APPENDIX “B”
CITY OF RICHLAND
STANDARD SPECIAL PROVISIONS

Updated March 2024

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CITY OF RICHLAND, WASHINGTON

STANDARD SPECIAL PROVISIONS

The following Special Provisions are made a part of this contract and supersede any conflicting provisions of the **2024** Standard Specifications for Road, Bridge and Municipal Construction, and the foregoing Amendments to the Standard Specifications.

INTRODUCTION TO THE SPECIAL PROVISIONS

(January 4, 2024 APWA GSP, Option A)

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2024 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 GSP)
(May 1, 2013 Richland GSP)

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 Manual M21-01, current edition
- City of Richland Standard Plans/Details
- City of Richland Materials List
- City of Richland Standard Special Provisions

Contractor shall obtain copies of these publications, at Contractor's own expense. Current editions of City of Richland Standard Plans, Materials list and Standard Special Provisions are available at the City's website.

DIVISION 1
GENERAL REQUIREMENTS

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions
(January 4, 2016 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, Amendments, 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.

Supplement this Section with the following:
(February 6, 2023 Richland GSP)

Definitions (Richland)

The following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Common or Joint Trench
Trench with two or more conduits or pipes installed within the same excavated 'trench' area.

Field Order
A Field Order is a written direction of minor changes or alterations in the work given by the Engineer to avoid undue delay in project work. Field Orders and associated documentation will be used in the preparation of change orders.

Substantial Completion
A project is considered Substantially Complete when the following items, as applicable, are complete and operational with un-obstructed access to all valves and structures: curb, gutter, sidewalk, HMA, storm drainage systems, water, sanitary sewer, street lights, traffic signals, landscaping, irrigation systems, communication conduits, electrical conduits, and other items as listed in the bid proposal, including ADA features surveying.

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

1-02.1 Qualifications of Bidder
Delete this Section and replace it with the following:
(January 24, 2011 APWA GSP)

1-02.1 Qualifications of Bidder

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

1-02.2 Plans and Specifications
Delete this section and replace it with the following:
(June 27, 2011 APWA GSP)

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")	5	Furnished automatically upon award.
Contract Provisions	2	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	5	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 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 3 business days preceding the bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids.

1-02.5 Proposal Forms
(July 31, 2017 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; the bidder's UDBE/DBE/M/WBE commitment, if applicable; a State of Washington Contractor's Registration Number; and a Business License Number, if applicable. Bids shall be completed by typing or shall be printed in ink by hand, preferably in black ink. 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
(January 4, 2024 APWA GSP 1-02.6, Option B)

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.
5. Any correction to a bid made by interlineation, alteration, or erasure, shall be initialed by the signer of the bid.

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 copy of the partnership agreement shall be submitted with the Bid Form if any DBE requirements are to be satisfied through such an agreement.

A bid by a joint venture shall be executed in the joint venture name and signed by a member of the joint venture. A copy of the joint venture agreement shall be submitted with the Bid Form if any DBE requirements are to be satisfied through such an agreement.

1-02.7 Bid Deposit
(March 8, 2013 APWA GSP)

Supplement this section with the following:

Bid bonds shall contain the following:

1. Contracting Agency-assigned number for the project;
2. Name of the project;
3. The Contracting Agency named as obligee;
4. The amount of the bid bond stated either as a dollar figure or as a percentage which represents five percent of the maximum bid amount that could be awarded;
5. Signature of the bidder's officer empowered to sign official statements. The signature of the person authorized to submit the bid should agree with the signature on the bond, and the title of the person must accompany the said signature;
6. The signature of the surety's officer empowered to sign the bond and the power of attorney.

If so stated in the Contract Provisions, bidder must use the bond form included in the Contract Provisions.

If so stated in the Contract Provisions, cash will not be accepted for a bid deposit.

(March 12, 2024 Richland GSP)
Cash or certified check will not be accepted for a bid deposit.

Bidder must use the bond form included as part of the contract bid documents.

1-02.9 Delivery of Proposal
(January 19, 2024 Richland GSP)

Delete this section and replace it with the following:

DBE DOCUMENT SUBMITTAL REQUIREMENTS

General

Each Proposal shall be submitted by electronic submittal, with the Project Name and Project Number as stated in the Call for Bids as the file name.

To be considered responsive on a FHWA-funded project, the Bidder may be required to submit the following items, as required by Section 1-02.6:

- DBE Utilization Certification (WSDOT 272-056)
- DBE Written Confirmation Document (WSDOT 422-031) from each DBE firm listed on the Bidder's completed DBE Utilization Certification
- Good Faith Effort (GFE) Documentation (if applicable)
- DBE Bid Item Breakdown (WSDOT 272-054)

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

1. In a sealed envelope labeled the same as for the Proposal, with "Supplemental Information" added, or
2. By facsimile to the following FAX number: 509-942-7397, or
3. By e-mail to the following e-mail address: purchasing@ci.richland.wa.us

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.

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" (DBE confirmations or GFE

documentation) that is received after the time specified above or received in a location other than that specified above.

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.

DBE Utilization Certification (WSDOT Form 272-056)
The DBE Utilization Certification shall be received at the same location and no later than the time required for delivery of the Proposal. The Contracting Agency will not open or consider any Proposal when the DBE Utilization Certification is received after the time specified for receipt of Proposals or received in a location other than that specified for receipt of Proposals. The DBE Utilization Certification may be submitted in the same envelope as the Bid deposit.

DBE Written Confirmation (WSDOT Form 422-031) and/or GFE Documentation (if applicable)
The DBE Written Confirmation Documents and/or GFE Documents are not required to be submitted with the Proposal. The DBE Written Confirmation Document(s) and/or GFE (if any) shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received no later than 48 hours (not including Saturdays, Sundays, and Holidays) after the time for delivery of the Proposal. To be considered responsive, Bidders shall submit Written Confirmation Documentation from each DBE firm listed on the Bidder's completed DBE Utilization Certification and/or the GFE as required by Section 1-02.6.

DBE Bid Item Breakdown (WSDOT form 272-054)
The DBE Bid Item Breakdown shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received no later than 48 hours (not including Saturdays, Sundays, and Holidays) after the time for delivery of the Proposal. The successful Bidder shall submit a completed DBE Bid Item Breakdown, however, minor errors and corrections to DBE Bid Item Breakdown will be returned for correction for a period up to five calendar days after bid opening (not including Saturdays, Sundays, and Holidays) DBE Bid Item Breakdown that are still incorrect after the correction period will be determined to be non-responsive.

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

1-02.10 Withdrawing, Revising, or Supplementing Proposal
Delete this section, and replace it with the following:
(May 26, 2022 Richland GSP)

After submitting an electronic Bid Proposal to the Contracting Agency, the Bidder may withdraw, revise, or supplement it if:

1. The Bidder submits changes directly on the Contracting Agency website where the electronic proposal was initially submitted, and
    a. The revised or supplemented Bid Proposal is completed electronically before the time set for receipt of Bid Proposals, or
2. The Bidder submits a written request signed by an authorized person, and
    a. The Contracting Agency receives the request at the following email address: purchasing@ci.richland.wa.us before the time set for receipt of Bid Proposals, and
    b. 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 confirm to the bidder and the electronic file will remain unopened. The Bidder must then submit the revised or supplemented package in its entirety. If the Bidder does not submit a revised or supplemented package, 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 will not be accepted. Mailed, in-person delivery, or faxed requests to withdraw, revise, or supplement a Bid Proposal are not acceptable.

1-02.13 Irregular Proposals
(January 4, 2024 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 (WSDOT Form 271-015), if applicable, as required in Section 1-02.6;
   f. The Bidder fails to submit or properly complete a Disadvantaged Business Enterprise Certification (WSDOT Form 272-056), if applicable, as required in Section 1-02.6;
   g. The Bidder fails to submit Written Confirmations (WSDOT Form 422-031) from each DBE firm listed on the Bidder's completed DBE Utilization Certification that they are in agreement with the bidder's DBE participation commitment, if applicable, as required in Section 1-02.6, or if the written confirmation that is submitted fails to meet the requirements of the Special Provisions;
   h. The Bidder fails to submit DBE Good Faith Effort documentation, if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to demonstrate that a Good Faith Effort to meet the Condition of Award in accordance with Section 1-07.11;
   i. The Bidder fails to submit a DBE Bid Item Breakdown (WSDOT Form 272-054), if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions;
   j. The 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;
   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); or
   g. If Proposal form entries are not made in ink.

1-02.14 Disqualification of Bidders

(May 17, 2018 APWA GSP, Option B)

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; or does not meet Supplemental Criteria 1-7 listed in this Section.

The Contracting Agency will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1), and Supplemental Criteria 1-2. Evidence that the Bidder meets Supplemental Criteria 3-7 shall be provided by the Bidder as stated later in this Section.

1. **Delinquent State Taxes**

   A Criterion: The Bidder shall not owe delinquent taxes to the Washington State Department of Revenue without a payment plan approved by the Department of Revenue.

   B. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder does not owe delinquent taxes to the Washington State Department of Revenue, or if delinquent taxes are owed to the Washington State Department of Revenue, the Bidder must submit a written payment plan approved by the Department of Revenue, to the Contracting Agency by the deadline listed below.

2. **Federal Debarment**

   A Criterion: The Bidder shall not currently be debarred or suspended by the Federal government.

   B. Documentation: The Bidder shall not be listed as having an “active exclusion” on the U.S. government’s “System for Award Management” database (www.sam.gov).

3. **Subcontractor Responsibility**

   A Criterion: The Bidder’s standard subcontract form shall include the subcontractor responsibility language required by RCW 39.06.020, and the Bidder shall have an established procedure which it utilizes to validate the responsibility of each of its subcontractors. The Bidder’s subcontract form shall also include a requirement that each of its subcontractors shall have and document a similar procedure to determine whether the sub-tier subcontractors with whom it contracts are also “responsible” subcontractors as defined by RCW 39.06.020.

   B. Documentation: The Bidder, if and when required as detailed below, shall submit a copy of its standard subcontract form for review by the Contracting Agency, and a written description of its procedure for validating the responsibility of subcontractors with which it contracts.

4. **Claims Against Retainage and Bonds**

   A Criterion: The Bidder shall not have a record of excessive claims filed against the retainage or payment bonds for public works projects in the three years prior to the bid submittal date, that demonstrate a lack of effective management by the

Bidder of making timely and appropriate payments to its subcontractors, suppliers, and workers, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Contracting Agency.

B. Documentation: The Bidder, if and when required as detailed below, shall submit a list of the public works projects completed in the three years prior to the bid submittal date that have had claims against retainage and bonds and include for each project the following information:

- Name of project
- The owner and contact information for the owner;
- A list of claims filed against the retainage and/or payment bond for any of the projects listed;
- A written explanation of the circumstances surrounding each claim and the ultimate resolution of the claim.

5. **Public Bidding Crime**

A Criterion: The Bidder and/or its owners shall not have been convicted of a crime involving bidding on a public works contract in the five years prior to the bid submittal date.

B. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder and/or its owners have not been convicted of a crime involving bidding on a public works contract.

6. **Termination for Cause / Termination for Default**

A Criterion: The Bidder shall not have had any public works contract terminated for cause or terminated for default by a government agency in the five years prior to the bid submittal date, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Contracting Agency.

B. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder has not had any public works contract terminated for cause or terminated for default by a government agency in the five years prior to the bid submittal date; or if Bidder was terminated, describe the circumstances. .

7. **Lawsuits**

A Criterion: The Bidder shall not have lawsuits with judgments entered against the Bidder in the five years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Contracting Agency

B. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder has not had any lawsuits with judgments entered against the Bidder in the five years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts, or shall submit a list of all lawsuits with judgments entered against the Bidder in the five years prior to the bid submittal date, along with a written explanation of the circumstances surrounding each such lawsuit. The Contracting Agency shall evaluate these explanations to determine whether the

lawsuits demonstrate a pattern of failing to meet of terms of construction related contracts

As evidence that the Bidder meets the Supplemental Criteria stated above, the apparent low Bidder must submit to the Contracting Agency by 12:00 P.M. (noon) of the second business day following the bid submittal deadline, a written statement verifying that the Bidder meets the supplemental criteria together with supporting documentation (sufficient in the sole judgment of the Contracting Agency) demonstrating compliance with the Supplemental Criteria. The Contracting Agency reserves the right to request further documentation as needed from the low Bidder and documentation from other Bidders as well to assess Bidder responsibility and compliance with all bidder responsibility criteria. The Contracting Agency also reserves the right to obtain information from third-parties and independent sources of information concerning a Bidder's compliance with the mandatory and supplemental criteria, and to use that information in their evaluation. The Contracting Agency may consider mitigating factors in determining whether the Bidder complies with the requirements of the supplemental criteria.

The basis for evaluation of Bidder compliance with these mandatory and supplemental criteria shall include any documents or facts obtained by Contracting Agency (whether from the Bidder or third parties) including but not limited to: (i) financial, historical, or operational data from the Bidder; (ii) information obtained directly by the Contracting Agency from others for whom the Bidder has worked, or other public agencies or private enterprises; and (iii) any additional information obtained by the Contracting Agency which is believed to be relevant to the matter.

If the Contracting Agency determines the Bidder does not meet the bidder responsibility criteria above 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.

Request to Change Supplemental Bidder Responsibility Criteria Prior To Bid: Bidders with concerns about the relevancy or restrictiveness of the Supplemental Bidder Responsibility Criteria may make or submit requests to the Contracting Agency to modify the criteria. Such requests shall be in writing, describe the nature of the concerns, and propose specific modifications to the criteria. Bidders shall submit such requests to the Contracting Agency no later than five (5) business days prior to the bid submittal deadline and address the request to the Project Engineer or such other person designated by the Contracting Agency in the Bid Documents.

1-02.15 Pre Award Information
Revise this section to read:
(December 30, 2022 APWA GSP)

Before awarding any contract, the Contracting Agency may require one or more of these items or actions of the apparent lowest responsible bidder:

1. A complete statement of the origin, composition, and manufacture of any or all materials to be used,
2. Samples of these materials for quality and fitness tests,

3. A progress schedule (in a form the Contracting Agency requires) showing the order of and time required for the various phases of the work,
4. A breakdown of costs assigned to any bid item,

5. Attendance at a conference with the Engineer or representatives of the Engineer,
6. Obtain, and furnish a copy of, a business license to do business in the city or county where the work is located.
7. Any other information or action taken that is deemed necessary to ensure that the bidder is the lowest responsible bidder.

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

Revise the first paragraph to read:
(December 30, 2022 APWA GSP)

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

(January 4, 2024 APWA GSP Option B)

Revise this section to read:

Within 3 calendar days of Award date (not including Saturdays, Sundays and Holidays), the successful Bidder shall provide the information necessary to execute the Contract to the Contracting Agency. The Bidder shall send the contact information, including the full name, email address, and phone number, for the authorized signer and bonding agent to the Contracting Agency.

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 10 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 any pre-award information the Contracting Agency may require under Section 1-02.15.

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 10 additional calendar days for return of the documents, provided the Contracting Agency deems the circumstances warrant it.

1-03.4 Contract Bond

Delete the first paragraph and replace it with the following:
(July 23, 2015 APWA GSP)

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

Revise this section to read:
(December 30, 2022 APWA GSP)

All decisions 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 WORK

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

Revise the second paragraph to read:
(November 1, 2021 Richland GSP)

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. Project Special Provisions,
4. City of Richland Standard Special Provisions,
5. Contract Plans,
6. Standard Specifications (WSDOT),
7. Contracting Agency's Standard Plans or Details (if any), and
8. WSDOT Standard Plans for Road, Bridge, and Municipal Construction.

1-04.3 Pre-Bid Site Inspection
Section 1-04.3 is supplemented as follows:
(March 19, 2012 Richland GSP)

The Contractor is encouraged to inspect the project site prior to submitting a bid.

1-05 CONTROL OF WORK

1-05.4 Conformity with and Deviations from Plans and Stakes
Section 1-05.4 is supplemented with the following:
(August 7, 2017 WSDOT GSP)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Agency will supply horizontal coordinates for the beginning and ending points and for each Point of Intersection (PI) on each alignment included in the project.

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

	Vertical	Horizontal
Slope stakes	±0.10 feet	±0.10 feet
Subgrade grade stakes set 0.04 feet below grade	±0.01 feet	±0.5 feet (parallel to alignment) ±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.

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

"Roadway Surveying", lump sum.

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

1-05.4(1) Land Corner and Control Monuments

All existing land corner and survey control monuments shall be carefully preserved. Before disturbing any existing monuments, the Contractor shall request, through the Inspector, with no less than three (3) days notice that reference stakes be set beyond the limits of the work. The Contracting Agency shall set reference points only once and the Contractor shall take necessary care to preserve said reference stakes. The Contracting Agency will deduct from payments due the Contractor all costs to replace such stakes, marks and monuments carelessly or willfully damaged or destroyed by the Contractor's operation.

1-05.4(2) Contractor Surveying – ADA Features
(January 19, 2024 Richland GSP)

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

ADA Feature As-Built Measurements
The Contractor shall be responsible for providing electronic As-Built records of all ADA feature improvements completed in the Contract.
The survey work shall include but not be limited to completing the measurements, recording the required measurements and completing other data fill-ins found on the ADA Measurement Forms, and transmitting the electronic Forms to the Engineer. The ADA Measurement Forms are found at the following website location:

https://wsdot.wa.gov/publications/fulltext/design/ASDE/ADA/ADA_Measurements.xlsm

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

"ADA Features Surveying", lump sum.

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

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

This section is supplemented with the following:
(February 6, 2023 Richland GSP)

Substantial Completion will not be granted until the ADA Features Surveying has been completed and the ADA Measurement Form(s) submitted to the Engineer.

1-05.7 Removal of Defective and Unauthorized Work
Supplement this Section with the following:
(October 1, 2005 APWA GSP)

If the Contractor fails to remedy defective or unauthorized 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, with Contracting Agency forces or by such other means as the Contracting Agency may deem necessary.

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 defective and unauthorized work corrected immediately, have the rejected 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 serious risk of loss or damage to the public.

Direct or indirect costs incurred by the Contracting Agency attributable to correcting and remedying defective or unauthorized work, or work the Contractor failed or refused to perform, shall be paid by the Contractor. Payment will be deducted by the Engineer from monies due, or to become due, the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and costs for repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's unauthorized work.

No adjustment in contract time or compensation will be allowed because of the delay in the performance of the work attributable to the exercise of the Contracting Agency's rights provided by this Section.

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.

1-05.11 Final Inspection
Delete this Section and replace it with the following:
(October 1, 2005 APWA GSP)

1-05.11 Final Inspections and Operational Testing

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 therefore.

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.

1-05.12 Final Acceptance

1-05.12(1) One-year Guarantee Period
Section 1-05.12(1) is added as follows:
(March 8, 2013 APWA GSP)

The Contractor shall return to the project and repair or replace all defects in workmanship and material discovered within one year after Final Acceptance of the Work. The Contractor shall start work to remedy any such defects within 7 calendar days of receiving Contracting Agency's written notice of a defect, and shall complete such work within the time stated in the Contracting Agency's notice. In case of an emergency, where damage may result from delay or where loss of services may result, such corrections may be made by the Contracting Agency's own forces or another contractor, in which case the cost of corrections shall be paid by the Contractor. In the event the Contractor does not accomplish corrections within the time specified, the work will be otherwise accomplished and the cost of same shall be paid by the Contractor.

When corrections of defects are made, the Contractor shall then be responsible for correcting all defects in workmanship and materials in the corrected work for one year after acceptance of the corrections by Contracting Agency.

This guarantee is supplemental to and does not limit or affect the requirements that the Contractor's work comply with the requirements of the Contract or any other legal rights or remedies of the Contracting Agency.

1-05.13 Superintendents, Labor and Equipment of Contractor
Delete the sixth and seventh paragraphs of this section.
(August 14, 2013 APWA GSP)

1-05.14 Cooperation With Other Contractors
Supplement this Section with the following:
(November 10, 2009 Richland GSP)

No additional compensation will be given to the Contractor for any coordination or delays caused by other nearby construction projects.

1-05.16 Water and Power
Section 1-05.16 is added as follows:
(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.

Supplement this Section with the following:
(September 20, 2022 Richland GSP)

When a Capital Improvement Project is administered by the City, the City will provide a water source for dust control, compaction, placement of crushed surfacing, pipe line installation, flushing and testing, etc. at available fire hydrant locations, within the construction area only. The Contractor shall pay a $1,500.00 meter deposit to be refunded at the end of the project if the meter is returned undamaged.

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 $ 500)	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.

This section is supplemented with the following:
(January 19, 2024 Richland GSP)

A final as-built survey point file (CSV) shall be submitted as part of this work. Requirements for survey, including all features installed or modified, shall follow City's Record Drawing Requirements found on City's website at:https://www.ci.richland.wa.us/departments/public-works/engineering-and-private-development/record-drawing-requirements.

1-06 CONTROL OF MATERIAL

1-06.1 Approval of Materials Prior to Use

Revise the first paragraph to read:
(May 6, 2014 Richland GSP)

Prior to use, the Contractor shall notify the Engineer of all proposed materials. The Contractor shall use the City of Richland Materials List or the Request for Approval of Material (RAM) form. Materials included in the Qualified Products List (QPL) but not on the City's Material List will be taken under consideration by use of the RAM form.

The Contractor shall note all deviations from the governing specifications and/or drawings and shall reference the appropriate paragraph of the section or page of the drawing. If the reason for the deviation from the specifications is not readily apparent, a written explanation shall be included.

The Engineer's review of the Contractor's submittals shall not relieve the Contractor of the entire responsibility for the correctness of details and dimension. The Contractor shall assume all responsibility and risk for any misfits due to any errors in information submitted by the Contractor. Any fabrications or other work performed in advance of the receipt of approved submittals shall be entirely at the Contractor's risk and expense. The Contractor shall be responsible for the dimensions and the design of adequate connections and details.

1-06.1(2)A Submittals
Section 1-06.1(2)A is added as follows:
(March 29, 2019 Richland GSP)

Contractor shall have one (1) pdf of submittals for review and comment by the City.

1-06.2 Acceptance of Materials

1-06.2(2) Statistical Evaluation of Materials for Acceptance
This Section is deleted in its' entirety.
(November 10, 2009 Richland GSP)

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
Supplement this Section 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.

1-07.2 State Taxes

Delete this section, including its sub-sections, in its entirety and replace it with the following:
(June 27, 2011 APWA GSP)

1-07.2 State Sales Tax

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).

1-07.4 Sanitation

1-07.4(2) Health Hazards
Supplement this Section with the following:
(November 10, 2009 Richland GSP)

The Contractor and all Subcontractors shall comply with WAC 296-809 for confined spaces and provide any required hazard protection for employees.

1-07.6 Permits And Licenses
Supplement this Section with the following:
(January 28, 2022 Richland GSP)

The Richland City Council has passed ordinances requiring that a Contractor have a City Business License. In accordance with these ordinances, a City of Richland Business License is required prior to conducting business within the City limits. Contractor shall obtain business license prior to commencing work on the project (not required for the bidding of the project).

1-07.9 Wages
Supplement this Section with the following:
(September 6, 2019 Richland GSP)

Prevailing Wages & Benefit Code Key: Per the requirements of Chapter 39.12 RCW, this project is subject to prevailing wages. The State of Washington prevailing wage rates applicable for this public works project, which is located in Benton County, may be found at the following website address of the Department of Labor and Industries: https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx.

A copy of the applicable prevailing wage rates are available for viewing at the City of Richland's Purchasing Division office, located at 2700 Duportail Street, Richland, WA 99352. Upon request, the City will mail a hard copy of the applicable prevailing wages for this project.

The prevailing wage rates in effect on the bid opening date are the prevailing wage rates that apply to this project; no matter how long it lasts, unless the contract is awarded more

than six months after the bids were due. For those contracts where award was delayed more than six months, the prevailing wage rate in effect on the date of the award shall apply for the duration of the contract.

1-07.9(5)A General
(December 30, 2022 APWA GSP)

This section is revised to read as follows:

All Statements of Intent to Pay Prevailing Wages, Affidavits of Wages Paid and Certified Payrolls, including a signed Statement of Compliance for Federal-aid projects, shall be submitted to the Engineer and to the State L&I online Prevailing Wage Intent & Affidavit (PWIA) system.

