provide
18 shotcrete coloration for finishing the sculptured shotcrete to match the color of the natural
19 surroundings. Acceptance of the final appearance of the coloration will be based on the
20 pre-production test panel. Acceptance of the long-term properties of the coloration
21 material will be based on a manufacturer's certification, submitted as a Type 1 Working
22 Drawing which verifies the following to be true about the product:
23

- 24 1. Resistance to alkalis in accordance with ASTM D 543.
- 25
- 26 2. Demonstrates no change in coloration after 1,000 hours of testing in
27 accordance with ASTM D 822.
- 28
- 29 3. Does not oxidize when tested in accordance with ASTM D 822.
- 30
- 31 4. Demonstrates resistance to gasoline and mineral spirits when tested in
32 accordance with ASTM D 543.
- 33

34 Additionally, the certification shall provide the product name, proposed mix design and
35 application method, and evidence of at least one project where the product, using the
36 proposed mix and application method, was applied and which has provided at least five
37 years or more of acceptable durability and color permanency.
38

39 6-18.2.OPT3.GB6

40 **(August 3, 2015)**

41 ***Fiber Reinforcement for Shotcrete Facing***

42 Fiber reinforcement for shotcrete facing shall be either steel fibers or macro synthetic
43 fibers.
44

45 Steel fibers shall be cold drawn, deformed steel Type 1 or Type 4 fibers conforming to
46 ASTM A 820 with a minimum tensile strength of 120 ksi. Steel fibers shall have a length
47 between 1.0 and 1.50 inches and shall have a length to diameter ratio of less than 80.
48 The steel fibers used shall be manufactured specifically for shotcrete applications.
49

1 Macro synthetic fibers shall be deformed polyolefin Type 3 fibers conforming to ASTM C
2 1116. Macro synthetic fibers shall have a length between 1.0 and 2.0 inches and shall
3 be between 0.02 and 0.04 inches in diameter. The macro synthetic fibers used shall be
4 manufactured specifically for shotcrete applications.

5
6 Fiber reinforcement will be accepted based on the Manufacturer's Certificate of
7 Compliance.

8
9 6-19.GR6

10 **Shafts**

11
12 6-19.2.GR6

13 **Materials**

14
15 6-19.2(9-36.2(2)).GR6

16 ***Shaft Slurry***

17 ***Synthetic Slurry***

18 Section 9-36.2(2) is supplemented with the following:

19
20 6-19.2(9-36.2(2)).OPT1.GB6

21 (January 2, 2012)

22 Salt water shall not be used with synthetic slurry for shafts. Fresh water only
23 shall be used.

24
25 6-19.2(9-36.4).GR6

26 ***Access Tubes and Caps***

27 The first paragraph of Section 9-36.4 is revised to read:

28
29 6-19.2(9-36.4).OPT1.GR6

30 (October 3, 2022)

31 Access tubes for CSL or TIP testing shall be steel pipe of 0.145 inches minimum
32 wall thickness and at least 1½ inch inside diameter, or shall be Sonitec V2 CSL
33 Tubes manufactured in America by Dextra. Dextra CSL tubes shall use Dextra caps
34 and connectors.

35
36 6-19.3.GR6

37 **Construction Requirements**

38
39 6-19.3(3).GR6

40 ***Shaft Excavation***

41
42 6-19.3(3).INST1.GR6

43 Section 6-19.3(3) is supplemented with the following:

44
45 6-19.3(3).OPT1.GB6

46 (January 2, 2012)

47 Variations in the bearing layer elevation from that shown in the Plans are anticipated.
48 The Contractor shall have equipment on-site capable of excavating an additional 20
49 percent of depth below that shown in the Plans.

1 6-19.3(3)B.GR6

2 **Temporary and Permanent Shaft Casing**

3
4 6-19.3(3)B.INST1.GR6

5 Section 6-19.3(3)B is supplemented with the following:

6
7 6-19.3(3)B.OPT2.GB6

8 (January 2, 2012)

9 Shaft casing shall be equipped with cutting teeth or a cutting shoe, and installed
10 by either rotating or oscillating the casing. Installing the casing by vibratory
11 means will not be allowed.

12
13 6-19.3(3)B4.GR6

14 **Temporary Telescoping Shaft Casing**

15
16 6-19.3(3)B4.INST1.GR6

17 The second paragraph of Section 6-19.3(3)B4 is revised to read as follows:

18
19 6-19.3(3)B4.OPT1.GB6

20 (January 2, 2012)

21 Temporary telescoping casing will not be allowed for bridge end pier shafts.

22
23 6-19.3(3)I.GR6

24 **Required Use of Slurry in Shaft Excavation**

25
26 6-19.3(3)I.INST1.GR6

27 Section 6-19.3(3)I is supplemented with the following:

28
29 6-19.3(3)I.OPT1.GB6

30 (August 3, 2015)

31 If the Contractor is utilizing casing that is adequately sealed into competent soils
32 such that the water cannot enter the excavation, the Contractor may, with the
33 Engineer's permission, continue excavation in wet soils without slurry provided
34 the water level within the casing does not rise or exhibit flow.

35
36 6-19.3(4).GR6

37 ***Slurry Installation Requirements***

38
39 6-19.3(4)A.GR6

40 **Slurry Technical Assistance**

41
42 6-19.3(4)A.INST1.GR6

43 Section 6-19.3(4)A is supplemented with the following:

44
45 6-19.3(4)A.OPT1.FB6

46 (January 2, 2012)

47 The slurry manufacturer's representative shall be present during construction
48 and completion of the first shaft excavated at the following specific shaft sites:

49 *** \$\$\$ **

1 6-19.3(5).GR6

2 **Assembly and Placement of Reinforcing Steel**

3
4 6-19.3(5).INST1.GR6

5 Section 6-19.3(5) is supplemented with the following:

6
7 6-19.3(5).OPT1.GB6

8 (August 1, 2016)

9 For those shafts with a specified minimum penetration into the bearing layer and no
10 specified tip elevation, the Contractor shall furnish each shaft steel reinforcing bar
11 cage, including access tubes for non-destructive QA testing in accordance with
12 Section 6-19.3(6), 20 percent longer than specified in the Plans. The Contractor
13 shall add the increased length to the bottom of the cage. The Contractor shall trim
14 the shaft steel reinforcing bar cage to the proper length prior to placing it into the
15 excavation. If trimming the cage is required and access tubes are attached to the
16 cage, the Contractor shall either shift the access tubes up the cage, or cut the access
17 tubes provided that the cut tube ends are adapted to receive the watertight cap as
18 specified.

19
20 6-19.3(6).GR6

21 **Contractor Furnished Accessories for Nondestructive QA Testing**

22
23 6-19.3(6)E.GR6

24 **Thermal Wire and Thermal Access Points (TAPs)**

25
26 6-19.3(6)E.INST1.GR6

27 Section 6-19.3(6)E is supplemented with the following:

28
29 6-19.3(6)E.OPT1.GB6

30 (January 2, 2018)

31 The thermal wire and associated couplers shall be obtained from the following
32 source:

33
34 Pile Dynamics, Inc.
35 30724 Aurora Road
36 Cleveland, OH 44139
37 (216) 831-6131
38 FAX: (216) 831-0916
39 www.pile.com

40
41 6-19.3(7).GR6

42 **Placing Concrete**

43
44 6-19.3(7)D.GR6

45 **Requirements for Placing Concrete Underwater**

46
47 6-19.3(7)D.INST1.GR6

48 Section 6-19.3(7)D is supplemented with the following:

1 6-19.3(7)D.OPT1.GB6

2 (January 2, 2012)

3 The Contractor may use a tremie instead of a concrete pump, subject to the
4 following conditions:

- 5
- 6 1. The tremie shall have a hopper at the top that empties into a
7 watertight tube at least eight inches in diameter.
 - 8
 - 9 2. The discharge end of the tube on the tremie shall include a device to
10 seal out water while the tube is first filled with concrete.
 - 11

12 6-19.4.GR6

13 **Measurement**

14

15 6-19.4.INST2.GR6

16 Section 6-19.4 is supplemented with the following:

17

18 6-19.4.OPT3.GB6

19 (January 2, 2012)

20 Fresh water for shaft slurry will be measured in accordance with Section 2-07.4.

21

22 6-19.5.GR6

23 **Payment**

24

25 6-19.5.INST1.GR6

26 Section 6-19.5 is supplemented with the following:

27

28 6-19.5.OPT2.GB6

29 (January 2, 2012)

30 "Fresh Water for Shaft Slurry", per M gal.

31

32 6-20.GR6

33 **Buried Structures**

34

35 6-20.1.GR6

36 **Description**

37

38 6-20.1(1).GR6

39 **Definitions**

40

41 6-20.1(1).INST1.GR6

42 The list of types of buried structures in Section 6-20.1(1) is supplemented with the
43 following:

44

45 6-20.1(1).OPT1.GB6

46 (March 20, 2025)

47 **Composite Arch System (CAS):** A buried Structure consisting of a two-component
48 Superstructure placed on reinforced concrete foundations. The Superstructure
49 consists of fiber-reinforced polymer (FRP) composite hollow tube external
50 reinforcement/stay-in-place forms filled with expansive self-consolidating concrete

1 (ESCC), supporting custom pultruded corrugated FRP deck panels retaining the
2 structural backfill.

3
4 The Superstructure of the CAS shall be as designed and supplied by:

5
6 AIT Composites - Maine
7 33 Steamboat Ave.
8 Winterport, ME 04496
9 1-888-491-1516
10 <https://www.aitcomposites.com/>

11
12 Fabrication shall be by the supplier or a licensed designee as designated by a Type
13 1 Working Drawing.

14
15 6-20.2.GR6

16 **Materials**

17
18 6-20.2.INST1.GR6

19 Section 6-20.2 is supplemented with the following:

20
21 6-20.2.OPT1.GB6

22 **(January 10, 2022)**

23 **Composite Arch System**

24 **FRP Composite Hollow Tubes**

25 Glass fibers shall be type E-glass manufactured in accordance with ASTM D578
26 Section 4.2.2 and tested in accordance with ASTM D2343.

27
28 Carbon fibers shall be standard modulus fibers. Tensile strength, tensile modulus,
29 and strain of the fibers shall be documented in accordance with the manufacturer's
30 test specifications.

31
32 Resin shall be epoxy vinyl ester resin with viscosity suitable for infusion. Clear
33 casting tensile strength and tensile modulus shall be tested in accordance with
34 ASTM D638. Clear casting flexural strength and modulus shall be tested in
35 accordance with ASTM D790. Heat distortion temperature shall be documented in
36 accordance with ASTM D648.

37
38 FRP components will be accepted based on a Manufacturer's Certificate of
39 Compliance. The certificate shall include test results for physical, material, and
40 durability properties specified in Section 3 of the *AASHTO LRFD Guide Specification*
41 *for Design of Concrete Filled FRP Tubes for Flexural and Axial Members*.

42
43 **FRP Deck Panels and Associated Fasteners and Adhesive Sealant**

44 The resin shall be premium grade, chemically resistant, UV stabilized polyurethane
45 of the type specified in the fabrication shop drawings.

46
47 The glass reinforcement shall be E-Glass that is straight and continuous, with fibers
48 oriented in three directions (0, 45, 90-degrees with respect to the length of the
49 panel). The glass content shall be a minimum of 70-percent by weight.
50

1 The FRP deck panels shall have a class B flame spread rating of 75 or less when
2 tested in accordance with ASTM E84, with the thickness, width, and corrugation
3 height specified in the fabrication shop drawings.
4

5 The fasteners attaching the FRP deck panels to the FRP composite hollow tubes
6 shall be drill point type AISI 410 stainless steel screws as specified in the fabrication
7 shop drawings.
8

9 The adhesive sealing the longitudinal joint of the FRP deck panels shall be a two-
10 part urethane sealant as specified in the fabrication shop drawings.
11

12 **Expansive Self Consolidating Concrete (ESCC)**

13 Total Cementitious Materials (CM) shall include cement, fly ash, and an expansive
14 cement component specified by the composite arch bridge system supplier.
15

16 Cement shall be Type I/II or Type IL portland cement conforming to AASHTO M 85.
17

18 An expansive cement product conforming to ASTM C845 Type K shall be added at
19 the rate as specified in Item 8 of the mix design parameters specified below.
20

21 Class F fly ash conforming to Section 9-23.9 or ground granulated blast furnace slag
22 conforming to Section 9-23.10 may be added at the allowable rates specified in Item
23 9 of the mix design parameters specified below.
24

25 **ESCC Mix Design**

26 The ESCC mix shall be designed in accordance with Section 6-02.3(2)A2 and
27 the following requirements:
28

- 29 1. Minimum 28-day compressive strength = 6000 psi.
- 30 2. Maximum size of coarse aggregate = 3/8-inch.
- 31 3. Fine aggregate proportions shall be 50 ± 5 -percent of the total
32 aggregate by volume, to be determined by trial batching as required
33 to attain specified strength, Visual Stability Index (VSI) and flow
34 characteristics.
35
- 36 4. Type F high range water reducer conforming to Section 9-23.6(7) is
37 required and shall be used at the concrete supplier's recommended
38 dosage.
39
- 40 5. Viscosity modifying admixture conforming to Section 9-23.6(9) may
41 be added at the concrete supplier's recommended dosage to
42 improve mix stability.
43
- 44 6. Hydration stabilizer (retarder) is required to ensure sufficient water
45 and time to begin ettringite formation of the Type K expansive
46 cement.
47
- 48 7. Minimum Cementitious Material (CM) = 850 LB./C.Y.
49
50
51

- 1 8. The mix shall contain Type K expansive cement at a rate of 15-
2 percent by weight of total cementitious material. This quantity may
3 be revised by a CTS Component materials technician that has
4 reviewed mix design and has provided a recommended Type K
5 proportion for a specific mix supplier.
6
- 7 9. The mix may include Section 9-23.9 Class F fly ash at a rate less
8 than 25-percent by weight of cementitious material, or Section 9-
9 23.10 Grade 100 or Grade 120 ground granulated blast furnace slag
10 at a rate less than 50-percent, by weight of cementitious material.
11
- 12 10. The water/cementitious material ratio (W/CM) shall be between 0.40
13 and 0.45.
14
- 15 11. Air content shall be 0-percent to 5.0-percent.
16

17 ESCC shall meet the following requirements in accordance with ASTM C1611
18 or AASHTO T 347 and AASHTO T 351 for slump flow and visual stability index:
19

- 20 1. Slump flow shall be between 24 and 30-inches
21
- 22 2. Visual stability index shall be between 0 and 1.0.
23

24 Additional concrete mix design requirements of the supplier shall be shown in
25 the FRP tube fabrication shop drawings.
26

27 Trial batches shall be performed prior to use to verify compressive strength,
28 slump flow, and visual stability index. Test results shall be submitted as a Type
29 1 Working Drawing. The trial batch requirement may be waived at the discretion
30 of the Engineer if the concrete supplier is experienced in producing ESCC.
31

32 Each batch of ESCC delivered to the jobsite shall be tested for slump flow and
33 visual stability index. If the ESCC fails to meet the requirements re-dosing with
34 additives is permitted. The Engineer may reject ESCC that does not meet
35 specified requirements.
36

37 6-20.3.GR6

38 **Construction Requirements**

39 6-20.3.INST1.GR6

40 Section 6-20.3 is supplemented with the following:
41

42 6-20.3.OPT1.GB6

43 **(January 10, 2022)**

44 **Composite Arch System**

45 **Design**

46 The CAS design, Superstructure and foundation, shall conform to Section 6-20.3(1),
47 and the following:
48
49

1 The CAS shall be designed in accordance with the AASHTO LRFD Bridge
2 Design Specifications, the AASHTO LRFD Guide Specifications for Design of
3 Concrete-Filled FRP Tubes for Flexural and Axial Members, the ASCE Pre-
4 Standard for LRFD of Pultruded FRP Structures, and other applicable
5 specifications.
6

7 The CAS shall be designed by the supplier on a project-specific basis by a
8 licensed professional engineer, with design and load rating calculations and
9 fabrication shop drawing Working Drawings provided to the Contractor.
10

11 **Submittals**

12 Submittals for CAS Superstructure and foundation shall conform to Section 6-
13 20.3(2).
14

15 **Foundation**

16 The CAS foundation shall be constructed in accordance with Sections 6-20.3(5) and
17 6-20.3(6).
18

19 **Fabrication**

20 The CAS structural components shall be fabricated, either by the supplier or an
21 independent fabricator licensed by the supplier, in accordance with Section 6-
22 20.3(7) and the following:
23

24 **Fabrication Quality Control/Quality Assurance**

25 FRP composite hollow tubes shall be fabricated in accordance with the
26 supplier's QC/QA plan and standard operating procedures. The portions of the
27 QC/QA plan and procedures which do not contain trade secret material will be
28 submitted to the Contracting Agency for review upon Engineer's request prior
29 to beginning fabrication.
30

31 The FRP laminate comprising the tube shell shall be tested for tensile strength.
32 Test result documentation of the mechanical properties and the required design
33 values shall be submitted as a Type 1 Working Drawing.
34

35 A minimum of five test specimens shall be obtained from each FRP composite
36 hollow tube. A minimum of two specimens per tube shall be tested. If the mean
37 of the two tests from any one tube fails to meet or exceed the required design
38 value, then at least three more specimens from the corresponding tube shall be
39 tested. If the mean of the three additional specimens does not meet or exceed
40 the design value, the tube will be rejected and replaced. All test results shall
41 be submitted as a Type 1 Working Drawing prior to placing and assembling the
42 tubes.
43

44 **FRP Composite Hollow Tube Fabrication**

45 The FRP composite hollow tubes may be fabricated as specified below using a
46 closed mold vacuum assisted resin transfer method (VARTM) of composite
47 manufacturing:
48

49 **Reinforcement Storage and Preparation**

50 Fabrics shall be stored in a clean, dry environment in the original
51 packaging. They shall be protected from water, dirt, grease, grinding dust,

1 and other foreign matter. The fabrics shall be cut on a clean cutting
2 surface, free of any deleterious material that may adhere to the fabrics prior
3 to layup. Longitudinal fabric shall not be spliced. Hoop reinforcement may
4 be spliced.

5
6 **Chemicals**

7 Vinyl ester resins and other chemicals necessary for catalyzing the infusion
8 matrix shall be stored in accordance with the manufacturer's
9 recommendations.

10
11 **Vacuum Assisted Resin Transfer**

12 Prior to vacuum infusion of the vinyl ester matrix, the fabricator shall
13 thoroughly seal the tooling and demonstrate that the sealed tooling can
14 obtain a minimum workable vacuum pressure and a drop test. Chemical
15 additives and catalysts to be combined with the vinyl ester resin shall be
16 measured by weight, or the corresponding volume, based on the batch
17 weight of the vinyl ester resin. The fabricator shall maintain documentation
18 of the promotion rates and the actual amount of catalyst used for each
19 infusion.

20
21 The infusion tank shall be charged with a sufficient amount of resin at all
22 times to prevent air bubbles from entering the infusion ports in the tooling.
23 Once resin is introduced into the tooling, the infusion process shall continue
24 uninterrupted until it has been demonstrated that all evacuation ports have
25 a surplus of resin flowing past the finished surface of the tooling and that
26 no less than the predicted volume of resin has been introduced into the
27 tool.

28
29 **Post Processing**

30 Once the laminate has been allowed to harden, the FRP composite hollow
31 tubes shall be removed from the form with care so as not to induce stresses
32 into the curing laminate. The laminate shall reach a minimum Barcol
33 hardness value of 35 prior to removing the tubes from the form.

34
35 **Tolerances**

36 The finished FRP composite hollow tubes shall conform to the dimensions
37 set forth in the accepted Type 2 Working Drawing fabrication shop
38 drawings of Section 6-20.3(2). The diameter shall not vary in any one
39 section by more than one-percent of the dimension given in the fabrication
40 shop drawings. The tubes shall be checked for shape variations. No tube
41 may vary from the shape specified in the fabrication shop drawings, except
42 for diameter, by more than 2-inches or one-percent of the dimension,
43 whichever is smaller.

44
45 **Composite Arch System Placement and Assembly**

46 The CAS structural components shall be erected in accordance with Section 6-
47 20.3(8) and the following:
48

1 **Assignment of Responsibility**

2 The supplier shall furnish the Contractor the FRP composite hollow tubes, FRP
3 deck panels, stainless steel fasteners, and the structural adhesive at the project
4 site on the date requested by the Contractor.

5
6 The Contractor is responsible for the complete installation of the FRP
7 composite hollow tubes including but not limited to unloading and storing the
8 tubes at the project site, erecting and setting the tubes into the reinforced
9 concrete foundation, filling the tubes with ESCC, inspecting the filled tubes for
10 voids, and filling such voids if any are found.

11
12 After receiving the accepted fabrication shop drawings, the Contractor shall
13 notify the fabricator to fabricate and deliver the FRP composite hollow tubes,
14 FRP deck panels, stainless steel fasteners, and the structural adhesive to the
15 project site.

16
17 **Handling and Storage at the Project Site**

18 Care shall be taken when handling the FRP composite hollow tubes such that
19 no damage is caused to the unfilled tubes. When moved or placed by hand,
20 tubes shall be stabilized to prevent tipping over. When moved by hoist, straps
21 shall provide at least 2 inches of padded contact area.

22
23 The Contractor is responsible for receiving, unloading, and storing the FRP
24 deck panels. All FRP deck panels shall be handled with care and protected
25 from cuts, scratches, and abrasions. FRP deck panels shall be stored on
26 blocking off the ground and kept clean and dry. Damaged panels shall be
27 replaced at no additional expense to the Contracting Agency.

28
29 **FRP Tube and FRP Panel Placement and Assembly**

30 The Contractor is advised that the FRP composite hollow tubes have some
31 flexibility prior to filling with ESCC, and tubes out of tolerance without any
32 outside loading may be brought into tolerance with a small force applied at each
33 end. All tubes shall be clearly marked by the fabricator in accordance with the
34 designation in the fabrication shop drawings.

35
36 The FRP composite hollow tubes shall be erected in a vertical position and FRP
37 deck panels installed prior to filling the tubes with ESCC. The maximum
38 allowable variation of installed tubes shall be $\pm 1/2$ -inch in-plane and out-of-
39 plane. The FRP deck panels shall be installed over the tubes after the tubes
40 are erected and aligned. The tubes shall be set into the reinforced concrete
41 foundation as shown in the Plans. Care shall be taken when placing the
42 foundation and vibrating around the base of the tubes as to not damage or
43 displace the tubes.

44
45 FRP deck panels shall be installed as shown in the Plans using fasteners
46 provided. The first row of FRP deck panels shall be installed on each side prior
47 to casting the foundation stem wall. The remaining FRP deck panels shall be
48 installed after the foundation stem wall has been cast and prior to filling the FRP
49 composite hollow tubes with ESCC.

1 Adhesive provided shall be used in accordance with the manufacturer's
2 recommendations to seal the longitudinal joint between the panels. FRP deck
3 panels shall be installed starting at the bottom at both ends of the FRP
4 composite hollow tubes and proceeding to the apex. The Contractor shall
5 assure that the starter panels are placed as shown in the Plans to a level line.
6 A closure plate is provided at the apex to be field-trimmed to fit and attached
7 after the tubes are filled with ESCC.
8

9 Once the foundation has achieved 2000 psi minimum concrete compressive
10 strength, the erected FRP composite hollow tubes shall be filled with ESCC.
11

12 **Placing ESCC Tube Fill**

13 ESCC will be accepted as a self-consolidating concrete in accordance with
14 Section 6-02.3(5).
15

16 ESCC shall be placed in accordance with Section 6-02.3(6) and the following:
17

18 All FRP composite hollow tubes shall be filled with ESCC under the
19 observation of the Engineer. The tubes shall be filled in one continuous
20 operation. Vibration may be necessary for shallow rise tubes and such use
21 of vibration will be determined by the Engineer. The tubes shall be filled
22 through the fill holes that are field drilled by the Contractor to the size and
23 locations shown in the fabrication shop drawings.
24

25 ESCC placement shall be accomplished using a method capable of
26 directing the ESCC into the 3-inch fill hole and regulating placement speed
27 to prevent voids. Acceptable methods include the use of a boom type
28 pump truck, a trailer pump, or a standard concrete bucket. The Contractor
29 shall have an alternative method available in the event of an equipment
30 malfunction.
31

32 All FRP composite hollow tubes shall undergo auditory tap testing after
33 ESCC placement to ensure complete filling of tubes. In the event that voids
34 are discovered, they shall be injected with grout conforming to Section 9-
35 20.3(2) for large voids or epoxy bonding agent conforming to Section 9-
36 26.1 for small voids. The maximum permitted hole size for grout injection
37 is 3/4-inch. The supplier shall be provided 72-hour minimum notice and
38 offered the opportunity to be present for the filling of the tubes and tap
39 testing.
40

41 **Backfilling the Assembled Composite Arch System**

42 The CAS shall be backfilled in accordance with Section 6-20.3(9) and the following:
43

44 ESCC fill in the FRP composite hollow tubes shall reach a minimum
45 compressive strength of 3000 psi prior to any backfilling or compaction activities
46 on the Structure other than headwall connection work.
47

48 Select gravel backfill shall extend to the lines and grades shown in the Plans
49 and shall be placed in accordance with Section 2-09.3(1)E and as follows:
50

1 Backfill shall be placed in maximum 6-inch lifts with each layer compacted
2 to 95-percent of the maximum density determined by the Compaction
3 Control Test in accordance with Section 2-03.3(14)D. Compaction within
4 4-feet of the Structure shall be accomplished with hand compactors only.
5 Vibratory rollers may be used outside of this zone and above the Structure
6 provided there is at least 24-inches of compacted cover above the
7 Structure.

8
9 All backfill shall be carefully placed to avoid damage to the Structure.

10
11 Lightweight equipment of an operating weight less than 12-tons may be
12 operated over the Structure provided there is at least 12-inches of cover.
13 Construction equipment of an operating weight 12-tons or greater may be
14 used after 24-inches of compacted backfill has been placed over the
15 Structure. In no case may the loading exceed the AASHTO design loading
16 HL-93 without the Engineer's written permission.

17
18 Backfill shall be placed in lifts such that at no time will the elevation
19 difference exceed 24-inches between opposite sides of the Structure.
20

21 6-20.5.GR6

22 **Payment**

23
24 6-20.5.INST1.GR6

25 Section 6-20.5 is supplemented with the following:

26
27 6-20.5.OPT1.GB6

28 (January 10, 2022)

29 Payment for the Composite Arch System will be made with the lump sum item,
30 "Contractor Designed Buried Structure No. ____" shall be full payment for the Work as
31 specified.
32

33 6-SA1.FR6

34 **6-23 POLYESTER CONCRETE OVERLAY**
35 **(September 3, 2024)**

36 **6-23.1 Description**

37 This Work consists of installing polyester concrete bridge deck overlays, preparing the
38 surface of the concrete bridge deck, removing and replacing unsound concrete (deck repair),
39 surveying, and other Work.
40

41 **6-23.1(1) Definitions**

42 **Existing Bridge Deck Surface** - The surface of the existing concrete bridge deck. It
43 follows wheel ruts and other anomalies.
44

45 **Polyester Concrete Overlay System** - All component materials used to complete the
46 system, including the polyester concrete (which is composed of polyester concrete
47 binder and aggregate), primer, initiators, promoters, catalysts, accelerators, inhibitors,
48 sand for abrasive finish, and crack sealing resin. All component materials of the polyester
49 concrete system shall be provided through a single System Provider.

1
2 **System Provider** – The single corporate entity that provides the Polyester Concrete
3 Overlay System that will be installed on this Contract. There shall be only one System
4 Provider.

5
6 **System Provider Technical Representative** - A duly authorized agent of the System
7 Provider, who has the requisite skills and experience.

8
9 **6-23.1(2) Qualifications**

10 The following shall have the minimum experience as described.

11
12 **6-23.1(2)A System Provider**

13 The proposed System Provider shall have had direct control and responsibility for
14 the proposed polyester concrete overlay system for the qualifying projects for the
15 overlay system. Qualifying Projects - The Polyester Concrete Overlay System shall
16 have been successfully placed on three overlay projects of similar size and scope
17 to the proposed installation within the past ten years. Previously installed overlay
18 must be in service for a minimum of two years showing no signs of installation
19 deficiency, major distress, excessive wear, non-reflective in-service cracks,
20 insufficient skid resistance, or delamination.

21
22 **6-23.1(2)B System Provider Technical Representative**

23 The System Provider Technical Representative shall have a minimum of two years
24 of experience with the exact polyester concrete overlay system to be used on this
25 Contract and be completely competent in all aspects of the Work. The Technical
26 Representative shall have experience on a minimum of three successful projects of
27 similar size and scope to the proposed installation. Thin polymer (broadcast) overlay
28 experience will not be accepted.

29
30 **6-23.1(2)C Polyester Concrete Placement Contractor and Workers**

31 The Contractor that performs the work of placing the polyester concrete system shall
32 have experience on three projects within the past two years placing polyester
33 concrete overlays using equipment as specified herein. Thin polymer (broadcast)
34 overlay experience will not be accepted.

35
36 The following employees shall also meet these qualifications:

- 37
38 1. One on-site supervisor.
39
40 2. One volumetric mixer operator.
41
42 3. One finishing machine operator.
43

44 **6-23.2 Materials**

45 Materials shall meet the requirements of the following sections:

46
47 Polyester Concrete Binder 6-23
48 Primer 6-23
49 Aggregate for Polyester Concrete 6-23
50 Sand for Abrasive Finish 6-23
51 Crack Sealing Materials 6-23

1	Portland Cement	9-01.2(1)
2	Blended Hydraulic Cement	9-01.2(1)B
3	Fine Aggregate	9-03.1
4	Coarse Aggregate	9-03.1
5	Admixtures	9-23.6
6	Water for Concrete	9-25.1

7

8 **6-23.2(1) Polyester Concrete System**

9 All components of the polyester concrete system shall be provided by the System
10 Provider.

- 11
- 12 1. Manufacturer's Certificates of Compliance - The Contractor shall submit a
13 separate Manufacturer's Certificate of Compliance meeting the requirements of
14 Section 1-06.3 for each of the following components of the polyester concrete
15 system: primer, polyester concrete binder, polyester concrete aggregates,
16 polyester concrete, and sand for abrasive finish. Each Manufacturer's
17 Certificate of Compliance shall identify the applicable lot(s) by lot number.
18
- 19 2. Certified Test Results - Each Manufacturer's Certificate of Compliance shall be
20 accompanied by certified test reports from independent labs for all the
21 properties described in Sections 6-23.2(1)A, B, C, D, and E of this Special
22 Provision, which are associated with each component. Each certified test report
23 shall identify the lot(s) represented by the test report by lot number.
24
- 25 3. Sampling - The Contracting Agency reserves the right to obtain and test
26 samples of components of the polyester concrete overlay system. This includes
27 requiring submittal of samples prior to the first installation or on-site sampling
28 during construction.
29

30 **6-23.2(1)A Primer**

31 Primer for the substrate concrete surface shall be a wax-free low odor, high
32 molecular weight methacrylate primer, and consist of a resin, initiator, and promoter.
33 The primer shall conform to the following requirements:
34

Resin		
Property	Requirement	Test Method
Viscosity	25 cps maximum (Brookfield RVT with UL adapter, 50 RPM at 77°F)	ASTM D2196
Volatile Content	30% maximum	ASTM D2369
Specific Gravity	0.90 minimum at 77°F	ASTM D1475
Vapor Pressure	1.0 mm Hg, maximum at 77°F	ASTM D 323

Resin with Initiator		
Property	Requirement	Test Method
Flash Point	180°F minimum	ASTM D 3278
Initiator for the methacrylate resin shall consist of a metal drier and peroxide. If supplied separately from the resin, the metal drier shall not be mixed with the peroxide directly; a VIOLENT EXOTHERMIC REACTION will occur.		

1
2 **6-23.2(1)B Polyester Concrete Binder**

3 Polyester concrete binder shall have the following properties:

- 4
5 1. Be an unsaturated isophthalic polyester-styrene co-polymer.
6
7 2. The binder content shall be 12% +/-1% of the weight of the dry aggregate.
8
9 3. Be used with a promoter that is compatible with suitable methyl ethyl
10 ketone peroxide and cumene hydroperoxide initiators.
11
12 4. Meet the requirements of the following tables.
13

Resin		
Requirement	Test Method	Requirement
Viscosity	75 – 200 cps (RVT No.1 Spindle, 20 RPM at 77°F)	ASTM D2196
Specific Gravity	1.05 to 1.10 at 77°F	ASTM D1475

14

Resin with Initiator		
Property	Property	Property
Contain gamma-methacryloxypropyltrimethoxysilane, an organosilane ester silane coupler	>1%	Nuclear Magnetic Resonance
Elongation	35 percent, minimum Type I specimen, thickness 0.25 ± 0.03" at Rate = 0.45 inch/minute.	ASTM D638
	Sample Conditioning: 18/25/50+5/70	ASTM D618
Tensile Strength	2,500 psi, minimum Type I specimen, thickness 0.25 ± 0.03" at Rate = 0.45 inch/minute.	ASTM D638
	2,500 psi, minimum Type I specimen, thickness 0.25 ± 0.03" at Rate = 0.45 inch/minute.	ASTM D618

15
16 **6-23.2(1)C Polyester Concrete Aggregates**

17 The polyester concrete aggregate (coarse and fine) shall be thoroughly washed and
18 kiln dried.

19
20 Polyester concrete aggregates shall be manufactured from sand and gravel in
21 accordance with the provisions of Section 3-01. Fine aggregate shall consist of
22 natural sand only. Reclaimed concrete aggregate shall not be used.
23

1
2

Polyester concrete aggregate shall have the following properties:

Polyester Concrete Aggregate Gradation	
Sieve Size	Percent Passing
1/2"	100
3/8"	98 minimum
#4	62-85
#8	45-67
#16	29-50
#30	16-36
#50	5-20
#100	0-7
#200	0-3

3

Properties of Polyester Concrete Aggregate		
Property	Test Method	Requirement
Los Angeles Wear	AASHTO T96	35% max at 500 rev
Degradation Factor	WSDOT T113	30 minimum
Clay lumps and Friable Particles	AASHTO M6	3.0% by weight
Coal and lignite	AASHTO M6	0.25% by weight
Particles of specific gravity less than 2.0	AASHTO M6	1.0% by weight
Crushed particles	AASHTO T335	<45% Crushed Particles, retained on the No. 8 Sieve
Weighted-average aggregate absorption	AASHTO T84 and T85	<1%
Mohs Hardness	Mohs Hardness Test	≥7 (≥6.5 if system has demonstrated more than 10 years of success on large scale installations)
Aggregate shall comply with the following properties at the time of mixing the polyester concrete: The polyester concrete aggregate shall have a weighted-average moisture content when tested under AASHTO Test Method T255 of not more than one half of the weighted-average aggregate absorption.		

4
5
6
7
8
9

6-23.2(1)D Polyester Concrete

The properties of the polyester concrete, when the polyester resin and polyester concrete aggregates are combined in the proportions of the approved mix design, shall be as follows:

Property	Test Method	Requirement
Portland Cement Concrete Saturated Surface Dry Bond Strength	California Test 551	500 psi minimum at 24 hrs. and 70°± 1° F (without primer, at 12% resin content by weight of the dry aggregate, on Saturated Surface Dry Specimen)

PCC Saturated Surface-Dry Bond Strength (Adhesive)	California Test 551	700 psi, minimum at 24 hours and 70° ± 1°F (at 12% resin content by weight of the dry aggregate), HMWM primed surface
Abrasion Resistance	California Test 550	<2g weight loss (at 12% resin content by weight of the dry aggregate)
Modulus of Elasticity	ASTM C 469	1,000,000 psi to 2,000,000psi (at 12% resin content by weight of the dry aggregate)
Portland Cement Concrete Dry Surface Bond Strength (Adhesive) – Primer installation window verification	California Test 551	700 psi, minimum at 24 hours and 70° ± 1°F (at 12% resin content by weight of the dry aggregate), HMWM primed surface. Polyester concrete placed against primed surface two hours after Primer application.

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6-23.2(1)E Sand for Abrasive Finish

Sand for abrasive finish shall have the following properties:

1. Be commercial-quality blast sand.
2. Have a minimum of 85 percent passing the No. 8 sieve and a maximum of 10 percent passing the No. 20 sieve when tested under AASHTO Test Method T27.
3. Be kiln dried and protected from moisture until time of placement. At the time of application on the polyester concrete, the moisture content of the sand for abrasive finish shall not exceed 0.5 percent.

6-23.2(1)F Shipping, Storing and Handling Polyester Concrete Materials

All components shall be shipped in strong, substantial containers bearing the manufacturers label specifying batch/lot number, brand name, and quantity. If bulk resin is to be used, the contractor shall notify the Engineer in writing 10 days prior to the delivery of the bulk resin to the job site. Bulk resin is any resin that is stored in containers in excess of 250 gallons.

