

DIVISION 1

GENERAL REQUIREMENTS

1-01.2(1) ASSOCIATIONS AND MISCELLANEOUS

Supplement this Section with the following:

DPD Department of Planning and Development

1-01.3 DEFINITIONS

Supplement this Section with the following:

EROSION & SEDIMENTATION CONTROL LEAD

A person who is certified as an Erosion & Sedimentation Control (ESC) Lead by Washington State Department of Transportation or the Associated General Contractor's of America or equal.

SECTION 1-02 BID PROCEDURES AND CONDITIONS

1.02.4 EXAMINATION OF BID DOCUMENTS AND PROJECT SITE

1-02.4(1) GENERAL (02-20-03) [3]

Supplement this Section with the following:

A mandatory pre-bid site inspection will be held on Tuesday, May 10, 2005, at 11:30 AM. Meet at the intersection of NE 117th St and 19th Ave NE. Keith Ward, SPU Project Manager, phone (206) 615-0734 will lead the tour. **No Bid will be accepted from any Bidder who does not attend the mandatory pre-bid meeting.**

1-02.4(2) SUBSURFACE INFORMATION [2] (10-16-00)

Supplement this section with the following:

Logs of soil borings in the vicinity of Project Work are located in the Appendix of the Project Manual.

1-02.9 BID SUBMITTAL

1-02.9(1) GENERAL (2-7-05)

Delete the second paragraph and replace with the following:

Physical Address: Contracting Services Division
City of Seattle Department of Executive Administration
Seattle Municipal Tower, Suite 4112
700 Fifth Avenue
Seattle, Washington 98104

Mailing Address: Contracting Services Division
City of Seattle Department of Executive Administration
Seattle Municipal Tower, Suite 4112
P.O. Box 94687
Seattle, Washington 98124-4687

If sending by courier (UPS, FedEx, etc.) the physical street address must be used. If mailing by regular US mail, the Post Office Box must be used. Bidders are responsible for ensuring that the proper Zip code is used.

1-02.9(3) BIDDER/SUBCONTRACTOR LIST

Delete the last paragraph in this Section.

1-02.14 DISQUALIFICATION OF BIDDERS (10-16-00)

Supplement this Section with the following:

12. The Bidder failed to attend a mandatory pre-bid conference (see Section 1-02.4(1)).

SECTION 1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1(3) CLAIM OF ERROR (11-10-03)

In the first paragraph, delete the indicated address and replace with the following:

*Contracting Services Division
City of Seattle Department of Executive Administration
Seattle Municipal Tower, Suite 4112
700 Fifth Avenue
P.O. Box 94687
Seattle, Washington 98124-4687
Telephone (206) 684-0430*

1-03.3(2) TIME TO EXECUTE AGREEMENT FORM (11-10-03)

In the first paragraph, delete the indicated address and replace with the following:

*Contracting Services Division
City of Seattle Department of Executive Administration
Seattle Municipal Tower, Suite 4112
700 Fifth Avenue
P.O. Box 94687
Seattle, Washington 98124-4687
Telephone (206) 684-0430*

1-03.4 CONTRACT BOND (10-23-03)

Delete this Section and replace with the following:

The successful Bidder shall provide an executed Contract Bond for the Awarded Contract Price. The Contract Bond shall:

1. Be on an Owner-approved form (sample form is located in Appendix of Project Manual);
2. Be signed by an approved Surety (or sureties) that:
 - a. Is registered with the Washington State Insurance Commissioner, and
 - b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner; and
 - c. Has a current rating of at least A-VII in A.M. Best's Key Rating Guide.

The Owner may require the Surety (or sureties) named on the Contract Bond to appear and qualify themselves whenever the Owner deems the Surety (or sureties) to be inadequate. In such case the Owner may require, upon written demand, the Contractor to furnish additional Surety to cover any remaining work. Until the added Surety is furnished, payment on the Contract will stop.

1-03.7 APPEALS (11-10-03)

In the first paragraph, delete the indicated address and replace with the following:

*Contracting Services Division
City of Seattle Department of Executive Administration
Seattle Municipal Tower, Suite 4112
700 Fifth Avenue
P.O. Box 94687
Seattle, Washington 98124-4687
Telephone (206) 684-0430*

Delete the second and third paragraphs and replace with the following:

The Department of Executive Administration will review and decide upon all such protests and appeals.

SECTION 1-04 SCOPE OF WORK

1-04.5(3) CLAIMS (03-02-04)

In item 10 a, "Direct Labor", delete "26% markup" and replace with "29% markup".

1-04.5(4) MEDIATION (01-09-03)

Delete this Section in its entirety and replace with the following:

If the Engineer denies the claim and prior to the initiation of any judicial proceedings, the Contractor shall within thirty (30) days of receiving the Engineer's Written Notice denying the claim or before the Completion Date, whichever comes first, file a dated Written Notice with the Engineer of its election to utilize a non-binding resolution procedure whereby each party presents its case at a hearing (the "Hearing") before a mutually acceptable mediator. The date the Written Notice is submitted to the Engineer shall be the date of filing the Written Notice. The Contractor shall not be allowed to change the scope of the claim as presented in Section 1-04.5(3). The Mediation Hearing will occur after the Contractor files Written Notice to use outside mediation by no more than sixty (60) days unless both the Contractor and the Engineer agree to a later date. Each party may be represented at the Hearing by lawyers. If the matter cannot be resolved at such Hearing, the mediator may be asked to assist the parties in evaluating the strengths and weaknesses of each party's position on the merits of the disputed matter. The parties shall each bear their respective costs incurred in connection with this procedure, except that they shall share equally the fees and expenses of the mediator and the costs of the facility for the Hearing. If mediation does not resolve the disputed matter, thereafter, the Contractor may pursue judicial resolution in a court of competent jurisdiction in King County, Washington within the timeline stated in Section 1-04.5(5).

SECTION 1-05 CONTROL OF WORK

1-05.5 CONSTRUCTION STAKES (12-09-04)

1-05.5(1) GENERAL (12-09-04)

Supplement this Section with the following:

* All Work constituting "the practice of engineering" or "the practice of land surveying" within the City of Seattle shall require NAVD88 as the vertical datum, and NAD83 (1991) as the horizontal datum.*

Supplement this Section with the following:

Seattle Public Utility (SPU) Surveyors are available to the Contractor to perform Contractor required survey work at the Contractor's cost based on time and material at the current SPU rate of \$81.45 per hour, per person. Cost of this work will be deducted from the monthly payment(s) due the Contractor.

1-05.5(2) ROADWAY AND UTILITY SURVEYS

Delete this Section and replace with the following:

The Engineer will furnish to the Contractor one (1) time only, the principal survey control, lines, grades, and measurements the Engineer deems necessary to accomplish the Work. Unless the Contract specifies otherwise, this information will include the following as applicable:

- 1 Survey control will be set by the Engineer as follows: control hubs and tacks will be set at 25 foot increments (whenever possible) on each side of the street right-of-way. Grade PK nails, or hub-n-tacks, depending on surface, will be set at 10 foot increments on curves, 25 foot increments along tangent sections, PC's, PT's, and vertical curves, along the centerline of the proposed pavement alignment for all streets. With elevations for each survey control point marked on either the stake or pavement.
- 2 The Engineer will furnish the Contractor with a Survey Control sheet(s) for each street of the project. These sheets shall lists the street monument line stationing, offset from the street monument line, the elevation, the proposed pavement alignment stationing, offsets from the proposed pavement alignment, horizontal coordinates, and elevations, for all survey control sets.
- 3 The Engineer shall stakeout, with finish grade elevations, the front center of all water meters, and all fire hydrants to be installed and/or relocated by SPU crews with two offset stakes to the center of hydrant. The Engineer will provide the Contractor with Stake-Out sheets with the street monument line stationing, offset from the street monument line, and finish grade elevation for each fire hydrant and water meter to be installed and/or relocated.
- 4 The Engineer will provide the Contractor with Horizontal and Vertical alignment tables for the proposed pavement centerline and front edge of sidewalk for each street based on the proposed pavement alignment stationing for each street of the project.
- 5 The Engineer will provide the contractor with cross-sections of street pavement on 10 foot increments on curves, 25 foot increments on tangents, PC's, PT's, PRC's, AP's, BVC's, EVC's, and cross slope transition points based on the proposed pavement alignment stationing for each street of the project.
- 6 If requested by the Contractor, the Engineer will provide the Contractor with a digital terrain model for the roadway surface, from outside edge of shoulder to outside edge of shoulder when applicable, for each street where the street pavement is being replaced. This information is intended for visual reference only, actual construction of street pavement must comply with Contract Drawings and data provided in item #4.
- 7 If requested by the Contractor, the Engineer will furnish the Contractor with Stake-Out sheets of construction points for drainage structures on each street of the project, listing the street monument line alignment stationing, the offset from street monument line and the elevation as established by the Engineer. This information is intended for visual reference only, actual construction of street pavement must comply with Contract Drawings and data provided in item #4.
- 8 The Engineer will provide the contractor cross-section data of bioretention swales, in a tabular format, at random sections and critical sections, to be determined by the Engineer, based on the street monument line alignment stationing for each street of the project. 'Critical' construction points will be noted on the critical sections.

All drainage structures listed in the Contract Drawings must be constructed to an accuracy of 0.10 feet in location and 0.03 feet in elevation. All other remaining drainage features listed in the Contract Drawings or in the Engineer provided Stake-Out sheets must be constructed to an accuracy of 0.50 feet for location and 0.20 feet for elevation, except for 'Critical' construction points where an accuracy of 0.30 feet for location and 0.10 feet for elevation must be achieved.

All roadway features and sidewalks constructed must meet an accuracy of 0.04 feet in location and 0.02 feet in elevation from the Contract Drawings. The Contractor shall be responsible for having the new street pavement laid out by a land surveyor in accordance with the Contract Drawings.

The Contractor shall use the furnished information for all necessary calculations and survey to complete the Work. The Contractor shall be fully responsible for staking all drainage structures, swales and roadway features.

Contractor furnished survey work will be paid using the lump sum Bid Item "Contractor Furnished Survey". Payments for progress estimates will be made in accordance with the lump sum breakdown specified in Section 1-09.3(2).

SECTION 1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.5(2) WATER QUALITY

Delete this Section in its entirety and replace with the following:

The Contractor shall comply with city ordinances, State, and federal laws and other regulations or rules applicable to water pollution occurring in waters of the State and in interstate waters.

The Contractor shall:

1. Exercise precautions throughout the life of the Contract to prevent contamination, pollution, erosion, siltation, sedimentation, and damage to public and private property, drainage systems, surface waters, and groundwater pollution, erosion, siltation, and damage to property.
2. Provide for the flow of all watercourses, including but not limited to streams, ditches, sewers, and drains intercepted during the progress of the Work.
3. Completely restore disturbed watercourses in as good condition as the Contractor found them, or make such final provisions for them as the Engineer may direct.
4. Not obstruct the gutter of any street.
5. Use all proper measures to provide for the free passage of surface water.
6. Remove and dispose of all surplus water, mud, silt, slicking, or other run-offs pumped from excavations or resulting from sluicing or pavement cleaning or other operations.
7. Make all applicable notifications required by Section 1-07.28.

The Contractor shall comply with the water quality criteria required by the Department of Ecology and regulations of:

- 1) The Washington State Department of Fish and Wildlife.
- 2) Those federal statutes on oil spills enacted under the federal Water Pollution Control Act Amendments of 1972 (a copy of which may be obtained from the U.S. Environmental Protection Agency).
- 3) The water quality standards of the State of Washington as set forth in WAC Chapters 173-200 and 173-201A.
- 4) In particular, DPD director's Rule 16-2000 "Construction Stormwater Control Technical Requirements Manual (Volume 2 of 4)".
- 5) For work done within the City of Seattle, the City of Seattle Stormwater, Grading and Drainage Control Code (SMC Chapters 22.800 through 22.808).
- 6) Any local statute, regulation, ordinance, or rule that stipulate the various type of discharge prohibited in public sewer systems or any drainage ditch in the local jurisdiction.

State statutes on water pollution covering liability of the Contractor, penalty for violation, liability and damages for injury or death of fish, animals or vegetation are set forth in Chapter 90.48 RCW. As an aid to the Contractor, some though not all, of the rules set forth by the various State departments are summarized below. The Contractor is cautioned, however, that each Department of the State may add other restrictions, as they deem necessary, to protect fish and to prevent air or water pollution:

- A. **State Department of Fish and Wildlife:** In doing the Work the Contractor shall:
 - a. Not degrade water quality in a way that would harm fish. (The Washington State Water Quality Regulations shall serve as water quality criteria for the Work.)
 - b. Promptly notify the Engineer if any fish are stranded by the Work.
 - c. If the Work has disturbed the vegetative cover of any stream bank or shoreline areas, replant the disturbed area with trees and other vegetation species selected compatible with area conditions as determined by the Engineer.

- d. Provide an open water channel at the lowest level of any isolated water location in the channel remaining when the Work is complete.
 - e. Protect fish by preventing additional siltation build-up on the bed or bottom of any body of water.
 - f. Not block stream flow or fish passage.
 - g. Keep all Equipment out of any flowing stream or other body of water, except when the Work requires.
 - h. Not remove gravel or other bottom material from within the high-water flow channel bed of any stream nor from the bottom of any other body of water (except as the Contract may permit).
 - i. Dispose of any Project debris beyond high-water flows.
- B. **State Department of Ecology:** In doing the Work, the Contractor shall:
- a. Obtain a waste discharge permit from the Department of Ecology before:
 - (1) Washing aggregate, and
 - (2) Discharging water into a ground or surface waterway from pit sites or excavations when the water contains turbidity, silt, or foreign materials.
 - b. Provide the Engineer with a copy of each waste discharge permit before starting the Work.
 - c. Control drainage and erosion to minimize the pollution of any waterway.
 - d. Dispose of all toxicants (including creosote, oil, cement, concrete, and water used to wash Equipment) in ways that will prevent them from entering State waters.
 - e. Dispose of all debris, overburden, and other waste materials in ways that will prevent them from entering State waters.

The Contractor shall perform such temporary work as may be necessary to prevent water pollution, erosion, and related damage within the Project Site and that may be necessary at locations outside the Project Site used in support for the Work.

If Work is suspended for an extended period of time, the Contractor shall be responsible for controlling erosion, pollution, sedimentation, and runoff during the shutdown period.

In addition to other requirements in the Contract, this temporary work shall include, but is not limited to, the following water quality considerations:

- A) **Diversion of Storm Water:** Storm water shall be diverted around the Project to prevent pickup of silt, clay, and other fine particles. This may be accomplished by pumping; improvising ditches; lining channels or by placing metal, plastic or concrete gravity pipe; constructing ditches, berms, culverts, etc. to control surface water; or constructing dams, settling basins, or energy dissipaters to control impacts of flow.
- B) **Surfacing Ground Water:** Surfacing ground water shall be intercepted and routed around the construction site to prevent erosion by the use of ESCBMPs.
- C) **Discharging Ground Water:** When ground water is encountered in an excavation, it shall be treated and discharged as follows:
 - (1) When the ground water meets State Water Quality standards, it may bypass detention and treatment facilities and be routed directly to its normal discharge point at a rate and method that will not cause erosion.
 - (2) Discharging turbid ground water shall comply with the requirements specified in subsection D) immediately following.
- D) **Turbid Water Treatment Before Discharge:** Determination of turbidity shall be at the discretion of the Engineer. Turbidity requirements are as follows;
 - (a) for Lake Class Receiving Waters, turbidity shall not exceed 5 NTU over background conditions;
 - (b) for Class AA and Class A Waters, turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU;

- (c) for other classes of waters, refer to WAC 173-201A-045 and WAC 173-201A-030.

The term turbidity means the optical property of sample demonstrating the scattering and absorption of light caused by suspended material as expressed in Nephelometric Turbidity Units (NTU) and measured with a turbidimeter calibrated within the 6 months prior to turbidity determination by a laboratory compliant with Ch 173-50 WAC. Turbidity reports shall be accompanied by a Manufacturer's Certificate of Compliance indicating laboratory accreditation and turbidimeter calibration as specified.

Discharges to a State waterway caused by aggregate washing, drainage from aggregate pit sites and stockpiles, dewatering of pits and excavations, and other discharges shall not increase the existing turbidity of the receiving waters. Turbid water from the Project Site shall be treated before being discharged into stream or other State waters.

Water discharged to a storm system, must meet State Water Quality standards and have permission from the local jurisdiction (SPU when within the City of Seattle).

Water discharged to a sanitary or combined Sewer must have permission from the local jurisdictions (meeting water quality requirements of both SPU and King County Industrial Waste Division for work within the City of Seattle).

Turbidity may be removed by the use of lagoons or holding ponds, settling basins/tanks, overflow weir, polymer water treatment, discharging to ground surface, by percolation, evaporation or by passing through gravel, sand or fiber filters.

- E) **Erosion and Sediment Control:** General requirements to manage, prevent and control erosion, and to treat sediment are specified in Section 1-07.15.
- F) **Chlorine Residual:** Water containing chlorine residual shall not be discharged directly into Storm Drains, streams, or State waters. Chlorine water may be discharged into sanitary sewers or disposed on land for percolation. Chlorine residual may be reduced chemically with a reducing agent such as sodium thiosulphate or vitamin C. Water shall be periodically tested for chlorine residual.
- G) **Vehicle and Equipment Washing:** Water used for washing vehicles and Equipment shall not be allowed to enter Storm Drains, streams or other State waters. Separation of petroleum products, fresh concrete products or other deleterious material from wash water is required prior to discharge. Detergent solution may be discharged into only sanitary sewers, or held on the ground for percolation. A recirculation system for detergent washing is recommended. Steam cleaning units shall provide a device for oil separation.
- H) **Oil and Chemical Storage and Handling:** Handling and storage of oil and chemicals shall not take place adjacent to surface waters. The storage shall be made in dike tanks and barrels with drip pans provided under the dispensing area. Shut-off and lock valves shall be provided on tanks. Shut-off nozzles shall be provided on hoses. Oil and chemicals shall be dispensed only during daylight hours unless the dispensing area is properly lighted. Should an oil or chemical spill occur, the Contractor shall promptly make the notification in accordance with Section 1-07.28 item 8, stop the spilling, contain the spill, and then clean up any spilled materials. Fencing shall be provided around oil storage. Locks shall be provided on valves, pumps, and tanks.
- I) **Sewage:** If a pipe carrying sewage is encountered and repair or relocation work is required, the Contractor shall provide blocking and sealing of the said pipe. Sewage shall be pumped out, collected, and conveyed or pumped directly to a sanitary or combined Sewer system manhole for discharge. Existing sewerage shall be maintained by the Contractor without interruption of service by the use of temporary Sewer bypasses. In addition, the excavated materials adjacent to and around a rupture of any pipe containing sewage shall be removed to a disposal site. Equipment and tools in contact with the above materials shall be washed by pressure water lines and the attendant wash water discharged into a sanitary or combined Sewer for transmission to a sewage treatment plant.
- J) **Sawcutting, Planing, and Grinding By-Products:** The Contractor shall take special precautions to assure that concrete, asphalt, concrete by-products, or asphalt by-

products from, or used in, the drilling, saw-cutting, grinding, or planing of asphalt cement or cement concrete pavements, sidewalks, curbs, etc. do not enter any Storm Drain, surface water, and natural drainage system. In as much as saw-cutting by-products increase the pH of the wastewater, filtering prior to discharge will NOT be acceptable. The Contractor shall provide a means for collecting, for on-site temporary storing as necessary, and for disposing of these by-products. Surfaces contaminated with these by-products shall be power washed and vacuum swept clean at least daily, and more frequently during wet weather.