1-07.11 Requirements for Nondiscrimination

1-07.11(2) Contractual Requirements
Section 1-07.11(2) is supplemented with the following:
(January 24, 2024 WSDOT GSP)

11. The Contractor shall comply with the following nondiscrimination provisions, and the Contractor shall ensure the nondiscrimination provisions are included in all subcontracts:

    a. Nondiscrimination Requirement. During the term of this Contract, the Contractor, including all subcontractors, shall not discriminate on the bases enumerated at RCW 49.60.530(3). In addition, the Contractor, including all subcontractors, shall give written notice of this nondiscrimination requirement to any labor organizations with which the Contractor, or subcontractor, has a collective bargaining or other agreement.

    b. Obligation to Cooperate. The Contractor, including all subcontractors, shall cooperate and comply with any Washington state agency investigation regarding any allegation that the Contractor, including any subcontractor, has engaged in discrimination prohibited by this Contract pursuant to RCW 49.60.530(3).

    c. Default. Notwithstanding any provision to the contrary, the Contracting Agency may suspend the Contract in accordance with Section 1-08.6, upon notice of a failure to participate and cooperate with any state agency investigation into alleged discrimination prohibited by this Contract, pursuant to RCW 49.60.530(3). Any such suspension will remain in place until the Contracting Agency receives notification that Contractor, including any subcontractor, is cooperating with the investigating state agency. In the event the Contractor, or subcontractor, is determined to have engaged in discrimination identified at RCW 49.60.530(3), the Contracting Agency may terminate this Contract in whole or in part in accordance with Section 1-08.10(1), and in addition to the sanctions listed in Section 1-07.11(5), the Contractor, subcontractor, or both, may be referred for debarment as provided in RCW 39.26.200. The Contractor or subcontractor may be given a reasonable time in which to cure this noncompliance, including implementing conditions consistent with any court-ordered injunctive relief or settlement agreement.

    d. Remedies for Breach. Notwithstanding any provision to the contrary, in the event of Contract termination or suspension for engaging in discrimination,

the Contractor, subcontractor, or both, shall be liable for contract damages as authorized by law including, but not limited to, any cost difference between the original contract and the replacement or cover contract and all administrative costs directly related to the replacement contract, which damages are distinct from any penalties imposed under Chapter 49.60, RCW. The Contracting Agency shall have the right to deduct from any monies due to Contractor or subcontractor, or that thereafter become due, an amount for damages Contractor or subcontractor will owe Contracting Agency for default under this Provision.

1-07.16 Protection and Restoration of Property
Supplement this Section with the following:
(December 15, 2010 Richland GSP)

The Contractor shall notify the adjacent property owners of the construction actives prior to commencing work. Method of notification shall be submitted to the Engineer for approval. Additional notifications may be required as the work progresses.

1-07.17 Utilities and Similar Facilities
Supplement this Section with the following:
(April 2, 2007 WSDOT GSP)

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:

City of Richland – Water Department	Pat Everham	(509) 713-9735
City of Richland – Sewer / Storm Dept	Steve Brewer	(509) 942-7481
City of Richland – Streets Department	Chad Boothe	(509) 531-9168
City of Richland – Energy Services	Clint Whitney	(509) 531-9759
Charter Communications	Junior Campos	(509) 222-2552
Ziply Fiber	Katherine Cichy	(509) 736-3726
	Michael Tovey	(509) 873-2179
Cascade Natural Gas	Alan Nelson	(509) 736- 5568
Call Before You Dig		**1-800-424-5555**

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
(January 4, 2024 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 <u>not</u> satisfy these requirements – actual endorsements must be submitted.

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.

1-07.18(5)I Builder's Risk

(December 30, 2022 APWA GSP)

Contractor shall purchase and maintain Builder's Risk insurance covering interests of the Contracting Agency, the Contractor, and subcontractors of every tier, as Named Insureds, in the Work. An Installation Floater instead of Builders Risk is acceptable for renovation projects. Builder's Risk insurance shall be on a special form policy, and shall insure against the perils of fire and extended coverage and physical loss or damage, theft, vandalism, malicious mischief and collapse; and flood and earthquake when shown below. The Builder's Risk insurance shall include coverage for temporary buildings, debris removal, and damage to materials in transit or stored off-site. Such insurance shall cover resulting "soft costs" including but not limited to design costs, licensing fees, architect's and engineer's fees, and costs due to delay in completion.

Builder's Risk insurance shall be written in the amount of the completed value of the project, with no coinsurance provisions. Such policy must provide coverage and deductibles that comply with the following:

Coverage:

Total Cost of Project to be Insured: Awarded Bid Amount
Soft Costs: 15% of Awarded Bid Amount
Flood: Awarded Bid Amount

Earthquake: Awarded Bid Amount

Deductibles not to exceed:

Flood: 2% of the Value at Time of Loss, subject to a $250,000 Minimum
Earthquake: 5% of the Value at Time of Loss, subject to a $250,000 Minimum
Earth Movement: 5% of the Value at Time of Loss, subject to a $250,000 Minimum
All Other Perils: $50,000
Soft Costs: $50,000, with no more than 7-day waiting period

The Builders Risk insurance covering the work shall have maximum deductibles as listed above for each occurrence. The deductible(s) shall be the responsibility of the Contractor.

The Contractor shall provide the Contracting Agency with a full and certified copy of the insurance policy 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.

The Builders Risk insurance shall be maintained until final acceptance of the Work by the Contracting Agency.

The Contractor and the Contracting Agency waive all rights against each other and any of their subcontractors of every tier, agents, and employees, officers, and officials, for damages caused by fire or other perils to the extent covered by Builder's Risk insurance or other property insurance applicable to the work. The policies shall provide such waivers by endorsement.

1-07.23 Public Convenience And Safety

1-07.23(1) Construction Under Traffic

(May 2, 2017 APWA GSP)

Revise the third sentence of the second paragraph to read:

Accessibility to existing or temporary pedestrian push buttons shall not be impaired; if approved by the Contracting Agency activating pedestrian recall timing or other accommodation may be allowed during construction.

Supplement this Section with the following:
(May 6, 2014 Richland GSP)

6. Maintain existing sidewalk and path routes, keeping them open through the project limits by placing gravel or temporary ramps in sidewalk removal areas. No drop off greater than 1 inch will be allowed along the route with temporary ramps not to exceed a 12:1 slope.
7. Sidewalks, pathways, driveways, and ramps which have been removed shall be replaced to their final configuration within 14 calendar days.
8. Trenching for utilities within the right of way shall be restored as soon as possible. The trench shall be restored to be flush with adjacent road surface with a finished temporary surface containing a minimum of 2" of crushed surfacing top course. Trenches in a travel lane running with the direction of travel and all perpendicular road crossings that will not be restored with the final HMA patching within 48 hours shall be treated with a magnesium chloride soil stabilization product.

1-07.24 Rights of Way
Delete this section and replace it with the following:
(July 23, 2015 APWA GSP)

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.

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:
(May 25, 2006 APWA GSP)

1-08.0 Preliminary Matters

1-08.0(1) Preconstruction Conference
Section 1-08.0(1) is added as follows:

(October 10, 2008 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 establish normal working hours for the work;
5. To review safety standards and traffic control; and
6. 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.

1-08.0(2) Hours of Work

Section 1-08.0(2) is added as follows:

(December 8, 2014 APWA GSP)

Except in the case of emergency or unless otherwise approved by the Engineer, the normal working hours for the Contract shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. Monday through Friday, exclusive of a lunch break. If the Contractor desires different than the normal working hours stated above, the request must be submitted in writing prior to the preconstruction conference, subject to the provisions below. The working hours for the Contract shall be established at or prior to the preconstruction conference.

All working hours and days are also subject to local permit and ordinance conditions (such as noise ordinances).

If the Contractor wishes to deviate from the established working hours, the Contractor shall submit a written request to the Engineer for consideration. This request shall state what hours are being requested, and why. Requests shall be submitted for review no later than 48-hours prior to the day(s) the Contractor is requesting to change the hours.

If the Contracting Agency approves such a deviation, such approval may be subject to certain other conditions, which will be detailed in writing. For example:

- On non-Federal aid projects, requiring the Contractor to reimburse the Contracting Agency for the costs in excess of straight-time costs for Contracting Agency representatives who worked during such times. (The Engineer may require designated representatives to be present during the work. Representatives who may be deemed necessary by the Engineer include, but are not limited to: survey crews; personnel from the Contracting Agency's material testing lab; inspectors; and other Contracting Agency employees or third party consultants when, in the opinion of the Engineer, such work necessitates their presence.)
- Considering the work performed on Saturdays, Sundays, and holidays as working days with regard to the contract time.
- Considering multiple work shifts as multiple working days with respect to contract time even though the multiple shifts occur in a single 24-hour period.
- If a 4-10 work schedule is requested and approved the non working day for the week will be charged as a working day.
- If Davis Bacon wage rates apply to this Contract, all requirements must be met and recorded properly on certified payroll

1-08.1(7)A Payment Reporting
(January 4, 2024 APWA GSP)

Revise this section to read: “Vacant”.

1-08.1(9)B Clauses Required in Subcontracts of All Tiers
The second paragraph of Section 1-08.1(9)B is supplemented with the following:
(January 24, 2024 WSDOT GSP)

16. 1-07.11 Requirements for Nondiscrimination – Item 11 from Section 1-07.11(2).

1-08.3 Progress Schedule.

1-08.3(1) General Requirements
Section 1-08.3(1) is supplemented as follows:
(October 16, 2013 Richland GSP)

Weekly Meeting
A weekly meeting between representatives of the City (inspector and/or engineer) and contractor (foreman, supervisor, and/or project manager) shall be held at the project site or in the Richland City Hall at a pre-determined time. This meeting is to go over current project status, project schedule, and address problems that have arisen.

1-08.3(2)A Type A Progress Schedule
Revise this section to read:
(December 30, 2022 APWA GSP)

The Contractor shall submit 10 copies 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 used, the schedule shall identify the critical path. The Engineer will evaluate the Type A Progress Schedule and approve or return the schedule for corrections within 15 calendar days of receiving the submittal.

1-08.5 Time For Completion
Supplement this Section with the following:
(November 10, 2009 Richland GSP)

If the Contractor elects 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.

The third sentence is supplemented with the following:
(October 16, 2013 Richland GSP)

Christmas Eve shall be counted as a non-working day on all projects. The third Monday of January and June 19th shall count as a working day on non-federal aid projects.

Supplement the sixth paragraph to read:
(November 10, 2009 Richland GSP)

e. Property owner releases per Section 1-07.24

1-08.6 Suspension of Work
Section 1-08.6 is supplemented with the following:
(January 19, 2024 Richland GSP)

Contract time may be suspended for procurement of critical materials (Procurement Suspension). In order to receive a Procurement Suspension, the Contractor shall within 21 calendar days after execution submit any/all materials deemed critical based on Contractor's critical path schedule for physical completion of the contract and place purchase orders for the said materials within 5 calendar days after receiving approval for those materials submittals/RAMs. The Contractor shall provide copies of purchase orders for the critical materials. Such purchase orders shall disclose the purchase order date and estimated delivery dates for such critical material.

The Contractor shall show procurement of all long lead materials as activities in the Progress Schedule.

If contract time is suspended due to a Procurement Suspension, charging of contract time will resume upon delivery of the critical materials to the Contractor.

1-08.9 Liquidated Damages
(March 3, 2021 APWA GSP Option B)

Revise the second and third paragraphs to read:

Accordingly, the Contractor agrees:

1. To pay (according to the following formula) liquidated damages 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.

Liquidated Damages Formula

LD=0.15C/T

Where:

LD = liquidated damages per working day (rounded to the nearest dollar)
C = original Contract amount
T = original time for Physical Completion

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, the formula for liquidated damages shown 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 Project

Engineer, the Contractor shall furnish a written schedule for completing the physical Work on the Contract.

1-09 MEASUREMENT AND PAYMENT

1-09.2 Weighing Equipment

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.

1-09.7 Mobilization
(December 30, 2022 APWA GSP)

Delete this Section and replace it with the following:

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.

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.

1-09.9 Payments
(December 30, 2022 APWA GSP)

Section 1-09.9 is revised to read:

The basis of payment will be the actual quantities of Work performed according to the Contract and as specified for payment.

The Contractor shall submit a breakdown of the cost of lump sum bid items at the Preconstruction Conference, to enable the Project Engineer to determine the Work performed on a monthly basis. A breakdown is not required for lump sum items that include a basis for incremental payments as part of the respective Specification. Absent a lump sum breakdown, the Project Engineer will make a determination based on information available. The Project Engineer's determination of the cost of work shall be final.

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 payments. 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.

Failure to perform obligations under the Contract by the Contractor may be decreed by the Contracting Agency to be adequate reason for withholding any payments until compliance is achieved.

Upon completion of all Work and after final inspection (Section 1-05.11), the amount due the Contractor under the Contract will be paid based upon the final estimate made by the Engineer and presentation of a Final Contract Voucher Certification to be signed by the Contractor. The Contractor's signature on such voucher shall be deemed a release of all

claims of the Contractor unless a Certified Claim is filed in accordance with the requirements of Section 1-09.11 and is expressly excepted from the Contractor's certification on the Final Contract Voucher Certification. The date the Contracting Agency signs the Final Contract Voucher Certification constitutes the final acceptance date (Section 1-05.12).

If the Contractor fails, refuses, or is unable to sign and return the Final Contract Voucher Certification or any other documentation required for completion and final acceptance of the Contract, the Contracting Agency reserves the right to establish a Completion Date (for the purpose of meeting the requirements of RCW 60.28) and unilaterally accept the Contract. Unilateral final acceptance will occur only after the Contractor has been provided the opportunity, by written request from the Engineer, to voluntarily submit such documents. If voluntary compliance is not achieved, formal notification of the impending establishment of a Completion Date and unilateral final acceptance will be provided by email with delivery confirmation from the Contracting Agency to the Contractor, which will provide 30 calendar days for the Contractor to submit the necessary documents. The 30 calendar day period will begin on the date the email with delivery confirmation is received by the Contractor. The date the Contracting Agency unilaterally signs the Final Contract Voucher Certification shall constitute the Completion Date and the final acceptance date (Section 1-05.12). The reservation by the Contracting Agency to unilaterally accept the Contract will apply to Contracts that are Physically Completed in accordance with Section 1-08.5, or for Contracts that are terminated in accordance with Section 1-08.10. Unilateral final acceptance of the Contract by the Contracting Agency does not in any way relieve the Contractor of their responsibility to comply with all Federal, State, tribal, or local laws, ordinances, and regulations that affect the Work under the Contract.

Payment to the Contractor of partial estimates, final estimates, and retained percentages shall be subject to controlling laws.

1-09.9 Payments
Supplement paragraph 3 with the following:
(December 15, 2010 Richland GSP)

Progress payments will be made on a monthly basis. The City is able to make payments during any week of the month; payment may be made at any time during the month convenient to the Contractor and acceptable to the City. The cut-off date for progress payments will be decided at the pre-construction conference. Progress payments will be made based on Contractor submitted and Engineer verified pay requests. Pay requests shall include the quantities completed for each bid item on a form approved by the Engineer.

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.

1-09.13 Claims Resolution

1-09.13(3) Arbitration

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
(January 19, 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 any records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

1-10 TEMPORARY TRAFFIC CONTROL

1-10.2 Traffic Control Management

1-10.2(1) General
Section 1-10.2(1) is supplemented with the following:

(October 3, 2022 WSDOT GSP)
The Traffic Control Supervisor shall be certified by one of the following:

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

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

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

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

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

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

1-10.2(2) Traffic Control Plans
Section 1-10.2(2) is supplemented with the following:
(November 30, 2015 Richland GSP)

A traffic control plan shall be required for any lane closure on an arterial or collector street or for any permanent signing changes within the City of Richland. A TCP, when required, shall be submitted for review no less than three days prior to the closure/work taking place. It may be hand or CAD drawn on letter size or larger paper and should clearly show the following items:

1. **The name of the project.** For example: South 212th Street grocery store; PSE service connection; etc.
2. **The reason for working within the public right-of-way.** For example: water main repair; sanitary sewer extension; street improvement; natural gas service connection; telecommunications cable installation; etc.
3. **The work area location, including the placement of protecting vehicles, pavement cuts, etc.**
4. **All streets and cross-streets (with streets labeled) in the traffic control zone and within 300 feet in all directions from the outer edge of the traffic control zone.**
5. **All driveways, alleys and access tracts affected within the traffic control zone.**
6. **The dimensions of the work zone (in feet), where the work zone will be in relation to the traffic lanes, and show sidewalks affected by your work zone.**
7. **Show travel lanes, shoulders, if present (both paved and unpaved width) and pedestrian travel path (shoulder or sidewalk).** Show how travel paths will be provided for pedestrians as well as for vehicles.
8. **A vicinity map with a north arrow.**
9. **The distance between all traffic control signs, and all other traffic control devices, and the lengths of all transition tapers in feet.** *The use of tables or equations in lieu of providing specific distances is not acceptable.*
10. **The location of the Flagger in relation to the installed traffic control signs and to other traffic control devices.**

11. **The name, 24-hour telephone number, certification number, and e-mail address of the Owner/Contractor's Traffic Control Supervisor/Responsible person for the traffic control set-up, operation and tear down.**
12. **The name, telephone number and e-mail address of the person who prepared the TCP.**
13. **Any permanent signs which need to be removed and what signing will be put up in its place.**

Once accepted, the TCP must be on-site for the duration that the lane closure or traffic control is in place.

DIVISION 2
EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.2 Disposal of Usable Materials and Debris
Section 2-01.2 is supplemented with the following:
(November 10, 2009 Richland GSP)

Disposal of burnable and non-burnable materials on private property will not be allowed without the written permission of the property owner.

2-01.2(1) Disposal Method No. 1 – Open Burning
Section 2-01.2(1) is supplemented with the following:
(November 10, 2009 Richland GSP)

All vegetation not retained for replanting or other uses, and all burnable litter within the clearing area, may be burned in an area approved by the Engineer and the ashes buried or disposed of at an approved waste site. Contractor shall obtain and comply with the requirements of burning permits including conditions which may be required by the Benton Franklin Air Pollution Control Board.

2-01.2(2) Disposal Method No. 2 – Waste Site
Section 2-01.2(2) is supplemented with the following:
(November 10, 2009 Richland GSP)

It shall be the Contractor's responsibility to locate approved waste sites for the disposal of all materials designated to be waste. The Contractor shall provide written approval from the property owner for private waste sites. All expenses incurred in securing both public and private waste sites will be the responsibility of the Contractor and considered incidental to the contract prices. The Contractor will be held liable for any and all damages resulting from the disposal of waste materials on privately owned waste sites. The Contractor may dispose of waste materials at the City of Richland Landfill located at the intersection of Grosscup Road and State Highway 240.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.3 Construction Requirements
Section 2-02.3 is supplemented with the following:
(February 17, 1998 WSDOT GSP)

Removal of Obstructions
The following items shall be removed, disposed of or reset as directed by the Engineer in accordance with the requirements of Section 2-02 of the Standard Specifications:

Sign Posts and Foundations
Curbing
Bollards

All other items encountered, which are not covered by Section 2-01 of the Standard Specification (Clearing and Grubbing) shall be considered incidental to the bid item “Removal of Structures and Obstructions”.

Section 2-02.3 is supplemented with the following:
(November 10, 2009 Richland GSP)

Written permission shall be provided to The City of Richland from property owners of any waste site prior to its use.

2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.3 Construction Requirements
Section 2-03.3 is supplemented with the following:
(November 10, 2009 Richland GSP)

Sawcutting
Contractor shall sawcut existing asphalt and concrete as detailed in the plans. Sawcutting shall produce a straight and vertical cut line to the full depth of the existing surface.

2-03.3(14) Embankment Construction

2-03.3(14)C Compacting Earth Embankments
Section 2-03.3(14)C is supplemented with the following:
(November 10, 2009 Richland GSP)

Compacting embankments and excavations shall be by Method "C" as specified under Section 2-03.3(14)C of the Standard Specifications.

2-03.4 Measurement
Section 2-03.4 is supplemented with the following:
(March 13, 1995 WSDOT GSP)

Only one determination of the original ground elevation will be made on this project. Measurement for roadway excavation and embankment will be based on the original ground elevations recorded previous to the award of this contract. Control stakes will be set during construction to provide the Contractor with all essential information for the construction of excavation and embankments.

If discrepancies are discovered in the ground elevations which will materially affect the quantities of earthwork, the original computations of earthwork quantities will be adjusted accordingly.

Earthwork quantities will be computed, either manually or by means of electronic data processing equipment, by use of the average end area method or by the finite element analysis method utilizing digital terrain modeling techniques.

Copies of the ground cross-section notes will be available for the bidder's inspection, before the opening of bids, at the Project Engineer's office and at the Region office.

Upon award of the contract, copies of the original ground cross-sections will be furnished to the successful bidder on request to the Project Engineer.

2-03.5 Payment
Section 2-03.5 of the Standard Specifications is supplemented with the following:
(March 19, 2012 Richland GSP)

No measurement or payment will be made for “Sawcutting”. It is considered incidental to other bid items.

2-07 WATERING

2-07.2 Construction Water Meter

Section 2-07.2 is added as follows:
(September 20, 2022 Richland GSP)

Water for dust control, compaction, placement of crushed surfacing, pipe line installation, flushing and testing, etc. will be available at fire hydrant locations, within the construction area only. The Contractor shall secure a fire hydrant meter from the City. The Contractor shall pay a $1,500.00 meter deposit to be refunded at the end of the project if the meter is returned undamaged. See https://www.ci.richland.wa.us/departments/public-works/water-utility/hydrant-meter-rental

2-07.3 Construction Requirements

Section 2-07.3 is supplemented with the following:
(November 10, 2009 Richland GSP)

The Contractor shall be solely responsible for dust control on this project and shall protect the motoring public, adjacent homes, orchards and crops from damage due to dust, by whatever means necessary. The Contractor shall be responsible for any claims for damages and shall protect the City from any and all such claims.

When directed by the Engineer, the Contractor shall provide water for dust control within two hours of such order and have equipment and manpower available at all times including weekends and holidays to respond to orders for dust control measures.

If City forces are required to respond to a dust control problem, the Contractor shall be charged liquidated damages to offset City expenditures. For each time that the City is required to provide dust control measures, the Contractor shall be assessed damages in the amount of $500.00.

DIVISION 4
BASES

4-04 BALLAST AND CRUSHED SURFACING

4-04.3(5) Shaping And Compaction

Section 4-04.3(5) is supplemented with the following:
(November 10, 2009 Richland GSP)

The Contractor shall be responsible for all damages or claims resulting from the use of vibratory compactors.

No successive course of crushed rock shall be spread until the preceding course is approved by the Engineer.

4-04.4 Measurement

Section 4-04.4 is deleted and replaced with the following:
(September 20, 2013 Richland GSP)

Crushed surfacing top course placed under HMA identified in Section 8-04, 8-06 and 8-14 will be measured by the cubic yard to the neat lines (in-place) as detailed in the plans. Crushed surfacing specified and used at all other locations is considered incidental to the applicable pay item.

For Material verification, the Contractor shall deliver truck tickets to the Engineer within four (4) hours of delivery of material to the job site or at the time of delivery when the Engineer is present.

4-04.5 Payment

Section 4-04.5 is supplemented with the following:
(December 15, 2010 Richland GSP)

Payment shall be made at the unit price as stated in the Contractor's bid proposal. Payment shall constitute full compensation for all labor, materials, and equipment to furnish and install crushed rock, complete.

DIVISION 5
SURFACE TREATMENTS AND PAVEMENTS

5-04 Hot Mix Asphalt
(January 31, 2023 APWA GSP)

Delete Section 5-04, Hot Mix Asphalt, 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.
- 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.

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 ***2*** 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 any, 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

(January 19, 2024 Richland GSP)

Use a material transfer device (MTD) or material transfer vehicle (MTV) to deliver the HMA from the hauling equipment to the paving machine for any lift in (or partially in) the top 0.30 feet (4 inches) of the pavement section used in traffic lanes. However, an MTD/V is not required for HMA placed in irregularly shaped and minor areas such as tapers and turn lanes, or for HMA mixture that is accepted by Visual Evaluation. At the Contractor's request the Engineer may approve paving without an MTD/V; 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 laydown 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.

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 laid 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). 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.

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 AASH-TO 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 $500 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 laid 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 laid 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 $500.00 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 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.