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 concrete binder and primer shall be accompanied by a Safety Data Sheet (SDS). Bulk resin containers shall be identified by one of the following methods:

1. A label on each container as specified above, or

- 1 2. A marking on each container that uniquely identifies the container,
2 accompanied by documentation that unequivocally identifies the
3 Manufacturer's Certificate of Compliance that is associated with the
4 material in that container.
5

6 The material shall be stored to prevent damage by the elements and to ensure the
7 preservation of their quality and fitness for the Work. The storage space shall be
8 kept clean and dry and shall contain a high-low thermometer. The temperatures of
9 the storage space shall not fall below nor rise above that recommended by the
10 manufacturer. Every precaution shall be taken to avoid contact with flame.
11

12 Stored materials shall be inspected prior to their use and shall meet the
13 requirements of these Special Provisions at the time of use.
14

15 Material which is rejected because of failure to meet the required tests or that has
16 been damaged shall be immediately replaced at no additional expense to the
17 Contracting Agency.
18

19 Sufficient material to perform the entire polyester concrete overlay application shall
20 be in storage at the site prior to field preparations, so that there shall be no delay in
21 procuring the materials for each day's application.
22

23 Prior to Work, a copy of the Contractor's safety plan addressing worker protective
24 clothing, protective breathing devices, measures to address inadvertent contact with
25 chemicals and other appropriate safety measures shall be submitted to the Engineer
26 in accordance with Section 1-07.1(2).
27

28 **6-23.2(2) Concrete Class M**

29 Concrete Class M shall be proportioned in accordance with the following mix design:
30

31 Portland Cement Type 1 or Type 2, or	
32 Blended Hydraulic Cement Type IL(X)	705 pounds
33 Fine Aggregate	1,280 pounds
34 Coarse Aggregate	1,650 pounds
35 Water/Cement Ratio	0.37 maximum
36 Air ($\pm 1\frac{1}{2}$ percent)	6 percent
37 Slump (± 1 inch)	5 inches

38
39 Fine aggregate shall be Class 1. Coarse aggregate shall be AASHTO grading No. 7 or
40 No. 8.
41

42 The use of a water-reducing admixture conforming to AASHTO M 194 Type A will be
43 required to produce Concrete Class M with the desired slump. Air entraining admixtures
44 shall conform to AASHTO M 154. The use of accelerating admixtures or other types of
45 admixtures is not allowed.
46

47 Concrete Class M shall be mixed in batch-plants and transported in ready-mix trucks
48 conforming to Section 6-02.3(4)A.
49

50 The maximum allowable and actual water/cementitious ratios shall be calculated using
51 all the available mix water, including water added at the plant, water added in transit and

1 at the job site, water in all admixtures, and the free water in the aggregates but not the
2 water absorbed by the aggregates. The following are considered cementitious materials:
3 Portland Cement and blended hydraulic cement.
4

5 **6-23.2(3) Crack Sealing Materials**

6 **6-23.2(3)A Crack Sealing Resin**

7 Resin for sealing cracks in the polyester concrete overlay shall meet the
8 requirements for polyester concrete binder.
9

10 **6-23.2(3)B Crack Sealing Sand**

11 Sand for topping the crack sealing resin shall meet the requirements for sand for
12 abrasive finish.
13

14 **6-23.3 Construction Requirements**

15 **6-23.3(1) Sequence of Operations**

16 The sequence of the Work shall be as follows. This sequence is in addition to other
17 sequence and timing requirements in this Special Provision:
18

- 19 1. Shotblasting existing Bridge Deck Surface
- 20
- 21 2. Surveying of Existing Bridge Deck Surface
- 22
- 23 3. Perform Type 1 and Type 2 Deck Repair
- 24
- 25 4. Sandblast, and clean the finished surface
- 26
- 27 5. Place and cure the primer, polyester concrete overlay, and sand for abrasive
28 finish
- 29
- 30 6. Check for bond and repair as required
- 31
- 32 7. Crack Sealing
- 33
- 34 8. Grind for smoothness
- 35
- 36 9. Texturing Polyester Concrete
- 37

38 **6-23.3(1)A Traffic Restrictions on Sequence of Operations**

39 Traffic shall not be allowed on shotblasted bridge deck surfaces until step 9 of
40 Section 6-23.3(1) of this Special Provision is completed.
41

42 **6-23.3(2) Equipment**

43 In addition to meeting the equipment requirements herein, equipment shall meet, and be
44 operated in accordance with, the System Provider Technical Representative's
45 recommendations.
46

47 **6-23.3(2)A Shot Blaster**

48 The shotblaster shall be a self-contained mobile unit using steel shot to texture the
49 sound concrete to produce a concrete surface profile of CSP-6 or greater in
50 accordance with International Concrete Repair institute (ICRI) 310.2R. The machine

1 shall blast a minimum width of 2 feet per pass. The shotblasting machine shall
2 shotblast, vacuum and store all material removed from the blasted concrete surface
3 in a self-contained unit.
4

5 The shotblaster vacuum shall allow the shotblaster to be operated in air pollution
6 sensitive areas and shall be equipped to not contaminate the deck during final
7 preparation for concrete placement.
8

9 **6-23.3(2)B Power Driven Hand Tools**

10 Power driven hand tools are limited to the following:

- 11 1. Jack hammers no heavier than the nominal 30-pound class.
- 12 2. Chipping hammers no heavier than the nominal 15-pound class.
- 13 3. Other mechanical means acceptable to the Engineer.

14
15
16
17 Power driven hand tools shall not be operated at angles greater than 45 degrees as
18 measured from the surface of the deck to the tool.
19

20
21 **6-23.3(2)C Air Compressor**

22 Air compressors shall be equipped with oil traps to eliminate oil from being blown
23 onto the bridge deck.
24

25 **6-23.3(2)D Vacuum Machine**

26 Vacuum machines, separate from and in addition to the vacuum built in to the shot-
27 blaster, shall be capable of collecting all remaining dust, concrete chips, and other
28 debris encountered while vacuuming. The machines shall be equipped with
29 collection systems that allow the machines to be operated in air pollution sensitive
30 areas and shall be equipped to not contaminate the deck during final preparation for
31 concrete placement.
32

33 **6-23.3(2)E Polyester Concrete Mixers**

34 A continuous automated mixer shall be used for all polyester concrete overlay
35 applications. The continuous mixer must be capable of mixing the polyester binder
36 resin components with dry aggregate, maintain proper ratios, and achieve set and
37 cure times within the specified limits.
38

39 The Contractor shall submit current certification documents showing that mixing
40 equipment has been calibrated (California Test 109 or similar accepted) with the
41 exact polyester concrete overlay system to be installed. If required by the Engineer,
42 the Contractor shall demonstrate that the proposed volumetric mixing equipment is
43 accurately calibrated through on-site verification. The actual weights of the polyester
44 concrete materials discharged from the volumetric mixer truck shall be accurately
45 represented by the printout ticket measurement produced by the on-board computer
46 tracking system. To demonstrate this the Contractor shall dispense individual
47 aggregate and resin batches and weigh with certified scales. The Engineer will
48 compare certified scale weights to print out ticket measurements. Results of each
49 comparison will be considered within calibration tolerance when ticket
50 measurements and certified scale weights are within 2% of each other. Mixing
51 equipment calibration verification should be considered successfully completed after

1 three consecutive successful results, witnessed by a representative of the
2 Contracting Agency.

3
4 The Contractor shall submit a documented history of the use of the placement
5 equipment to successfully install Polyester Polymer Concrete overlays on bridge
6 projects for review and approval by the Engineer. Acceptable experience shall be
7 from installations matching the scope of the proposed project, including thickness
8 and grade establishment requirements.

9
10 The continuous mixer shall:

- 11
12 1. Employ an auger screw/chute device capable of sufficiently mixing
13 catalyzed resin with dry aggregate.
- 14
15 2. Employ a plural component pumping system capable of handling polyester
16 binder resin and additives while maintaining proper ratios to achieve
17 set/cure times within the specified limits, evenly across the placement.
18 Resin and all field additives, including catalyst and accelerator, shall flow
19 through a static mix tube for sufficient duration to completely mix the liquid
20 system prior to combination with aggregates.
- 21
22 3. Be equipped with an automatic metering device that measures and records
23 aggregate and resin volumes. Record volumes at least every five minutes,
24 including time and date. Submit recorded volumes at the end of the work
25 shift.
- 26
27 4. Have a visible readout gage that displays running totals of aggregate and
28 resin being recorded.
- 29
30 5. Produce a satisfactory mix consistently during the entire placement, and
31 maintain appropriate resin content, catalyst, and accelerator levels to
32 produce desired outcome.
- 33
34 6. Discharge mixed material directly into the finishing machine.

35
36 A portable mechanical mixer of appropriate size for proposed batches, as
37 recommended by the System Provider Technical Representative and approved by
38 the Engineer, may be used for patching applications and for smaller area overlay
39 applications if recommended by the System Provider Technical Representative and
40 approved by the Engineer.

41 **6-23.3(2)F Polyester Concrete Paving Machine**

42 Except under the conditions described in Section 6-23.3(2)F1 of this Special
43 Provision, the polyester concrete overlay shall be placed with a self-propelled slip-
44 form paving machine that places, consolidates, and finishes the polyester concrete
45 overlay in one continuous operation. It shall be modified or specifically built to
46 effectively place the polyester concrete overlay in a manner that meets Contract
47 requirements. In addition, the paving machine shall:

- 48
49 1. Employ a vibrating pan to consolidate and finish the polyester concrete.
50 Paver primary finishing pan size shall measure not less than 2 feet in the
51

1 dimension parallel to the direction of paver travel. Secondary profile
2 finishing attachments, bolt on sections, and trailing pan extensions shall
3 not be included in this measurement.

- 4
- 5 2. Shall have the necessary adjustments to produce the required cross
6 section, line, and grade, including the ability to recreate transverse grade
7 breaks within 6 inches left or right of existing transverse grade breaks.
8
- 9 3. Be fitted with hydraulically controlled grade automation devices on both
10 sides of the machine to establish the finished profile and cross-slope.
11 These devices shall either (1) average 15 feet in front and behind the
12 center of automation sensors, or (2) the sensor shall be constructed to
13 work with string-line control. It is acceptable to match grade when placing
14 lanes adjacent to polyester concrete overlay placed on this Contract. String
15 line grade establishment may be required to establish proposed grades if
16 required by plan note or elsewhere in the Contract, in which case grade
17 averaging beams will not be acceptable.
18
- 19 4. Have sufficient engine power and weight to provide adequate vibration of
20 the finishing pan while maintaining consistent forward placement speed.
21
- 22 5. Be capable of both forward and reverse motion under its own power.
23
- 24 6. Demonstrate successful performance with the trial overlay.
25

26 Wheel or rubber tire mounted paving machines will not be allowed.
27

28 **6-23.3(2)F1 Vibratory Screed and Small Surfaces**

29 Roller type screeds will not be accepted.
30

31 A vibratory screed riding on preset forms or rails set at a maximum width of 12
32 feet may be used on structures that have live load paving train restrictions.
33

34 Shoulder pours of 6 feet wide or less may be placed without the use of a paving
35 machine.
36

37 Finishing of patch areas shall be completed using hand concrete finishing tools.
38 Patches shall be placed flush with the top of the existing deck surface.
39

40 **6-23.3(2)G Smoothness Grinding Equipment**

41 Equipment for grinding polyester concrete overlay that does not meet the surface
42 smoothness requirements shall use diamond embedded saw blades gang mounted
43 on a self-propelled machine that is specifically designed to smooth and texture
44 concrete pavement or polyester concrete overlays. The equipment shall not damage
45 the underlying surface, cause fracture, or spalling of any joints. The final surface
46 texture shall be uniform in appearance with longitudinal corduroy type texture. The
47 grooves shall be between $\frac{3}{32}$ and $\frac{5}{32}$ inches wide, and no deeper than $\frac{1}{16}$ inch. The
48 land area between the grooves shall be between $\frac{1}{16}$ and $\frac{1}{8}$ inches wide.
49

1 **6-23.3(2)H Texturing Equipment**

2 Equipment for texturing the polyester concrete overlay shall use diamond tipped saw
3 blades mounted on a power driven, self-propelled machine that is designed to
4 texture concrete surfaces. The grooving equipment shall provide grooves that are
5 $\frac{1}{8}'' \pm \frac{1}{64}''$ wide, $\frac{3}{16}'' \pm \frac{1}{16}''$ deep, and spaced at $\frac{3}{4}'' \pm \frac{1}{8}''$.

6
7 In locations where saw cutting cannot be done the Contractor is allowed to use the
8 spring tining method for texturing. The spring tining shall provide the same groove,
9 spacing and depth of the saw cut texture.

10
11 The Contractor shall demonstrate that the method and equipment for texturing the
12 bridge deck will not chip, spall or otherwise damage the overlay.

13
14 **6-23.3(3) Submittals**

15 The Contractor shall submit the following Working Drawings in accordance with Section
16 1-05.3:

- 17
18 1. A Type 2 Working Drawing of the shot-blasting equipment with associated
19 background information and catalog cuts.
20
21 2. A Type 2 Working Drawing of the Debris Containment and Disposal Plan. This
22 plan shall describe the methods and materials used to contain, collect, and
23 dispose of all concrete debris generated by all operations, including but not
24 limited to shotblasting, Type 1 Deck Repair, Type 2 Deck Repair, sandblasting,
25 and cleaning. The Working Drawing shall also address provisions for protecting
26 adjacent traffic from flying debris.
27
28 3. A Type 2 Working Drawing of the polyester concrete mix design meeting the
29 requirements of Section 6-23.2(1) of this Special Provision. The mix design
30 shall include a recommended initiator percentage for the expected application
31 temperature.
32
33 4. A Type 1 Working Drawing of the mix design for concrete Class M. This
34 submittal shall be on WSDOT Form 350-040 and shall provide a unique
35 identification for each mix design. A unique identification for the mix design is
36 composed of the combination of the Mix Design Number and the Concrete Plant
37 Number.
38
39 5. A Type 2 Working Drawing of samples, as specified below, shall be submitted
40 to the Engineer at least 15 working days prior to placing the polyester overlay:
41
42 a. One gallon minimum of the polyester concrete binder.
43
44 b. One pint minimum of the primer.
45
46 c. 100 pounds minimum of polyester concrete aggregate.
47
48 6. A Type 2 Working Drawing of the paving equipment specifications and details
49 of how the paver will maintain the required longitudinal and transverse grades.
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7. A Type 1 Working Drawing of the survey data collected as required in Section 6-23.3(6) of this Special Provision.
8. A Type 1 Working Drawing of the measurements documenting the deck patching areas as required by Section 6-23.3(7)B of this Special Provision.
9. A one-pint sample of each batch of promoted/initiated primer shall be retained and submitted to the Engineer at the time of primer application to verify proper catalyzation.
10. A Type 1 Working Drawing of the readings of the rebound hammer used shall be correlated to the compressive strength of the polyester concrete product in accordance with Section 5.4 of ASTM C805 and the Contractor.
11. A Type 2 Working Drawing of the qualifications of on-site supervisors, volumetric mixer operators, and finishing machine operators, in accordance with Section 6-23.1(2)C of this Special Provision.
12. A Type 2 Working Drawing of the method and materials used to contain primer and polyester concrete within the deck area specified to receive the overlay.
13. A Type 2 Working Drawing of the Contractor's Safety plan addressing worker protective clothing, protective breathing devices, measures to address inadvertent contact with chemicals and other appropriate safety measures.
14. A Type 2 Working Drawing of the equipment to be used for texturing.
15. A Type 2 Working Drawing of the Certified test results as required in Section 6-23.2(1) of this Special Provision.
16. A Type 1 Working Drawing of the Documentation of the System Provider Technical Representative's experience, demonstrating compliance with the experience requirements, including the following:
 - a. Years of Experience with the proposed Polyester Concrete Overlay System
 - b. Project location
 - c. Project construction date
 - d. Overlay quantities
 - e. Reference name and contact information for owner representative
17. A Type 2 Working Drawing of the Documentation of the Polyester Concrete Overlay System and System Provider experience, demonstrating compliance with experience requirements. Submit written installation instructions, safety data sheets, and independent test results for approval. Projects of similar scope shall be evaluated considering placement temperature, traffic return, allowable cure time, placement thickness, average daily traffic, surface texture, environmental conditions, and any other factors unique to the application. System failure examples

1 obtained from other Public Agencies may be considered for evaluation and rejection
2 whether submitted by the Contractor or obtained otherwise. Submit documentation
3 and references of the polyester concrete overlay system experience including the
4 following:

- 5 a. Project location
- 6
- 7 b. Contracting Agency
- 8
- 9 c. Project construction date
- 10
- 11 d. Overlay quantities and component details
- 12
- 13 e. Reference name and contact information for owner representative
- 14

15
16 18. A Type 2 Working Drawing of the Documentation of the experience of the
17 Polyester Concrete Placement Contractor and Workers that will place the polyester
18 concrete overlay system. The documentation of Contractor and employee
19 qualifications shall include the following:

- 20 a. Project location
- 21
- 22 b. Contracting Agency
- 23
- 24 c. Project construction date
- 25
- 26 d. Overlay volume and area quantities
- 27
- 28 e. Reference name and contact information for owner representative
- 29

30
31 19. A Type 2 Working Drawing of the certification and test reports of the polyester
32 concrete mixer and documented history of the use of the placement equipment to
33 successfully install Polyester Polymer Concrete overlays.

34
35 20. A Type 2 Working Drawing of the Overlay Placement Plan. The Contractor
36 shall submit an Overlay Placement Plan that includes the following:

- 37 a. Schedule of overlay work and testing for each bridge
- 38
- 39 b. Staging plan describing overlay placement sequence including:
 - 40 i. Construction joint locations
 - 41
 - 42 ii. Sequence of placement
 - 43
 - 44 iii. Paving widths
 - 45
 - 46 iv. Anticipated paving lengths
 - 47
 - 48 v. Paving directions
 - 49
 - 50
 - 51

- 1 vi. Joint locations
- 2
- 3 vii. Location of proposed trial overlay(s)
- 4
- 5 c. Description of equipment used for:
- 6
- 7 i. Surface preparation including grinding and shot blasting
- 8
- 9 ii. Applying primer
- 10
- 11 iii. Measuring, mixing, placing, and finishing the polyester concrete
- 12 overlay
- 13
- 14 iv. Applying sand for abrasive finish
- 15
- 16 d. Method of protecting and finishing inlets and bridge drains
- 17
- 18 e. Method for isolating expansion joints
- 19
- 20 f. Method for ensuring shotblasting achieves a concrete surface profile of
- 21 ICRI 310.2R CSP-6 or greater
- 22
- 23 g. Method for measuring and maintaining overlay thickness and profile
- 24
- 25 h. Cure time for polyester concrete
- 26
- 27 i. Storage and handling of primer and polyester concrete components
- 28
- 29 j. Procedure for disposal of excess primer, polyester concrete, and
- 30 containers
- 31
- 32 k. Procedure for cleanup of mixing and placement equipment
- 33

34 **6-23.3(4) Operations on the Bridge Deck**

35 The following apply to all Contractor operations on the bridge deck, including but not
36 limited to cleaning concrete surfaces, Type 1 and Type 2 Deck Repair, sandblasting,
37 shot-blasting, placing, consolidating, finishing, curing, sawing, and crack sealing the
38 overlay.

- 39
- 40 1. The Contractor shall not use water on the bridge deck nor allow water from their
- 41 operations to come into contact with the concrete bridge deck at any time,
- 42 except for the following:
- 43
- 44 a. Placing and curing Class M concrete. Using water for this application shall
- 45 be carefully controlled to prevent the water from coming into contact with
- 46 the bridge deck outside of the patch.
- 47
- 48 2. The Contractor shall protect adjacent traffic from flying debris in accordance
- 49 with its Debris Containment and Disposal Plan submitted in accordance with
- 50 Section 6-23.3(3) of this Special Provision.
- 51

1 3. The Contractor shall collect, contain, and dispose of all concrete debris in
2 accordance with its Debris Containment and Disposal Plan submitted in
3 accordance with Section 6-23.3(3) of this Special Provision.
4

5 4. Rainwater and stormwater runoff that comes in contact with the bridge deck
6 shall be considered process wastewater and shall be managed in accordance
7 with Section 8-01.
8

9 **6-23.3(5) Initial Surface Preparation**

10 Initial surface preparation is for the purpose of exposing the concrete substrate for chain
11 dragging and deck repair.
12

13 **6-23.3(5)A Prerequisites to Initial Surface Preparation**

14 Initial surface preparation shall not begin until the Contractor has completed all the
15 following:
16

- 17 1. Demonstrated that all Work, for a given bridge, needed to complete items
18 1, 2, 3, 4, 5, 6, 7, 8, and 9 of Section 6-23.3(1) of this Special Provision can
19 and will be completed in one and only one construction season.
20
- 21 2. Submitted all submittals required in Section 6-23.3(3) of this Special
22 Provision and addressed all the Engineer's comments to the satisfaction
23 of the Engineer.
24

25 **6-23.3(5)B Shotblasting**

26 For newly constructed bridge decks, the deck concrete shall cure a minimum of 28
27 days and attain design concrete compressive strength prior to shotblasting.
28

29 The areas to receive polyester concrete overlay shall be shotblasted, or sandblasted
30 if the shotblast equipment cannot access areas to be prepared, to produce a
31 concrete surface profile of CSP-6 or greater in accordance with International
32 Concrete Repair Institute (ICRI) 310.2R. All weak or loose surface mortar shall be
33 removed, aggregates within the concrete exposed, and open pores in the concrete
34 exposed, as well as a visible change in the concrete color.
35

36 Dust and debris generated during shotblasting shall be picked up and stored in the
37 vacuum unit built into the shotblaster and minimal dust shall be created during the
38 blasting operation.
39

40 **6-23.3(6) Surveying of Existing Bridge Deck**

41 After shotblasting the concrete surface as specified in these Provisions, the Contractor
42 shall complete a survey of the Existing Bridge Deck Surface(s) specified to receive
43 Polyester concrete overlay for use in establishing the existing cross section and profile
44 grade elevations.
45

46 The Engineer will provide the Contractor with primary survey control information
47 consisting of descriptions of two primary control points used for the horizontal and vertical
48 control. Primary control points will be described by reference to the bridge or project-
49 specific stationing and elevation datum. The Engineer will also provide horizontal
50 coordinates for the beginning and ending points and for each Point of Intersection (PI)
51 on each centerline alignment included in the project. The Contractor shall provide the

1 Engineer 21 calendar days' notice in advance of scheduled concrete surface shotblasting
2 work to allow the Engineer time to provide the primary survey control information.
3

4 The Contractor shall verify the primary survey control information furnished by the
5 Engineer and shall expand the survey control information to include secondary horizontal
6 and vertical control points as needed for the project. The Contractor's survey records
7 shall include descriptions of all survey control points, including coordinates and
8 elevations of all secondary control points.
9

10 The Contractor shall maintain detailed survey records, including a description of the work
11 performed on each shift, the methods utilized to conduct the survey, and the control
12 points used. The record shall be of sufficient detail to allow the survey to be reproduced.
13 A Type 1 Working Drawing of each day's survey record shall be provided to the Engineer
14 within 3 working days after the end of the shift. The Contractor shall compile the survey
15 information in an electronic file format acceptable to the Engineer (file formats submitted
16 shall be compatible with InRoads and MicroStation).
17

18 Survey information collected shall include station, offset, and elevation for each lane line
19 and curb line. Survey information shall be collected at even 20-foot station intervals and
20 at the centerline of each bridge expansion joint. The Contractor shall ensure a surveying
21 accuracy to within ± 0.01 feet for vertical control and ± 0.2 feet for horizontal control. The
22 survey shall extend 100 feet beyond the bridge back of pavement seat.
23

24 Except for the primary survey control information and final grade profile and cross-
25 section furnished by the Engineer, the Contractor shall be responsible for all calculations,
26 surveying, and measuring required for setting, maintaining, and resetting equipment and
27 materials necessary for the construction of the overlay to the final grade profile and cross-
28 section. The Engineer may post-check the Contractor's surveying, but these post-checks
29 shall not relieve the Contractor of responsibility for internal survey quality control.
30

31 The Engineer will establish the final grade profile and cross-section based on the
32 Contractor's survey and will provide the final grade profile and cross-section to the
33 Contractor within five working days after receiving the Contractor's survey information.
34

35 The Contractor shall not begin shotblasting concrete surface work as specified in these
36 Provisions until receiving the final grade profile from the Engineer.
37

38 **6-23.3(7) Deck Repair**

39 Deck repair Work shall not commence until shotblasting operations are complete.
40

41 **6-23.3(7)A Classification**

42 Deck repair will be classified as Type 1 Deck Repair or Type 2 Deck Repair. The
43 determination of whether an area will be classified as Type 1 or Type 2 will be made
44 after completion of deck repair excavation, repair of steel reinforcing bars, and
45 removal of concrete debris.
46

47 **6-23.3(7)B Chain Drag**

48 After the entire lane or strip to be overlaid has been shotblasted and cleaned as
49 required in Section 6-23.3(5) of this Special Provision, the entire surface shall be
50 inspected by the Contractor, in the presence of the Engineer, in accordance with

1 ASTM D4580, Method B. Based on that inspection, the Contractor shall mark those
2 areas, meeting any of the following criteria, for removal:

- 3
- 4 1. Unsound concrete in accordance with ASTM D4580, Method B.
- 5
- 6 2. Lack of bond between existing concrete and reinforcing steel.
- 7
- 8 3. All existing nonconcrete patches.
- 9

10 After all deck repair excavation is complete, the Contractor shall measure and
11 submit to the Engineer as a Type 1 Working Drawing the location and size of each
12 area identified above by station, offset, length, width, average depth, and deck repair
13 type, using the form provided by the Engineer.

14 **6-23.3(7)C Deck Repair Excavation**

15 The areas marked for removal in Section 6-23.3(7)B of this Special Provision shall
16 be excavated with equipment as described in Section 6-23.3(2)B of this Special
17 Provision. Excavation shall be to the depth necessary to remove all loose and
18 unsound material, without damaging reinforcing steel or sound concrete.

19 Care shall be taken in removing the deteriorated material to not damage the existing
20 sound concrete or steel reinforcing bars that are to remain in place. All removal shall
21 be accomplished by making vertical edges at the boundaries of the repair area. In
22 no case shall the depth of a sawn vertical cut exceed $\frac{3}{4}$ inch or to the top of the top
23 steel reinforcing bars, whichever is less.

24 Bridge deck areas outside the repair area damaged by the Contractor's operations
25 shall be repaired by the Contractor at no additional expense to the Contracting
26 Agency, and to the satisfaction of the Engineer.

27 **6-23.3(7)D Repair of Steel Reinforcing Bars**

28 Where existing steel reinforcing bars inside deck repair areas show natural
29 deterioration greater than 20-percent section loss, the Contractor shall furnish and
30 place steel reinforcing bars alongside the deteriorated bars in accordance with the
31 details shown in the Standard Plans. Payment for such extra Work will be by force
32 account as provided in Section 1-09.6.

33 All reinforcing steel damaged due to the Contractor's operations shall be repaired
34 by the Contractor. Damage to rebar shall be understood to include damage to epoxy
35 coating.

36 The repair shall be as follows or as directed by the Engineer:

- 37
- 38 1. Damage to epoxy coating, when present on existing steel reinforcing bars,
39 shall be repaired in accordance with Section 6-02.3(24)H.
- 40
- 41 2. Damage to bars resulting in a section loss of 20 percent or more of the bar
42 area shall be repaired by chipping out the adjacent concrete and splicing
43 a new bar of the same size. Concrete shall be removed to provide a $\frac{3}{4}$ -
44 inch minimum clearance around the bars. The splice bars shall extend a
45 minimum of 40 bar diameters beyond each end of the damage.
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3. All bars partially or completely removed from the deck shall have the damaged portions removed and spliced with new bars as outlined in item 2 above.

6 For bridge decks not constructed under the same Contract as the polyester concrete
7 overlay, responsibility for costs to repair damage shall be allocated as follows:
8

- 9
10
11
12
13
14
15
1. Repairing damage that occurs during shotblasting to coatings on existing reinforcing steel shall be paid for in accordance with Section 1-09.6.
 2. Repairing damage to existing reinforcing steel that is caused by the Contractor's negligence shall be at no additional expense to the Contracting Agency.

16 **6-23.3(7)E Type 1 Deck Repair**

17 An area will be classified as a Type 1 Deck Repair when the completed concrete
18 excavation either (a) exposes no more than one-half the periphery of a bottom bar
19 of the top layer of steel reinforcement, or (b) the length of an exposed bar does not
20 exceed 12-continuous inches along the length of the bar.
21

22 The scope of Work for Type 1 Deck Repair includes:
23

- 24
25
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33
1. Excavating and disposing of the unsound concrete and unsound nonconcrete patches within the repair area.
 2. Repair of steel reinforcing bars damaged by the Contractor.
 3. Sandblast the surface and exposed rebar.
 4. Providing a CSP-6 surface roughness on existing nonconcrete patches that are sound.

34 **6-23.3(7)F Type 2 Deck Repair**

35 An area will be classified as a Type 2 Deck Repair when the completed concrete
36 excavation either exposes more than one-half the periphery of a bottom bar of the
37 top layer of steel reinforcement or the length of an exposed bar exceeds 12-
38 continuous inches along the length of the bar.
39

40 The scope of Work for Type 2 Deck Repair includes:
41

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51
1. Excavating and disposing of the unsound concrete and unsound nonconcrete patches within the repair area, below the shotblasted depth.
 2. Repairing steel reinforcing bars damaged by the Contractor.
 3. Sandblasting the area and exposed rebar prior to placing deck patching concrete.
 4. Saturating and removing freestanding water.

- 1 5. All work related to patching and curing the excavated area with Class M
2 concrete in accordance with Section 6-23.2(2) of this Special Provision.
3

4 **6-23.3(7)G Filling and Curing Deck Repair Areas**

5 Type 1 Deck Repairs shall be filled with polyester concrete as part of placing the
6 polyester concrete overlay. Payment for filling Type 1 deck repairs with Polyester
7 Concrete shall be incidental to bid item "Polyester Concrete Overlay".
8

9 Type 2 Deck Repairs shall be patched with concrete class M. The top of these
10 patches shall be finished with a wood float, flush with the top of the shotblasted
11 surface. All Type 2 deck repair patching shall be performed well enough in advance
12 of the polyester concrete overlay to allow all patches to cure as required below.
13

14 Before placing Class M concrete in the Type 2 deck repairs, the Contractor shall
15 clean the surfaces to which the concrete will be applied (including rebar) by
16 sandblasting and blowing clean with oil-free air. The Contractor shall make sure the
17 existing concrete is well saturated at the time of placing concrete in the Type 2 deck
18 repairs but shall remove all freestanding water prior to placing the concrete. The
19 Contractor shall place concrete class M in the Type 2 deck repair areas while the
20 existing concrete is wet. It shall be consolidated in accordance with Section 6-
21 02.3(8). Concrete Class M shall be wet-cured a minimum of 42 hours, as follows:
22

- 23 1. The concrete shall be immediately covered with a single layer of clean,
24 new or used, wet burlap. The burlap shall have a maximum width of 6 feet.
25 The Engineer will determine the suitability of the burlap for reuse, based
26 on the cleanliness and absorption ability of the burlap. Care shall be
27 exercised to ensure that the burlap is well drained and laid flat with no
28 wrinkles on the deck surface. Adjacent strips of burlap shall have a
29 minimum overlap of 6 inches.
30
- 31 2. Once in place the burlap shall be lightly fog sprayed with water. A separate
32 layer of white, reflective type polyethylene sheeting shall immediately be
33 placed over the wet burlap.
34
- 35 3. As an alternative to the application of burlap and fog spraying described
36 above, the Contractor may propose a curing system using proprietary
37 curing blankets specifically manufactured for bridge deck curing. The
38 Contractor shall submit a Type 2 Working Drawing consisting of details of
39 the proprietary curing blanket system, including product literature and
40 details of how the system is to be installed and maintained.
41
- 42 4. The burlap shall be kept wet continuously and the wet curing regimen as
43 described shall remain in place for a minimum of 42-hours.
44

45 During the curing period of concrete placed in Type 2 deck repairs, all vehicular and
46 foot traffic shall be prohibited in the repair area.
47

48 **6-23.3(7)H Filling Existing Bridge Deck Wheel Ruts**

49 Existing Bridge Deck Ruts shall be filled with polyester concrete as part of placing
50 the polyester concrete overlay.
51

1 **6-23.3(8) Polyester Concrete Trial Overlay**

2 Prior to constructing the overlay, the Contractor shall place one or more trial overlays of
3 primer and polyester concrete using the equipment, materials, and procedures proposed
4 for production, as approved by the Engineer in accordance with Section 6-23.3(3). The
5 Contractor shall notify the Engineer of the time and location of the trial overlay at least
6 seven calendar days prior to the scheduled trial overlay.
7

8 The trial overlay shall be placed on a previously cast and cured concrete pad at a location
9 selected by the Contractor. The plan area of the concrete pad shall be 12 feet minimum
10 in width and 15 feet minimum in length.
11

12 The Contractor shall shotblast, clean the concrete pad surface, mix, place, finish, and
13 cure the polyester concrete overlay. The Contractor need not perform further deck
14 preparation, or place sand for abrasive finish provided that all other conditions of
15 Sections 6-23.3(9), (10), and (12) of this Special Provision are satisfied.
16

17 The Contractor shall arrange for soundness testing and three pull-off tests as described
18 in Section 6-23.3(13) to be performed by an independent testing laboratory. The
19 independent testing laboratory shall record the pull-off test results and the amount of (if
20 any) failure into the base concrete and shall provide written documentation of the test
21 results to the Engineer and Contractor.
22

23 The Contractor shall not begin placing polyester concrete overlay at the bridge site(s)
24 receiving the polyester concrete overlay until receiving the Engineer's approval of the
25 completed trial overlay.
26

27 After receiving the Engineer's approval of the completed trial overlay, the concrete pad
28 and trial overlay shall become the Contractor's property and shall be removed and
29 disposed of in accordance with Section 2-02.3.
30

31 If significant successful experience is demonstrated by both the installer, System
32 Provider, and System Provider Technical Representative together, the first shift of
33 polyester concrete overlay installation may be considered as the Trial Application if
34 approved by the Engineer. Rejection of all or part of the trial in this case will be required
35 to be removed and disposed of at no additional cost to the Contracting Agency. If no
36 further overlay is allowed due to full rejection after multiple trials, the site will be restored
37 to initial in-service condition at no additional cost to the Contracting Agency.
38

39 The number of trial applications required shall be as many as necessary for the
40 Contractor to demonstrate the ability to construct an acceptable trial overlay section and
41 competency to perform the work. However, the installer, proposed
42 equipment/techniques, or material may be rejected if not shown to be acceptable after
43 two trials.
44

45 **6-23.3(9) Polyester Concrete Overlay**

46 **6-23.3(9)A Pre-Overlay Conference**

47 Five to ten working days prior to polyester concrete overlay placement, a pre-overlay
48 conference shall be held to discuss final deck preparation, equipment, temperature
49 and weather requirements, aggregate and deck dryness requirements, construction
50 procedures, sequencing, and personnel. Inspection procedures shall also be
51 reviewed to ensure coordination. Attendees shall include representatives from all

1 parties involved in the work including inspectors, installer, and System Provider
2 Technical Representative. If necessary, teleconferencing of attendees may be
3 approved by the Engineer.
4

5 If the project includes more than one bridge deck, an additional conference shall be
6 held just before placing the polyester concrete overlay for each subsequent bridge
7 deck.
8

9 **6-23.3(9)B Restrictions on Other Work**

10 To ensure the best possible bond and integrity of the polyester concrete overlay, the
11 Contractor shall ensure that dust, debris, moisture, or any other deleterious
12 materials do not enter a work area from the start of final surface preparation in that
13 work area until completion of curing time for the polyester concrete overlay in that
14 work area. This work area during this timeframe shall be referred to as the protected
15 work area. In addition to other measures, the Contractor shall comply with the
16 following:
17

- 18 1. Perform no work within 100 feet of the protected work area which
19 generates dust or debris (including hand tool chipping, shotblasting,
20 sandblasting, vacuuming, and cleaning).
21
- 22 2. Dust or debris generating work may be allowed beyond this 100 feet
23 boundary provided dust and debris will not drift onto the limits of the
24 protected work area.
25

26 If the shotblasting impedes or interferes in any way with the final cleaning or overlay
27 placement within the protected area as determined by the Engineer, the shotblasting
28 Work shall be terminated immediately and the equipment shall be moved away from
29 the protected area to eliminate the conflict.
30

31 Traffic other than required construction equipment will not be permitted within the
32 protected work area unless allowed by the Engineer. To prevent contamination, all
33 equipment allowed within the protected work area shall be equipped with drip
34 guards.
35

36 **6-23.3(9)C Final Surface Preparation**

37 Following the completion of all Type 1 and Type 2 Deck Repairs (including
38 placement and curing of patches in Type 2 Deck Repair areas), the entire lane or
39 strip being overlaid shall undergo final cleaning. Final cleaning shall be
40 accomplished in one shift and consists of the following, in the sequence shown:
41

- 42 1. Remove grease, slurry, oils, paint, dirt, striping, cure compound, rust,
43 membrane, milling slurry, weak surface mortar or any other contaminants
44 that could interfere with the proper adhesion of the overlay system. These
45 materials shall be removed by abrasive blasting.
46
- 47 2. All steel surfaces that will be in contact with the overlay shall be cleaned in
48 accordance with SSPC-SP No. 10, Near-White Blast Cleaning, except that
49 wet blasting methods shall not be allowed.
50

- 1 3. Remove loose or trapped particles using magnets and vacuuming.
2 Vacuum shall be capable of collecting all remaining dust, concrete chips,
3 and other debris to the extent necessary to ensure the oil-free compressed
4 air in the next step complies with environmental requirements.
5
- 6 4. Oil-free compressed air shall be used as the final step to remove all
7 remaining dust and debris.
8
- 9 5. Cleaned surfaces shall not be exposed to Contractor or public vehicular
10 traffic. If the deck becomes contaminated before placing the overlay, the
11 Contractor shall shotblast or sandblast the contaminated areas to the
12 satisfaction of the Engineer at no additional cost to the Contracting Agency.
13
- 14 6. The Contractor shall provide suitable coverings (e.g. heavy duty drop
15 cloths) as needed to protect all exposed areas not to receive primer and
16 overlay, such as curbs, sidewalks, parapets, etc. All damage or defacement
17 resulting from this application shall be cleaned and/or repaired to the
18 Engineer's satisfaction at no additional cost.
19

20 **6-23.3(9)D Overlay Finishing Equipment Setup**

21 Construction joints between passes shall be within 1 foot of the stripe lines or
22 centered within a lane.
23

24 When grade will be established for a paving machine from a paving wire, or when a
25 vibrating screed is allowed, grade pins and screed rails shall be placed outside the
26 area to be overlaid. Hold-down devices shot into the concrete are not permitted.
27 Hold-down devices of other types leaving holes in the exposed area will be allowed
28 provided the holes are subsequently filled with polyester concrete. Hold-down
29 devices shall not penetrate the existing deck by more than $\frac{3}{4}$ inch.
30

31 **6-23.3(9)E Quality Assurance for Polyester Concrete Overlay**

32 All acceptance testing shall be performed by an independent testing laboratory
33 provided by the Contractor, in the presence of the Engineer's representative. The
34 Engineer reserves the right to self-perform any acceptance tests it deems in its best
35 interests. The Contractor's independent testing laboratory shall perform the
36 following tests:
37

- 38 1. Moisture content of polyester concrete aggregate and sand for abrasive
39 finish.
40
- 41 2. Temperature of deck surface and aggregates before mixing.
42
- 43 3. ASTM C805 Rebound Hammer (Schmidt hammer).
44
- 45 4. Smoothness quality testing.
46
- 47 5. Sounding using ASTM D4580, Method B.
48
- 49 6. Direct Tension Bond Testing, ASTM C1583.
50

1 The Contractor shall arrange to have the System Provider Technical Representative
2 furnish technical service relating to application of material and health and safety
3 training for personnel who are to handle the polyester concrete and the primer, at
4 the following times:

- 5 1. At the pre-paving conference.
- 6 2. During the trial overlay.
- 7 3. During paving machine setup.
- 8 4. During a minimum of the first two days of paving.