- K) **Gutters and other Surface Drainage Channels:** All construction waste and stockpiling, and all byproduct entering gutters and other pavement surface drainage channels shall be prevented from entering any inlet, catch basin, or other drainage structure or feature. Material shall be removed from drainage channels on a regular basis. Temporary filters or filter materials shall be placed and timely maintained by the Contractor in drainage channels to prevent the passage of said material.

1-07.5(3) AIR QUALITY

Delete this Section and replace with the following:

The Contractor shall maintain air quality within the National Emission Standards for Hazardous Air Pollutants. Air pollutants being defined as that part of the atmosphere to which no ambient air quality standard is applicable and which, in the judgment of the Administrator of the Environmental Protection Agency Clean Air Act, may cause or contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness.

1-07.5(4) NOISE POLLUTION

Supplement this Section with the following:

Compliance with off-hour, holiday, and weekend restrictions is required for all non-emergency work unless specifically authorized by the Engineer.

1-07.6 PERMITS AND LICENSES

Supplement this Section with the following:

The Contractor shall obtain and pay all fees for a street use permit from:

City of Seattle
Seattle Department of Transportation
Street Use Division
700 Fifth Avenue, Suite 3700
P.O. Box 34996
Seattle, Washington 98124-4996

Permit fees will be charged to the Contractor, comprised of a base permitting fee and mapping surcharge, plus a variable charge depending on the street designation, area occupied, and length of time occupied. Copies of sample worksheets for calculating the fee are included in the appendix. Contact the following personnel for further information concerning this permit:

Rex Stratton Telephone (206) 684-5193, or
Jolanda Neal Telephone (206) 684-5280

Separate Street Use permits can be issued for each phase (See Section 1-08.4) of the work to help decrease the cost of the permit.

1-07.9(1)B OVERTIME (11-10-03)

Delete the sixth paragraph beginning “Notwithstanding” and replace with following new paragraph indicating a revised address:

Notwithstanding the above provisions, overtime rates must be paid for all hours worked in excess of forty hours per week. For any overtime work performed on a federally funded Project in accordance with the agreements referenced above, the Contractor, Subcontractor, and all other individuals or firms required to pay prevailing wages, must submit a copy of such authorization agreement for each affected employee to the Contracting Services Division Section of the Department of Executive Administration, *Contracting Services Division, City of Seattle Department of Executive Administration, Seattle Municipal Tower, Suite 4112, 700 Fifth Avenue, P.O. Box 94687, Seattle, Washington 98124-4687*.

1-07.9(1)D PAYROLL REPORTS (11-10-03)

Delete the first paragraph beginning “On any Project” and replace with following new paragraph indicating a revised address:

On any Project that is federally funded, payroll reports for the Contractor, every Subcontractor, and all other individuals or firms required to pay prevailing wages for work performed on this Contract shall be submitted weekly to the Contracting Services Division of the Department of Executive Administration, City of Seattle, *Seattle Municipal Tower, Suite 4112, 700 Fifth Avenue, P.O. Box 94687, Seattle, Washington 98124-4687* within 72 hours after the expiration of each pay period. On a non-federally funded Project, the Owner and Engineer reserve the right to request payroll reports from the Contractor, every Subcontractor, and all other individuals or firms required to pay prevailing wages for work performed on this Contract. When required or requested, the payroll reports shall contain the following information:

Delete the second paragraph beginning “Payrolls” and replace with following new paragraph indicating a revised address:

Payrolls may be submitted on federal payroll form WH-347 (or equivalent), which may be obtained by contacting the Government Printing Office’s toll free number of (866) 512-1800, 7:30 AM to 4:30 PM Eastern Time or by accessing their web-site at <http://bookstore.gpo.gov>.

1-07.11(7) TRAINING AND PROMOTION

Delete this Section and Title in its entirety and replace with the following:

***1-07.11(7) APPRENTICE UTILIZATION AND EEO REPORTING (New Section) (9-6-02)**

1-07.11(7)A GENERAL (New Section) (9-6-02)

Notwithstanding any other provisions in the Project Manual, this Contract does not require any specific levels of utilization of minority and women as apprentices, except as may be specified in any federal regulations or statutes included or referenced in the Contract Documents. All other requirements of the City’s apprenticeship program shall apply as specified in the Contract Documents. The City encourages the Contractor to employ a workforce reflective of the region’s diversity. The Contractor shall adhere to all non-discrimination requirements as set forth in Federal and State laws and regulations and Seattle municipal code provisions.

The Owner has determined that there is a need for increased training and apprenticeship opportunities in the construction industry and that a diverse and well trained workforce is critical to the economic as well as social vitality of the region. In addition, the Owner has determined that compliance by the Contractor with the apprentice utilization requirements of the Contract must be consistent with the provisions of Chapter 49.04 RCW and Chapter 296.04 WAC.

In establishing requirements for the use of apprentices on the Project, it is the Owner’s intent to encourage the training and promotion of apprentices to journey level status.

Any questions, monthly reports, or other submittals regarding the apprentice utilization requirements of the Contract shall be directed to:

Contracting Services Division
City of Seattle Department of Executive Administration
Seattle Municipal Tower, Suite 4112
700 Fifth Avenue
P.O. Box 94687
Seattle, Washington 98124-4687
Telephone (206) 684-0430

1-07.11(7)B APPRENTICE UTILIZATION REQUIREMENTS AND GOALS (New Section) (9-6-02)

The total APPRENTICE UTILIZATION REQUIREMENT for this Project shall be:

15%

The Contractor shall ensure that the above percentage of the total Contract labor hours utilized on the Project are performed by apprentices registered with the Washington State Apprenticeship and Training Council, hereinafter known as SAC.

- a. Total Contract labor hours include additional hours worked as a result of Change Orders.
- b. Total Contract labor hours exclude hours worked by foremen, superintendents, supervisors, owners, and workers who are not subject to prevailing wage requirements. However, total Contract labor hours shall include the hours worked by supervisors, foremen, and superintendents if it is determined that they are subject to prevailing wage requirements pursuant to the following criteria of WAC 296-127-015:

Two (2) supervisors (e.g. foreman, general foreman, superintendents, etc.) are entitled to receive at least the journey level prevailing rate of wage for performing manual or physical labor:

- (a) For each hour spent in the performance of manual or physical labor if it is for more than twenty percent but less than fifty percent of their hours worked on a public works project during any given week.
- (b) For all hours worked in any given week if they perform manual or physical labor for fifty percent or more of their hours worked on a public works project during such week.

The Contractor shall include the apprentice utilization requirements of Section 1-07.11(7)B in all subcontracts executed for the Project, and ensure that all Subcontractors working on the Project are notified of the apprentice utilization requirements. The Contractor is responsible for meeting the apprentice utilization requirements of the Contract, including overall compliance on all Contract labor hours worked by Subcontractors.

The Contractor shall make good faith efforts to:

- a. Ensure that apprentice hours worked are equally distributed in each trade/craft and consistent with the apprentice utilization percentage requirement of the Contract.
- b. Recruit and hire minority and women apprentices for the Project. Of the total apprentice utilization requirement percentage, the Contractor shall pursue a goal of using twenty-one (21%) labor hours performed by minority apprentices and twenty percent (20%) labor hours performed by women apprentices.

The Contractor shall ensure compliance with the apprenticeship training standards for each trade/craft classification used on the Project, as set forth by the Washington State Department of Labor and Industries.

1-07.11(7)C APPRENTICE UTILIZATION PLAN (New Section) (9-6-02)

At the Pre-construction Meeting, the Contractor shall submit to the Department of Executive Administration, a comprehensive plan outlining how the apprentice utilization requirements will be met on the total Contract labor hours. The plan shall include the following information, on a form to be provided by the Owner or by accessing <http://www.cityofseattle.net/contract/apprentice.htm>.

- a. A list of all trades/crafts to be used on the Project, including an estimate of labor hours by trade/craft and the total labor hours to be used.
- b. An estimate of the number of apprentices for each trade/craft to be used on the Project.
- c. An estimate of the number of apprentice labor hours and percentage to be used by each trade/craft on the Project. The combined total number of apprentice hours used must equal or exceed the required apprentice utilization percentage. (Section 1-07.11(7)B).
- d. An estimate of the percentage of apprentice labor hours to be used by each trade/craft. The percentage of apprentice labor hours must be based on the estimate of total labor hours by each trade/craft.
- e. An estimate of the start date for each trade/craft.
- f. A description of efforts the Contractor intends to make to ensure that the apprentice utilization requirement and goals are met.
- g. A description of any assistance the Contractor believes will be necessary from the Owner to meet the apprentice utilization requirement and goals.

The Department of Executive Administration will provide assistance in directing the Contractor to available resources for hiring apprentices.

The Contractor, the Engineer, and the Department of Executive Administration shall meet to discuss and modify the plan as may be appropriate.

1-07.11(7)D CHANGES TO THE APPRENTICE UTILIZATION REQUIREMENT (New Section) (9-6-02)

If, during the term of the Contract, the Contractor determines that it will be unable to meet the apprentice utilization percentage required by Section 1-07.11(7)B2, the Contractor may make a written request to the Engineer, (directed to the Department of Executive Administration), to reduce the required apprentice utilization percentage. The request shall include documentation of the Contractor's affirmative efforts to use SAC registered apprentices, including copies of correspondence between the Contractor and the SAC approved apprentice programs, union locals, and others. These documents must demonstrate that an inadequate number of apprentices are available to meet the required apprentice utilization percentage.

The Department of Executive Administration shall evaluate the request, and if appropriate, a Change Order shall be prepared by the Engineer reducing the required utilization percentage. If the Department of Executive Administration determines that a reduction in the required utilization percentage is not justified, the Department of Executive Administration shall communicate the decision in writing to the Contractor.

1-07.11(7)E MONTHLY EEO/APPRENTICE UTILIZATION REPORT (New Section) (9-6-02)

The Contractor shall submit to the Department of Executive Administration a Monthly EEO/Apprentice Utilization Report in an electronic format to be provided by the Owner, for the Contractor and all Subcontractors. The Monthly EEO/Apprentice Utilization Report form shall be completed by the Contractor and all Subcontractors performing work on the Project during the reporting period. (Forms are available by calling (206) 684-0430 or by accessing <http://www.seattle.gov/contract/apprentice.htm>. The report shall be submitted by the 15th of the month following the reporting period to the Department of Executive Administration. A copy shall be sent to the Engineer.

The Contractor shall be responsible for reporting apprentice utilization data required by the Owner beginning with the first day of work for each apprentice. The Contractor's first submittals are due at the end of the first month after the Notice to Proceed Date, and at monthly intervals thereafter, until the Physical Completion Date has been established. Subcontractor submittals are due at the end of the month after commencement of their work and monthly thereafter.

The Contractor shall report the following information on each apprentice:

- a. Apprentice's Name
- b. Social Security Number
- c. Home Zip Code
- d. Employment Status: New Hire or Existing Staff
- e. Trade/Craft
- f. State Apprentice Registration I.D. Number
- g. Program Sponsor and/or Hiring Source
- h. Apprentice Progression Period or Percentage
- i. Ethnicity/Gender
- j. Labor hours for Reporting Period by Ethnicity/Gender
- k. Total labor hours and number of apprentice employees for reporting period by ethnicity/gender.
- l. Total apprentice labor hours and number of employees to-date.
- m. Summary information as noted on the form.

The Contractor shall report the following information on journey level employees:

1. Labor hours for reporting period by ethnicity/gender, for each trade/craft.
2. Total journey level labor hours by ethnicity for each trade/craft.
3. Total labor hours and number of journey level employees for reporting period by ethnicity/gender.
4. Total journey level labor hours and number of employees to-date.
5. Summary information as noted on the reporting form.

The Contractor shall submit such other information as may be requested by the Owner to verify compliance with the apprentice utilization requirements of the Contract. The Owner reserves the right to add, delete change as necessary the information required by the Contractor on the Monthly EEO/Apprentice Utilization Report form.

1-07.11(7)F MONITORING (New Section) (9-6-02)

The Department of Executive Administration will verify the registration of each apprentice used on the Project with the Washington State Apprenticeship and Training Council.

The Department of Executive Administration will monitor the apprentice utilization data provided by the Contractor. In the event that the Contractor is deficient in the use of apprentices, the Department of Executive Administration and the Engineer will meet with the Contractor to discuss the reasons for the deficiency and help the Contractor develop a written plan for meeting the requirement.

The Owner will make routine visits to the Project Site for the purpose of confirming the use of apprentices.

1-07.15 TEMPORARY WATER POLLUTION, EROSION, AND SEDIMENTATION CONTROL

Delete this Section in its entirety and replace with the following:

In an effort to prevent, control, and stop water pollution and erosion within the project, thereby protecting the work, nearby land, streams, and other bodies of water, the Contractor shall perform all work in strict accordance with all Federal, State, and local laws and regulations governing water of the State, as well as permits acquired for the project. Temporary water pollution, erosion, and sedimentation control work shall comply as a minimum with the Construction Stormwater Control Technical Requirements Manual (based on SMC Chapter 22.800 Stormwater, Grading & Drainage Code).

The Contractor shall plan and coordinate the transition from temporary water pollution/erosion/sedimentation control work to the permanent landscaping, drainage, sedimentation, and erosion control work that may be specified in the Contract ensuring a continuous and uninterrupted water pollution/erosion/sedimentation control.

The Contractor is hereby notified that compliance with these requirements may necessitate performance of certain items of Work at a different time or in a different manner than has been considered normal construction practices in the past and that such revisions in scheduling of Work may interfere with said normal construction practices.

The Contractor shall, as a condition of the NPDES permit for this project, submit to the Engineer for review a Storm Water Pollution Prevention Plan (SWPPP) prepared in accordance with Volume 2, Chapter 3 of Ecology's most current Stormwater Management Manual and the requirements of Section 8-01.3(1) A. The SWPPP shall be compatible with permanent erosion control requirements and elements associated with the Contract Drawings including, but not limited to, grading, tree and plant preservation soil preparation, irrigation, planting, and establishment.

The SWPPP shall be on-site and accessible at all times throughout the contract. All records of adjustments to the plans as well as weekly or precipitation event inspection reports shall be maintained on site as a component of the SWPPP. The Erosion and Sediment Control Lead (8-01.3(1)B) shall be responsible for inspections, record keeping, and plan amendment to document response to site conditions.

No clearing, grubbing or earthwork will be allowed until the SWPPP has been approved by the Engineer.

Temporary water pollution, erosion and sedimentation control, maintenance, and inspection shall be the Contractor's responsibility. Costs for temporary erosion control, temporary sedimentation control, and temporary water pollution control work shall be considered incidental to the Work and such costs shall be included in the bid item prices for the various bid items of Work listed in the Bid Form, unless there are bid items for specific measures included in the Bid Form.

The Engineer may notify the Contractor in writing, should they fail to adequately prevent water pollution/erosion/sedimentation as a result of construction activities, or fail to properly maintain the control measures. The Contractor shall implement corrective actions immediately or the Engineer may order the Work suspended. Corrective actions may include modifying the control measures, installing new measures, or modifying the offending work methods. If the Engineer orders the work suspended, work shall not be allowed to continue until the corrective actions are performed and approved by the Engineer. Any costs or delays as a result of the Work suspension order will be borne solely by the Contractor.

If the Engineer, under Section 1-08.6, orders the Work suspended for an extended time, the Contractor shall make, before the Engineer assumes maintenance responsibility, every effort to control erosion, pollution, sedimentation, and run-off during shutdown. Section 1-08.7 describes the Engineer's responsibility in such cases.

1-07.16(1) PRIVATE AND PUBLIC PROPERTY

Delete the second paragraph and replace with the following:

Property includes land; improvements lawfully occupying the Right of Way; trees, shrubbery and landscaping; electrical transmission and distribution systems; water distribution and transmission systems; survey markers and monuments; buildings and Structures; conduits and pipes; groundwater monitoring wells; fences; Highway facilities such as signal systems including loop detection systems in Pavement Structures both approaching and at signalized intersections, roadway lighting systems, signs, guardrails, pavements, curbs, driveways, sidewalks, traffic buttons, paint striping and other channelization; METRO bus shelters and electric trolley and Benson Line Waterfront Trolley overhead wiring system, and other property of all descriptions whether shown on the Drawings or not.

Supplement this Section with the following:

The Owner is responsible for the establishment and maintenance of all Right of Way monumentation. Removal or destruction of monuments will not be allowed until the Engineer has witness monuments in place to perpetuate the position of the pre-existing monument. Unless the Contract specifies otherwise, the Contractor shall provide a minimum 4 Working Days advance notice to the Engineer to allow SPU survey crews to provide witness monuments before such construction or activity. Contact (206) 684-5073 or (206) 684-4674.

All costs to monument removed or destroyed monumentation without making the required notification shall be at the sole expense of the Contractor. Such costs shall include, but are not limited to, replacement survey, survey supervision, monumentation, necessary documentation and verification, and other direct expense to the Owner and Engineer.

1-07.16(2) TREES, SHRUB, AND PLANT MATERIAL PROTECTION

Supplement this Section with the following:

Tree protection measures shall be provided and maintained by the Contractor per this section and Standard Plan No. 133. Protection measures including but not limited to the following shall be in place and approved prior to the beginning of construction:

- A. Temporary construction fencing shall be installed to identify the construction limits of the project and to restrict equipment operation and/or material storage from the "critical root zone" of trees to be retained unless otherwise approved by the Engineer. Approval for work activity within the critical root zone shall require protection methods to mitigate impact to soil, tree roots and/or tree canopy.
- B. Surface protection measures shall be required for all areas within the construction limits and within the dripline of trees to be retained.

Pruning shall be limited only to the extent necessary to allow safe operation of equipment and/or prevent damage to trees. Pruning shall not occur to expedite construction and/or allow for the use of large equipment where alternative methods of construction are feasible as determined by the Engineer.

1-07.16(2)A SOIL AND ROOT PROTECTION (New Section)

Soil protection measures shall be installed, inspected, and approved by the Engineer prior to construction and shall be maintained by the Contractor until notified by the Engineer.

