

SPECIAL PROVISIONS

A. Standard Specifications

The “1998 Standard Specifications for Road, Bridge, and Municipal Construction” prepared by the Washington State Department of Transportation and the Washington State Chapter of the American Public Works Association (APWA) and all amendments thereto, including the “Division One Supplement”, shall be hereinafter referred to as the “Standard Specifications” together with the laws of the State of Washington and the ordinances of the City of Orting, so far as applicable, are hereby included in these Specifications and shall apply as though quoted in their entirety.

B. Special Provisions

The following Special Provisions replace, amend, or supplement the Standard Specifications. All provisions of the Standard Specifications, which are not so amended, replaced, deleted, or supplemented, remain in full force and effect. In case of conflict, the Special Provisions shall take precedence over the Standard Specifications. Additional Special Provisions shall be included as part of the Special Provisions and are considered to be a supplement.

C. Division I

These Special Provisions contain two of Division I; those sections are IA and IB. All work in which the contractor has a contract with the City, please refer to IA. Developer extensions and plat improvements, please refer to IB and the City's Developer Extension Agreement (separate document).

**DIVISION 1A
GENERAL REQUIREMENTS**

FOR PUBLIC WORKS PROJECTS CONTRACTED BY THE CITY OF ORTING

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

Contracting Agency

Delete and add the following:

“City of Orting
P.O. Box 489
Orting, WA 98360”

Laboratory

Delete and add the following:

“Private testing laboratory employed by the Engineer or City.”

Secretary, Secretary of Transportation

Delete and add the following:

“City of Orting Council”

State

Delete and add the following:

“City of Orting
P.O. Box 489
Orting, WA 98360”

acting through its representatives

The change from “State” to “City of Orting” is intended to be used only when it refers to the Owner. This substitution is not to be construed to apply to Washington State laws or statutes. All applicable State of Washington or federal laws and regulations shall remain in force.

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Section 1-02.1 is deleted.

1-02.4(1) General

Add the following to the end of Section 1-02.4(1):

The Contractor shall verify the locations and elevations of all existing pipelines, structures, grades, and utilities prior to construction. The City assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available.

The Contractor shall be responsible for any breakage of the existing utilities or services, publicly or privately owned, resulting from his operations, and shall hold the City and its agents harmless from any claim resulting from disruption of or damage to the same.

1-02.4(2) Subsurface Information

Delete section and replace with the following:

Contractor is responsible for knowing, understanding, and being familiar with the local subsurface conditions. The City assumes no responsibility for soil conditions or groundwater level.

1-03.8 Notice to Proceed (New Section)

Written notice to proceed will not be given until a Preconstruction Meeting has been held. No work shall be performed until the notice has been issued.

1-05 CONTROL OF WORK

1-05.11 Final Inspection

Add the following sentences:

“The Contractor shall notify the Engineer in writing at least three (3) days prior to completion of all work and shall certify that all items have been accomplished ready for final inspection. If all items are not completed and ready for final inspection, no inspection will be made at that time. The Contractor shall reschedule the final inspection as indicated above.”

1-05.12 Final Acceptance

Delete the third sentence of the first paragraph.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.13 Contractor's Responsibility for Work

1-07.13(1) General

Add the following:

The Contractor shall submit a performance bond in accordance with City of Orting, State of Washington, Public Work performance and payment bond. The performance bond amount shall be set by the City.

Whether or not there appears here or elsewhere herein specific reference to guarantees of all items of materials, equipment, and workmanship, they nevertheless shall be so guaranteed against mechanical, structural, or other defects for which the Contractor is responsible that may develop or become evident within a period of one year from and after acceptance of the work by the City. Such guarantees shall include care of backfilling of trenches or at structures should the fill settle to such extent as to require refilling or resurfacing roadway surfaces to restore the original or intended condition or grade.

This guarantee shall be understood to imply prompt attention to any remedy of such defects as those mentioned above if and as they occur after the Contractor shall have written notice of their existence. If the defect, in the opinion of the Owner, is of such nature as to demand immediate repair, the Owner shall have the right to correct and cost thereof shall be borne by the Contractor.

To support the above guarantee, the Contractor's performance bond shall remain in full force and effect for one year following the acceptance of the project by the Owner. The bond shall be executed by a surety company authorized to do business within the State of Washington and it shall be subject to the approval of the attorney for the Owner.

1-07.15 Temporary Water Pollution/Erosion Control

Add the following to the end of this section:

The Contractor shall employ Best Management Practices as outlined in the DOE Stormwater Management Manual, "Erosion and Sediment Control," Volume II.

1-07.16 Protection and Restoration of Property

1-07.16(5) Utility Service (New Section)

The Contractor shall maintain the operational service of water distribution, storm drainage and sanitary sewer service systems in as continuous a manner as possible. Where services are to be shut down, affected parties shall be notified in writing at least 48 hours and not more than 72 hours in advance of the time and period of shut-down. The Contractor shall make every effort to keep shut down schedules to periods of anticipated minimum usage and for the least period of time. No utility service will be allowed to be shut down for more than 4 hours per day.

Should a shutdown of any utility be required for a period in excess of 4 hours, the Contractor shall take necessary measures to provide temporary service. The method of all temporary utility services shall first be approved by the City of Orting.

1-07.16(6) Restoration of Property (New Section)

The Contractor shall protect property in the vicinity of the work site and in instances of destruction or damage, restore the item to pre-construction condition.

1-07.17 Utilities and Similar Facilities

Section 1-07.17 of the Standard Specification is supplemented by the following:

Locations and dimensions which may be provided by the City for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification. The contractor shall protect all private and public utilities from damage resulting from the work.

The Contractor shall call the utility relocation center (one-call center) at 1-800-424-5555, for field location, not less than two nor more than ten business days before the scheduled date for commencement of excavation which may affect under ground facilities, unless otherwise agreed upon in writing by the parties involved. A business day is defined as any day other than Saturday, Sunday, or a legal local, state or federal holiday.

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.

1-07.18 Public Liability and Property Damage Insurance

Supplement Section 1-07.18 with the following:

The Contractor shall, before commencing work on said project, file with the City of Orting, certificate or certificates of insurance on a form acceptable to the Owner showing insurance coverage in force prior to or at the start of construction and including the City of Orting and its agents as an additional named insured.

Unless otherwise specified, the public liability and property damage insurance limits for each accident or occurrence shall be not less than \$1,000,000 for bodily injury, including accidental death to any one person and in a total amount of not less than \$2,000,000 bodily injury and property damage for each accident or occurrence. At the discretion of the City, such limits may be increased or decreased provided that any decrease shall not reduce such limits below the minimum limits provided by the City of Orting Municipal Code.

