INTRODUCTION TO THE SPECIAL PROVISIONS

(July 8, 2024 APWA GSP, Option B)

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2026 edition, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter "Standard Specifications"). The Standard Specifications, as modified or supplemented by these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

These Special Provisions are made up of both General Special Provisions (GSPs) from various sources, which may have project-specific fill-ins; and project-specific Special Provisions. Each Provision either supplements, modifies, or replaces the comparable Standard Specification, or is a new Provision. The deletion, amendment, alteration, or addition to any subsection or portion of the Standard Specifications is meant to pertain only to that particular portion of the section, and in no way should it be interpreted that the balance of the section does not apply.

The GSPs are labeled under the headers of each GSP, with the effective date of the GSP and its source. For example:

(March 8, 2013 APWA GSP)
(April 1, 2013 WSDOT GSPs), only use date

Project specific special provisions are labeled without a date as such:
(*****)

Also incorporated into the Contract Documents by reference are:

- *Manual on Uniform Traffic Control Devices for Streets and Highways*, currently adopted edition, with Washington State modifications, if any
- *Standard Plans for Road, Bridge and Municipal Construction*, WSDOT/APWA, current edition
- *City of Woodinville Transportation Infrastructure Standards and Specifications (TISS),* current edition
- *WSDOT Bridge Design Manual LRFD,* current edition
- *Woodinville Water District Standard Specifications and Standard Plans*

Contractor shall obtain copies of these publications, at Contractor's own expense.

Division 1
General Requirements

DESCRIPTION OF WORK

(March 13, 1995)

The contract provides for the improvements of SR 202 Widening and Trestle Replacement Project and other work, all in accordance with the attached Contract Plans, these Contract Provisions, and the Standard Specifications. This project will widen and plane and overlay portions of City roads of SR 202 (131Ave. NE) and the intersections of SR 202 and 175th St NE and 177th St NE. In addition, curb and gutter, sidewalk, drainage, sewer line, lighting, signal upgrades, landscaping, bridge replacement, catch basin adjustments, manhole and valve box adjustments, sidewalk curb ramps, striping, traffic control, trail grading and paving, retaining walls and other work. The project is funded with Federal Grants, TIB grant, Woodinville Water District and local money.

1-01 DEFINITIONS AND TERMS

1-01.2(1) Associations and Miscellaneous

Section1-01.2(1) is supplemented with the following:

(******)

WWD Woodinville Water District

District Woodinville Water District

1-01.3 Definitions

(January 19, 2022 APWA GSP)

Delete the heading **Completion Dates** and the three paragraphs that follow it, and replace them with the following:

Dates

Bid Opening Date
The date on which the Contracting Agency publicly opens and reads the Bids.

Award Date
The date of the formal decision of the Contracting Agency to accept the lowest responsible and responsive Bidder for the Work.

Contract Execution Date
The date the Contracting Agency officially binds the Agency to the Contract.

Notice to Proceed Date
The date stated in the Notice to Proceed on which the Contract time begins.

Substantial Completion Date
The day the Engineer determines the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint, any remaining traffic disruptions will be rare and brief, and only minor incidental work, replacement of temporary substitute facilities, plant establishment periods, or correction or repair remains for the Physical Completion of the total Contract.

Physical Completion Date
The day all of the Work is physically completed on the project. All documentation required by the Contract and required by law does not necessarily need to be furnished by the Contractor by this date.

Completion Date
The day all the Work specified in the Contract is completed and all the obligations of the Contractor under the contract are fulfilled by the Contractor. All documentation required by the Contract and required by law must be furnished by the Contractor before establishment of this date.

Final Acceptance Date
The date on which the Contracting Agency accepts the Work as complete.

Supplement this Section with the following:

All references in the Standard Specifications or WSDOT General Special Provisions, to the terms “Department of Transportation”, “Washington State Transportation Commission”, “Commission”, “Secretary of Transportation”, “Secretary”, “Headquarters”, and “State Treasurer” shall be revised to read “Contracting Agency”.

All references to the terms “State” or “state” shall be revised to read “Contracting Agency” unless the reference is to an administrative agency of the State of Washington, a State statute or regulation, or the context reasonably indicates otherwise.

All references to “State Materials Laboratory” shall be revised to read “Contracting Agency designated location”.

All references to “final contract voucher certification” shall be interpreted to mean the Contracting Agency form(s) by which final payment is authorized, and final completion and acceptance granted.

Additive
A supplemental unit of work or group of bid items, identified separately in the Bid Proposal, which may, at the discretion of the Contracting Agency, be awarded in addition to the base bid.

Alternate
One of two or more units of work or groups of bid items, identified separately in the Bid Proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Business Day
A business day is any day from Monday through Friday except holidays as listed in Section 1-08.5.

Contract Bond
The definition in the Standard Specifications for “Contract Bond” applies to whatever bond form(s) are required by the Contract Documents, which may be a combination of a Payment Bond and a Performance Bond.

Contract Documents
See definition for “Contract”.

Contract Time
The period of time established by the terms and conditions of the Contract within which the Work must be physically completed.

Notice of Award
The written notice from the Contracting Agency to the successful Bidder signifying the Contracting Agency's acceptance of the Bid Proposal.

Notice to Proceed
The written notice from the Contracting Agency or Engineer to the Contractor authorizing and directing the Contractor to proceed with the Work and establishing the date on which the Contract time begins.

Traffic
Both vehicular and non-vehicular traffic, such as pedestrians, bicyclists, wheelchairs, and equestrian traffic.

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this section and replace it with the following:

1-02.1 Qualifications of Bidder
(February 17, 2026 APWA GSP Option B)

Before award of a public works contract, a Bidder must meet at least the minimum qualifications of RCW 39.04.350(1)(b-g) to be considered a responsible Bidder and qualified to be awarded a public works project.

1-02.2 Plans and Specifications
(June 27, 2011 APWA GSP)

Delete this section and replace it with the following:

Information as to where Bid Documents can be obtained or reviewed can be found in the Call for Bids (Advertisement for Bids) for the work.

After award of the contract, plans and specifications will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	2	Furnished automatically upon award.
Contract Provisions	1	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	2	Furnished only upon request.

Additional plans and Contract Provisions may be obtained by the Contractor from the source stated in the Call for Bids, at the Contractor's own expense.

1-02.4 Examination of Plans, Specifications, and Site of Work

1-02.4(1) General

(December 30, 2022 APWA GSP Option B)

The first sentence of the ninth paragraph, beginning with "Prospective Bidder desiring…", is revised to read:

> Prospective Bidders desiring an explanation or interpretation of the Bid Documents, shall request the explanation or interpretation in writing by close of business 5 business days preceding the bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids written reply to reach all prospective Bidders before the submission of their Bids.

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

(September 3, 2019)
The Reference Information for this project is available for review by the bidder at the following location:

1. Public Purchase (www.publicpurchase.com) and Builders Exchange of Washington (www.bxwa.com/).
2. City of Woodinville Public Works, 17301 133rd Ave. NE, Woodinville, WA 98072

The Reference Information includes the following:

- Prevailing Wage Rates – Federal
- Prevailing Wage Rates – King County
- Standard Plans
- Report of Geotechnical Investigation, SR 202 Widening and Trestle Replacement, dated November 25, 2025
- Addendum #1 to Geotechnical Report – Neutral Plane Method for Bridge Foundations, SR 202 Widening and Trestle Replacement, dated January 29, 2026
- Environmental Investigation Report, SR 202 Widening and Trestle Replacement, dated April 17, 2025
- Permits
- King County Wastewater Treatment Division's Local Public Agency Program's construction approval letter

1-02.5 Proposal Forms

(February 17, 2026 APWA GSP)

Delete this section and replace it with the following:

> The Proposal Form will identify the project and its location and describe the work. It will also list estimated quantities, units of measurement, the items of work, and the

materials to be furnished at the unit bid prices. The bidder shall complete spaces on the proposal form that call for, but are not limited to, unit prices; extensions; summations; the total bid amount; signatures; date; and, where applicable, retail sales taxes and acknowledgment of addenda; the bidder's name, address, telephone number, and signature. Bids shall be in legible figures (not words) written in ink or typed and expressed in U.S. dollars. The required certifications are included as part of the Proposal Form.

The Contracting Agency reserves the right to arrange the proposal forms with alternates and additives, if such be to the advantage of the Contracting Agency. The bidder shall bid on all alternates and additives set forth in the Proposal Form unless otherwise specified.

1-02.6 Preparation of Proposal

(*February 17, 2026 APWA GSP, Option C*)

The first sentence of the second paragraph is revised to read as follows:

All prices shall be in legible figures (not words) written in ink or typed, and expressed in U.S. dollars.

Supplement the second paragraph with the following:

4. If a minimum bid amount has been established for any item, the unit or lump sum price must equal or exceed the minimum amount stated.

Delete the last two paragraphs, and replace them with the following:

The Bidder shall submit with their Bid a completed Contractor Certification Wage Law Compliance form, provided by the Contracting Agency. Failure to return this certification as part of the Bid Proposal package will make this Bid Nonresponsive and ineligible for Award. A Contractor Certification of Wage Law Compliance form is included in the Proposal Forms.

The Bidder shall make no stipulation on the Bid Form, nor qualify the bid in any manner.

A bid by a corporation shall be executed in the corporate name, by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign).

A bid by a partnership shall be executed in the partnership name and signed by a partner.

A bid by a joint venture shall be executed in the joint venture name and signed by a member of the joint venture.

(February 17, 2026 APWA GSP, Option B)

Revise the fourth paragraph to read:

Subcontractor's List

The Bidder shall submit with the Bid the completed Subcontractor List included in the Contracting Agency Proposal Package. If a Subcontractor List Form is not included in the package, use DOT Form 271-015LP. The Form shall contain the following:

1. Subcontractors who will perform the Work of structural steel installation, rebar installation, heating, ventilation, air conditioning, and plumbing as described in RCW 18.106 and electrical as described in RCW 19.28.

2. The Work those subcontractors will perform on the Contract as described in RCW 39.04.350(1)(b-g), and

3. No more than one subcontractor for each category of Work identified, except, when subcontractors vary with Bid alternates, in which case the Bidder shall identify which subcontractor will be used for which alternate.

Section 1-02.6 is supplemented with the following:

(November 4. 2025)
Bidder Questionnaire

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

1. Firm name;

2. Firm address including ZIP code;

3. Firm's status as a DBE or non-DBE;

4. NAICS code applicable to each scope of work the firm sought to perform in its bid;

5. Age of the firm; and

6. The annual gross receipts of the firm. The Bidder may obtain this information by asking each firm to indicate into what gross receipts bracket they fit (less than $1 million; $1-3 million; $3-6 million; $6-10 million; $10-20 million; $20-30.72 million; or greater than $30.72 million) rather than requesting an exact figure from the firm.

This form shall be received at the same location and no later than the time required for the delivery of the Proposal. Failure to comply with this requirement will cause this Bid to be considered irregular in accordance with Section 1-02.13.

The Contractor may correct errors to items 2 through 6 above on the Bidder Questionnaire form for a period up to 48 hours after bid opening. Bidder Questionnaire forms that are still incorrect after the correction period will be determined irregular. New Firm/Subcontractors may not be added to the form during the correction period. A Bidder Questionnaire form that fails to list a Firm/Subcontractor that appears on a different form will be considered irregular in accordance with Section 1-02.13.

1-02.9 Delivery of Proposal

(November 21, 2025 APWA GSP, Option D)

Delete this section and replace it with the following:

GENERAL

Each Proposal (including all required attachments) shall be submitted to the Contracting Agency by one of the following methods:

1. Electronically upload bid documents via Public Purchase. Instructions for uploading bid documents are located "Invitation to Bid".
2. Deliver hard copy Bid documents in a sealed envelope, with the Project Name and Project Number as stated in the Call for Bids clearly marked on the outside of the envelope, or as otherwise required in the Bid Documents, to ensure proper handling and delivery. Deliver to: Chista Kouretchian, Procurement/Contract Manager, Woodinville City Hall, 17301 133rd Ave. NE, Woodinville WA 98072.

Proposals that are received as required will be publicly opened and read as specified in Section 1-02.12. The Contracting Agency will not open or consider any Bid Proposal that is received after the time specified in the Call for Bids for receipt of Bid Proposals or received in a location other than that specified in the Call for Bids. The Contracting Agency will not open or consider any "Supplemental Information" that is received after the time specified or received in a location other than that specified in the Call for Bids.

If an emergency or unanticipated event interrupts normal work processes of the Contracting Agency so that Proposals cannot be received at the office designated for receipt of bids as specified in Section 1-02.12 the time specified for receipt of the Proposal will be deemed to be extended to the same time of day specified in the solicitation on the first workday on which the normal work processes of the Contracting Agency resume.

Supplemental bid information must be submitted within 48 hours of the time and date the proposal is due, the document(s) shall be submitted as follows:

1. By Facsimile to the following FAX number (425) 489-2705, or
2. By e-mail to the following e-mail address: chistak@woodinville.gov, or
3. By (agency provided electronically submitted): See Invitation to Bid

All other information required to be submitted with the Bid Proposal must be submitted with the Bid Proposal itself, at the time stated in the Call for Bids.

1-02.10 Withdrawing, Revising, or Supplementing Proposal

(February 17, 2026 APWA GSP)

Delete this section, and replace it with the following:

After submitting a physical or an electronic bid, if allowed under 1-02.9, Bid Proposal to the Contracting Agency, the Bidder may withdraw, revise, or supplement it if:

1. The Bidder submits a written request signed by an authorized person and physically delivers it to the place designated for receipt of Bid Proposals, if a physical Bid Proposal was submitted, or recalled electronically via electronic method described in 1-02.9 if an electronic Bid Proposal was submitted, and

2. The Contracting Agency receives the request before the time set for receipt of Bid Proposals, and
3. The revised or supplemented Bid Proposal (if any) is received by the Contracting Agency before the time set for receipt of Bid Proposals.

If the Bidder's request to withdraw, revise, or supplement its Bid Proposal is received before the time set for receipt of Bid Proposals, the Contracting Agency will return the unopened Proposal package to the Bidder. The Bidder must then submit the revised or supplemented package in its entirety. If the Bidder does not submit a revised or supplemented package before the time set for receipt of Bid Proposals, then its bid shall be considered withdrawn.

Late revised or supplemented Bid Proposals or late withdrawal requests will be date recorded by the Contracting Agency and returned unopen. Requests to withdraw, revise, or supplement a Bid Proposal may be submitted by the following methods:

1. In person by Chista Kouretchian, Procurement/Contract Manager, Woodinville City Hall, 17301 133rd Ave. NE, Woodinville WA 98072.
2. By (agency provided electronically submitted): See Invitation to Bid.

1-02.13 Irregular Proposals

(November 21, 2025 APWA GSP)

Delete this section and replace it with the following:

1. A Proposal will be considered irregular and will be rejected if:
   a. The Bidder is not prequalified when so required;
   b. The Bidder adds provisions reserving the right to reject or accept the Award, or enter into the Contract;
   c. A price per unit cannot be determined from the Bid Proposal;
   d. The Proposal form is not properly executed;
   e. The Bidder fails to submit or properly complete a subcontractor list as required in Section 1-02.6;
   f. The Bidder fails to submit the Bidder Questionnaire, if applicable, as required by Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions; or
   g. The Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation.

2. A Proposal may be considered irregular and may be rejected if:
   a. The Proposal does not include a unit price for every Bid item;
   b. Any of the unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the Contracting Agency;
   c. The authorized Proposal Form furnished by the Contracting Agency is not used or is altered;
   d. The completed Proposal form contains unauthorized additions, deletions, alternate Bids, or conditions;
   e. Receipt of Addenda is not acknowledged; or
   f. A member of a joint venture or partnership and the joint venture or partnership submit Proposals for the same project (in such an instance, both Bids may be rejected).

g. If Proposal form entries are not made in ink.

1-02.14 Disqualification of Bidders

(May 17, 2018 APWA GSP, Option A)

Delete this section and replace it with the following:

A Bidder will be deemed not responsible if the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended.

The Contracting Agency will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1). To assess bidder responsibility, the Contracting Agency reserves the right to request documentation as needed from the Bidder and third parties concerning the Bidder's compliance with the mandatory bidder responsibility criteria.

If the Contracting Agency determines the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1) and is therefore not a responsible Bidder, the Contracting Agency shall notify the Bidder in writing, with the reasons for its determination. If the Bidder disagrees with this determination, it may appeal the determination within two (2) business days of the Contracting Agency's determination by presenting its appeal and any additional information to the Contracting Agency. The Contracting Agency will consider the appeal and any additional information before issuing its final determination. If the final determination affirms that the Bidder is not responsible, the Contracting Agency will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the Contracting Agency's final determination.

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

After opening and reading proposals, the Contracting Agency will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit will control. If a minimum bid amount has been established for any item and the bidder's unit or lump sum price is less than the minimum specified amount, the Contracting Agency will unilaterally revise the unit or lump sum price, to the minimum specified amount and recalculate the extension. The total of extensions, corrected where necessary, including sales taxes where applicable and such additives and/or alternates as selected by the Contracting Agency, will be used by the Contracting Agency for award purposes and to fix the Awarded Contract Price amount and the amount of the contract bond.

1-03.3 Execution of Contract

(February 17, 2026 APWA GSP, Option A)

Revise this section to read:

Copies of the Contract Provisions, including the unsigned Form of Contract, will be available for signature by the successful bidder on the first business day following award. The number of copies to be executed by the Contractor will be determined by the Contracting Agency.

Within 7 calendar days after the award date, the successful Bidder shall return the signed Contracting Agency-prepared Contract, an insurance certification as required by Section 1-07.18, a satisfactory bond as required by law and Section 1-03.4, the Transfer of Coverage form for the Construction Stormwater General Permit with sections I, III, and VIII completed when provided. Before execution of the Contract by the Contracting Agency, the successful Bidder shall provide, if required, any of the following: pre-Award information required by the Contracting Agency as listed under Section 1-02.15, proof of licensure for electrical, HVAC, or plumbing subcontractors. If the Prime Contractor lists themselves as performing electrical, HVAC, or plumbing they are required to submit proof of licensure prior to execution.

Until the Contracting Agency executes a Contract, no Proposal shall bind the Contracting Agency nor shall any Work begin within the project limits or within Contracting Agency-furnished sites. The Contractor shall bear all risks for any Work begun outside such areas and for any materials ordered before the Contract is executed by the Contracting Agency.

If the Bidder experiences circumstances beyond their control that prevents return of the Contract documents within the calendar days after the Award date stated above, the Contracting Agency may grant up to a maximum of 7 additional calendar days for return of the documents, provided the Contracting Agency deems the circumstances warrant it.

1-03.4 Contract Bond

(July 23, 2015 APWA GSP)

Delete the first paragraph and replace it with the following:

The successful bidder shall provide executed payment and performance bond(s) for the full contract amount. The bond may be a combined payment and performance bond; or be separate payment and performance bonds. In the case of separate payment and performance bonds, each shall be for the full contract amount. The bond(s) shall:

1. Be on Contracting Agency-furnished form(s);
2. Be signed by an approved surety (or sureties) that:
   a. Is registered with the Washington State Insurance Commissioner, and
   b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner,
3. Guarantee that the Contractor will perform and comply with all obligations, duties, and conditions under the Contract, including but not limited to the duty and obligation to indemnify, defend, and protect the Contracting Agency against all losses and claims related directly or indirectly from any failure:

a. Of the Contractor (or any of the employees, subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform and comply with all contract obligations, conditions, and duties, or
b. Of the Contractor (or the subcontractors or lower tier subcontractors of the Contractor) to pay all laborers, mechanics, subcontractors, lower tier subcontractors, material person, or any other person who provides supplies or provisions for carrying out the work;

4. Be conditioned upon the payment of taxes, increases, and penalties incurred on the project under titles 50, 51, and 82 RCW; and
5. Be accompanied by a power of attorney for the Surety's officer empowered to sign the bond; and
6. Be signed by an officer of the Contractor empowered to sign official statements (sole proprietor or partner). If the Contractor is a corporation, the bond(s) must be signed by the president or vice president, unless accompanied by written proof of the authority of the individual signing the bond(s) to bind the corporation (i.e., corporate resolution, power of attorney, or a letter to such effect signed by the president or vice president).

1-03.7 Judicial Review

(December 30, 2022 APWA GSP)

Revise this section to read:

Any decision made by the Contracting Agency regarding the Award and execution of the Contract or Bid rejection shall be conclusive subject to the scope of judicial review permitted under Washington Law. Such review, if any, shall be timely filed in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction.

1-04 SCOPE OF THE WORK

1-04.2 Coordination of Contract Documents, Plans, Special Provisions, Specifications, and Addenda

(December 30, 2022 APWA GSP)

Revise the second paragraph to read:

Any inconsistency in the parts of the contract shall be resolved by following this order of precedence (e.g., 1 presiding over 2, 2 over 3, 3 over 4, and so forth):

1. Addenda,
2. Proposal Form,
3. Special Provisions,
4. Contract Plans,
5. Standard Specifications,
6. Contracting Agency's and Woodinville Water District's Standard Plans or Details (if any), and
7. WSDOT Standard Plans for Road, Bridge, and Municipal Construction.

Add the following new section:

(******)

1-04.2(1) Sanitary Sewer System Improvements Preconstruction Meeting

A preconstruction meeting will be required for sanitary sewer construction. The Contractor will submit a material and equipment list prior to the meeting that will include quantity, manufacturer and model number, acceptability under any specified inspections and/or tests required by ASTM and/or AWWA specification if applicable (or) of material and equipment to be installed as part of the work. The Woodinville Water District and King County Metro retains the right to reject materials and equipment which do not conform to their specifications and the approved Plans. Failure of the District or King County Metro to reject materials and equipment at the time the list is filed shall not be a waiver of the their right to reject such materials or equipment at a later time.

The King County Local Public Agency (LPA) Program must be contacted at 206-477-5414 or LPA.team@kingcounty.gov at least ten (10) working days in advance of the pre-construction conference for this project and at least ten (10) working days in advance of any work within 50 feet of King County sanitary sewers. The Contractor will submit the Contractor's notice to proceed and contact information to the LPA Program prior to start of construction.

1-04.4 Changes

(January 19, 2022 APWA GSP)

The first two sentences of the last paragraph of Section 1-04.4 are deleted.

1-05 CONTROL OF WORK

1-05.1 Authority of the Engineer

Add the following after the first paragraph:

(******)

The Engineer will be cooperating with the Woodinville Water District (District) in the inspection and approval of the construction of the sanitary sewer system. The District shall have authority to approve, reject or require changes in Plans designed during the course of work. The District shall have authority to inspect the work and shall have authority to stop work whenever necessary to ensure compliance with the approved Plans and Specifications. The District shall have authority to reject work and materials which do not conform to the Plans and Specifications and to decide questions which may arise in the execution of the work. The District shall have the authority to impose fines for violation of District policies adopted pursuant to resolution. The District and its Engineer shall be the sole judge whether supplies or material qualify "as equal" substitutions under the Plans and Specifications.

Minor items of work or materials omitted from Plans and Specifications prepared by the District or District's Engineer, but clearly inferable there from and which are called for by accepted good practice, shall be provided and/or performed by the Contractor as part of the construction. In case of doubt, the District's decision shall be final.

The Contractor shall keep the District's inspector informed of their schedule. The District shall have access to the work at all times, and the Contractor shall provide proper facilities for such access and inspection. The Contractor shall make reasonable tests of the work at the Contractor's expense upon the District's request. Whenever work must be specially tested or inspected for compliance with public regulations, or with the Plans and Specifications, the Contractor shall give the District 24-hour notice of the readiness of the work for such test or inspection. The District shall make inspections within 24-hours of notification by the Contractor. Such inspections and tests shall not relieve the Contractor of any of its responsibilities under this provision.

Prior to final acceptance of work, final punch-list items shall be completed including As-Built plans. The Woodinville Water District Board of Commissioners must approve final acceptance.

1-05.4 Conformity With And Deviations From Plans And Stakes

Section 1-05.4 is supplemented with the following:

(******)
Contractor Surveying - Structure
The Contracting Agency has provided primary survey control in the Plans.

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

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

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

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

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

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

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

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

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

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

6. Establish retaining wall top of wall profile grade.

7. Establish buried structure profile grade.

8. Establish elevation benchmarks for all substructure formwork.

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

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

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

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

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

14. Establish grout pad locations and elevations.

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

16. Establish box girder bottom slab grades and locations.

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

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.

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23. Contractor shall install surface settlement monitoring markers consisting of 1-inch long, powder-actuated concrete nails, set approximately 7/8-inch deep with head exposed in top of concrete of the geosynthetic retaining walls fascia footing / leveling pad, spaced at 25-foot intervals along the retaining wall alignments where the wall height is greater than 10 feet tall measured from bottom of footing. The nails shall be set a minimum of 3 inches from any edge of concrete to avoid damage to the structure. Alternatively, the Contractor may propose conventional settlement plates with flush-threaded riser pipes buried in the retaining wall backfill to complete settlement monitoring for the Engineer's approval and at no additional cost to the Owner. Marker installation and baseline readings shall be conducted by a Professional Surveyor licensed in the State of Washington. The baseline data shall be presented on a stamped scaled plan drawing showing the location of the markers with tabulated baseline data (marker identification number, northing, easting, elevation, and wall station).

The monitoring frequency of elevation surveys of the markers shall be twice per week beginning one week before the start of gravel borrow backfill placement for the retaining wall. This will require the concrete fascia footing / leveling pad be installed prior to installation of the geosynthetic-reinforced lifts of gravel borrow backfill. Measurements shall continue at least two weeks after all fill for the retaining walls and retained embankment slopes behind the walls has reached finished grade elevation, or longer if directed by the Engineer until measurements indicate essentially no further settlement is occurring following fill placement finished grade. The Contractor shall protect the masonry nails during construction as fill is placed and compacted to the design elevation. At least two sets of readings each month and the final readings shall by conducted by a Professional Surveyor licensed in the State of Washington, and the remainder of readings may be conducted by approved qualified Contractor staff.

Monitoring results shall be submitted to the Engineer at the end of each working week. Results shall be presented in tabular form displaying original marker baseline readings, the height and elevation of the retaining wall backfill behind each survey marker, marker survey readings for each monitoring event (northing, easting, elevation), and change in marker survey readings from baseline readings for each monitoring event (presented as change in northing, change in easting, change in elevation, and change in horizontal position with resultant movement vector direction). Surveying accuracy shall be 0.01± feet horizontal and vertical. The Contractor shall immediately notify the Engineer of any readings that indicate vertical and/or horizontal movement of 0.5 inches or more since the prior reading, and any readings that indicate cumulative movement of 2.0 inches.

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:

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

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

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

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

Payment

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

"Structure Surveying", lump sum.

The lump sum contract price for "Structure Surveying" shall be full pay for all labor, equipment, materials, and supervision utilized to perform the Work specified, including

any resurveying, checking, correction of errors, replacement of missing or damaged stakes, and coordination efforts.

(******)

Contractor Surveying – Roadway and Trail

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

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

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

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

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

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

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

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

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

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

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

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

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

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

9. **Provide limits of grinding depths at 25-foot intervals and at all grade breaks. The Contractor shall establish grinding depths to allow for a 0.25' HMA overlay of the existing pavement. Grinding depths shall be marked on the asphalt prior to grinding operations in areas shown on the plans as variable grinding depths.**

10. **Surveying existing pavement markings and lines on NE 127th Pl, west of 131st Avenue NE (SR 202) prior to grinding to allow placement of final pavement markings and lines in the same location of the existing prior to grinding.**

11. 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.

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

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

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

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

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

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

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

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

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

(******)

Contractor Surveying - Sanitary Sewer

The Contractor shall provide all surveying, staking, horizontal control, vertical control, calculations and measuring required to accomplish the sanitary sewer utility Work and as necessary to assure proper placement of all sanitary sewer utility project elements. The Contractor shall provide the Contracting Agency with copies of such calculations and staking data two (2) business days before construction begins for reference only, not for approval.

Tolerance limits for surveying/staking completed by the Contractor include, but are not limited to the following:

As-built sanitary invert and lid elevations: Vertical = ± 0.01 foot, Horizontal = ± 0.01 foot

The Contractor shall be responsible for setting and maintaining all alignment stakes, slope stakes, and grades necessary for the construction of the sanitary sewer utility pipelines and appurtenances.

At the Contracting Agency's discretion, it may spot-check the Contractor's surveying. These spot-checks will not change the requirements for normal checking and testing as described elsewhere, and do not relieve the Contractor of the responsibility of producing a finished product that is in accordance with the contract. Any discrepancies identified shall be resolved and corrected by the Contractor at no additional cost to the Owner.

Payment

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

"Roadway Surveying", lump sum.

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

(******)
"Trail Surveying", lump sum.

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

(******)
"Sanitary Sewer Surveying", lump sum.

The lump sum Contract for "Sanitary Sewer Surveying" shall be full compensation for all labor, material, tools, permitting, coordination and equipment necessary for to complete all construction surveying, staking, establishing horizontal control, establishing vertical control, calculations, measurements, checking, correction of errors, and replacement of missing or damaged stakes required to accomplish the sanitary sewer utility Work and as necessary to assure proper placement of all sanitary sewer utility project elements throughout the duration of construction per the Plans and Specifications.

(April 22, 2025 APWA GSP, Option D)

Supplement this section with the following:

Contractor Surveying – ADA Features

ADA Feature Staking Requirements

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

ADA Feature Contract Compliance

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

ADA Feature Measurements

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

The completed ADA Post Inspection Form(s) (WSDOT Form 224-020LP) shall be submitted as a Type 3 Working Drawing and transmitted to the Engineer within 30 calendar days of completing the ADA feature. After acceptance, the Contracting Agency will retain the final form(s) for their records.

Payment

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

"ADA Feature Surveying", lump sum.

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

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

1-05.7 Nonconforming Work

(February 17, 2026 APWA GSP)

Supplement this section with the following:

The rights exercised under the provisions of this Section shall not diminish the Contracting Agency's right to pursue any other avenue for additional remedy or damages with respect to the Contractor's failure to perform the Work as required. The Engineer has the right to reject all or part of the Nonconforming Work, and the Engineer's decision is final and not subject to protest.

No additional contract time or compensation will be allowed when the Contracting Agency exercises their rights provided by this Section.

1-05.7(1) Identification of Nonconforming Work

Replace this section with the following:

The Contractor is responsible for quality control and shall identify all Nonconforming Work. The Contracting Agency may also identify Nonconforming Work. However, failure by the Contracting Agency to identify Nonconforming Work shall not relieve the Contractor from their responsibility for the quality of the Work, nor shall it constitute acceptance or approval of the Nonconforming Work.

1-05.7(2) Reporting of Nonconforming Work

Replace this section with the following:

The Contractor shall immediately report all Nonconforming Work to the Engineer and shall include any relevant information known for suggested remediation of Nonconforming Work.

When the Contracting Agency identifies Nonconforming Work, the Engineer will notify the Contractor in writing specifying a time when a remedy must be complete. If the Contractor fails to remedy Nonconforming Work within the time specified in a written notice from the Engineer, or fails to perform any part of the Work required by the Contract Documents, the Engineer may correct and remedy such Work as may be identified in the written notice.

1-05.7(3) Remediation of Nonconforming Work

Supplement this section with the following:

The Contractor shall be responsible and bear all costs for remediating Nonconforming Work.

If the Contracting Agency remedies Nonconforming Work after the specified time when a remedy was to be completed, by any means deemed necessary, direct and indirect costs incurred by the Contracting Agency attributable to correcting and remedying Nonconforming Work not corrected by the time provided in the notice, or Work the Contractor failed or refused to perform, shall be paid by the Contractor.

If the Contractor fails to comply with a written order to remedy what the Engineer determines to be an emergency situation, the Engineer may have the Nonconforming Work corrected immediately, have the Work removed and replaced, or have Work the Contractor refuses to perform completed by using Contracting Agency or other forces. An emergency situation is any situation when, in the opinion of the Engineer, a delay in its remedy could be potentially unsafe, or might cause risk of loss or damage to the public.

When costs are incurred by the Contracting Agency, payment will be deducted by the Engineer from monies due, or to become due, to the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and compensation for removal, repair, replacement and/or correction of the Contractor's Nonconforming Work.

1-05.11 Final Inspection

Delete this section and replace it with the following:

1-05.11 Final Inspections and Operational Testing

(October 1, 2005 APWA GSP)

1-05.11(1) Substantial Completion Date

When the Contractor considers the work to be substantially complete, the Contractor shall so notify the Engineer and request the Engineer establish the Substantial Completion Date. The Contractor's request shall list the specific items of work that remain to be completed in order to reach physical completion. The Engineer will schedule an inspection of the work with the Contractor to determine the status of completion. The Engineer may also establish the Substantial Completion Date unilaterally.

If, after this inspection, the Engineer concurs with the Contractor that the work is substantially complete and ready for its intended use, the Engineer, by written notice to the Contractor, will set the Substantial Completion Date. If, after this inspection the Engineer does not consider the work substantially complete and ready for its intended use, the Engineer will, by written notice, so notify the Contractor giving the reasons therefor.

Upon receipt of written notice concurring in or denying substantial completion, whichever is applicable, the Contractor shall pursue vigorously, diligently and without unauthorized interruption, the work necessary to reach Substantial and Physical Completion. The Contractor shall provide the Engineer with a revised schedule indicating when the Contractor expects to reach substantial and physical completion of the work.

The above process shall be repeated until the Engineer establishes the Substantial Completion Date and the Contractor considers the work physically complete and ready for final inspection.

1-05.11(2) Final Inspection and Physical Completion Date

When the Contractor considers the work physically complete and ready for final inspection, the Contractor by written notice, shall request the Engineer to schedule a final inspection. The Engineer will set a date for final inspection. The Engineer and the Contractor will then make a final inspection and the Engineer will notify the Contractor in writing of all particulars in which the final inspection reveals the work incomplete or unacceptable. The Contractor shall immediately take such corrective measures as are necessary to remedy the listed deficiencies. Corrective work shall be pursued vigorously, diligently, and without interruption until physical completion of the listed deficiencies. This process will continue until the Engineer is satisfied the listed deficiencies have been corrected.

If action to correct the listed deficiencies is not initiated within 7 days after receipt of the written notice listing the deficiencies, the Engineer may, upon written notice to the Contractor, take whatever steps are necessary to correct those deficiencies pursuant to Section 1-05.7.
The Contractor will not be allowed an extension of contract time because of a delay in the performance of the work attributable to the exercise of the Engineer's right hereunder.

Upon correction of all deficiencies, the Engineer will notify the Contractor and the Contracting Agency, in writing, of the date upon which the work was considered physically complete. That date shall constitute the Physical Completion Date of the contract, but shall not imply acceptance of the work or that all the obligations of the Contractor under the contract have been fulfilled.

1-05.11(3) Operational Testing

It is the intent of the Contracting Agency to have at the Physical Completion Date a complete and operable system. Therefore when the work involves the installation of machinery or other mechanical equipment; street lighting, electrical distribution or signal systems; irrigation systems; buildings; or other similar work it may be desirable for the Engineer to have the Contractor operate and test the work for a period of time after final inspection but prior to the physical completion date. Whenever items of work are listed in

the Contract Provisions for operational testing they shall be fully tested under operating conditions for the time period specified to ensure their acceptability prior to the Physical Completion Date. During and following the test period, the Contractor shall correct any items of workmanship, materials, or equipment which prove faulty, or that are not in first class operating condition. Equipment, electrical controls, meters, or other devices and equipment to be tested during this period shall be tested under the observation of the Engineer, so that the Engineer may determine their suitability for the purpose for which they were installed. The Physical Completion Date cannot be established until testing and corrections have been completed to the satisfaction of the Engineer.

The costs for power, gas, labor, material, supplies, and everything else needed to successfully complete operational testing, shall be included in the unit contract prices related to the system being tested, unless specifically set forth otherwise in the proposal.

Operational and test periods, when required by the Engineer, shall not affect a manufacturer's guaranties or warranties furnished under the terms of the contract.

1-05.13 Superintendents, Labor and Equipment of Contractor
(August 14, 2013 APWA GSP)

Delete the sixth and seventh paragraphs of this section.

1-05.14 Cooperation With Other Contractors

Section 1-05.14 is supplemented with the following:

(March 13, 1995)
Other Contracts Or Other Work
It is anticipated that the following work adjacent to or within the limits of this project will be performed by others during the course of this project and will require coordination of the work:

- A private development will be redeveloping a gas station south of the bridge on the east side 131st Ave NE/SR 202. Part of this redevelopment will include widening NE 175th Street east of SR 202.
- Puget Sound Energy will be relocating an electrical vault from the existing sidewalk to within the roadway limits of SR 202 between NE 175th St. and NE 177th St.
- Woodinville Water District will be installing a new sewer main on NE 175th Street east of SR 202.

1-05.15 Method of Serving Notices
(January 4, 2024 APWA GSP)

Revise the second paragraph to read:

All correspondence from the Contractor shall be served and directed to the Engineer. All correspondence from the Contractor constituting any notification, notice of protest, notice of dispute, or other correspondence constituting notification required to be furnished under the Contract, must be written in paper format, hand delivered or sent via certified mail delivery service with return receipt requested to the Engineer's office. Electronic copies such as e-mails or electronically delivered

copies of correspondence will not constitute such notice and will not comply with the requirements of the Contract

Add the following new section:

1-05.16 Water and Power

(October 1, 2005 APWA GSP)

The Contractor shall make necessary arrangements, and shall bear the costs for power and water necessary for the performance of the work, unless the contract includes power and water as a pay item.

Add the following new section:

1-05.18 Record Drawings

(March 8, 2013 APWA GSP)

The Contractor shall maintain one set of full size plans for Record Drawings, updated with clear and accurate red-lined field revisions on a daily basis, and within 2 business days after receipt of information that a change in Work has occurred. The Contractor shall not conceal any work until the required information is recorded.

This Record Drawing set shall be used for this purpose alone, shall be kept separate from other Plan sheets, and shall be clearly marked as Record Drawings. These Record Drawings shall be kept on site at the Contractor's field office, and shall be available for review by the Contracting Agency at all times. The Contractor shall bring the Record Drawings to each progress meeting for review.

The preparation and upkeep of the Record Drawings is to be the assigned responsibility of a single, experienced, and qualified individual. The quality of the Record Drawings, in terms of accuracy, clarity, and completeness, is to be adequate to allow the Contracting Agency to modify the computer-aided drafting (CAD) Contract Drawings to produce a complete set of Record Drawings for the Contracting Agency without further investigative effort by the Contracting Agency.

The Record Drawing markups shall document all changes in the Work, both concealed and visible. Items that must be shown on the markups include but are not limited to:

- Actual dimensions, arrangement, and materials used when different than shown in the Plans.
- Changes made by Change Order or Field Order.
- Changes made by the Contractor.
- Accurate locations of storm sewer, sanitary sewer, water mains and other water appurtenances, structures, conduits, light standards, vaults, width of roadways, sidewalks, landscaping areas, building footprints, channelization and pavement markings, etc. Include pipe invert elevations, top of castings (manholes, inlets, etc.).

If the Contract calls for the Contracting Agency to do all surveying and staking, the Contracting Agency will provide the elevations at the tolerances the Contracting Agency requires for the Record Drawings.

When the Contract calls for the Contractor to do the surveying/staking, the applicable tolerance limits include, but are not limited to the following:

	Vertical	Horizontal
As-built sanitary & storm invert and grate elevations	± 0.01 foot	± 0.01 foot
As-built monumentation	± 0.001 foot	± 0.001 foot
As-built waterlines, inverts, valves, hydrants	± 0.10 foot	± 0.10 foot
As-built ponds/swales/water features	± 0.10 foot	± 0.10 foot
As-built buildings (fin. Floor elev.)	± 0.01 foot	± 0.10 foot
As-built gas lines, power, TV, Tel, Com	± 0.10 foot	± 0.10 foot
As-built signs, signals, etc.	N/A	± 0.10 foot

Making Entries on the Record Drawings:

- Use erasable colored pencil (not ink) for all markings on the Record Drawings, conforming to the following color code:
- Additions - Red
- Deletions - Green
- Comments - Blue
- Dimensions - Graphite
- Provide the applicable reference for all entries, such as the change order number, the request for information (RFI) number, or the approved shop drawing number.
- Date all entries.
- Clearly identify all items in the entry with notes similar to those in the Contract Drawings (such as pipe symbols, centerline elevations, materials, pipe joint abbreviations, etc.).

The Contractor shall certify on the Record Drawings that said drawings are an accurate depiction of built conditions, and in conformance with the requirements detailed above. The Contractor shall submit final Record Drawings to the Contracting Agency. Contracting Agency acceptance of the Record Drawings is one of the requirements for achieving Physical Completion.

Payment will be made for the following bid item:

Record Drawings (Minimum Bid $5000)	Lump Sum

Payment for this item will be made on a prorated monthly basis for work completed in accordance with this section up to 75% of the lump sum bid. The final 25% of the lump sum item will be paid upon submittal and approval of the completed Record Drawings set prepared in conformance with these Special Provisions.

A minimum bid amount has been entered in the Bid Proposal for this item. The Contractor must bid at least that amount.

1-06 CONTROL OF MATERIALS

Section 1-06 is supplemented with the following:

Buy America Requirements

(October 1, 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 (final assembly) 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 and be tracked as a Manufactured Product.

2. With respect to intelligent transportation systems and other electronic hardware systems that are classified as Manufactured Products, the cabinets or other enclosures of such systems that consist wholly or predominantly of iron, steel, or a combination of both, shall meet the requirements for and be tracked as an Iron or Steel Products. The item shall also meet the requirements for and be tracked as a Manufactured Product.

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

Definitions

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

   a. Non-ferrous metals including all manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly;

b. Plastic and polymer-based products including all manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form);

c. Glass including all manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting);

d. Fiber optic cable (includes drop cable) including all manufacturing processes, from initial ribboning (if applicable), through buffering, fiber stranding and jacketing, (fiber optic cable also includes the standards for glass and optical fiber);

e. Optical fiber including all manufacturing processes, from the initial preform fabrication stage, though the completion of the draw;

f. Lumber including all manufacturing processes, from initial debarking through treatment and planing;

g. Drywall including all manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels; or

h. Engineered wood including all manufacturing processes from the initial combination of constituent materials until the wood product is in its final form.

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

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, and are not an

Iron or Steel Product or a Construction Material, 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.

   If a Manufactured Material is not manufactured in the United States, it shall be considered a Foreign 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

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

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

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

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

Manufacturing begins with the initial melting and mixing and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. The processes include

rolling, extruding, machining, bending, grinding, drilling, welding, and coating. The action of applying a coating to steel or iron is deemed a manufacturing process. Coating includes epoxy coating, galvanizing, aluminizing, painting, and any other coating that protects or enhances the value of steel or iron. Any process from the original reduction from ore to the finished product constitutes a manufacturing process for iron.

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

The following are considered to be steel manufacturing processes:

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

    a. Open hearth furnace.

    b. Basic oxygen.

    c. Electric furnace.

    d. Direct reduction.

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

3. Fabrication of the products:

    a. Spinning wire into cable or strand.

    b. Corrugating and rolling into culverts.

    c. Shop fabrication.

A certification of materials origin will be required for all iron or steel products prior to such items being incorporated into the permanent work. The Contractor will not receive payment until the certification is received by the Engineer. The certification shall be on WSDOT Form 350-109 provided by the Engineer, or such other form approved by the Contracting Agency, provided it contains the same information as WSDOT Form 350-109.

Manufactured Products and Construction Material Requirements

A Contractor provided certification of materials origin will be required before each progress estimate or payment. The Contractor will not receive payment until the certification is received by the Engineer. The Contractor shall certify that all Manufactured Products and all Construction Materials installed during the current progress estimate period meet the Buy America requirements. The certification shall be on WSDOT Form 350-108 provided by the Engineer, or such other form approved by the Contracting Agency, provided it contains the same information as WSDOT Form 350-108.

Iron or Steel Products in a Manufactured Product

In addition to providing the certification of materials origin for the Manufactured Product, the iron or steel products in a manufactured product are subject to the Buy America requirements as follows:

1. When a precast concrete product is classified as a Manufactured Product, the components that are an Iron or Steel Product shall follow the "Iron or Steel Requirements" of this Specification.

2. When an electronic hardware system such as an intelligent transportation system is classified as a Manufactured Product, the cabinets and the other enclosures of such systems that are an Iron or Steel Product shall follow the "Iron or Steel Requirements" of this Specification.

Waiver for De Minimis Costs

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

$$\frac{Total\ cost\ of\ Foreign\ Construction\ Materials + Total\ cost\ of\ Foreign\ Manufactured\ Products}{Total\ applicable\ material\ costs} < 0.05$$

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

(******)

1-06.1 Approval of Materials Prior to Use

Supplement this section with the following:

Catalog cut sheets and manufacturer's information shall be provided to the Woodinville Water District via the Engineer for review and approval prior to installation of sewer main, side sewers, manholes, and all appurtenances. Minimum of 2 copies, plus a PDF, are required for submittal; if Contractor wants a copy returned following review, an additional copy is required for a total of 3.

1-06.6 Recycled Materials

(January 4, 2016 APWA GSP)

Delete this section, including its subsections, and replace it with the following:

The Contractor shall make their best effort to utilize recycled materials in the construction of the project. Approval of such material use shall be as detailed elsewhere in the Standard Specifications.

Prior to Physical Completion the Contractor shall report the quantity of recycled materials that were utilized in the construction of the project for each of the items listed in Section 9-03.21. The report shall include hot mix asphalt, recycled concrete aggregate, recycled glass, steel furnace slag and other recycled materials (e.g. utilization of on-site material and aggregates from concrete returned to the supplier). The Contractor's report shall be provided on DOT form 350-075 Recycled Materials Reporting.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws to be Observed

Section 1-07.1 is supplemented with the following:

(October 1, 2005 APWA GSP)

In cases of conflict between different safety regulations, the more stringent regulation shall apply.

The Washington State Department of Labor and Industries shall be the sole and paramount administrative agency responsible for the administration of the provisions of the Washington Industrial Safety and Health Act of 1973 (WISHA).

The Contractor shall maintain at the project site office, or other well known place at the project site, all articles necessary for providing first aid to the injured. The Contractor shall establish, publish, and make known to all employees, procedures for ensuring immediate removal to a hospital, or doctor's care, persons, including employees, who may have been injured on the project site. Employees should not be permitted to work on the project site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor's care.

The Contractor shall have sole responsibility for the safety, efficiency, and adequacy of the Contractor's plant, appliances, and methods, and for any damage or injury resulting from their failure, or improper maintenance, use, or operation. The Contractor shall be solely and completely responsible for the conditions of the project site, including safety for all persons and property in the performance of the work. This requirement shall apply continuously, and not be limited to normal working hours. The required or implied duty of the Engineer to conduct construction review of the Contractor's performance does not, and shall not, be intended to include review and adequacy of the Contractor's safety measures in, on, or near the project site.

(March 9, 2026)
Unmanned Aircraft Systems (UAS)

The procurement and/or use of any drone (UAS) on this Contract shall comply with the following directives:

- National Defense Authorization Act (NDAA) – American Security Drone Act of 2023 (ASDA, Pub. L. No. 118-31).

- Office of Management and Budget Memorandum M-26-02 – Restrictions on using federal funds to purchase or operate prohibited foreign UAS.

Contractors, subcontractors, and lower-tier subcontractors shall not procure, operate, maintain, or process data from prohibited UAS manufactured or assembled by "covered foreign entities" as defined in the Federal Acquisition Security Council (FASC) in the performance of this Contract.

1-07.1(2) Health and Safety

(March 9, 2023)
Lead Health Protection Program
The following Structural and non-structural materials located at the project site contain lead-based products:

Existing Railroad Trestle over SR 202

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

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

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

1-07.2 State Taxes

Delete this section, including its sub-sections, in its entirety and replace it with the following:

1-07.2 State Sales Tax
(June 27, 2011 APWA GSP)

The Washington State Department of Revenue has issued special rules on the State sales tax. Sections 1-07.2(1) through 1-07.2(3) are meant to clarify those rules. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The Contracting Agency will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability.

The Contractor shall include all Contractor-paid taxes in the unit bid prices or other contract amounts. In some cases, however, state retail sales tax will not be included. Section 1-07.2(2) describes this exception.

The Contracting Agency will pay the retained percentage (or release the Contract Bond if a FHWA-funded Project) only if the Contractor has obtained from the Washington State Department of Revenue a certificate showing that all contract-related taxes have been paid (RCW 60.28.051). The Contracting Agency may deduct from its payments to the Contractor any amount the Contractor may owe the Washington State Department of Revenue, whether the amount owed relates to this contract or not. Any amount so deducted will be paid into the proper State fund.

1-07.2(1) State Sales Tax — Rule 171

WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.

1-07.2(2) State Sales Tax — Rule 170

WAC 458-20-170, and its related rules, apply to the constructing and repairing of new or existing buildings, or other structures, upon real property. This includes, but is not limited to, the construction of streets, roads, highways, etc., owned by the state of Washington; water mains and their appurtenances; sanitary sewers and sewage disposal systems unless such sewers and disposal systems are within, and a part of, a street or road drainage system; telephone, telegraph, electrical power distribution lines, or other conduits or lines in or above streets or roads, unless such power lines become a part of a street or road lighting system; and installing or attaching of any article of tangible personal property in or to real property, whether or not such personal property becomes a part of the realty by virtue of installation.

For work performed in such cases, the Contractor shall collect from the Contracting Agency, retail sales tax on the full contract price. The Contracting Agency will automatically add this sales tax to each payment to the Contractor. For this reason, the Contractor shall not include the retail sales tax in the unit bid item prices, or in any other contract amount subject to Rule 170, with the following exception.

Exception: The Contracting Agency will not add in sales tax for a payment the Contractor or a subcontractor makes on the purchase or rental of tools, machinery, equipment, or consumable supplies not integrated into the project. Such sales taxes shall be included in the unit bid item prices or in any other contract amount.

1-07.2(3) Services

The Contractor shall not collect retail sales tax from the Contracting Agency on any contract wholly for professional or other services (as defined in Washington State Department of Revenue Rules 138 and 244).

1-07.5 Environmental Regulations

Section 1-07.5 is supplemented with the following:

(September 20, 2010)
Environmental Commitments

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

1. See Section 6-24 for dewatering.
2. King County Wastewater Treatment Division's Local Public Agency Program's construction approval letter located in Appendix G

(April 1, 2019)

The Contractor shall notify the Engineer a minimum of fifteen (15) calendar days prior to commencing any work in sensitive areas, mitigation areas, and wetland buffers. Installation of construction fencing is excluded from this notice requirement.

(August 3, 2009)

Payment

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

1-07.5(5) U.S. Army Corps of Engineers

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

(February 6, 2023)

The Contractor shall dispose of all creosoted timber, creosote piling and associated debris as shown in the Plans in accordance with current federal, state, and local regulations and provisions, and following Best Management Practices. Handling shall meet the Minimum Functional Standards for Solid Waste Handling, Chapter 173-304 WAC. Disposal shall be made in a landfill which meets the liner and leachate standards of the Criteria for Municipal Solid Waste Landfills, Chapter 173-351 WAC. The Contractor shall provide receipts from the disposal facility to the Engineer. If the material is transported to a transfer station, the Contractor shall obtain documentation indicating that final disposal will comply with the standards referenced above.

(April 2, 2018)

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

1-07.6 Permits and Licenses

Section 1-07.6 is supplemented with the following:

(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.

Permit or Approval	Permit #	Issuing Agency	Issued	Expires
NEPA CE	N/A	FHWA/WSDOT	11-7-25	N/A
NPDES Construction Stormwater General Permit	In Progress	Department of Ecology	N/A	N/A
SEPA Determination	SEP25004	City of Woodinville	2/11/26	
Shoreline Substantial Development Permit and Critical Areas Alteration	SPD25001	City of Woodinville	5-28-26	Construction must start by 5-28-28 and completed by 5-28-31
King County Special Use Permit	SUPS25-0053	King County	4/24/26	4/24/27

1-07.7 Load Limits

Section 1-07.7 is supplemented with the following:

(March 13, 1995)
If the sources of materials provided by the Contractor necessitates hauling over roads other than State Highways, the Contractor shall, at the Contractor's expense, make all arrangements for the use of the haul routes.

1-07.8 High-Visibility Apparel

1-07.8(1) Traffic Control Personnel

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

(September 16, 2025)
All personnel performing the Work described in Section 2-04 (including traffic control supervisors, flaggers, and others performing traffic control labor of any kind) shall comply with the following:

1. During daylight hours with clear visibility, workers shall wear a high-visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that are fluorescent yellow-green, fluorescent orange-red, or fluorescent red in color; and a high visibility hardhat that is white, yellow, yellow-green, orange, or red in color; and

2. During hours of darkness (½ hour before sunset to ½ hour after sunrise) or other low-visibility conditions (snow, fog, etc.), workers shall wear a high-visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that are fluorescent yellow-green, fluorescent

orange-red, or fluorescent red in color; a high-visibility lower garment meeting ANSI/ISEA 107 Class E, and a high visibility hardhat marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

1-07.9 Wages

1-07.9(1) General

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

(January 6, 2026)
The Federal wage rates incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. WA20260001.

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

1-07.9(5)A Required Documents

(February 17, 2026 APWA GSP, Option A)

Revise this section to read:

All Statements of Intent to Pay Prevailing Wages and Affidavits of Wages Paid, including a signed Statement of Compliance for Federal-aid projects, shall be submitted to the Engineer and entered into the State L&I online Prevailing Wage Intent & Affidavit (PWIA) system. In addition to entries made in the PWIA system, all Certified Payrolls must be submitted weekly to the Contracting Agency with a legally valid signature.

1-07.11 Requirements for Nondiscrimination

Section 1-07.11 is supplement with the following:

(May 5, 2025)
Requirement for Affirmative Action to Ensure Equal Employment Opportunity

In accordance with 41 CFR § 60-4.2, the clauses contained in 1-4 below are required to be included in this Contract. Nothing in this contract alters the Contractor's responsibility to comply with all applicable Federal regulations, including but not limited to 41 CFR part 60 as currently existing or later amended.

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

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

Women - Statewide

Timetable	Goal
Until further notice	6.9%

Minorities - by Standard Metropolitan Statistical Area (SMSA)

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

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

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

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

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

These goals are applicable to each nonexempt Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, or federally assisted project, contract, or subcontract until further notice. Compliance with these goals and 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
    90 – 7th Street, Suite 18-300
    San Francisco, CA 94103(415) 625-7800 Phone
    (415) 625-7799 Fax

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

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

<u>Standard Federal Equal Employment Opportunity Construction Contract Specifications</u>

1. As used in these specifications:

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

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

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

d. “Minority” includes:

(1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central American, South American, or other Spanish culture or origin, regardless of race);

(3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.)

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

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

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of this Special Provision. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a

Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

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

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

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

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

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

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

    d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the

Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

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

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

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

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

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

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

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

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

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

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

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

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

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

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

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

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

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

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

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

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

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

    Washington State Dept. of Transportation
    Office of Equity and Civil Rights
    PO Box 47314
    310 Maple Park Ave. SE
    Olympia WA

98504-7314
Ph: 360-705-7090
Fax: 360-705-6801
http://www.wsdot.wa.gov/equalopportunity/default.htm

Federal Small Business Enterprise Participation
(November 14, 2025, APWA GSP Option D)

1-07.11 is supplemented with the following:

The Federal Small Business Enterprise (FSBE) Program is an element of the Disadvantaged Business Enterprise (DBE) in accordance with the requirements of 49 CFR Part 26.39. Failure to comply with the requirements of this Specification may result in sanctions as provided by the Contract.

FSBE Abbreviations and Definitions

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

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

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

Firms certified by OMWBE as SBE, DBE can be used to fulfill the FSBE mandatory goal on a project.

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

FSBE – A firm certified by OMWBE as meeting Federal requirements of a small business enterprise. All firms on the OMWBE Certified Firm Directory with the designation of SBE or DBE are FSBEs.

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

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

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

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

FSBE Goal

The Contracting Agency has established an FSBE Goal for this Contract in the amount of: seventeen (17) percent

Crediting FSBE Participation

All FSBE subcontractors shall be certified before the subcontract on which they are participating is executed.

FSBE participation is only credited upon payment to the FSBE.

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

FSBE Prime Contractor

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

FSBE Subcontractor

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

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

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

When the subcontractor is an FSBE, the following apply:

1. If a FSBE subcontracts a portion of the Work of its contract to another firm, the value of the subcontracted Work may be counted toward the FSBE Goal only if the lower-tier subcontractor is also a FSBE.

2. Work subcontracted to a non-FSBE does not count towards the FSBE Goal nor FSBE participation.

FSBE Subcontract and Lower Tier Subcontract Documents

There must be a subcontract agreement that complies with 49 CFR Part 26 and fully describes the distinct elements of Work committed to be performed by the FSBE.

FSBE Service Provider

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

Temporary Traffic Control

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

If the FSBE firm is being utilized in the capacity of "Traffic Control Services", the FSBE firm must provide a TCS, flaggers, and traffic control items (e.g.,

cones, barrels, signs, etc.) and be in total control of all items in implementing the traffic control for the project.

Trucking

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

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

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

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

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

FSBE Manufacturer and FSBE Regular Dealer

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

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

FSBE firms proposed to be used as a Regular Dealer must be approved before being used on a project. The WSDOT Approved Regular Dealer list published on WSDOT's Office of Equal Opportunity (OEO) web site must include the specific project for which approval is being requested. For purposes of FSBE Goal participation, the Regular Dealer must submit the Regular Dealer Status Request form and receive approval prior to providing any equipment or materials or the signing of a purchase order, invoice, or subcontract.

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

Good Faith Effort Documentation

GFE is evaluated at Physical Completion when determining whether the Contractor has satisfied its FSBE Goal.

The Contracting Agency will measure GFE using the guidance in 49 CFR Part 26, Appendix A. The following is a list of the types of actions which may be considered as part of the Contractor's GFE to achieve FSBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of effort may be relevant in appropriate cases.

1. Solicited through all reasonable and available means the interest of all certified FSBEs who had the capability to perform the Work of the Contract. The Contractor must have solicited this interest within sufficient time to allow the FSBEs to respond to the solicitation. The Contractor must have determined with certainty that the FSBEs were interested in taking appropriate steps to follow up initial solicitations with potential FSBEs.

2. Selected portions of the Work to be performed by FSBEs to increase the likelihood that the FSBE Goal will be achieved. This includes, where appropriate, breaking out contract Work items into economically feasible units to facilitate FSBE participation, even when the Contractor might otherwise prefer to perform these Work items with its own forces.

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

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

    b. A Contractor using good business judgment would consider a number of factors in negotiating with FSBE subcontractors, including taking the firm's price and capabilities into consideration. The fact that there

may be some additional costs involved in finding and using FSBEs is not considered a sufficient reason for a Bidder's failure to meet the FSBE Goal, if such costs are reasonable. Also, the ability or desire of a Contractor to perform the Work of a Contract with its own organization does not relieve the Contractor of the responsibility to make Good Faith Efforts. Contractors are not, however, required to accept higher quotes from FSBEs if the price difference was excessive or unreasonable.

4. Not rejecting FSBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the Contractor's efforts to meet the FSBE Goal.

5. Made efforts to assist interested FSBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

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

7. Effectively used the services of available FSBE community organizations; FSBE contractors' groups; local, State, and Federal small business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of FSBEs.

8. Documentation of GFE must include copies of each FSBE and non-FSBE subcontractor quotes submitted to the Bidder when a non-FSBE subcontractor is selected over a FSBE for Work on the Contract.

Procedures after Execution

Commercially Useful Function (CUF)

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

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

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

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

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

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

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

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

Truck Unit Listing Log

In addition to the subcontracting requirements of Section 1-08.1, each FSBE trucking firm shall submit supplemental information consisting of a completed Primary DBE/FSBE Truck Unit Listing Log (WSDOT Form 350-077) and all Rental/Lease agreements (if applicable). The supplemental information shall be submitted in an electronic format to the Engineer prior to any trucking services being performed for FSBE credit. Incomplete or incorrect supplemental information will be returned for correction. The corrected Primary 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 FSBE participation.

Each FSBE trucking firm shall complete a Daily Truck Unit Listing Log for each day that the FSBE performs trucking services for FSBE 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 addresses:

NCRegionOEO@wsdot.wa.gov and
ChistaK@woodinville.gov

Joint Checking

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

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

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

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

Prompt Payment

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

Subcontracts

When FSBE is performing Work on the Contract, a copy of the executed subcontract between the Contractor and the FSBE subcontractor shall be submitted to WSDOT OECR. The executed subcontracts are submitted through the Diversity Management and Compliance System (DMCS) by uploading to the project documents tab.

Reporting

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

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

Decertification

When a FSBE is “decertified” from the FSBE program during the Contract, the participation of that FSBE shall continue to count as FSBE participation if the subcontract with the FSBE was executed prior to the decertification notice. The

Contractor cannot receive credit if a FSBE is decertified prior to having an executed subcontract agreement in place.

Payment

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

1-07.11(1) Regulatory Authorities

1-07.11(1)C Nondiscrimination Authorities

Section 1-07.11(1)C is revised to read:

(March 9, 2026)

During the performance of this Contract, the Contractor, for itself, its assignees, and successors in interest agrees to comply with the following nondiscrimination statues and authorities; including but not limited to:

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), and its implementing regulations and case law, prohibit discrimination on the basis of race, color, or national origin. 49 C.F.R. 21.5(b)(2) prohibits a recipient of federal funds from utilizing “criteria or methods of administration which have the effect of subjecting persons to discrimination because of their race, color, or national origin, or have the effect of defeating or substantially impairing accomplishment of the objectives of the program with respect to individuals of a particular race, color, or national origin.” This includes taking reasonable steps to provide limited English proficiency (LEP) persons meaningful access to all programs, activities and services, where necessary to avoid discrimination on the basis of national origin.

2. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C §4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects).

3. Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et. seq.), as amended, (prohibits discrimination on the basis of sex).

4. Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended (prohibits discrimination on the basis of disability); and 49 C.F.R. Part 27.

5. The Age Discrimination Act of 1975, as amended (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age).

6. Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex).

7. The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age of Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition and terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not).

8. Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. § 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38.

9. The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123), (prohibits discrimination on the basis of race, color national origin, and sex).

10. Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq.).

1-07.12 Federal Agency Inspection

Section 1-07.12 is supplemented with the following:

(October 3, 2023)
Required Federal Aid Provisions

The Required Contract Provisions Federal Aid Construction Contracts (FHWA 1273) Revised October 23, 2023 and the amendments thereto supersede any conflicting provisions of the Standard Specifications and are made a part of this Contract; provided, however, that if any of the provisions of FHWA 1273, as amended, are less restrictive than Washington State Law, then the Washington State Law shall prevail.

The provisions of FHWA 1273, as amended, included in this Contract require that the Contractor insert the FHWA 1273 and amendments thereto in each subcontract, together with the wage rates which are part of the FHWA 1273, as amended. Also, a clause shall be included in each subcontract requiring the subcontractors to insert the FHWA 1273 and amendments thereto in any lower tier subcontracts, together with the wage rates. The Contractor shall also ensure that this section, REQUIRED FEDERAL AID PROVISIONS, is inserted in each subcontract for subcontractors and lower tier subcontractors. For this purpose, upon request to the Engineer, the Contractor will be provided with extra copies of the FHWA 1273, the amendments thereto, the applicable wage rates, and this Special Provision.

1-07.16 Protection and Restoration of Property

1-07.16(1) Private/Public Property

Section 1-07.16(1) is supplemented with the following:

(******)
The Contractor shall not use private property for construction staging without the written consent of the property owner. The Contractor shall submit written consent to the City prior to occupation of private property. Contractor shall remove and restore private property within 48 hours of notification by the Engineer. Contractor is responsible for any costs incurred outside of the approved work area. Road right-of-way including easements may not be used for construction staging unless prior approval from the City has been granted.

(October 3, 2022)
The Contractor shall not access the worksite from adjacent properties without permission from the Engineer. The Contractor shall submit a Type 2 Working Drawing to the Engineer in accordance with Section 1-05.3 prior to accessing the project site from adjacent properties. The Working Drawing shall include the methods, materials, equipment, and restoration measures used to access the worksite.

1-07.16(2) Vegetation Protection and Restoration

Section 1-07.16(2) is supplemented with the following:

(August 2, 2010)
Vegetation and soil protection zones for trees shall extend out from the trunk to a distance of 1 foot radius for each inch of trunk diameter at breast height.

Vegetation and soil protection zones for shrubs shall extend out from the stems at ground level to twice the radius of the shrub.

Vegetation and soil protection zones for herbaceous vegetation shall extend to encompass the diameter of the plant as measured from the outer edge of the plant.

1-07.17 Utilities and Similar Facilities

Section 1-07.17 is supplemented with the following:

(April 2, 2007)
Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification.

The following addresses and telephone numbers of utility companies known or suspected of having facilities within the project limits are supplied for the Contractor's convenience:

Woodinville Water District
17238 NE Woodinville Duval Rd.
Woodinville, WA 98072
Attn: Christian Hoffman
(425) 487-4142

Comcast
1525 75th St. SW, Suite 200
Everett, WA 98203
Attn: Parker Stewart
(425) 263-5332

Ziply Fiber (formally Frontier)
P.O. Box 1003

Puget Sound Energy (Gas)
13230 SE 32nd St.

Everett, WA 98206
Attn: Jeremiah Buxton
(503) 680-6882

Bellevue, WA 98005
Attn: Kiara Skye
(425) 213-9205

Buried Utility Location Assistance
(One Call)
1-800-424-5555

King County (Metro Sanitary Sewer)
King County LPA Program
LPA.team@kingcounty.gov
206-477-5414

(******)
It shall be the Contractor's responsibility to coordinate with all utility companies. If the Contractor is adjusting utility company's facilities where shown in the plans the Contractor shall notify the affected Utility Company prior to doing the work.

(October 3, 2022)
Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification.

Public and private utilities, or their Contractors, will furnish all work necessary to adjust, relocate, replace, or construct their facilities unless otherwise provided for in the Plans or these Special Provisions. Such adjustment, relocation, replacement, or construction will be done during the prosecution of the work for this project. It is anticipated that utility adjustment, relocation, replacement, or construction within the project limits will be completed as follows:

1. Puget Sound Energy will be relocating an electrical vault from the existing sidewalk to within the roadway limits of SR 202 between NE 175th St. and NE 177th St
2. Zayo will be removing their line off of the existing bridge and will bore it under SR 202 to connect to existing line on other side of bridge.

The Contractor shall attend a mandatory utility preconstruction meeting with the Engineer, all affected subcontractors, and all utility owners and their Contractors prior to beginning onsite work.

The following addresses and telephone numbers of utility companies or their Contractors that will be adjusting, relocating, replacing or constructing utilities within the project limits are supplied for the Contractor's use:

Puget Sound Energy (Electrical)
13230 SE 32nd St.
Bellevue, WA 98005
Attn: Kiara Skye

Zayo
604 W Meeker St #103
Kent WA 98032
Attn: Terry Cromwell
(206) 793-0637

(******)

1-07.17(3) Interruption of Service

Add the following new section:

Whenever in the course of the construction operation it becomes necessary to cause an outage of utilities, it shall be Contractor's responsibility to coordinate with the utility

company to minimize outages and provide a notice of outages a minimum of 72 hours prior to the outage. Contractor shall make reasonable effort to minimize the duration of outages and shall estimate the length of time service will be interrupted and so notify the users. In the case of any utility outage that has exceeded or will exceed four hours, user contact shall again be made.

Locations and dimensions for existing buried facilities are not shown in the plans and it is the Contractor's responsibility to locate these utilities prior to any excavation work.

1-07.18 Public Liability and Property Damage Insurance

Delete this section in its entirety, and replace it with the following:

1-07.18 Insurance
(February 17, 2026 APWA GSP)

1-07.18(1) General Requirements

A. The Contractor shall procure and maintain the insurance described in all subsections of section 1-07.18 of these Special Provisions, from insurers with a current A. M. Best rating of not less than A-: VII and licensed to do business in the State of Washington. The Contracting Agency reserves the right to approve or reject the insurance provided, based on the insurer's financial condition.

B. The Contractor shall keep this insurance in force without interruption from the commencement of the Contractor's Work through the term of the Contract and for thirty (30) days after the Physical Completion date, unless otherwise indicated below.

C. If any insurance policy is written on a claims-made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract. The policy shall state that coverage is claims made and state the retroactive date. Claims-made form coverage shall be maintained by the Contractor for a minimum of 36 months following the Completion Date or earlier termination of this Contract, and the Contractor shall annually provide the Contracting Agency with proof of renewal. If renewal of the claims made form of coverage becomes unavailable, or economically prohibitive, the Contractor shall purchase an extended reporting period ("tail") or execute another form of guarantee acceptable to the Contracting Agency to assure financial responsibility for liability for services performed.

D. The Contractor's Automobile Liability, Commercial General Liability and Excess or Umbrella Liability insurance policies shall be primary and non-contributory insurance as respects the Contracting Agency's insurance, self-insurance, or self-insured pool coverage. Any insurance, self-insurance, or self-insured pool coverage maintained by the Contracting Agency shall be excess of the Contractor's insurance and shall not contribute with it.

E. The Contractor shall provide the Contracting Agency and all additional insureds with written notice of any policy cancellation, within two business days of their receipt of such notice.

F. The Contractor shall not begin Work under the Contract until the required insurance has been obtained and approved by the Contracting Agency.

G. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Contracting Agency may, after giving five business days' notice to the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.

H. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made.

I. Under no circumstances shall a wrap up policy be obtained, for either initiating or maintaining coverage, to satisfy insurance requirements for any policy required under this Section. A **"**wrap up policy**"** is defined as an insurance agreement or arrangement under which all the parties working on a specified or designated project are insured under one policy for liability arising out of that specified or designated project**.**

1-07.18(2) Additional Insured

All insurance policies, with the exception of Workers Compensation, and of Professional Liability and Builder's Risk (if required by this Contract) shall name the following listed entities as additional insured(s) using the forms or endorsements required herein:

- the Contracting Agency and its officers, elected officials, employees, agents, and volunteers

The above-listed entities shall be additional insured(s) for the full available limits of liability maintained by the Contractor, irrespective of whether such limits maintained by the Contractor are greater than those required by this Contract, and irrespective of whether the Certificate of Insurance provided by the Contractor pursuant to 1-07.18(4) describes limits lower than those maintained by the Contractor.

