

**SECTION 02 41 19**  
**SELECTIVE DEMOLITION**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.
  - 2. Demolition and removal of selected site elements.
  - 3. Salvage of existing items to be reused or recycled.

**1.2 DEFINITIONS**

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and store onsite for transportation by City of La Center staff. Coordinate with field inspector.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

**1.3 MATERIALS OWNERSHIP**

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection , for dust control and , for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Use of elevator and stairs.
  - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- D. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

#### 1.5 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
  - 1. Before selective demolition, Owner will remove the following items:
    - a. All stored items within the building.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - 1. Hazardous materials will be removed by Owner before start of the Work.
  - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.

- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.

## **PART 2 - PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS**

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs or video.
  - 1. Inventory and record the condition of items to be removed and salvaged.

### **3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS**

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
  - 2. Arrange to shut off utilities with utility companies.
  - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  - 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
    - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.

- c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
- d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
- e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
- g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

### **3.3 PROTECTION**

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

### **3.4 SELECTIVE DEMOLITION, GENERAL**

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
  - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

5. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
  6. Maintain adequate ventilation when using cutting torches.
  7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
1. Clean salvaged items.
  2. Pack or crate items after cleaning. Identify contents of containers.
  3. Store items in a secure area until delivery to Owner.
- D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

### **3.5 DISPOSAL OF DEMOLISHED MATERIALS**

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.

### **3.6 CLEANING**

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

**END OF SECTION**

**SECTION 22 00 00**  
**PLUMBING**

**PART 1 GENERAL**

**1.1 DESCRIPTION**

- A. Plumbing shall be bidder designed per separate plans & permit(s), (submittals & fees) by mechanical/plumbing sub-contractor(s) as required by local codes & local building department. Must be submitted as a deferred submittal along with required energy code forms (prepared by the mechanical designer/contractor) to the engineer/designer for review prior to building department submittal.

**END OF SECTION**

**SECTION 23 00 00**  
**HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)**

**PART 1 GENERAL**

**1.1 DESCRIPTION**

- A. Heating, ventilation, and air conditioning shall be bidder designed per separate plans & permit(s), (submittals & fees) by mechanical/plumbing sub-contractor(s) as required by local codes & local building department. Must be submitted as a deferred submittal along with required energy code forms (prepared by the mechanical designer/contractor) to the engineer/designer for review prior to building department submittal.
- B. Contractor shall furnish and install full temperature heating and air conditioning system(s) with digital control.

**END OF SECTION**



**SECTION 26 00 00**  
**ELECTRICAL**

**PART 1 GENERAL**

**1.1 DESCRIPTION**

- A. Electrical system shall be bidder designed per separate plans & permit(s), (submittals & fees) by electrical sub-contractor(s) as required by local codes & local building department. Must be submitted as a deferred submittal along with required energy code forms (prepared by the electrical designer/contractor) to the engineer/designer for review prior to building department submittal.
- B. Contractor to provide lighted exit signage at each exit door – typical throughout in conformance with all state and local codes.

**END OF SECTION**

**SECTION 31 22 00**  
**GRADING**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The other Contract Documents complement the requirements of this section.
- B. Other sections of this Specification may relate and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.
- C. Reference specification shall be the latest addition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association Washington Chapter (WSDOT/APWA).

**1.02 DESCRIPTION OF WORK**

- A. Excavation, filling, grading, and compaction in accordance with this Specification and to extent shown on Drawings.
  - 1. Preparing subgrades
  - 2. Excavating and backfilling
  - 3. Drainage and granular base for concrete slabs
  - 4. Base course for concrete and asphalt paving
  - 5. Borrow pits for the purpose of extracting gravel are not allowed.

**1.03 UNIT PRICES (SEE ALSO SECTION 01 22 00)**

- A. Excavation
  - 1. Unsuitable Soils
    - a. ASTM D2487 soil classification groups OL, OH, and PT, or a combination of these group symbols, and soils as described in Section 01 22 00.
    - b. Unsuitable soils may also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
    - c. Unsuitable soils may also include soils not in conformance with geotechnical report.
  - 2. Rock
    - a. Unanticipated rock ledges or larger than anticipated boulders that require blasting, or equipment with greater capacity than would normally be required.
- B. Fills
  - 1. Structural (Engineered) Fill
    - a. Imported, meeting the requirements of (WSDOT/APWA) 9-03.9(1) – Ballast, (WSDOT/APWA) 9-03.14(1) – Gravel Borrow or (WSDOT/APWA) 9-03.14(2) – Select Borrow.
    - b. On-site, as approved by Geotechnical Engineer
    - c. For use under structures (does not replace base granular material as shown or specified).
  - 2. Off-site Granular Fill
    - a. Pit run gravel
    - b. For use below the base rock of asphalt paving, or under sidewalks.