Insurance required to be obtained and maintained by the Contractor include: Comprehensive automobile, general comprehensive liability, Contractor's liability insurance covering risk of loss or damage to premises and property on which work is to be performed, and property casualty insurance as to the perils of fire, extended coverage of vandalism and malicious mischief.

1-07.22 Use of Explosives

Delete the entire section and add the following:

“No explosives shall be used without written permission from the City of Orting and the Orting Fire Department.”

1-07.23 Traffic Control

When performing work within the public roadway, the Contractor shall comply with all requirements of Section 1-07.23 of the Standard Specifications and the latest edition of the Uniform Traffic Control Manual.

1-07.23(1)A Residential Access (New Section)

The Contractor shall notify any affected property owner at least 24 hours and not more than 36 hours prior to construction that would block access to said property. Blockage must occur only during construction hours and shall not remain overnight. Contractor shall maintain or provide immediate access for emergency vehicles at all times.

1-07.28 Responsibility for Damage; Indemnification (New Section)

The Contractor hereby agrees to save the City harmless from all loss or damage occasioned to the City or to any third person by reason of any acts or admissions on the part of the Contractor, subcontractors, agents, employees, or persons working directly or indirectly in the performance of the contract, including acts or omissions attributable jointly the City, its officers, agents or employees, and shall, after reasonable notice thereof, defend and pay the expense of defending any suit which may be commenced against the City by any third person alleging injury by reason of such acts of omissions, and will pay any judgment which may be obtained against the City in such suit. The Contractor agrees to repair and replace all property of the City and all property of others damaged by himself, his employees and subcontractors and agents.

It is understood that the whole of the work is to be done at the Contractor's risk, and that he has familiarized himself with the conditions of excavation, backfill, materials, climatic conditions and other contingencies likely to affect the work and has made his bid accordingly and that he is to assume the responsibility and risk of all loss or damage to materials of work which may arise from any cause whatsoever prior to completion.

1-08 PROSECUTION AND PROGRESS

1-08.3.1 Contractor's Weekly Activity Schedule

In addition to the requirements of Section 1-08.3, the Contractor shall submit a weekly activity schedule. The schedule shall indicate the Contractor's proposed activities for the forthcoming week to permit the City of Orting to more efficiently and effectively implement the contract engineering and inspection for the Contractor's operation.

The written weekly activities schedule shall be submitted to the City of Orting by the weekly construction meeting preceding the indicated activities.

1-08.4 Prosecution of Work

Replace the first sentence with the following:

Contractor, and its duly appointed superintendent, shall attend a weekly construction meeting at City Hall, at a timetable to be specified by the City.

1-08.5(1) Work Hours (New Section)

Work hours shall be limited to weekdays only, between the hours of 7:00 a.m. and 6:00 p.m. unless otherwise approved in advance by the City of Orting. In addition, no work shall be done that affects SR 162 during normal commuting hours: 6:00 a.m. to 8:00 a.m. and 4:00 p.m. to 6:00 p.m.

1-08.10(4) Arbitration of Disputes

Delete the entire section and add the following:

“All claims, counter-claims, disputes and other matters in question between the Owner and the Contractor arising out of or relating to this agreement or the breach thereof will be decided by arbitration if the parties hereto mutually agree, or in a court of competent jurisdiction within the County in which the City is located. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the Engineer's decision.”

1-99 APWA SUPPLEMENT

The Supplement is included in the Special Provisions except as modified, deleted or supersede herein.

**DIVISION 1B
GENERAL REQUIREMENTS**

FOR DEVELOPER EXTENSION AND PLAT IMPROVEMENT PROJECTS

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

Contract

Delete and add the following:

“The written agreement is between the Developer and the Contractor. No contractual relationship exists between the City and the Contractor.”

Contract Plans

Delete and add the following:

“The plans and specifications approved by the City.”

Engineer

Delete and add the following:

“The City's Engineer or Consultant.”

Inspector

Delete and add the following:

“The City's designated inspector.”

1-02 BID PROCEDURES AND CONDITIONS

Section does not apply. Delete entire section.

1-03 AWARD AND EXECUTION OF CONTRACT

Section does not apply. Delete entire section.

1-04 SCOPE OF WORK

Replace the entire section with the following:

“If any conflict exists between the approved Plans/Specifications and these Special Provisions/Details, the latter shall take precedence. Conflicts shall be resolved by the Engineer.”

“The Contractor shall perform final cleanup within the right-of-way to the Engineer's satisfaction. The Contractor shall maintain the right-of-way to provide safe travel to the public. Roadways shall be cleaned off at the end of each workday.”

1-05 CONTROL OF WORK

1-05.1 Authority of Engineer

Delete and replace with the following:

“The Engineer shall be satisfied that all work is being done in accordance with the approved Plans and the standards of the City. The decision of the Engineer is final on all questions concerning quality and acceptability of work.”

1-05.2 Authority of Assistant's Inspections

Replace the word “contract” with the following:

“Approved Plans/Specifications and City Standards”

1-05.3 Plans and Working Drawings

Delete and replace with the following:

“City-approved Plans/Specifications”

1-05.4 Conformity With and Deviations From Plans and Stakes

Delete this section and replace with the following:

“The Developer's Engineer shall provide horizontal control during construction. The Contractor shall take full responsibility for detailed dimensions and elevations required to place all improvements as shown on the Plans.”

1-05.5 Pre-Construction Meeting (New Section)

Written notice to proceed will not be given until a Preconstruction Meeting has been held. No work shall be performed until the notice has been issued.

1-05.6 Inspection of Work and Materials

Replace the first and second paragraphs with the following:

“The Engineer or inspector may inspect all work and materials for conformity with Plans/Specifications or City Standards. Contractor shall provide any equipment needed for said inspection. Contractor shall supply any materials when requested by Engineer for testing.”

Replace the third and fourth paragraphs with the following:

“The Contractor shall correct any substandard work or materials as determined by the Engineer. The Contractor shall remove or uncover any area of completed work as requested by the Engineer and restore said area to required standards.”

Delete remaining paragraphs.

1-05.7 Removal of Defective and Unauthorized Work

Replace with the following:

“At the direction of the Engineer, the Contractor shall immediately remove and replace all defective work or materials that do not comply with City Standards.”

Delete Sections 1-05.9 through 1-05.12.

1-05.13 Superintendents, Labor, and Equipment of Contractor

Delete section with the following exceptions:

- First paragraph
- First sentence, second paragraph

Delete Sections 1-05.14 and 1-05.15.

1-06 CONTROL OF MATERIAL

Replace entire section with the following:

“Prior to construction, Contractor shall deliver to City information regarding all proposed materials and equipment to be used on the project. Contractor shall not proceed until Engineer has reviewed and approved all materials and equipment. Information shall include standard manufacturer's data and as requested by the Engineer.”

