CONSTRUCTION SPECIFICATIONS

REMOVAL ACTION
WILLAMETTE COVE UPLAND FACILITY
PORTLAND, OREGON

Prepared for
Port of Portland and Metro

Prepared by
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

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Seal
SECTION 011100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work includes but is not limited to:

Surface soil with metals, polycyclic aromatic hydrocarbons, and/or dioxin/furans above the DEQ hot spot levels will be excavated and disposed of off-site in a licensed solid waste landfill. In some areas, excavation will be conducted around trees to be saved. Excavation will be conducted under supervision of an arborist using methods that do not damage the trees. Outside of trees to be saved, excavation areas will be restored by re-grading on-site soil. Filling and re-grading will be conducted after confirmation sampling by Apex. Within the drip lines of trees to be saved, the excavation will be backfilled with imported topsoil. Disturbed areas will be seeded with native grass seed mix. Excavation depths will range from 0.5 to 3 feet. Final depths will be based on confirmation sampling to be completed by Apex.

The total quantity of soil to be excavated is estimated to range from 1,700 to 10,000 cubic yards (3,100 to 18,500 tons).

1.2 WORK AREA RESTRICTIONS

A. Plan and perform the work in accordance with the following restrictions:
   1. Allowable work hours are 7 am to 7 pm, 7 days per week.

1.3 PERMITS

A. Apex is in the process of obtaining the following permit.
   1. City of Portland Grading Permit.

B. Subcontractor shall obtain from DEQ a 1200-C NPDES construction stormwater permit.

C. The Subcontractor shall familiarize himself with the permit and ensure full compliance with all of its conditions.

D. Conflicts, if any, between the contract documents and issued permits, observed by the Subcontractor, shall be brought to the attention of Apex immediately.

1.4 SOILS INFORMATION

A. A record of soil exploration in the vicinity of this work is available at Apex for examination by the Subcontractor upon request. Apex makes no representation as to the completeness or accuracy of this information.
1.5 KNOWN SITE CONDITIONS AFFECTED BY REGULATORY AGENCIES

A. The following materials or conditions are known to exist on the construction site. The Subcontractor shall comply with federal, state, or local agencies’ ordinances or regulations pertaining to these conditions. A record of soil chemical data in the vicinity of this work is available at Apex for examination by the Subcontractor upon request. Apex makes no representation as to the completeness or accuracy of this information.

1. Heavy metals.
2. Grease, oils, fuels, and other hydrocarbons.
3. Polychlorinated biphenyls (PCBs).
4. Volatile organic compounds (VOCs).
5. Dioxins/Furans.

1.6 UNEXPECTED SITE CONDITIONS

A. Suspected Hazardous or Environmentally Sensitive Conditions:
1. If the Subcontractor encounters suspected hazardous or environmentally sensitive conditions in the work area beyond those mentioned in these specifications or the drawings, the Subcontractor shall immediately stop all work in the area of the suspected condition and notify Apex.
2. Apex will make arrangements for testing and appropriate abatement, if required.
3. The Subcontractor shall alert his employees to these facts and shall assure that no operations occur that disturb the suspected hazardous or environmentally sensitive condition.

B. Suspected Contaminated Soil:
1. If the Subcontractor encounters suspected contaminated soil in the work area beyond that mentioned in the contract documents, the Subcontractor shall immediately stop all work in the area of the suspected contamination and notify Apex.
2. Contaminated soil is soil that produces fuel or chemical odors, produces an oil sheen on the surface of water, has staining, contains debris or other visible indicators, or soil designated by Apex as contaminated. Apex will characterize contaminated soil, obtain the profile for disposal. The Port will determine the location of disposal.

C. Historical or Archaeological Conditions:
1. If the Subcontractor encounters materials suspected to be of historical or archaeological significance, or materials that are otherwise incongruous with their surroundings, he shall immediately stop work in that location and notify the Port. Do not proceed with the work until further direction has been given by the Port.

1.7 INTERNATIONAL BUILDING CODE

A. Work shall conform to the International Building Code (IBC), as amended by the OSSC, State of Oregon and as enforced by the City of Portland Bureau of Development Services.
1.8 PROGRESS MEETINGS

A. Job meetings may be held between the Subcontractor and Apex. The meetings may include project owners and regulatory agencies. The time and place of the meetings will be established by Apex.

END OF SECTION 011100
SECTION 012200 – UNIT PRICES

PART 1 - GENERAL

1.1 INCIDENTAL WORK

A. Consider work not listed, but necessary to complete the work, as incidental. Each bid item has incidental work associated with it. Some of the incidentals are identified. However, the list is not complete. This does not relieve the Subcontractor from the responsibility for completing the incidental work. Incidental work includes, but is not limited to, project meetings, compacting, grading, hauling, mixing, placing, shaping, and watering, as specified.

1.2 WEIGHING, WEIGH AND TRUCK MEASURE DELIVERY TICKETS

A. A ton is 2,000 pounds. Measure and compute weight to the nearest one-tenth (0.1) of a ton.

B. Weigh on certified public or private scales. The scales shall be of a capacity, kind, size and type suitable for the weighing to be done. Scales shall be tested, sealed, and certified by an acceptable certifying authority. Apex may order recertification of scales to ensure accuracy. Recertification shall be at no added cost to Apex.

C. Within one day after delivery, submit a weight delivery ticket to Apex for each load. Payment will only be made for material accounted for on a delivery ticket. Delivery tickets shall state project name, product delivered, date and time weighed, name and signature of the weigh master, and name of the truck driver.

D. Where items are paid by truck measure, each haul unit shall be measured by Apex and the Subcontractor jointly to determine the truck volume. Give each haul unit a unique number which is clearly shown on the unit. Submit a delivery ticket to Apex for each load. Payment will only be made for material accounted for on a delivery ticket. Delivery tickets shall state project name, product delivered, haul unit number, date and time of delivery, and the driver’s name and signature. Heap loads to the satisfaction of Apex to assure that delivered volume is equal to the truck volume as measured by Apex and the Subcontractor.

1.3 BID ITEMS

A. Payment constitutes total compensation for furnishing materials; for preparation of these materials; and for labor, equipment, tools and incidentals necessary to complete the work as specified and shown on the drawings. Measurement will not include unauthorized work performed beyond the design limits. Replace material removed without authorization at no added cost to Apex. The method of measurement and the basis of payment for bid items will be as follows.

1.4 APPLICABILITY OF UNIT PRICES
A. If provided, quantities are for information or bidding purposes only. Unit prices shall be applicable to any quantity actually used.

PART 2 - BID ITEMS

1 MOBILIZATION, SURVEYING, CLEANUP, AND DEMOBILIZATION – L.S.

A. Payment will be made at the contract lump sum price for mobilization and demobilization of personnel, equipment, supplies, offices and other facilities necessary for the work; surveying; and cleanup. The price includes premium on bonds and insurance, health and safety plan, temporary facilities, site controls such as work zones and erosion control, removal and replacement of concrete blocks for site access, and other costs which are incurred before beginning the work or that are not otherwise included in other bid items.

B. Payment will be made at 50 percent upon completion of mobilization and 50 percent upon completion of all work (including any final submittals).

2 SITE PREPARATION – L.S.

A. Payment will be made at the contract lump sum price for site preparation. The price includes all labor, equipment, materials, and incidentals required to prepare the site suitable to access all excavation areas with equipment and trucks as necessary to complete the work and clearing of vegetation from the excavation areas, including chipping of vegetation for use as mulch, in accordance with the drawings and specifications.

3 STANDARD SOIL EXCAVATION AND DISPOSAL – TON

A. Pay quantity will be the number of tons of soil excavated from the site and disposed of at the approved disposal facility from all areas outside the drip lines of trees to be saved. The price includes any processing necessary for acceptance of the soil at the disposal facility, standby (if any) associated with waiting for confirmation sample results, and grading of the excavation area in accordance with the drawings and specifications. Quantity will be determined from the submitted weigh slips from the disposal facility.

B. Payment will be made at the contract unit price per ton.

4 SPECIAL SOIL EXCAVATION AND DISPOSAL – TON

C. Pay quantity will be the number of tons of soil excavated from the site and disposed of at the approved disposal facility for all areas within the drip lines of trees to be saved. The price includes any processing necessary for acceptance of the soil at the disposal facility, and standby (if any) associated with waiting for confirmation sample results. Quantity will be determined from the submitted weigh slips from the disposal facility.

D. Payment will be made at the contract unit price per ton.
5  TOPSOIL – TON

E.  Pay quantity will be the number of tons of topsoil furnished and placed within the drip lines of trees to be saved. Quantity will be determined from the submitted weigh slips from the commercial source.

F.  Payment will be made at the contract unit price per ton.

6  SITE RESTORATION – L.S.

A.  Payment will be made at the contract lump sum price for site restoration. The price includes all labor, equipment, materials, and incidentals required to seed and mulch disturbed areas, and provide temporary irrigation in accordance with the drawings and specifications.

