

SPECIAL PROVISIONS FOR
HIGHLINE WATER DISTRICT

Standard Specifications

The standard specifications for this project will be the 2008 edition of the WSDOT/APWA specifications. The performance of this Contract and all work, materials and testing shall conform to the Standard Specifications which are expressly incorporated by this reference except as supplemented or modified. A copy of the Standard Specifications is available for the Contractor's review at the District office during normal business hours. The Contractor is encouraged to review the Standard Specifications to ensure the knowledge and understanding of their terms and conditions and/or to obtain a copy of such Standard Specifications from the District. The Standard Specifications are modified by the special provisions and supplemental specifications as follows:

DIVISION 1 GENERAL REQUIREMENTS

1-01.3 DEFINITIONS - The following definitions supersede others.

- a. **State** shall mean Owner.
- b. **Owner** shall mean the Highline Water District.
- c. **Engineer.** The term "Engineer" refers to Highline Water District or consultants, or the person designated by the Highline Water District Manager as its engineering representative during the course of construction to make appropriate inspections and computations of payments. On all questions concerning the acceptability of materials and construction, the decision of the Engineer and his/her duly authorized assistants shall be final.
- d. **Designer** shall mean Highline Water District or consultants, or the person designated by the Highline Water District Manager as its Designer.
- e. **Addenda.** Written or graphic instruments issued prior to execution of the Contract Agreement which modify or interpret the Contract Documents.
- f. **Additive**
A supplemental unit of work or group of Bid Items, identified separately in the Bid, which may, at the discretion of the Owner, be awarded in addition to the Base Bid should sufficient funding be available.
- g. **Alternate**
A supplemental unit of work or group of Bid Items, identified separately in the Bid, from which the Engineer may make a choice between different methods or material of construction for performing the same work.
- h. **As-Built Drawings.** Survey information depicted on plan and profile providing horizontal and vertical locations, including coordinates, of all water structures and appurtenances; bearings and distances on all water lines installed; water meter locations; location of water lines in relationship to water line easements and right-of-ways; and location of monumentation utilized for control.
- i. **Bid.** The offer or proposal of the Bidder submitted in the prescribed form setting forth the prices for the Work to be performed.
- j. **Bidder.** Any person, firm, corporation or organization submitting a Bid or Proposal for the Work.
- k. **Bonds.** Bid, performance, and payment bonds and other instruments of security furnished by the Bidder/Contractor and his/her surety in accordance with the Contract Documents.
- l. **Contract (Agreement)**

Delete the words "and subsurface boring logs (if any)."
- m. **Contract Documents.** The Contract Documents consist of:

PROJECT SPECIFICATIONS
DRAWINGS
ADDENDA
CLARIFICATIONS
EXECUTED CHANGE ORDERS

n. **Contract Price**

Awarded Contract Price:	The summation of Bid Item amounts (extensions) for all items of Work, including applicable taxes and alternates, additive or deductive upon which the Award is made.
Final Contract Price:	The total monies payable to the Contractor under the terms and conditions of the Contract Documents.
Revised Contract Price:	The Awarded Contract Price at any time after Award but prior to the Date of Final Acceptance adjusted plus or minus by Change Order approved by the Owner and Contractor.

o. **Contract Time**

The period of time established by the terms and conditions of the contract within which the work must be completed or the date stated in the Agreement for the completion of the Work.

p. **Contractor.** The Contractor is the person, firm, corporation, or organization identified as such in the Contract Agreement and is referred to throughout the Contract Documents as if singular in number. The term Contractor means the Contractor or his/her authorized representative.

q. **Dates**

The following milestone calendar dates shall be defined as indicated:

Bid Opening Date:	The date on which Bids for the Work are opened and read publicly.
Award Date:	The date on which the Owner formally accepts the offer of the lowest responsible Bidder and awards the contract.
Effective Date of Agreement:	The date indicated on the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
Date for Final Completion:	The date by which time the Work is required to be satisfactorily completed. The initial Date for Completion will be stated by Notice to Proceed. Thereafter, a revision to this date will be established periodically in writing by the Owner or whenever there is an authorized extension to the Contract Time.
Notice to Proceed Date:	The date stated in the Notice to Proceed on which the contract time begins.

Substantial Completion Date:	The date, as determined by the Owner and Engineer and evidenced by written notice to the Contractor, when the Work has progressed to the point of Substantial Completion, as that term is defined in the General Conditions of the Contract.
Actual Completion Date:	The date, certified in writing by the Engineer, when the Work including every item or element, has been satisfactorily completed in accordance with the Contract Documents.
Date of Final Acceptance:	The date on which the Owner accepts the Work as complete.

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Day

Unless otherwise specified day(s) shall mean calendar day.

Calendar Day:	The time period of 24 hours measured from midnight to the next midnight, local time.
Nonworking Day:	(1) Saturday. (2) Sunday. (3) A legal Holiday other than Sunday, as honored by Owner. (4) A day(s) upon which a suspension order is in effect. (5) A day(s) upon which the Contractor is specifically required by the Contract Documents to suspend the Work other than as specified in condition (4) above.
Business Day:	Any day other than Saturday, Sunday, or a legal holiday.
Working Day:	A day not otherwise defined as a nonworking Day except Saturday, Sunday or other legal Holiday worked by the Contractor or subcontractor may, at the Engineer's option, be considered a Working Day.

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Deductive

A supplemental unit of work or group of Bid Items, identified separately in the Bid which may, at the discretion of the Owner, be deducted from the Base Bid quantities.

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Defective

An adjective which, when modifying the word Work, refers to Work that is unsatisfactory, faulty, or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to Engineer's recommendation of final acceptance (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion).

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Drawings. The Drawings or exact reproductions thereof which show the scope and character of the Work to be performed and which have been approved by the District, and are referred to in the Contract Documents. The terms Drawing, Plan, and Plans have the same meaning as the term Drawings unless otherwise stated or specified.

v.

Easement

A right of use over the property of another. As used in these General Conditions and Technical Specifications, generally refers to a right of use by Owner over, across and through the land of a private owner, for

construction and maintenance purposes, which is evidenced by a writing executed by such private owners. Project easements are included in this document. All conditions included in these easements are conditions and requirements of the construction of this project.

- w. **Liquidated Damages**
The amount prescribed in the Contract Documents to be paid Owner, or to be deducted from any payments due or to become due Contractor, for each day's delay in completion or substantial completion of the Work beyond the time allowed in the Contract Documents and Notice to Proceed, plus any extensions of such time.
- x. **Notice of Award**
The written notice from the Owner to the successful bidder signifying the owner's acceptance of the bid.
- y. **Notice to Proceed**
A written notice from the Engineer or Owner to the Contractor authorizing and directing the Contractor to proceed with the work and establishing the date on which the contract time begins.
- z. **Owner**
Highline Water District acting through its legally constituted commissions, as represented by its authorized officers, employees or agents contracting with the Contractor for the Work.
- aa. **Partial Utilization**
Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.
- bb. **Proposal**
The written offer of a Bidder, properly executed on the prescribed proposal form, to perform the Work.
- cc. **Provide**
Wherever and in whatever manner used, shall be understood to mean provide complete in place, that is, furnish and install.
- dd. **Retained Percentage or Retainage**
That amount retained by Owner from payment to Contractor in accordance with RCW 60.28 to guarantee payment to all persons supplying labor and materials in the prosecution of the Work and to guarantee payment to the State of taxes.

The Contractor shall contact the Owner, prior to commencing work on this project, to obtain a copy of the DECLARATION OF OPTION FOR MANAGEMENT OF STATUTORY RETAINED PERCENTAGE. This form shall be completed, signed, and returned to the Owner, complete with all other related paper work prior to commencement of construction. Failure to submit all required paper work may be considered as a WAIVER by the Contractor of his options regarding investment of retained percentages.
- ee. **Right of Way**
Land, property, or property interests, usually in a strip, acquired for or devoted to transportation, utility lines, drainage, or other public purposes.

- ff. **Standard Specifications**
The 2004 edition of the "Standard Specifications for Road, Bridge, and Municipal Construction" published by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter as supplemented and modified herein.
- gg. **Standard Plans**
The most recent edition of the Highline Water District Standard Plans.
- hh. **Substantial Completion**
When the Work (or a specific part thereof) has progressed to a point where, in the opinion of the Engineer and Owner, as evidenced by written notice to the Contractor, the Work is sufficiently complete, in accordance with the Contract Documents, so that the Owner has full and unrestricted use and benefit of the facilities, both from an operational and safety standpoint, and only minor incidental work, replacement of temporary substitute facilities, or correction or repair of minor defects not in any way impairing or increasing the cost of Owner's use of the facilities remain to complete the Work.
- ii. **Supplier.** Any person, firm, corporation, or organization who supplies materials or equipment for the Work, including that fabricated to a special design, and may also be a Subcontractor or a Sub-subcontractor.
- jj. **Surety.** The term Surety is the person, firm, corporation, or organization that joins with the Contractor in assuming the liability for the faithful performance of the Work and for the payment of all obligations pertaining to the Work in accordance with the Contract Documents by issuing the Bonds required by the Contract Documents or by law.
- kk. **Traffic Control Devices**
Fixed or portable signs, signals, street lights, barricades, guard rails, pavement markings, channelization and other equipment or materials used for the purpose of regulating, warning and guiding traffic.
- ll. **Underground Facilities**
All pipelines, conduits, ducts, cables, wire, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable televisions, sewage and drainage removal, traffic or other control systems, or water.
- mm. **Unit Bid**
The price per unit quoted in the Proposal for unit price work used for Bid comparison and for estimated and final payments for actual quantities installed.
- nn. **Work.** The term Work includes all labor, materials, equipment, and incidentals necessary to produce the construction required by the Contract Documents and any and all obligations, duties, and responsibilities necessary to the successful completion of the construction

assigned to or undertaken by the Contractor under the Contract Documents.

oo. **Written Notice**

A notice in writing to the Owner, Engineer, or Contractor relative to the Work.

1-05 CONTROL OF WORK

Section 1-05.2 shall be deleted and replaced with the following:

1-05.2 Authority of Assistants and Observers

The District will be providing construction observers to assist in determining that work performed and materials furnished comply with the Contract Documents. Construction observers have the authority to reject defective material and suspend work that is being done improperly, subject to the final decision of the Engineer. Construction observers may exercise such additional authority as may be delegated to them by the Engineer. A construction observer is not authorized to approve or accept any work or materials, or to issue instructions or advice, contrary to the provisions of the Contract Documents.

Work performed or materials furnished, at any time found not to conform to the Contract Documents, shall be at the Contractor's risk and furnish no basis for claim, even though a construction observer purports to change the Contract Documents to provide for such work or material, to approve or accept such work or material, or issue any instructions contrary to the Contract Documents.

Although construction observers may advise the Contractor of any faulty work or materials or infringements of the terms of the Contract Documents, failure of the Engineer or a construction observer to do so shall not constitute acceptance or approval.

1-05.3 Plans and Working Drawings

Modify with the following:

Submittals - General

Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that all features of all products conform to the requirements of the Specifications and drawings. Submittal documents shall be clearly edited to indicate only those items, models, or series of materials or equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The Contractor shall ensure that there is no conflict with other submittals and notify the Engineer in each case where his submittal may affect the work of another Contractor or the District. The Contractor shall ensure coordination of submittals among the related crafts and subcontractors. If the Contractor proposes to provide material, equipment, or method of work which deviates from the project Specifications, he shall indicate so under "deviations" on the transmittal form accompanying the submittal copies.