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 coordinations 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 planning 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.

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.

Planing bituminous pavement will be measured by the square yard.

(January 19, 2024 Richland GSP)

Asphalt concrete sidewalks will be measured by the square yard of finished surface.

Asphalt Patching (__In. HMA and __In. CSTC) will be measured by the square yard. Limits of measurement will be as depicted on the Trench Detail or as approved by the Engineer. Additional areas may be identified by the Engineer during construction.

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, 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.

"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.

“Asphalt for Prime Coat”, per ton.

The unit Contract price per ton for “Asphalt for Prime Coat” shall be full payment for all costs incurred to obtain, provide and install the material in accordance with Section 5-04.3(4).

“Prime Coat Agg.”, per cubic yard, or per ton.

The unit Contract price per cubic yard or per ton for “Prime Coat Agg.” shall be full pay for furnishing, loading, and hauling aggregate to the place of deposit and spreading the aggregate in the quantities required by the Engineer.

“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).

“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.

(January 19, 2024 Richland GSP)

“Asphalt Conc. Sidewalk”, per square yard.
The unit price per square yard for “Asphalt Conc. Sidewalk” shall be full payment for all costs incurred to perform the Work as specified.

“Asphalt Patching (_ In. HMA and _ In. CSTC)”, per square yard.
The unit price for “Asphalt Patching (_ In. HMA and _ In. CSTC)”, per square yard shall be full compensation for furnishing all labor, materials, tools and equipment necessary to furnish, haul, place and compact surfacing materials to the grade as shown on the plans (or matching existing grade in field). It includes applying asphalt tack coat and

crack/joint sealant to adjacent existing asphalt and concrete surfaces, removal and disposal of the existing asphalt and surfacing within the pay limits, sawcutting the existing asphalt along the final match point and all other incidentals necessary to complete the asphalt surfacing complete in every detail.

All patching shall be completed within 14 calendar days after underground utility work within the patching area has taken place unless otherwise noted or approved in the contract. Failure to complete patching will result in the following penalties:

- **Completed within 14 calendar days: 100% payment**
- **Completed within 15-21 calendar days: 75% payment**
- **Completed after 21 calendar days: 50% payment**

"Driveway asphalt patching (__ In. HMA and __ In. CSTC)" per square yard.

The unit price for "Driveway Asphalt Patching (2 In. HMA and 4 In. CSTC)", per square yard shall be full compensation for furnishing all labor, materials, tools and equipment necessary to furnish, haul, place and compact surfacing materials to the grade as shown on the plans (or matching existing grade in field). It includes applying asphalt tack coat and crack/joint sealant to adjacent existing asphalt and concrete surfaces, removal and disposal of the existing asphalt and surfacing within the pay limits, sawcutting the existing asphalt along the final match point and all other incidentals necessary to complete the asphalt surfacing complete in every detail.

(January 13, 2021 WSDOT GSP)

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/contracts/about-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.

DIVISION 7
DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS

7-04 STORM SEWERS

7-04.2 Materials
Section 7-04.2 is supplemented with the following:
(November 10, 2009 Richland GSP)

Unless otherwise specified in the Special Provisions or on the plans, all storm sewers shall be solid wall PVC.

Materials shall meet the requirements of the City of Richland Materials List and Standard Details.

7-04.3 Construction Requirements
Section 7-04.3 is supplemented with the following:
(November 10, 2009 Richland GSP)

Installation of storm drain pipe with less than 18 inch cover to finished grade, the Contractor has the option of using PVC C905 pipe as specified in Section 9-30.1(5)A or covering pipe and trench with controlled density fill (CDF) per 2-09.3(1)E.

7-04.3(1) Cleaning and Testing

7-04.3(1)A General
Section 7-04.3(1)A is supplemented with the following:
(November 10, 2009 Richland GSP)

The requirements of Section 7-17.3(2)H shall apply to storm sewers.

7-04.5 Payment
Section 7-04.5 is supplemented with the following:
(September 23, 2013 Richland GSP)

Revise the second paragraph to read:

The unit Contract price per linear foot for storm sewer pipe of the kind and size specified shall be full pay for furnishing, hauling and assembling in place the completed installation including all wyes, tees, special fittings, joint materials, cleaning and debris removal, testing, bedding material, backfill material and adjustment of inverts to manholes for the completion of the installation to the required lines and grades.

Delete the following:

Testing Storm Sewer Pipe, per linear foot.

7-05 MANHOLES, INLETS, CATCH BASINS AND DRYWELLS

7-05.2 Materials
Section 7-05.2 is supplemented with the following:
(November 10, 2009 Richland GSP)

Ladder rungs 9-12.4

7-05.3 Construction Requirements
Section 7-05.3, paragraph four is replaced with the following:
(November 10, 2009 Richland GSP)

Channels shall be made to conform accurately to the sewer grade and shall be brought together smoothly with well-rounded junctions, satisfactory to the Engineer. Channel sides shall be carried up vertically to the spring line elevation of the various pipes, and the concrete shelf between channels shall be smoothly finished and warped evenly with slopes to drain.

Section 7-05.3, paragraph five is supplemented with the following:
(November 10, 2009 Richland GSP)

Ladder rungs to be installed only on sanitary sewer manholes per City Standard Details unless stated otherwise on the plans or in the Special Provisions.

Section 7-05.3, paragraph seven is replaced with the following:
(November 10, 2009 Richland GSP)

The ends of pipes shall be trimmed flush with the inside walls on manholes (both sewer and storm) and storm catch basins as shown on standard details. The ends of outlet pipes only on storm drain manholes utilized as catch basins shall extend into the manhole as shown on the standard details unless otherwise noted on the plans or in the special provisions.

7-05.3(3) Connections to Existing Manholes
Section 7-05.3(3) is supplemented with the following:
(November 10, 2009 Richland GSP)

New pipe connections to existing catch basins or manholes shall be core drilled and grouted. Mortar shall conform to the requirements of Section 9-04.3.

7-05.3(4) Drop Manhole Connection
Section 7-05.3(4) is replaced with the following:
(November 10, 2009 Richland GSP)

Drop manhole connections shall be constructed per City Standard Details or as shown on the plans.

7-05.4 Measurement
Section 7-05.4 is supplemented with the following:
(September 20, 2013 Richland GSP)

Structure excavation Class B and structure excavation Class B, including haul, shall be included as part of the applicable unit or lump sum bid item.

Adjust manhole lid per each.

Replace and adjust manhole lid (sewer or storm) per each.

Replace Catch Basin Frame & Grate per each.

Replace Catch Basin Grate per each.

7-05.5 Payment
Section 7-05.4 is supplemented with the following:
(March 29, 2019 Richland GSP)

"Adjust manhole lid", per each
The unit contract price per each for "Adjust manhole lid" shall be full pay for all costs necessary to make the adjustment of the existing manhole lid including restoration of adjacent areas in a manner acceptable to the Engineer and per City of Richland standard detail U4.

"Replace and adjust manhole lid (sewer or storm)", per each.
The unit contract price per each for "Replace and adjust manhole lid (sewer or storm)" shall be full pay for all costs necessary to provide a new manhole frame and lid and make the adjustment of the new manhole frame and lid including restoration of adjacent areas in a manner acceptable to the Engineer and per City of Richland standard detail U4.

"Replace Catch Basin Frame & Grate", per each.
The unit contract price per each for "Replace Catch Basin Frame & Grate" shall be full pay for all costs necessary to provide a catch basin frame & grate to City standards (City type catch basin) for type D-1 or D-2 per plans including restoration of adjacent areas in a manner acceptable to the Engineer and per City of Richland standard detail U4.

"Replace Catch Basin Grate", per each.
The unit contract price per each for "Replace Catch Basin Grate" Replace shall be full pay for all costs necessary to provide a catch basin grate, either type D-1 or D-2 as noted on the plans.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.2 Materials
Section 7-08.2 is supplemented with the following:
(May 7, 2015 Richland GSP)

Alternate Trench Foundation Class B	9-03.17
Imported Pipe Zone Bedding	9-03.12(3), 9-03.9(3)-Top Course
Imported Pipe Zone Backfill	9-03.12(3), 9-03.9(3)-Top Course

7-08.3 Construction Requirements

7-08.3(1) Excavation and Preparation of Trench

7-08.3(1)A Trenches
Section 7-08.3(1)A is supplemented with the following:
(December 15, 2010 Richland GSP)

Section 7-09.3(7)A Dewatering of Trench and Section 7-09.3(7)B Rock Excavation shall apply to section 7-08, General Pipe Installation Requirements.

The Contractor shall neatly saw cut all areas of existing ACP/BST within the trench excavation area, then remove and haul all waste materials from the project and dispose of at an approved site provided by the Contractor. Should any undermining occur on adjacent ACP/BST, the Contractor shall neatly cut the ACP/BST 6 inches beyond the undermined area.

In wet ground / groundwater installation or at the direction of the Engineer, the Contractor shall install new sewer or storm pipe per the City's Ground Water Trench Detail.

The requirements of section 7-09.3(7)A and 7-09.3(7)B shall apply to storm sewers and sewer mains.

7-08.3(1)B Shoring
Section 7-08.3(1)B is supplemented with the following:
(November 10, 2009 Richland GSP)

All trench excavations shall have adequate safety systems for the trench excavation that meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW. The Contractor shall be fully responsible for providing the necessary back sloping, cribbing, trench boxes, etc., as required to meet the specified safety requirements for the trench. When City crews will be making the main line taps or other work in the trench, the Contractor shall provide all trench safety measures, prior to City personnel entering the trench.

7-08.3(2) Laying Pipe

7-08.3(2)B Pipe Laying - General
Section 7-08.3(2)B is supplemented with the following:
(November 10, 2009 Richland GSP)

The Contractor shall be responsible for locating and protecting existing utilities as per Section 1-07.17. The Contractor shall make any advance explorations as necessary (even though not specifically identified on the drawings) in order to verify connection requirements, properly plan the installation of the pipe to the design line and grade, and achieve a uniform grade and horizontal alignment.

Sewer and storm drain mains are typically shown in profile as well as on the plan view. Other utilities are typically shown in plan view only except at crossings. Some omissions and inaccuracies should be expected. Critical locations shall be field located ahead of time and Call-Before-You-Dig procedures should be implemented in all cases. Any discrepancies shall be reported to the Engineer prior to commencing with the work.

The Plans may identify locations requiring “Dig and Verify.” Where specially called for on the Plans, or as directed by the Engineer the Contractor shall “Dig and Verify” existing utilities, connection points and existing inverts. All required “Dig and Verify” shall be completed prior to any Contractor activities at each improvement location. Any discrepancies found as the result of the “Dig and Verify” shall be immediately reported to the Engineer. Unless otherwise directed to the Engineer, the Contractor shall backfill and compact location where the ‘Dig and Verify“ was completed.

When new utilities cross under existing AC water main, use of controlled density fill (CDF) filled to the spring line of the water main shall be utilized to prevent settlement. Optional replacement of a segment of the AC water main (with either D.I. or C-900 depending on size) is also allowed on a case by case basis with the contractor paying the City’s costs to perform the work (contractor provides pipe and excavation / trench safety and completes backfilling after pipe segment is replaced). All costs associated with the crossing shall be incidental to the new utility being installed.

7-08.3(2)J Transition Couplings
Section 7-08.3(2)J is added with the following:
(November 10, 2009 Richland GSP)

When non-rigid transition couplings (i.e. Fernco couplings) are used for connections to existing sewer or storm pipe, the inclusion of controlled density fill will be required to prevent excessive settlement. Use of rigid transition couplings (i.e. Romac) in similar connection

locations will not require use of controlled density fill unless installation (of CDF) is directed by the Engineer or noted on the plans.

7-08.3(5) Underground Utility Crossings – Marked and Unmarked
Section 7-08.3(5) is added as follows:
(March 1, 2018 Richland GSP)

Utility crossings are common during pipe laying and boring construction and unexpected utility crossings are probable. The utilities identified on the plans were identified in accordance with available information.

Service lines are difficult to locate precisely. The Contractor shall use surface features and other evidence as well as locate marks in determining the approximate locations prior to excavation.

When excavating or boring in the vicinity of fiber optic cable, telephone lines, electrical power lines or gas lines, the Contractor shall exercise extreme caution to prevent damage to the utilities or danger to worker and/or nearby citizens. If such utilities are uncovered, the Contractor shall contact representatives of the owning utility to examine the facilities before they are backfilled.

During pipe installation the Contractor shall hand dig to expose existing utilities. For water line construction, the Contractor shall uncover all marked utilities a minimum of 100' ahead of water line placement. A new water main may require additional depth of bury, beyond the typical 48" minimum cover depth to resolve a conflict. For all other utility lines, the Contractor shall uncover all utilities between each mainline structure prior to placing pipe. Any utility conflicts identified shall be brought to the attention of the Engineer. During boring operations the Contractor shall uncover utilities for depth verification as needed or identified by the Engineer.

Any underground utility line of any size with less than a 6" horizontal separation from another underground line shall be considered a single utility crossing up to 24".

Any underground utility line damaged by the Contractor shall be restored to its' original condition. Crossing above an existing underground utility shall not be considered a utility crossing. Irrigation lines under 2" in diameter shall not be considered a utility crossing.

If a utility is determined to be abandoned and the Engineer approves, the utility may be cut and removed for the crossing. All costs to cut, remove, and plug the abandoned line are the sole responsibility of the Contractor.

Common or joint trenches shall be counted as a single unit for underground utility crossings (i.e. each individual conduit or pipe within the common or joint trench will not have a separate count or payment for utility crossing).

7-08.4 Measurement
Section 7-08.4 is supplemented with the following:
(April 21, 2014 Richland GSP)

Trench safety shall be measured per linear foot of installed pipe.

All trench excavation shall be unclassified and a separate measurement will not be made for any excavation, cement concrete and asphalt pavement sawing, removal and disposal, dewatering, and backfill for pipelines. All cost for excavation, cement concrete and asphalt pavement sawing, removal and disposal, and backfill for pipelines and fittings including

detectable marking tape and tracer wire shall be incidental to the pipe installation except as follows:

Dig and verify will be measured on a per each basis for those identified in the Plans or as directed by the Engineer.

Imported pipe zone bedding will be measured by the linear foot of imported and placed bedding.

Imported pipe zone backfill will be measured by the linear foot of imported and placed bedding.

Underground Utility Crossings – Marked and Unmarked will be measured per each.

7-08.5 Payment
Section 7-08.5 is supplemented with the following:
(April 21, 2014 Richland GSP)

"Trench safety", per linear foot.

"Dig and Verify", per each.
The unit contract price per each for "Dig and Verify" shall be pay to furnish all labor, materials and equipment for performing the work and when required to backfill and compact the dig and verify location.

"Imported Pipe Zone Bedding", per linear foot.
The unit contract price per linear foot for "Imported Pipe Zone Bedding" shall be full pay to provide all labor, materials and equipment for completing the work as specified. Payment shall include removing the unsuitable materials the imported bedding replaced.

"Imported Pipe Zone Backfill", per linear foot.
The unit contract price per linear foot for "Imported Pipe Zone Backfill" shall be full pay to provide all labor, materials and equipment for completing the work as specified. Payment shall include removing the unsuitable materials the imported backfill replaced.

All costs associated with constructing the City's Ground Water Detail shall be included in the following bid items:
"Imported Pipe Zone Bedding"
"Gravel Backfill for Foundations Class B"
"Construction Geotextile"

All costs associated with de-watering shall be included in the unit contract price for "Gravel Backfill for Foundations Class B".

"Underground Utility Crossings – Marked and Unmarked" per each.
The unit contract price per each shall be full payment for furnishing all labor, materials, equipment and supervision necessary to identify, uncover, protect and restore, cut and plug, and cross an underground utility.

7-09 WATER MAINS

7-09.2 Materials
Section 7-09.2 is supplemented with the following:
(November 10, 2009 Richland GSP)

Unless otherwise specified in the Special Provisions or on the plans, all water mains to be ductile iron except for residential water mains 10 inches and smaller can either be PVC or ductile iron pipe.

Materials shall meet the requirements of the City of Richland Materials List and Standard Details.

7-09.3 Construction Requirements

7-09.3(5) Grade and Alignment
The first sentence of the third paragraph of Section 7-09.3(5) is deleted and replaced with the following:
(November 10, 2009 Richland GSP)

The depth of trenching for water mains shall be such as to give a minimum cover of 48-inches over the top of the pipe unless otherwise specified in the Special Provisions or on the plans.

7-09.3(6) Existing Utilities
Section 7-09.3(6) is supplemented with the following:

Utility crossings are per section 7-08.3(5) Underground Utility Crossing – Marked and Unmarked.

7-09.3(7) Trench Excavation
Section 7-09.3(7) is supplemented with the following:
(December 15, 2010 Richland GSP)

The Contractor shall neatly saw cut all areas of existing ACP/BST within the trench excavation area, then remove and haul all waste materials from the project and dispose of at an approved site provided by the Contractor. Should any undermining occur on adjacent ACP/BST, the Contractor shall neatly cut the ACP/BST 6 inches beyond the undermined area.

All trench excavations shall have adequate safety systems for the trench excavation that meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW. The Contractor shall be fully responsible for providing the necessary back sloping, cribbing, trench boxes, etc., as required to meet the specified safety requirements for the trench. When City crews will be making the main line taps or other work in the trench, the Contractor shall provide all trench safety measures, prior to City personnel entering the trench.

7-09.3(12) General Pipe Installation
Section 7-09.3(12) is supplemented as follows:
(November 10, 2009 Richland GSP)

The Contractor shall be responsible for locating and protecting existing utilities as per Section 1-07.17. The Contractor shall make any advance explorations as necessary (even though not specifically identified on the drawings) in order to verify connection requirements, properly plan the installation of the pipe to the design line and grade, and achieve a uniform grade and horizontal alignment.

Sewer and storm drain mains are typically shown in profile as well as on the plan view. Other utilities are typically shown in plan view only except at crossings. Some omissions and inaccuracies should be expected. Critical locations shall be field located ahead of time and

Call-Before-You-Dig procedures should be implemented in all cases. Any discrepancies shall be reported to the Engineer prior to commencing with the work.

The Plans may identify locations requiring “Dig and Verify.” Where specially called for on the Plans, or as directed by the Engineer the Contractor shall “Dig and Verify” existing utilities, connection points and existing inverts. All required “Dig and Verify” shall be completed prior to any Contractor activities at each water line improvement location. Any discrepancies found as the result of the “Dig and Verify” shall be immediately reported to the Engineer. Unless otherwise directed to the Engineer, the Contractor shall backfill and compact location where the ‘Dig and Verify“ was completed.

Pipe tracer wire shall be installed with all PVC pipe used for water mains as per City Standard Detail.

7-09.3(12)A Mechanical Couplings
Section 7-09.3(12)A is added as follows:
(November 10, 2009 Richland GSP)

Before coupling, clean each pipe end a distance of at least eight (8) inches back from the end to provide a seat for the coupling gaskets. The pipe coating need not be removed if it presents a smooth surface and is securely bonded to the pipe.

Install couplings in accordance with the manufacturer's instructions. Wipe gaskets clean before installation. If necessary, lubrication may be used to install the gaskets onto the end of the pipe.

Tighten coupling bolts progressively and evenly on both sides to assure uniform seating of the gaskets.

7-09.3(15) Laying of Pipe on Curves

Section 7-09.3(15) is supplemented with the following:
(November 10, 2009 Richland GSP)

The amount of deflection in each pipe joint when pipe is laid on a horizontal or vertical curve shall not exceed 50% of the manufacturer’s printed recommended deflections.

7-09.3(19) Connections

7-09.3(19)A Connections to Existing Mains
Section 7-09.3(19)A is supplemented with the following:
(May 6, 2014 Richland GSP)

No new water mains 10” in diameter and smaller will be allowed to connect to the existing mains until all testing required in 7-09.3(23) and 7-09.3(24) is completed and accepted. The City Engineer can waive this requirement on a case by case basis where proposed extensions are short, of a smaller diameter or are at a location that would adversely affect traffic.

All connections to existing water mains shall be performed by the City water division maintenance personnel. The Engineer shall direct the Contractor in the procedure taken for such water main connections and disconnections. The Contractor shall supply all fittings, couplings and adapters that may be required for all connections to the existing mains in addition to adequate de-watering pump(s) and trench shoring. The Contractor shall be responsible for all installation work, including locating, excavating, shoring, backfilling and installing thrust blocks at each point of connection.

At connection points to existing mains the Contractor shall have installed, sterilized, flushed and tested, per the Standard Specifications, the new main a minimum of 10 feet, up to a maximum of 18 feet within the connection point to the existing main. The pipe used to complete the connections shall be swabbed and bagged per the Standard Specifications. The Contractor shall dig and verify the pipe material type, size, location and elevation of the tie-in prior to installing the new water line. The new pipe should be installed at a location and elevation per the Standard Specifications to facilitate a smooth transition to the existing line.

The anticipated schedule for the tie-ins shall be discussed and scheduled at the pre-construction conference, and indicated on the weekly schedule for actual execution. The City reserves the right to adjust the schedule of the tie-ins, as required, subject to a minimum of 24 hour notice of schedule change to the Contractor. ***NO TIE-INS WILL BE SCHEDULED FOR THE FIRST WORKING DAY AFTER A WEEKEND OR HOLIDAY.***

7-09.3(21) Concrete Thrust Blocking
Section 7-09.3(21) is supplemented with the following:
(November 10, 2009 Richland GSP)

No bag concrete mix will be allowed for concrete thrust blocks.

7-09.3(21)A Joint Harness
Section 7-09.3(21)A is added as follows:
(November 10, 2009 Richland GSP)

Install joint harness or thrust ties where indicated and as directed by the Engineer. Thrust tie bolts, nuts, and lugs shall be coated with hot coal-tar enamel or Koppers Bitumastic No. 505, as specified for mechanical couplings. Joint harnesses of adequate strength may be used instead of concrete thrust blocks if approved by the Engineer.

7-09.3(22) Blowoff Assemblies
Section 7-9.3(22) is supplemented to read as follows:
(November 10, 2009 Richland GSP)

Temporary blowoff assemblies shall be constructed as required for flushing and testing of water mains and in accordance with the standard plan.

7-09.3(23) Hydrostatic Pressure Test
The first sentence of the first paragraph of Section 7-09.3(23) is deleted and replaced with the following:
(November 10, 2009 Richland GSP)

Water main appurtenances and service connection to the meter setter shall be tested in section of convenient length under a hydrostatic pressure of 150 PSI (gage).

The first sentence of the fifth paragraph of Section 7-09.3(23) is deleted and replaced with the following:
(November 10, 2009 Richland GSP)

The test shall be accomplished by pumping the main up to 150 PSI, stopping the pump for 1 hour (60 minutes), and then pumping the main up to 150 PSI again.

7-09.3(23)D Building Fire Line Test Procedures
Section 7-09.3(23)D is added as follows:
(November 10, 2009 Richland GSP)

1. Pressure Test – Test for 2 hours at 200 psi If a loss, refer to allowable leakage description on Contractor's Material and Test Certificate for underground piping form as required by the latest edition of the NFPA Standard.

2. Flush – After the underground fire line passes the pressure test the flushing of the pipe from the main to the flange can be scheduled.
   All debris that is in the underground pipe must be flushed clear, a burlap bag will be required to collect debris from the pipe.

3. Flow test – When all debris has been flushed and the pipe is flowing clear, flow test must be taken to assure the pipe is flowing the minimum gallons per minute.
   4" Pipe – 390 GPM
   6" Pipe – 880 GPM
   8" Pipe – 1560 GPM
   Flow from the flange must be directed in a safe manner as not to flood the surrounding area. The Contractor will conduct the flow test with a City representative present. The Contractor shall supply a pedo gauge and measure the flow.

   If the flushing can be completed without reducing the pipe size and the P.I. valve opened completely, then gauging the flow fore GPM will not be required.

4. Health Sample – The Contractor shall obtain a health sample per the requirements of City Standard Specifications.

5. Soft Seat Check Valve – If a soft sear check valve is required, contact the City's Cross Connection Specialist to inspect the valve prior to installation.

7-09.3(24) Disinfection of Water Mains
Section 7-09.3(24) is supplemented with the following:
(December 15, 2010 Richland GSP)

The City of Richland uses AWWA Standard C651 as a guideline for disinfecting water mains.