B.  Progress payments may be made based on percent complete.

END OF SECTION 012200
PART 1 - GENERAL

1.1 SUBCONTRACTOR’S COORDINATION

A. The Subcontractor is responsible for overall coordination of the work.

B. The drawings and specifications are arranged for convenience only and do not necessarily determine which trades perform the various portions of the work.

1.2 HEALTH AND SAFETY

A. Subcontractor shall be responsible for site safety and prepare a health and safety plan for its employees and visitors that complies with all applicable U.S. Department of Labor OSHA regulations. Seven days prior to beginning site work, Subcontractor shall submit to Apex a copy of the site health and safety plan.

B. The Subcontractor shall warrant that all its employees who are permitted to engage in hazardous waste operations which could expose them to hazardous substances, safety, or health hazards have obtained the necessary health and safety training and medical monitoring as specified in 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and all applicable federal, state and local laws, regulations, and ordinances regarding health and safety. Seven days prior to beginning site work, Subcontractor shall submit evidence that personnel have current appropriate training and, as applicable, are subject to a medical surveillance program.

END OF SECTION 013100
SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 TEMPORARY UTILITIES
   A. Make arrangements for obtaining temporary water, electric power, telephone, and other services, as needed.
   B. Maintain temporary facilities in a safe and proper manner and completely remove from the site prior to final acceptance.
   C. Provide labor and equipment for temporary lines and services at no added cost to Apex.

1.2 SANITARY FACILITIES
   A. Provide and maintain sanitary facilities which meet the requirements of applicable state and local health regulations.

1.3 FIRE PROTECTION
   A. Provide adequate fire fighting equipment to contain an equipment fire. Make available and accessible in the work area.

1.4 DUST CONTROL
   A. If conditions exist that cause dust or soil to become windblown or otherwise entrained in the air by vehicular traffic or equipment activities, employ methods to control and abate nuisance dust conditions including, but not limited to:
      1. Covering excavated, graded, disturbed areas, or stockpiles with tarps or sheeting until removed from the site or finished in accordance with the contract documents.
      2. Cleaning, sweeping, or vacuuming areas to remove the dust source.
      3. Removing or relocating dust-creating materials or activities to other areas that will eliminate the dust problem.
      4. Applying dust control agents such as water, or water misting, to the dust source. Application of any wetting agents other than water require the written approval of Apex prior to use.
         a. Application of dust control agents is not acceptable for materials that will dissolve in water or become friable.
         b. Materials that will dissolve in water or become friable when wetted shall be stored only on impervious surfaces, field-installed ground sheeting, or other barriers.
         c. Run-off from wetted materials shall be controlled to prevent contamination of other portions of the site.
1.5 NOISE CONTROL

A. Comply with local noise control regulations.

1.6 SOLID WASTE MANAGEMENT

A. The Subcontractor shall be solely responsible for determining the proper disposition of all solid waste, including documentation showing that the solid waste and recyclables are not regulated as hazardous waste in accordance with state and federal regulations. Upon request, this documentation shall be made available to Apex.

B. Receptacles:
   1. All drop boxes, bins, totes, and cans located in areas exposed to wind or precipitation shall be equipped with metal, canvas, or plastic covers. Drop boxes, bins, totes, and cans shall be kept closed at all times, except when adding waste material.
   2. Where possible, large receptacles such as drop boxes, bins, and totes shall be placed on impervious areas such as concrete or asphalt pavement at locations away from public traffic, storm drain inlets, ditches, and other conveyances.
   3. If any receptacle is observed to be leaking any liquid, it shall be considered a solid waste leachate. The Subcontractor shall immediately take action to contain the leakage.
   4. Discarding of aerosol cans, used oil, paints, solvents, fluorescent light tubes, or any hazardous waste into the receptacle is strictly prohibited.
   5. Receptacles larger than 33-gallon capacity used for recyclables and general solid waste and portable toilets shall not be located within 50 feet of a storm drain inlet, drainage ditch, surface water, or wetland.
   6. Ensure that all recyclable and solid waste receptacles are kept closed, are not overfilled, are not leaking, and general housekeeping is performed in the area.
   7. All recyclable and general solid waste hauled from the Port shall be secured prior to leaving the work site so that no waste material blows out, falls out, or leaks out during transportation to the designated offsite location.

1.7 DISPOSAL

A. Dispose of waste material off Metro property and in accordance with applicable state, federal, and local regulations.

B. Burning or burying of waste material within Metro property is not permitted.

C. Disposal of waste material within the area cleared, a river, stream, wetland, or other waterway or waterfront is not permitted.

1.8 OWNERSHIP OF MATERIAL REMOVED FROM THE SITE

A. Unless directed otherwise in the specifications, the Subcontractor accepts ownership of material removed from the site under this contract, and accepts all costs and liability associated with its handling, transportation, removal, and disposal. The Subcontractor releases the Port, Metro, and Apex from any claims, actions, proceedings, damages, liabilities, and expenses of every kind, whether known or unknown, resulting from or arising out of such material.
1.9 STAGING, PARKING, AND WORK AREA

A. Access to and from staging, parking, and work areas shall be as shown on the drawings.

B. Where the Subcontractor’s lock is used for access through Metro gates, mark the lock to identify the Subcontractor. Place the lock in series with existing locks. Take care to assure that no existing lock is omitted from the series. Remove the Subcontractor’s lock upon completion of the work. Failure to adhere to these requirements will result in the Subcontractor’s lock being removed by Metro.

1.10 STORAGE AND PROTECTION OF MATERIAL AND EQUIPMENT

A. The drawings designate the area in which the Subcontractor may store material and equipment.

B. Protect materials and equipment from damage, pilfering, etc., and fully relieve Metro, the Port, and Apex of this responsibility.

C. Upon completion of the work, remove unused materials and equipment and restore the area to original condition, including any grading necessary to restore drainage patterns and surface smoothness.

D. Store materials to be salvaged by the Subcontractor in the staging area.

E. Store plant material delivered to the work area that cannot be planted within 4 hours in the area designated by the Port for the heeling-in of plant material.

1.11 WARNING SIGNS AND BARRICADES

A. Before starting work, provide and have available all signs, flaggers, escort vehicles and drivers, barricades, and lights necessary for protection of the work.

B. Install and maintain adequate warning signs and lighted barricades to protect property and personnel in the work area. Barricades shall be weighted or anchored to prevent overturning from wind.

C. Barricade design shall conform to recommendations in the Manual on Uniform Traffic Control Devices, Type II barricade, minimum. Mount a Type A barricade warning light flasher on top of each barricade. Keep flashers visible and operating at all times.

D. Space barricades a maximum of 20 feet apart unless directed otherwise by Apex.

E. Relocate barricades, at the direction of Apex, whenever required to maintain protection of the work area or when changing work areas.

F. Open trenches, excavations, or obstructions not being actively worked shall be marked with lighted and weighted barricades which can be seen from a reasonable distance.
1.12 TRANSPORTATION OF MATERIAL

A. Whenever shipments of hazardous material (including hazardous debris, contaminated soil or water, and hazardous waste) will be unloaded onto or loaded from the site, the Subcontractor shall have a qualified person available onsite when shipments are received or made who is current with U.S. Department of Transportation (DOT) approved training for the transportation of hazardous materials. The storage and shipment of hazardous waste shall also comply with the requirements of these specifications.

B. Ensure that hazardous goods and material delivered to or from the construction site meet applicable DOT labeling and placarding requirements.

C. Properly characterize and manifest waste material leaving the site for disposal.

D. Minimize and abate the creation of nuisance dust conditions during the loading and unloading of vehicles used to haul debris, rubble, soil, trash, or other material that may create dust during loading or unloading operations.

E. Before leaving the loading area, adequately secure and cover vehicles used to haul debris, rubble, soil, trash, or other material that may be blown or fall during transportation onsite or over public thoroughfares.

F. In areas that may result in the tracking of soil, sediments, or hazardous materials on the wheels of hauling equipment outside areas that are enclosed by erosion and silt/sediment control devices, the Subcontractor shall provide the means and methods to remove these materials prior to the vehicle exiting the controlled area. If water wash stations are used, the Subcontractor shall provide systems for the collection, treatment, and disposal of wheel wash water and accumulated sediment.

1.13 TRAFFIC CONTROL

A. Access to the site is via public streets through residential neighborhoods. Make arrangements for the safe handling of traffic accessing/leaving the work area.

B. Keep pavement surfaces free and clear of dirt, mud, and debris.

C. Keep a minimum of one lane of traffic open at all times. Provide flaggers as needed to control congestion. At the end of each workday, open all lanes to traffic.

1.14 HAUL ROUTE CONSTRUCTION AND MAINTENANCE

A. The term “haul route” applies to any designated paved or unpaved road used by the Subcontractor for travel of construction equipment.