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14 **6-23.3(9)F Moisture and Temperature Requirements**

15 It is critically important for the long-term performance of the polyester concrete
16 system that the concrete substrate and all other surfaces (primer and polyester
17 overlay) be (1) at the proper temperature and (2) moisture-free. Unless otherwise
18 noted below, the time period for these requirements begins with the start of applying
19 primer and ends two hours after placing the polyester overlay and sand for abrasive
20 finish. Therefore, the following requirements for temperature and moisture shall be
21 strictly enforced. Failure to follow these requirements may result in removal and
22 replacement of the polyester concrete system at no additional expense to the
23 Contracting Agency.

- 24 1. During the 24-hour period immediately preceding start of primer
25 placement, the area of bridge deck to receive primer shall not be exposed
26 to moisture or water in any form. Additionally, during this 24-hour period,
27 the concrete substrate shall be exposed to the atmosphere to freely allow
28 moisture to evaporate. Covering the concrete substrate during this period
29 with material that will hinder evaporation in any way, such as visqueen,
30 shall not be allowed.
 - 31 2. Primer application shall not begin if rain is forecast any time between start
32 of primer application and 2 hours after the planned completion of polyester
33 concrete and sand for abrasive surface.
 - 34 3. Primer application shall not begin until after morning dew has evaporated.
 - 35 4. Before starting primer, the concrete substrate surface must be free of any
36 surface darkening that would indicate locations of previously standing
37 water. The entire concrete substrate surface must appear to be uniformly
38 light in color and show no further lightening when drying methods such as
39 blowing compressed air are applied. Cracks in the concrete substrate must
40 also be dry.
 - 41 5. The concrete surface temperature shall be between 40°F (and rising) and
42 100°F. Night work may be required when temperatures cannot be met
43 during the day.
- 44
45
46
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49

1 **6-23.3(9)G Primer Application**

2 The primer placement shall start not more than 24 hours after the start of
3 sandblasting operations in Final Surface Preparation.
4

5 In the interim between completion of final surface preparation described in Section
6 6-23.3(9)C of this Special Provision and applying the primer, any contaminants that
7 have accumulated which could interfere with the proper adhesion of the overlay
8 system shall be removed to the satisfaction of the Engineer. Immediately prior to
9 applying the primer, the surface receiving the primer shall be blown off with oil free
10 and moisture free compressed air to remove accumulated dust and any other loose
11 material.
12

13 After the exposed surfaces have been prepared and are dry, primer shall be applied
14 in accordance with the System Provider Technical Representative's
15 recommendations. Primer shall be placed within 5 minutes of mixing at
16 approximately 90 sf/gal or the rate that provides substrate saturation acceptable to
17 the Engineer.
18

19 Primer shall be applied by flooding and uniformly spread to completely cover
20 surfaces to receive overlay. Care shall be taken to avoid heavy application that
21 results in excess puddling. Excess material shall be removed or distributed to meet
22 the required saturation without excessive puddling. Primer shall be reapplied to any
23 areas that appear dry 15 minutes after primer placement, prior to overlay placement.
24

25 The prepared concrete surface shall receive one coat of promoted/initiated primer.
26 The promoted/initiated primer shall be worked into the concrete in a manner to effect
27 complete coverage of the area. A one-pint sample of each batch of
28 promoted/initiated primer shall be retained and submitted to the Engineer at the time
29 of primer application to verify proper catalyzation.
30

31 Under no circumstances shall resin be allowed to run into drains and expansion
32 joints, or otherwise escape the Contractor's collection and containment system.
33

34 If the primed surface becomes contaminated, the contaminated area shall be
35 cleaned by abrasive blasting and reprimed at no additional expense to the
36 Contracting Agency. The primer shall cure for a minimum of 30 minutes before
37 placing the polyester concrete overlay.
38

39 **6-23.3(9)H Mixing Polyester Concrete**

40 Polyester concrete shall be mixed in volumetric mixers conforming to Section 6-
41 23.3(2)E of this Special Provision and in accordance with the mix design accepted
42 by the Engineer.
43

44 At the time of mixing, the polyester concrete aggregate shall:

- 45
- 46 1. Have a temperature between 45°F and 100°F.
 - 47
 - 48 2. Have a weighted-average moisture content, when tested under AASHTO
49 Test Method T255, of not more than one half of the weighted-average
50 aggregate absorption.
51

1 The amount of peroxide initiator used shall result in a polyester concrete set time
2 between 30- and 120-minutes during placement as determined by California Test
3 551, Part 2, "Method of Test For Determination of Set Time of Concrete Overlay and
4 Patching Materials", by Gilmore Needles. Accelerators or inhibitors may be required
5 as recommended by the polyester concrete binder supplier.
6

7 The polyester concrete binder shall be initiated and thoroughly blended just prior to
8 mixing the polyester concrete aggregate and binder. The polyester concrete shall
9 be thoroughly mixed prior to placing.
10

11 **6-23.3(9)I Placing Polyester Concrete**

12 The polyester concrete overlay shall be placed, consolidated, and finished to the
13 profile grade and cross-section provided by the Engineer using a paving machine
14 meeting the requirements of Section 6-23.3(2)F of this Special Provision. The
15 Contractor shall perform a dry run with the paving machine before placing Polyester
16 Concrete. Based on the dry run, adjustments to the final grade may be allowed
17 provided minimum thickness requirements are met.
18

19 The minimum thickness of polyester concrete overlay system shall be $\frac{3}{4}$ inches,
20 measured from the top of the Polyester Overlay to the highest point of the
21 shotblasted concrete surface as shown in the Plans.
22

23 Placement of the polyester concrete shall not proceed until the Engineer verifies that
24 the primer was properly promoted and initiated, as evidenced by the primer batch
25 sample.
26

27 During overlay application, the Contractor shall provide suitable coverings (e.g.,
28 heavy duty drop cloths) as needed to protect all exposed areas not to receive
29 overlay, such as curbs, sidewalks, parapets, etc. All damage or defacement resulting
30 from this application shall be cleaned and/or repaired to the Engineer's satisfaction
31 at no additional cost.
32

33 The polyester concrete shall be placed on the primer after 15 minutes and within 2
34 hours after the primer has been applied. The polyester concrete shall be placed prior
35 to gelling or 15 minutes following addition of initiator, whichever occurs first.
36

37 Polyester concrete shall have an initial set time of at least 20 minutes and at most
38 90 minutes following resin catalyzation. The initial set time can be determined in the
39 field when the in-place polyester concrete cannot be deformed by pressing with a
40 finger, indicating that the resin binder is no longer in a liquid state. If the initial set is
41 not within 90 minutes of catalyzation, the material shall be removed and replaced at
42 no additional cost to the Contracting Agency.
43

44 If, for any reason, polyester concrete is not placed over the primer within the two-
45 hour time limit, the Contractor shall apply a fresh coat of primer. Prior to applying
46 the polyester concrete overlay, the surface shall be re-cleaned in accordance with
47 Section 6-23.3(9)G of this Special Provision.
48

49 Expansion joints shall be protected from all polyester concrete overlay operations to
50 the satisfaction the Engineer. Saw cutting at bridge expansion joints shall not be

1 allowed. The surface temperature of the area receiving the polyester concrete shall
2 be the same as specified for the primer.
3

4 **6-23.3(10) Finishing Polyester Concrete**

5 The finished surface of the polyester concrete overlay shall conform to the straight-edge
6 requirements of Section 6-23.3(15) of this Special Provision and the following:
7

- 8 1. The polyester concrete shall be struck off, finished, and consolidated in
9 accordance with the profile grade and cross-section provided by the Engineer
10 with adjustments allowed in Section 6-23.3(9)I of this Special Provision.
11
- 12 2. Binder content shall be as specified in Section 6-23.2(1)B of this Special
13 Provision and yield a polyester concrete consistency that requires surface
14 applied consolidation and finishing to consolidate the polyester concrete and
15 yield a slight sheen of bleed binder on top surface yet does not yield excess
16 bleed binder.
17
- 18 3. Although the paver should yield a finished surface, additional finishing may be
19 necessary. Hand finishing of seam area between passes shall produce a
20 consistent surface across the junction of the placements. Polyester concrete
21 shall be finished as necessary through traditional concrete finishing methods,
22 producing a smooth surface, with slight resin sheen indicating complete
23 consolidation of aggregates. Polyester concrete patches shall be finished by
24 traditional concrete hand finishing methods.
25

26 **6-23.3(11) Sand for Abrasive Finish**

27 The polyester concrete overlay shall receive an abrasive finish using sand as specified.
28 The abrasive finish shall be applied immediately after overlay strike-off and before gelling
29 occurs. Where spring tining is allowed, the tining shall be performed after sufficient sand
30 broadcast.
31

32 At the time of application on the polyester concrete, the moisture content of the sand for
33 abrasive finish shall not exceed 0.5 percent.
34

35 At least 2.2 lbs. per square yard shall be applied evenly to refusal by hand broadcasting
36 onto the glossy surface immediately after sufficient finishing and before resin gelling
37 occurs. To ensure adequate pavement friction, the completed polyester concrete overlay
38 surface (including the sand for abrasive finish) shall be free of any smooth or "glassy"
39 areas such as those resulting from insufficient quantities of surface aggregate. Any such
40 surface defects shall be repaired by the Contractor in the manner recommended by the
41 System Provider Technical Representative and approved by the Engineer at no
42 additional cost to the Contracting Agency.
43

44 **6-23.3(12) Curing Polyester Concrete**

45 The polyester concrete overlay shall be cured in accordance with the manufacturer's
46 recommendations. Protect the overlay from moisture, traffic, and equipment for at least
47 2 hours after final finishing. The Engineer may extend protection time if sufficient strength
48 or adhesion is not achieved. The in-place material must achieve test reading from a
49 calibrated Schmidt Hammer of at least 3,000 psi within four hours after final finishing,
50 and before traffic or equipment is allowed on the overlay. Proper cure rate necessary to

1 achieve sufficient initial and final strength depends on proper initiator/accelerator levels
2 to account for field conditions such as ambient and substrate temperatures.
3

4 The Contractor shall measure the compressive strength of the cured polyester concrete
5 overlay with a rebound hammer in accordance with ASTM C805. The readings of the
6 rebound hammer used shall be correlated to the compressive strength of the polyester
7 concrete product in accordance with ASTM C805 Section 5.4 and the Contractor shall
8 submit a Type 1 Working Drawing of this correlation.
9

10 Traffic and equipment shall not be permitted on the polyester concrete overlay for at least
11 four hours and until the polyester overlay has reached a minimum compressive strength
12 of 3,000 psi based on the rebound hammer readings and the correlation chart for the
13 rebound hammer used.
14

15 Areas in the polyester concrete that do not totally cure, or that fail to attain the minimum
16 compressive strength specified above, shall have the deficiencies addressed in
17 accordance with Section 1-05.7.
18

19 The Contractor shall prevent any cleaning chemicals from reaching the polyester mix
20 during the overlay applications.
21

22 **6-23.3(13) Checking Polyester Concrete for Bond**

23 **6-23.3(13)A Sounding**

24 After the requirements for curing have been met, the entire overlay surface shall be
25 inspected by the Contractor's independent testing entity, in the presence of the
26 Engineer, in accordance with ASTM D4580, Method B. Any areas of delamination
27 shall be removed and replaced at no additional expense to the Contracting Agency.
28 Extensive unbonded areas may be grounds for rejection of the entire installation if
29 ordered by the Engineer.
30

31 **6-23.3(13)B Direct Tension Bond Testing**

32 Vertical axis adhesion tests shall be performed not more than 24 hours after the
33 placement of the Polyester concrete overlay by an independent testing company,
34 arranged by the Contractor, in accordance with ASTM C1583, cost to be included in
35 polyester concrete Overlay Placement item. At a minimum, two adhesion tests, at
36 randomly selected locations, shall be performed on the first bridge and Trial Overlay.
37 For bridges with deck areas greater than 25,000 square feet, or multiple bridge
38 projects, additional tests shall be performed at a frequency of one test per 25,000
39 square feet of additional deck area, if required by the Engineer. If substrate and
40 surface preparation remain consistent and sufficient, a single test set may be
41 sufficient and subsequent tests may be waived if allowed by the Engineer. Additional
42 testing may be required as directed by the Engineer if any element of the substrate,
43 surface prep, polyester concrete overlay system, or placement changes after initial
44 testing.
45

46 Test cores shall be drilled a minimum of 0.25" but no greater than 0.50" below the
47 substrate to overlay bond line.
48

49 The minimum bond strength of the polyester concrete overlay system on normal
50 weight concrete shall be 250 psi. An acceptable test will demonstrate that the
51 overlay bond strength is sufficient by producing a concrete subsurface failure area

1 greater than 50% of the test surface area (“type a” per test method). Failure at the
2 epoxy/overlay interface (“type d” per test method) is also acceptable provided the
3 failure occurs at not less than 250 psi. The Contractor shall repair all bond test
4 locations with polyester concrete overlay in accordance with this Special Provision.
5

6 **6-23.3(14) Crack Sealing Polyester Concrete**

7 If cracks appear in the overlay after a significant cure period, they shall be filled with
8 properly catalyzed and mixed HMWM primer material. Care shall be taken to fill the
9 cracks only, and ensure minimal primer is left on the finished surface of the overlay.
10

11 If cracking is extensive, yet no other defects exist, the area shall be shot blast cleaned
12 and flood coated with properly catalyzed and mixed crack sealer followed by
13 broadcasting sand meeting the requirements for sand for abrasive finish.
14

15 **6-23.3(15) Surface Smoothness**

16 After crack sealing is complete, the Contractor shall test the entire deck/slab for flatness
17 (allowing for crown, camber, and vertical curvature). The testing shall be done with a 10-
18 foot straightedge held on the surface. The straightedge shall be advanced in successive
19 positions parallel to the centerline, moving not more than one half the length of the
20 straightedge each time it advances. This procedure shall be repeated with the
21 straightedge held perpendicular to the centerline. An acceptable surface shall be both
22 (1) free from deviations of more than 1/8-inch under the 10-foot straightedge, and (2) free
23 from cyclical/repetitive vertical deviations greater than 1/16”.
24

25 If smoothness testing identifies areas that deviate from the smoothness requirements,
26 the Contractor shall grind these down with a diamond grinder meeting the requirements
27 of Section 6-23.3(2)G of this Special Provision. Prior to diamond grinding, areas showing
28 low spots of more than 1/4 inch in 10 feet shall be marked and prepared with shot blasting
29 or sandblasting, primed, and filled with either catalyzed resin and broadcast sand or
30 mixed polyester concrete slurry material if ordered by the Engineer. The use of resin or
31 mixed slurry material shall be as recommended by the System Provider Technical
32 Representative and approved by the Engineer. Grinding removal of the fill area boundary
33 may be required if directed by the Engineer. Retesting and refinishing shall continue until
34 a surface conforming to the requirements specified above is produced. The grinding
35 depth of high areas after initial finishing shall not exceed 1/4 inch.
36

37 **6-23.3(16) Texturing Polyester Concrete**

38 After the Contractor has completed all work required to meet the requirements for surface
39 smoothness, the polyester concrete overlay surface shall receive a longitudinally sawn
40 texture using equipment as described in Section 6-23.3(2)H of this Special Provision.
41 The Contractor shall texture the bridge deck surface to within 3-inches minimum and 12-
42 inches maximum of the edge of concrete at expansion joints, within 1-foot minimum and
43 2-feet maximum of the curb line, and within 3-inches minimum and 9-inches maximum
44 of the perimeter of bridge drain assemblies.
45

46 The Contractor shall contain and collect all concrete dust and debris generated by the
47 bridge deck texturing process and shall dispose of the collected concrete dust and debris
48 in accordance with its Debris Containment and Disposal Plan.
49

1 After texturing polyester concrete surface, the Engineer shall test the surface texture of
2 polyester concrete for uniformity and it shall have a skid number (SN) of not less than 35
3 as determined by ASTM E 274.
4

5 **6-23.3(17) Replacement of Defective Overlay**

6 A defective overlay, or portion thereof, as evidenced by insufficient strength, lack of
7 sound bond to substrate, or failing overlay adhesion test results shall be removed and
8 replaced at the Contractor's expense. The Contractor shall submit a written corrective
9 action plan to the Engineer, which shall include the methods and procedures that will be
10 used. The Contractor shall not commence corrective work until the methods and
11 procedures have been approved in writing by the Engineer. The Engineer's approval
12 shall not relieve the Contractor of the responsibility of producing work in conformity with
13 the Contract.
14

15 **6-23.3(18) Opening to Traffic**

16 Prior to opening the overlay area to vehicular traffic, the finished overlay shall be power
17 swept to remove excess loose aggregate and loose sand for abrasive finish. The
18 Contractor shall demonstrate to the satisfaction of the Engineer that the power broom
19 equipment will not damage the finished overlay. Damage to the finished overlay caused
20 by the power broom shall be repaired at no additional expense to the Contracting Agency.
21

22 **6-23.4 Measurement**

23 Shotblasting concrete surface will be measured by the square yard of surface shotblasted.
24

25 Type 1 Deck Repair and Type 2 Deck Repair will be measured by the square foot of surface
26 area of deck concrete removed in accordance with Section 6-23.3(7) of this Special Provision.
27 Determination of whether a deck repair is Type 1 or Type 2 shall be in accordance with Section
28 6-23.3(7) of this Special Provision.
29

30 Polyester concrete overlay will be measured by the square yard of overlay surface actually
31 placed.
32

33 **6-23.5 Payment**

34 Payment will be made for each of the following Bid Items that are included in the Bid Proposal:
35

36 "Surveying for Polyester Concrete Overlay", lump sum.

37 The lump sum contract price for "Surveying for Polyester Concrete Overlay" shall be full
38 pay to perform the Work as specified, including establishing secondary survey control
39 points, performing survey quality control, and recording, compiling, and submitting the
40 survey records to the Engineer, and all other surveying required to complete the polyester
41 concrete overlay.
42

43 "Type 1 Deck Repair", per square foot.

44 The unit contract price per square foot for Type 1 Deck Repair shall be full pay for
45 performing the Work as specified, including excavating and disposing concrete and
46 nonconcrete materials, and repair of concrete or rebar damaged by the Contractor's
47 operations.
48

49 "Type 2 Deck Repair", per square foot.

1 The unit contract price per square foot for Type 2 Deck Repair shall be full pay for
2 performing the Work as specified, including: excavating and disposing concrete;
3 sandblasting; placing, consolidating, finishing, and curing concrete patches in Type 2
4 deck repairs; repair of concrete or rebar damaged by the Contractor's operations.

5
6 "Polyester Concrete Trial Overlay", lump sum.

7 The lump sum contract price for "Polyester Concrete Trial Overlay" shall be full pay for
8 performing the Work as specified, including establishing a location for the trial overlay,
9 construction, removal, and disposal of the concrete pad and trial overlay.

10
11 "Polyester Concrete Overlay", per square yard.

12 The unit contract price per square yard for "Polyester Concrete Overlay" shall be full pay
13 for performing the Work as specified, including dry run, initial surface preparation, final
14 surface preparation, placing primer, placing, finishing, and curing the overlay, placing
15 sand for abrasive finish, sounding, direct tension bond testing, meeting surface
16 smoothness requirements, texturing, crack sealing, and replacement of defective
17 overlay. Polyester concrete overlay placed in excess of the thickness specified in the
18 Plans due to surface irregularities in the bridge deck such as rutting or excess concrete
19 surface shotblasting shall be considered incidental to the unit Contract price per square
20 yard for "Polyester Concrete Overlay".

21
22 Payment for the following shall be considered incidental to and included in the unit contract
23 items included in the Contract:

- 24 1. All Work and related costs for implementing the debris containment and disposal
25 plan.
- 26 2. All Work and related costs for protecting adjacent traffic from flying debris.
- 27 3. All Work and related costs for managing and disposing of process wastewater.
- 28 4. Submittals.

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33 DIVISION7.GR7

34 **Division 7**
35 **Drainage Structures, Storm Sewers, Sanitary**
36 **Sewers, Water Mains, and Conduits**

37
38
39 7-01.GR7

40 **Drains**

41
42 7-01.SA1.GR7

43 **(October 3, 2022)**

44 **MEDIA FILTER DRAINS**

45 **Description**

46 This Work shall consist of constructing media filter drains as detailed in the Plans.

47
48 **Materials**

49 Materials shall meet the requirements of the following sections:

1		
2	Aggregate for Bituminous Surface Treatment	9-03.4
3	Crushed Surfacing Base Course	9-03.9(3)
4	Gravel Backfill for Drains	9-03.12(4)
5	Underdrain Pipe	9-05.2
6	Seed	9-14.3
7	Fertilizer	9-14.4
8	Mulch and Amendments	9-14.5
9	Agricultural Grade Dolomite Lime	9-14.5(5)
10	Agricultural Grade Gypsum	9-14.5(6)
11	Compost	9-14.5(8)
12	Horticultural Grade Perlite	9-14.5(9)
13	Compost Socks	9-14.6(6)
14	Geotextile for Underground Drainage (Moderate Survivability,	9-33
15	Drainage Class C, non-woven)	
16		

Media Filter Drain Mix

Media filter drain mix shall be mixed in the following proportions: 3 cubic yards of aggregate, 1 cubic yard of horticultural grade perlite, 40 pounds of agricultural grade dolomite lime, and 12 pounds of agricultural grade gypsum. The perlite, dolomite lime, and gypsum shall not contain toxic material. Media filter drain mix shall be premixed prior to placement. The soil amendments and aggregate shall meet the following requirements prior to mixing.

Aggregate for Media Filter Drain Mix

Aggregate for media filter drain mix shall meet the requirements of Section 9-03.4(2), 3/8-inch to No.4., with the exception of:

- The use of recycled material is not permitted.
- The fracture requirement shall be at least two fractured faces and will apply to material retained on the No. 4 sieve in accordance with FOP for AASHTO T 335.

Acceptance of the aggregate shall be in accordance with Section 3-04.5, Table 2 for "Other" materials based on one sample every 1000 tons. Testing of aggregate shall occur prior to mixing with the soil amendments. Horticultural grade perlite, agricultural grade dolomite lime and gypsum will be accepted by catalog cut or bag label.

Construction Requirements

General Requirements

The Contractor shall construct the media filter drain in accordance with the details in the Plans. Media filter drain type work elements are shown in Table 1.

Media Filter Drain Table 1

Elements of Media Filter Drain Construction	Media Filter Drain Type						
	1	2	3	4	5	6	7
Media Filter Drain Mix	X	X	X	X	X	X	X
Scarification	X	X	X	X	X	X	X

Underdrain Pipe	X	X		X		X	
Gravel Backfill for Drains	X	X		X		X	
Geotextile for Underground Drainage	X	X		X		X	
Excavation	X	X	X	X	X	X	X
CSBC			X		X		X
Compost Blanket	X	X	X	X	X	X	X
Compost Sock						X	X
Flow Spreader				X	X	X	X
Gravel Backfill for Pipe Zone Bedding				X	X		
Non-Vegetation Zone	X	X	X	X	X		

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The Contractor shall sequence construction of the media filter drain to ensure different sections of the media filter drain are not contaminated or displaced by other materials during installation. Once constructed, the Contractor will not be allowed to drive equipment over areas of the media filter drain.

Before excavating media filter drains, the Contractor shall clear and grub the area in accordance with Section 2-01.

Preparation

Prior to placement of the compost blanket, the Contractor shall scarify the area for the grass strip to a depth of 2 to 3 inches as shown in the Plans. The application and scarifying methods shall be approved by the Engineer. The Contractor shall notify the Engineer a minimum of five working days prior to the start of compost work.

Excavation

Media filter drain excavation shall conform to Section 2-09.3(4).

Installation

Medium compost shall be uniformly and evenly placed as shown in the Plans.

Underdrain shall be constructed in accordance with Section 7-01.3.

Compost blanket shall be constructed in accordance with Section 8-01.3(4).

Compost sock shall be constructed in accordance with Section 8-01.3(12).

The media filter drain area shall be seeded in accordance with 8-02.3(9) after the compost blanket has been installed.

After excavation, the non-vegetation zone shall backfill as detailed in the plans. The use of recycled material is not permitted.

Measurement

Media filter drain will be measured per square yard along the ground surface of the completed installation.

Payment

“Media Filter Drain Type _____”, per square yard.

1 The unit Contract price per square yard for “Media Filter Drain Type _____” shall be full pay to
2 furnish all labor, equipment, and materials to complete the Work as specified.

3
4 Clearing and grubbing shall be paid for in accordance with Section 2-01.5.

5
6 Seeding, Fertilizing, and Mulching will be paid for in accordance with Section 8-02.5.

7
8 7-09.GR7

9 **Water Mains**

10
11 7-09.3.GR7

12 **Construction Requirements**

13
14 7-09.3(18).GR7

15 ***Coupled Pipe 4 – inches in Diameter and Larger***

16
17 7-09.3(18).INST1.GR7

18 Section 7-09.3(18) is revised to read:

19
20 7-09.3(18).OPT1.2026.GR7

21 (January 6, 2025)

22 Joints for steel pipe shall be bell and spigot or welded as specified in the Special
23 Provisions.

24
25 Component parts of couplings, rings, and bells shall receive a protective coating in
26 the same manner as specified for the steel pipe. Bolts and nuts, exposed edges,
27 and flanges shall, after installation, be covered with a protective coating conforming
28 to AWWA C222, or AWWA C210, or AWWA C229 with the exception that coatings
29 containing coal tar shall not be used.

30
31 Steel pipe 4 inches and larger for aboveground service shall be coupled with
32 flanges, compression type or grooved type couplings.

33
34 Pipe for outdoor service above ground shall be covered with a protective coating
35 conforming to AWWA C218 with the exception that coatings containing coal tar shall
36 not be used.

37
38 7-12.2.GR7

39 **Materials**

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41 7-12.2.GR7

42 **Materials**

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44 7-12.2(9-30.3).GR7

45 **Valves**

46
47 7-12.2(9-30.3(4)).GR7

48 **Valve Boxes**

49 Section 9-30.3(4) is revised to read

7-12.2(9-30.3(4)).OPT1.2026.GR7
(January 6, 2025)

Valve boxes shall be installed on all buried valves. The box shall be of cast iron, two-piece slip type standard design with a base corresponding to the size of the valve. The cast iron box and cover shall not be coated. The cover shall have the word "WATER" cast in it.

DIVISION8.GR8

**Division 8
Miscellaneous Construction**

8-01.GR8

Erosion Control and Water Pollution Control

8-01.2.GR8

Materials

8-01.2(9-14.5).GR8

Mulch and Amendments

8-01.2(9-14.5(2)).GR8

Hydraulically Applied Erosion Control Products (HECPs)

8-01.2(9-14.5(2)A).GR8

Long-Term Mulch

Table 2 of Section 9-14.5(2)A is revised to read:

8-01.2(9-14.5(2)A).OPT1.2026.GR8

(November 4, 2024)

Table 2 Long-Term Mulch Test Requirements

The Contractor shall supply independent test results from the National Transportation Product Evaluation Program (NTPEP) on 5-year intervals generated on or after November 1, 2015, showing that the product meets the Cover-Factor (C Factor) in accordance with ASTM D6459. ASTM D8297 may be used as an alternative test method.		
Properties	Test Method	Requirements
Performance in Protecting Slopes from Rainfall-Induced Erosion	ASTM D6459 or ASTM D8297. Test in one soil type. Soil tested shall be sandy loam as defined by the NRCS Soil Texture Triangle.	C Factor = 0.01 maximum using Revised Universal Soil Loss Equation (RUSLE) (or $C_{event} = 0.01$ maximum if using ASTM D8297)
The Contractor shall submit test results from an independent, accredited laboratory, on 5-year intervals generated on or after July 15, 2017, showing that the product meets the following requirements.		
Properties	Test Method	Requirements
Water Holding Capacity	ASTM D7367	800 percent minimum
Organic Matter Content	AASHTO T 267	90 percent minimum

Seed Germination Enhancement	ASTM D7322	Long Term 420 percent minimum
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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

Item number 3 and 4 in the second paragraph of Section 8-01.3(1)B are revised to read:

8-01.3(1)B.OPT1.GR8

(October 3, 2022)

3. 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.

8-01.3(1)C.GR8

Water Management

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 <u>(Botanical name)</u>	Pounds Pure Live Seed <u>(PLS) Per Acre</u>
*** \$\$2\$\$	\$\$
\$\$	\$\$
\$\$	<u>\$\$</u>
Total	\$\$ ***

The seed shall be certified in accordance with WAC 16-302 and meet the following requirements:

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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:

<u>Seed by Common Name, (Botanical Name), and "Source Identification"</u>	<u>Pounds Pure Live Seed (PLS) Per Acre</u>
*** \$\$2\$\$	\$\$
\$\$	\$\$
\$\$	<u>\$\$</u>
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.

1 8-01.3(2)B.OPT4.FR8

2 (January 3, 2006)

3 Sufficient quantities of fertilizer shall be applied to supply the following amounts
4 of nutrients:

5
6 Total Nitrogen as N - *** \$\$1\$\$ *** pounds per acre.

7
8 Available Phosphoric Acid as P₂O₅ - *** \$\$2\$\$ *** pounds per acre.

9
10 Soluble Potash as K₂O - *** \$\$3\$\$ *** pounds per acre.

11
12 *** \$\$4\$\$ *** pounds of nitrogen applied per acre shall be derived from
13 isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release,
14 polyurethane coated source with a minimum release time of 6 months. The
15 remainder may be derived from any source.

16
17 The fertilizer formulation and application rate shall be approved by the Engineer
18 before use.

19
20 8-01.3(2)B.OPT8.FR8

21 (August 4, 2014)

22 Seed of the following mix, rate, and analysis shall be applied at the rates shown
23 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\$\$	\$\$
\$\$	\$\$
\$\$	<u>\$\$</u>
Total	\$\$ ***

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37 Seed shall meet or exceed Washington State Department of Agriculture
38 Certified Seed Standards and be from within the *** \$\$3\$\$ *** Ecoregion(s) as
39 defined by the US Environmental Protection Agency (EPA).

40
41 The seed certification class shall be Certified (blue tag) in accordance with WAC
42 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.

1 8-01.3(2)D.GR8

2 **Temporary Mulching**

3
4 8-01.3(2)D.INST1.GR8

5 Section 8-01.3(2)D is supplemented with the following:

6
7 8-01.3(2)D.OPT1.FR8

8 (January 5, 2015)

9 *** \$\$1\$\$ *** shall be applied at a rate of *** \$\$2\$\$ *** pounds per acre with no
10 more than *** \$\$3\$\$ *** pounds per acre applied in a single lift.

11
12 8-02.GR8

13 **Roadside Restoration**

14
15 8-02.1.GR8

16 **Description**

17
18 8-02.1.INST1.GR8

19 Section 8-02.1 is supplemented with the following:

20
21 8-02.1.OPT1.GR8

22 (August 4, 2014)

23 This work shall consist of removing and disposing of buried previously fabricated debris
24 that may be encountered during soil amendment incorporation or excavation for irrigation
25 systems.

26
27 8-02.1.OPT2.GR8

28 (April 1, 2019)

29 This Work consists of supplying and applying a Biotic Soil Amendment (BSA) in
30 accordance with these Specifications and as shown in the Plans or as designated by the
31 Engineer.

32
33 8-02.2.GR8

34 **Materials**

35
36 8-02.2.INST1.GR8

37 Section 8-02.2 is supplemented with the following:

38
39 8-02.2.OPT1.GR8

40 **(January 3, 2011)**

41 **Conservation Grade Plant Material**

42 Conservation grade plant material is defined as healthy plants that do not meet aesthetic
43 standards as defined in ASNS. The plants have healthy, well-developed roots and in all
44 other ways meet standards for healthy and vigorous growth. However, these plants may
45 have multiple leaders, damaged or missing leaders, Y crotches, bent branches, or other
46 unusual shapes or forms. These plants may be used where shown in the plans.

47
48 8-02.2.OPT2.GR8

49 (April 1, 2019)

1 Biotic Soil Amendments (BSAs), also known as biotic soil media and hydraulic growth
 2 medium, shall be soil amendments engineered to improve the development of deficient
 3 soils and to facilitate sustainable vegetation. BSAs shall consist of a blend of organic
 4 material, nutrient sources, soil building and biostimulant components. BSAs shall
 5 increase the water and nutrient holding capacity of the soil and promote the growth of
 6 beneficial microorganisms. BSAs shall provide for enhanced seed germination and
 7 vegetative establishment.

8
 9 Biotic Soil Amendment shall be certified to be free of weed seeds and pathogens, free of
 10 plastic, composed of non-toxic materials, and be a pre-mixed formulation unaltered by
 11 synthetic materials.

12
 13 The biotic soil amendment shall have a minimum of 90% organic matter (organic growth
 14 medium) and contain other materials designed to improve seed germination, vegetation
 15 establishment and overall soil health. In addition to organic growth medium BSA shall
 16 include mycorrhizal fungi and a minimum of three of the following ingredients:

- 17
- 18 • Biochar
- 19 • Humus/Humic Acid
- 20 • Porous Ceramics or Water-holding Organic Polymers
- 21 • Seaweed Extract
- 22 • Beneficial Bacteria
- 23 • Micronutrients
- 24

25 The Contractor shall provide test results dated within 3 years prior to the date of
 26 application from an independent, accredited laboratory that has been recognized by an
 27 accrediting organization to test and evaluate products to product safety standards. The
 28 independent, accredited lab shall be free from commercial, financial, and other pressures
 29 that may influence the results of the testing and evaluation process. Test results shall
 30 show that the product meets the following table requirements:
 31

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.		

32

1 **Submittal Requirements**

2 At the time of delivery, the Contractor shall submit the specific biotic soil amendment
3 packing list to the Engineer for acceptance. The packing list shall include complete
4 identification including, but not limited to, the following information:

- 5
6 • Manufacturer name and location,
7 • Manufacturer telephone number and fax number,
8 • Manufacturer's e-mail address and web address, and
9 • BSA name.
10 • Certification that the specific BSA meets the physical, environmental and
11 performance criteria of this specification and test results.

12
13 **Acceptance**

14 Acceptance of the materials shall be based on:

- 15
16 1. Certificate of Compliance demonstrating adherence to the Specifications,
17 2. Visual inspection ensuring the material is free of plastic.

18
19 8-02.2(9-14).GR8

20 **Erosion Control and Roadside Planting**

21
22 8-02.2(9-14).INST1.GR8

23 Section 9-14 is supplemented with the following:

24
25 8-02.2(9-14).OPT1.FR8

26 **(January 3, 2011)**

27 **Weed Barrier Mats**

28 Weed Barrier Mats shall be 3 feet square. They shall be made of UV stabilized
29 geotextile colored with carbon black and shall provide a minimum of 3 years of weed
30 control. Weed Barrier Mats shall be 2.5 mils thick with a minimum of 400 micropores
31 per square inch. Staples shall be a minimum of 11 gauge wire and be *** \$1\$ ***
32 inches in length.