For Commercial General Liability insurance coverage, the required additional insured endorsements shall be at least as broad as ISO forms CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

1-07.18(3) Subcontractors

The Contractor shall cause each subcontractor of every tier to provide insurance coverage that complies with all applicable requirements of the Contractor-provided insurance as set forth herein, except the Contractor shall have sole responsibility for determining the limits of coverage required to be obtained by subcontractors.

The Contractor shall ensure that all subcontractors of every tier add all entities listed in 1-07.18(2) as additional insureds, and provide proof of such on the policies as required by that section as detailed in 1-07.18(2) using an endorsement as least as broad as ISO CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

Upon request by the Contracting Agency, the Contractor shall forward to the Contracting Agency evidence of insurance and copies of the additional insured endorsements of each subcontractor of every tier as required in 1-07.18(4) Verification of Coverage.

1-07.18(4) Verification of Coverage

The Contractor shall deliver to the Contracting Agency a Certificate(s) of Insurance and endorsements for each policy of insurance meeting the requirements set forth herein

when the Contractor delivers the signed Contract for the Work. Failure of Contracting Agency to demand such verification of coverage with these insurance requirements or failure of Contracting Agency to identify a deficiency from the insurance documentation provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

Verification of coverage shall include:

1. An ACORD certificate or a form determined by the Contracting Agency to be equivalent.

2. Copies of all endorsements naming Contracting Agency and all other entities listed in 1-07.18(2) as additional insured(s), showing the policy number. The Contractor may submit a copy of any blanket additional insured clause from its policies instead of a separate endorsement.

3. Any other amendatory endorsements to show the coverage required herein.

4. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements – actual endorsements must be submitted.

5. All insurance coverage maintained or procured pursuant to this agreement shall be endorsed to waive subrogation against the Contracting Agency, its elected or appointed officers, agents, officials, employees, and volunteers or shall specifically allow the Contractor or others providing insurance evidence in compliance with these Specifications to waive their right of subrogation prior to a loss. The Contractor hereby waives its own right of subrogation against the Contracting Agency and shall require similar written express waivers and insurance clauses from each of its subcontractors.

Upon request by the Contracting Agency, the Contractor shall forward to the Contracting Agency a full and certified copy of the insurance policy(s). If Builders Risk insurance is required on this Project, a full and certified copy of that policy is required when the Contractor delivers the signed Contract for the Work.

1-07.18(5) Coverages and Limits

The insurance shall provide the minimum coverages and limits set forth below. Contractor's maintenance of insurance, its scope of coverage, and limits as required herein shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the Contracting Agency's recourse to any remedy available at law or in equity.

All deductibles and self-insured retentions must be disclosed and are subject to approval by the Contracting Agency. The cost of any claim payments falling within the deductible or self-insured retention shall be the responsibility of the Contractor. In the event an additional insured incurs a liability subject to any policy's deductibles or self-insured retention, said deductibles or self-insured retention shall be the responsibility of the Contractor.

1-07.18(5)A Commercial General Liability

Commercial General Liability insurance shall be written on coverage forms at least as broad as ISO occurrence form CG 00 01, including but not limited to liability arising from premises, operations, stop gap liability, independent contractors, products-completed

operations, personal and advertising injury, and liability assumed under an insured contract. There shall be no exclusion for liability arising from explosion, collapse or underground property damage.

The Commercial General Liability insurance shall be endorsed to provide a per project general aggregate limit, using ISO form CG 25 03 05 09 or an equivalent endorsement.

Contractor shall maintain Commercial General Liability Insurance arising out of the Contractor's completed operations for at least three years following Substantial Completion of the Work.

Such policy must provide the following minimum limits:

$2,000,000	Each Occurrence
$3,000,000	General Aggregate
$3,000,000	Products & Completed Operations Aggregate
$2,000,000	Personal & Advertising Injury each offence
$2,000,000	Stop Gap / Employers' Liability each accident

1-07.18(5)B Automobile Liability

Automobile Liability shall cover owned, non-owned, hired, and leased vehicles; and shall be written on a coverage form at least as broad as ISO form CA 00 01. If the Work involves the transport of pollutants, the automobile liability policy shall include MCS 90 and CA 99 48 endorsements.

Such policy must provide the following minimum limit:

$1,000,000	Combined single limit each accident

1-07.18(5)C Workers' Compensation

The Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

1-07.24 Rights of Way

(April 22, 2025 APWA GSP)

Delete this section and replace it with the following:

Street Right of Way lines, limits of easements, and limits of construction permits are indicated in the Plans. The Contractor's construction activities shall be confined within these limits unless arrangements for use of private property are made as described below.

Generally, the Contracting Agency will have obtained, prior to bid opening, all rights of way and easements, both permanent and temporary, necessary for carrying out the work. Exceptions to this are noted in the Bid Documents or will be brought to the Contractor's attention by a duly issued Addendum.

Whenever any of the work is accomplished on or through property other than public Right of Way, the Contractor shall meet and fulfill all covenants and stipulations of any easement agreement obtained by the Contracting Agency from the owner of the private property. Copies of the easement agreements may be included in the Contract Provisions or made available to the Contractor as soon as practical after they have been obtained by the Engineer.

Whenever easements or rights of entry have not been acquired prior to advertising, these areas are so noted in the Plans. The Contractor shall not proceed with any portion of the work in areas where right of way, easements or rights of entry have not been acquired until the Engineer certifies to the Contractor that the right of way or easement is available or that the right of entry has been received. If the Contractor is delayed due to acts of omission on the part of the Contracting Agency in obtaining easements, rights of entry or right of way, the Contractor will be entitled to an extension of time. The Contractor agrees that such delay shall not be a breach of contract.

Each property owner shall be given 48 hours' notice prior to entry by the Contractor. This includes entry onto easements and private property where private improvements must be adjusted.

The Contractor shall be responsible for providing, without expense or liability to the Contracting Agency, any additional land and access thereto that the Contractor may desire for temporary construction facilities, storage of materials, or other Contractor needs. However, before using any private property, whether adjoining the work or not, the Contractor shall file with the Engineer a written permission of the private property owner, and, upon vacating the premises, a written release from the property owner of each property disturbed or otherwise interfered with by reasons of construction pursued under this contract. The statement shall be signed by the private property owner, or proper authority acting for the owner of the private property affected, stating that permission has been granted to use the property and all necessary permits have been obtained or, in the case of a release, that the restoration of the property has been satisfactorily accomplished. The statement shall include the parcel number, address, and date of signature. Written releases must be filed with the Engineer before the Completion Date will be established.

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0 Preliminary Matters

(May 25, 2006 APWA GSP)

Add the following new section:

1-08.0(1) Preconstruction Conference

(October 21, 2025 APWA GSP)

Prior to the Contractor beginning the work, a preconstruction conference will be held between the Contractor, the Engineer and such other interested parties as may be invited. The purpose of the preconstruction conference will be:

1. To review the initial progress schedule;
2. To establish a working understanding among the various parties associated or affected by the work;
3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.;
4. To review Training or Apprenticeship Plans, when applicable.
5. To discuss FSBE Goals when applicable.
6. To establish normal working hours for the work;

7. To review safety standards and traffic control; and
8. To discuss such other related items as may be pertinent to the work.

The Contractor shall prepare and submit at the preconstruction conference the following:

1. A breakdown of all lump sum items;
2. A preliminary schedule of working drawing submittals; and
3. A list of material sources for approval if applicable

(******)
A plan showing the location of proposed retaining wall settlement monitoring points as specified Section 1-05.4.

1-08.1 Subcontracting

(December 30, 2022 APWA GSP, Option A)

Section 1-08.1 is supplemented with the following:

Prior to any subcontractor or lower tier subcontractor beginning work, the Contractor shall submit to the Engineer a certification (WSDOT Form 420-004) that a written agreement between the Contractor and the subcontractor or between the subcontractor and any lower tier subcontractor has been executed. This certification shall also guarantee that these subcontract agreements include all the documents required by the Special Provision Federal Agency Inspection.

A subcontractor or lower tier subcontractor will not be permitted to perform any work under the contract until the following documents have been completed and submitted to the Engineer:

1. Request to Sublet Work (WSDOT Form 421-012), and
2. Contractor and Subcontractor or Lower Tier Subcontractor Certification for Federal-aid Projects (WSDOT Form 420-004).

The Contractor shall submit to the Engineer a completed Monthly Retainage Report (WSDOT Form 272-065) within 15 calendar days after receipt of every monthly progress payment until every subcontractor and lower tier subcontractor’s retainage has been released.

The Contractor's records pertaining to the requirements of this Special Provision shall be open to inspection or audit by representatives of the Contracting Agency during the life of the contract and for a period of not less than three years after the date of acceptance of the contract. The Contractor shall retain these records for that period. The Contractor shall also guarantee that these records of all subcontractors and lower tier subcontractors shall be available and open to similar inspection or audit for the same time period.

1-08.1(1) General

(February 17, 2026 APWA GSP)

Delete the first paragraph, and replace it with the following:

For purposes of this Section, all Work that is not self-performed by the Contractor will be considered as subcontracting except the following, hereinafter referred to as materials supplying: (1) when purchased directly by the Contractor - sand, gravel, crushed stone, crushed slag, batched concrete aggregates, ready-mix concrete, off-site fabricated structural steel, other off-site fabricated items, and any other materials supplied by established and recognized commercial plants; or (2) delivery of these materials to the Work site in vehicles owned or operated by such plants or by recognized independent or commercial hauling companies hired by those commercial plants; or (3) the presence of a uniformed law enforcement officer and marked law enforcement vehicle.

(November 4, 2024)
Each request to subcontract shall

1-08.1(7) Payments to Subcontractors and Lower-Tier Subcontractors

1-08.1(7)A Payment Reporting
Section 1-08(7)A is revised to read:

(March 9, 2026)
The Contractor shall report the actual amounts paid to all firms that were used as subcontractors of any tier, materials suppliers, manufacturers, regular dealers, or service providers on the Contract including all Disadvantaged, Minority, Small, Veteran, or Women's Business Enterprise firms. The following do not need reported: (1) retail sales or services that are paid for at the time of purchase; (2) payments to materials suppliers or manufacturers that are in normal course of business unless it is to a Disadvantaged, Minority, Small, Veteran, or Women's Business Enterprise firm in accordance with Section 1-07.11. The Contractor shall report this information by entering it into the Contracting Agency's Diversity Management and Compliance System at: https://wsdot.diversitycompliance.com. Payments shall be reported no later than the 20th of the month for all payments made to firms the previous calendar month. For example, the Contractor shall enter all payments made to firms during the month of March into DMCS by April 20th. Payments shall be reported between execution of the Contract and the Contract Completion Date. When no Work occurred or no payments were made for a firm, the reported payment shall be zero.

The Contractor shall require all recipients of such payments to use DMCS to acknowledge their receipt of payment.

1-08.1(8)B Clauses Required in Subcontracts of All Tiers
(November 25, 2024 APWA GSP)
Delete item 8 of the second paragraph of Section 1-08.1(8)B.

1-08.1(9) Submittal of Executed Subcontracts

(April 22, 2025 APWA GSP, Option B)

Section 1-08.1(9) content and title are deleted and replaced with the following:

Vacant

(******)

1-08.3 Progress Schedule

Supplement this section with the following:

The Contractor shall notify Woodinville Water District a minimum of ten days in advance of contemplated construction to allow for coordination of the project.

At least ten days prior to beginning any sanitary sewer system construction, the Contractor shall submit a construction plan and schedule for the sanitary sewer main work to the Woodinville Water District for review and approval. The construction plan shall follow the construction sequence shown on the plans and shall address the Contractor's proposed method of mainline construction phasing and connection to the existing system. Sanitary sewer system work shall be coordinated as necessary with the City's construction.

1-08.3(2)A Type A Progress Schedule

Revise this section to read:

(******)

The Contractor shall submit 5 hard copies and one digital copy of a Type A Progress Schedule no later than at the preconstruction conference, or some other mutually agreed upon submittal time. The schedule may be a critical path method (CPM) schedule, bar chart, or other standard schedule format. Regardless of which format is used, the schedule shall identify the critical path. The Engineer will evaluate the Type A Progress Schedule and accept or return the schedule for corrections within 15 calendar days of receiving the submittal.

1-08.4 Prosecution of Work

Delete this section and replace it with the following:

1-08.4 Notice to Proceed and Prosecution of Work

(February 17, 2026 APWA GSP)

Notice to Proceed will be given after the Contract has been executed and the contract bond and evidence of insurance have been approved and filed by the Contracting Agency. The Contractor shall not commence with the Work until the Notice to Proceed has been given by the Engineer. The Contractor shall commence construction activities on the project site within ten days of the Notice to Proceed Date, unless otherwise approved in writing. The Contractor shall diligently pursue the Work to the Physical Completion Date within the time specified in the Contract. Voluntary shutdown or slowing of operations by the Contractor shall not relieve the Contractor of the responsibility to complete the Work within the time(s) specified in the Contract.

When shown in the Plans, the first order of Work shall be the installation of high visibility fencing to delineate all areas for protection or restoration, as described in the Contract.

Installation of high visibility fencing adjacent to the roadway shall occur after the placement of all necessary signs and traffic control devices in accordance with 2-04.3. Upon construction of the fencing, the Contractor shall request the Engineer to inspect the fence. No other Work shall be performed on the site until the Contracting Agency has accepted the installation of high visibility fencing, as described in the Contract.

(******)
If the Contractor wants to work on Woodinville Water District's (WWD) portion of work (sanitary sewer system) on a non-working day, Contractor must first coordinate with the WWD a minimum of four (4) working days in advance in order to schedule inspection coverage. The Contractor shall not work on the District's portion of work on District observed holidays.

1-08.5 Time for Completion

Section 1-08.5 is supplemented with the following:

(March 13, 1995)
This project shall be physically completed within 260 working days.

(February 17, 2026 APWA GSP, Option A)

Revise the third and fourth paragraphs to read:

Contract time shall begin on the first working day following the Notice to Proceed Date.

Each working day shall be charged to the Contract as it occurs, until the Contract Work is physically complete. If substantial completion has been granted and all the authorized working days have been used, charging of working days will cease. Each week the Engineer will provide the Contractor a statement that shows the number of working days: (1) charged to the Contract the week before; (2) specified for the physical completion of the Contract; and (3) remaining for the physical completion of the Contract. The statement will also show the nonworking days and all partial or whole days the Engineer declares as unworkable. The statement will be identified as a Written Determination by the Engineer. If the Contractor does not agree with the Written Determination of working days, the Contractor shall pursue the protest procedures in accordance with Section 1-04.5. By failing to follow the procedures of Section 1-04.5, the Contractor shall be deemed as having accepted the statement as correct. If the Contractor is approved to work 10 hours a day and 4 days a week (a 4-10 schedule) and the fifth day of the week in which a 4-10 shift is worked would ordinarily be charged as a working day then the fifth day of that week will be charged as a working day whether or not the Contractor works on that day.

Revise the sixth paragraph to read:

The Engineer will give the Contractor written notice of the Completion Date of the Contract after all the Contractor’s obligations under the Contract have been performed by the Contractor. The following events must occur before the Completion Date can be established:

1. The physical Work on the project must be complete; and

2. The Contractor must furnish all documentation required by the Contract and required by law, to allow the Contracting Agency to process final acceptance of the Contract. The following documents must be received by the Engineer prior to establishing a completion date:
    a. Certified Payrolls (per Section 1-07.9(5)).
    b. Material Acceptance Certification Documents
    c. Monthly Reports in DMCS of the amounts paid including the final payment confirmation to all firms required by Section 1-08.1(7)A if applicable
    d. Final Contract Voucher Certification
    e. Copies of the approved "Affidavit of Prevailing Wages Paid" for the Contractor and all subcontractors
    f. A copy of the Notice of Termination sent to the Washington State Department of Ecology (Ecology); the elapse of 30 calendar days from the date of receipt of the Notice of Termination by Ecology; and no rejection of the Notice of Termination by Ecology. This requirement will not apply if the Construction Stormwater General Permit is transferred back to the Contracting Agency in accordance with Section 8-01.3(16).
    g. Property owner releases per Section 1-07.24

1-08.9 Liquidated Damages

(February 17, 2026 APWA GSP, Option A)

Replace Section 1-08.9 with the following:

Time is of the essence of the Contract. Delays inconvenience the traveling public, obstruct traffic, interfere with and delay commerce, and increase risk to Highway users. Delays also cost tax payers undue sums of money, adding time needed for administration, engineering, inspection, and supervision.

Accordingly, the Contractor agrees:

1. To pay liquidated damages in the amount of $8,100.00 for each working day beyond the number of working days established for Physical Completion, and

2. To authorize the Engineer to deduct these liquidated damages from any money due or coming due to the Contractor.

When the Contract Work has progressed to Substantial Completion as defined in the Contract, the Engineer may determine the Contract Work is Substantially Complete. The Engineer will notify the Contractor in writing of the Substantial Completion Date. For overruns in Contract time occurring after the date so established, liquidated damages identified above will not apply. For overruns in Contract time occurring after the Substantial Completion Date, liquidated damages shall be assessed on the basis of direct engineering and related costs assignable to the project until the actual Physical Completion Date of all the Contract Work. The Contractor shall complete the remaining Work as promptly as possible. Upon request by the Engineer, the Contractor shall furnish a written schedule for completing the physical Work on the Contract.

Liquidated damages will not be assessed for any days for which an extension of time is granted. No deduction or payment of liquidated damages will, in any degree, release the Contractor from further obligations and liabilities to complete the entire Contract.

1-09 MEASUREMENT AND PAYMENT

1-09.2 Weighing Equipment

1-09.2(1) General Requirements for Weighing Equipment

(November 25, 2024 APWA GSP, Option B)

Revise item 4 of the fifth paragraph to read:

4. Test results and scale weight records for each day's hauling operations are provided to the Engineer daily. Reporting shall utilize WSDOT form 422-027LP, Scaleman's Daily Report, unless the printed ticket contains the same information that is on the Scaleman's Daily Report Form. The scale operator must provide AM and/or PM tare weights for each truck on the printed ticket.

(July 8, 2024.APWA GSP, Option C)

Revise the sixth and seventh paragraph to read:

Trucks and Tickets – Each truck to be weighed shall bear a unique identification number. This number shall be legible and in plain view of the scale operator. The Contractor shall provide Electronic tickets or Physical tickets for all weighed materials. All Tickets shall, regardless of medium, at a minimum, contain the following information:

1. Date of haul;
2. Contract number;
3. Contract unit Bid item;
4. Unit of measure;
5. Identification number of hauling vehicle; and
6. Weight delivered:
    a. Net weight in the case of batch and hopper scales.
    b. Gross weight, tare (a.m. and p.m. minimum) and net weight in the case of platform scales (tare may be omitted if a tare beam is used).
    c. Approximate load out weight in the case of belt conveyor scales.

Electronic-tickets shall be uploaded to the designated site so that they can be accessed by the material receiver at the material delivery point. Physical tickets shall be handed to the inspector at the delivery point at the time materials are delivered. The material delivery point is defined as the location where the material is incorporated into the permanent Work. The Contractor's representative shall make report summaries available to the Engineer's designated receiver, not later than the end of shift, for reconciliation. Tickets for loads not verified as delivered will receive no pay.

1-09.2(5) Measurement
(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

Scale Verification Checks – At the Engineer's discretion, the Engineer may perform verification checks on the accuracy of each batch, hopper, or platform scale used in weighing contract items of Work.

1-09.3 Scope of Payment
Section 1-09.3 is supplemented with the following:

(******)
Steel Cost Adjustment
The Contractor may elect to participate in the steel cost adjustments for work permanently incorporated into this Contract. Steel cost adjustment is not a guarantee of full compensation for changes to the cost of steel items; not eligible for all items with steel; and any adjustment provided by this provision will not obligate the Contracting Agency for any costs beyond the amount adjusted by this provision.

This Special Provision provides the option to opt-in to steel cost adjustments for eligible Bid items. The Contractor is provided one opportunity to opt-in and there are no future opt-out provisions. The steel cost adjustment requirements of this Special Provision apply for the duration of the Contract.

General
The Contractor may select Bid items from the list below to be included in the steel cost adjustment. The Contractor is not obligated to select any Bid items or to participate in the steel cost adjustment program. The steel cost adjustment will apply only to the Bid items selected by the Contractor.

Prior to Contract execution the Contractor shall submit the Steel Cost Adjustment Opt-In Bid Item List, WSDOT Form 410-031LP. The form is to be submitted to City of Woodinville, Chista Kouretchian, located at 17301 133rd Ave. NE, Woodinville WA 98072 or may be submitted by facsimile to the following FAX number, (425) 489-2705. The Steel Cost Adjustment Opt-In Bid Item List shall be signed by an authorized representative of the Contractor. Should the Contractor fail to return this document as required no Bid items will be eligible for steel cost adjustment.

Steel Index Values
The Contracting Agency will use the Bureau of Labor Statistics (BLS) producer price index (PPI) series Id: WPUSISTEEL1 index value for steel cost adjustments.

The Base Steel Materials Index Value (BV) will be the most recent value published on the BLS website on the day of bid opening. This value will be fixed on the day of bid opening even if the BLS lists this as a preliminary value. The Monthly Steel Materials Index Value (MV) will be the final index value published on the BLS website for any month during the Contract.

Measurement

The Contracting Agency has determined the initial cost basis (ICB) of steel to be $0.40/lb. This cost basis is reflected in the steel cost adjustment calculations below, is non-negotiable and will be taken as a fixed value for the duration of the Contract.

For each month that steel material is incorporated into the permanent Work of the Contract or paid for as Materials on Hand and the MV is more than 110 percent or less than 90 percent of the BV the Contractor shall provide the Engineer with the following for each eligible Bid item by the end of the following month:

1. The weight of steel material for the month, and

2. Documentation of the weight and shipment to the Contractor of the steel material by bills of lading, invoices, or purchase orders.

Should the Contractor not provide the required documentation as specified the following shall apply:

1. Steel material that has an MV that is more than 110 percent of the BV will not be eligible for a steel cost adjustment.

2. The steel cost adjustment for a Bid item with an MV that is less than 90 percent of the BV will be calculated using a weight of steel determined by the Engineer.

Steel materials will not be eligible for cost adjustments until all requirements of the Contract have been met. Steel added to a Contract as part of a Value Engineering Change Proposal will not be eligible for steel cost adjustment. Steel cost adjustments made in accordance with this Special Provision will not be reflected on payments made to the Contractor until after the index value required for the calculation becomes final. Preliminary index values may be used to establish the BV, but will not be used to establish the MV in calculations.

For each Bid Item selected by the Contractor on the Steel Cost Adjustment Opt-In Bid Item List form a cost adjustment evaluation will be made. A cost adjustment will only be made if the MV for the month the Work associated with the Bid Item is performed differs by more than ten-percent from the BV.

The steel cost adjustment will be determined as follows:

1. If the MV is within ten-percent of the BV, there will be no adjustment.

2. If the MV is more than 110-percent of the BV, then

$$CA = (((MV - BV) \div BV) - 0.10) \times (ICB \times WS)$$

3. If the MV is less than 90-percent of the BV, then

$$CA = (((MV - BV) \div BV) + 0.10) \times (ICB \times WS)$$

Where:

CA = Cost Adjustment, dollars
MV = Monthly Steel Materials Index Value from BLS for the month determined above
BV = Base Steel Materials Index Value taken as the most recent value published on the BLS website on the day of bid opening.
ICB = Initial Cost Basis of steel per pound
WS = Weight of steel (in pounds) eligible for cost adjustment

The following Bid Items are eligible for the steel cost adjustment program for this Project:

"Steel Reinforcing Bar for Bridge"
"Superstructure"
"Constructing 5 Ft Diam Shafts"
"Furnishing Soldier Pile W18x211"

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

"Steel Cost Adjustment", by calculation.

To provide a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the Contractor's total bid.

1-09.6 Force Account
(December 30, 2022 APWA GSP)

Supplement this section with the following:

The Contracting Agency has estimated and included in the Proposal, dollar amounts for all items to be paid per force account, only to provide a common proposal for Bidders. All such dollar amounts are to become a part of Contractor's total bid. However, the Contracting Agency does not warrant expressly or by implication, that the actual amount of work will correspond with those estimates. Payment will be made on the basis of the amount of work actually authorized by the Engineer.

1-09.8 Payment For Material On Hand

The last paragraph of Section 1-09.8 is revised to read:

(August 3, 2009)
The Contracting Agency will not pay for material on hand when the invoice cost is less than $2,000. As materials are used in the work, credits equaling the partial payments for them will be taken on future estimates. Each month, no later than the estimate due date, the Contractor shall submit a letter to the Engineer that clearly states: 1) the amount originally paid on the invoice (or other record of production cost) for the items on hand, 2) the dollar amount of the material incorporated into each of the various work items for the month, and 3) the amount that should be retained in material on hand items. If work is performed on the items and the Contractor does not submit a letter, all of the previous material on hand payment will be deducted on the estimate. Partial payment for materials on hand shall not constitute acceptance. Any material will be rejected if found to be faulty even if partial payment for it has been made.

1-09.9 Payments

(February 17, 2026 APWA GSP, Option B)

Delete the fourth paragraph and replace it with the following:

Progress payments for completed Work and material on hand will be based upon progress estimates prepared by the Engineer. A progress estimate cutoff date will be established at the preconstruction conference.

The initial progress estimate will be made not later than 30 days after the Contractor commences the Work, and successive progress estimates will be made every month thereafter until the Completion Date. Progress estimates made during progress of the Work are tentative, and made only for the purpose of determining progress payment. The progress estimates are subject to change at any time prior to the calculation of the Final Payment.

The value of the progress estimate will be the sum of the following:

1. Unit Price Items in the Bid Form — the approximate quantity of acceptable units of Work completed multiplied by the unit price.
2. Lump Sum Items in the Bid Form — based on the approved Contractor's lump sum breakdown for that item, or absent such a breakdown, based on the Engineer's determination.
3. Materials on Hand — 100 percent of invoiced cost of material delivered to Job site or other storage area approved by the Engineer.
4. Change Orders — entitlement for approved extra cost or completed extra Work as determined by the Engineer.

Progress payments will be made in accordance with the progress estimate less:

1. Retainage per Section 1-09.9(1), on non FHWA-funded projects;
2. The amount of Progress Payments previously made; and
3. Funds withheld by the Contracting Agency for disbursement in accordance with the Contract Documents.

Progress payments for Work performed shall not be evidence of acceptable performance or an admission by the Contracting Agency that any Work has been satisfactorily completed. The determination of payments under the Contract will be final in accordance with Section 1-05.1.

The sixth paragraph of Section 1-09.9 is deleted.

1-09.9(1) Retainage

Section 1-09.9(1) including title is deleted and replaced with the following:

(June 27, 2011)
Vacant

1-09.11 Disputes and Claims

1-09.11(3) Time Limitation and Jurisdiction

(December 30, 2022 APWA GSP)

Revise this section to read*:*

For the convenience of the parties to the Contract it is mutually agreed by the parties that all claims or causes of action which the Contractor has against the Contracting Agency arising from the Contract shall be brought within 180 calendar days from the date of final acceptance (Section 1-05.12) of the Contract by the Contracting Agency; and it is further agreed that all such claims or causes of action shall be brought only in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction. The parties understand and agree that the Contractor's failure to bring suit within the time period provided, shall be a complete bar to all such claims or causes of action. It is further mutually agreed by the parties that when claims or causes of action which the Contractor asserts against the Contracting Agency arising from the Contract are filed with the Contracting Agency or initiated in court, the Contractor shall permit the Contracting Agency to have timely access to all records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.
action.

1-09.13 Claims Resolution

1-09.13(3)A Arbitration General

(January 19, 2022 APWA GSP)

Revise the third paragraph to read:

The Contracting Agency and the Contractor mutually agree to be bound by the decision of the arbitrator, and judgment upon the award rendered by the arbitrator may be entered in the Superior Court of the county in which the Contracting Agency's headquarters is located, provided that where claims subject to arbitration are asserted against a county, RCW 36.01.050 shall control venue and jurisdiction of the Superior Court. The decision of the arbitrator and the specific basis for the decision shall be in writing. The arbitrator shall use the Contract as a basis for decisions.

1-09.13(4) Venue for Litigation

(December 30, 2022 APWA GSP)

Revise this section to read:

Litigation shall be brought in the Superior Court of the county in which the Contracting Agency's headquarters is located, provided that where claims are asserted against a county, RCW 36.01.050 shall control venue and jurisdiction of the Superior Court. It is mutually agreed by the parties that when litigation occurs, the Contractor shall permit the Contracting Agency to have timely access to all records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

END OF DIVISON 1

Division 2
Temporary Features

2-01 Mobilization

(February 17, 2026 APWA GSP)

Delete Section 2-01 and replace it with the following:

2-01.1 Description

This Work consists of operations and preparatory Work necessary to become ready to perform the Work or an item of Work.

2-01.3 Construction Requirements

Mobilization consists of preconstruction expenses and the costs of preparatory Work and operations performed by the Contractor typically occurring before 10 percent of the total original amount of an individual Bid Schedule is earned from other Contract items on that Bid Schedule. Items which are not to be included in the item of Mobilization include but are not limited to:

1. Portions of the Work covered by the specific Contract item or incidental Work which is to be included in a Contract item or items.
2. Profit, interest on borrowed money, overhead, or management costs.
3. Costs incurred for mobilizing equipment for force account Work.

2-01.5 Payment

Payment will be by lump sum as “Mobilization”.

Based on the lump sum Contract price for “Mobilization”, partial payments will be made as follows:

1. When 5 percent of the total original Bid Schedule amount is earned from other Contract items on that original Bid Schedule, excluding amounts paid for materials on hand, 50 percent of the Bid Item for mobilization on that original Bid Schedule, 5 percent of the total of that original Bid Schedule, or 5 percent of the total original Contract amount, whichever is the least, will be paid.
2. When 10 percent of the total original Bid Schedule amount is earned from other Contract items on that original Bid Schedule, excluding amounts paid for materials on hand, 100 percent of the Bid Item for mobilization on that original Bid Schedule, 10 percent of the total of that original Bid Schedule, or 10 percent of the total original Contract amount, whichever is the least, will be paid.
3. When the Substantial Completion Date has been established for the project, payment of any remaining amount Bid for mobilization will be paid.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the Contract.

2-03 PUBLIC CONVENIENCE AND SAFETY

2-03.3(1) Construction Under Traffic

Section 2-03.3(1) is supplemented with the following:

(November 4, 2024)
Lane, ramp, shoulder, and roadway closures are only permitted as follows:

- Contractor can have nightly road closures if preapproved by the Engineer and the traffic detour route is installed prior to closure. Road closure hours are from 9:00 pm to 5:00 am.
- Contractor can have weekend closures when preapproved by the Engineer. Weekend closure will be permitted as shown in the construction staging plans. Weekend closure hours are from Friday 9:00 pm to Monday 5:00 am.
- Local Access must be maintained at all times except during asphalt curing periods. Contractor shall give businesses 5 day's notice prior to limiting access to their property. The notice shall give the day and time frame (not to exceed 8 hours) that there will be no access to their property to allow the asphalt to cure. The notice shall be hand delivered or overnighted to each business 5 days prior to the closure. Contractor to send proof of delivery via texted photo to the Inspector.
- Contractor shall return all lanes to normal operations at the end of each working day or provide temporary pavement markings and/or signal detection along with traffic control devices. Tape may be used for temporary pavement markings. Contractor shall maintain the temporary pavement markings throughout construction and repair and replace immediately at his own expense.
- Contractor shall return all sidewalks to normal operations at the end of each working day unless a pedestrian detour is set up by the Contractor.
- See Traffic Control Plans for additional restrictions.
- Contractor shall have open a minimum of 2 lanes in each direction open from 6:00 am to 7:00 pm every day except during closures.
- Contractor will be allowed to work nights with prior approval from the Engineer.
- Contractor shall install a portable message signs as shown in the Detour plans.

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 12:00 noon on the day prior to a holiday or holiday weekend, and
4. Before 8:00 a.m. 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:

    - Annual Seafair Hydroplane Race Weekend
      Friday 11:59 a.m. to Sunday 8:00 p.m.

Miscellaneous Special Events – The two-hour period prior to and the two-hour period after the following miscellaneous events:

January	Stinky Spokes, Weddings in Woodinville
May	Seattle Tour De Cure Farmers Market 7 Hills of Kirkland
June	Wine Ride
June/July/August	Celebrate Woodinville Summer Concerts in the Park Chateau Ste. Michelle Summer Concert Series
July	Cystic Fibrosis Cycle for Life Northwest Tandem Rally Potlatch 2017 Dinner 20 Corners Brewing
August	Celebrate Woodinville Summer Festival RAW: Ride Around Washington RSVP 1 & 2: Ride Seattle to Vancouver (BC) Columbia Winery Charity Run/Walk Gigantic Century Ride to Conquer Cancer Skate Board Competition Auction of Washington Wineries
September	Labor Day Half and 4k Susan G Koment 3-Day for the Cure MayaRides Cycle the Wave Craft Classic

November	Turkey Trot
December	Tree Lighting
	Winterfest 5k
	Winterfest Santa Photo

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.

If the delay becomes greater than 5 minutes, the Contractor shall immediately begin to take action to cease the operations that are causing the delays. If the 5 minute delay limit has been exceeded, as determined by the Engineer, the Contractor shall provide to the Engineer, a written proposal to revise their work operations to meet the 5 minute limit. This proposal shall be accepted by the Engineer prior to resuming any work requiring traffic control.

There shall be no delay to medical, fire, or other emergency vehicles. The Contractor shall alert all flaggers and personnel of this requirement.

General Restrictions

Construction vehicles using a closed traffic lane shall travel only in the normal direction of traffic flow unless expressly allowed in an accepted traffic control plan. Construction vehicles shall be equipped with flashing or rotating amber lights.

No two consecutive on-ramps, off-ramps, or intersections shall be closed at the same time and only one ramp at an interchange shall be closed, unless specifically shown in the Plans.

Roads or ramps that are designated as part of a detour shall not be closed or restricted during the implementation of that detour, unless specifically shown in the Plans.

Controlled Access

No special access or egress shall be allowed by the Contractor other than normal legal movements or as shown in the Plans.

Contractor's vehicles of 10,000 GVW or greater shall not exit or enter a lane open to public traffic except as follows:

Egress and ingress shall only occur during the hours of allowable lane closures, and:

1. For exiting an open lane of traffic, by decelerating in a lane that is closed during the allowable hours for lane closures.

2. For entering an open lane of traffic, by accelerating in a closed lane during the allowable hours for lane closures.

Traffic control vehicles are excluded from the gross vehicle weight requirement. If placing construction signs will restrict traveled lanes, then the work will be permitted during the hours of allowable lane closures.

Advance Notification

The Contractor shall notify the Engineer in writing of any traffic impacts related to lane closure, shoulder closure, sidewalk closure, or any combination for the week by 12:00 p.m. (noon) Wednesday the week prior to the stated impacts.

The Contractor shall notify the Engineer in writing ten working days in advance of any traffic impacts related to full roadway closure, ramp closure, or both.

The Contractor shall notify the Engineer in writing of any changes to the stated traffic impacts a minimum of 48 hours prior to the traffic impacts.

(October 3, 2022)

Public Notification

The Contractor shall furnish and install information signs that provide advance notification of a ramp closure, roadway closure, or both, a minimum of seven (7) working days prior to the closure. Sign locations, messages, letter sizes, and sign sizes are shown in the Plans.

The Contractor shall notify affected businesses, City of Woodinville, WSDOT, local fire/police/emergency services, school districts, Sound Transit, Metro Transit and all other affected agencies in writing, a minimum of 10 working days prior to each closure. The Contractor shall furnish copies of these notifications to the Engineer.

(September 3, 2024)

If July 4 occurs on a Tuesday, the prior Monday is considered to be part of a holiday weekend. If July 4 occurs on a Thursday, the following Friday is considered to be part of a holiday weekend.

(******)

Parcel 726910-0085 (Pep Boys)

The Contractor shall notify the business 15 days in advance prior to entering the Temporary Easement, including entering their property to remove the existing business sign and wood arbor. Contractor shall not enter or use the business parcel unless preapproved by the Engineer.

2-04 TEMPORARY TRAFFIC CONTROL

2-04.2 Materials

Construction Signs

Section 9-35.2 is revised to read:

(January 5, 2026)

Construction signs shall conform to the requirements of the MUTCD and shall meet the requirements of NCHRP Report 350 for Category 2 devices or MASH. Except as noted below, any sign/sign stand combination that satisfies these requirements will be acceptable. Post mounted Class A construction signs shall conform to the requirements of this section and additionally shall conform to the requirements stated in Section 9-28.

Aluminum sheeting shall be used to fabricate all construction signs. The signs shall have a minimum thickness of 0.080 inches and a maximum thickness of 0.125 inches.

All construction signs shall be fabricated with reflective sheeting in accordance with Section 9-28.12. All post mounted signs shall use a nylon washer between the twist fasteners (screw heads, bolts or nuts) and the reflective sheeting.

The use of plywood, fiberglass reinforced plastic, fabric rollup signs, and any other previously approved sign materials except aluminum or aluminum composite is prohibited.

All Class A and Class B signs shall utilize materials and be fabricated in accordance with Section 9-28 and the Washington State Sign Fabrication Manual M 55-05. A fabrication decal as stated in Section 9-28.1 is not required for construction signs.

Barricades

Section 9-35.6 is revised to read:

(January 5, 2026)
Barricades shall conform to the requirements of the MUTCD. The alternating orange and white reflective bands shall be fabricated with reflective sheeting in accordance with Section 9-28.12.

Traffic Safety Drums

The third and fourth paragraphs of Section 9-35.7 are revised to read:

(January 5, 2026)
Until December 31, 2026, traffic safety drums may have 4-inch or 6-inch reflective bands fabricated from Type III or Type IV or higher sheeting type as described in Section 9-28.12.

Beginning January 1, 2027, traffic safety drums shall have 6-inch reflective bands. A minimum of 4 reflective horizontal bands, alternating fluorescent orange and white starting with the top stripe being fluorescent orange, shall be used. Reflective bands shall be fabricated from Type IV or higher (reflective sheeting as described in Section 9-28.12. Drums of different reflective band types shall not be intermixed within the same closure. When recommended by the manufacturer, drums shall be treated to ensure proper adhesion of the reflective sheeting.

Traffic Cones

The last paragraph of Section 9-35.9 is revised to read:

(January 5, 2026)
White reflective bands shall be fabricated with reflective sheeting in accordance with Section 9-28.12

Tubular Markers

The last paragraph of Section 9-35.10 is revised to read:

(January 5, 2026)

White reflective bands shall be fabricated with reflective sheeting in accordance with Section 9-28.12. When recommended by the manufacturer, tubular markers shall be treated to ensure proper adhesion of the reflective sheeting.

Transportable Attenuator

The last paragraph of Section 9-35.12 is revised to read:

(January 5, 2026)
The transportable attenuator shall have a chevron pattern on the rear of the unit. The pattern shall consist of 4-inch to 8-inch alternating nonreflective black and reflective yellow or alternating reflective red and white sheeting, slanted at 45 degrees in an inverted “V” with the “V” at the center of the unit. Reflective sheeting shall be in accordance with Section 9-28.12.

42-Inch Tall Channelizing Devices

The third and fourth paragraphs of Section 9-35.13 are revised to read:

(January 5, 2026)
Until December 31, 2026, 42-inch tall channelization devices may have 4-inch or 6-inch reflective bands fabricated from Type III or Type IV or higher sheeting type as described in Section 9-28.12.

Beginning January 1, 2027, 42-inch tall channelization devices shall have 6-inch reflective bands. A minimum of 4 reflective horizontal bands, alternating fluorescent orange and white starting with the top stripe being fluorescent orange, shall be used. Reflective bands shall be fabricated from Type IV or higher IV (reflective sheeting as described in Section 9-28.12. 42-inch tall channelization devices of different reflective band types shall not be intermixed within the same closure. When recommended by the manufacturer, 42-inch tall channelization devices shall be treated to ensure proper adhesion of the reflective sheeting.

Pedestrian Channelizing Devices

Section 9-35.16 is revised to read:

(January 5, 2026)
When exposed to vehicular traffic, pedestrian channelizing devices shall meet the crashworthiness requirements of NCHRP 350 or MASH as described in Section 2-04.3(3). The bottom and top surfaces of the pedestrian channelizing device shall have

6-inch reflective bands matching the body color of the device fabricated from reflective sheeting as described in Section 9-28.12.**2-04.3 Construction Requirements**

Section 2-04.3 is supplemented with the following:

(******)

Temporary Video Detection

The Contractor shall supply the following materials for the *** Temporary Video Detection *** system:

Description	Quantity
Video Detection Cameras	7 EA
Camera Attachment Brackets	7 EA
Video Image Processors	7 EA
Video Splice Enclosures	7 EA

Contractor shall coordinate with WSDOT Signal Maintenance, Alex Mathews @ 206-555-2457 two (2) weeks prior to turning on temporary video detection

(******)

Temporary ADA Ramp

The Contractor shall provide temporary ADA Ramps where shown in the plans. The ramps must be made of a solid surface and meet WSDOT Standard Plan F-40.12, F-40.14, F-40.15 or F-40.16.

2-04.3(1) Traffic Control Management

Section 2-04.3(1) is supplemented with the following:

(March 9, 2026)

The Traffic Control Supervisor shall be certified by one of the following:

The American Traffic Safety Services Association
15 Riverside Parkway, Suite 100
Fredericksburg, Virginia 22406-1022
Training Dept. Toll Free (877) 642-4637
Phone: (540) 368-1701
https://atssa.com/training

Evergreen Safety Council
12545 135th Ave. NE
Kirkland, WA 98034-8709
1-800-521-0778
https://www.esc.org

Integrity Safety
13912 NE 20th Ave.
Vancouver, WA 98686
(360) 574-6071
https://www.integritysafety.com

K&D Services Inc.
2719 Rockefeller Ave.
Everett, WA 98201
(800) 343-4049
https://www.kndservices.net

The Northwest Laborers-Employers Training Trust
27055 Ohio Ave.
Kingston, WA 98346
(360) 297-3035
https://www.nwlett.edu

Trafficorp
5077 N Bldg Center Drive
Coeur d'Alene, ID 83815
(208) 665-4683
https://trafficorp.com/contact-us/

US Safety Alliance
(904) 705-5660
https://www.ussafetyalliance.com

2-04.3(4)B Other Traffic Control Labor

(February 17, 2026 APWA GSP)

Section 2-04.3(4)B is supplemented with the following:

Uniformed Police Officer

Definitions:

Uniformed Police Officer (UPO) as used in this specification is a "General Authority Washington Peace Officer" as defined by RCW 10.93.020(4), or a "Specially Commissioned Washington Peace Officer" as defined by RCW 10.93.020(11).

Law Enforcement Agency as used in this specification is a "General Authority Washington Law Enforcement Agency" as defined by RCW 10.93.020(3).

The Contractor shall arrange for off-duty UPOs to be present for the following activities:

1. At the commissioning of a new traffic signal, or the recommissioning of an existing traffic signal which has been upgraded.
2. Countermanding a traffic signal indication at a signalized intersection.
3. Directing vehicle and pedestrian traffic when a traffic signal indication is turned off or is inoperative.
4. Where the Engineer deems it necessary for safety, including Work during hours of darkness.

It shall be the Contractor's responsibility to secure the off duty UPO as required by the Contract, including the costs to arrange, coordinate, and supervise.

The following contact information is supplied for the Contractor's convenience:

Agency Police Officer
Contact: Chief Anatoliy Nazariva
Phone: (425) 877-2277
Email: Anatoliy.nazariya@lingcounty.gov

County Deputy Sheriff
Contact: Sergeant Randal Potter
Phone: (206) 255-7512
Email: Randall.potter@kingcounty.gov

Washington State Patrol
Contact: Yi Zhang
Phone: (425) 401-7764
Email: yi.zhang@wsp.wa.gov

The Contractor must obtain prior approval for use of off-duty UPOs through an approved traffic control plan and approved amendments to the Contract traffic control plans. The off-duty UPO shall be in addition to all other personnel required for flagging according to the approved traffic control plan.

A UPO shall be provided in the event of accidental power outages or disruption of a signalized intersection as a result of Contractor's Work and remain in place until the intersection becomes satisfactorily operational as determined by Agency Engineer or his/her representative.

The UPO shall provide their Agency Police Vehicle with active light bars for night visibility.

2-04.3(6)A Construction Signs

The second paragraph of Section 2-04.3(6)A is revised to read:

(June 1, 2026)
No passing zones defined by existing pavement markings that will be obliterated by construction operations shall be replaced by "Do Not Pass" and "Pass With Care" signs. The Contractor shall provide, install, and maintain the signs and posts until the passing zones have been reestablished by permanent pavement markings. The signs and posts shall then be removed and become the property of the Contractor. When the Contractor is not responsible for pavement markings and when the markings by others is not completed before the Physical Completion Date, the posts and signs shall be left in place and shall become the property of the Contracting Agency.

2-04.4 Measurement

2-04.4(2) Item Bids With Lump Sum for Incidentals

(February 17, 2026 APWA GSP)

Section 2-04.4(2) is supplemented with the following:

"Uniformed Police Officer" will be measured by the hour. Hours will be measured for each fully equipped Uniformed Police Officer, including vehicle, if required, directing or

monitoring traffic, as shown on an approved Traffic Control Plan in accordance with Section 2-04.3(4)B of these Special Provisions.

(******)
Temporary ADA Ramp will be measured per each.

2-04.5 Payment

2-04.5(2) Item Bids with Lump Sum for Incidentals
(February 17, 2026 APWA GSP, Option B)

Section 2-04.5(2) is supplemented with the following:

"Uniformed Police Officer", per hour

The unit contract price for "Uniformed Police Officer", when applied to the number of units measured for this item in accordance with Section 2-04.4(2), shall be full compensation for all costs incurred by the Contractor in performing the Contract Work defined in Section 2-04.3(4)B of these Special Provisions, including all costs for arrangement for and supervision of uniformed law enforcement personnel and vehicles to participate in the Contractor's traffic control activities.

(******)
"Temporary Video Detection", lump sum shall include obtaining and setting up temporary video detection system, as described in Section 2-04.3 of these Special Provisions.

(******)
"Temporary ADA Ramp" will be measured per each for each temporary installation where shown in the plans and shall include all labor, material and equipment to install and remove the temporary ADA ramp.

END OF DIVISON 2

Division 3
Earthwork

3-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

3-01.1 Description

Section 3-01.1 is supplemented with the following:

(March 13, 1995)
Clearing and grubbing on this project shall be performed within the following limits:

- Within the right-of-way limits of SR 202 (131st Ave NE).
- Within the old railroad right-of-way including the siding that connects to NE 175th St. west of 131st Ave NE.
- Within the Special Use Permit acquired from King County adjacent to the Sammamish River Trail.
- All trees four inch diameter or greater shall remain unless otherwise shown on the plans or if they are within the cut and fill lines.

(******)
It is the Contractor's responsibility to visit the site prior to bidding the project. For clarity, not all trees, stumps, bushes and ground cover are shown on the plans. Contractor shall mark all trees four inch diameter or greater for removal and schedule a field review with the Owner's Authorized Representative prior to clearing and grubbing for verification of tree removals.

Payment for Clearing and Grubbing will include the removal of all trees and stumps, bushes and landscape items per this section for all vegetation located within the limits stated herein or as shown on the plans and no additional compensation will be allowed.

3-01.2 Disposal of Usable Material and Debris

3-01.2(1) Disposal Method No. 1 – Open Burning
Section 3-01.2(1) is supplemented with the following:

(******)
Open burning will not be permitted on this project.

3-01.3 Construction Requirements

(******)
3-01.3(1) Clearing

Delete this section and replace with the following:

The Contractor shall:

1. Fell trees only where shown in the plans or directed by the Engineer.
2. Grind or remove stumps two (2) feet below existing ground and fill hole with topsoil.
3. Leave standing any trees not shown for removal or as directed by the Engineer.
4. Protect all private property and utilities when falling trees. Any damage occurred

by falling trees will be repaired at the Contractor's expense.

5. Protect, by fencing if necessary, all trees, bushes and landscaping to remain from damage caused by construction operations.
6. The Contractor shall coordinate tree removal activities with the affected utility companies and private landowners, including meeting all applicable requirements.

3-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

3-02.1 Description

Section 3-02.1 is supplemented with the following

(February 25, 2021)
Decommissioning Wells

The Contractor shall decommission wells at the locations as shown in the Plans.

(******)
Removing Rails and Ties

This Work consists of removing all railroad rail, ties and Other Track Material (OTM) within the project limits at locations specified in the Plans. The following items are included in the bid item, "Removing Rails and Ties" per linear track feet (TF) as measured along the centerline of the rails:

1. Removal of existing railroad rail and ties. Rails are either continuously welded or bolted together.
2. OTM of various portions
    - Tie Plates
    - Track spikes
    - Rail anchors
    - Joint bars & Compromise joint bars of various sizes
    - Insulated Joints
    - Track bolts, nuts, washers
    - Insulated gage rods
    - Ties (main & industry tracks)
    - Switch ties
    - Miscellaneous items attached to the tracks
3. Removal of the following railroad equipment / other track material:
    - Railroad turnouts including switch stands, frogs, etc.
    - Railroad related signage.
    - Railroad crossing panels (wood, concrete, or other material), flangeway fillers, and other associated materials that are connected to the ties.
4. Salvaging rails as noted in the plans. Salvaged removed rail to be used per the details shown in the plans. All other rail shall become the property of the Contractor and removed off site.
5. Voids left by removal of items shall be backfilled with remaining track ballast and compacted.

Protect monuments and other appurtenances from disturbance and damage throughout the Work.

3-02.2 Vacant

Section 3-02.2 shall be supplemented with the following:

(February 25, 2021)
Materials shall conform to WAC 173-160-381 for the type of well scheduled for decommissioning.

3-02.3 Construction Requirements

Section 3-02.3 shall be supplemented with the following:

(September 7, 2021)
Removal of Obstructions
The following miscellaneous Obstructions shall be removed and disposed of:

Item	*Approximate Quantity*
Removing Traffic Island	505 SF
Removing Private Landscaping Including Rocks, Bushes and Trees where shown on the plans	1600 SF
Removing Private Wood Arbor	1 EA

(******)
Removal of Raised Pavement Markings

Removal of raised pavement markers shall consist of removing raised pavement markers where shown in the plans.

(February 25, 2021)
Decommissioning of Wells

1. Protect the well in place until decommissioned.

2. The Contractor shall provide the Department of Ecology (Ecology) a Notice of Intent (NOI) prior to decommissioning a well. A pdf of the NOI shall be provided to the Engineer within 24 hours of submittal to Ecology. A pdf of any Ecology required well reports shall be provided to the Engineer within 24 hours of submittal to the Ecology. Well reports shall include tag numbers, coordinates or other data required by Ecology for incorporation into the Ecology database for wells.

3. Licensed well drillers shall be utilized in accordance with Chapter 18.104 RCW, the Washington Well Construction Act.

4. The Contractor shall comply with WAC 173-160-381 which describes the standards for decommissioning a well.

5. The Contractor shall comply with WAC 173-160-261 requiring all dug wells to have a proper cap to prevent injury and contamination.

6. The Contractor shall comply with local laws pertaining to the decommissioning of wells.

7. This Work shall be completed prior to physical completion of the project or as agreed upon with the Engineer.

(******)
Removal of Private Business Sign

Contractor shall remove the private business sign where shown in the plans. The Contractor shall notify the business owner fifteen (15) working days in advance of sign removal. This work shall be done when the business is closed.

The base of the sign shall be removed a minimum of 2' below the landscape island. Contractor shall take care not to damage the extruded curb or asphalt within the parking lot. Contractor shall remove all associated lights and disconnect the power at the nearest junction box.

(******)
Removal of Private Billboard

Contractor shall remove the private billboard where shown in the plans. The poles/base of the billboard shall be completely removed to allow installation of retaining wall. Contractor shall remove all associated lights and disconnect the power at the nearest junction box.

3-02.3(2) Removal of Bridges, Box Culverts, and Other Drainage Structures

Section 3-02.3(2) is supplemented with the following:

(******)
The Contractor shall remove the existing drainage structure in whole where shown in the plans.

Removing pipe or steel casing will require the Contractor to sawcut the pipe or casing to be removed from the pipe or casing to remain and be plugged.

3-02.3(2)A Bridge and Structural Removal

Section 3-02.3(2)A is supplemented with the following:

(******)
The Contractor shall remove the existing railroad bridge and abutments after routing traffic per the Detour Plan shown in the plans.

Half of the existing trestle bridge shall be salvaged and stored within City owned land located on 134th Ave NE (north of N 177th Street) on the east side of road right-of-way at the end of the road or as directed by the Engineer. The Contractor shall set the relocated bridge on six (6) concrete ecology blocks as directed by the Engineer.

The other half of the structure will become the property of the Contractor and shall be disposed off-site.

The Contractor shall contact the Engineer at least five working days prior to scheduled delivery of the bridge half to confirm delivery arrangements.

(******)
Removal Existing Structure (Landscape Retaining Wall) consists of removing block retaining walls and concrete retaining walls that vary in height from 3 to 6 feet high. Contractor shall preserve enough blocks to allow reconstruction of the wall per Section ___ of these special provisions.

3-02.3(3) Removal of Pavement, Sidewalks, Curbs, and Gutters

Section 3-02.3(3) is supplemented with the following:

(September 8, 1997)
The approximate thickness of the asphalt pavement varies from 9 inches asphalt pavement to 19 inches asphalt pavement and ATB over 7 inches concrete pavement. See Geotech report.

(******)
Sawcutting
Where sawcutting is required, the sawcut shall be 6 inches deep, minimum in asphalt paved areas. Where the existing asphalt pavement is more than 6 inches thick, the portion below the top 6 inches may be broken after the sawcut is made. Sawcuts shall be cleaned by the use of high pressure water (1,400 psi or greater), or another method as accepted by the Engineer.

Sawcutting within existing concrete sidewalk, curb and gutter and driveways shall be full depth vertical sawcut between the portion to be removed and that to remain. Care shall be taken to prevent damage to the existing pavement, curb and gutter, and sidewalk specified to remain. All damage to existing pavement, sidewalk, and curb and gutter specified to remain shall be repaired in accordance with Section 1-07.13.

The Contractor shall perform all sawcutting work, including all containment, collection and disposal of sawcutting debris and wastewater, in accordance with Section 1-07.5(3) and as supplemented in these Special Provisions.

Contractor to see Geotech report for existing asphalt and concrete depths within the roadway.

Collection, Containment, and Disposal

Removal of residue and slurry from the immediate Roadway shall be done on a continuous basis. Residue and slurry shall not be allowed to drain across traffic lanes and shoulders or drain into any stormwater conveyance system, including catch basins, inlets, or ditches. Any discharge to surface waters, including wetlands, is a violation of State water quality standards.

The Contractor shall develop a Collection, Containment, and Disposal Plan identifying how the residue and slurry will be contained and collected. The residue and slurry shall become the property of the Contractor and shall be disposed of by hauling to a Contractor-provided disposal site.

The Contractor shall submit a Type 2 Working Drawing consisting of a Collection, Containment, and Disposal Plan, including, at a minimum, the following.

1. Collection, Containment, and Disposal Plan identifying all proposed methods to prevent discharges into the existing drainage systems.
2. Location of all off-site disposal sites, including copies of all applicable permits and approvals for the use of those sites.

Section 3-02.3 is supplemented with the following new section:

(******)

3-02.3(4) Removing Rails and Ties

The Contracting Agency specifically makes no representations, guarantees, or warranties as to the quantity, quality, condition, or types of rail and other track materials located within the project corridor and that therefore shall be removed by the Contractor by the end of this project. It shall be the Contractor's responsibility to carefully examine the Bid Documents and Work site to develop quantities and assess quality and quantity of materials to develop an estimate of the effort necessary to complete the Work. The submitted Bid shall be based on the Contractor's own determination of the quantity and quality of materials to be removed.

Any material damaged during construction activities or the removal process shall be replaced in-kind by the contractor at no additional cost to the contracting agency.

Rail Removal – Contractor shall salvage some of the rails and shall reinstall them as shown in the landscaping plans.

Tie Removal - Contractor shall be responsible for removing all ties from the project location. This includes pieces of ties that break off during the removal process. The existing right-of-way corridor shall be free from debris at the end of construction activities.

Tie Disposal - Contractor shall arrange for disposal of all non-salvageable ties at a Contractor-provided disposal site while meeting all requirements of federal, state, county, and municipal regulation regarding health, safety, and public welfare in the disposal.

The Contractor shall acquire all permits and approvals required for the use of the disposal site. The cost of any such permits and approvals shall be included in the applicable Bid prices.

The Contractor shall provide the Engineer the location of all disposal sites to be used and also provide copies of the permits and approvals for such disposal sites before any ties are hauled off the project. Contractor shall also provide the Engineer with a copy of each disposal receipt, which shall include a description and quantity of each disposed material.

Section 3-02.3 is supplemented with the following new section:

(******)

3-02.3(5) Abandonment of Existing Sanitary Sewer Manholes and Sanitary Sewer Main

Where shown in the plans, existing sanitary sewer manholes and the existing sewer

main ends are to be plugged with concrete and abandoned in place by filling with low density cellular concrete (LDCC) after the new sanitary sewer manholes and sewer main is in place. See Section 7-08 for more information.

3-02.4 Vacant

Section 3-02.4, including title is revised to read:

Measurement

(******)
"Sawcutting" will be measured by the linear foot to achieve full depth saw cut.

(******)
"Removing Cement Conc. Sidewalk" will be measured by the square yard. Removing cement concrete ADA ramps and removing concrete driveways will be measured by the square yard and paid for under the bid item "Removing Cement Conc. Sidewalk".

(******)
"Removing Extruded Curb" will be measured by the linear foot.

(******)
"Removing Cement Conc. Curb and Gutter" will be measured by the linear foot.

(******)
"Removing Mountable Traffic Curb" will be measured by the linear foot.

(******)
Removing raised pavement markers will not be measured and will be incidental to other bid items.

(******)
Removing Asphalt Pavement will be measured by the square yard. If concrete pavement is below the asphalt this removal shall be incidental in the pavement removal.

(******)
"Removing Rails and Ties", per linear track foot (TF). Track foot includes both rails and all ties as measured down the centerline of the tracks.

(******)
"Remove Existing Structure (Landscape Retaining Wall)" will be measured by the square feet of retaining wall removed above the ground line.

(******)
"Removing Drainage Structure" will be measured per each.

(******)
"Removing Business Sign" will be measured per each.

(******)
"Removing Billboard" will be measured per each.

(******)
"Removing 18" Concrete Sanitary Sewer Pipe" will be measured per linear foot of the pipe removed and disposed of by the Contractor. Sawcutting the pipe to be removed from the pipe to remain shall be incidental to the cost of removing the pipe.

(******)
"Removing 36" Steel Casing" will be measured per linear foot of the casing removed and disposed of by the Contractor. Sawcutting the casing to be removed from the pipe to remain shall be incidental to the cost of removing the casing.

3-02.5 Payment

Section 3-02.5 is supplemented with the following:

(******)
"Decommissioning Well", per each well removed including all Work as specified and payment to regulatory agencies for any associated fees for monitoring or decommissioning of wells.

(November 3, 1999)
"Removing Cement Conc. Sidewalk" per square yard.

(******)
"Removing Cement Conc. Curb and Gutter" per linear foot. The unit contract price per linear foot for "Removing Cement Conc. Curb" shall be full pay for performing the work as specified and disposal of all debris.

(******)
"Removing Mountable Traffic Curb" per linear foot. The unit contract price per linear foot for "Removing Cement Conc. Curb" shall be full pay for performing the work as specified and disposal of all debris.

"Removing Extruded Curb" per linear foot. The unit contract price per linear foot for "Removing Cement Conc. Curb" shall be full pay for performing the work as specified and disposal of all debris.

(September 30, 1996)
"Removing Asphalt Pavement" will be measured by the square yard.

(******)
The linear track foot (TF) Bid item, “Removing Rails and Ties” shall be full compensation for all materials, tools, equipment, and labor necessary or incidental to removing all material within 5’ of the centerline of the tracks as noted in the plans from the project corridor. Track feet will be measured along the center of the tracks and include both tracks, ties and all other items noted herein. All items noted for removal, salvage, abandonment, or relocation on the Contract Plans and described in these Specifications for which other specific Bid items do not apply shall be considered incidental to and included in the Bid item “Removing Track and Ties” including but not limited to: cutting rail, demolition, haul, relocation of salvaged rail as shown on the landscape plans, and disposal of all materials.

(******)
“Removing Existing Bridge and Abutments”, lump sum includes salvaging half of the bridge as noted in these specifications and setting the relocated span on concrete ecology blocks.

(******)
“Removing Existing Structure (Landscape Retaining Wall) will be paid for by the square feet of retaining wall removed above the ground line and shall be full compensation for all tools, material, labor and equipment necessary to remove and dispose of the removed retaining wall Including sawcut of the existing concrete retaining wall made into the surface of the concrete at the perimeter of the removal limits.

(******)
“Sawcutting” will be paid for by the linear foot to achieve full depth saw cut.

(******)
“Removing Drainage Structure” will be measured per each.

(******)
“Removing Business Sign” will be measured per each including the foundation shall be removed and disposed of per these specifications. The cost per each shall be full compensation for notifying the property owner fifteen (15) working days in advance of sign removal, working when business is closed, labor, equipment, materials, removal of

lights, disconnecting power, and repair of damage to the property, including replacement of any extruded curb or asphalt damaged during the removal.

(******)
"Removing Billboard" will be measured per each including foundation shall be removed and disposed of per these specifications. The cost per each shall be full compensation for all labor, equipment, materials, removal of lights, and disconnecting power.

(******)
"Removing 18" Concrete Sanitary Sewer Pipe" will be measured per linear foot of pipe removed and disposed of by the Contractor.

(******)
"Removing 36" Steel Casing" will be measured per linear foot of pipe removed and disposed of by the Contractor.

3-03 ROADWAY EXCAVATION AND EMBANKMENT

(******)
Replace Section 3-03.2 with the following:

3-03.2 Potentially Contaminated Subsurface Materials

The Contractor is advised that environmentally impacted soils and/or groundwater may be encountered during excavation and/or dewatering. The Contractor shall refer to the Environmental Investigation Report in the included Reference Information for details.

(******)
Section 3-03 is supplemented with the following:

ULTRA-LIGHTWEIGHT FOAMED GLASS AGGREGATE FILL (UL-FGA FILL)

Foamed Glass Aggregate

Description.

This Section specifies the delivery, storage and installation of ultra-lightweight foamed glass aggregate (UL-FGA) fill.

Materials.

UL-FGA shall meet the following requirements.

The organic content of the foamed glass aggregate shall not exceed 0.1% by weight as determined by AASHTO T267.

The soundness loss of the foamed glass aggregate, as determined by AASHTO T104, shall not exceed 30% when subjected to four cycles of magnesium sulfate.

The resistivity of the foamed glass aggregate, as determined by WSDOT T 417, shall be at least 3000 ohm-cm.

The chlorides shall be 100 ppm maximum as determined by AASHTO T 291.

The pH of the foamed glass aggregate, as determined by WSDOT T 417 shall not be lower than 5 and not higher than 10.

The foamed glass aggregate shall meet the size and grading requirements in Table 1 based on laboratory sieve tests per AASHTO T27.

TABLE 1
Size and Grading Requirements

Sieve Size	Total Percent Passing
4”	100
2 ½”	85-100
3/8”	0-15
#200[1]	0-5

Notes:
1. Passing #200 test only required for test pad and initial ten successful T 27 tests

The foamed glass aggregate shall have a maximum dry bulk unit weight of 15 lbs/ft3 and minimum dry bulk unit weight of 10 lbs/ft3 per AASHTO T 19, or other method as approved by the Engineer.

The minimum frequency for testing of the foamed glass aggregate is given in Table 2.

TABLE 2
Test Method and Frequency

Property	Test Method	Test Frequency
Size and Grading[1]	ASTM C136/C136M-19 (modified)	per 1,000 cy
Dry Bulk Unit Weight	ASTM C29/C29M-17a, Method C	per 1,000 cy

Notes:
1. Size and grading tests may be revised to per 20,000 yards after ten tests that meet requirements.

UL-FGA used as Structural Earth Wall backfill shall meet the electrochemical requirements (pH, resistivity, chlorides, sulfates) of 9-03.14(4) for the selected wall reinforcement type.

Delivery, Storage, and Handling

The Contractor shall deliver, store and handle the material in a manner that does not expose the material to excess moisture, contamination or cause damage from construction or other activities, and that during all stages of delivery, storage, and construction, the material will not be physically damaged.

Geotextile

The geotextile material shall be a woven or nonwoven geotextile for separation, meeting the requirements of Table 3 in Division 9-33. Consideration shall be given to the chemical composition of selected geotextile due to UL-FGA potentially having a pH greater than 9.0.

Installation

The Contractor shall place construction geosynthetic in accordance with Standard Specification 3-09, and UL-FGA in accordance with this Special Provision at locations indicated on the plans. The area to be filled shall not have any standing water (including ice) in it prior to placement of the UL-FGA.

Construction equipment, other than for placement and compaction, shall not operate on the exposed UL-FGA.

For compaction using tracked equipment, UL-FGA shall be placed in uncompacted lift thicknesses of 24 inches and compaction shall be performed with a tracked excavator or dozer with ground pressures of 625 - 1,025 psf. When placing a new lift, no tracking shall be performed until the 24” thickness is achieved. Compaction using tracked equipment shall be completed by placing the initial lift thickness, and then raising the blade or bucket and tracking over the layer for a total of four (4) full passes. One (1) full pass is defined as a minimum of 100% coverage of the tracks passing over the top of the lift. Avoid excessive compaction to reduce crushing of the aggregate.

For areas not accessible by tracked equipment (e.g., around structures and utilities), UL-FGA shall be placed in uncompacted lifts of 12” and compacted with a plate compactor 110-220 lbs. When placing a new lift, no passes shall be made until the 12” thickness is achieved. Compaction shall be complete after a total of four (4) full passes with the plate compactor. One (1) full pass is defined as a minimum of 100% coverage of the plate passing over the top of the lift.

Minimize the compaction of thinner lifts from those specified above as this will increase the in-place unit weight and overall compaction factor. When necessary, the lift thicknesses specified above may be decreased as noted in the Contractor’s UL-FGA installation plan.

If the Contractor must vary the methods described above prior approval shall be obtained from the Engineer.

A capping layer consisting of borrow material or other material as approved by the engineer shall be placed above the final lift of the UL-FGA. The construction geosynthetic shall be placed as a separator at the interface between UL-FGA and adjacent fill or native soils as well as above the final lift and on side slopes as a separator between the UL-FGA and capping layer. Geotextile damaged during the placement of the capping layer shall be replaced.

Traffic shall not be routed over UL-FGA until the capping layer has reached a minimum thickness of six (6) inches.

Construction Requirements.

Submittals

The Contractor shall provide a Type 3 Working Drawings to the Engineer including the following product test data and installation plan:

Materials

A manufacturer's technical data sheet or test reports which displays that the product meets or exceeds the material values specified herein.

Delivery, Storage, and Handling

The installation plan shall show the delivery, storage, and handling of materials will be conducted in a manner that does not expose the material to excess moisture, contamination or damage from construction or other activities, and that during all stages of delivery, storage, and construction, the material will not be saturated, contaminated or physically damaged.

Installation Plan

The installation plan shall include a detailed description of installation placement and compaction operations that conform to the requirements herein including equipment cut sheets for the equipment the Contractor will be using for UL-FGA placement and compaction and proposed lift thicknesses. The installation plan shall include the construction of a test pad using the materials and installation procedures described herein. The test pad shall measure in both width and length a minimum of two times the track width of equipment used to compact the UL-FGA, and shall consist of a minimum of three 12" uncompacted lift thicknesses. The test pad shall demonstrate that the installation procedures are not crushing the aggregate and are meeting the unit weight requirements. The demonstration that installation procedures are not crushing the aggregate shall include gradation tests including passing #200 sieve. In place unit weights shall be measured using a string line or other method approved by the Engineer to confirm target density has been achieved.

Measurement.

UL-FGA shall be measured per cubic yard of material installed in place and compacted to the required density as specified in herein.

Payment.

Payment will be made for each of the following Bid items that are included in the Proposal:
"Construction Geosynthetic", per square yard
"UL-FGA", per cubic yard including haul

3-03.3 Construction Requirements

3-03.3(7) Disposal of Surplus Material

Section 3-03.3(7) is supplemented with the following:

(******)

A waste site has not been provided by the Engineer for the disposal and/or storage of surplus materials and debris.

The Contractor shall haul all excess excavated material off site and dispose of it at a legal disposal site at the Contractor's expense without additional payment.

The Contractor shall provide the Engineer with copies of permits for disposal of surplus material and all forms included in the Bid Requirements section of this document within ten (10) calendar days after award of the contract. The Engineer will review the permit(s) and waste sites within fourteen (14) calendar days after receipt of the permits.

The Contractor is responsible for obtaining all permits from the appropriate agency and to follow all applicable local policies and ordinances.

If the disposal and/or storage site is rejected by the Engineer, the Contractor is responsible for locating a new disposal or storage site that will meet the Contracting Agency's criteria. Any costs incurred by the Contractor to meet this Section shall be at the Contractor's expense and at no additional cost to the Contracting Agency.

No payment will be made for any related contract item until a site has been approved.

3-03.3(14) Embankment Construction

3-03.3(14)C Compacting Earth Embankments

Section 3-03.3(14)C is supplemented with the following:

(******)

All embankments, except waste embankments, shall be compacted using Method B.

3-03.4 Measurement

Section 3-03.4 is supplemented with the following:

(September 3, 2024)

Only one determination of the original ground elevation will be made on this project. Measurement for roadway excavation and embankment will be based on the original ground elevations recorded previous to the award of this contract.

If discrepancies are discovered in the ground elevations which will materially affect the quantities of earthwork, the original computations of earthwork quantities will be adjusted accordingly.

Earthwork quantities will be computed, either manually or by means of electronic data processing equipment, by use of the average end area method or by the finite element analysis method utilizing digital terrain modeling techniques.

Electronic Design Files will be available by request for the Bidder's inspection before the opening of Bids.