B. Construction equipment shall follow agreed-upon haul routes.

C. Do not cross electrical or communication cables unless protected by approved means.
D. Equipment operated on haul routes over existing pavements shall conform to legal load limits for public highways unless approved protection is provided. Keep pavement areas free of material spillage and foreign matter at all times. Continuously clean pavement surfaces with regenerative-air vacuum sweepers.

E. Maintain haul routes over unpaved areas in good usable condition during the course of the work. Sprinkle roads as necessary to prevent dust.

F. Haul roads over unpaved areas to remain after completion of work.

G. Construct, maintain, and restore haul routes to the satisfaction of Apex. Cost shall be considered an incidental item.

1.15 HARD HATS AND SAFETY CLOTHING

A. At a minimum, wear hard hats and high visibility clothing that comply with current ANSI requirements. Use additional personal protective devices as required by the health and safety plan. All safety equipment shall be in good repair.

END OF SECTION 015000
SECTION 015639 - TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide temporary fencing, barricades, and guards as necessary or required to protect trees which are to remain from damage above and below grade.

B. Protect root systems from smothering and compaction. Do not store construction materials or permit vehicles to drive or park within the drip line area of any tree to remain.

C. Protect all plant growth, including root systems of trees from the dumping of refuse or chemically injurious material or liquids, and continual puddling of running water.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect all trees and document by written memorandum and photograph any unusual existing conditions. Submit copies to Apex prior to commencement of work.

3.2 FIELD SUPERVISION

A. Subcontractor must provide an arborist (certified in accordance with the standards of the International Society of Arboriculture) to be on-site and directing excavation and filling within the drip line of trees to remain.

B. Apex must be present during work within the drip line of trees to remain.

3.3 GENERAL

A. Protect root systems of trees to remain from damage due to noxious materials in solution caused by run-off or spillage during mixing and placement of construction materials, or drainage from stored materials.

B. Protect root systems of trees to remain from flooding, erosion or excessive wetting resulting from any operations.
C. Protect all existing trees to remain against unauthorized cutting, breaking, or skinning roots and branches, skinning, and bruising of bark.

D. Do not allow fires on the project site.

E. Where cutting seems necessary, review conditions with Apex before proceeding, and comply with its directives.

F. All tree pruning or root cutting to be performed with sharp pruning instruments; do not break or chop. Do not prune without explicit approval of Apex.

3.4 EXCAVATION AROUND TREES

A. Excavate within drip line of trees only where indicated on drawings or as approved by Apex.

B. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover, or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently covered with backfill.

3.5 GRADING AND FILLING AROUND TREES

A. Restore to existing grade within drip line of trees unless otherwise indicated on the drawings and approved by Apex.

3.6 REPAIR AND REPLACEMENT OF TREES

A. Repair trees damaged by construction operations as directed by Apex. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.

B. Remove and replace dead trees and damaged trees which are determined by Apex to be incapable of restoration to normal growth pattern.
   1. Provide new trees of same size (up to 13 inch caliper) as those damaged. Plant and maintain as directed (maintain for minimum of 1 year). Species to be selected by Apex.
   2. For trees exceeding replaceable size (over 13 inch caliper) Metro shall be compensated on the basis of an evaluation schedule on the damaged trees by a qualified consulting arborist registered with the American Society of Consulting Arborists.

END OF SECTION 015639
SECTION 015713 - TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes temporary measures and monitoring to control water pollution, soil erosion, and siltation. Erosion, sediment, and pollutant control (ESPC) devices or methods include the use of berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, sediment (filter) fences, grasses, slope drains, and other techniques.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 312000, Site Clearing and Earthwork

1.3 REFERENCES AND APPLICABLE CODES

A. City of Portland, Erosion Control Manual.

B. City of Portland Title 10, Chapter 10.10 – 10.80.

1.4 PERMITS

A. Subcontractor is responsible for obtaining and complying with a National Pollutant Discharge Elimination System (NPDES) 1200-C permit.

B. Apex is in the process of obtaining a grading permit that will include City of Portland approval for the ESPC measures shown on the drawings. The Subcontractor shall satisfy all ESPC requirements set forth by the City of Portland.

1.5 SUBMITTALS

A. At the pre-construction meeting, submit the following supplemental ESPC information:
   1. Construction start and completion dates.
   2. Dates when ESPC measures will be in place.
   3. Projected date of removal of erosion control structures (after soil is stabilized by vegetation or pavement).
   4. Description of procedures for prompt maintenance or repair of ESPC measures utilized on-site.
   5. Description of clearing and grading practices, including a schedule of implementation, that will minimize the area of exposed soil throughout the duration of the project. (Whenever practicable, clearing and grading shall be phased to prevent exposed inactive areas from becoming a source of erosion.)
6. Description of best management practices that will be used to prevent or minimize storm water from being exposed to pollutants from spills, cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery as well as debris, leftover paints, solvents, and glues from construction operations.

7. Name, title, and telephone number of designated employee to perform the Subcontractor’s inspection and monitoring of ESPC measures.

B. Any requested changes or modifications to the ESPC measures shown on the drawings shall be submitted to Apex for approval prior to implementation. Upon request by Apex, the Subcontractor shall submit updated ESPC drawings which include the latest modifications.

C. ESPC inspection records shall be submitted with the Subcontractor’s monthly request for payment.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 GENERAL

A. The implementation of the ESPC measures and the construction, performance monitoring, maintenance, replacement, and upgrading of the ESPC measures are the responsibility of the Subcontractor until all construction is completed and accepted and vegetation/landscaping is established.

B. The ESPC measures shown on the drawings shall be constructed in conjunction with all clearing, grading, trenching, and earthwork activities and in a manner that ensures that sediment and sediment-laden water do not enter the drainage system, roadways, or violate applicable water quality standards.

C. The ESPC measures shown on the drawings are the minimum requirements for anticipated site conditions and Subcontractor methods and sequences. During the construction period, the ESPC measures shall be upgraded as needed for unexpected conditions, storm events, or Subcontractor methods or sequences and to ensure that sediment and sediment-laden water do not leave the site.

D. The Subcontractor shall be responsible for implementing temporary erosion control measures during construction to correct unforeseen conditions. The Subcontractor shall be responsible for additional erosion control due to the Subcontractor’s negligence, carelessness, or failure to install planned controls as a part of the work.

E. Implementation, construction, and maintenance of ESPC measures shall be in accordance with the City of Portland Erosion Control Manual.

F. Do not begin soil disturbance activities until ESPC measures are in place.
G. Schedule and perform ground disturbance activities in order to minimize impact to the overall project.

H. The erosion control drawings together with the supplemental ESPC information constitute the ESPC plan. A copy of the ESPC plan shall be retained on site and made available to Apex upon request.

3.2 CONSTRUCTION DETAILS

A. No visible or measurable erosion material or pollutant shall exit the construction site. Visible or measurable is defined as:
   1. Deposits of mud, dirt, sediment or similar material exceeding 1/2 cubic foot in volume in any area of 100 square feet or less on public or private streets, adjacent property, or into the storm and surface water system, either by direct deposit, dripping, discharge, or as a result of the action of erosion.
   2. Evidence of concentrated flows of water over bare soils; turbid or sediment laden flows; or evidence of on-site erosion such as rivulets on bare soil slopes, where the flow of water is not filtered or captured on the site.
   3. Earth slides, mud flows, earth sloughing, or other earth movement which leaves the property.

B. Employ all reasonable means and methods to control or divert upslope stormwater runoff away from cleared and grubbed areas, stockpiled materials, and other disturbed areas that will be open or stockpiled for periods longer than 2 weeks.

C. Construction entrances, exits, and parking areas shall be graveled or paved to reduce the tracking of sediment onto public or private roads. Maintain for the duration of the project.

D. Unpaved roads on the site shall be graveled or under other effective erosion and sediment control measures, either on the road or down gradient, to prevent sediment and sediment-laden water from leaving the site.

E. Preserve existing vegetation where practicable and revegetate open areas after grading or construction.

F. Continuously secure or protect soil stockpiles from runoff and erosion throughout the project with temporary soil stabilization measures or protective cover.

G. Provide ongoing maintenance, repair, and restoration of ESPC measures to keep them continually functional.
   1. The following maintenance activities shall be included:
      a. Visual or measurable amounts of sediment and pollutants that leave the site shall be cleaned up immediately and placed back on the site or properly disposed. Under no conditions shall sediment be intentionally washed into storm sewers or drainage ways.
      b. Clean catch basin protection when design capacity has been reduced by 50 percent.
      c. Remove sediment trapped by sediment fences before it reaches one third of the above-ground fence height.
      d. Remove trapped sediments from sediment basins when design capacity has been reduced by 50 percent.
H. If fertilizers are used to establish vegetation, the application rates shall follow manufacturer’s guidelines and the application shall be done in a way that minimizes nutrient-laden runoff to receiving waters.