Soil surface protection consisting of a 4" minimum depth of wood chips or equal as approved by the Engineer shall be provided and maintained for all non-paved surfaces subject to construction impacts.

Soil structure protection consisting of a 4" minimum depth of wood chips and steel plates (or equal) shall be provided to prevent compaction for all unpaved areas subject to equipment operation or material storage.

1-07.16 (3) FENCES, MAILBOXES AND MISCELLANEOUS ITEMS

Delete the last four sentences in the third paragraph and replace with the following:

Existing mailbox stands shall be temporarily relocated. The Contractor shall coordinate with the US Postal Service Postmaster (phone 206-364-0656) for approval of the temporary mailbox locations. New mailbox units shall be installed at locations indicated on the Drawings. New mailbox structures shall be either non-locking or locking as indicated on the Drawings and as specified in Section 8-02.

1-07.18 INSURANCE

1-07.18(2) REQUIRED COVERAGES [1]

Delete subitems g and h in item 1 “Commercial General Liability Insurance:” and replace with the following:

- g. Explosion, Collapse, or Underground (XCU)*
- h. Watercraft Liability – Owned and Non-owned*

*This coverage is only required when the Contractor’s Work under this Contract includes exposures to which this coverage responds.

Supplement this Section with the following additional items:

- 5. **Excess or Umbrella Liability Insurance:** Insurance above the primary general liability, auto liability and pollution liability policies that will provide a total minimum limit of liability of \$2,000,000 any one occurrence. Any combination of primary and excess or umbrella liability insurance limits that provide a total minimum limit of liability of \$2,000,000 any one occurrence for general liability, auto liability and pollution liability insurance policies shall also satisfy this requirement.

1-07.18(5) CONDITIONS (1-25-05)

Delete item 7 beginning with “Include all Subcontractors as insureds. Alternatively...”

1-07.23(1) CONSTRUCTION UNDER TRAFFIC (3-20-03)

Delete subitem f of item 4 and replace with the following:

- *f. Coordinating construction operations with all disposal firms and transit bus service that may be operating within the Project Site. If METRO operates in the area of Work, the Contractor shall maintain the Project Site in such a manner that transit bus service, including access to bus zones, is safe and convenient. Whenever it is necessary to modify METRO Transit Bus or Trolley Service (such as closure or temporary relocation of a bus stop or on-street bus staging area, removal of a bus shelter, closure of or detour of a bus route, construction in a roadway where bus transit is granted access and transit should be made aware, or requesting a temporary weekend only diesel bus for an electric trolley), the Contractor shall make the notification in accordance with Section 1-07.28, item 2.*

1-07.28 NOTIFICATIONS RELATIVE TO CONTRACTOR’S ACTIVITIES (3-20-03)

Delete items 2 and 11 and replace with the following:

- *2. **Disruptions to, or service modification requests for, METRO transit and Benson Line Waterfront Streetcar service and facilities:**

- A. Contact 206-684-2732 or “construction.coord@metrokc.gov” for the following:
 - 1. Short term closure or temporary relocation of a bus stop requires a minimum 5 Working Days advance notice;
 - 2. Removal of bus shelter at bus stop requires a minimum 15 Working Days advance notice;
 - 3. The request for assignment of diesel coaches for electric coaches on electric trolley routes (weekend only – no weekday diesel coach substitution) shall be made by no later than 10:00 AM on the Tuesday prior to the weekend requested.
 - 4. Bus route road closure resulting in traffic detour requires a minimum 7 Working Days advance notice. If transit is to be granted access during this closure, this notification is still required.

- B. Contact 206-263-6580 for overhead power wire requests as follows:
- 1). Overhead power line modification or outage requests for the Benson Line Waterfront Trolley require a minimum 15 Working Days advance notice.. See item 4) immediately following.
 - 2). Overhead power line modification or outage requests for the electric bus require a minimum 10 Working Days advance notice. See item 4) immediately following.
 - 3). Any construction or Equipment operating within 10 feet of any electric bus or Benson Line Waterfront Trolley overhead power line requires a 10 Working Day advance notice.
 - 4). Requests for overhead power line modification or outage may have an associated cost payable by the requesting party and such requests may require additional information be provided. Scheduling is dependent upon King County METRO Transit Power Distribution's ability to accommodate such requests. The Contractor shall be prepared to accommodate such scheduling in the Work as required in Section 1-08.3(1).*

1-07.29 RESERVED (3-9-05)

Delete this Title and replace with the following new Title and Section:

***1-07.29 FIELD OFFICE FOR THE ENGINEER'S STAFF (New Section) (3-9-05) [2]**

The Contractor shall provide a field office on or adjacent to the Project Site for the use of the Engineer's staff within 5 Working Days from the Notice to Proceed Date. The field office, its location, and an alternate date if necessary, shall be subject to the approval of the Engineer and shall be established at the pre-construction meeting (see Section 1-08.1(2)). The field office shall meet the following requirements:

1. The field office shall be a weather-tight building, either portable or permanent structure a minimum of ten (10) feet wide with not less than 300 square feet of clear floor space, having at least one door, and a window area of not less than 45 square feet. Windows shall open to allow ventilation. Doors and windows shall be provided with bug screens. The interior walls shall be covered with material suitable for displaying Contract Drawings and progress charts, etc.
2. To deter break-in and theft, window and door glass shall be protected with heavy security screens on metal frames bolted to the walls and doors. All doors shall have 2 locks each: one doorknob keyhole lock and 1 deadbolt cylinder lock, each with its own distinct key. The Contractor shall provide 4 sets of keys for each lock.
3. The field office shall be level and, if portable, the structure shall be supported on blocks. If more than three (3) steps are required to enter the office, a floor-level landing of at least 12 square feet with railing shall be provided. Steps and landing shall be stable and slip resistant. A 3 sided boot brush ("Scrusher" by Chasburg Manufacturing Co. or approved equal) center mounted on a 2 foot x 2 inch x 8 inch board shall be provided at each field office entrance.
4. The Contractor shall be responsible for maintaining and cleaning the field office; repairing any damage to the structure, equipment and appurtenances; providing weekly janitorial services including supplying appropriate toilet room paper products; refilling applicable dispensers with drinking water cups; waterless hand cleaner with pumice, and paper towels; cleaning windows and sweeping floors; and emptying trash receptacles, disposing trash, and relining trash receptacles.
5. The office shall be furnished with the following furniture, equipment and appurtenances reasonably presentable, in good working order, and acceptable to the Engineer:
 - a. Drafting table, 6 foot x 4 foot minimum, a "D size" plan drawer, soft pad covering entire top, locking tilt feature, and stool with back support (one set);
 - b. Drafting table lamp, swing arm model with 3 foot minimum reach, clamp for attachment to drafting table, at least one 100 watt bulb (one);
 - c. Executive chair, each with seat cushion, adjustable height seat, tilt back, arm rests, and floor wheels (two);

- d. Office desk, 30" x 60" minimum size, with at least 4 drawers which can be locked with key & one of which is set up for file folders, 2 sets of keys each desk (two);
 - e. Office table 36" x 72" (two);
 - f. Office chairs with seat & back cushion (four);
 - g. Four (4) drawer legal file steel cabinet (one) w/75 legal size folders and hanging folders, metal frames for folders in each drawer, locking feature and 2 sets keys;
 - h. Electric pencil sharpener (one);
 - i. Metal trash receptacles with trash liner inserts and 25 extra trash liners (two each 41 quart size and 1 each 28 quart size);
 - j. Photocopy machine, single or multiple tray frontload with 2 paper trays (8-1/2 x 11-inch and 8-1/2 x 14-inch), photocopier should be able to sort/stack auto feed and copy 11"x17" copies, own understorage cabinet, floor wheels to accommodate service technician, preset reduction to 50% and enlarge to 200% and zoom in 1% increments, bypass tray, at least 100 sheets each size 20 lb. white bright paper with no more than 30% post consumer recycle content, and a repair and maintenance service contract with 4 hour service response on-site parts and labor;
 - l. FAX machine (plain paper);
 - m. The Contractor shall provide a commercial grade broadband internet access (DSL at 640k, or ISDN when DSL is not available) between the field office and an Internet Service Provider (ISP). The Contractor shall provide for 24 hour technical support and a local or 1-800 phone number to troubleshoot and maintain the broadband connectivity. The Contractor shall provide inside wiring to support a Local Area Network inside the field office and shall include a 4-plex jack to at least 4 workstations (desk or table locations to be addressed at the pre-construction meeting per Section 1-08.1(2)). The Contractor shall provide necessary equipment to allow internet connectivity and shall be configured to allow VPN access from individual machines to the City of Seattle. The Contractor shall contact Seattle Information Technology at 206-684-8774 (206-684-4544 backup) at least 5 Working Days in advance for access to the Seattle internal network; and
 - n. Seven (7) 20 foot (min. length) power cord with multiple plug-in surge protector for each of 4 computers with monitors, 1 printer, 1 FAX machine, and 1 spare.
 - o. Paper shredder: Type – strip cut, confetti, or x-cut; Capacity – can shred 5 to 7 sheets of paper at a time; Waste Bin – self contained and attached to shredder; Throat Width – nine (9) inch minimum width; and must be capable of shredding paper clips and staples.
6. Electric power of sufficient capacity to operate 4 computers with monitors, electric heater, air conditioner, typewriter, FAX machine, high speed internet, calculator, copier, and lights shall be provided and shall include a minimum of seven (7) duplex convenience electrical outlets. The office shall be illuminated at the tables and desks. An outdoor light fixture with a 150 watt bulb or approved equal shall be installed to effectively light the area around the office facility.
- After obtaining inspection and approval of the field office electrical system and the proposed temporary power connection hook-up from DPD, the Contractor shall provide a minimum 15 Working Days advance to Seattle City Light requesting a temporary power drop and connection. At and north of Denny Way, contact 206-615-0600, and south of Denny Way contact 206-386-4200. Generators (gas and diesel) for producing electrical power will not be allowed unless the Engineer permits such in writing.
- 7. Contractor shall provide drinking water with disposable cup dispenser filled with cups; sanitary facilities within the office including a toilet and wash basin both with running water; a waterless hand cleaner dispenser filled with waterless hand cleaner with pumice; and a paper towel dispenser filled with paper towels.
 - 8. The Contractor shall provide both local and long distance telephone service with four (4) separate phone lines (two for voice, one for internet access, and one for FAX); two (2) each single line "touch-tone" phones; "Centraflex" service with "call pickup, voice mail,

and call forwarding.” Each installation shall include 25 foot long extension cord between phone jack and instrument to serve the desks and drafting tables.

9. The Contractor shall provide heating and air-conditioning of sufficient capacity to heat the office to 70° F within 1 hour, and to cool the office 15° F within 1 hour.

The field office shall be strictly for the use of the Engineer’s staff.

If the Contractor fails to provide a field office at the location on the date agreed to at the pre-construction meeting, the Engineer will provide Written Notice of such and shall have the right to withhold progress payments in accordance with Section 1-09.9(3). If within 5 Working Days of the Engineer sending this Written Notice the Contractor has not provided the field office, then the Engineer will have the option to provide the field office. If the Engineer elects to provide the field office, the Engineer will give the Contractor a second Written Notice of such; will within three (3) Working Days of giving the second Written Notice provide the field office meeting the requirements specified in Section 1-07.29; and will charge the Contractor by deducting from monies due or to become due the Contractor on progress payments, all costs associated with the field office as specified in Section 1-07.29. Upon deliverance of the second Written Notice, the Contractor’s right to provide the field office shall be forfeited.

The field office, equipment, and appurtenances supplied by the Contractor shall revert to and be removed by the Contractor when the Engineer, via the Written Notice of physical completion to the Contractor, establishes the Physical Completion Date. If the Contractor removes, closes, or discontinues the services specified in Section 1-07.29 prior to receiving the Written Notice of physical completion without first obtaining approval from the Engineer, the Contractor will be charged Liquidated Damages in accordance with Section 1-08.9.

All costs for the work required to provide the field office as specified in Section 1-07.29 and to procure all permits and licenses required for the field office, shall be included in the lump sum Contract Price Bid for “Mobilization.” All costs for the work required to relocate the field office, if required, shall be considered incidental to the Bid item “Mobilization.” *

1-07.31 RESERVED

Delete this Title and replace with the following new Title and Section:

1-07.31 SPILL PREVENTION, CONTROL & COUNTERMEASURES (New Section)

All pollution prevention work and spill cleanup, spill containment, and disposal of spilled material/waste shall be the Contractor’s responsibility, including, but not limited to, testing, handling, and disposal as required by law for any spill waste generated through construction activities. The Contractor shall prepare a Spill Prevention, Control, and Countermeasures (SPCC) plan as part of the Storm Water Pollution Prevention Plan (SWPPP) as specified in Section 8-01.3(1)A.

1-07.31(1) SPCC PLAN REQUIREMENTS (New Section)

The SPCC plan shall identify construction-planning elements and recognize potential spill sources at the site. The plan shall outline responsive actions in the event of a spill or release and shall identify notification and reporting procedures. As a minimum, SPCC plan shall include the following:

1. A map indicating the layout of all materials, products, equipment storage areas, bulk and non-bulk chemical/petroleum storage areas, temporary waste storage areas/structures, spill kit(s), secondary containment units, and sanitary facilities for the workers.
2. Methods of managing stationary equipment and vehicles on-site, to prevent and contain any petroleum releases.
3. The name of the Contractor’s personnel responsible for the coordination and implementation of the specified environmental requirements, and the emergency response sub-contractor’s 24-hour/7-day phone number.

4. Spill Prevention and Emergency Cleanup Response plan, including but not limited to: notification procedures and procedures for spill containment, clean up, removal, hauling and off-site disposal of contaminated soil or water.

Applicable spill-related materials include, but are not limited to the following:

- Any hazardous materials, as defined in RCW 70.105.010 under “hazardous substances”, that the Contractor stores, uses, or generates on the construction site during construction activities. These items include, but are not limited to, gasoline, oils and chemicals.
- Any contaminated soil, as defined in RCW 70.105.010, meaning soil containing hazardous substances as defined at concentrations exceeding Ecology’s MTCA Method A cleanup criteria.
- Any contaminated water, as defined in RCW 70.105.010, meaning groundwater, surface water, run-on, run-off, or dewatering fluids containing hazardous substances at concentrations exceeding Ecology’s MTCA Method A cleanup criteria.

1-07.31(2) POLLUTION CONTROL AND SPILL RESPONSE (New Section)

The Contractor shall respond immediately to any situation involving spills or the possibility of pollution. The Contractor shall make required notifications and take corrective action to eliminate or temporarily contain and clean up contaminants. The Contractor shall provide containers to store all contaminated wastes prior to disposal.

1-07.31(3) PREVENTION OF SPILL FROM HANDLING CHEMICAL AND PETROLEUM PRODUCTS (New Section)

The Contractor shall minimize potential spills by applying the following:

A. Storage

1. Storage of products shall be strictly controlled in an impervious diked area or containment shed. Any products actively being used for construction work shall be returned to storage afterwards or by the end of each shift.
2. Designate a chemical storage location in the staging area and identify the location in the Contractor’s submitted SPCC plan.
3. Hazardous materials storage containers shall be OSHA-approved, and secure against spillage.
4. Provide lockable, positive shutoffs on any valve, pump, hose, or nozzle attached to any container.
5. Provide a clearly visible, weatherproof sign at entrance to storage with the following information:
 - a. Full time phone number to contact SPU in the event of a spill or leak. SPU will furnish information to Contractor after contract award.
 - b. Designate cleanup firm who will be available 24- hours and contacted in the event of a spill.

B. SPILL PREVENTION AND CLEANUP

1. Products or waters contaminated as evidenced by sheens or rainbows shall not be allowed to contaminate ground surface or enter surface waters or surface drainage systems. Spills shall be contained and cleaned up immediately. Use of chemical emulsifiers, dispersants, coagulants, or other cleanup compounds for spills shall not be allowed.
2. Contaminated soil and vegetation from any product spill, including leaks from equipment, shall be immediately contained, removed/excavated, and properly stored in approved container(s). Contractor shall be responsible for disposal in accordance with all applicable laws and regulations and shall provide documentation of legal disposal to the Engineer.
3. Provide and maintain containment, recovery, cleanup, restoration, and disposal supplies and equipment at project site during construction.

4. Maintain, service, and make emergency repairs to equipment off-site, with procedures to prevent product spills and pollution. Take containment measures prior to all such work, i.e. use absorbent pads underneath all stationary vehicles and equipment.
 - a. Disconnecting, modifying, reconnecting, and testing of hydraulic and fuel lines shall not be allowed on project site unless for an emergency. In case of emergency repairs, all work shall be performed in a manner to prevent spill onto ground surface or nearby bodies of water. Containers and absorbent pads shall be immediately available and used for this work. Contractor shall monitor any such work to watch for leaks/spills.
 - b. Any piece of equipment having a gasoline or diesel engine, operating on project site, shall carry, as a minimum, one empty 5-gallon bucket with lid, 5 absorbent pads, two absorbent socks and a shovel.
 - c. Any fuel/lubrication truck operating on project site shall carry, as a minimum, one 20-gallon bucket with lid, 10 absorbent pads, 3- 5"x10' absorbent booms and a shovel.
 - d. No devices for dispensing petroleum products shall be allowed on project site.
 - e. Dumping condensation siphoned from petroleum/fuel tanks or flushing water from equipment or any product container shall not be permitted on project site.
5. If a spill occurs, the Contractor shall immediately implement the spill contingency/cleanup plan in accordance with the SPCC plan as approved by the Engineer.
6. Spills will be reported to SPU in accordance with the SPU Initial Spill Response And Reporting Procedures (See Appendix)
 - For spills of 1 gallon or less, the Contractor will clean up the spill, complete a Spill Report Form, and submit it to the Engineer. The Engineer will forward the Report to the SPU Senior Spill Coordinator within 48 hours.
 - For larger spills, the Contractor will initiate the spill cleanup and will immediately notify the Engineer. The Engineer will immediately notify OCC Dispatch (206-386-1800) and request that the duty Spill Coordinator be advised. The Engineer will complete a Spill Report and provide it to the Spill Coordinator.
 - The SPU Spill Coordinator will respond to the scene to oversee the Contractor's cleanup activities and to mobilize SPU resources, if necessary.
 - The contractor must immediately initiate spill cleanup actions and not delay action while awaiting the arrival of the Spill Coordinator.
- C. Provide and maintain a central Spill Cleanup Kit at site when any work occurs. Locate kit(s) conveniently as designated in the approved SPCC plan. Notify all on-site workers of locations, and indicate locations on site map.