**1.04 COORDINATION**

- A. Coordinate excavation, filling, grading, and compaction with other trades and with local utility companies.

**1.05 SUBMITTALS**

- A. For each item specified in Part 2, prior to delivery, submit the following for approval:
  - 1. Gradation test reports per ASTM D421 and D422.
  - 2. Moisture density test reports per ASTM D-1557.

**1.06 SITE**

- A. Definition: The term “site” as herein referenced means Owner’s entire property on which improvements are to be constructed and as shown on the Site Plan.

### **1.07 WARRANTY/BONDING**

- A. Furnish labor and material warrantee or maintenance bond for all work in public right-of-way, or easement, in accordance with requirements of jurisdiction having authority.

### **1.08 SITE EXPLORATION**

- A. Survey: Metes and bounds, topographical data as shown is based on a survey by Sitts & Hill Engineers Inc. dated April 7, 2020.
- B. Geotechnical Investigation: Project Geotechnical Report by PBS Engineering, Inc. dated April 11, 2017.

### **1.09 ENGINEERING CONTROL**

- A. Extent:
  - 1. Personnel from an independent testing and inspection laboratory will assist the City as Owner's representative at the site. Earthwork operations are subject to inspections and approvals.
  - 2. Intermittent, rather than continuous, inspections are anticipated.
  - 3. Contractor shall inform the City and Inspectors of schedules so that inspections can be made at appropriate times.
  - 4. Unapproved earthwork buried by fills prior to approvals is subject to rejection. Any fill that does not meet Specification requirements is subject to removal, replacement, and re-compaction at Engineer's discretion.

### **1.10 PROJECT CONDITIONS**

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities.
- B. Notify utility locator service for area where Project is located before grading or excavation.

## **PART 2 PRODUCTS**

### **2.01 OFF-SITE IMPROVEMENTS (WITHIN PUBLIC RIGHT-OF-WAY)**

- A. For work to be performed off-site within the public right-of-way, standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association Washington Chapter. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of La Center Engineering Standards for Construction, and Details.
- C. For work to be performed on-site, the requirements of this section shall apply.

### **2.02 MATERIALS**

- A. General:
  - 1. Dry weather fill: Existing native site materials may be utilized for non-structural fills. Aeration of the native material may be required to achieve the recommended compaction criteria.
  - 2. Wet weather fill: Existing native site materials may not be suitable for fills or may require augmentation.
- B. Granular Fill:
  - 1. Crushed Rock
    - a. Approved, manufactured from ledge rock, talus or gravel, uniform in quality and substantially free from wood, bark and other extraneous materials. Less than 5% material by weight passing through the, No. 200-sieve, maximum 6-inches diameter.
    - b. For placement under interior building floor slabs (see also Interior Concrete Slabs).
  - 2. Structural (Engineered) Fill
    - a. Imported Material: Shall be imported granular material of pit run rock, quarry run rock, crushed rock or crushed gravel and sand, and meet the requirements of (WSDOT/APWA) 9-03.9(1) – Ballast, (WSDOT/APWA) 9-03.14(1) – Gravel Borrow or (WSDOT/APWA) 9-03.14(2) – Select Borrow. The imported material shall be fairly well graded between coarse and fine material, have less than 5 percent by dry weight passing the US Standard No. 200 sieve, and have a minimum of two mechanically fractured faces.

- b. On-site Material: Shall be free of highly organic or clayey soils, debris, and other deleterious material as approved by the Geotechnical Engineer, and shall be adequately dried or moisture-conditioned to achieve recommended compaction specifications.

### **PART 3 EXECUTION**

#### **3.01 OFF-SITE IMPROVEMENTS (WITHIN PUBLIC RIGHT-OF-WAY)**

- A. For work to be performed off-site within the public right-of-way, standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association Washington Chapter. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of La Center Engineering Standards for Construction, and Details.
- C. For work to be performed on-site, the requirements of this section shall apply.

#### **3.02 PREPARATION**

- A. Layout:
  - 1. Accept site for development "as-is".
  - 2. Employ and pay for professional, licensed surveyor to verify existing contours, elevations and to lay out the work as required.
  - 3. Locate and work from existing monuments, and benchmarks.
  - 4. Locate existing utilities on and adjacent to the project site.