For Special Facilities (i.e., pump stations), the following materials shall be supplied:

- A. In addition to notification of material suppliers and fabricators, the Contractor shall also furnish for the Engineer's review and approval all required shop drawings.

Shop drawings are defined as drawings or data which illustrate how specific items shall be fabricated, manufactured, or installed. Shop drawings shall be required for all shop or field fabricated or manufactured items and shall include all information necessary for the fabrication and installation of the item. The information shall include:

1. For fabricated items or those constructed in place, show component sizes, layout, materials and connection details including connectors or weld type, reinforcement schedules and sizes.
2. Shop drawings for reinforced concrete structures shall include, but not be limited to, reinforcement bending and placing drawings.
3. Manufacturers standard catalog information and details may be submitted; however, standard manufacturer information and advertising literature may not necessarily be sufficient.

In addition to the above, the Contractor shall note any required exceptions to the Contract and require deviations from the Contract Plans and any required modifications to other details that would result from the exceptions or deviations.

B. Shop Drawings Submittal Procedure.

1. The Contractor shall review and sign all shop drawings to certify that he has reviewed the shop and supplemental drawings submittal and submit them to the Engineer attached to a transmittal form noting the item name, quantity, location by drawing number and section in the Specification where the item is described. The Contractor shall clearly note on shop drawings, and in writing at the time of submission, any changes or deviations from the Plans or Specifications.
2. The Contractor shall submit to the Engineer three copies of all shop drawings for review and approval. Shop drawings for major equipment items should be submitted in one package to allow a complete check. One copy should be sent to the City.
3. Following review of the shop drawings, the Engineer will indicate appropriate action to be taken by the Contractor and return one copy to the Contractor. In the event that revisions are required, the Contractor shall follow the same procedure for the resubmittal as for the original submittal. For scheduling purposes, the Contractor shall allow the Engineer a minimum of ten (10) days for each review.
4. The Contractor shall be responsible for insuring that items submitted for shop drawing submittal meet the requirements of the Contract Documents and that the shop drawings information is complete and accurate.
5. Approval of the shop drawings by the Engineer is only for general conformance with the design concept of the product and general compliance with the information given in the approved Plans. Any action shown is subject to the requirements of the Plan and Specifications and City Standards. The Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, coordination of his work with that of all other trades and the satisfactory performance of his work.

- C. Samples: Samples are defined as physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged. Samples submitted shall be of sufficient size and quantity to clearly illustrate functional characteristics of product or material and full range of colors available.

D. O&M Manuals: The Contractor shall assemble an operations and maintenance manual for the facility which shall include, as a minimum, the following:

1. Catalog cut sheets and individual O&M manuals for each piece and type of equipment installed.
2. Wiring diagrams and schematics for all electrical equipment.
3. Programming instructions for control of the equipment.

The Contractor shall provide six copies of the completed O&M manual to the Owner. Manuals shall be bound in a three-ring binder (K&M VB11-20 or equal).

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

Delete Sections 1-07.1 through 1-07.13

1-07.15 Temporary Water Pollution/Erosion Control

Add the following to the end of this section:

The Contractor shall employ Best Management Practices as outlined in the DOE Stormwater Management Manual, "Erosion and Sediment Control," Volume II.

1-07.16 Protection and Restoration of Property

1-07.16(6) Restoration of Property (New Section)

The Contractor shall protect property in the vicinity of the work site and in instances of destruction or damage, restore the item to pre-construction condition.

1-07.23 Traffic Control

1-07.23(1)A Residential Access (New Section)

The Contractor shall notify any affected property owner at least 24 hours and not more than 36 hours prior to construction that would block access to said property. Blockage must occur only during construction hours and shall not remain overnight. Contractor shall maintain or provide immediate access for emergency vehicles at all times.

1-07.23(3)C Traffic Control Plans

Add the following:

“Traffic control plans will be required when work will occur on existing right-of-way. Said plans will be submitted at the pre-construction meeting. Work shall not start until the City has approved the traffic control plan.”

1-08 PROSECUTION AND PROGRESS

Delete Sections 1-08.1 through 1-08.2 and 1-08.4 through 1-08.5 and 1-08.8 through 1-08.10

1-08.5 Time for Completion

1-08.5(1) Work Hours (New Section)

Work hours shall be limited to weekdays, between the hours of 7:00 a.m. and 6:00 p.m. unless otherwise approved in advance by the City of Orting. In addition, no work shall be done that affects SR 162 during normal commuting hours: 6:00 a.m. to 8:00 a.m. and 4:00 p.m. to 6:00 p.m. Work is permitted on Saturdays between the hours of 9:00 a.m. and 5:00 p.m. No work shall be done on City observed holidays without written approval from the City. All requested additional working days shall be given to the City 48 hours in advance of the holiday or weekend to be worked on. All inspection will be billed at time-and-a-half for a minimum of 4 hours.

Delete Section 1-09.

DIVISION 2

EARTHWORK

2-01 CLEARING, GRUBBING AND ROADSIDE CLEANUP

2-01.1 Description

Delete the third paragraph of this section and replace with the following:

“Roadside cleanup,” shall mean work required to give the construction activities completed an attractive, finished appearance.

2-01.2 Disposal of Usable Material and Debris

Delete the third paragraph of this section and replace with the following:

Refuse and debris shall be hauled to a waste site secured by the Contractor and shall be disposed of in such a manner as to meet all requirements of state, county, and municipal regulations regarding health, safety and public welfare.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

Supplement this section with the following:

The work shall consist of the removal and disposal or salvaging of existing improvements, including pavements, concrete road structures, pipe fittings, valves, fire hydrants, manholes, and other items necessary for the accomplishment of the improvement.

2-02.3 Construction Details

2-02.3(1) General Requirements

Supplement this section with the following:

The removal of street improvements shall be conducted in such a manner as not to damage utilities and any portion of the improvement that is to remain in place. Any deviation in this matter will obligate the Contractor at his own expense, to repair, replace or otherwise make proper restoration to the satisfaction of the City. Any dirt tracked onto the City right-of-way shall be cleaned off by a sweeper or other approved method by the end of that day's construction work.

When sawing of concrete or combinations of rigid materials is required, the depth of cut shall be such as will accomplish the intended purpose, and will be determined in the field to the satisfaction of the City of Orting.

2-02.3(3) Removal of Pavement

Delete this section and replace with the following:

The Contractor shall remove existing permanent type pavement as necessary for proper installation of the improvements.

Make a vertical saw cut between any existing pavement, sidewalk, or curb that is to remain and the portion to be removed.