3-03.5 Payment

Section 3-03.5 is supplemented with the following:

(******)

Embankment Compaction, per cubic yard, consists of reusing Structural Excavation that is stockpiled and placing it within the fill limits. Material shall meet the requirements of Gravel Borrow. Embankment Compaction shall be full compensation for all costs incurred for all material, labor, tools and equipment including loading, hauling, stock piling and placing the material. It is assumed that 80% of all excavated material will be used within the embankment.

3-07 SRUCTURAL EXCAVATION

3-07.3(3)D Shoring and Cofferdams

Section 3-07.3(3)D is supplemented with the following:

(March 13, 1995)

The Contractor shall protect the existing pavement from damage due to the Contractor's operations and shall shore all excavation adjacent to the existing pavement.

3-07.5 Payment

(******)

Structural Excavation Class B will not be measured and will be incidental to other bid items.

END OF DIVISON 3

Division 4
Aggregate Production and Acceptance

4-01 PRODUCTION FROM QUARRY AND PIT SITES

4-01.2 Material Sources, General Requirements

Section 4-01.2 is supplemented with the following:

(March 13, 1995)
Permits For Pit Operations In King County
The Contractor is advised that King County may require the Contractor to meet any or all of the following listed conditions before considering issuance of a temporary permit for pit operations within King County:

1. Security fences and locking gates shall be installed where deemed necessary by the King County Department of Building. Cable or wire gates are not acceptable.

2. Hours of operation shall be limited to: 7:00 a.m. to 7:00 p.m.

3. Access roads shall be improved and maintained to the satisfaction of the King County Department of Public Works. A haul road agreement for County road maintenance may be required.

   All roads shall be swept, washed, or both, by the Contractor at the Contractor's expense as often as the Department of Building deems necessary.

   Property shall have functional access to an arterial level street.

4. All operations will have to be approved by King County Flood Control for drainage plans, Washington State Department of Ecology, and Puget Sound Air Pollution Control Authority.

   Those properties near or adjacent to any water body shall have written approval from the State of Washington Department of Fisheries.

   The Contractor shall obtain a mining reclamation permit from the State of Washington Department of Natural Resources for sites of over three acres in size of disturbed land or resulting in pit walls more than thirty feet high and steeper than one to one slope.

5. No stockpiling of foreign excavated material is permitted on the site except for those materials to be used in the land rehabilitation of the subject property.

6. No signs other than signs required by Chapter 24.42, King County Zoning Code are authorized as a result of the temporary permit.

7. Plans required:

   a. Scale of Plot Plans

Site Size:	less than 10 acres	1 inch = 50 feet
	10 to 100 acres	1 inch = 100 feet
	over 100 acres	1 inch = 200 feet

b. Contours

Show existing and proposed contours at 5-foot intervals. If existing and proposed contours are superimposed upon one another it must be clear as to which is which. Plans which incorporate a screening process may be required by the County to distinguish said contours.

Finished contours must show how the property can be used under the existing zoning. Plans showing daylighting of property to road grade or below with high 2:1 slope walls will no longer be permitted within the R, S, or G zones. The plans must contain large terraces which will permit the lot sizes and roads that are permitted within the zone.

c. Sections

Show a minimum of two sections in each direction.

d. Maximum Slope

Cuts shall not be steeper in slope than two horizontal to one vertical unless the owner furnishes a soils engineering or an engineering geology report certifying that the site has been investigated and indicating that the proposed deviation will not endanger any private property or result in the deposition of debris on any public way or interfere with any existing drainage course.

e. Fill Slopes

No fill shall be made which creates an exposed surface steeper in slope than two horizontal to one vertical.

f. Benches on Slopes

There shall be a 10 foot wide bench sloped into the hillside for every 50 feet in height.

g. Setbacks

Material and vegetation shall be left in its natural state:

50 feet from any FP, A, G, S, or R zoned property;

20 foot setback which includes a 6 foot high planted berm along any public right-of-way;

20 feet from M, B, or CG zoned property;

10 feet from QM or FR zoned property.

Plans shall show type of vegetation existing within the buffer zones.

h. Drainage

All drainage facilities shall be designed to carry surface waters to the nearest practical street, storm drain, or natural water-course. Adequate provision shall be made to prevent any surface waters from damaging the face of an excavation or fill. All slopes shall be protected from surface water runoff from above by berms or swales.

The Contractor is further advised that King County may require conditions which are in addition to the foregoing list and that the County may reject permit applications at its discretion because of the proposed operations proximity to schools, residential neighborhoods, hospitals, arterials, or for other environmental conditions.

When there are discrepancies between the requirements of the State and the County the more stringent specifications shall apply.

Should the Contractor fail to comply with any requirements of a temporary permit obtained in the Contracting Agency's name, the Contracting Agency will take the necessary action to meet these requirements and any costs incurred by the Contracting Agency will be deducted from monies due or to become due the Contractor.

END OF DIVISON 4

Division 5
Surface Treatments and Pavements

5-04 Hot Mix Asphalt

(December 12, 2025 APWA GSP)

Delete Section 5-04 and replace it with the following:

5-04.1 Description

This Work shall consist of providing and placing one or more layers of plant-mixed hot mix asphalt (HMA) on a prepared foundation or base in accordance with these Specifications and the lines, grades, thicknesses, and typical cross-sections shown in the Plans. The manufacture of HMA may include warm mix asphalt (WMA) processes in accordance with these Specifications. WMA processes include organic additives, chemical additives, and foaming.

HMA shall be composed of asphalt binder and mineral materials as may be required, mixed in the proportions specified to provide a homogeneous, stable, and workable mixture.

5-04.2 Materials

Materials shall meet the requirements of the following sections:

Asphalt Binder	9-02.1(4)
Cationic Emulsified Asphalt	9-02.1(6)
Anti-Stripping Additive	9-02.4
HMA Additive	9-02.5
Aggregates	9-03.8
Recycled Asphalt Pavement (RAP)	9-03.8(3)B, 9-03.21
Reclaimed Asphalt Shingles (RAS)	9-03.8(3)B, 9-03.21
Mineral Filler	9-03.8(5)
Recycled Material	9-03.21

The Contract documents may establish that the various mineral materials required for the manufacture of HMA will be furnished in whole or in part by the Contracting Agency. If the documents do not establish the furnishing of any of these mineral materials by the Contracting Agency, the Contractor shall be required to furnish such materials in the amounts required for the designated mix. Mineral materials include coarse and fine aggregates, and mineral filler.

The Contractor may choose to utilize recycled asphalt pavement (RAP) in the production of HMA. The RAP may be from pavements removed under the Contract, if any, or pavement material from an existing stockpile.

The Contractor may use up to 20 percent RAP by total weight of HMA with no additional sampling or testing of the RAP.

If the Contractor wishes to utilize High RAP/Any RAS, the design must be listed on the WSDOT Qualified Products List (QPL).

The grade of asphalt binder shall be as required by the Contract. Blending of asphalt binder from different sources is not permitted.

The Contractor may only use warm mix asphalt (WMA) processes in the production of HMA with 20 percent or less RAP by total weight of HMA. The Contractor shall submit to the Engineer for approval the process that is proposed and how it will be used in the manufacture of HMA.

Production of aggregates shall comply with the requirements of Section 3-01. Preparation of stockpile site, the stockpiling of aggregates, and the removal of aggregates from stockpiles shall comply with the requirements of Section 3-02.

5-04.2(1) How to Get an HMA Mix Design on the QPL

If the Contractor wishes to submit a mix design for inclusion in the Qualified Products List (QPL), please follow the WSDOT process outlined in Standard Specification 5-04.2(1).

5-04.2(1)A Vacant

5-04.2(2) Mix Design - Obtaining Project Approval

No paving shall begin prior to the approval of the mix design by the Engineer.

Nonstatistical evaluation will be used for all HMA not designated as Commercial HMA in the Contract documents.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, temporary pavement, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Project Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Project Engineer. The Proposal quantity of HMA that is accepted by commercial evaluation will be excluded from the quantities used in the determination of nonstatistical evaluation.

Nonstatistical Mix Design. Fifteen days prior to the first day of paving the Contractor shall provide one of the following mix design verification certifications for Contracting Agency review;

- The WSDOT Mix Design Evaluation Report from the current WSDOT QPL, or one of the mix design verification certifications listed below.
- The proposed HMA mix design on WSDOT Form 350-042 with the seal and certification (stamp & signature) of a valid licensed Washington State Professional Engineer. * (see below)
- The Mix Design Report for the proposed HMA mix design developed by a qualified City or County laboratory that is within one year of the approval date. * (see below)

The mix design shall be performed by a lab accredited by a national authority such as Laboratory Accreditation Bureau, L-A-B for Construction Materials Testing, The Construction Materials Engineering Council (CMEC's) ISO 17025 or AASHTO Accreditation Program (AAP) and shall supply evidence of participation in the AASHTO: resource proficiency sample program.

Mix designs for HMA accepted by Nonstatistical evaluation shall:

- Be designed for 4,818,000 million equivalent single axle loads (ESALs).
- Have the aggregate structure and asphalt binder content determined in accordance with WSDOT Standard Operating Procedure 732 and meet the requirements of Sections 9-03.8(2), except that Hamburg testing for ruts and stripping are at the discretion of the Engineer, and 9-03.8(6).
- Have anti-strip requirements, if required, for the proposed mix design determined in accordance with AASHTO T 283 or T 324 or based on historic anti-strip and aggregate source compatibility from previous WSDOT lab testing.

* At the discretion of the Engineer, agencies may accept verified mix designs older than 12 months from the original verification date with a certification from the Contractor that the materials and sources are the same as those shown on the original mix design.

Commercial Evaluation Mix Design. Approval of a mix design for "Commercial Evaluation" will be based on a review of the Contractor's submittal of WSDOT Form 350-042 (for commercial mixes, AASHTO T 324 evaluation is not required) or a Mix Design from the current WSDOT QPL or from one of the processes allowed by this section. Testing of the HMA by the Contracting Agency for mix design approval is not required.

For the Bid Item Commercial HMA, the Contractor shall select a class of HMA and design level of ESALs appropriate for the required use.

5-04.2(2)B Using Warm Mix Asphalt Processes

The Contractor may elect to use additives that reduce the optimum mixing temperature or serve as a compaction aid for producing HMA. Additives include organic additives, chemical additives and foaming processes. The use of Additives is subject to the following:

- Do not use additives that reduce the mixing temperature more than allowed in Section 5-04.3(6) in the production of mixtures.
- Before using additives, obtain the Engineer's approval using WSDOT Form 350-076 to describe the proposed additive and process.

5-04.3 Construction Requirements

5-04.3(1) Weather Limitations

Do not place HMA for wearing course on any Traveled Way beginning October 1st through March 31st of the following year without written concurrence from the Engineer.

Do not place HMA on any wet surface, or when the average surface temperatures are less than those specified below, or when weather conditions otherwise prevent the proper handling or finishing of the HMA.

Minimum Surface Temperature for Paving

Compacted Thickness (Feet)	Wearing Course	Other Courses
Less than 0.10	55°F	45°F
0.10 to .20	45°F	35°F
More than 0.20	35°F	35°F

5-04.3(2) Paving Under Traffic

When the Roadway being paved is open to traffic, the requirements of this Section shall apply.

The Contractor shall keep intersections open to traffic at all times except when paving the intersection or paving across the intersection. During such time, and provided that there has been an advance warning to the public, the intersection may be closed for the minimum time required to place and compact the mixture. In hot weather, the Engineer may require the application of water to the pavement to accelerate the finish rolling of the pavement and to shorten the time required before reopening to traffic.

Before closing an intersection, advance warning signs shall be placed, and signs shall also be placed marking the detour or alternate route.

During paving operations, temporary pavement markings shall be maintained throughout the project. Temporary pavement markings shall be installed on the Roadway prior to opening to traffic. Temporary pavement markings shall be in accordance with Section 8-23.

All costs in connection with performing the Work in accordance with these requirements, except the cost of temporary pavement markings, shall be included in the unit Contract prices for the various Bid items involved in the Contract.

5-04.3(3) Equipment

5-04.3(3)A Mixing Plant

Plants used for the preparation of HMA shall conform to the following requirements:

1. **Equipment for Preparation of Asphalt Binder** – Tanks for the storage of asphalt binder shall be equipped to heat and hold the material at the required temperatures. The heating shall be accomplished by steam coils, electricity, or other approved means so that no flame shall be in contact with the storage tank. The circulating system for the asphalt binder shall be designed to ensure proper

and continuous circulation during the operating period. A valve for the purpose of sampling the asphalt binder shall be placed in either the storage tank or in the supply line to the mixer.

2. **Thermometric Equipment** – An armored thermometer, capable of detecting temperature ranges expected in the HMA mix, shall be fixed in the asphalt binder feed line at a location near the charging valve at the mixer unit. The thermometer location shall be convenient and safe for access by Inspectors. The plant shall also be equipped with an approved dial-scale thermometer, a mercury actuated thermometer, an electric pyrometer, or another approved thermometric instrument placed at the discharge chute of the drier to automatically register or indicate the temperature of the heated aggregates. This device shall be in full view of the plant operator.

3. **Heating of Asphalt Binder** – The temperature of the asphalt binder shall not exceed the maximum recommended by the asphalt binder manufacturer nor shall it be below the minimum temperature required to maintain the asphalt binder in a homogeneous state. The asphalt binder shall be heated in a manner that will avoid local variations in heating. The heating method shall provide a continuous supply of asphalt binder to the mixer at a uniform average temperature with no individual variations exceeding 25°F. Also, when a WMA additive is included in the asphalt binder, the temperature of the asphalt binder shall not exceed the maximum recommended by the manufacturer of the WMA additive.

4. **Sampling and Testing of Mineral Materials** – The HMA plant shall be equipped with a mechanical sampler for the sampling of the mineral materials. The mechanical sampler shall meet the requirements of Section 1-05.6 for the crushing and screening operation. The Contractor shall provide for the setup and operation of the field-testing facilities of the Contracting Agency as provided for in Section 3-01.2(2).

5. **Sampling HMA** – The HMA plant shall provide for sampling HMA by one of the following methods:

    a. A mechanical sampling device attached to the HMA plant.

    b. Platforms or devices to enable sampling from the hauling vehicle without entering the hauling vehicle.

5-04.3(3)B Hauling Equipment

Trucks used for hauling HMA shall have tight, clean, smooth metal beds and shall have a cover of canvas or other suitable material of sufficient size to protect the mixture from adverse weather. Whenever the weather conditions during the work shift include, or are forecast to include precipitation or an air temperature less than 45°F or when time from loading to unloading exceeds 30 minutes, the cover shall be securely attached to protect the HMA.

The Contractor shall provide an environmentally benign means to prevent the HMA mixture from adhering to the hauling equipment. Excess release agent shall be drained

prior to filling hauling equipment with HMA. Petroleum derivatives or other coating material that contaminate or alter the characteristics of the HMA shall not be used. For live bed trucks, the conveyer shall be in operation during the process of applying the release agent.

5-04.3(3)C Pavers

HMA pavers shall be self-contained, power-propelled units, provided with an internally heated vibratory screed and shall be capable of spreading and finishing courses of HMA plant mix material in lane widths required by the paving section shown in the Plans.

The HMA paver shall be in good condition and shall have the most current equipment available from the manufacturer for the prevention of segregation of the HMA mixture installed, in good condition, and in working order. The equipment certification shall list the make, model, and year of the paver and any equipment that has been retrofitted.

The screed shall be operated in accordance with the manufacturer's recommendations and shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, segregating, or gouging the mixture. A copy of the manufacturer's recommendations shall be provided upon request by the Contracting Agency. Extensions will be allowed provided they produce the same results, including ride, density, and surface texture as obtained by the primary screed. Extensions without augers and an internally heated vibratory screed shall not be used in the Traveled Way.

When specified in the Contract, reference lines for vertical control will be required. Lines shall be placed on both outer edges of the Traveled Way of each Roadway. Horizontal control utilizing the reference line will be permitted. The grade and slope for intermediate lanes shall be controlled automatically from reference lines or by means of a mat referencing device and a slope control device. When the finish of the grade prepared for paving is superior to the established tolerances and when, in the opinion of the Engineer, further improvement to the line, grade, cross-section, and smoothness can best be achieved without the use of the reference line, a mat referencing device may be substituted for the reference line. Substitution of the device will be subject to the continued approval of the Engineer. A joint matcher may be used subject to the approval of the Engineer. The reference line may be removed after the completion of the first course of HMA when approved by the Engineer. Whenever the Engineer determines that any of these methods are failing to provide the necessary vertical control, the reference lines will be reinstalled by the Contractor.

The Contractor shall furnish and install all pins, brackets, tensioning devices, wire, and accessories necessary for satisfactory operation of the automatic control equipment.

If the paving machine in use is not providing the required finish, the Engineer may suspend Work as allowed by Section 1-08.6. Any cleaning or solvent type liquids spilled on the pavement shall be thoroughly removed before paving proceeds.

5-04.3(3)D Material Transfer Device or Material Transfer Vehicle

A Material Transfer Device/Vehicle (MTD/V) shall only be used with the Engineer's approval, unless otherwise required by the Contract.

Where an MTD/V is required by the Contract, the Engineer may approve paving without an MTD/V, at the request of the Contractor. The Engineer will determine if an equitable adjustment in cost or time is due.

When used, the MTD/V shall mix the HMA after delivery by the hauling equipment and prior to placement by the paving machine. Mixing of the HMA shall be sufficient to obtain a uniform temperature throughout the mixture. If a windrow elevator is used, the length of the windrow may be limited in urban areas or through intersections, at the discretion of the Engineer.

To be approved for use, an MTV:

1. Shall be self-propelled vehicle, separate from the hauling vehicle or paver.

2. Shall not be connected to the hauling vehicle or paver.

3. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.

4. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.

5. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

To be approved for use, an MTD:

1. Shall be positively connected to the paver.

2. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.

3. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.

4. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

5-04.3(3)E Rollers

Rollers shall be of the steel wheel, vibratory, oscillatory, or pneumatic tire type, in good condition and capable of reversing without backlash. Operation of the roller shall be in accordance with the manufacturer's recommendations. When ordered by the Engineer for any roller planned for use on the project, the Contractor shall provide a copy of the manufacturer's recommendation for the use of that roller for compaction of HMA. The number and weight of rollers shall be sufficient to compact the mixture in compliance with the requirements of Section 5-04.3(10). The use of equipment that results in crushing of the aggregate will not be permitted. Rollers producing pickup, washboard,

uneven compaction of the surface, displacement of the mixture or other undesirable results shall not be used.

5-04.3(4) Preparation of Existing Paved Surfaces

When the surface of the existing pavement or old base is irregular, the Contractor shall bring it to a uniform grade and cross-section as shown on the Plans or approved by the Engineer.

Preleveling of uneven or broken surfaces over which HMA is to be placed may be accomplished by using an asphalt paver, a motor patrol grader, or by hand raking, as approved by the Engineer.

Compaction of preleveling HMA shall be to the satisfaction of the Engineer and may require the use of small steel wheel rollers, plate compactors, or pneumatic rollers to avoid bridging across preleveled areas by the compaction equipment. Equipment used for the compaction of preleveling HMA shall be approved by the Engineer.

Before construction of HMA on an existing paved surface, the entire surface of the pavement shall be clean. All fatty asphalt patches, grease drippings, and other objectionable matter shall be entirely removed from the existing pavement. All pavements or bituminous surfaces shall be thoroughly cleaned of dust, soil, pavement grindings, and other foreign matter. All holes and small depressions shall be filled with an appropriate class of HMA. The surface of the patched area shall be leveled and compacted thoroughly. Prior to the application of tack coat, or paving, the condition of the surface shall be approved by the Engineer.

A tack coat of asphalt shall be applied to all paved surfaces on which any course of HMA is to be placed or abutted; except that tack coat may be omitted from clean, newly paved surfaces at the discretion of the Engineer. Tack coat shall be uniformly applied to cover the existing pavement with a thin film of residual asphalt free of streaks and bare spots at a rate between 0.02 and 0.10 gallons per square yard of retained asphalt. The rate of application shall be approved by the Engineer. A heavy application of tack coat shall be applied to all joints. For Roadways open to traffic, the application of tack coat shall be limited to surfaces that will be paved during the same working shift. The spreading equipment shall be equipped with a thermometer to indicate the temperature of the tack coat material.

Equipment shall not operate on tacked surfaces until the tack has broken and cured. If the Contractor’s operation damages the tack coat it shall be repaired prior to placement of the HMA.

The tack coat shall be CSS-1, or CSS-1h emulsified asphalt. The CSS-1 and CSS-1h emulsified asphalt may be diluted once with water at a rate not to exceed one-part water to one-part emulsified asphalt. The tack coat shall have sufficient temperature such that it may be applied uniformly at the specified rate of application and shall not exceed the maximum temperature recommended by the emulsified asphalt manufacturer. PG grade asphalt or non-tracking tack formulas may be used upon approval of the Engineer.

5-04.3(4)A Crack Sealing

When the Proposal includes a pay item for crack sealing, seal cracks in accordance with Section 5-03.

5-04.3(4)B Vacant

5-04.3(4)C Pavement Repair

The Contractor shall excavate pavement repair areas and shall backfill these with HMA in accordance with the details shown in the Plans and as marked in the field. The Contractor shall conduct the excavation operations in a manner that will protect the pavement that is to remain. Pavement not designated to be removed that is damaged as a result of the Contractor's operations shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Contracting Agency. The Contractor shall excavate only within one lane at a time unless approved otherwise by the Engineer. The Contractor shall not excavate more area than can be completely finished during the same shift, unless approved by the Engineer.

Unless otherwise shown in the Plans or determined by the Engineer, excavate to a depth of 1.0 feet. The Engineer will make the final determination of the excavation depth required. The minimum width of any pavement repair area shall be 40 inches unless shown otherwise in the Plans. Before any excavation, the existing pavement shall be sawcut or shall be removed by a pavement grinder. Excavated materials will become the property of the Contractor and shall be disposed of in a Contractor-provided site off the Right of Way or used in accordance with Sections 2-02.3(3) or 9-03.21.

Asphalt for tack coat shall be required as specified in Section 5-04.3(4). A heavy application of tack coat shall be applied to all surfaces of existing pavement in the pavement repair area.

Placement of the HMA backfill shall be accomplished in lifts not to exceed 0.35-foot compacted depth. Lifts that exceed 0.35-foot of compacted depth may be accomplished with the approval of the Engineer. Each lift shall be thoroughly compacted by a mechanical tamper or a roller.

5-04.3(5) Producing/Stockpiling Aggregates and RAP

Aggregates and RAP shall be stockpiled according to the requirements of Section 3-02. Sufficient storage space shall be provided for each size of aggregate and RAP. Materials shall be removed from stockpile(s) in a manner to ensure minimal segregation when being moved to the HMA plant for processing into the final mixture. Different aggregate sizes shall be kept separated until they have been delivered to the HMA plant.

5-04.3(5)A Vacant

5-04.3(6) Mixing

After the required amount of mineral materials, asphalt binder, recycling agent and anti-stripping additives have been introduced into the mixer the HMA shall be mixed until

complete and uniform coating of the particles and thorough distribution of the asphalt binder throughout the mineral materials is ensured.

When discharged, the temperature of the HMA shall not exceed the optimum mixing temperature by more than 25°F as shown on the reference mix design report or as approved by the Engineer. Also, when a WMA additive is included in the manufacture of HMA, the discharge temperature of the HMA shall not exceed the maximum recommended by the manufacturer of the WMA additive. A maximum water content of 2 percent in the mix, at discharge, will be allowed providing the water causes no problems with handling, stripping, or flushing. If the water in the HMA causes any of these problems, the moisture content shall be reduced as directed by the Engineer.

Storing or holding of the HMA in approved storage facilities will be permitted with approval of the Engineer, but in no event shall the HMA be held for more than 24 hours. HMA held for more than 24 hours after mixing shall be rejected. Rejected HMA shall be disposed of by the Contractor at no expense to the Contracting Agency. The storage facility shall have an accessible device located at the top of the cone or about the third point. The device shall indicate the amount of material in storage. No HMA shall be accepted from the storage facility when the HMA in storage is below the top of the cone of the storage facility, except as the storage facility is being emptied at the end of the working shift.

Recycled asphalt pavement (RAP) utilized in the production of HMA shall be sized prior to entering the mixer so that a uniform and thoroughly mixed HMA is produced. If there is evidence of the recycled asphalt pavement not breaking down during the heating and mixing of the HMA, the Contractor shall immediately suspend the use of the RAP until changes have been approved by the Engineer. After the required amount of mineral materials, RAP, new asphalt binder and asphalt rejuvenator have been introduced into the mixer the HMA shall be mixed until complete and uniform coating of the particles and thorough distribution of the asphalt binder throughout the mineral materials, and RAP is ensured.

5-04.3(7) Spreading and Finishing

The mixture shall be placed upon an approved surface, spread, and struck off to the grade and elevation established. HMA pavers complying with Section 5-04.3(3) shall be used to distribute the mixture. Unless otherwise directed by the Engineer, the nominal compacted depth of any layer of any course shall not exceed the following:

HMA Class 1”		0.35 feet
HMA Class ¾” and HMA Class ½”		
	wearing course	0.30 feet
	other courses	0.35 feet
HMA Class ⅜”		0.15 feet

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the paving may be done with other equipment or by hand.

When more than one JMF is being utilized to produce HMA, the material produced for each JMF shall be placed by separate spreading and compacting equipment. The intermingling of HMA produced from more than one JMF is prohibited. Each strip of HMA placed during a work shift shall conform to a single JMF established for the class of HMA specified unless there is a need to make an adjustment in the JMF.

5-04.3(8) Aggregate Acceptance Prior to Incorporation in HMA

For HMA accepted by nonstatistical evaluation, the aggregate properties of sand equivalent, uncompacted void content, and fracture will be evaluated in accordance with Section 3-04. Sampling and testing of aggregates for HMA accepted by commercial evaluation will be at the option of the Engineer.

5-04.3(9) HMA Mixture Acceptance

Acceptance of HMA shall be as provided under nonstatistical, or commercial evaluation.

Nonstatistical evaluation will be used for the acceptance of HMA unless Commercial Evaluation is specified.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, temporary pavement, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Engineer.

The mix design will be the initial JMF for the class of HMA. The Contractor may request a change in the JMF. Any adjustments to the JMF will require the approval of the Engineer and may be made in accordance with this section.

HMA Tolerances and Adjustments

1. **Job Mix Formula Tolerances** – The constituents of the mixture at the time of acceptance shall be within tolerance. The tolerance limits will be established as follows:

   For Asphalt Binder and Air Voids (Va), the acceptance limits are determined by adding the tolerances below to the approved JMF values. These values will also be the Upper Specification Limit (USL) and Lower Specification Limit (LSL) required in Section 1-06.2(2)D2

Property	Non-Statistical Evaluation	Commercial Evaluation
Asphalt Binder	+/- 0.5%	+/- 0.7%
Air Voids, Va	2.5% min. and 5.5% max	N/A

   For Aggregates in the mixture:

   a. First, determine preliminary upper and lower acceptance limits by applying the following tolerances to the approved JMF.

Aggregate Percent Passing	Non-Statistical Evaluation	Commercial Evaluation
1", ¾", ½", and 3/8" sieves	+/- 6%	+/- 8%
No. 4 sieve	+/-6%	+/- 8%
No. 8 Sieve	+/- 6%	+/-8%
No. 200 sieve	+/- 2.0%	+/- 3.0%

b. Second, adjust the preliminary upper and lower acceptance limits determined from step (a) the minimum amount necessary so that none of the aggregate properties are outside the control points in Section 9-03.8(6), except as specified below in (c). The resulting values will be the upper and lower acceptance limits for aggregates, as well as the USL and LSL required in Section 1-06.2(2)D2.

c. These tolerances and specification limits constitute the allowable limits as described in Section 1-06.2. The tolerance limit for aggregate shall not exceed the limits of the control points, except the No. 8 tolerance is +/- 6% from the JMF, the No. 200 tolerance is +/- 2.0% from the JMF with a minimum of 2% and a maximum of 8.0% passing the No. 200 sieve. Other tolerance limits for sieves designated as 100 percent passing will be 99-100

2. **Job Mix Formula Adjustments** – An adjustment to the aggregate gradation or asphalt binder content of the JMF requires approval of the Engineer. Adjustments to the JMF will only be considered if the change produces material of equal or better quality and may require the development of a new mix design if the adjustment exceeds the amounts listed below.

a. **Aggregates** –2 percent for the aggregate passing the 1½″, 1″, ¾″, ½″, ⅜″, and the No. 4 sieves, 1 percent for aggregate passing the No. 8 sieve, and 0.5 percent for the aggregate passing the No. 200 sieve. The adjusted JMF shall be within the range of the control points in Section 9-03.8(6).

b. **Asphalt Binder Content** – The Engineer may order or approve changes to asphalt binder content. The maximum adjustment from the approved mix design for the asphalt binder content shall be 0.3 percent.

5-04.3(9)A Vacant

5-04.3(9)B Vacant

5-04.3(9)C Mixture Acceptance – Nonstatistical Evaluation

HMA mixture which is accepted by Nonstatistical Evaluation will be evaluated by the Contracting Agency by dividing the HMA tonnage into lots.

5-04.3(9)C1 Mixture Nonstatistical Evaluation – Lots and Sublots

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced

for each Job Mix Formula placed. Only one lot per JMF is expected. A sublot shall be equal to one day's production or 800 tons, whichever is less except that the final sublot will be a minimum of 400 tons and may be increased to 1200 tons.

All of the test results obtained from the acceptance samples from a given lot shall be evaluated collectively. If the Contractor requests a change to the JMF that is approved, the material produced after the change will be evaluated on the basis of the new JMF for the remaining sublots in the current lot and for acceptance of subsequent lots. For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

Sampling and testing for evaluation shall be performed on the frequency of one sample per sublot.

5-04.3(9)C2 Mixture Nonstatistical Evaluation Sampling

Samples for acceptance testing shall be obtained by the Contractor when ordered by the Engineer. The Contractor shall sample the HMA mixture in the presence of the Engineer and in accordance with AASHTO T 168. A minimum of three samples should be taken for each class of HMA placed on a project. If used in a structural application, at least one of the three samples shall be tested.

Sampling and testing HMA in a structural application where quantities are less than 400 tons is at the discretion of the Engineer.

For HMA used in a structural application and with a total project quantity less than 800 tons but more than 400 tons, a minimum of one acceptance test shall be performed. In all cases, a minimum of 3 samples will be obtained at the point of acceptance, a minimum of one of the three samples will be tested for conformance to the JMF:

- If the test results are found to be within specification requirements, additional testing will be at the Engineer's discretion.

- If test results are found not to be within specification requirements, additional testing of the remaining samples to determine a CPF shall be performed.

5-04.3(9)C3 Mixture Nonstatistical Evaluation – Acceptance Testing

Testing of HMA for compliance of V_a will at the option of the Contracting Agency. If tested, compliance of V_a will use WSDOT SOP 731.

Testing for compliance of asphalt binder content will be by WSDOT FOP for AASHTO T 308.

Testing for compliance of gradation will be by FOP for WAQTC T 27/T 11.

5-04.3(9)C4 Mixture Nonstatistical Evaluation – Pay Factors

For each lot of material falling outside the tolerance limits in 5-04.3(9), the Contracting Agency will determine a CPF using the following price adjustment factors:

Table of Price Adjustment Factors	
Constituent	**Factor "f"**
All aggregate passing: 1½″, 1″, ¾″, ½″, ⅜″ and No.4 sieves	2
All aggregate passing No. 8 sieve	15
All aggregate passing No. 200 sieve	20
Asphalt binder	40
Air Voids (Va) (where applicable)	20

Each lot of HMA produced under Nonstatistical Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the nonstatistical tolerance limits in the Job Mix Formula shown in Table of Price Adjustment Factors, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The nonstatistical tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the Roadway shall be tested to provide a minimum of three sets of results for evaluation.

5-04.3(9)C5 Vacant

5-04.3(9)C6 Mixture Nonstatistical Evaluation – Price Adjustments

For each lot of HMA mix produced under Nonstatistical Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The total job mix compliance price adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

If a constituent is not measured in accordance with these Specifications, its individual pay factor will be considered 1.00 in calculating the CPF.

5-04.3(9)C7 Mixture Nonstatistical Evaluation - Retests

The Contractor may request a sublot be retested. To request a retest, the Contractor shall submit a written request within 7 calendar days after the specific test results have been received. A split of the original acceptance sample will be retested. The split of the sample will not be tested with the same tester that ran the original acceptance test. The sample will be tested for a complete gradation analysis, asphalt binder content, and, at the option of the agency, V_a. The results of the retest will be used for the acceptance of the HMA in place of the original sublot sample test results. The cost of testing will be

deducted from any monies due or that may come due the Contractor under the Contract at the rate of $500 per sample.

5-04.3(9)D Mixture Acceptance – Commercial Evaluation

If sampled and tested, HMA produced under Commercial Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the commercial tolerance limits in the Job Mix Formula shown in 5-04.3(9), the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The commercial tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the street shall be tested to provide a minimum of three sets of results for evaluation.

For each lot of HMA mix produced and tested under Commercial Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The Job Mix Compliance Price Adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

If a constituent is not measured in accordance with these Specifications, its individual pay factor will be considered 1.00 in calculating the CPF.

5-04.3(10) HMA Compaction Acceptance

HMA mixture accepted by nonstatistical evaluation that is used in traffic lanes, including lanes for intersections, ramps, truck climbing, weaving, and speed change, and having a specified compacted course thickness greater than 0.10-foot, shall be compacted to a specified level of relative density. The specified level of relative density shall be a CPF of not less than 0.75 when evaluated in accordance with Section 1-06.2, using a LSL of 92.0 (minimum of 92 percent of the maximum density). The maximum density shall be determined by WSDOT FOP for AASHTO T 729. The specified level of density attained will be determined by the evaluation of the density of the pavement. The density of the pavement shall be determined in accordance with WSDOT FOP for WAQTC TM 8, except that gauge correlation will be at the discretion of the Engineer, when using the nuclear density gauge and WSDOT SOP 736 when using cores to determine density.

Tests for the determination of the pavement density will be taken in accordance with the required procedures for measurement by a nuclear density gauge or Roadway cores after completion of the finish rolling.

If the Contracting Agency uses a nuclear density gauge to determine density the test procedures FOP for WAQTC TM 8 and WSDOT SOP T 729 will be used on the day the mix is placed and prior to opening to traffic.

Roadway cores for density may be obtained by either the Contracting Agency or the Contractor in accordance with WSDOT SOP 734. The core diameter shall be 4-inches

minimum, unless otherwise approved by the Engineer. Roadway cores will be tested by the Contracting Agency in accordance with WSDOT FOP for AASHTO T 166.

If the Contract includes the Bid item “Roadway Core”, the cores shall be obtained by the Contractor in the presence of the Engineer on the same day the mix is placed and at locations designated by the Engineer. If the Contract does not include the Bid item “Roadway Core”, the Contracting Agency will obtain the cores.

For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor’s request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used for preleveling wheel rutting shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

Test Results

For a sublot that has been tested with a nuclear density gauge that did not meet the minimum of 92 percent of the reference maximum density in a compaction lot with a CPF below 1.00 and thus subject to a price reduction or rejection, the Contractor may request that a core be used for determination of the relative density of the sublot. The relative density of the core will replace the relative density determined by the nuclear density gauge for the sublot and will be used for calculation of the CPF and acceptance of HMA compaction lot.

When cores are taken by the Contracting Agency at the request of the Contractor, they shall be requested by noon of the next workday after the test results for the sublot have been provided or made available to the Contractor. Core locations shall be outside of wheel paths and as determined by the Engineer. Traffic control shall be provided by the Contractor as requested by the Engineer. Failure by the Contractor to provide the requested traffic control will result in forfeiture of the request for cores. When the CPF for the lot based on the results of the HMA cores is less than 1.00, the cost for the coring will be deducted from any monies due or that may become due the Contractor under the Contract at the rate of $200 per core and the Contractor shall pay for the cost of the traffic control.

5-04.3(10)A HMA Compaction – General Compaction Requirements

Compaction shall take place when the mixture is in the proper condition so that no undue displacement, cracking, or shoving occurs. Areas inaccessible to large compaction equipment shall be compacted by other mechanical means. Any HMA that becomes loose, broken, contaminated, shows an excess or deficiency of asphalt, or is in any way

defective, shall be removed and replaced with new hot mix that shall be immediately compacted to conform to the surrounding area.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided the specified densities are attained. Unless the Engineer has approved otherwise, rollers shall only be operated in the static mode when the internal temperature of the mix is less than 175°F. Regardless of mix temperature, a roller shall not be operated in a mode that results in checking or cracking of the mat. Rollers shall only be operated in static mode on bridge decks.

5-04.3(10)B HMA Compaction - Cyclic Density

Low cyclic density areas are defined as spots or streaks in the pavement that are less than 90 percent of the theoretical maximum density. At the Engineer's discretion, the Engineer may evaluate the HMA pavement for low cyclic density, and when doing so will follow WSDOT SOP 733. A $1500 Cyclic Density Price Adjustment will be assessed for any 500-foot section with two or more density readings below 90 percent of the theoretical maximum density.

5-04.3(10)C Vacant

5-04.3(10)D HMA Nonstatistical Compaction

5-04.3(10)D1 HMA Nonstatistical Compaction - Lots and Sublots

HMA compaction which is accepted by nonstatistical evaluation will be based on acceptance testing performed by the Contracting Agency dividing the project into compaction lots.

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced for each Job Mix Formula placed. Only one lot per JMF is expected. A sublot shall be equal to one day's production or 400 tons, whichever is less except that the final sublot will be a minimum of 200 tons and may be increased to 800 tons. Testing for compaction will be at the rate of 5 tests per sublot per WSDOT T 738.

The sublot locations within each density lot will be determined by the Engineer. For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used to prelevel wheel ruts shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

5-04.3(10)D2 HMA Compaction Nonstatistical Evaluation – Acceptance Testing

The location of the HMA compaction acceptance tests will be randomly selected by the Engineer from within each sublot, with one test per sublot.

5-04.3(10)D3 HMA Nonstatistical Compaction – Price Adjustments

For each compaction lot with one or two sublots, having all sublots attain a relative density that is 92 percent of the reference maximum density the HMA shall be accepted at the unit Contract price with no further evaluation. When a sublot does not attain a relative density that is 92 percent of the reference maximum density, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The maximum CPF shall be 1.00, however, lots with a calculated CPF in excess of 1.00 will be used to offset lots with CPF values below 1.00 but greater than 0.90. Lots with CPF lower than 0.90 will be evaluated for compliance per 5-04.3(11). Additional testing by either a nuclear moisture-density gauge or cores will be completed as required to provide a minimum of three tests for evaluation.

For compaction below the required 92%, a Non-Conforming Compaction Factor (NCCF) will be determined. The NCCF equals the algebraic difference of CPF minus 1.00 multiplied by 40 percent. The Compaction Price Adjustment will be calculated as the product of CPF, the quantity of HMA in the compaction control lot in tons, and the unit Contract price per ton of mix.

5-04.3(11) Reject Work

5-04.3(11)A Reject Work General

Work that is defective or does not conform to Contract requirements shall be rejected. The Contractor may propose, in writing, alternatives to removal and replacement of rejected material. Acceptability of such alternative proposals will be determined at the sole discretion of the Engineer. HMA that has been rejected is subject to the requirements in Section 1-06.2(2) and this specification, and the Contractor shall submit a corrective action proposal to the Engineer for approval.

5-04.3(11)B Rejection by Contractor

The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material. Any such new material will be sampled, tested, and evaluated for acceptance.

5-04.3(11)C Rejection Without Testing (Mixture or Compaction)

The Engineer may, without sampling, reject any batch, load, or section of Roadway that appears defective. Material rejected before placement shall not be incorporated into the pavement. Any rejected section of Roadway shall be removed.

No payment will be made for the rejected materials or the removal of the materials unless the Contractor requests that the rejected material be tested. If the Contractor elects to have the rejected material tested, a minimum of three representative samples will be obtained and tested. Acceptance of rejected material will be based on conformance with the nonstatistical acceptance Specification. If the CPF for the rejected material is less than 0.75, no payment will be made for the rejected material; in addition, the cost of sampling and testing shall be borne by the Contractor. If the CPF is greater than or equal to 0.75, the cost of sampling and testing will be borne by the Contracting Agency. If the material is rejected before placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at a CPF of 0.75. If rejection occurs after placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at the calculated CPF with an addition of 25 percent of the unit Contract price added for the cost of removal and disposal.

5-04.3(11)D Rejection - A Partial Sublot

In addition to the random acceptance sampling and testing, the Engineer may also isolate from a normal sublot any material that is suspected of being defective in relative density, gradation or asphalt binder content. Such isolated material will not include an original sample location. A minimum of three random samples of the suspect material will be obtained and tested. The material will then be statistically evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)E Rejection - An Entire Sublot

An entire sublot that is suspected of being defective may be rejected. When a sublot is rejected a minimum of two additional random samples from this sublot will be obtained. These additional samples and the original sublot will be evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)F Rejection - A Lot in Progress

The Contractor shall shut down operations and shall not resume HMA placement until such time as the Engineer is satisfied that material conforming to the Specifications can be produced:

1. When the CPF of a lot in progress drops below 1.00 and the Contractor is taking no corrective action, or
2. When the Pay Factor (PF) for any constituent of a lot in progress drops below 0.95 and the Contractor is taking no corrective action, or
3. When either the PF for any constituent or the CPF of a lot in progress is less than 0.75.

5-04.3(11)G Rejection - An Entire Lot (Mixture or Compaction)

An entire lot with a CPF of less than 0.75 will be rejected.

5-04.3(12) Joints

5-04.3(12)A HMA Joints

5-04.3(12)A1 Transverse Joints

The Contractor shall conduct operations such that the placing of the top or wearing course is a continuous operation or as close to continuous as possible. Unscheduled transverse joints will be allowed, and the roller may pass over the unprotected end of the freshly placed mixture only when the placement of the course must be discontinued for such a length of time that the mixture will cool below compaction temperature. When the Work is resumed, the previously compacted mixture shall be cut back to produce a slightly beveled edge for the full thickness of the course.

A temporary wedge of HMA constructed on a 20H:1V shall be constructed where a transverse joint as a result of paving or planing is open to traffic. The HMA in the temporary wedge shall be separated from the permanent HMA by strips of heavy wrapping paper or other methods approved by the Engineer. The wrapping paper shall be removed and the joint trimmed to a slightly beveled edge for the full thickness of the course prior to resumption of paving.

The material that is cut away shall be wasted and new mix shall be placed against the cut. Rollers or tamping irons shall be used to seal the joint.

5-04.3(12)A2 Longitudinal Joints

The longitudinal joint in any one course shall be offset from the course immediately below by not more than 6 inches nor less than 2 inches. All longitudinal joints constructed in the wearing course shall be located at a lane line or an edge line of the Traveled Way. A notched wedge joint shall be constructed along all longitudinal joints in the wearing surface of new HMA unless otherwise approved by the Engineer. The notched wedge joint shall have a vertical edge of not less than the maximum aggregate size or more than ½ of the compacted lift thickness and then taper down on a slope not steeper than 4H:1V. The sloped portion of the HMA notched wedge joint shall be uniformly compacted.

5-04.3(12)B Bridge Paving Joint Seals

Bridge Paving Joint Seals shall be in accordance with Section 5-03.

5-04.3(13) Surface Smoothness

The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The completed surface of the wearing course shall not vary more than ⅛ inch from the lower edge of a 10-foot straightedge placed on the surface parallel to the centerline. The transverse slope of the completed surface of the wearing course shall vary not more than ¼ inch in 10 feet from the rate of transverse slope shown in the Plans.

When deviations in excess of the above tolerances are found that result from a high place in the HMA, the pavement surface shall be corrected by one of the following methods:

1. Removal of material from high places by grinding with an approved grinding machine, or

2. Removal and replacement of the wearing course of HMA, or

3. By other method approved by the Engineer.

Correction of defects shall be carried out until there are no deviations anywhere greater than the allowable tolerances.

Deviations in excess of the above tolerances that result from a low place in the HMA and deviations resulting from a high place where corrective action, in the opinion of the Engineer, will not produce satisfactory results will be accepted with a price adjustment. The Engineer shall deduct from monies due or that may become due to the Contractor the sum of $1500.00 for each and every section of single traffic lane 100 feet in length in which any excessive deviations described above are found.

When utility appurtenances such as manhole covers and valve boxes are located in the traveled way, the utility appurtenances shall be adjusted to the finished grade prior to paving. This requirement may be waived when requested by the Contractor, at the discretion of the Engineer or when the adjustment details provided in the project plan or specifications call for utility appurtenance adjustments after the completion of paving.

Utility appurtenance adjustment discussions will be included in the Pre-Paving and Pre-Planing Briefing (5-04.3(14)B3). Submit a written request to waive this requirement to the Engineer prior to the start of paving.

5-04.3(14) Planing (Milling) Bituminous Pavement

The planing plan must be approved by the Engineer and a pre-planing meeting must be held prior to the start of any planing. See Section 5-04.3(14)B2 for information on planing submittals.

Where planing an existing pavement is specified in the Contract, the Contractor must remove existing surfacing material and to reshape the surface to remove irregularities. The finished product must be a prepared surface acceptable for receiving an HMA overlay.

Use the cold milling method for planing unless otherwise specified in the Contract. Do not use the planer on the final wearing course of new HMA.

Conduct planing operations in a manner that does not tear, break, burn, or otherwise damage the surface which is to remain. The finished planed surface must be slightly grooved or roughened and must be free from gouges, deep grooves, ridges, or other

imperfections. The Contractor must repair any damage to the surface by the Contractor's planing equipment, using an Engineer approved method.

Repair or replace any metal castings and other surface improvements damaged by planing, as determined by the Engineer.

A tapered wedge cut must be planed longitudinally along curb lines sufficient to provide a minimum of 4 inches of curb reveal after placement and compaction of the final wearing course. The dimensions of the wedge must be as shown on the Drawings or as specified by the Engineer.

A tapered wedge cut must also be made at transitions to adjoining pavement surfaces (meet lines) where butt joints are shown on the Drawings. Cut butt joints in a straight line with vertical faces 2 inches or more in height, producing a smooth transition to the existing adjoining pavement.

After planing is complete, planed surfaces must be swept, cleaned, and if required by the Contract, patched and preleveled.

The Engineer may direct additional depth planing. Before performing this additional depth planing, the Contractor must conduct a hidden metal in pavement detection survey as specified in Section 5-04.3(14)A.

Section 5-04.3(14) is supplemented with the following:

(******)

The Contractor shall perform the planing operations no more than three (3) calendar days ahead of the time the planed area is to be paved with HMA, unless otherwise allowed by the Engineer in writing.

See Section 1-08.9 Liquidated Damages of these Special Provisions for the cost of not meeting the above requirements.

5-04.3(14)A Pre-Planing Metal Detection Check

Before starting planing of pavements, and before any additional depth planing required by the Engineer, the Contractor must conduct a physical survey of existing pavement to be planed with equipment that can identify hidden metal objects.

Should such metal be identified, promptly notify the Engineer.

See Section 1-07.16(1) regarding the protection of survey monumentation that may be hidden in pavement.

The Contractor is solely responsible for any damage to equipment resulting from the Contractor's failure to conduct a pre-planing metal detection survey, or from the Contractor's failure to notify the Engineer of any hidden metal that is detected.

5-04.3(14)B Paving and Planing Under Traffic

5-04.3(14)B1 General

In addition, the requirements of Section 1-07.23 and the traffic controls required in Section 1-10, and unless the Contract specifies otherwise or the Engineer approves, the Contractor must comply with the following:

1. Intersections:

   a. Keep intersections open to traffic at all times, except when paving or planing operations through an intersection requires closure. Such closure must be kept to the minimum time required to place and compact the HMA mixture, or plane as appropriate. For paving, schedule such closure to individual lanes or portions thereof that allows the traffic volumes and schedule of traffic volumes required in the approved traffic control plan. Schedule work so that adjacent intersections are not impacted at the same time and comply with the traffic control restrictions required by the Traffic Engineer. Each individual intersection closure or partial closure must be addressed in the traffic control plan, which must be submitted to and accepted by the Engineer, see Section 1-10.2(2).

   b. When planing or paving and related construction must occur in an intersection, consider scheduling and sequencing such work into quarters of the intersection, or half or more of an intersection with side street detours. Be prepared to sequence the work to individual lanes or portions thereof.

   c. Should closure of the intersection in its entirety be necessary, and no trolley service is impacted, keep such closure to the minimum time required to place and compact the HMA mixture, plane, remove asphalt, tack coat, and as needed.

   d. Any work in an intersection requires advance warning in both signage and a number of Working Days advance notice as determined by the Engineer, to alert traffic and emergency services of the intersection closure or partial closure.

   e. Allow new compacted HMA asphalt to cool to ambient temperature before any traffic is allowed on it. Traffic is not allowed on newly placed asphalt until approval has been obtained from the Engineer.

2. Temporary centerline marking, post-paving temporary marking, temporary stop bars, and maintaining temporary pavement marking must comply with Section 8-23.

3. Permanent pavement marking must comply with Section 8-22.

5-04.3(14)B2 Submittals - Planing Plan and HMA Paving Plan

The Contractor must submit a separate planing plan and a separate paving plan to the Engineer at least 5 Working Days in advance of each operation's activity start date.

These plans must show how the moving operation and traffic control are coordinated, as they will be discussed at the pre-planing briefing and pre-paving briefing. When requested by the Engineer, the Contractor must provide each operation's traffic control plan on 24 x 36 inch or larger size Shop Drawings with a scale showing both the area of operation and sufficient detail of traffic beyond the area of operation where detour traffic may be required. The scale on the Shop Drawings is 1 inch = 20 feet, which may be changed if the Engineer agrees sufficient detail is shown.

The planing operation and the paving operation include, but are not limited to, metal detection, removal of asphalt and temporary asphalt of any kind, tack coat and drying, staging of supply trucks, paving trains, rolling, scheduling, and as may be discussed at the briefing.

When intersections will be partially or totally blocked, provide adequately sized and noticeable signage alerting traffic of closures to come, a minimum 2 Working Days in advance. The traffic control plan must show where police officers will be stationed when signalization is or may be, countermanded, and show areas where flaggers are proposed.

At a minimum, the planing and the paving plan must include:

1. A copy of the accepted traffic control plan, see Section 1-10.2(2), detailing each day's traffic control as it relates to the specific requirements of that day's planing and paving. Briefly describe the sequencing of traffic control consistent with the proposed planing and paving sequence, and scheduling of placement of temporary pavement markings and channelizing devices after each day's planing, and paving.

2. A copy of each intersection's traffic control plan.

3. Haul routes from supplier facilities, and locations of temporary parking and staging areas, including return routes. Describe the complete round trip as it relates to the sequencing of paving operations.

4. Names and locations of HMA supplier facilities to be used.

5. List of all equipment to be used for paving.

6. List of personnel and associated job classification assigned to each piece of paving equipment.

7. Description (geometric or narrative) of the scheduled sequence of planing and of paving and intended area of planing and of paving for each day's work, must include the directions of proposed planing and of proposed paving, sequence of adjacent lane paving, sequence of skipped lane paving, intersection planing and paving scheduling and sequencing, and proposed notifications and coordination's

to be timely made. The plan must show HMA joints relative to the final pavement marking lane lines.

8. Names, job titles, and contact information for field, office, and plant supervisory personnel.

9. A copy of the approved Mix Designs.

10. Tonnage of HMA to be placed each day.

11. Approximate times and days for starting and ending daily operations.

5-04.3(14)B3 Pre-Paving and Pre-Planing Briefing

At least 2 Working Days before the first paving operation and the first planing operation, or as scheduled by the Engineer for future paving and planing operations to ensure the Contractor has adequately prepared for notifying and coordinating as required in the Contract, the Contractor must be prepared to discuss that day's operations as they relate to other entities and to public safety and convenience, including driveway and business access, garbage truck operations, transit operations and working around energized overhead wires, school and nursing home and hospital and other accesses, other Contractors who may be operating in the area, pedestrian and bicycle traffic, and emergency services. The Contractor, and Subcontractors that may be part of that day's operations, must meet with the Engineer and discuss the proposed operation as it relates to the submitted planing plan and paving plan, approved traffic control plan, and public convenience and safety. Such discussion includes, but is not limited to:

1. General for both the Paving and Planing:

   a. The actual times of starting and ending daily operations.

   b. In intersections, how to break up the intersection, and address traffic control and signalization for that operation, including use of peace officers.

   c. The sequencing and scheduling of paving operations and of planing operations, as applicable, as it relates to traffic control, public convenience and safety, and other Contractors who may operate in the Project limits.

   d. Notifications required of Contractor activities and coordinating with other entities and the public as necessary.

   e. Description of the sequencing of installation and types of temporary pavement markings as it relates to planing and paving.

   f. Description of the sequencing of installation of, and the removal of, temporary pavement patch material around exposed castings and as may be needed.

g. Description of procedures and equipment to identify hidden metal in the pavement, such as survey monumentation, monitoring wells, streetcar rail, and castings, before planing as per Section 5-04.3(14)B2.

h. Description of how flaggers will be coordinated with the planing, paving, and related operations.

i. Description of sequencing of traffic controls for the process of rigid pavement base repairs.

j. Other items the Engineer deems necessary to address.

2. Paving – additional topics:

a. When to start applying tack and coordinating with paving.

b. Types of equipment and numbers of each type of equipment to be used. If more pieces of equipment than personnel are proposed, describe the sequencing of the personnel operating the types of equipment. Discuss the continuance of operator personnel for each type of equipment as it relates to meeting Specification requirements.

c. Number of JMFs to be placed, and if more than one JMF is used, how the Contractor will ensure different JMFs are distinguished, how pavers and how MTVs are distinguished, and how pavers and MTVs are cleaned so that one JMF does not adversely influence the other JMF.

d. Description of contingency plans for that day's operations such as equipment breakdown, rain out, and supplier shutdown of operations.

e. Number of sublots to be placed, sequencing of density testing, and other sampling and testing.

5-04.3(15) Sealing Pavement Surfaces

Apply a fog seal where shown in the plans. Construct the fog seal in accordance with Section 5-02.3. Unless otherwise approved by the Engineer, apply the fog seal prior to opening to traffic.

5-04.3(16) HMA Road Approaches

Construct HMA approaches at the locations shown in the Plans or where staked by the Engineer, in accordance with Section 5-04.

(******)

Asphalt used for road approaches shall be paid under the bid item, "HMA Cl. ½ In. PG 58H-22", per ton.

5-04.4 Measurement

HMA Cl. ___ PG ___, HMA for ___ Cl. ___ PG ___, and Commercial HMA will be measured by the ton in accordance with Section 1-09.2, with no deduction being made for the weight of asphalt binder, mineral filler, or any other component of the mixture. If the Contractor elects to remove and replace mix as allowed by Section 5-04.3(11), the material removed will not be measured.

Roadway cores will be measured per each for the number of cores taken.

Pavement repair excavation will be measured by the square yard of surface marked prior to excavation.

(******)

All joint seals including, but not limited to, traverse and longitudinal will not be measured. Joint sealing shall be considered incidental to the bid item, "HMA Cl. ½ In. PG 58h-22", per ton.

Planing bituminous pavement will be measured by the square yard.

Section 5-04.4 shall be supplement with the following"

(******)

Planing bituminous pavement will be measured by the square yard and will include butt joint, variable depth and full depth grinding as shown on the plans and removing and disposing of raised pavement markers within the planing limits. Existing utilities shall be lowered prior to grinding and adjusted to grade after paving is complete.

5-04.5 Payment

Payment will be made for each of the following Bid items that are included in the Proposal:

"HMA Cl. ___ PG ___", per ton.
"HMA for Approach Cl. ___ PG ___", per ton.
"HMA for Preleveling Cl. ___ PG ___", per ton.
"HMA for Pavement Repair Cl. ___ PG ___", per ton.
"Commercial HMA", per ton.

(******)

The unit Contract price per ton for "HMA Cl. ___ PG ___", "HMA for Approach Cl. ___ PG ___", "HMA for Preleveling Cl. ___ PG ___", "HMA for Pavement Repair Cl. ___ PG ___", and "Commercial HMA" shall be full compensation for all costs, including anti-stripping additive, and all joint seals, incurred to carry out the requirements of Section 5-04 except for those costs included in other items which are included in this Subsection and which are included in the Proposal.

(******)

The unit Contract price per ton for "HMA Cl. 3/8" PG 58H-22", shall include the cost to install all paving of the trail including the cost to install asphalt under the proposed benches, pet waste stations and trash receptables.

"Pavement Repair Excavation Incl. Haul", per square yard.
The unit Contract price per square yard for "Pavement Repair Excavation Incl. Haul" shall be full payment for all costs incurred to perform the Work described in Section 5-04.3(4) with the exception, however, that all costs involved in the placement of HMA shall be included in the unit Contract price per ton for "HMA for Pavement Repair Cl. ___ PG ___", per ton.

"Planing Bituminous Pavement", per square yard.
The unit Contract price per square yard for "Planing Bituminous Pavement" shall be full payment for all costs incurred to perform the Work described in Section 5-04.3(14).

(******)
Longitudinal Joint Seals will not be measured and will be incidental to other bid items.

(******)
The unit Contract price per square yard for "Planing Bituminous Pavement" shall be full payment for all costs incurred to perform the Work described in Section 5-04.3(14).

"Job Mix Compliance Price Adjustment", by calculation.
"Job Mix Compliance Price Adjustment" will be calculated and paid for as described in Section 5-04.3(9)C6.

"Compaction Price Adjustment", by calculation.
"Compaction Price Adjustment" will be calculated and paid for as described in Section 5-04.3(10)D3.

"Roadway Core", per each.
The Contractor's costs for all Work associated with the coring (e.g., traffic control) shall be incidental and included in the unit Bid price per each.

"Cyclic Density Price Adjustment", by calculation.
"Cyclic Density Price Adjustment" will be calculated and paid for as described in Section 5-04.3(10)B.

Section 5-04.5 is supplemented with the following:

(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"

The adjustment is not a guarantee of full compensation for changes in the cost of asphalt binder. The Contracting Agency does not guarantee that asphalt binder will be available at the reference cost.

The Contracting Agency will establish asphalt binder reference costs twice each month and post the information on the Agency website at: https://wsdot.wa.gov/business-wsdot/how-do-business-us/public-works-contracts/payments-reporting/asphalt-binder-reference-cost. The reference cost will be determined using posted prices furnished by Poten & Partners, Inc. If the selected price source ceases to be available for any reason, then the Contracting Agency will select a substitute price source to establish the reference cost.

Price adjustments will be calculated one time per month. No price adjustment will be made if the Current Reference Cost is within +/-5% of the Base Cost. Reference costs for projects located in Eastern versus Western Washington shall be selected from the column in the WSDOT website table labeled "Eastern", or "Western", accordingly. The adjustment will be calculated as follows:

If the reference cost is greater than or equal to 105% of the base cost, then Asphalt Cost Price Adjustment = (Current Reference Cost – (1.05 x Base Cost)) x (Q x 0.056).

If the reference cost is less than or equal to 95% of the base cost, then Asphalt Cost Price Adjustment = (Current Reference Cost – (0.95 x Base Cost)) x (Q x 0.056).

Where: **Current Reference Cost** is selected from the website table based on the "Date Effective" that immediately precedes the current month's progress estimate end date. For work completed after all authorized working days are used, the adjustment will be based on the posted reference cost during which contract time was exhausted.

Base Cost is selected from the website table based on the "Date Effective" that immediately precedes the contract bid opening date, and shall be a constant for all monthly adjustments.

Q = total tons of all classes of HMA paid in the current month's progress payment.

"Asphalt Cost Price Adjustment", by calculation.
"Asphalt Cost Price Adjustment" will be calculated and paid for as described in this section. For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the total bid by the Contractor.

END OF DIVISON 5

Division 6
Structures

6-02 CONCRETE STRUCTURES

6-02.2 Materials

Section 6-02.2 is supplemented with the following:

Bridge Supported Utilities

(June 26, 2000)
Inserts shall be of the type and model specified in the Plans. Inserts shall be galvanized in accordance with AASHTO M 111.

(September 3, 2019)
Hanger rods, and associated nuts and washers, shall conform to Section 9-06.5(1), and shall be galvanized in accordance with ASTM F2329.

Steel bars and plates shall conform to ASTM A 36 and shall be galvanized in accordance with AASHTO M 111.

(September 3, 2019)
Horizontal strut bolts or threaded rods, and associated nuts and washers, shall conform to Section 9-06.5(1), and shall be galvanized in accordance with ASTM F2329.

Pre-formed fabric pads shall be composed of multiple layers of duck, impregnated and bound with high quality oil resistant synthetic rubber, compressed into resilient pads. The pre-formed fabric pads shall conform to latest edition of MIL C 882 and the following requirements. The number of plies shall be as required to produce the specified thickness, after compression and vulcanizing.

Pre-formed fabric pads shall have a shore A hardness of 90$\pm$5 in accordance with ASTM D 2240.

Pre-formed fabric pads for bridge utility supports will be accepted based on the Manufacturer's Certificate of Compliance that the material furnished conforms to these specifications.

Anchor bolts, and associated nuts and washers, shall conform to Section 9-06.5(4), and shall be galvanized in accordance with ASTM F2329.

6-02.3 Construction Requirements

Section 6-02.3 is supplemented with the following:

Bridge Supported Utilities

(August 3, 2015)
The Contractor shall furnish and install inserts for the bridge utility supports as shown in the Plans. The Contractor shall verify that the hanger rods freely hang plumb in their

inserts, and shall make adjustments to the inserts as necessary and as accepted by the Engineer prior to utility installation.

(June 26, 2000)
The Contractor shall furnish and install the bridge utility supports, and the utility pipe or conduit pipe, as shown in the Plans.

6-02.3(4) Ready-Mix Concrete

6-02.3(4)A Qualification of Concrete Supplier

Section 6-02.3(4)A is revised to read:

(November 25, 2025)
Batch Plant Prequalification requires a certification by the National Ready Mix Concrete Association (NRMCA). Information concerning NRMCA certification may be obtained from the NRMCA at 900 Spring Street, Silver Springs, MD 20910 or online at www.nrmca.org. The NRMCA certification shall be valid for a 2-year period from the date of certificate. The following documentation shall be submitted to the Engineer; a copy of the current NRMCA Certificate of Conformance, the concrete mix design(s) (WSDOT Form 350-040), along with copies of the truck list, batch plant scale certification, admixture dispensing certification, and volumetric water batching devices (including water meters) verification.

For central-mixed concrete, the mixer shall be equipped with a timer that prevents the batch from discharging until the batch has been mixed for the prescribed mixing time. A mixing time of 1 minute will be required after all materials and water have been introduced into the drum. Shorter mixing time may be allowed if the mixer performance is tested in accordance with (AASHTO M157 Annex A1 Concrete Uniformity Requirements). Tests shall be conducted by an independent testing lab or by a commercial concrete producer's lab. If the tests are performed by a producer's lab, the Engineer or a representative will witness all testing.

For shrink-mixed concrete, the mixing time in the stationary mixer shall not be less than 30 seconds or until the ingredients have been thoroughly blended.

For transit-mixed or shrink-mixed concrete, the mixing time in the transit mixer shall be a minimum of 70 revolutions at the mixing speed designated by the manufacturer of the mixer. Following mixing, the concrete in the transit mixer may be agitated at the manufacturer's designated agitation speed.

All transit-mixers shall be equipped with an operational revolution counter and a functional device for measurement of water added. All mixing drums shall be free of concrete buildup and the mixing blades shall meet the minimum Specifications of the drum manufacturer. A copy of the manufacturer's blade dimensions and configuration shall be on file at the concrete producer's office. A clearly visible metal data plate (or plates) attached to each mixer and agitator shall display: (1) the maximum concrete capacity of the drum or container for mixing and agitating, and (2) the rotation speed of the drum or blades for both the agitation and mixing speeds. Mixers and agitators shall

always operate within the capacity and speed-of-rotation limits set by the manufacturer. Mixers, when fully loaded, shall keep the concrete uniformly mixed. All mixers and agitators shall be capable of discharging the concrete at a steady rate. Only those transit-mixers which meet the above requirements will be allowed to deliver concrete to a Contracting Agency project covered by these Specifications.

In transit-mixing, mixing shall begin within 30 seconds after the cement is added to the aggregates.

For each project, at least biannually, or as required, the Plant Manager will examine mixers and agitators to check for buildup of hardened concrete or worn blades. If this examination reveals a problem, or if the Engineer wishes to test the quality of the concrete, slump tests may be performed with samples taken at approximately the ¼ and ¾ points as the batch is discharged. The maximum allowable slump difference shall be as follows:
If the average of the two slump tests is < 4 inches, the difference shall be < 1 inch or if the average of the two slump tests is >4 inches, the difference shall be < 1½ inches.

If the slump difference exceeds these limits, the equipment shall not be used until the faulty condition is corrected. However, the equipment may continue in use if longer mixing times or smaller loads produce batches that pass the slump uniformity tests.

All concrete production facilities will be subject to verification inspections at the discretion of the Engineer. Verification inspections are a check for: current scale certifications; accuracy of water metering devices; accuracy of the batching process; and verification of coarse aggregate quality.

If the concrete producer fails to pass the verification inspection, the following actions will be taken:

1. For the first violation, a written warning will be provided.

2. For the second violation, the Engineer will give written notification and the Contracting Agency will assess a price reduction equal to 15 percent of the invoice cost of the concrete that is supplied from the time of the infraction until the deficient condition is corrected.

3. For the third violation, the concrete supplier is suspended from providing concrete until all such deficiencies causing the violation have been permanently corrected and the plant and equipment have been reinspected and meets all the prequalification requirements.

4. For the fourth violation, the concrete supplier shall be disqualified from supplying concrete for 1 year from the date of disqualification. At the end of the suspension period the concrete supplier may request that the facilities be inspected for prequalification.

6-02.3(4)D Temperature and Time for Placement

The last paragraph of Section 6-02.3(D) is revised to read:

(November 3, 2025)
When conditions are such that the concrete may experience an accelerated initial set, the Engineer may require a shorter time to discharge. The time to discharge in the above table may be extended 15 minutes upon request from the Contractor and concurrence of the Engineer. Time extensions greater than 15 minutes require a Type 3 Working Drawing submittal. The submittal shall include:

1. An explanation of why an extended placement time is necessary for the Work.

2. The proposed concrete mix design, including the specified dosage of chemical admixtures for the anticipated range of concrete temperatures and details regarding when the admixtures are to be introduced into the mix. Type B (retarding) or Type D (water-reducing and retarding) chemical admixtures are required for structural or self-consolidating concrete.

3. Technical data sheets and supporting information from the admixture supplier indicating the appropriate chemical admixture dosage for the anticipated concrete temperatures, haul times, and working times.

4. The haul distance and estimated range of haul times.

5. The proposed maximum time to discharge for the mix(es) shall not exceed 3 hours.

6-02.3(5) Acceptance of Concrete

6-02.3(5)B Certification of Compliance

The first paragraph of Section 6-02.5(B) is revised to read:

(November 3, 2025)
The concrete producer shall provide a Certificate of Compliance for each truckload of concrete. The Certificate of Compliance shall verify that the delivered concrete is in compliance with the mix design and shall include:

Manufacturer plant (batching facility)
Contracting Agency Contract number
Date
Time batched
Truck No.
Quantity (quantity batched this load)
Type of concrete by class and producer design mix number
Cement producer, type, and Mill Certification No. (The mill test number as required by Section 9-01.3 is the basis for acceptance of cement.)
Fly ash (if used) brand and Class
Accepted aggregate gradation designation

6-02.3(14) Finishing Concrete Surfaces

Section 6-02.3(14) is supplemented with the following:

(******)
Section applies for all walls and permanent facing shown on the Drawings to receive an architectural finish.

General Requirements for Finishing:

Smooth off joint marks, remove blemishes, leave finished surfaces smooth and unmarred. Corners of curbs and walls are to have a 1/8" radius unless otherwise specified on the drawings.

6-02.3(14)D2 Architectural Form Liner Finish

Section 6-02.3(14)D2 supplemented with the following**:**

(******)
Reusable form liner panels used to achieve the surface finish specified on the drawings shall be high re-use elastomeric polyurethane form liners fabricated to impart the specified texture to the surface of cast-in-place concrete.

High-use reusable form liners Basis of Design manufacturer:

Architectural Polymers, Inc.
1220 Little Gap Road
Palmerton, PA 18071
Tel: 610.824.3322
Web: https://www.apformliner.com

Or approved equal.

Reusable form liner materials must meet the following properties:

Property	Testing Method	Value
Specific Gravity	(ASTM D2240	1.05
Elongation at Break	(ASTM D2240	550
Shore A Harness	(DIN 35505)	65
Tensile Strength	(DIN 53504)	520 PSI or 3.59 N/mm^2
Tear Resistance	(ASTM D624)	145 PLI or 25.44 kN/m

Contractor shall furnish form liner accessories as required for the complete form liner system.

Form Liner Accessories (Basis of Design products):

1. Release Agent: 2550 Form Oil release agent for cast-in-place concrete, solvent based.
2. Filler: 75/65 RTV Urethane for repair of damaged form liners.
3. Adhesive: Epoxy bond adhesive for fully adhering entire surfaces on steel or timber and equalizing rear of form liner.

The Contractor shall apply a form liner finish to all surfaces of concrete elements designated in the Drawings.

The Contractor shall prepare the form liner prior to the placement of concrete:

1. Verify lines and levels of formwork and form liner patterns are within allowable tolerances.
2. Align form liner modules for a seamless and consistent texture for the entirety of the finished surface.
3. Clean form liner before each use. Do not use damaged form liner when continued use or repair would diminish the aesthetic result.
4. Apply release agent to cover all sections and angles of the pattern according to the form liner Manufacturer's requirements.
5. Comply with requirements for Delivery, Storage, and Handling when handling and storing units between uses.
6. Prevent matrix build-up on the form liner surface. Excess release agent shall be removed before the form liner is put back into service.
7. Discontinue use of form liner units that are deformed, compromised, or otherwise insufficient for providing a consistent concrete texture.

The form liner pattern shall appear seamless, level, and continuous when viewed in typical daylight illumination from a distance of 6 feet. The form liner pattern shall align vertically and horizontally.

Working Drawings:
The contractor shall provide Type 3 working drawings for each form liner panel specified.

The contractor shall provide Type 3 working drawings for all walls receiving an architectural form liner finish. Working drawings shall include top of wall and bottom of wall elevations, wall expansion joints, and the specific placement of each form liner panel and type.