33
34 Acceptance will be based on a catalog cut.

35
36 8-02.2(9-14.2).GR8

37 **Topsoil**

38
39 8-02.2(9-14.2(1)).GR8

40 **Topsoil Type A**

41 Section 9-14.2(1) is supplemented with the following:

42
43 8-02.2(9-14.2(1)).OPT1.FR8

44 (February 25, 2021)

45 Topsoil Type A shall meet the following requirements:

- 46
47 1. Cation exchange capacity (CEC) of Topsoil Type A shall be a
48 minimum of 5 milliequivalents CEC/100 g dry soil (U.S. EPA
49 Method 9081).
50

1 2. Organic content greater than 8-percent but less than 15-percent
2 as measured on a dry weight basis using AASHTO T 267
3 Determination of Organic Content in Soils by Loss on Ignition.
4

5 Topsoil Type A shall be 60-percent to 70-percent *** \$1\$\$ *** Loam and
6 40-percent to 30-percent *** \$2\$\$ *** Compost by volume. *** \$3\$\$ ***
7 Loam shall be as defined by the US Department of Agriculture Soil
8 Classification System.
9

10 The Contractor shall submit a Particle Size Analysis as a Type 1 Working
11 Drawing from an independent accredited soils testing laboratory indicating
12 the Material source and compliance with all Topsoil Type A specifications.
13 The laboratory analysis shall be with a sample size of no less than 2
14 pounds.
15

16 The *** \$4\$\$ *** Compost shall conform to the requirements of Section 9-
17 14.5(8).
18

19 8-02.2(9-14.5).GR8

20 **Mulch and Amendments**

21
22 8-02.2(9-14.5(8)).GR8

23 **Compost**

24 Section 9-14.5(8) is supplemented with the following:
25

26 8-02.2(9-14.5(8)).OPT2.GR8

27 (September 3, 2019)

28 The compost product may contain biosolids as a feedstock. Biosolids
29 compost production and quality shall comply with WAC 173-308.
30

31 The Compost Submittal Requirements shall include a copy of the Coverage
32 Under the General Permit for Biosolids Management issued to the
33 manufacturer by the Department of Ecology in accordance with WAC 173-
34 308 (Biosolids Management).
35

36 8-02.3.INST1.GR8

37 Section 8-02.3 is supplemented with the following:
38

39 8-02.3.OPT1.GR8

40 **(April 1, 2019)**

41 **Storage and Handling**

42 Biotic soil amendments in accordance with the above requirements shall be furnished by
43 the manufacturer in pre-packaged, standard unopened containers with weight, name of
44 plant nutrients and manufacturer's guaranteed statement of analysis clearly marked in
45 accordance with State and Federal laws. Field mixing of BSA components will not be
46 permitted. Containers shall be kept safe in storage protected from weather, excessive
47 temperatures, and construction operations. Products shall be handled in compliance with
48 any instructions or recommendations stated by the manufacturer. Any spills shall be
49 promptly cleaned.
50

1 **Installation of Biotic Soil Amendment**

2 The Contractor shall comply with the equipment manufacturer's installation instructions
3 and recommendations. Biotic soil amendment shall be hydraulically applied at the rate
4 of 4000 pounds per acre with no more than 2500 pounds applied in any single lift. Lifts
5 shall be applied from opposing directions to soil surface for uniform coverage. If
6 recommended by the BSA manufacturer, seed, tackifier and/or fertilizer shall be added
7 to the slurry as recommended by manufacturer or BSA shall be applied within 48 hours
8 of the seeding operation. A continuous and uniform cover shall be provided to the depth
9 specified by the manufacturer. Thin areas or areas of bare soil will not be allowed, and
10 supplemental biotic soil amendment applied by the Contractor shall be at no additional
11 cost to the Contracting Agency.

12
13 8-02.3(4).GR8

14 **Topsoil**

15
16 8-02.3(4)A.GR8

17 **Topsoil Type A**

18
19 8-02.3(4)A.INST1.GR8

20 Section 8-02.3(4)A is supplemented with the following:

21
22 8-02.3(4)A.OPT1.FR8

23 (August 3, 2015)

24 Topsoil Type A shall be placed to a non-compacted depth of *** \$\$1\$\$ ***
25 inches. The topsoil shall be thoroughly blended prior to placement.

26
27 The Contractor shall submit a Type 1 Working Drawing consisting of
28 independent test results from an accredited laboratory demonstrating the
29 Topsoil Type A meets the requirements of Section 9-14.1(1). The Type 1
30 Working Drawing shall also include the Request for Approval of Material in
31 accordance with Section 1-06.1(2).

32
33 8-02.3(5).GR8

34 **Roadside Seeding, Lawn and Planting Area Preparation**

35
36 8-02.3(5).INST1.GR8

37 Section 8-02.3(5) is supplemented with the following:

38
39 8-02.3(5).OPT1.FR8

40 (August 5, 2013)

41 After the initial planting area weed control, soil placement, grading, and the
42 installation of irrigation lines are completed, and prior to planting, all designated
43 planting areas shall be covered with compost.

44
45 Prior to placement of compost, the application methods shall be approved by the
46 Engineer.

47
48 Compost shall not be placed when a condition exists, such as frozen or water
49 saturated soil that may be detrimental to successful application or soil structure.
50

1 The Contractor shall notify the Engineer a minimum of five working days prior to the
2 start of compost work.

3
4 Compost shall be uniformly and evenly placed in all designated areas at a depth of
5 *** \$\$1\$\$ *** inches.

6
7 8-02.3(5).OPT2.FR8

8 (August 5, 2013)

9 After the initial planting area weed control, soil placement, and grading are
10 completed, and prior to the installation of irrigation lines and planting, all designated
11 planting areas shall be covered with compost.

12
13 Prior to placement and incorporation of compost, the application and incorporation
14 methods shall be approved by the Engineer.

15
16 Compost shall not be placed when a condition exists, such as frozen soil or water
17 saturated soil that may be detrimental to successful application, incorporation, or
18 soil structure.

19
20 The Contractor shall notify the Engineer a minimum of five working days prior to the
21 start of compost work.

22
23 Compost shall be uniformly and evenly placed in all designated areas at a depth of
24 *** \$\$1\$\$ *** inches.

25
26 After placement of the compost, the Contractor shall incorporate the layer uniformly
27 into the existing soil to a depth of *** \$\$2\$\$ *** inches.

28
29 8-02.3(5).OPT3.FR8

30 (August 5, 2013)

31 After initial area weed control, grading, and soil placement are completed, all soil
32 shall be covered with compost.

33
34 Prior to the placement and incorporation of compost, the application and
35 incorporation methods shall be approved by the Engineer.

36
37 Compost shall not be placed when a condition exists, such as frozen or water
38 saturated soil that may be detrimental to successful application, incorporation, or
39 soil structure.

40
41 The Contractor shall notify the Engineer a minimum of five working days prior to the
42 start of compost work.

43
44 Compost shall be uniformly and evenly placed in all designated areas at a depth of
45 *** \$\$1\$\$ *** inches.

46
47 After placement of the compost, the Contractor shall incorporate the layer uniformly
48 into the existing soil to a depth of *** \$\$2\$\$ *** inches.

1 8-02.3(5).OPT4.GR8

2 **(August 4, 2014)**

3 **Removal of Buried Previously Fabricated Debris**

4 The Contractor shall remove buried previously fabricated debris as directed by the
5 Engineer to a maximum depth of two feet. The excavated debris shall be removed
6 from the project site to a disposal facility approved by the Engineer.
7

8 8-02.3(6).GR8

9 **Mulch and Amendments**

10
11 8-02.3(6)B.GR8

12 **Fertilizers**

13
14 8-02.3(6)B.INST1.GR8

15 Section 8-02.3(6)B is supplemented with the following:
16

17 8-02.3(6)B.OPT1.FR8

18 (September 3, 2019)

19 Sufficient quantities of fertilizer shall be applied to supply the following amounts
20 of nutrients:
21

22 Total Nitrogen as N - *** \$\$1\$\$ *** pounds per acre.
23

24 Available Phosphoric Acid as P₂O₅ - *** \$\$2\$\$ *** pounds per acre.
25

26 Soluble Potash as K₂O - *** \$\$3\$\$ *** pounds per acre.
27

28 *** \$\$4\$\$ *** pounds of nitrogen applied per acre shall be derived from
29 isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release,
30 polyurethane coated source with a minimum release time of 6 months. The
31 remainder may be derived from any source.
32

33 The fertilizer formulation and application rate shall be approved by the Engineer
34 before use.
35

36 8-02.3(6)B.OPT2.FR8

37 **(September 3, 2019)**

38 **First Application of Fertilizer**

39 Sufficient quantities of fertilizer shall be applied to supply the following amounts
40 of nutrients:
41

42 Total Nitrogen as N - *** \$\$1\$\$ *** pounds per acre.
43

44 Available Phosphoric Acid as P₂O₅ - *** \$\$2\$\$ *** pounds per acre.
45

46 Soluble Potash as K₂O - *** \$\$3\$\$ *** pounds per acre.
47

48 The fertilizer formulation and application rate shall be approved by the Engineer
49 before use.
50

1 **Second Application of Fertilizer**

2 A second application of fertilizer shall be applied during the period of March 1
3 to April 15 or November 15 to December 15. In no instance shall the second
4 application of fertilizer occur less than 90 days after the first fertilizer application.
5

6 Sufficient quantities of fertilizer shall be applied to supply the following amounts
7 of nutrients:

8
9 Total Nitrogen as N - *** \$\$4\$\$ *** pounds per acre.

10
11 Available Phosphoric Acid as P₂O₅ - *** \$\$5\$\$ *** pounds per acre.

12
13 Soluble Potash as K₂O - *** \$\$6\$\$ *** pounds per acre.

14
15 *** \$\$7\$\$ *** pounds of nitrogen applied per acre shall be derived from
16 isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release,
17 polyurethane coated source with a minimum release time of 6 months. The
18 remainder may be derived from any source.
19

20 The fertilizer formulation and application rate shall be approved by the Engineer
21 before use.
22

23 8-02.3(6)B.OPT3.GR8

24 (September 3, 2019)

25 Fertilizer shall be a commercially prepared mix of 10-20-20 and shall be applied
26 at the rate of 10 pounds per 1000 square feet.
27

28 8-02.3(6)B.OPT4.FR8

29 (September 3, 2019)

30 Sufficient quantities of fertilizer shall be applied to supply the following amounts
31 of nutrients:

32
33 Total Nitrogen as N – *** \$\$1\$\$ *** pounds per acre.

34
35 Sulfur – *** \$\$2 \$\$ *** pounds per acre.

36
37 *** \$\$3\$\$ *** pounds of nitrogen applied per acre shall be derived from
38 isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release,
39 polyurethane coated source with a minimum release time of 6 months. The
40 remainder may be derived from any source.
41

42 The fertilizer formulation and application rate shall be approved by the Engineer
43 before use.
44

45 8-02.3(8).GR8

46 ***Planting***

47
48 8-02.3(8).INST1.GR8

49 Section 8-02.3(8) is supplemented with the following:
50

1 8-02.3(8).OPT1.FR8
 2 (February 25, 2013)
 3 When work requiring disturbance within planting area(s) *** \$\$1\$\$ *** is complete,
 4 the Contractor shall perform planting work within the next available planting window.

5
 6 8-02.3(9).GR8
 7 **Seeding, Fertilizing, and Mulching**

8
 9 8-02.3(9)B.GR8
 10 **Seeding and Fertilizing**

11
 12 8-02.3(9)B.INST1.GR8
 13 Section 8-02.3(9)B is supplemented with the following:

14
 15 8-02.3(9)B.OPT1.FR8
 16 (September 3, 2019)
 17 Seed of the following mix, rate, and analysis shall be applied at the rates shown
 18 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\$\$	\$\$
\$\$	\$\$
\$\$	<u>\$\$</u>
Total	\$\$ ***

19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32 Source Identified seed shall be generation four or less. Non-Source Identified
 33 seed shall meet or exceed Washington State Department of Agriculture
 34 Certified Seed Standards and be from within the appropriate genetic zones of
 35 the *** \$\$3\$\$ *** Ecoregion(s) as defined by the US Environmental Protection
 36 Agency (EPA).

37
 38 The seed certification class shall be Certified (blue tag) in accordance with WAC
 39 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.

40
 41
 42
 43
 44
 45
 46 The Contractor shall document all Source Identified seed by providing the
 47 Association of Official Seed Certifying Agents (AOSCA) yellow seed label for
 48 each species in the mix. Site Identification Logs can be supplied for collections
 49 where the AOSCA yellow label is not available.
 50

1 8-02.3(9)B.OPT2.GR8

2 (September 3, 2019)

3 Grass seed shall be a commercially prepared mix, made up of low growing
4 species which will grow without irrigation at the project location, and accepted
5 by the Engineer. The application rate shall be two pounds per 1000 square
6 feet.

8 8-02.3(9)B.OPT3.FR8

9 (September 3, 2019)

10 Seed of the following mix, rate, and analysis shall be applied at the rates shown
11 below on all areas requiring *** \$\$1\$\$ *** seeding within the project:

13 Seed by Common Name, 14 (Botanical Name), and 15 "Source Identification"	16 Pure Live Seed 17 Pounds (PLS) Per Acre
18 *** \$\$2\$\$	19 \$\$
20 \$\$	21 \$\$
22 \$\$	23 <u>\$\$</u>
24 Total	25 \$\$ ***

26 Seed shall meet or exceed Washington State Department of Agriculture
27 Certified Seed Standards and be from within the *** \$\$3\$\$ *** Ecoregion(s) as
28 defined by the US Environmental Protection Agency (EPA).

29 The seed certification class shall be Certified (blue tag) in accordance with WAC
30 16-302 and meet the following requirements:

31 Prohibited Weed	32 0% max.
33 Noxious Weed	34 0% max.
35 Other Weed	36 0.20% max.
37 Other Crop	38 0.40% max.

37 8-02.3(11).GR8

38 **Mulch**

40 8-02.3(11).INST1.GR8

41 Section 8-02.3(11) is supplemented with the following:

43 8-02.3(11).OPT1.FR8

44 (April 2, 2012)

45 Bark mulch or wood chip mulch shall be placed to a uniform non-compacted depth
46 of *** \$\$1\$\$ *** over all planting areas.

47
48 Bark or wood chip mulch shall not be placed in areas of standing or flowing water.
49

1 8-02.3(11)A.GR8

2 **Mulch for Seeding Areas**

3

4 8-02.3(11)A.INST1.GR8

5 Section 8-02.3(11)A is supplemented with the following:

6

7 8-02.3(11)A.OPT1.FR8

8 (September 3, 2019)

9 *** \$\$1\$\$ *** shall be applied at a rate of *** \$\$2\$\$ *** pounds per acre with no
10 more than *** \$\$3\$\$ *** pounds per acre applied in a single lift.

11

12 8-02.4.GR8

13 **Measurement**

14

15 8-02.4.INST1.GR8

16 Section 8-02.4 is supplemented with the following:

17

18 8-02.4.OPT2.GR8

19 (April 1, 2019)

20 Biotic Soil Amendment will be measured by the acre along the grade and slope of the
21 area covered immediately after application.

22

23 8-02.5.GR8

24 **Payment**

25

26 8-02.5.INST1.GR8

27 Section 8-02.5 is supplemented with the following:

28

29 8-02.5.OPT2.GR8

30 (September 7, 2021)

31 "Removal of Buried Previously Fabricated Debris" will be paid for by force account as
32 specified in Section 1-09.6. The payment for removal of buried man-made debris shall
33 be full compensation for all costs for the specified Work to include removing, loading,
34 hauling, and all associated disposal costs.

35

36 For the purpose of providing a common proposal for all bidders, the Contracting Agency
37 has entered an amount in the proposal to become a part of the Contractor's total Bid.

38

39 8-02.5.OPT4.FR8

40 (April 1, 2019)

41 "Biotic Soil Amendment", per acre.

42

43 The unit Contract price per acre for "Biotic Soil Amendment" shall be full pay to perform
44 the Work as specified. When seed is mixed into, and applied with the biotic soil
45 amendment, payment for seed will be made under the Bid item *** \$\$1\$\$ ***.

46

47 8-03.GR8

48 **Irrigation Systems**

49

1 8-03.3.GR8
2 **Construction Requirements**

3
4 8-03.3(6).GR8
5 **Excavation**

6
7 8-03.3(6)A.GR8
8 **Trenches**

9
10 8-03.3(6)A2.GR8
11 **Within Critical Root Zone**

12
13 8-03.3(6)A2.INST1.GR8
14 Section 8-03.3(6)A2 is supplemented with the following:

15
16 8-03.3(6)A2.OPT1.FR8
17 (October 3, 2022)
18 Mechanical trenching within the Critical Root Zone of existing trees is
19 allowed at the following locations:

20
21 *** \$\$1\$\$ ***

22
23 The Contractor shall exercise care when excavating pipe trenches near
24 existing trees to minimize damage to tree roots.

25
26 Utilize International Society of Arboriculture (ISA) Best Practices for all
27 trenching activities to minimize soil compaction and damage to root
28 systems. All shattered root ends shall be clean-cut using appropriate sharp
29 pruning tools. Where roots are 1½ inches or greater in diameter are
30 encountered, the trench shall be hand excavated and tunneled under the
31 roots. Exposed roots 1½ or greater in diameter shall be wrapped with
32 heavy, moist material, such as burlap or canvas, for protection and to
33 prevent excessive drying. The wrapping material must be kept moist until
34 the trench is backfilled. All wrapping material and fastenings used to cover
35 the roots shall be removed before backfilling.

36
37 8-10.GR8
38 **Guide Posts**

39
40 8-10.1.GR8
41 **Description**

42
43 8-10.1.INST1.GR8
44 Section 8-10.1 is supplemented with the following:

45
46 8-10.1.OPT1.GR8
47 (November 20, 2023)
48 This Work shall consist of furnishing and installing linear delineation panels in
49 accordance with these Specifications, at the locations indicated in the Plans or where
50 designated by the Engineer.

1
2 8-10.2.GR8

3 **Materials**

4
5 8-10.2.INST1.GR8

6 Section 8-10.2 is supplemented with the following:

7
8 8-10.2.OPT1.GR8

9 (November 20, 2023)

10 Linear delineation panels shall consist of one of the following products:

- 11
12 1. 3M Linear Delineation System – Series 340 – 6” high for barrier.
13
14 2. 3M Linear Delineation System – Series 340, 1-1/2” high for guardrail.
15
16 3. Luciol Systems Bidirectional Linear Delineation M.S. for barrier or guardrail.
17

18 Only one system shall be selected and installed for the project.

19 Adhesives and mechanical fasteners for linear delineation shall meet the requirements
20 of the manufacturer.
21

22
23 Reflective sheeting shall be in accordance with Section 9-28.12.
24

25 8-10.3.GR8

26 **Construction Requirements**

27
28 8-10.3.INST1.GR8

29 Section 8-10.3 is supplemented with the following:

30
31 8-10.3.OPT1.GR8

32 **(November 20, 2023)**

33 **General**

34 Installation of linear delineation panels shall follow manufacturer recommendations but
35 shall not be installed on top of concrete barriers or guardrail.
36

37 Spacing of linear delineation panels shall be as specified in the plans. Delineator color
38 shall be white on the right of traffic and yellow on the left of traffic.
39

40 Attachment methods for linear delineation panels shall not rely solely on adhesives and
41 shall utilize the manufacturer recommended method for mechanical fasteners.
42

43 **Concrete Barrier**

44 Linear delineation panels shall be installed 6” from the top of concrete barrier unless
45 otherwise shown on the Plans.
46

47 **Guardrail**

48 Linear delineation panels installed on beam guardrail shall be installed in the rail trough.
49 For installation on thrie beam guardrail the top trough shall be used.
50

1 Linear delineation panels shall be installed at least 1 inch away from the outer edge of
2 post rail attachment slots of beam guardrail. Linear delineation panels shall not be
3 installed in, over, or through the rail slots located where the rail is attached to the guardrail
4 posts and blocks.

5
6 8-10.4.GR8

7 **Measurement**

8
9 8-10.4.INST1.GR8

10 Section 8-10.4 is supplemented with the following:

11
12 8-10.4.OPT1.GR8

13 (November 20, 2023)

14 Linear delineation panels will be measured by each panel furnished and installed.

15
16 8-10.5.GR8

17 **Payment**

18
19 8-10.5.INST1.GR8

20 Section 8-10.5 is supplemented with the following:

21
22 8-10.5.OPT1.GR8

23 (November 20, 2023)

24 "Linear Delineation Panel for Concrete Barrier", per each.

25 "Linear Delineation Panel for Guardrail", per each.

26
27 8-11.GR8

28 **Guardrail**

29
30 8-11.1.GR8

31 **Description**

32
33 8-11.1.INST1.GR8

34 Section 8-11.1 is supplemented with the following:

35
36 8-11.1.OPT1.GR8

37 ***(February 3, 2020)***

38 ***High-Tension Cable Barrier System (4 Cable)***

39 This work consists of supplying and constructing high-tension cable barrier systems
40 (cable, posts, compensating devices, fittings, and hardware), terminals, and transitions
41 in conformity with the lines and grades as staked.

42
43 8-11.1.OPT2.GR8

44 (April 1, 2019)

45 This Work shall consist of applying an aesthetic treatment, either a powder coating or
46 reactive coloring agent, to galvanized beam guardrail, galvanized guardrail posts,
47 terminal ends and associated hardware that provides a "non-reflective" and "earth" tone
48 colored finish (dark brown) that visually blends with the natural environment.

1 8-11.1.OPT3.GR8
2 **(November 4, 2024)**
3 **Short Radius Guardrail System (SRGS)**
4 This work consists of supplying and constructing the Short Radius Guardrail System
5 (SRGS) in accordance with the Plans, Specifications, and Standard Plans in conformity
6 with the lines and grades as staked.
7

8 8-11.1.OPT4.GR8
9 **(March 20, 2025)**
10 **Removing High-Tension Cable Barrier**
11 This work consists of removing all or part of existing cable barrier systems (cable, posts,
12 sockets, compensating devices, fittings, and hardware), terminals, and transitions to the
13 limits shown in the Plans.
14

15 8-11.1.OPT5.GR8
16 **(March 20, 2025)**
17 **Restoring High-Tension Cable Barrier**
18 This Work consists of restoring temporarily decommissioned cable barrier systems
19 (cable, posts, sockets, compensating devices, fittings, and hardware), terminals, and
20 transitions to a fully operational condition.
21

22 8-11.2.GR8
23 **Materials**
24

25 8-11.2.INST1.GR8
26 Section 8-11.2 is supplemented with the following:
27

28 8-11.2.OPT1.FR8
29 (March 20, 2025)
30 The new terminal(s) and any associated components necessary for restoring a
31 temporarily decommissioned cable barrier system shall be:
32

33 *** \$\$1\$\$ ***
34

35 8-11.2.OPT2.FR8
36 **(November 20, 2023)**
37 **High-Tension Cable Barrier System (4 Cable)**
38 The Contractor shall furnish a high-tension 4-cable barrier system, terminals, and
39 transitions that meet the requirements of the current version of AASHTO Manual for
40 Assessing Safety Hardware (MASH-16) Test Level 3 or 4. Cable barrier tension and
41 breaking strength of all cable barrier fittings and hardware shall be as specified by the
42 manufacturer.
43

44 The maximum allowable lateral deflection distance for the high-tension cable barrier
45 system(s) on the project is:
46

47 *** \$\$1\$\$ *** feet
48

49 The Contractor shall submit a Type 2 Working Drawing consisting of fabrication drawings
50 and installation procedures. The Working Drawings shall specify all components used in

1 the entire barrier system, document the barrier system deflection distances, and specify
2 the required post spacing necessary to meet the maximum allowable deflection
3 distances.
4

5 The barrier system will be accepted based on a Manufacturer's Certificate of Compliance
6 provided by the Contractor. The Manufacturer's Certificate of Compliance shall consist
7 of a Contract specific letter from the manufacturer stating the system is MASH-16 Test
8 Level 3 or 4 compliant, a copy of the original FHWA eligibility letter(s) for the barrier
9 system, documentation from the manufacturer describing any and all modifications that
10 have been made to the system since the letter(s) were issued, and a statement from the
11 manufacturer certifying that those modifications do not affect the performance of the
12 original system.
13

14 8-11.2.OPT4.GR8

15 **(April 1, 2019)**

16 ***Powder Coating***

17 Powder coating materials for coating galvanized surfaces shall be in accordance with
18 Section 9-08.2. The color shall match SAE AMS Standard 595, color number 30045.
19

20 ***Reactive Coloring Agent***

21 The reactive coloring agent shall consist of a stable, "non-reflective" "earth" tone (dark
22 brown) colored finish on the surface of the galvanized materials. The reactive coloring
23 agent shall only utilize oxidizers, metals, metal salts, and/or other trace elements applied
24 directly to the galvanized surfaces to obtain the desired color. The chemical components
25 of the reactive coloring agent shall have no adverse reactions or effects on soils, plants,
26 or animals and shall not contain corrosive by-products once the product has been
27 applied. Only nitrate fertilizer products are permitted to be present as soluble residues.
28

29 The reactive coloring agent shall be provided by either the following manufacturer or an
30 accepted equal:
31

32 NATINA manufactured by Natina Products, LLC
33 1577 First Street
34 Coachella, CA 92236
35 Telephone: (877) 762-8462
36 www.natinaproducts.com
37

38 8-11.2(9-16.3).GR8

39 ***Beam Guardrail***

40
41 8-11.2(9-16.3(1)).GR8

42 ***Rail Element***

43 Section 9-16.3(1) is supplemented with the following:
44

45 8-11.2(9-16.3(1)).OPT1.GR8

46 **(November 4, 2024)**

47 ***SRGS Rail***

48 All rail elements of the SRGS shall be formed from 10-gauge steel.
49

1 **SRGS Guardrail Rail Cable**

2 The top and bottom guardrail rail cables shall be AASHTO M 30 Type 1, 0.75-
3 inch diameter, 3 by 7 steel wire rope with Class A galvanizing coating. The
4 guardrail rail cables shall have a minimum breaking strength of 25,000 pounds
5 in conformance with AASHTO M 30. Two certified copies of mill test reports of
6 the guardrail rail cable used shall be furnished to the Engineer.
7

8 The rail cable end fittings shall be forged steel conforming to the requirements
9 of AASHTO M 269. Cast steel components shall conform to the requirements
10 of AASHTO M 103 (ASTM A 27) Class 1. The cable end fittings shall be hot-dip
11 galvanized in accordance with AASHTO M 232.
12

13 Cable end fittings attached to the rail cables shall develop 100 percent of the
14 specified 25,000 pounds breaking strength of the rail cables. One cable end
15 fitting attached to 3 feet of cable shall be furnished to the Engineer for testing.
16

17 **Short Anchor Bracket Assembly**

18 The Short Anchor Bracket Assembly (anchor plate and end plate) shall be
19 fabricated of steel conforming to the Specifications of ASTM A36. The Short
20 Anchor Bracket Assembly shall be hot-dip galvanized in conformance with
21 AASHTO M 111 (ASTM A 123).
22

23 8-11.2(9-16.3(2)).GR8

24 **Posts and Blocks**

25
26 8-11.2(9-16.3(2)).INST1.GR8

27 Section 9-16.3(2) is supplemented with the following:
28

29 8-11.2(9-16.3(2)).OPT1.GB8

30 (April 6, 2015)

31 Shear plates and backing plates shall conform to ASTM A 36, and shall be
32 galvanized after fabrication in accordance with AASHTO M 111.
33

34 8-11.2(9-16.3(2)).OPT2.GB8

35 (April 6, 2015)

36 Grout for post bases shall conform to Section 9-20.3(2).
37

38 8-11.2(9-16.3(2)).OPT3.GB8

39 (April 6, 2015)

40 Steel angles connecting the timber blockout to the existing steel truss members
41 shall conform to either ASTM A 36 or ASTM A 992, and shall be galvanized in
42 accordance with AASHTO M 111.
43

44 8-11.2(9-16.3(2)).OPT4.GB8

45 (April 6, 2015)

46 HSS steel tubing shall conform to ASTM A 500 Grade B, and shall be
47 galvanized after fabrication in accordance with AASHTO M 111.
48

49 Steel bars, plates, and shapes shall conform to ASTM A 36, and shall be
50 galvanized after fabrication in accordance with AASHTO M 111, except that
51 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

(November 20, 2023)

Resin bonded anchors shall conform to Section 6-02.3(18)A and Section 9-06.4.

8-11.2(9-16.3(4)).OPT2.GB8

(April 6, 2015)

Lag screws shall conform to Section 9-06.22.

8-11.2(9-16.3(4)).OPT3.GR8

(November 4, 2024)

SRGS Eyebolts

Carbon steel eyebolts shall be Type 1, forged steel, with 5/8 inch diameter by 8 inches long shank in conformance with ASTM A 489. The eyebolts shall be hot-dip galvanized in conformance with ASTM F 2329/2329M.

8-11.3.GR8

Construction Requirements

8-11.3.INST1.GR8

Section 8-11.3 is supplemented with the following:

8-11.3.OPT1.FR8

(October 3, 2022)

Installing Steel Posts on Existing Box Culverts

Field Measurements

The Contractor shall obtain field measurements both vertically and horizontally at each location steel posts are to be installed on the existing box culvert. The Contractor shall calculate the steel post lengths for fabrication using the field measurement information obtained.

Submittals

The Contractor shall remove surfacing materials from the top of the box culvert and shall determine the length of the posts. Prior to post and rail fabrication the Contractor shall submit Type 2 Working Drawings in accordance with Section 1-

05.3. The Working Drawings shall include plan and elevation views of each post location on the culvert. The plan view drawing shall show the station and offset of each post on the culvert. The elevation view drawing shall show the top of culvert elevation at each post location, the top of surfacing elevation at each post location, the top of rail elevation, the top of post elevation, and the length of post at each post location.

Excavation

The Contractor shall excavate an area extensive enough to allow the top of the culvert to be cleaned of all dirt, oil, and debris, installation of the baseplate, backfilled, and properly compacted around the posts.

Post Installation

See the Contract plans for the method of steel post attachment to the box culvert (embedded or bolt through). Steel posts shall be installed in accordance with Standard Plan C-20.41 or Standard Plan C-20.43.

The Contractor shall exercise care in locating and drilling the holes to avoid damage to existing steel reinforcing bars and concrete. To avoid damaging the existing steel reinforcing bars, the location of the holes may be shifted slightly with the acceptance of the Engineer. All damage caused by the Contractor's operations shall be repaired by the Contractor in accordance with Section 1-07.13.

Backfilling

After the posts are installed on the box culverts, the excavated areas shall be backfilled and compacted in 6-inch maximum lifts. Compaction shall be accomplished with three passes with a mechanical tamper. When culvert posts are installed through HMA, repair the roadway with materials matching the existing surfacing depths. Use Commercial HMA in accordance with Section 5-04.

Additional Box Culvert Guardrail Steel Post Assemblies

For each culvert with embedded or bolt through guardrail steel posts, furnish and deliver one complete set of Box Culvert Guardrail Steel Post Assemblies. Box Culvert Guardrail Steel Post Assemblies shall be delivered to the Contracting Agency locations as listed below:

Location (SR & MP)	Location/Contact Phone Number
*** \$1\$ \$ ***	*** \$2\$ \$ ***
*** \$3\$ \$ ***	*** \$4\$ \$ ***

A complete set of assemblies will include the following:

When using Embedded Anchor Box Culvert Guardrail Steel Posts (Standard Plan C-20.41):

1. Steel Post and Base Plate Assembly – One replacement post and base plate for each post installed on culvert
2. Embedded Anchor Bolt Assemblies including four threaded rods, bolts, and resin adhesive for each post installed on culvert

1 When using Bolt-Thru Anchor Box Culvert Guardrail Steel Posts (Standard Plan
2 C-20.43):

- 3
- 4 1. Steel Post and Base Plate Assembly – One replacement post and
5 base plate for each post installed on culvert
 - 6
 - 7 2. Bottom Plate – One plate for each post installed on culvert
 - 8
 - 9 3. Hex Head Bolts, Nuts, & Washers – 4 bolts, 4 nuts, and 8 washers
10 for each post installed on culvert
 - 11

12 Provide 48-hours' notice to both the Engineer and the contact(s) listed above prior
13 to delivery. Damaged items will not be accepted and shall be replaced at no cost to
14 the Contracting Agency.

15

16

17 8-11.3.OPT2.FR8

18 **(November 4, 2024)**

19 ***High-Tension Cable Barrier System (4 Cable)***

20 A manufacturer's representative, or an installer who has been certified by the system's
21 manufacturer within the last 5 years for the specific system(s) being installed, shall
22 supervise the assembly and installation of the system at all times. The Contractor shall
23 provide a copy of the installer's certification to the Engineer prior to installation.

24

25 Assemble and install the high-tension cable barrier system according to the
26 manufacturer's recommendations. This shall include connecting cable barrier to
27 guardrail, guardrail transitions, and/or guardrail terminals when identified in the Plans.
28 Submit any Contractor proposed modification in barrier location, type, terminal or
29 transition to the Engineer for approval a minimum of 10-days prior to any work in the
30 affected section.

31

32 High-tension cable barrier line posts shall be one of the following types:

- 33
- 34 1. A socket type assembly with the line post being inserted into a sleeve encased
35 in a cast-in-place or precast post foundation as specified by the manufacturer.
 - 36
 - 37 2. A socket type assembly with the line post being inserted into a direct driven
38 socket assembly as specified by the manufacturer.
 - 39

40

41 On every 6th line post, install yellow retro-reflective markers in accordance with the
42 manufacturer's system and Section 9-28.12. The retro-reflective markers shall be applied
43 to a clean and dry line post.

44

45 Unless otherwise stated in the Plans, all high-tension cable barrier terminal anchor posts
46 shall be a socket type assembly with the cable barrier post being inserted into a sleeve
47 encased in a cast-in-place or precast reinforced concrete post foundation and installed
48 as specified by the manufacturer. Delineate the terminal anchor posts for approach traffic
49 with yellow Type IV lateral clearance markers (object markers) in accordance with
50 Section 9-28.12. The object markers shall be applied to a clean and dry terminal post.

1 **Terminal Placement**

2 Unless otherwise stated in the Plans, the foundations for the high-tension cable barrier
3 terminals shall be cast in place or precast concrete and shall be installed in accordance
4 with manufacturer's recommendations. If a precast concrete foundation is installed, the
5 bottom of the unit shall have a full and even bearing on the surface under it. If there is a
6 need for backfilling an excavation, use Controlled Density Fill (CDF) in accordance with
7 Section 2-09.3(1) E.

8
9 **Additional High-Tension Cable Barrier Components**

10 Furnish and deliver one complete set of High-Tension Cable Barrier to each of the
11 Contracting Agency sites listed below:

12 *** \$\$1\$\$ ***

13
14
15 Include the following components with each complete set:

16
17 One-hundred line posts and all associated hardware including but not limited to
18 spacers, connectors, straps, caps and covers. If the system has a special post to
19 accommodate turnbuckles, then 5 of the line posts shall be these special posts.

20
21 Twenty sockets except when concrete sockets are used.

22
23 One 50-foot long section of cable used for the contract.

24
25 Four cable splices and 4 turnbuckle assemblies (1-assembly consists of a left- and
26 right-hand threaded end with a turnbuckle).

27
28 One tension measuring device as recommended by the manufacturer.

29
30 One anchor post designed for use with the foundations installed.

31
32 Ten line terminal posts and all associated hardware.

33
34 Provide 48-hour notice to both the Engineer and the maintenance contact listed above
35 prior to delivery. Damaged items will not be accepted and shall be replaced at no cost to
36 the Contracting Agency.

37
38 8-11.3.OPT3.FR8

39 **(November 4, 2024)**

40 **Short Radius Guardrail System (SRGS)**

41 The radius of the SRGS system(s) are:

42 *** \$\$1\$\$ ***

43
44
45 Install the SRGS as shown in the Plans.

46
47 Posts shall be installed in accordance with Section 8-11.3(1)A, except posts shall not be
48 omitted within the limits of the SRGS.

1 The radius rails shall be shop bent in accordance with Section 9-16.3(1) and installed in
2 accordance with Section 8-11.3(1).

3
4 8-11.3.OPT4.GR8

5 (April 1, 2019)

6 Aesthetic treatments to the galvanized W-beam guardrail, galvanized guardrail posts,
7 galvanized guardrail terminals, and associated galvanized hardware shall be performed
8 using either a powder coating or reactive coloring agent. The Contractor shall apply
9 powder coating or reactive coloring agent to all galvanized steel rail, posts, other
10 galvanized steel parts, and impact head components of the beam guardrail as specified
11 in the Plans. Confirm that the manufacturer of proprietary guardrail terminals allows the
12 use of powder coatings or reactive coloring agents prior to applying them.

13
14 Only the top 30 inches on any guardrail post length to be exposed above ground shall
15 receive aesthetic treatment.

16
17 The color of the finish coat shall be a dark brown. The Contractor shall furnish a one-
18 foot minimum length test section of galvanized W-beam guardrail treated with the
19 proposed aesthetic treatment product to the Engineer for acceptance. The test section
20 shall be prepared in accordance with the manufacturer's instructions.