Work Included

Submittals required for this work shall include any or all of the following as required by the particular Specification section and the submittal schedule:

1. Product Submittals:
 - a. Manufacturer's Literature
 - b. Shop Drawings
 - c. Color and Material Samples
 - d. Design Calculations
 - e. Test Reports
2. Project Record Document
3. As-built Drawings

Submittal Information

Shop, catalog, and other appropriate drawings shall be submitted to the Engineer for review prior to fabrication or ordering of all equipment specified. The number of copies of submittal information to be submitted shall be as indicated in the following parts of this section.

All submittal information shall be sent to the Engineer through the general contractor. The Contractor shall assign a separate submittal number to each item or group of items that relate to each Specification section. Submittal numbers shall correspond to the specification sections in which the items were specified. Resubmittals shall be numbered using an alphabetical suffix.

Product Submittals - General

Each submittal shall be accompanied by a letter of transmittal showing the date of transmittal, specification section or drawing number to which the submittal pertains, and a brief description of the material submitted.

When the contract documents require a submittal, the Contractor shall submit the specified information as follows:

1. One (1) reproducible original of all the submitted information. When individual sheets in the submittal exceed 8-1/2 inches x 11 inches, a sepia shall be submitted.
2. **Seven (7) copies** of all the submitted information; three (3) sets will be retained for Owner and Engineer records.

Unless otherwise specified, within ten (10) calendar days after receipt of the submittal, the Engineer shall review the submittal and return two (2) copies of the marked-up reproducible original noted in 1 above. The reproducible original will be retained by the Engineer. The returned submittal shall indicate one of the following actions:

1. If the review indicates that the material, equipment or work method complies with the project Specifications, submittal copies

will be marked "NO EXCEPTIONS TAKEN." In this event, the Contractor may begin to implement the work method or incorporate into the project the material or equipment covered by the submittal.

2. If the review indicates limited corrections are required, copies will be marked "MAKE CORRECTIONS NOTED". The Contractor may begin implementing the work method or incorporating into the project the material and equipment covered by the submittal in accordance with the noted corrections.

Where submittal information will be incorporated in O&M data, the corrected copy shall be provided.

3. If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "AMEND AND RESUBMIT." Except at his own risk, the Contractor shall not undertake work covered by this submittal until it has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."
4. If the review indicates that the material, equipment, or work method does not comply with the project Specifications, copies of the submittal will be marked "REJECTED - SEE REMARKS." Submittals with deviations which have not been identified clearly may be rejected. Except at his own risk, the Contractor shall not undertake the work covered by such submittals until a new submittal is made and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."

The Engineer shall review all submittals for general conformance with the design and the requirements of the contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the contract documents.

Submittals may be rejected based on inadequate information and/or not meeting the requirements of the Specifications or Drawings. Rejection of submittals requires action on the part of the Contractor to correct the reason for the rejection.

The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes and for techniques of assembly and installation.

Manufacturer's Literature

Where the contents of submitted literature includes data not pertinent to the submittal, the portion(s) of the contents being submitted for the Engineer's review shall be clearly indicated.

Shop Drawings

Shop drawings shall be submitted in the form of blue-line or black-line prints of each sheet. Blueprint submittals will not be acceptable.

All shop drawings shall be accurately drawn to a scale sufficiently large enough to show pertinent features and method of connection or joining. On all shop drawings, figure dimensions shall be used as opposed to scaled dimensions.

Shop drawings shall bear the Contractor's certification that he has reviewed, checked, and approved the shop drawings.

Material Samples

All material samples shall be of the exact article proposed to be furnished and shall be submitted in the quantity required to be returned to the Contractor, plus one additional sample to be retained by the Engineer.

Design Calculations

Where required in the Specifications, a minimum of seven (7) copies of design calculations shall be submitted to the Engineer. Design calculations shall be complete, concise, and in an easy to read format. If required in the particular section to which the design calculations pertain, test data and calculations from previous full-scale pilot plant testing shall be submitted with the design calculations.

Test Reports

A minimum of five (5) copies of test reports shall be submitted to the Engineer.

Resubmittals

When material is resubmitted for any reason, it shall be submitted under a new letter of transmittal and referenced to the previous submittal.

Coordination of Product Submittals

Prior to submittal for review by the Engineer, all data shall be fully coordinated, including the following:

1. All field dimensions and conditions.
2. All trades and public agencies involved, including necessary approvals.
3. All deviations from the contract documents.

Grouping of Submittals

1. All submittals shall be grouped with associated items, unless otherwise specifically permitted by the Engineer.
2. The Engineer may reject the submittals in their entirety or any part thereof, if not in accordance with the contract documents, or if not submitted in groups of associated items.

Timing of Product Submittals

1. All submittals shall be made far enough in advance of installation to provide all required time for reviews and securing of necessary approvals.
2. In scheduling, the Contractor shall allow at least ten (10) calendar days for the Engineer's review following his receipt of the submittal.
3. A minimum of seven (7) copies are required for submittal (shop drawings, manufacturer's literature, etc.), five (five) copies will be retained by the Engineer. The remaining copies will be returned to the Contractor.

Delays

Cost of delays occasioned by tardiness of submittals on the part of the Contractor will not be borne by the Owner, or the Engineer.

Substitutions

1. Wherever possible throughout the Specifications, the minimum acceptable quality of workmanship and materials has been defined either by manufacturer's name and catalog number, by reference to recognize industry standards, or by performance requirements.
2. To ensure that the specified products are furnished and installed in accordance with the design intent, procedures have been established for advance submittal of design data and for review and approval or rejection by the Engineer.

Engineer's Review Required

1. Comply with the requirements of the General Conditions unless modified herein.
2. The contract is based on the materials, equipment, and methods described in the contract documents.
3. The Engineer will consider proposals for substitutions of materials, equipment, and methods only when such proposals are accompanied by full and complete technical data and all other information required by the Engineer to evaluate the proposals.
4. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this work by the Engineer.
5. If the Contractor desires to furnish items of minor equipment by manufacturers other than those specified, he shall secure the approval of the Engineer prior to placing a purchase order.
6. Where the phrase "or equal" occurs in the contract documents, do not assume that material, equipment, or methods will be approved

as equal by the Engineer unless the item has been specifically approved in writing for this work by the Engineer.

Availability of Specified Items

1. Verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the work.
2. In the event the specified item or items will not be available, notify the Engineer prior to receipt of bids.
3. Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, shall not be borne by the Owner. Under such conditions, the Contractor is subject to liquidated damages should contract time expire.

Project Record Document (As-Built Drawings)

A. Description:

Throughout progress of construction the Contractor shall, maintain an accurate as-built record in the Contract Documents as described herein. The Contractor's person responsible for making the Project Record Document must become familiar with the entire set of Contract Documents so as to be able to fully discharge this responsibility. **Any and all As-built plans, if required and included as a pay item in this Contract, shall be under the supervision of a Professional Engineer who has a current registration in the State of Washington.**

B. Quality Assurance:

The Contractor shall delegate the responsibility for maintenance of the Project Record Document to one person who shall also have the Engineer's approval.

C. Accuracy and Timeliness:

As-built entries shall be coordinated within the Project Record Document so that adequate and proper entries on each sheet of the Drawings and other Documents where such entry is required does properly show the as-built data. Accuracy of records shall be such that future search for items shown in the Project Record Document may rely reasonably on information obtained from the approved Project Record Document. Entries shall be made within five (5) working days after the construction of the work is complete. Approval by the Engineer of current status and completeness are prerequisites to the Engineer's approval of requests for progress payments and final payment under the Contract.

D. Responsibility for Procurement and Protection of the Project Record Document:

The Contractor shall procure from the Engineer, at no charge to the Contractor, one complete set of all Documents comprising the Contract. The Contractor shall maintain the Project Record Document completely protected from deterioration and from loss and damage throughout the construction of the project and through the final submittal process. In the event of loss of recorded data, the Contractor is responsible to use means necessary to again secure, all at his own expense, the data needed for the Project Record Document. Such means shall include, if necessary, the removal of concealing materials, and once the data is recorded then reconstruction of the work to the standards originally required by the Contract Documents.

E. Project Record Document Procedure Guideline:

1. Title - Immediately upon receipt of the job set of Contract Documents, identify each of the Documents with the title "RECORD DOCUMENTS - JOB SET".
2. Protection - Considering the contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, the Contractor shall devise a suitable method for protecting the job set to the approval of the Engineer. The job set shall be maintained at the work site and shall not be used for any purpose except entry of new data and for review by the Engineer and Designer.
3. Record Entries - Use an erasable colored pencil (not ink or indelible pencil) to clearly describe the change by graphic line and note as required. Date all entries. Call attention to the entry by a "cloud" drawn around the area or areas affected. Use different colors for overlapping changes. Put entries on all the affected Documents.
4. Contractor's person responsible shall make entries based on the makeup of the Contract Documents, the specific requirements of the Project Manual and, if requested by the Contractor, other more extensive As-built Entry Guidelines are available from the Designer.

F. Final Project Record Documents:

1. If the Job Set Documents have been kept clean during the progress of construction, and if the as-built entries have been orderly to the approval of the Engineer, the Job Set Document will be accepted as the Final Project Record Document.
2. If any part of the Job Set Document does not meet the approval of the Engineer, the Contractor shall procure from the Engineer, at the usual charge for reproduction and handling, a new copy of the Document and carefully transfer the as-built data to the new Document and resubmit for approval of the Engineer.

3. The Contractor along with the Engineer and Designer shall participate in any review meetings that may be necessary to facilitate prompt completion of the Final Project Record Documents.

G. Changes Subsequent to Acceptance:

The Contractor has no responsibility for additions or changes to the Project Record Documents after final acceptance of same, except for work that is required under Warranty.

1.05.4 Conformity With and Deviations From Plans and Stakes (1-99 APWA Supplemental, APWA Only)

Section 1-05.4 shall be deleted and replaced as follows:

The Owner will provide construction staking services. The Contractor shall keep the Owner informed of staking requirements and provide at least 72 hours written notice to allow the Owner adequate time for setting stakes. The Contractor's request for staking shall be in writing.

Contractor shall take adequate precautions to locate and protect existing markers, property corners, monuments, and other reference points which will be affected by construction. Each such marker shall be identified, and if it is necessary for the marker to be removed due to construction, then the following procedure shall be used:

- a) Notify Owner of the location of the marker.
- b) If the marker is for survey use, or if requested by Owner, a qualified land surveyor shall be scheduled by Owner to establish reference points and eventually reset the marker.
- c) If the marker is within the right-of-way or easement limits for the work, OWNER will pay for the required survey work and recording of survey as necessary.
- d) If the marker is at the edge of or outside the right--of-way or easement limits for the work, Contractor will pay for the required survey work and recording of survey.

Contractor shall not knowingly remove any such marker before such marker can be referenced by the Engineer. All survey costs for replacing markers and recording of survey shall be paid by Contractor if such markers are removed by Contractor prior to proper referencing by the Owner.

Contractor will not be entitled to any delay costs for referencing an existing marker, unless his work is physically delay-ed by the referencing work, and a minimum of 72 hours (three working days) notice have been previously given to Owner of the existence of the marker and the need for it to be referenced.

The Contractor shall work to preserve stakes and marks. The Contracting Agency will deduct from payments due the Contractor all costs to replace stakes and marks carelessly or willfully damaged or destroyed by the Contractor's operation.

1-05.4(1) Roadway and Utility Surveys (APWA Only)

Replace numbers 1-4 with the following:

1. Pipeline centerline and 10-foot offset stakes at tees and bends.
2. Pipeline centerline and 10-foot offset stakes at 100-foot intervals along straight runs of water main.
3. Centerline and 10-foot offset stake for fire hydrant.
4. Grades will be provided at 200-foot intervals and at tees and bends.