Architectural Form Liner Mockup:

1. Minimum Size: 8 ft x 8 ft exposed face unless otherwise shown; include a vertical and horizontal seam in the pattern, a control/expansion joint detail, and a representative number of tie holes if tie holes will be exposed in production.
2. Substrate/Formwork: replicate production formwork materials, fasteners, and assembly methods; demonstrate joint sealing and grout-loss prevention.
3. Pattern Orientation: install form liner panels to match final orientation; seam alignment and pattern continuity shall reflect the production plan.
4. Location: construct the mockup at the project site or as directed; free-standing panel or first-in-place test segment as approved. Abutment walls and wing walls shall not be used as a first-in-place mockup.

6-02.4 Measurement

Section 6-02.4 is supplemented with the following:

(September 8, 2020)
Superstructure contains the following approximate quantities of materials and work:

Conc. Class 5000 for Bridge	497 CY
St. Reinf. Bar for Bridge	90,740 LB

Epoxy-Coated St. Reinf. Bar for Bridge	37,185 LB
Superstructure – Elastomeric Bearing Pad	8 EACH
Expansion Joint System Compression Seal – Superstr.	34 LF

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 Superstructure even though the actual quantities required may deviate from those listed.

(******)
The architectural form liner mockup will be measured as a single Lump Sum item, including all materials, labor, equipment, submittals, and incidentals required for a complete and accepted mockup.

The "Architectural Form Liner Panels" shall be measured as a single Lump Sum item, including all materials, labor, equipment, submittals, and incidentals required for procurement and delivery of formliner panels.

6-02.5 Payment
Section 6-02.5 is supplemented with the following:

(June 26, 2000)
Bridge Supported Utilities
All costs in connection with placing electrical, telecommunications, water, drainage and irrigation through the superstructure of ST-13-002 as shown in the Plans, including all furnishing materials, installing materials, coordination with utility company, shall be included in the Bridge Supported Utilities pay item.

(******)
Payment will be made at the Contract unit price per Lump Sum for "Architectural Form Liner Mockup," which price shall be full compensation for performing the Work, including submittals, layout, fabrication, concrete placement, curing, protection, evaluation cycles, and removal or incorporation, as specified and as directed by the Engineer.

"Architectural Form Liner Panels" shall be paid as a Lump Sum, inclusive of all labor, material, and incidental work to procure and deliver form liner panels to the project site.

Implementation of the Architectural Form Liner Finish, inclusive of all labor, material, and incidental work, shall be incidental to "Concrete Fascia Panel (Soldier Pile Wall)" and "Concrete Fascia Panel for Geosynthetic Wall."

6-09 Vacant
Section 6-09 is replaced with the following:

(*******)
6-09 Planter Waterproofing Assembly:

6-09.1 Description
The Contractor shall provide a waterproofing assembly for all on-structure planting areas that provides a complete water barrier and lateral conveyance system to ensure subsurface flows are discharged off of the bridge to downstream conveyance systems. For sidewalk

areas of the integral to the cast-in-place bridge deck, the waterproofing assembly may be omitted.

The waterproofing assembly from bottom substrate to top shall include, but not be limited to, surface conditioners, waterproofing membrane, flashing, reinforcing, protection courses, horizontal root barrier, moisture retention and drainage layer, prefabricated drainage mat, and filter fabric. Lightweight fill, where used immediately below landscape areas, shall add additional layers into the assembly, including one additional layer of moisture retention and drainage layer, moisture retention mat, and filter fabric into the waterproofing assembly layering. Refer to the requirements below when lightweight fill is utilized in the waterproofing assembly layering.

Penetrations through the waterproofing assembly shall be limited to the extent feasible and only as necessary for irrigation and drainage elements. For each location, the waterproofing membrane and flashing/reinforcing shall extend up the sides of the element in accordance with the waterproofing manufacturer's requirements and to ensure the depth of subsurface water does not exceed the vertical height of the protection.

All waterproofing assembly components shall be obtained from a sole source and installed to ensure total system compatibility, function, and integrity.

The Contractor shall install the surface conditioner and membrane with reinforcing and flashing as required per manufacturers' recommendations. A continuous protection course shall be embedded into the fully reinforced waterproofing membrane. A heavy-duty horizontal root barrier membrane shall be installed in accordance with the manufacturer's recommendations. A water retention/drainage layer extending across the entire horizontal surface shall then be installed. A water permeable polymeric filter fabric shall be installed across the full extent of the water retention/drainage layer. The filter fabric sheets shall be lapped and affixed together according to manufacturer recommendations.

In landscape planting areas, the water retention/drainage layer shall be required to have retention cups on the top side, drainage channels on the top and bottom, and holes in the tops of the domes for aeration. The retention cups shall be filled with a lightweight aggregate prior to placement of the filter fabric. The water retention/drainage layer in landscape planting areas shall have a minimum thickness of 1 inch and sufficient strength to support all overburden, including, but not limited to, the loads of Landscaping: soils, sand, and gravel fills; trees; maintenance equipment; and pedestrians

The Contractor shall provide positive drainage as flow transitions from the drainage layer to a downstream conveyance system at the outside edges of all structures or retaining type elements. At these locations, the top of the conveyance system shall be located below the level of the drainage layer. Backwater conditions resulting from this transition shall be prohibited. Perimeter drainage systems shall consist of perforated underdrains installed above a layer of impermeable geotextile.

Lightweight fill, where used within planting areas on bridge structure, shall bear sufficient compressive strength to support the overburden, pedestrian and maintenance loads, dynamic loads, and overburden (soils, sand, gravel, plantings, and furnishings), and shall be designed in coordination with and per the recommendations of the waterproof assembly manufacturer.

Placement of lightweight fill shall be coordinated with subsurface drainage components and shall not impede subsurface drainage. If lightweight fill is used, the waterproofing assembly requirement varies above and below the fill element. The components required in all vertical applications of the lightweight fill zones shall be:

- Below the lightweight fill
  - Surface conditioner
  - Membrane with reinforcing and flashing
  - Protection course
  - Horizontal root barrier (below landscape areas only)
  - Drainage Layer
    - Prefabricated drainage mat (conveyance only below non-landscape areas and vertical surfaces)
    - Moisture Retention/Drainage Layer (conveyance and water retention below landscape areas)
  - Filter Fabric
  - Water retention/drainage layer (below landscape areas only)
  - Filter Fabric

Reference Publications

Some or all of the publications referred to hereinafter form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. The latest edition of the referenced American Society of Testing Materials (ASTM) Publications:

ANSI.SPRI VF-1 -	External Fire Design Standard for Vegetative Roofs
ASTM E2397 -	05 Standard Practice for Determination of Dead Loads and Live Loads associated with Green Roof Systems
ASTM E2399 -	05 Standard Test Method for Maximum Media Density for Dead Load Analysis of Green Roof Systems
ASTM D7877 -	14 Standard Guide for Electronic Methods of Detecting and Locating Leaks in Waterproof Membranes
ASTM D8231 -	19 Standard Practice for the Use of a Low Voltage Electronic Scanning System for Detecting and Locating Breaches in Roofing and Waterproofing Membranes
FLL Guideline for the Planning, Execution and Upkeep of Green-Roof Sites (Germany)	
FM Global 1-35 -	Green Roof Systems, January 2007
C 165 -	Test Method for Measuring Compressive Properties of Thermal Insulation
C 203 -	Test Method for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
C 303 -	Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation
C 390 -	Practice for Sampling and Acceptance of Thermal Insulation Lots
C 578 -	Test Method for Rigid, Cellular Polystyrene Thermal Insulation
C 272 -	Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions

C 2863 -	Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
D 732 -	Test Method for Shear Strength of Plastics by Punch Tool
D 1621 -	Test Method for Compressive Properties of Rigid Cellular Plastics
D 1622 -	Test Method for Apparent Density of Rigid Cellular Plastics
D 1623 -	Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
D 6817 -	Specification for Rigid Cellular Polystyrene Geofoam

6-09.2 Materials

The manufacturer shall ensure coordination of design of all waterproofing assembly components such that all products and materials furnished under this specification are compatible and will perform properly to achieve the performance requirements specified herein.

The surface conditioner shall be a solvent based bituminous primer, meeting the CGSB-37-gp-9MA standard and ASTM D41, as recommended by the rubberized asphalt membrane manufacturer for preparation of Portland cement concrete surfaces for waterproofing.

The rubberized asphalt membrane shall be a hot fluid applied rubberized asphalt meeting the CGSB-37.50-M89 Standard and the following physical properties:

PROPERTY	TEST METHOD	REQUIREMENT
Flash point*	ASTM D-92 CGSB-37.50-M89	>500°F (>260°C)
Cone Penetration*	ASTM D-5329 CGSB-37.50-M89	<98 mm @77°F (25°C) <187 mm @122°F (50°C)
Flow	ASTM D-5329 CGSB-37.50-M89	<1.0 mm @ 140°F (60°C)
Toughness	CGSB-37.50-M89	>14.7 Joules
Ratio of Toughness to Peak Load	CGSB-37.50-M89	>0.069
Water Vapor Permeability	ASTM E-96, Procedure E CGSB-37.50-M89	< 1.3 ng/Pa(s)m^2
Water Absorption	CGSB-37.50-M89	< 0.11 gram weight gain
Low Temperature Flexibility (-25°C)	CGSB-37.50-M89	Pass – with no evidence of cracking, delamination or adhesion loss
Low Temperature Crack Bridging Capability (-25°C)	CGSB-37.50-M89	Pass – with no evidence of cracking, adhesion loss, or splitting

Heat Stability	CGSB-37.50-M89	Pass – with no change in viscosity, penetration, flow or low temperature flexibility.
Viscosity	CGSB-37.50-M89	4 to 11 seconds
Water Resistance (5 days @ 50°C)	CGSB-37.50-M89	Pass – with no delamination, blistering, emulsification, or deterioration
Softening Point	ASTM D-36	> 180°F (82°C)
Elongation	ASTM D-5329	> 1000%
Resiliency	ASTM D-5329	> 40%
Bond to Concrete	ASTM D-5329	Pass – 0°F (-18°C)
Acid Resistance	ASTM D-896 Procedure 7.1 (N-8)	Pass - 50% Nitric Acid - 50% Sulfuric Acid No blistering, deterioration, delamination or re-emulsification
Resistance to Hydrostatic Pressure	ASTM D-5385	Pass – with no blistering, deterioration, or re-emulsification
Resistance to Salt Water	ASTM D-896 similar	Pass – (50% sodium chloride) with no blistering, deterioration, delamination , or re-emulsification
Resistance to Fertilizer	ASTM D-896 similar	Pass – (undiluted, 15/5/5 or 30/10/10, nitrogen/phosphorus potash) with no blistering, deterioration, delamination , or re-emulsification
Resistance to Animal Waste	3-year exposure	No deterioration
Solids Content	ASTM D-1353	100%-no solvents

*or alternatively not less than 77°F above the application temperature recommended by the manufacturer.

Reinforcing for the membrane shall be a spun bound polyester fabric as recommended by the rubberized asphalt membrane manufacturer.

Flashing for the waterproofing assembly shall be an uncured neoprene as recommended by the rubberized asphalt membrane manufacturer.

The protection course shall be a rubberized asphalt sheet with sand embedded on the top side. The protection course shall meet the requirements of ASTM D6509/D6163. The minimum thickness of the protection sheet shall be 85 mils.

The horizontal root barrier for use planting areas shall be a smooth high density polyethylene geo-membrane sheeting. The horizontal root barrier shall meet the following minimum requirements or as recommended by the rubberized asphalt manufacturer:

PROPERTY	TEST METHOD	REQUIREMENT
Thickness	ASTM D-5199	30 mil
Weight (lb/ft^2)	ASTM D-1505	> 0.17
Tensile properties - Strength @ break lb/in-width - Strength @ yield lb/in-width - Elongation @ break - Elongation @ yield	ASTM D-6693, Type IV Dumbell GL 2.0 in GL 1.3 in	 > 114 > 63 > 700% > 12%
Tear resistance	ASTM D-1004	> 21
Puncture resistance	ASTM D-4833	> 54

The moisture retention mat shall be comprised of high-quality, non-deteriorating polypropylene fibers and be specifically intended for retaining moisture in vegetated roof applications. The moisture retention mat shall be capable of retaining water at a rate of 0.13 gal/ft^2

The water retention/drainage layer shall be a high-strength product made of recycled polyethylene core molded into a three-dimensional panel. The product shall provide retention cups on the top side, drainage channels on the top and bottom, and holes in the tops of domes for aeration. The product shall be specifically intended for use in vegetated roof applications for water retention, drainage, and aeration. The minimum thickness of the water retention/drainage layer shall be 1 inch.

The prefabricated drainage mat shall be composite drainage system of a three dimensional, crush-proof drainage core and a woven, needle filter fabric. The filter fabric shall be bonded to the top surface of the core dimples, preventing intrusion of the fabric into the flow channels during backfilling. The filter fabric shall extend 4” beyond the core and be bonded on one side of the core. The prefabricated drainage mat shall be 0.4 inches thick and for horizontal applications shall have sufficient compressive strength to support the overburden to be determined during final design.

The filter fabric shall be a non-woven needle punched geotextile filter fabric sheet made of non-rotting polypropylene fibers. The fabric shall be highly resistant to all natural acids, alkalis and chemically neutral. The fabric shall meet the following minimum requirements:

PROPERTY	TEST METHOD	REQUIREMENT
Apparent opening	ASTM D-4751	< 100
Flow rate	ASTM D-4491	> 132 gpm/ft^2
Tensile strength	ASTM D-4632	> 90 lbs

Elongation	ASTM D-4632	> 50%
Puncture resistance	ASTM D-4833	> 60 lbs

Lightweight fill used within landscape planting areas on the structures shall bear sufficient compressive strength to support the overburden, including pedestrian pavements, pedestrian and maintenance vehicle design loads, dynamic loads, and overburden (soil, sand, gravel, plantings and furnishings), and shall be designed in coordination with and per the recommendations of the waterproofing assembly manufacturer.

Lightweight fill panels shall be a closed cell, rigid plastic, extruded polystyrene foam insulation intended for use on top of waterproofing membranes. The foam sheet shall be dark gray in color, rot-resistant, and manufactured to comply with global warming potential (GWP) requirements. The foam sheet shall have resistance to water absorption, water vapor transmission, freeze/thaw cycling, and meet the following requirements:

- Maximum water absorption by volume per ASTM D-2842, 0.7%
- Water vapor permeance for 1" product per ASTM E-96, 1.1 perm (max.)

6-09.3 Construction Requirements

The Contractor shall make arrangements necessary to have a trained employee of the waterproofing assembly manufacturer present continuously during the waterproofing work to review and instruct installation procedures and during review of Hold Points related to waterproofing work. The Contractor shall install waterproofing assembly components using only personnel that have undergone training by the manufacturer and are listed on the manufactures approved contractor list.

The Contractor shall notify the Engineer 7 Calendar Days prior to application of all waterproofing assembly work for review of surfaces receiving waterproofing. The surface shall be inspected and approved satisfactory for application by the waterproofing assembly representative prior to installation of the waterproofing assembly.

The waterproofing assembly installation shall meet the manufacturer's requirements to be fully warrantable. For conditions not shown on the plans, implement the manufacturer's standard details and requirements. Deviations from standard details shall be approved in writing by the manufacturer prior to implementation.

Submittals

Quality Assurance:

1. Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress for both installation of waterproofing roof installer and vegetated roof installer.
2. The Waterproofing Contractor shall demonstrate qualifications to perform the work of this Section by submitting the following documentation to the Engineer for review and comment:
    a. Certification or license by the membrane manufacturer as a locally based, authorized applicator of the product as specified, and has been licensed for a minimum of five years.
    b. List of at least three (3) projects, satisfactorily completed within the past five years, of similar scope and complexity to this project. For each project include the following information: project name, location, owner's name,

owner's representative, representative's phone number, size in square feet and completion date. Previous experience submittal shall correspond to specific membrane system proposed for use by applicator.

c. Waterproofing roof installer will be responsible for the installation of all vertical and horizontal rubberized membranes, protection membranes, root barrier membranes, horizontal and vertical drainage composites, and flashings while ensuring positive drainage throughout the vegetated roof area.

3. Waterproofing and vegetated system for the roof system are to be provided by single source manufacturer for all components.
   a. Manufacturer and Products "Basis of Design":

      Intensive Garden Roof System manufactured by American Hydrotech, Inc

      303 East Ohio Street Chicago, Illinois 60611-3318
      800-877-6125 or 312-337-4998
      FAX: 312-661-0731
      Web Site: http://www.hydrotechusa.com

      a. Surface Conditioner
         i. American Hydrotech, Inc Surface Conditioner

      b. Membrane with Reinforcing and Flashing
         i. Membrane
            1. American Hydrotech, Inc. Monolithic Membrane 6125 FR ®
         ii. Fiber Reinforcement Layer
            1. American Hydrotech, Inc. Flex Flash® UN
         iii. Flashing
            1. American Hydrotech, Inc. Flex Flash® UN
            2. American Hydrotech, Inc. HydroSeal Resin

      c. Protection Course
         i. American Hydrotech, Inc. Hydroflex® 30S

      d. Horizontal Root Barrier Membrane
         i. American Hydrotech, Inc. Root Stop HD

      e. Drainage Layer
         i. Prefabricated Drainage Mat
            1. American Hydrotech, Hydrodrain 400 (Vertical Applications)
            2. American Hydrotech, Hydrodrain 990 (Horizontal Applications)

         ii. Water Retention/Drainage Layer (Prefabricated Drainage Mat Below Landscape Areas)
            1. American Hydrotech, Gardendrain GR30
            2. American Hydrotech, LiteTop Aggregate Infill

      f. Lightweight Fill

i. Rigid Insulation Panels
1. American Hydrotech, DuPont Styrofoam Insulation High Load ST-100
2. Atlas Geofoam lightweight expanded polystyrene (EPS-19) engineered fill

g. Moisture Retention Mat
1. American Hydrotech, Moisture Retention Mat

h. Filter Fabric
i. American Hydrotech, System Filter

4. Membrane Supplier Qualifications: Manufacturer shall demonstrate qualifications to supply materials for the project by certifying the following:
   a. Membrane Manufacturer showing evidence that the specified rubberized asphalt has been manufactured by the same source for (35) thirty-five years and successfully installed on a yearly basis of a minimum of (35) years of project of similar scope and complexity.
5. Pre-installation Training Conference: Schedule and conduct a training conference at Project site specific to vegetated roof assembly prior to the commencement of construction. Train personnel and coordinate trades involved in the work toward successful construction execution of Project vegetated roof assemblies.
   a. Notify all attendees, at least, two weeks prior to the conference.
   b. Attendees: Parties involved in or affected by the installation and its coordination or integration with adjacent and successive work, including Contractor, Architect, Landscape Architect, Owners Representative, green roof consultant, waterproofing consultant, waterproofing membrane installer, vegetated roof installer, irrigation installer, installers of plumbing, mechanical, electrical systems and related work, waterproofing membrane manufacturer, and manufacturers and installers of other major materials.
   c. Document proceedings, including corrective measures or actions, required, and furnish a copy of the record to each participant.
   d. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
      i. Vegetated roof assemblies construction methods and installation procedures.
      ii. Drawings and Specifications.
      iii. Changes in the Work.
      iv. Purchases, deliveries, storage, and handling of materials.
      v. Protection of stored, installed, and adjacent work during construction.
      vi. Staging, scheduling and conveyance methods; space and access limitations.
      vii. Review of mockups.
      viii. Possible conflicts.
      ix. Compatibility requirements.
      x. Time schedules.
      xi. Weather limitations.
      xii. Manufacturer's instructions.
      xiii. Warranty requirements.

xiv. Compatibility of materials.
xv. Acceptability of substrates.
xvi. Temporary facilities and controls.
xvii. Regulations of authorities having jurisdiction.
xviii. Testing and inspecting requirements.
xix. Contractor's safety plan and protection of construction and personnel.
xx. Maintenance of plants during construction.

e. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
f. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
g. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to the performance of the Work and reconvene the conference at the earliest feasible date.

The Contractor shall not begin the application of any part of the waterproofing assembly until receiving the Engineer's written approval of all required submittals.

Product data: Submit manufacturer product data, installation instructions, use limitations and manufacturer's recommendations for each component, including but not limited to waterproofing membrane, protection and root barrier membranes, drain boards, flashings, and terminations to the Engineer for review and comment.

1. Shop drawings: Type 3 Working Drawings for all details and installation procedures for the waterproofing assembly not covered by the manufacturer's instructions and product data sheets.
2. A plan sheet showing profile and section views of the proposed lightweight fill layout. Proposed ballasting or guying techniques
3. Proposed lightweight fill placement methods

Samples for Verification:

1. Membrane / Protection board: Two panels 12 by 12 inches (300 by 300 mm)
2. Prefabricated Drainage Mat (horizontal/vertical): Two panels 12 by 12 inches (300 by 300 mm) of each type specified, indicating the method of lapping layers to form continuous drainage surface
3. Water Retention/Drainage Layer: Two panels 12 by 12 inches (300 by 300 mm) of each type specified, indicating the method of lapping layers to form continuous drainage surface
4. Moisture Retention Mat
5. Flashings: 24-inch length of each type to be used.
6. Lightweight Fill: 1'x1' Lightweight Fill Panel

Certifications:

1. Certification from an approved independent testing laboratory experienced in testing rubberized asphalt material, that the material meets the CGSB-37.50-M89 standard for rubberized asphalt membranes, including applicable ASTM procedures.

2. Roofing membrane has current validation by Underwriters laboratories, or other approved independent validation service provider, of a minimum 40% recycled content.
3. Plant manufacturing that rubberized asphalt material has ISO 9001-2015 approval as evidence by a copy of the official certificate.
4. Certification showing that all waterproofing assembly components are being supplied and warranted by a single-source manufacturer.
5. Prior to the delivery of the EPS geofoam blocks, the Contractor shall furnish the Engineer a copy of the manufacturer's test reports or a third party's certified test report showing that the Geofoam blocks meet the physical properties listed in ASTM D6817.
6. The Contractor shall submit to the Engineer a Manufacturer's Certificate of Compliance for the first 100 yd^3 and for every 1500 yd^3 thereafter before the geofoam is delivered to the site.
    a. The Certificate of Compliance shall include current inspection reports showing that the geofoam manufacturer is in compliance with a UL follow-up service program for both flame spread and physical properties. In addition, computer generated stress-strain data and the accompanying curves shall be produced from compressive testing and supplied to the Engineer. The curves and/or data shall clearly indicate the stress at 1% strain and the modulus of elasticity.
7. Draft certificate of warranty meeting the requirements of this Section.
8. Upon completion of the work, final certificate of warranty meeting the requirements of this Section.

Closeout Submittals

1. Vegetated Roof Maintenance Plan: Submit a comprehensive maintenance plan, applicable initial installation through construction and establishment period for review by Landscape Architect, and Owner. Collaborate with the vegetated roof planter assemblies installer as required to produce the maintenance plan.
2. A Certificate of Compliance shall be furnished stating that the selected waterproofing assembly has been tested, meets the above mentioned requirements, and is:
    a. Free from pinholes, tears, and other defects which would cause leakage of liquids through the geomembrane.
    b. Acceptable for spill containment of hydrocarbons, including automobile gasoline, aviation gas, diesel fuel, kerosene, hydraulic fluid, methanol, ethanol, mineral spirits, and naphtha.

Conditions

Perform work only when existing and forecasted weather conditions are within the limits established by the rubberized asphalt waterproofing membrane manufacturer. In no event shall work be performed when unfavorable conditions are present.

Substrate Surface Preparation

The Contractor shall provide a finished substrate appropriate for a waterproofing application according to manufacturer recommendations. Thoroughly sweep the substrate which is to receive the membrane and utilize an air compressor to remove any remaining loose debris. The substrate shall be free of all dirt, debris, oils, and moisture. Determine if the concrete has been properly cleaned by applying a test patch of

membrane to the surface and check its adhesion. The substrate shall be free of all dirt, debris, oils, and moisture.

All substrates to be waterproofed shall be prepared in accordance with the manufacturers written recommendations. Concrete substrates shall be water cured no less than 28 days Calendar Days following concrete placement and shall be in a condition acceptable to the rubberized asphalt waterproofing membrane manufacturer. Surfaces to receive waterproofing shall be free of material or workmanship defects, free of dirt, debris, oils and moisture meeting the manufacturer's requirements for substrate conditions. At least 7 Calendar Days prior to commencing with installation of the membrane, the manufacturer's representative shall inspect with the Contractor, waterproofing assembly manufacturer's representative, and the Engineer for substrate acceptance. Installation of the membrane shall not commence until corrections to irregularities and areas of nonconforming substrates are completed and accepted by the manufacturer's representative.

The substrate shall be cleaned immediately prior to the application of the substrate primer in accordance with the rubberized asphalt membrane manufacturer's written requirements. All cleaned surfaces shall be protected from soiling upon completion of cleaning.

The Contractor shall perform a minimum of four substrate tests on the structure and two substrate tests on the and the prior to the installation of the waterproofing assembly. Using the ASTM D 4541-95 Test Method as amended herein, set a 50 mm dolly in Type III asphalt at the locations agreed upon by the Contractor, Engineer and waterproofing assembly manufacturer's representative. Once the asphalt adhesive is cured, the calibrated Type III self-aligning Adhesion Tester shall achieve a minimum of 150 psi prior to adhesive failure to be satisfactory. Do not proceed with work until unsatisfactory conditions are corrected. Do not proceed with work until substrates have been inspected and approved by the manufacturer's representative.

Waterproofing Assembly Installation

Apply the surface conditioner only to concrete using a handheld sprayer evenly at a rate of 300 to 600 SF/gallon (7.4 - 14.7 m2/L) depending on surface texture and in accordance with manufacturer requirements. Surface conditioner shall "tan" the surface, not blacken it. Allow sufficient time for the surface conditioner to thoroughly dry prior to the membrane application.

Install all detailing and flashing in accordance with the manufacturer's recommendations and industry best practices. All liquid applied resin flashings shall be applied over properly completed membrane flashing details in accordance with the manufacturer's recommendations. Flashings requiring reglet embedments shall be completed before installing the membrane. Layout of substrate board joints shall be pre-detailed with membrane and fabric reinforcing prior to full fabric reinforced membrane application is done. Prepare the membrane. The membrane shall be heated in double jacketed, oil bath or hot air melter with mechanical agitation, specifically designed for the preparation of a rubberized asphalt membrane. Heat membrane until membrane can be drawn-free flowing at a temperature range between 350°F (176°C) and 375°F (190°C).

Apply the hot-fluid applied rubberized asphalt membrane, reinforcing and protection course per the requirements of the manufacturer's recommendations. The membrane shall be installed in two applications for the top of the horizontal waterproofed surfaces with the first application meeting of 90-mil minimum thickness and a second application of a 125-mil minimum thickness. The total thickness of hot-fluid applied rubberized asphalt membrane shall be 215 mils average, 180 mils minimum. While the first application of membrane is still warm and tacky install the reinforcing fabric overlapping sheets a minimum of two inches. Following the second application, while the membrane is still warm and tacky install the protection course overlapping sheets one to two inches for a continuous protection layer with a membrane between sheets.

Throughout planting areas the Contractor shall install a horizontal root barrier, installed, lapped and affixed in accordance to the manufacturer's recommendations. The horizontal root barrier shall be installed directly above the protection course. The protection course and horizontal root barrier shall be embedded into the membrane while it is still hot to ensure a good bond. Adjoining sheet edges shall be overlapped 4" and sealed with a propane torch or additional membrane.

Immediately above the horizontal root barrier in all landscape areas, the Contractor shall install a water retention/drainage layer. Provide a 4- inch salvage edge of the geotextile fabric overlaps adjoining sheets and can be held in place with duct tape. In conditions where the drainage panels terminate at a vertical edge with flashing cut the drainage board 4 inches and while maintaining the filter fabric. Wrap the filter fabric over to seal the edge of the board. Positive drainage shall be provided as flow transitions from a water retention/drainage layer to a conveyance system at the outside edges of structures as recommended by the manufacturer.

The Contractor shall install a prefabricated drainage mat on all vertical surfaces within landscape areas. Secure in place with flashing and in accordance with the manufacturer's recommendations.

The placement of the prefabricated drainage mat shall be coordinated with potential obstructions in a water course to ensure no impounding of water within the mat including, but not limited to, deck penetrations, curbs, sidewalks, roadways, foundations and lightweight fill geofoam.

The Contractor shall install filter fabric sheets, overlapping sheets a minimum of four inches and in accordance with the manufacturer's recommendations.

Waterproofing Testing

The horizontal and vertical surfaces of planting areas which received hot rubberized asphalt membrane shall be leak tested by the Contractor by means of electronic testing in accordance with ASTM D8231 and ASTM D7877. Apply a conductive primer as needed to non-conductive surfaces prior to the installation of the membrane to enable complete and successful electronic testing of the waterproofing membrane.

All horizontal waterproofed surfaces shall show no sign of flowing water or standing water. Flowing water shall be described as water that has leaked into space immediately between the waterproofing membrane and the waterproofed substrate in sufficient quantity as to be able to move under the effects of gravity. Standing water shall be described as water that has leaked into space immediately between the

waterproofing membrane and the waterproofed surface resulting in separation of the membrane from the substrate.

The Contractor shall provide repairs to provide a watertight seal all waterproofed surfaces that have flowing or standing water prior to placement of subsequent overburden. The testing area shall be divided into manageable sections to ensure complete coverage. Any breaches or defects identified during testing shall be marked and documented. Repairs to the membrane shall be performed in accordance with the manufacturer's requirements and retested to verify integrity.

Protection

All areas which have been waterproofed shall be protected from vehicular, pedestrian and construction traffic and activities in accordance with the manufacturers written recommendations. Take care to prevent sediment laden water from entering into the assembly and impacting the drainage layers.

Lightweight Fill Installation

No construction equipment shall drive directly on the lightweight fill. Damage to the lightweight fill resulting from the Contractor's vehicles, equipment or operations shall be replaced or repaired with new materials to the satisfaction of the Engineer.

Install lightweight fill to establish final soil depths as depicted in drawings. The top of the foam installation is to be uniform and in-plane without depressions.

Placement

Lightweight fill shall be placed to the lines and grades shown in the Plans and as directed by the Engineer. All panels shall accurately fit relative to adjacent blocks. No gaps greater than 0.07 ft will be allowed on vertical joints.

The finished surface of the lightweight fill beneath pavement sections shall be constructed to within the tolerance of zero to minus 0.2 foot of the indicated grade.

The finished surface of the lightweight fill on side slopes that receive soil cover shall be constructed to within a tolerance of plus 0.3 foot minus 0.3 foot of the indicated grade. Foam shall be cut using a hot wire. Where it is not possible to use a hot wire a saw may be used.

Because of the light unit weight of the lightweight fill, it is the Contractor's responsibility to provide temporary weighing and/or guying as necessary until all the blocks are built into a homogeneous mass and the topping is in place.

Embankment over the side slopes of the lightweight fills shall be placed starting at the bottom of the slope in such a manner as to prevent damage to the lightweight fill. Finished lightweight fill on side slopes shall have a minimum of 18 inch embankment cover unless specified otherwise in the Plans.

Warranty

Provide a Manufacturer's Total System Warranty shall cover the materials and installation of the green roof assembly, including membrane, flashing, and Green Roof System components and shall include the removal and replacement of the of Green

Roof System components and growing media as required to access, inspect, and repair membrane and flashing systems. The warranty shall include removing and replacing the vegetated roof planter assembly components, including growing media, plant materials, and irrigation components, to access and repair waterproofing/roofing below the vegetated roof planter assembly.

The duration of the Total System Warranty shall be 20-years from the date of purchase and beginning after complete acceptance of the installation by the manufacturer's representative. Both the waterproofing membrane installer and planter assembly installer shall be parties to the warranty agreement.

Planter Assembly Installer Warranty: Provide 10-year Installer Warranty covering installation of geocomposite moisture retention layer, growing media, plant material, mulch, and vegetated roof planter assembly accessories. Installer warranty shall cover the following failures:

1. Loss or dislocation of media due to the wind scour or erosion during the establishment period.
2. Growing media settlement greater than 6 inches in the first 3 years after installation.
3. Development of anaerobic soil conditions in the growing media profile.
4. Surface ponding, loss of soil drainage capacity, or loss of soil permeability.
5. Development of soil pathogens.
6. Deleterious changes in soil pH.
7. Clogging of roof drains or scuppers.

6-09.4 Measurement:

The planter waterproofing assembly will be measured by the square foot of surface area satisfactorily installed and accepted, complete in place.

6-09.5 Payment:

The unit contract price for "Planter Waterproof Assembly" per square foot shall be full compensation for:

- Furnishing and installing the membrane system (including primers, flashings, and accessories);
- Surface preparation, cleaning, and detailing;
- Overlap treatment, terminations, and edge seals;
- Quality-control testing, repairs, and protection until acceptance; and
- All labor, equipment, tools, and incidentals required to complete the work as specified.
- All warranties and guarantees specified.

6-10 CONCRETE BARRIERS

6-10.3 Construction Requirements

The first paragraph of Section 6-10.3(5) is revised to read:

(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 Payment

Section 6-10.5 is revised to read:

(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.

6-14 GEOSYNTHETIC RETAINING WALLS

Section 6-14.2 Materials
Section 6-14.2 is supplemented with the following:

(******)
9-03.14(4) Gravel Borrow for Structural Earth Wall

In the gradation requirements table, revise percent Passing the No. 200 sieve size from 7.0 to 5.0 max percent.

Section 6-14.3 Construction Requirements
Section 6-14.3 is supplemented with the following:

(******)
Section 6-14.3 Construction Requirements
Add the following after the first paragraph:

The Contractor shall monitor the settlement of geosynthetic retaining walls during construction through regular surveys as specified in Section 1.05.4.

Section 6-14.3(2) Submittals
The first sentence of the first paragraph of Section 6-14.3(2) is revised to read:

(June 1, 2026)
The Contractor shall submit Type 3E Working Drawings consisting of detailed plans for each wall.

(******)
Supplement the list of submittals with the following:

7. A plan showing the location of proposed retaining wall settlement markers specified in Section 1-05.4 Details of the surface settlement monitoring markers specified in Section 1-05.4.

6-16 Soldier Pile and Soldier Pile Tieback Walls

6-16.4 Measurement

The first paragraph of Section 6-16.4 is revised to read:

(June 1, 2026)
Soldier pile shaft construction will be measured by the linear foot of shaft excavated below the top of ground line for the shaft, defined as the highest existing ground point within the shaft diameter at the time of shaft excavation.

6-19 SHAFTS

(******)
Section 6-19 is supplemented with the following:

CONFIRMATION BORINGS

At each of the two bridge abutments foundations, drill a confirmation boring and conduct soil sampling to verify the soils below the proposed drilled shaft tips are consistent with assumed subsurface conditions in the Geotechnical Report (AECOM, 2025) and adequate to support the design loads. The final design depth(s) of the drilled shafts will be based on the results of the confirmation borings.

1. Perform a confirmation boring at the centroid of each drilled shaft group location to a depth of at least 20 feet below the design shaft tip elevation shown in the contract documents. The 20-foot below shaft tip depth criterion assumes the soils encountered are similar to or more competent than those encountered within the bottom 20 feet of Borings BT-4 and BT-5 and have standard penetration test (SPT) N-values of at least 35 blows per foot. If N-values less than 35 blows per foot are measured within the depth of 20 feet below the design shaft tip elevation, the boring depth should be extended an additional 10 feet or deeper if directed by the Engineer. Boring termination depths shall be reviewed with and accepted by the Engineer
2. Perform mud rotary wash borings with standard penetration test sampling (SPT) according to ASTM D 1586 in the soil. Perform the tests at maximum 5-foot depth intervals. Use sample retainers in cohesionless soils to ensure recovery of material for classification and potential laboratory testing. A recent (within 1 year) SPT hammer energy calibration report shall be provided by the driller for the specific drill rig used to drill the borings.
3. Borings shall be logged by a qualified geologist or geotechnical engineer, and detailed electronic boring logs shall be prepared. The geologist or geotechnical engineer shall be licensed in the State of Washington or work under supervision of a geologist or geotechnical engineer licensed in the State of Washington. Submit qualifications of the geologist or geotechnical engineer to the Engineer at least 15 calendar days prior to the start of drilling.
4. Standard penetration test samples shall be collected in minimum 1-quart plastic bags or glass jars for potential laboratory testing by the Engineer.

5. Deliver soil samples and typed boring logs in digital (pdf) format to the Engineer at least 30 calendar days prior to the start of drilling of the drilled shafts.
6. Do not install drilled shafts until the results of the confirmation boring have been submitted and reviewed by the Engineer.
7. The Engineer will complete the review of the confirmation borings report within fourteen (14) calendar days after submittal. Adjustment of the final bottom elevation of the shafts may be required depending upon the results of the confirmation borings.

6-19.2 Materials

Access Tubes and Caps

The first paragraph of Section 9-36.4 is revised to read:

(October 3, 2022)
Access tubes for CSL or TIP testing shall be steel pipe of 0.145 inches minimum wall thickness and at least 1½ inch inside diameter, or shall be Sonitec V2 CSL Tubes manufactured in America by Dextra. Dextra CSL tubes shall use Dextra caps and connectors.

6-19.3(2)B Shaft Installation Narrative

(******)

The first paragraph of Section 6-19.3(2)B is revised to read:

The Contractor shall submit a shaft installation narrative to the Engineer. In preparing the narrative, the Contractor shall reference the available subsurface data provided in the contract test hole boring logs, the subsurface data in the Contractor-performed confirmation test hole boring logs, and the geotechnical and environmental reports prepared for this project.

6-19.4 Measurement

(******)

Section 6-19.4 is supplemented with the following:

"Confirmation Borings" will not be measured and will be incidental to other bid items.

(******)

6-24 DEWATERING

Section 6-24 shall be added with the following:

6-24.1
Description of Work

It is estimated that dewatering may be required for construction below approximately Elevations +23 to +26 feet (NAVD88), including but not limited to removal of existing bridge foundations, construction of new bridge foundations, and construction of certain utilities. However, the Contractor will be responsible for determining the full extent of dewatering required.

Definitions

Aquifer: rock or sediment in a formation, group of formations, or part of a formation that is saturated and sufficiently permeable to transmit water to pumped wells, well points, eductors, and sumps.

Confining Layer: a body of material of low hydraulic conductivity/permeability that is stratigraphically adjacent to one or more aquifer. It may lie above or below the aquifer and has a permeability lower than the adjacent aquifer.

Dewatering System: a system that will lower the water table, piezometric, or potentiometric surface adequately to permit safe and dry construction.

Groundwater: water that is found in fully saturated soils, sediments and rocks below the surface of the ground and which flows primarily in response to gravitational forces. Groundwater also includes perched water.

Confined Groundwater: groundwater under pressure that is greater than atmospheric pressure. Confined groundwater is separated from direct contact with atmospheric pressure because of overlying impermeable or relatively low permeability layers of sediments or rock.

Groundwater (unconfined): water in an aquifer that has a water table that is at atmospheric pressure.

Groundwater Table: is a particular potentiometric surface for an unconfined aquifer.

Incidental Sump Pumping: sump pumping of perched or pocketed groundwater in an excavation where the static groundwater table has already been lowered below subgrade using wells or well points.

Potentiometric Surface/Piezometric Level: theoretical (imaginary) surface of the static head of groundwater in an aquifer. The water table is a particular potentiometric surface for an unconfined aquifer.

Sand/Gravel Pack: a sand or gravel material which is placed in the annular space between a drilled hole and the well casing and/or well screen.

Saturated Zone: the part of an unconfined aquifer below the water table where the soil pores are completely filled with water.

Screen (well screen): a cylinder of steel or plastic material with slots or perforations used to allow water to enter a well while preventing sediment or rock particles from entering the well.

Piezometric Level/Head: the level representing the total hydraulic head of groundwater in a confined aquifer.

Piezometric Pressure: pore water pressure at a specific point.

Pore Water Pressure: the pressure of groundwater in a soil, measured relative to atmospheric pressure.

Pumped Well: a hole in the ground with a casing in screen that includes its own motorized pump in the casing or screen to lift water to the surface.

Pumping Level: the level of water in a well casing or screen when pumping is in progress.

Observation Well: a non-pumping well used to observe changes in the elevation of the water table or the potentiometric surface/piezometric head.

Subgrade: the finished grade level of an excavation as shown on the Drawings, below any slab including excavation for foundation material.

Sump: shallow hole in the ground adjacent to or in excavation trench with a slotted or perforated casing containing a pump and surrounded by filter sand or gravel to prevent the pumping of formation material.

Well Point: a short slotted or perforated screen (usually steel or plastic and generally less than 4 inches in diameter and 5 feet long) attached to a 15 to 50-foot-long riser pipe and typically jetted, driven, or installed in a drilled hole.

Well Point System: a dewatering system that includes a number of well points, vacuum header, vacuum well point pump, and discharge pipe.

This section specifies the definition, responsibilities, and execution for control of water. Control of water shall consist of the design, furnishing, installation, operation, maintenance, monitoring, and removal of a dewatering system or systems to achieve proper completion of all work performed under this contract.

The Contractor shall depress water levels and hydrostatic pressures a minimum of 2 feet below the excavation bottom as required to complete all work performed under this contract. The Contractor shall provide, operate, maintain, and decommission the dewatering systems that shall consist of sump pumping, deep wells and/or well points as needed to control groundwater. The Contractor shall control groundwater so as to prevent softening of the bottom of excavations, of formation of “quick” conditions or “boils” during excavation. The Contractor shall design, install, maintain, and operate the dewatering system so as to prevent removal of the natural soils.

The Contractor shall provide backup systems for all ordinary emergencies, including power outage and flooding, and shall have available at all times competent workers for the continuous and successful operation of the dewatering system. The Contractor shall not disable or shout-down the dewatering system between shifts, on holidays, or weekends, or during work stoppages, without written permission from the Engineer. The Contractor shall be responsible for maintaining all electric power service connections to the dewatering system components and for the cost of electric power used in the operation of the dewatering system.

The Contractor shall control surface runoff so as to prevent entry or collection of water in excavations or in other isolated areas of the site. The Contractor shall employ sumps to pump any pocketed or undrained water not otherwise collected or removed. However, the Contractor shall not rely solely upon open and cased sumps for dewatering. The Contractor shall use sumps only where static groundwater levels are less than 2 feet above excavation/trench bottom or in areas where the potentiometric surface has been previously lowered to within 2 feet of subgrade using well points or pumped wells.

The Contractor shall design the dewatering system using accepted and professional methods of design and engineering consistent with sound modern practice. The Contractor shall have, or shall employ, the services of a subcontractor who has experience in the field of dewatering system design, installation, operation, and maintenance.

Before the commencement of any dewatering, the Contractor shall obtain acceptance by the Engineer for the design, materials, method, installation, and operation and maintenance details of the dewatering system(s) and monitoring system the Contractor plans to install. Acceptance by the Engineer of the design, materials, method, installation, and operation and maintenance details submitted by the Contractor shall not in any way relieve the Contractor from responsibility for errors therein or from the entire responsibility for complete and adequate design, materials, installation, operation, maintenance and performance of the system in controlling the water level in the excavated areas and for control of the hydrostatic pressures to the depths herein specified. The Contractor shall bear sole responsibility for proper design, installation, operation, maintenance, and any failure of any component of the dewatering system for the duration of this contract.

After initiating dewatering operations, the Contractor shall operate, maintain, and monitor the dewatering system or systems for the duration of the contract until specifically authorized in writing by the Engineer to cease operation, maintenance, or monitoring.

Well construction shall be in accordance with WAC 173-160.

Before the commencement of any dewatering to existing storm drain systems, the Contractor shall install, operate, and maintain a water treatment system to provide for settling of suspended solids or other requisite water quality treatment in the discharge from any sumping, dewatering well, or well point system. The Contractor shall be prepared to manage and dispose environmentally contaminated groundwater, if encountered; refer to the project environmental investigation report for further information. The Contractor shall be responsible for all permitting necessary to complete the dewatering activities.

The Contractor shall dewater and dispose of the water in a manner that will not cause injury to public or private property, or to cause a nuisance or a menace to the public.

The Contractor shall not allow the water discharged from the dewatering system well, well points, or supplemental water control systems (i.e., sumps) to degrade the water quality of the receiving waters. The Contractor shall comply with the site-specific stormwater discharge permit requirements.

The Contractor shall pay any fines incurred as a result of discharges that exceed maximum levels specified in the site-specific stormwater discharge permit.

6-24.1(1) Existing Monitoring Wells

The approximate locations of existing monitoring wells are shown on the Drawings. The Contractor shall be allowed to use any existing City monitoring wells to ensure that dewatering systems meet the drawdown requirements. The Contractor shall assume responsibility for determining the suitability and function of existing wells. The City shall bear no responsibility for the condition and usefulness, or lack thereof, of existing wells.

6-24.1(2) Quality Assurance

The Contractor shall include, at a minimum, all of the elements necessary for furnishing, installing, operating, and maintaining the dewatering system. The Contractor shall employ the services of a specialty dewatering subcontractor who has at least 5 years experience in the field of large area-wide dewatering system design, installation, operation, and maintenance, and who can document successful completion of at least 5 projects in the Puget Sound region that included either large diameter deep wells and/or well points.

The Contractor shall employ materials, equipment, and construction methods commonly used and proven as suitable for the duration of construction dewatering. The Contractor shall employ provide submittals and/or product data that demonstrate the suitability of the materials and equipment proposed for use on these systems. The Contractor shall test the dewatering system to the reasonable satisfaction of the Engineer and make operational any deficiency prior to excavation.

The Contractor shall integrate all dewatering, shoring, and excavation activities to ensure that dewatering, shoring, and excavation activities do not impede or conflict to the detriment of the work. The Contractor shall be responsible for any impacts to the project from conflicts between dewatering, shoring, and/or excavation.

The Contractor shall control excavation dewatering to prevent damage from settlement due to possible lowering of the adjacent groundwater table. The release of groundwater to its static levels shall be performed in such a manner as to maintain the undisturbed state of the foundation soils, prevent disturbance of backfill, and prevent movement of all structures and utilities.

6-24.1(3) Submittals

Three weeks before excavation begins, the Contractor shall submit drawings and complete design data showing methods and equipment the Contractor proposes for dewatering, including relief of hydrostatic head, management of other water, and in maintaining the excavation in a dewatered, hydrostatically controlled condition. The dewatering design shall be prepared by a Professional Engineer licensed in the State of Washington. The Contractor shall submit information sufficient for the Engineer to understand the dewatering system including, but not limited to, the following:

1. Specifications and manufacturer's literature of the materials and a description of the methods proposed for use in the construction of the dewatering system.
2. Drawings indicating the location and size of berms, dikes, ditches, wells, well points, sumps, monitoring well, gravel drains, treatment facilities, discharge lines, and outfall design. The drawings shall include, at a minimum, all dewatering system elements.
3. Capacities of pumps, prime movers, and standby equipment.
4. Information supporting the location and number of any wells, well points, gravel drains, sumps and discharge lines, and the adequacy of vacuum header, pressure header, discharge pipe sizes, pumps, filters/gravel packs, screens, and treatment facilities.
5. Information supporting the design of the dewatering wells, gravel packs, well points, and water treatment systems.
6. Dewatering schedule, operation, maintenance, and abandonment procedures.
7. Project descriptions for dewatering projects of similar scope and size completed in the Puget Sound region by the Contractor's specialty dewatering subcontractor.

6-24.1(4) Available Subsurface Data

The Contractor may use the information presented in the project geotechnical and environmental investigation reports, which are appended as Reference Information.

However, the Contractor shall assume responsibility for the interpretation or use of all of the information presented in the above reports. The use of the available data and information in no way relieves the Contractor from the sole responsibility for proper design, installation, operation, maintenance, and any failure of any component of the dewatering systems for the duration of this contract.

The Contractor is advised that environmentally contaminated soils and/or groundwater requiring management and disposal may be encountered during excavation. Refer to the appended environmental investigation report for further information.

6-24.2 Materials

Vacant

6-24.3 Construction Requirements

6-24.3(1) Monitoring System

The Contractor may use any or all of the City's monitoring wells installed during the geotechnical and environmental investigations as part of the monitoring system. The Contractor shall provide in-line flow meters on all well and well point system discharge pipes to ensure accurate measurement of the total flow from the dewatering system. The flow meters shall show flow in gallons per minute and total flow passing through the meter. The Contractor shall test and document the accuracy of all installed flow meters. The Contractor shall provide flow meter calibration documentation to the Engineer two weeks prior to any dewatering system pumping other than well or well point development.

The Contractor shall begin water level measurements within 24 hours of any well completion or well point installation and development and continue daily measurements until the well is properly abandoned or the Engineer approves cessation of measurement.

The Contractor shall begin water flow measurements within 4 hours of initiating pumping in any well or well point system and continue measurements until the Engineer approves cessation of measurement. The Contractor shall report to the Engineer, any changes in dewatering discharge flow of 25 percent or more occurring within any 24-hour period within 4 hours following such a change. The Contractor shall notify the Engineer anytime a pump fails, or is turned off or on, for a period of more than 4 hours. Additionally, the Contractor shall note and record when any well(s) or dewatering systems are turned off and back on. The Contractor shall provide water level and flow measurement records to the Engineer daily in both hardcopy and digital form.

The Contractor may remove and replace or shorten the casings of monitoring wells as the work requires, however, the Contractor shall bear full responsibility for the water level information provided by those wells and any consequences stemming from the lack of or error in the information. The Engineer shall be notified of any change in the measuring points of any well. The Contractor shall resurvey any shortened or lengthened observation well casing and provide such data to the Engineer.

The Contractor shall notify the Engineer, one week prior to installation of any monitoring wells. The Contractor shall provide the Engineer with driller's logs and formation samples at 5-foot intervals for each well.

6-24.3(2) Formation Protection and Well Development

The Contractor shall design, construct, operate, and maintain the dewatering system such that the fine fraction of the foundation soils will not be removed upon pumping.

The Contractor shall develop all wells and well points to remove fines resulting from drilling and construction and to increase the yield and hydraulic connection with the aquifer. The Contractor shall discharge all development water to the sediment settling tanks prior to discharge. The Contractor shall not discharge any development water directly to the ground surface or surface water body.

The Contractor shall develop dewatering wells until the sand/silt content of the discharge water during surging is less than 10 parts per million (ppm) as determined by a centrifugal separating meter such as a Rossum SAND TESTER (Journal AWWA, 46:123, February 1954), or equivalent.

The Contractor shall monitor discharge from all parts of the system to ensure that the sand/silt content of the discharge water does not exceed 10 ppm as determined by a Rossum SAND TESTER or equivalent. The Contractor shall provide all of the equipment and fittings for monitoring sand content. The Contractor shall monitor sand/silt content daily for one week after installing any dewatering well or well point and weekly thereafter. The Contractor shall take sand/silt content measurements in the presence of the Engineer. The Contractor shall notify the Engineer of the time of measurement and provide 24-hour notice of planned measurements.

6-24.3(3) Standby Equipment

The Contractor shall furnish and maintain on site sufficient power-generating and other equipment and materials to ensure continuous and successful operation of the dewatering system. The Contractor shall maintain on site, ready to operate, sufficient standby electrical generating capacity to operate all well pumps and/or well point pumps simultaneously. The Contractor shall test all backup electrical systems monthly in the presence of the Engineer. These tests shall include at least 24 hours of operation under full system load. The Contractor shall have on site, a backup pump for each type of pump in the dewatering system and sufficient pipe and fittings for any repair.

6-24.3(4) Discharge Points and Pipes

Discharge piping shall be designed and installed in a manner which minimizes impacts to excavation or construction activities.

Acceptable discharge points to be provided by the Engineer.

6-24.3(5) Water Supply for System Installation and Electrical Service

The Contractor shall provide water supply and electrical service needed for the dewatering systems. The Contractor shall provide a completely separate power company source for the dewatering system electric service with its own meter and which shall be dedicated solely for the dewatering system and separate from all other electric service.

6-24.3(6) Dewatering System Protection

The Contractor shall take reasonable precautions to ensure continuous successful operation of the dewatering system. This includes establishing and/or maintaining

adequate marking of all well, pump, and pipeline locations. Wherever dewatering wells or discharge lines require crossing for access into, out of, or around an excavation or driveway, steel ramps shall protect the system from vehicular traffic. Existing driveway access shall be maintained at all times unless approved by the Engineer. All ramps shall have the strength to support the heaviest equipment on site and shall provide at least one foot of clearance between the dewatering system element and the underside of the ramp. The Contractor shall clearly identify all vehicular access points across the dewatering system with brightly colored or flagged 8-foot-high poles on each side of the access point. The Contractor shall valve all ramped pipelines on both sides of the ramp.

6-24.3(7) System Removal

A licensed water well contractor in accordance with WAC 173-160 shall abandon all wells, well points, and monitoring/observation wells installed by the Contractor.

6-24.4 Measurement

Dewatering will be measured per lump sum.

6-24.5 Payment

The following bid items will be paid as:

"Dewatering," per lump sum.

The lump sum contract price for "Dewatering" will be full compensation for all labor, tools, materials, equipment, quality control, and other work required or implicitly needed to design the dewatering system.

The lump sum price for "Dewatering" will also be full compensation for all labor, tools, materials, equipment, mobilization, quality control, water quality treatment and monitoring, water storage and testing, disposal, permit fees and fines, observation wells, incidental sump pumping, and other work required or implicitly needed to provide installation, operation and abandonment, and any additional pumping or testing necessary to provide a properly functioning pumped well system. The lump sum price for "Dewatering" will be full compensation for all labor, tools, materials, equipment, quality control, and other work required or implicitly needed to provide installation, operation and abandonment of a sump pumping system. Incidental sump pumping to control perched or pocketed water in conjunction with a well point or pumped well system is considered incidental to the primary dewatering system.

END OF DIVISON 6

Division 7
Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits

7-01 DRAINS

7-01.2 Materials
Section 7-01.2 is supplemented as follows:

(******)
Filter Fabric 9-08.6

7-01.3 Construction Requirements
Section 7-01.3 is supplemented as follows:

(******)
Planter Drain Infiltration Drywell:
Planter Drain Infiltration Drywell shall be constructed per the detail shown in the plans.

Dispersion Trench:
Dispersion Trench shall be constructed per the detail shown in the plans.

7-01.4 Measurement
Section 7-01.4 is supplemented as follows:

Planter Drain Infiltration Drywell will be measured per each for the completed installation per the detail shown in the plans.

Dispersion Trench will be measured per each for each completed installation per the detail shown in the plans.

7-01.5 Payment
Section 7-01.5 is supplemented as follows:

(******)
The unit contract price for “Planter Drain Infiltration Drywell” and “Dispersion Trench” per each includes the cost of excavation, filter fabric, gravel backfill for drains, labor, material, equipment and all other costs to install the drywell or dispersion trench per the details shown in the plans.

7-04 STORM SEWERS

7-04.2 Materials
Section 7-04.2 is supplemented as follows

(******)
Ductile Iron Storm Sewer Pipe shall meet the requirements of Section 9-30.1(1) Class 50 Nonrestrained joints.

7-04.3 Construction Requirements

Section 7-04.3 is supplemented as follows:

Add the following new section:

(******)

7-04.3(2) Television Inspection of Culvert Pipe

All pipes shown in the plans to be inspected by the use of a Closed-Circuit Television (CCTV) camera. The CCTV footage and corresponding inspection file database (media, mdf, ldf files) shall be exported and provided to the Engineer on a USB flash storage device (thumb drive). CCTV files shall be provided to the Engineer before connecting to the existing pipe and shall be approved prior to connection to pipe. No VHS tapes or DVD-R Discs will be accepted. All inspections shall be conducted in accordance with NASSCO PACP methods and format.

At the beginning of each pipe inspection, the following information shall be electronically generated and displayed on the CCTV footage:

1. Date of inspection
2. Contractor Company Name
3. Operator Name
4. Location of pipe
5. Direction of inspection (upstream or downstream)
6. Pipe material and size

During inspections, the following information shall be electronically generated, automatically updated, and displayed on the CCTV footage:

1. Inspection location in the pipe line in feet from adjusted zero
2. Invert location (with direction of travel US/DS)
3. Date of inspection
4. Elapsed time of inspection

Each individual pipe inspection, from end to end, shall be recorded on one digital file.

7-04.4 Measurement

Section 7-04.4 is supplemented as follows:

(******)

Televised Inspection of Culvert Pipe shall be by the linear foot of pipe televised as shown in the plans.

Ductile Iron Storm Sewer Pipe __ In. Diam. shall be measured by the linear foot of complete pipe installed per the plans.

7-04.5 Payment

Section 7-04.5 is supplemented as follows:

(******)
The unit contract price of “Televised Inspection of Culvert Pipe” per linear foot shall include all costs of taping and televising the pipe and producing a reviewable image to determine the condition of the pipe, including all costs incurred in television inspections, labor, equipment and materials.

The unit contract price of “Ductile Iron Storm Sewer Pipe __ In. Diam. shall include excavation, pipe bedding, labor, equipment and materials to install the pipe be the lines and grades shown in the plans.

7-05 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS

7-05.2 Materials

Section 7-05.2 is supplemented with the following:

(******)
Manhole Frame and Cover 9-05.50(6)

7-05.3 Construction Requirements

7-05.3(2) Abandon Existing Manholes

Section 7-05.3(2) is supplemented with the following:

(******)
In the last sentence of this section, delete “shall be salvaged” for sanitary sewer manholes only.

7-05.3(4) Drop Manhole Connection

Delete Section 7-05.3(4) in its entirety and replace with the following:

(******)
Inside Drop Manhole Connection shall be constructed in accordance with Woodinville Water District Sewer Standard Plan #7.

Add the following new section:

(******)
7-05.3(5) Sanitary Sewer Manholes

FRP baselined or saddle manholes shall be constructed as per Woodinville Water District Standard Plans and as noted and shown on the drawings.

All lift holes and the inside face of rubber gasket joints between precast sections shall be thoroughly wetted, filled with mortar, and smoothed with a brush finish. All joints shall be air/watertight. Lift holes shall be grouted from the outside as well as inside the manhole. Infra-Riser Composite adjustment rings shall be used in place of concrete rings. The contractor shall install external joint wrap on MH riser joints, pick holes, and riser rings of the MH, after external seam grouting but before backfilling.

Precast sections shall be placed and aligned to provide vertical sides and vertical alignment of ladder rungs over the largest portion of the structure’s bench. Eccentric cone shall be positioned to allow vertical access to the ladder. The completed manhole shall be vertical,

rigid, true to dimension and watertight.

The Contractor shall install external joint wrap on manhole riser joints, pick holes and neck of the manhole. See Special Provisions Section 9-37 and the District Standard Plans for more information.

Manholes eight (8) feet and less in depth shall have cones a maximum of two (2) feet in height.

Manholes set in paved streets or other paved areas shall be set flush with finished grade of the paving and when required, the manhole frame shall be tilted to conform to the grade on the paved surface. Manholes set in gravel shoulders or other nonpaved improved areas shall be set flush with the finished grade and with an asphalt apron six (6) feet square. The manhole frame shall be tilted to conform to the grade of the finished surface. Manholes not set in paved areas shall be set in a collar per District Standard Plan No. 21 to prevent surface water infiltration into the system, unless plans specify otherwise.

The Contractor shall furnish watertight manhole lids per District Standard Plan 20 Manhole joints and pipe entry points shall be watertight.

Manhole channels shall be made to conform to the sewer grade and shall be brought together with well-rounded junctions. Channel sides shall be carried up vertically to 3/4 of the largest pipe's diameter and rounded to the shelf at the largest pipe's crown elevation. The concrete shelf shall be smoothly finished with slopes to drain. Channeling shall be performed by a pre-qualified specialist well experienced with District requirements. The District, at its sole discretion, may require a demonstration on a test manhole to establish pre-qualification. New sewer manholes shall be installed with a prefabricated manhole base liner made of polypropylene (PP) and/or fiberglass reinforced plastic (FRP), unless otherwise noted on the Plans. See Section 9-05.50(2)B for additional information. Connections into an existing fiberglass base shall replace the base section or have the channel re-glassed by a certified service technician to accommodate the new connection.

As indicated on the Standard Plans and drawings, channels with cored knockouts shall be provided to facilitate connecting future incoming sewers. Connection and knockouts shall provide for matching pipe crown elevations, with 0.10-foot drop to discharge pipe.

Kor-N-Seal boots shall be used provided the manhole penetrations are cored to provide the proper pipe orientation and allowance for fall across the manhole (0.1 foot minimum). Special attention needs to be given to steep runs to ensure the minimum fall across channel. Maximum fall across the Manhole shall be 0.3 feet. Channel mix shall have a minimum compressive strength of 3,000 psi.

Where the manhole is located in streets or other areas which have not been brought to grade, the top of cone shall be constructed so as to provide clearance not less than 12 inches or more than 22 inches below the surface to be restored, unless otherwise directed by the District.

Manholes shall not be located in sidewalks or curb and gutter line, unless otherwise noted on the Plans.

MH ladder orientation shall generally be centered over the widest bench with special attention given to future connection points and wheel tracking. In no case may any portion of the ladder align with the channel.

Maximum spacing between manholes on sanitary sewer main runs shall be 400 feet.

The minimum inner diameter of manholes shall be 48 inches. For incoming pipes larger

than 24 inches in diameter, the manhole shall be 54 inches or greater. Manholes are mandatory when connecting significant commercial or industrial facilities to the sanitary sewer system and shall be of adequate size to provide for monitoring and sampling equipment. Manholes with invert elevations greater than or equal to 15 feet below finished grade shall be minimum 54 inches in diameter.

All existing sewers shall remain in service at all times. Adequate provision shall be made for disposal of existing flow if any existing sewers are damaged. Any damage shall be repaired to a condition equal to or better than that existing prior to construction at no cost to the District. The Contractor will be solely responsible to determine existing flows and provide adequate bypass pumping as required to maintain existing flows. The Contractor shall prepare and submit a bypass pumping plan for review and approval by the District prior to construction.

Add the following new section:

(******)
7-05.3(6) Manhole Vacuum Testing

Before sewer manholes are accepted and/or connected to the existing system for use, all manholes shall be inspected for air tightness. Any corrections required shall be made at the expense of the Contractor.

All manholes, except saddle manholes, shall be vacuum tested in accordance with the latest edition of ASTM C1244/C1244M-20 to verify water tightness. All manhole penetrations shall be blocked or sealed and braced prior to the testing in order to prevent pipes, boots, gaskets, or any other materials from being drawn into the manhole.

Vacuum testing requires a minimum six (6) foot whip from the test gauge to the testing apparatus to prevent injury during the testing process. Any safety concerns during sewer testing will constitute a “Test Fail” and the testing will be rescheduled once proper safety measures are put into place and followed.

The test head shall be placed at the top of the manhole in accordance with the manufacturer’s recommendations. A vacuum of ten (10) inches of Hg shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time for the vacuum on the manhole to drop from ten (10) inches of Hg to nine (9) shall be measured and the manhole shall have passed the vacuum test if the time measured meets or exceeds the values indicated in the Table below:

MH Diameter (inches)	Depth (feet)									
	8 or less	10	12	14	16	18	20			
	Time (seconds)									
48	20	25	30	35	40	45	50			
60	26	33	39	45	52	59	65			

If the time required for the pressure to drop from 10 inches of Hg to 9 inches of Hg is less than the value indicated in the table, the manhole shall be rejected by the District and shall be repaired or replaced and re-tested by the Contractor until a satisfactory test is obtained.

7-05.4 Measurement
Section 7-05.4 is supplemented with the following:

(******)

Remove Sanitary Sewer Manhole will be measured per each sanitary sewer manhole removed.

Abandon Sanitary Sewer Manhole will be measured per each sanitary sewer manhole abandoned.

FRP Sanitary Sewer Manhole 60 In. Dia. will be measured per each furnished and installed.

Saddle Sanitary Sewer Manhole 60 In. Dia. will be measured per each furnished and installed.

Inside Drop Manhole Connection will be measured per each furnished and installed.

7-05.5 Payment

Section 7-05.5 is supplemented with the following:

(******)
"Remove Sanitary Sewer Manhole", per each

The unit Contract price per each for "Remove Sanitary Sewer Manhole" shall be full pay for all work to remove the structure in its entirety, and dispose of all items removed, including manhole rim and cover.

"Abandon Sanitary Sewer Manhole", per each

The unit Contract price per each for "Abandon Existing Sanitary Sewer Manhole" shall be full pay for all work to remove the top 4 feet of the structure, plug abandoned sewer mains, furnish and fill with sand to the subgrade level, and dispose of all items removed, including manhole rim and cover.

"FRP Sanitary Sewer Manhole 60 In Dia", per each.

The unit Contract price per each for "FRP Sanitary Sewer Manhole __ In. Diam." shall include full compensation for all materials, labor, equipment, and other associated costs to furnish and install the manhole including but not limited to: excavation, hauling and disposal of excavated materials, manhole base with PP or FRP baseliner integrally cast, manhole risers, manhole eccentric cone, manhole frame and cover, asphalt or concrete ring around frame and cover where required, polypropylene steps and ladder and hand hold, gaskets, adjustment rings, external joint wrap, adjusting rim and cover to final grade, Kor-n-Seal boot, sewer pipe connections, marker posts where required, grouting, sawcutting, structure excavation, and over excavation; dewatering and proper disposal of water; placement, compaction and testing of foundation material; placement, compaction and testing of backfill material; cleaning, manhole channeling, and vacuum testing, replacement, repair and re-testing, if required or as directed by the District in accordance with the contract Plans and Specifications.

"Saddle Sanitary Sewer Manhole 60 In Dia", per each.

The unit Contract price per each for "Saddle Sanitary Sewer Manhole __ In. Diam." shall include full compensation for all materials, labor, equipment, and other associated costs to furnish and install the saddle manhole including but not limited to: excavation, hauling and disposal of excavated materials, manhole risers, manhole eccentric cone, manhole frame and cover, asphalt or concrete ring around frame and cover where required, polypropylene steps and ladder and hand hold, gaskets, adjustment rings, external joint wrap, adjusting rim and cover to final grade, Kor-n-Seal boot, sewer pipe connections, concrete for manhole base and channel, concrete blocking, grouting of pipe penetrations, removal and disposal of

existing sewer pipe in channel, marker posts where required, grouting, sawcutting, structure excavation, and over excavation; dewatering and proper disposal of water; placement, compaction and testing of foundation material; placement, compaction and testing of backfill material; cleaning, manhole channeling, replacement, repair and re-testing, if required or as directed by the District in accordance with the contract Plans and Specifications.

"Inside Drop Manhole Connection", per each

The unit Contract price per each for an inside drop assembly shall constitute full compensation for all labor, material, tools and equipment necessary and incidental for the construction of drop connections inside of manholes as shown on District Standard Sewer Plans and in accordance with the Engineering Specifications, including all piping and appurtenances, core drilling, cleaning, preparation, and furnishing and attaching the drop structure to the manhole.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.1 Description

Section 7-08.1 is supplemented with the following:

(******)

Sewer Mains and Appurtenances

Sewer Mains shall be constructed as shown in the Plans and in accordance with the Woodinville Water District Standard Plans and Standard Specifications (Available at https://www.woodinvillewater.com/216/standard=specifications), these Special Provisions, and the 2026 Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction, and the American Water Works Association Specifications.

Sanitary Sewer Work

These Special Provisions outline the technical requirements for the construction of a sewer main system. All references to the "District" mean the Woodinville Water District or their authorized representative.

During construction, if the existing sewer or water mains are damaged, the mains must be removed and replaced with the same diameter of DI pipe immediately. Contractor shall coordinate with the District for restoring the mains. Contractor is not allowed to operate any existing water main valves. Only District staff may operate valves. Contractor required to maintain access for District staff to all valves (existing and Contractor-installed) throughout the duration of the project.

Contractor shall also coordinate the District sewer main work with the City work included elsewhere in these specifications. The construction sequence shown on the plans does not include coordination with the other parts of the work.

7-08.2 Materials

Section 7-08.2 is supplemented with the following:

(******)

Diversion pipe for lay flat discharge hose shall have a pressure rating that exceeds the operating pressure, internal pressure, and head conditions. It shall be in good working

condition, free of defects, patched punctures, and otherwise meet the manufacturer recommendations for working conditions. The fittings shall be cam-lock or flanged.

Use of High Density Polyethylene Pipe (HDPE) for diversion piping shall meet the requirements of AWWA C906-21. It shall have a pressure rating and dimension ratio appropriate for the calculated internal pressure and head conditions. It shall be in good working condition and free of cracks, defects, and otherwise meet the manufacturer recommendations for working conditions. The fittings shall be butt-fused or flanged.

7-08.3 Construction Requirements

7-08.3(1)C Bedding the Pipe

Section 7-08.3(1)C is supplemented with the following:

(******)
Recycled concrete is not approved as foundation gravel, pipe bedding, or trench backfill material for any Ductile Iron or PVC water or sewer piping, structures, or appurtenances.

Native material is not approved for as foundation gravel, pipe bedding, or trench backfill material for any Ductile Iron or PVC water or sewer piping, structures, or appurtenances.

Imported water utility and sewer utility trench bedding and backfill shall be furnished, installed and compacted in accordance with the requirements of the various applicable sections of the Specifications, these Special Provisions, and the WWD Standard Details.

Bedding material shall be carefully placed and firmly compacted to provide a firm, uniform cradle for the pipe. The minimum thickness of the layer of bedding material required shall be 6 inches under the bell for all pipe sizes of 27 inches in diameter and smaller and a minimum thickness of 6 inches under the bell of the pipe where rock is excavated. The Contractor shall provide firm, continuous support for the pipe.

After the pipe laying operation, additional bedding material shall be placed and compacted by hand tools for the full width of the trench to a minimum height of 6 inches above the top of the pipe.

No timber bracing, lagging, sheathing or other lumber shall be left in any excavation.

7-08.3(1)D Temporary Traffic Control

Section 7-08.3(1)D is added to the Special Provisions:

(******)
The Contractor shall make suitable, safe, and adequate provisions for necessary traffic around, over, or across the work in progress and shall schedule pavement patching to follow after backfilling is completed as directed by the regulatory agency.

The contractor shall submit a traffic control plan for review and approval by the District and the permitting agency prior to beginning work. Traffic control shall conform to Section 1-10 of the Standard Specifications and these Special Provisions.