#### **3.03 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- A. Refer to Section 31 25 00 Erosion and Sedimentation Control.

#### **3.04 PROTECTION**

- A. General:
  - 1. Protect existing adjacent property from damage during work under this Contract.
  - 2. Protect existing trees shown to remain. Keep trees intact and root balls free from disruption. Any trees damaged shall be replaced with like species and size. Refer to Section 01 56 39 Temporary Tree and Plant Protection.
  - 3. Existing fences in adjoining areas to be cleared and grubbed that may be damaged or disturbed by such operations shall be carefully removed, reserved and re-installed after earthwork operations.
  - 4. Do not store equipment or materials adjacent to trees (under area of branch/limb overhang).

#### **3.05 GRADING**

It shall be the Contractor's responsibility to verify balance, and if additional material is required, or excess material is to be removed from site to meet contours shown on drawing, it shall be at the Contractor's expense.

- 1. Coordinate with Owner's inspector for inspections. Obtain approvals prior to proceeding with succeeding lifts.
  - a. Inspection of grubbed and stripped surfaces before grading operations.
  - b. Inspection of cut areas to detect presence of unsuitable soil areas.
  - c. Inspection of each lift of fill materials before proceeding with succeeding lifts.
  - d. Inspection and approval of off-site materials.
  - e. Inspection and compaction tests for compaction.
- 2. Uniformly grade areas to a smooth surface, free from irregular surface changes, to bring site to elevations and contours shown in drawings.
- 3. Proof roll subgrades, before filling or placing aggregate courses, with heavy pneumatic-tired equipment to identify unsuitable soil areas and areas of excess yielding. Do not proof roll wet or saturated subgrades, see geotechnical report for wet weather construction.
- 4. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities.
- 5. Remove unsuitable soils and replace with suitable soils or as directed by the City and/or Engineer.

6. Subbase and Base Courses: Under pavements, place sub base course on prepared subgrade. Place base course material over subbase. Compact to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D1557.
7. Under Concrete Slabs-on-Grade: Place granular base on prepared subgrade (see Interior Concrete Slab). Compact to required sections and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D1557.

### **3.06 PROTECTION AND DISPOSAL**

- A. Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction.
- C. Where settling occurs before project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
- D. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

### **3.07 STRUCTURAL (ENGINEERED) FILL**

- A. Place in maximum 12-inch deep lifts and compact each lift to not less than 95 percent of maximum dry density, as determined by ASTM D 1557.

### **3.08 NON-STRUCTURAL FILL**

- A. Place in maximum 12-inch deep lifts and compact each lift to not less than 90 percent of maximum dry density, as determined by ASTM D 1557.

**END OF SECTION**

**SECTION 31 23 33**  
**TRENCHING**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The other Contract Documents complement the requirements of this section.
- B. Other sections of this Specification may relate and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.

**1.02 DESCRIPTION**

- A. This section includes materials and methods to be used to perform all trenching, shoring, foundation preparation, backfilling and compaction required to accomplish the work.

**1.03 SUBMITTALS**

- A. Gradation test reports per ASTM C-136.

**1.04 WARRANTY/BONDING**

- A. Furnish labor and material warrantee or maintenance bond for all work in public right-of-way, or easement in accordance with requirements of jurisdiction having authority.

**1.05 STANDARD SPECIFICATION**

- A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter (WSDOT/APWA). Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. All shoring submittals, design requirements and construction requirements shall follow Standard Specifications Division 2-09.
- C. Reference Specification is City of La Center Engineering Standards for Construction, and Details.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Provide the following materials conforming to the referenced sections of the Standard Specifications (WSDOT/APWA).
  - 1. Bedding Material - Paragraph 9-03.12(3), Gravel Backfill for Pipe Zone Bedding.
  - 2. Imported Backfill Material - Paragraph 9-03.19, bank run gravel for Trench Zone. The use of screenings will not be allowed during wet weather or if compaction requirements cannot be met.
  - 3. Foundation Material - Paragraphs 9-03.17 and 9-03.18, Class A, B, or C at the Contractor's option.
  - 4. Native Backfill Material – Native backfill material shall be reviewed for acceptance and approved by the engineer prior to installation.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. Trench excavation, bedding, and backfill shall be as shown in the Drawings. All pipe shall be bedded per the Drawings. Imported Backfill Material shall be placed in maximum 8" lifts with each lift compacted to 95 percent maximum density. Dispose of excess material from the trench off-site in accordance with all applicable state and local regulations.