21
22 The Engineer will provide acceptance in writing accepting the color of the test section
23 prior to acceptance of any permanently incorporated material into the project.

24
25 ***Powder Coating***

26 Powder coating of galvanized surfaces shall be in accordance with Section 6-07.3(11)B.

27
28 ***Reactive Coloring Agent***

29 Application of the reactive coloring agent to galvanized surfaces shall be in accordance
30 with the following:

31
32 The reactive coloring agent shall be applied using the same methods used for the
33 accepted test section. The treated material shall develop full coloration within two weeks
34 of application and achieve a color consistent with the color of the authorized test section.

35
36 The Contractor shall apply the reactive coloring agent prior to delivering the steel
37 components to the project site. The reactive coloring agent manufacturer or the
38 manufacturer's authorized application contractor shall apply the reactive coloring agent
39 for both the test section and production applications. Application of the reactive coloring
40 agent shall fully coat the galvanized steel in accordance with the manufacturer's written
41 instructions and achieve the accepted surface color. Once the reactive coloring agent is
42 applied, the Contractor shall protect the steel pieces from abrasion that would remove
43 the brown color.

44
45 After the various guardrail components have been installed, the Contractor shall apply
46 the reactive coloring agent to any steel products that did not receive adequate coloring,
47 or where the color was removed during the shipment or the construction process. This
48 remedial action shall coat the affected area. Any reactive coloring agent applied in the
49 field shall be cured according to manufacturer's specifications, and shall be applied while
50 protecting soil, plants, and surrounding natural surfaces.

1 8-11.3.OPT5.FR8

2 (October 3, 2022)

3 **Installing Steel Posts on New Box Culverts**

4 **Post Installation**

5 See the Contract plans or culvert Working Drawings for the method of steel post
6 attachment to the box culvert (embedded or bolt through). Steel posts shall be
7 installed in accordance with Standard Plan C-20.41 or Standard Plan C-20.43.
8

9 The Contractor shall exercise care in locating and drilling the holes to avoid damage
10 to existing steel reinforcing bars and concrete. To avoid damaging the existing steel
11 reinforcing bars, the location of the holes may be shifted slightly with the acceptance
12 of the Engineer. All damage caused by the Contractor's operations shall be repaired
13 by the Contractor in accordance with Section 1-07.13.
14

15 **Additional Box Culvert Guardrail Steel Post Assemblies**

16 For each culvert with embedded or bolt through guardrail steel posts, furnish and
17 deliver one complete set of Box Culvert Guardrail Steel Post Assemblies. Box
18 Culvert Guardrail Steel Post Assemblies shall be delivered to the Contracting
19 Agency locations as listed below:
20

Box Culvert Designation & Location (SR & MP)	Contracting Agency Delivery Location/Contact Phone Number
*** \$1\$\$ ***	*** \$2\$\$ ***
*** \$3\$\$ ***	*** \$4\$\$ ***

21 A complete set of assemblies will include the following:

22 When using Embedded Anchor Box Culvert Guardrail Steel Posts (Standard
23 Plan C-20.41):

- 24 1. Steel Post and Base Plate Assembly – One replacement post and
25 base plate for each post installed on culvert
- 26 2. Embedded Anchor Bolt Assemblies including Four threaded rods,
27 bolts, and resin adhesive for each post installed on culvert
- 28 3. Embedded Anchor Bolt Assemblies including Four threaded rods,
29 bolts, and resin adhesive for each post installed on culvert

30 When using Bolt-Thru Anchor Box Culvert Guardrail Steel Posts (Standard Plan
31 C-20.43):

- 32 1. Steel Post and Base Plate Assembly – One replacement post and
33 base plate for each post installed on culvert
- 34 2. Bottom Plate – One plate for each post installed on culvert
- 35 3. Hex Head Bolts, Nuts, & Washers – 4 bolts, 4 nuts, and 8 washers
36 for each post installed on culvert

37 Provide 48-hours' notice to both the Engineer and the contact(s) listed above prior
38 to delivery. Damaged items will not be accepted and shall be replaced at no cost to
39 the Contracting Agency.
40
41
42
43
44
45
46

1
2 8-11.3.OPT6.GR8

3 **(March 20, 2025)**

4 **Removing High-Tension Cable Barrier System**

5 Existing cable barrier shall be removed to the limits shown in the Plans. If required, cable
6 cutting shall be in accordance with manufacturer's recommendations. Existing buried
7 sockets may remain if they are flush with the ground. All other components shall become
8 property of the Contractor and shall be removed from the project. Voids resulting from
9 removal of components in the ground and from leaving existing buried sockets in the
10 ground shall be backfilled in layers no more than 6 inches thick and compacted to a
11 density similar to that of the adjacent material.

12
13 When the removal of an entire existing high-tension cable barrier is associated with
14 installation of a new high-tension cable barrier system, the existing high-tension cable
15 barrier system shall remain in place and fully operational until the new replacement
16 system is completely installed and fully operational, unless otherwise allowed by the
17 Engineer. All requests to remove the existing high-tension cable barrier system from
18 operation before the new high tension cable barrier system is installed and operational
19 shall be submitted as an RFI in accordance with Section 1-05.1(2). The RFI shall include
20 a schedule showing all high-tension cable barrier work activities including the order and
21 durations of the work activities starting from when the existing high-tension cable barrier
22 system is made nonoperational to the time when the new high-tension cable barrier
23 system is installed and made fully operational. The Contractor shall structure and
24 schedule their work activities to minimize the amount of time that there is no functioning
25 cable barrier system in place.

26
27 When the temporary or permanent removal of a portion of an existing high-tension barrier
28 system is required, the removal shall include installing a new terminal at the removal limit
29 as shown in the Plans to restore the remaining portion of the system to a fully operational
30 condition. The new terminal shall be connected to the remaining portion of the system
31 and the system be made fully operational within the same work shift that the system was
32 made inoperable. Reinstalling any existing cable barrier components from the existing
33 cable barrier removal is not permitted. All work to install a new high-tension cable barrier
34 terminal at the removal limits shall follow the construction requirements for **High-Tension**
35 **Cable Barrier (4 Cable)**, regardless of whether a 3- or 4-cable system terminal is being
36 installed.

37
38 8-11.3.OPT7.GR8

39 **(March 20, 2025)**

40 **Restoring High-Tension Cable Barrier**

41 The contractor shall remove the temporary terminal(s) installed at the original removal
42 limits of the existing high tension cable barrier system. The removed terminal(s) and
43 associated components shall become property of the Contractor and shall be removed
44 from the project. The Contractor shall install new high-tension cable barrier required to
45 restore the existing system to its original state or to a new state as shown in the Plans.
46 Reinstalling any existing cable barrier components from the removed terminal(s) is not
47 permitted. All work to install new high-tension cable barrier in order to restore the existing
48 cable barrier system to its original condition, or new condition, as shown in the Plans,
49 shall follow the construction requirements for **High-Tension Cable Barrier (4 Cable)**,
50 regardless of whether a 3- or 4-cable system is being restored. The restored high-tension

1 cable barrier shall be made fully operational within the same work shift that the temporary
2 high-tension cable barrier system first becomes inoperable.

3
4 When splicing new cable to the existing cable, the Contractor shall form splices in
5 accordance with the manufacturer's recommendations with a manufacturer approved
6 cable splice system. The ultimate tensile strength of the splice shall meet or exceed that
7 of unspliced cable for the existing cable barrier system.

8
9 A minimum of 10 days before field splicing of any cables, the Contractor shall provide
10 the Engineer with a Type 1 Working Drawing detailing the following:

- 11
- 12 • Test report confirming that the Contractor's proposed field splicing method has
13 been tested and meets the specified tensile strength criteria,
- 14
- 15 • Step-by-step instructions for field splicing showing details of the materials used
16 and procedures that are consistent with the test report,
- 17
- 18 • A manufacturer's certification that the material is identical to that used in testing
19 the splice design, and,
- 20
- 21 • A written statement from the Contractor that the splicing system and materials
22 will be used according to the manufacturer's instructions and all requirements
23 of this section.
- 24

25 The Engineer will visually inspect field splicing activities. Cable splices that are
26 inconsistent with the procedures or materials outlined in the Type 1 Working Drawing
27 provided by the Contractor shall be removed and replaced at the Contractor's expense.

28
29 8-11.3(1).GR8

30 ***Beam Guardrail***

31
32 8-11.3(1).INST1.GR8

33 Section 8-11.3(1) is supplemented with the following:

34
35 8-11.3(1).OPT1.GR8

36 (April 5, 2010)

37 This project may contain a mixture of steel and wood posts. The bidder is advised
38 that post selection will be as detailed in the plans and these specifications.

39
40 8-11.3(1)A.GR8

41 **Erection of Posts**

42
43 8-11.3(1)A.INST1.GR8

44 Section 8-11.3(1)A is supplemented with the following:

45
46 8-11.3(1)A.OPT1.GB8

47 **(April 6, 2015)**

48 **Timber Blockouts for Beam Guardrail Type Thrie Beam**

49 The Contractor shall cut and trim the timber blocks as necessary to conform to
50 the shape of the existing concrete baluster rail, and to align the beam guardrail
51 element, as shown in the Plans.

1
2 When the specified timber blockout spacing places a block at an existing
3 concrete end post or intermediate post, the Contractor shall core drill holes into
4 the existing concrete as shown in the Plans and as follows. The Contractor
5 shall not shatter or damage the concrete adjacent to the holes. Location of
6 blockout assemblies may be shifted slightly within the tolerance specified in the
7 Plans in order to reduce the risk of damage to existing steel reinforcing bars.
8 However, once a blockout assembly position is established, damage to existing
9 steel reinforcing bars caused by subsequent core drilling operations at that
10 assembly location is acceptable.

11
12 8-11.3(1)A.OPT2.GB8

13 **(January 4, 2016)**

14 **Steel Posts for Beam Guardrail Type Thrie Beam**

15 The Contractor shall field measure the dimension of the existing curb above the
16 existing wearing surface at each curb line for each bridge receiving beam
17 guardrail Type Thrie Beam. The field measured dimensions, and all
18 adjustments to the field measurements required by planing and paving
19 operations included in this project, shall be included in the steel post assembly
20 shop drawings submitted in accordance with Section 8-11.3(1)G.

21
22 8-11.3(1)A.OPT3.GB8

23 **(September 8, 2020)**

24 **Beam Guardrail Type WP Thrie Beam**

25 The Contractor shall field measure the depth of the existing ballast and wearing
26 course at both wheel guard lines, and shall include the dimensions at both
27 wheel guard lines in the steel post mounting bracket shop drawings submitted
28 in accordance with Section 8-11.3(1)G.

29
30 The Contractor shall remove the existing ballast and wearing course to the top
31 of existing timber deck in the vicinity of the steel post anchorage locations, and
32 shall dispose of the removed surfacing materials in accordance with Section 2-
33 02.3.

34
35 As shown in the Plans, the Contractor shall place a timber block beneath the
36 timber deck at each steel post anchorage location and against the existing
37 exterior timber stringer.

38
39 The Contractor shall install the steel post anchorage assembly, including the
40 deck plate, distribution plate, bearing plate, base plate, backing plate, and HSS
41 steel tube post, as shown in the Plans. Timber deck shims shall be cut and
42 trimmed as necessary to align the top of the vertical webs of the steel post
43 anchorage 1/2 inch below the top of the surrounding wearing course surfacing,
44 in accordance with the existing timber deck transverse slope and existing
45 ballast and wearing course depth specified in the shop drawings.

46
47 The Contractor may field drill holes through the steel components in
48 accordance with Section 6-03.3(27) except as otherwise noted. The Contractor
49 shall identify all holes to be field drilled in the steel fabrication shop drawings.
50 The Contractor may field drill the holes using hand held drills provided that the
51 Contractor submits the method and equipment used to the Engineer for

1 approval, and that the Contractor receives the Engineer's acceptance of the
2 submittal prior to beginning hand drilling. The Contractor shall repair all
3 galvanized steel surfaces damaged by field drilling operations by painting the
4 damaged areas with one coat of paint conforming to Section 9-08.1(2)B.
5

6 The Contractor shall replace all existing ballast and wearing course removed in
7 the vicinity of the steel post anchorage locations to the top of the surrounding
8 surfacing. The Contractor shall fill the void with an HMA surfacing material
9 accepted by the Engineer.
10

11 8-11.3(1)B.GR8

12 **Erection of Rail**

13
14 8-11.3(1)B.INST1.GR8

15 Section 8-11.3(1)B is supplemented with the following:
16

17 8-11.3(1)B.OPT6.GB8

18 **(April 6, 2015)**

19 **Field Measuring to Existing Type 3 Anchors**

20 The Contractor shall field measure the dimension from the centerline of the
21 existing Type 3 anchors specified for reuse to the end of the existing concrete
22 curb and railbase or concrete baluster railing end blocks of the adjacent bridge.
23 The Contractor shall submit these dimensions to the Engineer along with a Type
24 2 Working Drawing showing the arrangement of the thrie beam guardrail
25 elements and approach guardrail elements relative to the existing Type 3
26 anchors and concrete curb and railbase or concrete baluster railing end blocks
27 for each bridge as applicable.
28

29 8-11.3(1)B.OPT7.GB8

30 **(April 6, 2015)**

31 **Attaching Beam Guardrail Type Thrie Beam to Timber Blockouts**

32 The Contractor shall fasten the thrie beam element to the timber blackout
33 assemblies such that the steel shear plates fit snug against the surface forming
34 the opening through the concrete baluster rail.
35

36 The Contractor may field drill the holes through the thrie beam elements in
37 accordance with Section 6-03.3(27), except as otherwise noted. The Contractor
38 may field drill the holes using hand held drills.
39

40 The Contractor shall repair all galvanized steel surfaces damaged by field
41 drilling operations by painting the damaged areas with one coat of paint
42 conforming to Section 9-08.1(2)B.
43

44 8-11.3(1)B.OPT8.GB8

45 **(September 13, 2021)**

46 **Thrie Beam Expansion Joint Element**

47 Where beam guardrail Type Thrie Beam crosses bridge interior expansion
48 joints, the Contractor shall place a thrie beam expansion section element
49 conforming to Standard Plan C-25.22 or C-25.26.
50

1 8-11.3(1)B.OPT9.GB8

2 **(April 6, 2015)**

3 **Beam Guardrail Type WP Thrie Beam**

4 The Contractor may field drill the holes through the thrie beam elements in
5 accordance with Section 6-03.3(27), except as otherwise noted. The Contractor
6 may field drill the holes using hand held drills.

7
8 The Contractor shall repair all galvanized steel surfaces damaged by field
9 drilling operations by painting the damaged areas with one coat of paint
10 conforming to Section 9-08.1(2)B.

11
12 After completing the beam guardrail retrofit and replacing the surfacing at the
13 steel post anchorage locations on the bridge up to the level of the surrounding
14 surfacing, the Contractor shall install the sheet metal water barrier, when the
15 water barrier is shown in the Plans. A bonding layer of rubberized asphalt shall
16 be applied to the surfacing contact area immediately prior to installing the water
17 barrier assembly. The direction of overlap of adjacent water barrier segments
18 shall be as directed by the Engineer.

19
20 8-11.3(1)D.GR8

21 **Removing Guardrail and Guardrail Anchor**

22
23 8-11.3(1)D.INST1.GR8

24 Section 8-11.3(1)D is supplemented with the following:

25
26 8-11.3(1)D.OPT1.GB8

27 **(September 8, 2020)**

28 **Beam Guardrail Type WP Thrie Beam**

29 The Contractor shall remove the existing bridge guardrail posts and railing, the
30 existing timber wheel guards, all associated fasteners, and the existing ballast
31 and wearing course in the vicinity of the steel post anchorage assemblies of the
32 bridges being retrofitted with beam guardrail Type WP Thrie Beam as shown in
33 the Plans

34
35 The items specified above shall be removed as follows:

- 36
37 1. The Contractor shall remove the existing timber wheel guards before
38 beginning the beam guardrail retrofit work.
- 39
40 2. The Contractor shall not remove any section of the existing bridge
41 railing system on the bridge until completing the beam guardrail
42 retrofit within that section of the bridge, except as otherwise
43 specified. The Contractor may remove portions of the existing bridge
44 railing system on the bridge which conflict with the anchorages,
45 posts, and rail elements of the retrofit, provided:
- 46
47 a. The Contractor installs as much of the beam guardrail retrofit as
48 possible in the section that does not conflict with the existing
49 bridge railing system elements.
- 50

- 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

(October 3, 2022)

Box culvert guardrail steel posts type 31 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.OPT3.GR8

(November 4, 2024)

Measurement of the Short Radius Guardrail System (SRGS) will be by the linear foot measured along the line of completed guardrail system.

1 8-11.4.OPT4.GR8
2 (April 2, 2018)
3 Measurement of Aesthetic Treatment for beam guardrail will be by the linear foot
4 measured along the line of the completed guardrail, including expansion sections and
5 the end section for F connections.
6
7 Measurement for Aesthetic Treatment for beam guardrail transition section will be per
8 each for the type of transition section installed.
9
10 Measurement for Aesthetic Treatment for beam guardrail anchor type specified will be
11 per each for the completed anchor, including the attachment of the anchor to the
12 guardrail.
13
14 Measurement of Aesthetic Treatment beam guardrail ____ terminal will be per each for
15 the completed terminal.
16
17 Measurement of Aesthetic Treatment beam guardrail Type 31 buried terminal Type 2 will
18 be per linear foot for the completed terminal.
19
20 8-11.4.OPT5.GR8
21 (March 20, 2025)
22 Removing high-tension cable barrier system will be measured by the linear foot
23 measured along the line of removed barrier including transition and terminal sections.
24
25 8-11.4.OPT6.GR8
26 (March 20, 2025)
27 Restoring high-tension cable barrier will be measured by the linear foot measured along
28 the line of barrier need to return the system to its original fully operational state, or new
29 state, as shown in the Plans.
30
31 8-11.5.GR8
32 **Payment**
33
34 8-11.5.INST2.GR8
35 Section 8-11.5 is supplemented with the following:
36
37 8-11.5.OPT1.GR8
38 (April 2, 2018)
39 "Aes. Tr. Beam Guardrail Type ____", per linear foot
40
41 "Aes Tr. Beam Guardrail Type 1- ____ Ft. Long Post" , per linear foot.
42
43 "Aes Tr. Beam Guardrail Type 31- ____ Ft. Long Post" , per linear foot.
44
45 The unit Contract price per linear foot for "Aes. Tr. Beam Guardrail Type ____", "Aes Tr.
46 Beam Guardrail Type 1- ____ Ft. Long Post", and "Aes Tr. Beam Guardrail Type 31- ____
47 Ft. Long Post", shall be full payment for all costs to perform the Work as specified.
48
49 "Aes. Tr. Beam Guardrail Transition Section Type ____", per each

1 The unit Contract price per each for “Aes. Tr. Beam Guardrail Transition Section Type
2 _____” shall be full payment for all costs to perform the Work as described in Section 8-
3 11.3.

4
5 “Aes. Tr. Beam Guardrail Anchor Type _____”, per each.

6
7 “Aes. Tr. Beam Guardrail _____ Terminal”, per each.

8
9 The unit Contract price per each for “Aes. Tr. Beam Guardrail Anchor Type _____” and
10 “Aes. Tr. Beam Guardrail _____ Terminal” shall be full payment for all costs to perform the
11 Work as specified.

12
13 “Aes. Tr. Beam Guardrail Type 31 Buried Term. Type 2”, per linear foot.

14
15 The unit Contract price per linear foot for “Aes. Tr. Beam Guardrail Type 31 Buried Term.
16 Type 2” shall be full payment for all costs to perform the Work as specified.

17
18 8-11.5.OPT2.GR8

19 (November 4, 2024)

20 “Short Radius Guardrail System (SRGS)”, per linear foot.

21
22 The unit contract price per linear foot for “Short Radius Guardrail System (SRGS)” shall
23 be full payment to obtain and provide materials and to perform the work as specified.
24 Payment for the work includes connection of the top and bottom guardrail rail cables to
25 the Type 25 Transition, or Type 31 Guardrail.

26
27 8-11.5.OPT3.GR8

28 (March 20, 2025)

29 “Removing High Tension Cable Barrier System”, per linear foot.

30 The unit contract price per linear foot for “Removing High Tension Cable Barrier System”
31 shall be full payment to complete the work as specified for either a 3 Cable or 4 Cable
32 system. When a portion of a cable barrier system is removed and the remaining portion
33 is required to be made fully operational, all costs for furnishing and installing terminal(s),
34 and any associated components required to return the remaining portion of the system
35 to a fully operational condition shall be incidental to this Bid item.

36
37 8-11.5.OPT4.GR8

38 (March 20, 2025)

39 “Restoring High Tension Cable Barrier System, per linear foot.

40 The unit contract price per linear foot for “Restoring High Tension Cable Barrier System”
41 shall be full payment to complete the work as specified for either a 3 Cable or 4 Cable
42 system. Removal and disposal of temporary terminals and associated components shall
43 be incidental to this Bid item.

44
45 8-11.5.OPT6.GR8

46 (October 3, 2022)

47 “Box Culvert Guardrail Steel Post Type 31”, per each.

48
49 The unit contract price per each for “Box Culvert Guardrail Steel Post Type 31” shall be
50 full pay for completing the installation of the posts, including obtaining field
51 measurements, excavation, furnishing, placing and compacting the backfill material, and

1 when required, repairing surfacing materials. Beam guardrail will be paid for in
2 accordance with Section 8-11.5.

3
4 "Additional Box Culvert Guardrail Steel Post Assemblies", lump sum.

5
6 The lump sum contract price for "Additional Box Culvert Guardrail Steel Post Assemblies"
7 shall be full pay to complete the work as specified.

8
9 8-11.5.OPT7.GR8

10 (February 3, 2020)

11 "High-Tension Cable Barrier System (4 Cable)", per linear foot.

12 "Additional High-Tension Cable Barrier Components", lump sum.

13
14 The unit contract price per linear foot for "High-Tension Cable Barrier (4 Cable)" shall be
15 full pay to complete the work as specified.

16
17 8-11.5.OPT8.GR8

18 (February 3, 2020)

19 The lump sum contract price for "Additional High-Tension Cable Barrier Components"
20 shall be full pay to complete the work as specified for a 4 Cable system.

21
22 8-12.GR8

23 **Chain Link Fence and Wire Fence**

24
25 8-12.2.GR8

26 **Materials**

27
28 8-12.2.INST1.GR8

29 Section 8-12.2 is supplemented with the following:

30
31 8-12.2.OPT1.FR8

32 ***(September 8, 2020)***

33 ***Coated Chain Link Fence***

34 Chain link fence fabric shall be hot-dip galvanized with a minimum of 0.8 ounce per
35 square foot of surface area.

36
37 Fencing materials shall be coated with an ultraviolet-insensitive plastic or other inert
38 material at least 2 mils in thickness. Any pretreatment or coating shall be applied in
39 accordance with the manufacturer's written instructions. The Contractor shall provide
40 the Engineer with the manufacturer's written specifications detailing the product and
41 method of fabrication. The color shall match SAE AMS Standard 595 color number ***
42 \$\$\$ **\$.

43
44 Samples of the coated fencing materials shall have received the Engineer's acceptance
45 prior to installation on the project.

46
47 The Contractor shall supply the Engineer with 10 aerosol spray cans containing a
48 minimum of 14 ounces each of paint of the color specified above. The touch-up paint
49 shall be compatible with the coating system used.

1 8-12.5.GR8

2 **Payment**

3

4 8-12.5.INST1.GR8

5 Section 8-12.5 is supplemented with the following:

6

7 8-12.5.OPT1.GR8

8 (April 1, 2002)

9 "Coated Chain Link Fence Type ____", per linear foot.

10 Payment for clearing of fence line for "Coated Chain Link Fence Type ____" shall be in
11 accordance with Section 2-01.5.

12 "Coated End, Gate, Corner, Pull Post for Chain Link Fence", per each.

13 "Double 14 Ft. Coated Chain Link Gate", per each.

14 "Double 20 Ft. Coated Chain Link Gate", per each.

15 "Single 6 Ft. Coated Chain Link Gate", per each.

16

17 8-13.GR8

18 **Monument Cases**

19

20 8-13.1.GR8

21 **Description**

22

23 8-13.1.INST1.GR8

24 Section 8-13.1 is deleted and replaced by the following:

25

26 8-13.1.OPT1.GR8

27 (March 13, 1995)

28 This work shall consist of furnishing and placing monument cases, covers, and pipes in
29 accordance with the Standard Plans and these Specifications, in conformity with the lines
30 and locations shown in the Plans or as staked by the Engineer.

31

32 8-13.2.GR8

33 **Materials**

34

35 8-13.2.INST1.GR8

36 Section 8-13.2 is supplemented with the following:

37

38 8-13.2.OPT1.GR8

39 (March 13, 1995)

40 The pipe shall be Schedule 40 galvanized pipe.

41

42 8-13.3.GR8

43 **Construction Requirements**

44

45 8-13.3(1).GR8

46 ***Monument Case and Cover***

47

48 8-13.3(1).INST1.GR8

49 The last paragraph of Section 8-13.3(1) is revised to read:

50

1 8-13.3(1).OPT1.GR8
2 (March 13, 1995)
3 The Engineer will be responsible for placing the concrete core and tack or wire inside
4 the pipe.
5

6 8-13.3(2).GR8
7 **Adjust Monument Case and Cover**
8

9 8-13.3(2)B.GR8
10 **Reinstalling Monument Case and Cover**
11

12 8-13.3(2)B.INST1.GR8
13 The first sentence of Section 8-13.3(2)B is revised to read:
14

15 8-13.3(2)B.OPT1.GR8
16 (October 3, 2022)
17 The adjusted or reinstalled monument case and cover shall be reset to ¼-inch
18 below the finished pavement as indicated in the plans and in accordance with
19 the following additional requirements:
20

21 8-13.4.GR8
22 **Measurement**
23

24 8-13.4.INST1.GR8
25 Section 8-13.4 is deleted and replaced by the following:
26

27 8-13.4.OPT1.GR8
28 (March 13, 1995)
29 Measurement of monument case, cover, and pipe will be by the unit for each monument
30 case, cover, and pipe furnished and set.
31

32 8-13.5.GR8
33 **Payment**
34

35 8-13.5.INST1.GR8
36 Section 8-13.5 is supplemented with the following:
37

38 8-13.5.OPT1.GR8
39 (April 28, 1997)
40 "Monument Case, Cover, and Pipe", per each.
41

42 8-14.GR8
43 **Cement Concrete Sidewalks**
44

45 8-14.2.GR8
46 **Materials**
47

48 8-14.2(9-19.1).GR8
49 **Surface Applied Detectable Warning Surface**
50

1 8-14.2(9-19.1(1)).GR8

2 **General Requirements**

3 The first paragraph of Section 9-19.1(1) is revised to read:

4
5 8-14.2(9-19.1(1)).OPT1.FR8

6 (October 3, 2022)

7 The color of detectable warning surfaces shall be *** \$\$1\$\$ ***.

8
9 Units shall provide the required contrast (light-on-dark or dark-on-light) with
10 the adjacent curb ramp or other applicable walkway.

11
12 8-14.2(9-19.2).GR8

13 **Cast-in-Place Detectable Warning Surface**

14
15 8-14.2(9-19.2(1)).GR8

16 **General Requirements**

17 The first paragraph of Section 9-19.2(1) is revised to read:

18
19 8-14.2(9-19.2(1)).OPT1.FR8

20 (October 3, 2022)

21 The color of detectable warning surfaces shall be *** \$\$1\$\$ ***.

22
23 Units shall provide the required contrast (light-on-dark or dark-on-light) with
24 the adjacent curb ramp or other applicable walkway.

25
26 8-14.3.GR8

27 **Construction Requirements**

28
29 8-14.3.INST1.GR8

30 Section 8-14.3 is supplemented with the following:

31
32 8-14.3.OPT1.GR8

33 (October 3, 2022)

34 The Contractor shall request a pre-construction meeting with the Engineer to be held two
35 to five working days before any work can start on cement concrete sidewalks, curb ramps
36 or other pedestrian access routes to discuss construction requirements. Those attending
37 shall include:

- 38
39 1. The Contractor and subcontractor in charge of constructing forms, and placing,
40 and finishing the cement concrete.
41
42 2. Engineer (or representative) and Project Inspectors for the cement concrete
43 sidewalk, curb ramp or pedestrian access route Work.
44

45 Items to be discussed in this meeting shall include, at a minimum, the following:

- 46
47 1. Slopes shown on the Plans.
48
49 2. Inspection
50
51 3. Traffic control

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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.

1 8-15.5.GR8

2 **Payment**

3

4 8-15.5.INST1.GR8

5 The first sentence of the second paragraph of Section 8-15.5 is revised to read:

6

7 8-15.5.OPT1.GR8

8 (March 13, 1995)

9 The unit contract price per ton or cubic yard for the class or kind of riprap specified shall
10 be full pay for furnishing all labor, tools, equipment, and materials required to construct
11 the riprap, including excavation.

12

13 8-15.5.INST2.GR8

14 Section 8-15.5 is supplemented with the following:

15

16 8-15.5.OPT8.GR8

17 (September 30, 1996)

18 "Special Excavation", per cubic yard.

19

20 8-16.GR8

21 **Concrete Slope Protection**

22

23 8-16.3.GR8

24 **Construction Requirements**

25

26 8-16.3(2).GR8

27 ***Placing Semi-Open Concrete Masonry Units***

28

29 8-16.3(2).INST1.GR8

30 Section 8-16.3(2) is supplemented with the following:

31

32 8-16.3(2).OPT1.GR8

33 (December 19, 2005)

34 The Contractor shall round and treat the areas between the bridge end slopes and
35 the edges of the shoulders to the satisfaction of the Engineer.

36

37 Upon completion of the installation of the units, the voids shall be filled full with top
38 soil. All excess fill shall be removed and the exposed concrete surfaces swept clean.

39 The slope protection shall be seeded to grass in accordance with Section 8-
40 01.3(2)A.

41

42 8-16.5.GR8

43 **Payment**

44

45 8-16.5.INST1.GR8

46 Section 8-16.5 is supplemented with the following:

47

48 8-16.5.OPT1.GR8

49 (September 30, 1996)

50 "Semi-Open Conc. Masonry Slope Protection", per square yard.

1
2 8-20.GR8
3 **Illumination, Traffic Signal Systems, Intelligent Transportation Systems, and**
4 **Electrical**

5
6 8-20.2.GR8
7 **Materials**

8
9 8-20.2.INST1.GR8
10 Section 8-20.2 is supplemented with the following:

11
12 8-20.2.OPT1.GB8

13 **(April 6, 2015)**

14 ***Traffic Signal Standard Foundation Shaft Casing***

15 All permanent casing shall be a smooth wall non corrugated structure of steel base metal.
16 All permanent casing shall be of ample strength to resist damage and deformation from
17 transportation and handling, installation stresses, and all pressures and forces acting on
18 the casing. The casing shall be clean prior to placement in the excavation. The
19 permanent casing may be telescoped, but the outside diameter of the casing shall not
20 be less than the specified diameter of the shaft.

21
22 8-20.2(9-29.2).GR8

23 ***Junction Boxes, Cable Vaults, and Pull Boxes***

24 Section 9-29.2 is supplemented with the following:

25
26 8-20.2(9-29.2).OPT1.GR8

27 **(September 3, 2019)**

28 ***Slip-Resistant Surfacing for Junction Boxes, Cable Vaults, and Pull Boxes***

29 Where slip-resistant junction boxes, cable vaults, or pull boxes are required, each
30 box or vault shall have slip-resistant surfacing material applied to the steel lid and
31 frame of the box or vault. Where the exposed portion of the frame is ½ inch wide or
32 less, slip-resistant surfacing material may be omitted from that portion of the frame.

33
34 Slip-resistant surfacing material shall be identified with a permanent marking on the
35 underside of each box or vault lid where it is applied. The permanent marking shall
36 be formed with a mild steel weld bead, with a line thickness of at least 1/8 inch. The
37 marking shall include a two character identification code for the type of material used
38 and the year of manufacture or application. The following materials are approved
39 for application as slip-resistant material, and shall use the associated identification
40 codes:

- 41
42 1. Harsco Industrial IKG, Mebac #1 - Steel: **M1**
43
44 2. W. S. Molnar Co., SlipNOT Grade 3 – Coarse: **S3**
45
46 3. Thermion, SafTrax TH604 Grade #1 – Coarse: **T1**
47

48 8-20.2(9-29.6).GR8

49 ***Light And Signal Standards***

50 Section 9-29.6 is supplemented with the following:

1
2 8-20.2(9-29.6).OPT1.GR8

3 **(January 6, 2025)**

4 **Light Standards with Type 1 Luminaire Arms**

5 Lighting standards shall be fabricated in conformance with the methods and
6 materials specified on the pre-approved Plans listed below, provided the following
7 requirements have been satisfied:

- 8
- 9 (a) Light source to pole base distance (H1) shall be as noted in the Plans.
- 10 Verification of H1 distances by the Engineer, prior to fabrication, is not
- 11 required. Fabrication tolerance shall be ± 6 inches.
- 12
- 13 (b) All other requirements of the Special Provisions have been satisfied.
- 14

Fabricator	Pre-Approved Drawing No.	Rev.	Mounting Height(s) (feet)
Valmont Ind., Inc.	DB01164, Sheets 1-5 of 5	B	30, 35, 40, and 50
Ameron Pole Products Division	WA15LT3721, Sheets 1 and 2 of 2	A	20, 25, 30, 35, 40, 45, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-BB, Sheets 1 and 2 of 2	H	30, 35, 40, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-ELBOW, Sheets 1-3 of 3	J	30, 35, 40, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-SB, Sheets 1-3 of 3	H	30, 35, 40, and 50

15
16
17 8-20.2(9-29.6).OPT2.GR8

18 **(January 6, 2025)**

19 **Light Standards with Type 1 Luminaire Arms**

20 Lighting standards shall be fabricated in conformance with the methods and
21 materials specified on the pre-approved plans listed below, provided the following
22 requirements have been satisfied:

- 23
- 24 (a) Mounting heights shall be as specified in the Plans.
- 25
- 26 (b) Light source to pole base distances (H1) shall be determined or verified by
- 27 the Engineer prior to fabrication. Fabrication tolerance shall be ±6 inches.
- 28
- 29 (c) All other requirements of the Special Provisions have been satisfied.
- 30

Fabricator	Pre-Approved Drawing No.	Rev.	Mounting Height(s) (feet)
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Valmont Ind., Inc.	DB01164, Sheets 1-5 of 5	B	30, 35, 40, and 50
Ameron Pole Products Division	WA15LT3721, Sheets 1 and 2 of 2	A	20, 25, 30, 35, 40, 45, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-BB, Sheets 1 and 2 of 2	H	30, 35, 40, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-ELBOW, Sheets 1-3 of 3	J	30, 35, 40, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-SB, Sheets 1-3 of 3	H	30, 35, 40, and 50

8-20.2(9-29.6).OPT5.GR8

(January 6, 2025)

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, applicable characteristics, and foundation types are as follows:

Type PPB

Pedestrian push button posts and their foundations shall conform to Standard Plan J-20.15.

Type PS, Type I, Type RM, and Type FB

Type PS pedestrian signal standards, Type I vehicle signal standards, Type RM ramp meter signal standards, and Type FB flashing beacon standards shall conform to Standard Plan J-20.16, J-21.15, J-21.16, and J-22.15 respectively, or to one of the following pre-approved plans:

Fabricator	Pre-Approved Drawing No.
Valmont Ind., Inc.	DB01165 Rev. B (4 sheets)
Ameron Pole Products Division	WA15TR10-1 Rev. C (1 sheet) and WA15TR10-2 Rev. C (1 sheet)

Millerbernd Manufacturing, Co.	74514-WA-PED-FB Rev. J (2 sheets)
Millerbernd Manufacturing Co.	74514-WA-PED-SB Rev. K (2 sheets)

Foundations shall be as noted in Standard Plan J-21.10.

Type II

Type II signal standards are single mast arm signal standards with no luminaire arm or extension. Type II standards shall conform to one of the following pre-approved plans. Maximum arm length (in feet) and wind load (XYZ value, in cubic feet) is noted for each manufacturer.

Fabricator	Pre-Approved Drawing No.	Max. Arm Length (ft)	Max. Wind Load (XYZ) (ft ³)
Valmont Ind., Inc.	DB01162 Rev. B (5 sheets)	65	3206
Ameron Pole Products Division	WA15TR3724-1 Rev. C (sheet 1 of 2), and WA15TR3724-2 Rev. D (sheet 2 of 2)	65	2935
Millerbernd Manufacturing, Co.	74516-WA-TS-II Rev. L (4 sheets)	65	3697

Foundations shall be as noted in the Plans and Standard Plan J-26.10. Type II signal standards with two mast arms installed 90 degrees apart may use these pre-approved drawings. Standards with two arms at any other angle are Type SD and require special design.

Type III

Type III signal standards are single mast arm signal standards with one Type 1 (radial davit type) luminaire arm. The luminaire arm has a maximum length of 16 feet and a mounting height of 30, 35, 40, or 50 feet, as noted in the Plans. Type III standards shall conform to one of the following pre-approved plans. Maximum arm length (in feet) and wind load (XYZ value, in cubic feet) is noted for each manufacturer. Wind load limit includes a luminaire arm up to 16 feet in length.