1-05.6 Inspection of Work and Materials

This section shall be amended to include:

All materials and compaction testing shall be performed and paid for by the District's certified independent Materials Testing Laboratory. Any/all re-testing shall be paid for by the Contractor, including all re-testing due to failed compaction tests. **There shall be a minimum of one (1) compaction test of the water main trench every two hundred (200) lineal feet of each lift placed.**

1-05.10 Guarantees

Section 1-05.10 shall be deleted and replaced with the following:

1-05.10(1) General Guaranty and Warranty

The Contractor shall furnish to the District any guaranty or warranty furnished as a normal trade practice in connection with the purchase by the Contractor or a subcontractor of any equipment, materials, or items used in the Work.

Additionally, if within two years after the date of Final Acceptance of the Work by the District, defective and unauthorized work is discovered, the Contractor shall promptly, upon written request by the Owner, return and in accordance with the Engineer's instructions, either correct such work, or if such work has been rejected by the Engineer, remove it from the Project Site and replace it with non-defective and authorized work, all without cost to the District. If the Contractor does not promptly comply with the written request to correct defective and unauthorized work, or if an emergency exists, the Owner reserves the right to have defective and unauthorized work corrected or rejected, removed, and replaced pursuant to the provisions of Section 1-05.7 of these Specifications, and to bill the Contractor for all such costs, which the Contractor agrees to promptly pay.

The Contractor agrees the above two year limitation shall not exclude or diminish the District's rights under any law to obtain damages and recover costs resulting from defective or unauthorized work discovered after two years but prior to the expiration of the legal time period set forth in RCW 4.16.040 limiting actions upon a contract in writing or liability, expressed or implied, arising out of a written agreement.

1-07 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

1-07.5(4) Air Quality

In addition to the requirements of Section 1-07.5, the Contractor shall comply with the following environmental provisions which are made a part of the contract documents:

Regulation I Puget Sound Air Pollution Control Agency
Regulation II Puget Sound Air Pollution Control Agency
King County Erosion Control Requirements

The Puget Sound Air Pollution Control Agency, for Pierce, King, Snohomish, and Kitsap Counties was activated by the Washington Clean Air Act, RCW 7-0.94. The agency adopted regulations to carry out the requirements and purpose of the Washington Clean Air Act.

Prior to starting any work on the contract, the Contractor shall contact the Agency to register with the Agency and obtain a copy of their air pollution regulations. The agency will provide guidance on how their regulations can be met.

The Agency's Board of Directors established procedures which allow them to observe and enforce the provision of the regulations through an appointed control officer.

Written notice will be served upon violators, whenever the Board or the Control Officer have reason to believe that provisions of the regulations relating to the control or preventing of air pollution have been violated.

Any order, or registration certificate required to be obtained by this regulations, shall be available on the premises designated on the order of certificate. Further, in the event the agency requires a notice to be displayed it shall be posted in a prominent place.

Any person who violates any provision of the regulation shall be guilty of a gross misdemeanor and upon conviction shall be punished by a fine or by imprisonment, or both, for each separate violation.

It is the policy of the Puget Sound Air Pollution Control Agency to minimize to the greatest extent reasonably possible, the burning of outdoor fires. Further, it is the policy of the Board to encourage the development of alternate methods of disposing of waste which are reasonable, economical, and less harmful to the environment. It is unlawful for any person to cause or allow outdoor fires with certain exceptions. The Agency should be contacted to determine if the activities in this contract would be eligible for one of these exceptions. In any event, written confirmation of approval must be issued by the Control Officer or Board for any burning outdoors.

Emissions exceeding any of the limits established by the regulation as a direct result of startups, periodic shutdown, or unavoidable and unforeseen failure or breakdown, unavoidable and unforeseen upset or breakdown of process equipment or control apparatus shall not be deemed in violation of the rules, if the Contractor immediately notifies the agency of such occurrence together with the pertinent facts relating to the nature of the problem as well as the time, date, and duration.

Dust control must be maintained on all roads prior to pavement restoration. All cost of which, to include water shall be completely borne by the Contractor and considered incidental to the project.

1-07.9 Wages

This section is supplemented with the following:

It shall be understood that the rules and regulations of the State of Washington Department of Labor and Industries shall apply regarding wage rates. The most recent schedule of prevailing wage rates, for the area in which this project is located, shall be as determined by the Department of Labor and Industries. A copy of the Department's current wage rates is included in the Appendices of these Specifications.

The Contractor shall submit certified payrolls with each pay request to the Owner. The Owner will not process a voucher for the pay request without receipt of the certified payroll.

1-07.13 Contractor's Responsibility for Work

1-07.13(1) General

Section 1-07.13(1) shall be supplemented as follows:

Broken or otherwise defective pipe shall be removed and replaced. Repair bands or clamps shall not be used to repair broken or defective pipe.

1-07.13(4) Repair of Damage

Paragraph 1-07.13(4) shall be supplemented as follows:

CONTRACTOR shall be responsible for making or having made any emergency repair to any public or private improvements damaged or destroyed directly or indirectly by CONTRACTOR's activities in performing the Work. OWNER will attempt to contact CONTRACTOR if the need for such repair is reported when CONTRACTOR is not present. Should OWNER be unable to contact CONTRACTOR, OWNER may perform or authorize whatever emergency repairs OWNER may deem necessary, and all costs of such emergency repair shall be deducted from funds due or to become due CONTRACTOR.

1-07.15 Temporary Water Pollution/Erosion Control (Supplement)

Delete and replace this section with the following:

The Contractor shall, upon request, submit temporary pollution/erosion control Plan complying with requirements of this section.

The Contractor shall be required to preserve existing ditches, culverts, drainage channels, etc., and to make every attempt to construct the project with as little adverse impact as is practical on existing storm drainage facilities. Trench "spoils" or import materials shall not be allowed to be stored in ditches or

adjacent to ditches if the Contractor's work efforts cause stockpiled materials to migrate into existing storm drainage facilities. Stockpiled material shall neither impede nor prevent storm water runoff entering ditches, catch basins, swales, drainage channels, or culverts, nor shall stockpiled materials or equipment create ponding or entrapment of storm water in areas which presently do not experience ponding or entrapment of water. The Contractor shall immediately clean catch basins, restore ditches, and drainage facilities that are damaged, plugged, or blocked, provide temporary pumping if directed by the Engineer, protect and maintain all existing drainage facilities, and no separate monies will be due the Contractor for performing this item. **Contractor shall accomplish all work in conformance with EPA 's best management practices and with special attention given to "Endangered Species Act" (ESA) regulations.** Furthermore, no separate monies will be due the Contractor if special construction is required, to include off-site storage of materials, conveyor systems, or any other special means utilized to ensure existing storm drainage facilities are kept in service and their original integrities are kept intact. The Contractor shall adhere to any and all dust control and/or mitigation as required by statute.

All costs associated with protecting and maintaining the existing drainage system, to include immediate restoration of same shall be considered incidental to the project and as such, merged in the various lump sum and unit prices bid.

1-07.17 Utilities and Similar Facilities

Modify this Section as follows:

- A. The Contractor is alerted to the existence of Chapter 19.122 RCW, a law relating to underground utilities. Any cost to the Contractor incurred as a result of this law shall be at the Contractor's expense. No excavation shall begin until all known facilities in the vicinity of the excavation area have been located and marked.

The Contractor shall be responsible for any breakage of utilities or services resulting from his operations and shall hold the District and it's agents harmless from any claims resulting from disruption of, or damage to, same.

No payment will be made for locating any existing utilities, including sufficient potholing as necessary, for the protection of existing utilities. Any cost and expense incurred in protecting these utilities shall be included in the various unit prices bid under this contract.

If any damage is done to an existing utility, the Contractor shall notify, on that same day, the utility company involved.

- B. A clearance of 6 inches or more is desired between water lines and all other utilities, excluding Sanitary Sewer. If the separation is less than 6 inches, a separation of at least 2 inches shall be maintained and a minimum 2 x 2 foot sheet of 2-inch thick polyethylene plastic foam material shall be placed in the separation between the water line and the other utility.

For Sanitary Sewer, a clearance of 18 inches or more is desired between the water main and the sewer line. If less than 18", Controlled Density Fill (CDF) shall be used as backfill at the crossing, a minimum of 6 feet each side of said crossing.

Generally, the minimum desired horizontal distance between water lines and sewer lines shall be 10 feet, measured outside wall to outside wall.

- C. The Utilities Underground Location Center's toll-free telephone number for this project area is 1-800/424-5555.
- D. The Contractor shall maintain all the utility poles in their current state as construction operations take place adjacent to the poles. Any damages occurring to the poles or attached utilities shall be repaired by the Contractor at his/her expense.

The location of existing underground utilities, as shown on the drawings, is approximate only and CONTRACTOR shall be responsible for verification or determining the exact locations from the utility companies. Failure of OWNER to show the existence of subsurface objects or installations on the drawings shall not relieve CONTRACTOR from his responsibility to make independent checks on the ground, nor relieve CONTRACTOR from all liability for damages resulting from CONTRACTOR's operations unless other-wise provided in the Contract Documents.

Existing utilities may include:

Water:	Highline Water District Seattle Water Department
Gas:	Puget Sound Energy Olympic Pipeline, Inc.
Power:	Puget Sound Energy Seattle City Light
Telephone:	U.S. West AT & T
Cable TV:	AT&T / Comcast
School District:	Federal Way School District Highline School District
Sewer:	Midway Sewer District Val-Vue Sewer District SW Suburban Sewer District Lakehaven Water and Sewer District
Roads & Drainage:	Local City or King County Dept. of Transportation

The utility locating service shall be contacted at least 48 hours prior to construction.

1-07.18 Public Liability and Property Damage Insurance

Replace with the following:

The contractor shall obtain and keep in force during the term of the contract and until final acceptance, the following insurance with companies or through sources approved by the State Insurance Commissioner pursuant to Chapter 48.05 RCW.

1. General Requirement

- a. **Insurance Company Rating.** All insurance companies issuing policies in accordance with these General Conditions shall have a Best's Insurance Guide rating of not less than A VII.
- b. **Subcontractor Insurance.** The General Contractor shall require that all subcontractors maintain insurance at the same level as the General Contractor.
- c. **Commencement of Work.** No Contractor or Subcontractor shall commence work under this agreement until all the insurance required hereunder has been obtained and the Owner has approved such insurance, in writing. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.
- d. **Certificate of Insurance.** The Contractor shall furnish the Owner with four copies of a Certificate of Insurance for each separate policy required hereunder. At the request of the Owner, Contractor shall provide certified duplicate copies of all policies required herein. All policies and certificates shall contain a clause agreeing that such insurance cannot be materially altered, reduced or canceled without first giving forty-five (45) days written notice to the Owner. Such policies or certificates shall contain a clause acknowledging that the hold harmless agreement of this contract is covered by the policies and that the Contractor's insurance is primary.

The Certificates of Insurance for all policies identified herein shall name the following entities as additional insureds: Highline Water District and its officers, officials, employees and agents, the District's consultants (if applicable) and the applicable local City, its officers, officials, employees and agents.

- e. **Failure to Maintain.** Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of the contract upon which the Owner may, after giving five working 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. Any sums so expended shall be repaid to the Owner on demand, or at the sole discretion of the Owner, offset against funds due the Contractor from the Owner.
- f. **Cost of Insurance.** All costs for insurance shall be considered incidental to and included in the unit contract prices and no

additional payment will be made by the Owner for the insurance policies required herein.