I. If construction activities cease for 30 days or more, the entire site shall be stabilized using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.

J. Any use of toxic or other hazardous materials shall include proper storage, application, and disposal.

K. When trucking saturated soils from the site, either watertight trucks shall be used or loads shall be drained on-site until dripping has been reduced to minimize spillage on roads and streets.

L. Clean all catch basins and inlets protected from sediment prior to final acceptance. The cleaning operation shall not flush sediment laden water into the downstream system.

M. ESPC measures installed during construction shall be removed when construction and site disturbance activity are complete and permanent soil stabilization is in place.

N. Remove and dispose of waste and unused building material.

3.3 MONITORING AND REPORTING REQUIREMENTS

A. The Subcontractor shall designate an employee to perform inspections of ESPC measures. The employee shall have knowledge and experience in construction storm water controls and management practices.

B. Inspect erosion control measures daily and maintain as necessary to ensure their continued functioning.

C. For inactive periods of work, inspect ESPC measures at least once every 14 days and within 24 hours after any storm with precipitation greater than 0.5 inches per 24-hour period.

D. Visibly monitor storm water runoff to evaluate the effectiveness of the erosion control measures or practices. If visible quantities of sediment are leaving the property, take corrective action immediately. Notify Apex of all corrections and violations.

E. The Subcontractor shall keep a record of inspections. This record shall be made available to Apex upon request and shall be submitted with each request for payment.

F. Visual inspections shall document the following information:
   1. Inspection date, inspector’s name, weather conditions, and rainfall amount for past 24 hours (inches). (Rainfall information can be obtained from the nearest weather recording station.)
   2. List observations of all best management practices (BMPs): Erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and nonstormwater controls.
3. At representative discharge location(s) from the construction site, conduct observation and document the quality of the discharge for any turbidity, color, sheen, or floating materials. If possible, in the receiving stream, observe and record color and turbidity or clarity upstream and downstream within 30 feet of the discharge from the site. For example, a sheen or floating material shall be noted as present/absent. If present, it may indicate possible spill and/or leakage from vehicles or materials storage. Observation for turbidity and color shall describe any apparent color, the clarity of the discharge, and apparent differences compared with the receiving stream.

4. If visual or measurable amounts of sediment are leaving the property, briefly explain the corrective measures taken to reduce the discharge and/or clean it up. Describe efforts to prevent future releases. The ESPC shall be amended accordingly.

5. If a site is inaccessible due to inclement weather, the inspection shall include observations at a relevant discharge point or downstream location, if practical.

END OF SECTION 015713
PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes required environmental practices.

1.2 SUBMITTALS

A. Where hazardous materials or products are stored in quantities of 42 gallons or more, submit a spill response that includes a map indicating storage site locations.

B. If total petroleum product storage, including fuels and oil (e.g. drummed lubricants), exceeds 1,320 gallons, obtain special approval from Metro and submit a Spill Prevention Control and Countermeasures (SPCC) plan in accordance with federal regulations (40 CFR 112). Total storage is equal to the sum of all drums, receptacles, tanks, etc. equal to or greater than 55 gallons, including mobile storage tanks that are parked on site.

C. Submit a monthly written report that provides:
   1. A complete inventory of all hazardous waste generated that month;
   2. The current inventory of Subcontractor-generated hazardous waste stored on the site; and
   3. The date(s) the waste was placed into onsite storage.

1.3 EMERGENCY CONTACT AND NOTIFICATION INFORMATION

A. Provide a notification sign with Subcontractor’s appropriate emergency contact information in the following locations:
   1. Areas where fuel, hazardous waste, or hazardous liquid products are dispensed or stored.
   2. Areas where more than 42 gallons of hazardous materials are stored.
   3. On-board mobile motor fueling equipment.

1.4 RELEASE OF CONTAMINANTS

A. Protect against the entry of petroleum products and other contaminants into a waterway (including river, stream, slough, wetland, etc.), other drainage system (including stormwater collection systems) or overland to any drainage ditch or swale.

B. In the event of a spill outside a containment area:
   1. Notify Apex immediately if a spill occurs or if contamination is discovered which indicates a release of petroleum products or other contaminants to the environment.
   2. Immediately contain and remove the spilled material.
   3. If contaminants enter a waterway, immediately begin containment and cleanup.
C. Notify the appropriate regulatory agencies and provide written follow-up. Submit to Apex copies of all reports, written follow-ups, documentations, and agencies responses.

D. All cleanup costs, reporting requirements, fines, and fees shall be the sole responsibility of the Subcontractor.

1.5 SPILL KITS

A. A clearly labeled spill kit shall be located within 50 feet of the following:
   1. Fueling areas.
   2. Liquid products storage and dispensing areas.
   3. Hazardous materials storage areas.
   4. Vehicle and equipment maintenance areas.
   5. Any surface water if work is being performed in the vicinity.

B. Spill kits shall contain an ample supply of oil-absorbent ground booms, socks, pads, bagged sorbents, flat-blade shovels, salvage drums suitable for collection of spilled materials and absorbents, provisions for preventing spilled materials from entering any storm drain inlet or conveyance, supplies to protect at least two storm drain inlets, and personnel protective equipment suitable for the quantity and type of hazardous substances handled.

C. Provide spill kits as described above for the following types of mobile equipment:
   1. Mobile fueling, maintenance, and storage equipment.
   2. Mobile equipment service vehicles (including oilers).
   3. Mobile tanker equipment (e.g. tanker vehicles used to apply bituminous tack material) and hazardous material transport vehicles.

1.6 HAZARDOUS MATERIAL MANAGEMENT

A. General:
   1. Minimize the volume and number of locations where hazardous material is used and stored by the Subcontractor on the site.
   2. Minimize the type and volume of material used onsite that will be regulated as hazardous waste when the material becomes spent or unfit for further use.
   3. Ensure that any hazardous material or hazardous substance for which the use, storage, or disposal is regulated under federal, state, or local requirements is handled and managed in accordance with the requirements applicable to those substances.
   4. The use of degreasing or cleaning products containing chlorinated solvents such as 1,1,1-trichloroethane, perchloroethylene, and methylene chloride is prohibited unless approved by Apex.
   5. Immediately clean up hazardous material spilled outside any designated secondary containment system in accordance with Oregon DEQ, U.S. EPA, and Oregon OSHA requirements. Clean up, as soon as possible, any hazardous materials spilled inside a secondary containment system.
   6. Where hazardous materials or products are stored in quantities of 42 gallons or more, submit a spill response plan including a map indicating storage site locations.
   7. Ensure that every hazardous material container is clearly labeled with its contents or original product label. Indicate the Subcontractor’s name and contact number on the side of every container greater than 5 gallons in size with legible size lettering. If hazardous
material is transferred into a secondary container (i.e., any container used to transfer
material from a storage location to a point of use or storage prior to use, including but not
limited to buckets, pails, pans, drums, bottles, cans, etc.), this container shall also be
labeled with the contents, the Subcontractor’s name, and contact number.

8. Storage of flammable or reactive hazardous material/waste is not permitted unless stored
inside a building or other portable device approved by the Fire Marshal.

9. Keep an up-to-date file or notebook of Material Safety Data Sheets (MSDS) for all
hazardous materials located by the Subcontractor on the site. Upon request, this
information shall be made available to Apex.

10. All containers used for storing, dispensing, or accumulating hazardous materials shall be
placed inside a structure or under cover whenever possible. All containers not inside a
structure shall be equipped with secondary containment.

11. Do not locate fuel and hazardous substances storage and dispensing areas where runoff
flows.

B. Onsite Storage of Petroleum Products

1. Do not install or use underground storage tanks (USTs) on the site.

2. Storage racks and vehicles shall be equipped with drip collection devices and enclosures.

3. Provide an emergency dispenser shut-off switch. Switch shall be located at least 15 feet
from tanks or the minimum distance approved by the Fire Marshal, whichever is greater.

4. Use bollards or other vehicle restraint devices (e.g., Jersey barriers) to prevent vehicles
from damaging tanks and containment area.

5. Tanks, containment areas, and dispensing pads shall be under cover or under a temporary
shelter to minimize contact with, or accumulation of, precipitation, unless otherwise
approved by Apex.

C. Large Containers (20 Gallons or More):

1. Store containers of hazardous liquids on an impervious surface (i.e., concrete, asphalt, or
field-erected system [heavy plastic ground sheeting] capable of withstanding normal wear
and tear from construction equipment and other traffic throughout the course of the work)
and inside or under cover in a location that does not have any storm drain inlets or floor
drains within 50 feet of the storage location.