CENTRAL SPILL CLEANUP KIT SHALL CONTAIN THE FOLLOWING ITEMS AS A MINIMUM:

1. Two shovels
 2. Two 6-volt flashlights including extra batteries and bulbs
 3. Two 55-gallon empty drums with lids
 4. Two pairs of chemical-petroleum rated work gloves
 5. Two pairs of chemical splash goggles
 6. Two bales (100/bale) of oil absorbent pads
 7. Eight 5"x10' oil absorbent booms with connectors at each end
 8. Two 19"x100' oil absorbent sweeps
 9. 15 plastic disposal bags
 10. 50 All-purpose/chemical absorbent pads
 11. Labels and markers for drum/container identification
- D. Contaminated soil or surface water shall not be tracked from contaminated areas or spilled onto non-contaminated areas of the property and surrounding environment. Contractor shall comply with the SPCC plan provisions regarding equipment decontamination.

1-07.31(4) MATERIALS (New Section)

Oil Absorbing Materials shall be oleophilic and hydrophobic, constructed of blown polypropylene fibrous material, 3M Brand Oil Sorbent as manufactured by Occupational Health and Safety Products Division/3M, St. Paul, Minnesota or approved equal. Materials shall have sufficient strength to allow them to be secured and remain in position for the applications required. The materials shall be reusable and shall not have any irritating or toxic effects on personnel. The Contractor shall supply oil-absorbing materials in the form of sheets, rolls, or pillows as required for effective control of spilled oil.

1-07.31(5) PAYMENT (New Section)

Costs for the Work required to prepare and implement the Spill Prevention, Control, and Countermeasures (SPCC) plan will be considered incidental to the Work and such costs shall be included in the lump sum Bid or the unit prices for the various items of Work listed in the Bid Form that comprise the Contract.

SECTION 1-08 PROSECUTION AND PROGRESS

1-08.1(2) PRECONSTRUCTION CONFERENCE (3-28-03)

After item 8 in paragraph 1, add the following new item:

- *9. To arrange for "type" field office including features, location and delivery date.*

1-08.1(4) HOURS OF WORK

In the first paragraph, revise the first sentence to read as follows:

Except in case of emergency or unless otherwise approved by the Engineer, the normal hours of work shall be between **7:00 a.m** and 7:00 p.m. on any Working Day and shall consist of 8 hours exclusive of a lunch period not more than one hour.

Supplement this Section with the following:

Unless otherwise directed by the Engineer, no construction activities will be allowed on any portion of the Project during the holiday season from December 23, 2005 to January 2, 2006.

1-08.3(1) CRITICAL PATH SCHEDULE

Supplement the first paragraph with the following:

Within two weeks of submitting an initial schedule, the Contractor shall provide expenditure rate by quarter.

The electronic copy of the schedule shall be prepared using Microsoft Project 98 software. The Contractor may, at its option, provide the electronic copy of the schedule prepared using other software such as Primavera or SureTrak. If the electronic copy is prepared using software other than Microsoft Project 98, the software used shall be compatible with the Windows 2000 operating system. The Contractor shall also furnish to the Engineer two copies of the software used to prepare the schedule at no additional cost to the Owner. The software shall revert to the Contractor at the completion of the contract.

Supplement the third paragraph with the following:

4. Show relocation of water meters in the Critical Path Schedule. See Section 7-11.9(9)E Water Meter Relocation.

5. If additional gas main service or meter relocation is required, show relocation of gas lines and meters in the Critical Path Schedule.

1-08.3(2) REQUIRED CONTRACTOR SUBMITTALS

Replace number 1 through 8 of the first paragraph with the following:

Required Contractor submittals include as necessary, but are not limited to, the following:

1. A method of removal and/or demolition plan and schedule,
2. Copies of permits required by the Contractor,
3. Traffic control plan, schedule, and safeguards to be used,
4. Materials catalog-cuts,
5. Sources of materials (Section 1-06.1),
6. Submittal Control Document (Section 1-05.3(2)B),
7. Critical Path Schedule (Section 1-08.3(1)),
8. Stormwater Pollution Prevention Control Plan (SWPPP) (including Site Access Plan) per Section 8-01.3(1)A.
9. Spill Prevention, Control & Countermeasures (SPCC) Plan (Section 1-07.31).
10. Critical Design Elevations per Section 2-03 and Section 7-05.

1-08.4 NOTICE TO PROCEED AND PROSECUTION OF WORK

Supplement this Section with the following:

WORK EXECUTION SEQUENCE & RESTRICTIONS

Work shall progress in four phases as detailed below:

Phase 1 – 19th Ave NE and 23rd Ave NE, north of NE 115th St;

Phase 2 – 20th Ave NE, north of NE 115th St and 23rd Ave NE, south of NE 115th St;

Phase 3 – 20th Ave NE, south of NE 115th St and NE 113th St, between 20th Ave NE and 23rd Ave NE;

Phase 4 – NE 117th St between 16th Ave NE and 23rd Ave NE.

Unless directed otherwise by the Engineer, each phase of the work shall be completed before starting the next phase. Each phase of work will be considered complete when an Avenue or Street is ready for landscaping work and all critical location and elevation data points verified by the Engineer. Ready for landscaping shall mean that all sidewalk, curb, driveway, pavement, soil, compost and mulch placement work is finished.

Prior to the start of construction on each Avenue or Street, the Engineer will conduct a pre-construction walk through to highlight existing features that are to be protected or removed.

Work on 25th Ave NE & NE 113th St can be completed at anytime.

1-08.9 LIQUIDATED DAMAGES (04-01-03)

Supplement this section with the following:

*Liquidated Damages will be assessed in the amount of ninety dollars (\$90.00) for each day after the day established for the complete set up of the field office for the Engineer's use, and for each day the field office is removed or closed prior to the Physical Completion Date (see Section 1-07.29). These monies will be deducted from payment(s) due the Contractor. No deduction or payment of Liquidated Damages will release the Contractor from the Contractor's obligation to provide the field office.

If the Engineer elects to provide the field office in accordance with Section 1-07.29, Liquidated Damage charges as specified in Section 1-08.9 will cease upon deliverance of the Written Notice to the Contractor.*

SECTION 1-09 MEASUREMENT AND PAYMENT

1-09.6 FORCE ACCOUNT (03-02-04)

1-09.6(2) LABOR (03-02-04)

In the fifth (5th) paragraph, delete 26% and replace with 29%.

1-09.7 PAYMENT FOR MOBILIZATION (8-20-03)

Delete this Section and replace with the following:

*Mobilization consists of preconstruction expenses and the costs of preparatory work and operations performed by the Contractor which occur before 10 percent of the Awarded Contract Price is earned from other than mobilization Contract Bid items and other than payment for Materials on hand. Bid items which are not to be included in the Contract Bid item of Mobilization include but are not limited to:

1. Any portion of the Work covered by the specific Contract Bid item or incidental work which is to be included in a Contract Bid item or items.
2. Profit, interest on borrowed money, overhead, or management costs.
3. Any costs of mobilizing Equipment for force account work.

Based on the Bid item lump sum price for "Mobilization", progress payments will be made as follows:

- a. When 5 percent of the Awarded Contract Price is earned from other than mobilization Contract Bid items, excluding amounts paid for Materials on hand, 50 percent of the amount Bid for mobilization, or 5 percent of the Awarded Contract Price other than mobilization, whichever is the least, will be paid.
- b. When 10 percent of the Awarded Contract Price is earned from other than mobilization Contract Bid items, excluding amounts paid for Materials on hand, 100 percent of the amount Bid for mobilization, or 10 percent of the Awarded Contract Price other than mobilization, whichever is the least, will be paid.
- c. When the Physical Completion Date has been established for the Project, payment of any amount remaining for the amount Bid for mobilization will be paid.

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

SECTION 1-10 TEMPORARY TRAFFIC CONTROL

1-10.1 GENERAL

Supplement this Section with the following:

7. Provide temporary traffic control around SPU crews while water meters are being relocated.

1-10.2(5)C TRAFFIC CONTROL RESTRICTIONS (10-16-00)

Supplement this Section with the following:

The Contractor shall maintain access for emergency vehicles at all times.
The Contractor shall coordinate mail service delivery, garbage and recycling pick up during project duration.

Unless otherwise directed by the Engineer, no construction activities will be allowed on any portion of the Project during the holiday season from December 23, 2005 to January 2, 2006. During this period the Contractor shall consolidate storage areas and prepare the site in a manner that allows the maximum number of parking spaces for residents.

1-10.4 MEASUREMENT

Delete the 2nd, 3rd and 4th paragraphs of this Section.

1-10.5 PAYMENT

Delete pay items 2. and 3. All costs for the work required for "Traffic Control Labor" and "Construction Signs Class A" on this project shall be considered incidental to the Bid Item "Maintenance and Protection of Traffic Control" and no separate payment will be made.

DIVISION 2

EARTHWORK

SECTION 2-01 CLEARING, GRUBBING AND ROADSIDE CLEANUP

2-01.3(1) CLEARING

Supplement the first paragraph with the following:

Clearing shall also include removal and trimming of shrubs and hedges (regardless of size); removal of rockeries, wood and chain link fencing and gates; removal of concrete curb, sidewalk, pavement, steps and driveways, wood pads, wood walks and steps, concrete blocks, concrete walls, retaining walls, bollards, wood posts, landscape timbers, railroad ties, asphalt in ditches, concrete culvert and catch basin pipes, catch basins, sandboxes, junction boxes, inlet and catch basin grates, tree stumps, tree rounds from trees removed, removal of ivy growing on trees, temporary relocation of mailboxes, and any other work marked as remove on each Removal, Relocate and Protection Plan sheet unless a separate removal bid item is included in the Bid. The Contractor shall give the Engineer 72 hour advance notification prior to the start of clearing and grubbing on each Avenue or Street to allow the Engineer time to field mark features to be protected or removed.

Supplement this Section with the following:

Trees and woody vegetation cleared on site may be chipped or shredded and stockpiled on site for use if materials conform with requirements of "Shredded Mulch" specified in Section 9-14.4(10). Cost for this work will be paid separately using the Bid Item "Shredded Mulch".

Payment for "Saw Asphalt Concrete", "Saw Cement Concrete", "Abandon and Fill Pipe", "Remove Tree" (greater than 6 inches in diameter), "Remove Traffic Circle" shall be made in accordance with Section 2-02.

Removal of asphalt pavement will be paid using the bid item "Common Excavation".

Payment for relocated or new wood fencing shall be in accordance with Section 8-12.

Removed rock facing may be reused on the project if materials conform with the requirements of Section 8-15.

2-01.3(5) PROTECTION OF EXISTING IMPROVEMENTS

Supplement this Section with the following:

Existing trees identified as protected within the right-of way shall be protected by installing temporary high visibility fencing, on the construction side of vegetation to be protected, at a minimum distance equal to one-half the distance to the drip line away from the trunk, or as directed by the Engineer. Existing trees to be protected will be flagged by the Engineer prior to the start of construction on each Avenue or Street. All clearing and grubbing around native trees shall be selective, by hand methods only and as directed by the Engineer.

High visibility fencing shall be composed of a High Density Polyethylene material and shall be at least 4 feet high. Posts for fencing shall be placed every 5 to 10 feet on center or as directed by the Engineer to ensure rigidity. On long continuous runs exceeding 8 feet, a tension wire or rope shall be used as a top stringer to prevent sagging between posts.

Fencing material shall be free of any chemical treatment and meet the following requirements:

PROPERTY	VALUE	TEST METHOD
Tensile strength	360 lbs / ft	ASTM D4595
Color	High Visibility Orange	

The Contractor shall furnish a certificate or affidavit attesting that the fabric meets all the requirements stated above.

Upon completion of the project or when directed by the Engineer, the high visibility fence shall be removed in its entirety and disposed of by the Contractor.

2-01.4 MEASUREMENT

Supplement this Section with the following:

High visibility construction fencing will not be measured.

2-01.5 PAYMENT

Supplement this Section with the following:

All costs for the work required to furnish, install, maintain and remove the high visibility construction fencing shall be included in the lump sum price bid for "Clearing and Grubbing" and no separate payment will be made.

SECTION 2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

SECTION 2-02.3(2) REMOVAL OF BRIDGES, BOX CULVERTS AND OTHER DRAINAGE STRUCTURES

Supplement this Section with the following:

Backfilling of pipe removal areas shall use native soil backfill material unless otherwise specified by the Engineer. If the Engineer determines structural properties of native backfill material are inappropriate, Mineral Aggregate, Type 17 shall be used.

2-02.3(6) SAWING AND LINE DRILLING

Delete the last paragraph in this Section and replace with the following:

To thoroughly clean sawcuts the Contractor shall use high pressure water (water under at least 1400 psi.) to flush the cuts while simultaneously collecting wastewater using a wet-dry vacuum or similar method, or the wastewater may be pumped directly into drums for disposal. Disposal of waste liquid may be to soil or other porous surfaces away from storm drains and surface water ONLY if the Contractor collects and disposes of the remaining sediment after the water has filtered into the soil or evaporated. Impervious surfaces contaminated with sediment and grit from saw-cutting, planing or pulverizing operations shall be cleaned by sweepers to prevent contaminants from entering the storm drainage system or surface waters when it rains.

2-02.3(9) REMOVE BRICK DRIVEWAY, STORE BRICKS & PROVIDE SAND (New Section)

At 11539 23rd Ave NE, the existing brick driveway shall be removed and neatly stacked on site for reuse by others. After final roadway grades are established and 4 inches of base coarse has been placed, provide a sufficient quantity of builders sand to provide a uniform depth of 2.5 inches over the driveway area. Spread and level the sand to a uniform depth of 2.5 inches. The removed bricks will be reset by others.

Excavation and base coarse rock will be paid separately.

2-02.5 PAYMENT

Supplement this Section with the following:

(11) "Remove Brick Driveway, Store Bricks & Provide Sand", per lump sum.

The Bid item price for "Remove Brick Driveway, Store Bricks & Provide Sand" shall include all costs for the work required to perform this work as specified.

SECTION 2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.3(19) SWALES, RAIN GARDENS & EARTH BERMS (New Section)

2-03.3(19)A DESCRIPTION (New Section)

Construction of Bioretention Swales, Conveyance Swales and Rain Gardens shall consist of common excavation; placement of one-foot high rock facing, weir logs and earth berms; placement of Bioretention Soil and Engineered Soil; finish grading; placement of Composted Material, jute matting and mulch.

Log weirs shall conform to the requirements of Section 7-05.3(3).

Rock shall conform to the requirements of Section 8-15.

Soil mixes and mulch shall conform to the requirements of Section 9-14.

2-03.3(19)B SWALE & RAIN GARDEN GRADING (New Section)

Finish grade of the bottom of the Bioretention Swales, Conveyance Swales and Rain Gardens shall be the Bottom Swale Elevation as indicated on the Drawings unless directed otherwise by the Engineer. Finish grade at any point around the Bioretention Swale's top of swale shall be equal to or exceeding Minimum Top Swale Elevation as shown on the Drawings. Maximum exposed vertical surface of rock placed on street side of swale is 1-foot.

Bioretention Swale, Conveyance Swales and Rain Garden survey staking shall be conducted by the Contractor. The Owner will set control hubs every 25-feet on street centerline with elevations. The Engineer will provide the Contractor with a Stake-Out Sheet prior to the construction of each Avenue or Street (See Section 1-05.5(2) item #8). Each Stake-Out Sheet will include horizontal and vertical control for Swale Construction Points to aid in constructing the swales. Some of the Swale Construction Points may also be Critical Grading Points where higher degrees of grading accuracy are required. Swale Construction Points will be provided for a minimum of two and a maximum of five cross sections for each swale depending on the length of the swale (See sample tables in the Appendix). Finish grades at all the Critical Grading Points, and other swale points as directed by Engineer, shall be reported to the Engineer prior to the placement of mulch or composted material. Swale elevation at this point in construction shall be verified to meet the critical design elevation minus 3-inches. If design elevations are not met within the tolerances specified in Section 1-05.5(2) the Engineer can require the Contractor to rework the soil to meet the design requirements, solely at the Contractor's expense. Following placement and compaction of mulch, Engineer shall verify mulch depth of 3-inches is achieved by using a ruler to measure mulch depth.

The Contractor shall establish the number of survey points to clearly identify swale and berm bottom and top shape and elevations; at minimum the construction points supplied by SPU shall be surveyed. After staking, the Contractor shall delineate swale shape with marking paint. The Engineer shall approve survey information and swale shape before excavation begins. Upon approval of paint markings, stakes shall be set to maintain limits of excavation as directed by the Engineer.

Grading within root zones of existing trees to be protected shall be under the direction of the engineer. Trees shall be protected per 1-07.16(2) and 8-02.3(7). Should grading conflict with existing site conditions, consult with the Engineer prior to proceeding with the work.

No heavy equipment shall operate within the swale perimeter during excavation, subsurface pipe placement, backfilling, tree pit preparation, or mulching of the facility.

Excavation within 6-inches of final native soil grade shall not be permitted if soil area is saturated. Engineer will determine if soil is saturated if soil is more than 3% beyond optimum moisture content; laboratory testing to verify saturation can be conducted by Contractor if soil saturation is in dispute. Moisture content test may take several days to complete.

No materials or substances shall be mixed or dumped within the swale area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations.

Any existing private drainpipe currently discharging into the right-of-way area shall be reconnected to a new swale at an invert elevation greater than or equal to the downstream culvert invert elevation. If the existing private drainpipe intercepts a new swale at or below the downstream culvert elevation, or at or below structure outlet elevation, the private drainpipe shall be piped to a downstream swale or structure. A perforated cap shall be placed on the end of the drainpipe to block entrance of animals.

PSE shall relocate gas lines in conflict with proposed culvert and swale elevations prior to contractor work in those locations. Contractor shall pothole for gas line locations as requested by Engineer in accordance with Section 7-17.3(5).

The Contractor shall coordinate relocation and/or adjustments of water meters as specified in Section 7-11.3(9)C Water Service Connections.

Swales with a utility crossing through the swale soil or a side sewer within 18-inches from bottom of swale soil (as identified through shallow potholing per Section 7-17.3(6)) require a clay trench dam to prevent migration of water along the utility line. A clay trench dam shall be placed and constructed as specified in Section 7-17.3(6).

Prior to finishing swale excavation, the Engineer shall inspect swale native soil to establish if there are any soil lenses that might direct significant volumes of water to a private property or other area of concern. If such a soil lense is identified the Engineer may determined a swale liner is necessary. A swale liner shall be constructed by thoroughly mixing 25% bentonite clay into 75% native soil to depth of 6-inches or as directed by the Engineer. Payment for swale liner will be made at the unit price bid for "Dam, Clay Trench".

When the top surface of culvert pipes are within 6-inches of finished grade within vegetated area, Contractor shall berm soil over culvert pipe such that there is a 6-inch depth of Bioretention Soil over the pipe.

Soil used for the 2-foot shoulder strip, adjacent the road, shall be Engineered Soil and it shall be compacted between 90% to 95% of its maximum dry density per ASTM D698.

Prior to placement of Bioretention Soil in each swale, the Contractor shall notify the Engineer to inspect and take a photograph of the swale. If any sediment laden runoff has entered swale, the sediment deposition shall be removed by overexcavating the swale by a 3-inch minimum. Additional 3-inches of Bioretention Soil shall be imported at the Contractor's expense.