2. **Hold Harmless Agreement.** The Contractor shall protect, defend, indemnify and save the Owner harmless from and against any damage, costs, or liability, including pollution liability, for injury, personal injury, bodily injury or death to persons or damage to or destruction of property arising out of the work performed under this contract even if such claims are groundless and/or fraudulent.
3. **Workman's Compensation.** LI employees of Contractor and Subcontractors are to be insured under Washington State Industrial Insurance. Contractor shall also be required to carry Stop Gap Liability Insurance for \$500,000 each occurrence, each accident.
4. **Comprehensive General Liability.** Commercial General Liability Insurance written under ISO Form CG0001 or its equivalent including Premise and Operations, Independent Contractors, (Protective Liability), Completed Operations and Products, Contractual, Combined Single Limit of \$2,000,000 each occurrence with a \$2,000,000 per project aggregate. Products and completed operations coverage shall be provided for a period of three years following final acceptance of the work.
5. **Comprehensive Automobile Liability.** Contractor shall maintain bodily injury and property damage liability coverage for all owned, nonowned and hired vehicles assigned to or used in the performance of the work for a combined single limit of not less than \$1,000,000 each occurrence.
6. **Umbrella Policy.** Contractor shall maintain a true umbrella policy with drop down provisions, which provides excess limits over the primary insurance, in an amount not less than \$5,000,000.
7. **Property Insurance.** Contractor shall obtain builder's risk "all-risk" or equivalent policy form in the amount of the Awarded Contract Price, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Work on a replacement cost basis with a right of occupancy. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made. This insurance shall include the Owner as a named loss payee.

Property Insurance shall be on an "all-risk" or equivalent policy form and shall include without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements.

1-07.23 Public Convenience and Safety

Paragraphs 1-07.23(1) and 1-07.23(2) are modified as follows:

Contractor, not Owner, will be responsible for maintenance, control, and safeguarding of traffic both within and without the project limits wherever affected

by work included in the Contract. Neither Owner nor Engineer shall furnish, maintain, or be responsible for traffic control signs, equipment or devices. Contractor shall coordinate his activities with the agency or agencies which have traffic control responsibilities to provide safe conditions during the construction period.

Contractor shall prepare detour plans, if require by the City and/or the District, for all streets which will be closed during construction, including, but not limited to designated detour routes, detour and temporary traffic control, sign location and details, barricading plans, flagging plans, estimated closure time, and plans for temporary trench covering during non-construction hours. Modified traffic detour plans for streets shall be submitted to Owner for review, and to the governing City and the Engineer. Traffic detour plans for streets located outside of City Limits shall be submitted to King County Inspection Department or Washington State Department of Transportation, as appropriate, for review and approval prior to construction. Copies of the approved modified detour plans shall be submitted to Engineer and Owner for informational purposes only.

In areas where the Contractor does not have a pipe laying crew and during non-work hours, two-way traffic shall be made available. A minimum of one lane of traffic shall be made available by the Contractor at all times during work hours in the immediate work area for that day, unless specific approval is obtained.

1-07.24 Rights-Of-Way

Supplement with the following:

It shall be the Contractor's responsibility to confine his construction activities to within the public right-of-way or the District's easement. The Contractor shall take adequate precautions to protect private property. Contractor is responsible for restitution for any disturbance or damage done to areas outside the right-of-way or easement areas.

If, relative to this project, the Contractor makes arrangement to use private property; he/she shall obtain written permission from the property owner. In addition, the Contractor shall furnish the Engineer with a release from all damage, properly executed by the property owner. Any costs to the Contractor for acquiring such rights of entry shall be at his/her own expense.

1-08.0 Preliminary Matters (1-99 APWA Supplemental, APWA Only)

Add a new Section 1-08.1(5) as follows:

1-08.0(4) Pre-construction Photographs

A minimum of one pre-construction photograph shall be taken by the Contractor in each direction at minimum 50-foot stations along the route of the water main construction. In areas with extensive improvements, several photographs shall be taken. The photographs shall be 5" x 7" size, color, glossy finish, and must show the flagged position of the route of the pipeline and adjacent property and improvements. Each photograph shall be marked with identification showing street location, date taken and viewing direction. Two (2) complete files of all photographs shall be delivered to the District prior to beginning of construction. Photographs shall be mounted within a photograph book. Each photograph book shall state, on the cover, which station or location

the photographs were taken. All photographs shall be taken by an acceptable commercial photographer hired by the Contractor. Care should be taken to identify any pre-construction damage, surface conditions and structural problems in those photographs.

This work shall be considered incidental to the project and no additional claims by the Contractor shall be allowed.

1-08.5 Time for Completion

Supplement with the following:

The contract time shall begin as noted in the notice to proceed. This is a calendar day contract. There will be no extension for holidays, weekends, seasonal weather or any other non-agreed to days.

1-09.11 Disputes and Claims

1-09.11(1) Disputes

Delete and replace this section with the following:

All disputes arising under this contract will be removed by submission to binding arbitration at the local offices of Judicial Arbitration & Mediation Services, Inc. (J.A.M.S.)

Parties may agree on a jurist from the J.A.M.S. panel. If they are unable to agree, J.A.M.S. will provide a list of three available panel members and each party may strike one. The remaining panel member will serve as the arbitrator.

The parties agree that arbitration must be initiated within one year after the claimed breach occurred and that the failure to initiate arbitration within the one-year period constitutes an absolute bar to the institution of any new proceedings.

The aggrieved party can initiate arbitration by sending written notice of any intention to arbitrate by registered or certified mail to all parties and to J.A.M.S. The notice must contain a description of the dispute involved, and the remedy sought.

If and when a demand for arbitration is made by either party, the parties agree to execute a Submission Agreement, provided by J.A.M.S., setting forth the rights of the parties if the case is arbitrated and the rules and procedures to be followed at the arbitration hearing.

1-09.1 MEASUREMENT OF QUANTITIES

Delete and replace with the following:

It is the intent of these Contract Documents that the performance of all work under the Bid Items will result in the complete construction of the contract. Payment will be made only for items listed in the Bid Form in the Proposal. All other material, labor or equipment required for the water main work shall be considered as incidental to the construction.

Delete all references to Measurement and Payment in the Standard Specifications. All measurement and payment for this project will be governed by this Section

BID ITEM NO. 3001 MOBILIZATION

The lump sum (L.S.) price bid for Mobilization shall be made in accordance with Section 1-09.7 of the Standard Specifications.

BID ITEM NO. 3002 TRENCH SAFETY SYSTEM

The lump sum (L.S.) price bid for Trench Safety Systems shall be full compensation for costs of all labor, tools, materials and equipment, required to provide, construct, maintain, and remove the trench safety system for any and all water main related excavations.

BID ITEM NOS. 3003-3005 FURNISH AND INSTALL WATERMAIN PIPE

Measurement for this item will be per linear foot (LF) based on the slope distance from point to point. The point of beginning or ending of measurement in any particular run of pipe shall be the vertical intersection of the centerline of the intersecting pipe, or with the beginning or ending of any new pipe laid. No deductions will be made for the linear length of fittings, valves, couplings, etc., contained within the measured length. At changes in pipe size connected by a reducer, the point of measurement shall be taken as the midpoint of the reducer.

The per linear foot (LF) price bid for ANSI/AWWA C151/A21.51-91 Ductile Iron Pipe shall be full compensation for the costs of all labor, tools, material and equipment required to install the pipe, in accordance with the Plans and Specifications, including, but not limited to the following:

- a. All trench excavation.
- b. Adaptors as required for joining dissimilar pipes.
- c. Dewatering, as necessary.
- d. Remove and dispose of unsuitable and excess material as required where necessary. Select backfill, if required by the Owner/Engineer, shall be measured and paid elsewhere.

- e. Additional excavation where necessary for valves and concrete blocking.
- f. Tunneling under pavements, sidewalks, curb and gutter, water mains, storm drains, tree roots as well as obstructions or utilities as may be directed by the Owner/Engineer.
- g. Placing and maintaining temporary steel plates as required over the trench so that traffic may pass through.
- h. Laying, joining, bedding, flushing, testing, and disinfection of the water mains, including safe and sanitary disposal of chlorinated flushing water. Bedding material shall be furnished and installed as indicated on the Plans.
- i. All fittings, and couplings including Meg-a-Lug and Field-Lok Gasket joint restraints where shown on the Plans, unless bid as separate item.
- j. Waterline installation including laying, cleaning, disinfection, and testing.
- k. Laying and compaction of native backfill or select borrow.
- l. All concrete blocking (including interior angle blocking).
- m. Backfill and compaction of tree/brush stump and root holes with native backfill or select borrow.
- n. Sawcutting, removing, and disposing of asphalt or concrete pavement, curb, gutter, and/or sidewalk.
- o. Provide material and equipment approval data and "as-built" drawings.
- p. All other labor and material necessary for completion of the pipelines not included in other bid items.
- q. Protection of existing survey monuments, property corners, and right-of-way monumentation, and restoration of same that may be disturbed during construction.
- r. Draining, capping, and abandoning existing water mains, upon acceptance of new ductile iron water mains.
- s. All fees associated with pipe laying including but not limited to the applicable City's Street Use Permit, and other similar fees required for the work.
- t. Locating and maintaining private utility crossings, including repairing as necessary said utilities damaged during construction.
- u. Installation, removal and disposal of cold mix as required by the City during construction.
- v. Take pre-construction photographs of all potentially disturbed construction areas.

BID ITEM NO. 3006
SHORT SERVICE CONNECTION – 5/8" TO 1"

The per each (EA) price bid shall be considered full compensation for all labor, materials, and equipment for tapping the water main, installing corp. stop, installing 1-inch diameter "type K" copper service line (20 lineal feet or less) and meter box with traffic bearing lid (H20), connecting to a new meter setter and adjusting meter box to grade as necessary. This includes jetting or using pneumatic mole to cross under street without causing damage to existing paving. This bid item shall also include all miscellaneous fittings to connect to customer's existing service line. Also included is all required excavation, backfill, compaction and restoration to accomplish work outlined in these specifications, outlined in the details, shown on the drawings and/or directed by ENGINEER.

BID ITEM NO. 3007
1-1/2" to 2" SERVICE CONNECTION W/ HIGH BYPASS SETTER

The per each (EA) price bid shall be considered full compensation for all labor, materials, and equipment for tapping the water main, installing saddle and related appurtenances, installing a 2-inch diameter copper service line and meter box with traffic bearing (H20) lid, connecting to a new meter setter and adjusting meter box to grade as necessary. This includes jetting or using pneumatic mole to cross under street without causing damage to existing paving. This bid item shall also include all miscellaneous fittings to connect to customer's existing service line. Also included is all required excavation, backfill, compaction and restoration to accomplish work outlined in these specifications, outlined in the details, shown on the drawings and/or directed by ENGINEER.

BID ITEM NO. 3008-3010
GATE VALVES

The unit prices bid per each (EA) for the various types and sizes of valves shall be full compensation for all costs required to provide and install these valves and their respective valve boxes. This unit price also includes providing, painting and installing valve marker posts for each valve.

BID ITEM NO. 3011
FIRE HYDRANT ASSEMBLY

The per each (EA) price bid for "Fire Hydrant Assembly" shall constitute complete compensation for the assembly complete in place, including excavation, backfill, the fire hydrant painted with two coats of paint after installation, auxiliary gate valve, cast iron valve box, valve operating nut extension, shackle rods or MEGALUG glands, Storz fitting, bolts and gaskets, concrete curbing, a minimum of six (6) cubic feet of washed gravel and the necessary 15-pound felt roofing paper to cover the gravel drain pocket prior to backfilling. This item shall also include the cost of leveling, grading and compacting an area of at least five (5) feet in radius around the hydrant. The auxiliary gate valve and valve box shall be measured and paid for under the appropriate bid item for 6-inch gate valves and 6-inch valve box. The hydrant tee is incidental, and will be paid for under the appropriate bid item for ductile iron pipe. The run of pipe shall be paid for under the bid item for 6" D.I. pipe. Bid item includes bagging all hydrants which are not in service, pavement marker and salvaging of existing hydrants in good condition to District's yard without breakage, if not included in other bid items.