7-08.3(1)E Excavating In Paved Areas

Section 7-08.3(1)E is added to the Special Provisions:

(******)

Before excavating in paved areas, the existing road surface shall be cut a minimum of 1 foot back from the outer edge of the excavation with approved cutting equipment. The cuts are to be made in clean, straight lines to ensure a minimum of damage to the existing pavements. All cuts in existing concrete pavement are to be made with a concrete saw, except that where the concrete has been overlaid with asphalt, the pavement may be drilled on three (3) inch centers 1 foot (minimum) from the outer edge of the excavation on each side of the trench section. If the Contractor fails to adequately protect the cut edges during construction, it will be required, at its own expense, to re-cut the edges a minimum of 1 foot back from the edge of excavation prior to repairing the pavement.

7-08.3(1)F Trench Safety and Excavation

Section 7-08.3(1)F is added to the Special Provisions:

(******)
The Contractor shall provide and install trench safety systems such as shoring or trench boxes or shall employ construction techniques such back sloping that meet the applicable State and Federal safety regulations. Use and removal of trench safety systems shall be accomplished in such a manner that there will be no damage to the work or to the other properties.

Maximum and minimum trench widths shall be in accordance with the dimensions shown on the WWD Standard Details.

In all cases, trenches must be of sufficient width to permit proper joining of the pipe and backfilling of material along the sides of the pipe. Trench width at the surface of the ground shall be kept to the minimum amount necessary for proper installation of the work in a safe manner.

Trenches wider than the maximum specified may result in a greater load on the pipe and, consequently, if the maximum trench width is exceeded by the Contractor, the Contractor shall, at its own expense, provide pipe of higher strength classification or provide a higher class of bedding where necessary to assure that the pipe will not be overloaded.

The maximum length of open trench permissible on any line, in advance of pipe laying, will be 100 feet for sewer pipe and 100 feet for water mains, except at the end of each day's operations, there shall be no trench in which pipe laying, embedment and backfill have not been completed.

Upon completion of work each day, all open trenches shall be completely backfilled, leveled and temporarily patched, graveled, fenced, or sheeted as required by the regulatory agency and the District.

Excavation for manholes, valves, structures, and other appurtenances shall be sufficient to provide enough room for compaction equipment between the outside surfaces and the sides of the excavation.

All material excavated from trenches and stored adjacent to the trench or in a roadway or public thoroughfare shall be maintained in such a manner that will cause a minimum of inconvenience to public travel. Provision shall be made for traffic where such is necessary. Free access shall be provided to all fire hydrants, water valves, and meters and clearance shall be left to enable the free flow of stormwater in all gutters, conduits, and natural water courses. Where the trench bottom is a material that is unsuitable for providing an adequate foundation or material which will make it difficult to obtain uniform bearing for the pipe such material shall be removed and replaced with “foundation

gravel", as defined in Section 7-17.3(8).

7-08.3(2)F Plugs and Connections

Section 7-08.3(2)F to add the following at the end of this section:

(******)
The proposed connection to the King County MH LBEAR W11-A05 shall be plugged and not put into service until the tributary system has been cleaned, inspected, tested, and approved by Woodinville Water District and approved by the King County representative.

7-08.3(2)H Sewer Line Connections
Section 7-08.3(2)H is supplemented with the following:

(******)
The physical connection to existing manhole or sewer lines shall not be made until so authorized by the Woodinville Water District (District). The connection to an existing manhole or existing sewer shall be plugged and sealed at the commencement of work, and shall remain sealed until opening of the line is authorized by the District. This authorization will not be given until all upstream lines have been completely cleaned, tested, and accepted.

The Contractor shall notify the District, in writing, of their schedule for making the connection at least ten (10) working days prior to the time of making the connection. The LPA Program must be contacted at 206-477-5414 or LPA.team@kingcounty.gov at least ten (10) working days prior to construction activity within 50 feet of any King County sewer pipe as identified on the plan sheets.

The Contractor shall excavate completely around the existing manholes to ensure against unbalanced loading on the manhole. The Contractor shall keep the manholes in operation at all times and take all precautions necessary to prevent any debris or other materials from entering the sewer.

The Contractor shall be responsible for repairing all damage to the manholes resulting from their operations.

A King County representative shall be on site at all times during excavation, coring, and installation of the connection to the King County Maintenance Hole (MH) LBEAR.W11-A05 and abandonment of the connection to King County MH LBEAR.W11-A04.

In the event that entry into a King County MH is required in the course of the proposed work, or inspection of the proposed work, note that the King County MH is a Permit Required Confined Space and all applicable rules and regulations shall be followed prior to and during entry.

Connection to existing manhole MH LBEAR W11-A05 shall be cored. A boot connector (Kor-N-Seal or approved equal) shall be used and installed per manufacturer instructions. Prior authorization and approval by the District and King County is required for all other methods when the manhole cannot be cored. The existing King County Maintenance Hole (MH) LBEAR W11-A05 cone shall be rotated and new steps and ladder installed due to the location of the new connection with respect to the existing ladder and shelf. All steps, ladders and MH neck adjustment for King County

Maintenance Hole (MH) LBEAR W11-A05 shall be updated per King County Standard Plan “3305-416, Type B Maintenance Hole”. If the neck of the existing manhole is not in conformance with King County Standard Plans “3305-416, Type B Maintenance Hole” for neck adjustment, manhole sections will need to be added or deleted to meeting the allowable dimensions.

At the proposed connection to King County MH LBEAR.W11-A05, the connection shall be subject to the approval of the King County representative. King County shall review and approve of the contractor’s work plan for the new connection to King County MH LBEAR.W11-A05.

King County does not guarantee pipe location, diameter, or invert elevation; therefore, field verification is recommended prior to construction.

All flushing water, grit and foreign material shall be removed from upstream manholes and not allowed to enter the existing sewer.

All existing sewers shall remain in service at all times. Adequate provision shall be made for disposal of existing flow if any existing sewers are damaged. Any damage shall be repaired to a condition equal to or better than that existing prior to construction at no cost to the District.

All work on King County pipelines and facilities shall not be backfilled until it has been inspected and approved by a King County representative.

Upon completion of the work, the Contractor shall provide Woodinville Water District and King County with an “as-constructed” drawing of the new connection to the King County MH LBEAR W11-A05 and a copy of the sewer test results.

7-08.3(2)H1 Sewer Diversion

Section 7-08.3(2)H1 is added:

(******)

This Section specifies the requirements for a temporary pumping system to provide temporary diversion of sewage around the Work. The bypass system includes all primary, secondary, and backup pumps, generators, piping, valves, and other equipment needed to continuously move the sewer flow from an upstream connection point to a downstream re-entry (discharge) point. Sewer Diversion systems will be required for: 1) connecting to King County's sewer MH W11-A05, 2) the construction of the District's proposed sewer main in conflict with the District's existing sewer main, and 3) the abandonment of the existing sewer main connected to King County's sewer MH W11-A04

A Bypass plan shown in the plan set has not been approved by Metro or WWD and is only a schematic.

The contractor will be solely responsible to determine existing flows and provide adequate bypass pumping as required to maintain existing flows. The Contractor shall prepare and submit a bypass pumping plan at least 15 Working Days prior to operating the bypass system for review and approval by the District and King County prior to construction.

Temporary sewer bypass submittals shall be prepared for each location where a bypass

is required, including for any sewer laterals that require bypassing. Bypass submittals shall include the following:

1. Bypass Plan, including:

a. Written proposal with a list of all equipment and a drawing showing bypass routing from upstream location to downstream re-entry point.
b. Expected hours of operation.
c. Plan to provide uninterrupted power.
d. Staffing and emergency contacts.
e. Suction and discharge points with elevations on plan view.
f. High-flow accommodation plan.
g. Steps to address equipment failure
h. Emergency Cleanup Plan
i. Other equipment or measures to ensure continuous bypass operation
j. protection/security measures for the bypass system
k. alarm/call-out system.

2. Manufacturer's catalog cuts showing the capacities of pumps and pipes.

3. Design calculations proving adequacy of the system and selected equipment, including:
a. Pump performance curves
b. System curve and operating point of the pump-conveyance system
c. Ability of hoses, fittings, and appurtenances to meet the operating pressure.

4. Any property agreements, permissions, or releases required to accommodate the Contractor's bypass plan including:
a. Written permission to enter or use private property.
b. Written release prior to vacating private property impacted by construction.

The approval of the plan and/or proposed equipment by WWD or King County does not relieve
the Contractor of liability for sewage spills or sanitary sewer overflows under this Contract.

Discharge all diverted flow as shown on the Contractor provided Drawings and as approved by the Woodinville Water District and King County Local Public Agency Representative. Where Sewer Diversion is required, ensure that location of connecting laterals and side sewers are identified and service is not disrupted, unless noted otherwise. Contractor shall schedule work or provide for sewer service operations to allow businesses to operate during their normal hours of operation. Do not shut down the Sewer Diversion system between shifts, on holidays or weekends, or during work stoppages without permission from the King County Local Public Agency Representative. Monitor upstream and downstream maintenance holes for flow backup and obstructions.

No diverting flow to the ground surface or receiving waters. Sewer Diversion which results in surface or groundwater contamination, or potential health hazards shall be reported to authorities.

Temporary sewer bypass systems shall be designed by a registered professional engineer in the State of Washington. Engineer shall have demonstrated experience in the design of pumping systems of comparable size and complexity.

Before commencement of any bypassing operation, the temporary sewer bypass

pumping system shall work continuously without error, see 7-17.3(3) sub-section 2. The Contractor shall obtain the District's and King County's acceptance of the design, equipment and materials, installation, operation and maintenance.

Contractor shall provide a copy of written procedures for backup operations that shall be stored on site and on equipment for emergency personnel use during emergency operations.

The King County MH LBEAR W11.A05 and King County MH LBEAR W11-A04 structures to be diverted receives flows from the Cross Valley Water District and Woodinville Water District. The Contractor shall make its own interpretations, evaluations, and conclusions as to the nature of the interceptor flow characteristics and design the Sewer Diversion system accordingly. The Contractor may perform flow monitoring. Flow monitoring data collected by the Contractor shall be provided to the King County Local Public Agency Representative on a weekly basis. Flow data below is in millions of Gallons per Day and is approximate.

Flows	WWD MH16	KC W11-A05	KC W11-04
Average dry weather flow	0.35 MGD	0.66 MGD	0.66 MGD
Peak 5-year dry weather flow	0.7 MGD	2.7 MGD	2.7 MGD
Minimum bypass rate	0.8 MGD	3.0 MGD	3.0 MGD

Schedule construction activities based on data from the Project Representative and National Weather Service Forecasts to reduce the probability of high flows and/or surcharging from stormwater during construction. Obtain a forecast of the weather conditions for the next five days at the Site based on the National Weather Service forecast.

Any diversion configurations that deviate from that shown in the plans will require approval by the Project Representative. Accomplish Sewer Diversion by routing the contributing flow around the Contractor's work. Sewer Diversion shall be done in such a manner as not to damage private or public property or create a nuisance or public menace. The pumped sewage shall be conveyed by appropriate means and shall be returned into the originating sanitary sewer system. Dumping or free flow of sewage on private or public property, excavations, gutters, streets, sidewalks, or into storm sewers is prohibited.

Take all necessary precautions including constant monitoring of diversion pumping and at a minimum monitor the maintenance hole immediately upstream of the diversion lateral to ensure that no private residences or properties are subjected to a sewage backup or spill. Do not surcharge maintenance holes more than one (1) foot above the crown of the pipe. The Contractor shall be liable for all cleanup, damages, and resultant fines in the event of a spill. After the work is completed, flow shall be restored and all sewer pipes and manholes' that were surcharged during the bypass operation shall be properly cleaned and flushed to remove accumulated sewage material after service is restored. Removed accumulated sewage material shall be removed from the collection system and not flushed down stream.

Contractor is fully responsible for any damage that may result from an inadequate or improper installation, maintenance or operation, or failure of any kind of the bypass

system.

Spills or bypasses of sewage to surface waters or drainage courses is prohibited. In the event of sewage spills, the Contractor shall immediately take whatever actions are deemed necessary to stop a spill. Should the Contractor not take immediate action, the District will be entitled to take whatever actions are deemed necessary to stop a spill.

Costs incurred by the Contractor, the District or King County, including penalties imposed on the District or King County as a result of any sewage spill caused by the Contractor, its employees, or subcontractors, shall be borne in full by the Contractor, including legal fees and other expenses to the Contractor, District, or King County resulting directly or indirectly from the spill.

Provide pumps, conduits, and other equipment necessary to divert the sewer flow. Provide flow meter(s), data loggers, and other equipment as necessary to continuously measure and record flow. Furnish the necessary labor and supervision to set up and operate the pumping and diversion system. Pumps and diversion pipe shall be of adequate capacity and size to control the flows. Install Contractor's equipment in a manner that shall not cause sewers to surcharge during maximum flows. Monitor all operating pumps 24 hours per day.

Maintain standby equipment with sufficient equipment and materials to ensure continuous and successful operation of the diversion and dewatering systems at the 5-year peak flow rate provided above. Valves, tees, elbows, connections, tools, sewer plugs, piping and other parts or system hardware are to be on-site to ensure immediate repair or modification of any part of the system as necessary. For engine powered pumps, provide full-sized standby pump, fueled and operational at all times, on site, equal to the largest sized regular duty pump approved by the Local Sewer Agency. For electric motor driven pumps, provide full-sized standby pump, on site, equal to the largest sized regular duty pump approved by the Local Sewer Agency and adequately sized standby generators. Keep pumps and generators fueled and operational at all times.

All diesel driven equipment used shall be fitted with sound attenuation sufficient to meet permit requirements of the City of Woodinville. A utility or solar powered battery charger and coolant heater such that the equipment is ready to start in any operating condition.

Provide sewage spill containment equipment and cleanup in accordance with the accepted Emergency Cleanup Plan.

Inspect the entire length of the diversion pipe daily for damage and to verify proper function. Repair any damage that may result from inadequate or improper design, installation, maintenance and operation of diversion systems, including mechanical or electrical failures. Restore areas affected by diversion systems.

If the bypass system is to be operated when the Contractor is not on-site, the system shall be provided with a monitoring and alarm system (auto-dialer third party service) that notifies the Contractor, WWD, and the King County Local Public Agency Representative 24 hours a day of a system failure. Failure will be considered equipment failure resulting in rising liquid level in the upstream system beyond that designated in the diversion design.

In the event of a failure of the primary bypass system, the backup bypass pumping system shall automatically turn on and be operational without any physical changes

required to the system. The Contractor shall respond immediately and fix the cause of the problem to the primary bypass system. Contractor shall be on-call 24 hours a day and be able to respond within 30 minutes at all times during sewer bypassing. The Contractor will be required to demonstrate to the satisfaction of the District and King County that this requirement can be met and that responsible and appropriately trained personnel will be able to deal with emergencies that could arise. The Contractor is encouraged to consider retaining a company or individual(s) that specialize in the operation and maintenance of sewer systems for bypasses that require unattended operation."

Flush diversion pipes with potable or reclaimed water and drain prior to disassembly. When diversion piping discharges through a maintenance hole cover, install a temporary cover sized to accommodate the piping and cover the annular space to minimize escape of odors and noise.

7-08.3(3) Backfilling

Section 7-08.3(3) is supplemented with the following:

(******)
Recycled concrete will not be allowed as foundation gravel, pipe bedding, or trench backfill material for any Ductile Iron (DI water or sewer main installation).

The placement and compaction of the pipe bedding and trench backfill shall be in accordance with the requirements of the various applicable sections of these specifications and as shown in the WWD Standard Details.

Where governmental agencies other than the District have jurisdiction over roadways, the backfill shall be in accordance with the agency's requirements.

Bedding material shall be carefully placed and firmly compacted to provide a firm, uniform cradle for the pipe. The minimum thickness of the layer of bedding material required shall be 6 inches over and under the pipe. The Contractor shall provide firm, continuous support for the pipe.

After the pipe laying operation, additional bedding material shall be placed and compacted by hand tools for the full width of the trench to a height of 6" above the top of the pipe.

In backfilling the trench, the Contractor shall take all necessary precautions to protect the pipe and protective coating from any damage or shifting of the pipe.

No timber bracing, lagging, sheathing or other lumber shall be left in any excavation.

At all roadway and driveway crossings and within existing paved rights-of-way and in such additional locations as may be directed by the District, the trench shall be immediately backfilled after the pipe is installed and inspected and shall be immediately provided with a temporarily graveled surface and continually maintained daily until replaced with permanent repair as required.

The Contractor shall be responsible for restoring to a condition equal to the prior condition of any and all existing utilities, culverts, ditches, drains, landscaping, or other facilities that are damaged as a result of the Contractor's operation.

7-08.3(3)A Compaction of Trench Backfill

Section 7-08.3(3)A is added to the Special Provisions:

(******)
Recycled concrete will not be allowed as foundation gravel, pipe bedding, or trench backfill material for any water or sewer main installation.

The moisture content of all soils used shall be within 2% of optimum. All densities shall be determined by the ASTM D-1557 (Modified Proctor) test procedure. The District will conduct on-site materials sampling and in-place density testing for all District projects. For private development projects, all testing is to be provided and paid for by the developer; compaction reports shall be provided to the District. The Contractor shall coordinate the testing with the District and shall provide convenient and safe access to the site and the trench for sampling and testing.

1.TRENCHING PARALLEL TO ROAD ALIGNMENT

All trenches backfilled under the roadway shall be mechanically compacted to 95% of maximum dry density. In any trench in which 95% density cannot be achieved with existing backfill, the existing backfill shall be replaced with imported gravel backfill. The imported gravel backfill shall be mechanically compacted to 95% of maximum dry density for the full depth of the trench.

All backfill material shall be compacted in 24-inch maximum lifts using heavy machinery or 12-inch maximum lifts using hand equipment.

2.TRENCHING TRANSVERSE TO ROAD ALIGNMENT

For transverse trenching locations, such as side sewers and intersections, the entire trench shall be backfilled with crushed rock, unless otherwise noted on the Plans, and placed in the maximum lifts listed above for trenching parallel to the road alignment and compacted to 95% of maximum dry density.

7-08.3(4) Plugging Existing Pipe

Section 7-08.3(4) to add the following at the end of this section:

(******)

The abandoned sewer main shall be disconnected from King County MH LBEAR W11-A04 per the detail shown in the plans and shall be plugged at the point of connection to King County MH LBEAR W11-A04. The existing bench channel shall be filled with 3000 psi concrete and the bench plastered smooth. King County shall review the contractor's work plan for plugging and abandoning the connection to King County MH LBEAR W11-A04. In the event that the plug falls into the King County MH LBEAR W11-A04, the contractor shall remove the plug immediately. Provisions for removal must be included in the contractor's work plan. Upon completion of the work, the Contractor shall provide King County and WWD with an "as-constructed" drawing of the abandonment to King County MH LBEAR W11-A04.

7-08.3(5) Lateral Sanitary Sewer Service Disruptions

Section 7-08.3(5) is added:

(******)

During temporary sewer bypass operation, the Contractor is responsible for all sanitary sewer back-ups and claims associated with the temporary sewer bypass operation or service interruption.

Sewer lateral use must not be restricted during normal business operating hours without

prior authorization from the Engineer and WWD. If sewer service is anticipated to be disrupted, the Contractor must coordinate restrictions with WWD and businesses to minimize disruptions and restrictions. The Contractor shall provide mobile restroom(s) including a hand washing station and bottled water to businesses affected by water and sewer service disruptions at no additional cost to the Owner.

The Contractor must keep the construction trench free from sewage discharges from lateral connections. Temporary plugs shall not be placed in laterals to block flow unless a relief point is provided to prevent flooding of private property and sanitary sewer overflows.

7-08.3(6) Abandon Existing Sanitary Sewer Main

Section 7-08.3(6) is added:

(******)
Existing sanitary sewer pipe where shown on the Contract Drawings or designated by the Engineer to be abandoned in-place shall have the full length filled with low density cellular concrete (LDCC) material as manufactured by Cell-Crete, Elastizell or approved equal. Flowable CDF is not acceptable.

The Contractor shall verify abandon-in-place extents with the District. Low density cellular concrete material shall have minimum 28-day strength of 50 psi and maximum 28-day strength not to exceed 300-psi. The Contractor shall submit a written plan to the District 10 working days prior to the start of this work describing the Contractor's method for accomplishing this work. The plan shall include a complete list of equipment that will be used, details for ensuring that pipe segments are completely filled and free of voids, and contingency measures for fill material collection and containment for unanticipated spills.

7-08.4 Measurement

Section 7-08.4 is supplemented with the following:

(******)
Sewer Diversion will be per lump sum to provide a complete and functional sewer bypassing system and operation throughout the duration of construction.

Abandon Sewer Main will be per linear foot.

Connection to existing manhole MH LBEAR W11-A05 will be per each.

Disconnect from King County MH LBEAR W11-A04 will be per each.

7-08.5 Payment

Section 7-08.5 is supplemented with the following:

(******)
"Sewer Diversion", per lump sum.

The Contract lump sum price for "Sewer Diversion" shall include full compensation for all materials, labor, equipment, tools and other associated costs for diverting and bypassing of existing sewer main and lateral services including: planning, obtaining all required approvals, SPCC plan development, notifications, communications with the Engineer, King County, and WWD; sewer caps and plugs; mobile restroom, hand wash station and bottled water for

lateral service disruptions; system testing, pumping, water, power, temporary piping and ramps or shallow excavation installation, backfill and temporary surface restoration, furnishing standby equipment and materials; continuous operation, monitoring, record keeping; maintenance of the system or moving the system, as necessary, to maintain continuous sewer service throughout construction; removal of all bypassing equipment and materials when the Work is complete. Partial payments will be made as follows:

1. 25 percent of the total bid item Contract amount will be paid once the bypassing plan is approved, all submittals are approved, and the bypass system is installed, tested, functional and approved for use.

2. 50 percent of the total bid item Contract amount will be paid will be paid at a prorated amount based on the total number of days completed compared with the Contractor-furnished construction schedule and total duration of planned sewer bypassing.

3. The final 25 percent of the total bid item Contract amount will be paid once all bypassing is complete, all equipment is removed, any surcharged manholes and sewer mains propoerly cleaned and flushed, and any damage is restored to the satisfaction of the Engineer.

All traffic control, including planning and obtaining approvals, shall be paid for under a separate Bid Item included in the Proposal.

"Abandon Sewer Main", per linear foot.

The linear foot price bid for Abandon Existing Sanitary Sewer Main shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to cleaning and abandoning in place the existing sanitary sewer where identified on the Plans. This item shall include, but not be limited to, the following:

1.Cleaning existing sanitary sewer systems identified to be abandoned in place

2.Furnishing and installing materials to create water tight seals of all piping at existing manhole connections for abandonment of existing sanitary sewer piping.

3.Furnish and fill full length of abandoned pipe with low density cellular concrete (LDCC) material as manufactured by Cell-Crete, Elastizell or approved equal. Flowable CDF is not acceptable.

“Connection to Existing Manhole MH LBEAR W11-A05”, per each shall be full pay for all labor, equipment, and materials to connect to Metro’s manhole as specified herein.

“Disconnect from King County MH LBEAR W11-A04” per each shall be full pay for all labor, equipment, and materials to disconnect from Metro’s manhole as specified herein.

7-09 WATER MAINS

7-09.3(6) Existing Utilities

Section 7-09.3(6), including title, is deleted and replaced with the following:

(June 1, 2026)

Vacant

7-12 VALVES FOR WATER MAINS

7-12.3 Construction Requirements

Section 7-12.3 is supplemented with the following:

(******)

Adjusting Valve Boxes to Grade

The Contractor shall adjust existing water and gas valves to the new grade as shown on the Plans or as directed by the Engineer. The Contractor shall notify the Utility company associated with the valve box that is to be adjusted to grade three (3) working days prior to performing the adjustment. If Utility company wants to replace the lid or valve box then the Utility company will provide this to the Contractor prior to doing the work.

7-12.5 Payment

Section 7-12.5 is supplemented with the following:

(******)

"Adjust _____Valve Box" shall be per each and shall include all cost for labor, materials, and equipment, including replacing the valve box and lid if furnished by the Utility company where shown in the plans or as directed by the Engineer.

7-17 SANITARY SEWERS

7-17.2 Materials

Section 7-17.2 is revised to read as follows:

(******)

Materials shall meet the requirements of the following sections:

Pea Gravel	9-03.5
Crushed Surfacing Base Course	9-03.9(3)
Imported Foundation Gravel	9-03.9(1)
Polyvinyl Chloride (PVC) Pipe – AWWA C900	9-30.1(5)A
Polyvinyl Chloride (PVC) Pipe – ASTM D3034, SDR35	9-05.12(1)
Ductile Iron (DI) Class 52, Protecto 401 Ceramic Epoxy Lined – ANSI C151/ AWWA A21.51/C116	9-05.13
Steel Casing Pipe	9-30.4

The type and class of materials to be used shall be as shown on the Contract Plans. Where no specific reference is shown, the following specifications shall govern the materials used. All materials shall be new and undamaged of a known brand, with replacement parts readily available from the general Seattle area.

Prior to the installation of any of the facilities required on the project, all materials shall be approved by the Engineer and WWD.

Sanitary sewer pipe shall be Solid Wall C900 PVC RJ Certa-Lok DR18, PVC D3034 SDR35, or Class 52 DI Protecto 401 Ceramic Epoxy Lined pipe per the Plans and installed per manufacturer's recommendation. .

All pipes shall be clearly marked with type, class, and thickness. Lettering shall be legible and permanent under normal conditions of handling and storage.

The Contractor shall furnish all materials noted and as listed on the Construction Drawings and required to complete the work. All materials shall be manufactured with premium materials.

Flexible couplings shall be used to join dissimilar sewer pipe materials. Flexible coupling adapters shall meet the specifications outlined in the AWWA Standard C219 coupling specification and be rated for working pressures up to 250 psi. Flexible coupling adapters shall be Romac XR501, or Engineer approved equal.

All pipes shall be clearly marked with the manufacturer's identification, year, and class of pipe.

All fittings and accessories shall be manufactured and furnished by the pipe supplier, or approved equal.

7-17.3 Construction Requirements

Section 7-17.3 is revised to read as follows:

(******)

Sanitary sewers shall be constructed in accordance with Section 7-08 except when superseded by Woodinville Water District Sanitary Sewer Specifications.

7-17.3(2) Cleaning and Testing

Delete Section 7-17.3(2) in its entirety and replace with the following:

(******)

Before sewer lines are accepted and/or connected to the existing system for use, all lines shall be inspected for line and grade, air tightness, deflection, and television inspection. Any corrections required shall be made at the expense of the Contractor.

All necessary safety precautions regarding air testing and confined space entry shall be observed.

Any safety concerns during sewer testing will constitute a "Test Fail" and the testing will be rescheduled once proper safety measures are put into place and followed.

7-17.3(2)A Preparation for Testing

Prior to testing the Contractor shall clean and flush all sewer lines. The Contractor shall conduct preliminary tests to confirm that the section to be tested is in an acceptable condition before requesting the District to witness the test. The manner and time of testing shall be subject to approval of the District.

7-17.3(2)B Line and Grade

Variance from established line and grade shall not be greater than one thirty-second (1/32) of an inch per inch of pipe diameter and not to exceed one-half (1/2) inch, provided that such variation does not result in a level or reverse sloping invert; provided, also, that variation in the invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surfaces, does not exceed one sixty-fourth (1/64) of an inch per inch of pipe diameter, or one-half (1/2) inch maximum.

7-17.3(2)C Low Pressure Air Test

Gravity sewers shall be tested with low pressure air, by the pressure drop method. The Contractor shall furnish all facilities and personnel for conducting the air test. under the supervision of the District. The Contractor may desire to make an air test prior to backfilling for its own purposes. However, the acceptance air test shall be made after backfilling has been completed and compacted.

All wyes, tees or the end of the side sewer stubs shall be plugged with flexible joint caps, or acceptable alternative, securely fastened to withstand the internal test pressures. Such plugs or caps shall be readily removable and their removal shall provide a socket suitable for making a flexible, jointed lateral connection or extension. No double plugs shall be allowed.

Immediately following the pipe cleaning, the pipe installation shall be tested with low pressure air. A maximum reach to be tested shall be the reach between two consecutive manholes. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 4.0 pounds per square inch greater than the average back pressure of any groundwater above the center of the pipe being tested. At least two minutes shall be allowed for temperature stabilization before proceeding further.

The requirements of this specification shall be considered satisfied if the time required in seconds for the pressure to decrease from 3.5 to 2.5 lbs. per square inch greater than the average back pressure of any groundwater that may submerge the pipe is not less than the listed values shown in the following:

According to the following table:

Diameter (inches)	Minimum Test Times for Length of Main (seconds)							
	50'	100'	150'	200'	250'	300'	350'	400'
8	144	286	428	570	712	854	908	908
10	222	444	666	888	1110	1134	1134	1134
12	320	640	960	1280	1360	1360	1360	1462
15	500	1000	1500	1700	1700	1714	1998	2284
18	720	1440	2040	2040	2056	2468	2878	3290
24	1280	2558	2720	2924	3654	4386	5116	5846

According to the following:

$T = 4*K$, for $C < 1$
$T = 4*(K/C)$, for $1 \leq C < 1.75$
$T = 4*(K/1.75)$, for $C \geq 1.75$

Where: $C = 0.0003918*d*L$

$K = 0.0111*d2*L$
d = Pipe diameter (inches)
L = Pipe length (feet)
T = Minimum test time (seconds)

Note: All test times in the above table are rounded up to the nearest even number.

The use of air pressure for testing sewer lines creates hazards that must be recognized. The Contractor shall be certain that all plugs are securely blocked to prevent blowouts. The air testing apparatus shall be equipped with a pressure release device such as a rupture disc or a pressure relief valve designed to relieve pressure in the pipe under test at greater than 6 lbs. per square inch.

Precautions shall be taken to prevent any damage caused by testing. Any damage resulting shall be repaired by the Contractor at its own expense.

All visible leaks showing flowing water in pipelines or manholes shall be stopped even if the test results fall within the allowable leakage.

7-17.3(2)D Deflection Testing

If required by the District, all PVC sewer pipes shall be tested for deflection not less than 30 days after the trench has been backfilled and compaction has been completed. The testing shall be conducted by pulling a properly sized mandrel through the pipe.

Sanitary sewers constructed of thermoplastic pipe shall be tested for deflection not less than 30 days after the trench backfill and compaction has been completed. The test shall be conducted by pulling a properly sized “go-nogo” mandrel through the completed pipeline. Testing shall be conducted on a manhole-to-manhole basis and shall be done after the line has been completely flushed out with water.

The mandrel shall be a rigid, nonadjustable mandrel having an effective length of not less than its normal diameter and an odd-number of legs (9 legs minimum). Minimum diameter at any point along the full length of the mandrel shall be 95 percent of the base inside diameter of the pipe being tested.

Base inside diameter is derived by subtracting a statistical tolerance package from the average inside diameter. The tolerance package is defined as the square root of the sum of squared manufacturing tolerances. The tolerance package for controlled outside diameter pipe consists of (1) outside diameter tolerance specified in applicable ASTM Standard, (2) 12 percent of one wall thickness specified in applicable ASTM Standard, and (3) out of roundness tolerance listed in appendix of applicable ASTM Standard. The items in the tolerance package for controlled inside diameter pipe consists of (1) inside diameter tolerance listed in appendix of applicable ASTM Standard and (2) out of roundness tolerance listed in appendix of applicable ASTM Standard. When out of roundness tolerance is not listed, use 3 percent of average inside diameter.

The average inside diameter for pipe with controlled outside diameter shall be equal to the average outside diameter as specified in applicable ASTM Standard minus 2 minimum wall thicknesses as specified in applicable ASTM Standard and minus 2 times excess wall tolerance of 6 percent. The average inside diameter for pipes with controlled inside diameter shall be the average inside diameter as specified in applicable ASTM Standard.

The Contractor shall be required, at no expense to the Contracting Agency, to locate and uncover any sections failing to pass the test and, if not damaged, reinstall the pipe. The use of a vibratory re-rounding device or any process other than removal or reinstallation shall not be acceptable. The Contractor shall retest the section after replacement of the pipe.

7-17.3(2)E Television Inspection

All sanitary sewers shall be inspected by the use of a Closed-Circuit Television (CCTV) camera. The CCTV footage and corresponding inspection file database (media, mdf, ldf

files) shall be exported and provided to the District on a USB flash storage device (thumb drive). CCTV files shall be provided to the District before final acceptance of the project. No VHS tapes or DVD-R Discs will be accepted. All inspections shall be conducted in accordance with NASSCO PACP methods and format.

At the beginning of each sewer main inspection, the following information shall be electronically generated and displayed on the CCTV footage:

1. Date of inspection
2. Contractor Company Name
3. Operator Name
4. Upstream Manhole number to downstream manhole number
5. Direction of inspection (upstream or downstream)
6. Pipe material and size

During inspections, the following information shall be electronically generated, automatically updated, and displayed on the CCTV footage:

1. Inspection location in the sewer line in feet from adjusted zero
2. Manhole number to manhole number (with direction of travel US/DS)
3. Date of inspection
4. Elapsed time of inspection

Each individual sewer main inspection, from manhole to manhole, shall be recorded on one digital file. If a pipe reach cannot be recorded to a single digital file due to extreme pipe length or obstructions in the pipe, multiple digital files for a single pipe are acceptable. On the other hand, multiple sewer main inspections recorded on a single digital file shall not be accepted.

For all projects (District or private development), CCTV inspections shall be furnished by the Contractor. Contractor shall utilize 1-inch target or ball and sewer inspection dye during CCTV recording. Contractor shall use the pipe ID number as shown on the Plans when conducting post-construction CCTV as referenced in the requirements above.

This CCTV inspection will be performed prior to final restoration of the street or easement. The Contractor shall inform the District ahead of time when and which lines are ready to be inspected.

The Contractor shall bear all costs incurred in correcting any deficiencies found during the CCTV inspection including the cost of any additional CCTV inspection that may be required by the District to verify the correction of said deficiency.

The project will not be accepted by the District until the CCTV inspection has been performed.

7-17.3(3) Submittals

Section 7-17.3(3) is added as follows:

The Contractor shall submit applicable products, work plans and schedules as listed in this specification section to WWD and copy to LPA.Team@kingcounty.gov for review and approval a minimum of 15 business days in advance of the inspection work. Submittals should contain the Project Name and Site Address.

The Contractor shall provide the following submittals:

1. Drawings and complete design data showing methods and equipment that the Contractor proposes to utilize at all locations for use in Sewer Diversion. This design shall be designed and stamped by a licensed Professional Engineer registered in the State of Washington. The submittal shall include the following information:
    a. Drawings indicating the location of pumps, flow meters, temporary sewer plugs, and diversion discharge lines.
    b. Capacities of pumps, prime movers, and standby equipment or gravity piping systems.
    c. Flow monitoring procedures for a flow meter and data transfer
    d. Design calculations proving adequacy of the Sewer Diversion system and selected equipment.
    e. Pressure testing plan.
    f. Traffic control plan.
    g. Emergency Cleanup Plan.
        The Emergency Cleanup Plan shall be submitted within 15 days of the effective date of the Notice to Proceed.

        Include provisions for an industrial hygienist and a standby subcontractor for the cleanup of exterior and building interior spaces that might be affected by a spill or overflow. The cleanup subcontractor shall be certified by the Institute of Inspection Cleaning and Restoration (IIRC) and follow the Standard and Reference Guide for Professional water damage Restoration IICRCS500 for the cleanup of Category-3 Gray/Black Water. Include the name and phone number of the emergency cleanup contractor and industrial hygienist.

        Identify solid and liquid material disposal facilities.
    h. Side Sewer Protection Plan.
    i. Contractor's Accident Prevention Program per Washington Administrative Code (WAC) 296-800-140/296-155-110 and site-specific/project Health and Safety Plan (HASP) per WAC 296-155/WD 27.00.
    j. Dewatering Plan
    King County and Woodinville Water District will review and comment on the dewatering plan for the proposed construction.
    k. Provide Contractor's Bypass Plan for review and approval prior to construction
    l. Sewer Service Interruption Notification Plan.
        Submit this plan within 15 days of the effective date of the Notice to Proceed. Plan and schedule shall include:
            a) Addresses of affected properties.
            b) Estimated days of service interruption of affected properties.
            c) Contingency plan if diversion/outages will last longer than anticipated.
            d) Schedule that reflects three week and 48-hour notifications to Project Representative.
            e) Schedule that reflects notifications of residents and businesses by the County.
            f) Plan to notify residents and businesses on the day that sewer service is interrupted.
            g) Written approvals received from WWD and King County Local Public Agency Representative.

Update the Notification Schedule for affected residents and businesses for review at the weekly Contract meetings.

Request and obtain written approval from the King County Local Public Agency before interrupting any sewer service. Notify the Woodinville Water District and the King County Local Public Agency Representative a minimum of two weeks prior to any service interruption. Contractor's notification regarding work to be performed shall be in such detail as to give the time of commencement and completion of the Work. Provide specific addresses for residents and businesses affected by the scheduled outing. Notification of the residents and businesses affected by the outages shall be provided by the Woodinville Water District. At least 48 hours in advance of the service interruption.

On the day that sewer service is interrupted, the Contractor may notify affected residents and businesses that are affected by the outage. The occupants(s) shall be advised that sewer service will be interrupted and the occupant(s) are to refrain from discharge to the sewer. The notification shall provide the estimated time of service restoration. The Contractor shall maintain a record of the residences and businesses that were visited, the time of the visit, and whether or not personal contract was made with the occupant(s).

2. Full Scale Demonstration:

Woodinville Water District (WWD) requires a full-scale demonstration of the Sewer Diversion system that is necessary to complete the work. The demonstration of the proposed Sewer Diversion system shall be done before the scheduled date of the actual need for the Sewer Diversion. Demonstrate that the proposed methods of Sewer diversion are fully functional and reliable and capable of continuously diverting all flow to the downstream system.

Notify agencies WWD and the King County Local Public Agency Representative at least 7 days in advance of the date and time of the demonstration.

The demonstration will be performed for 4 hours between 9:00 pm and 5:00 am Monday through Friday. Do not conduct the demonstration on a Saturday, Sunday, or a holiday. Following 2 hours of normal operation conduct a simulated pump failure to demonstrate operation of standby equipment and auto dialer as described in Section 7.08.3(2)H1.

The full-scale demonstration shall be deemed to have failed if at any time during the demonstration all wastewater flows are not accommodated through the Sewer Diversion system or the upstream sewage levels cannot be maintained. If the full-scale demonstration fails, determine and correct the deficiencies that caused the demonstration to fail and conduct another full-scale Demonstration. Full scale Demonstrations shall be performed until all wastewater flow is accommodated for the entire 4-hour time of the Demonstration.

Do not begin diverting sewage until a successful full-scale demonstration has been completed.

(******)
This Item shall govern for placing concrete saddles when called for the Project plans or as directed by the Engineer. When shown on the plans or when directed by the Engineer, pipe to receive concrete saddle shall be backfilled in accordance with WSDOT Section 7-08 Pipe zone bedding to the spring line and concrete placed for a depth and width conforming with details and sections shown on the plans.

7-17.3(4) Connection to Sanitary Manhole

Section 7-17.3(4) is added as follows:

(******)
Connections to existing manholes shall be made by core-drilling. Proposed sanitary sewer main crown to match existing sewer main crown(s) in manhole. Invert of the manhole shall be re-channelized as necessary to accommodate flow directions and provide a minimum of 0.10-foot drop from the inlet to the outlet. Connections shall be watertight. If connection is made to an existing manhole with a fiberglass-reinforced plastic baseliner, the disturbed channel must be re-glassed by a District approved contractor.

7-17.3(5) Plug(s) For Existing System

Section 7-17.3(5) is added to the Special Provisions:

(******)
The Contractor shall furnish and install a plug at the time the project is connected to the District's sewer system. The plug(s) must remain in position to prevent debris and water from entering the existing sewer system until such time as the sewer system within the project has been accepted by the District for maintenance and operation. A $2,000.00 fine will be levied against the Contractor when a sewer mainline plug is removed at any time during the work. The Contractor will also be accountable for all expenses incurred to clean and flush sanitary sewer mainlines as a result of said plug removal.

7-17.3(6) Pipe Laying

Section 7-17.3(6) is added to the Special Provisions:

(******)
The sewer pipe, unless otherwise approved by the District, shall be installed upgrade from point of connection on the existing sewer or from a designated starting point to line and grade per approved plans. The sewer pipe shall be installed with the bell end forward or upgrade. When pipe laying is not in progress, the forward end of the pipe shall be kept tightly closed with an approved temporary plug.

7-17.3(7) Pipe Jointing

Add Section 7-17.3(7) to the Special Provisions:

(******)
All extensions, additions, and revisions to the sewer system, unless otherwise indicated, shall be made with sewer pipe joined by means of a flexible gasket which shall be fabricated and installed in accordance with these specifications.

All joints shall be made up in strict compliance with the manufacturer's directions and all sewer pipe manufacturing and handling shall meet or exceed the current revisions of the ASTM recommended specifications.

Pipe handling after the gasket has been affixed shall be carefully controlled to avoid disturbing the gasket and knocking it out of position or loading it with dirt or other foreign material. Any gaskets so disturbed shall be removed, cleaned, re-lubricated, if required, and replaced before the re-joining is attempted.

Care shall be taken to properly align the pipe before joints are entirely forced home. During insertion of the tongue or spigot, the pipe shall be partially supported by hand, sling, or crane to minimize unequal lateral pressure on the gasket and to maintain concentricity until the gasket is properly positioned.

Sufficient pressure shall be applied in making the joint to assure that it is home, as described in the installation instructions provided by the pipe manufacturer.

7-17.3(8) Bedding the Pipe

Section 7-17.3(8) is added to the Special Provisions:

(******)
Recycled concrete will not be allowed as foundation gravel, pipe bedding, or trench backfill material for any Ductile Iron (DI water or sewer main installation).

Foundation gravel shall consist of clean, granular material free from objectionable materials such as organic matter or other deleterious substances with at least 90 percent coarse material ranging from 1-inch in diameter to 3-inch in diameter and 100 percent 3-inch in diameter or less, unless otherwise specified or approved by the District.

Sewer main and lateral pipe bedding shall consist of clean, granular manufactured pea gravel per Section 9-03.5.

7-17.3(9) Trench Backfill

Section 7-17.3(9) is added to the Special Provisions:

(******)
Trench backfill for all sanitary sewer main trenches shall be full depth crushed surfacing base course per Section 9-03.9(3) and includes materials placed above the pipe zone backfill. Trench backfill within the roadway prism shall extend up to the underside of the pavement or surfacing materials. Trench backfill outside the roadway prism shall extend up to original ground or finished grade.

7-17.3(10) Dewatering and Control of Water

Section 7-17.3(10) is added to the Special Provisions:

(******)
Groundwater in underground utility construction is a widely known, and not unusual, condition. The Contractor shall review the actual field conditions and any other available resources to determine the extent and volume of groundwater to be expected. The Contractor shall submit a dewatering plan to the District for review prior to dewatering activities. The dewatering plan shall show specific locations, in plan and section, where dewatering is expected as well as general discussion of methods should water be encountered in other locations. The plan should also indicate the location and methods for removing groundwater, proper sediment removal and disposal of groundwater.

Dewatering into the storm drainage system is not allowed unless approved by the agency having jurisdiction. Dewatering into the sanitary sewer system is not allowed unless the contractor has King County Wastewater Discharge Authorization and an approved Industrial

Waste Discharge Permit from the District. This needs to be submitted and approved before work on the project starts.

Review by the District of the design, materials, method, installation, and operation and maintenance details submitted by the Contractor shall not in any way relieve the Contractor from responsibility for errors/omissions therein or from the entire responsibility for complete and adequate design, materials, inspection, operation, maintenance and performance of the dewatering system. The Contractor shall bear sole responsibility for proper design, installation, operation, maintenance, and any failure of any component of the dewatering system.

The Contractor shall dewater and dispose of the water so as not to cause injury to public or private property or to cause a nuisance or a menace to the public and shall meet all regulatory agency requirements.

The control of groundwater shall be such that softening of the bottom of excavations or formation of "quick" conditions or "boils" shall be prevented. Dewatering systems shall be designed and operated so as to prevent the removal of the natural soils.

During excavating, installing, placing of trench backfill and the placing and setting of concrete, excavations shall be kept free of water. The static water level shall be drawn down below the bottom of the excavation to maintain the undisturbed state of the natural soils and allow the placement of backfill to the required density. The dewatering system shall be installed and operated so that the ground water level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property.

The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures and pipelines.

In carrying out the work within the limits of streams or an area that will drain into a stream, the Contractor is required to comply with the regulations of the appropriate local, State and Federal agencies.

The Contractor shall contact the above referenced departments and secure such permits as may be necessary to cover its proposed method of operation within the areas described above. If no permit is necessary and, if requested by the District, the Contractor shall provide written approval from the appropriate agency.

Groundwater must not enter future or existing water or sewer lines.

Dewatering and proper disposal of groundwater related to the sanitary sewer construction shall be considered incidental to the various items of work and no additional compensation will be allowed.

If the trench dewatering for sanitary sewer construction is greater than anticipated based on the available geotechnical report(s), the District may authorize additional trench dewatering and that authorized work shall be paid for under the bid item for "Additional Trench Dewatering, If Required". Prior to any such work commencing, the District shall approve any work to be considered for payment for Additional Trench Dewatering, If Required. No payment shall be made for additional trench dewatering efforts that are not approved by the District.

7-17.3(11) Steel Casing

Section 7-17.3(11) is added to the Special Provisions:

(******)
Where shown on the Plans, the Contractor shall install the casing pipe by open cut construction to the depth and grade shown on the plans. Carrier pipe shall be installed inside casing per manufacturer's recommendations.

Steel casing shall be in accordance with the Specifications, these Special Provisions, the Plans and the WWD Standard Plans. Sizing and wall thickness of casing shall be per the Plans or as approved by the District.

Casing pipe shall be installed according to pipe laying practices per Section 7-08.3. All joints must be welded by operators who are qualified by testing as prescribed by the AWS in Standard Qualifications Procedure and are certified to perform the type of work required. The quality of welding must conform to the current edition AWS D1.1 Structural Welding Code, Section 3, Workmanship.

The carrier pipe shall be supported on casing spacers at 6-foot maximum spacing intervals and shall be installed with restrained joints. Upon carrier pipe installation, testing completion and the approval of the inspector, the annular space between the carrier pipe and the casing pipe shall be filled with dry sand blown in the casing pipe. Care shall be exercised to ensure that the entire space is filled and that the pipe is not disturbed during the placement of the backfill between the pipe and the casing. A temporary
blow-off shall be placed at each end of the casing to verify and facilitate sand placement.

The Contractor shall remove the carrier pipe and reinstall it if the pipe is not within the tolerances shown on the drawings and as specified.

Casing ends shall be sealed using butyl rubber pipe boot and hose clamps or Link-Seal casing seals.

7-17.3(12) Slip-lining Pipe

Section 7-17.3(12) is added to the Special Provisions:

(******)
Where shown on the Plans, the Contractor shall install a new sewer main within an abandoned sewer main of a larger size. The slip-lined pipe with casing spacers shall be placed at the invert of the inside diameter of the existing pipe. The slip-lined pipe shall be per the plans.

A. Cleaning:
Prior to installation of the slip-lined pipe, Contractor shall thoroughly clean the sewer main designated to receive the slip-lined pipe. Cleaning shall constitute removal of all debris, solids, roots, deposits, and other matter, which would preclude the installation of the slip-lined pipe into the sewer line.

B. Inspection of Pipeline
Prior to the installation of the slip-lined pipe, Contractor shall inspect the sewer designated to receive the slip-lined pipe by Closed Circuit Television Inspection per Section 7-17.3(2)E of these special provisions.

C. Slip-Lining
Contractor shall remove the existing abandoned pipe to allow insertion of the slip-lined pipe through the manhole. The existing abandoned sewer line shall be exposed and removed for the length necessary to accommodate the length of slip-lined pipe and for equipment.

Sections of the slip-lined pipe shall be field connected above the insertion pit using

low profile bell and spigot joints and shall be supported on casing spacers at 6-foot maximum spacing intervals. Contractor shall take precautions to prevent ragged edges of broken sewer pipe from scoring the slip-lined pipe as it is being pushed into the existing sewer main.

D. Contractor shall seal the annular space between the slip-lined pipe and the existing sewer pipe with dry blown sand. Care shall be exercised to ensure that the entire space is filled and that the slip-lined pipe is not disturbed during the placement of the sand between the slip-lined pipe and the existing sewer main. Contractor shall take appropriate precautions to avoid over pressurization, buckling and floating the slip-lined pipe above the existing invert of the sanitary sewer pipe being inserted. Contractor shall grout the ends of the pipes to create a watertight connection to the manhole.

Contractor shall provide the City and WWD with a thumb drive showing both pre- and post-installation conditions, including the restored connections to the manhole. All defects discovered during the post-inspection television inspection shall be corrected by the Contractor at its expense. After defects, if any, are corrected, the affected sewer segment shall be video inspected again.

7-17.4 Measurement

Section 7-17.4 is modified as follows:

(******)
Measurement for Sanitary Sewer Clean Out, 8 In Diam will be per each.

No measurement will be made for furnishing and installing pea gravel pipe bedding, typical dewatering, cleaning, testing, and CCTV inspection of sewer pipe; it is considered incidental to the installation of the sewer pipe.

Measurement of Crushed Surfacing Base Course and Imported Foundation Gravel, If Required will be per ton as substantiated by certified scale tickets, up to the maximum quantity calculated for the volume within the neat lines of the trench as specified in the Plans and Specifications. The conversion factor to convert cubic yards of material to tons of compacted in-place material, shall be determined by the geotechnical testing and Proctor results based on the actual soil sample. Certified weight tickets must be received by the Engineer at the delivery site for each load in accordance with Standard Specification 1-09. Loads of material for which a certified weight ticket has not been provided to the Engineer shall not be paid for. Measurement for "Crushed Surfacing Base Course" or "Imported Foundation Gravel, If Required" to be paid for in the sanitary sewer bid schedule included in the Proposal shall only include work required related to sanitary sewer construction.

Measurement of Connection to Existing Sewer System will be per each.

Measurement for Steel Casing for Water Main shall be per linear foot of casing furnished and installed and shall be measured along the pipe centerline.

Measurement for Utility Potholing will be per lump sum.

Measurement for Additional Potholing, If Required will be per each.

Measurement for Additional Trench Dewatering, If Required will be by calculation.

Slip-Lining 8” Diam. PVC 3034 SDR Sanitary Sewer shall be measured by the linear foot from center of manhole to center of manhole of completed sanitary sewer main.

7-17.5 Payment

Section 7-17.5 will be revised as follows:

(******)

"PVC C900 DR 18 RJ Sanitary Sewer Pipe_____In. Diam." per linear foot.
"PVC D3034, SDR35 Sanitary Sewer Pipe_____In. Diam." per linear foot.
"DI Class 52 Protecto 401 Sanitary Sewer Pipe_____In. Diam." per linear foot.

The unit Contract price per linear foot for sewer pipe of the kind and size specified shall be full compensation for all labor, material, tools and equipment required to complete the work specified in the Contract Documents and shall include, but not be limited to, the following: excavation and grading, hauling and disposal of waste materials including asphalt pavement, concrete curb and gutter or sidewalk and securing approved disposal site; dewatering and proper disposal of water; furnishing and installing pipe of the size and type per the Plans, gaskets, fittings, restrained joints, detectable marking tape, adaptors/couplings, installation, laying and joining of pipe and fittings; furnishing, placement and compaction of pipe zone bedding; adjustments to manhole inverts, protection of existing utilities, cleaning, low pressure air testing, deflection testing, CCTV inspection, and any other items necessary to accomplish the Work.

Payment for trench backfill shall be made under the Crushed Surfacing Base Course bid item.

"Crushed Surfacing Base Course", per ton.
The unit Contract per ton for "Crushed Surfacing Base Course" for sanitary sewer utility trench, pavement patching and permanent restoration shall be full compensation for all labor, material, tools and equipment necessary including furnishing, loading, hauling, conditioning (if required), final placement, compaction, and any other items or activities necessary to accomplish the Work.

Payment for Crushed Surfacing Base Course to be paid for in the sanitary sewer bid schedule included in the Proposal shall only include work required related to sanitary sewer construction.

Payment will be made based on the actual number of tons of material furnished and placed. Quantities shall be based on certified weight tickets signed by the driver and collected by the Engineer at the time and place of delivery. Loads of material for which a certified weight ticket has not been given to the inspector shall not be paid for. It shall be the Contractor's responsibility to see that a ticket is given to the Inspector for each truckload of material delivered. Duplicate tally tickets shall be prepared to accompany each truckload of material delivered on the project. The tickets shall, at minimum, bear the following information:

1.Truck number.
2.Quantity delivered in cubic yards and tons.
3.Driver's name and date.
4.Location of delivery - by job name and stationing on each job.
5.Place for receipting by the inspector.

"Imported Foundation Gravel, If Required" per ton.
The unit price bid per ton for Imported Foundation Gravel, If Required shall constitute full compensation for all labor, material, tools and equipment necessary and incidental to furnishing, hauling, placing, and compacting the materials in the trench or elsewhere

as required or as directed by the District, and proper disposal of excavated materials. These items shall include, but not be limited to, the following:

1.Over-excavation or extra depth excavation as may be required by the District, or field conditions, which dictate such excavation, as approved by the District.

2.Grading, preparation and compaction of existing subgrade.

3.Proper disposal of excavated materials.

Payment for gravel and rock materials will be made based on the actual number of tons of material furnished and placed. Quantities shall be based on certified weight tickets signed by the driver and collected by the inspector at the time and place of delivery. Loads of material for which a certified weight ticket has not been given to the inspector shall not be paid for.

Gravel and rock materials will be paid for by the ton as substantiated by certified scale tickets, up to the maximum quantity calculated for the volume within the neat lines of the trench as specified in the specifications and standard details. The conversion factor to convert cubic yards of material to tons of compacted in-place material, shall be determined by the geotechnical testing and Proctor results based on the actual soil sample.

It will be the Contractor's responsibility to see that a ticket is given to the Inspector for each truckload of material delivered. Duplicate tally tickets shall be prepared to accompany each truckload of material delivered on the project. The tickets shall bear at least the following information:

1.Truck number.

2.Quantity delivered in cubic yards and tons.

3.Driver's name and date.

4.Location of delivery - by job name and stationing on each job.

5.Place for receipting by the inspector.

"Sanitary Sewer Clean Out, 8" Diam.", per each

The unit Contract price per each for "Sanitary Sewer Clean Out, 8" Diam" shall be full compensation for all labor, material, tools and equipment required to complete the work specified in the Contract Documents and shall include, but not be limited to, the following: clearing and grubbing, excavation, hauling and disposal of waste materials; dewatering and proper disposal of water; furnishing and installing the sanitary sewer clean out, fittings, gaskets, standpipe, plug, ring and cover casting, concrete collar, 12” PVC under casting and appurtenances per the Plans, restrained joints, detectable marking tape, adaptors/couplings, installation, laying and joining of pipe and fittings; furnishing, placement and compaction of pipe zone bedding and trench backfill; protection of existing utilities, cleaning, low pressure air testing, deflection testing, CCTV inspection, and any other items necessary to accomplish the Work.

Payment for trench backfill shall be made under the Crushed Surfacing Base Course bid

item.

"Connection to Existing Sewer System" per each.

The unit price bid per each for connection to existing sewer system shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to providing a watertight connection to the existing sanitary sewer system (e.g. connection to existing sanitary sewer manholes, mains, side sewers) as shown on the Plans, including but not limited to the following items, as necessary: potholing and locating the existing sewer main or other utilities, excavation, cutting, removal, hauling and proper disposal (if required) of any abandoned pipe material that is encountered including, but not limited to ductile iron, cast iron, PVC, concrete and asbestos cement pipe; furnish and install a flexible pipe connection per the Plans, including all fittings, couplings, gaskets, and other hardware necessary to accomplish the Work, core drilling, Kor-N-Seal boot, removal and replacement of existing concrete channel or modifying and repairing existing FRP manhole base, and maintenance of existing sewer service including by-pass pumping.

"Steel Casing 36 In. Diam.", per linear foot.

The unit Contract price per linear foot for "Steel Casing 36 In. Diam." shall be full compensation for furnishing and installing all pipe and fittings as shown on the Plans, protection and temporary support of existing utilities and services; dewatering and proper disposal of water; trench excavation, compacting subgrade; handling, hauling, placing, mechanical compaction of pipe bedding and trench backfill to the limits, lines and grades shown on the Plans and called for in the Specifications, the permitting agency's standards; furnishing and installing steel casing pipe or split steel casing pipe as required, including casing spacers; sand filling of annular space including any fittings and/or plumbing necessary for injection and venting necessary to fill the annular spacing; coatings and repair of coatings, casing end seals, welding, bolting; furnishing and filling annular space as required per the Plans.

"Utility Potholing", per lump sum.

The unit Contract per lump sum for "Utility Potholing" shall be full compensation for all labor, material, tools, permitting, coordination and equipment necessary for locating, potholing, uncovering, and documenting (recording) the underground utility information, including, but not limited to: potholing existing utilities and recording the depths, size and material of all underground existing utilities that will cross the proposed sewer main or side sewer crossings and connections, potholing shall occur a minimum of 6 business days prior to commencing any installation of the proposed sewer main; potholing includes, but is not limited to, sawcutting, excavation, hauling and proper disposal of removed materials, measuring and recording the depths of the existing utility.

Crushed surfacing and temporary patching with commercial HMA will be paid for under other Bid Items included in the Proposal.

"Additional Potholing, If Required", per each

Potholing is incidental to all other bid items. However, when located utilities are not found within the standard locating limits (2' plus ½ the diameter on either side of the locate mark) or there are other utilities located that are not shown on the contract plans, the District may authorize additional potholing (1' wide by 4' long, depth as required), and that authorized work shall be paid for under this bid item. The unit price bid per each Additional Potholing, If Required, shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to pothole and record depths of the underground existing utilities in these circumstances. The District shall approve any work to be considered for payment for Additional Potholing, If Required prior to any such work commencing. No payment shall be

made for potholing efforts that are not approved by the District.

To provide a common Proposal for Bidders, the Contracting Agency has entered an estimated quantity in the Proposal, however the actual quantity required may vary. Payment will be made based on the actual quantity installed. Bid item is not subject to price change due to variation in actual quantity required.

Trench dewatering for sanitary sewer construction is incidental to all other bid items. However, if the trench dewatering is greater than anticipated based on the available geotechnical report(s), the District may authorize additional trench dewatering as required and that authorized work shall be paid for under Minor Changes. The District shall approve any work to be considered for payment for Additional Trench Dewatering, If Required prior to any such work commencing. No payment shall be made for additional trench dewatering efforts that are not approved by the District.

"Additional Trench Dewatering, If Required", per calculation

Trench dewatering for sanitary sewer construction is incidental to all other bid items. However, if the trench dewatering is greater than anticipated based on the available geotechnical report(s), the District may authorize additional trench dewatering as required and that authorized work shall be paid for under this bid item. The District shall approve any work to be considered for payment for Additional Trench Dewatering, If Required prior to any such work commencing. No payment shall be made for additional trench dewatering efforts that are not approved by the District.

The unit price bid for Additional Trench Dewatering, If Required, by calculation shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to dewater, treat and dispose of all water during construction of sanitary sewer piping; removal, restoration and demobilization of the dewatering and treatment system; all plans, permits and fees and other necessary work required.

Measurement shall be by calculation. For the purpose of providing a common Proposal for all bidders, the Contracting Agency has entered an amount in the Proposal to become a part of the total bid by the Contractor.

(******)
“Concrete Saddle”, per each.

The unit Contract price per each for “concrete saddle” will be measured per each of accepted work, complete in place. Reinforcing, if required, shall not be measured for payment.

“Slip-Lining 8” Diam. PVC 3034 SDR Sanitary Sewer” shall be paid for by the linear foot from center of manhole to center of manhole of completed sanitary sewer main. Payment shall include cleaning, pre- and post-construction televising, labor, equipment, material and other work as specified for a complete installation of the slip-lined pipe.

END OF DIVISON 7

Division 8
Miscellaneous Construction

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.5 Payment

Section 8-01.5 is supplemented with the following:

(******)
Street Cleaning is considered incidental to other bid items.

8-02 ROADSIDE RESTORATION

8-02.2 Materials

For materials, see Plans for seed mixes. Section 8-02.2 is supplemented with the following:

Section 8-02.3(9) Seeding, Wildflower Meadow Seeding

Section 8-02.3(9) is supplemented with the following:

Seeding, Wildflower Meadow Seeding

For all seed, the Contractor shall furnish the following documentation to the Engineer and Landscape Architect:

1. The state or provincial seed dealer license and endorsements.
2. Locations of seed collection per seed species. Seed must be sourced from within 100 miles of the project site.
3. Type 3 Working Drawings listing seed mixes, application rates, source information and application plan shall be submitted to the Landscape Architect prior to purchase.
4. No seed species substitutions shall be made without prior notification, review and approval by the Landscape Architect.
5. Seeds shall be furnished in containers that show the following information: seed name, lot number, net weight, percentage of purity, germination, weed seed and inert material. Seed which has become wet, moldy, or otherwise damaged will not be accepted. Seed shall conform to the requirements of the Washington State seed law and when applicable the Federal Seed Act, and shall be “certified” grade or better.

Should at any time the seed stock be lost or compromised due to weather or other natural occurrences, notify the Landscape Architect immediately of the need to locate new material.

Seed Species Substitutions: Seed species substitutions will not be permitted unless the Contractor furnishes the Landscape Architect with written evidence from no less than three seed providers that the seed species specified in the Plant Schedules are not obtainable commercially or through contract collection. Submit Seed Species Substitutions within 90 days of award of contract.

Unless otherwise specified all seed material shall be from a licensed, well-established grower or seed provider. Seed shall come from, but not limited to, the following sources:

1. Northwest Meadowscapes, 1240 W. Sims Way, #218, Port Townsend WA

98368.
360-504-6415 https://www.northwestmeadoscapes.com/

2. BFI Native Seeds, 1550 Pilgrim St, Moses Lake WA 98837
509-765-6348 http://www.bfinativeseeds.com/

3. Or Equal. Contractor to furnish a list of additional providers for seed material selection to be reviewed by the Landscape Architect.

Seed Area Preparation: Restrict traffic from seeding areas until seed is established. Erect signs and barriers as requested. Clear all debris and rocks larger than 1" prior to seeding. Rough grading shall be inspected and approved by the Engineer and Landscape Architect prior to placing planting soil. Prior to seeding, soil shall be compacted with sheeps foot roller, cleated crowler tractor or equipment approved by Owner, or Owner's Representative. Equipment must produce 150-300 pounds per square inch of ground pressure. Compaction shall produce a uniform rough texture free or tire ruts, depressions, low spots, and be ready for seeding and mulching. A minimum of four passes are required. After compaction, finished grade shall be one inch below the top of curbs, catch basins, and other structures. If required, water shall be provided to condition the soil for compaction or to provide dust control. Water shall be furnished and applied by contractor from on-site supply. Finished grading shall be approved by the Engineer and Landscape Architect prior to seed application.

Hydroseeding Application: Hydroseeding shall not be done during windy weather, when the ground is frozen, or during a heat wave. Contractor shall give the Owner 24 hours notice of seeding operation. Seeding season shall be March 1st to May 15th, and September 1st to October 1st. Seeding outside these dates may only be competed with written approval from the Landscape Architect, Owner, or Owner's Representative. Seed shall be applied with equipment that utilizes water as a carrying agent utilizing continuous built-in agitation system. Equipment with a gear pump is not acceptable, Hydroseed shall be applied as a continuous slurry to provide a uniform distribution of material over designated areas. No mulch shall be applied over seeded areas.

Provisional Inspection and Acceptance: Provisional acceptance will be made in writing by the Owner, or the Owner's Representative upon completion of the punch list. Acceptance shall include seeded areas with a relatively uniform stand of seedlings with no bare spots over a 6" square at the time of provisional inspection. All areas failing to vigorously establish within 90 days after germination or a growing season shall be re-seeded. Reseed at the rate specified per mix and patch as seen in the Planting Schedules. Upon completion of work, the Contractor shall request a provisional inspection. Uniform stand of seedlings is required for final acceptance.

(******)
Section 9-14.7(2) Plant Materials - Quality

Section 9-14.7(2) is supplemented with the following:

Plant Materials & Submittals

Submit plan for the procurement of plant material no later than 90 days after award of contract. Source of Supply and Procurement Plan shall include:

1. Plant List.
2. Documentation that plants are being contract grown or deposits have been

provided to nurseries to ensure availability of species listed on the Plant Schedule and that plant material will be delivered as specified and on-schedule.

3. Name and contact information of growers.
4. Representative photographs of each plant species being held at a nursery on timeline indicated above or 30 days prior to the final digging deadline for the planting season (whichever is sooner).
5. Locations of nursery sites where each plant species is being grown.
6. Photographs (using digital camera) shall be taken at the nursery source. Stock images or old images will be rejected. A scale figure or measuring device to indicate size shall be in each photograph.
    a. Tree photographs shall include images of the entire tree, and detail photographs showing the following:
        i. Base of the tree
        ii. Leaves
        iii. Branching structure
        iv. Form and Habit.
        v. Root flare
    b. Shrub photographs shall include images of the entire plant, and detail photographs showing the following:
        i. Base of the plant,
        ii. Leaves
        iii. Branching structure
        iv. Form and Habit,
        v. Root ball (for balled and burlap material), and/or roots (for boxed material).

Each photograph taken shall be labeled with the botanical and common names, nursery name, location, and date. Blurry or illegible photographs will not be reviewed and shall be resubmitted to the satisfaction of the Landscape Architect.

Should at any time the nursery stock be lost or compromised due to weather or other natural occurrences, notify the Landscape Architect immediately of the need to locate new material.

Plant Substitutions: Plant substitutions will not be permitted unless the Contractor furnishes the Landscape Architect with written evidence from no less than three nurseries that the plants specified are not obtainable commercially or through contract growing. Submit Plant Substitutions within 90 days of award of contract.

Unless otherwise specified all plant material shall be from a licensed, well-established grower or nursery. Plants shall come from, but not limited to, the following sources:

1. Far Reaches Farm, 1818 Hastings Avenue, Port Townsend WA 98368. 360-385-5114 https://www.farreachesfarm.com/
2. Fourth Corner Nurseries, 5757 Sand Road, Bellingham WA 98226 360-592-2250 http://fourthcornernurseries.com/
3. Sevenoaks Native Nursery, 29730 Harvest Drive SW, Albany OR 97321 541-757-6520 https://www.sevenoaksnativenursery.com
4. Sundquist Nursery, 3809 NE Sawdust Hill Road, Poulsbo WA 98370 360-779-6343 https://www.sqnursery.com/
5. T&L Nursery, 13245 Woodinville-Redmond Rd NE, Redmond WA 98052 425-861-5050 https://www.tandlnursery.com/
6. Storm Lake Growers, 18510 WA-203, Monroe WA 98272

360-794-4842 https://www.stormlakegrowers.com/

7. Plantas Nativa, 315 East Champion Street, Bellingham WA 998225
360-715-9655 https://www.plantasnativa.com/

8. **Or Equal. Contractor to furnish a list of additional nurseries for plant material selection to be reviewed by the Landscape Architect.**

Reuse of Nursery Containers: Containers for plant materials must be reused by plant materials supplier or other source for new plantings of similar type provided. Recycling plant containers by remanufacturing (or similar processes) for other uses or landfill (or similar type) disposal is not acceptable.

8-02.3 Construction Requirements

8-02.3(3) Weed and Pest Control

Section 8-02.3(3) is supplemented with the following:

(******)
Contractor shall prepare and submit for approval a project Weed and Pest Control Plan. The Weed and Pest Control Plan shall describe the protocols for integrated pest management, including, but not limited to, inspection frequency, identification of weeds and pests, pest monitoring, record keeping, and thresholds for weed and pest control measures.

8-02.3(3)A Chemical Pesticides

Section 8-02.3(3)A is supplemented with the following:

(******)
The use of chemical controls shall be in accordance with the City of Woodinville Integrated Pest Management (IPM) policies and requirements. The use of chemical controls requires written approval by the City's Authorized Representative prior to use.

The use of pesticide and herbicide applications shall be considered only as a last resort and only after other methods of control are proven ineffective. If the Contractor determines that pesticide applications may be needed, submit written request for the use of pesticide. Request shall include detailed explanation of the issue, what IPM techniques were attempted, explanation of how or why IPM techniques did not have the desired result, and details of the proposed application. Pesticide use must be reviewed and approved in writing by the City's Authorized Representative prior to use. Proposed pesticides shall be appropriate for use with the respective plant materials. The contractor is responsible for damages incurred as a result of applications and shall repair or replace such damage.

Under no circumstances will combination products be allowed, such as "weed and feed", weed control plus fertilizer, or insect control plus fertilizer. Under no circumstances will regularly schedule calendar-based or "blanket" applications of pesticides be allowed. The use of pre-emergent and residual pesticides and herbicides is prohibited.

8-02.3(4) Topsoil

Section 8-02.3(4) is supplemented with the following:

(******)
To ensure a suitable growing medium for plants, Contractor shall employ the services of a certified agronomic soils testing laboratory to perform soil testing of topsoil. Contractor is responsible for absorbing agronomic soil testing costs as part of the contract. Testing shall be performed for all soil materials used on the project. Testing, amending, and reuse of on-site soils (Topsoil Type B) is strongly encouraged.

Testing Laboratory: Contractor to use a single testing laboratory for all project soil testing. Laboratory as part of their work is to provide all testing and recommendations for amendments of planting soils for the project. The use of multiple testing laboratories is not allowed.

During the evaluation of all testing reports and follow up analysis the contractor shall authorize full access to Owners Authorized Representative to contact the testing laboratory for consultations regarding reports and recommendations provided by the laboratory.

Contractor to use one of the following laboratories:

a. Soiltest Farm Consultants, Inc.
2925 Driggs Dr., Moses Lake, WA 98837
Telephone: 509.765.1622 or 800.764.1622
Fax: 509.765.0314
www.soiltestlab.com

b. Agrimanagement, Inc.
408 N 1st St
Yakima WA 98901
Telephone: 509.453.4851
Website: http://www.agrimgt.com

c. A&L Western Laboratories
21830 SW Alexander Lane,
Sherwood, OR 97140
Telephone: 503.968.9225
Fax: 503.598.7702
Web: https://al-labs-west.com

d. Wallace Laboratories
365 Coral Cir,
El Segundo, CA 90245
Telephone: 310.615.0116
Fax: 310.640.6863
Web: https://wlabs.com/

e. Or approved equal.