One foot of Bioretention Soil shall be placed in each swale. Soil shall not be placed when the ground or soil is frozen, excessively wet or, in the opinion of the Engineer, in a condition detrimental to the work. Once all lifts are placed, the Contractor shall compact each lift of soil by watering soil until just saturated. Water for saturation shall be applied by spraying or sprinkling. After compaction, the Contractor shall grade the swale bottom areas to finished grade minus 3-inches. Finished grades are the elevations indicated on the Drawings and cross sections provided by the Engineer. Contractor shall provide 5 check elevation points within bottom of each swale prior to placement of compost or mulch. After grading is approved by the Engineer, areas shall be dressed with 3-inches of Composted Material or Shredded Bark Mulch.

Finished elevation shall be graded to 1-inch below walks, curbs, pavements and driveways, unless adjacent to a bermed area.

Berm areas shall be graded in a uniform manner following the Detail Plans, or as set by the Engineer. Rounding shall be done at abrupt changes in surfaces as per Standard Plan # 140. Feather grades gradually to meet existing contours. Implement minor adjustments to the swale grading and contouring shown in the Drawings as necessary to meet site conditions. Hand grading and final refinement of swale bottom and Engineered and Bioretention Soil areas shall be as directed by the Engineer. The Engineer shall have final approval of all grading and contouring.

Upon completion of finish grading work, all excess material shall be removed from the Project Site and disposed of.

Contractor shall vegetate the 2-foot shoulder strip following finish grading of the swales or as directed by the Engineer. Vegetation shall be grass or ground cover, as directed by the Engineer.

2-03.3(19)C EARTH BERM GRADING (New Section)

Upper one foot of soil used for any bermed areas shall be Bioretention Soil. Lower portion of berm can be Bioretention Soil or native soil. Fill material shall be placed in lifts not exceeding 6 inches. All lifts below the top one-foot of finished grade shall be compacted to 95% maximum dry density per ASTM D698. Top one-foot of finished grade shall be compacted to between 85% and 90% maximum dry density by proof rolling with hand held device approved by the Engineer. Soil shall not be placed when the ground or soil is frozen, excessively wet or, in the opinion of the Engineer, in a condition detrimental to the work.

Finish grades at all the Critical Grading Points, and other swale points as directed by Engineer, shall be reported to the Engineer prior to the placement of mulch. Swale elevation at this point in construction shall be verified to meet the critical design elevation minus 3-inches; this elevation shall be achieved to an accuracy as described in Section 1-05.5(2). If design elevations are not met within the tolerances specified in Section 1-05.5(2) the Engineer can require the Contractor to rework the soil to meet the design requirements, solely at the Contractor's expense. Following placement of mulch, Engineer shall verify mulch depth of 3-inches is achieved by using a ruler to measure mulch depth.

2-03.3(20) CONVEYANCE DITCHES (New Section)

Construction of Conveyance Ditches shall consist of common excavation; placement of stream bed cobbles and one-foot rock facing; placement of Bioretention Soil and Engineered Soil; finish grading; and placement of jute matting, turf reinforcement mat and bark mulch. Landscaping will be by others.

Conveyance Ditch, Type 1, 2 & 3 shall be constructed as specified and as indicated on the Drawings.

Conveyance Ditches shall be graded to achieve 1% minimum slope to the downstream conveyance system.

Bioretention Soil and Engineered Soil shall be placed and compacted as specified in Section 2-03.3(19)

Rock shall conform to the requirements of Sections 2-08 and 8-15.

Jute matting shall conform to the requirements of Section 8-01.

Mulch and turf reinforcement mat shall conform to the requirements of Section 8-02.

Soil mixes and mulch shall conform to the requirements of Section 9-14.

2-03.4 MEASUREMENT

Supplement this Section with the following:

No measurement for finish grading will be made.

2-03.5 PAYMENT

Supplement item 9. with the following:

(9) Other Payment Information

Payment for Bioretention Swales, Conveyance Swales, Rain Gardens, Conveyance Ditches & Earth Berms shall be made using the applicable bid items listed in the Bid Form.

No separate payment will be made for finish grading work required to hand grade Bioretention Swales, Conveyance Swales, Rain Gardens, Earth Berms and Conveyance Ditches to final shape as specified.

No separate payment will be made for connection of private drain pipes to the swales, or for bypassing surface or underground drainage water.

SECTION 2-08 ROCK FACING

2-08.3(1)A GENERAL

Delete the first sentence and replace with the following paragraph:

'ROCK FACING' for this project shall be constructed in accordance with Standard Plan #141, with the following exceptions:

There will not be any 6" perforated PVC subsurface drainpipe.

The "Existing or Proposed Grade" shown on the Drawings shall be considered to be the top of undisturbed native soil in the bottom of swale. The "Depth of Base" (d) shall be the embedment depth of the rock in undisturbed native soil.

The "Slope Line of Rock Facing" shown shall be as shown, unless otherwise noted.

Where it shows 'Rock Facing Modified' or 'Rock Facing, One Foot High' on the Drawings it shall be constructed according to the details indicated on the Drawings.

Material called out as 'Filter Fabric' shall meet the strength properties in Section 9-05.22(2) Table 4, for moderate survivability and the requirements of 9-05.22(2) Table 5 class "C".

2-08.4 MEASUREMENT

Supplement this Section with the following:

Measurement for "Rock Facing, Modified" will be by the square foot.
Measurement for "Rock Facing, One Foot High" will be by the linear foot.

2-08.5 PAYMENT

Supplement this Section with the following:

(5) "Rock Facing, Modified", per square foot

The bid item price for "Rock Facing, Modified" shall include all costs for the work required to furnish and place the rock as indicated on the Drawings.

Excavation will be paid separately in accordance with Section 2-03.
Filter fabric will be paid separately in accordance with Section 2-12.
Quarry spalls will be paid separately in accordance with Section 8-15.
Bioretention soil will be paid separately in accordance with Section 8-02.

(6) "Rock Facing, One Foot High", per linear foot.

The bid item price for "Rock Facing, One Foot High" shall include all costs for the work required to furnish and place the rock facing as indicated on the Drawings.

SECTION 2-10 DITCH AND CHANNEL EXCAVATION

2-10.5 PAYMENT

Delete this Section and replace with the following:

All ditch excavation on this project will be paid as Common Excavation.

SECTION 2-12 CONSTRUCTION GEOTEXTILE

2-12.5 PAYMENT

Supplement this Section with the following:

(8) "Filter Fabric", per square yard.

The bid item price for "Filter Fabric" shall include all costs for the work required to furnish and install filter fabric as specified in Section 2-08.3(1)A and as indicated on the Drawings.

DIVISION 5

SURFACE TREATMENTS AND PAVEMENTS

SECTION 5-04.3(15) ASPHALT CONCRETE DRIVEWAYS

Second sentence is revised to read: The Contractor shall complete the necessary earthwork and provide a 3-inch Compacted Asphalt Concrete, Class A over 4 inches of Compacted Mineral Aggregate Type 2.

SECTION 5-04.3(21) SHOULDERS

Revise this Section to read: Shoulders, if required, shall be constructed to the lines, grades, and cross-section specified on plans and this specification. Material for building up shoulders shall be Engineered Soil mix per Section 9-14.(1)5.

SECTION 5-04.3(23)C ASPHALT CONCRETE ON GRANULAR BASE

The first sentence is revised to read: After the subgrade and the base course have been prepared, Asphalt Class A shall be placed to a thickness shown on plan and compacted in the manner specified in this section.

DIVISION 7

STORM DRAINS, CULVERTS, SANITARY AND COMBINED SEWERS, WATERMAINS AND RELATED STRUCTURES

SECTION 7-02 CULVERTS

7-02.3(1) PLACING CULVERT PIPE

7-02.3(1)A GENERAL

Supplement this Section with the following:

Bedding for 10" and 12" DIP culvert pipe crossing under roadway and driveway areas with less than 2-feet of cover shall be Class C modified so that dimension A shown on Std Plan No 285, shall be 6-inches. Bedding for D.I. culvert pipe crossing under other areas shall be Class D.

7-02.3(2)A JUNCTION BOX 277, MODIFIED (New Section)

Where Junction Box 277, MOD, is indicated on the Drawings, the Contractor shall install the structure according to the details shown on Drawing Sheet 48.

7-02.5 PAYMENT

Supplement this Section with the following:

(5) "Junction Box, (Type), Modified", per each.

The bid item price for "Junction Box, (Type), Modified" shall include all costs for the work required to furnish and install the modified junction box complete to finished grade as indicated on the Drawings including but not limited to excavation, mortar, grout, brick, block, beehive grate and backfill with suitable native material.

Stream bed cobbles will be paid separately in accordance with Section 8-15.

SECTION 7-05 MANHOLES, CATCH BASINS, AND INLETS

7-05.3(3)C LOG WEIR (New Section)

Log weir shall be constructed of 2 recycled plastic landscaping timbers with a minimum dimension of 3.5"x 9.5". Length shall be 12-feet unless otherwise shown on plans. Color shall be redwood or sandstone brown. Recycled plastic timbers shall have 3- 1" diameter hole drilled, one at the center and two at a minimum of 2 feet from the end of the timbers. Recycled plastic landscape timber shall be placed as such that a minimum of 2-feet is embedded into the side slope of the swales, and top of log is within 0.5" accuracy of design elevation. 1-foot minimum width of soil under weir shall be amended with bentonite clay. Minimum depth of log embedment below swale finish grade is 8". Number 6 rebar shall be placed through the drilled holes and embedded a minimum of 2.5-feet. The connection between the timber blocks shall have a groove as indicated in the Drawings. Sealing between the two pieces shall be done using materials as recommended by the lumber manufacturer. Bottom swale elevation on the downstream swale, from the log weir, shall be at least 1.5" above the seam between the two pieces of recycled plastic timber.

Material source for recycled plastic landscaping timbers is American Ecoboard or approved equal. Material suppliers include Schrader Co, (425) 377-1550.

7-05.4 MEASUREMENT

Supplement this section with the following:

Measurement for "Log Weir" will be by each weir constructed complete and in place.

7-05.5 PAYMENT

Supplement this section with following:

(10)"Log Weir", per each.

The Bid item price for "Log Weir" shall include all costs for the work required to furnish and install the log weir as specified and as indicated on the Drawings. Filter fabric and streambed cobbles will be paid separately.

SECTION 7-11 PIPE INSTALLATION FOR WATER MAINS

7-11.3(9)E WATER SERVICE RELOCATION (New Section)

Contractor shall coordinate with SPU Water Operations to have water meters and hydrants relocated by SPU. Water service and hydrant relocations or adjustments shall be subject to the following conditions:

- 1) The Contractor shall make all necessary excavations, shorings, backfills, and provide any equipment and operators required for moving and lowering the component parts of SPU Operations crew work on water mains into position (including connections, service transfers and hydrants). The Contractor shall also provide all traffic control for any SPU Operations crew work. The Contractor shall do all temporary and permanent blocking. In some cases, this work will need to be completed on Saturdays or off-hours.
- 2) Water meter and hydrant adjustment or relocation shall be by SPU Water Operations crews. For water meter and service work contact Dave Guarin at (206) 386-1827, 10 days prior to establishment of rough grade within the two-foot road shoulder. For hydrant adjustments and relocations contact Dan Enrico at (206) 233-7184, 15 days prior to construction.
- 3) Shear pads shall be placed around all existing and proposed water hydrants per City of Seattle Standard Plan #311.
- 4) In the construction schedule, the Contractor shall allow 3 days per construction block for SPU Water Operations crews to perform the service work. Contact Dave Guarin at (206) 386-1827 to coordinate.
- 5) The Contractor shall not damage, repair, alter, dismantle or operate any SPU water mains, services, hydrants, test stations or valves.

On this project, there are a total of 46 water service connections (14 galvanized iron and 32 plastic renewals) and 4 hydrant relocations that will require the Contractor to assist SPU Water Operations crews as specified.

7-11.5 PAYMENT

Supplement this Section with the following:

9. "Assist SPU Water Operations Crews", per lump sum.

The Bid item price for "Assist SPU Water Operations Crews" shall include all costs for labor, tools, materials and equipment required to help SPU Water Operations crews during water service work as specified.

SECTION 7-14 HYDRANTS

7-14.3(4) RELOCATING EXISTING HYDRANTS

Supplement this Section with the following:

Contact Dan Enrico at (206) 233-7184 to coordinate hydrant relocations.

All hydrant relocations shall be subject to the conditions specified in Section 7-11.9(3)E.

7-14.4 MEASUREMENT

Supplement this Section with the following:

Measurement for "Hydrant Shear Pad" will be per each.

7-14.5 PAYMENT

Supplement this Section with the following:

(3) "Hydrant Shear Pad", per each.

The bid item price for "Hydrant Shear Pad" shall include all costs for the work required to furnish and install the shear pad as indicated on Standard Plan 311a.

SECTION 7-17 STORM DRAINS AND SANITARY SEWERS

7-17.3(5) POTHOLING AND FIELD INVESTIGATION (New Section)

The Engineer may direct the Contractor to pothole at specific locations in order to locate depth of existing utilities. The Contractor shall call to locate utilities prior to potholing. The Contractor shall mobilize equipment, excavate, shore, backfill, provide temporary pavement patch if needed and provide the Engineer with a report indicating the location and relative depth of utilities/objects within the pothole location. The temporary pavement patch shall consist of 3 inches of MC 250 over 6 inches of Mineral Aggregate, Type 2.

7-17.3(6) POT HOLE FOR SIDE SEWERS IN SWALES (New Section)

Contractor shall attempt to locate of all side sewer pipe within swale locations by potholing. Pot holing shall have a maximum depth of 18" beyond the maximum excavation depth of the swales. pot hole locations shall be filled and compacted to 90%.

Any side sewer crossing within swale excavations shall be replaced with PVC side sewer pipe per standard specifications in accordance with Section 7-18. Minimum depth of cover for new side sewer pipes shall be 6 inches measured from the maximum excavation depth of the swales.

For side sewer pipe located beyond limits of common excavation, Contractor shall report condition of pipe at the location the pipe is exposed to the Engineer (Contractor is not required to expose full length of side sewer pipe within ROW). If the Engineer determines that the side sewer is in poor condition, the Contractor will be directed to replace the side sewer within the right-of-way.

New side sewer pipe installed within 18-inches of bottom of swale soil shall require a clay trench dam to prevent migration of water along the utility line. Construct clay dam by thoroughly mixing 25% bentonite

clay with 75% native soil. Place clay dam at the low end of the pipe, extending up to a horizontal location approximately equal to the minimum top of swale elevation. The clay dam shall be 6-inches thick and shall be keyed into the soil surrounding the trench by extending beyond the trench limits a minimum of 8-inches into the native soil.

All side sewer pipe within 18 inches from limits of excavation shall be flagged as a warning to equipment operators.

7-17.5 PAYMENT

Supplement this Section with the following:

(13) "Pothole (Depth) & Field Investigation", per each.

The bid item price for "Pothole, (Depth) & Field Investigation" shall include all costs for the work required to complete the pothole and field investigation as specified in Section 7-17.3(5).

(14) "Pothole Side Sewers In Swales, (Depth)", per each.

The bid item price for "Pothole Side Sewers In Swales, (Depth)" shall include all costs for the work required to complete the pothole, report condition of pipe if found, flag pipe location and backfill hole.

(15) "Bedding For 8 In SSD Pipe, M.A. Type 26", per linear foot.

The bid item price for "Bedding For 8 In SSD Pipe, M.A. Type 26" shall include all costs for the work required to furnish and install the bedding to the cross section indicated on the Drawings.

(16) "Bedding, CI C Modified, (Size Pipe)", per linear foot.

The bid item price for "Bedding, CI C Modified, (Size Pipe)" shall include all costs for the work required to furnish and install the bedding as specified in Section 7-02.3(1)A.

(17) "Dam, Clay Trench", per each.

The bid item price for "Dam, Clay Trench" shall include all costs for the work required to furnish and install the clay dam as specified in Section 7-17.3(6).

SECTION 7-18 SIDE SEWERS

7-18.1 DESCRIPTION

Supplement this Section with the following:

All side sewer pipe within 18 inches from limits of excavation shall be protected during construction by flagging location of pipe to alert equipment operator of pipe location.

No direct unloading of dump truck soil shall be allowed within 5-feet of marked side sewer. No heavy equipment shall be permitted to drive over marked side sewer locations.

Side sewer pipe damaged by construction related activities shall be replaced by the Contractor at Contractor expense.

DIVISION 8

MISCELLANEOUS CONSTRUCTION

SECTION 8-01 EROSION CONTROL

Delete this title and Section in its entirety and replace with the following:

SECTION 8-01 WATER POLLUTION, EROSION, AND SEDIMENT CONTROL

8-01.1 DESCRIPTION (New Section)

This Work shall consist of furnishing, installing, maintaining, and removing and disposing of water pollution, erosion, and sediment control items in accordance with these Specifications, as shown in the Stormwater Pollution Prevention Plan (SWPPP), as designated by the Engineer, or as necessary on site.

8-01.2 MATERIALS (New Section)

Materials shall meet the requirements of the following Sections:

<i>Sediment Fence Materials</i>	<i>9-05.22</i>
<i>Roadside Planting and Related Materials</i>	<i>9-14</i>
<i>Erosion Control Blanket</i>	<i>9-14.5</i>
<i>Quarry Spalls</i>	<i>9-13.7</i>
<i>Rip Rap</i>	<i>9-13</i>
<i>Water For Irrigation</i>	<i>9-25.2</i>

8-01.3 CONSTRUCTION REQUIREMENTS (New Section)

8-01.3(1) GENERAL (New Section)

Controlling erosion, sediment, run-off, and related damage may require the Contractor to perform temporary work items including but not limited to:

1. Providing ditches, berms, culverts, and other measures to control surface water;
2. Building dams, settling basins, energy dissipaters, and other measures to protect downstream water quality;
3. Controlling underground water encountered during construction;
4. Covering or otherwise protecting slopes and exposed or disturbed soil areas until permanent erosion-control measures are working;
5. Installing and maintaining temporary construction fencing and/or mulch to protect existing trees, understory vegetation, and soil conditions within their associated driplines.

The Contractor shall coordinate temporary erosion control work with permanent erosion-control measures such as grading, soil preparation, planting and mulching to ensure an unbroken sequence of protection throughout the contract. The erosion controls specified herein are the minimum required to perform the work in favorable weather conditions. It is possible that additional erosion controls will be needed. If necessary, the Engineer may require additional temporary erosion control measures be installed by the Contractor.

The Contractor shall anticipate weather conditions and schedule work accordingly. The extent of excavation, borrow, and embankment operations in progress will be limited commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other pollution/erosion/sedimentation control measures current according to the approved critical path schedule. The Engineer may require the Contractor's operations to be scheduled so permanent pollution/erosion/sedimentation control features will be installed concurrently with or immediately following grading operations.