2. For containers of liquids that are not, or cannot, be stored inside a structure, equip the
storage area with some form of secondary containment. Acceptable secondary
containment devices may include, but are not limited to:
   a. Field constructed secondary containment area such as a perimeter berm with
      impervious interior surface; or
   b. Movable pallet systems with integrated secondary containment and covers (these
      systems are available in one, two, and four drum capacities).

3. Secondary containment systems shall have sufficient capacity to contain 10 percent of the
total volume of hazardous material containers stored, or 110 percent of the volume of the
largest container, whichever volume is greater.

4. Dispense from liquid-filled containers using a manually operated pump. Do not dispense
from gravity feed spigots. Containers shall be used in an upright vertical position.

D. Small Containers (Less Than 20 Gallons):

1. Store containers of flammable liquids in National Fire Protection Association (NFPA)
Code 30 approved safety cabinets, or equal.

2. Store containers of non-flammable liquids in cabinets or other devices equipped with
secondary containment.
E. Empty Containers:
1. A container is deemed empty when all possible material has been removed using normal practices (e.g. pouring, pumping, aspirating, etc.) and no more than 1 inch of residue remains on the bottom of the container or inner liner.
2. Transferring of the liquid heel at the bottom of containers into other containers shall be done only in areas equipped with secondary containment.
3. Do not store empty containers upside down, although they may be stored in a horizontal position if the bungs/lids are securely fastened.
4. Do not rinse empty containers on the work site.
5. Manage empty or unwanted containers as solid waste in accordance with the requirements of this section.
6. Do not offer empty containers to employees or the public on the site.

1.7 HAZARDOUS WASTE MANAGEMENT

A. General:
1. Obtain the necessary generator identification numbers from the Oregon Department of Environmental Quality (DEQ). Perform required characterization tests to determine if waste material produced is regulated as hazardous waste. Manage, transport, and dispose or recycle such waste in accordance with state and federal regulations.
2. In addition to that required by federal or state regulations, the storage of containers containing hazardous waste shall be in accordance with the requirements described elsewhere in this section.
3. Disposal of hazardous waste down any floor drain, sink, storm drain inlet, onto the ground, or into any water conveyance is strictly prohibited by state and federal law.
4. Submit a monthly written report to Apex that provides:
   a. A complete inventory of all hazardous waste generated that month;
   b. The current inventory of Subcontractor-generated hazardous waste stored on the site; and
   c. The date(s) the waste was placed into onsite storage.
5. Keep all required hazardous waste documentation, including, but not limited to, testing records, inspection logs, manifests, and contingency plans onsite during the course of the work. Upon request, the Subcontractor shall make this information available to Apex.
6. Loading and transportation of hazardous waste from the site shall be in accordance with the requirements described elsewhere in this section.

1.8 WASHDOWNS

A. The washdown or hosing of hazardous material storage areas, refueling areas, or tank farm and containment areas is prohibited unless the Subcontractor provides for the collection and disposal of the washdown liquids.

B. Limit washdown of vehicle and equipment service pads and other work areas. Limit steam cleaning and high pressure or other types of washing of vehicles and equipment. Liquids from these activities shall be collected, managed as contaminated wastewater, and properly disposed.
1.9 EQUIPMENT FUELING AND MAINTENANCE

A. Ultra Low Sulfur Diesel (ULSD) Fuel:
   1. All diesel-powered off-road vehicles and equipment used on the project site for three consecutive days or more shall be fueled with ultra low sulfur diesel. This includes vehicles with engine horsepower ratings of 50 HP and above, and internal combustion engines used to power generators, compressors, and similar equipment.
   2. The ULSD fuel shall contain no more than 15 parts per million sulfur.
   3. If sufficient quantities of ULSD are not available, or if the price of ULSD is at least 3 percent greater than diesel fuel with a sulfur content in excess of 15 parts per million, Apex may allow the use of higher sulfur fuel. Such exceptions will be made on a case-by-case basis.

B. Fueling Operations:
   1. Do not top off vehicle tanks when fueling.
   2. Where practicable, fuel and liquid product dispensing shall be done over an impervious surface such as a concrete pad or field-constructed temporary pad (e.g. an aggregate pad with membrane bottom and side liner), at least 50 feet from the nearest storm drain inlet, drainage ditch, surface water, wetland, or other drainage conveyance. Install temporary impervious covers over storm drain inlets. Provide storm drainage diversion away from drainage ditches, surface water, wetlands, or other drainage conveyances.

C. Equipment and Vehicle Maintenance Operations:
   1. Comply with requirements specified elsewhere in this section regarding onsite storage and use of hazardous material and management of hazardous or solid waste produced during the course of the work.
   2. Perform daily equipment checks for leaking oil and fluids. Visible spills shall be immediately cleaned up.
   3. Equipment with leaking oil or fluids shall be repaired prior to being operated on the site.
   4. To the extent practicable, park vehicles and equipment indoors, under a roof, or on an impervious surface to prevent stormwater contact in the area.
   5. If a vehicle or equipment is known to be leaking oil or other fluids, and service cannot be completed that day, install a drip pan or absorbent materials to contain the leak until service and repair is completed.

D. Equipment Maintenance Areas:
   1. To the extent practicable, vehicle and equipment servicing shall be done indoors or under cover.
   2. Perform vehicle and equipment maintenance over an impervious floor or pad (concrete, chemical-resistant coated asphalt, or other field-erected system). Ensure that contaminated liquids including, but not limited to, contaminated stormwater are not discharged to any storm drain inlet, drainage ditch, swale, or other surface water conveyance.
   3. For equipment that cannot practicably be moved to an equipment service area, take all reasonable precautions to prevent chemical spills onto the ground or into water. Use protective ground sheeting or absorbent materials beneath and around equipment areas that may be vulnerable to chemical spills.
   4. Contaminated stormwater from vehicle and equipment maintenance areas shall not be allowed to discharge into the stormwater collection system, discharge onto the ground, or run overland to any drainage ditch or swale.
5. Solvent or caustic parts washing stations shall not be used outdoors, unless the area is covered and equipped with appropriate secondary containment as described elsewhere in this section.

E. Mobile Equipment Service Vehicles (Including Oilers):
   1. Multi-purpose mobile equipment maintenance vehicles (oilers) that are equipped with multiple tanks or containers of lubricants, fuels, hydraulic fluids, greases, chemicals, etc., may be used on the site under the following conditions:
      a. The vehicle is equipped with a spill kit.
      b. The vehicle is equipped with a sufficient supply of containers for the collection of fluids that may be removed from the equipment being serviced (e.g., used oil, waste antifreeze, chemicals, etc.).
   2. If equipment service is performed within 50 feet of a storm drain inlet, drainage ditch, surface water, or wetland, the Subcontractor shall install a flexible storm drain cover over the storm drain inlet or place oil absorbent booms or socks around the inlet or other drainage conveyance prior to commencing work.
   3. Mobile tanker, mobile fueling, or equipment service personnel shall be appropriately trained in spill response techniques. At least one spill response-trained person shall be present at all times where fueling, fuel staging, or fuel transfers are made.
   4. Mobile motor fueling equipment shall be equipped with an emergency dispenser shutoff switch located in the cab or on the opposite side of the vehicle or trailer from the pump(s).
   5. Overnight/weekend parking of mobile equipment service vehicles shall not occur within 50 feet of the nearest storm drain inlet, drainage ditch, surface water, or wetland area unless the storm drain inlet, ditch, and all drainage conveyances leading to the surface water or wetland have been equipped with oil absorbent booms or pads.

F. Storage and Handling of Waste Oil, Fluids, and Filters:
   1. The Subcontractor shall determine whether or not waste oil, fluids, filters, and other materials generated from onsite maintenance activities are regulated as hazardous waste under state and federal regulations.
   2. Regardless of the regulatory status of waste oil, fluids, filters, and other material, if the waste material is accumulated and stored on the site, the Subcontractor shall provide proper storage.

END OF SECTION 015719
SECTION 017000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 INSPECTION OF WORK AREA

A. Examine the work area and become satisfied as to the conditions of the work involved and the quantities of materials required for the performance of the work.

1.2 LAYOUT OF WORK

A. Survey and layout work performed under this contract shall be performed under the direct supervision of a professional land surveyor licensed in the State of Oregon.

B. The Subcontractor shall lay out the work and be responsible for all measurements in connection therewith. Cut stakes shall be furnished and maintained at a spacing of not greater than 50 feet.

C. Furnish stakes, templates, platforms, equipment, and labor as required to lay out every part of the work.

D. Maintain and preserve stakes and monuments until authorized to remove them.

E. Measuring for pay quantities will be by Apex.

F. Submit a copy of field notes made in connection with layout measurements to Apex if they are requested. Apex may check field layout measurements at any time.

G. Engage a professional land surveyor licensed in the State of Oregon to replace monuments that are disturbed, damaged, or destroyed during the course of the work, and ensure that a record of survey depicting replaced monuments is filed at the appropriate county survey office, all at no additional cost to Apex.