All soil tests are to clearly identify reference source, location, and sample date for each sample submitted for testing. As part of the submittal for soil analysis for review by Owners Authorized Representative contractor is to clearly identify the anticipated location on the site where the soil will be placed. All analysis is to provide a general assessment of the soil with written recommendations the incorporate the results of the Contractors proposed amendments for the soil with application rates for:

1. Tree pits
2. Shrub and Groundcover Beds
3. Hydroseed areas
4. On-structure planters

Agronomic soil analysis shall include, at a minimum, the following:

1. Mechanical gradation (sieve analysis) shall be performed and compared to the USDA Soil Classification System. Percent clay (<0.002 mm) shall be reported separately in addition to silt, sand, and gravel (SSSA/ASA, Methods of Soil Analysis, Part 4, Physical Methods, 1986, chapter 15, pgs 383-411, hydrometer method).
2. The silt and clay content shall be determined by a Hydrometer Test of soil passing a 2-millimeter screen.
3. Submit a chemical analysis performed in accordance with current ASA and UC Standards, including the following:
   a. pH.
   b. Percent organic matter as determined by total organic carbon, and total nitrogen. Test samples shall be oven-dried to a constant weight at a temperature of 105 degrees C.
   c. Analysis for nutrient levels and toxic elements by parts per million including nitrate-nitrogen, and extractable phosphorus, potassium, magnesium, manganese, iron, zinc, copper, boron, sulfate, calcium, molybdenum, sodium, aluminum, arsenic, cadmium, chromium, cobalt, lead, lithium, mercury, nickel, selenium, silver, strontium, tin, and vanadium. Nutrient tests shall include testing laboratory recommendations for supplemental additions to soils as calculated by the amount of material to be added per volume of soils for the type of plants to be grown in the soil.
   d. Soluble salt by electrical conductivity of a saturated paste extract measured in millimho per cm, soluble calcium, magnesium, potassium, sodium, sulfate, chloride, nitrate, and boron
   e. Components of the test shall include all major nutrients: N, P, K, Ca, Mg, SO4, Na, B, Cu, Zn, Mn, Fe,

8-02.3(4)A Topsoil Type A

Section 8-02.3(4)A is replaced with the following:

(******)
Topsoil Type A shall consist of a uniform blend composed by volume of 60 percent to 70 percent Sandy Loam and 30 percent to 40 percent Fine Compost.

Sandy Loam

Sandy Loam shall be as defined by the US Department of Agriculture Natural Resource Conservation Services Soil Texture Triangle. Testing shall be performed by a Washington State Department of Ecology accredited testing laboratory approved through the North American Proficiency Testing Performance Assessment Program (NAPT-PAP) on a sample size of no less than 2 pounds. Testing shall not occur more than 90 days prior to installation and shall be submitted to the Engineer for approval a minimum of 14 calendar days prior to use or installation. The Sandy Loam analysis shall meet the following requirements:

Tested Item	Method*	Units	Specification Range
pH 1:1	S-2.20	S.U.	5.5 – 7.5
E.C. 1:1	S-2.20	mmhos/cm	≤ 2
Nitrate Nitrogen	S-3.10	mg/Kg	***
Ammonium Nitrogen	S-3.50	mg/Kg	***
Organic Matter	S-9.10	%	3 – 10
Phosphorus (P)	S-4.20 (Bray)	mg/Kg	***
Calcium (Ca)	S-5.10 (NH_4OAC)	meq/100g	***
Magnesium (Mg)	S-5.10 (NH_4OAC) S-6.11 (DTPA/Sorbitol)	meq/100g Mg/Kg	***
Sodium (Na)			***
Potassium (K)			***
Zinc (Zn)			***
Manganese (Mn)	S-6.11 (DTPA/Sorbitol) EPA 908/S-10.10	Mg/Kg meq/100g	***
Copper (Cu)			***
Iron (Fe)			***
Sulfur (SO_4-S)			***
Boron (B)			***
Molybdenum (Mo)			***
Cation Exchange (CEC)			5 Min.
Total Nitrogen	AOAC 990.3	%	***
Total Carbon	AOAC 972.3	%	***
C:N Ratio			20:1 or less
Exchangeable Sodium Percentage (ESP)	ESP	%	10 Max.
Particle Size Analysis (Sand, Clay, Silt)	S-14.10 (Hydrometer)	%	Sandy Loam
Heavy Metals Testing	EPA 6010D	mg/Kg	From WAC 173-350-220 Table 220-B unless otherwise noted
Arsenic			≤ 20
Cadmium			≤ 10
Chromium			≤ 42**
Copper			≤ 100**
Lead			≤ 150
Molybdenum			≤ 9
Nickel			≤ 100**
Selenium			≤ 18
Zinc			≤ 270**
Mercury	EPA 7473		≤ 8
*Methods are from “Soil, Plant, and Water Reference Methods For the Western Region” 2005, 3rd Ed., Dr. R. Gavlak, Dr. D. Horneck, Dr. R.O. Miller.			**From WAC 173-340-900 Table 749-2 for Unrestricted Land Uses ***Testing for soil-testing laboratory recommendations for soil treatments and amendments

The soil-testing laboratory shall state recommendations for soil treatments and soil

amendments to be incorporated based on the results of the tests. Recommendations shall be in pounds per acre, or volume per cu. yd. for nitrogen, phosphorus, potash nutrients, and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.

Compost
Compost shall conform to the requirements of Section 9-14.5(8).

Mixing Requirements
Topsoil Type A shall be thoroughly mixed by the supplier prior to delivery to the site. The Contractor shall submit certification from the supplier that the Topsoil Type A has been mixed according to the above percentages at the point of delivery.

Acceptance of Topsoil Type A for use on a project shall be on the basis of visual verification by the Engineer that the delivered material is representative of the laboratory analysis documentation and certification.

8-02.3(4)B Topsoil Type B

Section 8-02.3(4)B is deleted and replaced with the following:

(******)
On-site soils may be stockpiled, amended and reused to produce Topsoil Type B. Suitable Topsoil Type B materials shall be capable of being amended to meet the requirements of Topsoil Type A for reuse on site.

Compost
Compost shall conform to the requirements of Section 9-14.5(8).

Mixing Requirements
Topsoil Type B shall be thoroughly mixed on-site with amendments as recommended by the soil testing report. Incorporate amendments uniformly; re-sample and test blended mix to verify compliance. The Contractor shall submit agronomic soil testing results to demonstrate that soils were mixed properly and as prescribed.

Acceptance of Topsoil Type B for use on a project shall be on the basis of visual verification by the Engineer that the material is representative of the laboratory analysis documentation and certification.

Section 8-02.3(4)D On-Structure Soil Mix

(******)
Section 8-02.3(4)D is added as follows:

On-Structure Soil Mix shall be furnished and placed in on-structure planting areas located over bridge decks as shown in the Plans and provide a sandy loam soil mix capable of supporting vigorous growth of the specified vegetation.

The Contractor shall submit manufacturer's product data, gradation, bulk density, and mix composition for Engineer approval a minimum of 30 calendar days prior to placement.

The On-Structure Soil Mix shall consist of a homogeneous blend of mineral aggregates and organic matter specifically manufactured for structural loading limitations while providing a suitable growing medium for the specified plant material.

On-structure soil mix density at field saturation shall not exceed 120 lbs/cuft.

Agronomic Testing Requirements

The agronomic soils test report shall include, at a minimum, analysis of the following parameters. Testing shall be performed using methods commonly accepted by the soil science industry and reported in the units shown below. Testing of on-structure soil mix shall include analysis of maximum density at field saturation.

Property	**Acceptable Range**
pH	5.5 – 7.5
Organic Matter (%)	5 – 15
Soluble Salts (mmhos/cm)	≤ 2.0
Cation Exchange Capacity (CEC) (meq/100g)	≥ 8
Nitrate Nitrogen (NO_3-N) (ppm)	20 – 50
Ammonium Nitrogen (NH_4-N) (ppm)	0 – 20
Phosphorus (Bray P1 or Olsen P, as appropriate) (ppm)	25 – 100
Potassium (K) (ppm)	150 – 300
Calcium (Ca) (ppm)	1,000 – 3,000
Magnesium (Mg) (ppm)	100 – 500
Sulfur (S) (ppm)	10 – 50
Iron (Fe) (ppm)	20 – 150
Manganese (Mn) (ppm)	10 – 100
Zinc (Zn) (ppm)	2 – 10
Copper (Cu) (ppm)	1 – 5
Boron (B) (ppm)	0.5 – 2.0
Sodium Adsorption Ratio (SAR)	< 4
Texture Classification	Sandy Loam to Loam

The soil mix shall be amended as necessary to achieve the specified agronomic ranges prior to delivery to the Project. Test results falling outside the specified ranges shall be accompanied by written recommendations from the testing laboratory for corrective amendments. The Contractor shall provide a final agronomic test report demonstrating compliance with these requirements prior to placement of the soil mix in bridge planters.

The mineral component shall consist of durable crushed aggregate, expanded shale, expanded slate, pumice, or other lightweight aggregate approved by the Engineer. Organic material shall consist of compost meeting the requirements of Section 9-14.4(8) or approved equal.

The Contractor shall not substitute native soil, Topsoil Type A, Topsoil Type B, or Topsoil Type C for the specified On-Structure Soil Mix.

Prior to placement, the Contractor shall verify that drainage systems, waterproofing systems, root barriers, geotextiles, and other appurtenances shown in the Plans have been installed and accepted by the Engineer.

Install soil in lifts no greater than 6 inches thick. Compact each lift to minimize soil settlement. Compaction shall be performed with a minimum of two passes of a handheld manual tamper. Mechanical compaction shall not be permitted.

The finished soil surface shall conform to the lines and grades shown in the Plans and shall provide positive drainage. Settlement exceeding 5 percent of the specified soil depth prior to Final Acceptance shall be corrected at no additional cost to the Owner.

The Contractor shall protect the placed soil from contamination, erosion, sediment deposition, and excessive compaction. Soil that becomes contaminated or excessively compacted, as determined by the Engineer, shall be removed and replaced at no additional cost to the Owner.

Section 8-02.4 Measurement

Section 8-02.4 is supplemented with the following:

(******)
Mulch-Bark will be measured by the acre by ground slope measurement or through the use of design data.

Wildflower Meadow Seeding will be measured by the acre by ground slope measurement or through the use of design data.

On-Structure Soil Mix will be measured by the cubic yard in place.

Section 8-02.5 Payment

Section 8-02.5 is supplemented with the following:

Payment will be made for each of the following listed Bid items that are included in the Proposal:

(******)
"Seeding, Fertilizing and Mulching," per acre.
"On-Structure Soil Mix," per cubic yard.
"Wildflower Meadow Seeding", per acre.
"Mulch-Bark", per acre.

Payment will be full compensation for furnishing all labor, materials, equipment, testing, handling, transporting, placing, grading, protection, and incidentals necessary to complete the work as specified.

8-03 IRRIGATION SYSTEMS

8-03 Irrigation System

Section 8-03 is supplemented by the following:

(******)
Contractor shall prepare and submit for approval a Temporary Irrigation Plan detailing the methods, protocols, and anticipated schedule for providing supplemental irrigation to planting areas without a permanent irrigation system. The plan shall also include proposed watering schedule and rates to establish plantings and proposed equipment and layout. Temporary irrigation shall be provided for the duration of the landscape establishment period. The contractor may connect the temporary irrigation system to the irrigation mainline installed by the project.

The temporary irrigation system shall be removed prior to the end of the landscape establishment period unless otherwise directed by the City's Authorized Representative. If removed, the Contractor shall cap any mainline connections with a PVC cap and leaving a minimum of 8" of pipe for potential future reuse. An 8" diameter round valve box matching valve boxes on the project shall be placed over the cap.

8-03.5 Payment
Section 8-03.5 is supplemented with the following:

(******)
The temporary irrigation system will be incidental to "Irrigation System", lump sum.

8-05 VACANT

(******)
Section 8-05 is replaced with the following:

8-05 RAILINGS

8-05.1 Description

This work shall consist of constructing the types of railings shown in the plans and in accordance with these Specifications and the details shown in the plans.

8-05.2 Materials & Construction Requirements

Fall Protection Railing
Materials for the Fall Protection Railing must comply with the following:

The fabricator shall provide the City with working drawings for fall protection railing. All fall protection railing shall be installed where designated on the plan sheets. Fall protection railing shall be designed to match the fall protection railing throughout the length of the project.
The safety rail shall be commercially available rail type, and shall include, but not be limited to the following:

1. Post: 2-inch square aluminum posts, spaced maximum of 8 feet on center. Post height to not exceed 42-inches height. Post to be mounted per recommendation of the manufacturer.
2. Top Rail: Universal aluminum top rail with rounded top mounted on post.

3. Bottom Rail: 3x1-inch rectangular aluminum rail mounted to bottom of pickets a minimum of 3-inches above finished grade.
4. Pickets: 5/8-inch square aluminum, spaced 3¾-inch clearance between adjacent picket edges.
5. Color: Black powder coated. All fittings shall be painted Black.

Type 2: Galvanized Steel Posts and Rails with Stainless Handrails

Steel post and railing material shall be Hot-Dip Galvanized Finish. Zinc coating shall be applied by the hot-dip process to structural steel according to ASTM A 123/A 123M.Fill vent and drain holes that will be exposed in the finished work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.

Handrails material shall be per Section 8-18.3(4).

Install guard railing system plumb, level, square, and rigid. Tension cables to a minimum of 150 pounds each. Ensure cables are parallel, without kinks and sags.

Submit Type 3E working drawings of all guardrails and railings for Landscape Architect and Agency Engineer review and approval prior to installation.

Construct an off site mockup of for each pedestrian and bridge railing type used on the project. Mockups shall be a 5 foot section, and include two posts/stanchions with mounting, infill, handrail, lean rail, connections between railing sections, lighting, and all finishes. Upon approval, the mockup shall serve as the quality standard for the remainder of the work.

Lean Rail

The material for the Lean Rail must comply with the following:

Handrails must be of stainless steel plate construction, fabricated and installed as indicated on the drawings. Stainless steel plates, hot rolled, or extruded shapes shall be Type 316, Condition T (hardened and tempered at a relatively high temperature), Type 316 (for welded applications) or Type 304 (for all other applications), passivated in conformance with ASTM A 967. Stainless steel plating shall be Type 316, Grade MT, No. 2D (matte) finish, passivated in conformance with ASTM A 967. Stainless steel castings shall be ASTM A 743, Grade CF8M or CF3M. Stainless steel coil, sheet, strip, plate and flat bar exposed locations shall be Type 316 (annealed and tempered), annealed, No. 4 (soft) temper (hardness not more than Rockwell B-65; can be bent flat upon itself in any direction), passivated in conformance with ASTM A 967. Uncoated (Bare) or Natural Finish shall be No. 2B (bright) finish.

Nonwelded connections shall be mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws, using plastic cement filler colored to match finish of railings. Welded connections shall be fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in accepted mockup article, whether welding is performed in the shop or in the field. Dissimilar metal connections shall be separated by a neoprene gasket. The neoprene gasket shall be cut to fit the space between the two metal surfaces and shall not extend beyond the interface. Neoprene gaskets shall have a 1/16 inch minimum thickness and 80A durometer complying with ASTM D2000.

Galvanized steel sleeves shall be zinc coated as follows: ASTM A153 for galvanizing iron and steel hardware, ASTM A123 for ASTM A123 for galvanizing both fabricated and un-fabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip. Coating grade 85 3.3 mil or greater, fabricate joints exposed to the weather to exclude water or provide weeps holes.

Either the railing must be placed completely assembled at the time when concrete is placed, or recesses must be provided in the concrete for grouting the railing posts after the concrete has been placed, finished, and cured. The installed railing must be in true alignment, on proper grade, and with posts plumb. Non-shrink, Nonmetallic Grout shall comply with Section 9-04.

Submit Type 3E working drawings of all handrails for Landscape Architect and Agency Engineer review and approval prior to installation.

Construct an off site mockup of for each handrail type used on the project. Mockups shall be a 5 foot section, and include two posts/stanchions with mounting, infill, handrail, lean rail, connections between railing sections, lighting, and all finishes. Upon approval, the mockup shall serve as the quality standard for the remainder of the work.

8-05.4 Measurement

Lean Rail and Fall Protection Railing will be measured by the liner foot of installed railing.

8-05.5 Payment

Payment will be made for the following Bid Items:

"Lean Rail", per linear foot
"Fall Protection Railing" per linear foot.

All costs in constructing the railings and installing the railing shall be included. The cost of submittals and mockups shall be incidental to the contract price.

8-07 PRECAST TRAFFIC CURB

8-07.1 Description

(******)
Section 8-07.1 is supplemented with the following:

All new Precast Dual Faced Sloped Mountable Curb shall be constructed per the detail shown in the plans with scuppers to allow runoff to pass through the curb. Curb that is removed and replaced as shown in the traffic control plans shall match the existing curb removed.

8-07.3 Construction Requirements

(******)
Section 8-07.3 is supplemented with the following:

All Precast Dual Faced Sloped Mountable Curb shall be painted yellow per Section 8-07.3(17) of WSDOT's Standard Specifications.

8-07.4 Measurement

(******)
Section 8-07.4 is supplemented with the following:

Precast Dual Faced Sloped Mountable Curb shall be measured by the linear foot for both new and removed and replaced mountable traffic curb.

8-07.5 Payment

(******)
Section 8-07.5 is supplemented with the following:

"Precast Dual Faced Sloped Mountable Curb" shall be paid by the linear foot for both new curb installed per the detail on the plans and removed and replaced Dual Mountable Traffic Curb that matches the existing curb that was removed for traffic control.

8-13 MONUMENT CASES

8-13.1 Description

Section 8-13.1 is deleted and replaced by the following:

(******)
This work shall consist of furnishing and placing monument cases, covers, and brass discs in accordance with the City of Woodinville Standard Plans and these Specifications, in conformity with the lines and locations shown in the Plans or as staked by the Engineer.

(******)
Work to adjust existing monument case and cover to grade consists of resetting the existing monument case and cover, in conformity with the lines and locations shown in the plans or as staked.

8-13.3 Construction Requirements

8-13.3(2) Adjust Monument Case and Cover

8-13.3(2)B Reinstalling Monument Case and Cover

(******)
The first sentence of Section 8-13.3(2)B shall be revised to read:

The adjusted or reinstalled monument case and cover shall be reset flush with the finished pavement as indicated in the plans and in accordance with the following requirements:

8-13.4 Measurement

Section 8-13.4 is deleted and replaced by the following:

(******)
Measurement of monument case, cover, and pipe will be by the unit for each monument case, cover, and brass disc furnished and set per the City of Woodinville Standard Plan 336.

8-13.5 Payment

Section 8-13.5 is supplemented with the following:

(April 28, 1997)
"Monument Case, Cover, and Pipe", per each.

(******)
Payment of “Monument Case, Cover, and Pipe” will be by the unit for each monument case, cover, and brass disc furnished and set per the City of Woodinville Standard Plan 336

8-14 CEMENT CONCRETE SIDEWALKS

8-14.3 Construction Requirements

Section 8-14.3 is supplemented with the following:

(October 3, 2022)
The Contractor shall request a pre-construction meeting with the Engineer to be held two to five working days before any work can start on cement concrete sidewalks, curb ramps or other pedestrian access routes to discuss construction requirements. Those attending shall include:

1. The Contractor and Subcontractor in charge of constructing forms, and placing, and finishing the cement concrete.

2. Engineer (or representative) and Project Inspectors for the cement concrete sidewalk, curb ramp or pedestrian access route Work.

Items to be discussed in this meeting shall include, at a minimum, the following:

1. Slopes shown on the Plans.

2. Inspection

3. Traffic control

4. Pedestrian control, access routes and delineation

5. Accommodating utilities

6. Form work

7. Installation of detectable warning surfaces

8. Contractor ADA survey and ADA Feature as-built requirements

9. Cold Weather Protection

(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.

(******)
Layout and Conformance to Grades
Using the information provided in the Contract documents as a guide, the Contractor shall lay out, grade, and form each new curb ramp, sidewalk, and curb and gutter. Contractor shall be responsible to layout all curb ramps per WSDOT Standard Plans.

8-19 – VACANT
Section 8-19 shall be replaced with the following:

(******)
8-19 MISCELLANEOUS SITE ELEMENTS

8-19.1 Description

This Work shall consist of furnishing, relocating, fabricating, and installing various site elements as shown in the Plans and as specified herein. Work under this Section includes, but is not limited to:

1. Memorial Boulders
2. Bridge Bench, Trail Bench
3. Trash receptacle
4. Pet Waste Station
5. Recycled Railroad Rails
6. Landscape Edger
7. Split rail fence
8. Permanent Sign (1'x1')
9. Seed Mix Barrier
10. Concrete Curb – Concrete Landscaping Border
11. Mulch - Mineral

All materials, finishes, and installation methods shall conform to the Plans, these Special Provisions, and the manufacturer's written recommendations where applicable.

8-19.2 Materials

8-19.2(1) Memorial Boulders

Boulders shall be those designated on the Plans or identified in the field by the Engineer for relocation. Each boulder shall be free of loose material and cleaned prior to reinstallation.

8-19.2(2) Bridge Bench, Trail Bench

Benches shall be constructed from reclaimed hardwood timbers as shown on the Plans, securely fastened to metal or concrete supports. Wood shall be free of rot, structural defects, and foreign materials, and shall be sanded smooth with eased edges. Protective finish shall be a non-toxic low-VOC penetrating oil, sealer, or waterborne finish suitable for exterior exposure in wet climates.
Hardware and fasteners shall be Type 316 stainless steel.

Benches shall be fabricated and supplied by a site furnishing fabricator specializing in sustainably reclaimed, regional woods, such as

1. Urban Hardwoods / Urban Lumber Co.
   4755 Colorado Ave, C
   Seattle, WA 98134
   AND
   303 S 5th Street, #127
   Springfield, OR 97477

   Telephone: 541.968.4488
   Web: http://urbanhardwoods.com http://urbanlumbercompany.com

2. Or Approved Equal.

Submit photos of wood material for review and acceptance. Submit (1) 6”x6”x2” physical sample for the wood material and (1) 8” long segment of metal rail to demonstrate all aesthetic elements such as bends, welds, and finishes.

8-19.2(3) Trash Receptacle

Trash receptacles shall be of the type and size shown on the Plans and fabricated from powder-coated steel, aluminum, or stainless steel. Units shall include a rigid liner and be compatible with standard bag liners. Finish color and mounting configuration shall be as shown on the Plans or approved by the Engineer. Anchors and hardware shall be stainless steel.

8-19.2(4) Pet Waste Station

The dispenser and receptacle assembly shall be a commercial product designed for outdoor installation, constructed from powder-coated aluminum or stainless steel.
The unit shall include a lockable bag dispenser, signage panel, and receptacle with liner.
Finish color shall be dark green, or as coordinated with other site furnishings.
Bag supply shall be compatible with industry-standard pet waste bags, minimum two-ply.

8-19.2(5) Recycled Railroad Rails

Recycled railroad rail edging shall consist of authentic steel railroad rail sections mounted horizontally or vertically to a concrete curb as detailed in the Plans. Rail shall be salvaged from the site, cleaned of oils, dirt, and scale, and cut to uniform lengths. Finish shall be wire-brushed and sealed with a clear, corrosion-inhibiting protective coating. Anchorage to the

concrete curb shall use stainless steel bolts or welded plates as shown in the approved Working Drawings.

8-19.2(6) Landscape Edger

All metal elements of the edging system, including the edging sections and stakes, shall be hot-rolled carbon steel conforming to ASTM A569. Edging sections and stakes shall be manufactured by the same manufacturer.

Edging sections shall be an all-steel interlocking system 1/4-inch thick, 5-inches wide, and up to 16-feet long. Edging sections shall be designed to receive tapered steel stakes and be fabricated with stake pockets stamped, punched, or welded to the face of sections approximately 30 inches on center.

Tapered stakes shall be 1/4-inch thick and 16-inches in length and be designed specially to anchor the edging sections in place.

The edge section and stake finish shall be black factory-applied Sherwin Williams H68GT85 powder coat paint, electrostatically applied and oven baked. Minimum thickness to be 1.5 mils.

8-19.2(7) Split Rail Fence

Provide Untreated Western Red Cedar, Port Orford Cedar, or Juniper sourced from PNW mills for wood elements:

Dimensions:
Line/Corner Posts: 5 in. × 5 in. (nominal) or 6-in. min. dia. rounds, length as detailed.
Rails: Split or hewn members, 3 in.–4 in. thick, 4 in.–6 in. wide, 10 ft typical length.

Grading: WWPA No. 2 or better; sound, free of unsound knots, rot, or wane > ¾ depth. 90 % heartwood minimum.

Hardware: Galvanized (ASTM A153 Class C) 3⁄8-in. drift pins, lag screws, or rail fasteners as required.

Gravel Backfill: Gravel Borrow per 9-03.14(1), modified: 100 % passing 1½-in. sieve; < 5 % passing No. 200 sieve.

8-19.2(8) Permanent Sign (1'x1')

Sheet material: Provide aluminum sheet of alloy and temper recommended by the aluminum producer or finisher for the type of use and finish indicated and with no less than the strength and durability properties specified in ASTM B209 for 5005-H15.

Post Material: Provide aluminum extrusion of alloy and temper recommended by the aluminum producer or finisher for the type of use and finish indicated and with not less than the strength and durability properties specified is ASTM B- 221 for 6063-T5.

Coating System Basis of Design:

Matthews Pain by PPG Industries Inc.
760 Pittsburgh Drive, Delaware, OH 43015
Telephone: 800.323.6593
Website: https://www.ppg.com/en-US/refinish/products/matthews-paint

Pretreatment:1 coat 74-734SP & 74-735 Metal Pretreat @ .25 mils DFT

Finish Coat: 1 coat Matthews Acrylic Polyurethane 1 mil DFT (min.)

Or approved equal.

All applications of color coatings are to be equal and of consistent cover with no “streaking”, “spotting”, “gradation” or other variations within and from each similar application. All paint and coatings shall be no/low VOC where possible.

8-19.2(9) Seed Mix Barrier

Provide Untreated Western Red Cedar, Port Orford Cedar, or Juniper sourced from PNW mills for wood elements:

Dimensions:
Line/Corner Posts: 5 in. × 5 in. (nominal) or 6-in. min. dia. rounds, length as detailed.
Rails: Split or hewn members, 3 in.–4 in. thick, 4 in.–6 in. wide, 10 ft typical length.

Grading: WWPA No. 2 or better; sound, free of unsound knots, rot, or wane > ¾ depth. 90 % heartwood minimum.

Rope: 1-in. manila rope treated for rot resistance

Gravel Backfill: Gravel Borrow per 9-03.14(1), modified: 100 % passing 1½-in. sieve; < 5 % passing No. 200 sieve.

8-19.2(10) Concrete Curb – Concrete Landscaping Border

All concrete elements of the edging system shall be cast in place concrete, in accordance with WSDOT Standard Specification 8-04.3(1) and Standard Specification 9-01.

Concrete curb sections shall be shown in the Plans. Concrete curbs shall be flush with the adjacent finished surface. Contractor shall provide a crushed stone base concourse as shown on plans.

8-19.2(11) Mulch – Mineral

Mulch – Mineral shall be of the type, quality, and quantities as specified as 9-03.11(1) Streambed Sediment where shown in the Plans or as specified in the Special Provisions.

Materials for Mulch – Mineral shall meet the following requirements:
Streambed Sediment 9-03.11(1)

8-19.3 Construction Requirements

8-19.3(1) General

All site elements shall be installed true to line, grade, and alignment as shown on the Plans. Coordinate locations with adjacent pavement, planting, drainage, and structural features. All hardware shall be tightened, concealed, and corrosion-protected where possible.

8-19.3(2) Memorial Boulders

Excavate and reset boulders to the elevations and orientations shown on the Plans. Boulders shall be set firmly on stable, compacted subgrade, embedded to a depth providing

stability. Backfill and compact material around each boulder. Replace or repair any boulders damaged during relocation at no additional cost to the Contracting Agency.

8-19.3(3) Bridge Bench, Trail Bench

Install benches plumb, level, and securely anchored to the prepared foundation or concrete pad.
Wood components shall be installed with grain orientation and spacing consistent with the Plans.
All fasteners shall be flush or countersunk.
Upon completion, clean all exposed wood surfaces and apply protective finish if required.

8-19.3(4) Trash Receptacle

Install trash receptacles at the locations shown on the Plans. Edge of trash receptacles shall not be within 2'-0" of trail shoulder edge.
Anchor units to concrete or paving using stainless steel hardware per manufacturer's instructions.
Ensure units are level, accessible, and operable.
Deliver one set of keys for each locking receptacle to the Engineer upon acceptance.

8-19.3(5) Pet Waste Station

Install units on concrete pads or embedded posts as shown on the Plans. Edge of pet waste receptacles shall not be within 2'-0" of trail shoulder edge.

Ensure proper alignment and clear access for users. Provide one box of two-ply Mutt Mitt compatible bag refills, or approved equal, at project closeout. Clean all surfaces after installation.

8-19.3(6) Recycled Railroad Rails

Install recycled railroad rail sections to the concrete curb using anchors or weldments shown on the Plans and approved Working Drawings. Set rails straight and true to grade, with consistent reveal and spacing. Seal exposed fasteners and coat cut rail ends with rust-inhibiting primer or clear sealer. Clean rail surfaces and remove all installation residues.

8-19.3(7) Landscape Edger

Install landscape edger as shown on the Plans and approved Working Drawings. Set true to grade, with consistent reveal and spacing. Secure with 12" tapered steel splicing stakes at 30" on-center max. Clean exposed surfaces after installation.

8-19.3(8) Split Rail Fence

Install wood split rail fence (Native Growth Protection Area Fence) as shown on the Plans and approved Working Drawings. Set posts 10' on-center max and posts to be set in Gravel Backfill for Drainage per Section 9-03.12(5). Place 4 in. gravel in bottom, set post plumb, and backfill with gravel in 6-in. lifts, tamping each lift to refusal. Crown final lift to shed water. Upon completion, clean all exposed wood surfaces

8-19.3(9) Permanent Sign (1'x1')

Install permanent signs as shown on the Plans and approved Working Drawings per WMC 21.77.120(9). Signs must be posted at locations shown on plans unless otherwise directed by the City's Authorized Representative. Clean exposed surfaces after installation.

8-19.3(10) Seed Mix Barrier

Install wood seed mix barrier fence as shown on the Plans and approved Working Drawings. Set posts 4' on-center max and posts to be set in Gravel Backfill for Drainage per Section 9-03.12(5). Wood to be treated and suitable for ground contract. Upon completion, clean all exposed wood surfaces.

8-19.3(11) Concrete Curb – Concrete Landscaping Border

Install concrete curb to the elevations and orientations shown on the Plans. Set true to grade, with consistent reveal and spacing. Clean exposed surfaces after installation.

8-19.3(12) Mulch – Mineral

Prior to placement of Mulch – Mineral, prepared surface slopes shall be executed to grades and elevations as shown in the Plans. No material shall be placed until the grade is approved by the Landscape Architect and Engineer. After approval, the prepared surface shall be cleaned and free of debris, construction materials and other foreign objects. Mulch – Mineral shall be placed in such a manner to produce a well graded mix with smaller fragments filling the space between larger sediments. The layers shall be placed such that voids are minimized, and a uniform layer of Mulch – mineral to the depth specified in the Plans is achieved. For sloped surfaces, Mulch – Mineral shall be applied beginning from the bottom working toward the top of the slope, so that rolling and segregation does not occur. Mulch – Mineral shall be placed flush to the adjacent sidewalk surface, and shall not spill out or over the adjacent surface. All Mulch - Mineral shall be installed as shown in the Plans within 30 days after delivery to the project site. **8-19.4 Measurement**

Miscellaneous Site Elements will be measured by the following units, as applicable:

1. **Memorial Boulders** – per each relocated and accepted boulder
2. **Bridge Bench** – per each installed and accepted bench
3. **Trail Bench** – per each installed and accepted bench
4. **Trash Receptacle** – per each installed and accepted unit
5. **Pet Waste Station** – per each installed and accepted assembly
6. **Recycled Railroad Rails** – per linear foot of installed and accepted rail edging
7. **Landscape Edger** - per linear foot of installed and accepted metal edging
8. **Split Rail Fence** - per linear foot of installed and accepted fence
9. **Permanent Sign (1'x1')** – per each installed and accepted sign
10. **Seed Mix Barrier** – per linear foot of installed and accepted fence
11. **Concrete Curb - Concrete Landscaping Border** – per linear foot of installed and accepted curb
12. **Mulch – Mineral** - per ton of installed and accepted mulch

8-19.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following items:

Bid Item No.	Description	Unit
8-19.1	Memorial Boulders	Each
8-19.2	Bridge Bench	Each
8-19.2	Trail Bench	Each
8-19.3	Trash Receptacle	Each
8-19.4	Pet Waste Station	Each
8-19.5	Recycled Railroad Rails	Linear Foot

Bid Item No.	Description	Unit
8-19.6	Landscape Edger	Linear Foot
8-19.7	Split Rail Fence	Linear Foot
8-19.8	Permanent Sign (1'x1')	Each
8-19.9	Seed Mix Barrier	Linear Foot
8-19.10	Concrete Curb – Concrete Landscaping Border	Linear Foot
8-19.11	Mulch – Mineral	Ton

Payment shall be full compensation for furnishing all materials, equipment, labor, hardware, anchorage, coatings, installation, cleaning, and all incidentals required to complete the Work as shown on the Plans and specified herein.

8-20 Illumination, Traffic Signal Systems, Intelligent Transportation Systems, and Electrical

8-20.2 Materials

Section 8-20.2 is supplemented with the following:

(April 6, 2015)

Traffic Signal Standard Foundation Shaft Casing

All permanent casing shall be a smooth wall non corrugated structure of steel base metal. All permanent casing shall be of ample strength to resist damage and deformation from transportation and handling, installation stresses, and all pressures and forces acting on the casing. The casing shall be clean prior to placement in the excavation. The permanent casing may be telescoped, but the outside diameter of the casing shall not be less than the specified diameter of the shaft.

Conduit, Innerduct, and Outerduct

Foam Conduit Sealant

Section 9-29.1(11) is supplemented with the following:

(January 7, 2019)

The following products are accepted for use as foam conduit sealant:

- CRC Minimal Expansion Foam (No. 14077)
- Polywater FST Foam Duct Sealant
- Superior Industries Foam Seal
- Todol Duo Fill 400

Junction Boxes, Cable Vaults, and Pull Boxes

Section 9-29.2 is supplemented with the following:

(September 3, 2019)

Slip-Resistant Surfacing for Junction Boxes, Cable Vaults, and Pull Boxes

Where slip-resistant junction boxes, cable vaults, or pull boxes are required, each box or vault shall have slip-resistant surfacing material

applied to the steel lid and frame of the box or vault. Where the exposed portion of the frame is ½ inch wide or less, slip-resistant surfacing material may be omitted from that portion of the frame.

Slip-resistant surfacing material shall be identified with a permanent marking on the underside of each box or vault lid where it is applied. The permanent marking shall be formed with a mild steel weld bead, with a line thickness of at least 1/8 inch. The marking shall include a two character identification code for the type of material used and the year of manufacture or application. The following materials are approved for application as slip-resistant material, and shall use the associated identification codes:

1. Harsco Industrial IKG, Mebac #1 - Steel: **M1**

2. W. S. Molnar Co., SlipNOT Grade 3 – Coarse: **S3**

3. Thermion, SafTrax TH604 Grade #1 – Coarse: **T1**

Light And Signal Standards

Section 9-29.6(1) is supplemented with the following:

(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	Max. Wind Load (XYZ) (ft^3)

		Length (ft)	
Valmont Ind., Inc.	DB00162 Rev. B (5 sheets), with Type "J" luminaire arm	65	3259
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 rams 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.

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)

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.

Foundations for Type SD standards shall be as noted in the Plans.

(******)

City of Woodinville Street Lighting System

(TISS Section 1-7.7) shall be supplemented with the following:

New free-standing luminaires along SR 202 shall be City of Woodinville owned and operated. Luminaires fixtures shall be Lumec Domus Series and pole shall be Lumec aluminum bottleneck pole. Pole and fixture shall be black.

Pedestrian Push Buttons

Section 9-29.19 is supplemented with the following:

(November 4, 2024)
Approved APS Equipment
APS equipment shall be one of the following systems:

1. Model: **Campbell Guardian Independent 4-Wire APS**

Components:
APS Pushbutton Kit: KAC-32021-2BT
Pedestrian Display Interface Unit: 501-0300 SPI

Manufacturer:
Campbell Company
450 W McGregor Dr
Boise, ID 83705
(208) 345-7459
www.pedsafety.com

2. Model: **Pelco IntelliCross Intelligent Pedestrian System**

Components:
APS Pushbutton: SE-2901-#-P30 9x15
Pedestrian Display Interface Unit: SE-6190-PNC

Manufacturer:
Pelco Products, Inc.
320 W 18th St
Edmond, OK 73013
(405) 340-3435
intellicross@pelcoinc.com
www.pelcointellicross.com

3. Model: **Polara iNS iNavigator Push Button Station**

Components:
APS Pushbutton: iNS23TN1-G
Pedestrian Display Interface Unit: iPHCU3S
PC Interface Module: iN-DGL (one per intersection; place in cabinet drawer).

Manufacturer:
Polara Enterprises
1497 CR 2178
Greenville, TX 75402
(903) 366-0300
www.polara.com

Only one brand of equipment shall be used for the entire Contract.

8-20.2(1) Equipment List And Drawings

Section 8-20.2(1) is supplemented with the following:

(March 13, 1995)

If traffic signal standards, strain pole standards, or combination traffic signal and lighting standards are required, final verified dimensions including pole base to signal mast arm connection point, pole base to light source distances (H1), mast arm length, offset distances to mast arm mounted appurtenances, and orientations of pole mounted appurtenances will be furnished by the Engineer as part of the final approved shop drawings prior to fabrication.

8-20.3 Construction Requirements

Section 8-20.3(1) General

Section 8-20.3(1) is supplemented with the following:

(November 20, 2023)

Salvaged Equipment

The following equipment designated for removal shall remain the property of WSDOT:

- Traffic Signal Standards and Mast Arms
- Light Fixtures
- Emergency Vehicle Detectors
- Vehicle and Pedestrian Displays and Mounting Hardware
- Pedestrian Pushbuttons
- Luminaires
- Video Cameras and Mounting Hardware
- Terminal Cabinets
- Visors
- Back Plates

The Contractor shall deliver this equipment to the following address as appropriate:

WSDOT Signal Shop
3700 9th Ave. So.
Seattle WA 98134
Phone: (206) 442-2110

All equipment deliveries shall be made Monday through Friday between 6am and 1:30pm. A 3-day advance notice is required to ensure staff are available to receive materials. The point of contact is the Spencer Cole. Cell: 206-255-6310.

All other existing electrical equipment and materials designated to be removed shall become the property of the Contractor and be removed from the project.

Section 8-20.3(8) Wiring

Section 8-20.3(8) is supplemented with the following:

(March 13, 1995)

Field Wiring Chart

501	AC+ Input	516-520 Railroad Pre-empt
502	AC- Input	5A1-5D5 Emergency Pre-empt
503-510	Control-Display	541-580 Coordination
511-515	Sign Lights	581-599 Spare

Movement Number	1	2	3	4	5	6	7	8	9
Vehicle Head									
Red	611	621	631	641	651	661	671	681	691
Yellow	612	622	632	642	652	662	672	682	692
Green	613	623	633	643	653	663	673	683	693
Spare	614	624	634	644	654	664	674	684	694
Spare	615	625	635	645	655	665	675	685	695
AC-	616	626	636	646	656	666	676	686	696
Red Auxiliary	617	627	637	647	657	667	677	687	697
Yellow Auxiliary	618	628	638	648	658	668	678	688	698
Green Auxiliary	619	629	639	649	659	669	679	689	699
Pedestrian Heads & Dets.									
Hand	711	721	731	741	751	761	771	781	791
Man	712	722	732	742	752	762	772	782	792
AC-	713	723	733	743	753	763	773	783	793
Detection	714	724	734	744	754	764	774	784	794
Common-Detection	715	725	735	745	755	765	775	785	795
Spare	716	726	736	746	756	766	776	786	796
Spare	717	727	737	747	757	767	777	787	797
Spare	718	728	738	748	758	768	778	788	798
Spare	719	729	739	749	759	769	779	789	799
Detection									
AC+	811	821	831	841	851	861	871	881	891
AC-	812	822	832	842	852	862	872	882	892
Common-Detection	813	823	833	843	853	863	873	883	893
Detection A	814	824	834	844	854	864	874	884	894
Detection B	815	825	835	845	855	865	875	885	895
Loop 1 Out	816	826	836	846	856	866	876	886	896

Loop 1 In	817	827	837	847	857	867	877	887	897
Loop 2 Out	818	828	838	848	858	868	878	888	898
Loop 2 In	819	829	839	849	859	869	879	889	899
Supplemental Detection									
Loop 3 Out	911	921	931	941	951	961	971	981	991
Loop 3 In	912	922	932	942	952	962	972	982	992
Loop 4 Out	913	923	933	943	953	963	973	983	993
Loop 4 In	914	924	934	944	954	964	974	984	994
Loop 5 Out	915	925	935	945	955	965	975	985	995
Loop 5 In	916	926	936	946	956	966	976	986	996
Loop 6 Out	917	927	937	947	957	967	977	987	997
Loop 6 In	918	928	938	948	958	968	978	988	998
Spare	919	929	939	949	959	969	979	989	999

8-20.5 Payment

Section 8-20.5 is supplemented with the following:

(******)
Adjusting junction boxes to grade for both new and existing junction boxes shall be incidental to the lump sum bid items “Traffic Signal System___”, “ITS” or “Illumination System”.

8-21 PERMANENT SIGNING

8-21.2 Materials

Section 9-06.16 is supplemented with the following:

(January 3, 2011)
Perforated Steel Square Sign Post System
Where noted in the Plans, steel sign post systems shall be square, pre-punched galvanized steel tubing, that are NCHRP 350 Test Level 3 Certified and FHWA approved. The steel sign post system shall include all anchor sleeves, and other hardware required for a complete sign installation.

System Acceptance
Systems listed in the current QPL will be accepted per the QPL approval code. Systems not listed in the QPL will be accepted based on a Supplier’s Certificate of Compliance. The Supplier’s Certificate of Compliance will be a contract specific letter from the supplier stating the system is NCHRP 350 Test Level 3 compliant.

The last paragraph of Section 9-28.11 is revised to read:

(January 5, 2026)
All STOP, YIELD, DO NOT ENTER, WRONG WAY, FREEWAY ENTRANCE, HIGHWAY ENTRANCE signs shall be constructed entirely of Type XI reflective sheeting. All S series signs shall be constructed entirely of Type XI reflective sheeting unless otherwise specified. Overhead mounted signs shall use Type XI background reflective sheeting. Background reflective sheeting for all other signs shall be Type IV reflective sheeting or as noted in the Plans. Sign legends for all

overhead signs shall be Type XI reflective sheeting, while legends on all other signs shall be constructed of Type IV reflective sheeting unless otherwise specified. Sign legends include: borders, letters, numerals, symbols, shields, and arrows. Reflective legend sheeting types shall not be mixed on individual signs.

Section 9-28.12 is revised to read:

(January 5, 2026)

Reflective sheeting material shall conform to ASTM D4956 - Standard Specification for Retroreflective Sheeting for Traffic Control. The following standard reflective sheeting types have been modified to reflect Contracting Agency requirements:

Device Type	Use	Sheeting Color	Sheeting Types
Permanent Signing			
Ground Mounted	All	All	IV[1]
Overhead	All	All	XI[5]
Object Markers	All	All	IV
Temporary Construction Signing			
Warning Signs	All	Fluorescent Orange	VIII, IX, X[2], XI
Regulatory Signs	All	White	IV
Regulatory Signs	Rural	White	II[3], IV
Regulatory Signs	Urban/Rural	White	II[3], IV
Regulatory Signs	All	Red	III, IV
Regulatory Signs	All	Green	II, IV
Regulatory Letters, Border or Symbols	-	Green	III[3], IV
Temporary Construction Signs	All	All Other Background Colors	III[3], IV
Other Devices			
Barricades	All	White or Orange	III[3], IV
Barrier Delineators	All	White or Yellow	III, IV, V, XI
Bollards	All	All	IV
Flexible Guidepost	All	All	III, IV, V
Pedestrian Channelization Devices	All	White or Orange	III[3], IV
Signal Backplates	Portable Signals		IV
Signal Backplates	Permanent Signals		See Section 9-29.16
Tall Channelization Devices - 42-inch	All	Fluorescent Orange/White	III[3], IV[4]
Traffic Cones 28-inch and 36-inch	All	White or Higher White	VI
Traffic Safety Drums	All	Fluorescent Orange/White	III[3], IV[4]
Transportable Attenuators	All	Yellow and Black Chevron	III[3], IV
Transportable Attenuators	All	White and Red Chevron	IV

Tubular Markers (portable or pavement mounted)	All	White or Yellow	III[3], IV
Utilities Attached to Bridges			I, See Section 6-01.10

1. Except S Series, STOP, YIELD, DO NOT ENTER, FREEWAY ENTRANCE, and HIGHWAY ENTRANCE signs shall use Type XI.
2. Former Type X, not shown in ASTM 04956, however meets requirements of Types VII, IX, and XI.
3. Only devices in inventory may be used through December 31, 2026.
4. Type IV or higher fluorescent orange and white sheeting.
5. Type IV sheeting shall be used for overhead street name signs if specified in the Plans.

Section 9-28.14 is supplemented with the following:

(September 8, 2020)
Manufacturers for Steel Roadside Sign Supports
The Standard Plans lists several steel sign support types. These supports are patented devices and many are sole-source. All of the sign support types listed below are acceptable when shown in the Plans.

Steel Sign Support Type	Manufacturer
Type TP-A & TP-B	Transpo Industries, Inc.
Type PL, PL-T & PL-U	Northwest Pipe Co.
Type AS	Transpo Industries, Inc.
Type AP	Transpo Industries, Inc.
Type ST 1, ST 2, ST 3, & ST 4	Ultimate Highway Solutions, Inc., 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.

8-21.3 Construction Requirements

Section 8-21.3(5) Sign Relocation

Section 8-21.3(5) is supplemented with the following:

(******)
One relocated sign is the City's Directional Sign Type 2. This sign requires a special foundation as shown in Appendix C – Woodinville Directional Sign Plan L-100 and L-101. This work shall be considered incidental to the lump sum cost for "Permanent Signing".

8-21.5 Payment

Section 8-21.5 is supplemented with the following:

(******)
"Permanent Signing (Way Finding Signs), lump sum, includes the cost to install Way Finding Signs as shown on Sheet TP5.

"Permanent Signing", lump sum, includes the cost of all other permanent signing including relocating existing signs as shown on the plans.

8-22 PAVEMENT MARKINGS

8-22.1 Description

Section 8-22.1 is supplemented with the following:

(******)
All new longitudinal pavement markings shall be supplemented with raised pavement markers per WSDOT Standard Plans M-20.30 and M-20.40. Raised pavement markers shall be installed per WSDOT Standard Plan M-20.30 between double yellow centerlines that are spaced 4 inches apart (narrow roadways).

All Pavement markings shall be plastic made of Methyl Methacrylate Type D (MMA) as approved by the Engineer unless otherwise shown in the plans.

8-22.2 Material

Section 8-22.2 is supplemented with the following:

(******)
4-inch Wide Warning Band

Material shall meet WSDOT Standard Specification 9-34.3(2) and shall be 4-inches wide, 125 mil. Thick, white color preformed thermoplastic bands with 60º taper

8-22.4 Measurement

Section 8-22.4 is supplemented with the following:

(******)
4-inch Warning Band will be measured by the linear foot of completed line.

8-22.5 Payment

Section 8-22.5 is supplemented with the following:

(******)
"4-inch Warning Band", per linear foot.

8-24 ROCK AND GRAVITY BLOCK WALL AND GABION CRIBBING

8-24.2 Materials

Section 8-24.2 is supplemented with the following:

(******)
Gravity Block Wall shall use the existing blocks from part of the wall that was removed and shall be installed to match the existing wall per the manufactures recommendations. Damaged blocks shall be replaced with matching blocks at the Contractor's expense.

8-26 VACANT

Section 8-26 shall be replaced with the following:

(******)

8-26 ILLUMINATED CHANNEL LETTER SIGNAGE (BRIDGE MOUNTED)

8-26.1 Description

This work shall consist of designing, furnishing, fabricating, delivering, and installing illuminated metal channel letter signage mounted to the bridge structure in accordance with the Plans, the Standard Specifications, and these Special Provisions.
The work includes the sign letters, structural supports, attachment hardware, lighting systems, electrical connections, conduits, and all necessary incidentals required for a complete and operable installation.

8-26.2 Materials

8-26.2(1) Channel Letters

1. Letters shall be fabricated from **stainless steel sheet**, minimum thickness **0.125 inch**, formed with welded seams and continuous returns.
2. Letters shall be 5" deep, and +/- 3'-6", dependent upon letter dimensions.
3. Faces shall be **high-performance coated stainless steel**, minimum thickness **1/8 inch**.
4. Backs shall be Lexan polycarbonate, minimum thickness 3/16 inch.
5. All materials shall be corrosion-resistant and suitable for exterior bridge-mounted exposure.
6. Finish shall be **3-Part high performance coating system** Section 9-08.
7. Color and font shall conform to the Contract Plans.

8-26.2(2) Illumination System

1. Each letter shall contain integrated LED lighting modules, providing uniform illumination.
2. LED modules shall be UL listed for wet locations and operate on 24V DC or as specified.
3. Drivers and power supplies shall be UL listed and located in weatherproof enclosures as shown in the Plans.
4. Wiring, conduits, junction boxes, and grounding shall conform to Section 8-20 and the National Electrical Code (NEC).
5. Lighting intensity and color temperature shall conform to the Plans and approved mock-up.

8-26.2(3) Mounting Hardware

1. Structural supports and mounting brackets shall be Type 316 stainless steel.
2. All fasteners shall be stainless steel, vibration-resistant, and isolated from dissimilar metals.
3. Anchorage to the bridge structure shall be made only at locations shown on the Plans and approved by the Bridge Engineer.

8-26.3 Construction Requirements

8-26.3(1) Submittals

The Contractor shall submit for approval:

1. Type 3 Working Drawings showing letter dimensions, mounting methods, wiring diagrams, and power source locations.
   Type 3E Working Drawings for all welds, anchorages, and attachments, including structural calculations for anchor loads and attachment to bridge structure.
2. Product data and certifications for all electrical components and finishes.
3. Illumination photometric data and proposed control system.

8-26.3(2) Fabrication

1. Letters shall be fabricated in a controlled shop environment.
2. Electrical components shall be pre-wired and tested prior to installation.
3. Channel letters shall be fabricated and supplied by a regional signage fabricator specializing in channel letters, such as:
   1. Crossroad Sign
      16406 7th Pl W
      Lynnwood, WA 98037
      Telephone: 425.820.3400
      Web: http://crossroadsign.com/

   2. Or approved equal.

Property	Tolerance
Overall letter height and width	+/- 1/4” measured across the face
Return depth (side wall height)	+/- 1/4” after forming and welding
Face flatness	1/8” max deviation

8-26.3(3) Installation

1. Install channel letters in alignment and spacing as shown on the Plans.
2. Attach to bridge structure using approved anchors and seal all penetrations with silicone or neoprene gaskets.
3. Electrical connections shall be made by a licensed electrician in accordance with Section 8-20.
4. Coordinate power supply installation with bridge electrical systems.
5. Upon completion, test illumination for uniformity and verify all letters are fully operational.

Property	Tolerance
Alignment and Placement of Lettering	+/- 1” horizontal and vertical

Individual letter assemblies shall be located with the specified alignment and placement tolerance and combined shall appear to form a continuous arc and be consistently spaced when viewed from street level and 20-feet from the edge of the bridge structure.

8-26.3(4) Protection and Cleaning

After installation, clean all exposed surfaces and remove all installation debris. Protect the sign from damage until final acceptance.

8-26.4 Measurement

Illuminated channel letter signage will be measured by the **lump sum** for the completed installation, including letters, lighting, mounting, wiring, and all incidentals.

8-26.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

“Illuminated Channel Letter Signage (Bridge Mounted)” per lump sum shall be full compensation for all materials, fabrication, electrical work, mounting hardware, testing, and incidentals required to complete the Work.

8-27 VACANT

Section 8-27 shall be replaced with the following:

(******)

8-27 CUSTOM GLASS BRIDGE BARRIER WALL WITH ARTWORK AND INTEGRATED LIGHTING

8-27.1 Description

This Work shall consist of designing, fabricating, and installing a custom glass bridge barrier wall system incorporating 9/16-inch tempered laminated glass panels with integrated artwork and LED illumination within the embedded support channel, complete with all supports, anchors, lighting components, wiring, sealants, and appurtenances necessary to produce a

complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The Work also includes preparation and submittal of Working Drawings, fabrication of a full-size artwork mockup, and furnishing of spare glass panels.

8-27.2 Materials

8-27.2(1) Custom Glass Bridge Barrier Wall with Artwork and Integrated Lighting

1. Custom Glass Bridge Barrier Wall panels shall be 9/16-inch thick tempered laminated glass, consisting of two plies of fully tempered glass laminated with a structural SPG interlayer (SentryGlas® Plus or approved equal).
2. Fabrication shall conform to ASTM C1048, ASTM C1172, and ANSI Z97.1.
3. Edge finish: polished and seamed smooth.
4. Transparency, color, and artwork configuration shall match the approved artwork mockup and the Contract Plans.
5. Glass shall be designed to resist the wind, weather, and impact loads specified in the AASHTO LRFD Bridge Design Specifications.

8-27.2(2) Artwork Application

1. Artwork shall be permanently integrated within the laminated glass using ceramic frit, printed interlayer, or equivalent in-glass imaging method approved by the Engineer.
2. Colors and patterning shall match the approved full-size mockup.
3. All artwork materials shall be UV-stable, graffiti-resistant, and suitable for exterior exposure.

8-27.2(3) Structural Metal Channels and Supports

1. Embedded support channels, posts, and attachments shall be fabricated from Type 316 stainless steel, unless otherwise shown on the Plans.
2. All metalwork shall conform to Section 9-06 and be finished to a brushed surface.
3. Structural fasteners shall be stainless steel and isolated from dissimilar metals to prevent galvanic corrosion.
4. Channels shall include integrated raceways or cavities for LED lighting as detailed in the Working Drawings.

8-27.2(4) Integrated LED Lighting System

1. LED lighting shall be factory-integrated within the lower **channel** that supports the glass barrier panels.
2. LED modules shall be IP67-rated, UL-listed for wet locations, and designed for continuous exterior operation.
3. Light output shall provide uniform edge illumination of the glass panels as indicated on the Plans.
4. Power supply units (drivers, transformers) shall be Class 2, UL-listed, and installed in weatherproof enclosures in locations approved by the Engineer.
5. Wiring and conduits shall conform to Section 8-20 (Illumination, Traffic Signal, and Electrical) and the National Electrical Code (NEC).

6. LED strip, lighting color temperature, brightness, and control system shall be approved by Electrical Engineer, shall be as shown on the Plans and verified by mockup.

8-27.2(5) Gaskets, Sealants, and Setting Components

1. Gaskets and setting blocks shall be UV-resistant neoprene or silicone, compatible with laminated glass and stainless steel.
2. Sealants shall conform to ASTM C920, Type M or S, Grade NS, Class 25, Use NT.

8-27.2(6) Spare Panels

Provide 6 spare laminated glass panels – L3 (quantity 2), L2 (quantity 2), L1 (quantity 1), L4 (quantity 1). Final spare panel selection to be approved by Landscape Architect and City Authorized Representative during the submittal process..
Spare panels shall be fully fabricated and finished to match installed units and delivered in protective crates to the location designated by the Engineer.

8-27.3 Construction Requirements

8-27.3(1) Working Drawings

Submit Working Drawings in accordance with Section 1-05.3 and these requirements:

1. Type 3 Working Drawings showing glass panel dimensions, artwork alignment, lighting layout, anchor details, wiring diagrams, conduit routing, and control locations.
2. Type 3E Working Drawings for attachments, anchorages, and embedments, including structural calculations sealed by a Professional Engineer licensed in the State of Washington demonstrating compliance with the design loads specified in the Plans.
3. Electrical submittals, including LED module specifications, driver data sheets, and photometric calculations.
4. Artwork proofs, including full-size printed or digital samples showing color, alignment, and translucency.

No fabrication shall begin until Working Drawings, lighting data, and artwork proofs have been reviewed and approved by the Engineer.

8-27.3(2) Artwork and Lighting Mockup

1. Fabricate a full-size mockup of one complete glass panel assembly, including the embedded lighting channel, artwork, gaskets, and representative mounting hardware.
2. The mockup shall demonstrate the intended appearance, lighting performance, and finish quality.
3. The Engineer and Landscape Architect shall review and accept the mockup prior to production.
4. Accepted mockup components may be incorporated into the completed installation if undamaged.

8-27.3(3) Fabrication

1. Glass panels shall be factory-fabricated in a controlled environment.

2. All LED components shall be pre-fitted into channels, wired, and tested prior to delivery to the site.
3. Glass Panels shall be fabricated and supplied by a fabricator specializing in architectural railing systems and exterior glass printing, such as:
    1. Viva Railings
       151 W Vista Ridge Mall Dr
       Lewisville, TX 75067
       Telephone: 972.353.8482, extension 69
       Web: http://vivarailings.com

    2. Pulp Studio
       2100 W 139th Street
       Gardena, CA 90249
       Telephone: 415.309.6558
       Web: http://pulpstudio.com

    3. Or approved equal.

Property	Tolerance
Glass Dimension	Plus or minus 1/16" between any corner
Alignment	Plus or minus 1/16"
Space between Panels	Plus or minus 1/2" (12mm)

8-27.3(4) Installation

1. Install glass panels and lighting channels true to line and grade as shown on the Plans.
2. Ensure full seating of panels within gaskets and setting blocks; avoid edge contact between glass and metal.
3. Connect LED power and control wiring per approved Working Drawings and Section 8-20 requirements.
4. Coordinate electrical testing and commissioning with the Contracting Agency's representative.
5. Protect all glass and metal surfaces during installation from damage and staining.
6. After installation, clean all exposed glass and metal, and test the lighting system for full and uniform operation.

8-27.3(5) Protection and Replacement

1. Any glass panel or lighting component damaged before final acceptance shall be replaced at no cost to the Contracting Agency.
2. Spare panels and replacement lighting components shall be turned over to the Owner, properly labeled and stored in protective packaging.

8-27.4 Measurement

The custom glass bridge barrier with integrated lighting and artwork will be measured by the linear foot of completed and accepted installation or spare panels, including glass, metal supports, lighting, wiring, artwork, and all associated appurtenances.

8-27.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

> **"**Custom Glass Bridge Barrier with Artwork and Integrated Lighting" per linear foot and shall be full compensation for all design, Working Drawings, mockups, materials, fabrication, artwork, integrated LED lighting, wiring, installation, testing, cleaning, and furnishing of spare panels, including all labor, tools, and incidentals necessary to complete the Work.

8-28 VACANT

Section 8-28 shall be replaced with the following:

(******)

8-28 RAISED PLANTER, RAISED PLANTER EDGE

8-28.1 Description

This Work shall consist of furnishing, fabricating, and installing a Raised Planter and Raised Planter Edge consisting of modular metal panels, bases, supports, anchors, fasteners, drainage components, soil barriers, coatings, finishes, and all appurtenances required for a complete and functional installation as shown on the Plans and specified herein.

The Tournesol Kitsap Modular Planter System is designated as the basis of design for this Work. Other manufacturers or systems may be submitted for approval provided they meet or exceed the design, appearance, dimensional, and performance requirements of the basis of design product.

> Tournesol Siteworks
> 2930 Faber Street
> Union City, CA 94587
> Telephone: 800.542.2282
> Website: https://tournesol.com/

The Work also includes preparation and submittal of Working Drawings, physical material and color samples for approval, and coordination with adjacent paving, irrigation, and planting systems.

8-28.2 Materials

8-28.2(1) Planter Panels and Components

Planter panels and internal framing shall be fabricated from welded aluminum or corrosion-resistant steel plate, minimum 0.125 inch thick, formed to the dimensions shown on the Plans. All components shall be free from warping, dents, or sharp edges. Panel joints shall be uniform, with tight and aligned seams.

The system shall have structural and aesthetic characteristics equivalent to the Tournesol Kitsap Modular Planter System. Substitutions shall be reviewed and approved by the Engineer prior to fabrication.

8-28.2(2) Finish

Exterior surfaces shall be factory-finished with a baked-on powder coating or fluoropolymer coating meeting AAMA 2604 or higher.
Finish color shall be as shown on the Plans or as approved by the Engineer from submitted samples.
All exposed fasteners and anchors shall have matching finishes unless otherwise approved.

8-28.2(3) Drainage and Liners

Each planter shall include integrated drainage openings, weep systems, or concealed drains to prevent standing water.
If shown on the Plans, provide internal liners, drainage media, and geotextile separation fabrics as part of the complete system.

8-28.2(4) Anchors and Fasteners

All bolts, screws, washers, and anchors shall be Type 316 stainless steel, concealed wherever possible.
Anchorage to the substrate shall be achieved using expansion anchors, weld plates, or threaded inserts as shown in the approved Working Drawings.

8-28.2(5) Material and Color Samples

The Contractor shall provide the following for approval prior to fabrication:

1. Minimum 6-inch by 6-inch metal samples showing the specified material and factory-applied finish.
2. A complete color sample set for selection and approval.
3. Representative hardware and fastener samples, showing material type and coating.

Fabrication shall not begin until all samples have been reviewed and approved by the Engineer.

8-28.3 Construction Requirements

8-28.3(1) Working Drawings

Submit Type 3E Working Drawings in accordance with Section 1-05.3 and the following:

1. Complete shop drawings showing plan and elevation layouts, panel sizes, joint configurations, and base details.
2. Detailed connection drawings showing all fasteners, welds, and anchorages.
3. Drainage, liner, and weep hole details as required for functionality.
4. Coordination drawings showing interface with adjacent paving, waterproofing, or irrigation systems.
5. Manufacturer’s product data, installation instructions, and maintenance information.

Working Drawings shall be stamped by a Professional Engineer licensed in the State of Washington when required by the Contract Plans.

Fabrication shall not begin until Working Drawings are reviewed and approved by the Engineer.

8-28.3(2) Fabrication

Planters shall be factory-fabricated and finished prior to delivery.
All field connections shall be made with concealed mechanical fasteners unless otherwise approved.
Welds shall be continuous, smooth, and ground flush where exposed.

Property	Tolerance
Squareness	Not more than 1/8" difference in diagonal measurements
Maximum offset between components at joints	1/16" except at welded joints, offsets are prohibited
Maximum bowing	1/8" over 48 inches
Maximum deviation from plane	1/16" over 48 inches

8-28.3(3) Installation

Install planters at the locations and elevations shown on the Plans, true to line and grade.
Coordinate installation with adjacent trades and site elements including waterproofing, paving, and planting.
Secure planters to the substrate using the approved anchorage method.
Verify that planters are level, plumb, and properly aligned before final fastening.
After installation, clean all exposed surfaces and remove protective coverings.

Installed work shall meet the following erection tolerances:

Property	Tolerance
Maximum misalignment of adjacent units	1/4"
Joint width	+/- 1/8"
Warpage	Maximum permissible warpage of one corner out of plane of the other three shall be 1/16 inch per foot of distance from the nearest adjacent corner or 1/8 inch total after installation
Bowing	Not over L/360, where L is the panel length

8-28.3(4) Field Adjustments and Finishing

Inspect all components for damage prior to final acceptance.
Touch up minor surface imperfections using manufacturer-recommended coating systems.
Replace damaged or nonconforming units at no cost to the Contracting Agency.

8-28.4 Measurement

The Raised Planter will be measured by the linear foot of completed and accepted planter installation, including all panels, bases, anchors, fasteners, coatings, and drainage components.

The Raised Planter Edge will be measured by the linear foot of completed and accepted planter installation, including all panels, bases, anchors, fasteners, coatings, and drainage components.

8-28.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following items:

“Raised Planter ” per linear foot and shall be full compensation for furnishing all materials, Working Drawings, fabrication, coatings, anchorage, installation, material and color samples, and all incidentals necessary to complete the Work.

“Raised Planter Edge” per linear foot and shall be full compensation for furnishing all materials, Working Drawings, fabrication, coatings, anchorage, installation, material and color samples, and all incidentals necessary to complete the Work.

8-32 VACANT

Section 8-32 shall be replaced with the following:

(******)

8-32 FIELD OFFICE BUILDING

8-32.1 Description

This work shall consist of furnishing and setting-up a temporary office building for the sole use of the Contracting Agency.

8-32.3 Construction Requirements

The building with a minimum area of not less than 400 square feet of floor space, shall be set-up within the first 10 working days, unless the Engineer has approved a different schedule. After building set-up, the building shall be in place and available for the contracting Agency’s use the entire duration of the project, including project suspensions or other non-working periods.

The building shall be weather-tight, installed plumb and level, and provided with the following as a minimum:

A floor above ground, cylinder lock and four (4) keys, adequate ventilation with windows that open and are covered with bars or expanded metal grate covering, continuous supply of bottled water and dispenser, garbage service, electric lights, heat, and air conditioning.

The interior layout of the building shall provide for one separate room at the end (approximately 1/3 of the space), with walls and doors separating it from the larger central room. Exterior doors shall have hinge and lock over plates, with padlocks in addition to cylinder locks, as needed. The office structure shall be in new, like new, or refurbished condition.

All-weather parking shall be provided adjacent to the building for four (4) Contracting agency vehicles.

The Contractor shall provide cleaning service for the office once per week, during the hours the office is occupied, to include sweeping, vacuuming, dusting, trash removal, etc., not to exceed 2 hours per week.

Internet Connection

The Contractor shall provide a wired internet connection to the Field Office, Coaxial or Fiber line and shall pay the monthly charges. The internet connectivity must support download speed of up to 500 Mbps, provisioned with one (1) static IP address for remote support connectivity. To support equipment connectivity, the Contractor will provide a router that has Wi-Fi capability and a minimum of 2 high-speed ethernet ports. The Contractor shall secure all equipment against theft and/or unauthorized access by non-Agency staff.

Multifunction Printer/Copier/Scanner

Print and Copy Functions

The Contractor shall furnish and maintain one (1) multifunction device, capable of printing and copying on 8½" x 11", 8½" x 14", and 11" x 17" paper for the duration of the project, with the Contractor supplying the ink, toner, and paper. It shall have a 550-sheet capacity or better, two-sided printing and copying, 10 copies per minute, and an automatic document feeder with a manual feeder for larger sized paper.

Reduction/Enlargement Capability, and Sorter

It shall have a copy resolution of 600 dpi quality and a printing resolution of 1200 dpi quality, or better, and shall produce fifteen (15) color pages per minute or better. The printer shall include a USB connection and be Wi-Fi capable. The printer shall be networked with a printer server connected to a router.

The Contractor shall supply all accessories needed for the device's operation, including toner and paper.

Scanner Function

The scanner must be able to scan in single/multi-page PDF and single/multi-page TIFF formats and have 600 dpi optical resolution, a 50-sheet automatic document feeder (ADF), and a USB 2.0 interface with double feed detection. The scanner shall be capable of handling 8½" x 11", 8½" x 14", and 11" x 17" paper and have an automatic document feeder. It must have the ability to scan to media (USB/SD Card) and scan to a URL.

The Contractor shall set up and connect all equipment, install all software and internet service, and confirm that all components are operable and compatible with the printer before the work for the field office shall be considered complete.

Sanitary Facilities

The Contractor shall provide and install the sanitary facility so that it is plumb and level and shall properly maintain the facility based upon the number of workers on the site. The facility shall be kept locked during nonworking hours. The Contractor shall also provide a dispenser and waterless hand-sanitizing cleaner near or in the sanitary facility. Upon physical completion of the Contract, or when designated by the Engineer, the Contractor shall remove the sanitary facility and hand-washing station from the site, and the facility shall remain the property of the Contractor. If any equipment becomes inoperable during the duration of the project, the Contractor shall repair, replace, or otherwise return the equipment to operation within three working days of notification by the Engineer, or the County will request a repair person to service the equipment with payment deducted from monies due or that may become due to the Contractor. The building shall remain the property of the Contractor and be removed from the site upon physical completion of the contract, or when designated by the Engineer.

Note: Contractor only has to provide one "Field Office Building" and is to split the cost between the different bid schedules that this bid item is shown on.

8-32.4 Measurement

No specific unit of measurement shall apply to "Field Office Building", which shall be measured and paid per lump sum.

8-32.5 Payment

"Field Office Building" Lump Sum.

The lump sum contract price for "Field Office Building" shall be full pay for furnishing, installing, maintaining, and removing the facility, including all costs associated with all required utility hook-ups and disconnects, and monthly utility charges for all utilities. The field office building shall remain on site until the complete project is accepted or as approved by the Engineer.

(******)

8-33 BRIDGE LIGHTING: MAINTENANCE AND MURAL, AND LIGHTING CONTROL PANEL

Section 8-33 shall be added with the following:

8-33.1 Description

This work shall consist of purchase and installation of luminaires for maintenance lighting for the interior of the bridge, and the lighting control panel complete with all supports, anchors, lighting components, wiring, sealants, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of luminaire, and lighting control panel.

8-33.2 Materials

8-33.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-33.2(2) Luminaire "F1"

1. Luminaire Description: 2' lensed linear surface mounted LED for bridge maintenance. Wet rated. Gasketed.

2. Lighting Criteria:

    a. LED Luminaires: UL CCN IFAM; including UL 1598.
    b. Marked in accordance with UL CCN HYXT, including UL 1598, for compatible power supply, installation location, and environmental conditions.