If the Engineer, under Section 1-08.6, orders the work suspended for an extended time, the Contractor shall, before the City assumes maintenance responsibility, make every effort to control erosion, pollution, and runoff during shutdown. Section 1-08.7 describes the City's responsibility in such cases.

All temporary water pollution, erosion, and sediment controls shall be removed within 30 days after final site stabilization is achieved and the temporary controls are no longer needed as determined by the Engineer. Trapped sediment shall be removed or stabilized on site. Sediment that has been trapped in bottom of swales shall be removed as specified in Section 2-03.3(19)B. Any areas or parts of the work that are disturbed during removal of temporary erosion and sediment controls (TESC) or trapped sediments shall be restored to the satisfaction of the Engineer, including stabilization as necessary. Nothing contained within this section shall relieve the Contractor from complying with other contract requirements.

8-01.3(1)A SUBMITTALS (New Section)

At the preconstruction conference, the Contractor shall submit a Stormwater Pollution Prevention Plan (SWPPP) to the Engineer for review and approval. If requested, the Engineer will provide full size plots of avenues and streets with base map information and major design elements shown. The Contractor shall allow at least ten working days for the Engineer's review of the SWPPP and may be required to attend a site inspection with the Engineer to facilitate that review. Review and approval of the SWPPP shall not make the Owner liable for plan elements or their effectiveness in meeting the requirements of the Contract.

The SWPPP must be approved by the Engineer prior to the start of any onsite stockpiling, clearing, grading, or other earthwork.

The SWPPP shall be prepared and signed by an individual having completed training in and having working knowledge of Construction Site Erosion and Sedimentation Control as indicated at a minimum by certification as an Erosion & Sedimentation Control (ESC) Lead by Washington State Department of Transportation or the Associated General Contractor's of America or equal. The SWPPP shall show the scheduling, as it relates to the Contractor's critical path schedule, for both temporary and permanent pollution, sedimentation, and erosion control measures, including proposed materials and installation methods. The schedule shall include inspection and maintenance provided by the contractor to meet the requirements of the contract. Areas covered in the plan shall include but not be limited to:

1. Areas within the contract limits.
2. Areas beyond the contract limits subject to impacts by project activity.
3. Transportation facilities including Haul roads used for transport to and from the project site..
4. Critical Areas including steep slopes, wetlands, streams or other bodies of water within or adjacent to the contract limits
5. Critical root zones of trees and understory vegetation within or adjacent to the contract limits.

Other required specific elements of the SWPPP shall include (see Volume 2, Chapter 3 of Ecology's most current Stormwater Management Manual for further guidance):

1. Site drawing, to scale, showing the limits of clearing and grading, proposed locations of all temporary water pollution, erosion, sedimentation control measures. If necessary, prepare multiple drawings to demonstrate how erosion control needs and measures change with stages of the work and in accordance with the project schedule.

2. Location and construction details of construction entrance and exits, haul routes, and tire wash areas.
3. Integration of permanent landscaping, tree and plant protection, and permanent erosion control measures.
4. Locations of existing and proposed (temporary or permanent) storm water management facilities including but not limited to ditches, berms, culverts, pipes, sediment basins and basin outfalls.
5. Removal methods and disposal locations, including how any water quality requirements will be met, for any construction site or trench dewatering water.
6. Location and construction of any equipment wash down areas.
7. Location of staging and stockpile areas.
8. Location of impacted storm drain inlets and protection measures to be applied.
9. Indicate methods to be used for erosion and sediment control in excavations, embankments, stockpiles, and for boundary control.
10. A stormwater bypass plan, including phasing that allows non-impacted stormwater to move downstream without contacting exposed soils or otherwise becoming contaminated by the construction.
11. Method of collecting/treating sediment-laden runoff, which may include use of project cells/swales called out as "temporary sedimentation cells/swales" on the typical TESC plan, or use of a settling tank or other method to meet water quality standards prior to discharge. The proposed location of "temporary sedimentation cells/swales" shall be shown on the SWPPP.
12. Sequencing of installation of temporary erosion and sediment controls with respect to contract schedule including seeding deadlines, project milestones, permanent erosion controls, and other seasonal or project restrictions.
13. Shop drawings of any specific erosion or sediment control measures proposed by Contractor and not included on the Contract Drawings.
14. Catalog cut-sheets for all materials/systems proposed to be used in erosion control work.
15. Identification, qualifications, and certifications of the Erosion and Sedimentation Control (ESC) Lead and Erosion Control Inspectors.
16. Inspection and maintenance schedule for all proposed erosion and sediment control measures.
17. Maintenance procedures and inspection criteria for each proposed erosion and sediment control measure.
18. Emergency action plan, including contacts and phone numbers for performing emergency erosion control work outside of normal working hours.
19. Spill Prevention, Control and Countermeasures (see Section 1-07.31)

The Contractor shall keep and maintain the approved SWPPP on site for the duration of the Contract, making revisions and updates to document changed conditions and in response to a written request by the Engineer.

8-01.3(1)B EROSION AND SEDIMENT CONTROL LEAD (New Section)

The Contractor shall identify the ESC Lead at the preconstruction conference. As a minimum, the ESC Lead shall have, for the duration of the contract, a current Erosion and Sediment Control Lead Certification in Construction Site Erosion and Sediment Control issued by Washington State Department of Transportation or the Associated General Contractor's of America or equal. The ESC Lead shall implement the Plan. Implementation shall include, but is not limited to:

1. Ensuring that all temporary water pollution, erosion, and sedimentation controls are installed and maintained correctly and in a timely manner in accordance with the Contract Specifications and Drawings, the SWPPP, or as directed by the Engineer.
2. Performing daily inspections of the site and water pollution/erosion/sedimentation controls to determine their adequacy, and identify the need for maintenance. Inspections shall be documented daily and be kept on-site as part of the SWPPP for the Engineer's review at all times. Inspections shall also be performed to monitor site conditions after the first ½" and for each subsequent ½" of rainfall associated with a storm event.
3. Preparing and submitting to the Engineer each Monday (or once as week as agreed to by the Engineer) a weekly summary report. The weekly summary report shall include dated digital photographs of water pollution control and TESC measures and shall document all inspection and maintenance activities conducted that week. The report shall include daily weather conditions, amounts of precipitation, when, where, and how measures were installed, removed, and modified, repairs needed and repairs made, observations of the effectiveness of all measures. The report shall include recommendations to add or improve the performance of any controls and shall provide a schedule for corrective action by the contractor.
4. Immediately scheduling the repair, replacement, or maintenance of any damaged, inadequate, or missing items
5. Being authorized by the contractor to direct contractor crew response to ensure compliance with the plan requirements
6. Being authorized by the contractor to communicate with the Engineer regarding compliance with environmental protection requirements.
7. Updating the SWPPP to meet the requirements of regulatory agencies, jurisdictions, and the Engineer.
8. Notifying the Engineer regarding all revisions to the SWPPP and schedule implementation within 24 hours of recognition of deficiencies.

The Plan and all weekly summary reports shall be maintained on site and shall be available for review by the Engineer upon completion by the ESC lead.

8-01.3(2) COVER PRACTICES (New Section)

Where specified in the approved SWPPP, directed by the Engineer, or as necessary to prevent water pollution, erosion, or sedimentation, the following Cover Practices shall be installed, inspected, and maintained.

8-01.3(2)A EROSION CONTROL MULCHING (New Section)

Where shown in the Drawings or as directed by the Engineer, the Contractor shall place and maintain the following mulches for the purposes of temporary erosion control. Any areas that experience erosion shall be remulched or protected with matting. When no longer needed the Contractor shall remove and dispose of all mulch or matting or reuse on site if in suitable condition as directed by the Engineer.

WOOD CHIP MULCH

1. Material: Wood Chip Mulch shall be as specified in Section 9-14.
2. Application: Wood Chip Mulch application to areas exceeding ½ acre shall be applied using an approved type mulch spreader which utilizes forced air to blow mulch material. Wood Chip mulch shall be applied to achieve a minimum depth of 2", unless otherwise identified in the Contract or otherwise directed by the Engineer. Wood chip mulch may be distributed by hand methods to achieve the 2" (or otherwise specified depth) to areas less than ½ acre in size or areas with access limitations..
3. Maintenance & Inspection: If more than 50% of the underlying subgrade is visible in any 100 square ft. area, remulch to 100% coverage immediately.

BARK MULCH

1. Material: Bark Mulch shall be bark chips or shredded bark as specified in Section 9-14.4(3).
2. Application: Bark Mulch application to areas exceeding ½ acre in size shall be applied using an approved type bark spreader, followed by hand raking for even distribution. Bark mulch shall be applied to achieve a minimum depth of 2" (100 tons per acre), unless otherwise identified in in the Contract or unless otherwise directed by the Engineer.
3. Maintenance & Inspection: If more than 50% of the underlying subgrade is visible in any 100 square area, remulch to 100% coverage immediately.

8-01.3(2)B EROSION CONTROL MATTING (New Section)

MATERIAL. Matting shall meet the requirements of Section 9-14.5.

INSTALLATION. Erosion control matting shall be unrolled parallel to the flow of water. If the area being matted is to receive seed and fertilizer, the seed and fertilizer shall be placed prior to the placing of matting. Where more than one strip of matting is required to cover the given area, it shall overlap the adjacent mat a minimum of 6 inches. The up-slope matting shall overlap the edge of the downslope matting by 6 inches. The up-slope end of each strip of matting shall be staked and buried in a 6-inch deep trench with the soil firmly tamped against the mat. Three stakes per width of matting (one stake at each overlap) shall be driven below the finish ground line prior to backfilling of the trench. The Engineer may require that any other edge exposed to more than normal flow of water or strong prevailing winds be staked and buried in a similar manner.

Matting edges shall be buried around the edges of catch basins and other Structures. Matting must be spread evenly and smoothly and in contact with the soil at all points.

The matting shall be held in place by approved wire staples, pins, spikes or wooden stakes driven vertically into the soil. Matting shall be fastened at intervals not more than 3 feet apart, with a minimum of three rows for each strip of matting, with one row along each edge and one row Alternately spaced in the middle. All ends of the matting and check slots, if required, shall be fastened at 6-inch intervals across their width. Length of fastening devices shall be sufficient to securely anchor matting against the soil. Anchors shall be driven flush with the finished grade.

INSPECTION AND MAINTENANCE. The Contractor shall inspect erosion control matting daily for rips, uplift, and areas of erosion. Patch ripped or otherwise damaged areas of matting with new matting extending 24-inches beyond the damaged area in all directions and fasten to the soil using the same fastening method as the parent material. Re-fasten uplifted areas, doubling the original quantity of fasteners. Areas of erosion shall be repaired and protected as necessary to prevent further erosion. Matting installed as a temporary erosion control measure shall be fully removed and disposed of when it is no longer necessary, or as directed by the Engineer. When installed as a permanent erosion control measure, the Contractor shall maintain and protect the erosion control matting through the duration of the Contract.

8-01.3(2)C CLEAR PLASTIC COVERING (New Section)

MATERIAL: Clear plastic covering shall meet the requirements of Section 9-14.5.

INSTALLATION: The Contractor shall maintain the cover tightly in place by using sandbags on ropes with a minimum 10-foot grid spacing in all directions. All seams shall be taped or weighted down full length. There shall be at least a 12-inch overlap of all seams. If plastic covering is being used on a slope, the up-slope end shall be secured and buried in a 6-inch deep trench with the soil firmly tamped against the plastic covering.

INSPECTION AND MAINTENANCE: The Contractor shall inspect clear plastic covering daily for rips, uplift, and areas of erosion. Patch ripped or otherwise damaged areas of covering with new covering extending 24-inches beyond the damaged area in all directions and fasten to the base sheet by taping.

Re-fasten uplifted areas, doubling the original quantity of fasteners. Contact between the plastic and the ground should always be maintained. Any air bubbles found shall be removed immediately. Areas of erosion shall be repaired and protected as necessary to prevent further erosion. Clear plastic covering installed as a temporary erosion control measure shall be fully removed and disposed of when it is no longer necessary, or as directed by the Engineer.

8-01.3(3) STRUCTURAL & BIOMECHANICAL EROSION & SEDIMENTATION CONTROLS (New Section)

Where specified in the approved SWPPP, or as necessary to prevent water pollution, erosion, and/or sedimentation the Contractor shall install, inspect, and maintain the following Structural and Biomechanical Controls.

8-01.3(3)A CONSTRUCTION ROAD STABILIZATION (New Section)

Where shown on the Drawings, as directed by the Engineer, or as needed to prevent water pollution and/or erosion, the Contractor shall stabilize construction roads including, but not limited to, access roads, haul roads, subdivision roads, parking areas, and other on-site vehicle transportation routes immediately after grading in accordance with the Drawings and these specifications.

INSTALLATION Road stabilization shall consist of a 6-inches of crushed rock base course applied immediately after grading or the completion of utility installation within the right-of-way. Contractor may, at the approval of the Engineer, substitute a 4-inch course of asphalt treated base in lieu of the crushed rock.

INSPECTION AND MAINTENANCE Inspect stabilized roads daily and during and immediately following storm events having 0.25-inches of precipitation or greater. Grade ruts by backblading or grading with a motor grader. Place additional crushed rock to maintain a 6-inch thickness.

8-01.3(4) SEDIMENT RETENTION (New Section)

Where shown on the Drawings, specified in the Special Provisions, or as directed by the Engineer, the Contractor shall install, inspect, and maintain the following Sediment Retention Controls.

8-01.3(4)A SEDIMENT FENCE (New Section)

GENERAL The Contractor shall install and maintain sediment fences at the locations shown on the Drawings. The sediment fences shall be constructed downslope from areas of clearing, grading, or drainage prior to starting those activities. The sediment fence shall prevent runoff from moving beneath or over the fence while slowing the movement of water through the fence, thereby reducing the migration of sediments to downslope areas. Sediment fences shall not be placed across streams. Sediment fences shall not be placed across ditches unless directed or approved by the engineer. . The minimum height of the top of the sediment fence shall be 2-1/2 feet and the maximum height shall be 3 feet above the original ground surface. Damaged or improperly functioning portions of sediment fences shall be repaired or replaced by the Contractor at no cost to the Owner.

The geotextile shall be attached on the up-slope side of the posts and support systems with staples, wire, or in accordance with the manufacturer's recommendations. The geotextiles shall be attached to the posts in an appropriate manner to prevent tearing at the staples, wire, or other connection device. Sediment fence backing support for the geotextile in the form of wire or plastic mesh may be required depending on the properties of the geotextile selected for use in Table 6 in Section 9-05.22. If wire or plastic backing mesh is used, the mesh shall be fastened securely to the up-slope side of the posts with the geotextile fastened up-slope of the mesh backing support.

The geotextile shall be manufactured with sewn seams to form geotextile lengths as required. All seams shall be located at a support post. Alternatively, two sections of sediment fence can be overlapped, provided the Contractor can demonstrate acceptable results to the Engineer, that the overlap is long enough and that the adjacent fence sections are close enough together to prevent sediment laden water from escaping through the fence at the overlap.

The geotextile at the bottom of the fence shall be buried in a trench to a minimum depth of 6 inches below the ground surface. Excavation for installation of sediment fence shall be within the dripline of trees and other vegetation to be retained shall be approved by the Engineer prior to trenching and shall circumvent critical root zones unless specifically allowed by the Engineer. The trench shall be backfilled and the soil tamped in place over the buried portion of the geotextile as shown on the Drawings, such that no flow can pass beneath the fence nor scour occur. When wire or plastic backing support mesh is used, the wire or plastic mesh shall extend into the trench a minimum of 3 inches. The fence posts shall be placed or driven a minimum of 1-1/2 feet into the ground.

Sediment fence shall be installed perpendicular to slopes. Fence post depths shall be increased by 6 inches if the fence is located on slopes exceeding 3H:1V. If required post depths cannot be obtained, the posts shall be adequately secured by bracing or guying to prevent overturning of the fence due to sediment loading.

Sediment fences shall be located on the contour with ends turned uphill to capture runoff and prevent flow around the ends of the fence. Where the installation requires the crossing of contours in areas other than at the ends, gravel check dams shall be placed perpendicular to the uphill face of the fence to minimize concentrated flow and erosion along the back of the fence. The gravel check dams shall be approximately 1 foot deep at the fence and shall continue perpendicular to the fence at the same elevation until the top of the check dam intercepts the ground surface. The gravel check dams shall consist of crushed surfacing base course gravel backfill for walls, or shoulder ballast. The gravel check dams shall be located every 10 feet along the fence where the fence crosses contours. The slope of the fence line where contours are crossed shall not be steeper than 3H:1V.

POSTS Either wood or steel posts shall be used. Hardwood posts shall have minimum dimensions of 1-1/4 inches by 1-1/4 by the minimum length shown on the Drawings, and shall be free of defects such as knots, splits, or gouges. If fir or hemlock is used (stud grade), the posts shall have minimum dimensions of 1-1/2 inches by 3 inches. Steel posts shall be 2 U, T, L, or C shape steel posts with a minimum weight of 1.35 lbs./ft. The spacing of the support posts shall be a maximum of 6 feet on center with a 10' span allowed for sediment fence with reinforcement mesh.

Steel posts used for permanent sediment fence shall be hot-dipped galvanized shall be galvanized in accordance with the requirements of ASTM A 123, or ASTM A 153.

Fence backing support, if used, shall consist of steel wire with a maximum mesh spacing of 2 inches, or a prefabricated plastic mesh. The strength of the wire or plastic mesh shall be equivalent to or greater than that required in Table 6 of Section 9-05.22 for unsupported geotextile (i.e., 180 lbs. grab tensile strength). The plastic mesh shall be as resistant to ultraviolet radiation as the geotextile it supports and steel wire mesh shall be hot-dip galvanized, class 3.

INSPECTION AND MAINTENANCE The Contractor shall inspect all sediment fences daily during inclement weather, and at least once per week, provided no precipitation has fallen that week. Should any of the following conditions be found to occur: rips, tears, broken fence stakes or posts, or stakes/posts that lean greater than 15 degrees from plumb, water leaking beneath the sediment fence, or any other conditions that would lower the effectiveness of the sediment fence, the Contractor shall immediately repair and/or replace the sediment fence as necessary. When sediment has accumulated to be 0.1-foot or greater in depth at any location along the silt fence, the Contractor shall remove and dispose of the sediment.

Sediment fencing installed as a temporary erosion control measure shall be fully removed and disposed of when it is no longer necessary, or as directed by the Engineer. The bid item price for sediment fence, if included in the contract, includes installation, maintenance, and, if necessary, replacement to meet pollution and sediment control requirements for the duration of the contract.

8-01.3(4)B STORM DRAIN INLET PROTECTION (New Section)

Storm Drain Inlet protection shall be as specified in Section 9-14.15.