7-09.3(24)A Flushing
Section 7-09.3(24)A is supplemented with the following:
(May 29, 2014 Richland GSP)

Water needed for flushing shall be provided through a water transporting device or temporary connection to the existing water system. All materials and equipment necessary to complete this work shall be provided by the Contractor. Proper backflow prevention practices shall be implemented (certified and tested double check valves, equipment with appropriate air gap).

Temporary blow offs used for flushing shall be a minimum of 2 inch for mains less than 12 inch, 4 inch for a 12 inch main and 6 inch for a 24 inch main or as required to meet the 2.5 feet per second velocity required.

City of Richland's Domestic water main into service procedure:

1. Main Pre-flush via existing water source (i.e. fire hydrant)
2. Chlorinate main (load to 50 mg/l) using approved method
3. 24 hour period after loading line
4. Verify a minimum of 10 mg/l chlorine residual in prior to flushing
5. Flush lines via existing water source (i.e. fire hydrant) to clear out chlorinated water
6. 1st Health Sample
7. 24 hour period after sample

8. Pressure Test only after satisfactory 1st health sample
9. Flush lines
10. 2nd Health Sample
11. Tie-ins can begin after second sample is returned with a satisfactory result

All costs associated with loading, flushing, testing, and health samples (including temporary service taps if needed) as considered incidental to the installation of the water main. City of Richland covers the lab costs from the Department of Health.

7-09.3(24)C Form of Applied Chlorine
Section 7-09.3(24)C is replaced as follows:
(March 1, 2018 Richland GSP)

Chlorine shall be applied by either Dry Calcium Hypochlorite (per 7-09.3(24)D or Liquid Chlorine per 7-09.3(24)E), to give a dosage of not less than 50 mg/l of available chlorine.

7-09.3(24)D Dry Calcium Hypochlorite
Section 7-09.3(24)D is supplemented as follows:
(May 14, 2014 Richland GSP)

Dry calcium hypochlorite (granular chlorination) is allowed with engineer approval for pipe runs 150' and shorter and only for 8 inch diameter and smaller. Chlorine injection is required for all other lengths and larger pipe sizes.

7-09.3(24)N Final Flushing and Testing
Section 7-09.3(24)N is supplemented with the following:
(November 10, 2009 Richland GSP)

After flushing has been accomplished to the satisfaction of the Engineer, a bacteriological test will be performed by City forces. Should the initial treatment result in an unsatisfactory bacteriological test, the chlorination procedure shall be repeated by the Contractor until satisfactory results are obtained.

After a satisfactory bacteriological test is confirmed, the hydrostatic test can be performed.

7-09.4 Measurement
Section 7-09.4 is supplemented with the following:
(November 10, 2009 Richland GSP)

All trench excavation (except with use of Alternative Trench Section) shall be unclassified and a separate measurement will not be made for any excavation, cement concrete and asphalt pavement sawing, removal and disposal, and backfill for pipelines.

Alternative Trench Foundation Class B will be measured by the linear foot.

Dig and verify will be measured on a per each basis for those identified in the Plans or as directed by the Engineer.

Trench safety systems will be measured per linear foot of pipe installed.

Imported pipe zone bedding will be measured by the linear foot of placed bedding.

Fittings of the type and size listed on the bid proposal schedule will be measured per each furnished and installed.

Connect to existing water main per each.

7-09.5 Payment
Section 7-09.5 is supplemented with the following:
(December 15, 2010 Richland GSP)

All costs for excavation, cement concrete and asphalt pavement sawing, removal and disposal, and backfill for pipelines and fittings including detectable marking tape and tracer wire shall be incidental to the pipe installation except as follows:

"_____ Pipe for Water Main _____ In. Diam. With Restrained Joint", per lineal foot.
The unit contract price for "_____ Pipe for Water Main _____ In. Diam. With Restrained Joint" shall be full pay for all work to complete the installation of the water main including but not limited to trench excavation, bedding, laying and jointing pipe, backfilling, testing, flushing, disinfecting the pipeline, and cleanup.

Fittings (bends, tees, crosses, caps, plugs, couplings, etc.) shall be per each.
The unit contract price shall be full pay for all work to complete the installation of the specified fittings including but not limited to excavation, bedding, laying and jointing pipe and fittings, backfilling, testing, flushing, disinfecting the pipeline, specified thrust restraint and cleanup.

"Dig and Verify", per each.
The unit contract price per each for "Dig and Verify" shall be pay to furnish all labor, materials and equipment for performing the work and when required to backfill and compact the dig and verify location.

"Imported Pipe Zone Bedding", per linear foot.
The unit contract price per linear foot for "Imported Pipe Zone Bedding" shall be full pay to provide all labor, materials and equipment for completing the work as specified. Payment shall include removing the unsuitable materials the imported bedding replaced.

"Trench safety", per linear foot.

"Connect to Existing Water Main _ In.", per each.
The unit contract price per each for "Connect to Existing Water Main" shall be full pay for furnishing all labor, materials and equipment necessary to make the connections, including miscellaneous fittings.

7-12 VALVES FOR WATER MAINS

7-12.2 Materials
Section 7-12.2 is amended as follows:
(November 10, 2009 Richland GSP)

Unless otherwise specified in the Special Provisions or on the plans, all valves 8 inch and smaller shall be gate valves and all valves 10 inches and larger shall be butterfly valves.

Materials shall meet the requirements of the City of Richland Materials List and Standard Details.

7-12.3 Construction Requirements
Section 7-12.3 is supplemented with the following:
(December 15, 2010 Richland GSP)

All valves shown on the plans adjacent to tees, crosses or similar fittings shall be flanged to such fittings.

Misaligned valve boxes shall be excavated, plumbed, and backfilled at the Contractor's expense.

Blow off valves shall be installed per City Standard Detail for Construction _ In Blow-off Installation or Permanent 2 In Blow-off Installation.

7-12.4 Measurement
Section 7-12.4 is supplemented with the following:
(March 29, 2019 Richland GSP)

Adjustment of valve box shall be per each.

Replace and adjust valve box shall be per each

7-12.5 Payment
Section 7-12.5 is supplemented with the following:
(March 29, 2019 Richland GSP)

“Adjust Valve Box”, per each.
The unit contract price per each for “Adjust Valve Box” shall be full pay for all costs necessary to make the adjustment of the existing valve box including restoration of adjacent areas in a manner acceptable to the Engineer.

“Replace and adjust valve box”, per each.
The unit contract price per each for “Replace and Adjust Valve Box” shall be full pay for all costs necessary to supply a new valve box and make the adjustment of the new valve box including restoration of adjacent areas in a manner acceptable to the Engineer.

7-14 HYDRANTS

7-14.3 Construction Requirements

7-14.3(1) Setting Hydrants
Section 7-14.3(1) is supplemented with the following:
(November 10, 2009 Richland GSP)

Set all hydrants plumb and nozzles parallel with, or at right angles to, the curb, with the pumper nozzle facing the curb. Set hydrants so that middle of traffic flange is within 2 inches of the bury line Hydrants shall be ordered with the bury depth required to meet the above specification. No extensions will be allowed.

When placed behind the curb, set hydrant behind the back of curb as shown on the standard detail. When set in lawn space between curb and sidewalk, or between sidewalk and property line, let no portion of the hydrant or nozzle cap be within 8 inches of the sidewalk.

Contractor to install Storz adapter.

7-15 SERVICE CONNECTIONS

7-15.3 Construction Requirements
Section 7-15.3 is supplemented as follows:

(November 10, 2009 Richland GSP)

All new meter boxes shall be set square with the roadway and level with the adjacent sidewalk and/or lawn. The finished box grade shall be set by two each 2" x 4" x 48" grade adjustment boards set on compacted soil at the 36" depth. As indicated in the Special Provisions and as directed by the Engineer new meter boxes located in a position to receive vehicular traffic shall have traffic rated metal lids.

Existing Water Connections
The service connection shall conform to the City's Water Service Connection Standard Detail.

The Contractor shall thread existing galvanized service line to facilitate connections. Plumber's paste shall be used on all threaded connections. If condition of existing pipe is not conducive to threading, the Engineer on a case-by-case basis will consider a pack joint for iron pipe coupling.

The new house service line shall be connected so that all existing meter setter fittings are eliminated. The new house service line shall be swept into the tie-in locations with adequate pipe length to allow for expansion/contraction of the HDPE. Equivalent elbow fittings will be considered by the Engineer on a case-by-case basis to reduce impacts to existing improvements.

The Contractor shall make a mark on the HDPE house service line one foot from the end of the pipe prior to installing the house service assembly couplings. No couplings will be allowed beneath concrete or asphalt areas.

Section 7-15.3, end of second paragraph, is supplemented as follows:
(February 4, 2013 Richland GSP)

Missile or Boring is the preferred method of service line installation under existing roadways, curbs and sidewalks. The Engineer will consider the use of a small backhoe for installation of service lines on a case by case basis. Where boring is used the house service line shall not be used to connect the air source to the missile and the 4" wide locate tape will not be required.

7-15.3(2) Connection to Water Main
Section 7-15.3(2) is added as follows:
(November 10, 2009 Richland GSP)

Do not place saddle within one (1) foot of pipe joint, couplings, or other clamps without approval from the Engineer.

7-15.3(3) New Water Service Connection
Section 7-15.3(3) is added as follows:
(November 10, 2009 Richland GSP)

The Contractor shall, prior to backfilling the piping and in the presence of the Engineer, pressure-test the new line at system pressure to assure no leakage and shall flush the new water service line a minimum of 30 seconds prior to the connection being made. Once the connection is made, the Contractor shall have the property owner open outside hose bibs and unscreened inside faucets to assure any sediment removal, and to assure proper flow and pressure at each location.

The shutdown time for each new water service connection shall be minimized by the Contractor, having the meter setter and all of the service line installed to the point of

connection prior to the shutting down of water service. At the completion of each service connection, the Contractor shall verify with the property owner that all plumbing fixtures and irrigation systems are working properly. The Contractor shall repair any deficiency promptly.

7-15.5 Payment

Section 7-15.5 is replaced by the following:
(November 10, 2009 Richland GSP)

Payment will be made in accordance with Section 1-04.1, for the following bid items that are included in the proposal:

"__ In. Street Service Assembly", per each
The unit contract price per each for "__ In. Street Service Assembly" shall be full pay for all work to install the street service assembly including the service saddle, corporation stop, curb stop, service valve box and any pipe couplings, insert stiffeners and adaptors necessary for the installation of the new street service lines from the service saddle to the curb stop as shown in the City Standard Detail.

"1 In. Street Service Line (Type K Copper)", per linear foot
"2 In. Street Service Line (HDPE)" per linear foot.

The unit contract price per linear foot for "1 In. Street Service Line (Type K Copper)" and "2 In. Street Service Line (HDPE)" shall be full pay for all work to install the Type K copper piping or HDPE pipe, trench excavation and backfill, pipe bedding, and 4" wide locate tape necessary for the street service line installation as shown on the plans.

"__ In. Meter Assembly", per each
The unit contract price per each for "__ In. Meter Assembly" shall be full pay for all work to install the include the meter setter (supplied by City with jumper or meter (see detail), meter boxes, grade adjustment boards and all copper tubing and fittings as shown in the details "1" Meter Setter and 1 ½" & 2" Meter Setter" including excavation and backfill, and the removal and disposal of the existing water meter installation (boxes and setter). The existing water meter shall be removed from the existing meter box, wrapped in a plastic bag and placed in the new meter assembly boxes.

"__ In. House Service Assembly", per each
The unit contract price per each for "__ In. House Service Assembly" shall be full pay for all work including all labor, equipment and materials needed for the installation of the water service lines, compression couplings, insert stiffeners and materials necessary for the capping and abandonment of the existing water service lines.

"__ In. House Service Line", per linear foot
The unit contract price per linear foot for "__ In. House Service Line" shall be full pay for the installation of the service line including the HDPE piping, trench excavation and backfill, piping bedding and locate tape necessary for the service line installations shown on the plans.

7-17 SANITARY SEWERS

7-17.2 Materials

Section 7-17.2 is supplemented with the following:
(December 15, 2010 Richland GSP)

Unless otherwise specified in the Special Provisions or noted on the plans all sewer pipe 15 inch diameter or smaller and with less than 15 feet of cover shall be polyvinyl chloride (PVC), ASTM D3034, SDR 35. All sewer mains 18 inch diameter to 48 inch diameter or with more than 15 feet of cover shall be ASTM F 679-08-SDR26, 115 psi min. pipe unless an alternate material is specified or approved by the City.

ASTM D3034, SDR 35	9-05.12(1)
ASTM F 679, 115 psi min	9-05.12(1)

7-17.3 Construction Requirements

7-17.3(2) Cleaning and Testing

7-17.3(2)A General
Section 7-17.3(2)A is supplemented with the following:
(September 23, 2013 Richland GSP)

Revise the 1st sentence of the 1st paragraph of Section 7-17.3(2)A to read:

Sewers and appurtenances shall be cleaned and any installation where there is a pipe joint shall be tested after backfilling by the low pressure air method, except where the ground water table is such that the Engineer may require the infiltration test.

Insert the following:

Cleaning shall consist of hydro pressure jetting of lines (jet truck). Material/debris shall be caught and removed at each structure.

7-17.3(2)H Television Inspection
Replace the first paragraph of Section 7-17.3(2)H with:

All sanitary sewer and storm drain lines shall be inspected by the use of television camera before final acceptance. The costs incurred in making the inspection for approval of installation shall be borne by the contractor.

Section 7-17.3(2)H is supplemented with the following:

Prior to construction the City will TV inspect existing sewer and storm systems downstream from the project to document condition of existing pipe.

Each of the Sewer or Storm collection systems and sewer service installations shall be completed and backfilled to subgrade for sewer installation and after utility / concrete placement as applicable for storm prior to TV inspection. TV inspections shall take place prior to approval for paving of roadway.

All sewer / storm lines shall be cleaned via method approved by the City and free of debris / flow prior to TV inspection so that all interior pipe surface is visible. Contractor is responsible for preventing discharge material / debris into existing system.

During construction a plug shall be placed at the lowest possible point in the new storm or sewer system to prevent infiltration into the existing system. Plug(s) shall be securely attached. Plug(s) will be removed only after acceptance of project by City. The contractor shall be held responsible for any unauthorized discharge into the existing system.

Inspections shall include all structures. When possible the camera must pass completely through structure (i.e. manhole) to insure manhole channel has been built correctly. At direction of engineer or inspector, inspection shall include running water with dye.

City shall receive a minimum 24 hour notice prior to start of TV inspection being completed. Contractor shall provide accommodations to City personnel for live viewing of the TV inspection. All inspections (unless pre-approved otherwise) shall take place between 7:30 am and 3:30 pm. All recordings shall be in color and saved as an .avi or .mpg4 file type (must be viewable by common Window based media players). Media to transfer files can be either portable hard drive or portable flash drive. Inspection and paper written or printed reports shall be given to City representative either immediately upon completion or within 1 business day of inspection. Media will not be returned to the contractor.

The television inspection must meet the requirements of the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) with includes a camera speed no to exceed 30 feet per minute. A pivot head camera shall be used with detailed inspection of all laterals showing the entire lateral with a 360 degree pan around the opening. The recording shall be free from static and a minimum distance of 10 feet shall be clearly visible in front of the camera. The City engineer has final approval for acceptance

All recordings shall show on the screen the correct time and date of the inspection, the project name, the name of the camera operator, the manhole numbers (from plans or as given to contractor from inspector) being inspected, and accurate footage count, and all lateral locations using a 12 hour clock position.

All inspections shall be performed by trained personnel and in the PACP format. Submittals of TV operator current PACP certification will be required upon request by the City. Contractor to provide a paper copy of the inspection report.

Sewer and storm systems shall be flushed with water prior to TV inspection. If sags within the sewer / storm line are encountered, the television shall include a measuring device to adequately estimate actual sag depth. Measuring device to consist of a known diameter weighted ball or like device to assist in the estimating of sag depths during TV inspection.

7-17.5 Payment
Section 7-17.5 is supplemented with the following:
(September 23, 2013 Richland GSP)

Revise the second paragraph to read:

The unit Contract price per linear foot for sewer pipe of the kind and size specified shall be full pay for furnishing, hauling and assembling in place the completed installation including all wyes, tees, special fittings, joint materials, cleaning and debris removal, testing, bedding material, backfill material and adjustment of inverts to manholes for the completion of the installation to the required lines and grades.

“TV inspection of sewer or storm pipe” per linear foot.
Unit contract price per linear foot for “TV inspection of sewer or storm pipe” shall be full pay for all labor, material, and equipment required to conduct the TV inspection per Section 7-17.3(2)H.

Delete the following:

Testing Sewer Pipe, per linear foot.

7-18 SIDE SEWERS

7-18.3 Construction Requirements

7-18.3(5) End Pipe Marker
Section 7-18.3(5) is replaced with the following:
(November 10, 2009 Richland GSP)

End pipe marker shall be per Sewer Service Marker Post Standard Detail or as shown on the plans.

7-19 SEWER CLEANOUTS

7-19.4 Measurement
Section 7-19.4 is supplemented with the following:
(March 29, 2019 Richland GSP)

Adjust Cleanout per each

Replace and adjust cleanout per each

7-19.5 Payment
Section 7-19.5 is supplemented with the following:
(March 29, 2019 Richland GSP)

"__ In Sewer Cleanout", per each.

"Adjust cleanout", per each
The unit contract price per each for "Adjust cleanout" shall be full pay for all costs necessary to make the adjustment of the existing cleanout including restoration of adjacent areas in a manner acceptable to the Engineer and per City of Richland standard detail U4.

"Replace and adjust cleanout", per each.
The unit contract price per each for "Replace and adjust cleanout" shall be full pay for all costs necessary to provide a new cleanout lid and make the adjustment of the new manhole frame and lid including restoration of adjacent areas in a manner acceptable to the Engineer and per City of Richland standard detail U4.

DIVISION 8
MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.3 Construction Requirements

8-01.3(2) Seeding, Fertilizing, and Mulching

8-01.3(2)B Seeding and Fertilizing
Section 8-01.3(2)B is supplemented with the following:
(December 4, 2006 WSDOT GSP)

Grass seed, of the following composition, proportion, and quality shall be applied at the rates shown below on all areas requiring roadside seeding within the project:

Kind and Variety of Seed in Mixture by Common Name and (Botanical name)	Pounds Pure Live Seed (PLS) Per Acre
Thick spike Wheatgrass	11.4
Blue bunch Wheatgrass	10.8
Great Basin Wildrye	5.7
Sandberg Bluegrass	5.7
Sherman Big Bluegrass	11.4
Idaho Fescue	10.8
Weed Seed	0.6(max)
Inert and Other Crop	3.6(max)
Total Pounds PLS Per Acre	60.0

Seeds shall be certified “Weed Free,” indicating there are no noxious or nuisance weeds in the seed.

(January 3, 2006 WSDOT GSP)

Sufficient quantities of fertilizer shall be applied to supply the following amounts of nutrients:

Total Nitrogen as N - *** 67 *** pounds per acre.

Available Phosphoric Acid as P_2O_5 - *** 67 *** pounds per acre.

Soluble Potash as K_2O - *** 67 *** pounds per acre.

*** forty *** pounds of nitrogen applied per acre shall be derived from isobutylidene diurea (IBDU), cyclo-di-urea (CDU), or a time release, polyurethane coated source with a minimum release time of 6 months. The remainder may be derived from any source.

The fertilizer formulation and application rate shall be approved by the Engineer before use.

8-01.3(2)D Mulching
Section 8-01.3(2)D is supplemented with the following:
(November 10, 2009 Richland GSP)

Initial Application
*** Wood Cellulose fiber with guar-based tackifier *** mulch shall be applied at a rate of *** 1200 (WCF) and 50 (tackifier) *** pounds per acre. Mulch shall be applied to completed slopes within 7 days.

Final Application
*** Wood Cellulose fiber with guar-based tackifier *** mulch shall be applied at a rate of *** 1500 (WCF) and 50 (tackifier) *** pounds per acre.

8-01.3(17) Temporary Water and Pollution/Erosion Control
Section 8-01.3(17) is added as follows:
(November 10, 2009 Richland GSP)

The Contractor shall be responsible for preventing objectionable materials and sediments from entering and clogging all new or existing catch basin curb inlets, grates and underground piping. Prior to construction, the Contractor shall supply, install and maintain effective protective sediment filtering devices. Sediment filtering devices such as straw bale barriers, sediment barriers and/or filter fabric on inlet structures shall be in place at all times during construction.

The Contractor shall be responsible to regularly inspect sediment-filtering devices to insure that they do not become ineffective or cause localized flooding. Upon completion of construction activities, the Contractor shall remove sediment-filtering devices from all catch basins and clean catch basin sumps and underground piping which have become contaminated with sediment and debris.

Payment for catch basin protection including all labor, equipment and materials as required shall be considered incidental to the associated contract bid items.

8-02 ROADSIDE RESTORATION

8-02.3 Construction Requirements

8-02.3(17) Tree Trimming
Section 8-02.3(17) is added as follows:
(November 10, 2009 Richland GSP)

The Contractor shall trim all existing tree limbs within 2 feet of the edge of the sidewalk or pathway to provide 8 feet of vertical clearance from the surface of the sidewalk or pathway to the bottom of the tree limb.

8-02.3(18) Site Restoration
Section 8-02.3(18) is added as follows:
(November 10, 2009 Richland GSP)

Site restoration shall consist of the restoration of all disturbed site improvements, including fences, sprinkler valves, sprinkler lines, heads, and lawn and landscaping materials. The property owner shall be notified prior to the removal of any plants or shrubs. The existing plants and shrubs shall be set aside and re-planted or replaced after trenching is completed.

All disturbed lawn areas shall be cut with a sod cutter or other method approved by the Engineer, and replaced. During trenching the top 4" of topsoil shall be segregated and replaced prior to sod installation. All damaged sod shall be replaced with grass sod, from an off-site source, and placed on four inches of topsoil. All sod shall be watered daily by the Contractor for a three-week period, at which time any dead or browned sod shall be removed and replaced. The replaced areas will again require a three-week watering period. The Contractor shall provide a water source and all equipment required to maintain the sod. Use of the property owner's water and/or hoses shall be approved in writing by the property owner prior to its use. At any yard where the underground sprinkling system is disturbed (either piping or heads), the Contractor shall verify with the resident that the system has been restored to satisfactory operating condition.

All site restoration (except for concrete and/or asphalt patching) shall be completed within 14 calendar days after the adjacent construction has taken place. All construction debris shall be removed and properly disposed of.

If existing topsoil is not segregated for reuse, then topsoil from an off-site source shall be provided. Topsoil shall be a sandy loam silt material free of sticks, rocks, wood, vegetable material and other deleterious material, and shall contain 30% silt or clay. Minimum thickness placed shall be four inches. The seed specifications for grass sod and/or hydro-seed will be submitted to the Engineer for approval prior to placement.

In areas where landscaping rock and/or gravel exist, the Contractor shall remove and replace rock and landscaping materials to match existing types or better. In gravel areas without fabric the Contractor shall apply a weed sterilant to the finished gravel surface as approved by the Engineer.

All site restoration shall be completed within 14 calendar days after adjacent construction has taken place. Failure to complete restoration will result in the following penalties:

- **Completed within 14 calendar days: 100% payment**
- **Completed within 15-21 calendar days: 75% payment**
- **Completed after 21 calendar days: 50% payment**

City of Richland project inspector will document date of construction and date of site restoration being completed.

8-02.5 Payment
Section 8-02.5 is supplemented with the following:
(November 10, 2009 Richland GSP)

"Tree Trimming", lump sum.
All costs for trimming, removing, and hauling off tree trimmings shall be included in the lump sum price for "Tree Trimming".

"Site Restoration", lump sum.
The lump sum contract payment shall include all labor, equipment and materials necessary for the restoration of all disturbed site improvements, other than those specifically listed in the bid proposal.

8-04 CURBS, GUTTER, AND SPILLWAYS

8-04.3 Construction Requirements

8-04.3(1) Cement Concrete Curbs, Gutters, and Spillways

Section 8-04.3(1) is supplemented with the following:
(November 10, 2009 Richland GSP)

At each location where a water service or water main crosses under a concrete curb the curb shall be stamped with a “W” to indicate the location.

At each location where a sewer service or sewer main crosses under a concrete curb the curb shall be stamped with an “S” to indicate the location.