2-02.3(8) Salvage (New Section)

Unless otherwise indicated in the construction plans or in the special provisions, all casting, pipe and other material of recoverable value taken from the discarded City-owned facilities shall be carefully salvaged and delivered to the City of Orting in good condition and in such order of salvage as the Engineer may direct. Materials and things deemed of no value by the Engineer shall be removed by the Contractor and becomes his property, to be disposed of at his discretion.

2-02.3(9) Waste Disposal (New Section)

Waste materials shall be hauled to a waste site secured by the Contractor and shall be disposed of in such a manner as to meet all requirements of state, county and municipal regulations regarding health, safety and public welfare.

2-04 HAUL

Delete this entire section.

DIVISION 5

SURFACE TREATMENTS AND PAVEMENTS

5-04 ASPHALT CONCRETE PAVEMENT

5-04.1 Description

Add the following:

Asphalt concrete pavement shall be Class B.

5-04.2 Materials

Supplement this section with the following:

Tack Coat

Tack coat shall be emulsified asphalt grade CSS-1 as specified in Section 9-02.1(6) of the Standard Specification and will be used at locations specified or as directed by the Engineer.

5-04.3 Construction Requirements

5-04.3(2) Hauling Equipment

Add the following to the first paragraph:

If truck has not used canvas to protect asphalt from weather during haul the Engineer, or its representative, reserves the right to reject the load.

5-04.3(5)A Preparation of Existing Surfaces

Add the following sentences to this section:

Tack coat shall be heated and applied to all joints between new and existing asphalt. Existing road surface shall be clean and free of all foreign debris prior to placement of tack coat.

Saw cut lines shall be in a straight line, 5 feet in length minimum.

5-04.3(5)C Crack Sealing

Delete the first sentence and replace with the following:

Contractor shall seal all asphalt concrete pavement joints. First all cracks and joints shall be cleaned with compressed air.

5-04.3(9) Spreading and Finishing

Supplement this section with the following:

Asphalt Concrete Pavement Class B

ACP Class B shall be placed to the compacted depths shown on the plans as leveling and wearing course. Asphalt over 3 inches in compacted depth shall be placed in two equal lifts. Placement shall be in accordance with applicable provisions of Section 5-04 of the Standard Specifications, except that longitudinal joints between successive layers of ACP shall be displaced laterally a minimum of 12 inches.

Feathering Asphalt Concrete Pavement

The Contractor shall feather the ACP in a manner to produce a smooth riding connection to existing pavements.

5-04.3(17) Paving Under Traffic

Add the following sentence to the second paragraph of this section:

The Contractor shall be responsible for opening newly placed pavement to traffic, unless otherwise directed by the Engineer. Traffic control where necessary shall be maintained during the curing period.

5-05 CEMENT CONCRETE PAVEMENT

5-05.3 Construction Requirements

5-05.3(22)A Existing PCC Pavement Replacement (New Section)

PCC pavement that is slated for removal and replacement shall be replaced with Class 3,000 LS concrete in accordance with Section 6-02.3(6) of the Standard Specifications.

DIVISION 7

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

7-02 CULVERTS

7-02.3(4) Removing and Relaying Culverts

Replace the first sentence of the first paragraph of this section with the following:

Where it is necessary to remove existing storm drain pipes for installation of improvements, the existing pipes shall be removed and relaid in accordance with these Specifications. All joints shall be made as directed by the Engineer to achieve a watertight joint.

Replace the second paragraph with the following:

All storm drain pipe removed and not relaid shall be disposed of by the Contractor, unless otherwise directed by the Engineer.

7-04 STORM SEWERS

7-04.2 Materials

Replace the third paragraph with the following:

Thermoplastic storm sewer pipe shall be smooth walled corrugated N-12 polyethylene pipe, shall conform to AASHTO M294 performance specifications, and be manufactured by Advanced Drainage Systems or approved equal. Fittings and cuppler joints shall be able to pass the low-pressure air test and conform to AASHTO M294 performance specifications. Cupplers shall be ADS Series 85 Integral Bell Type or approved equal.

7-05 MANHOLES

7-05.3 Construction Requirements

Replace the third paragraph and replace with the following:

All manholes shall be 48-inch diameter, pre-cast concrete manufactured by Pipe Inc., Associated Sand and Gravel, or approved equal.

Add the following to the fifth paragraph:

Ladder rungs shall be polypropylene coated conforming to ASTM D-4101. Coating shall not be field applied.

7-05.3(1) Adjusting Manholes to Grade

Supplement this section with the following:

All manholes, catch basins, grates, and valve boxes affected by the construction shall be adjusted to final grade. Covers shall not rock when seated in any position on the frame.

7-05.3(3) Connection to Existing Manholes

Supplement this section with the following:

The Contractor shall notify the city at least 24 hours prior to connecting to any existing utilities. Also see Section 7-17.3(2)G.

Excavate completely around the existing manhole to ensure against unbalanced loading on the manhole.

Keep the manhole in operation at all times and take precautions necessary to prevent any debris or other materials from entering the sewer.

Contractor may be required to install a tight pipeline bypass through the existing channel. If the connection is to a dead-end manhole, the outlet shall be plugged and sealed with cement grout.

The Contractor shall verify the existing manhole invert elevations prior to construction.

Bring laterals into the existing manhole so that the crowns of the two incoming pipes are at the same elevation unless otherwise specified.

Reshape the existing base to provide a channel equivalent to that specified for a new manhole.

The Contractor shall be responsible for repairing all damage to the manholes resulting from his operations.

7-08 GENERAL PIPE INSTALL

7-08.3(1)C Pipe Zone Bedding

Supplement this section with the following:

Pipe bedding shall conform to 9-03.12(3) and shall extend 6 inches above and below the pipe. The base of the excavation should be as dry as possible and all loosened soil, organic material and other debris removed. Any bedding material should be placed on a firm nonyielding, relatively dry subgrade. The top 6 inches of bedding should be contoured to fit the pipe.

Pipe zone material should be placed in layers not exceeding 6 inches (loose thickness), compacted to 90 percent density as the standard (ASTM D 1557), and should be brought up evenly on both sides of the pipe for its full length up to at least 6 inches above the top of the pipe. Compaction within the pipe zone should be accomplished with hand-operated lightweight equipment as approved by the pipeline manufacturer to avoid pipe damage.

7-08.3(2)H Sewer Line Connections

Supplement this section with the following:

Temporary connections shall be made to ensure that the side sewers can continue to be used. Said connections shall be constructed so that they will not leave permanent damage to the finished pipeline. Temporary connections which are visibly leaking will not be allowed.

7-03.3(2)I Side Sewer Connections

Supplement this section with the following:

Side sewer connections shall conform to Section 7-18.