BID ITEM NO. 3012
REMOVE AND SALVAGE EXISTING FIRE HYDRANT

The unit price per each (EA) for this item shall be full compensation for excavation, backfill removal of existing fire hydrant assembly, salvaging to a location designated by the District, cut and cap the existing main, and other incidental work required for a full job. Asphalt patch and/or concrete sidewalk replacement shall be paid for under a separate bid item.

**BID ITEM NO. 3013
ADDITIONAL WATERMAIN FITTINGS**

The unit price bid per pound (LB) for "Additional Watermain Fittings" price shall be full compensation to the Contractor for providing any and all extra fittings used but not shown or implied on the Plan. This price shall also be used to deduct from the Contractor monies for fittings shown or implied on the Plan but not used.

**BID ITEM NO. 3014
CONNECT TO EXISTING SYSTEM**

The unit price bid per each (EA) Connection to Existing System shall be full compensation for all costs for work required to furnish required fittings, restraint system, plug all abandoned pipes and all other incidental work required to make the new connection and secure the abandoned pipe.

**BID ITEM NO. 3015
RELOCATE/RECONNECT EXISTING SERVICES**

The per each (EA) price bid shall be considered full compensation for all labor, materials, and equipment for freezing the service line, installing additional copper service line (more than 20 lineal feet) and meter box with a traffic bearing (H20) lid, connecting to a new meter setter and adjust new meter box to grade as necessary. This bid item shall also include all miscellaneous fittings to connect to existing service line. Also included is all required excavation, backfill, compaction and restoration to accomplish work outlined in these specifications, outlined in the details, shown on the drawings and/or directed by ENGINEER.

**BID ITEM NO. 3016
ASPHALT TREATED BASE, PAVEMENT RESTORATION**

The unit price bid per square yard (SY) shall constitute complete compensation for furnishing all material, labor and equipment necessary to provide pavement restoration to a minimum compacted thickness for the full width of restoration as shown on the Contract Plans (4-inches, minimum) or as approved by the City. This shall include, but shall not be limited to trimming the edges of the existing paving to neat lines and sealing the completed edges. Crushed surfacing shall be paid for elsewhere. Payment will be per square yard of asphalt actually installed.

Paving around valve boxes will be paid under this bid item, including costs of edge screeds, etc. Where existing surfaces have been sealed, or otherwise treated, such treatment shall be restored and all costs thereof included in this bid item.

Measurement will be made of the area of asphalt treated base actually installed where required for road crossings and for areas where the water pipe is to be constructed beneath the existing pavement. No payment will be made under this item for pavement restoration where pipe is installed parallel to and a few feet off the edge of existing pavement. This shall include the cost of adjusting all drainage structures, valve boxes, monument cases and other structures and utilities to grade after the asphalt restoration is completed. This shall also include replacing in-kind all painted or plastic striping, stop bars or crosswalks removed during the restoration construction.

BID ITEM NO. 3017
CRUSHED SURFACING TOP COURSE

The price bid per ton (TN) for crushed surfacing top course shall constitute complete payment for furnishing and placing crushed surfacing top course for pavement base course, select trench backfill, and on road shoulders to the width and depth as prescribed and designated by the City. Also to be included in this item shall be the cost of all motor patrol or grader work, or any other equipment required to shape the roadway shoulder to proper grade before gravel is placed, as well as all equipment required to spread and compact the crushed gravel uniformly. During dry periods, ENGINEER may require water sprinkling prior to the crushed gravel placement and while spreading gravel. The cost of such sprinkling shall be included in the crushed surfacing top course bid item. The crushed surfacing top course item shall be payment for either base course or top course material.

BID ITEM NO. 3018
REMOVE EXISTING FIRE VAULTS

The price per each (EA) shall be for all labor, materials, tools and equipment required to remove the existing fire vaults as shown on the contract plans. The existing backflow prevention device shall be salvaged for use in the proposed new vaults. Price shall include the disposal of the vault, salvage and protect the existing backflow prevention device and all excavation and backfill required in the area. If select backfill is required, it shall be measured and paid for elsewhere. The cost of adjusting existing vaults is considered incidental to the project and as such, shall be merged into the various unit prices bid watermain pipe.

BID ITEM NO. 3019
FIRE VAULT

The price per each (EA) shall be for all labor, materials, tools and equipment required to install fire vaults as shown on the contract plans in accordance with District plans and details. Price shall include all the excavation, restoration and backfill required in the area, adjusting vault to grade as necessary and the reinstallation of the salvaged backflow prevention device, including any and all testing required for the backflow device. If select backfill is required, it shall be measured and paid for elsewhere. The cost of adjusting existing vaults is considered incidental to the project and as such, shall be merged into the various unit prices bid watermain pipe.

BID ITEM NO. 3020
TRAFFIC CONTROL LABOR

The lump sum (L.S.) price bid for Traffic Control Labor shall be full compensation for costs of all labor, tools, materials, and equipment required for flagging, setting, moving and removing traffic control devices and Class A and Class B construction signs required for those construction operations for watermain installation as authorized by the Engineer. Also included in this bid item is the cost of off-duty police officers if required by the City.

**BID ITEM NO. 3021
SELECT BACKFILL**

The quantity for payment shall be the volume in cubic yards (CY) of select backfill as determined by the product of the length of pipe installed, multiplied by the depth measured from the top of the initial backfill, one (1) foot above the crown of the pipe, to the subgrade for roadway or pavement, multiplied by the maximum payment width as shown in the details. If native material is ordered by the Engineer, all costs of backfill and compaction shall be incidental to the watermain pipe.

DIVISION 2

EARTHWORK

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

Paragraph 2-02.1 shall be supplemented and modified as follows:

Where indicated on the Drawings or in the Construction Provisions, or when directed by OWNER, castings, pipe, hydrants, fence, and any removed or disturbed facilities shall be carefully salvaged and stockpiled in OWNER's yard or in a location directed by OWNER. Other such items with no salvage value to OWNER shall be disposed of at CONTRACTOR's expense.

2-02.3 Construction Requirements

2-02.3(3) Removal of Pavement, Sidewalks, and Curbs, add the following:

Comply with the requirements of the applicable City standards.

Add new Sections 2-02.3(4) and (5) as follows:

2-02.3(4) Replacement of Asbestos Cement Water Main at Pipeline Crossings (new section)

Coordinate water main shut down with the OWNER pursuant to Section 7-11.3(9)A as modified in these Specifications. For water mains outside the OWNER's service area, contact the local water purveyor. Remove the existing asbestos cement water main between points three (3) feet outside of the new pipe line trench zone of influence, replacing it with like diameter Class 52 Ductile iron pipe conforming to Section 9-30.1(1) as modified in these Specifications. Couple the DI pipe to the remaining existing asbestos cement pipe with OWNER (or water purveyor, as applicable) approved water main couplings provide support blocking under couplings to prevent settlement. Comply with the requirements of the Standard Detail bound with these Specifications.

2-02.3(5) Recommended Standard Asbestos Cement Pipe Work Practice, Procedures and Training Requirements (new section)

All personnel on any asbestos project who directly handles asbestos/cement water pipe or asbestos-containing waste materials will be certified per Chapter 296-65 WAC. Provide proof of certification to Owner prior to work on asbestos cement pipe.

All work with asbestos/cement water pipe shall be done as follows:

Carbide Blade Cutting (hand-operated only):

Blade cutters consist of a frame, adjustable to the circumference of the pipe and a number of outboard, self-tracking rollers which align one or more carbide-tipped cutting blades. The cutter is rotated around the pipe

with the blades cutting a groove into the pipe. As the cutter is rotated, the blades are slowly tightened with screws to cut deeper and deeper into the pipe until the pipe is severed.

Snap Cutting:

Snap cutting equipment operates by means of cutting wheels mounted on a chain wrapped around the A/C pipe. Hydraulic or manually-applied pressure simultaneously squeezes the cutting wheels into the pipe wall until the pipe is severed.

Hand Saw Cutting:

Large-toothed, cross-cut hand saws used to manually cut small A/C pipes or to trim larger pipes.

Repair Band Installation:

Repair bands consist of a pliable gasket material held in place by a metal sleeve tightened over the gasket and are used to repair small A/C pipe leaks.

Wet/Hot Tapping:

Wet tapping is done with specific equipment which can tap an A/C pipe while it is under pressure. The equipment is designed to tap various sizes of pipe and connect either services or pipe. Normally the A/C debris is contained in the tapping equipment until removed by the operator.

Tapping of A/C pipe less than 10-inches in diameter is not allowed unless approved by the Engineer. Also, the tap size shall be one standard diameter less than the pipe to be tapped. For instance, an existing 12-inch A/C main can only be tapped by a main no larger than 10-inches in diameter.

Equipment required: Hand-operated carbide blade cutter or Snap Cutting or Hand Saw or Repair band and tools necessary for installation or Wet tapping machine of appropriate size; water source and means of application sufficient to maintain a continuously-wetted cutting area; protective equipment including:

- disposable coveralls
 - respiratory protection (consisting of ½ face respirator equipped with HEPA filters or respirator which provides equivalent or better protection).
 - rubber boots
 - hard hat
1. Excavate around the A/C pipe in a sufficient distance to assure adequate tool clearance in the area to be cut. Care must be taken to avoid any abrasion to the pipe.
 2. Don protective equipment and have sufficient water available before entering trench to begin cutting operations.

3. Clean and wash with water the surface of the pipe in the area to be cut and attach the cutting equipment around the A/C pipe.
4. Begin applying water to area being cut and continue until cutting is complete.
5. Operate the cutting tool in accordance with the manufacturer's instruction until cutting is complete or tap pipe, making sure that water is applied in sufficient quantities to assure that area being cut is continuously wetted and no A/C dust is created.
6. Detach cutting equipment, move to new cutting location and repeat procedure described above. Upon completion of the final cut, thoroughly wash the cutting equipment with clean water to remove all A/C debris. Allow wash water to drain into the bottom of the trench. Remove washed cutting equipment from the trench.
7. Install other pipe and fittings as necessary to complete the job taking care to avoid any abrasion to the A/C pipe. Install the repair band and tighten bolts, keeping the entire exposed area of the pipe wet in the vicinity of the repair band during the operation.
8. When all pipe work is completed, any asbestos cement water pipe greater than one (1) linear foot in size may be buried at the project site if it is covered with three feet (3') or more of non-asbestos fill materials. Thoroughly wash tools, boots and hands with clean water to remove all A/C debris. Allow wash water to drain into the bottom of the trench.
All asbestos-containing waste materials, including pipe fragments, protective clothing, HEPA filters and asbestos-contaminated containers and debris shall be sealed in a leak tight, labeled container while adequately wet, and disposed in accordance with Puget Sound Air Pollution Control Agency, Asbestos Control Standard, Regulation III, Article 4.
9. Exit ditch in such a manner that no A/C debris will contaminate clothing, boots, tools, etc.

2-02.6 Other (New Section)

Removal of structures and obstructions pursuant to 2-02 and not related to Open Cut Pavement Crossings or Replacement of Asbestos Cement Water Main at Pipeline Crossings will be considered incidental to other Work in this Contract and will not be measured or paid for as a separate item. The Contractor shall estimate the amount and cost of this Work and shall include it in one or all of the bid items.