Section 8-04.3(1) the first sentence of the first paragraph is revised to read:
(March 19, 2012 Richland GSP)

All cement concrete curb, curb and gutter, gutter, and spillway shall be constructed with air entrained concrete Class 4000 conforming to the requirements of Section 6-02.

8-13 Monument Cases

8-13.1 Description

Section 8-13.1 is deleted and replaced by the following
(March 29, 2019 Richland GSP)

This work shall consist of furnishing and placing monument cases, covers, and pipes in accordance with the City of Richland Standard Plan ST20 and per City of Richland Materials List, in conformity with the lines and locations shown in the Plans or as staked by the Engineer.

8-13.3 Construction Requirements

Section 8-13.3 is supplemented with the following:
(March 29, 2019 Richland GSP)

The City shall provide straddle marks and final monument punch. Contractor shall provide traffic control during marking of the straddle marks and final monument punching. City to provide all monument removal / replacement permitting.

8-13.4 Measurement

Section 8-13.4 is deleted and replaced by the following:
(March 29, 2019 Richland GSP)

Measurement of monument case, cover, and pipe will be by the unit for each monument case, cover, and pipe furnished and set.

8-13.5 Payment

Section 8-13.5 is supplemented with the following:
(March 29 2019 Richland GSP)

"Monument Case, Cover, and Pipe", per each.

8-14 CEMENT CONCRETE SIDEWALKS

8-14.4 Measurement

Section 8-14.4 is supplemented with the following:
(March 29, 2019 Richland GSP)

Cement Conc. Sidewalk for ADA ramp will be measured by the square yard of finished surface required for the new ADA ramp.

Sawcutting Cement Conc. Curb will be measured by the linear foot of curbing saw-cut for the purposes of the installation of a new ADA ramp or driveway.

Concrete Retaining Wall (1' to 2.5' tall) will be measured by the square foot of surface area, measured from base of wall (sidewalk / ramp side) to top of wall.

Cement Conc. Drop Back Sidewalk w/ Raised Edge will be measured by the square yard of finished surface requiring the drop back and including the pedestrian curb.

8-14.5 Payment

Section 8-14.5 is supplemented with the following
(March 29, 2019 Richland GSP)

"Cement Conc. Sidewalk for ADA ramp" per square yard.
The unit Contract price per square yard for "Cement Conc. Sidewalk for ADA ramp" shall be full pay for installing the ADA ramp including saw cutting and removing the existing sidewalk, excavation as needed, CSTC as needed but does not include saw cutting existing curbing or truncated dome. Any cement concrete monolithic pedestrian curb that is required for ADA ramp installation shall be considered incidental to the unit cost up to 1' in height.

"Sawcutting Cement Conc. Curb" per linear foot.
The unit contract price per linear foot for "Sawcutting Cement Conc. Curb" per linear foot shall be full pay for saw cutting the concrete curb and removal of cut material for the purposes of the installation of a new ADA ramp or driveway.

"Concrete Retaining Wall (1' to 2.5')" per square foot.
The unit contract price for "Concrete Retaining Wall (1' to 2.5')" per square foot shall be full pay for forming and installing (including all concrete, rebar, etc.) the retaining wall as shown on the plans and per the detail. Concrete retaining wall is only those walls that are 1' and greater in height – shorter than 1' in height will be considered part of the concrete cement monolithic pedestrian curb.

"Cement Conc. Drop Back Sidewalk w/ Raised Edge" per square yard.
The unit Contract price per square yard for "Cement Conc. Drop Back sidewalk" shall be full pay for installing the drop back sidewalk as shown on the plans including removing the existing sidewalk, excavation as needed, CSTC as needed.

"Cement Conc. Sidewalk", per square yard.
The unit contract price per square yard for "Cement Conc. Sidewalk" includes as incidental to the bid item all CSTC as needed, saw cutting and removal of the existing sidewalk, excavation as needed, and clearing and grubbing as needed.

8-20 ILLUMINATION, TRAFFIC SIGNAL SYSTEMS, INTELLIGENT TRANSPORTATION SYSTEMS, AND ELECTRICAL

8-20.1 Description

8-20.1(1) Regulations and Code

(February 21, 2020 Richland GSP)

Section 8-20.1(1) is supplemented with the following:

All materials and work required shall be done in accordance with the latest editions of the following codes and standards, except as hereinafter supplemented, revised, or superseded by these special provisions:

- National Electrical Manufacturers Association Specifications for Traffic Control Systems (NEMA);
- The WSDOT Standard Specifications for Road, Bridge and Municipal Construction (SWSS);
- WSDOT Standard Plans for Road and Bridge Construction (SWSP);
- The Manual on Uniform Traffic Control Devices (MUTCD);
- The American Society of Testing and Materials (ASTM); and
- International Municipal Signal Association (IMSA).

8-20.2 Materials

8-20.2(1) Equipment List and Drawings
(November 1, 2021 Richland GSP)
Section 8-20.2(1) is supplemented with the following:

Materials Acquisition
Within 10 working days of the "Notice to Proceed" the Contractor shall provide submittals for all street light standards, signal standards, controllers, cabinets and auxiliary equipment contained within the cabinet. Within 10 working days of receipt of approved submittals from the City, the Contractor shall provide documentation of order with suppliers for all street light standards, signal standards, controllers, cabinets and auxiliary equipment contained within the cabinet. The Contractor may be required to submit samples of materials dependent on the approval code listed in the Qualified Products List (QPL).

(March 13, 1995) Pole base to light source distances (H1) for lighting standards with pre-approved plans shall be as noted in the Plans. Pole base to light source distances (H1) for lighting standards without pre-approved plans will be furnished by the Engineer as part of the final approved shop drawings, prior to fabrication.

(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
(February 21, 2020 Richland GSP)
Section 8-20.3 is supplemented with the following:

Prior to ordering signal poles and mast arms, the Contractor is responsible to field locate and verify that all signal poles and their foundations will not interfere with existing underground utilities. If it is determined that a signal pole location interferes with an existing underground utility, after confirming its location, the Contractor shall immediately notify the City and the engineer so that appropriate adjustments in the signal design, or relocation of the underground utility can be identified and carried out.

8-20.3(1) General
(February 21, 2020 Richland GSP)
Section 8-20.3(1) is supplemented with the following:

The controller cabinet shall be installed on the cabinet foundation and electrical service shall be provided to the cabinet prior to installation of the video detection units (VDU's) onto the signal standards. Completion of this work will be required to properly align the VDU's and collect video images before the signal turn-on can be scheduled. The Contractor shall provide the City 72 hours notice to allow the City to coordinate personnel to assist the Contractor with the VDU installation. The Contractor shall align each VDU to the satisfaction of the Traffic Engineer. The Contractor shall afford the City five (5) contract days, after VDU installation, before scheduling turn-on of the traffic signal.

Signal Operational Changes

1. **Scheduled turn-off**. When any scheduled traffic signal turn-off occurs, the following conditions should be satisfied:

    - A temporary Stop sign should be placed on every intersection approach.
    - An additional Stop sign should be placed on every intersection approach with two or more lanes. These signs should be placed in the center of the road or in the median.
    - An advance Stop warning sign should be placed on every intersection approach. These signs should be located in accordance with the MUTCD.
    - The stop signs and advance stop warning signs should have a minimum size of 30-inches.
    - The stop signs and advance stop warning signs should be supplemented with flags.
    - All signs shall be made of metal and incorporate reflective sheeting.
    - All signal and pedestrian heads should be bagged or removed during extended inoperative periods.

2. **Scheduled turn-on.** Before any intersection is turned on for normal traffic operation, the new or modified equipment shall be field tested under the direction of and to the satisfaction of the Traffic Engineer. Any equipment that is determined to be unsatisfactory shall be repaired or replaced before turn-on will be allowed.

    Turn on to normal cycling operation shall be completed prior to 2 P.M. on Monday through Thursday, excluding holidays and the day preceding a holiday. The Contractor shall schedule a date and time for turn-on and notify the Traffic Engineer a minimum of 72 hours in advance of the scheduled date. Traffic signal turn-on shall not take place until all required pavement markings and signs have been installed.

    A field test shall be performed in the presence of the City's Traffic Engineer. The test shall conform to the following sequence:

    - Turn on the signal system to flash mode to verify proper flash indications.
    - Stop all traffic from entering the intersection and allow the signal system to cycle through no less than one full signal cycle to verify proper signal operation.

    Based on the outcome of this test, the Traffic Engineer will direct the Contractor to take one of the following actions:

- Switch the signal system to flash mode to remove conflicting temporary and permanent traffic control devices. Then turn on the signal system to normal cyclic operation.
- Switch the signal system to flash mode for a period not to exceed five (5) calendar days.
- Turn off power to the signal system and cover all signal heads with black opaque material that is not easily damaged by the wind.

If option “A” is taken, the Contractor shall remove all conflicting signs as designated by the Traffic Engineer. If option “B” or “C” is taken, the Contractor shall correct project deficiencies and schedule a new turn-on date following the tests exercised herein.

Inspection

The Contractor shall provide the City inspector no less than a 72 hour notice, prior to installation of heads or mast arms, to facilitate inspection of signal head assemblies. If deficiencies are found the contractor shall correct and provide the inspector a 24 hour notice for follow-up inspection prior to installation.

8-20.3(3) Removing and Replacing Improvements

(February 21, 2020 Richland GSP)

Section 8-20.3(3) is supplemented with the following:

The Contractor shall be responsible for any and all reconstruction of landscaping, irrigation, driveways, and asphalt pavement that may be damaged or removed to facilitate installation of conduit. To facilitate installation of conduit, junction boxes and signal standard foundations concrete sidewalk shall be removed and disposed of by the Contractor. Curb and gutter may also be removed if necessary to facilitate installation of conduit and foundations. After installation of conduit and signal standard foundation forms the Contractor shall be required to construct temporary sidewalk and bridge any removed sections of curb and gutter to restore flow line and grade to maintain adequate surface drainage if deemed necessary by the project Engineer.

Temporary sidewalk and curb shall be constructed by smoothly grading and compacting sub-grade areas and placing a minimum of one and one-half inches of cold mix asphalt, compacted in place. The Contractor shall be required to ensure that drainage, to the adjacent roadway, is reasonably provided upon completion of the temporary curb.

At locations where landscaping will be impacted, the Contractor shall notify the property owner at least three days in advance to allow them the opportunity to relocate plants and shrubs that would otherwise be destroyed by this work item.

8-20.3(4) Foundations

(November 1, 2021 Richland GSP)

Section 8-20.3(4) is supplemented with the following:

Precast concrete foundations may be used for City of Richland street light poles, provided they meet the City Standard Details. Backfilling and compaction shall be per Standard Specification 2-09.3(1)E.

Before placing the concrete, the Contractor shall block out around any other underground utilities that lie in the excavated base so that the concrete will not adhere to the utility line. Concrete foundations shall be troweled, brushed, edged and finished in a workman-like manner. Concrete shall be promptly cleaned from signal standards, anchor bolts and conduit after placement.

Conduit, anchor bolts and other hardware shall be left the distance above the foundation as required for proper installation of the pole. The final sidewalk around the signal standard shall be poured after installation and leveling of the signal standard to match adjacent existing sidewalk panels.

Concrete foundations shall be formed in corrugated metal pipe or Sonotube, if possible, or otherwise against undisturbed earth.

No excavation for signal standard foundations shall occur until foundation locations have been field approved by the Traffic Engineer. No foundation shall be poured unless the forms and bolt pattern alignment has been approved by the Traffic Engineer.

Type II/III. The bolt patterns shall be consistent throughout all Type II or III signal standards specified in the contract.

8-20.3(5) Conduit

8-20.3(5)A General

Section 8-20.3(5)A is supplemented with the following:
(March 1, 2018 Richland GSP)

Utility crossings are per section 7-08.3(5) Underground Utility Crossing – Marked and Unmarked.

Section 8-20.3(5)A is supplemented with the following:
(February 21, 2020 Richland GSP)

When installing conduit in unpaved areas, the primary installation method shall be open trenching.

Bends, clearance, and fittings

All conduit shall be swept into signal standard foundations, cabinet foundations, junction boxes, electrical service pedestals etc. Conduit sweeps shall be 90 degree P.V.C. factory elbows of a schedule consistent with the adjoining conduit. All conduit ends shall be fitted with an "End Bell" fitting. The top of the “End Bell” fitting shall be at a height between 6-inches below the box lid and 6-inches above native soil at the bottom of the box.

Horizontal alignment shall be achieved by using 45 degree elbows or sweeping the conduit whenever possible so as to reduce the total bend in degrees. Where P.V.C. conduit is attached to new polyethylene conduit, IPS threaded couplings shall be used. The IPS threaded coupling shall be threaded to the polyethylene conduit with a hydraulic coupling press. Where P.V.C conduit is to be attached to existing sub-standard polyethylene conduit, a slip/ipt adapter shall be joined to a clamp/ipt adapter.

8-20.3(5)C Conduit Size

(February 21, 2020 Richland GSP)
Section 8-20.3(5)C is supplemented with the following:

The Contractor shall provide and install as a minimum the size of conduit as shown on the wiring schematic. The Contractor may install larger conduit than that shown at no additional cost to the project.

*8-20.*3(5)E Method of Conduit Installation

8-20.3(5)E1 Open Trenching

(November 1, 2021 Richland GSP)

Section 8-20.3(5)E1 is supplemented with the following:

Open trenching is also allowed at the Contractor's discretion when guided horizontal boring is not possible or practical due to cost, material or geometric restrictions. All trenches shall be as straight and narrow as practicable to provide a minimum of pavement disturbance. Trenches in existing roadways shall be completed per City Standard Detail U2, with minimum cover on top of the conduit being 24 inches. The trench shall be patched the same day the trench is opened. If HMA is unavailable after backfill is complete, the street shall be temporarily patched with cold mix until hot mix is available, at no additional cost to the Contracting Agency.

8-20.3(5)E4 Directional Boring

(February 21, 2020 Richland GSP)

Section 8-20.3(5)E4 is supplemented with the following:

Installing conduit using the "Guided Horizontal Boring" method shall employ hydraulically powered boring equipment with positive steering. The boring head shall be fluid assisted and surface launched. Monitoring equipment shall be used to ensure precise boring head locating for accurate boring. The boring equipment shall be capable of installing the size and lengths of conduit specified.

8-20.3(9) Bonding, Grounding

(February 21, 2020 Richland GSP)

Section 8-20.3(9) is supplemented with the following:

Each standard shall be provided with a provision for grounding and pole, mast arm, and luminaire with one grounding connection. The grounding mean shall be located such that the ground connections can easily be made through the hand hole. Each light standard shall be assembled such that all metallic components of the pole are internally bonded to the grounding means.

8-20.3(13) Illumination Systems

8-20.3(13)A Light Standards

(November 1, 2021 Richland GSP)

Section 8-20.3(13)A is revised with the following:

Light standards shall be handled when loading, unloading, and erecting in such a manner that they will not be damaged. Any parts that are damaged due to the Contractor's operations shall be repaired or replaced at the Contractor's expense.

Light standards shall not be erected on concrete foundations until foundations have set at least 72 hours or attained a compressive strength of 2,400 psi, and shall be raked sufficiently to be plumb after all load has been placed.

Breakaway coupling installation shall conform to the following:

1. The anchor bolts shall be installed with top of bolt projection above the foundation per City Standard Detail SL-2, to account for the breakaway support coupling. New anchor bolts may not be cut and shall be verified plumb and at the correct height prior to pouring concrete.
2. Couplings shall be installed per City Standard Detail SL-2 and per manufacturer's recommendations. Couplings shall be leveled.

3. The pole shall be set and plumbed; and washers, nuts, bolt covers and skirt installed per manufacturer's recommendations.
4. The conduit installed in a luminaire foundation shall be 1 1/2 inch, trade size.

8-20.3(13)B Acceptance of Illumination System
(January 19, 2024 Richland GSP)
Section 8-20.3(13)B is added as follows:

When street lights are directly connected to transformers, the Contractor shall install an inline fuses for each pole to act as a protection device. This is to be included as part of the lump sum cost for the illumination system bid item.

After the Contractor has obtained written approval from the State Electrical Inspector (L&I), the Contractor shall coordinate with City's construction inspector for submitting an as-built map showing detailed locations of the installed street lights, junction boxes, and disconnects. After receiving the as-builts of the illumination system, City will provide the street light number tags to the Contractor for Contractor's installation on each pole as shown on City Standard Details SL-1 and SL-2. Contractor shall coordinate pickup of the number tags at City Shops.

All lighting installations shall be tested by the Contractor and verified in the presence of the construction inspector prior to acceptance by the City.

8-20.3(13)C Luminaires
(November 1, 2021 Richland GSP)
Section 8-20.3(13)C is supplemented with the following:

The Contractor shall mask each luminaire photo-sensor for luminaires mounted on traffic signals to facilitate determining proper operation before the scheduled signal turn-on. The Contractor shall remove all masking on the day of signal turn-on.

8-20.3(14) Signal Systems
8-20.3(14)E Signal Standards
(February 21, 2020 Richland GSP)
Section 8-20.3(14)E is supplemented with the following:

All welds shall comply with the latest AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. Hardened washers shall be used with all signal-arm connecting bolts instead of lock-washers. All signal arm AASHTO M 164 connecting bolts shall be tightened to 40 percent of proof load.

8-21 PERMANENT SIGNING

8-21.3 Construction Requirements

8-21.3(2) Placement of Signs
The last two sentences of Section 8-21.3(2) are deleted and replaced with the following:
(October 8, 2021 Richland GSP)

Type ST-2 and ST-4 sign supports/bases shall be driven in compacted backfill or native undisturbed soil with a mechanical driver, unless otherwise approved by the Engineer.

8-21.3(9)C Timber Posts
This Section 8-21.3(9)C is deleted in its entirety.
(October 8, 2021 Richland GSP)

8-21.3(12) Steel Sign Posts

The last sentence of Section 8-21.3(12) is deleted and replaced with the following:
(October 8, 2021 Richland GSP)

1. The Contractor shall attach the perforated square steel post to the lower sign post support with a minimum of two drive rivets as shown on Standard Detail TR5.

(October 3, 2022 WSDOT GSP)

BOLLARDS

Description

This work shall consist of furnishing and installing steel bollards in accordance with the Plans, Standard Plans, and these Specifications, at the locations shown in the Plans or as staked by the Engineer.

Materials

Posts and Hardware

Type 1 and Type 2 bollard posts shall be in accordance with the Standard Plans and ASTM A 53, NPS 3 (3" Nom.) schedule 80 steel pipe. Post sleeves shall be ASTM A 53, NPS 4 (4"Nom.) schedule 40 steel pipe.

Type 3 bollard posts shall be steel structural tubing in accordance with the Plans and ASTM A 500 Gr B.

Steel plate shall be in accordance with ASTM A 36.

All steel parts shall be hot-dip galvanized after fabrication in accordance with AASHTO M 111.

Reflective Tape

Reflective tape shall be in accordance with Section 9-28.12.

Concrete

Footings shall be constructed using concrete Class 3000.

Construction Requirements

Bollards shall be constructed in accordance with the Standard Plans.

Bollards shall not vary more than ½ inch in 30 inches from a vertical plane.

Bollard posts and the exposed parts of the base assembly shall be painted in accordance with Section 6-07.3(11) for galvanized surfaces. The top coat shall match SAE AMS Standard 595, Color No. 33538 Traffic Signal Yellow.

Measurement

Measurement for bollards will be by the unit for each type of bollard furnished and installed.

Payment

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

"Bollard Type ___", per each.

DIVISION 9
MATERIALS

9-03 AGGREGATES

9-03.12 Gravel Backfill

9-03.12(3) Gravel Backfill for Pipe Zone Bedding

Section 9-03.8 is supplemented as follows:
(May 7, 2015 Richland GSP)

Sand for Bedding and Backfill

Sand shall be clean, hard, sound material, either naturally occurring sand of crushed fines. Blending sand shall meet the following quality requirement:

Sand Equivalent	30 Minimum

9-12 MASONRY UNITS

9-12.4 Ladder Rungs

Section 9-12.4 is added as follows:
(February 4, 2012 Richland GSP)

Ladder Rungs (steps) shall be 316 stainless steel or polypropylene conforming to the requirements of ASTM C 478 or an acceptable alternative. Steps shall have integral restraints to prevent side slipping of feet. Ladder rungs shall be installed only in sanitary sewer manholes.

9-28 SIGNING MATERIALS AND FABRICATION

9-28.2 Manufacturer's Identification and Date

Section 9-28.2 is replaced with the following:
(October 8, 2021 Richland GSP)

All new signs shall be delivered to the City Warehouse, Building 200, a minimum of 5 business days prior to installation for tagging and inspection. Coordinate with the Warehouse staff by contacting them at (509) 942-7440 with 24-hour notice of delivery.

9-29 ILLUMINATION, SIGNAL, ELECTRICAL

9-29.1 Conduit, Innerduct, and Outerduct

(February 21, 2020 Richland GSP)
Section 9-29.1 is supplemented with the following:

Traffic Signal Systems

All traffic signal conduit installed by "Guided Horizontal Boring" shall be High Density Black Polyethylene - Schedule 80 per ASTM D 3035, ASTM D 1248 and ASTM D 2513. All traffic signal conduit installed in open trench shall be P.V.C. - Schedule 80 per ASTM D 1785. All underground electrical service conduit shall be P.V.C. - Schedule 40 per City of Richland - Energy Services. All pole risers for electrical service shall be rigid steel per N.E.C. and City of Richland - Energy Services.

Illumination Systems

All street lighting conduit shall be 1-1/2 inch schedule 40 gray PVC conforming to NEMA TC-2 and ASTM D1785 specifications. All necessary fittings shall also be schedule 40

gray PVC conforming to NEMA TC-3 specifications. All sweeps must be factory made with a minimum radius of 18 inch. A reduced radius of 8 inch may be used in the light pole base.

9-29.2 Junction Boxes, Cable Vaults, and Pull Boxes
(February 1, 2024 Richland GSP)
Section 9-29.2 is supplemented with the following:

Traffic Signal Systems & Illumination Systems

In-ground junction boxes shall be constructed of polymer concrete and reinforced with heavy-weave fiberglass. Enclosures and covers shall be rated for no less than 8000 lbs. over a ten (10) inch by ten (10) inch area and designed and tested to temperatures of minus 50 degrees Fahrenheit. Material compressive strength shall be no less than 11,000 psi. The cover shall be provided with a standard stainless steel hex bolt and washer locking mechanism.

Supplemental ground rods, as required by the "Electrical Service" specification, shall reside within a common junction box serving the signal field wiring. The ground rods shall be vertically oriented in the box with the rod end at a height between 6-inches below the box lid and 6-inches above native soil at the bottom of the box.

9-29.2(1) Junction Boxes
(February 1, 2024 Richland GSP)
Section 9-29.2(1) is supplemented with the following:

Non-concrete junction boxes shall be used per the Materials List. Heavy Duty versions shall be used in driveways, pathways or in curb ramp areas at intersections.

9-29.3 Fiber Optic Cable, Electrical Conductors, and Cable
9-29.3(2) Electrical Conductors and Cable
(February 1, 2024 Richland GSP)
Section 9-29.3(2) is supplemented with the following:

Traffic Signal Systems

Safe Wiring Labels

The Contractor is advised that safe-wiring labels required by Department of Labor and Industries shall be required.

All costs for labor, materials, tools, and equipment necessary to provide Safe Wiring Labels shall be considered incidental to other associated contract bid items.

The conductor insulation shall be of the respective primary (red, yellow and green) colors.

Labeling

All field-wiring conductors shall be labeled with a wire marker at every wire termination, connector, splice and device. In dry locations, at the controller cabinet and signal standard terminal blocks, the marker shall be a white PVC wire marking sleeve. The marker shall bear the circuit number as indicated on the plans for each single conductor and for each conductor within a cable. Where

the marker position cannot be physically retained, the marker shall have adequate heat applied to shrink the marker securely to the conductor.

In wet locations, at junction boxes, the marker shall be a one (1) inch brass tag as manufactured by or equivalent, attached with a plastic tie-strap. The marker shall indicate the circuit number for single conductors or range of circuit numbers for multi-conductor cable as indicated on the plans.

AC Conductors

The Contractor shall furnish and install approved single-conductor or multi-conductor cable for traffic control consistent with the requirements of the specifications and as shown on the wiring schematic.