7-08.3(3) Backfilling

Supplement this section with the following:

Select trench backfill shall conform to Section 9-03.19.

7-09 PIPE AND FITTINGS FOR WATER MAINS

7-09.2 Materials

Supplement this section with the following:

A. Pipe

Pipe installed shall be Class 50, or higher, ductile iron pipe as shown on the plans conforming to the requirements of Section 9-30.1(1).

Water service installed shall be 200 psi polyethylene pipe as shown on the Plans conforming to the requirements of Section 9-30.6(3)B.

B. Fittings

All water main fittings shall be ductile iron conforming to the requirements of Section 9-30.2(1), and shall be installed with appropriate thrust blocking or other approved means of restraints.

Following assembly, all fitting nuts, bolts, exposed threads and shackle rods shall be treated with two field coats of asphalt varnish, or other suitable material as approved by the project engineer. Couplers shall be further protected with plastic wrap as described in Section 7-11.3(3)A.

Joint restraints are to be mechanical joint retainer glands, manufactured from ductile iron to a minimum 60-40-12 grade. Set screws are to be manufactured from AISI 4140 steel, case and core hardened, unplated. Screws are to have breakable automatic torque caps. All sizes must be UL listed and meet all specifications of AWWA/ANSI C 111/A21 11-80 where applicable.

7-10 TRENCH EXCAVATION, BEDDING, AND BACKFILL FOR WATER MAINS

7-10.3 Construction Details

7-10.3(6)A Potholing (New Section)

At the direction of the Engineer, the Contractor shall pothole a minimum of 100 feet ahead of the pipe-laying operation on existing right-of-way to determine the exact horizontal and vertical location of existing utilities and determine if a conflict exists. If a conflict should exist, the Engineer shall be notified prior to any change in water line grade.

7-10.3(7) Trench Excavation

Supplement this section with the following:

Where indicated on the plans or directed by the Engineer, the Contractor shall excavate around trees with hand tools to prevent damage to the root system.

7-10.3(10) Backfilling Trenches

Supplement this section with the following:

Backfill shall be bank run gravel for trench backfill free of organic materials, conforming to the requirements of Section 9-03.19 and the Standard Details.

Open excavations will not be allowed to be left during non-working hours. All open excavation shall be backfilled or covered with steel sheets with appropriate traffic warning signs.

Replace the second sentence of second paragraph of this section with the following:

Atop the pipe zone select backfill material should be placed in 8-inch thick layers, loose depth, and compacted to at least 90 percent of the ASTM D 1577 as the standard. In pavement areas this should be increase to 95 percent for the top two feet of backfill (immediately underlying pavement base course).

Supplement this section with the following:

Import trench backfill shall conform to Section 9-03.19.

All native material removed from the trench shall be disposed of at a site secured by the Contractor.

7-10.3(12) Compaction Testing (New Section)

The Contractor shall excavate to depths and locations when and as directed by the Engineer to allow for compaction tests. The request for compaction tests shall be made in writing two working days prior to the need. Shoring shall be supplied by the Contractor as required.

For non-Public Works contract, all testing shall be at the Developer's expense.

Any areas which fail to meet compaction requirements shall be retested. For public works contracts, any retesting shall be at the Contractor's expense.

No paving will be allowed until trench compaction has been tested and accepted.

7-11 PIPE INSTALLATION FOR WATER MAINS

7-11.3(9)A Connections to Existing Mains

Supplement this section with the following:

Connections to existing water mains shall be made in accordance with the standard details and the provisions of Section 7-11.3(9), and shall not be made without prior approval of the Engineer.

Connections to existing AC (asbestos cement) pipe shall be performed by approved methods by qualified personnel in strict accordance with the provisions of all applicable laws, codes, and regulations, particularly the provisions of the Washington Administrative Code regarding asbestos materials.

7-11.3(10) Detectable Marking Tape

Replace this section with the following:

All new services shall be paralleled by #12 AWG insulated copper wire taped at not less than 10-foot intervals to the top of the pipe.

7-11.3(11) Hydrostatic Pressure Test

Supplement this section with the following:

The water main shall be pressure tested in accordance with Section 7-11.3(11) of the Standard Specifications.

Temporary lines used for pressure testing and flushing shall be removed in their entirety following successful testing. The corporation stop shall be left exposed so that the project engineer may verify that it is not leaking prior to final backfilling. Any visible leakage shall be the responsibility of the Contractor to repair by methods approved by the Engineer.

7-11.3(11)A Testing Extensions From Existing Mains

Add the following after the last paragraph:

When an extension greater than 18 feet is made from an existing valve, or from a section of main without services which can be isolated by an existing valve, the Contractor may have the option of pressure testing the existing section or valve to eliminate the need for a final connection by pretested prechlorinated pipe, subject to the consent of the Engineer.

In order to ensure the integrity of the existing valve and prevent possible cross-connection hazards, the existing section or valve must be pressure tested prior to connecting the new

main. Subsequently, the connected new construction must be pressure tested together with the connected pretested section.

In electing and receiving consent to utilize the method of pretesting and direct connection, the Contractor retains all responsibility for successful final testing of the completed new construction and assumes all risk for damages which may be caused to the existing system valves, piping, or appurtenances.

7-11.3(12) Disinfection of Water Mains

Supplement this section with the following:

All new pipe and appurtenances shall be disinfected, flushed, and tested in accordance with Section 7-11.3(12) before placing the mains into service. Samples will be collected and bacteriological tests obtained by the Project Engineer. The Contractor shall give a minimum of two (2) working days written notice prior to disinfection test is required and allow a minimum of five (5) working days for test results. No chlorinated water shall be directly discharged to the sanitary sewer or storm drainage system when flushing out the water main.

7-11.3(13) Thrust Blocking

Replace this section with the following:

Concrete thrust blocking or other suitable means of restraint approved by the project engineer shall be provided for all bends, reducers, tees, valves, caps, and plugs. Blocking shall be 3,000 psi concrete.

Concrete blocking shall bear against solid undisturbed earth at the sides and bottom of the trench excavation and shall be shaped so as not to obstruct access to the joints of the pipe or fittings.

The exposed portions of any rebar used in thrust blocks shall be field treated with two coats of asphalt varnish. All fittings and valves shall be protected from contact with the concrete with plastic film.

7-12 VALVES FOR WATER MAINS

7-12.2 Materials

Supplement this section with the following:

A. Gate Valves

Gate valves shall be resilient seat, complying with AWWA C509 and C550, non-rising stem type opening counterclockwise. Valves shall be installed with cast iron boxes with the lids marked "Water." The valves shall be provided with asphalt or concrete pads as indicated on the standard details.