END OF DIVISION 2

DIVISION 3
PRODUCTION FROM QUARRY AND PIT SITES AND STOCKPILING

NO ADDITIONS, DELETIONS OR REVISIONS.

**DIVISION 4
BASES**

NO ADDITIONS, DELETIONS OR REVISIONS.

DIVISION 5
SURFACE TREATMENTS AND PAVEMENTS

NO ADDITIONS, DELETIONS OR REVISIONS.

**DIVISION 6
STRUCTURES**

NO ADDITIONS, DELETIONS OR REVISIONS.

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

7-01 DRAINS

7-01.3 Construction Requirements, insert the following sentence after the first sentence in the first paragraph:

If trench dimensions are not shown or specified, the maximum permissible trench widths shall not exceed the limits specified in 7-9.3(7).

7-01.3 Construction Requirements, add the following paragraphs:

Any trench exceeding four (4) feet in depth shall be provided with adequate safety systems meeting the requirements of the Washington State Industrial Safety and Health Act (WISHA), Chapter 49.17 RCW and all regulations adopted pursuant thereto. The Contractor alone shall be responsible for worker safety and the OWNER and the ENGINEER assume no responsibility.

7-09 WATER MAINS

7-9.1 Description, add the following:

Comply with the requirements of City and State permits when operating within their franchise areas.

7-9.1(1)B Unsuitable Material, add the following:

OWNER and/or ENGINEER may designate any and all material excavated from the trench as unsuitable.

7-09.2 Materials, delete and replace with the following:

7-09.2(1) Pipe- The following are the only pipe types allowed by the District:

7-09.2(1)A Ductile Iron Pipe. Ductile iron pipe shall be in accordance with Section 9-30.1(1), shall be thickness Class 52, unless otherwise shown on the drawings or details and shall be furnished with rubber gasket push-on type joints except when restrained joints are specifically required. All pipe shall be manufactured in the United States of America.

Restrained joint (RJ) ductile iron pipe shall be U.S. Pipe "field lock gasket system," or equivalent when shown on the drawings or directed by the ENGINEER or OWNER.

7-09.2(1)C Copper Pipe, Copper tubing used for water mains and/or services shall be straight lengths of Type K copper.

7-09.2(2) Fittings – The following are the only fitting types allowed by the District

7-09.2(2)A Ductile Iron Fittings, Ductile iron fittings for ductile iron pipe shall be in accordance with Section 9-30.2 and may be flanged, mechanical joint or plain end as required. All fittings shall be manufactured in the United States of America unless approved otherwise by the District. All fittings manufactured outside of the United States and approved by the District for use must have epoxy coated linings in accordance with Section 9-30.2.

7-09.2(2)B Transition Reducing and Flexible Couplings, Fittings for coupling ductile iron pipe to existing pipe shall be in accordance with Section 9-30.2(7). It shall be the Contractor's responsibility to determine and order the proper coupling based upon field determination of the existing pipe dimensions.

7-09.2(2)C Compression Fittings, Compression fittings for coupling copper tubing shall be Mueller 110 compression connection or equivalent

7-9.3 Construction Details

7-09.3(1) General, add the following:

Comply with the requirements of City and State permits when operating within their franchise areas.

7-09.3(3) Clearing and Grubbing in Ungraded Streets, delete the last sentence and replace with the following sentence:

All such material shall be disposed of at a waste site obtained by the Contractor.

7-9.3(7) Trench Excavation, delete the first sentence in the first paragraph and replace with the following sentences:

Trench excavation shall be unclassified. The Contractor shall excavate all materials encountered to the depth shown on the Drawings, as specified, or as directed by the ENGINEER. No extra payment will be allowed for bed rock, boulders, hard pan, cemented gravel or any other material encountered. All material shall be disposed of at a site obtained by the Contractor.

Delete the sixth and seventh paragraphs and replace with the following paragraph:

Any trench exceeding four (4) feet in depth shall be provided with adequate safety systems meeting the requirements of the Washington State Industrial Safety and Health Act, Chapter 49.17 RCW, and all regulations adopted pursuant thereto. The Contractor alone shall be responsible for worker safety and the OWNER and the ENGINEER assume no responsibility.

Add the following paragraph:

All ledge rock, boulders and stones shall be removed to provide a minimum of four (4) inches clearance under all portions of the pipe. All rock larger than three (3) inches in diameter shall be disposed of at a site obtained by the Contractor, and shall not be used for trench backfill.

Section shall be supplemented as follows:

Mains shall be installed with a minimum depth of cover of 42 inches unless provided otherwise on the Drawings. Exceptions may be allowed at local depressions, such as ditch crossings or crossings of other utilities. Depth of cover at ditch lines shall be a minimum of 30 inches unless provided otherwise on the Drawings. Exceptions will be allowed only with the prior approval of ENGINEER or OWNER. Minimum separation between other utilities and water mains shall be twelve (12) inches with sand cushion or concrete blanket as directed by ENGINEER or OWNER. Maximum cover shall be 60" unless provide otherwise on the Drawings or approved by OWNER.

7-9.3(7)B Extra Trench Excavation, delete this section.

7-9.3(8) Removal and Replacement of Unsuitable Materials, correct section reference at the end of the second paragraph to read "Section 9-03.19" and add the following:

The ENGINEER's and/or OWNER's decision is final with regard to removal and replacement of unsuitable material.

7-9.3(9) Bedding the Pipe, add the following sections:

7-9.3(9)C Ductile Iron Water Pipe

This section applies to bedding for ductile iron water pipe.

When native material at the trench bottom is a pure sand and/or gravel and suitable for pipe bedding, the bottom shall be hand finished to grade so that the pipe will have uniform support along the barrel and bell. After the pipe is in place, additional hand selected native material shall be placed and tamped in place around the pipe up to the horizontal diameter of the pipe, or as shown on the Plans.

When native material at the trench bottom is any other type of material or stony or otherwise non-uniform, the trench shall be over-excavated to 4" below the specified grade and a layer of pipe bedding material as provided in Section 9-03.12(3) (unless otherwise stated in the Plans) shall be placed to the specified grade. After the pipe is in place, additional bedding material shall be placed and tamped in place around the pipe up to the horizontal diameter of the pipe, or as shown on the Plans.

7-9.3(10) Backfilling Trenches, delete the second and third paragraphs and replace with the following paragraphs:

Initial Backfill: The portion of the backfill from the horizontal diameter of the pipe to a point one (1) foot above the top of the pipe, shall be made

with finely divided earth free from stones larger than two (2) inches in diameter. The material shall be carried up evenly on both sides of the pipe simultaneously in approximately six (6) inch layers and each layer thoroughly compacted with appropriate tools in such manner as to avoid injuring or disturbing the completed pipeline.

Subsequent Backfill: In public right-of-way and in all areas (paved and unpaved) where streets, roadway shoulders, driveways, sidewalks, or parking lots will be constructed or reconstructed over the trench, the top four (4) feet of the trench shall be mechanically compacted to 95% density (minimum 90% density below this and above subsequent backfill). In any trench in which 95% density cannot be achieved with existing backfill, the top four (4) feet shall be replaced with Bank Run Gravel for Trench Backfill as specified in Section 9-03.19 up to the top two (2) feet. The top two (2) feet which included an 8-inch thick 12-inch cut back area on each side of the trench. (See drawing details)

Any transverse open cut of any Right-of-Way shall be backfilled entirely with crushed surfacing top course meeting the requirements of Section 9-03.9(3). Backfill shall be placed and compacted mechanically in one (1) foot lifts with an inspector present. After backfill and compaction an immediate hot mix patch shall be placed and maintained in a manner acceptable to the ENGINEER.

Standards and in Sections 5-04 ASPHALT CONCRETE PAVEMENT and 5-05 CEMENT CONCRETE PAVEMENT.

7-9.3(11) Compaction of Backfill, delete this section and refer to 7-9.3(10) as amended above.

7-9.3(12) General Pipe Installation, add the following:

Contractor may obtain water from the Owner for use on this project through a meter which may be rented from the Owner. A WADOH approved backflow prevention device shall be used in accordance with State Cross Connection Regulations.

Contractor shall provide all trucking, piping, fittings, and connections for the distribution and measurement of the water used on this project. Contractor shall assume sole responsibility for maintaining the temporary piping for the water used on this project.

7-09.3(15) Laying of Pipes on Curves, delete and replace with the following:

Deflection of joints to achieve horizontal/vertical alignment shall not exceed 1.5 degrees per length of pipe or no more than ½ max deflection per manufacturer. Contractor must obtain approval of ENGINEER or OWNER before horizontal/vertical deflections beyond this are used to achieve alignment.

7-09.3(19) Connections, add the following:

7-11.3(9)C General Requirements (New Section)

Pipe work shall be completed as shown on Drawings, except the connections, which are subject to the following limitations. All equipment and material necessary to make the connection shall be delivered to the site prior to the start of work. Bolts, flanges, gaskets, couplings, and all accessories shall be checked and verified by ENGINEER or OWNER prior to shutdown of the existing water system. Once work is started, it shall proceed rapidly and continually to completion.

CONTRACTOR shall notify OWNER and other utilities at least three (3) regular working days in advance of any construction, and make the necessary arrangements with OWNER for connection to exist-ing water main. CONTRACTOR shall not operate any gate valve of the water system before or during construction. OWNER may elect to furnish the materials, equipment, and labor necessary for making the connection and CONTRACTOR shall pay OWNER all costs for the connection. In the event OWNER does not elect to make the connection, he may authorize CONTRACTOR to furnish the materials, equipment, and labor necessary for making the connection under the supervision of OWNER or ENGINEER.

This work includes places where connections may be made to system components to be constructed by others. CONTRACTOR shall coordinate and schedule his work and connection to be made following the testing and acceptance of the system components constructed by others. Connection may need to be made near the end of the work under this Contract.

CONTRACTOR must notify customers of time and length of shut-downs at least 48 hours prior to shutdown. CONTRACTOR shall be responsible for any damage caused to customer systems due to shutdown and recharging the water system.

No direct connection of the new system being constructed shall be made to the existing system until the new system has been pressure tested and accepted and until water quality (purity) tests have been satisfactorily completed.

All abandoned pipes which result from work under this contract shall be capped and plugged with concrete.

7-09.3(20) Detectable Marking Tape, delete and add the following:

Detectable marking tape shall only be installed if shown on the Plans or as directed by the Engineer.

7-09.3(21) Concrete Thrust Blocking, add the following paragraph:

Blocking where shown on plans shall consist of poured cement concrete, against undisturbed soil with sufficient concrete and $\frac{3}{4}$ - inch anchor rods, if required, to resist the resultant forces. Conform to the Standard Detail bound with these Specifications and to details shown on the Drawings. Blocking shall provide for removal of any connection to the fittings without

damage to the fitting. Where unfavorable ground conditions are encountered, special blocking will be required as directed by the Engineer or Owner in the field. When digging near fittings of existing pipelines, temporary wood blocking or other restraining system shall be installed to prevent blowouts. Megalugs or field lock gaskets shall be required as shown on the Contract Drawings or in select locations as determined by the Owner /Engineer.

7-09.3(23) Hydrostatic Pressure Test, Add the following sentence to the last paragraph:

The Contractor shall provide all taps, fittings, connections, blowoffs, etc. required to complete all necessary pressure tests.

7-09.3(24) Disinfection of Water Mains, Add the following sentence to the last paragraph:

Following a successful test, those water pipes which will not immediately be connected to the existing system shall be relieved of excess pressure and shall be left full of the chlorinated water. Contractor shall be responsible for disposal of super chlorinated water after testing.