1.3 VERIFICATION OF MEASUREMENTS

A. Verify elevations and measurements and be responsible that executed dimensions fit actual conditions, regardless of the drawings, and report discrepancies to Apex before proceeding with the work. The Subcontractor will not receive extra compensation for verification of measurements or for labor or material expended on account of such differences.

1.4 EXISTING UTILITIES

A. Notify the Oregon Utility Notification Center (OUNC), and owners of underground utilities within the construction area or within affected public rights-of-way or easements, via the “one-call” notification system (1-800-332-2344) in advance of the commencement of excavation
activities, as prescribed in Oregon Revised Statutes (ORS) 757.541 to 757.571, Excavation Regulations.

B. Notify Apex when the “one-call” request is being initiated.

C. Protect existing utilities, and other public and private facilities and improvements which are to remain in place, from damage in the course of the work.

D. Perform any shutdown of utilities only when such shutdown will not interfere with operations. Schedule shutdowns through Apex, allowing time for adequate coordination.

E. In the event of interruption to field-located utility services as a result of the work, promptly notify the proper authority Apex. Cooperate with said authority in restoring service as promptly as possible. If required, the Subcontractor shall install suitable temporary service until permanent repair is completed and bear the cost of repair and temporary service.

F. Unless noted as abandoned, expose utilities only by hand excavation.

G. Notify Apex of all utilities exposed. Do not disrupt or cut utilities until identified and Apex has approved the cut.

H. Repair damages that result from execution of the work at no cost to Apex. Repairs shall be subject to approval of Apex.

END OF SECTION 017000
SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 AS-CONSTRUCTED DRAWINGS
A. Upon completion of the work, and as a requirement of final acceptance, submit to Apex a drawing set showing all as-constructed changes and information.

1.2 CONSTRUCTION STAKE AND MARKINGS REMOVAL
A. Remove stakes and painted markings used in construction layout.

1.3 CLEANUP
A. Remove debris from the staging and work area(s).
B. Thoroughly sweep paved areas prior to final acceptance.

1.4 CERTIFICATES OF FINAL APPROVAL
A. Submit originals or clearly readable copies of certificates of approval from the inspection authority prior to application for final payment.

END OF SECTION 017700
SECTION 026100 – REMOVAL AND DISPOSAL OF CONTAMINATED SOILS

PART 1 - GENERAL

1.1 DESCRIPTION
A. This section describes excavation and disposal of soil contaminated with petroleum and other products.
B. If the Subcontractor encounters suspected contaminated soil in the work area beyond that mentioned in the contract documents, the Subcontractor shall immediately stop all work in the area of the suspected contamination and notify Apex. Apex will characterize contaminated soil, obtain profile for disposal, and determine the location of disposal.

1.2 RELATED WORK SPECIFIED ELSEWHERE
A. Section 312000, Site Clearing and Earthwork

1.3 SUBMITTALS
A. Submit copies of all receipts for processing contaminated soil at the disposal facility.

1.4 DISPOSAL DOCUMENTATION
A. Apex will prepare all documentation required for characterization and disposal of contaminated soil at the disposal facility.

1.5 DEFINITIONS
A. Contaminated Soil: Soil that produces a fuel or chemical odor, produces an oil sheen on the surface of water, has staining, contains debris or other visible indicators, or soil designated by Apex as contaminated.

PART 2 - PRODUCTS

2.1 PLASTIC SHEETING
A. Minimum 6 mil polyethylene sheeting.
PART 3 - EXECUTION

3.1 GENERAL

A. Apex will provide field and laboratory evaluation of materials suspected of being contaminated.

B. Notify Apex 48 hours before excavating in an area of known or suspected contamination.

C. Apex will designate which materials are contaminated and which are suitable for use in the work.

D. Metro, through Apex, will determine the disposition of all materials.

E. The Subcontractor shall assist Apex in collecting soil samples from excavator buckets or by briefly stopping work to allow observations or samples to be collected.

3.2 EXCAVATION AND STOCKPILING

A. All contaminated excavated material is the property of Metro and will be handled per direction by Metro through Apex.

B. Excavation to remove material determined by Apex to be contaminated shall be performed as described in Section 312000, Site Clearing and Earthwork, and shall be made to the depth and extent as determined by Apex.

C. Provide adequate containment of and protection from contaminated material, suited to the type of contamination. Follow all federal, state, and local requirements in excavating, loading, transporting, and otherwise handling or working around contaminated material. The Subcontractor shall be responsible for meeting all regulatory requirements.

D. Contaminated stockpiles shall meet the requirements of Section 312000, Site Clearing and Earthwork.

E. Place contaminated soil in a stockpile separate from clean materials.

F. Stockpile contaminated soil on pavement or on plastic sheeting. The perimeter of the plastic sheeting shall be elevated to prevent overland stormwater flow from contacting the contaminated soil. Pavement may substitute for the plastic sheeting if there is a method for preventing stormwater flow into the stockpile (i.e., a curb on the uphill side of the stockpile).

G. Cover contaminated soil stockpile with plastic sheeting when the stockpile is not actively involved in construction. Secure the plastic covering to ensure it stays in place and that stormwater runoff from the cover does not pond on the cover or contact the contaminated soil.

3.3 DISPOSAL

A. Apex will characterize contaminated soil and obtain the profile for disposal.
B. Contaminated soil shall be disposed of by the Subcontractor at a location determined by Metro. Follow all federal, state, and local requirements and regulations in excavating, loading, transporting, disposing of, and otherwise handling the contaminated soil.

END OF SECTION 026100
SECTION 312000 – SITE CLEARING AND EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes clearing, excavation, and site grading.

B. If the Subcontractor encounters suspected contaminated soil in the work area beyond that mentioned in the contract documents, the Subcontractor shall immediately stop all work in the area of the suspected contamination and notify Apex. Contaminated soil is soil that produces fuel or chemical odors, produces an oil sheen on the surface of water, has staining, contains debris or other visible indicators, or soil designated by Apex as contaminated. Apex will characterize contaminated soil, obtain profile for disposal. Metro will determine the location of disposal.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 015713, Temporary Erosion, Sediment, and Pollution Control

B. Section 026100, Removal and Disposal of Contaminated Soils

PART 2 - PRODUCTS

2.1 TOPSOIL AND COMPOST

A. Topsoil and compost shall be supplied from a commercial source after verification that chemical concentrations meet the DEQ clean fill requirements.

B. Sampling and testing of proposed import material will be conducted by Apex. A minimum of 4 weeks prior to importing any material to the site, notify Apex of the proposed source of materials. The results of the analytical laboratory sample analysis will be received and reviewed prior to importing materials to the Site.

C. If the proposed import material does not meet the DEQ clean fill requirements, provide an alternate source. Testing shall be repeated at alternative sources until fill meeting the clean fill requirements is identified. There shall be no additional payment to subcontractor for using alternative sources or for delays resulting from additional testing.
PART 3 - EXECUTION

3.1 GENERAL

A. Apex will designate the disposition and determine the suitability of products.

B. The right is reserved to make minor adjustments or revisions in line or grades, if found necessary as the work progresses.

C. No excavation or stripping shall be started until the Subcontractor has staked out the proposed work.

D. Suspend earthwork when satisfactory results cannot be obtained because of rain, freezing weather, or other unsatisfactory conditions.

E. Drag, blade, or slope the grade to provide proper surface drainage. Install temporary drains and drainage ditches to intercept or divert surface water which may affect the prosecution or condition of the work.

F. Route hauling equipment around or away from areas of soft or yielding subgrade.

G. Furnish and maintain earth-moving equipment in satisfactory condition and operate such equipment as necessary to control uniform density, section, and smoothness of grade.

H. Promptly remove soil or other foreign materials that fall on pavements.

3.2 CLEARING

A. Remove clearing materials to a height of not greater than 0.1 foot above original ground.

B. Invasive species shall be disposed of off the site.

C. Grind clearing materials (non-invasive species only) and use as mulch on the project.

D. Limit the total cleared area, excavations, and other disturbance, to only those areas necessary for the orderly flow of work.

3.3 EXCAVATION

A. Excavate to the depth, lines, and grades shown on the drawings or as otherwise specified.

B. Use excavation equipment that does not mix material to be excavated with underlying material to remain (e.g., smooth blade bucket).

C. Within the drip lines of trees to be saved, use means and methods that do not damage the trees.
3.4 LOADING AND HAULING

A. Line trucks with plastic sheeting prior to filling.
B. During loading, use methods that minimize spillage of soil on the exterior of the trucks or clean ground surface.
C. Remove visible soil from the truck exterior prior to leaving the loading area.
D. If dry soil is present in the truck, wet the load prior to departure.
E. Trucks shall be tightly covered prior to departing the site.
F. Trucks must not leave the site if liquids are draining from the load.
G. Exiting trucks must pass through a wheel wash and rock construction entrance prior to leaving the site.
H. Excavated soil will be transported in accordance with appropriate Department of Transportation (DOT) regulations for solid or hazardous waste, as applicable.