7-15 SERVICE CONNECTIONS

7-15.1 General

Replace this section with the following:

This work consists of installing the service connection from the new water main to the customer's service line with fittings required to make a watertight connection.

7-15.2 Materials

Supplement this section with the following:

Corporation Stops and Service Saddles

Service saddles shall be a painted saddle with a single stainless steel strap. Castings shall be high tensile ductile (modular) iron and shall meet the requirements of ASTM 536-71, and shall be protected with corrosion resistant paint. All bolts, nuts, and washers shall be stainless steel; all stainless steel shall be type 304 (13-8). Corporation stops shall be plug-type with cc inlet and IPT outlet Mueller Model Number H-15005, or approved equal.

7-17 SANITARY SEWERS

7-17.2 Materials

Replace section with the following:

Pipe used for sanitary sewers shall be:

Solid Wall PVC Sanitary Sewer Pipe per 9-05.12(1)

7-17.3(2) Cleaning and Testing

Supplement this section with the following:

Gravity sewer pipe shall be subject to low pressure air test per Section 7-17.3(4)E. Contractor shall furnish all equipment and personnel for conducting the test. All tests shall be done under observation of the inspector. Contractor shall give inspector 24-hour written notice prior to conducting test.

All wyes, tees, and end of side sewer stubs shall be plugged with flexible joint caps, or acceptable alternates, securely fastened to withstand the internal test pressures. Such plugs or caps shall be readily removable and their removal shall provide a socket suitable for making a flexible jointed lateral connection or extension.

Immediately following the pipe cleaning, the pipe installation shall be tested with low-pressure air.

A water test of all new manholes is also required. The water test shall be made by the Contractor first by filling the manhole up with water and letting it sit to allow the water to saturate the concrete. After the saturation period, the manhole shall be filled to the top of the cone. The water cannot drop more than 0.05 gallons in 15 minutes per foot of head above invert to pass.

Contractor shall be responsible for maintaining service during manhole and sewer testing.

7-17.3(2)H Television Inspection

Delete the first paragraph and supplement with the following:

The Contractor shall give the Engineer a 48-hour written notice prior to conducting the video inspection.

After cleaning the new sewer pipe, passing the air test, and passing the compaction testing on the trench backfill, the Contractor shall make a video recording (DVD format) of the new sewer main and side sewers using remote camera normally used for said application and deliver the tape, and associated written transcript, to the engineer within 48 hours of performing the video recording.

Television inspection of the sewer main shall include a 1-inch sewer ball attached in front of the camera to allow for inspection of the depth of water in low points in the sewer pipe. Low points exceeding ½ inch shall be repaired. The inspection will be done one manhole section at a time, and the flow in the section being inspected shall be suitably controlled as necessary to observe the depth of flow on the 1-inch sewer ball.

The television camera used for the inspection shall be one specifically designed and constructed for such inspection with a rotating camera capable of looking into the side sewers from the main. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe.

The camera shall be operative in 100 percent humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the Engineer, and, if unsatisfactory, equipment shall be removed, and no payment will be made for an unsatisfactory inspection.

Television inspection of the sewer main and side sewers shall be incidental to the Contract unit price for PVC sanitary sewer pipe 8-inch diameter.

7-18 SIDE SEWERS

7-18.1 Description

Replace this section with the following:

The work shall consist of reconnecting existing side sewers to the new side sewers at the right-of-way, and extending new side sewers to the right-of-way from the new sewer.

7-18.2 Materials

Replace this section with the following:

Side sewers shall be 6" PVC conforming to Section 9-05.12. Contractor shall be responsible to have fittings available for connecting to existing side sewers.

DIVISION 8

MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL

8-01.3(2) Topsoil

Supplement this section with the following:

All damage occurring to existing roadbeds, shoulders, walks, curbs, lawn, planting areas or other existing adjacent structures or areas due to the Contractor's operation in hauling and placing the topsoil shall be repaired by the Contractor. All topsoil shall be Type A or native topsoil as approved by the City.

8-01.3(3) Miscellaneous Erosion Control (New Section)

Contractor shall take necessary precautions and use the Best Management Practices to prevent sediment from construction activities from entering into storm water systems or natural waterways and from being carried away from the construction area by storm water.

All catch basins shall have filter fabric installed over the inlet to prevent sedimentation from entering the storm system.

8-02 ROADSIDE PLANTING

8-02.3(14) Lawn Installation

Supplement this section with the following:

Areas to receive new sod shall be cleared and grubbed, and leveled to a depth of 3 inches below grade.

Before placing of planting soil, areas shall be cultivated to a depth of 3 inches unless otherwise specified, or as ordered by the Engineer. Cultivation of the soil may be done by disc, spring-tooth harrow, rototiller, or similar equipment.

The area shall be raked to make it smooth and level. Topsoil shall be added as shown on the Plans, or designated by the Engineer.

Immediately prior to placement of sod, a 10-20-20 fertilizer shall be raked into the soil at a rate of 12 pounds per 1,000 square feet. The fertilizer shall be applied by approved hand or mechanical methods. Application in one direction will be sufficient.

The sod strips shall be placed within 48 hours after being cut. Dry soil shall be moistened by sprinkling prior to the laying of the sod. Sod shall be placed without voids, and have the end joints staggered. Butt joints shall be staggered and tightly fitted.

Following placement, the sod shall be rolled with a smooth-water-filled type roller. After rolling, the sod shall be heavily watered by sprinkling. Lawn areas shall be uniformly level.

The Contractor shall commence watering immediately as specified in Section 8-02.3(15). Watering and fertilizing shall be the Contractor's responsibility during the Lawn Establishment period. Watering shall be scheduled to prevent drying of joints between the sod strips.

8-02.3(15) Lawn Establishment

Supplement this section with the following:

Lawn Establishment shall consist of providing adequate and proper care for all public and private lawn areas installed within the limits of the project. The lawn establishment period shall begin immediately after the lawn has been planted and accepted in writing by the Engineer and shall extend through a minimum 30-day period or until the Actual Completion Date, whichever comes first.

During the lawn establishment period, the Contractor shall provide adequate and proper care to ensure the continuing healthy growth of the turf. Adequate and proper care shall include the labor, materials, and equipment necessary to keep the planted areas in a presentable condition.

8-02.3(17) Remove and Replace Sod (New Section)

The Contractor shall remove and replace sod within the project. All sod removed shall be protected during its period away from the native soil. The Contractor shall not allow sod to deteriorate and shall make every effort to save native sod. If sections of sod are damaged beyond reuse the Contractor shall replace with new sod.