Fabricator	Pre-Approved Drawing No.	Max. Arm Length (ft)	Max. Wind Load (XYZ) (ft ³)
Valmont Ind., Inc.	DB00162 Rev. B (5 sheets),	65	3259

	with Type "J" luminaire arm		
Ameron Pole Products Division	WA15TR3724-1 Rev. C (sheet 1 of 2), and WA15TR3724-2 Rev. D (sheet 2 of 2), with Series "J" luminaire arm	65	2988
Millerbernd Manufacturing, Co.	74516-WA-TS-III-J Rev. L (5 sheets)	65	3750

Foundations shall be as noted in the Plans and Standard Plan J-26.10. Type III signal standards with two mast arms installed 90 degrees apart may use these pre-approved drawings. Standards with two arms at any other angle are Type SD and require special design.

Type IV

Type IV strain pole standards shall be consistent with the Plans and Standard Plan J-27.15 or one of the following pre-approved plans:

Fabricator	Pre-Approved Drawing No.
Valmont Ind., Inc.	DB01167 Rev. B (2 sheets)
Ameron Pole Products Division	WA15TR15 Rev. A (2 sheets)
Millerbernd Manufacturing, Co.	74554-WA-SP-IV Rev. H (2 sheets)

Foundations shall be as noted in the Plans and Standard Plan J-27.10.

Type V

Type V strain poles are combination strain pole and light standards, with Type 1 (radial davit type) luminaire arms. Luminaire arms may be up to 16 feet in length, and a mounting height of 40 or 50 feet, as noted in the Plans. Type V strain poles shall be consistent with the Plans and Standard Plan J-27.15 or one of the following pre-approved plans:

Fabricator	Pre-Approved Drawing No.
Valmont Ind., Inc.	DB01167 Rev. B (2 sheets),
Ameron Pole Products Division	WA15TR15 Rev. A (2 sheets)
Millerbernd Manufacturing, Co.	74554-WA-SP-V Rev. J (3 sheets)

Foundations shall be as noted in the Plans and Standard Plan J-27.10.

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Type CCTV

Type CCTV camera pole standards shall conform to Standard Plan J-29.15 or to one of the following pre-approved plans:

Fabricator	Pre-Approved Drawing No.
Valmont Ind., Inc.	DB01166 Rev. C (4 sheets)
Ameron Pole Products Division	WA15CCTV01 Rev. B (2 sheets)
Millerbernd Manufacturing, Co.	74577-WA-LC1 Rev. H (2 sheets)
Millerbernd Manufacturing, Co.	74577-WA-LC2 Rev. H (2 sheets)
Millerbernd Manufacturing, Co.	74577-WA-LC3 Rev. H (3 sheets)

6
7
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9

Foundations shall be as noted in the Plans and Standard Plan J-29.10.

Type SD

Type SD signal standards are outside the basic requirements of any pre-defined signal standard and 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.

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31
32
33
34
35

1
2 Foundations for Type SD standards shall be as noted in the Plans.
3

4 8-20.2(9-29.6(5)).GR8

5 **Foundation Hardware**

6 Section 9-29.6(5) is supplemented with the following:
7

8 8-20.2(9-29.6(5)).OPT1.GR8

9 (January 13, 2021)

10 Anchor bolt assemblies for light standards installed on top of barrier (median
11 barrier mount) shall consist of the following:

- 12
- 13 • (4) 1-inch diameter threaded rods (bolts), minimum 36 inches in
- 14 length
- 15 • (24) heavy hex nuts, six per anchor rod
- 16 • (24) flat washers, six per anchor rod
- 17 • Two anchor plates

18
19 Each anchor plate shall be constructed from 1/2" ASTM A36 plate and hot-dip
20 galvanized in accordance with AASHTO M111. Each anchor plate shall be ring
21 shaped, with an outside diameter of 16 inches and an inside diameter of 12
22 inches. Each anchor plate shall have four 1 1/8" diameter holes on a 13.89"
23 bolt circle, with the holes positioned to match the anchor rod layout shown in
24 the Standard Plans.
25

26 Anchor rods shall extend a minimum of five inches and a maximum of six inches
27 above the top of the traffic barrier. The lower anchor plate shall be embedded
28 29 inches below the top of the traffic barrier. Each anchor plate shall be
29 clamped with a heavy hex nut and washer above and below the anchor plate.
30 The lower heavy hex nut for the pole base plate shall be no more than one inch
31 from the top of the traffic barrier.
32

33 8-20.2(9-29.13).GR8

34 **Control Cabinet Assemblies**

35 Section 9-29.13 is supplemented with the following:
36

37 8-20.2(9-29.13).OPT1.GR8

38 (January 2, 2018)

39 **Uninterruptible Power Supply (UPS)**

40 Each UPS System shall provide battery backup power to the cabinet to which it is
41 connected in the event of loss or failure of normal utility power. Each UPS system
42 shall be constructed for full on line configuration (line interactive type), providing
43 automatic voltage regulation and power conditioning when operating on normal
44 utility power. The transfer between utility power and battery power shall not interfere
45 with the normal operation of the connected downstream cabinet.
46

47 Each UPS System shall be capable of supplying a minimum 1000W load at 120
48 VAC for a minimum number of hours depending on the number of batteries
49 specified:

- 50
- 51 • Four batteries: Minimum 4 hours run time.

- 1
2
3
- Eight batteries: Minimum 8 hours run time.

4 Each UPS System shall be composed of the following equipment:

5
6 **UPS Cabinet Construction**

7 Each UPS Cabinet shall be constructed as follows. The equipment shall be
8 installed within the cabinet as shown in the Plans.

- 9
10 1. The cabinet shall be designated Type 331, consisting of Housing 1B
11 and Mounting Cage 1 as described in the CalTrans TEES. The
12 housing shall use 0.125 inch minimum thickness 5052 H32 ASTM
13 B209 alloy aluminum, with bare mill finish. The exterior shall not be
14 anodized or painted.
15
16 2. Each cabinet door shall be provided with:
17
18 a. A three point latch system. Locks shall be spring loaded
19 construction locks capable of accepting a Best 6 pin core. A 6 pin
20 construction core of the type (blue, green, or red) specified in the
21 contract shall be installed in each core lock. One core removal
22 key and two standard keys shall be included with each cabinet
23 and delivered to the Engineer.
24
25 b. A one piece, closed cell, neoprene gasket.
26
27 c. A two position doorstop assembly. The doorstops shall hold the
28 door open at both 90 degrees and 180 +/- 10 degrees.
29
30 3. Cabinet lighting shall be provided by two LED light strips. Each LED
31 light strip shall be approximately 12 inches long, have a minimum
32 output of 320 lumens, and have a color temperature of 4000K (cool
33 white) plus or minus 400K. Lighting shall not interfere with the proper
34 operation of any other ceiling or shelf mounted equipment. All
35 lighting fixtures shall energize whenever any door is opened. Each
36 door switch shall be labeled "Light". Both light strips shall be ceiling
37 mounted - rack mounted lights are not allowed. One light strip shall
38 be installed over the front face of the rack and the second shall be
39 installed over the rear face of the rack. Each light strip shall be
40 oriented parallel to the door face, and placed such that the
41 associated face of the rack and the rack mounted equipment is
42 illuminated.
43
44 4. Cabinet ventilation shall be as described in the TEES for a Type
45 332L cabinet. The door vent filter shall be a 12 inch by 16 inch by 1
46 inch thick (nominal) disposable paper filter.
47
48 5. A UPS Service Panel, installed on the left side of the cabinet as
49 viewed from the front. This service panel shall include the following,
50 positioned as shown in the Plans:
51

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- 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.

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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.

15 Three sets of cabinet drawings and maintenance and operations manuals shall
16 be provided. Two sets shall be hard copies in paper format and placed in the
17 cabinet drawer shelf. The third shall be electronic in PDF format and provided
18 on a portable USB flash drive (stick) and placed in the cabinet drawer shelf.
19

20 Contact information for Alpha Technologies:

21
22 Alpha Technologies, Inc.
23 3767 Alpha Way
24 Bellingham, WA 98226
25 Phone: (360) 647-2360
26 E-mail: alpha@alpha.com
27 Website: www.alpha.ca
28

29 8-20.2(9-29.13(10)).GR8

30 **NEMA and Type 2070 Controllers and Cabinets**

31
32 8-20.2(9-29.13(10)D).GR8

33 **Cabinets for Type 2070 Controllers**

34
35 8-20.2(9-29.13(10)D).INST2.GR8

36 Item 1 of Section 9-29.13(10)D is supplemented with the following:
37

38 8-20.2(9-29.13(10)D).OPT2.GR8

39 **(February 6, 2023)**

40 **Removable Door Handles**

41 Cabinet doors shall be provided with a $\frac{5}{8}$ -inch hex key socket in place of a
42 handle. The hex socket and locking cam shall rotate on a 0.5-inch minimum
43 diameter shaft. No portion of the socket assembly shall extend beyond the
44 face of the door, such that the socket cannot be rotated by locking pliers or
45 a similar gripping device. No door handles or hex keys shall be provided.
46

47 8-20.2(9-29.13(11)).GR8

48 **Traffic Data Accumulator and Ramp Meters**

49 Section 9-29.13(11) is supplemented with the following:
50

1 8-20.2(9-29.13(11)).OPT1.GR8

2 **(November 20, 2023)**

3 **Advanced Transportation Controller**

4 All new Traffic Data Accumulator (Data Station) and Ramp Meter cabinets shall
5 be provided with a Type ATC 2070 Controller as shown in the Plans. Each
6 controller shall comply with Advanced Transportation Controller (ATC) Standard
7 Version 06 (ATC 5201 v06.25), and shall support both C12S serial bus
8 operation and C1S (104 pin) parallel bus operation. Each controller shall be
9 supplied with the following options and equipment:

- 10
- 11 1. Board Support Package, in electronic format (see ATC 5201,
12 Paragraph 3.3.1)
 - 13 2. 2070-1C Engine Board (CPU Module)
 - 14 3. 2070-2E Field I/O Module
 - 15 4. 2070-3B or 2070-3D Front Panel
 - 16 5. 2070-4A Power Supply Module
- 17

18 A spare blank cover (4X wide), designed to cover the slot for the 270-2E module
19 when it is removed, shall also be provided.

20

21 ATC Controllers are required to be preapproved by WSDOT to ensure
22 compatibility with WSDOT ITS operating software. The following controllers
23 have been verified compatible with WSDOT ITS operating software and are
24 preapproved:

- 25
- 26 1. Model: **Intelight 2070-LDX**
- 27

28 Manufacturer:

29 **Q-Free America**

30 5962 La Place Ct SE, Ste. 150

31 Carlsbad, CA 92008

32 (833) MAXHELP (833-629-4357)

33 info@intelight-its.com

34 www.intelight-its.com

- 35
- 36 2. Model: **McCain ATC 2070LX**
- 37

38 Manufacturer:

39 **McCain, Inc.**

40 2365 Oak Ridge Way

41 Vista, CA 92801

42 (888) 262-2246

43 info@mccain-inc.com

44 www.mccain-inc.com

- 45
- 46 3. Model: **Yunex 2070LX ATC**
- 47

48 Manufacturer:

49 **Yunex, LLC**

50 **(formerly Siemens Mobility, Inc.)**

51 9225 Bee Caves Road

1 Building B, Suite 101
2 Austin, TX 78733
3 (512) 837-8300
4 mobility.siemens.com/us/en.html
5

6 4. Model: **Safetran ATC 2070LX**
7

8 Manufacturer:
9 **Econolite**
10 1250 N Tustin Ave
11 Anaheim, CA 92807
12 (714) 630-3700
13 www.econolite.com
14

15 8-20.2(9-29.13(11)).OPT2.GR8

16 **(February 6, 2023)**
17 **Removable Door Handles**

18 Cabinet doors shall be provided with a 5/8-inch hex key socket in place of a
19 handle. The hex socket and locking cam shall rotate on a 0.5-inch minimum
20 diameter shaft. No portion of the socket assembly shall extend beyond the face
21 of the door, such that the socket cannot be rotated by locking pliers or a similar
22 gripping device. No door handles or hex keys shall be provided.
23

24 8-20.2(9-29.13(12)).GR8

25 **Type 331L ITS Cabinet**
26

27 8-20.2(9-29.13(12)).INST2.GR8

28 Item 3 of Section 9-29.13(12) is supplemented with the following:
29

30 8-20.2(9-29.13(12)).OPT2.GR8

31 **(February 6, 2023)**
32 **Removable Door Handles**

33 Cabinet doors shall be provided with a 5/8-inch hex key socket in place of a
34 handle. The hex socket and locking cam shall rotate on a 0.5-inch minimum
35 diameter shaft. No portion of the socket assembly shall extend beyond the face
36 of the door, such that the socket cannot be rotated by locking pliers or a similar
37 gripping device. No door handles or hex keys shall be provided.
38

39 8-20.2(9-29.15).GR8

40 **Flashing Beacon Control**

41 Section 9-29.15 is supplemented with the following:
42

43 8-20.2(9-29.15).OPT1.GR8

44 **(May 5, 2025)**
45 **Rapid Flashing Beacons**

46 Rapid Flashing Beacon (RFB) indications shall comply with the dimensional,
47 operational, and flash pattern requirements of Chapter 4L of the 2023 MUTCD.
48

49 RFB system pushbuttons shall be Accessible Information Device (AID) type meeting
50 the requirements of Section 9-29.19. The AID may not use percussive indications.
51

1 8-20.2(9-29.19).GR8

2 **Pedestrian Push Buttons**

3 Section 9-29.19 is supplemented with the following:

4
5 8-20.2(9-29.19).OPT1.GR8

6 **(November 4, 2024)**

7 **Approved APS Equipment**

8 APS equipment shall be one of the following systems:

9
10 1. Model: **Campbell Guardian Independent 4-Wire APS**

11 Components:

12 APS Pushbutton Kit: KAC-32021-2BT

13 Pedestrian Display Interface Unit: 501-0300 SPI

14
15 Manufacturer:

16 **Campbell Company**

17 450 W McGregor Dr

18 Boise, ID 83705

19 (208) 345-7459

20 www.pedsafety.com

21
22
23 2. Model: **Pelco IntelliCross Intelligent Pedestrian System**

24 Components:

25 APS Pushbutton: SE-2901-#-P30 9x15

26 Pedestrian Display Interface Unit: SE-6190-PNC

27
28 Manufacturer:

29 **Pelco Products, Inc.**

30 320 W 18th St

31 Edmond, OK 73013

32 (405) 340-3435

33 intellicross@pelcoinc.com

34 www.pelcointellcross.com

35
36
37 3. Model: **Polara iNS iNavigator Push Button Station**

38 Components:

39 APS Pushbutton: iNS23TN1-G

40 Pedestrian Display Interface Unit: iPHCU3S

41 PC Interface Module: iN-DGL (one per intersection; place in cabinet
42 drawer).

43
44 Manufacturer:

45 **Polara Enterprises**

46 1497 CR 2178

47 Greenville, TX 75402

48 (903) 366-0300

49 www.polara.com

50
51

1 Only one brand of equipment shall be used for the entire Contract.
2

3 8-20.2(9-29.24).GR8

4 **Service Cabinets**

5 Item 3 of Section 9-29.24 is supplemented with the following:
6

7 8-20.2(9-29.24).OPT1.GR8

8 **(February 6, 2023)**

9 **Removable Door Handles**

10 Service cabinet doors shall be provided with a $\frac{5}{8}$ -inch hex key socket in place of a
11 handle for customer sections of the service cabinet. The hex socket and locking cam
12 shall rotate on a $\frac{1}{2}$ -inch minimum diameter shaft. The socket assembly shall either
13 be:
14

- 15 1. Flush with the face of the door, such that no portion of the socket assembly
16 extends beyond the face of the door, and it cannot be rotated by locking
17 pliers or a similar gripping device; or
18
- 19 2. Protected by a ring of 6061-T6 aluminum tubing. The tubing shall have a
20 minimum wall thickness of 0.125 inches. The ring shall extend at least 0.15
21 inches beyond the end of the socket and shall provide no more than 0.07
22 inches of clearance from the socket such that the socket cannot be gripped
23 by pliers or a similar gripping device. The ring shall be attached to the door
24 using three $\frac{1}{2}$ -inch fillet welds, each $\frac{3}{4}$ -inch long, evenly spaced around
25 the outer circumference of the tube.
26

27 One hex key door handle shall be provided with each cabinet.
28

29 8-20.2(9-29.25).GR8

30 **Amplifier, Transformer, and Terminal Cabinets**

31 Item 3 of Section 9-29.25 is supplemented with the following:
32

33 8-20.2(9-29.25).OPT1.GR8

34 **(February 6, 2023)**

35 **Removable Door Handles**

36 Transformer cabinet doors shall be provided with a $\frac{5}{8}$ -inch hex key socket in place
37 of a handle for customer sections of the service cabinet. The hex socket and locking
38 cam shall rotate on a $\frac{1}{2}$ -inch minimum diameter shaft. The socket assembly shall
39 either be:
40

- 41 1. Flush with the face of the door, such that no portion of the socket assembly
42 extends beyond the face of the door, and it cannot be rotated by locking
43 pliers or a similar gripping device; or
44
- 45 2. Protected by a ring of 6061-T6 aluminum tubing. The tubing shall have a
46 minimum wall thickness of 0.125 inches. The ring shall extend at least 0.15
47 inches beyond the end of the socket and shall provide no more than 0.07
48 inches of clearance from the socket such that the socket cannot be gripped
49 by pliers or a similar gripping device. The ring shall be attached to the door
50 using three $\frac{1}{2}$ -inch fillet welds, each $\frac{3}{4}$ -inch long, evenly spaced around
51 the outer circumference of the tube.

1
2 One hex key door handle shall be provided with each cabinet.
3

4 8-20.2(1).GR8

5 **Equipment List And Drawings**
6

7 8-20.2(1).INST1.GR8

8 Section 8-20.2(1) is supplemented with the following:
9

10 8-20.2(1).OPT1.GR8

11 (March 13, 1995)

12 Pole base to light source distances (H1) for lighting standards with pre-approved
13 plans shall be as noted in the Plans.
14

15 Pole base to light source distances (H1) for lighting standards without pre-approved
16 plans will be furnished by the Engineer as part of the final approved shop drawings,
17 prior to fabrication.
18

19 8-20.2(1).OPT2.GR8

20 (March 13, 1995)

21 Pole base to light source distances (H1) for lighting standards with pre-approved
22 plans will be determined or verified by the Engineer at the request of the Contractor
23 prior to fabrication.
24

25 Pole base to light source distances (H1) for lighting standards without pre-approved
26 plans and for combination traffic signal and lighting standards will be furnished by
27 the Engineer as part of the final approved shop drawings prior to fabrication.
28

29 8-20.2(1).OPT3.GR8

30 (March 13, 1995)

31 If traffic signal standards, strain pole standards, or combination traffic signal and
32 lighting standards are required, final verified dimensions including pole base to
33 signal mast arm connection point, pole base to light source distances (H1), mast
34 arm length, offset distances to mast arm mounted appurtenances, and orientations
35 of pole mounted appurtenances will be furnished by the Engineer as part of the final
36 approved shop drawings prior to fabrication.
37

38 8-20.3.GR8

39 **Construction Requirements**
40

41 8-20.3(4).GR8

42 **Foundations**
43

44 8-20.3(4).INST1.GR8

45 Section 8-20.3(4) is supplemented with the following:
46

1 8-20.3(4).OPT1.FB8

2 (August 7, 2017)

3 **Shafts For Signal Standard Foundations**

4 Shaft foundations for the traffic signal standards at the following location(s) shall be
5 constructed in accordance with the following requirements:

6
7 *** \$\$1\$\$ ***

8
9 Shaft foundations for traffic signal standards shall be constructed in accordance with
10 Section 6-19.3, except as follows:

11
12 **Quality Assurance**

13 The tolerance for placing the center at the top of shaft under Section 6-19.3(1)A
14 is revised for traffic signal standard foundation shafts to be within 4-inches of
15 the Plan location.

16
17 Non-destructive testing of shafts under Sections 6-19.3(1)B and 6-19.3(9) and
18 associated Work under Section 6-19.3(6) does not apply.

19
20 **Shaft Excavation**

21 Permanent casing advanced during excavation operations is required full depth
22 for all traffic signal standard shaft foundation locations specified at the
23 beginning of this Special Provision. Excavation in advance of the casing tip
24 shall not exceed three feet. In no case shall shaft excavation and casing
25 placement extend below the bottom of shaft excavation as shown in the Plans.

26
27 When efforts to advance past the obstruction to the design shaft tip elevation
28 result in the rate of advance of the shaft drilling equipment being significantly
29 reduced relative to the rate of advance for the portion of the shaft excavation in
30 the geological unit that contains the obstruction, then the Contractor shall
31 remove, break-up, or push aside, the obstruction under the provisions of
32 Section 8-20.5 as supplemented in these Special Provisions.

33
34 **Placing Concrete**

35 Traffic signal standard foundation shaft concrete shall be Class 4000P.

36
37 **Casing Removal**

38 Tops of permanent casing for the shafts shall be removed to at least 6-inches
39 beneath the finish groundline, unless otherwise specified by the Engineer.

40
41
42 8-20.3(5).GR8

43 **Conduit**

44
45 8-20.3(5)E.GR8

46 **Method of Conduit Installation**

47
48 8-20.3(5)E.INST1.GR8

49 Section 8-20.3(5)E is supplemented with the following:
50

1 8-20.3(5)E.OPT1.GR8

2 (February 6, 2023)

3 CDF Encased ITS Conduit

4 Where two 4-inch conduits with factory installed innerducts are used for ITS
5 fiber-optic cable installation and open trenching is allowed the conduits shall be
6 installed by open trenching with CDF encasement. Conduit shall be installed
7 where shown in the Plans and backfilled in accordance with the Standard Plans.

8
9 8-20.3(8).GR8

10 **Wiring**

11
12 8-20.3(8).INST1.GR8

13 Section 8-20.3(8) is supplemented with the following:

14
15 8-20.3(8).OPT1.GR8

16 (March 13, 1995)

17 **Field Wiring Chart**

18	501	AC+ Input	516-520 Railroad Pre-empt
19	502	AC- Input	5A1-5D5 Emergency Pre-empt
20	503-510	Control-Display	541-580 Coordination
21	511-515	Sign Lights	581-599 Spare

22										
23	Movement Number	1	2	3	4	5	6	7	8	9
24										
25	Vehicle Head									
26	Red	611	621	631	641	651	661	671	681	691
27	Yellow	612	622	632	642	652	662	672	682	692
28	Green	613	623	633	643	653	663	673	683	693
29	Spare	614	624	634	644	654	664	674	684	694
30	Spare	615	625	635	645	655	665	675	685	695
31	AC-	616	626	636	646	656	666	676	686	696
32	Red Auxiliary	617	627	637	647	657	667	677	687	697
33	Yellow Auxiliary	618	628	638	648	658	668	678	688	698
34	Green Auxiliary	619	629	639	649	659	669	679	689	699
35	Pedestrian Heads & Dets.									
36	Hand	711	721	731	741	751	761	771	781	791
37	Man	712	722	732	742	752	762	772	782	792
38	AC-	713	723	733	743	753	763	773	783	793
39	Detection	714	724	734	744	754	764	774	784	794
40	Common-Detection	715	725	735	745	755	765	775	785	795
41	Spare	716	726	736	746	756	766	776	786	796
42	Spare	717	727	737	747	757	767	777	787	797
43	Spare	718	728	738	748	758	768	778	788	798
44	Spare	719	729	739	749	759	769	779	789	799
45	Detection									
46	AC+	811	821	831	841	851	861	871	881	891
47	AC-	812	822	832	842	852	862	872	882	892
48	Common-Detection	813	823	833	843	853	863	873	883	893
49	Detection A	814	824	834	844	854	864	874	884	894
50	Detection B	815	825	835	845	855	865	875	885	895
51	Loop 1 Out	816	826	836	846	856	866	876	886	896

1	Loop 1 In	817	827	837	847	857	867	877	887	897
2	Loop 2 Out	818	828	838	848	858	868	878	888	898
3	Loop 2 In	819	829	839	849	859	869	879	889	899
4	Supplemental Detection									
5	Loop 3 Out	911	921	931	941	951	961	971	981	991
6	Loop 3 In	912	922	932	942	952	962	972	982	992
7	Loop 4 Out	913	923	933	943	953	963	973	983	993
8	Loop 4 In	914	924	934	944	954	964	974	984	994
9	Loop 5 Out	915	925	935	945	955	965	975	985	995
10	Loop 5 In	916	926	936	946	956	966	976	986	996
11	Loop 6 Out	917	927	937	947	957	967	977	987	997
12	Loop 6 In	918	928	938	948	958	968	978	988	998
13	Spare	919	929	939	949	959	969	979	989	999

14
15 8-20.3(14).GR8

16 **Signal Systems**

17
18 8-20.3(14)A.GR8

19 **Signal Controllers**

20
21 8-20.3(14)A.INST1.GR8

22 Section 8-20.3(14)A is supplemented with the following:

23
24 8-20.3(14)A.OPT1.GR8

25 **(August 2, 2010)**

26 **Testing**

27 All signal control equipment shall be tested at the Washington State Department
28 of Transportation Materials Laboratory located in Tumwater, Washington, prior
29 to final delivery. The tests shall check the operation of each individual
30 component as well as the overall operation of the system.

31
32 The Contractor shall designate a qualified representative for these tests.
33 Notification of this representative shall be submitted for approval, in writing, to
34 the State Materials Laboratory, 14 calendar days prior to any equipment
35 deliveries. The Engineer shall also receive a copy of this notification, which
36 includes the representative's name, address, and telephone number. All
37 communications and actions regarding testing of all equipment submitted to the
38 State Materials Laboratory shall be made through this representative. These
39 communications and actions shall include, but not be limited to, the following:

40
41 All notifications of failure or rejection, demonstration of the equipment, and
42 the return of rejected equipment.

43
44 The State Materials Laboratory testing process will consist of the following four
45 separate stages:

- 46
- 47 a. Delivery and Assembly
- 48 b. Demonstration and Documentation
- 49 c. Performance Test
- 50 d. Operational Test
- 51

1 Testing will follow in the correct order with no time gaps between stages unless
2 mutually agreed upon by the Contractor and State Materials Laboratory.
3

4 **Stage 1 Delivery Assembly**

5 All components for the complete traffic control systems, including the
6 necessary test equipment, shall be assembled and ready for
7 demonstration within ten working days of delivery to the Materials
8 Laboratory. The systems shall simulate the operations as installed in the
9 field.
10

11 Equipment and prerequisites necessary to complete this stage shall
12 include:
13

14 a. **Detection Simulator:**

15 The detection simulator shall provide at least one detector per
16 phase and variable traffic volumes. One simulator shall be
17 required for every two controllers tested.
18

19 b. **Communications Network:**

20 Locations, specified for coordinating communications equipment
21 and cable, shall be completely wired to provide an operational
22 communications system between all local and master controllers.
23

24 The Contractor shall provide labor, equipment, and materials necessary to
25 assemble all control equipment complete and ready for demonstration.
26 Materials and equipment used for this stage that are not required for field
27 installation shall remain the property of the Contractor. Failure to complete
28 this stage within ten working days will result in rejection of the entire
29 system.
30

31 **Stage 2 Demonstration and Documentation**

32 This stage shall be completed within seven working days following the
33 completion of Stage 1. Failure to do so shall result in rejection of the entire
34 shipment.
35

36 All documentation shall be furnished with the control equipment prior to the
37 start of testing. If corrections to any document are deemed necessary by
38 the State, the Contractor shall submit this updated version prior to the final
39 approval by the State Materials Laboratory. The documents to be supplied
40 shall consist of or provide the following:
41

42 a. **A Complete accounting of all the control and test equipment**
43 **required.**

44 b. **A complete set of documents which shall include:**

45 1. **Serial numbers when applicable.**

46 2. **Written certification that equipment of the same make**
47 **and model has been tested according to NEMA**
48 **Environmental Standards and Test Procedures, and has**
49
50
51

1 met or exceeded these standards. The certificate shall
2 include equipment model number and where, when, and
3 by whom the tests were conducted. This certificate shall
4 accompany each shipment of controllers.

- 5
6 3. Reproducible mylar wiring diagrams and two blue-tone
7 prints for each controller and cabinet supplied. The
8 sheet size shall be 24 inches by 36 inches.
9
10 4. Wiring diagrams for all auxiliary equipment furnished.
11 One set per cabinet.
12
13 5. Complete operations and maintenance manuals
14 including complete and correct software listing and flow
15 charts. One set of operations and maintenance
16 manuals per cabinet; at least four but no more than ten.
17 Five sets of software listings and flow charts.
18
19 6. Complete operations and maintenance manuals for all
20 auxiliary equipment. One set per cabinet.

- 21
22 c. A description of the functions and the capabilities of individual
23 components and of the overall control system.
24
25 d. A presentation on how to operate the system.
26
27 e. A complete and thorough demonstration to show that all
28 components of the control system are in good condition and
29 operating properly, and proof that the controller and cabinet are
30 functioning correctly.
31
32 f. Detailed instructions for installing and operating the controller(s),
33 including explanations on the use of all features of the
34 controller(s).
35
36 g. The operational and maintenance manuals for each traffic signal
37 controller supplied including as a minimum, but not to be limited
38 to the following:
39
40 1. Detailed instructions for maintaining all hardware
41 components, controller, and auxiliary equipment.
42
43 2. A complete parts list detailing all manufacturer's
44 identification codes.
45
46 3. Detailed wiring diagrams and schematics indicating
47 voltage levels and pictorial description, part name, and
48 location for all hardware components, controller, and
49 auxiliary equipment.

50
51 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.

1
2 A total of two failures will be allowed from the start of Stage 3 to the end of
3 Stage 4. If three failures occur during this time period, the equipment will
4 be rejected. New equipment of different serial numbers submitted as
5 replacement shall be received by the Materials Laboratory for testing under
6 Stage 3 within ten working days following notification of rejection. Failure
7 to meet this requirement within the allotted time will result in rejection of the
8 entire system. Software errors will be considered as failures and, if not
9 corrected within ten working days, the entire system will be subject to
10 rejection. Following rejection of any equipment, the Contractor shall be
11 responsible for all costs incurred. This shall include but not be limited to
12 all shipping costs.

13
14 When the traffic control program is supplied by the State, the Contractor
15 shall prove that any failures are, in fact, caused by that program and not
16 the hardware.

17
18 All component or system failures, except load switches and detector
19 amplifiers, shall be documented. This documentation shall be submitted
20 prior to commencing the test or stage in which the failure was found and
21 shall provide the following information:

- 22
- 23 a. A detailed description of the failure.
- 24 b. The steps undertaken to correct the failure.
- 25 c. A list of parts that were replaced, if any.
- 26

27 Upon completion of the tests, the equipment will be visually inspected. If
28 material changes are observed which adversely affect the life of the
29 equipment, the cause and conditions shall be noted. The Contractor will
30 immediately be given notice to correct these conditions. If not repaired
31 within ten working days of notification, the equipment will be subject to
32 rejection. A final accounting shall be made of all equipment prior to
33 approval.

34
35 All failed or rejected equipment shall be removed from the Materials
36 Laboratory within three working days following notification; otherwise, the
37 failed or rejected equipment will be returned, freight collect, to the
38 Contractor.

39
40 Following final approval by the State Materials Laboratory, all equipment
41 shall be removed from the State Materials Laboratory and delivered to sites
42 as designated elsewhere in this contract.

43
44 **Guarantees**

45 Guarantees and warranties shall be in accordance with Section 1-05.10.

46
47 8-20.5.GR8

48 **Payment**

49
50 8-20.5.INST1.GR8

51 Section 8-20.5 is supplemented with the following:

1
2 8-20.5.OPT1.GB8

3 (April 6, 2015)

4 "Removing Traffic Signal Shaft Obstructions", estimated.

5 Payment for removing obstructions, as defined in Section 8-20.3(4) as supplemented in
6 these Special Provisions, will be made for the changes in shaft construction methods
7 necessary to remove the obstruction. The Contractor and the Engineer shall evaluate
8 the effort made and reach agreement on the equipment and employees utilized, and the
9 number of hours involved for each. Once these cost items and their duration have been
10 agreed upon, the payment amount will be determined using the rate and markup
11 methods specified in Section 1-09.6. For the purpose of providing a common proposal
12 for all bidders, the Contracting Agency has entered an amount for the item "Removing
13 Traffic Signal Shaft Obstructions" in the bid proposal to become a part of the total bid by
14 the Contractor.

15
16 If the shaft construction equipment is idled as a result of the obstruction removal work
17 and cannot be reasonably reassigned within the project, then standby payment for the
18 idled equipment will be added to the payment calculations. If labor is idled as a result of
19 the obstruction removal work and cannot be reasonably reassigned within the project,
20 then all labor costs resulting from Contractor labor agreements and established
21 Contractor policies will be added to the payment calculations.

22
23 The Contractor shall perform the amount of obstruction work estimated by the
24 Contracting Agency within the original time of the contract. The Engineer will consider a
25 time adjustment and additional compensation for costs related to the extended duration
26 of the shaft construction operations, provided:

- 27
28 1. the dollar amount estimated by the Contracting Agency has been exceeded,
29 and
30
31 2. the Contractor shows that the obstruction removal work represents a delay to
32 the completion of the project based on the current progress schedule provided
33 in accordance with Section 1-08.3.
34

35 8-21.GR8

36 **Permanent Signing**

37
38 8-21.2.GR8

39 **Materials**

40
41 8-21.2(9-06.16).GR8

42 **Roadside Sign Structures**

43 Section 9-06.16 is supplemented with the following:

44
45 8-21.2(9-06.16).OPT1.GR8

46 (January 3, 2011)

47 **Perforated Steel Square Sign Post System**

48 Where noted in the Plans, steel sign post systems shall be square, pre-punched
49 galvanized steel tubing, that are NCHRP 350 Test Level 3 Certified and FHWA

1 approved. The steel sign post system shall include all anchor sleeves, and other
2 hardware required for a complete sign installation.
3

4 **System Acceptance**

5 Systems listed in the current QPL will be accepted per the QPL approval code.
6 Systems not listed in the QPL will be accepted based on a Supplier's Certificate of
7 Compliance. The Supplier's Certificate of Compliance will be a contract specific
8 letter from the supplier stating the system is NCHRP 350 Test Level 3 compliant.
9

10 8-21.2(9-28.11).GR8

11 **Hardware**

12 Section 9-28.11 is supplemented with the following:
13

14 8-21.2(9-28.11).OPT1.GB8

15 (August 3, 2015)

16 Locknuts shown in the Plans specifying a locknut or locknut with nylon insert shall
17 conform to one of the following:
18

- 19 1. ANCO Pin Locknut, with stainless steel locking pin, as manufactured by
20 Lok-Mor, Inc.
21
- 22 2. Tri-lock Locknut, as manufactured by Lok-Mor, Inc.
23
- 24 3. Grade DH or 2H hex or heavy hex nuts conforming to one of the ASTM
25 material specifications in the Locknut category of the Hardware table of this
26 Section may be modified by installing a nylon insert washer. A minimum of
27 60-percent of the original number of threads shall meet the requirements
28 of the applicable ASTM material specification after insertion of the nylon
29 insert washer.
30
- 31 4. Hex or heavy hex nuts conforming to one of the ASTM material
32 specifications in the Locknut category of the Hardware table of this Section
33 may be modified by adding one of the following products to a minimum of
34 one-half of the internal threads of the nut and the entire exterior top surface
35 of the nut:
36
 - 37 a. Nylok Blue Torq-Patch Locknut.
 - 38 b. Nylok Precote 30.
 - 39 c. ND Patch 360 Ring Patch.
40
41

42
43 The nuts with any of the three listed products are permitted for a single use
44 only and shall have a maximum of two nut widths of thread extending
45 beyond the nut after installation.
46

47 The alternatives to locknuts specified in Standard Plans G-90.20, G-90.30, and J-
48 75.41 are deleted and replaced with the four options specified above.
49

1 8-21.2(9-28.14).GR8

2 **Sign Support Structures**

3 Section 9-28.14 is supplemented with the following:

4
5 8-21.2(9-28.14).OPT6.GR8

6 **(September 8, 2020)**

7 **Manufacturers for Steel Roadside Sign Supports**

8 The Standard Plans lists several steel sign support types. These supports are
9 patented devices and many are sole-source. All of the sign support types listed
10 below are acceptable when shown in the Plans.

<u>Steel Sign Support Type</u>	<u>Manufacturer</u>
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., Allied Tube & Conduit Corp. (Mechanical Division), Trinity Highway Products, LLC.
Type SB-1, SB-2, & SB-3	Ultimate Highway Solutions, Inc., Xcessories Squared Development and Manufacturing Incorporated, Trinity Highway Products, LLC.