7-09.3(24)A Flushing and Pigging, delete the last paragraph and replace with the following paragraph:

The Contractor shall not do any flushing of the pipeline without supervision of OWNER. Prior to flushing, the Contractor shall submit to the Owner and Engineer a flushing plan that includes dechlorination of the super chlorinated waste water. Holding of water until the verification that it is safe to be released to drainage channel or sewer system will be required. If discharging chlorinated water to a local sewer system is planned, written permission from the sewer agency shall be obtained. Best management practices shall be utilized when disposing of the higher chlorinated water. The District shall hold the Contractor liable for any ESA salmon "takes" that occur as a result of improperly disposing of the flushing water. The Contractor shall make arrangements with the OWNER for the necessary flushing of the pipeline. . The governing public entity of said drainage system shall approve of any disposal into available drainage systems, provided that the rate of disposal will not overload their system or flow turbid water into waterways. Flushing procedure shall be approved and observed by OWNER.

Sections of pipe to be disinfected shall first be cleaned. This shall include pigging at the discretion of the District in accordance with these Construction Standards and AWWA Standard C651-922, Section 4.5 to remove any solids or contaminated material that may have become lodged in the pipe. Flushing velocities should be a minimum of 2.5 ft/sec in the new water main when practical to assure the all debris is removed during the flushing process. Table shown below may be used as a guideline, but does not relieve the Contractor from assuring a clean line.

Pipe (in inches)	To produce 2.5 ft/sec (approx) Velocity in Main	Size of Tap, 2 inches/ Number of taps on Pipe**	Number of 2-1/2 inch Hydrant Outlets
4	100 gpm	--	1
6	200 gpm	--	1
8	400 gpm	1	1
10	600 gpm	2	1
12	900 gpm	2	2
16	1600 gpm	4	2

Table 3.8.6 AWWA C651-92 suggested flow and openings to flush pipelines (40 psi residual pressure in water main*):

**With a 40 psi pressure in the main and the hydrant flowing to atmosphere, a 2-1/2 inch hydrant outlet will discharge approximately 1000 gpm and 4-1/2 inch hydrant outlet will discharge approximately 2500 gpm.*

***Number of taps on pipe based on discharge through 50 feet of galvanized iron pipe with one 90 degree elbow.*

7-09.3(24)H Point of Application, add the following:

The Contractor shall provide all taps, fittings, connections, blow offs, etc. required to complete all necessary purity tests.

7-9.3(25) Jacked Crossings (New Section)

At the locations shown on the Drawings, pipe line crossings of arterial streets shall be made by jacking, driving, or auguring a steel casing pipe beneath the surface. Alignment and grade of casing furnished shall be such that no additional fittings are necessary to make the necessary connections. If the casing does not provide this it shall be abandoned, filled, and a new casing installed to meet this line and grade requirement. No open excavation shall be made closer than six (6) feet from the edge of pavement. Diameter of casing pipe shall be sufficient to allow installation of the pipe line. Wall thickness shall be sufficient to withstand installation force and highway loading. It shall not be less than 3/8-inch. After the pipe has been adjusted to grade, moist sand shall be blown in and tamped into the casing pipe so that all voids will be filled.

Conform to the requirements of the WSDOT utility permits for this Work.

7-9.3(26) Steel Casing Pipe (New Section)

Where used elsewhere than for jacked crossings, steel casing pipe shall be a separate bid item. Steel casing pipe shall be new welded steel pipe conforming to ASTM A 53, Grade B for diameters 26 inches or less and conforming to API 5L for larger pipe diameters. Minimum wall thickness shall be 3/8-inch. All casing joints shall be continuously welded with single bevel or double bevel, full penetration welds. Blow in and tamp moist sand into the casing pipe after the carrier pipe has been installed.

Excavation, bedding and backfill shall be in accordance with the applicable requirements of Sections 7-17.3(1)A, 7-17.3(1)B, and 7-17.3(3) as modified in these Specifications.

7-9.3(27) Casing Spacer (New Section)

Casing spacers shall be equally spaced within the casing as shown on the contract drawings. Casing spacers shall be sized to center the carrier pipe within the casing pipe. Casing spacers shall be constructed with 14 gauge steel, 90 mil PVC or Neoprene liner and be 12-inches in width. Casing spacer shall be APS Casing Spacer model SI as manufactured by Advance Products & Systems (www.advprod.com/casepac.html) or approved equal.

7-12 VALVES FOR WATER MAINS

7-12.3(1) Installation of Valve Marker Post, delete the paragraph and replace with the following paragraph:

Valve marker posts shall be furnished and installed as directed and as shown on the Standard Detail bound with these Specifications. Concrete style marker posts shall be four (4) inch minimum square section, 42-inch length, and shall be reinforced with one 3/8" x 39" bar of reinforcing steel. Plastic style marker posts shall be 3-inch wide blue plastic, 42-inches in length as provided by Hansen Supply, or approved equal. Markers shall be placed as directed by the Owner or Engineer and set so as to leave 18 inches exposed above grade. The exposed portion of the marker posts shall be painted with two (2) coats of blue enamel, and then the size of the valve (for example, six (6) inch gate valve) and the distance in feet to the valve shall be stenciled with white exterior enamel paint on the face of the post, using a stencil which will produce letters two (2) inches high.

7-14 HYDRANTS

Delete the words "Standard Plans" and replace with the words "District Standard Detail(s)" in 7-14.3(1), 7-14.3(2), 7-14.2(2)A, and 7-14.3(5).

7-14.2 Materials, delete and add the following:

Hydrants shall be Center Stem Compression Style and conform to the latest revision of AWWA Specification C 502, except as herein modified. Minimum of 5-1/4 inch main valve opening, six-inch mechanical joint outlet, Megalug glands, furnished with six-inch resilient wedge valve flanged to main tee, and valve box;

riser pipe to suit trench depth and finished grade at each installation. Furnished with breakoff flange on barrel and breakoff coupling for the stem. Furnished with two (2) 2-1/2 inch hose connections, one (1) pumper connection and 1 ¼ " pentagonal operating nuts which turn counterclockwise to open; a removable Stortz one-quarter turn adaptor and blind cap is to be attached to the pumper connection of hydrants indicated below. Nozzles shall be fitted with renewable bronze nipples locked in place. All threads shall be National Standard Thread. Hydrants shall be painted as shown on the Standard Details bound with these specifications. Contractor shall submit hydrant and fitting specifications for Engineer's or Owner's review and approval prior to ordering.

PUMPER PORT SCHEDULE		
Jurisdiction	Pumper Port Size/Thread	Stortz Coupling Size
City of Kent FD	4½" NST	N/A
All other Fire Districts	4½" NST	5-Inch

APPROVED HYDRANTS	
Clow Medallion	F-2545
M & H	929
Mueller	Centurion

7-14.3(1) Setting Hydrants, add the following paragraphs:

Maintain three feet clearance between hydrant and obstructions, which would inhibit the operation of the hydrant such as banks, fences, rockeries, walls, trees or bushes. Install as shown in the details contained herein and specified in the District's Standard Details.

7-15 SERVICE CONNECTIONS

7-15.1 General, add the following:

Comply with the District's Standard Detail(s).

Meter boxes supplied by the Contractor for installation will be approved by the Owner prior to installation.

Meters will be supplied by the Owner but installed by the Contractor.

7-17 SANITARY SEWERS

Add a new Section 7-17.3(2)J, Special Details:

7-17.3(2)J Special Details

1. Required Separation Between Water Lines and Sanitary Sewers:

The basic separation requirements apply to sewers of 24-inch diameter or less; larger sewers may create special hazards because of flow volumes and joint types. The special construction requirements given are for the normal conditions found with sewage and water systems. More stringent requirements may be necessary in areas of high ground water, unstable soil conditions, etc.

a. Horizontal Separation (Parallel)

A minimum horizontal separation of ten (10) feet between gravity sanitary sewers and any existing potable water lines shall be maintained, whenever possible. The distance shall be measured edge to edge.

b. Unusual Conditions (Parallel)

When local conditions prevent a horizontal separation as described in a., a gravity sewer may be laid closer than 10 feet to a water line provided:

- i. It is laid in a separate trench; or, it is laid in the same trench with the water line that is located at one side on a bench of undisturbed earth; and
- ii. In either case, the elevation of the crown of the gravity sewer must be at least 18 inches below the invert of the water line. When this vertical separation cannot be obtained, the gravity sewer shall be constructed of materials and joints that are equivalent to water main standards of construction and shall be pressure tested to assure water tightness prior to backfilling.

c. Vertical Separation (Perpendicular)

Sewer lines crossing water lines shall be laid below the water lines to provide a separation of at least 18 inches between the invert of the water pipe and the crown of the sewer, whenever possible.

d. Unusual Conditions (Perpendicular)

When local conditions prevent a vertical separation as described in c. the following construction shall be used:

- i. Gravity sewers passing over or under water lines shall be:

The one segment of the maximum standard length of pipe, (but no less

than 18 feet long) shall be used with the pipes centered to maximize joint separation.

Standard gravity sewer material encased in concrete or in a 1/4" thick continuous steel casing with all voids pressure-grouted with sand-cement grout.

The length of sewer pipe shall be centered at the point of crossing so that the joints will be equi-distant and as far as possible from the water line. The sewer pipe shall be the longest standard length available from the manufacturer.

- ii. Water lines passing under gravity sewers, in addition, shall be protected by providing:

A vertical separation of at least 18 inches between the invert of the sewer and the crown of the water line;

Adequate structural support for the sewers to prevent excessive deflection of joints and settling on and breaking of the water lines; and

The length of sewer pipe shall be centered at the point of crossing so that the joints will be equi-distant and as far as possible from the water line. The sewer pipe shall be the longest standard length available from the manufacturer.

- iii. Pressure sewers shall only be constructed under water lines with ductile iron pipe or standard sewer pipe in a steel casing for a distance of at least ten (10) feet on each side of the crossing.

END OF DIVISION 7

**DIVISION 8
MISCELLANEOUS CONSTRUCTION**

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.1 Description

Erosion control work shall be in compliance with details and specifications as shown on the Plans and as spelled out in the Contract Documents.

**DIVISION 9
MATERIALS**

9-03 AGGREGATES

9-03.9 Aggregates for Ballast and Crushed Surfacing, add the following:

Crushed gravel surfacing and crushed gravel backfill for road crossings shall conform to the requirements of Section 9-03.9 of the General Conditions.

9-03.22 Controlled Density Fill (New Section)

9-03.22(1) Description

Controlled Density Fill shall be a mixture of Portland cement, fly ash, aggregates, water and admixtures which has been batched and mixed in accordance with ASTM C 94 or WSDOT 6-02.3.

9-03.22(2) Materials

- | | |
|--------------------|---|
| 1. Portland cement | ASTM C 150 or
AASHTO M 85 or
WSDOT 9-01 |
| 2. Fly Ash | Class F or
Class C |
| 3. Aggregates | ASTM C 33 or
WSDOT 9-03.14 or
WSDOT 9-03.1 |
| 4. Water | WSDOT 9-25 |
| 5. Admixtures | WSDOT 9-23.6 or
AASHTO M 194 or
ASTM C 494 or
ASTM C 260 |

9-03.22(3) Classification of Controlled Density Fill

- | | |
|----------------|---|
| Class A | Free-flowing...void fills, tank fills, insulating fills, pipe and caisson fills |
| Class B | Free-flowing...road base, slab base, sub-footings, trench backfills and pipe bedding. |

9-03.22(4) Proportioning

The table below provides a guideline for Controlled Density Fill mixes. The weights shown are only an estimate of the amount to be used per cubic yard of C.D.F. Actual amounts may vary from those shown as approved by the ENGINEER or approved trial mix data or field test results for proper strength, work- ability, consistency and density.