8-161 ENGINE GENERATOR (New Section)

8-161.1 General

8-161.1(1) Description of Work

- A. This entire system shall be built, tested, and shipped by the manufacturer, who is currently engaged in the production of such equipment. All applicable licensing fees shall be paid by the Contractor and the units shall be ready for street use at the time of delivery. The system shall be a package of new and current equipment consisting of:

1. A diesel engine driven electric plant to provide emergency power.
2. Engine mounted start-stop and control system.
3. Generator housing.
4. Mounted accessories as specified.

8-161.1(2) Rating

- A. The units shall be rated at 480 Y/277 volts, 3-phase, 4-wire, 60 Hz, and 1800 rpm.

8-161.1(3) Submittals

- A. The Contractor shall furnish six copies of the following information on the generator with its accessories in one complete submittal to the Engineer for review.
 1. Shop drawings of the generator showing all equipment being supplied.
 2. Interconnecting and wiring diagrams of all equipment.
 3. Drawings and/or literature describing auxiliary equipment to be furnished.

8-161.1(4) Operation and Maintenance Manuals

The Contractor shall furnish operation and maintenance manuals in accordance with Section 106.1.

8-161.1(5) Warranty

The manufacturer shall provide a warranty of all parts and shall service for a period of two years or 1500 hours of operation from date of Substantial Completion whichever occurs first.

8-161.1(6) Size

The E-G manufacturer shall guarantee that the proposed unit will carry the standby loads as shown on the one-line diagrams and as required by the City. Refer to pump station design and specification for connected loads. If a larger unit is provided, then the Contractor shall upsize all wire, conduit, and equipment as necessary.

8-161.2 Materials

8-161.2(1) Engine

The engine shall be a compression-ignition engine, two- or four-cycle, solid-injection engine of either in-line or V-type. The continuous power output capacity of the engine for standby applications shall not be less than 1.5 bhp/kw at synchronous speed, corrected to the specified application.

- A. Governor: Engine speed shall be governed by an electronic-type governor capable of maintaining engine speed such that generator output frequency is held to within 3 percent of the 60 cycles per second from no-load to full-load. The frequency at any constant load, including no-load, shall be maintained within a steady-state band width of ± 0.25 percent of the 60-Hz rated frequency. The governor shall not permit frequency modulation (defined as the number of times per second that the frequency varies from the average frequency in cyclic manner) to exceed one cycle per second.
- B. Fuel System: The engine shall be capable of satisfactory performance on a commercial grade of distilled petroleum fuel oil such as No. 2 fuel oil. The system shall include a replaceable element fuel filter conveniently located for servicing. Fuel consumption of the generator set with all engine-driven accessories operating shall not exceed 0.75 pounds of fuel per kilowatt-hour at any load between 50 to 100 percent of rated load. Provide an appropriate fuel transfer pump complete with fuel system.

A 24-hour (based on 100% wading) diesel, double-walled fuel tank shall be mounted inside the skid base of the generator set housing. Piping shall be in accordance with the applicable codes. Provide a tank-mounted fuel gage.
- C. Lubrication: The engine shall have a gear-type lubricating oil pump for supplying oil under pressure to main bearings, crank pin bearings, and valve rocker mechanisms. Full flow oil filters, conveniently located for servicing, shall be provided. Filters shall be equipped with a spring-loaded bypass valve to ensure oil circulation if filters are clogged. Sufficient lubricating oil as recommended by the engine manufacturer shall be supplied to charge the lubricating oil system. A corrosion resistant, oil-drip pan shall be provided under the entire engine area.
- D. Cylinder Liners: The engine shall be provided with removable, wet or dry-type cylinder liners of close-grained alloy iron.
- E. Air Cleaners: The engine shall be provided with one or more dry-type air cleaners.
- F. Cooling: The engine shall be furnished with a cooling system having sufficient capacity for cooling the engine when the set is delivering full rated load and when operating in an ambient temperature of up to 100°F. In addition, the engine shall be equipped with a radiator and fan of a type and capacity recommended by the engine manufacturer. The radiator shall have a flange to permit the attachment of sheet-metal

exhaust duct. The cooling system shall be filled with a mixture of antifreeze (ethylene glycol type) and water. This mixture shall protect the cooling system to -40°F. The engine shall be equipped with an integral, thermostatically-controlled immersion-type engine coolant heater which shall provide a minimum coolant temperature of 120°F at an ambient room temperature of 32°F. This heater shall be suitable for operation on 120-volt, single-phase AC power.

- G. Exhaust System: The engine shall be equipped with a critical rated welded steel exhaust silencer, of sufficient size to ensure low loss of power output due to excessive back pressure. The silencer shall have appropriately sized inlet and outlet and shall have side inlet if required due to space limitations. The silencer shall be provided with a protective coating which shall remain intact and unblemished at operating temperatures of 1000°F. Provide a stainless-steel flexible exhaust connection. Unit shall include an appropriate exhaust pipe extension and rain cap through the roof or sidewall of the new building or enclosure.
- H. Safety Controls and Alarms: The engine shall be equipped with automatic safety controls which will shut down the engine in the event of low-lubricating oil pressure, high jacket water temperature and engine overspeed. The alarms shall be transmitted and displayed on the control panel. In addition, the unit shall include a separate isolated output alarm contacts for input to the alarm system.
- I. Starting: The engine shall be equipped with a 24-volt electric starting system of sufficient capacity to crank the engine at a speed which will allow for full diesel start of the engine. The battery shall be of the lead-acid type, fully charged at 1225 specific gravity for stationary service. Mounting base and holding brackets shall be provided on the unit subbase. The battery charger shall be of the static, silicon rectifier type, self-regulated and provide a 10-ampere DC charging rate to the battery. The input shall be from a single-phase, 120-volt AC power. The charging system shall be complete with voltmeter, ammeter, charging rheostat and automatic equalizing timer.

Automatic starting shall be initiated by the closing of contacts for this purpose in the automatic transfer switch. The starting system shall provide four cranking and three rest periods. A starting switch with the positions of “Automatic,” “Off,” and “Manual” shall be provided in the control panel. A 24-volt alarm system, both audio and visual, shall be provided for failure to start, safety shutdown, and charger failure.

8-161.2(2) Alternator

The alternator shall be a four-pole, revolving field design, equipped with a solid-state voltage regulator. Maximum regulation shall be ± 2 percent no-load to full-load. The enclosure shall be of drip-proof construction. Insulation shall be Class F. Wiring shall be 12-lead, reconnectable for 3-phase, 60-Hz operation. The alternator shall have a minimum of 0.8 power factor while operating at sea level in an ambient temperature range from 0°F to 100°F. The alternator shall be provided with a full capacity output circuit breaker.