Multi-conductor cable shall be used at all locations where conduit capacity will allow. Single conductors will be acceptable only where existing conduit capacity is restrictive to the use of multi-conductor cable per N.E.C. Sufficient wiring shall be installed and terminated to provide the functional operation as shown on the plans and as described in these specifications.

VDU Communication Cable

VDU communication cable shall be employed between the VDU and controller cabinet without splices. The communication cable shall be 18 AWG stranded copper consisting of a minimum of three conductors.

The VDU communication cable shall be installed with enough slack to allow proper VDU adjustment angle without exceeding the bend radius specifications of the cable. The cable shall enter the signal standard near the VDU mount through a UV resistant plastic grommet between the side and bottom of the arm. No excess cable slack or loops shall be made between the VDU connector and pole entrance so as to allow flexing and fatigue from wind and other environmental influences. The VDU end of the cable shall be fitted with a mating connector provided by the manufacturer of the VDU.

Illumination Systems

Electrical conductors shall be insulated with cross-link polyethylene type USE. Wiring shall be #2 aluminum triplex with a bare #6 copper ground wire for lateral runs and #6 duplex with a bare #6 copper ground wire for runs from the pole base junction box to the luminaire.

Line Connectors

Connections for current carrying conductors shall consist of insulated connectors suitable for use with copper and aluminum conductors. The connector shall be suitable for conductor with a size range of #8 – 1/0. Split bolt type connectors are not allowed. All line connectors must be listed as meeting UL489B. Those connectors to be utilized within the underground junction boxes must also be listed as UL486D. The UL approved connector shall be utilized for all underground junction box applications.

Ground System Components

Connectors for grounding conductor shall be UL approved and shall be compression or vise type. Split bolt type connectors are not allowed.

- Ground rods shall be 5/8 in X 8 ft copper or copper clad.
- Minimum size grounding conductor shall be #6 soft drawn copper.
- Connectors must be permanent, either bolted or use exothermic weld.

9-29.6 Light and Signal Standards
9-29.6(1) Steel Light and Signal Standards
(February 1, 2024 Richland GSP)
Section 9-29.6(1) is supplemented with the following:

Traffic Signal Systems

Traffic Signal standards shall conform to WSDOT pre-approved plans and modified as follows:

Type II/III standards shall be provided with an integral hand-hole and terminal compartment at the base of the standard with a watertight lockable hinged door as shown in the integral handhole and terminal compartment detail in the plans. Within the compartment, terminal blocks shall be installed with screw positions adequate to terminate all conductors shown in the wiring schematic. Terminal blocks shall be Marathon 1606ST or 1612ST or equivalent

Luminaire arms on Type III standards shall be fabricated with a 7-gauge wall thickness.

Illumination Systems

The streetlight standard (pole) shall be as specified on the plans and in the City's Materials List. All fasteners and non-aluminum attaching devices shall be galvanized in accordance with ASTM designation A153.

Hand Hole

A 4 x 6.5 inch hand hole shall be provided in the pole shaft at a distance of approximately 18 inches to center above the finished grade or baseplate. The hand hole shall be positioned on the same side of the pole as the mast arm. Handhole cover must be steel and secured with screws that require a special tool for their removal.

Grounding

Each standard shall be provided with a provision for grounding the pole, mast arm and luminaire with one grounding connection. The grounding means shall be located such that the ground connections can easily be made through the handhole. Each light standard shall be assembled such that all metallic components of the pole are internally bonded to the grounding means.

Breakaway System

The installation of a breakaway standard mounting system shall be required on all standards located on arterial and collector streets. See Materials List for pre-approved breakaway systems, however, it is the installer's responsibility to verify that current productions of these are approved by the Washington State Department of Transportation as a breakaway device.

9-29.7 Luminaire Fusing and Electrical Connections at Light Standard Bases, Cantilever Bases, and Sign Bridge Bases

9-29.7(2) Fused Quick-Disconnect Kits

(November 1, 2021 Richland GSP)

Section 9-29.7(2) is supplemented with the following:

Traffic Signal & Illumination Systems

Disconnect

The disconnecting means shall be UL listed and suitable for service entrance equipment. The disconnect shall include overcurrent protection in the form of a circuit breaker and be rated for the maximum available fault current at the installation site. The disconnect will be mounted on a pedestal.

Pedestal Mounted Disconnect

The pedestal and disconnecting means shall be constructed as a one-piece unit and UL listed as such. Construction shall be NEMA Type 3R with galvanized steel and welded joints. A door capable of being sealed with a padlock shall be provided to conceal the circuit breaker housing. The pedestal post shall incorporate a removable section to assist in the wiring and a barrier to separate the fused and unfused conductors. Height to top of pedestal shall be capable of accepting (3) 1-1/2 conduits at a depth of 2’ to 3’ below grade.

The circuit breaker housing shall incorporate dead front design so that no live wires are exposed when the door is opened. All terminals, including the ground shall be approved for #6 - #2 Copper and Aluminum conductors (the use of high plugs, etc. may be allowed to meet this criteria if approved by the State Electrical Inspector). The unit shall be rated for minimum of 60 amps continuous duty and a minimum of 10,000 AIC (Amps Interrupting Current) measured RMS symmetrical short circuit (higher short circuit ratings may be necessary depending upon location. Consult the City Electrical Engineering Division).

See City’s Materials List for pre-approved combination pedestal/disconnect units.

9-29.10 Luminaires

(February 1, 2024 Richland GSP)

Section 9-29.10 is supplemented with the following:

Luminaire housing shall be cast aluminum and allow tool-less entry. Housing shall be provided with a level bubble to facilitate installation. Luminaire external housing shall have a minimum rating of IP65 as specified in IEC 60529, with the ability to shed water from inside the housing (i.e. weep holes). The luminaire optical chamber shall have a minimum rating of IP66 as specified in IEC 60529.

End fitting shall be a slip fit design and shall be capable of accepting 1-1/4 inch through 2 inch diameter mounting arms. Slip fit end shall accept minimum 4-7/8 inch minimum arm penetration.

The luminaire door shall be securely hinged and incapable of involuntary separation from the housing and accessed in field installed position.

Luminaire design shall facilitate hose-down cleaning and discourage debris accumulation.

Luminaire shall accept connection of #6 AWG Aluminum and Copper conductor to power source. Connections shall be made on a terminal block, which is secured, to the housing.

Luminaire shall be supplied fully assembled.

9-29.10(1)B Light Emitting Diode (LED) Conventional Roadway Luminaires
(November 1, 2021 Richland GSP)
Section 9-29.10(1)B is replaced with the following:

Luminaires shall be of the general "cobra-head" style and shall be designed and constructed to meet the requirements of ANSI C136.37.

Light Emitting Diode (LED) light sources shall produce a light color temperature of 4,000K ± 300K or 3,000K ± 300K as shown on the plans. The manufacturer shall submit LM-79 and LM-80 reports in conjunction with the luminaire cut sheet. Light sources will also meet or exceed the following efficiency benchmarks:

Light Emitting Diode (LED) Light Sources

Minimum Luminous Efficacy	Minimum Expected Lamp Life (hours)	Minimum Lumen Maintenance Factor (25°C) @ 50,000 hours
100 lumens/Watt	> 100,000	0.95

BUG Rating (Maximum)		
B: 2	U: 0	G: 3

Luminaire cooling system shall consist of a passive heat sink with no fans, pumps, or liquids. All fasteners shall be stainless steel and all polycarbonate components shall be UV stabilized. The complete assembly weight shall not exceed 40 lbs.

LED Drivers (Drivers)
LED drivers shall be Class 1 or 2 type, adequately sized for the luminaires designed light output. The Driver shall be an integral part of the luminaire unit. It shall be a prewired, built-in type mounted in the luminaire.

Provide a manufacturer's nameplate on the Driver housing. The nameplate shall have the manufacturer's name, model number, serial number, hook-up diagram, power supply data, LED type and operating wattage.

The Driver shall operate the luminaire within the limits specified below throughout the rated life of the luminaire:

1. The LED light source shall not vary more than 10% in light output.
2. The LED light source wattage shall not vary more than plus or minus 5% of the nominal when the LED light source is at its rated nominal.
3. The minimum efficiency of the Driver (nominal LED light sources watts/line watts) shall not be less than 80%.
4. The Driver shall not allow the LED light source to extinguish when a line voltage dip between 40-50% occurs for several seconds.
5. The power factor shall not drop below 90% and the total harmonic distortion shall be less than 20% for the line voltage with allowable fluctuations of ± 10%.
6. Drivers shall be provided with integral 10kV surge suppression.

7. The line starting current shall not exceed normal line operating current.
8. The Driver shall start and operate the LED light source in ambient temperatures down to -20 ºF.
9. The Driver shall conform to all ANSI standards.

Unless otherwise shown or specified, operate Drivers on a multi-voltage type driver to be connected to 120V, 208V, 240V, or 277V.

Luminaire Warranty

Manufacturer of luminaire shall provide a minimum 5-year warranty covering maintained integrity and functionality of:

1. Luminaire housing, wiring, and connections
2. LED light source(s) (Negligible light output from more than 10 percent of the LED packages constitutes luminaire failure)
3. LED driver(s)

Warranty period shall begin 90 days after installation.

See City's Materials List for pre-approved luminaires.

9-29.11 Control Equipment

9-29.11(2) Photoelectric Controls

(February 21, 2020 Richland GSP)
Section 9-29.11(2) is replaced with the following:

Photocontrol device shall conform to ANSI C136.10-2006 except where modified herein. Assembled photocontrols and each of their individual components shall be designed and constructed to have a nominal life of 20 years.

Photocontrol circuit boards shall be constructed of glass epoxy material and circuit board components shall be protected from the environment with a thin, transparent coating that does not promote heat buildup.

Photocontrol devices must meet the following requirements:

- Color code – Black
- Plug type – Locking, three-pole, three wire
- Operating voltage range, volts, ac – 105 to 305
- Load rating, LED, minimum, watts – 1,000
- Operating temperature range, ambient, degrees C – -40 to +70
- Turn on response time range, seconds – 0.5 to 5.0
- Turn off response time range, seconds – 0.5 to 5.0
- Turn on light level, fc – 1.5 +/- 0.6
- Turn off light level, fc – 5.1
- Turn off/turn on ration, nominal – 1.5
- Failure mode, nominal – Fail ON

Each photocontrol shall be provided with a means to conveniently and permanently record date of installation and date of removal.

Each photocontrol shall be provided with an internal, 160 joule minimum, metal-oxide varistor (MOV) type surge arrestor.

Photocontrols shall be provided with a means of sealing according to requirements of ANSI C136.10, Section 4.3. Photocontrol base gasket shall be fabricated from a neoprene blend.

Photocontrols shall be tested according to the requirements of ANSI C136.10. Test results shall be provided upon request.

Each individual photocontrol shall be marked with the following information:

- Manufacturer's name
- Model number
- Voltage rating
- Load rating
- North orientation
- Rotation of installation and removal

See City's Materials List for pre-approved photocontrol devices.

9-29.13 Control Cabinet Assemblies

9-29.13(3) Traffic Signal Controller
(February 21, 2020 Richland GSP)
Section 9-29.13(3) is supplemented with the following:

The traffic signal controller shall be compatible with the City's existing inventory of controllers in purpose, functional capabilities, connectivity and inter-operability. The controller shall also be compatible with existing telemetry, central software and type M+ and P cabinets currently in operation. The controller shall have an Ethernet port for telemetry compatible with an industry standard layer-2 switch along with an RS232 serial port for local connection to a laptop. Also, provided shall be a removable and hot-swappable data key, having no less than 2 MB storage, to backup and restore the controller database and a heated display. The controller shall comply with all applicable sections of the NEMA Standards Publication TS2, NTCIP 1202, and ATC standard 6.10.

The controller shall include an ATC engine board compliant to ATC standard 5.2b and proposed version 6.10. The engine board shall include a PowerPC 83XX family processor with QUICC engine. The operating system shall be Linux 2.6.35 or later. The engine board shall have the following minimum memory;

128Mbytes of DDR2 DRAM memory used for application and OS program execution.
64 Mbytes of FLASH memory used for storage of OS Software and user applications.
2MB of SRAM memory used for non-volatile parameter storage.

The front of the controller shall consist of a panel for the display, keyboard and connectors for all necessary user connections. The color display shall be no less than seven inches measured horizontally, utilizing TFT and LCD in its design, and readable in direct sunlight. The display shall have a resolution of 800 X 480 with no less than a 16-bit color depth. The touch screen and display shall not be affected by condensation or water droplets. The front panel operator inputs shall be via touch screen and by a clearly labeled elastomeric keypad.

The entire controller unit shall be warranted to be free of defects, in workmanship and material, for one year from the date of shipment by the manufacturer. Any parts found to be defective shall, upon concurrence of the defect by the manufacturer, be replaced free of charge.

9-29.13(6) Emergency Preemption

(February 21, 2020 Richland GSP)

Section 9-29.13(6) is supplemented with the following:

Priority Control System

A multimode priority control system shall operate in a manner that allows infrared, and GPS/Radio priority control technologies to interoperate and activate one another in a consistent manner. The priority control system shall consist of a matched system of vehicle equipment and intersection equipment capable of employing both data-encoded radio communications to identify the presence of designated priority vehicles, as well as data-encoded infrared signaling communications. In preemption mode, the data-encoded communication shall request the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available. A record of system usage by agency identification number, vehicle classification and vehicle identification number shall be created. The system software shall support call history analysis and reporting across any subset of intersections and/or vehicles independent of activation method. System software shall also support both onsite and remote programming and monitoring of the priority control system.

Intersection detection equipment will consist of either a GPS receiver and radio transceiver or an infrared detector or both connected to a multimode phase selector located in the intersection controller cabinet. The GPS radio unit receives the data-encoded radio signal from the GPS radio equipped vehicle and transmits the decoded information through detector cable to the multimode phase selector for processing. The intersection radios also communicate to vehicles and other intersection radios at distances of up to at least 2,500 feet (762m) with no obstructions. The infrared detector receives the data-encoded infrared signal from the infrared equipped vehicle and transmits information through detector cable designed to convert infrared light energy at the proper wavelength into analog voltage signals that can be evaluated and decoded by the multimode phase selector.

The multimode phase selector shall be capable of receiving data encoded signals from either or both infrared and GPS radio detection equipment and combine the detection signals into a single set of tracked vehicles requesting priority activation. The multimode phase selector will process the vehicle information to ensure that the vehicle is (1) in a predefined approach corridor, (2) heading toward the intersection, (3) requesting priority, and (4) within user-settable range. The multimode phase selector shall treat the combined, single set of tracked calls with first come first served priority methodology within a given priority level. Arbitration between infrared signal intensity and GPS radio distance/ETA shall be first come first served methodology based on time of detection as each equipped vehicle reaches its programmed threshold.

To ensure priority control system integrity, operation and compatibility, all components shall be from the same manufacturer including vehicle emitters, detection units, phase selectors and auxiliary interface panels. The system shall offer compatibility with most signal controllers, e.g. NEMA (National Electrical Manufacturers Association) 170/2070 controllers. The system can be interfaced with most globally available controllers using the controller's preemption inputs. RS-232, USB and Ethernet interfaces shall be provided to allow management by stand-alone and central software.

Software

Interface software shall be provided to manage the multimode phase selector while on-site at the intersection.

9-29.13(7) Wiring Diagram
(February 1, 2024 Richland GSP)
Section 9-29.13(7) is supplemented with the following:

As-built drawings showing the cabinet wiring diagram and layout shall be supplied by the Contractor with each new or modified cabinet. Preliminary as-built drawings shall first be provided upon delivery of the cabinet as two (2) prints. Final as-built drawings shall be forwarded by email or provided as an Autocad file in electronic format. Complete maintenance and operation manuals with schematics (3 copies) shall be supplied for each new electronic assembly provided by the Contractor prior to completion of the project. All manuals and drawings shall be delivered to the Traffic Engineer.

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9-29.13(10)E ATC Controller Cabinets
(February 1, 2024 Richland GSP)
Section 9-29.13(10)E is added as follows:

1. ADVANCED TRAFFIC CONTROLLER CABINET (ATCC) AND AUXILIARY EQUIPMENT

The cabinet assembly shall meet, as a minimum, all sections of the ATC 5301 Standard Publication No. v02.02 dated March 18, 2019, or the most recent version. This specification describes the 120VAC High-Voltage Model ATC “M” Stretch High-Voltage (HV) Cabinet that is a modular, serial interconnected cabinet architecture. The controller and specified auxiliary equipment shall be housed in a weatherproof base mounted cabinet as noted in the plans. The cabinet shall be clean in design and appearance and have the following minimum dimensions:

Type M Stretch+
Depth 17"
Width 36"
Height 65”

The cabinet shall be designed and provided with the following items:

1.1 Cabinet Shell. The cabinet shall be fabricated from 5052-H32 aluminum with a minimum thickness of 0.125 inch. The cabinet shall be supplied with a natural aluminum finish. Sufficient care shall be taken in handling to ensure that scratches are minimized. All surfaces shall be free from weld flash. Welds shall be smooth, neatly formed, free from cracks, blowholes and other irregularities. All sharp edges shall be ground smooth. All seams shall be sealed with RTV sealant or equivalent material on the interior of the cabinet. A minimum 3/16th inch radius shall be provided on all outside corners, drip shield edges, and door edges. All parts attached to the cabinet shall be made of non-corrosive material. The cabinet interior and exterior shall be left unpainted. The cabinet shall be of a weatherproof construction adequately reinforced and sealed with two doors (side-by-side) on the front for reduced door swing and wind area.

1.1.1 Transport Feature. Lifting eyes shall be provided and attached to the center of the left and right sides of the cabinet. The eyes shall be fabricated from the same material as the cabinet, shaped as an oval or triangle with rounded corners and free of any rough or sharp edges. The eyes shall be attached with a single half-inch carriage-bolt with locking nut, internal to the cabinet, and located just below the top edge of the cabinet and away from internal mounting rails. When rotated in the upright position the entire eyehole shall clear the cabinet top. When rotated to the downward position the eyehook plate shall be completely below the cabinet top edge.

1.1.2 Door Operation. The enclosure door frames shall be double flanged out on all four sides and shall have strikers to hold tension on, and to form a firm seal between, the door gasketing

and the frame. The dimension between the door edge and the enclosure external surface when the door is closed and locked shall be 0.156 inch (+/-0.08 inches).

Gasketing shall be provided on all door openings and shall be dust tight. Gaskets shall be 0.25 inches minimum thickness closed cell neoprene or silicone (BOYD R- 108480 or approved equal) and shall be permanently bonded to the metal. A gasket top and side channels shall be provided to support the top gasket on the door to prevent gasket gravitational fatigue.

Doors shall have a heavy-duty continuous hinge with a 3/16” minimum diameter stainless steel hinge pin. The hinge pin shall be secured with ¼-20 stainless steel carriage bolts and stainless steel lock nuts. The latching handle shall be a three-point draw roller type and have provision for padlocking in the closed position. The handle shall be 0.75 in minimum diameter stainless steel with a minimum 0.5 in shank. The padlocking attachment shall be placed at 4.0 in from the handle shank center to clear the lock and key. An additional 4.0 in minimum gripping length shall be provided. The main door shall have a tumbler lock keyed for a Best brand green construction core key.

The door shall be equipped with police panel and a lock for a standard police key as detailed in Section 1.1.3. Two keys shall be furnished for each lock. When the door is closed and latched, with the key removed, the door shall lock automatically.

Doors shall be provided with catches to hold the door open at both 90 and 165 (+/-10) degrees. The catch minimum diameter shall be 0.375 inch aluminum rods. The catches must be capable of holding the door open at 90 degrees in a 60 mph wind acting at an angle perpendicular to the plane of the door.

1.1.3 Police Panel. The door of the cabinet shall have a small police panel door with a standard Corbin lock. Behind this door shall be a panel with three toggle switches permanently labeled. The cabinet shall have one switch provided and labeled "SIGNALS ON / OFF” and one switch provided and labeled "FLASH / AUTO". The MANUAL CONTROL ENABLE (MCE) ON / OFF switch and a receptacle for the INTERVAL ADVANCE cord shall be provided. An INTERVAL ADVANCE cord, six feet in length, shall be provided.

Signal ON / OFF – When switched OFF the output to the Signals shall go dark. This will be accomplished by removing voltage to input of the Solid-State Relay.

SIGNALS FLASH / AUTO - In the FLASH position this switch shall cause the intersection to be placed in flashing operation and the controller stop timed in its position at the instant the switch was placed in FLASH position. When this switch is returned to the AUTO position, restart shall be applied to the controller. With this switch in the AUTO position, the intersection shall operate in the normal traffic actuated mode subject to the position of other switches. The controller and signal monitor unit shall remain energized with this switch in the FLASH position. Returning from Flash shall initiate an MUTCD startup.

The MANUAL CONTROL ENABLE (MCE) ON / OFF – When switched to MANUAL the intersection can be advanced one signal interval at a time using the INTERVAL ADVANCE cord. When set to AUTO, the signal shall return to normal traffic actuated mode

1.1.4 Ventilation. A two-fan ventilation assembly shall be provided with a minimum capacity of 200 cubic feet per minute. The fan shall be mounted in the top of the cabinet in a manner to prevent rain from entering the cabinet. The fan shall be thermostatically controlled and shall be manually adjustable to turn on between 32 degrees Fahrenheit and 140 degrees Fahrenheit. The cabinet fan circuit shall be separately fused at 125% of the capacity of the fan motor. The panel on which the fan is mounted shall seal on all sides of the panel so as not to bypass air within the cabinet rendering the fan less effective. Louvered filtered vents shall be provided in the door to intake air and facilitate proper ventilation by the fan. The filter shall be of a replicable type, held in place around the entire circumference of the filter to insure a good seal between the filter and the door.

1.1.5 Shelves. Three cabinet width shelves shall be provided.

1.1.6 Interior Lighting. A cabinet light shall be provided with a door switch to energize the lights when the door is open. The door switch shall be mounted in the upper-right most opening of the doorway so as not to impede access to shelf and other sub-panel mounted equipment. The lighting shall be two low voltage LED lights mounted at the top of the cabinet.

1.1.7 Document and Computer Drawer. Each cabinet shall be equipped with a sliding computer drawer mounted below the center of the bottom shelf with the following features:

- Dimensions shall be 16” (W) x 12” (D) x 1-1/2” (H).
- The drawer shall extend not less than 12 inches from the shelf when fully extended.
- The body of the drawer shall be enclosed by four (4) sides such that material contained within will not fall out.
- The slides shall incorporate ball bearing rollers and shall have a load rating of 95 lbs.
- The slides shall not extend beyond the front of the drawer when fully contracted.
- The drawer shall be easily mountable beneath a standard shelf within the cabinet enclosure.
- The drawer shall not lock in place when fully extended but shall have stops to prevent the drawer from overextending beyond the slides.

1.2 Model ATCC Assemblies

1.2.1 Output Assembly (32-Channel). The Output Assembly shall be a 6U high rack mounted assembly. The Output Assembly shall house sixteen Model 2202-HV-MC High-Density Switch Pack / Flasher Units (HDSP/FU) and shall provide ninety-six output circuits. The Output Assembly shall accommodate two Model 2218-MC Serial Interface Units (SIU) to provide interface and control via system SB1/SB2. The Output Assembly shall house one model 2212-HV-MC Cabinet Monitor Unit (CMUip), the Main Contactor, Stop Time Switch, Flash / Auto Switch, one Circuit Breakers and Momentary 24 Vdc Bypass Switch.

1.2.2 Field Output Termination Assembly (32-Channel). Field Output Termination Assembly shall be coupled with the 32ch Output Assembly and shall house sixteen Model 21XBXHL-48VDC High-Density Flash Transfer Relays (HDFTR). The HDFTRs and Flash Program Blocks (FPB) shall be provided to control and select the color (red, yellow, or dark) during ATC (HV) Cabinet flash mode. HDSP Suppressors shall be provided at the field terminals for the protection of the HDSP. Each HDFTR position shall be labeled with the number of its associated HDSP (1-16). Each FPB position shall be labeled with the number of its associated channel (1-32).