31 8-21.3.GR8

32 **Construction Requirements**

33
34 8-21.3(9).GR8

35 **Sign Structures**

36
37 8-21.3(9)E.GR8

38 **Bridge Mounted Sign Brackets**

39
40 8-21.3(9)E.INST1.GR8

41 Section 8-21.3(9)E is supplemented with the following:

42
43 8-21.3(9)E.OPT1.FB8

44 (November 20, 2023)

45 Bridge Mounted Sign Bracket No(s). *** \$\$1\$\$ *** include the following
46 quantities of structural carbon steel:

47
48 *** \$\$2\$\$ ***

1 For bridge mounted sign brackets mounted with resin bonded anchors, the
2 Contractor shall install resin bonded anchors in accordance with Section 6-
3 02.3(18)A and Section 9-06.4. For this type of mounting, Bridge Mounted Sign
4 Bracket No(s). *** \$\$\$ \$\$ ** include the following quantities of drilled holes:

5
6 *** \$\$\$ \$\$ **

7
8 8-21.4.GR8

9 **Measurement**

10
11 8-21.4.INST1.GR8

12 Section 8-21.4 is supplemented with the following:

13
14 8-21.4.OPT1.FB8

15 (September 8, 2020)

16 *** \$\$\$ \$\$ ** contain(s) the following approximate quantities of material and work:

17
18 *** \$\$\$ \$\$ **

19
20 The quantities are listed only for the convenience of the Contractor in determining the
21 volume of work involved and are not guaranteed to be accurate. The prospective bidders
22 shall verify these quantities before submitting a bid. No adjustments other than for
23 accepted changes will be made in the applicable sign structure lump sum Contract price
24 even though the actual quantities required may deviate from those listed.

25
26 8-22.GR8

27 **Pavement Marking**

28
29 8-22.4.GR8

30 **Measurement**

31
32 8-22.4.INST1.GR8

33 The sixth paragraph of Section 8-22.4 is revised to read:

34
35 8-22.4.OPT1.2026.GR8

36 (November 4, 2024)

37 Wide Dotted Entry Line will be measured by the completed linear foot as "Painted 12-
38 inch Wide Line" or "Plastic 12-inch Wide Line". No deduction will be made for the
39 unmarked area when the marking includes a broken or dotted line.

40
41 8-23.GR8

42 **Temporary Pavement Markings**

43
44 8-23.1.GR8

45 **Description**

46
47 8-23.1.INST1.GR8

48 The first sentence of Section 8-23.1 is revised to read:

1 8-23.1.OPT1.2026.GR8
2 (May 5, 2025)
3 The Work consists of furnishing, installing, and removing temporary pavement markings.
4

5 8-23.2.GR8

6 **Materials**

7

8 8-23.2(9-34).GR8

9 ***Pavement Marking Material***

10 Section 9-34 is supplemented with the following:

11

12 8-23.2(9-34).OPT1.GR8

13 **(October 3, 2022)**

14 **Temporary Adhesive Transverse Rumble Strips**

15 Temporary Adhesive Transverse Rumble Strips shall consist of a self-adhesive
16 orange rumble strips that is 4 inches wide and 0.250 inches thick.

17

18 Temporary Adhesive Transverse Rumble Strips shall be manufactured by Advanced
19 Traffic Markings, Seton, Stop-Painting, or an approved equal.

20

21 8-23.3.GR8

22 **Construction Requirements**

23

24 8-23.3(4).GR8

25 ***Pavement Marking Application***

26

27 8-23.3(4)A.GR8

28 **Temporary Pavement Markings – Short Duration**

29

30 8-23.3(4)A.INST1.GR8

31 Section 8-23.3(4)A is supplemented with the following:

32

33 8-23.3(4)A.OPT1.GR8

34 (October 3, 2022)

35 **Temporary Adhesive Transverse Rumble Strips** - A SOLID line used as an
36 advance warning device. Each line shall be continuous and placed in the travel
37 lane, perpendicular to the flow of traffic, as shown in the Plans. Each temporary
38 transverse rumble strip shall be applied in accordance with the manufacturer's
39 recommendation.

40

41 Temporary adhesive transverse rumble strips may be used on two-way, two-
42 lane roadways in conditions requiring traffic to stop.

43

44 Do not place temporary adhesive transverse rumble strips on sharp horizontal
45 or vertical curves, through pedestrian crossings or on bicycle routes. When
46 placed on roadways used by bicyclists a minimum clear path of 4 feet shall be
47 provided at each edge of the roadway or on each paved shoulder if feasible.

48

1 Temporary adhesive transverse rumble strips shall be repaired immediately
2 when it no longer provides the intended use. Temporary adhesive transverse
3 rumble strips will be removed when they are no longer required.
4

5 8-23.4.GR8

6 **Measurement**
7

8 8-23.4.INST1.GR8

9 Section 8-23.4 is supplemented with the following:
10

11 8-23.4.OPT1.GR8

12 (October 3, 2022)

13 Temporary Adhesive Transverse Rumble Strips will be measured by the linear foot of
14 each installed line for the initial installation only. Repair, for any reason, of temporary
15 transverse rumble strips will not be measured.
16

17 8-23.5.GR8

18 **Payment**
19

20 8-23.5.INST1.GR8

21 Section 8-23.5 is supplemented with the following:
22

23 8-23.5.OPT1.GR8

24 (October 3, 2022)

25 "Temporary Adhesive Transverse Rumble Strips", per linear foot.
26

27 The unit Contract price per linear foot for "Temporary Adhesive Transverse Rumble
28 Strips" shall be full pay for all Work as specified.
29

30 8-24.GR8

31 **Rock and Gravity Block Wall and Gabion Cribbing**
32

33 8-24.2.GR8

34 **Materials**
35

36 8-24.2.INST1.GR8

37 Section 8-24.2 is supplemented with the following:
38

39 8-24.2.OPT1.GR8

40 **(November 2, 2022)**

41 **Gravity Block Wall**

42 Gravity block wall blocks shall be rectangular prisms with dimensions 2'-5 ½" by 2'-5 ½"
43 by 4'-11", except for special blocks which shall be as dimensioned in the Plans. All
44 dimensions shall be ± ½".
45

46 Except as otherwise specified, gravity block wall blocks will be accepted by the Engineer
47 based on visual inspection only, with no minimum compressive strength and no air
48 content requirements for the concrete used in the block.
49

1 Gravity block wall blocks for permanent walls of heights greater than six feet and less
2 than 15 feet shall be cast with Class 3000 concrete, conforming to the air content
3 requirements of Section 6-02.3(2)A. Commercial concrete shall not be used. Gravity
4 block wall blocks for permanent walls of these heights will be accepted based on visual
5 inspection, and conformance to Section 6-02.3(9) and the specified concrete strength
6 and air content requirements.
7

8 8-24.3.GR8

9 **Construction Requirements**

10
11 8-24.3(2).GR8

12 ***Gravity Block Wall***

13
14 8-24.3(2).INST1.GR8

15 Section 8-24.3(2) is supplemented with the following:
16

17 8-24.3(2).OPT1.GR8

18 **(January 7, 2002)**

19 **Definitions**

20 Temporary Gravity Block Wall: A gravity block wall that is constructed and removed
21 under the same contract. Temporary gravity block walls shall not exceed ten feet in
22 height, measured from the bottom of the bottom row of blocks to the top of the
23 highest block.
24

25 Permanent Gravity Block Wall: A gravity block wall that remains in place after the
26 conclusion of the contract under which the gravity block wall was constructed.
27 Permanent gravity block walls shall not exceed 15 feet in height, measured from the
28 bottom of the bottom row of blocks to the top of the highest block.
29

30 **Submittals**

31 The Contractor shall submit working drawings of the gravity block wall to the
32 Engineer for approval in accordance with Section 6-01.9. The working drawings
33 shall include, but not be limited to, the following:
34

- 35 1. Plan, elevation, and section views of the wall, showing the layout, batter,
36 and orientation of the blocks.
- 37 2. Dimensions and details of the blocks, including details and locations of
38 block erection lifting loops and inserts, and the features designed to
39 interlock blocks together if the blocks have such features.
- 40 3. Method and equipment used to erect the blocks.
- 41 4. Erection sequence.

42
43
44
45
46 The Contractor shall not begin fabricating gravity block wall blocks until receiving
47 the Engineer's approval of the working drawing submittal.
48

49 **Gravity Block Wall Erection**

50 After excavating for the wall base, the Contractor shall grade the excavation for a
51 width equal to or exceeding the width of the bottom row of blocks. The base shall

1 be graded to the base elevation shown in the Plans and working drawings as
2 approved by the Engineer, and shall accommodate the batter of the bottom row of
3 blocks.

4
5 The Contractor shall erect the gravity block wall and place the backfill in accordance
6 with the erection sequence as approved by the Engineer. The top of the gravity
7 block wall shall be within two inches of the line and grade shown in the Plans. The
8 backfill shall be compacted in accordance with Section 2-03.3(14)C, Method C.
9

10 The Contractor shall repair all large blemishes, honeycombed areas, and chipped
11 surfaces, (25 square inches and larger) on the exposed face of the erected wall
12 using methods and materials as approved by the Engineer.
13

14 8-25.GR8

15 **Glare Screen**

16
17 8-25.1.GR8

18 **Description**

19
20 8-25.1.INST1.GR8

21 Section 8-25.1 is supplemented with the following:
22

23 8-25.1.OPT1.GR8

24 (April 1, 2002)

25 This work shall consist of furnishing and constructing permanent and temporary barrier
26 glare screen on concrete barrier in accordance with the Plans, these Specifications, and
27 as directed by the Engineer.
28

29 8-25.2.GR8

30 **Materials**

31
32 8-25.2.INST1.GR8

33 Section 8-25.2 is supplemented with the following:
34

35 8-25.2.OPT1.GR8

36 (April 1, 2002)

37 **Barrier Glare Screen**

38 Barrier glare screen shall consist of modular units with vertical blades mounted on a
39 horizontal base rail. Base rails and blades shall be made of non-warping, non-metallic
40 durable polymeric materials; shall be resistant to damage due to impacts, ultraviolet light,
41 ozone, hydrocarbons, and other effects of atmosphere weathering; shall resist stiffening
42 with age; and shall be designed for a minimum life equaling 60 months of outdoor service.
43

44 The color of blades shall be gray or green. Only one color shall be used throughout the
45 project. The height of the blade shall be 24 inches. The blade width and spacing shall
46 provide for a minimum 22 degree sight cutoff angle. The length of the unit shall be the
47 same as the length of the concrete barrier that the unit is mounted on. The unit can be
48 composed of smaller sub-units as long as the completed assembly is the same length
49 as the concrete barrier. The unit shall not exceed 4.5 pounds per linear foot.
50

1 Brackets and mounting hardware may be metallic or non-metallic. Metallic brackets and
2 anchor hardware shall be stainless steel or galvanized in accordance with ASTM A-153.
3 Anchors shall be a stud mechanical system and shall include the necessary washers.
4 The blade to rail base separation strength shall be a minimum of 1,500 pounds. Anchors
5 shall have a minimum 3,000 pound pull-out and shear strength.
6

7 Barrier glare screen shall be selected from approved materials listed in the Qualified
8 Products List.
9

10 **Laboratory Tests**

11 Three blades shall be cycled at 1000 hours in a weatherometer in accordance with ASTM
12 G 53 (3 hr. 60C UV, 3 hr. 50C CON). The blades shall show no signs of delamination,
13 distress, or discoloration. Physical properties of tensile strength and rigidity shall be
14 maintained within 80 percent of the unconditioned values.
15

16 An impact test shall be performed on three partial sections of the modular unit consisting
17 of the base rail and one blade. The temperature shall be 45°F. The modular unit shall be
18 fastened in a similar fashion as to how the system would be used in the field. Each blade
19 shall receive three impacts with a horizontal steel bar traveling at 50 MPH impacting at
20 mid-height on the blade. After impact, the screening unit (blades and base) shall be
21 inspected for the following criteria:
22

- 23 1. Any cracking, splitting, or delamination, other than surface cracking evident on
24 only one face of the blade, is considered a failure.
25
- 26 2. If the blade leans more than 10 degrees from the vertical it is considered a
27 failure.
28
- 29 3. Any separation of the blade from the base is considered a failure.
30
- 31 4. Any separation of the base from the attachment is considered a failure.
32

33 If an individual blade or base fails any of the above criteria, the product is unacceptable.
34

35 **Pre-approval**

36 In order for a particular model of temporary barrier glare screen to become pre-approved,
37 the following conditions must be met:
38

- 39 1. The manufacturer must submit a written request for pre-approval along with
40 samples for each model to be tested to: Materials Engineer, Department of
41 Transportation Material Laboratory, P.O. Box 47365, Olympia, WA 98504-7365.
42 Samples shall be complete with blades, base rail, and mounting hardware and
43 shall be accompanied by the manufacturer's written installation procedures.
44
- 45 2. The barrier screen will be field impact tested by the State Materials Laboratory
46 to verify compliance with these specifications.
47
- 48 3. In lieu of State Materials Laboratory testing, the Lab will accept the results of
49 pre-approved testing performed by the manufacturer or other agencies under
50 the following conditions:
51

- 1 a. The State Materials Laboratory is informed of the pre-approval
2 testing sufficiently in advance in order to attend and observe.
3 Attendance will be at the discretion of the Materials Laboratory.
4
5 b. The results of the testing shall be reported in sufficient detail to
6 enable the State Materials Laboratory to evaluate compliance with
7 these specifications.
8

9 The Manufacturer must submit a certified test report, including test data developed by
10 an approved testing laboratory, which demonstrates that the barrier screening complies
11 with the requirements of the specifications. Certified test data supplied by the
12 manufacturer shall be subject to verification by appropriate tests conducted by the State
13 Materials Laboratory.
14

15 Frequency of field testing, evaluation, and pre-approval updating shall be at the sole
16 discretion of the Materials Laboratory.
17

18 8-25.3.GR8

19 **Construction Requirements**

20
21 8-25.3.INST1.GR8

22 Section 8-25.3 is supplemented with the following:
23

24 8-25.3.OPT1.GR8

25 ***(April 1, 2002)***

26 ***Barrier Glare Screen***

27 The vertical blades shall be attached to the rail base in a positive mechanical manner to
28 prevent unintentional blade rotation or dislocation. Barrier glare screen shall be attached
29 to the top of the barrier using approved anchors and following the manufacturer's
30 recommendations. Each modular unit of 10 feet or less shall be secured to the concrete
31 barrier with anchors at a minimum of three points. Modular units greater than 10 feet in
32 length shall be secured at a minimum of four points. Spanning the joint between concrete
33 barrier sections will not be allowed.
34

35 When the temporary screening is no longer required, the Contractor shall remove the
36 screening units. When noted in the contract that the screening will become the property
37 of the Contracting Agency, the Contractor shall deliver and stockpile the screening units
38 at the location noted in the contract.
39

40 8-25.4.GR8

41 **Measurement**

42
43 8-25.4.INST1.GR8

44 Section 8-25.4 is supplemented with the following:
45

46 8-25.4.OPT1.GR8

47 ***(April 1, 2002)***

48 Barrier glare screen and temporary barrier glare screen will be measured by the linear
49 foot along its completed line and slope.
50

1 8-25.5.GR8

2 **Payment**

3

4 8-25.5.INST1.GR8

5 Section 8-25.5 is supplemented with the following:

6

7 8-25.5.OPT1.GR8

8 (April 1, 2002)

9 "Barrier Glare Screen", per linear foot.

10 "Temporary Barrier Glare Screen", per linear foot.

11

12 8-29.GR8

13 **Wire Mesh Slope Protection**

14

15 8-29.1.GR8

16 **Description**

17

18 8-29.1.INST1.GR8

19 Section 8-29.1 is supplemented with the following:

20

21 8-29.1.OPT1.GR8

22 (April 5, 2010)

23 This work also consists of furnishing and installing cable net slope protection.

24

25 8-29.2.GR8

26 **Materials**

27

28 8-29.2.INST1.GR8

29 Section 8-29.2 is supplemented with the following:

30

31 8-29.2.OPT1.GR8

32 ***(January 2, 2018)***

33 ***Cable Net Slope Protection Materials***

34 Except where the Plans specify only one type of wire mesh backing material, wire mesh
35 shall consist of either of the following:

36

37 1. 8x10 double-twisted, hexagonal wire mesh conforming to ASTM A 975

38

39 2. Chain link fabric conforming to Section 9-16.4(2) except that the chain link mesh
40 grid shall be two-inch square.

41

42 Unless otherwise specified, wire mesh shall be PVC coated. The color of the PVC
43 coating shall be SAE AMS Standard 595 color number 20045, unless otherwise specified
44 in the Plans.

45

46 Wire rope for cable net panels specified in the Plans to be 5/16-inch nominal diameter
47 shall be galvanized aircraft cable (GAC) construction, EIP steel, 7x7 or 7x19, having a
48 nominal breaking strength of at least 9,200 pounds. 5/16-inch wire rope shall be
49 fabricated and galvanized in accordance with Federal Specification RR-W-410E and
50 ASTM A 1023.

1
2 Wire rope for cable anchors, and for other wire ropes specified in the Plans to be 3/4-
3 inch nominal diameter or larger, shall be independent wire rope class (IWRC)
4 construction, EIP steel, 6x19, and shall be galvanized in accordance with ASTM A 603
5 Class A.

6
7 Hardware shall conform to Section 9-16.4(4), with appropriate adjustments for the actual
8 wire rope diameter used for the cable net slope protection. Jaw end swivels shall be
9 galvanized after fabrication in accordance with Federal Specification RR-C-271D Type
10 VII Class 3. Screw pin anchor shackles shall be galvanized after fabrication in
11 accordance with Federal Specification RR-C-271D Type IVA Grade A Class 2.

12
13 Lacing wire for seaming the double-twisted wire mesh shall conform to Section 9-16.4(5).

14
15 Pressed ring fasteners for seaming the double-twisted wire mesh and fastening the mesh
16 to the cable nets shall be made of high tensile steel.

17
18 Threaded bar ground anchors used for anchoring the top cable net support rope and
19 steel post anchor assemblies to the ground surface as shown in the Plans shall be
20 deformed continuously threaded steel reinforcement bars conforming to either Section
21 9-07.2 or Section 9-07.11 (Grade 60 or better). Threaded bar ground anchors shall be
22 either epoxy-coated in accordance with Sections 6-02.3(24)H and 9-07.3 or galvanized
23 after fabrication in accordance with ASTM A 767 Class I.

24
25 Bearing plates shall conform to ASTM A 572 Grade 50 and shall be galvanized after
26 fabrication in accordance with AASHTO M 111. Nuts shall conform to either ASTM A 563
27 Grade B, hexagonal, or Section 9-07.11. Washers shall conform to AASHTO M 293,
28 except that plate washers shall conform to ASTM A 36. Nuts and washers shall be
29 galvanized after fabrication in accordance with AASHTO M 111 for plate washers and
30 AASHTO M 232 for all other hardware.

31
32 Steel posts shall conform to ASTM A 992 and shall be galvanized after fabrication in
33 accordance with AASHTO M 111. Bars and plates welded to steel posts shall conform
34 to ASTM A 572 Grade 50 and shall be galvanized after fabrication in accordance with
35 AASHTO M 111.

36
37 Grout for soil anchors and ground anchors shall conform to Section 9-16.4(6).

38
39 Concrete for soil gravity anchors shall be either commercial concrete conforming to
40 Section 6-02.3(2)B or Class 3000 conforming to Section 6-02.

41
42 Steel reinforcing bars for soil gravity anchors shall conform to Section 9-07.2 and shall
43 be epoxy-coated in accordance with Sections 6-02.3(24)H and 9-07.3.

44
45 8-29.3.GR8

46 **Construction Requirements**

47
48 8-29.3.INST1.GR8

49 Section 8-29.3 is supplemented with the following:

50

1 8-29.3.OPT1.GR8

2 **(January 3, 2011)**

3 **Cable Net Slope Protection Construction Requirements**

4 **Submittals**

5 The Contractor shall submit a cable net slope protection plan to the Engineer for
6 approval in accordance with Section 6-01.9. The cable net slope protection plan
7 shall include the following:

- 8
- 9 1. Identification of the supplier of the cable nets. The cable net supplier shall
- 10 either be listed in the WSDOT Qualified Products List (QPL) or the WSDOT
- 11 New Products List, or if not listed in the WSDOT QPL or WSDOT New
- 12 Products List, the submittal shall include written documentation
- 13 demonstrating satisfactory performance of cable nets furnished by this
- 14 supplier in projects completed for other agencies in similar site conditions.
- 15
- 16 2. An inclusive list with catalogue cuts for the appurtenances to be used for
- 17 the anchors, support system, seaming panels, wire mesh fasteners,
- 18 anchor bars, grout, wire rope, clips, thimbles, ferrules, steel rings and other
- 19 fastening hardware.
- 20
- 21 3. Mill certificates for the wire rope.
- 22
- 23 4. A 3'-0" square physical sample of the PVC coated wire mesh in the
- 24 specified color.
- 25
- 26 5. The Contractor's plan for installing anchors for the cable net slope
- 27 protection, and the equipment and process to be used to confirm the
- 28 capacity of the constructed anchors. The calibration data for the stressing
- 29 devices used to proof test the anchors, as completed by an independent
- 30 testing laboratory within 60 calendar days of the submittal date of the cable
- 31 net slope protection plan to the Engineer, shall be included.
- 32
- 33 6. Working drawings for the temporary yoke or load frame to be used for
- 34 anchor proof testing.
- 35
- 36 7. The Contractor's plan for assembling the cable nets and wire mesh, and
- 37 erecting the assembled nets on the slope.
- 38

39 The Contractor shall not begin cable net slope protection operations until receiving
40 the Engineer's approval of the cable net slope protection plan.

41

42 **Cable Net Slope Protection Assembly**

43 The cable net panels shall conform to the following criteria:

- 44
- 45 Panel Size: approximately 12 feet by 25 feet
- 46 Grid Size: no larger than 12 inches by 12 inches
- 47 Interior and Perimeter Rope: no smaller than 5/16 inch diameter
- 48

49 Cable nets shall be fabricated with a perimeter rope. Interior wire rope junctions
50 shall be bound with either double knots of 1/8 inch diameter corrosion resistant wire,
51 or high-strength, corrosion resistant clips with slotted bottoms made from 0.08 inch

1 thick plate. All perimeter-interior wire rope junctions shall be bound with corrosion
2 resistant ferrules.

3
4 Clips and ferrules shall be pressed on and tie wires knotted so as not to slip when
5 manually stretched or during the placement of the nets. Clips and ferrules shall be
6 secured in the manner intended by the manufacturer while not damaging the wire
7 ropes. Cable net assemblies showing signs of slight damage as determined by the
8 Engineer will be subject to rejection.

9
10 **Cable Net Slope Protection Installation**

11 Cable net slope protection shall be installed in accordance with the details shown in
12 the Plans.

13
14 Anchors and the top horizontal support rope shall be located a minimum of 15 feet
15 beyond the slope crest, at locations receiving the Engineer's approval.

16
17 Anchors shall achieve the specified anchor capacity in vertical pullout. If double
18 anchors are used, they shall be installed to ensure equal load distribution to both
19 anchors, and each anchor shall achieve 60 percent of the specified anchor capacity
20 in vertical pullout. For vertical pullout proof testing, an anchor is acceptable if it
21 sustains the specified capacity for 10 minutes with no loss of load. Anchors that fail
22 this criterion shall be replaced and retested at no additional expense to the
23 Contracting Agency. For Type 1 cable net slope protection, up to 25 percent of the
24 support rope anchors shall be proof tested. For Type 2 cable net slope protection,
25 all support rope anchors shall be proof tested. Up to 25 percent of the side and back
26 anchors shall be proof tested at the discretion of the Engineer. If more than three
27 anchors fail, the Contractor shall proof test all anchors.

28
29 Proof testing of anchors shall be performed against a temporary yoke or load frame.
30 No part of the temporary yoke or load frame shall bear within three feet of the anchor
31 being tested.

32
33 Unless otherwise specified in the Plans, the wire mesh shall be placed on the
34 outside of the cable net panels, and lapped and fastened as detailed in the Plans.
35 With the exception of vertical seaming of the net panels, the wire mesh shall be
36 connected to the cable net panels as shown in the Plans prior to placement on the
37 slope.

38
39 All galvanized steel with exposed steel or damaged galvanizing shall be repaired in
40 place after erection of the cable net slope protection in accordance with Section 6-
41 07.3(9)I with paint conforming to Section 9-08.1(2)B.

42
43 8-29.4.GR8

44 **Measurement**

45
46 8-29.4.INST1.GR8

47 Section 8-29.4 is supplemented with the following:

48
49 8-29.4.OPT1.GR8

50 (April 5, 2010)

1 Cable net slope protection will be measured by the square foot of cable net panels
2 erected on the slope.

3

4 8-29.5.GR8

5 **Payment**

6

7 8-29.5.INST1.GR8

8 Section 8-29.5 is supplemented with the following:

9

10 8-29.5.OPT1.GR8

11 (January 3, 2011)

12 "Cable Net Slope Protection Type ____", per square foot.

13 The unit contract price per square foot for "Cable Net Slope Protection Type ____" shall
14 be full pay for performing the work as specified, including fabrication and installation of
15 all steel posts and anchors and all anchor proof testing.

16

17 8-30.GR8

18 **Streams, Rivers, and Waterbodies**

19

20 8-30.3.GR8

21 **Construction Requirements**

22

23 8-30.3(1).GR8

24 **General Requirements**

25

26 8-30.3(1)A.GR8

27 **Stream Preconstruction Meeting**

28

29 8-30.3(1)A.INST1.GR8

30 The last sentence of the first paragraph of Section 8-30.3(1)A is revised to read:

31

32 8-30.3(1)A.OPT1.2026.GR8

33 (May 5, 2025)

34 The purpose of the meeting is to discuss the goals, objectives, intent,
35 streambed construction procedures, erosion and scour protection construction
36 procedures, construction sequence, woody material placement, critical
37 functions during stream work, potential use of native streambed excavation
38 materials, quality control steps to control mixing ratios, personnel, equipment to
39 be used, onsite evaluation for erosion and scour protection, and other elements
40 of construction.

41

42 8-30.3(1)B.GR8

43 **Onsite Evaluation Meetings**

44

45 8-30.3(1)B1.OPT1.2026.GR8

46 (May 5, 2025)

47 The last sentence of Section 8-30.3(1)B1 is deleted.

48

1 8-30.3(2).GR8
2 **Mixing of Streambed Aggregates**
3
4 8-30.3(2)E.GR8
5 **As-Built**
6
7 8-30.3(2)E.OPT1.2026.GR8
8 (May 5, 2025)
9 Section 8-30.3(2)E is deleted in its entirety.

10
11 8-31.GR8
12 **Temporary Stream Diversion**

13
14 8-31.3.GR8
15 **Construction Requirements**

16
17 8-31.3(1).GR8
18 **General**

19
20 8-31.3(1)A.GR8
21 **General TSD Requirements**

22
23 8-31.3(1)A.INST1.GR8
24 Section 8-31.3(1)A is supplemented with the following:

25
26 8-31.3(1)A.OPT1.FR8
27 **(October 3, 2022)**
28 **Minimum Stream Flows**

29 At all times of operation, the Contractor's temporary stream diversion shall be
30 designed to convey the following minimum flow rate of water in cubic feet per
31 second:

32
33 *** \$\$1\$\$ ***

34
35 8-31.3(1)A.OPT2.FR8
36 **(October 3, 2022)**
37 **Minimum Stream Flows (Contingency System)**

38 A Contingency System is required for this Project. The Contractor's contingency
39 system shall be designed to convey the following minimum flow rate of water in
40 cubic feet per second:

41
42 *** \$\$1\$\$ ***

43
44 8-31.3(1)B.GR8
45 **TSD Plan Implementation Meeting**

46
47 8-31.3(3).GR8
48 **Fish Block Net Installation and Fish and Aquatic Species Exclusion**
49

1 8-31.3(3)B.GR8

2 **Contracting Agency Provided Materials**

3
4 8-31.3(3)B.INST1.GR8

5 Section 8-31.3(3)B is supplemented with the following:

6
7 8-31.3(3)B.OPT1.FR8

8 (October 3, 2022)

9 The Contracting Agency will provide the following fish exclusion materials:

10
11 *** \$\$1\$\$ ***

12
13 8-SA1.GR8

14 **(August 7, 2017)**

15 **FIELD OFFICE BUILDING**

16 **Description**

17 This work shall consist of furnishing and setting-up a temporary office building for the sole
18 use of the Contracting Agency.

19
20 **Construction Requirements**

21 The building shall be set-up, at the location designated by the Engineer, within the first 10
22 working days, unless the Engineer has approved a different schedule.

23
24 The building shall be weather-tight, installed plumb and level, and provided with the following
25 as a minimum:

- 26
27 1. 240 square feet of floor space
28 2. Above ground floor
29 3. Heat
30 4. Electric lights
31 5. Telephone
32 6. Adequate windows
33 7. Six square feet of shelving
34 8. Plan table: 3 feet 6 inches deep by 6 feet wide by 3 feet 3 inches high
35 9. Drafting stool
36 10. Conference table: 4 foot by 8 foot
37 11. Four chairs
38 12. Cylinder door lock and six keys
39 13. Sanitary facilities (unless existing facilities are available)

40
41 The building shall remain the property of the Contractor and removed from the site upon
42 physical completion of the contract, or when designated by the Engineer.

43
44 **Payment**

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

46
47 "Field Office Building", lump sum.

48
49 The lump sum contract price for "Field Office Building" shall be full pay for furnishing,
50 installing, maintaining, and removing the facility, including all costs associated with all

1 required utility hook-ups and disconnects, and monthly utility charges for all utilities except
2 telephone.

3
4 The monthly telephone costs will be paid by the Contracting Agency.

5
6 8-SA2.GR8
7 **(October 3, 2022)**

8 **BOLLARDS**

9 **Description**

10 This work shall consist of furnishing and installing steel bollards in accordance with the Plans,
11 Standard Plans, and these Specifications, at the locations shown in the Plans or as staked
12 by the Engineer.

13
14 **Materials**

15 ***Posts and Hardware***

16 Type 1 and Type 2 bollard posts shall be in accordance with the Standard Plans and
17 ASTM A 53, NPS 3 (3" Nom.) schedule 80 steel pipe. Post sleeves shall be ASTM A 53,
18 NPS 4 (4"Nom.) schedule 40 steel pipe.

19
20 Type 3 bollard posts shall be steel structural tubing in accordance with the Plans and
21 ASTM A 500 Gr B.

22
23 Steel plate shall be in accordance with ASTM A 36.

24
25 All steel parts shall be hot-dip galvanized after fabrication in accordance with AASHTO
26 M 111.

27
28 ***Reflective Tape***

29 Reflective tape shall be in accordance with Section 9-28.12.

30
31 ***Concrete***

32 Footings shall be constructed using concrete Class 3000.

33
34 **Construction Requirements**

35 Bollards shall be constructed in accordance with the Standard Plans.

36
37 Bollards shall not vary more than ½ inch in 30 inches from a vertical plane.

38
39 Bollard posts and the exposed parts of the base assembly shall be painted in accordance
40 with Section 6-07.3(11) for galvanized surfaces. The top coat shall match SAE AMS Standard
41 595, Color No. 33538 Traffic Signal Yellow.

42
43 **Measurement**

44 Measurement for bollards will be by the unit for each type of bollard furnished and installed.

45
46 **Payment**

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

48
49 "Bollard Type ___", per each.

3 **(August 6, 2018)**

4 **Environmental Compliance**

5 **Description**

6 It is the Contractor's responsibility to conduct and perform all Work in accordance with
7 Environmental Regulations, Environmental Commitments, permits, and Plans that the Work
8 is subject to. The Environmental Compliance Lead (ECL) shall be the Contractor's
9 representative that is responsible for management of the Contractor's environmental
10 compliance.

11
12 **Construction Requirements**

13 ***Environmental Compliance Lead (ECL)***

14 The Contractor shall designate a primary ECL and an alternate ECL to perform the duties
15 of the ECL. The Contractor shall provide the Engineer with a copy of the formal
16 assignment in writing prior to the start of construction. The Contractor's superintendent
17 and/or foreman cannot be designated as the primary or alternate ECL.

18
19 The ECL shall represent all Contractor work actions for the project, regardless of whether
20 the work is performed by the Contractor or one of the subcontractors. The ECL shall
21 have the authority to direct work to expeditiously correct any environmental compliance
22 deficiency and coordinate these measures with the Engineer, and to order the
23 Contractor's on-site personnel to stop work that is not being performed in compliance
24 with the permits.

25
26 The ECL shall be on-site during all work activities unless otherwise approved by the
27 Engineer. The Contractor shall maintain 24-hour telephone numbers at which the
28 Contractor's designated ECL can be contacted and be available upon the Engineer's
29 request during other than normal working hours. ECL and alternate(s) shall be listed on
30 the Emergency Contact List required under Section 1-05.13(1).

31
32 The ECLs shall have, for the life of the Contract, a current Certificate of Training in
33 Construction Site Erosion and Sediment Control (CESCL) from a course approved by
34 the Washington State Department of Ecology.

35
36 The primary responsibilities of the ECL are to assist the Contractor's superintendent in
37 planning and scheduling work activities to achieve environmental compliance; and be
38 present on-site to observe work activities and resolve environmental compliance issues
39 as they may develop.

40
41 The duties of the ECL shall also include the following requirements:

- 42
43
- 44 • Erosion and Sediment Control (ESC) Lead, Section 8-01.3(1)B,
 - 45 • Updating the Spill Prevention, Control and Countermeasures Plan, Section 1-
46 07.15(1),
 - 47 • Attending the preconstruction conference (ECL and alternates),
 - 48 • 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.

8-SA5.GR8

(January 6, 2025)

WOODY MATERIAL

Description

This Work shall consist of furnishing and installing woody material where shown in the Plans or where specified by the Engineer.

Definitions

Diameter at breast height (DBH) - The method of expressing the diameter of the trunk of a tree measured 4.5 feet above ground when standing.

Large Woody Material (LWM) - Trees and parts of trees including any variation of logs, rootwads, or stumps greater than 4 inches in diameter.

Small Woody Material (SWM) - Small trees and parts of trees where the trunk is 2 to 4 inches in diameter.

Slash - Small trees and parts of trees where the trunk is less than 2 inches in diameter.

Materials

Large Woody Material (LWM)

LWM shall be a log with or without rootwad as specified in the Plans. LWM shall be free of soil and rocks, rot and disease, and shall be free of fractures. It shall retain at least 50% of the original bark in its final placement. Cleaning shall not strip LWM of bark and roots.

Log without Rootwad

When a log without rootwad is specified in the Plans, it shall meet the following requirements:

1. The trunk shall be of a native coniferous tree excluding Western red cedar (*Thuja plicata*).
2. Diameter shall be as specified in the Plans with an acceptable tolerance of $\pm 10\%$. Diameter shall be measured at the midpoint of the cut log.

- 1 3. The length shall be as specified in the Plans with an acceptable tolerance
2 of ±6 inches. The length shall be measured from cut end to cut end.
3

4 **Log with Rootwad**

5 When a log with rootwad is specified in the Plans, it shall meet the following
6 requirements:
7

- 8 1. The trunk shall be of a trunk of a native coniferous tree excluding Western
9 red cedar (*Thuja plicata*).
10
11 2. Diameter is defined as the DBH as specified in the Plans with an
12 acceptable tolerance of ±10%.
13
14 3. The length shall be as specified in the Plans with an acceptable tolerance
15 of ±6 inches. The length shall be measured from the cut end of the log to
16 the start of the rootwad mass.
17
18 4. The rootwad diameter, averaged from two orthogonal measurements, shall
19 be a minimum of 2.5 times DBH and maximum as determined by the
20 Engineer with roots intact. Rootwads shall not be cut, unless approved by
21 the Engineer.
22

23 **Boulder Anchoring**

24 When anchoring of the LWM is specified in the Plans, the anchoring shall meet the
25 following requirements:
26

- 27 1. Wire Rope - Wire Rope utilized for connecting LWM to the boulders shall
28 be ½-inch stainless steel, multi-strand, flexible wire rope. Wire rope shall
29 meet the requirements of ASTM A492.
30
31 2. Wire Rope Clips and Thimbles - Shall meet the requirements of Section 9-
32 16.4(4).
33
34 3. Epoxy Adhesive - Epoxy adhesive used for boulder anchors shall be Type
35 IV and meet the requirements of Section 9-26.
36
37 4. Rebar Pin - Rebar used to anchor the LWM shall be No. 4 (½-inch) steel
38 reinforcing bar conforming to Section 9-07.2.
39
40 5. Eye Bolt - Eye Bolt used for connecting the LWM to the streambed boulders
41 shall be ¾-inch diameter stainless steel (ASTM A193) threaded eye bolt
42 with a minimum of a 4,000-pound working load limit and pull out strength.
43 Eye Bolts shall have a minimum 1½ inch opening for the “eye” and have
44 sufficient length and threads to be embedded a minimum of 6 inches into
45 the Boulder Anchor. Eye Bolt shall meet the requirements of ASTM A489.
46
47 6. No galvanized steel shall be used.
48
49 7. Boulders - Boulders used for anchoring shall meet the requirements for
50 Streambed Boulders in accordance with Section 9-03.11(5).
51

1 **Small Woody Material (SWM)**

2 SWM shall consist of a random assortment of branches, trees, brush and treetops of the
3 following native species: Western red cedar (*Thuja plicata*), douglas fir (*Pseudotsuga*
4 *mensezeii*), western hemlock (*Tsuga heterophylla*) coniferous trees, or various hardwood
5 trees. No more than 50% of hardwood species shall be used. Branches, twigs, leaves
6 and needles shall be left intact to the extent possible given the mechanics of handling
7 SWM. The maximum diameter of any piece of SWM shall be 4 inches. The maximum
8 length of any piece of SWM shall be 6 feet. SWM shall not contain any material which
9 causes turbidity.