8-161.2(3) Control Panel

- A. The unit control panel shall be of the dead-front type, mounted adjacent to the alternator and contain the following instruments and controls:
1. Indicating and alarm lights described previously.
 2. AC voltmeter and switch.
 3. AC ammeter, current transformers and test switch.
 4. Frequency meter.
 5. Engine control selector switch.
 6. Lube oil pressure gage and alarm.
 7. Coolant temperature gage.
 8. Running time meter.
 9. Generator output protection circuit breaker.
 10. Automatic exercise and cycle timer (this unit may be included in Load Transfer Control, Paragraph 8-161.2(4)).
 11. Emergency shutdown button.
 12. Time-delay relay to permit operation at no load after retransfer of load-to-normal source.
 13. Contacts for transmission of failure alarm to remote location.
 14. Contact (4 sets) of run status.
 15. Contacts (and 120 V control) for motorized louvers.

8-161.2(4) Load Transfer Control

- A. Provide for the engine generator set, an automatic transfer switch capable of transferring the rated output of the generator from normal to standby power.
- B. The transfer switch shall be 3-phase, 3-pole, rated for 480-volt operation. The switch shall be electrically and mechanically held, have high current breaking capacity with silver-surfaced contacts complete with arc barriers and magnetic blow-out coils. The contacts shall be rated in accordance with UL 1008 for current carrying and switching capabilities. Unit shall be housed in a NEMA 12 enclosure. The switch shall be UL listed, and so labeled.
- C. Interlocking: The transfer switch shall be interlocked to prevent supplying the load from more than one source at a time.
- D. Control: The transfer switch shall transfer from normal to standby when normal voltage falls to 70 percent of rated value and retransfers to normal voltage when normal voltage returns to 90 percent of rated value. Adjustable time delay shall be provided to prevent transfer and retransfer on voltage dips. The load transfer unit shall be equipped with a voltage sensing device to start the engine on power failure and prevent load transfer until the generator has reached rated voltage.

Additional features shall include a test switch for both simulation and an actual outage transfer, an adjustable time delay in the neutral position, status lights for normal, standby and test conditions, and auxiliary breaker contacts (DPDT) for both normal and standby source.

8-161.2(5) Plant Mounting

- A. The engine and alternator shall be equipped with a suitable fabricated steel subbase for mounting the entire set as a unit on a concrete foundation. All instrument panels, safety alarms, and measuring devices shall be mounted on or within the subbase and equipped with suitable shock and vibration isolators. In addition, the engine shall be equipped with spring-type vibration isolators between the subbase and the concrete foundation. Vibration isolation efficiency shall be 99 percent at 1800 rpm.

8-161.2(6) Finish and Painting

- A. The entire diesel electric set shall be factory painted with heat-resistant enamel of at least two coats of the manufacturer's standard color. Manufacturer shall ship with the unit one quart of identical paint for touch-up purposes.

8-161.2(7) Spare Parts

- A. The Contractor shall furnish the following spares: (provide in an appropriately labelled fiberglass enclosure)
 - 1. One complete replacement set of combustion air filters; fuel oil filters; all V-belts; fuel oil transfer pump packing; any special tools required for maintenance.
 - 2. Two complete replacement sets of lube oil filters.

8-161.3 Construction Details

- A. Installation: Generator set shall be installed in strict accordance with the manufacturer's specifications. All equipment permanently mounted on concrete shall be leveled, aligned, and have a minimum of 1-1/2 inches of dry pack grout under the base plates. Grout shall be neatly trimmed and finished and all splatter shall be completely cleaned from all surfaces.
 - 1. Startup: Initial startup and testing shall be performed by the manufacturer's service personnel in the presence of the Engineer's representative. The manufacturer shall supply six copies of certified reports on the unit's factory test performance and on the installation of the equipment.
 - 2. Field Test: The unit shall be field tested at the pump station with the largest pumps served for a minimum of two hours of uninterrupted service. Additional tests shall also be conducted for each phase and voltage output. Provide written reports of the recordings (same as factory test).
 - 3. Factory Test: The manufacturer shall provide certified copies of a 4-hour full-load test with recordings of voltage, frequency, amperage, engine temperature, lube oil pressure and load transfer results.
- B. Operation and Maintenance Instructions
 - 1. The Contractor shall furnish three copies of operating and maintenance instructions covering the engine generator and such auxiliary equipment as may require published operating instructions or periodic maintenance. Manuals shall be bound in suitable three-ring binders.

DIVISION 9
MATERIALS

Division 9 of the Standard Specifications is supplemented as follows:

9-03 AGGREGATES

9-03.9(3) Crushed Surfacing

Add the following sentence:

Crushed rock for base and top course used in pavement restoration shall conform to this section.

9-03.12(3) Bedding Material

Add the following to the section:

Bedding material for all PVC piping shall conform to type and depths shown on the Standard Detail.

9-03.12(5) Controlled Density Fill (New Section)

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 Section 6-02.3 of the Standard Specifications.

2. Materials:

- | | | |
|----|-----------------|---|
| a. | Portland cement | ASTM C 150 or AASHTO M 85 or
WSDOT 9-01 |
| b. | Fly Ash | Class F or Class C |
| c. | Aggregates | ASTM C 33 or WSDOT 9-03.1 |
| d. | Water | WSDOT 9-25 |
| e. | Admixtures | WSDOT 9-23.6 or AASHTO M 194 or
ASTM C 494 or ASTM C 260 |

3. Classification of Controlled Density Fill:

Class A Free-flowing . . . void fills, abandoned pipe fills

Class B Free-flowing . . . trench backfills and pipe bedding

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 CDF. Actual amounts may vary from those shown as approved by the Engineer or approved trial mix data or field test results for proper strength, workability, consistency, and density.

Class of CDF	A	B
Maximum Compressive strength, lbs. per sq. in. (lbs./sq. ft.)	100 (14,400)	300 (43,200)
Maximum gallons of mixing water per cubic yard	50	50
Pounds of cement per cubic yard, approximate	30	50
Pounds of fly ash per cubic yard, approximate	200	250
Pounds of dry aggregate per cubic yard, approximate (assumed Sp. G. 2.67)	3,200	3,200

NOTES: If air entraining or water reducing admixture is used for flowability, total water and aggregates may be adjusted for yield.

For flowable or excavatable CDF, 3/8" minus or sand is recommended.

Weights may be adjusted for flowability and pumpability.

9-03.13 Backfill for Sand Drains

Add the following to the section:

Bedding material for all polyethylene pipe shall conform to this section.

9-03.19 Bank Run Gravel for Trench Backfill

Add the following to the section:

All trench backfill, to replace unsuitable native material, shall conform to this section.

9-05 DRAINAGE STRUCTURES, CULVERTS, AND CONDUITS

9-05.12 PVC Sewer Pipe

Add the following to the second paragraph of this section:

PVC pipe shall conform to ASTM D 3034-SDR35.