3.5 SITE GRADING AND BACKFILLING

A. Except within the drip line of trees to be saved, use on-site materials to shape, trim, and finish surface areas to conform to the lines, grades, and cross-sections shown on the drawings or as designated by Apex.
B. Within the drip line of trees to be saved, backfill with imported Topsoil. Lightly tamp and water to eliminate voids.
C. Grade surfaces as shown on the drawings. Disturbed areas outside of excavation areas shall be graded to drain.
D. Eliminate wheel ruts by regrading.

END OF SECTION 312000
SECTION 329113 - SOIL PREPARATION

PART 1 - GENERAL

1.1 DESCRIPTION
   A. This section describes preparation of soil including application soil amendments.

1.2 RELATED WORK SPECIFIED ELSEWHERE
   A. Section 329219, Seeding

1.3 SUBMITTALS
   A. Submit certification of quantities of fertilizer and compost delivered to the site to Apex.
   B. Submit to Apex for approval a sample of garden care compost and yard debris compost.

1.4 PRODUCT DELIVERY
   A. Deliver fertilizer to the site in original unopened containers, each bearing the manufacturer’s guaranteed analysis.

1.5 PROTECTION
   A. Protect utility lines, storm drainage lines, site improvements, and underground irrigation system during execution of work. See Section 015000, Temporary Facilities and Controls.

PART 2 - PRODUCTS

2.1 SOIL AMENDMENTS
   A. Yard Debris compost:
      2. McFarlanes: 1 inch minus.
      3. Or equal.
   B. Lime: Dolomite lime, No. 10.
PART 3 - EXECUTION

3.1 SOIL PREPARATION

A. Within the drip lines of trees to be saved, use topsoil that is ready for seeding.

B. For other disturbed areas:
   1. Remove stones, mortar, concrete, asphalt, rubbish, debris, and other materials larger than 1 1/2 inches from planting areas.
   2. Amend soil with compost at the rates described below to achieve a total 6-inch layer of amended soil material. Apply in the following order.
      a. Add 2 inches (6 cubic yards per 1,000 square feet) of yard debris compost.
      b. For each 1,000 square feet, apply 10 pounds of 34-0-0 and 4 pounds of 16-16-16. Do not apply fertilizer to impervious areas. Use deflectors to prevent improper application.
      c. Rototill, in two directions, to a depth of 6 inches, to create a uniform mix of soil and Yard Debris Compost.
   3. Within the seeded areas, apply lime at a rate of 50 pounds per 1000 square feet.

C. Rake and smooth planting area to a tolerance of 1 inch, plus or minus, in 10 feet.

END OF SECTION 329113
SECTION 329219 - SEEDING

PART 1 - GENERAL

1.1 DESCRIPTION
   A. This section describes the seeding of native seed mix areas.

1.2 REFERENCES
   A. Official Seed Analysts of North America

1.3 RELATED WORK SPECIFIED ELSEWHERE
   A. Section 329113, Soil Preparation

1.4 SUBMITTALS
   A. Seed Certification: Seed Mix shall be blue tag certified seed. Prior to delivery of seed, submit one copy of seed analysis tag. Tag shall state seed name(s), mixture, blend, or variety, lot number, origin of seed, each variety with its associated purity, germination and test date, percentages of crop, inert and weed, “use before” date, AMS number, and net weight. Tag shall comply with standards established by the Official Seed Analysts of North America.
   B. For non-blue tag certified seed, submit seed vendor’s certified statement of each seed required.

1.5 PROTECTION
   A. Provide temporary twine barricades at perimeter of foot traffic areas receiving seed.
   B. Seed when wind velocity is less than 5 miles per hour.

PART 2 - PRODUCTS

2.1 SEED MIX
   A. General:
      1. Oregon certified quality, or better.
      2. Minimum germination not less than 90 percent.
      3. Minimum purity at least 98 percent.
B. Seed mix shall be “Streambank Plus”, provided by Sunmark Seeds International, Inc., or pre-bid approved equal.

2.2 COMPOST

A. Yard debris compost.

2.3 FERTILIZER

A. Commercial chemical-type fertilizer, uniform in composition, dry, free-flowing, conforming to state and federal laws, and minimum percentage of nutrients by weight:
   1. 16 percent nitrogen, 16 percent phosphoric acid, 16 percent potash, slow release.
   2. Slow release 10N 15P 10K.

2.4 WOOD CELLULOSE FIBER CARRIER

A. Pure wood fiber products with tackifier, one of the following:
   1. Weyerhaeuser Silva-Fiber.
   2. Or equal.

2.5 HYDROSEEDER

A. Commercial model with an agitator to mix seed, mulch, and fertilizer into a slurry solution and capable of spraying the slurry at the desired application rates.

PART 3 - EXECUTION

3.1 PREPARATION

A. See Section 329113, Soil Preparation, for application of compost and lime prior to seeding and fertilizing.
   1. Apply products strictly according to the manufacturer’s recommendations.

B. Grade as necessary and roll and rake the surface of seeded areas as necessary to create a firm, professional quality finish grade, free of depressions and humps.

C. Rake seeded areas perpendicular to the desired contours.

D. Blend the finish grade smoothly into adjoining existing grades.

E. Request inspection of grades. Condition of planting surface shall meet approval of the Port prior to commencing seeding.

F. Apply fertilizer as follows:
   1. Slow release 10N 15P 10K at a rate of 15 pounds per 1,000 square feet.
2. Scotts Proturf #8463, or equal, starter fertilizer with pre-emergence weed control at the rate of 4.4 pounds per 1,000 square feet. Follow manufacturer’s directions.

3. Do not apply fertilizer to impervious areas. Use deflectors to prevent improper application.

G. Lightly irrigate soil prior to seeding.

3.2 SEEDING APPLICATION

A. Evenly apply seed mix where shown on the drawings at the rate of 1.5 pounds per 1,000 square feet.

B. Apply seed with a mechanical spreader. Apply half of the seed in one direction and the balance at right angles to the first direction.

C. Method of seeding operation may be varied at the option of the Subcontractor if approved by the Port. Approved options are hydroseeding or hydroseeding with pre-germinated seed.

D. Feather rake or lightly drag to cover seed, and apply compost in a roller-type organic spreader to a depth of 1/8 to 1/4 inch.

E. Immediately after seeding, water with a fine spray to wet the soil several inches in depth.

F. At completion of work, remove all debris, equipment, and surplus materials. Leave work area in a neat and orderly condition.

G. Protect improvements from damage. Provide protective cover and barriers as required to prevent damage.

3.3 HYDROSEEDING

A. Apply hydroseeding mix at the rate of 2950 pounds per acre.

B. Apply fertilizer at the rate of 650 pounds per acre.

C. Apply wood fiber carrier at the rate of 2000 pounds per acre.

D. Remove mulch, seed, and fertilizer from surfaces not intended for seeding.

3.4 SEEDED AREA ACCEPTANCE REQUIREMENTS

A. For acceptance, seeded areas shall meet the following requirements:
   1. Ninety percent seed germination within 7 days.
   2. Ninety-five percent lawn purity.
   3. Minimum of one sprouting seed per 1/4 inch uniformly throughout.
   4. Uniform green color throughout entire seeded areas.
B. Reseed areas failing to meet the above conditions at five-day intervals until all areas are acceptable.

3.5 ADJUSTMENTS AND MAINTENANCE

A. Keep the seed bed moist at all times to ensure seed germination until the date of substantial completion.

B. Repair “washouts” and reseed within 7 days. Reseed bare spots, fertilize, and rake to an even grade.

C. Do not mow seeded area.

END OF SECTION 329219
DRAWING SET:
- C-1 SITE PLAN
- C-2 EROSION CONTROL, SITE PREPARATION, AND CONSTRUCTION MANAGEMENT PLAN
- C-3 EARTHWORK PLAN
- C-4 EXCAVATION, GrADING, AND EROSION CONTROL PLAN - AREA 1 AND AREA 2
- C-5 EXCAVATION, GrADING, AND EROSION CONTROL PLAN - AREA 3
- C-6 EXCAVATION, GrADING, AND EROSION CONTROL PLAN - AREA 5
- C-7 EXCAVATION, GrADING, AND EROSION CONTROL PLAN - AREA 6
- C-8 DETAILS

LEGEND:
- Limits of work
- Mean high water
- Parcel boundary
- 100-Year floodplain boundary
- Top of bank
- Greenway setback
- Railroad
- Limits of trees
- Big leaf maple
- Madrone
- Oregon white oak
- Excavation boundary
- Haul road construction
- Haul road improvement
- Monitoring well
- Historical soil sample location
- Silt fence
- Haul route
- Typical surface drainage direction
- City of Portland zoning boundary and zoning designation

Source: USGS 7.5-minute quadrangles of Linnton and Portland, OR, as provided by Terraserver.