INSTALLATION: Place at catch basins and other inlets as per the SWPPP and the manufacturer's recommendations. Cut excess fabric away from inlet border to prevent the excess fabric from covering and blocking the inlet.

INSPECTION AND MAINTENANCE: The Contractor's ESC lead shall inspect storm drain inlet protection devices daily to ensure proper placement and function. Inspection requirements for weekly reports or in response to rain events in excess of ½" shall include the measurement of sediment build up. Water flow into the catch basin shall be uninterrupted by the device. Clean or replace the device when build-up of sediment or backing-up of water flows entering the protected catch basin occurs.

8-01.3(4)C TEMPORARY SEDIMENTATION CELL CONSTRUCTION (New Section)

When sedimentation ponds/traps are required, they shall be fully functional and documented as such in the Contractor's SWPPP before beginning other grading and excavation work. Bioretention Swale areas may be used for the construction of temporary sedimentation ponds/traps as indicated on the Drawings. The Drawings show a typical layout plan for Street or Avenue installations. The Drawings identify these areas as Temporary Sedimentation Cells.

The surface 3-inches of any Temporary Sedimentation Cell shall be removed prior to the placement of Bioretention Soil. Once Bioretention Soil has been placed, the swale may no longer be used as a Temporary Sedimentation Cell, unless otherwise approved by the Engineer. If a Bioretention Soil area is authorized for use as a Temporary Sedimentation Cell, the Contractor shall remove the upper 3-inches of the Bioretention Soil and replace in kind prior to approval of the swale grading.

8-01.3(5) STREET CLEANING (New Section)

Self-propelled vacuum-equipped street sweepers shall be used to prevent the transport of sediment and other debris from all paved areas within the project boundaries, adjacent areas, and project-impacted haul routes. Perform street cleaning at the end of each day's operations and at such interim periods as required to prevent track-out and transport of sediment. Street washing with water will require approval by the Engineer.

8-01.3(6) MANUAL SWEEPING (New Section)

Manual sweeping shall occur for the duration of the project, and as frequently as necessary during any given day, or as directed by the Engineer, to ensure that material dropped during construction is not tracked off-site and to minimize the amount of material allowed to accumulate on impervious surfaces that may be carried off-site by the next rain event.

8-01.4 MEASUREMENT (New Section)

Bid items of Work completed pursuant to the Contract will be measured as provided in Section 1-09.1, Measurement of Quantities, unless otherwise provided for by individual measurement paragraphs herein this Section.

The Stormwater Pollution Prevention Plan (SWPPP) will be measured by the lump sum.

Erosion control matting will be measured by ground slope measurement in square feet of actual ground surface covered, accepted, and protected. No separate measurement will be made for anchor trench, sandbags, or rope, stakes, or soil staples and other hold-down devices associated with erosion control matting.

Measurement of storm drain inlet protection shall be per each for each control installed and maintained in existing structures only.

Measurement of sediment fence will be by the linear foot of sediment fence installed, accepted, and maintained. Repair and replacement of damaged materials will not be measured.

Measurement for temporary asphalt berms will be by the linear foot.

Measurement of temporary sedimentation cells shall be per each feature installed, maintained and restored.

No separate measurement will be made for street sweeping activities on public or adjacent roadways as a result of the failure of the on-site erosion controls to prevent track-out of sediment from the site.

When an erosion control bid item is temporary in nature (i.e. does not remain in place after the contract), there will be no separate measurement for removal and disposal of the controls.

8-01.5 PAYMENT (New Section)

Compensation for the cost necessary to complete the work described in Section 8-01 will be made at the Bid item prices Bid only for the Bid items listed or referenced as follows:

- (1) "Stormwater Pollution Prevention Plan", per lump sum.

The bid item price for "Stormwater Pollution Prevention Plan", shall include all costs for the work required to prepare, submit, administer, inspect, monitor/document (via daily inspections and weekly reports), and update/amend the SWPPP as specified for the duration of the Contract.

Payment will be made in three payments at the rate of 25%, 25%, 50% of the Bid item price for "Stormwater Pollution Prevention Plan". The first payment of 25% will be processed upon completion of an approved SWPPP. The second payment will be processed upon completion of work equal to 50% of the Awarded Contract Price based on payment to date. The third and final payment will be processed upon Physical Completion of the Work.

- (2) "Erosion Control, Matting (Type)", per square foot.

The bid item price for "Erosion Control, Matting (Type)" shall include all costs for the work required to furnish and install the specified type matting. All costs to repair and maintain matting and coverings shall be included in this bid item price.

- (3) "Temporary Asphalt Berm", per linear foot.

The bid item price for "Temporary Asphalt Berm" shall include all costs for the work required to furnish, install, maintain, and remove the asphalt berm.

- (4) "Temporary Sediment Fence", per linear foot.

The bid item price for "Sediment Fence" shall include all costs for the work required to furnish, install, remove, and dispose of sediment fence. All costs to repair, maintain and replace (as necessary) sediment fence shall be included in this bid item price.

- (5) "Storm Drain Inlet Protection", per each.

The bid item price for "Storm Drain Inlet Protection" shall include all costs for the work required to furnish, install, maintain, and remove and dispose of the specified type inlet protection in existing structures only.

- (6) "Temporary Sedimentation Cell", per each.

The bid item price for "Temporary Sedimentation Cell" shall include all costs for the work required to clean and restore the cell as specified in 8-01.3(4)C.

Temporary mulch placed at the direction of the Engineer for erosion control purposes will be paid using the bid item "Bark Mulch" or "Shredded Mulch" in accordance with Section 8-02. Mulch used as temporary mulch shall be removed and disposed of off site unless directed otherwise by the Engineer.

Cost of work required to remove and dispose of temporary mulch will be paid using the bid item "Common Excavation".

Cost of dust control measures, use of temporary clear plastic sheeting, sand bags and construction of a temporary stormwater bypass system shall be considered incidental to the various bid items comprising this improvement and no separate payment will be made.

SECTION 8-02 ROADSIDE PLANTING

8-02.2 MATERIALS

Supplement this Section with the following:

Materials shall meet the requirements of the following Sections:

Bioretention Soil	9-14
Engineered Soil	9-14
Shredded Mulch	9-14
Composted Material	9-14

Bioretention Soil shall be used in areas indicated on the Drawings.

Engineered Soil shall be along roadway shoulders as indicated on the Drawings.

Mulch for exposed earth areas shall be Shredded Mulch or Bark Mulch at locations indicated in the Drawings or as directed by the Engineer.

8-02.3(23) TREE ROOT PRUNING PROCEDURE

Delete this section and replace with the following:

All grading within the critical root zone shall be done under the direction of the Engineer. Root structure 2 inches or greater shall not be cut. All tree roots 2 inches or greater shall be tunneled under. Roots smaller than 2 inches must be cleanly cut flush with the edge of the trench. No ripping or tearing of the root structure will be allowed. See Section 1-07.16(2).

Supplement this Section with the following:

When trenching within drip lines of trees, root pruning shall be conducted as directed by Engineer. City Engineer or Landscape Architect shall be on site during root pruning. Root pruning work shall be incidental to pipe installation.

8-02.3(25) ENTRY ACCESS WALKWAYS (New Section)

Walkways for access to private property from private driveways (or the street edge) are conceptually represented on the paving plan to be provided under this contract. Walkways shall be constructed by one of four methods: as concrete sidewalk, gravel, geo grid paver or wood chips (with width, alignment, and grades to be field directed for compatibility with existing conditions).

Construction requirements for each property shall be generally conveyed to the Contractor by the Engineer at the preconstruction review, subject to final confirmation 15 working days prior to the installation of access walks as identified in the Contractor's construction schedule.

8-02.3(26) MAILBOX STRUCTURES (New Section)

New mailbox structures shall be installed at locations indicated on the Drawings.

Non-locking mailbox structures (with and without a roof) shall be constructed as indicated on the Drawings.

Locking mailbox structures shall be a cluster mailbox unit (CBU Type II) as manufactured by American Locker Security Systems, phone 1-800-828-9118, www.americanlocker.com, or approved equal. Install per manufacturer's recommendations and as indicated on the Drawings.

8-02.3(27) PLANTING AREA PREPARATION (New Section)

Drawing Sheets 10, 16, 22, 33, 34, 40, 45 and 46 conceptually identify areas for Planting Area Preparation and Upland Revegetation Area as all disturbed areas between the roadway edge and the Right of Way line.

At Planting Area Preparation and Upland Revegetation areas, the Contractor shall scarify native soil to a depth of 4"-6", install a 3" lift of Composted Material, thoroughly blend the two materials to provide a homogeneous mix., compact material to 85% and top dress with mulch. Scarification within the dripline of existing trees and other vegetation to be retained shall be field directed and reduced in depth and/or provided by the Contractor by hand (or other approved) methods to reduce damage to roots. Cost for the work required for Planting Area Preparation and Upland Revegetation shall be paid using the bid items "Composted Material", "Shredded Mulch" and "Bark Mulch". Scarification of existing soil surfaces shall be incidental to the various bid items comprising this improvement and no separate payment will be made.

8-02.3(28) GRAVEL GEO GRID PAVER (New Section)

Provide and install plastic paver system per detail shown in Appendix and per manufacturer's recommendations. Plastic paver material shall be Gravelpave2 Paving products including Gravelpave2 units and anchors, or approved equivalent. (Gravelpave2) Invisible Structures, Inc., 1597 Cole Blvd., Suite 310, Golden, CO 80401 (1- 800-233-1510). Approved equivalent be Lightweight injection molded plastic units 0.5x0.5x0.025 m (20"x20"x1" high, 2.7 ft² each) with hollow rings rising from a strong open grid with a geotextile fabric heat fused to the bottom of the grid. Loading capability shall be equal to 5700 psi when filled with sand. Color shall be black, cool gray, or cashew brown, as directed by the Engineer. Anchors shall be 8" long nails with "fender" type washers 5/16" id x 1.25" od, all galvanized metal or similar corrosion resistant coating.

All hard surface paving adjacent to Gravelpave2 areas, including concrete walks and asphalt paving, must be completed prior to installation of plastic paver system.

Protect plastic paver material units from damage during delivery and store under tarp when time from delivery to installation exceeds one week.

Subgrade shall be uniformly graded, and compacted to 90% maximum dry density. Do not build on frozen work or wet, saturated or muddy subgrade. Do not place base course until Engineer has approved subgrade for proper compaction and positive slope. Place base course material over prepared subbase to a 6-inch depth. Compact base course to 95% maximum dry density. Leave 1.0-inch for Gravelpave2 unit and gravel fill to final grade.

Install the plastic paver system units by placing units with rings facing up, and using small male/female connectors provided along each edge to maintain proper spacing and interlock the units. Cutting can be performed with pruning shears and knife, or portable power saw. Units shall be anchored to the base course, using anchors described above, as required to secure units in place from movement by traffic, at an average rate of 6 pins per square meter (high speed, heavy vehicles, fast turning movement will require additional anchors). Tops of rings shall be flush with the surface of adjacent hard surfaced pavements.

Install gravel into rings after the units are anchored by "backdumping" directly from a dump truck, or from buckets mounted on tractors, with a minimum depth of 6", then exit the site by driving forward over rings already filled. Sharp turning of vehicles on bare rings must be avoided. The gravel is then spread

laterally from the pile using power brooms, blades, flat bottomed shovels and/or wide "asphalt rakes" to fill the rings. A stiff bristled broom should be used for final "finishing". The gravel should be "compacted", if necessary, by using a vibrating plate or small roller, with the finish grade no less than the top of rings and no more than 0.25-inches above top of rings.

Materials

Base Course: Sandy Gravel material from local sources commonly used for road base construction, passing the following sieve analysis.

<u>% Passing</u>	<u>Sieve Size</u>
100	3/4"
85	3/8"
60	#4
30	#40
<3	#200

Sources of the material can include either "pit run" or "crusher run". Crusher run material will generally require sharp sand to be added to mixture (25 to 35% by volume) to ensure long term porosity.

Gravel Fill: Obtain clean, washed, fine decorative gravel, must be sharp and angular (no-rounded) stone, granite hardness, to fill the 25 mm (1") high rings and spaces between the rings, with the following sieve analysis:

<u>% Passing</u>	<u>Sieve Size</u>
100	#4 Screen
80	#8 Screen
50	#16 Screen
30	#30 Screen
15	#50 Screen
5	#100 Screen

8-02.4 MEASUREMENT

Supplement this Section with the following:

Measurement for "Bioretention Soil", "Engineered Soil" and "Shredded Mulch" shall be per cubic yard measured in the hauling conveyance at the point of delivery. The Contractor shall notify the Engineer at least 24 hours prior to material delivery to ensure the Engineer's presence for measurement at the time of delivery. No payment will be made for material deliveries not witnessed by the Engineer.

Measurement for "Mailbox Structure (Type)" will be per each mailbox structure installed.

Measurement for "Turf Reinforcement Mat" and "Gravel Geo Grid" will be per square yard.

8-02.5 PAYMENT

Supplement this Section with the following:

(21) "Bioretention Soil", per cubic yard.

The Bid item price for "Bioretention Soil" shall include all costs for the work required to furnish and place the Bioretention Soil as specified and as indicated on the Drawings.

(22) "Engineered Soil", per cubic yard.

The Bid item price for "Engineered Soil" shall include all costs for the work required to furnish and place the Engineered Soil as specified and as indicated on the Drawings.

(23) "Shredded Mulch", per cubic yard.

The Bid item price for "Shredded Mulch" shall include all costs to furnish, stockpile, and install the mulch as specified.

(24) "Mailbox Structure (Type)", per each.

The Bid item price for "Mailbox Structure (Type)" shall include all costs for the work required to furnish and install the mailbox structure as specified including the work required to temporarily relocate existing mailboxes. Concrete sidewalk adjacent to wooden mailbox structures will be paid separately. The concrete footing installed for the locking mailbox structure will be paid separately using the bid item "Sidewalk, Cem Conc".

(25) "Turf Reinforcement Mat", per square yard.

The Bid item price for "Turf Reinforcement Mat" shall include all costs for the work required to furnish and install the mat as specified and as indicated on the Drawings.

(26) "Gravel Geo Grid", per square yard.

The Bid item price for "Gravel Geo Grid" shall include all costs for the work required to furnish and install the geo grid as specified and as indicated on the Drawings including base course and gravel fill.

(27) "Composted Material", per cubic yard.

The Bid item price for "Composted Material" shall include all costs for the work required to furnish and place the composted material as specified and as indicated on the Drawings.

(28) "Restore Private Surface Features", per force account.

As directed by the Engineer, all work required to replace/restore surface features on private property shall be paid by Force Account in accordance with Section 1-09.6.

Payment for the work required for Planting Area Preparation and Upland Revegetation will be made using the Bid Items "Composted Material", "Shredded Mulch" and "Bark Mulch" as specified.

Cost of soil testing shall be considered incidental to the various items comprising this improvement and no separate payment will be made.

SECTION 8-04 CEMENT CONCRETE CURB, CURB AND GUTTER

8-04.3(4) TYPE 410B CURB AND GUTTER

Supplement this Section with the following:

Curb and gutter shall be constructed to meet the requirements of Type 410B Curb and Gutter, except the gutter pan shall be sloped away from the curb as a spill gutter.

8-04.3(7) CONCRETE BAND (New Section)

A two foot wide concrete band shall be constructed as indicated on the Drawings. Transverse joints shall be placed at intervals of ten feet or less. Concrete band concrete shall be Class 6 (1-1/2).

8-04.4 MEASUREMENT

Measurement for "Concrete Band, 2 Ft Wide" will be by the linear foot.

8-04.5 PAYMENT

Supplement this Section with the following:

- (4) "Concrete Band, 2 Ft Wide", per linear foot.

The Bid item price for "Concrete Band, 2 Ft Wide" shall include all costs for the work required to construct the concrete band as indicated on the Drawings.

- (5) "Traffic Circle, Asphalt", per each.

The Bid item price for "Traffic Circle, Asphalt" shall include all costs for the work required to construct the traffic circle in accordance with the "Typical Landscaped Asphalt Traffic Circle" detail and Standard Plan #415 (both located in the Appendix) including pavement and base course removal, loosening of subsoil, lane markers and the object marker traffic sign (per Std Plan 626). Placement of soil will be paid separately.

SECTION 8-12 CHAIN LINK FENCE AND WIRE FENCE

8-12.3(6) WOOD FENCE (New Section)

At locations indicated on the Drawings, the Contractor shall relocate wood fencing or construct new wood fencing as field conditions warrant. If new wood fencing is constructed it shall be to an equal or better condition than the existing. New fencing shall match existing fencing in style, height and material choice.

8-12.5 PAYMENT

Supplement this Section with the following:

- (9) "Fence, Wood, 4-6 Ft High", per linear foot.

The Bid item price for "Fence, Wood, 4-6 Ft High" shall include all costs for the work required to relocate existing wood fencing or to furnish and install new wood fencing as specified.

SECTION 8-14 CEMENT CONCRETE SIDEWALK

8-14.3(7) CURB RAMP, TYPE 1 (9-23-04)

Supplement this Section with the following:

City of Seattle Standard Plan No. 422a shall be replaced by "Standard Plan No. 422a Revised". City of Seattle Standard Plan No. 422b shall be replaced by "Standard Plan No. 422b Revised". See Appendix.

All curb ramps and curb ramp retrofits constructed as a part of this Contract, including Type 1 and Type 2, shall include a detectable warning plate.

The detectable warning plate shall meet the requirements for tactile warning surfaces established by the Americans with Disabilities Act Title 49 CFR Transportation, Part 37.9 Standards for Accessible Transportation Facilities, Appendix A, Section 4.29.2 – Detectable Warning on Walking Surfaces.

The detectable warning plate shall be cast-in-place with the curb ramp per manufacturer's instructions. "Curb Ramp (422a), Type 1" shall meet the requirements of this section and be constructed per "Standard Plan No. 422a Revised" in the Appendix.

"Curb Ramp (422b), Type 1" shall meet the requirements of this section and be constructed per "Standard Plan No. 422b Revised" in the Appendix.

Prior to the removal of an existing curb ramp or existing sidewalk, the Contractor shall have received from the supplier all necessary detectable warning plate required to construct the new curb ramp unless otherwise approved by the Engineer. Contractor shall begin construction of new curb ramp within 3 working days of removal of existing curb ramp or sidewalk.

8-14.3(7)A DETECTABLE WARNING PLATE (New Section) (9-23-04)

The detectable warning plate shall either meet the requirements of 8-14.3(7)C Precast Concrete Plate or 8-14.3(7)D Alternate Materials for Warning Surface Plate.

The detectable warning plate shall have truncated domes as detailed in Standard Plan No. 422a Revised. See Appendix.

The nominal size of the detectable warning plate shall be 24 inches by the width of the center section of the curb ramp. The face thickness of the detectable warning plate shall be 3/16 of an inch or greater. The depth of the detectable warning plate shall be 1.4 inches or greater. Warpage of edge shall be at most 0.5%.