The Field Output Termination Assembly shall be provided with 32qty 6-position Phoenix Contact terminal block model number 18-04-94-6 plugs and 18-61-19-6 sockets or approved equal. Each Load Terminal Block receptacle shall be labeled with the number of its associated channel (1-32). Additional labels shall be provided to clearly indicate which terminals correspond to the red, yellow, and green switch pack outputs. The color of these labels shall match the color of their associated Field Output Termination Assembly output (red, yellow, or green). Field Output Termination Assembly shall include:

- Terminal Blocks Class 9080 (type GR6).
- Mount Blocks on din 3 9080 MH3 or Phoenix Contact NS 35/7, 5 653 Perforated – 0801733 or Allen Bradley 199-DR1/DR2.
- Use end barrier GM6B.
- Use Screw on end clamp (MHA10).
- Use blank vinyl marking strip (9080 GH220) with marking strip end plug 657 (9080 GH60) and leave marking strip blank.
- The panel shall have 25 Position AC Neutral Buss. 6
- Use 2 pole jumpers (9080 GH72) for continuity of Phase colors. Install 662 cabinet wiring and 2 pole jumpers (9080 GH72), on the top side of the 663 terminal blocks. And install the jumper portion of the 9080 GH72 facing 664 the din rail.

1.2.3 Input Assembly (2qty 24-channel). The Input Assembly shall be a 3U high rack mounted assembly providing twelve slots of 22/44 pin PCB sockets. One Model 2218-MC Serial Interface Unit (SIU) shall be provided and mated to a DIN 96-pin connector. The SIU shall provide interface and control between the Controller and the input devices via system SB1/SB2. The Input Assembly shall house either 2-channel or 4-channel detection modules. The Input Assembly shall house twelve 2-channel detection modules, or six 4-channel detection modules, or a combination of 2 & 4 channel detection modules up to 24 channels. Each Input Assembly shall be equipped with an Opto Input Card. The Opto Input Card shall be equipped with four LED indicators and four toggle switches. Activation of the switch 1-4 shall place a call into SIU Opto 1-4 input, respectively.

1.2.4 Field Input Termination Assembly (2qty 24-channel). Each 24-Channel Field Input Termination Assembly shall be coupled with each 24-Channel Input Assembly and shall have positions for landing 24qty, two-wire inputs and their associated earth ground wires. The Field Input Termination Assembly shall have positions for 12 Detection Module Suppressors. The Detection Module Suppressors shall be supplied with the cabinet if procurement requires. The 24-Channel Field Input Termination Assembly shall be mounted across the EIA rails, and it shall swing down to provide access to the back of the assemblies mounted in the opposite side.

1.2.5 Service Assembly (32-channel). The Service Assembly shall be a 3U high rack mounted assembly. It shall house: 2qty Model 2202-HV-MC High-Density Switch Pack / Flasher Units (HDSP/FU), Cabinet Suppressor–Filter, 7-postion utility and BBS landing wire terminal, GFCI, one convenience outlet NEMA 15-5 format, 8qty HDFU output fuses, 4qty HDFU spare fuses, five Circuit Breakers, and a Raw AC+ and an AC- terminal block having 5 screw terminals.

1.2.6 Communication and Power Bus. SB1/SB2 and DC/Clean Power Bus shall include eight DB25 d-submodular socket connectors to interconnect the SB1/SB2 communication ports of the assemblies and Controller. It shall include an internal termination circuit at the end of the connections (S8) to prevent radio frequency signal reflection. It shall include one Phoenix Contact plug block or approved equal to bring the DC power to the Bus; such power shall be distributed to the ATC (HV) Cabinet Assemblies through seven Phoenix Contact receptacle blocks or approved equal. The copper traces for the DC voltages shall support at least 10 Amp.

The AC Clean Power Bus shall also include eight NEMA 5-15 receptacles, to provide AC Clean Power to the ATC (HV) Cabinet Assemblies, the Controller and Cabinet Power Supply. SB1/SB2 and DC/Clean Power Bus shall be mounted across the EIA rails, and it shall swing down to provide access to the back of the assemblies mounted in the opposite side.

1.3 ATCC Components

1.3.1 Model 2202-HV High Density Switch Pack/Flasher Unit (HDSP-FU). The HDSP-FU shall be compact, pluggable, modular PCB-based, and equipped with DIN connector. The HDSP-FU shall be compatible with ultra-low power LED signal heads, and it shall have a current monitoring feature for each output of each channel. The HDSP-FU shall use real-time standardized high speed SB3 communications with the Cabinet Monitor Unit to send a complete set of RMS voltage and load current measurements. The HDSP-FU shall be 4.5” H x 6.5” D and shall be equipped with a handle, reset push button switch, six RYG LED indictors, four flasher LED indicators, one power LED indicator and two Rx/Tx LED indicators. The HDSP-FU can function as either a switch pack (HDSP) or as a flasher unit (HDFU). When installed in the Output Assembly, the High-Density Switch Pack (HDSP) shall provide two RYG channels of operation (6 outputs). When installed in the Service Assembly, the High-Density Flasher Unit (HDFU) shall function as a four-output flasher.

1.3.2 Model 2212-HV Cabinet Monitor Unit (CMUip). The Cabinet Monitor Unit (CMUip) shall be compact, pluggable, and modular. The CMUip shall use real-time standardized 614.4 Kbs SDLC communications with the ATC to transfer command and response data on Serial Bus #1 (SB1). The CMUip shall be capable of monitoring up to 32 physical switch pack channels (RYG)

and shall have optional four virtual channels. The CMUip shall provide a Flasher Alarm feature. The CMUip shall analyze the ATC output commands and field input status to isolate the failure source by channel and color. The CMUip configuration programming shall be provided by an interchangeable Datakey nonvolatile memory device. This rugged key shall store all CMUip configuration parameters and shall eliminate programming using jumpers, diodes, or DIP switches. The CMUip shall maintain a nonvolatile event log recording the complete intersection status as well as time stamped previous fault events, AC Line events, configuration changes, monitor resets, cabinet temperature and true RMS voltages and currents for all field inputs. The signal sequence history log stored in nonvolatile memory graphically shall display up to 30 seconds of signal status prior to the fault trigger event with 50 ms resolution to ease diagnosing of intermittent and transient faults.

1.3.3 Serial Interface Unit (SIU). The Model 2218-MC Serial Interface Unit (SIU) shall be a compact, pluggable, and modular. The SIU shall use real-time standardized 614.4 Kbs SDLC communications with the ATC to transfer command and response data on Serial Bus #1 (SB1). The SIU shall be equipped with 54 programmable input/out pins, four optically isolated input pins, one line sync reference input pin and 4 address select input pins. The optically isolated inputs shall work with either 12 Vac or 24 Vdc.The SIU outputs shall be rated at 150 mA continuous sink current. Each output shall provide a 500-mA typical current limit and shall be rated to 50 V and utilize a voltage clamp for inductive transient protection. The SIU shall be equipped with a front panel LED indicator that can report the current SIU assembly address assignment of the SIU for cabinet configuration verification.

1.3.4 Model 2220 Auxilliary Display Unit (ADU). The ADU shall install in a 1U height 19” rack space and shall provide a menu driven user interface to the enhanced features of the CMUip monitor including the built-in Diagnostic Wizard. The ADU shall provide 32 channels of Red, Yellow and Green LED indicators that display full intersection status and 32 Blue fault status LED indicators shall identify faulty channels. The ADU shall provide proper electrical termination to SB3. The ADU shall have a 4 line by 20-character menu driven liquid crystal display with backlight and heater. The ADU built-in Diagnostic Wizard shall automatically pinpoint faulty signals and offers trouble-shooting guidance and automatically isolate and identify problems. The ADU shall be equipped with Event Logging displaying the CMUip time-stamped non-volatile event log records with the complete intersection status as well as AC Line events, monitor resets, temperature and true RMS voltages and currents.

1.3.5 Model 21XBXHL-48VDC High-Density Flash Transfer Relay (HDFTR). The HDFTR shall have a hermetically sealed cover and shall be moisture proof. The HDFTR shall be filled with dry nitrogen to protect contacts from corrosion and to prevent condensation. The HDFTR shall have a shock/impact resistant metal can cover with solid and bend proof pins. The HDFTR contacts shall be rated at 120 Vac @ 5 Amp. The coil of the HDFTR shall be rated at 48 Vdc. The HDFTR shall have an LED indicator to display contact transfer position. 1.3.8.7 Main Contactor (MC) The MC shall be mercury free and shall be rated at 48 Vdc. The coil of the MC shall be rated at 48 Vdc. The MC shall be equipped with input indicator and shall have SPST-N.O. contacts. The MC shall be placed on a removable panel for maintenance access.

1.3.6 Service Assembly Cabinet Suppressor-Filter. The cabinet shall be equipped with a Cabinet Suppressor–Filter. The unit shall incorporate the use of warning and failure indicators and shall have a dry relay contact remote sensing circuit. The unit shall be modular and pluggable with a 6-position Beau 5406 connector. The unit shall be rated at continuous service current of 15 Amp and maximum clamp voltage of 390 Vac. The unit dimensions shall be 3.5”H x 3.5”W x 2.8”D

1.3.7 High Density Output Suppressor. The HDSP Suppressor shall be modular and pluggable. The unit shall be epoxy encapsulated and equipped with 9-position 5.08 mm Phoenix Contact connector or approved equal. The unit shall be able to protect 6 circuits. The device operating voltage shall be 120 Vac and clamping voltage shall be 340 Vac. The unit dimensions shall be 2”H x 0.7”W x 2”D.

1.3.8 Cabinet Power Supply (CPS). A multi voltage high-speed switching power supply shall be provided and installed to power the cabinet assemblies, and any other devices requiring DC supply, with the necessary voltage with no less than twice the current required by the equipment. The CPS shall install in a 1U height 19" rack space. The CPS shall be rated at 168 Watts, 48 Vdc @ 1 Amp and 24 Vdc @ 5 Amp. The CPS shall use modern switching technology and provides full output regulation across changes in AC Line voltage and output load over the full operating temperature range of -34C to +74C without the need for a fan. Power Factor Correction shall be provided. The CPS shall have separate LED indicators that display AC input status, DC output status and associated fuse integrity. The CPS outputs shall be fused for over-current protection and shall be protected against voltage transient suppressor.

1.3.9 Generator Transfer Switch (GTS) & Alternate Feed Connector. A GTS and alternate feed connector shall be provided to supply power to the Main Breaker. The GTS shall have a nameplate labeled 1 (GEN) – 0 (OFF) – 2 (NORMAL) and be fed via a cabinet mounted alternate feed connector to facilitate connection to a generator while the cabinet door is closed. The GTS shall be mounted to the bottom shelf and to the left of the ATCC HV-Service Assembly. The alternate feed connector shall be mounted on the rear cabinet exterior wall behind the GTS so that it is also accessible from the interior of the cabinet. These devices shall be wired as shown on the GEN TRANSFER SWITCH detail. The GTS shall switch both AC Line and AC Neutral.

1.4 Cabinet Wiring & Terminals

1.4.1 Wiring. All cabinet wiring harness assemblies shall be closely bundled by appropriate means and laid into the cabinet in a square wired fashion. These harness assemblies shall be held in position inside the cabinet by a sufficient number of retaining devices attached to the cabinet assembly. The retaining devices shall be fastened to the cabinet by mechanical means. The cabinet wiring shall include noise suppression of AC and DC circuits, in accordance with Section 9-29.13(6) of the WSDOT Standard Specifications.

1.4.2 Harnesses. All cabling shall be suitably protected at all potential wear points. All cabinet wiring harnesses shall be neat, firm, and routed to minimize crosstalk and electrical interference. Sufficient wire shall be provided between the main cabinet wiring harness and sub-assemblies to allow the sub-assemblies to be made accessible for maintenance without having to loosen the cabinet wiring harness from its retaining devices. Wire loop across door hinge from police and maintenance panels to main cabinet wiring assemblies shall have a total of 24 inches of protected slack between metal cable clamps.

1.4.3 Preemption. Each preemption interface module output shall be brought to a separate dry tie point near the controller matrix panel. All input terminals shall be located near other field wiring terminals mounted on the left wall of the cabinet.

1.4.4 Grounding. All DC returns (Logic Ground) from controller and auxiliary cabinet equipment shall be separate from the AC neutral and earth-ground. These DC returns shall all be terminated at one location on the controller matrix panel. This logic common point shall be tied to earth-ground via a wire accessible from the front of the controller matrix panel. Pedestrian pushbutton returns shall be Earth ground.

1.4.5 Terminals. All connecting cable wires shall be terminated on terminal blocks. Not more than three conductors shall be terminated on any one terminal screw. Sufficient terminal blocks with pressure connectors shall be provided to have a terminal for all field conductors as shown on the plans. Each terminal shall be numbered in accordance with the field-wiring chart in the contract plans. Terminal numbering shall be permanently etched in the panel to which the terminal block is mounted or have attached an engraved plastic laminate or silk screen. The laminate shall be fastened to the terminal block or adhered to the panel adjacent to the terminal block on its mounting. Field Terminal Labeling shall be per Figure 1, Field Terminal Labeling on the next page.

1.5 Cabinet Testing.

All new cabinets and auxiliary equipment shall be tested prior to delivery to the City at both low and high temperature extremes. Specifically, the equipment shall be cycled at -34.6 °F for a minimum of 5 hours and then returned to 68 °F, followed by a 5 hour test at 165.2 °F and then returned to 68 °F. After the test, the equipment shall resume normal operation successfully. A complete Quality Control (QC) final test report shall be supplied with every new cabinet provided.

The Contractor shall have all cabinets delivered to the City Shops facility at 2700 Duportail - Building 200 for inspection prior to installation. The Contractor shall make allowances in the project schedule to afford the City no less than 10 business days for any one cabinet for said inspection. Any cabinet with missing or defective equipment shall restart the time allowance afforded the City as specified above. All costs for transporting the cabinets shall be considered incidental to the project.

1.6 Warranty for ATC Cabinet & Assemblies.

New cabinets shall be covered for two years for defects in materials and/or workmanship. Any failures within the first year should receive full replacement of defective parts. Within the second year, the vendor may repair or replace defective parts.

ATC Cabinet Wiring Reference

Output Wiring Assignments

Channel	**1**			**2**			**3**			**4**			**5**			**6**			**7**			**8**		
Channel/Label	1R	1Y	1G	2R	2Y	2G	3R	3Y	3G	4R	4Y	4G	5R	5Y	5G	6R	6Y	6G	7R	7Y	7G	8R	8Y	8G
Label	**611**	**612**	**613**	**621**	**622**	**623**	**631**	**632**	**633**	**641**	**642**	**643**	**651**	**652**	**653**	**661**	**662**	**663**	**671**	**672**	**673**	**681**	**682**	**683**
Wire Color	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G
Function	R	Y	G	R	Y	G	R	Y	G	R	Y	G	R	Y	G	R	Y	G	R	Y	G	R	Y	G
Phase	1			2			3			4			5			6			7			8		

Channel	**9**			**10**			**11**			**12**			**13**			**14**			**15**			**16**		
Channel/Label	9R	9Y	9G	10R	10Y	10G	11R	11Y	11G	12R	12Y	12G	13R	13Y	13G	14R	14Y	14G	15R	15Y	15G	16R	16Y	16G
Label	**721**		**722**	**731**		**732**	**741**		**742**	**751**		**752**	**6A1**	**6A2**	**6A3**	**6B1**	**6B2**	**6B3**	**6C1**	**6C2**	**6C3**	**6D1**	**6D2**	**6D3**
Wire Color	R		G	R		G	R		G	R		G	R	O	G	R	O	G	R	O	G	R	O	G
Function	DW		W	DW		W	DW		W	DW		W	R	Y	G	R	Y	G	R	Y	G	R	Y	G
Phase	Ped 2			Ped 4			Ped 6			Ped 8			OL A (RTA)			OL B (RTB)			OL C (RTC)			OLD (RTD)		

Channel	**17**			**18**			**19**			**20**			**21**			**22**			**23**			**24**		
Channel/Label	17R	17Y	17G	18R	18Y	18G	19R	19Y	19G	20R	20Y	20G	21R	21Y	21G	22R	22Y	22G	23R	23Y	23G	24R	24Y	24G
Label	**6E1**	**6E2**	**6E3**	**6F1**	**6F2**	**6F3**	**6G1**	**6G2**	**6G3**	**6H1**	**6H2**	**6H3**	**6I1**	**6I2**	**6I3**	**6J1**	**6J2**	**6J3**	**6K1**	**6K2**	**6K3**	**6L1**	**6L2**	**6L3**
Wire Color	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G	R	O	G
Function	R	Y	FY	R	Y	FY	R	Y	FY	R	Y	FY	R	Y	FY	R	Y	FY	R	Y	FY	R	Y	FY
Phase	OL E (FYA1)			OL F (FYA3)			OL G (FYA5)			OL H (FYA7)			OL I (RTFYA-A)			OL J (RTFYA-B)			OL K (RTFYA-C)			OL L (RTFYA-D)		

Channel	**25**			**26**			**27**			**28**			**29**			**30**			**31**			**32**		
Channel/Label	25R	25Y	25G	26R	26Y	26G	27R	27Y	27G	28R	28Y	28G	29R	29Y	29G	30R	30Y	30G	31R	31Y	31G	32R	32Y	32G
Label	**6M1**	**6M2**	**6M3**	**6N1**	**6N2**	**6N3**	**6O1**	**6O2**	**6O3**	**6P1**	**6P2**	**6P3**	**711**		**712**	**731**		**732**	**751**		**752**	**771**		**772**
Wire Color	R	O	G	R	O	G	R	O	G	R	O	G	R		G	R		G	R		G	R		G
Function	R	Y	G	R	Y	G	R	Y	G	R	Y	G	DW		W	DW		W	DW		W	DW		W
Phase	OLM (Bike 2)			OLN (Bike 4)			OLO (Bike 6)			OLP (Bike 8)			Ped 1			Ped 3			Ped 5			Ped 7		

Input Wiring Assignments

	FIT 9 (Peds 2 & 4)						FIT 10 (Peds 6 & 8)						FIT 11 (Pre-empt A & B)						FIT 12 (Pre-empt C & D)					
FIT Terminal #'s	#	Ch	**Label**	Func	Color	Loc	#	Ch	**Label**	Func	Color	Loc	#	Ch	**Label**	Func	Color	PH	#	Ch	**Label**	Func	Color	PH
	1	17	**724**	PB	O	SW	1	19	**764**	PB	O	NE	1	21	**5A1**	A	Y	6/1	1	23	**5C1**	C	Y	4/7
	2	17	**725**	PBR	B	SW	2	19	**765**	PBR	B	NE	2	21	**5A2**	PWR	O		2	23	**5C2**	PWR	O	
	3	17	**724**	PB	O	NW	3	19	**764**	PB	O	SE	3	21					3	23				
	4	17	**725**	PBR	B	NW	4	19	**765**	PBR	B	SE	4	21					4	23				
	5	GND					5	GND					5	GND					5	GND				
	6	18	**744**	PB	O	SE	6	20	**784**	PB	O	NW	6	22	**5B1**	B	BL	2/5	6	24		D	BL	8/3
	7	18	**745**	PBR	B	SE	7	20	**785**	PBR	B	NW	7	22		GND			7	24		GND		
	8	18	**744**	PB	O	SW	8	20	**784**	PB	O	NE	8	22					8	24				
	9	18	**745**	PBR	B	SW	9	20	**785**	PBR	B	NE	9	22					9	24				
	10	GND					10	GND					10	GND		SHD			10	GND		SHD		

Video Detection Wiring Assignments

Autoscope Comm Manager	PH	VDU	**Func**	Color
	6/1	VDU1	**AC+**	B
			AC-	W
			GND	GND
	2/5	VDU2	**AC+**	B
			AC-	W
			GND	GR
	4/7	VDU3	**AC+**	B
			AC-	W
			GND	GR
	8/3	VDU4	**AC+**	B
			AC-	W
			GND	GR

NEMA Cabinet Wiring Reference for Replacement of NEMA Cabinets with an ATC Cabinet

Phase	Terminal/Label #	Function	Wire Color
Vehicle Phases			
1	**611**	Red	R
	612	Yellow	O
	613	Green	G
	616	Neutral	W
2	**621**	Red	R
	622	Yellow	O
	623	Green	G
	626	Neutral	W
3	**631**	Red	R
	632	Yellow	O
	633	Green	G
	636	Neutral	W
4	**641**	Red	R
	642	Yellow	O
	643	Green	G
	646	Neutral	W
5	**651**	Red	R
	652	Yellow	O
	653	Green	G
	656	Neutral	W
6	**661**	Red	R
	662	Yellow	O
	663	Green	G
	666	Neutral	W
7	**671**	Red	R
	672	Yellow	O
	673	Green	G
	676	Neutral	W
8	**681**	Red	R
	682	Yellow	O
	683	Green	G
	686	Neutral	W

Phase	Terminal/Label #	Function	Wire Color
Pedestrian Phases			
PED2	**721**	DW	R
	722	W	G
	723	FYA1	B
	724	PB	O
	725	PBR	B
	726	Neutral	W
PED4	**741**	DW	R
	742	W	G
	743	FYA3	B
	744	PB	O
	745	PBR	B
	746	Neutral	W
PED6	**761**	DW	R
	762	W	G
	763	FYA5	B
	764	PB	O
	765	PBR	B
	766	Neutral	W
PED8	**781**	DW	R
	782	W	G
	783	FYA7	B
	784	PB	O
	785	PBR	B
	786	Neutral	W
Overlaps			
OL A	**6A1**	Red	R
	6A2	Yellow	O
	6A3	Green	G
	6A6	Neutral	W
OL B	**6B1**	Red	R
	6B2	Yellow	O
	6B3	Green	G
	6B6	Neutral	W
OL C	**6C1**	Red	R
	6C2	Yellow	O
	6C3	Green	G
	6C6	Neutral	W
OL D	**6D1**	Red	R
	6D2	Yellow	O
	6D3	Green	G
	6D6	Neutral	W

Phases	Pre-empt/VDU's	Terminal/Label #	Function	Wire Color
Power, Pre-empt & VDU				
	Power	**501**	AC+	B
		502	AC-	W
		503	GND	GR
6/1	PE1	**5A1**	CH-1	Y
		5A2	PWR	O
		5A3	EARTH GND	SHIELD
2/5	PE2	**5B1**	CH-2	BL
4/7	PE3	**5C1**	CH-3	Y
		5C2	PWR	O
		5C3	EARTH GND	SHIELD
8/3	PE4	**5D1**	CH-4	BL
6/1	VDU1	**AC+**	Autoscope Comm Manager	B
		AC-		W
		GND		GND
2/5	VDU2	**AC+**		B
		AC-		W
		GND		GR
4/7	VDU3	**AC+**		B
		AC-		W
		GND		GR
8/3	VDU4	**AC+**		B
		AC-		W
		GND		GR

2. CABINET FOUNDATION.

The cabinet foundation any new or relocated cabinets shall be anchored to a pad mount with four anchor bolts. Each bolt shall have one nut and two washers large enough to cover the cabinet mounting-hole completely. The foundation pad shall be constructed per the cabinet foundation detail and incorporate a pre-cast polymer concrete pedestal reinforced with heavy-weave fiberglass. The opening in the top of the pre-cast pedestal shall match the cabinet bottom opening. If required, field modification by saw-cut will be allowed to match the cabinet opening. Foundation pads shall have been designed and tested to temperatures of minus 50 degrees Fahrenheit. Material compressive strength shall be no less than 11,000 psi. The form-poured concrete portion of the foundation shall be allowed to cure for 7 days before the cabinet is installed. If mounting is necessary in less than 7 days, provisions shall be made to heat and/or ventilate the cabinet so condensation does not form within the cabinet.

9-29.14 Signs for Mounting on Signal Standards (Illuminated and Non-Illuminated)
(February 1, 2024 Richland GSP)
Section 9-29.14 is added with the following:

Frame and Components – Illuminated LED Signs

Illuminated signs, when specified, shall be single sided LED flat panel signs. The sign body shall be one piece construction from 5052 H32 .125” thick aluminum with all seams continuously welded to ensure a watertight seal. Weep holes shall be incorporated in the bottom of the enclosure to prevent possible buildup of condensation. Signs shall include a neoprene gasket strip to provide a watertight seal between the body, lens and door. The frame shall be polyester powder coated for durability with a satin black finish on all external aluminum surfaces.

The signs shall be UL listed and provide simple access for replacement of lens or other parts using turn-lock style devices and piano hinge at the bottom. Lenses shall be impact resistant clear polycarbonate with a minimum thickness of .125”.