File Name: SITE DRAWINGS
APEX Project Number: 1056-05.002
Scale: Not to scale
Drawing Number: 1 of 10
Cover: HFC JLP MJP
SUBMITTED: Dated 1/8/15

Removal Action: Willamette Cove Upland Facility
Portland, Oregon

A PEX Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201
Phone 503.924.4704
Fax 503.943.6357

SS-19 CITY OF PORTLAND ZONING BOUNDARY AND ZONING DESIGNATION

R5-1 SITE DRAWINGS
NOTES:
1. REMOVE CONCRETE BLOCK/CONCRETE DEBRIS BARRIERS AS NEEDED FOR SITE ACCESS. REPLACE BARRIERS UPON COMPLETION OF WORK.
2. COORDINATE WITH CONSTRUCTION STAGING TO PREVENT THROUGH TRAFFIC FROM TRACKING ANY SEDIMENT ONTO ROADWAY PAVEMENT.
3. IMPLEMENTATION, CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADE OF ALL EROSION CONTROL MEASURES IS THE RESPONSIBILITY OF THE SUBCONTRACTOR. ALL CONSTRUCTION IS COMPLETED. THE SUBCONTRACTOR SHALL REMOVE THE EROSION CONTROL MEASURES AT THE END OF CONSTRUCTION AND WITH APPROVAL OF PORT.
4. THE EROSION CONTROL FACILITIES ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO ALL GRAADING ACTIVITIES TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT VIOLATE APPLICABLE WATER QUALITY STANDARDS.
5. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL UPGRADE AND MAINTAIN ALL EROSION CONTROL FACILITIES AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT LEAVE THE SITE.
6. ALL EROSION CONTROL FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR.
7. DURING INACTIVE PERIODS ON THE SITE, THE CONTRACTOR MUST INSPECT AND MAINTAIN EROSION CONTROL FACILITIES EVERY 14 DAYS OR WITHIN 24 HOURS FOLLOWING A STORM EVENT (GREATER THAN 0.5 INCH). MEASURES MUST BE TAKEN BY THE CONTRACTOR WHEN NECESSARY TO ENSURE THAT ALL EXISTING PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT. SWEEP ACCESS HAUL ROUTE DAILY AT A MINIMUM.
8. THE MEANS AND METHODS OF THE CONTRACTOR MAY DICTATE THAT ADDITIONAL EROSION CONTROL MEASURES ARE NECESSARY. THESE ADDITIONAL MEASURES SHALL BE IMPLEMENTED AS NECESSARY TO PREVENT SEDIMENT LADEN WATER FROM LEAVING THE SITE.

HAUL ROADS (TYPICAL).

10. CONTACT INFORMATION:
   Owner: METRO XXX Portland, OR 97208
   Developer: Port of Portland 7200 NE Airport Way Portland, OR 97208
   Dw application:
   Engineer/General Contractor: Apex Companies 3015 SW First Avenue Portland, OR 97201
   Herb Clough hclough@apexcos.com 503-924-4704
   Emergency Contact: TBD
   Contact Information:
   Sweetgrass Access Route Daily. At M.
   During the construction period, the contractor shall upgrade and maintain all erosion control facilities as needed for unexpected storm events and to ensure that sediment-laden water does not leave the site.
   Measures must be taken by the contractor when necessary to ensure that all existing paved areas are kept clean for the duration of the project. Sweep access haul route daily at a minimum.
   The means and methods of the contractor may dictate that additional erosion control measures are necessary. These additional measures shall be implemented as necessary to prevent sediment laden water from leaving the site.
Willamette Cove
West Parcel
Central Parcel
East Parcel

Edgewater Street

MEAN HIGH WATER (APPROXIMATE)

GATE

100-YEAR FLOODPLAIN

LIMITS OF WORK

NOTE:
1) Vertical Datum: Orthometric NAVD88 (International Feet)
2) Horizontal Datum: NAD83 Oregon State Plane (International Feet)
3) 100-Year Flood Elevation 31.2 feet (NAVD) per FEMA Flood Insurance Study for City of Portland, November 26, 2010.
EXCAVATE SOIL FOR DISPOSAL. INITIAL EXTENT AS SHOWN. INITIAL DEPTH 1.0 FEET. FINAL EXTENT AND DEPTH BASED ON CONFIRMATION SAMPLING. SEE FOR SITE RESTORATION UNLESS OTHERWISE NOTED.

NOTES:
1. CONFIRMATION SAMPLES (BY APEX) ANALYZED FOR TOTAL METALS (COPPER, LEAD, MERCURY, ZINC).
2. TYPICAL TREE SPECIES: BLACK COTTONWOOD; BLACK POPLAR.

EXCAVATE SOIL FOR DISPOSAL. INITIAL EXTENT AS SHOWN. INITIAL DEPTH 0.5 FEET. FINAL EXTENT AND DEPTH BASED ON CONFIRMATION SAMPLING. SEE FOR SITE RESTORATION.
EXCAVATE SOIL FOR DISPOSAL. SEE NOTE 2. INITIAL EXTENT AS SHOWN. INITIAL DEPTH 0.5 FEET. FINAL EXTENT BASED ON CONFIRMATION SAMPLING. SEE...
EXCAVATE SOIL FOR DISPOSAL. INITIAL DEPTH 0.5 FEET. FINAL EXTENT AND DEPTH OF EXCAVATION BASED ON CONFIRMATION SAMPLING. SEE 

INITIAL EXCAVATION AREA 5

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NOTES:
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2. TYPICAL TREE SPECIES BLACK COTTONWOOD.
EXCAVATE SOIL FOR DISPOSAL. SEE NOTE 2. INITIAL EXTENT AS SHOWN. INITIAL DEPTH 0.5 FEET. FINALExtent AND DEPTH BASED ON CONFIRMATION SAMPLING. SEE...
**Gravel Construction Entrance**

1. Clean pit run or 2" minus gravel.
2. Provide full width of ingress/egress area.
3. Existing pavement or approved access point.

**Subgrade Reinforcement Geotextile, as Required**

- Clean pit run or 2" minus gravel.
- Provide full width of ingress/egress area.
- Existing pavement or approved access point.

**Excavation Detail**

- Clearing limits: See Note 1.
- Existing ground surface.
- Excavation limits: See Note 1.

**Excavation Notes:**

1. Clear all vegetation within the excavation limits except trees designated to be saved. Clearing beyond the excavation limits shall be the minimum necessary to complete the work, but not greater than 5 feet (1.5 meters) in any direction.
2. Excavation shall not extend past property boundaries on the property above in any instance. Excavation depth (see Note 2) will be determined by objective samples by Apex, excavate laterally or directed. Repeat excavation and confirm objective sample (not < 3 feet). Confirm samples are acceptable.
3. Excavation depth (see Note 2) will be determined by objective samples by Apex, excavate laterally or directed. Repeat excavation and confirm objective sample (not < 3 feet). Confirm samples are acceptable.
4. Excavation depth of 3 feet + 6 inches (914 mm) in any direction.
5. Excavation depth of 3 feet + 6 inches (914 mm) in any direction.

**Restoration Detail - No Boundary Restrictions**

- Seed with native grass mix and cover with mulch (typical all disturbed areas)

**Not for Construction**

- Not for construction.

**Removal Action**

- Willamette Cove Upland Facility
- Portland, Oregon
**Restoration Detail - Boundary At Property Line Or 50-Foot Setback**

- **Grading Limits**
  - Existing Ground Surface
  - Grade existing soil and ground surface to form gradual, smooth transition (typical)
  - Seed with native grass mix and cover with beach (typical all disturbed areas)

**Excavation Limits**

- Seed with native grass mix and cover with beach (typical all disturbed areas)

**Notes:**
1. Cover stockpile if no activity for 48-hour period.
2. Minimum 12" overlap of all seams required.
3. Barrier required at toe of stockpile.
4. Covering maintained to keep stockpile using sandbags or tires on 10' grid spacing in all directions.

**Stockpile Detail**

- Minimum 12" overlap of seams
- Barrier required at times at toe of slope; may be biobags, straw bales, or berm

**Excavation and Backfill at Trees to be Saved**

- Low-Impact excavation only (see note)

**Wheel Wash**

- Filter fabric (omit with gunite option)
- Graded base course (4 to 6" rock, 8" thick) or contractor-applied gunite

**Reference:** City of Portland Erosion Control Manual.

**Details:**

- Removal Action: Willamette Cove Upland Facility
- Portland, Oregon

**Contact:**
- Apex Companies, LLC
  - 3015 SW First Avenue
  - Portland, OR 97201
  - Fax: 503.943.6357
  - Phone: 503.924.4704

**Design:**
- Herb Clough
- Principal Engineer

**Scale:**
- 1" = 200'