Contractor shall submit to the Engineer:

1. Detectable warning plate manufacturer's description of product, installation and maintenance procedures.
2. For products other than "CASTinTACT" precast concrete plates, two plate samples, 6 inch by 6 inch minimum size.
3. Shop drawings showing fabrication details, composite structural system, plans of plate placement, including joints, and material to be used as well as outlining installation materials and procedures.
4. Material test reports from a qualified independent testing laboratory indicating that the detectable warning plate meets the requirements of this section.
5. Manufacturer's warranty against breakage, fading and deformation.

All costs for the purchase and installation of the detectable warning plate shall be included in the unit bid price for Curb Ramp, (Type).

8-14.3(7)B DETECTABLE WARNING PLATE COLOR (New Section) (8-11-04)

Detectable warning plate shall be City of Seattle safety yellow. The yellow color shall be through out the detectable warning plate. The color on the surface of the detectable warning plate may be enhanced by the manufacturer with an application of a stain.

A representation of City of Seattle safety yellow color may be achieved by the paint mix listed below. The detectable warning plate is not to be painted.

Home Depot Custom Color Match:

Base: BEHR Premium Plus Ext Semi Gloss Accent Base 5670, size 1 quart with the following colorants:

Colorant	OZ	48	96
Perm Yellow	1	15	1
Exterior Red	0	2	1
Brown Oxide	0	5	0

8-14.3(7)C PRECAST CONCRETE PLATE (New Section) (9-3-04)

The warning surface plate shall be made of precast concrete.

Slip resistance of detectable warning plate on the top of the domes or on the field area between the domes, as measured by the combined wet/dry static co-efficient of friction tested per ASTM D2047, shall be greater than 0.80 (both wet and dry).

The compressive strength of the detectable warning plate as tested per ASTM C-39 shall not be less than 10,000 psi.

The detectable warning plate shall be "CASTinTACT" prestained and sealed with Miracote Mirastain II manufactured by MASCO (phone: (425) 487-6161), Armor-Tile Tactile Systems Seattle Safety Yellow "Cast in Place" manufactured by Armor-Tile (phone: (800) 682-2525, distributed by: White Cap (phone: (206) 783-8400) or approved equal.

8-14.3(7)D Alternate Materials for Warning Surface Plate (New Section) (8-11-04)

Warning surface plates made from materials other than precast concrete may be submitted to the Engineer for approval. Warning surface plates from alternate materials must meet the all requirements in Sections 8-14.3(7)A and B.

Slip resistance of warning surface plates from alternate materials either on the top of the domes or on the field area between the domes, as measured by the combined wet/dry static co-efficient of friction tested per ASTM D2047, shall be greater than 0.80 (both wet and dry).

The compressive strength of warning surface plates from alternate materials shall not be less than 10,000 psi.

8-14.5 PAYMENT

Delete pay item 3. and replace with the following:

3. "Curb Ramp (422a or 422b), (Type)", per each.

The Bid item price for "Curb Ramp (422a or 422b), Type 1" shall include all costs for the work required to construct the curb ramp as specified including the ramp, sidewings, detectable warning plate, joint materials and excavation.

The Bid item price for "Curb Ramp (422a or 422b), Type 2" shall include all costs for the work required to remove existing improvements within area of new curb ramp and to construct the curb ramp at "cut-in" locations as specified.

SECTION 8-15 RIPRAP

8-15.2 MATERIALS

Supplement this Section with the following:

Streambed Cobbles shall be 2-4" size smooth washed rock.

1-Man, 2-Man and 3 Man Landscape Rocks shall be granite rocks as specified in Section 9-03.19.

8-15.3(8) X-MAN LANDSCAPE ROCK PLACEMENT (New Section)

1, 2 and 3-Man rocks shall be placed as field directed during construction to reinforce/stabilize slopes and blend landscaped area with rockery installation. Rocks shall be subject to selection at the source by the

Engineer's representative to ensure compatibility with site conditions unless otherwise directed by the Engineer (minimum 5 working days notice required to coordinate schedules for this work). Location and orientation of some rocks set on site shall be as field directed by the Engineer's representative (minimum 5 working days notice required to coordinate schedules for this work).

8-15.5 MEASUREMENT

Supplement this Section with the following:

Measurement for "Streambed Cobbles, (Size)" will be by the ton.

Measurement for "Furnish & Install X-Man Landscape Rock, (Type)" will be by each.

8.15.4 PAYMENT

Supplement this Section with the following:

- (8) "Streambed Cobbles, (Size)", per ton.

The Bid item price for "Streambed Cobbles, (Size)" shall include all costs for the work required to furnish and install cobbles at locations indicated on the Drawings.

- (9) "Furnish & Install X-Man Landscape Rock, (Type)", per each.

The Bid item price for "Furnish & Install X-Man Landscape Rock, (Type)" shall include all costs for the labor, equipment, and materials required to furnish, deliver to the job site and install the rocks as specified.

SECTION 8-18 CEMENT CONCRETE STAIRWAYS, LANDINGS, AND STEPS

8-18.5 PAYMENT

Supplement this Section with the following:

- (7) "Handrail, Ornamental", per linear foot.

The Bid item price for "Handrail, Ornamental" shall include all costs for the work required to fabricate, paint, furnish, and install the handrail as indicated on the Drawings.

DIVISION 9

MATERIALS

SECTION 9-03 AGGREGATES

SECTION 9-03.19 GRANITE ROCK (New Section)

Granite rock shall be native stone, locally quarried and "High Cascade Granite" or "Bandera Weathered Granite" as available from Marenakos Rock Center (425.392.3313) or approved equal. If a source other than Marenakos is proposed, the Engineer shall inspect rocks at the quarry for approval of material prior to its delivery on site. Rock shall be approximately 165 pounds per cubic foot.

<u>Size</u>	<u>Approx Weight</u>	<u>Minimum Approx Dimensions</u>	<u>Approx Volume</u>
One-man rock	150 - 300 lbs	12 inches	0.9 - 1.8 cf
Two-man rock	310- 1000 lbs	14 inches	2 - 6 cf
Three-man rock	1010-2000 lbs.	18 inches	6 - 12 cf
Four-man rock	2010 - 4500 lbs	24 inches	12 - 27 cf

SECTION 9-05 STORM DRAIN AND SANITARY SEWER STRUCTURES, CULVERTS AND CONDUITS

9-05.2(1) SLOTTED HDPE SUBSURFACE DRAIN PIPE (New Section)

All slotted subsurface drains and fittings shall be HDPE SDR 21 with flush joint threads.

Screen shall be slotted uniformly with slots placed perpendicular to the longitudinal axis of the pipe in straight rows. Slots shall be free from any sign of burning or abrasion. Pipe slotting shall be performed by Farwest "Special Products Division" (1-800-438-3808) or approved equal. Screen opening slot width shall be .069 in. Slots shall be placed such that there are 4 rows of slots; From the invert of the pipe the first slot shall be 60 degrees up the pipe, with the remaining pipes spaced every 80 degrees (see Figure X in Appendix). Slot width tolerance shall be +0.005 to -0.015. Slot length shall be 1.0 inch long and Spacing between slots shall be 0.125 inches.

Pipe and screen shall be installed true to line and grade and shall be free of cracks or defects. The interior of the pipe shall be cleaned of all dirt, excess water and other foreign material as the pipe laying progresses.

The slotted pipe shall be installed so that the solid half faces down. The location of the slots shall be in accordance with the Drawings.

SECTION 9-14 EROSION CONTROL AND ROADSIDE PLANTING

9-14.1(5) ENGINEERED SOIL MIX (New Section)

Engineered Soil shall consist of approximately 30% to 35% composted material per Section 9-14.1(8) by volume and approximately 65% to 70% gravelly sand meeting the specification herein. Soil components shall be mixed together to achieve a uniform consistency.

Gravelly sand shall meet the following gradation per Designation D 422 (Standard Test Method for Particle-Size Analysis of Soils):

<u>Sieve Size</u>	<u>Percent Passing</u>
2-inch	100
¾-inch	70 - 100
¼-inch	50 - 80
US No. 40	15 - 40
US No. 200	0 - 3

Prior to mixing of Engineered Soil, Contractor shall submit a grain-size analysis per ASTM Designation D 422 (Standard Test Method for Particle-Size Analysis of Soils) from a representative sample of the gravelly sand material, demonstrating that it meets these specifications.

Stockpiled engineered soil, or engineered soil components stockpiled prior to mixing, shall be stored in a manner that prevents them from becoming wet from rain, stormwater runoff, or other sources of water. Soil mixing or placement shall not be allowed if soil area is saturated or has been subjected to water within 48-hours prior to mixing or placement. Engineer shall have final authority to determine if wet or saturated conditions exist.

The Engineered Soil mixture shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. Mixing of the Engineered Soil to a homogeneous consistency shall be done to the satisfaction of the Engineer. No soil mixing shall occur while raining on site or wet conditions exist.

Prior to placement of Engineered soil, Contractor shall submit testing to verify the organic content and permeability of the soil mixture meets the requirements specified herein. Organic content shall be between 4- and 10-percent by dry weight per ASTM Designation D 2974 (Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils). Minimum hydraulic conductivity rate shall be 4 inches per hour per ASTM Designation D 2434 (Standard Test Method for Permeability of Granular Soils) when compacted to 80-percent of maximum dry density per ASTM Designation D 1557 (Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort).

Soil shall also be testing for soil fertility and micronutrients. A copy of the test results with recommendations for amendments shall be provided to the Engineer. Laboratory recommendations for amendments required for optimum plant establishment and early growth shall be provided and incorporated into the soil by the Contractor at no cost to the Owner. Any additional amendments recommended by test results shall be organic and contain no deleterious materials that may enter the water in the swales.

Engineered Soil shall be placed in lifts not exceeding 6-Inches. Moisture condition the engineered soil mix shall be as needed for suitable placement and compaction. Engineered Soil within the 2-foot shoulder adjacent to pavement edge shall be compacted between 90% and 95% of maximum dry density per ASTM D-698. Place and compact fill to 0.5" below the surface of adjacent roadway. Remaining areas of Engineered Soil shall be lightly compacted by proof rolling with hand held equipment approved by Engineer, or other method as approved by Engineer. Use of mechanical vibratory compaction equipment is NOT permitted in swale area beyond 2-foot shoulder. No equipment shall be driven across or parked upon the soil once soil mix has been placed. Contractor shall contact SPU materials lab 10 days after soil placement for in situ density testing.

9-14.1(6) BIORETENTION SOIL MIX (New Section)

Bioretention Soil shall consist of approximately 30% to 35% composted material per Section 9-14.1(8) by volume and approximately 65% to 70% gravelly sand meeting the specification herein. Soil components shall be mixed together to achieve a uniform consistency. Mixing of the Bioretention Soil to a homogeneous consistency shall be done to the satisfaction of the Engineer.

Gravelly sand shall meet the following gradation per ASTM Designation D 422 (Standard Test Method for Particle-Size Analysis of Soils):

<u>Sieve Size</u>	<u>Percent Passing</u>
US No. 4	100

US No. 6	88 - 100
US No. 8	79 - 97
US No. 50	11 - 35
US No. 200	5 - 15

Soil mix shall have less than 5% maximum clay content.

Prior to mixing of Bioretention Soil, Contractor shall submit a grain-size analysis per ASTM Designation D 422 (Standard Test Method for Particle-Size Analysis of Soils) from a representative sample of the gravelly sand material, demonstrating that it meets these specifications.

Soil mixing or placement shall not be allowed if soil area is saturated or has been subjected to water within 48-hours prior to mixing or placement. Engineer shall have final authority to determine if wet or saturated conditions exist.

Prior to placement of Bioretention Soil, Contractor shall submit soil testing for organic content, coefficient of permeability, soil fertility, and micronutrient analysis. Organic content and coefficient of permeability of the soil mixture shall meet the requirements specified herein. Organic content shall be between 4- and 10-percent by dry weight per ASTM Designation D 2974 (Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils). The minimum coefficient of permeability shall be 1 inch per hour per ASTM Designation D 2434 (Standard Test Method for Permeability of Granular Soils) when compacted to 85-percent of maximum dry density per ASTM Designation D 1557 (Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort).

A copy of the soil fertility and micronutrient analysis test results with recommendations for amendments shall be provided to the Engineer. Laboratory recommendations for amendments required for optimum plant establishment and early growth shall be provided and incorporated into the soil by the Contractor at no cost to the Owner. Any additional amendments recommended by test results shall be organic and contain no deleterious materials that may enter the water in the swales. Four (4) Working Days shall be allowed for testing.

9-14.1(7) SHREDDED MULCH (New Section)

Shredded Mulch shall be chipped and/or shredded tree trimmings, free of weeds, and shall not contain excessive resin, tannin, garbage or materials over a 6-inch length in any dimension. Trees and woody vegetation cleared on site, if any and as approved by Engineer, may be chipped or shredded and stockpiled on site for use as Shredded Mulch.

Off site sources for shredded tree trimming mulch include: Local utility tree trimming services and private tree trimming services (Seattle Tree Preservation, Inc., Ballard Tree Service, Inc., City Foresters, Asplundh) or approved equal. A two pound sample of Shredded Mulch proposed to be used shall be submitted to the Engineer for approval.

9-14.1(8) COMPOSTED MATERIAL (New Section)

Compost material must be derived from a Type 1 feedstock and produced by a facility in compliance with WAC chapter 173-350 (Solid Waste Handling Standards), Section 220. The compost shall meet Grade AA Compost as defined by the Washington State Department of Ecology's Interim Guidelines for Compost Quality (Publication #94-38, Revised November 1994). Compost material shall have 100 passing a 1/2-inch screen. The Carbon to Nitrogen ratio of the compost shall be between 20:1 and 35:1. The compost shall have an organic matter content of 40 to 60% as determined by "loss on ignition" test method. The compost shall have a pH between 5.5 and 7.0 and maximum electrical conductivity of 6 ohms/cm. Moisture content of the compost should range between 35% and 50%. Decomposed Organic Compost shall be mature as US Composting Council stability test ratings referred to in the WAC 173-350.

The product shall be tested, and test results shall document specified requirements. Manufacturer shall submit a certified lab report dated within 30-days of submittal. Submit one-gallon sample, source, letter of certification, and testing results from the supplier to Engineer a minimum of 5 days prior to product delivery

on site.

Compost delivered to the site shall have a Solvita Compost Maturity Test performed on site, and must score a number 6 or above to be accepted. Solvita Compost Maturity Test is available from Woods End Research Laboratory, phone (207) 293-2457. Or 1(800)451-0337 or www.woodsends.org .

9-14.5(4) EROSION CONTROL BLANKET (New Section)

Erosion Control Blanket shall be a lofty web of polyolefin fibers between two high strength, biaxially oriented nets and bound securely together by parallel stitching with polyolefin thread. Every component of the blanket shall be stabilized against ultraviolet degradation and inert to chemicals normally encountered in a natural soil environment. The Erosion Control Blanket shall also conform to the following physical property requirements listed for Tensar Erosion Blanket TB-1000, or approved equivalent product in materials and performance:

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>VALUE</u>
Thickness (inches)	ASTM D1777	0.40 min
Weight (oz/yd)	ASTM D3776	10 min
Specific Gravity	ASTM D1505	0.91
Ground Cover Factor (%) ¹	Light Projection Test	65 minimum
Tensile Strength (lb/ft)	ASTM D1682 (2" Strip) ³	175 x 110
Elongation (%) ²	ASTM D1682 (2" Strip) ³	40
Tensile Strength ² at 15% Elongation (lb/ft)	ASTM D1682 (2" Strip) ³	90 x 90
Flexibility (mg.cm) ²	ASTM D1388	10,000 min
Ultraviolet Stability % Strength Retained after 1000 hours	ASTM D4355	80 minimum
Color		Green
Roll Dimensions		
Length (ft)		120
Width (ft)		7.5
Area (sq.ft.)		900
Weight (lb)		63
Roll Diameter (ft)		2.5

Notes:

- 1.Ground Cover Factor represents "% shade" from light projection test.
- 2.Values apply to both machine and cross machine directions.
- 3.Machine direction specimen for 2" strip tests includes one machine direction polyolefin stitch line centered within its width and extending the full length of the specimen.

9-14.5(5) TURF REINFORCEMENT MAT (New Section)

Turf reinforcement mat shall be BioD-Mat™ 70 by RoLanka International, 1-800-760-3215, www.rolanka.com, or approved equal. Install per manufacturer's specifications at locations indicated on the Drawings. Area covered with turf mat shall be seeded before placement.

9-14.15 STORM DRAIN INLET PROTECTION INSERTS (New Section)

Inserts shall fit under standard catch basin/inlet gratings and be capable of removing contaminants such as oil and grease, sediment, floatables, and debris from stormwater and shall work without chemicals.

Inserts shall be made primarily from geotextile sewn together with monofilament thread. The geotextile shall be resistant to degradation from ultraviolet exposure and shall meet or exceed the following minimum property requirements:

STORM DRAIN INLET PROTECTION INSERTS

<i>Fabric Property</i>	<i>Test Method</i>	<i>Unit</i>	<i>Value</i>
<i>Fabric Weight</i>	<i>ASTM D-5261</i>	<i>oz/yd</i>	<i>8.0</i>
<i>Fabric Thickness</i>	<i>ASTM D-5199</i>	<i>mils</i>	<i>145</i>
<i>Grab Tensile Strength</i>	<i>ASTM D-4632</i>	<i>lbs</i>	<i>270/300</i>
<i>Grab Elongation</i>	<i>ASTM D-4632</i>	<i>percent</i>	<i>60/80</i>
<i>Trapezoid Tear Strength</i>	<i>ASTM D-4533</i>	<i>lbs</i>	<i>110/130</i>
<i>Puncture Resistance</i>	<i>ASTM D-4833</i>	<i>lbs</i>	<i>160</i>
<i>Mullen Burst Strength</i>	<i>ASTM D-3786</i>	<i>psi</i>	<i>535</i>
<i>Water Flow Rate</i>	<i>ASTM D-4491</i>	<i>gpm/ft²</i>	<i>120 *</i>
<i>Permeability</i>	<i>ASTM D-4491</i>	<i>cm/sec</i>	<i>0.5</i>
<i>Permissivity</i>	<i>ASTM D-4491</i>	<i>sec⁻¹</i>	<i>1.26</i>
<i>U.V. Resistance</i>	<i>ASTM D-4355</i>	<i>percent</i>	<i>70</i>
<i>Apparent Opening Size</i>	<i>ASTM D-4751</i>	<i>US Sieve (mm)</i>	<i>70 (0.212)</i>

The total water flow rate through the insert in new condition should be in excess of 500 gpm, with an overflow rate of approximately 250 gpm.

Products: Storm Watch Catch Basin Insert (for sediment only) as manufactured by Price-Moon Enterprises (Or equal); StreamGuard Sediment Catch Basin Insert, #3003 (or equal)