3. Standard Features:

    a. Nominal Operating Voltage: 120V(ac)
    b. Nominal Luminaire Operating Power Rating: 18W.
    c. CRI: 80+.
    d. Driver Location: Internal.
    e. Materials:
        i. Enclosure: free of sharp edges and burrs.
        ii. Enclosure Ingress Protection Rating: UL50E Type 4X or IEC 60529 IP65 & IP66.
        iii. Lenses, Diffusers, and Globes:
            1. Fixed Lens.
            2. Medium light distribution.
            3. Polycarbonate or Acrylic.
            4. Lens Thickness: Not less than 0.125 inch (3 mm) unless otherwise indicated.
    f. LED Luminaires (UL CCN IFAM):
        i. Output Intensity: Not less than 2000 lm.
        ii. Efficacy: Not less than **100 lm/W**.
        iii. Rated Life: 60,000 hours to L80 or better.
        iv. CCT: 4000 K.

4. Installation Markings:

a. All Luminaires (UL CCN HYXT):
    i. “SUITABLE FOR WET LOCATIONS”
    ii. Marked to identify voltage supply or type of branch circuit or both.

5. Seismic and Wind Performance: Installed product must perform in accordance with the following:
    a. Withstand Requirement: Unit must remain in place without separation of parts when subjected to specified criteria during seismic events.
    b. Component Importance Factor (I_p): 1.0.
    c. Component Amplification Factor (a_p): 1.0.
    d. Component Response Modification Factor (R_p): 1.5.
    e. Component Overstrength Factor (Ω_o): 1.5.

6. Luminaire Support Accessories Standard Features:
    a. Sized and rated for luminaire weight.
    b. Capable of maintaining luminaire position after cleaning and maintenance.
    c. Capable of supporting luminaire without causing deflection of ceiling or wall.
    d. Capable of supporting horizontal force equal to 100 percent of luminaire weight and vertical force equal to 400 percent of luminaire weight.

8-33.2(3) Luminaire “F2”

1. Luminaire Description: 2’ lensed linear surface mounted LED wall wash fixture with adjustable angle mount for mural lighting. Wet rated.

2. Lighting Criteria:

    a. LED Luminaires: UL CCN IFAM; including UL 1598.
    b. Marked in accordance with UL CCN HYXT, including UL 1598, for compatible power supply, installation location, and environmental conditions.

3. Standard Features:

    a. Nominal Operating Voltage: 120V(ac)
    b. Nominal Luminaire Operating Power Rating: 21W.
    c. CRI: 80+.
    d. Driver Location: Internal.
    e. Materials:
        i. Enclosure: free of sharp edges and burrs.
        ii. Enclosure Ingress Protection Rating: UL50E Type 4X or IEC 60529 IP67.
        iii. Lenses, Diffusers, and Globes:
            1. Fixed Lens.
            2. Asymmetric wall wash light distribution.
            3. Clear, UV stabilized acrylic.
            4. Lens Thickness: Not less than 0.125 inch (3 mm) unless otherwise indicated.
    f. LED Luminaires (UL CCN IFAM):
        i. Output Intensity: Not less than 1000 lm/ft (lumens per foot).
        ii. Efficacy: Not less than **92 lm/W**.
        iii. Rated Life: 100,000 hours to L70 or better.
        iv. CCT: 3000 K.

4. Installation Markings:
    a. All Luminaires (UL CCN HYXT):
        i. “SUITABLE FOR WET LOCATIONS”
        ii. Marked to identify voltage supply or type of branch circuit or both.

5. Seismic and Wind Performance: Installed product must perform in accordance with the following:
    a. Withstand Requirement: Unit must remain in place without separation of parts when subjected to specified criteria during seismic events.
    b. Component Importance Factor (I_p): 1.0.
    c. Component Amplification Factor (a_p): 1.0.
    d. Component Response Modification Factor (R_p): 1.5.
    e. Component Overstrength Factor (Ω_o): 1.5.

6. Luminaire Support Accessories Standard Features:
    a. Sized and rated for luminaire weight.
    b. Capable of maintaining luminaire position after cleaning and maintenance.
    c. Capable of supporting luminaire without causing deflection of ceiling or wall.
    d. Capable of supporting horizontal force equal to 100 percent of luminaire weight and vertical force equal to 400 percent of luminaire weight.

8-33.2(4) Lighting Control Panel

1. Lighting control panel description: Lighting control panel capable of controlling mural lighting, letter signage RGBW lighting, and the glass rail RGBW lighting. Capable of remote accessibility and programming different scenes. Capable of astronomic time clock controls. Coordinate final control capabilities and connect ability with City of Woodinville. Temperature hardened equipment. Provide in wet rated enclosure.

2. Lighting Criteria: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

3. Standard Features:

    a. RGBW lighting controller with DMX control capability
    b. 4G/5G rugged cellular modem for remote monitoring and control
    c. Astronomical time clock controls.
    d. Automatic daylight savings time changeover.
    e. Scene programmable.
    f. Remote accessible.
    g. NEMA 4X enclosure.
    h. 120V rated.

4. Connectivity and Programming Requirements
    a. Contractor shall furnish, install, configure, and fully program the DMX-compatible lighting controller, including all required hardware, software, communication devices, licenses, and accessories necessary for a complete and operational system.

b. Contractor shall program all DMX addresses, fixture groups, zones, scenes, presets, schedules, astronomical clock functions, and control logic as indicated in the Contract Documents and as directed by the Owner.
c. Contractor shall conduct functional testing of all programmed features and demonstrate proper operation of the complete system prior to Final Acceptance.
d. Contractor shall procure and prepay cellular data service for the installed controller for a period of not less than twenty-four (24) months from the date of Final Acceptance. The prepaid cellular service shall include sufficient data capacity to support normal controller communications, remote monitoring, software updates, diagnostics, and programming activities during the required service period.

8-33.2(5) Mounting Hardware

1. Structural supports and mounting brackets shall be Type 316 stainless steel.
2. All fasteners shall be stainless steel, vibration-resistant, and isolated from dissimilar metals.
3. Anchorage to the bridge structure shall be made only at locations shown on the Plans and approved by the Bridge Engineer.

8-33.3 Construction Requirements

8-33.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittals with the following information:
   a. Product Listing: Include copy of unexpired approval letter, on letterhead of qualified electrical testing agency, certifying product's compliance with specified listing criteria.
   b. Include life, output (lumens, CCT, and CRI), and energy-efficiency data.
   c. Include photometric data and adjustment factors obtained from qualified laboratory tests.
   d. Include manufacturer's sample warranty language.

   No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Closeout Submittals
   a. Warranty Documentation.

8-33.3(2) Installation of Lighting

1. Comply with manufacturer's published instructions.
2. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:
   a. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
   b. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.

c. Work in Confined Spaces: NFPA 350.
d. Work in Basements and Other Developed Subterranean Spaces: NFPA 520.
e. Installation of Indoor Lighting Systems: NECA NEIS 500.
f. Installation of Exterior Lighting Systems: NECA NEIS 501.
g. Installation of Industrial Lighting Systems: NECA NEIS 502.
h. Installation of Luminaires, Lampholders, and Lamps: Article 410 of NFPA 70.
i. Installation of Extra-Low-Voltage Lighting: Article 411 of NFPA 70.
j. Consult Engineer for resolution of conflicting requirements.

3. Special Installation Techniques:
    a. Install luminaires level, plumb, and square with finished floor or grade unless otherwise indicated.
    b. Install luminaires at height and aiming angle as indicated on the Drawings.
    c. Coordinate layout and installation of luminaires with other construction.
    d. Adjust luminaires that require field adjustment or aiming.
    e. Exterior Corrosion Prevention:
        i. Do not use aluminum in contact with earth or concrete. When in direct contact with dissimilar metals, protect aluminum with insulating fittings or treatment.
        ii. When embedding steel conduits in concrete, wrap conduit with 10 mil (0.254 mm) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.
    f. Flush-Mounted Luminaire Support:
        i. Secured to outlet box.
        ii. Attached to ceiling structural members at four points equally spaced around circumference of luminaire.
        iii. Trim ring flush with finished surface.
    g. Remote Mounting of Drivers: Do not exceed distance between driver and luminaire recommended by driver manufacturer.
    h. Install wiring connections for luminaires.
    i. Identification: Provide labels for luminaires and associated electrical equipment.
        i. Identify field-installed conductors, interconnecting wiring, and components.
        ii. Provide warning signs.
        iii. Label each enclosure with engraved metal or laminated-plastic nameplate.
    j. Systems Integration: Integrate lighting control devices and equipment with electrical power connections for operation of luminaires as specified.
    k. Protection: After installation, protect lighting equipment from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

8-33.3(3) Field Quality Control of Lighting

1. Administrant for Electrical Power Tests and Inspections:
    a. Administer and perform tests and inspections.
2. Administrant for Field Tests and Inspections of Lighting Installations:
    a. Administer and perform tests and inspections.
3. Tests and Inspections:
    a. Perform manufacturer's recommended tests and inspections.

b. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.

4. Nonconforming Work:
   a. Luminaire will be considered defective if it does not pass tests and inspections.
   b. Remove and replace defective units and retest.
5. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

8-33.3(4) Closeout Activities

1. Training:
   a) Train Owner's maintenance personnel on the following topics:
      i) How to adjust, operate, and maintain luminaires.
   b) Allow Owner to record training sessions.

8-33.4 Measurement

The luminaires will be measured per each for each luminaire type installed and all associated appurtenances and incidental work.

Lighting Control Panel will be measured per each.

Lighting Control Connection will be measured per each.

8-33.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"Luminaire _" will be paid for per each and shall be full pay for luminaires and related material including all labor and incidentals necessary to complete the Work.

"Lighting Control Panel" and "Lighting Control Connection" will be paid for per each and shall be full payment of lighting control panel and related material including mounting hardware, all labor and incidentals necessary to complete the Work.

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8-34 WIRING DEVICES

Section 8-34 shall be added with the following:

8-34.1 Description

This work shall consist of purchase and installation of wiring devices: switches and receptacles, complete with all supports, anchors, sealants, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of device.

8-34.2 Materials

8-34.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-34.2(2) General-Use Switch

1. Toggle Switch:
    a. Listing Criteria: UL CCN WMUZ and UL 20.
    b. Standard Features:
        i. Configuration:
            1. Extra-heavy duty, 120-277V, 20A, single pole.

8-34.2(3) Receptacles with Ground-Fault Protective Devices

1. General-Grade, Weather-Resistant, Duplex Straight-Blade Receptacle with GFCI Device:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Receptacle GFCIs: UL CCN KCXS, UL 498, and UL 943.
    b. Standard Features:
        i. Configuration: Heavy-duty, NEMA 5-20R.

8-34.2(4) Mounting Hardware

1. Structural supports and mounting brackets shall be Type 316 stainless steel.
2. All fasteners shall be stainless steel, vibration-resistant, and isolated from dissimilar metals.
3. Anchorage to the bridge structure shall be made only at locations shown on the Plans and approved by the Bridge Engineer.

8-34.3 Construction Requirements

8-34.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittals with the following information:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Listing criteria identified in approval letter must match specified listing criteria. UL label indicating approval of equipment's enclosure is not considered approval of equipment for intended application.
    c. Product identification in approval letter must match product branding and model numbers in submittal. Approval letters for discontinued or superseded products are not acceptable for submitted product.

2. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

3. Field quality-control reports.

4. Informational Submittals
    a. Manufacturer’s published instructions.
    b. Field Reports:
        i. Manufacturer’s field reports for field quality-control support.

5. Closeout Submittals
    a. Warranty Documentation.

8-34.3(2) Examination

1. Receptacles:
    a) Verify that receptacles to be procured and installed for Owner-furnished equipment are compatible with mating attachment plugs on equipment.

8-34.3(3) Installation of Switches

1. Comply with manufacturer's published instructions.

2. Reference Standards for Installation: Unless more stringent installation requirements are specified in the Contract Documents or manufacturer's published instructions, comply with the following:
    a. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
    b. Electrical Safety: NFPA 70E.
    c. Life Safety and Means of Egress Work: NFPA 101.
    d. Work in Basements and Other Developed Subterranean Spaces: NFPA 520.
    e. Wiring Devices: NECA NEIS 130.
    f. Mounting Heights: NECA NEIS 1.
    g. Consult Engineer for resolution of conflicting requirements.

3. Identification:
    a. Identify on cover or cover plate for device with panelboard identification and circuit number.
    b. Provide warning signs and arc-flash hazard warning labels for electrical equipment.

8-34.3(4) Installation of Straight-Blade Receptacles

1. Comply with manufacturer's published instructions.

2. Reference Standards for Installation: Unless more stringent installation requirements are specified in the Contract Documents or manufacturer's published instructions, comply with the following:
    a) Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
    b) Electrical Safety: NFPA 70E.
    c) Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
    d) Work in Confined Spaces: NFPA 350.
    e) Work in Basements and Other Developed Subterranean Spaces: NFPA 520.
    f) Installing and Maintaining Wiring Devices: NECA NEIS 130.

g) Mounting Heights: Unless otherwise indicated in the Contract Documents, comply with mounting heights recommended in NECA NEIS 1.
h) Receptacle Orientation: Unless otherwise indicated in the Contract Documents, orient receptacle to match configuration diagram in NEMA WD 6.
i) Consult Engineer for resolution of conflicting requirements.

3. Identification:
   a) Provide labels for receptacles and associated electrical equipment.
   b) Identify field-installed conductors, interconnecting wiring, and components.
   c) Label each enclosure with engraved metal or laminated-plastic nameplate.
      i) Identify cover or cover plate for device with panelboard identification and circuit number.
   d) Provide warning signs and arc-flash hazard warning labels for electrical equipment.

8-34.3(5) Field Quality Control of Switches

1. Administrant for Electrical Power Tests and Inspections:
   a. Administer and perform tests and inspections.

2. Tests and Inspections:
   a. Perform tests and inspections in accordance with manufacturers' published instructions.

3. Nonconforming Work:
   a. Unit will be considered defective if it does not pass tests and inspections.
   b. Remove and replace defective units and retest.

4. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

8-34.3(5) Field Quality Control of Straight-Blade Receptacles

1. Administrant for Electrical Power Tests and Inspections:
   a. Administer and perform tests and inspections.

2. Tests and Inspections:
   a. Insert and remove test plug to verify that device is securely mounted.
   b. Verify polarity of hot and neutral pins.
   c. Measure line voltage.
   d. Measure percent voltage drop.
   e. Measure grounding circuit continuity; impedance must be not greater than 2 ohms.
   f. Perform additional installation and maintenance inspections and diagnostic tests in accordance with NECA NEIS 130 and manufacturers' published instructions.

3. Nonconforming Work:
   a. Device will be considered defective if it does not pass tests and inspections.
   b. Remove and replace defective units and retest.

4. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

8-34.3(6) System Startup for Switches

1. Perform startup service.
    a. Complete installation and startup checks in accordance with manufacturer's published instructions.

8-34.3(7) Protection

1. Devices:
    a. Schedule and sequence installation to minimize risk of contamination of wires and cables, devices, device boxes, outlet boxes, covers, and cover plates by plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other materials.
    b. After installation, protect wires and cables, devices, device boxes, outlet boxes, covers, and cover plates from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

8-34.4 Measurement

Wiring devices will be measured per each by for the device type installed including all associated appurtenances:

GFCI WP, per each
Single Pole LTG Sw, FS Enclosure, Lockable Cover, per each

8-34.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"GFCI WP", per each
"Single Pole LTG Sw, FS Enclosure, Lockable Cover", per each

Payment per device shall include the device and related material including all labor and incidentals necessary to complete the Work.

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8-35 BOXES AND COVERS FOR ELECTRICAL SYSTEMS

Section 8-35 shall be added with the following:

8-35.1 Description

This work shall consist of purchase and installation of: outlet boxes, junction boxes, pull boxes, cover plates for device boxes, hoods for outlet boxes, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of box and cover.

8-35.2 Materials

8-35.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-35.2(2) Metallic Outlet Boxes, Device Boxes, Rings, and Covers

1. UL QCIT - Metallic Outlet Boxes and Covers:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN QCIT; including UL 514A.

    b. Standard Features:
        i. Box having pryout openings, knockouts, threaded entries, or hubs in either the sides or the back, or both, for entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting outlet box cover, but without provisions for mounting wiring device directly to box.
        ii. Material: Stainless steel.
        iii. Sheet Metal Depth: Minimum 2 inch (50 mm).
        iv. NEMA 4X

2. UL QCIT - Metallic Conduit Bodies:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN QCIT; including UL 514A.

    b. Standard Features: Means for providing access to interior of conduit or tubing system through one or more removable covers at junction or terminal point. In the United States, conduit bodies are listed in accordance with outlet box requirements.
    c. NEMA 4X

3. UL QCIT - Metallic Device Boxes:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN QCIT; including UL 514A.

    b. Standard Features:
        i. Box with provisions for mounting wiring device directly to box.
        ii. Material: Stainless steel.
        iii. Sheet Metal Depth: minimum 2 inch (50 mm).
        iv. NEMA 4X

4. UL QCIT - Metallic Extension Rings:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

i. UL CCN QCIT; including UL 514A.

b. Standard Features: Ring intended to extend sides of outlet box or device box to increase box depth, volume, or both.
c. Stainless steel
d. NEMA 4X

8-35.2(3) Junction Boxes and Pull Boxes

1. UL BGUZ - Outdoor Sheet Metal Junction and Pull Boxes:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN BGUZ; including UL 50 and UL 50E.

    b. Standard Features:
        i. Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
        ii. Degree of Protection: Type 4X, unless more stringent rating required elsewhere on plans, or standards.

8-35.2(4) Cover Plates for Device Boxes

1. UL QCIT or QCMZ - Metallic Cover Plates for Device Boxes:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN QCIT or UL CCN QCMZ; including UL 514D.

    b. Standard Features:
        i. Cover plate-Securing Screws: Metal with head color to match cover plate finish.
        ii. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
        iii. NEMA 4X
        iv. Cover Plate Material:
            1. 0.032 inch (0.8 mm) thick, Type 302/304 non-magnetic stainless steel with brushed finish.

8-35.2(5) Hoods for Outlet Boxes

1. UL QCIT or QCMZ - Extra-Duty, While-in-Use Hoods for Outlet Boxes:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN QCIT or UL CCN QCMZ; including UL 514D.
        ii. Receptacle, Hood, Cover Plate, Gaskets, and Seals: UL 498 Supplement SA when mated with box or enclosure complying with UL 514A, UL 514C, or UL 50E.
    b. Standard Features:
        i. Mounts to box using fasteners different from wiring device.

ii. Marked "Extra-Duty" in accordance with UL 514D.
iii. NEMA 4X

8-35.2(6) Mounting Hardware

1. Structural supports and mounting brackets shall be Type 316 stainless steel.
2. All fasteners shall be stainless steel, vibration-resistant, and isolated from dissimilar metals.
3. Anchorage to the bridge structure shall be made only at locations shown on the Plans and approved by the Bridge Engineer.

8-35.3 Construction Requirements

8-35.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Listing criteria identified.
    c. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Field quality-control reports.

3. Informational Submittals
    a. Manufacturer’s published instructions.
    b. Field Reports:
        i. Manufacturer’s field reports for field quality-control support.

4. Closeout Submittals
    a. Warranty Documentation.

8-35.3(2) Selection of Boxes and Cover for Electrical Systems

1. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Engineer for resolution of conflicting requirements.
2. Degree of Protection:
    a. Type 4X unless otherwise indicated.
3. Exposed Boxes Installed Less Than 2.5 m (8 ft) Above Floor:
    a. Provide cast-metal boxes. Boxes with knockouts or unprotected openings are prohibited.
    b. Provide exposed cover. Flat covers with angled mounting slots or knockouts are prohibited.

8-35.3(3) Installation of Boxes and Covers for Electrical Systems

1. Comply with manufacturer's published instructions.

2. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:
    a. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
    b. Electrical Safety: NFPA 70E.
    c. Commissioning of Active and Passive Fire Protection Features: NFPA 3 and NFPA 4.
    d. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
    e. Communications Work: BICSI N1.
    f. Life Safety and Means of Egress Work: NFPA 101.
    g. Emergency and Standby Power Work: NFPA 110, NFPA 111, and NECA NEIS 416.
    h. Work in Confined Spaces: NFPA 350.
    i. Work in Basements and Other Developed Subterranean Spaces: NFPA 520.
    j. Outlet, Device, Pull, and Junction Boxes: Article 314 of NFPA 70.
    k. Consult Engineer for resolution of conflicting requirements.

3. Special Installation Techniques:
    a. Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures.
    b. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
    c. Fasten junction and pull boxes to, or support from, building structure. Do not support boxes by conduits.
    d. Do not install aluminum boxes, enclosures, or fittings in contact with concrete or earth.
    e. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to ensure a continuous ground path.

4. Interfaces with Other Work:
    a. Identification: Provide labels for boxes and associated electrical equipment.
        i. Identify field-installed conductors, interconnecting wiring, and components.
        ii. Label each enclosure with engraved metal or laminated-plastic nameplate.
        iii. Provide warning signs and arc-flash hazard warning labels for electrical equipment.

8-35.3(4) Field Quality Control of Boxes and Covers

1. Administrant for Electrical Power Tests and Inspections:
    a. Administer and perform tests and inspections.

2. Tests and Inspections:
    a. Perform manufacturer's recommended tests and inspections.

3. Nonconforming Work:
    a. Boxes and covers will be considered defective if they do not pass tests and inspections.

b. Remove and replace defective units and retest.

4. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

8-35.3(5) Cleaning

1. Remove construction dust and debris from boxes before installing cover plates, covers, and hoods.

8-35.3(6) Protection

1. After installation, protect boxes from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

8-35.4 Measurement

Boxes and covers will be measured by quantity per type installed and all associated appurtenances.

Junction Box (FSCT ¾", 3 Hub with Cover), per each
Junction Box N4X-6"x6'x4' Sc Cvr, per each

8-35.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"Junction Box (FSCT ¾", 3 Hub with Cover)", per each
"Junction Box N4X-6"x6'x4' Sc Cvr", per each

Payment per device shall include the boxes, covers, and related material including all labor and incidentals necessary to complete the Work.

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8-36 Conduits for Electrical Systems

Section 8-36 shall be added with the following:

8-36.1 Description

This work shall consist of purchase and installation of: conduit, fittings, joint compounds, solvent cements and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of conduit, fitting, joint compound, and solvent cement.

8-36.2 Materials

8-36.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-36.2(2) Type ERMC Duct Raceways, Elbows, Couplings, and Nipples

1. UL DYIX - PVC-Coated-Steel Electrical Rigid Metal Conduit (ERMC-S-PVC), Elbows, Couplings, and Nipples:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN DYIX; including UL 6.

    b. Standard Features:
        i. Exterior Coating: PVC complying with NEMA RN 1.
        ii. Interior Coating: Zinc with organic top coating.
        iii. Minimum Trade Size: Metric designator 21 (trade size 3/4).

    c. Other Available Features Required by the Project:
        i. Expansion and Deflection Fittings: UL 651 with flexible bonding jumper.

8-36.2(2) Type PVC Duct Raceways And Fittings

1. UL DZYR - Schedule 80 Rigid PVC Conduit (PVC-80) and Fittings:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN DZYR; including UL 651.

    b. Standard Features:
        i. Dimensional Specifications: Schedule 80.
        ii. Minimum Trade Size: Metric designator 21 (trade size 3/4).
        iii. Markings: For use with maximum 90 deg C wire.

8-36.2(3) Fittings for Conduit, Tubing, and Cable

1. UL DWTT - Fittings for ERMC-S-PVC Duct Raceways:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN DWTT; including UL 514B.

    b. Standard Features:
        i. Material: PVC coated Steel.
        ii. Coupling Method: Threaded
        iii. Expansion and Deflection Fittings: UL 651 with flexible bonding jumper.

8-36.2(4) Joint Compounds

1. UL FOIZ - Electrically Conductive Corrosion-Resistant Compound for Threaded Conduit:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. UL CCN FOIZ; including UL Subject 2419.

8-36.2(5) Solvent Cements

1. UL VBEW - Solvent Cements for Nonmetallic Duct Raceways and Fittings:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Solvent Cements: UL CCN VBEW; including UL 340.
        ii. Solvent Cement Compatibility with PVC Conduit Fittings: UL CCN DWTT; including UL 514B. Follow solvent manufacturer's published instructions.
        iii. Solvent Cement Compatibility with Rigid PVC Conduit: UL CCN DZYR; including UL 651. Follow solvent manufacturer's published instructions.
        iv. Solvent Cement Compatibility with Rigid EPEC and HDPE Underground Conduit: UL CCN EAZX; including UL 651A. Follow solvent manufacturer's published instructions.

8-36.3 Construction Requirements

8-36.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Listing criteria identified.
    c. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Field quality-control reports.

3. Closeout Submittals
    a. Warranty Documentation.

8-36.3(2) Selection of Conduits Cover for Electrical Systems

1. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Architect for resolution of conflicting requirements.
2. Outdoors:
    a. Direct Buried: PVC-80.

3. Indoors:

a. Exposed and Not Subject to Physical Damage: ERMC-S-PVC.
b. Damp or Wet Locations: ERMC-S-PVC.

4. Duct Fittings: Select fittings in accordance with NEMA FB 2.10 guidelines.
    a. ERMC-S-PVC: Provide threaded-type fittings unless otherwise indicated.

8-36.3(3) Installation of Conduits for Electrical Systems

1. Comply with manufacturer's published instructions.
2. Ensure that all penetrations into the box structure shall maintain the integrity of the structural reinforcing steel.
3. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:
    a. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
    b. Electrical Safety: NFPA 70E.
    c. Commissioning of Active and Passive Fire Protection Features: NFPA 3 and NFPA 4.
    d. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
    e. Communications Work: BICSI N1.
    f. Work in Confined Spaces: NFPA 350.
    g. Work in Basements and Other Developed Subterranean Spaces: NFPA 520.
    h. Type ERMC-S: Article 344 of NFPA 70 and NECA NEIS 101.
    i. Type PVC: Article 356 of NFPA 70 and NECA NEIS 111.
    j. Expansion Fittings: NEMA FB 2.40.
    k. Consult Engineer for resolution of conflicting requirements.

4. Special Installation Techniques:
    a. General Requirements for Installation of Duct Raceways:
        i. Complete duct raceway installation before starting conductor installation.
        ii. Provide stub-ups through floors with coupling threaded inside for plugs, set flush with finished floor. Plug coupling until conduit is extended above floor to final destination or a minimum of 2 ft (0.6 m) above finished floor.
        iii. Make bends in duct raceway using large-radius preformed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii requirements. Provide only equipment specifically designed for material and size involved.
        iv. Install conduits parallel or perpendicular to building lines.
        v. Support conduit within 12 inch (300 mm) of enclosures to which attached.
        vi. Install devices to seal duct raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal interior of duct raceways at the following points:
            1. Where an underground service duct raceway enters a building or structure.
            2. Conduit extending from interior to exterior of building.
            3. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.

4. Where otherwise required by NFPA 70.

vii. Keep duct raceways at least 6 inch (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal duct raceway runs above water and steam piping.

viii. Cut conduit perpendicular to the length. For conduits metric designator 53 (trade size 2) and larger, use roll cutter or a guide to make cut straight and perpendicular to the length. Ream inside of conduit to remove burrs.

ix. Install pull wires in empty duct raceways. Provide polypropylene or monofilament plastic line with not less than 200 lb (90 kg) tensile strength. Leave at least 12 inch (300 mm) of slack at both ends of pull wire. Cap underground duct raceways designated as spare above grade alongside duct raceways in use.

x. Install duct raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts hand tight, plus one-quarter turn more.

1. Termination fittings with shoulders do not require two locknuts.

xi. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to metric designator 35 (trade size 1-1/4) and insulated throat metal bushings on metric designator 41 (trade size 1-1/2) and larger conduits terminated with locknuts.

b. Type ERMC-S-PVC:

i. Follow manufacturer's installation instructions for clamping, cutting, threading, bending, and assembly.

ii. Provide PVC-coated sealing locknut for exposed male threads transitioning into female NPT threads that do not have sealing sleeves, including transitions from PVC couplings/female adapters to Type ERMC-S-PVC elbows in direct-burial applications. PVC-coated sealing locknuts must not be used in place of conduit hub. PVC-coated sealing locknut must cover exposed threads on Type ERMC-S-PVC duct raceway.

iii. Coat field-cut threads on PVC-coated duct raceway with manufacturer-approved corrosion-preventing conductive compound prior to assembly.

c. Types PVC:

i. Do not install Type PVC conduit where ambient temperature exceeds 122 deg F (50 deg C). Conductor ratings must be limited to 75 deg C except where installed in a trench outside buildings with concrete encasement, where 90 deg C conductors are permitted.

ii. Comply with manufacturer's published instructions for solvent welding and fittings.

iii. Join joints with solvent cement in accordance with manufacturer's published instructions and allowed to cure before handling. Joints to be bent, pushed, or pulled must set for minimum 24 h after joining.

d. Duct Fittings: Install fittings in accordance with NEMA FB 2.10 guidelines.

i. ERMC-S-PVC: Provide only fittings listed for use with this type of conduit. Patch and seal joints, nicks, and scrapes in PVC coating after

installing conduits and fittings. Provide sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.

e. Expansion-Joint Fittings:
    i. Install type and quantity of fittings that accommodate temperature change listed for the following locations:
        1. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F (70 deg C) temperature change.
    ii. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F (0.06 mm per meter of length of straight run per deg C) of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F (0.0115 mm per meter of length of straight run per deg C) of temperature change for metal conduits.
    iii. Install expansion fittings at locations where conduits cross building or structure expansion joints.
    iv. Install expansion-joint fitting with position, mounting, and piston setting selected in accordance with manufacturer's published instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

f. Identification: Provide labels for conduit assemblies, duct raceways, and associated electrical equipment.
    i. Provide warning signs.

g. Interfaces with Other Work:
    i. Provide conduit hangers and supports.

8-36.3(4) Field Quality Control of Conduits for Electrical Systems

1. Administrant for Electrical Power Tests and Inspections:
    a. Administer and perform tests and inspections.

2. Tests and Inspections:
    a. Perform manufacturer's recommended tests and inspections.
    b. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. If obstructions are indicated, remove obstructions and retest.
3. Conduit Placement:
    a. Verify that center-line location and offsets are in accordance with the Drawings.
    b. Verify that hangers and supports for conduits are attached to structure.
    c. Verify that nuts on bolts or hanger rods are secure.
    d. Verify that expansion devices are installed at locations indicated on the Drawings and the Specifications.
    e. Verify that ends are cut square to provide flush-butting surfaces when spliced and inside edges are free of burrs that could impede installation of cables.

f. Verify minimum separation of utilities, or that approved mechanical protection has been provided to surrounding conduit(s) where minimum separation cannot be achieved.

4. Document all changes on Record Drawings.

5. Nonconforming Work:
   a. Conduit will be considered defective if it does not pass tests and inspections.
   b. Remove and replace defective units and retest.

6. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

8-36.3(5) Cleaning

1. Verify that bentonite or other drilling fluids are contained and removed, and site is restored to its original or improved condition.

8-36.3(6) Protection

1. Protect coatings, finishes, and cabinets from damage and deterioration.
   a. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
   b. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

8-36.4 Measurement

Conduit will be measured by the linear foot per type of conduit installed and all associated anchors, fasteners, couplings, elbows and other appurtenances for the following:

1-1/2 inch PVC Coated RGS Conduit, per linear foot
1-1/4 inch PVC Coated GRS Conduit, per linear foot
1 inch PVC Coated RGS Conduit, per linear foot
¾ inch PVC Coated RGS Conduit, per linear foot

Conduit will be measured per each for the type of conduit installed per the plans and all associated anchors, fasteners, couplings, elbows and other appurtenances for the following:

2 inch Conduit Penetration with Sleeve (2” 316 SST), per each.

8-36.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

“1-1/2 inch PVC Coated RGS Conduit”, per linear foot
“1-1/2 inch PVC Coated GRS Conduit”, per linear foot
“1-1/4 inch PVC Coated RGS Conduit”, per linear foot
“1 inch PVC Coated RGS Conduit”, per linear foot
“¾ inch PVC Coated RGS Conduit”, per linear foot

Payment per linear foot for type of conduit installed and all associated anchors, fasteners, couplings, elbows and other appurtenances, and related material including all labor and incidentals necessary to complete the Work.

"2 inch Conduit Penetration with Sleeve (2" 316 SST)", per each.

Payment per each for type of conduit installed per the plans and all associated anchors, fasteners, couplings, elbows and other appurtenances, and related material including all labor and incidentals necessary to complete the Work

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8-37 Low-Voltage Electrical Power Conductors and Cables

Section 8-37 shall be added with the following:

8-37.1 Description

This work shall consist of purchase and installation of: conductors, connectors and splices, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of conductor, connector and splice.

8-37.2 Materials

8-37.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-37.2(2) Conductor Material Application

1. Branch Circuits:
    a. Copper:
        i. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

8-37.2(3) Copper Wire

1. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
2. Standards:
    a. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
    b. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
3. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.
4. Conductor Insulation:

a. Type XHHW-2. Comply with UL 44.

8-37.2(4) Connectors and Splices

1. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.
3. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.
    a. Material: Copper.
    b. Type: Provide 1-hole lugs for 8 AWG through 4/0 AWG. Provide 2-hole lugs for 250 AWG and larger. Provide with long barrels.
    c. Termination: Compression.

8-37.3 Construction Requirements

8-37.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Listing criteria identified.
    c. Indicate type, use, location, and termination locations.
    d. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Field quality-control reports.

3. Closeout Submittals
    a. Warranty Documentation.

8-37.3(2) Installation of Conductors and Cables

1. Complete raceway installation between conductor and cable termination points according to Section 8-36 "Conduits for Electrical Systems" prior to pulling conductors and cables.

2. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

3. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

4. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

8-37.3(3) Connections

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

2. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

3. Wiring at Outlets: Install conductor at each outlet, with at least 6 inch (150 mm) of slack.

8-37.3(4) Identification

1. Identify and color-code conductors and cables according to specifications.

2. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

8-37.3(5) Sleeve and Sleeve-seal Installation for electrical penetrations

1. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements of specifications.

8-37.3(5) Field Quality Control

1. Document all changes on Record Drawings.

2. Nonconforming Work:
    a. Conduit will be considered defective if it does not pass tests and inspections.
    b. Remove and replace defective units and retest.

3. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

8-37.4 Measurement

Conductor will be measured by the linear foot per type of conductor installed and all associated connectors and splices.

8-37.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"#2 XHHW - 2 600V Cu", per linear foot
"#8 HHHW -2 Green" , per linear foot
"#10 XHHW-2", per linear foot

Payment shall be for full installation and related material including all labor and incidentals such as connectors and splices necessary to complete the Work.

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8-38 Grounding and Bonding for Electrical Systems

Section 8-38 shall be added with the following:

8-38.1 Description

This work shall consist of purchase and installation of: Grounding and bonding systems including: Grounding and bonding conductors, clamps, bushings, hubs, connectors, intersystem bonding bridge grounding connectors, busbars, grounding electrodes, grounding electrode enclosures, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of conductor, clamps, blushing, hubs, connectors, intersystem bonding bridge grounding connectors, busbars, grounding electrodes, grounding electrode enclosures.

8-38.2 Materials

8-38.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-38.2(2) Grounding and Bonding Conductors

1. Equipment Grounding Conductor:
    a. Standard Features: 600 V, XHHW-2, copper wire or cable, green color, in accordance with Section "Low-Voltage Electrical Power Conductors and Cables."
2. Isolated Equipment Grounding Conductor:
    a. Standard Features: 600 V, XHHW-2, copper wire or cable, green color with one or more yellow stripes, in accordance with Section "Low-Voltage Electrical Power Conductors and Cables."
3. ASTM - Bare Copper Grounding and Bonding Conductor:
    a. Standard Features: Complying with one or more of the following:
        i. Soft or Annealed Copper Wire: ASTM B3.
        ii. Concentric-Lay Stranded Copper Conductor: ASTM B8.
        iii. Tin-Coated Soft or Annealed Copper Wire: ASTM B33.
        iv. 19-Wire Combination Unilay-Stranded Copper Conductor: ASTM B787/B787M.

8-38.2(3) Grounding and Bonding Clamps

1. Description: Clamps suitable for attachment of grounding and bonding conductors to grounding electrodes, pipes, tubing, and rebar. Grounding and bonding clamps specified in this article are also suitable for use with communications applications.

2. UL KDER - Hex-Fitting-Type Pipe and Rod Grounding and Bonding Clamp:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
    b. Standard Features:
        i. Two pieces with stainless steel bolts.
        ii. Clamp Material: Copper or copper alloy.
        iii. Listed for outdoor use.
3. UL KDER - U-Bolt-Type Pipe and Rod Grounding and Bonding Clamp:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
    b. Standard Features:
        i. Clamp Material: Copper or copper alloy.
        ii. Listed for outdoor use.

8-38.2(4) Grounding and Bonding Bushings

1. Description: Bonding bushings connect conduit fittings, tubing fittings, threaded metal conduit, and unthreaded metal conduit to metal boxes and equipment enclosures, and have one or more bonding screws intended to provide electrical continuity between bushing and enclosure. Grounding bushings have provision for connection of bonding or grounding conductor and may or may not also have bonding screws.

2. UL KDER - Bonding Bushing:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
    b. Standard Features: Threaded bushing with insulated throat.
3. UL KDER - Grounding Bushing:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
    b. Standard Features: Threaded bushing with insulated throat and mechanical-type wire terminal.

8-38.2(5) Grounding and Bonding Hubs

1. UL KDER - Pressure-Type Grounding and Bonding Busbar Cable Connector:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.

b. Standard Features: Copper or copper alloy, for compression bonding of one or more conductor directly to copper busbar. Listed for direct burial.

2. UL KDER - Lay-In Lug Mechanical-Type Grounding and Bonding Busbar Terminal:
   a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
      i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
   b. Standard Features: Mechanical-type, copper rated for direct burial terminal with set screw.
3. UL KDER - Split-Bolt Service-Post Pressure-Type Grounding and Bonding Busbar Terminal:
   a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
      i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
   b. Standard Features: Bolts that surround cable and bond to cable under compression when nut is tightened after assembly is screwed into busbar opening.
4. UL KDER - Split-Bolt Pressure-Type Grounding and Bonding Cable Connector:
   a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
      i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
   b. Standard Features: Bolts that surround cable and bond to cable under compression when nut is tightened.
      i. Copper.

8-38.2(6) Grounding and Bonding Busbars

1. Description: Miscellaneous grounding and bonding devices that serve as common connection for multiple grounding and bonding conductors.
2. UL KDER - Equipment Room Grounding and Bonding Busbar:
   a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
      i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
   b. Standard Features:
      i. Bus: Rectangular bar of annealed copper.
      ii. Mounting Stand-Off Insulators: Lexan or PVC.
         1. Comply with UL 891 for use in 600 V switchboards, impulse tested at 5000 V.
3. Other Available Features Required by the Project:
4. Mounting Hardware: Stand-off brackets that provide at minimum 2 inch (50 mm) clearance to access rear of bus. Brackets and bolts must be stainless steel.

8-38.2(7) Grounding (Earthing) Electrodes

1. UL KDER - Rod Electrode:

a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
    i. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
b. Standard Features: Copper-clad steel; 3/4 inch by 10 ft (19 mm by 3 m).

8-38.2(8) Grounding Electrode Enclosures

1. Description: Enclosures designed to protect grounding electrodes from damage while providing access for inspection and testing of the grounding system.
2. Grounding Electrode Access Well Enclosure:
    a. Standard Features:
        i. Well Material: Concrete.
        ii. Cover Material: Cast iron or Concrete.
        iii. Cover Strength: as required for application based off location installed.
    b. Other Available Features Required by the Project:
        i. Round:
            1. Nominal Diameter: 10 inch (250 mm).
            2. Nominal Height: 12 inch (300 mm).
            3. Slotted sides for installation after grounding connections made.
        ii. Rectangular:
            1. Nominal Width: 12 inch (300 mm).
            2. Nominal Length: 12 inch (300 mm).
            3. Nominal Height: 12 inch (300 mm).

8-38.3 Construction Requirements

8-38.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Product Listing: Include copy of unexpired approval letter, on letterhead of qualified electrical testing agency, certifying product's compliance with specified listing criteria.
    c. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Field quality-control reports.

3. Closeout Submittals
    a. Operation and Maintenance Data:
        i. Include the following:
            1. Plans showing locations of grounding features described in "Field Quality Control for Grounding and Bonding" Article, including the following:
                a. Grounding electrode access enclosures.

b. Grounding electrodes.
c. Grounding arrangements and connections for separately derived systems.

8-38.3(2) Qualifications

1. Electrical Power Testing and Inspecting Agency: Entities possessing active credentials from a qualified electrical testing laboratory recognized by authorities having jurisdiction.
    a. On-site electrical testing supervisors must possess active NICET EPT Technician III certification.

8-38.3(3) Service Conditions for Electrical Equipment

1. Soil Resistivity: Grounding (earthing) Work on the Project must account for soil resistivity conditions.
2. Electrical and ICT Equipment Grounding (Earthing): Do not exceed 25 Ω resistance to ground (earth).
    a. Contact Engineer for resolution if 25 Ω specified resistance to ground (earth) is not attained after complying with prescriptive requirements in Article 250 of NFPA 70.

8-38.3(4) Examination

1. Examine facility's grounding electrode system and equipment grounding for compliance with requirements for maximum ground-resistance level and other conditions affecting performance of grounding and bonding of electrical system.

2. Inspect test results of grounding system measured at point of electrical service equipment connection.

3. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

4. Proceed with connection of electrical service equipment only after unsatisfactory conditions have been corrected.

8-38.3(5) Selection of Grounding and Bonding Products

1. Grounding and Bonding Conductors:
    a. Provide solid conductor for 10 AWG and smaller, and stranded conductors for 8 AWG and larger unless otherwise indicated.
    b. Custom-Length Insulated Equipment Bonding Jumpers: 6 AWG, 19-strand, Type THHN.
    c. Bonding Cable: 28 kcmil, 14 strands of 17 AWG conductor, 1/4 inch (6 mm) in diameter.
    d. Bonding Conductor: 4 AWG or 6 AWG, stranded conductor.
    e. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inch (41 mm) wide and 1/16 inch (1.6 mm) thick.

f. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inch (41 mm) wide and 1/16 inch (1.6 mm) thick.
g. Underground Grounding Conductors: Install barecopper conductor, 2/0 AWG minimum.

2. Grounding and Bonding Connectors:
   a. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
   b. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
   c. Connections to Ground Rods at Test Wells: Bolted connectors.
3. Grounding and Bonding Busbars: Provide in electrical equipment rooms, in rooms housing service equipment, and elsewhere as indicated on the Drawings.

8-38.3(6) Installation of Grounding and Bonding

1. Comply with manufacturer's published instructions.

2. Reference Standards:
   a. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
   b. Electrical Maintenance: NFPA 70B.
   c. Electrical Safety: NFPA 70E.
   d. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
   e. Communications Work: BICSI N1.
   f. Work in ITE Rooms: NFPA 75.
   g. Work in Health Care Facilities: NFPA 99 and Article 517 of NFPA 70.
   h. Emergency and Standby Power Work: NFPA 110, NFPA 111, and NECA NEIS 416.
   i. Work in Confined Spaces: NFPA 350.
   j. Work in Basements and Other Developed Subterranean Spaces: NFPA 520.
   k. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.
   l. Consult Architect for resolution of conflicting requirements.

3. Special Techniques:
   a. Grounding and Bonding Conductors:
      i. Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
      ii. Underground Grounding Conductors:
         1. Bury at least 30 inch (750 mm) below grade.
         2. Duct-Bank Grounding Conductor: Bury 12 inch (300 mm) above duct bank when indicated as part of duct-bank installation.
   b. Grounding and Bonding Connectors: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection

hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.

i. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
ii. Make connections with clean, bare metal at points of contact.
iii. Make aluminum-to-steel connections with stainless steel separators and mechanical clamps.
iv. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
v. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
vi. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
    1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate adjacent parts.
    2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
    3. Use exothermic-welded connectors for outdoor locations; if disconnect-type connection is required, use bolted clamp.
vii. Grounding and Bonding for Piping:
    1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use bolted clamp connector or bolt lug-type connector to pipe flange by using one of lug bolts of flange. Where dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
    2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with bolted connector.
    3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
viii. Grounding for Steel Building Structure: Install driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 ft (18 m) apart.

c. Grounding and Bonding Busbars:
    i. Install busbar horizontally, on insulated spacers 2 inch (50 mm) minimum from wall, 6 inch (150 mm) above finished floor unless otherwise indicated.
    ii. Where busbars are indicated on both sides of doorways, route bonding conductor up to top of door frame, across top of doorway, and down; connect to continuation of horizontal busbar.
d. Electrodes:

i. Ground Rods: Drive rods until tops are 2 inch (50 mm) below finished floor or final grade unless otherwise indicated.
    1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
    2. Use exothermic welds for below-grade connections.
ii. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 260543 "Underground Ducts and Raceways for Electrical Systems," and must be at least 12 inch (300 mm) deep, with cover.
    1. Install at least one test well for each service unless otherwise indicated. Install at ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.

e. Grounding at Service:
    i. Equipment grounding conductors and grounding electrode conductors must be connected to ground busbar. Install main bonding jumper between neutral and ground buses.

f. Grounding Underground Distribution System Components:
    i. Duct-Bank Grounding Conductor: Bury 12 inch (300 mm) above duct bank when indicated as part of duct-bank installation.
    ii. Comply with IEEE C2 grounding requirements.
    iii. Grounding Handholes: Install driven ground rod through handhole floor, close to wall, and set rod depth so 4 inch (100 mm) will extend above finished floor. If necessary, install ground rod before manhole is placed and provide 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inch (50 mm) above to 6 inch (150 mm) below concrete. Seal floor opening with waterproof, nonshrink grout.

g. Equipment Grounding and Bonding:
    i. Install insulated equipment grounding conductors with feeders and branch circuits.
    ii. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
        1. Feeders and branch circuits.
        2. Lighting circuits.
        3. Receptacle circuits.
        4. Flexible raceway runs.
        5. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.
    iii. Metallic Fences: Comply with requirements of IEEE C2.
        1. Grounding Conductor: Bare copper, not less than 8 AWG.
        2. Gates: Must be bonded to grounding conductor with flexible bonding jumper.
        3. Barbed Wire: Strands must be bonded to grounding conductor.

h. Fence Grounding:

i. Grounding Method: At each grounding location, drive grounding rod vertically until top is 6 inch (150 mm) below finished grade. Connect rod to fence with 6 AWG conductor. Connect conductor to each fence component at grounding location.
ii. Fences greater than 100 ft (30 m) of Buildings, Structures, Walkways, and Roadways: Ground fence at maximum intervals of 1500 ft (450 m).
iii. Fences within 100 ft (30 m) of Buildings, Structures, Walkways, and Roadways: Ground fence at maximum intervals of 750 ft (225 m).
1. Gates and Other Fence Openings: Ground fence on each side of opening.
a. Bond metal gates to gate posts by connecting bonding jumper between gate post and gate frame.
b. Bond across openings, with and without gates, except at openings indicated as intentional fence discontinuities. Use 2 AWG wire and bury it at least 18 inch (460 mm) below finished grade.
iv. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of power line crossing and at maximum distance of 150 ft (45 m) on each side of crossing.
v. Bonding to Lightning-Protection System: If fence terminates at lightning-protected building or structure, ground fence and bond fence grounding conductor to lightning-protection down conductor or lightning-protection grounding conductor, complying with NFPA 780.

4. Protection: After installation, protect grounding and bonding cables and equipment from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

8-38.3(7) Field Quality Control for Grounding and Bonding

1. Administrant for Electrical Power Tests and Inspections:
a. Engage qualified electrical testing and inspecting agency to administer and perform tests and inspections.
2. Tests and Inspections:
a. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
b. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with calibrated torque wrench in accordance with manufacturer's published instructions.
c. Test completed grounding system at each location where maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells , and at individual ground rods. Make tests at ground rods before conductors are connected.
i. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
ii. Perform tests by fall-of-potential method in accordance with IEEE Std 81.

iii. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

d. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to record of tests and observations. Include number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

3. Nonconforming Work:
   a. Grounding system will be considered defective if it does not pass tests and inspections.
   b. Remove and replace defective components and retest.
4. Collect, assemble, and submit test and inspection reports.
   a. Report measured ground resistances that exceed the following values:
      i. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 Ω**.**
      ii. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 Ω.
      iii. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 Ω.
      iv. Power Distribution Units or Panelboards Serving Electronic Equipment: 3 Ω.
      v. Substations and Pad-Mounted Equipment: 5 Ω.
      vi. Manhole Grounds: 10 Ω.

8-38.4 Measurement

Grounding and bonding systems including: Grounding and bonding conductors, clamps, bushings, hubs, connectors, intersystem bonding bridge grounding connectors, busbars, grounding electrodes, grounding electrode enclosures will be measured by the linear foot per type of grounding and bonding conductor installed and all associated clamps, bushings, hubs, connectors, busbars, grounding electrodes and grounding electrode enclosures by quantity of each type.

8-38.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"#8 XHHW – 2 Ground Conductor" per linear foot and shall be for full installation and related material including all labor and incidentals such as connectors and clamps necessary to complete the Work.

"Grounding Panel" will be paid for per each and shall be for full installation and related material including all labor and incidentals necessary to complete the work.

"Grounding Well" will be paid for per each and shall be for full installation and related material including all labor and incidentals necessary to complete the work.

(******)

8-39 Underground Ducts and Raceways for Electrical Systems

Section 8-39 shall be added with the following:

8-39.1 Description

This work shall consist of purchase and installation of: PVC raceways, fittings, solvent cements, duct accessories, handholes and boxes for exterior underground wiring, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type PVC raceways, fittings, solvent cements, duct accessories, handholes and boxes for exterior underground wiring.

8-39.2 Materials

8-39.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-39.2(2) Type PVC Raceways and Fittings

1. Performance Criteria:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics: UL 651 and UL CCN DZYR.

2. Schedule 80 Rigid PVC Conduit (PVC-80) and Fittings:
    a. Dimensional Specifications: Schedule 80.
    b. Options:
        i. Minimum Trade Size: Metric designator 21 (trade size 3/4).
        ii. Markings: For use with maximum 90 deg C wire.

8-39.2(3) Fittings for Conduit, Tubing, and Cable

1. Performance Criteria:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

8-39.2(4) Solvent Cements

1. Performance Criteria:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics: As recommended by conduit manufacturer in accordance with UL 514B and UL CCN DWTT.

8-39.2(5) Duct Accessories

1. Duct Spacers: Factory-fabricated, rigid, PVC interlocking spacers; sized for type and size of duct with which used, and selected to provide minimum duct spacing indicated while supporting duct during concreting or backfilling.

8-39.2(6) Handholes and Boxes for Exterior Underground Wiring

1. Performance Criteria:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics:
        i. ASTM C858 for design and manufacturing processes.
        ii. SCTE 77.
2. Source Quality Control:
    a. Precast Concrete Utility Structures: Test and inspect in accordance with ASTM C1037.
        i. Tests of materials must be performed by independent testing agency.
        ii. Strength tests of complete boxes and covers must be by independent testing agency or manufacturer. Qualified registered professional engineer must certify tests by manufacturer.
3. Precast Concrete Handholes and Boxes:
    a. Description: Factory-fabricated, reinforced-concrete, monolithically poured walls and bottom unless open-bottom enclosures are indicated. Frame and cover must form top of enclosure and must have load rating consistent with that of handhole or box.
    b. Configuration: Units must be designed for flush burial and have open bottom unless otherwise indicated.
    c. Frame and Cover:
        i. Weatherproof steel frame, with steel cover with recessed cover hook eyes and tamper-resistant, captive, cover-securing bolts.
        ii. Cover Finish: Nonskid finish must have minimum coefficient of friction of 0.50.
        iii. Cover Legend: Molded lettering, per Washington State Department of Transportation standards.
    d. Extensions and Slabs: Designed to mate with bottom of enclosure. Same material as enclosure.
        i. Extension must provide increased depth of 12 inch (300 mm).
        ii. Slab: Same dimensions as bottom of enclosure, and arranged to provide closure.
    e. Joint Sealant: Asphaltic-butyl material with adhesion, cohesion, flexibility, and durability properties necessary to withstand maximum hydrostatic pressures at installation location with ground-water level at grade.
    f. Knockout Panels: Precast openings in walls, arranged to match dimensions and elevations of approaching duct, plus additional 12 inch (300 mm) vertically and horizontally to accommodate alignment variations.
    g. Duct Entrances in Handhole Walls: Cast end-bell or duct-terminating fitting in wall for each entering duct.
    h. Handholes 12 inch wide by 24 inch long (300 mm wide by 600 mm long) and larger must have inserts for cable racks and pulling-in irons installed before concrete is poured.

8-39.2(7) Duct Sealing

1. Duct-Sealing Compound: Nonhardening, safe for contact with human skin, not deleterious to cable insulation, and workable at temperatures as low as 35 deg F (2 deg C). Compound must be capable of withstanding temperature of 300 deg F (150 deg C) without slump and adhering to clean surfaces of plastic ducts, metallic conduit, conduit and duct coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and common metals. Duct sealing compound must be removable without damaging ducts or cables.

2. Inflatable Duct-Sealing System: Wraparound inflatable bladder that seals ducts that are empty or containing conductors against air and water infiltration. System is suitable for use in steel, plastic, or concrete ducts and penetrations.

8-39.3 Construction Requirements

8-39.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Listing criteria identified.
    c. Indicate type, use, location, and termination locations.
    d. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Closeout Submittals
    a. Warranty Documentation.

8-39.3(2) Preinstallation Meetings

1. Preinstallation Conference: Conduct conference at Project site.

2. Preinstallation Coordination Meeting(s): For underground ducts and raceways. Conduct meeting(s) before installation.

8-39.3(3) Action Submittals

1. Product Data: For each type of product.
    a. For concrete and steel used in precast concrete handholes, also include product certificates as required by ASTM C858.
2. Field Quality-Control Submittals:
    a. Field quality-control reports.
3. Sustainable design submittals.

8-39.3(4) Informational Submittals

1. Certificates:

a. For concrete and steel used in precast concrete handholes, as required by ASTM C858.

2. Manufacturers' Published Instructions: Prepare and submit installation, testing, and operating instructions for product.
3. Source Quality-Control Submittals:
    a. Source quality-control reports.

8-39.3(5) Preparation

1. Coordinate layout and installation of duct, duct bank, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in field. Notify Architect if there is conflict between areas of excavation and existing structures or archaeological sites to remain.

2. Coordinate elevations of duct and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of duct and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as required to suit field conditions and to ensure that duct and duct bank will drain to manholes and handholes, and as approved by Architect.

8-39.3(6) Selection of Underground Ducts

1. Duct for Electrical Feeders: PVC-80, unless otherwise indicated.

2. Duct for Electrical Branch Circuits: PVC-80 unless otherwise indicated.

8-39.3(7) Selection of Underground Enclosures

1. Handholes and Boxes:
    a. Units in Roadways and Other Deliberate Traffic Paths: Precast concrete, AASHTO HB 17, H-20 structural load rating.
    b. Units in Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Precast concrete, AASHTO HB 17, H-10 structural load rating.
    c. Units in Sidewalk and Similar Applications with Safety Factor for Nondeliberate Loading by Vehicles: Precast concrete, AASHTO HB 17, H-10 structural load rating.
    d. Cover design load must not exceed load rating of handhole or box.

8-39.3(8) Installation of Ducts and Duct Banks

1. Reference Standards:
    a. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NEMA TCB 2 for installation of underground ducts and duct banks.
    b. Consult Engineer for resolution of conflicting requirements.
2. Special Techniques:
    a. Where indicated on Drawings, install duct, spacers, and accessories into duct-bank configuration shown. Duct installation requirements in this Section also apply to duct bank.

b. Steel raceway, bends, and fittings in single duct run or duct bank must be of same type.
c. Curves and Bends:
    i. Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with minimum radius of 48 inch (1200 mm), both horizontally and vertically, at other locations unless otherwise indicated.
    ii. Duct must have maximum of 180 degrees of bends between pull points.
d. Joints: Use solvent-cemented joints in nonmetallic duct and fittings and make watertight in accordance with manufacturer's published instructions. Stagger couplings so those of adjacent duct do not lie in same plane. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with minimum 3 inch (75 mm) of concrete for minimum of 12 inch (300 mm) on each side of coupling.
    i. Install insulated grounding bushings on steel raceway terminations that are less than 12 inch (300 mm) below grade or floor level and do not terminate in hubs.
e. Installation Adjacent to High-Temperature Steam Lines: Where duct is installed parallel to underground steam lines, perform calculations showing duct will not be subject to environmental temperatures above 104 deg F (40 deg C). Where environmental temperatures are calculated to rise above 104 deg F (40 deg C), and anywhere duct crosses above underground steam line, install insulation blankets listed for direct burial to isolate duct bank from steam line to maintain maximum environmental temperature of 104 deg F (40 deg C).
f. End Bell Entrances to Concrete Handholes: Use end bells, spaced approximately 10 inch (250 mm) o.c. for 5 inch (125 mm) duct, and vary proportionately for other duct sizes.
    i. Begin change from regular spacing to end-bell spacing 10 ft (3 m) from end bell, without reducing duct slope and without forming trap in line.
    ii. Grout end bells into structure walls from both sides to provide watertight entrances.
g. Sealing: Provide temporary closure at terminations of duct with pulled cables. Seal spare duct at terminations. Use sealing compound and plugs to withstand at least 15 psig (1.03 MPa) hydrostatic pressure.
h. Direct-Buried Duct and Duct Bank:
    i. Width: Excavate trench 12 inch (300 mm) wider than duct on each side.
    ii. Depth: Install top of duct at least 36 inch (900 mm) below finished grade unless otherwise indicated.
    iii. Set elevation of top of duct bank below frost line.
    iv. Place minimum 3 inch (75 mm) of sand as bed for duct. Place sand to minimum of 6 inch (150 mm) above top level of duct.
    v. Support ducts on duct spacers coordinated with duct size, duct spacing, and outdoor temperature.
    vi. Spacer Installation: Place spacers close enough to prevent sagging and deforming of duct, with not less than five spacers per 20 ft (6 m) of duct. Place spacers within 24 inch (600 mm) of duct ends. Stagger spacers approximately 6 inch (150 mm) between tiers. Secure spacers to earth and to ducts to prevent floating during concreting. Tie

entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.

vii. Install duct with minimum of 3 inch (75 mm) between ducts for like services and 6 inch (150 mm) between power and communications duct.

viii. Underground-Line Warning Tape: Bury conducting underground line specified in Section "Identification for Electrical Systems" no less than 12 inch (300 mm) above concrete-encased duct and duct banks and approximately 12 inch (300 mm) below grade. Align tape parallel to and within 3 inch (75 mm) of centerline of duct bank. Provide additional warning tape for each 12 inch (300 mm) increment of duct-bank width over nominal 18 inch (450 mm). Space additional tapes 12 inch (300 mm) apart, horizontally across width of ducts.

ix. Ground ducts and duct banks in accordance with Section "Grounding and Bonding for Electrical Systems."

8-39.3(9) Installation of Handholes and Boxes Other Than Precast Concrete

1. Reference Standards:
   a. Consult Architect for resolution of conflicting requirements.
2. Special Techniques:
   a. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting duct, to minimize bends and deflections required for proper entrances. Use box extension if required to match depths of duct, and seal joint between box and extension as recommended by manufacturer.
   b. Unless otherwise indicated, support units on level bed of crushed stone or gravel, graded from 1/2 inch (12.5 mm) sieve to No. 4 (4.75 mm) sieve and compacted to same density as adjacent undisturbed earth.
   c. Elevation: In paved areas and trafficways, set cover flush with finished grade. Set covers of other handholes 1 inch (25 mm) above finished grade.
   d. Install handholes and boxes with bottom below frost line.
   e. Ground handholes and boxes in accordance with Section "Grounding and Bonding for Electrical Systems."

8-39.3(10) Field Quality Control

1. Tests and Inspections:
   a. Demonstrate capability and compliance with requirements on completion of installation of underground duct, duct bank, and utility structures.
   b. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. Provide minimum 12 inch (300 mm) long mandrel equal to duct size minus 1/4 inch (6 mm). If obstructions are indicated, remove obstructions and retest.
   c. Test **handhole** grounding to ensure electrical continuity of grounding and bonding connections. Measure and report ground resistance as specified in Section "Grounding and Bonding for Electrical Systems."
2. Nonconforming Work:
   a. Underground ducts, raceways, and structures will be considered defective if they do not pass tests and inspections.
   b. Correct deficiencies and retest as specified above to demonstrate compliance.

3. Assemble and submit test and inspection reports.

8-39.4 Measurement

PVC Raceways will be measured by linear foot per raceway type installed and all associated fittings, solvent cements, and duct accessories. Handholes and boxes will be incidental to this bid item.

8-39.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"1-1/2" PVC Schedule 80 Conduit" will be paid per linear foot and shall be for full installation and related material including all labor and incidentals such as fittings, handholes, boxes, solvent cements, and duct accessories necessary to complete the Work.

(******)

8-40 Hangers and Support for Electrical Systems

Section 8-40 shall be added with the following:

8-40.1 Description

This work shall consist of purchase and installation of: support systems, mounting, anchoring, attachment components, metal supports, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of support system, mounting, anchoring, and attachments component.

8-40.2 Materials

8-40.2(1) Performance Requirements

2. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

8-40.2(2) Support Systems

1. Steel Slotted Support Systems
    a. Standard Features: Preformed steel channels and angles with minimum 13/32 inch (10 mm) diameter holes at a maximum of 8 inch (200 mm) on center in at least one surface.
        i. Referenced Standard: MFMA-4 factory-fabricated components for field assembly.
        ii. Material for Channel, Fittings, and Accessories: Stainless steel, Type 316.
        iii. Channel Width: 1-5/8 inch (41.25 mm).
        iv. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

2. Conduit and Cable Support Devices:

a. Standard Features: Stainless steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

3. Support for Conductors in Vertical Conduit:
   a. Standard Features: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs must have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body must be made of malleable iron.
4. Structural Steel for Fabricated Supports and Restraints:
   a. Standard Features: ASTM A36/A36M steel plates, shapes, and bars; black and galvanized.

8-40.2(3) Mounting, Anchoring, and Attachment Components

1. Mechanical-Expansion Anchors:
   a. Standard Features: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
2. Concrete Inserts:
   a. Standard Features: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
3. Clamps for Attachment to Steel Structural Elements:
   a. Standard Features: MSS SP-58 units are suitable for attached structural element.
4. Through Bolts:
   a. Standard Features: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325 (Grade A325M).
5. Toggle Bolts:
   a. Standard Features: Stainless steel springhead type.
6. Hanger Rods:
   a. Standard Features: Threaded steel.

8-40.3 Construction Requirements

8-40.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
   a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
   b. Listing criteria identified.
   c. Indicate type, use, location, and termination locations.
   d. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Field quality-control reports.

3. Closeout Submittals
   a. Warranty Documentation.

8-40.3(2) Selection of Hangers and Supports

1. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for ERMC as required by NFPA 70. Minimum rod size must be 1/4 inch (6 mm) in diameter.
2. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
    a. Secure raceways and cables to these supports with two-bolt conduit clamps.
3. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2 inch (38 mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings, and for fastening raceways to trapeze supports.

8-40.3(3) Installation of Hangers and Supports

1. Comply with manufacturer's published instructions.
2. Ensure that all penetrations into the box structure shall maintain the integrity of the structural reinforcing steel.
3. Reference Standards for Installation: Unless more stringent installation requirements are specified in the Contract Documents or manufacturer's published instructions, comply with the following:
    a. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
    b. Hot Work: NFPA 51B.
    c. Work in Confined Spaces: NFPA 350.
    d. Work in Basements and Other Developed Subterranean Spaces: NFPA 520.
    e. Installation of Steel Conduit: NECA NEIS 101
    f. Installation of Metal Cable Tray Systems: NECA NEIS 105.
    g. Consult Engineer for resolution of conflicting requirements.
4. Special Installation Techniques:
    a. Raceway Support Methods: In addition to methods described in NECA NEIS 1, ERMC may be supported by openings through structure members, in accordance with NFPA 70.
    b. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination must be weight of supported components plus 200 lb (90 kg).
    c. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
        i. To New Concrete: Bolt to concrete inserts.
        ii. To Existing Concrete: Expansion anchor fasteners.
    d. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.
5. Interfaces with Other Work:
    a. Provide vibration and seismic controls with hangers and supports.

b. Touchup Finishes:
    i. Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
        1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).
c. Installation of Fabricated Metal Supports:
    i. Provide site-fabricated metal supports.
    ii. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
    iii. Field Welding: Comply with AWS D1.1/D1.1M. Submit welding certificates.

8-40.3(4) Field Quality Control

1. Document all changes on Record Drawings.

2. Nonconforming Work:
    a. Remove and replace defective units and retest.

8-40.4 Measurement

Conduit Support shall be measured per each and shall include all support systems, mounting, anchoring, attachment components, labor, materials and equipment..

8-40.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"Conduit Support", per each shall include support systems, mounting, anchoring, and attachment components and shall be for full installation and related material including all labor and incidentals such as connectors and splices necessary to complete the Work.

(******)

8-41 Electrical Identification

Section 8-41 shall be added with the following:

8-41.1 Description

This work shall consist of purchase and installation of: Labels, Extruded insulating tubing, Bands, Tapes and stencils, tags, signs, cable ties, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of Labels, Extruded insulating tubing, Bands, Tapes and stencils, tags, signs, and Cable ties.

8-41.2 Materials

8-41.2(1) Labels

1. Performance Criteria:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
    b. Listing Criteria: UL CCN PGDQ2 for components; including UL 969.

2. UL PGDQ2 - Vinyl Wraparound Labels: Preprinted, flexible labels laminated with clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

3. UL PGDQ2 - Self-Adhesive Wraparound Labels: Preprinted, 3 mil (0.08 mm) thick, vinyl flexible label with acrylic pressure-sensitive adhesive.
    a. Self-Lamination: Clear; UV-, weather-, and chemical-resistant; self-laminating, with protective shield over legend. Size labels such that clear shield overlaps entire printed legend.
    b. Marker for Labels:
        i. Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

4. UL PGDQ2 - Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3 mil (0.08 mm) thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
    a. Minimum Nominal Size:
        i. 1-1/2 by 6 inch (37 by 150 mm) for raceway and conductors.
        ii. 3-1/2 by 5 inch (76 by 127 mm) for equipment.
        iii. As required by authorities having jurisdiction.

8-41.2(2) Extruded Insulating Tubing

1. Performance Criteria:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
    b. Listing Criteria: UL CCN YDPU2 for components; including UL 224.

2. UL YDPU2 - Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tubes with machine-printed identification labels, sized to suit diameter and shrunk to fit firmly. Full shrink recovery occurs at maximum of 200 deg F (93 deg C).

8-41.2(3) Bands

1. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameters and that stay in place by gripping action.

2. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, 2 inch (50 mm) long, with diameters sized to suit diameters and that stay in place by gripping action.

8-41.2(4) Tapes and Stencils

1. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

2. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mil (0.08 mm) thick by 1 to 2 inch (25 to 50 mm) wide; compounded for outdoor use.

3. Tape and Stencil: 4 inch (100 mm) wide black stripes on 10 inch (250 mm) centers placed diagonally over orange background and are 12 inch (300 mm) wide. Stop stripes at legends.

4. Underground-Line Warning Tape:
    a. Tape:
        i. Recommended by manufacturer for method of installation and suitable to identify and locate underground electrical utility lines.
        ii. Printing on tape must be permanent and may not be damaged by burial operations.
        iii. Tape material and ink must be chemically inert and not be subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.
    b. Color and Printing:
        i. Comply with APWA Uniform Color Code using NEMA Z535.1 safety colors.
        ii. Inscriptions for Red Tapes: "CAUTION BURIED ELECTRIC LINE BELOW".
    c. Detectable Line-Warning Tape:
        i. Detectable three-layer laminate, consisting of printed pigmented polyolefin film, solid aluminum-foil core, and clear protective film that allows inspection of continuity of conductive core; bright colored, compounded for direct-burial service.
        ii. Width: 3 inch (75 mm).
        iii. Overall Thickness: 5 mil (0.125 mm).
        iv. Foil Core Thickness: 0.35 mil (8.9 m).
        v. Weight: 28 lb/1000 sq. ft (13.7 kg/100 sq. m).
        vi. Tensile in accordance with ASTM D882: 70 lb (311.3 N) and 4600 psi (31.7 MPa).

8-41.2(5) Tags

1. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch (50 by 50 by 1.3 mm), with stamped legend, punched for use with self-locking cable tie fastener.
2. Nonmetallic Preprinted Tags: Polyethylene tags, 0.023 inch (0.58 mm) thick, color-coded for phase and voltage level, with factory printed permanent designations; punched for use with self-locking cable tie fastener.
3. Write-on Tags:
    a. Polyester Tags: 0.010 inch (0.25 mm) thick, with corrosion-resistant grommet and cable tie for attachment.
    b. Marker for Tags:
        i. Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

8-41.2(6) Signs

1. Baked-Enamel Signs:
    a. Preprinted aluminum signs, high-intensity reflective, punched or drilled for fasteners, with colors, legend, and size required for application.
    b. 1/4 inch (6.4 mm) grommets in corners for mounting.
    c. Nominal Size: 7 by 10 inch (180 by 250 mm).

2. Metal-Backed Butyrate Signs:
    a. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396 inch (1 mm) galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
    b. 1/4 inch (6.4 mm) grommets in corners for mounting.
    c. Nominal Size: 10 by 14 inch (250 by 360 mm).

3. Laminated Acrylic or Melamine Plastic Signs:
    a. Engraved legend.
    b. Thickness:
        i. For signs up to 20 sq. inch (129 sq. cm), minimum 1/16 inch (1.6 mm) thick.
        ii. For signs larger than 20 sq. inch (129 sq. cm), 1/8 inch (3.2 mm) thick.
        iii. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

8-41.2(7) Cable Ties

1. Performance Criteria:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
    b. Listing Criteria: UL CCN ZODZ; including UL 1565 or UL 62275.
2. UL ZODZ - General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
    a. Minimum Width: 3/16 inch (5 mm).
    b. Tensile Strength at 73 deg F (23 deg C) in accordance with ASTM D638: 12,000 psi (82.7 MPa).
    c. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
    d. Color: Black, except where used for color-coding.