10
11 **Slash**

12 Slash shall consist of a random assortment of branches, trees, brush and treetops of the
13 following native species: Western red cedar (*Thuja plicata*), douglas fir (*Pseudotsuga*
14 *mensezeii*), western hemlock (*Tsuga heterophylla*), sitka spruce (*Picea sitchensis*)
15 coniferous trees, or various hardwood trees. No more than 50% of hardwood species
16 shall be used. Branches, twigs, leaves and needles shall be left intact to the extent
17 possible given the mechanics of handling Slash. The maximum diameter of any piece of
18 Slash shall be 2 inches. The maximum length of any piece of Slash shall be 6 feet. Slash
19 shall not contain any material which causes turbidity.

20
21 Woody material may be available from trees removed by excavation or clearing and
22 grubbing limits as shown in the Plans. Components of the removed trees which meet the
23 criteria for the specific woody material may be used to supplement the woody material
24 and will be accepted based on a visual inspection by the Engineer.

25
26 Acceptance of Woody Material will be based upon inspection by the Engineer prior to
27 placement.

28
29 **Construction Requirements**

30 **General**

31 The Contractor shall install woody material at the location shown in the Plans and as
32 directed by the Engineer.

33
34 The Contractor shall exercise care when installing and transporting the Woody Material
35 to avoid damage. Rootwads shall remain intact during delivery and installation.

36
37 The streambed and bank shall be temporarily excavated to allow placement of the woody
38 material as specified in the Plans. Backfill shall be native material or streambed material,
39 unless otherwise shown in the Plans. Backfill shall be placed in lifts no thicker than 12
40 inches and shall be compacted to be uniformly dense and unyielding as approved by the
41 Engineer.

42
43 The Contractor shall exercise care when placing the Woody Material to ensure that the
44 method of installation minimizes disturbance of waterways and prevents sediment or
45 pollutant discharge into water.

46
47 After the woody material has been placed, the area shall be graded as shown in the
48 Plans.

1 **Boulder Anchoring**

2 When anchoring LWM is called out in the Plans, each anchor shall consist of two
3 boulders as detailed in the Plans. One 7/8 inch hole shall be drilled a minimum of 6 inches
4 deep into each boulder. After the hole is drilled in the boulder anchors, the hole shall be
5 cleaned using compressed air to blow out the dust and rock particles. After being
6 cleaned, the hole in the boulder anchors shall be filled with epoxy adhesive in accordance
7 with the manufacturer’s instructions, and eye bolt inserted as shown in the Plans. Note
8 that the minimum amount of epoxy adhesive to place in each hole is equal to the amount
9 necessary to fill the hole to the top with the eye bolt inserted.

10
11 After epoxy adhesive has cured, in accordance with the manufacturer’s instructions, the
12 Contractor shall anchor the LWM to the boulders as shown in the Plans. All LWM to be
13 anchored shall be anchored such that there is no slack in the wire rope. The wire rope
14 shall be looped around a thimble, through the eye bolt, then doubled back on itself. The
15 end of the wire rope shall be secured using three wire rope clips, with the saddle of the
16 clip placed on the “live” end of the wire rope, as described in Section 6-02.3(17)F2. Three
17 stainless steel, malleable wire rope clips per connection shall be used to complete the
18 anchor assembly as specified in the Plans. Stainless steel thimbles shall be used
19 wherever the wire rope terminates in a loop.
20

21 **Measurement**

22 Large Woody Material – Log without Rootwad DIA____, Large Woody Material – Log with
23 Rootwad DIA ____, Boulder Anchor will be measured per each.

24
25 SWM and Slash will be measured by the cubic yard, in the hauling conveyance.
26

27 **Payment**

28 Payment will be made in accordance with Section 1-04.1, for each of the following bid items.
29

30 “Large Woody Material - Log without Rootwad DIA_____”, per each.

31 “Large Woody Material - Log with Rootwad DIA_____”, per each.

32 The unit contract price for each “Large Woody Material - Log without Rootwad
33 DIA_____” and “Large Woody Material -Log with Rootwad DIA_____” shall be full
34 payment for all Work as specified, including acquiring, storing, hauling to the site,
35 unloading, assembling, pinning, bundling, installing, excavation, backfill, compaction and
36 grading.
37

38 “Boulder Anchor”, per each.

39 “Boulder Anchor” shall be full payment for all Work as specified, including acquiring,
40 storing, hauling to the site, unloading, assembling, bundling, drilling, epoxy, installing,
41 anchoring, excavation, backfill, compaction and grading.
42

43 “Slash” and “Small Woody Material”, per cubic yard.

44 The unit Contract price per cubic yard for “Slash” and “Small Woody Material” shall be
45 full payment for all Work as specified, including acquiring, storing, hauling to the site,
46 unloading, assembling, bundling, installing, excavation, backfill, compaction and grading.
47
48

1 DIVISION9.GR9

2 **Division 9**
3 **Materials**

4
5 APPENDIX1.FR9

6 **Appendices**
7 **(January 2, 2012)**

8 The following appendix is attached and made a part of this contract:

9
10 *** \$\$1\$\$ ***

11
12 [Fill-in is the name, title, and if necessary the page numbers of the appendix, formatted
13 as shown in the following sample:]

14
15 APPENDIX A:

16 Summary of Geotechnical Conditions, Page __ through Page __.

17
18 APPENDIX2.FR9

19 **Appendices**
20 **(January 2, 2012)**

21 The following appendices are attached and made a part of this contract:

22
23 *** \$\$1\$\$ ***

24
25 [Fill-in is the name, title, and if necessary the page numbers of the appendices, formatted
26 as shown in the following sample:]

27
28 APPENDIX A:

29 Summary of Geotechnical Conditions, Page __ through Page __.

30
31 APPENDIX B:

32 (Name of Report or Document), Page __ through Page __.

33
34 STDPLANS.GR9

35 **(May 5, 2025)**
36 **Standard Plans**

37 The Washington State Department of Transportation *Standard Plans* M21-01, published
38 September 2024, is made a part of this Contract with the following revisions:

39
40 A-10.30

41 RISER RING detail (Including SECTION view and RISER RING DIMENSIONS table):
42 The RISER RING detail is deleted from the plan.

43
44 INSTALLATION detail, SECTION A: The "1/4"" callout is revised to read "+/- 1/4" (SEE
45 CONTRACT ~ Note: The + 1/4" installation is shown in the Section A view)"

46
47 A-40.20

1 Sheet 1, NOTES 1, 2, 3, and 4 are replaced with the following:
2

- 3 1. Use the ½ inch joint details for bridges with expansion length less than 100 feet
4 and for bridges with L type abutments. Use the 1 inch joint details for other
5 applications.
6
- 7 2. Use detail 5, 6, 7 on steel trusses and timber bridges with concrete bridge deck
8 panels.
9
- 10 3. For details 1, 2, 3, and 4, the item “HMA Joint Seal at Bridge End” shall be used
11 for payment. For details 5 and 6, the item “HMA Joint Seal at Bridge Deck Panel
12 Joint” shall be used for payment. For detail 7, the item “Clean and Seal Bridge
13 Deck Panel Joint” shall be used for payment.
14

15 Sheet 2, Detail 8 reference to “6-09.3(6)” is revised to read “6-21.3(7)”.

16
17 A-50.40

18 Sheet 1, Plan View: The callout “BEAM GUARDRAIL TYPE 31 TRANSITION SECTION
19 TYPE 21 OR TYPE 24 (SEE STANDARD PLAN C-25.20 OR C-25.30)” is revised to read
20 “BEAM GUARDRAIL TYPE 31 TRANSITION SECTION TYPE 21, 24, OR 25 (SEE
21 STANDARD PLAN C-25.20, C-25.30, OR C-25.32)”
22

23 A-60.40

24 Note 2 reference to “6-09.3(6)” is revised to read “6-21.3(7)”.

25
26 B-90.40

27 Valve Detail – DELETED
28

29 C-20.41

30 Note 4, First Sentence, “Box Culvert guardrail steel posts are not needed for fill depths
31 greater than 40 inches.” is revised to read; “Box culvert guardrail steel posts are not
32 needed for fill depths greater than 46 inches. Provide 6-inches or greater of separation
33 between the bottom of the guardrail post and top of the culvert”
34 BOX CULVERT POST ASSEMBLY, ELEVATION VIEW, post assembly length dimension
35 “41” MIN. 72” MAX.” is revised to read; “41” MIN. 78” MAX.”
36 SECTION A, base material depth dimension - “9” MIN. 40” MAX. (SEE NOTE 4)” is
37 revised to read: “9” MIN. 46” MAX. (SEE NOTE 4)”
38

39 C20-43

40 Note 4, First Sentence: “Box culvert guardrail steel posts are not needed for fill depths
41 greater than 40 inches.” is revised to read: “Box culvert guardrail steel posts are not
42 needed for fill depths greater than 46 inches. Provide 6-inches or greater separation
43 between the bottom of guardrail post and top of culvert.”
44 BOX CULVERT POST & BASE PLATE ASSEMBLY, ELEVATION VIEW, post assembly
45 length dimension – “41” MIN. 72” MAX.” is revised to read: “41” MIN. 78” MAX.”
46 SECTION A, base material depth dimension - “9” MIN. 40” MAX. (SEE NOTE 4)” is
47 revised to read: “9” MIN. 46” MAX. (SEE NOTE 4)”
48

49 C-23.70

50 Sheet 2, ANCHOR BRACKET ASSEMBLY DETAIL, dimension, “R. 5/16” is revised to
51 read; R. 15/16”

1 ANCHOR PLATE DETAIL, weld callout (fillet), 1/4" is revised to read; 3/16"

2
3 C-60.20

4 Sheet 1, Plan view, callout – "1/2" (IN) DIAMETER X 6 1/2" (IN) LONG ANCHOR BOLT
5 ~ PER STD. SPEC. SECT. 9-06.5(4) (TYPICAL) (SEE NOTE 7)" is revised to read: "5/8"
6 DIAMETER x 6 1/2" (IN) LONG ANCHOR BOLT ~ PER STD. SPEC. SECT. 9-06.5(4)
7 (TYPICAL) (SEE NOTE 7)"

8
9 C-70.15

10 BARRIER CONNECTION DETAIL, callout – "CENTER GRID IN CONNECTION
11 BLOCKOUT AND FILL VOID WITH TYPE 3 GROUT (STD. SPECIFICATION SECTION
12 9-20.3(3) PLACED IN ACCORDANCE WITH STD. SPECIFICATION SECTION 6-
13 20.3(20)" is revised to read "CENTER GRID IN CONNECTION BLOCKOUT AND FILL
14 VOID WITH GROUT TYPE 3 (STD. SPECIFICATION SECTION 9-20.3(3) PLACED IN
15 ACCORDANCE WITH STD. SPECIFICATION SECTION 6-02.3(20)"

16
17 C81.10

18 Sheet 1, TYPICAL SECTION – TRAFFIC BARRIER the R4 #6 bar on the traffic face may
19 be placed 4" down from the top of the barrier to allow additional room to install BP railing
20 or other attachments. The R4 bar shall be kept tight to the front R2 bar.

21 Sheet 4, the existing table "IMPACT SHEAR AND IMPACT MOMENT TABLE" is renamed
22 to "IMPACT SHEAR AND MOMENT TABLE DECK OVERHANG AND CONNECTIONS"
23 keynote 25 is still applicable.

24 Sheet 4, NOTES, the following Note is added: "3. Deck overhangs for this use constitute
25 plain reinforced concrete typically around 8" in thickness, non-prestressed moment slabs
26 or approach slabs, or plain reinforced and longitudinally prestressed box girders which
27 employ a topping slab. Other Supporting Structure Systems inclusive of post-tensioned
28 decks, walls, and or Structure segments tied together without a topping slab, with the
29 ties in the barrier resistance load path, shall use the impact shear and moments for other
30 supporting structures."

31 Sheet 4, the following table is added with a keynote 25.

32

IMPACT SHEAR AND MOMENT TABLE OTHER SUPPORTING STRUCTURES										
	Interior Segment					End Segment				
Roadway and Fill Height at Curb Line (in)	0	6	12	18	24	0	6	12	18	24
End Segment Length (ft)	-	-	-	-	-	10.00	10.50	11.25	11.75	12.50
Impact Moment (kip*ft/ft)	19.86	24.12	28.55	33.16	37.97	20.80	25.17	29.65	34.27	39.04
Impact Shear (kip/ft)	7.89	8.04	8.23	8.44	8.68	8.27	8.39	8.54	8.72	8.92

33
34 C-81.15

1 Sheet 1, General Notes, Add Note 7, to read;”7. The concrete class for the moment slab
2 shall be class 4000 typically and class 4000A when the top of the slab is used as the
3 roadway, or sidewalk, surface. The concrete class for the barrier is defined in Standard
4 Specification Section 6-10.3.”

5
6 C-85.11

7 On Section B, the callout “3” EXPANDED POLYSTYRENE AROUND COLUMN (TYP.)”
8 is revised to read “3” EXPANDED POLYSTYRENE OR POLYETHYLENE FOAM
9 AROUND COLUMN (TYP.)”

10
11 D-3.09

12 Sheet 1, GEOSYNTHETIC WALL WITH 2 FT TRAFFIC SURCHARGE detail, callout –
13 “BARRIER ON WALL ~ SEE Standard Plan D-3.15 or D-3.16” is revised to read:
14 “BARRIER ON WALL ~ SEE CONTRACT PLANS”

15
16 D-3.10

17 Sheet 1, Typical Section, callout – “FOR WALLS WITH SINGLE SLOPE TRAFFIC
18 BARRIER. USE THE DETAILS ABOVE THE MATCH LINE ON STANDARD PLAN D-
19 3.15” is revised to read; ”FOR WALLS WITH SINGLE SLOPE TRAFFIC BARRIER, SEE
20 CONTRACT PLANS”

21 Sheet 1, Typical Section, callout – “FOR WALLS WITH F-SHAPE TRAFFIC BARRIER.
22 USE THE DETAILS ABOVE THE MATCH LINE ON STANDARD PLAN D-3.16” is revised
23 to read; ”FOR WALLS WITH F-SHAPE TRAFFIC BARRIER, SEE CONTRACT PLANS”

24
25 D-3.11

26 Sheet 1, Typical Section, callout – “”B” BRIDGE APPROACH SLAB (SEE BRIDGE
27 PLANS) OR PERMANENT GEOSYNTHETIC WALL BARRIER ~ SEE STANDARD
28 PLANS D-3.15 OR D-3.16” is revised to read; ”B” BRIDGE APPROACH SLAB OR
29 MOMENT SLAB (SEE CONTRACT PLANS)

30 Sheet 1, Typical Section, callout – “TYPICAL BARRIER ON BRIDGE APPROACH SLAB
31 (SEE BRIDGE PLANS) OR PERMANENT GEOSYNTHETIC WALL BARRIER ~ SEE
32 STANDARD PLANS D-3.15 OR D-3.16” is revised to read; “TYPICAL BARRIER ON
33 BRIDGE APPROACH SLAB OR MOMENT SLAB (SEE CONTRACT PLANS)

34
35 D-10.10

36 Note 7, “If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-
37 15.30” is revised to read “Traffic Barriers shall not be structurally connected to the
38 Reinforced Concrete Retaining Wall Type 1 and 1SW”.

39
40 D-10.15

41 Note 7, “If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-
42 15.30” is revised to read “Traffic Barriers shall not be structurally connected to the
43 Reinforced Concrete Retaining Wall Type 2 and 2SW”.

44
45 D-10.30

46 Wall Type 5 may be used in all cases.

47
48 D-10.35

49 Wall Type 6 may be used in all cases.

50
51 D-10.40

1 Note 5, "If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-
2 15.30" is revised to read "Traffic Barriers shall not be structurally connected to the
3 Reinforced Concrete Retaining Wall Type 7".
4

5 D-10.45

6 Note 5, "If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-
7 15.30" is revised to read "Traffic Barriers shall not be structurally connected to the
8 Reinforced Concrete Retaining Wall Type 8".
9

10 F-10.18

11 Note 1; "Construct curb joints at concrete pavement transverse joint locations. If all
12 adjacent pavement is HMA, see Standard Plan F-30.10 for Curb Expansion and
13 Contraction Joint Spacing." is revised to read – "See Standard Plan F-30.10 and
14 Standard Specification Section 8-04.3 for Curb Expansion and Contraction Joint details
15 and spacing."
16

17 F-30.10

18 All five instances of the "2.0% MAX." are replaced with "2.1% MAX."
19

20 F-40.12

21 The one instance of "2.0% MAX." is replaced with "2.1% MAX."

22 Note 7 is replaced with the following:

23 7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted
24 herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans
25 for details. Use a single constant slope from bottom of ramp to top of ramp to match into
26 the landing. Do not include the abutting landing in the Curb Ramp length measurement.
27 When a ramp is constructed on a radius, the Curb Ramp length is measured on the inside
28 radius along the back of the walkway.

29 Section B is amended as follows:

30 Delete: "15' – 0" MAX. (TYP.)"

31 Section C is amended as follows:

32 Delete: "15' – 0" MAX. (TYP.)"
33

34 F-40.14

35 The one instance of "2.0% MAX." is replaced with "2.1% MAX."

36 Note 7 is replaced with the following:

37 7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted
38 herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans
39 for details. Use a single constant slope from bottom of ramp to top of ramp to match into
40 the landing. Do not include the abutting landing in the Curb Ramp length measurement.
41 When a ramp is constructed on a radius, the Curb Ramp length is measured on the inside
42 radius along the back of the walkway.

43 Section A is amended as follows:

44 Delete: "15' – 0" MAX. (TYP.)"

45 Section C is amended as follows:

46 Delete: "15' – 0" MAX. (TYP.)"
47

48 F-40.15

49 The one instance of "2.0% MAX." is replaced with "2.1% MAX."

50 Note 7 is replaced with the following:

1 7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted
2 herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans
3 for details. Use a single constant slope from bottom of ramp to top of ramp to match into
4 the landing. Do not include the abutting landing in the Curb Ramp length measurement.
5 Section A is amended as follows:

6 Delete: "15' – 0" MAX. (TYP.)"
7

8 F-40.16

9 The one instance of "2.0% MAX." is replaced with "2.1% MAX."

10 Note 8 is replaced with the following:

11 7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted
12 herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans
13 for details. Use a single constant slope from bottom of ramp to top of ramp to match into
14 the landing. Do not include the abutting landing in the Curb Ramp length measurement.

15 Section A is amended as follows:

16 Delete: "15' – 0" MAX. (TYP.)"

17 Section B is amended as follows:

18 Delete: "15' – 0" MAX. (TYP.)"
19

20 F-80.10

21 The one instance of "2.0% MAX." is replaced with "2.1% MAX."

22 Note 6 is replaced with the following:

23 The running slope of the Pedestrian Ramp shall not exceed 8.3% maximum except as
24 noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract
25 plans for details. Use a single constant slope from bottom of ramp to top of ramp to match
26 into the sidewalk.

27 Section A is amended as follows:

28 Delete: "15" Max."
29

30 J-10.10

31 Sheet 4 of 6, "Foundation Size Reference Table", PAD WIDTH column, Type 33xD=6' –
32 3" is revised to read: 7' – 3". Type 342LX / NEMA P44=5' – 10" is revised to read: 6' –
33 10"

34 Sheet 5 of 6, Plan View, "FOR EXAMPLE PAD SHOWN HERE:", "first bullet" item, "-
35 SPACE BETWEEN TYPE B MOD. CABINET AND 33x CABINET IS 6" (IN)" IS REVISED
36 TO READ: "SPACE BETWEEN TYPE B MOD. CABINET (BACK OF ALL CHANNEL
37 STEEL) AND 33x CABINET IS 6" (IN) (CHANNEL STEEL ADDS ABOUT 5" (IN))"
38

39 J-10.16

40 Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14
41

42 J-10.17

43 Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14
44

45 J-10.18

46 Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14
47

48 J-20.01

49 STANDARD DIMENSIONS AND REFERENCES table, TYPE FB, Standard Height
50 column – "15'-0" "is revised to read; "14'-0" "
51

1 J-20.10
2 DELETED
3
4 J-20.11
5 DELETED
6
7 J-20.26
8 Add Note 1, "1. One accessible pedestrian pushbutton station per pedestrian pushbutton
9 post."
10 Add General Note 2, to read: "Signs shown are for locations with pedestrian signal
11 displays (Accessible Pedestrian Signals/APS). Accessible information device (AID)
12 pushbuttons signs not shown."
13 Revise View Titles (Both Sheets) to read: "ACCESSIBLE PEDESTRIAN PUSHBUTTON
14 ASSEMBLY"
15
16 J-20.16
17 View A, callout, was – LOCK NIPPLE, is revised to read; CHASE NIPPLE
18
19 J-21.10
20 Sheet 1, Anchor Bolt Template, callout; "9" (IN) BOLT CIRCLE" is revised to read: "9" (IN)
21 DIA.BOLT CIRCLE"
22 Base Plate Detail, callout; "3/4" (IN) STEEL PLATE WITH HOLE = POLE BASE + 1/6"
23 (IN)" IS REVISED TO READ; "3/4" (IN) STEEL PLATE WITH HOLE = POLE BASE +
24 1/16" (IN)"
25 Flat Foundation Detail – Elevation, callout; "ANCHOR BOLTS ~ 3/4" (IN) x 30" (IN) FULL
26 THREAD ~ THREE REQ'D. PER ASSEMBLY" is revised to read; "ANCHOR BOLTS ~
27 3/4" (IN) x 30" (IN) FULL THREAD ~ FOUR REQ'D. PER ASSEMBLY"
28 Flat Foundation Detail – Elevation, dimension; 4' – 0" is revised to read; "4' – 0" ROUND
29 OR 3' – 0" SQUARE"
30
31 J-21.15
32 Partial View, callout, was – LOCK NIPPLE ~ 1 1/2" DIAM., is revised to read; CHASE
33 NIPPLE ~ 1 1/2" (IN) DIAM.
34
35 J-21.16
36 On both elevation views, the overall standard height dimension "15'-0" " is revised to
37 read; "14'-0" "
38
39 J-28.30
40 General Note 13 – "See Standard Plans C-8b and C-85.14 for steel light standards on
41 traffic barrier" is revised to read; "See Standard Plan C-85.15 for steel light standards on
42 traffic barrier."
43
44 J-40.10
45 Sheet 2 of 2, Detail F, callout, "12 – 13 x 1 1/2" S.S. PENTA HEAD BOLT AND 12" S. S.
46 FLAT WASHER" is revised to read; "12 – 13 x 1 1/2" S.S. PENTA HEAD BOLT AND 1/2"
47 (IN) S. S. FLAT WASHER"
48
49 J-40.36

1 Note 1, second sentence; "Finish shall be # 2B for backbox and # 4 for the cover." Is
2 revised to read; "Finish shall be # 2B for barrier box and HRAP (Hot Rolled Annealed
3 and Pickled) for the cover.
4

5 J-40.37

6 Note 1, second sentence; "Finish shall be # 2B for backbox and # 4 for the cover." Is
7 revised to read; "Finish shall be # 2B for barrier box and HRAP (Hot Rolled Annealed
8 and Pickled) for the cover.
9

10 J-50.15

11 Sheet 1, SECTION A, the call out "LOOP LEAD-IN WIRES, TWISTED PAIRS ~ MAX. 3
12 PAIRS" is revised to read "LOOP LEAD-IN WIRES, TWISTED PAIRS ~ MAX. 6 PAIRS"
13

14 J-75.20

15 Key Notes, note 16, second bullet point, was: "1/2" (IN) x 0.45" (IN) Stainless Steel
16 Bands", add the following to the end of the note: "Alternate: Stainless steel cable with
17 stainless steel ends, nuts, bolts, and washers may be used in place of stainless steel
18 bands and associated hardware."
19

20 J-75.55

21 Notes, Note A1, Revise reference, was – G-90.29, should be – G-90.20.
22

23 L-5.10

24 Add new general Note 9 on sheet 1 – "9. The top of wall in Section A on Sheet 1 shall be
25 located as follows: 1) flush with the finished grade when placed within the deflection
26 distance of the long span guardrail system (Std. Plan C-20.40), 2) Two inches maximum
27 above finished grade when placed behind a box culvert guardrail steel post system (Std.
28 Plan C-20.41 or C-20.43), 3) Six inches minimum for all other applications. The bottom
29 rail shall be located at mid height between the top rail and the top of structure."
30

31 M-20.30

32 Wide Dotted Lane Line Detail, reference below title, (SEE NOTE 6) is revised to read:
33 (SEE NOTE 5)
34

35 M-40.10

36 Guide Post Type ~ Reflective Sheeting Applications Table, remove reference - "(SEE
37 NOTE 5)"
38

39 The following are the Standard Plan numbers applicable at the time this project was
40 advertised. The date shown with each plan number is the publication approval date
41 shown in the lower right-hand corner of that plan. Standard Plans showing different dates
42 shall not be used in this contract.
43

A-10.10-00	8/7/07	A-30.35-00	10/12/07	A-50.10-02.....	7/18/24
A-10.20-00	10/5/07	A-40.00-01	7/6/22	A-50.40-01	8/17/21
A-10.30-00	10/5/07	A-40.10-04	7/31/19	A-60.10-03.....	12/23/14
A-20.10-00	8/31/07	A-40.15-00	8/11/09	A-60.20-03.....	12/23/14
A-30.10-00	11/8/07	A-40.20-04	1/18/17	A-60.30-01	6/28/18
A-30.30-01	6/16/11	A-40.50-03	9/12/23	A-60.40-00.....	8/31/07
B-5.20-03	9/9/20	B-30.50-03.....	2/27/18	B-75.20-03	8/17/21

B-5.40-02 1/26/17	B-30.60-00.....9/9/20	B-75.50-02 3/15/22
B-5.60-02 1/26/17	B-30.40-03.....2/27/18	B-70.60-01 1/26/17
B-10.20-03 8/23/23	B-30.70-04.....2/27/18	B-75.60-00 6/8/06
B-10.40-02 8/17/21	B-30.80-01.....2/27/18	B-80.20-00 6/8/06
B-10.70-03 8/23/23	B-30.90-02.....1/26/17	B-80.40-00 6/1/06
B-15.20-01 2/7/12	B-35.20-00.....6/8/06	B-85.10-01 6/10/08
B-15.40-01 2/7/12	B-35.40-01.....8/23/23	B-85.20-00 6/1/06
B-15.60-02 1/26/17	B-40.20-00.....6/1/06	B-85.30-00 6/1/06
B-20.20-02 3/16/12	B-40.40-02.....1/26/17	B-85.40-00 6/8/06
B-20.40-04 2/27/18	B-45.20-01.....7/11/17	B-85.50-01 6/10/08
B-20.60-03 3/15/12	B-45.40-01.....7/21/17	B-90.10-00 6/8/06
B-25.20-02 2/27/18	B-50.20-00.....6/1/06	B-90.20-00 6/8/06
B-25.60-03 8/23/23	B-55.20-03.....8/17/21	B-90.30-00 6/8/06
B-30.05-00 9/9/20	B-60.20-02.....9/9/20	B-90.40-01 1/26/17
B-30.10-03 2/27/18	B-60.40-01.....2/27/18	B-90.50-00 6/8/06
B-30.15-00 2/27/18	B-65.20-01.....4/26/12	B-95.20-02 8/17/21
B-30.20-04 2/27/18	B-65.40-00.....6/1/06	B-95.40-01 6/28/18
B-30.30-03 2/27/18	B-70.20-01.....3/15/22	

1

C-1..... 9/8/22	C-23.70-01 10/16/23	C-70.10-04 10/16/23
C-1b..... 10/12/23	C-24.10-05.....7/21/24	C-70.15-01 7/21/24
C-1d..... 10/31/03	C-24.15-00 3/15/22	C-75.10-02 9/16/20
C-6a..... 9/8/22	C-25.20-07 8/20/21	C-75.20-03 8/20/21
C-7..... 9/8/22	C-25.22-06 8/20/21	C-75.30-03 8/20/21
C-7a..... 9/8/22	C-25.26-05 8/20/21	C-80.10-03 10/16/23
C-20.10-09 10/12/23	C-25.30-01 8/20/21	C-80.20-01 6/11/14
C-20.14-05 9/8/22	C-25.32-00 7/29/24	C-80.30-02 8/20/21
C-20.15-03 10/12/23	C-25.80-05 8/12/19	C-80.40-01 6/11/14
C-20.18-04 9/8/22	C-60.10-04 7/21/24	C-85.10-00 4/8/12
C-20.40-10 10/12/23	C-60.15-01 7/21/24	C-85.11-01 9/16/20
C-20.41-05 7/18/24	C-60.20-01 9/8/22	C-85.15-03 10/17/23
C-20.43-01 7/18/24	C-60.30-02 7/21/24	C-85-18-03 9/8/22
C-20.44-00 8/13/24	C-60.40-01 7/21/24	C-81.10-00 9/12/23
C-20.45-03 9/8/22	C-60.45-01 7/21/24	C-81.15-00 9/12/23
C-20.55-00 7/30/24	C-60.50-01 7/21/24	
C-22.16-08 10/17/23	C-60.60-01 7/21/24	
C-22.40-11 7/21/24	C-60.70-01 9/8/22	
C-22.45-07 7/21/24	C-60.80-02 7/21/24	

2

D-2.36-03.....6/11/14	D-3.11-03..... 6/11/14	D-10.25-01 8/7/19
D-2.46-02 8/13/21	D-4 12/11/98	D-10.30-00 7/8/08
D-2.84-00 11/10/05	D-6 6/19/98	D-10.35-00 7/8/08
D-2.92-01 4/26/22	D-10.10-01 12/2/08	D-10.40-01 12/2/08
D-3.09-00 5/17/12	D-10.15-01 12/2/08	D-10.45-01 12/2/08
D-3.10-01 5/29/13	D-10.20-01 8/7/19	D-20.10-00 10/9/23

3

E-1 2/21/07	E-4.....8/27/03	E-20.10-00 9/12/23
E-2 5/29/98	E-4a.....8/27/03	E-20.20-00 10/4/23

4

F-10.12-04 9/24/20	F-10.62-02.....4/22/14	F-40.15-04..... 9/25/20
F-10.16-00 12/20/06	F-10.64-03.....4/22/14	F-40.16-03..... 6/29/16

	F-10.18-04 6/28/24	F-30.10-04 9/25/20	F-45.10-05 6/4/24
	F-10.40-04 9/24/20	F-40.12-03 6/29/16	F-80.10-04 7/15/16
	F-10.42-00 1/23/07	F-40.14-03 6/29/16	
1	G-10.10-00 9/20/07	G-24.50-05 8/7/19	G-90.10-03 7/11/17
	G-20.10-03 8/20/21	G-24.60-05 6/28/18	G-90.20-05 7/11/17
	G-22.10-04 6/28/18	G-25.10-05 9/16/20	G-90.30-04 7/11/17
	G-24.10-00 11/8/07	G-26.10-00 7/31/19	G-95.10-02 6/28/18
	G-24.20-01 2/7/12	G-30.10-04 6/23/15	G-95.20-03 6/28/18
	G-24.30-02 6/28/18	G-50.10-03 6/28/18	G-95.30-03 6/28/18
	G-24.40-07 6/28/18		
2	H-10.10-01 6/2/24	H-30.10-00 10/12/07	H-70.10-02 8/17/21
	H-10.11-00 6/2/24	H-32.10-00 9/20/07	H-70.20-02 8/17/21
	H-10.15-01 6/2/24	H-60.10-01 7/3/08	
	H-10.16-00 6/2/24	H-60.20-01 7/3/08	
3	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-30.30-02 6/12/19	I-50.20-02 7/6/22
	I-30.15-02 3/22/13	I-30.40-02 6/12/19	I-60.10-01 6/10/13
	I-30.16-01 7/11/19	I-30.60-02 6/12/19	I-60.20-01 6/10/13
	I-30.17-01 6/12/19	I-40.10-00 9/20/07	I-80.10-02 7/15/16
4	J-05.50-00 8/30/22	J-26.10-03 7/21/16	J-50.05-00 7/21/17
	J-10 7/18/97	J-26.15-01 5/17/12	J-50.10-01 7/31/19
	J-10.10-04 9/16/20	J-26.20-01 6/28/18	J-50.11-02 7/31/19
	J-10.12-00 9/16/20	J-27.10-01 7/21/16	J-50.12-02 8/7/19
	J-10.14-00 9/16/20	J-27.15-00 3/15/12	J-50.13-01 8/30/22
	J-10.15-01 6/11/14	J-28.01-00 8/30/22	J-50.15-01 7/21/17
	J-10.16-02 8/18/21	J-28.10-02 8/7/19	J-50.16-01 3/22/13
	J-10.17-02 8/18/21	J-28.22-00 8/07/07	J-50.18-00 8/7/19
	J-10.18-02 8/18/21	J-28.24-02 9/16/20	J-50.19-00 8/7/19
	J-10.20-04 8/18/21	J-28.26-01 12/02/08	J-50.20-00 6/3/11
	J-10.21-02 8/18/21	J-28.30-04 6/18/24	J-50.25-00 6/3/11
	J-10.22-03 10/4/23	J-28.40-02 6/11/14	J-50.30-00 6/3/11
	J-10.25-01 6/21/24	J-28.42-01 6/11/14	J-60.05-01 7/21/16
	J-10.26-00 8/30/22	J-28.43-01 6/28/18	J-60.11-00 5/20/13
	J-12.15-00 6/28/18	J-28.45-03 7/21/16	J-60.12-00 5/20/13
	J-12.16-00 6/28/18	J-28.50-03 7/21/16	J-60.13-00 6/16/10
	J-15.10-01 6/11/14	J-28.60-03 8/27/21	J-60.14-01 7/31/19
	J-15.15-02 7/10/15	J-28.70-04 8/30/22	J-75.10-02 7/10/15
	J-20.01-01 6/21/24	J-29.10-02 8/26/22	J-75.20-01 7/10/15
	J-20.05-00 6/21/24	J-29.15-01 7/21/16	J-75.30-02 7/10/15
	J-20.10-05 10/4/23	J-29.16-02 7/21/16	J-75.50-00 8/30/22
	J-20.11-03 7/31/19	J-30.10-01 8/26/22	J-75.55-00 8/30/22
	J-20.15-04 6/21/24	J-40.01-00 8/30/22	J-80.05-00 8/30/22
	J-20.16-02 6/30/14	J-40.05-00 7/21/16	J-80.10-01 8/18/21
	J-20.20-02 5/20/13	J-40.10-04 4/28/16	J-80.12-00 8/18/21
	J-20.26-01 7/12/12	J-40.20-03 4/28/16	J-80.15-00 6/28/18
	J-21.10-05 6/21/24	J-40.30-04 4/28/16	J-81.10-02 8/18/21
	J-21.15-01 6/10/13	J-40.35-01 5/29/13	J-81.12-00 9/3/21

	J-21.16-02..... 6/21/24	J-40.36-027/21/17	J-84.05-00 8/30/22
	J-21.17-01..... 6/10/13	J-40.37-027/21/17	J-86.10-00 6/28/18
	J-21.20-01..... 6/10/13	J-40.38-015/20/13	J-90.10-03 6/28/18
	J-22.15-03..... 6/21/24	J-40.39-005/20/13	J-90.20-03 6/28/18
	J-22.16-03..... 7/10/15	J-40.40-027/31/19	J-90.21-02 6/28/18
	J-22.17-00..... 6/21/24	J-45.36-007/21/17	J-90.50-00 6/28/18
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	K-70.20-01 6/1/16	K-80.32-00.....8/17/21	K-80.35-01 9/16/20
	K-80.10-02 9/25/20	K-80.34-00.....8/17/21	K-80.37-01 9/16/20
2			
	L-5.10-02 6/5/24	L-20.10-037/14/15	L-40.20-02 6/21/12
	L-5.15-00 9/19/22	L-30.10-02 6/11/14	L-70.10-01 5/21/08
	L-10.10-02 6/21/12	L-40.15-01 6/16/11	L-70.20-01 5/21/08
3			
	M-1.20-04 9/25/20	M-9.60-002/10/09	M-24.66-00 7/11/17
	M-1.40-03 9/25/20	M-11.10-048/2/22	M-40.10-04 10/17/23
	M-1.60-03 9/25/20	M-12.10-046/28/24	M-40.20-00 10/12/07
	M-1.80-036/3/11	M-15.10-027/17/23	M-40.30-01 7/11/17
	M-2.20-03 7/10/15	M-17.10-027/3/08	M-40.40-00 9/20/07
	M-2.21-00 7/10/15	M-20.10-048/2/22	M-40.50-00 9/20/07
	M-3.10-04 9/25/20	M-20.20-024/20/15	M-40.60-00 9/20/07
	M-3.20-04 8/2/22	M-20.30-056/28/24	M-60.10-01 6/3/11
	M-3.30-04 9/25/20	M-20.40-036/24/14	M-60.20-03 8/17/21
	M-3.40-04 9/25/20	M-20.50-02 6/3/11	M-65.10-03 8/17/21
	M-3.50-03 9/25/20	M-24.20-024/20/15	M-80.10-01 6/3/11
	M-5.10-03 9/25/20	M-24.40-024/20/15	M-80.20-00 6/10/08
	M-7.50-01 1/30/07	M-24.60-046/24/14	M-80.30-00 6/10/08
	M-9.50-02 6/24/14	M-24.65-00 7/11/17	

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