The LED sign shall be designed to meet the needs of the specific application, using a combination of LED light strips, power supply, circuit boards and heat sink to provide a stable white light intensity (6000° K or more). LED’s shall be rated for a minimum of 60,000 hours and shall deliver at least 70% of the initial brightness during this time. The lamps shall be energized by means of a photocell circuit to only be active during low-light conditions. Signs shall be installed with a twist-lock cord cap and plug disconnect, (consisting of Leviton part numbers 4570-C, 4579-C, 6017-L, and 6018-L) to allow for easy maintenance.

All components of the signs shall be warranted for a minimum of 5 years.

Sign Blank – Non-Illuminated

Sheet aluminum signs shall 0.125 inches thick and be constructed of material conforming to ASTM B209 alloy 6061-T6 or alloy 5052-H36 or H38.

Sign Face – Both Illuminated and Non-Illuminated

The sign face shall have an 18” high viewable area for single line legends and 30” high viewable area for double line legends. Typical sign lengths are 4’, 6’, 8’, and 10’. The sign face shall be covered with Type XI reflective sheeting applied to the full area of the panel. The legend shall be formed using film applied to the full area of the panel less the legend text and a 0.75” white border and protected with protected overlay film applied over the full area of the panel.

The street name legend shall be twelve (12) inch initial uppercase and ten (10) inch lower case along with a 0.75 inch white border, with radius as appropriate on the corners. Supplemental suffix naming shall be abbreviated to read ST, AVE, BLVD, WY, LN or DR. Lettering for the suffixes and address shall be five (5) inch tall and separated by 2 inches to match the 12” uppercase letters and shall be left justified with respect to each other. Letter type shall be Highway Gothic Type "D" for all text. Alternate letter type and or sizes may be used if size limitations exist and with the approval of the Traffic Engineer. Proofs must be submitted and approved prior to fabrication.

Regulatory or warning signs shall utilize the same sign facing materials as identified above with appropriate colors and sizes per the plans and the MUTCD.

Mounts

Illuminated sign mounts shall be a static sign mount mounted parallel and inline with the mast arm using cable mount bracket. All signs shall be properly leveled to the ground.

Non-Illuminated sign mounts shall be attached to the back of the signs with multiple windbeams per WSDOT Standard Plan G-30.10-04. All signs shall be properly leveled to the ground.

9-29.16 Vehicle Signal Heads, Displays, and Housing
(February 1, 2024 Richland GSP)
Section 9-29.16 is supplemented with the following:

All vehicle signal heads shall have 12-inch lenses and be constructed of polycarbonate material. Vehicle signal heads shall be green in color. Vehicle heads shall be supplied with two-piece, five (5) inch louvered aluminum backplates black in color with 2” yellow borders. All openings in the backplates shall have one-inch minimum radius corners to reduce fracture potential. Vehicle heads shall be supplied with aluminum tunnel visors green in color. Backplates shall be mounted with lock washers, 5/8” minimum O.D. flat washers and stainless steel screws of sufficient length to accommodate the two washers and the additional thickness of the backplate. Terminal blocks shall be located in the uppermost section of the head. The signal head lens arrangement and indications shall be as shown on the plans.

All de-energized signal heads over the roadway are to be covered in such a way that the traveling public cannot view the signal face until the project is completed and "turn-on" is accomplished. Masking shall be opaque and black in color.

9-29.16(2) Conventional Traffic Signal Heads
9-29.16(2)A Optical Units
(February 21, 2020 Richland GSP)
Section 9-29.16(2)A is supplemented with the following:

All red, yellow and green vehicle indications shall be illuminated with LED lamps. All yellow indications shall be illuminated with 130 volt 150 watt incandescent lamps and provided with polycarbonate lens and Alzak reflectors. All red and green indications shall be illuminated with LED lamps.

LED Lamps

Within this project all supplied LED lamps shall be by a common manufacturer. LED lamps shall meet the following specifications and provisions or samples shall be provided for approval:

- Utilize one common circuit board to support all of the LED's in the lamp and the required circuit components.
- Incorporate 16-guage AWG wire leads with strain relief and spade terminals.
- Utilize a rigid housing protecting all circuitry with a one-piece neoprene gasket.
- To ensure resistance to moisture intrusion, the lens shall be sealed to the lamp's protective housing by the use of silicone sealant, or thermal welding.
- Incorporate an ultraviolet stabilized polycarbonate outer lens serving to focus the collimated light, so as to meet ITE intensity and distribution standards.
- Incorporate an inner fresnel lens that is sealed to the lamp housing, and serves to collimate the light emitted by the LED's collectively.
- Red lamps shall utilize AlInGaP LED technology and green lamps shall utilize Indium gallium nitride technology.
- The lamp shall be operationally compatible with NEMA TS-1 and NEMA TS-2 conflict monitor parameters.
- The intensity of lamps shall not vary by more than 10% over the allowable voltage range as specified in the electrical section below.
- Green ball lamp shall be dimmable by phase-cutting the electrical supply.
- The lamp shall have integral control circuitry to prevent typical triac leakage from causing illumination of the LED.
- Consume less than 20 watts through an operating voltage range of 85 VAC to 130 VAC and an operating temperature range of –35 degrees F to +150 degrees F.
- Warranted for 15 years against manufacturing defects.
- Warranted to be in compliance with the July 1998 ITE VTCSH, Part 2 specifications for luminous intensity for 3 years.
- Ball lamps shall provide an indicator, viewable from the ground, when the lamp no longer in compliance with its rated output specification.
- The Pedestrian lamp man/hand symbols shall be completely occupied by LED's rather than outlined.

9-29.16(2)C Louvered Visors

(February 21, 2020 Richland GSP)

Section 9-29.16(2)C is supplemented with the following:

All louvered indications shall be illuminated with LED lamps. Full circle visors shall be provided on the louvered indications fitted with an adjustable louver with a dispersion angle cut-off 8 degrees.

9-29.17 Signal Head Mounting Brackets and Fittings

(February 1, 2024 Richland GSP)

Section 9-29.17 is supplemented with the following:

All mounting styles shall be without terminal compartments, which require that terminal blocks be provided within each signal head, located behind the yellow indication in standard three-section, four-section heads, and 5-section doghouse; and behind the green ball in 5-section vertical head.

Traffic signal heads mounted on the mast-arm or side mounted on the upright section of a Type II, III or SD standard pole shall utilize a Type N mounting (using cable, not

bands) for the appropriate number of signal heads as shown on WSDOT Standard Plan (J-75.20-01). The mast arm shall be drilled for field wire entrance to the arm. Traffic signal heads on the same mast arm shall be mounted such that all red sections are level to the horizon. In no instance, shall any portion of the mast arm mounted traffic signal be lower than 16.5' above the street.

Traffic signal heads top mounted on Type I Standard poles shall utilize a Type K or F mount incorporating an aluminum hub/arm/tube assembly for attachment to the top of the pole. The hub shall incorporate dual-row set screws.

Adjustment. Aiming of any optically programmed or louvered head shall take place prior to turn-on after all field adjustments have been made. Final adjustments shall be made in the presence of the Traffic Engineer. After aiming, no further head position adjustments shall be made without the approval of the Traffic Engineer.

9-29.18 Vehicle Detector

(February 1, 2024 Richland GSP)

Section 9-29.18 is replaced with the following:

Vehicle Detection will be accomplished with a video detection system furnished by the Contractor unless otherwise noted on the plans. The system is comprised of 2 components as follows:

Four (4) to eight (8) video detector units (VDU)
One (1) cabinet interface unit + communications interface panel (CIP)

The number of VDU's will be shown on the contract plans. The Contractor's obligation within this section will be limited to furnishing, installation and aiming of the VDU's, furnishing and installing the associated VDU mounting hardware and field wiring each VDU to the CIP.

9-29.19 Pedestrian Push Buttons

(February 21, 2020 Richland GSP)

Section 9-29.19 is supplemented with the following:

The "pedestrian pushbutton" (PPB) assembly shall be powder coated green in color. The pushbutton and integral arrow shall be natural aluminum without a clear coat finish. The assembly shall include a "signal power interface" along with 10-feet of four-conductor interface cable. The assembly shall be installed in accordance applicable portions of the "Signal Pole Assembly Detail". The pedestrian pushbuttons shall be attached to the poles utilizing aluminum bolts to reduce damage when struck by vehicles.

Mechanical Requirements. The pedestrian pushbutton assembly;

- Shall have a machined aluminum housing with fully gasketed mating surfaces.
- Shall have a replaceable raised tactile arrow centered on the push button.
- Shall have a solid state switch rated at >100x106 operations.
- Shall have a #8 "barrier terminal" connection on the PPB allowing connection to existing field wiring.
- Shall have a cover plate for the "barrier terminal connections" bay that provides a threaded chase nipple to be attached to provide "drip" and sharp edge wire protection.
- Shall provide an integral mounting surface to support and fasten a 5 X 7-3/4" sign. The sign adapter plate shall be machined out of one-quarter inch T-6061 aluminum.
- Shall not exceed 5 X 2 X 12" in exterior housing dimensions.

- Shall have EDPM mounting buttons that conform to all sized of poles and flat surfaces.
- Shall have an “optional” adapter plate that allows mounting retrofit to the bolt pattern required by the H-frame button assembly.

Environmental Requirements. The pedestrian pushbutton assembly;

- Shall be fully operational between -40° F to +150°F.
- Shall have a weatherproof speaker.
- Shall be furnished with a “signal power interface” (SPI) for installation into the “pedestrian display” housing.
- Shall interface with the walk, don’t walk, and neutral circuits.
- Shall utilize a 4-wire cable to interface the SPI with the PPB terminals.
- Shall have a 4 position, #8 barrier terminal connector on the SPI.
- Shall operate properly with power sources ranging from 12 VDC to 220 VAC.
- Shall be fully enclosed in a weatherproof enclosure.
- Shall utilize tamper-proof screws for all exterior fasteners.

Programming and Configuration. The pedestrian pushbutton assembly;

Shall be configured at the factory for true “Plug and Play” operations.
Shall be provided with Windows 7 compatible software capable of flashing PPB software, uploading any .wav format audio files for annunciation, and for establishing configuration settings including integrated hover help menus.

9-29.20 Pedestrian Signals
(February 1, 2024 Richland GSP)
Section 9-29.20 is supplemented with the following:

Pedestrian signal heads shall have a 16-inch by 18-inch housing which displays the Man/Hand symbols projected from a single housing in conformance with the Manual on Traffic Control.

Pedestrian signal heads shall be constructed of polycarbonate material and be provided with a single integrated LED lamp. Pedestrian signal heads shall be green in color. Pedestrian signal heads shall incorporate LED lamps as specified in the Vehicle Signal Head – Led Lamps section of these Special Conditions. The lamps shall display a man/hand symbol on the left and a countdown timer on the right.

Lamp. The LED pedestrian signal module shall incorporate a superimposed hand/man symbol on the left with two-row LED countdown digits on the right. Digits shall be 9-inch in height. The module shall be driven by a timer module that automatically adjusts to controller interval changes. A dip switch setting shall provide the option to display a dark countdown display during any cycle that follows a reduced or extended cycle. This feature shall relearn a reduced pedestrian clearance interval in two cycles and an extended pedestrian clearance interval in one cycle.

The module shall be fully compliant with the latest ITE PTCSI Part-2. The module shall employ three power supplies each independently driving the hand/man/countdown portions of the display. Transient suppression shall be incorporated into the module that exceeds ITE and NEMA specifications. Modules shall operate over a voltage range of 80 VAC to 135 VAC and a temperature range of –30C to +70C.

Mounting. All mounting styles shall be without terminal compartments, which require that terminal blocks be provided within each signal head. The signal pole shall be field

drilled for field wire entrance to the pole. In no instance, shall any portion of the pedestrian signal head be lower than 8 feet or higher than 10 feet above the sidewalk.

Pedestrian signal heads shall use a side-mounted clamshell style Type E mounting on Type I, II, III or SD signal standards in accordance with WSDOT State Standard Plan (J-75.10-02) where clearances allow for proper orientation and serviceability. Where a Type E mounting does not offer proper clearances, a Type A mounting can be provided by approval of the engineer.

9-29.21 Flashing Beacon

(February 1, 2024 Richland GSP)

Section 9-29.21 is supplemented with the following:

Rectangular Rapid Flashing Beacon System

The Standard Rectangular Rapid Flashing Beacon (RRFB) system has a stand-alone high-power solar panel and is a cabinet based system that has a controller enclosure that houses the energy management system, on-board user interface, wireless communications, power supply, and audible push button circuit boards. Each system shall typically include the control cabinet, solar panel, pedestrian pushbutton and up to one or two RRFB lightbars per pole per the plans and specifications, with side emitting pedestrian confirmation light(s). When median or overhead mounted beacons are called for on the plans additional controller enclosures and/or RRFB light bars may be required.

If specifically called for on the plans, a Compact version of the RRFB may be utilized which shall consist of a self-contained solar engine that houses the charge controller, flash controller, on-board user interface, wireless communications, batteries and solar panel. This would be in lieu of the separate solar panel and cabinet system. Other components such as the LED light bars and pedestrian pushbuttons would be the same.

Mechanical Specifications

The Standard control cabinet shall be constructed from aluminum with a lockable industry standard #2 lock and tamper-proof hinged door. The battery shall be mounted inside the cabinet with no external control cabinet or battery cabinet required. The control cabinet shall be vented to provide air circulation and cooling of the battery and electronic system. The vents shall be screened to prevent ingress by insects and debris. The overall weight of the Standard control cabinet shall not exceed 90lbs with the battery installed and shall have the approximate dimensions: 24” H x 16” W x 8” D.

The Compact control cabinet (solar engine), when specified, shall be constructed from aluminum with an integrated solar panel. All batteries and electronics shall be mounted in the solar engine, with no external control cabinet or battery cabinet required. Access to the interior of the solar engine shall be provided by a lid that is hinged on the bottom edge and is fitted with a foam gasket. The lid shall have a lockable latch. The solar engine shall be vented to provide cooling of the battery and electronic system. The vents shall be screened to prevent ingress by insects and debris. The overall weight of the solar engine assembly (including two batteries but not including light bars or pushbutton) shall not exceed 40 lbs. The solar engine, excluding mounting components, shall not exceed 22” in width, 16” in height, and 5” in depth.

The light bars shall be current-driven LED strings without active electronics. The LEDs shall be driven by pulse-width modulated fixed current.

The lightbar housing shall be constructed from aluminum and shall have the approximate dimensions: 24” L x 1.5” D x 4.5” H.

Each lightbar shall have two light modules of approximately 7” wide by approximately 3” high. Each lightbar shall include a side-emitting pedestrian confirmation lights on each end that can be easily covered if not used.

The lightbar assembly shall open for access to the wiring connections for the LED modules. LED modules shall be rated to MIL-STD-810F, Method 506.4 for ingress protection.

Mounting

The Standard controller enclosure shall be furnished with mounting brackets for banding to 4” diameter or larger round poles.

For top of pole mounting, the solar panel or Compact solar engine cabinet shall be supplied with a fixed tilt angle of 45 degrees and shall be able to be oriented toward the equator with no additional mounting hardware. Attachment will be 4” - 4.5” Diameter Round Post Mount.

The lightbar shall be mounted to the pole using a separate bracket assembly to facilitate mounting two light bars back to back (bi-directional) and to allow the lightbar to pivot. The lightbar shall be able to pivot by approximately 40 degrees in order to aim the lightbar independent of the wire hole location on the pole.

The lightbar bracket shall be constructed from 3/16” galvanized steel and shall have both banding and bolting mounting options and shall be able to be mounted to all specified pole types.

For side of pole or mast arm mounting, the solar panel shall be supplied with an adjustable tilt angle and shall be able to be oriented toward the equator with no additional mounting hardware. Solar simulations for side-of-pole solar panel mounting shall assume 45-degree angle.

Fasteners shall be stainless steel.

Configuration

The controller enclosure shall house an on-board user interface that provides on-site configuration adjustment, system status and fault notification, and system activation information.

The flash duration shall be adjustable in-the-field from 10 to 60 seconds in one second increments.

The system shall provide configurable night time intensity settings.

The system shall be capable of enabling or disabling ambient brightness auto-adjustment. This feature allows the system to provide optimal output brightness in relation to ambient light levels while always maintaining adherence to SAE J595 Class I specifications.

Flash duration and other in-the-field adjustable settings shall be automatically broadcast to all units in the system, except channel selection which shall be configured on each unit.

AC Power Interface

The Standard control system shall include an on-board AC-DC power supply with 90-264 VAC input.

Solar Panel System

Unless specified on the plans to be an AC powered system, the Standard RRFB shall be offered with one 20-watt, 50-watt, or 80-watt 18-volt solar panel supplied with mounting hardware and bypass diode. The Compact RRFB shall be offered with either a 13-watt or 30-watt solar panel. Nominal voltage of the RRFB shall be 12 volts.

Electrical connections on the back of the solar panel shall be contained within an enclosure that prevents accidental contact with either of the power leads.

The solar charging system shall use maximum power point tracking (MPPT).

Battery System

Unless specified on the plans to be an AC powered system, the Standard control cabinet shall house one 33 Ah, 75 Ah or 100 Ah sealed 12-Volt valve-regulated AGM lead-acid maintenance-free battery. The battery shall be equipped with a fast-acting 7-Amp cartridge fuse on the positive lead.

The Compact solar engine shall house either a 14 or 34 amp-hour 12V nominal sealed valve-regulated AGM lead-acid maintenance-free battery system. The batteries shall be equipped with a minimum 1.5 amp fuse on the positive lead.

The battery charging system shall be 3-stage and incorporate temperature-compensation to prevent battery overcharging in hot weather.

The battery, in conjunction with recommended RRFB performance, shall be designed for a demonstrable service life of 5 years.

The operating temperature range of the battery shall be -40 to 161˚ F (140 ˚ F for Compact)

Batteries shall have quick connections to facilitate installation and be readily available from multiple suppliers and non-proprietary.

Batteries shall be supported from the sides by rubber bumpers and shall be secured in place with straps.

Radio System

The radio system shall operate at 2.4GHz

Upon detection of a pushbutton press, an RRFB will broadcast an activation to all other nearby RRFBs sharing the same channel.

The RRFB shall have the capability to activate other RRFBs by wireless communications within 1,000 feet.

The RRFB shall have a minimum of 14 unique channels that can be configured on-site to avoid inadvertent activation of nearby systems.

The antenna shall be a low-profile “button” shape that cannot be bent or broken by vandals.

Operational Specifications

The RRFB shall meet the minimum photometric specifications of the Society of Automotive Engineers (SAE) standard J595 Class I dated January 2005. A photometric report by a certified third-party testing laboratory shall be provided to demonstrate compliance with J595.

The color of the yellow light bar indications shall meet the specifications of SAE standard J578 (Color Specification) dated December 2006.

The RRFB shall have the capacity to provide 660 (500 for Compact system) 20-second activations per day year-round using the applicable peak sun hours insolation available at the installation location.

The controller shall be able to support up to 1.4 amps combined current through the RRFB fixtures simultaneously.

The system shall use a dedicated light sensor to detect night and day states and apply any optionally-enabled intensity adjustments.

Pushbutton Actuation System

Push Button with voice message:
The system shall be actuated by pedestrian push buttons that shall have an LED indicator with audible locator tone and voice message with Piezo control. The button shall be ADA compliant and MUTCD-2009 Section 4E compliant for momentary operation. The default message shall be “Yellow lights are flashing. Make sure vehicles are stopped before crossing”. The message shall be spoken twice. The button shall have an R10-25 sign with the legend “PUSH BUTTON TO TURN ON WARNING LIGHTS”. Each button shall have a single vibro-tactile arrow to indicate the direction of travel. For median locations the button shall be a double arrow.

All RRFB’s in the system shall initiate activation simultaneously within 150ms of actuation.

If an additional actuation occurs while the system is activated, the flash duration shall reset. For example, with the flash duration set to 20 seconds, if an additional actuation occurs after the RRFB has been activated for 15 seconds the RRFB shall continue for an additional 20 seconds, or 35 seconds in total.

If the RRFB has ceased operation, any subsequent actuation shall activate the RRFB without delay regardless of how recently the RRFB ceased operation.

Installation

The system shall be mounted on a foundation per WSDOT Standard Plan J-21.10-04 or J-20.11-03 as directed on plans using an aluminum pedestal base with square aluminum door. The pole shall be schedule 40 spun aluminum, 4.5 inches in diameter and 14 feet tall. The RRFB system shall be grounded in a separate junction box per standard plan details.

Environmental Testing

The RRFB solar engine and light bars shall be rated to a minimum of NEMA 3R.

Qualifications

The product shall be FCC certified to comply with all 47 CFR FCC Part 15 Subpart B Emission requirements.

Manufacturer shall provide a 5-Year Limited Warranty, with the exception of the batteries which shall be covered by a 1-year warranty.

Manufacturer must be ISO 9001 certified.

Solar Simulations

Detailed solar simulations shall be provided as evidence that the RRFB is capable of the claimed performance at the specific location per the plans. Solar Simulations shall be composed of three calculations: Energy Balance, Array-to-Load Ratio (ALR), and Autonomy. The manufacturer or bidder shall provide a detailed analysis of these three calculations in an “Energy Balance Report”.

9-30 WATER DISTRIBUTION MATERIALS

9-30.1 Pipe

9-30.1(7) Joint Lubricant
Section 9-30.1(7) Joint Lubricant is added
(November 10, 2009 Richland GSP)

Joint lubricant shall be furnished with the pipe, in the amount and type recommended by the pipe manufacturer. The lubricant shall be a water-soluble, nontoxic, vegetable soap compound conforming to United States Pharmacopoeia No. P39.

9-30.2 Fittings

9-30.2(6) Restrained Joints
Section 9-30.2(6) is supplemented as follows:
(November 10, 2009 Richland GSP)

1. Thrust Ties

   Joint harness shall be used where thrust ties are indicated, and consist of galvanized steel tie-bolts extending across the pipe joints to lugs shop welded to the pipe barrel. Thrust tie assembly shall conform to AWWA M 11 Steel Pipe Manual.

2. Retainer Gland

   Ductile iron retainer glands for mechanical joint pipe and fittings shall be constructed with matching bolt holes for standard joint and provided with a series of set screws to bear on the pipe barrel and provide holding power against joint separation due to internal pressure.

9-30.2(12) Pipe Couplings
Section 9-30.2(12) Pipe Couplings is added:
(November 10, 2009 Richland GSP)

Pipe couplings shall be wrought steel or cast iron capable of withstanding the designated internal pressure without leakage or overstressing. Diameter of the coupling shall be compatible with the outside diameter of the pipe on which the coupling is installed. Steel style pipe couplings shall be used in the pipeline or to connect the pipeline to existing steel pipelines. Cast style pipe couplings shall be used in the pipeline or to connect the pipeline to existing cast or ductile iron pipelines.

Couplings middle ring dimensions shall be as recommended by the manufacturer or as approved. Gaskets shall be standard or equivalent as approved. Corrosion protection for middle ring and follower rings shall be hot-dip or electro-galvanizing or bonded vinyl plastic coating.

Furnish all joint accessories with pipe couplings. Remove center stops if required for installation. It shall be the Contractor's responsibility to verify dimensions of all existing pipelines in the field before ordering couplings.

9-30.3 Valves

9-30.3(1) Gate Valves (3-inches to 16 inches)
Section 9-30.3(1) is supplemented as follows:
(November 10, 2009 Richland GSP)

The ductile Iron Gate valve wedge or gate member shall be fully encapsulated in synthetic rubber. All seating surfaces within the valve body shall be inclined to the vertical, the valve stem shall be sealed by a minimum of two (2) O-rings and all stem seals shall be replaceable with the valve wide open and subjected to full rated pressure.

Joint materials for mechanical joint or push-on joint for cast iron pipe shall conform to AWWA C111. Joint materials for flanged joints shall consist of one-eighth (1/8) inch thick, full-face, one-piece, cloth inserted rubber gaskets conforming to Section 7 of AWWA C207. Bolts and nuts shall conform to Section 8 of AWWA C207.

9-30.3(8) Tapping Sleeve and Valve Assembly
Section 9-30.3(8) is supplemented as follows:
(November 10, 2009 Richland GSP)

Tapping valves are required with all tapping sleeves 12” diameter and larger along with all size on size taps.

9-30.6(4) Service Fittings
Section 9-30.6(4), third paragraph is replaced with the following:
(November 10, 2009 Richland GSP)

All connection to polyethylene tubing shall be Ford Pack Joint type fittings.