8-41.3 Construction Requirements

8-41.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Listing criteria identified.
    c. Indicate type, use, location, and termination locations.
    d. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

8-41.3(2) Preparation

1. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

8-41.3(3) Selection of Colors and Identification Markings

1. Comply with 29 CFR 1910.144 for color identification of hazards, and the following:
    a. Ceiling-mounted hangers, supports, cable trays, and raceways must be suitably marked safety yellow where less than 7.7 ft (2.3 m) above finished floor.
2. Color-Coding for Phase- and Voltage-Level Identification, 1000 V or Less: Use colors listed below for ungrounded branch-circuit conductors.
    a. Color must be factory applied.
    b. Colors for 208Y/120 V Circuits:
        i. Phase A: Black.
        ii. Phase B: Red.
        iii. Phase C: Blue.
    c. Colors for 240 V Circuits:
        i. Phase A: Black.
        ii. Phase B: Red.
    d. Color for Neutral (Grounded Conductor): White.
    e. Color for Equipment Ground: Green.
    f. Color for Isolated Ground: Green with two or more yellow stripes.
3. Accessible Fittings for Raceways: Identify cover of junction and pull box of the following systems with wiring system legend and system voltage. System legends must be as follows:
    a. "POWER."
4. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
5. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.
6. Handholes, and Pull and Junction Boxes, 1000 V or Less: For conductors in pull and junction boxes, and handholes, use vinyl wraparound labels to identify phase.
    a. Locate identification at changes in direction, at penetrations of walls and floors, at 50 ft (15 m) maximum intervals in straight runs, and at 25 ft (7.6 m) maximum intervals in congested areas.
    b. Identify system voltage with black letters on orange field.
7. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive labels with conductor or cable designation, origin, and destination.
8. Control-Circuit Conductor Termination Identification: For identification at terminations, provide self-adhesive labels with conductor designation.

9. Faceplates: Label individual faceplates with self-adhesive labels. Place label at top of faceplate. Each faceplate to be labeled with its individual, sequential designation, composed of the following, in the order listed:
    a. Wiring closet designation.
    b. Colon.
    c. Faceplate number.

8-41.3(4) Selection of Signs and Hazard Markings

1. Comply with 29 CFR 1910.145 for danger, caution, warning, and safety instruction signs.
2. Signs, labels, and tags required for personnel safety must comply with the following standards:
    a. Safety Colors: NEMA Z535.1.
    b. Facility Safety Signs: NEMA Z535.2.
    c. Safety Symbols: NEMA Z535.3.
    d. Product Safety Signs and Labels: NEMA Z535.4.
    e. Safety Tags and Barricade Tapes for Temporary Hazards: NEMA Z535.5.
3. Electrical Hazard Warnings:
    a. Multiple Power Sources Warning Legend: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
4. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive labels.
    a. Apply to exterior of door, cover, or other access.
5. Operating Instruction Signs: Self-adhesive labels.

8-41.3(5) Installation

1. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
2. Fasteners for Labels and Signs: Self-tapping, stainless steel screws or stainless steel machine screws with nuts and flat and lock washers.
3. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
4. Verify identity of item before installing identification products.
5. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
6. Apply identification devices to surfaces that require finish after completing finish work.
7. System Identification for Raceways and Cables under 1000 V: Identification must completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
    a. Secure tight to surface of conductor, cable, or raceway.
8. Vinyl Wraparound Labels:
    a. Secure tight to surface of raceway or cable at location with high visibility and accessibility.

b. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to location and substrate.

9. Snap-Around Labels: Secure tight to surface at location with high visibility and accessibility.
10. Self-Adhesive Wraparound Labels: Secure tight to surface at location with high visibility and accessibility.
11. Self-Adhesive Labels:
    a. Install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
    b. Unless otherwise indicated, provide single line of text with 1/2 inch (13 mm) high letters on 1-1/2 inch (38 mm) high label; where two lines of text are required, use labels 2 inch (50 mm) high.
12. Snap-Around Color-Coding Bands: Secure tight to surface at location with high visibility and accessibility.
13. Heat-Shrink, Preprinted Tubes: Secure tight to surface at location with high visibility and accessibility.
14. Marker Tapes: Secure tight to surface at location with high visibility and accessibility.
15. Self-Adhesive Vinyl Tape: Secure tight to surface at location with high visibility and accessibility.
    a. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for minimum distance of 6 inch (150 mm) where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.
16. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.
17. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's instructions.
18. Underground Line Warning Tape:
    a. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inch (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in common trench exceeds 16 inch (400 mm) overall.
    b. Limit use of underground-line warning tape to direct-buried cables.
    c. Install underground-line warning tape for direct-buried cables and cables in raceways.
19. Metal Tags:
    a. Place in location with high visibility and accessibility.
    b. Secure using UV-stabilized cable ties.
20. Nonmetallic Preprinted Tags:
    a. Place in location with high visibility and accessibility.
    b. Secure using UV-stabilized cable ties.
21. Write-on Tags:
    a. Place in location with high visibility and accessibility.
    b. Secure using UV-stabilized cable ties.
22. Baked-Enamel Signs:
    a. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
    b. Unless otherwise indicated, provide single line of text with 1/2 inch (13 mm) high letters on minimum 1-1/2 inch (38 mm) high sign; where two lines of text are required, use signs minimum 2 inch (50 mm) high.
23. Metal-Backed Butyrate Signs:

a. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
b. Unless otherwise indicated, provide single line of text with 1/2 inch (13 mm) high letters on 1-1/2 inch (38 mm) high sign; where two lines of text are required, use labels 2 inch (50 mm) high.

24. Laminated Acrylic or Melamine Plastic Signs:
    a. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
    b. Unless otherwise indicated, provide single line of text with 1/2 inch (13 mm) high letters on 1-1/2 inch (38 mm) high sign; where two lines of text are required, use labels 2 inch (50 mm) high.
25. Cable Ties: General purpose, for attaching tags, except as listed below:
    a. Outdoors: UV-stabilized nylon.
    b. In Spaces Handling Environmental Air: Plenum rated.

8-41.4 Measurement

Labels, Extruded insulating tubing, Bands, Tapes and stencils, tags, signs, cable ties will be incidental to other bid item.

8-41.5 Payment

No payment will be made for the following item:

Labels, Extruded insulating tubing, Bands, Tapes and stencils, tags, signs, and cable ties are incidental to other bid items.

(******)

8-42 Panelboards

Section 8-42 shall be added with the following:

8-42.1 Description

This work shall consist of purchase and installation of: panelboards, overcurrent protective devices, and appurtenances necessary to produce a complete and functional installation in accordance with the Plans, the Standard Specifications, and these Special Provisions.

The work also includes preparation and submittal of product data for each type of support system, mounting, anchoring, and attachments component.

8-42.2 Materials

8-42.2(1) Performance Requirements

1. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
2. Fabricate and test panelboards in accordance with IEEE 344 to withstand seismic forces.
3. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.
4. Comply with NEMA PB 1.

5. Enclosures: Surface-mounted, dead-front cabinets.
    a. Rated for environmental conditions at installed location.
        i. Locations provided on plans: UL 50E, Type 4X, stainless steel.
    b. Height: 6 ft (1.83 m) maximum.
    c. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions. Trims must cover live parts and may have no exposed hardware.
    d. Finishes:
        i. Panels and Trim: Stainless steel, factory finished immediately after cleaning with manufacturer's standard.
        ii. Back Boxes: Same finish as panels and trim.
6. Phase, Neutral, and Ground Buses:
    a. Material: Hard-drawn copper, 98 percent conductivity.
        i. Plating must run entire length of bus.
        ii. Bus must be fully rated for entire length.
    b. Interiors must be factory assembled into unit. Replacing switching and protective devices may not disturb adjacent units or require removing main bus connectors.
    c. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
7. Conductor Connectors: Suitable for use with conductor material and sizes.
    a. Material: Hard-drawn copper, 98 percent conductivity.
    b. Terminations must allow use of 75 deg C rated conductors without derating.
    c. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.
    d. Main and Neutral Lugs: Mechanical type, with lug on neutral bar for each pole in panelboard.
    e. Ground Lugs and Bus-Configured Terminators: Mechanical type, with lug on bar for each pole in panelboard.
8. Quality-Control Label: Panelboards or load centers must be labeled, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for use as service equipment with one or more main service disconnecting and overcurrent protective devices. Panelboards or load centers must have meter enclosures, wiring, connections, and other provisions for utility metering. Coordinate with utility company for exact requirements.
    a. Future Devices: Panelboards or load centers must have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
        i. Percentage of Future Space Capacity: 10 percent.
    b. Panelboard Short-Circuit Current Rating:
        i. Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for 100 percent interrupting capacity.
            1. Panelboards and overcurrent protective devices rated 240 V or less must have short-circuit ratings as shown on Drawings, but not less than 10 000 A(rms) symmetrical.
            2. Panelboards and overcurrent protective devices rated above 240 V and less than 600 V must have short-circuit ratings as shown on Drawings, but not less than 14 000 A(rms) symmetrical.

8-42.2(2) Panelboards

1. UL QEUY - Lighting and Appliance Branch-Circuit Panelboard:
    a. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:
        i. Lighting and Appliance Branch-Circuit Type Panelboards: UL CCN QEUY; including UL 67 and NEMA PB 1.
2. Standard Features:
    a. Mains: Circuit breaker.
        i. Location: Convertible between top and bottom.
        ii. Main Breaker: Main lug interiors up to 400 A must be field convertible to main breaker.
    b. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
3. Other Available Features Required by Project:
    a. Full-Sized Neutral: Equipped with full-capacity bonding strap for service entrance applications. Mount electrically isolated from enclosure.
    b. Do not mount neutral bus in gutter.
    c. Doors: Door-in-door construction with concealed hinges; secured with flush latch with tumbler lock; keyed alike. Outer door must permit full access to panel interior. Inner door must permit access to breaker operating handles and labeling, but current carrying terminals and bus must remain concealed.

8-42.2(3) Overcurrent Protective Devices

1. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.
    a. Thermal-Magnetic Circuit Breakers:
        i. Inverse time-current element for low-level overloads.
        ii. Instantaneous magnetic trip element for short circuits.
    b. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
    c. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6 mA trip).
    d. Arc-Fault Circuit Interrupter Circuit Breakers: Comply with UL 1699; 120/240 V, single-pole configuration.
    e. MCCB Features and Accessories:
        i. Standard frame sizes, trip ratings, and number of poles.
        ii. Breaker handle indicates tripped status.
        iii. UL listed for reverse connection without restrictive line or load ratings.
        iv. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
        v. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.

8-42.3 Construction Requirements

8-42.3(1) Working Drawings

Submit Working Drawings in accordance with **Section 1-05.3** and these requirements:

1. Electrical Product Data Submittal for each type of product:
    a. If listed manufacturer differs from selling manufacturer, indicate relationship between entities on submittal. Clearly indicate which entity warrants product performance and fitness for purpose.
    b. Listing criteria identified.
    c. Product Listing: Include copy of unexpired approval letter, on letterhead of qualified electrical testing agency, certifying product's compliance with specified listing criteria.
    d. No installation shall begin until electrical submittals have been reviewed and approved by the Engineer.

2. Shop Drawings: For each panelboard and related equipment:
    a. Include dimensioned plans, elevations, sections, and details.
    b. Show tabulations of installed devices with nameplates, conductor termination sizes, equipment features, and ratings.
    c. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
    d. Detail bus configuration, current, and voltage ratings.
    e. Short-circuit current rating of panelboards and overcurrent protective devices.
    f. Include evidence of listing, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for series rating of installed devices.
    g. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
    h. Include wiring diagrams for power, signal, and control wiring.

3. Field quality-control reports.

4. Informational Submittals
    a. Panelboard Schedules: For installation in panelboards.
    b. Field Reports:
        i. Manufacturer's field reports for field quality-control support.
        ii. Field reports for voltage monitoring and adjusting.
        iii. Field reports for infrared scanning.

5. Closeout Submittals
    a. Warranty Documentation.

8-42.3(2) Examination

1. Receive, inspect, handle, and store panelboards in accordance with NECA 407 and NEMA PB 1.1.

8-42.3(3) Installation

1. Receive, inspect, handle, and store panelboards in accordance with NECA 407 and NEMA PB 1.1.

2. Reference Standards:

a. Panelboards: Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NECA 407 and NEMA PB 1.1.
b. Consult Engineer for resolution of conflicting requirements.

3. Special Techniques:
    a. Equipment Mounting:
        i. Provide seismic control devices.
    b. Provide mounting and anchoring devices.
    c. Mount top of trim so that top-most trip circuit breaker is not higher than 79 inches above finished floor.
    d. Mount panelboard cabinet plumb and rigid without distortion of box.
    e. Install overcurrent protective devices and controllers not already factory installed.
        i. Tighten bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver in accordance with manufacturer's published instructions.
    f. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.
    g. Install filler plates in unused spaces.

4. Interfaces with Other Work:
    a. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

8-42.3(4) Identification

1. Identify field-installed conductors, interconnecting wiring, and components.
2. Install warning signs.
3. Panelboard Nameplates: Label each panelboard with nameplate.
4. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles must be located on interior of panelboard door.
5. Breaker Labels: Faceplate must list current rating, UL and IEC certification standards, and AIC rating.
6. Circuit Directory:
    a. Provide computer-generated circuit directory mounted inside panelboard door with transparent plastic protective cover.

8-42.3(5) Field Quality Control

1. Administrant for Low-Voltage Electrical Tests and Inspections:
    a. Administer and perform tests and inspections.
2. Acceptance Testing Preparation:
    a. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
    b. Test continuity of each circuit.
3. Tests and Inspections:

a. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
b. Perform the following infrared scan tests and inspections and prepare reports:
i. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform infrared scan of each panelboard. Remove front panels so joints and connections are accessible to portable scanner.
ii. Follow-up Infrared Scanning: Perform additional follow-up infrared scan of each panelboard 11 months after date of Substantial Completion.
iii. Instruments and Equipment:
1. Use infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

4. Nonconforming Work:
a. Panelboards will be considered defective if they do not pass tests and inspections.
b. Remove and replace defective units and retest.
5. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.
a. Include certified report that identifies panelboards included and that describes scanning results, with comparisons of two scans. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
6. Document all changes on Record Drawings.

8-42.4 Measurement

Panelboards and circuit breakers, will be measured by the quantity of each type installed.

8-42.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following item:

"Panelboard" will be paid for per each and shall be for full installation and related material including all labor and incidentals necessary to complete the work.

"Circuit Breaker" will be paid for per each and shall be for full installation and related material including all labor and incidentals necessary to complete the work.

8-43 VACANT

Section 8-43 shall be replaced with the following:

(******)

8-43 ARCHITECTURAL TOPPING SLAB – CIRUCLATION PATH, ALCOVE PAVING

8-43.1 Description

This work shall consist of constructing the types of Architectural Topping Slabs shown in the plans and in accordance with these Specifications and the Details shown in the Plans.

8-43.2 Materials

All concrete elements of the Architectural Topping Slab shall be cast in place concrete, in accordance with WSDOT Standard Specification 6-02 and Standard Specification 9-01 as detailed on the Plans.

8-43.3 Construction Requirements

Contractor shall submit Type 3 Working Drawings for the cast-in-place topping slab for Landscape Architect and Engineer of Record review prior to construction. Working Drawings shall include a detailed plan view and section details identifying all proposed joint locations and types, reinforcement, and joint details. The submittal shall include the proposed concrete placement pour sequence. Markups of Contract Documents are not considered working drawings and will be rejected.

Apply a surface deactivator finish to all designated concrete surfaces to produce a uniform exposed-aggregate appearance. The surface deactivator shall be a commercially manufactured, spray-applied product specifically formulated to retard cement paste hydration at the concrete surface, such as Top-Cast, or an approved equal. The Contractor shall select the deactivator grade necessary to achieve the specified depth of aggregate exposure and shall apply the product in strict accordance with the manufacturer's recommendations. After the concrete has attained sufficient set, the retarded surface mortar shall be removed using water washing and brushing or other approved methods to expose the aggregate without dislodging particles or damaging the surrounding concrete. The finished surface shall exhibit a consistent texture, uniform aggregate exposure, and color variation within acceptable industry tolerances, free of laitance, streaking, patchiness, honeycombing, or other surface defects.

Prior to commencement of production work, the Contractor shall construct a mockup panel for each specified architectural concrete finish to demonstrate materials, placement methods, joints, finishing techniques, aggregate exposure, color, texture, and overall appearance. Mockups shall be a minimum 4'x4' size and be constructed at the project site. Mockups shall accurately represent the finished work and shall be constructed using the same concrete mix design, formwork, surface treatment products, curing methods, and construction procedures proposed for the project. The mockup shall be reviewed and accepted by the Landscape Architect of Record prior to proceeding with topping slab installation. Accepted mockups shall serve as the standard of quality for the completed work and shall remain available for comparison until final acceptance of the project. Any production work that does not match the approved mockup in appearance, texture, aggregate exposure, workmanship, or overall quality may be subject to corrective action or replacement at no additional cost to the Owner.

The Architectural Topping slab shall be poured true to grade, and provide no dips, depressions, or obviously reverse slopes that will trap water and cause ponding.

Remove and replace concrete paving that is broken, damaged or does not comply with the specification requirements. Remove work in complete sections from joint to joint, unless otherwise approved by Owner’s Authorized Representative.

8-43.4 Measurement

The “Architectural Topping Slab - ____” shall be measured in square foot of completed and accepted topping slab.

8-43.4 Payment

The “Architectural Topping Slab - ____” shall be measured in square foot of completed and accepted topping slab.

Payment shall be full compensation for furnishing all materials, equipment, labor, hardware, anchorage, coatings, installation, cleaning, and all incidentals required to complete the Work as shown on the Plans and specified herein.

8-44 VACANT

Section 8-44 shall be replaced with the following:

(******)

8-44 TEMPORARY REMOVAL AND REINSTALLATION OF MURAL ART PANNELS

Murals and mural attachments shall be those designated on the Plans, and identified in the field by the Engineer for relocation. Both murals and mural attachment materials shall be salvaged for reattachment as specified on Plans, and securely stored off-site as instructed by the Owner’s Representative until reinstallation.

8-44.1 Description

This work consists of temporarily removing, storing, protecting, transporting, and reinstalling existing mural art panels and associated mounting hardware at the bridge abutment as shown in the Plans or as directed by the Engineer. The work includes all labor, materials, equipment, incidentals, documentation, protection measures, and coordination necessary to remove the mural panels without damage, maintain their condition during construction, and reinstall them in their original locations following completion of the bridge work.

Prior to removal, the Contractor shall document the existing condition, orientation, layout, and attachment details of all mural panels. The Contractor shall take photographs and prepare a panel identification and location plan for Engineer review. Existing mural panels and associated hardware shall remain the property of the Owner.

8-44.2 Construction Requirements

The Contractor shall exercise care during removal, handling, transportation, storage, and reinstallation operations to prevent damage to the mural panels, coatings, artwork, frames, anchors, and supporting elements.

Prior to removal, each panel shall be clearly labeled with a unique identification number corresponding to its original location and orientation. Labels shall be placed in a manner that does not damage visible surfaces or artwork. The Contractor shall prepare and maintain an inventory of all removed components.

Removal operations shall utilize methods and equipment appropriate for the size, weight, and condition of the panels. Fasteners and attachment hardware intended for reuse shall be removed, cleaned, cataloged, and protected from loss or damage. Hardware determined by the Engineer to be damaged, deteriorated, or unsuitable for reuse shall be replaced with materials of equivalent size, type, strength, finish, and corrosion resistance.

Removed mural panels shall be stored in a secure, dry, protected location and supported to prevent distortion, abrasion, impact damage, moisture intrusion, vandalism, or exposure to conditions that could adversely affect the artwork or panel integrity. Panels shall not be stacked unless specifically approved by the Engineer and protected by suitable spacers and padding.

Upon completion of the bridge abutment work, the Contractor shall reinstall the mural panels at as shown on the drawings. Using the existing holes in the mural, the mural shall be reattached to the mural attachment materials as shown in the Plans and Details. Reinstallation shall include all required anchors, brackets, fasteners, shims, adjustments, alignment, and incidental materials necessary to restore the mural installation to its original condition and appearance. Panels shall be installed plumb, level, and aligned with adjacent panels to maintain the continuity of the artwork.

Any mural panel, artwork, coating, frame, mounting component, or hardware damaged as a result of the Contractor's operations shall be repaired or replaced at no additional cost to the Owner. Repairs shall be performed by qualified personnel experienced in restoration of architectural artwork and shall be subject to Engineer approval.

Following reinstallation, the Contractor shall clean the mural panels using methods and materials recommended by the artwork manufacturer or conservator and shall remove all temporary markings, protective coverings, and debris.

8-44.3 Measurement

Temporary Removal and Reinstallation of Mural Art Panels will be measured on a lump sum basis. The lump sum quantity shall include all work required to document, remove, label, transport, store, protect, maintain, reinstall, align, clean, and restore the mural panels and associated mounting hardware, including all labor, equipment, materials, incidentals, and coordination necessary to complete the work.

8-44.4 Payment

Payment for "Temporary Removal and Reinstallation of Mural Art Panels" will be made at the lump sum contract price.

The lump sum contract price shall be full compensation for furnishing all labor, materials, tools, equipment, transportation, storage facilities, protection measures, replacement hardware, documentation, cleaning, restoration, incidentals, and all other work necessary to complete the temporary removal and reinstallation of the mural art panels as specified.

Payment will be made under:

Bid Item No.	Description	Unit
8-44	Temporary Removal and Reinstallation of Mural Art Panels	Lump Sum

No separate payment will be made for documentation, labeling, storage, protection, transportation, temporary supports, replacement of damaged hardware, cleaning, or other incidental work necessary to complete this item. These costs shall be included in the lump sum bid item.

8-45 Anti-Graffiti Coating

This work shall consist of the installation of a combination Concrete Sealer and Anti-Graffiti Coating in accordance with these Specifications or as directed by the Engineer. The work includes all labor, materials, equipment, incidentals, protection measures and coordination necessary to coat the retaining walls without damage following completion of the bridge and wall work. The Anti-Graffiti coating shall be applied to all exposed concrete surfaces, including concrete topping slab, concrete pavement, and concrete retaining walls.

8-45.1 Description

Concrete Sealer and Anti-Graffiti Coating shall be a two-part, quartz-based coating system consisting of a primer and finish coat applied to exposed finished surfaces to seal and protect concrete and facilitate the removal of graffiti by preventing paint penetration into the substrate.

Basis of Design Product:
Finish Coat: Coval Concrete
Primer: Coval Concrete Primer

Manufactured by Coval Concrete Technologies, Co. Ltd.
Royal Office Park
12811 Royal Drive, Suite 110
Stafford, TX 77477
Phone: 281.566.4277
https://covaltechnologies.com/

Or Approved Equal.

Visual Appearance: When compared visually to an untreated sample under the same lighting conditions, anti-graffiti coating may not alter the color or sheen of the coated substrate and must be invisible after application and over the life of the substrate. Confirm visual appearance by mockups and adjust products and applications as required.

8-45.2 Construction Requirements

Install anti-graffiti coating using materials and methods required, recommended, or accepted by the manufacturer, along with manufacturer-recommended accessories and techniques. Do not exceed the application rates recommended by the manufacturer. Completed work must match approved samples and mockups, as accepted by the Architect. Installed sealer and anti-graffiti coating must be warrantable. Do not install, correct, or replace anti-graffiti coating in a manner that results in any warranty or guarantee becoming void.

8-45.3 Measurement

Anti-Graffiti Coating shall be measured per square foot.

8-45.4 Payment

Payment for "Anti-Graffiti Coating" will be made at the square foot contract price.

The square foot contract price shall be full compensation for furnishing all labor, materials, tools, equipment, protection measures, cleaning, incidentals, and all other work necessary to complete the anti-graffiti coating as specified.

No separate payment will be made for incidental work necessary to complete this item. These costs shall be included in the square foot bid item.

END OF DIVISON 8

Division 9
Materials

9-05.50 Precast Concrete Drainage Structures

(******)

Section 9-05.50 is supplemented with the following **for sanitary sewer only**:

The type and class of materials to be used shall be as shown on the Contract Plans. Where no specific reference is shown, the following specifications shall govern the materials used. All materials shall be new and undamaged of a known brand, with replacement parts readily available from the general Seattle area.

Prior to the installation of any of the facilities required on the project, all materials shall be approved by the Engineer and WWD.

9-05.50(2) Manholes

(******)

Section 9-05.50(2) is removed and replaced in its entirety with the following **for Sanitary Sewer only:**

Manholes shall be of the offset type, shall be precast concrete sections with a precast base, and shall be made from 3,000 psi structural concrete. All manhole joints shall be watertight and shall be confined O-ring type. They shall be constructed in full compliance with the Plans and as further specified herein.

Manhole materials and manufacturing shall be in accordance with ASTM C478.

Minimum standard manhole depth is eight (8) feet and maximum depth is eighteen (18) feet. Depths other than within this range shall require special design and approval by the District.

The base sections and risers of the manholes shall be arranged so no pipes pass through the manhole joints.

All new manholes shall be precast reinforced concrete manholes FRP baselined concrete manholes, unless otherwise noted on the Plans.

9-05.50(2)A Manhole Sections For Sanitary Sewer

(******)

Manhole sections shall be placed and aligned so as to provide plumb vertical sides and vertical alignment of the ladder steps. The completed manhole shall be rigid, true to dimension and be watertight. The ladder shall be rigidly attached to the side of the manhole.

Manhole grade rings shall be Infra-Riser Composite Adjustment Riser from East Jordan Iron Works. Risers require polyurethane joint sealer/adhesive to seal adjustments rings to the manhole cone. If more than one adjustment riser is used, a continuous strip of sealant/adhesive is to be laid between each ring. Do not grout risers.

Manhole sections shall be jointed with mortar and with flexible joint using rubber gaskets conforming to ASTM C443. Joint shall be watertight. Mortar shall be applied to the inside and outside of the structure after the flexible joint is initially
made. External Joint Wrap shall be installed on the exterior seams, after grouting and prior to backfilling the structure.

Manhole access, section joints, pick holes, and riser neck sections shall be sealed with

Wrapid Seal (sold by CANUSA, The Woodlands Texas) sheet roll encapsulation or NPC External Joint Wrap (sold by Trelleborg Engineered Systems).

Steel lifting loops or hooks for precast manhole components shall be removed to a minimum depth of one (1) inch below the surface and the remaining hole packed with grout. Precast sections with damaged joint surfaces or with cracks or other damage that may permit infiltration will not be allowed.

Reinforcement for precast manholes shall be in accordance with ASTM C 478-97.

9-05.50(2)B Manhole Baseliner for Sanitary Sewer

(******)
All new manholes shall be installed with a prefabricated manhole base liner made of polypropylene (PP) and/or fiberglass reinforced plastic (FRP), unless otherwise noted on the Plans. The base liner shall be integrally cast and adequately anchored inside new precast concrete manhole base sections during the concrete casting process at the manhole suppliers manufacturing facility. The base liner shall be cast integral with the precast concrete manhole base section in accordance with the liner manufacturer's specifications. The liner must be fully supported during the casting process and lifting devices shall not penetrate the base liner.

The manhole base liner shall be prefabricated from a one piece homogeneous composite and/or thermoplastic with a minimum thickness of 0.12-inch (3 mm) and shall be in lengths and nominal inside diameters corresponding to the precast concrete base section and be a non load-bearing component, which is resistant to the chemical environment normally found in wastewater collection systems. The outer surface of the liner shall be coated with aggregate and/or PP pellets bonded to the outer surface and have perforated PP I-beam "bonding bridge" anchors bonded to the outer surface in order to insure adequate anchoring to concrete base sections to pass vacuum testing with 10-inch of negative pressure.

The inside liner surfaces shall be free of bulges, dents and other defects that result in a variation of inside diameter of more than ¼-inch (7 mm) for base liner flow channel and pipe connections. The precast concrete pipe penetration joint surfaces shall be free of excess concrete at external and internal surfaces to insure a proper seal between the pipe connection and the liner.

The manhole base liner shall include full flow channels with sidewalls to the crown of the pipe. The inner surface of the bench shall be provided with an anti-skid pattern. Watertight gasketed pipe bell connections to suit specific pipe types, grade, and alignment, shall be monolithically attached to the base liners.

If PP base liner is utilized, a minimum slope of 0.06 foot is acceptable across the invert channel. The FRP base liner shall require the District standard minimum slope of 0.1 foot across the invert channel.

Base liner properties shall be in accordance with the following:

MATERIALS

Polypropylene (PP):	100% Copolymer
Minimum thickness:	3mm
Hardness:	75 Shore D
Density:	56.8 lb/ft^3 (0.91 g/cm^3)
Color:	Dull mustard/goldenrod

Fiberglass Reinforced Plastic (FRP): Polyurethane Hybrid Composite

Glass fiber:	Type E, min fiber length of 0.625-inch (16mm), 10 - 12% content by weight
Inert filler:	10 - 13% content by weight
Minimum thickness:	3mm
Hardness:	85 Shore D
Density:	73.0 lb/ft^3 (1.17 g/cm^3)
Color:	Dull mustard/goldenrod
Aggregate bonding medium:	Processed sand containing crushed & uncrushed dry and cleaned semi-round particles in the 0.08 - 0.12-inch (2 - 3mm) size range
Gaskets:	Polyisoprene, EPDM, or as approved
Hardness:	50 - 55 Shore A

PHYSICAL PROPERTIES

Percolation Test:	Water absorption of top surface - 0.032%
Thermal shock (CSA-B45-M93):	100 thermal cycles - no sign of surface defects

Chemical Resistance (ASTM D1308):

Selected Reagents

Reagent	Result
Nitric Acid 69%	No surface Degradation - Surface Staining
Hydrochloric Acid 60%	No surface Degradation
Ammonia 28%	No surface Degradation
Sodium Hydroxide 5.25%	No surface Degradation
Sulfuric Acid 50%	No surface Degradation
Sulfuric Acid 70%	No surface Degradation
Sulfuric Acid 80%	No surface Degradation
Acetone	No surface Degradation
Unleaded Gasoline	No surface Degradation
Turpentine	No surface Degradation
Acetone Immersion (ASTM D2152)	No Attack

Base liners shall be manufactured and supplied by Jensen Precast, or approved equal.

9-05.50(2)C Manhole Steps for Sanitary Sewer

(******)
Manhole steps shall be made of 1/2-inch Grade 60 Steel reinforcing bars coated with copolymer polypropylene, equal to Lane International Manhole Step, #P-14938.

Handholds (WSDOT/APWA Standard Plan B-24) shall be used in lieu of steps in the neck, and the first (top) step of the cone. Hanholds shall be equal to Lane International Hand Hold Step, #P-14070-HH

The steps shall be installed at the manhole manufacturer's yard in conformance with the step manufacturer's requirements. At a minimum, the step ends shall be coated with non-shrink epoxy grout and driven into pre-drilled holes with dimensions of 1-inch diameter and 3-1/2-inch depth. The pre-drilled holes shall not penetrate the exterior manhole wall.

9-05.50(2)D Grade Adjustment for Sanitary Sewer

(******)
The depth of the 24-inch diameter manhole neck from the top of the frame to the top of the cone shall be between 10-inch and 22-inch.

9-05.50(2)E Channels for Sanitary Sewer

(******)
All new manholes shall be provided with fiberglass reinforced plastic base liners per Section 9-05.50(2)B of these specifications, unless otherwise indicated on the plans or approved by the District. Manholes approved for cement concrete channels shall conform to this Section of the specifications.

Channels shall be made to conform accurately to the sewer grade and shall be brought together smoothly with well-rounded junctions, subject to approval by the District.

Channels shall consist of commercial grade concrete, minimum Class 3000 in accordance with Section 6-02 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

The channels shall be field poured after the inlet and outlet pipes have been laid and firmly grouted into place at the proper elevation. Allowances shall be made for a minimum of one-tenth foot (0.1 foot) drop in elevation across the manhole in the direction of flow. The maximum allowable drop in inlet elevation across the manhole in the direction of flow shall be 0.5 foot. Channel sides shall be carried up vertically from the invert to three-quarters of the diameter of the various pipes. The concrete bench shall be warped evenly and sloped two percent (2%) to drain. Rough, uneven surfaces will not be permitted. Channels shall be constructed to allow the installation and use of a mechanical plug of the appropriate size.

9-05.50(2)F Pipe Connections for Sanitary Sewer

(******)
All pipes entering or leaving the manhole shall be placed on firmly compacted bedding. Special care shall be taken to see that the openings through which pipes enter the structure are completely and firmly filled with mortar from the outside to ensure water tightness. All PVC pipe connections to manholes shall be made with GPK PVC Manhole Adapters (also known as “sand collars”) with an external abrasive silica layer or Kor-N-Seal Connector manufactured by NPC. Inc.

All stubbed-out sewer pipes placed through manhole walls for future connections shall be suitably plugged and blocked in a manner acceptable to the District.

9-05.50(2)G Shelf Repairs for Sanitary Sewer

(******)
Shelf repairs at connections to the existing manholes shall be class 3000 commercial-grade

cement in accordance with the Engineering Specifications. Rebar reinforcement is required as approved by the District.

9-05.50(2)H Grout for Sanitary Sewer

(******)
Grout for all uses including, but not limited to, shelves and pick-holes, shall be cement-based, nonshrink, noncorrosive, and nonmetallic grout conforming to ASTM C 1107. Grout shall be Dayton Superior 1107 Advantage Grout, Basalite Non-Shrink Grout - Fast Set, SpecChem SC Multipurpose Grout, or Quikrete Commercial Grade FastSet Non-Shrink Grout. The District may sample and test grout to determine conformance with the specifications.

9-05.50(2)I Lift Holes for Sanitary Sewer

(******)
All lift holes shall be completely filled smooth with grout both inside and out in order to ensure watertightness.

9-05.50(2)J Manhole Certification for Sanitary Sewer

(******)
The Contractor shall provide written certification from the manhole manufacturer that the manholes provided meet or exceed the specifications and that the materials used in the construction of the manhole are in accordance with the specifications. A Manufacturer's Certificate of Compliance shall be provided for each manhole delivered to the project and shall include the manufacturer's name and address, the District's manhole number, reference to the applicable project specifications being used, the design mix and 28-day strength of the cement concrete used, drawings indicating reinforcing steel details, such as size and location, results of materials testing conducted by the manufacturer and the signature of a responsible corporate official of the manufacturer.

The District may test manholes and materials used at any time, including after installation, and any manhole not conforming to the specifications shall be rejected by the District and replaced with a conforming manhole provided and installed by the Contractor.

9-05.50(6) Manhole and Cleanout Frame and Cover for Sanitary Sewer

(******)
Section 9-05.50(6) is added to the contract Special Provisions:

Frames and covers shall be cast iron and conform to WWD Standard Details and these specifications. Castings shall conform to the requirements of ASTM A-48, Class 30 and shall be free of porosity, shrink cavities, cold shuts or cracks, or any surface defects that would impair serviceability. Repair of defects by welding, or by the use of smooth-on or similar material, will not be permitted. Frames and covers shall be machine-finished or ground on seating surfaces so as to assure non-rocking fit in any position and interchangeability of covers.

All manhole frames and covers will be locking type. Manhole frame and cover shall be East Jordan Iron Works, Part No. 00370548W01.

Cleanout frame and cover shall be locking 5/8-inch-diameter countersunk N.C. socket head cap screws and a single one-inch-diameter lift hole in the cover. Frame and cover shall be set on a 12" PVC collar. The cleanout frame and cover shall be East Jordan Iron Works, Part No. 00366102 and shall be per WWD Standard Sewer Plan No. 14.

9-05.50(7) Steel Casing for Sanitary Sewer

(******)
Section 9-05.50(7) is added to the contract Special Provisions:

Steel casing pipe shall meet ASTM A-53, having a minimum tensile strength of 60,000 psi and a minimum yield strength of 35,000 psi. Wall thickness shall be sufficient to withstand jacking forces without deformation, with a minimum wall thickness of 0.375 inches for casing pipe diameters up to 22-inches. For casing pipe diameters larger than 22-inches, please see the table at the end of this subsection. . All joints shall be welded. All field-welded joints shall comply with AWS Code for procedures of manual shielded metal arc welding. The carrier pipe shall be installed with casing spacers. Spacers shall be placed in accordance with the Methods of Construction and shall be at least 12-inches wide.

Spacers shall be designed to provide a maximum space of 1-inch between the upper runners and the inside of the steel casing. The spacers shall prevent the pipe bells from touching the inside of the casing. Metal components of casing spacers shall be Type 304 (18-8) 14-gauge (minimum) stainless steel. The liner shall be neoprene rubber or PVC, and the runners shall be polyethylene with a low friction factor. Casing spacers shall be designed for center restraint. Casing spacers shall be Model CCS by Cascade Waterworks manufacturing, or District approved equal.

Where casing spacers must be custom designed to account for a specific grade of the carrier pipe inside the casing, submittals must be provided which include drawings and dimensions for each of the casing spacers and the respective location of each of the spacers relative to the casing and carrier pipe.
Casing end seals shall be 1/8-inch thick synthetic rubber with two stainless steel bands and clamps. The end seal shall be Model S by Pipeline Seal and Insulator, or APS Model AC, or approved equal.

Steel Casing Pipe Wall Thickness Table	
Diameter of Casing Pipe	Minimum Thickness
22 or Less	0.3750”
Over 22” – 28”	0.4375”
Over 28” – 34”	0.5000”
Over 34” – 42”	0.5625”
Over 42” – 48”	0.6250”
Over 48”	Review Required

Appendices
(January 2, 2012)

The following appendices are attached and made a part of this contract:

APPENDIX A:
Prevailing Wage Rates – Federal.

APPENDIX B:
Prevailing Wage Rates – King County

APPENDIX C:
Standard Plans.

Appendix D:
Report of Geotechnical Investigation SR 202 Widening and Trestle Replacement and Addendum #1 – Neutral Plane Method for Bridge Foundations

Appendix E:
Environmental Investigation Report SR 202 Widening and Trestle Replacement

Appendix F:
Permits

Appendix G:
King County Wastewater Treatment Division's Local Public Agency Program's construction approval letter

(January 5, 2026)
Standard Plans

The Washington State Department of Transportation *Standard Plans* M21-01, published September 2024, is made a part of this Contract with the following revisions:

A-10.30
RISER RING detail (Including SECTION view and RISER RING DIMENSIONS table): The RISER RING detail is deleted from the plan.

INSTALLATION detail, SECTION A: The "1/4"" callout is revised to read "+/- 1/4" (SEE CONTRACT ~ Note: The + 1/4" installation is shown in the Section A view)"

A-40.20
Sheet 1, NOTES 1, 2, 3, and 4 are replaced with the following:

1. Use the ½ inch joint details for bridges with expansion length less than 100 feet and for bridges with L type abutments. Use the 1 inch joint details for other applications.

2. Use detail 5, 6, 7 on steel trusses and timber bridges with concrete bridge deck panels.

3. For details 1, 2, 3, and 4, the item "HMA Joint Seal at Bridge End" shall be used for payment. For details 5 and 6, the item "HMA Joint Seal at Bridge Deck Panel Joint" shall be used for payment. For detail 7, the item "Clean and Seal Bridge Deck Panel Joint" shall be used for payment.

Sheet 2, Detail 8 reference to "6-09.3(6)" is revised to read "6-21.3(7)".

A-50.40

Sheet 1, Plan View: The callout “BEAM GUARDRAIL TYPE 31 TRANSITION SECTION TYPE 21 OR TYPE 24 (SEE STANDARD PLAN C-25.20 OR C-25.30)” is revised to read “BEAM GUARDRAIL TYPE 31 TRANSITION SECTION TYPE 21, 24, OR 25 (SEE STANDARD PLAN C-25.20, C-25.30, OR C-25.32)”

A-60.40
Note 2 reference to “6-09.3(6)” is revised to read “6-21.3(7)”.

B-55.20
General Note 3 reference to “2-09.4” is revised to read “3-07.4”.

B-90.40
Valve Detail – DELETED

C-20.41
Note 4, First Sentence, “Box Culvert guardrail steel posts are not needed for fill depths greater than 40 inches.” is revised to read; “Box culvert guardrail steel posts are not needed for fill depths greater than 46 inches. Provide 6-inches or greater of separation between the bottom of the guardrail post and top of the culvert”
BOX CULVERT POST ASSEMBLY, ELEVATION VIEW, post assembly length dimension “41” MIN. 72” MAX.” is revised to read; “41” MIN. 78” MAX.”
SECTION A, base material depth dimension - “9” MIN. 40” MAX. (SEE NOTE 4)” is revised to read: “9” MIN. 46” MAX. (SEE NOTE 4)”

C20-43
Note 4, First Sentence: “Box culvert guardrail steel posts are not needed for fill depths greater than 40 inches.” is revised to read: “Box culvert guardrail steel posts are not needed for fill depths greater than 46 inches. Provide 6-inches or greater separation between the bottom of guardrail post and top of culvert.”
Add a new KEY NOTE 4 - “IT IS PERMISSIBLE TO USE A 1” DIAM. ANCHOR ROD WITH TWO NUTS AND TWO – 1” DIAM. WASHERS PER STD. SPEC. SECTION 9-06.5(4) IN LIEU OF A HEX HEAD BOLT.”
BOX CULVERT POST & BASE PLATE ASSEMBLY, ELEVATION VIEW, post assembly length dimension – “41” MIN. 72” MAX.” is revised to read: “41” MIN. 78” MAX.”
SECTION A, base material depth dimension - “9” MIN. 40” MAX. (SEE NOTE 4)” is revised to read: “9” MIN. 46” MAX. (SEE NOTE 4)”
Section A, callout – “1” (IN) DIAM. HEX HEAD BOLT (ASTM A 307, GR. A) W/NUT & 2 – 1” DIAM. WASHERS PER STD. SPEC. SECTION 9-06.5(1) ~ SEE NOTE 1”, is revised to read:
“1” (IN) DIAM. HEX HEAD BOLT (ASTM A 307, GR. A) W/NUT & TWO – 1” DIAM. WASHERS PER STD. SPEC. SECTION 9-06.5(1) ~ SEE KEY NOTES 1 AND 4”
Elevation View, Weld symbol – callout, See (key Note Symbol) “4” is revised to read: See (key Note Symbol) “3”

C-23.70
Sheet 2, ANCHOR BRACKET ASSEMBLY DETAIL, dimension, “R. 5/16” is revised to read; R. 15/16”
ANCHOR PLATE DETAIL, weld callout (fillet), 1/4" is revised to read; 3/16”

C-60.20
Sheet 1, Plan view, callout – “1/2” (IN) DIAMETER X 6 1/2" (IN) LONG ANCHOR BOLT ~ PER STD. SPEC. SECT. 9-06.5(4) (TYPICAL) (SEE NOTE 7)” is revised to read:

"5/8" DIAMETER x 6 1/2" (IN) LONG ANCHOR BOLT ~ PER STD. SPEC. SECT. 9-06.5(4) (TYPICAL) (SEE NOTE 7)"

C-70.15

BARRIER CONNECTION DETAIL, callout – "CENTER GRID IN CONNECTION BLOCKOUT AND FILL VOID WITH TYPE 3 GROUT (STD. SPECIFICATION SECTION 9-20.3(3) PLACED IN ACCORDANCE WITH STD. SPECIFICATION SECTION 6-20.3(20)" is revised to read "CENTER GRID IN CONNECTION BLOCKOUT AND FILL VOID WITH GROUT TYPE 3 (STD. SPECIFICATION SECTION 9-20.3(3) PLACED IN ACCORDANCE WITH STD. SPECIFICATION SECTION 6-02.3(20)"

C81.10

Sheet 1, TYPICAL SECTION – TRAFFIC BARRIER the R4 #6 bar on the traffic face may be placed 4" down from the top of the barrier to allow additional room to install BP railing or other attachments. The R4 bar shall be kept tight to the front R2 bar.
Sheet 4, the existing table "IMPACT SHEAR AND IMPACT MOMENT TABLE" is renamed to "IMPACT SHEAR AND MOMENT TABLE DECK OVERHANG AND CONNECTIONS" keynote 25 is still applicable.
Sheet 4, NOTES, the following Note is added: "3. Deck overhangs for this use constitute plain reinforced concrete typically around 8" in thickness, non-prestressed moment slabs or approach slabs, or plain reinforced and longitudinally prestressed box girders which employ a topping slab. Other Supporting Structure Systems inclusive of post-tensioned decks, walls, and or Structure segments tied together without a topping slab, with the ties in the barrier resistance load path, shall use the impact shear and moments for other supporting structures."
Sheet 4, the following table is added with a keynote 25.

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

C-81.15

Sheet 1, General Notes, Add Note 7, to read;"7. The concrete class for the moment slab shall be class 4000 typically and class 4000A when the top of the slab is used as the roadway, or sidewalk, surface. The concrete class for the barrier is defined in Standard Specification Section 6-10.3."

C-85.11

On Section B, the callout "3" EXPANDED POLYSTYRENE AROUND COLUMN (TYP.)" is revised to read "3" EXPANDED POLYSTYRENE OR POLYETHYLENE FOAM AROUND COLUMN (TYP.)"

D-3.09

Sheet 1, GEOSYNTHETIC WALL WITH 2 FT TRAFFIC SURCHARGE detail, callout – "BARRIER ON WALL ~ SEE Standard Plan D-3.15 or D-3.16" is revised to read: "BARRIER ON WALL ~ SEE CONTRACT PLANS"

D-3.10

Sheet 1, Typical Section, callout – "FOR WALLS WITH SINGLE SLOPE TRAFFIC BARRIER. USE THE DETAILS ABOVE THE MATCH LINE ON STANDARD PLAN D-

3.15" is revised to read; "FOR WALLS WITH SINGLE SLOPE TRAFFIC BARRIER, SEE CONTRACT PLANS"
Sheet 1, Typical Section, callout – "FOR WALLS WITH F-SHAPE TRAFFIC BARRIER. USE THE DETAILS ABOVE THE MATCH LINE ON STANDARD PLAN D-3.16" is revised to read; "FOR WALLS WITH F-SHAPE TRAFFIC BARRIER, SEE CONTRACT PLANS"

D-3.11
Sheet 1, Typical Section, callout – ""B" BRIDGE APPROACH SLAB (SEE BRIDGE PLANS) OR PERMANENT GEOSYNTHETIC WALL BARRIER ~ SEE STANDARD PLANS D-3.15 OR D-3.16" is revised to read; "B" BRIDGE APPROACH SLAB OR MOMENT SLAB (SEE CONTRACT PLANS)
Sheet 1, Typical Section, callout – "TYPICAL BARRIER ON BRIDGE APPROACH SLAB (SEE BRIDGE PLANS) OR PERMANENT GEOSYNTHETIC WALL BARRIER ~ SEE STANDARD PLANS D-3.15 OR D-3.16" is revised to read; "TYPICAL BARRIER ON BRIDGE APPROACH SLAB OR MOMENT SLAB (SEE CONTRACT PLANS)

D-10.10
Note 7, "If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30" is revised to read "Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 1 and 1SW".

D-10.15
Note 7, "If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30" is revised to read "Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 2 and 2SW".

D-10.30
Wall Type 5 may be used in all cases.

D-10.35
Wall Type 6 may be used in all cases.

D-10.40
Note 5, "If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30" is revised to read "Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 7".

D-10.45
Note 5, "If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30" is revised to read "Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 8".

E-20.10
On Sheet 2, the reference to "2-09.4" is revised to read "3-07.4".

F-10.18
Note 1; "Construct curb joints at cement concrete pavement transverse joint locations. If all adjacent pavement is HMA, see Standard Plan F-30.10 for Curb Expansion and Contraction Joint Spacing." is revised to read – "See Standard Plan F-30.10 and Standard Specification Section 8-04.3 for Curb Expansion and Contraction Joint details and spacing."

CURB 3 Detail, the diamond note 1 callout on the 6” dimension at the bottom left side of the detail, is revised to be a diamond note 2 callout.

F-30.10

All five instances of the “2.0% MAX.” are replaced with “2.1% MAX.”

F-40.12

The one instance of “2.0% MAX.” is replaced with “2.1% MAX.”
Note 7 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the abutting landing in the Curb Ramp length measurement. When a ramp is constructed on a radius, the Curb Ramp length is measured on the inside radius along the back of the walkway.
Section B is amended as follows:
Delete: “15’ – 0” MAX. (TYP.)”
Section C is amended as follows:
Delete: “15’ – 0” MAX. (TYP.)”

F-40.14

The one instance of “2.0% MAX.” is replaced with “2.1% MAX.”
Note 7 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the abutting landing in the Curb Ramp length measurement. When a ramp is constructed on a radius, the Curb Ramp length is measured on the inside radius along the back of the walkway.
Section A is amended as follows:
Delete: “15’ – 0” MAX. (TYP.)”
Section C is amended as follows:
Delete: “15’ – 0” MAX. (TYP.)”

F-40.15

The one instance of “2.0% MAX.” is replaced with “2.1% MAX.”
Note 7 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the abutting landing in the Curb Ramp length measurement.
Section A is amended as follows:
Delete: “15’ – 0” MAX. (TYP.)”

F-40.16

The one instance of “2.0% MAX.” is replaced with “2.1% MAX.”
Note 8 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the abutting landing in the Curb Ramp length measurement.
Section A is amended as follows:

Delete: “15’ – 0” MAX. (TYP.)”

Section B is amended as follows:

Delete: “15’ – 0” MAX. (TYP.)”

F-80.10

The one instance of “2.0% MAX.” is replaced with “2.1% MAX.”

Note 6 is replaced with the following:

The running slope of the Pedestrian Ramp shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the sidewalk.

Section A is amended as follows:

Delete: “15” Max.”

J-5.50

General Note 4 reference to “2-09.3(1)E” is revised to read “3-07.3(1)E”

General Note 5 reference to “2-09.3(1)E” is revised to read “3-07.3(1)E”

J-10.10

Sheet 4 of 6, “Foundation Size Reference Table”, PAD WIDTH column, Type 33xD=6’ – 3” is revised to read: 7’ – 3”. Type 342LX / NEMA P44=5’ – 10” is revised to read: 6’ – 10”

Sheet 5 of 6, Plan View, “FOR EXAMPLE PAD SHOWN HERE:, “first bullet” item, “-SPACE BETWEEN TYPE B MOD. CABINET AND 33x CABINET IS 6” (IN)” IS REVISED TO READ: “SPACE BETWEEN TYPE B MOD. CABINET (BACK OF ALL CHANNEL STEEL) AND 33x CABINET IS 6” (IN) (CHANNEL STEEL ADDS ABOUT 5” (IN)”

J-10.16

Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14

J-10.17

Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14

J-10.18

Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14

J-15.15

The reference to “2-09.3(1)E” is revised to read “3-07.3(1)E”

J-20.01

STANDARD DIMENSIONS AND REFERENCES table, TYPE FB, Standard Height column – “15’-0” ”is revised to read; “14’-0” ”

J-20.10

DELETED

J-20.11

DELETED

J-20.26

Add Note 1, “1. One accessible pedestrian pushbutton station per pedestrian pushbutton post.”
Add General Note 2, to read: “Signs shown are for locations with pedestrian signal displays (Accessible Pedestrian Signals/APS). Accessible information device (AID) pushbuttons signs not shown.”
Revise View Titles (Both Sheets) to read: “ACCESSIBLE PEDESTRIAN PUSHBUTTON ASSEMBLY”

J-20.16
View A, callout, was – LOCK NIPPLE, is revised to read; CHASE NIPPLE

J-21.10
Sheet 1, Anchor Bolt Template, callout; “9” (IN) BOLT CIRCLE” is revised to read: “9” (IN) DIA.BOLT CIRCLE”
Base Plate Detail, callout; “3/4” (IN) STEEL PLATE WITH HOLE = POLE BASE + 1/6” (IN)” IS REVISED TO READ; “3/4” (IN) STEEL PLATE WITH HOLE = POLE BASE + 1/16” (IN)”
Flat Foundation Detail – Elevation, callout; “ANCHOR BOLTS ~ ¾” (IN) x 30” (IN) FULL THREAD ~ THREE REQ’D. PER ASSEMBLY” is revised to read; “ANCHOR BOLTS ~ ¾” (IN) x 30” (IN) FULL THREAD ~ FOUR REQ’D. PER ASSEMBLY”
Flat Foundation Detail – Elevation, dimension; 4’ – 0” is revised to read; “4’ – 0” ROUND OR 3’ – 0” SQUARE”

J-21.15
Partial View, callout, was – LOCK NIPPLE ~ 1 ½” DIAM., is revised to read; CHASE NIPPLE ~ 1 ½” (IN) DIAM.

J-21.16
On both elevation views, the overall standard height dimension “15’-0” ” is revised to read; “14’-0” ”

J-26.10
The reference to “2-09.3(1)E” is revised to read “3-07.3(1)E”

J-27.10
The reference to “2-09.3(1)E” is revised to read “3-07.3(1)E”

J-28.30
General Note 13 – “See Standard Plans C-8b and C-85.14 for steel light standards on traffic barrier” is revised to read; “See Standard Plan C-85.15 for steel light standards on traffic barrier.”

J-29.10
The reference to “2-09.3(1)E” is revised to read “3-07.3(1)E”

J-40.10
Sheet 2 of 2, Detail F, callout, “12 – 13 x 1 ½” S.S. PENTA HEAD BOLT AND 12” S. S. FLAT WASHER” is revised to read; “12 – 13 x 1 ½” S.S. PENTA HEAD BOLT AND 1/2” (IN) S. S. FLAT WASHER”

J-40.36

Note 1, second sentence; ”Finish shall be # 2B for backbox and # 4 for the cover.” Is revised to read; ”Finish shall be # 2B for barrier box and HRAP (Hot Rolled Annealed and Pickled) for the cover.

J-40.37

Note 1, second sentence; ”Finish shall be # 2B for backbox and # 4 for the cover.” Is revised to read; ”Finish shall be # 2B for barrier box and HRAP (Hot Rolled Annealed and Pickled) for the cover.

J-50.15

Sheet 1, SECTION A, the call out “LOOP LEAD-IN WIRES, TWISTED PAIRS ~ MAX. 3 PAIRS” is revised to read “LOOP LEAD-IN WIRES, TWISTED PAIRS ~ MAX. 6 PAIRS”
General Note 1 reference to “2-09.3(1)E” is revised to read “3-07.3(1)E”

J-75.20

Key Notes, note 16, second bullet point, was: “1/2” (IN) x 0.45” (IN) Stainless Steel Bands”, add the following to the end of the note: “Alternate: Stainless steel cable with stainless steel ends, nuts, bolts, and washers may be used in place of stainless steel bands and associated hardware.”

J-75.55

Notes, Note A1, Revise reference, was – G-90.29, should be – G-90.20.

K-80.32

Sheet 1, END VIEW, the callout located at the base of barrier – “SEE NOTE 2” is revised to read: “SEE NOTE 3”
Sheet 2, WIRE ROPE LOOP DETAIL, dimension (overall length) – “SEE NOTE 1” is revised to read: “SEE NOTE 2”
Sheet 2, Side View (Right), callout – “WIRE ROPE LOOPS – SEE NOTE 1” is revised to read: “WIRE ROPE LOOPS – SEE NOTE 2”

L-5.10

Add new general Note 9 on sheet 1 – “9. The top of wall in Section A on Sheet 1 shall be located as follows: 1) flush with the finished grade when placed within the deflection distance of the long span guardrail system (Std. Plan C-20.40), 2) Two inches maximum above finished grade when placed behind a box culvert guardrail steel post system (Std. Plan C-20.41 or C-20.43), 3) Six inches minimum for all other applications. The bottom rail shall be located at mid height between the top rail and the top of structure.”

M-20.30

Wide Dotted Lane Line Detail, reference below title, (SEE NOTE 6) is revised to read: (SEE NOTE 5)

M-40.10

Guide Post Type ~ Reflective Sheeting Applications Table, remove reference - “(SEE NOTE 5)”

The following are the Standard Plan numbers applicable at the time this project was advertised. The date shown with each plan number is the publication approval date shown in the lower right-hand corner of that plan. Standard Plans showing different dates shall not be used in this contract.

A-10.10-00..... 8/7/07
A-10.20-00.....10/5/07
A-10.30-00.....10/5/07
A-20.10-00.....8/31/07
A-30.10-00.....11/8/07
A-30.30-01.....6/16/11
A-30.35-00.....10/12/07
A-40.00-01.....7/6/22
A-40.10-04.....7/31/19
A-40.15-00.....8/11/09
A-40.20-04.....1/18/17
A-40.50-03..... 9/12/23
A-50.10-02 .....7/18/24
A-50.40-01 .....8/17/21
A-60.10-03 ..... 12/23/14
A-60.20-03 ..... 12/23/14
A-60.30-01 .....6/28/18
A-60.40-00 .....8/31/07

1

B-5.20-03..... 9/9/20
B-5.40-02.....1/26/17
B-5.60-02.....1/26/17
B-10.20-03.....8/23/23
B-10.40-02.....8/17/21
B-10.70-03.....8/23/23
B-15.20-01..... 2/7/12
B-15.40-01..... 2/7/12
B-15.60-02.....1/26/17
B-20.20-02.....3/16/12
B-20.40-04.....2/27/18
B-20.60-03.....3/15/12
B-25.20-02.....2/27/18
B-25.60-03.....8/23/23
B-30.05-00..... 9/9/20
B-30.10-03.....2/27/18
B-30.15-00.....2/27/18
B-30.20-04.....2/27/18
B-30.30-03.....2/27/18
B-30.50-03 .....2/27/18
B-30.60-00 ..... 9/9/20
B-30.40-03 .....2/27/18
B-30.70-04 .....2/27/18
B-30.80-01 .....2/27/18
B-30.90-02 ..... 1/26/17
B-35.20-00 .....6/8/06
B-35.40-01 .....8/23/23
B-40.20-00 .....6/1/06
B-40.40-02 ..... 1/26/17
B-45.20-01 .....7/11/17
B-45.40-01 .....7/21/17
B-50.20-00 .....6/1/06
B-55.20-03 .....8/17/21
B-60.20-02 ..... 9/9/20
B-60.40-01 .....2/27/18
B-65.20-01 .....4/26/12
B-65.40-00 .....6/1/06
B-70.20-01 .....3/15/22
B-75.20-03 ..... 8/17/21
B-75.50-02 ..... 3/15/22
B-70.60-01 ..... 1/26/17
B-75.60-00 ..... 6/8/06
B-80.20-00 ..... 6/8/06
B-80.40-00 ..... 6/1/06
B-85.10-01 ..... 6/10/08
B-85.20-00 ..... 6/1/06
B-85.30-00 ..... 6/1/06
B-85.40-00 ..... 6/8/06
B-85.50-01 ..... 6/10/08
B-90.10-00 ..... 6/8/06
B-90.20-00 ..... 6/8/06
B-90.30-00 ..... 6/8/06
B-90.40-01 ..... 1/26/17
B-90.50-00 ..... 6/8/06
B-95.20-02 ..... 8/17/21
B-95.40-01 ..... 6/28/18

2

C-1..... 9/8/22
C-1b.....10/12/23
C-1d.....10/31/03
C-6a..... 9/8/22
C-7..... 9/8/22
C-7a..... 9/8/22
C-20.10-09.....10/12/23
C-20.14-05..... 9/8/22
C-20.15-03.....10/12/23
C-20.18-04..... 9/8/22
C-20.40-10.....10/12/23
C-20.41-05.....7/18/24
C-20.43-01.....7/18/24
C-20.44-00.....8/13/24
C-20.45-03..... 9/8/22
C-20.55-00.....7/30/24
C-22.16-08.....10/17/23
C-22.40-11.....7/21/24
C-22.45-07.....7/21/24
C-23.70-01 ..... 10/16/23
C.24.10-05 ..... 7/21/24
C-24.15-00 ..... 3/15/22
C-25.20-07 ..... 8/20/21
C-25.22-06 ..... 8/20/21
C-25.26-05 ..... 8/20/21
C-25.30-01 ..... 8/20/21
C-25.32-00 ..... 7/29/24
C-25.80-05 ..... 8/12/19
C-60.10-04 ..... 7/21/24
C-60.15-01 ..... 7/21/24
C-60.20-01 ..... 9/8/22
C-60.30-02 ..... 7/21/24
C-60.40-01 ..... 7/21/24
C-60.45-01 ..... 7/21/24
C-60.50-01 ..... 7/21/24
C-60.60-01 ..... 7/21/24
C-60.70-01 ..... 9/8/22
C-60.80-02 ..... 7/21/24
C-70.10-04 ..... 10/16/23
C-70.15-01 ..... 7/21/24
C-75.10-02 ..... 9/16/20
C-75.20-03 ..... 8/20/21
C-75.30-03 ..... 8/20/21
C-80.10-03 ..... 10/16/23
C-80.20-01 ..... 6/11/14
C-80.30-02 ..... 8/20/21
C-80.40-01 ..... 6/11/14
C-85.10-00 ..... 4/8/12
C-85.11-01 ..... 9/16/20
C-85.15-03 ..... 10/17/23
C-85-18-03 ..... 9/8/22
C-81.10-00 ..... 9/12/23
C-81.15-00 ..... 9/12/23

3

D-2.36-03.....6/11/14
D-2.46-02.....8/13/21
D-2.84-00.....11/10/05
D-2.92-01.....4/26/22
D-3.09-00.....5/17/12
D-3.11-03 .....6/11/14
D-4 ..... 12/11/98
D-6 ..... 6/19/98
D-10.10-01 ..... 12/2/08
D-10.15-01 ..... 12/2/08
D-10.25-01 ..... 8/7/19
D-10.30-00 ..... 7/8/08
D-10.35-00 ..... 7/8/08
D-10.40-01 ..... 12/2/08
D-10.45-01 ..... 12/2/08

D-3.10-01.....5/29/13
D-10.20-01 ..... 8/7/19
D-20.10-00 ..... 10/9/23

1

E-1.....2/21/07
E-2.....5/29/98
E-4 ..... 8/27/03
E-4a 8/27/03
E-20.10-00 ..... 9/12/23
E-20.20-00 ..... 10/4/23

2

F-10.12-04 .....9/24/20
F-10.16-00 .....12/20/06
F-10.18-04 .....6/28/24
F-10.40-04 .....9/24/20
F-10.42-00 .....1/23/07
F-10.62-02..... 4/22/14
F-10.64-03..... 4/22/14
F-30.10-04..... 9/25/20
F-40.12-03..... 6/29/16
F-40.14-03..... 6/29/16
F-40.15-04 ..... 9/25/20
F-40.16-03 ..... 6/29/16
F-45.10-05 ..... 6/4/24
F-80.10-04 ..... 7/15/16

3

G-10.10-00 .....9/20/07
G-20.10-03 .....8/20/21
G-22.10-04 .....6/28/18
G-24.10-00 .....11/8/07
G-24.20-01 ..... 2/7/12
G-24.30-02 .....6/28/18
G-24.40-07 .....6/28/18
G-24.50-05..... 8/7/19
G-24.60-05..... 6/28/18
G-25.10-05..... 9/16/20
G-26.10-00..... 7/31/19
G-30.10-04..... 6/23/15
G-50.10-03..... 6/28/18
G-90.10-03..... 7/11/17
G-90.20-05..... 7/11/17
G-90.30-04..... 7/11/17
G-95.10-02..... 6/28/18
G-95.20-03..... 6/28/18
G-95.30-03..... 6/28/18

4

H-10.10-01..... 6/2/24
H-10.11-00..... 6/2/24
H-10.15-01..... 6/2/24
H-10.16-00..... 6/2/24
H-30.10-00 ..... 10/12/07
H-32.10-00 ..... 9/20/07
H-60.10-01 ..... 7/3/08
H-60.20-01 ..... 7/3/08
H-70.10-02..... 8/17/21
H-70.20-02..... 8/17/21

5

I-10.10-01 .....8/11/09
I-30.10-02 .....3/22/13
I-30.15-02 .....3/22/13
I-30.16-01 .....7/11/19
I-30.17-01 .....6/12/19
I-30.20-00..... 9/20/07
I-30.30-02..... 6/12/19
I-30.40-02..... 6/12/19
I-30.60-02..... 6/12/19
I-40.10-00..... 9/20/07
I-40.20-00..... 9/20/07
I-50.20-02..... 7/6/22
I-60.10-01..... 6/10/13
I-60.20-01..... 6/10/13
I-80.10-02..... 7/15/16

6

J-05.50-00 .....8/30/22
J-10 .....7/18/97
J-10.10-04 .....9/16/20
J-10.12-00 .....9/16/20
J-10.14-00 .....9/16/20
J-10.15-01 .....6/11/14
J-10.16-02 .....8/18/21
J-10.17-02 .....8/18/21
J-10.18-02 .....8/18/21
J-10.20-04 .....8/18/21
J-10.21-02 .....8/18/21
J-10.22-03 .....10/4/23
J-10.25-01 .....6/21/24
J-10.26-00 .....8/30/22
J-12.15-00 .....6/28/18
J-12.16-00 .....6/28/18
J-15.10-01 .....6/11/14
J-15.15-02 .....7/10/15
J-20.01-01 .....6/21/24
J-20.05-00 .....6/21/24
J-20.10-05 .....10/4/23
J-20.11-03 .....7/31/19
J-26.10-03..... 7/21/16
J-26.15-01..... 5/17/12
J-26.20-01..... 6/28/18
J-27.10-01..... 7/21/16
J-27.15-00..... 3/15/12
J-28.01-00..... 8/30/22
J-28.10-02..... 8/7/19
J-28.22-00..... 8/07/07
J-28.24-02..... 9/16/20
J-28.26-01..... 12/02/08
J-28.30-04..... 6/18/24
J-28.40-02..... 6/11/14
J-28.42-01..... 6/11/14
J-28.43-01..... 6/28/18
J-28.45-03..... 7/21/16
J-28.50-03..... 7/21/16
J-28.60-03..... 8/27/21
J-28.70-04..... 8/30/22
J-29.10-02..... 8/26/22
J-29.15-01..... 7/21/16
J-29.16-02..... 7/21/16
J-30.10-01..... 8/26/22
J-50.05-00..... 7/21/17
J-50.10-01..... .7/31/19
J-50.11-02..... 7/31/19
J-50.12-02..... 8/7/19
J-50.13-01..... 8/30/22
J-50.15-01..... 7/21/17
J-50.16-01..... 3/22/13
J-50.18-00..... 8/7/19
J-50.19-00..... 8/7/19
J-50.20-00..... 6/3/11
J-50.25-00..... 6/3/11
J-50.30-00..... 6/3/11
J-60.05-01..... 7/21/16
J-60.11-00..... 5/20/13
J-60.12-00..... 5/20/13
J-60.13-00..... 6/16/10
J-60.14-01..... 7/31/19
J-75.10-02..... 7/10/15
J-75.20-01..... 7/10/15
J-75.30-02..... 7/10/15
J-75.50-00..... 8/30/22
J-75.55-00..... 8/30/22

J-20.15-04 .....6/21/24
J-20.16-02 .....6/30/14
J-20.20-02 .....5/20/13
J-20.26-01 .....7/12/12
J-21.10-05 .....6/21/24
J-21.15-01 .....6/10/13
J-21.16-02 .....6/21/24
J-21.17-01 .....6/10/13
J-21.20-01 .....6/10/13
J-22.15-03 .....6/21/24
J-22.16-03 .....7/10/15
J-22.17-00 .....6/21/24
J-40.01-00 ..... 8/30/22
J-40.05-00 ..... 7/21/16
J-40.10-04 ..... 4/28/16
J-40.20-03 ..... 4/28/16
J-40.30-04 ..... 4/28/16
J-40.35-01 ..... 5/29/13
J-40.36-02 ..... 7/21/17
J-40.37-02 ..... 7/21/17
J-40.38-01 ..... 5/20/13
J-40.39-00 ..... 5/20/13
J-40.40-02 ..... 7/31/19
J-45.36-00 ..... 7/21/17
J-80.05-00..... 8/30/22
J-80.10-01..... 8/18/21
J-80.12-00..... 8/18/21
J-80.15-00..... 6/28/18
J-81.10-02..... 8/18/21
J-81.12-00..... 9/3/21
J-84.05-00..... 8/30/22
J-86.10-00..... 6/28/18
J-90.10-03..... 6/28/18
J-90.20-03..... 6/28/18
J-90.21-02..... 6/28/18
J-90.50-00..... 6/28/18

K-70.20-01..... 6/1/16
K-80.10-02.....9/25/20
K-80.32-00 ..... 8/17/21
K-80.34-00 ..... 8/17/21
K-80.35-01 ..... 9/16/20
K-80.37-01 ..... 9/16/20

L-5.10-02 ..... 6/5/24
L-5.15-00 .....9/19/22
L-10.10-02 .....6/21/12
L-20.10-03..... 7/14/15
L-30.10-02..... 6/11/14
L-40.15-01..... 6/16/11
L-40.20-02..... 6/21/12
L-70.10-01..... 5/21/08
L-70.20-01..... 5/21/08

M-1.20-04 .....9/25/20
M-1.40-03 .....9/25/20
M-1.60-03 .....9/25/20
M-1.80-03 ..... 6/3/11
M-2.20-03 .....7/10/15
M-2.21-00 .....7/10/15
M-3.10-04 .....9/25/20
M-3.20-04 ..... 8/2/22
M-3.30-04 .....9/25/20
M-3.40-04 .....9/25/20
M-3.50-03 .....9/25/20
M-5.10-03 .....9/25/20
M-7.50-01 .....1/30/07
M-9.50-02 .....6/24/14
M-9.60-00..... 2/10/09
M-11.10-04..... 8/2/22
M-12.10-04..... 6/28/24
M-15.10-02..... 7/17/23
M-17.10-02..... 7/3/08
M-20.10-04..... 8/2/22
M-20.20-02..... 4/20/15
M-20.30-05..... 6/28/24
M-20.40-03..... 6/24/14
M-20.50-02..... 6/3/11
M-24.20-02..... 4/20/15
M-24.40-02..... 4/20/15
M-24.60-04..... 6/24/14
M-24.65-00..... 7/11/17
M-24.66-00..... 7/11/17
M-40.10-04..... 10/17/23
M-40.20-00..... 10/12/07
M-40.30-01..... 7/11/17
M-40.40-00..... 9/20/07
M-40.50-00..... 9/20/07
M-40.60-00..... 9/20/07
M-60.10-01..... 6/3/11
M-60.20-03..... 8/17/21
M-65.10-03..... 8/17/21
M-80.10-01..... 6/3/11
M-80.20-00..... 6/10/08
M-80.30-00..... 6/10/08

END OF DIVISON 9