Class of C.D.F.	A	B
Maximum compressive strength, lbs per sq. in. (lbs./sq. ft.)	100 (14400)	300 (43200)
Max. gals. of mixing water per cubic yard	50	50
Lbs of cement per cubic yard, approximate	30	50
Lbs of fly ash per cubic yard, approximate	200	250
Lbs. of dry aggregate per cubic yard, approximate (assumed Sp.G. 2.67)	3200	3200

1. If air entraining or water reducing admixture is used for flowability, total water and aggregates may be adjusted for yield.
2. Coarse aggregate size of 1-1/2" minus assumed. For flowable or excavatable C.D.F., 3/8" minus or sand is recommended.
3. Weights may be adjusted for flowability and pumpability.

9-04.3 Joint Mortar, delete and add the following:

Mortar for hand mortared joints in District vaults shall be Kryton Krystol T1/T2 or approved equal. Mortar must prevent the seepage of water into the vault. Contractor to follow all manufacturer recommend preparation and installation guidelines.

9-13 RIP RAP, QUARRY SPALLS, SLOPE PROTECTION, AND ROCK WALL

9-13.6 Quarry Spalls, delete and add the following:

Quarry spalls shall consist of 6-inch minus quarry rock having less than 5 percent passing the No. 4 sieve.

9-30 WATER DISTRIBUTION MATERIALS

9-30.1(1) Ductile Iron Pipe, supplement with the following:

Pipe shall be new, seal coated, thickness Class 52, conforming to AWWA/ANSI C151/A21.51-96. Cement- mortar Lining shall be 1/16 cement-mortar conforming to AWWA/ANSI C104/A21.4-95. Joints shall be push-on type with rubber gasket which fits into an annular groove, except as noted on plans. Joints at valves or fittings may be mechanical joint or flanged depending on Specification and Drawing requirement. Restrained joint water pipe, where shown on the Drawings, shall be in accordance with one of the alternate types of restrained joint water pipe as specified in this document.

Where shown on the Drawings, restrained joints shall be used. Restrained joints shall be U.S. Pipe Field Lock gasket system, Megalug or approved equal as determined by the Engineer.

9-30.2 Fittings, supplement with the following:

Fittings for ductile iron pipe shall conform to Section 9-30.2(1) of the General Conditions, and may be flanged, mechanical joint or plain end as required. Fittings shall be furnished with standard cement mortar lining with seal coat **for those fittings manufactured in the United States.**

Fittings manufactured outside of the United States and approved by the District must have a fusion-bonded epoxy coating in accordance with ANSI/AWWA C116/A21.16 which shall be applied to the interior and exterior surfaces.

All fittings shall be manufactured in the United States of America. Ductile Iron fittings may conform to the requirements of AWWA C153/A21.53-84 where shown on the Drawings. Mechanical joint restraint shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Glands shall be manufactured of ductile iron conforming to ASTM A 536-80 Grade 65-42-12. Restraining devices shall be of ductile iron, heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts, sized same as tee-head bolts, shall be used to insure proper actuating of restraining devices. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1 and shall be EBAA Iron, Inc., MEGALUGTM, Uni-Flange Series 1400, Smith-Blair 913 w/anchor bolts or equivalent. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1 without the use of auxiliary blocking or restraints. Mechanical joint restraint requiring a follower gland and wedge action restraint shall be MEGALUGTM 1100 Series, Uni-Flange Series 1400, Smith-Blair 913 w/anchor bolts or equivalent.

9-30.2(7) Bolted, Sleeve-Type Couplings for Plain End Pipe, delete the first sentences and replace with the following sentence:

Couplings shall be ductile iron, ROMAC Style 501 or equivalent, or the equivalent for unequal pipe sizes, as required by field conditions.

9-30.3 Valves

9-30.3(1) Gate Valves (3 inches to 12 inches), supplement with the following:

Gate Valves shall conform to AWWA C509. Valve end connections may be flanged or mechanical joint, as required. Operating nuts for non-rising stem gate valves installed are to be extended to within 18 to 24 inches of the finish grade. All gate valves shall be resilient wedge seated type of valves.

9-30.3(2) Gate Valves (14 inches and 16 inches), supplement with the following:

Gate Valves shall conform to AWWA C509. Valve end connections may be flanged or mechanical joint, as required. Operating nuts for non-rising stem gate valves installed are to be extended to within 18 to 24 inches of the finish grade. All gate valves shall be resilient wedge seated type of valves.

9-30.3(2)A Gate Valves (18 inches to 30 inches), (New Section):

Gate Valves shall conform to AWWA C509. Valve end connections may be flanged or mechanical joint, as required. Operating nuts for non-rising stem gate valves installed are to be extended to within 18 to 24 inches of the finish grade. All gate valves shall be resilient wedge seated type of valves. Gate valves shall be for horizontal buried installation with bevel gearing. Gate valves shall be U.S. Pipe or approved equal.

9-30.3(4) Valve Boxes, add the following paragraph:

Cast iron valve box with lid marked "Water", as manufactured by Olympic Foundry, Tyler or approved equal. A locking cover shall be installed in high traffic areas or as directed by the Engineer or Owner. Each box shall be adjusted to match the finish grade at the valve location. All valve box covers shall be painted as directed by the Owner for no additional cost.

9-30.3(5) Valve Marker Posts, delete the paragraph and replace with the following paragraph:

Refer to Section 7-12.3(01) as modified in these Specifications.

The following items shall be painted as shown:

Item	Paint	Color	Number of Coats
Valve Marker Posts	Exterior Enamel Paint	Blue	2
Stenciled Notations	Exterior Enamel Paint	White	1

9-30.3(6) Combination Air Release/Air Vacuum Valves, supplement with the following:

Air and Vacuum valve shall be of the type that automatically exhausts large quantities of air during the filling of the pipeline and allowing air to re-enter during the draining or when a negative pressure occurs. The inlet and outlet of the valve shall have the same cross sectional area.

The float shall be guided by a stainless steel guide shaft and seated against a synthetic seat. The valve shall have NPT inlets and outlets and they shall be constructed of cast iron with stainless steel trim and buna-NC seating. Valve should be manufactured by Val-Matic Valve and Manufacturing Corporation, APCO Model No. 143C, or approved equal.

9-30.3(8) Tapping Sleeve and Valve Assembly, supplement with the following:

9-30.3(8)A Tapping Gate Valves

1. Valves shall be of the resilient-seated variety and shall meet or exceed the requirements of AWWA C509. Valves shall be coated both internally and externally with a fusion bonded epoxy coating meeting or exceed AWWA C550. Double metal disc or solid metal wedge valve designs are not acceptable.
2. Bore diameter shall be equal to, or preferably larger than, nominal valve size, allowing for the use of a ½" undersize shell cutter or larger.
3. For applications on mains where working pressures are anticipated to exceed 175 PSI ductile iron valve rated for 250 PSI or higher working pressure shall be utilized. Valve shall be U.S. Pipe "Metroseal 250" or equivalent.
4. All valves shall be new and of current manufacture, and shall display a current casting date.
5. For applications below 175 PSI valves of the following manufacture, or equivalent, are acceptable providing they meet the requirements of paragraphs 1. and 2. above. Clow, Darling, M & H, Mueller, U.S. Pipe, Waterous.

9-30.3(8)B Tapping Sleeves

1. All tapping sleeves shall be rated by their manufacturer for a working pressure of at least 200 PSI. Acceptable sleeve types are as follows:

"Mechanical Joint" Style: May be of either ductile or grey iron construction. Ductile iron is preferred. Acceptable for both size-on-size and non-size-on-size applications on cast iron and ductile iron, mains through 12" on 12". All mechanical joint sleeves shall be new and of current manufacture, and shall display a current casting date. Clow, Darling, Dresser, Mueller, Tyler, U.S. Pipe, Waterous, or equivalent.

"Stainless Steel" Style: OWNER prefers all stainless construction in this style. Stainless sleeves with ductile iron (but not carbon steel) flanges are also acceptable. Acceptable for all applications on ductile iron, cast iron, and A/C mains through 12" on 12". Must meet working

pressure requirement of 1. above. JCM, Romac, or approved equal.

"Fabricated Steel" Style: Must be fusion epoxy coated in accordance with AWWA C213. Acceptable for all taps on ductile iron or steel pipe, and for non-size-on-size applications of any size combination on cast iron pipe. Required where applicable for lines with pressures in excess of 175 PSI. JCM, Romac, or equivalent.

9-30.3(9) Check Valves, (New Section):

Check valves shall be in accordance with AWWA C508. They shall be Globe Style check valves with flanged or mechanical joint ends as indicated on the drawings. The clappers for the valve shall be all bronze or bronze faced. Gate Valve shall be as manufactured by Val-Matic or approved equal.

9-30.3(10) Water Pressure Regulating Valve, (New Section):

The valve shall be shall be flanged at both ends, Class 125 ASA drilling, with cast iron body. Valve shall be hydraulically operated, single seat, diaphragm-actuated, globe valve with stainless steel trim. Seat ring shall be replaceable. The diaphragm shall be fully guided top and bottom. All necessary repairs shall be possible without removing the valve from the line. Packing glands are not permitted. Disc shall be synthetic rubber and have a rectangular cross section. The stem shall be guided by a bearing in the valve cover and an integral bearing in the valve seat. There shall be no piston operating the main valves.

Valves shall be designed to maintain a constant downstream pressure regardless of varying inlet pressure. They are to be used to handle clean, cold water. The valve shall maintain a constant upstream pressure by bypassing or relieving excess pressure and shall maintain close pressure limits without causing surges. If upstream pressure decreases below the spring setting, the valve shall close.

A full range of spring settings shall be available in ranges from 0-450 psi. Valve shall be set to open and relieve pressures higher than 135 psi.

The pressure regulating valve shall be CLA Valve No. 90 or approved equal. The pressure relief valve shall be a Cla-Val Co. Model No. 50-01 Pressure Relief Valve with X10I Position Indicator as manufactured by CLA Val Co.

9-30.3(11) Combination Back Pressure Sustaining and Antisiphon Valve, (New Section):

Provide combination backpressure sustaining and anti-siphon valve fabricated from PVC or CPVC as required, Type, Grade I, and designed to prevent siphoning in system where discharge pressure may drop below suction line pressure. The valve shall also function as a backpressure sustaining valve to maintain a constant backpressure on the metering pump. Provide valve designed for in-line operation and equal to Griffco Valve with 10-150 psi pressure adjustment. Provide necessary piping for complete installation

9-30.5 Hydrants, add the following paragraphs:

OWNER's requirements are given below. These requirements supplement and, in case of a conflict, supersede Section 9-30.5.

Hydrants shall conform to the latest revision of AWWA Specification C502, except as herein modified. Minimum of 5-1/4 inch main valve opening, 6-inch mechanical joint outlet, MEGALUG™ glands, furnished with 6-inch auxiliary gate valve flanged to main tee and valve box; riser to suit trench depth at each installation. Furnished with breakoff flange on barrel and break off coupling for the stem. Furnished with two (2) 2-1/2 inch hose connections, one (1) larger pumper connection and 1 1/4" pentagonal operating nuts which turn counterclockwise to open; all according to the OWNER's standards.

Nozzles shall be fitted with renewable bronze nipple locked in place.

All fire hydrants shall be M & H Style 929 Reliant, Mueller Centurion Model A-423 or Clow Medallion F-2545.

		Color	# of Coats
Hydrant Coatings	Heavy Duty, Brush-Type Primer		1
	Enamel	Yellow	2

END OF DIVISION 9