- B. Contractor shall coordinate the timing of trench excavation with City of La Center to minimize impacts to parking and access during construction.
- C. Open pits and trenches shall be protected from entry during non-working hours.

**END OF SECTION**

**SECTION 31 25 00**  
**EROSION AND SEDIMENTATION CONTROL**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The other Contract Documents complement the requirements of this section.
- B. Other sections of this Specification may relate and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.

**1.02 DESCRIPTION OF WORK**

- A. This work shall consist of providing project erosion and sedimentation control (ESC) in accordance with city, state and federal requirements, regardless of the specific ESC measures shown on the plans and details. The implementation of the ESC and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the Contractor until all construction is completed and approved and the permanent vegetation/landscaping is established.

**1.03 STANDARD SPECIFICATIONS**

- A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter (WSDOT/APWA). Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference specifications shall be the City of La Center Engineering Standards for Construction and the Washington State Department of Ecology (DOE) Stormwater Management Manual for Western Washington.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. All materials shall be in conformance with the requirements shown on the City of La Center standard erosion control details and the Department of Ecology.

**PART 3 EXECUTION**

**3.01 INSTALLATION AND MAINTENANCE**

- A. Provide temporary erosion and sedimentation control (ESC) measures to prevent soil erosion and discharge of soil bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authority having jurisdiction and the sediment and erosion control contract drawings. Regardless of the specific ESC measures shown on the contract drawings, the Contractor is responsible to provide all required project erosion and sedimentation control measures necessary to address changing field and weather conditions, in accordance with city, state and federal requirements.
- B. Erosion control as shown on the plans are the base recommendations and are in no way intended to represent all of the potential erosion control measures that may be required during construction. Contractor shall be responsible for grading of temporary cut-off ditches, sedimentation ponds, sumps, Baker Tanks™, bypass pumping, and/or other means as required and necessary to control storm water runoff during construction so that no silt-laden water leaves the project site. All such measures shall be at Contractor's expense.
- C. At no time shall more than one foot of sediment be allowed to accumulate within a trapped catch basin. All catch basins and conveyance systems shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system.
- D. Stabilized construction entrance(s) will be constructed at the beginning of construction. Locations shall be reviewed and approved by the Owner. These entrance(s) shall be maintained by the contractor of this project for the duration of the project. Additional measures may be required to ensure that all paved areas adjacent to the project are kept clean for the duration of the project.



- E. Sediment fences, bio-bags, and other ESC measures shall be removed when they have served their useful purpose and when approved by the engineer, but not before the upslope area has been permanently stabilized. Upon completion of construction and full site establishment, remove erosion and sedimentation controls and restore and stabilize any areas that are disturbed during removal.
- F. Construction and maintenance of graveled construction entrances, temporary sediment fences, and straw bale sediment barriers, and other erosion control work shall conform to City of La Center requirements.
- G. All materials shall be in good physical condition to provide proper sediment retention.
- H. Sediment fences and barriers shall be inspected by the contractor immediately after each rainfall and at least daily during prolonged rainfall. Inspect all other ESC facilities daily and provide repair and/or maintenance as necessary to ensure their continued functioning. Any required repairs shall be made immediately.

**END OF SECTION**

**SECTION 32 12 16**  
**ASPHALT PAVING**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The other Contract Documents complement the requirements of this section.
- B. Other sections of this Specification may relate and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.

**1.02 DESCRIPTION OF WORK**

- A. Work Included: All labor, materials, equipment, transportation and services to place geotextile fabric, rock base, and asphalt paving.

**1.03 WARRANTY/BONDING**

- A. Furnish labor and material warrantee or maintenance bond for all work in public right-of-way, or easement, in accordance with requirements of jurisdiction having authority.

**1.04 OFF-SITE IMPROVEMENTS (WITHIN PUBLIC RIGHT-OF-WAY)**

- A. For work to be performed off-site within the public right-of-way, standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association Washington Chapter (WSDOT/APWA), as modified by City of La Center Design Standards. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of La Center Engineering Standards for Construction, and Details.
- C. For work to be performed on-site, the requirements of this section shall apply.

**PART 2 MATERIALS**

**2.01 MATERIALS**

- A. Granular Base:
  - 1. Ballast (subgrade stabilization): Ballast shall be crushed ballast meeting the requirements of Section 9-03.9(1) of the Standard Specifications except that the material shall be 100% crushed rock and not more than 6% by dry weight of material shall pass the No. 200 sieve (wet sieve test).
  - 2. Crushed Surfacing (Top Course/Base Course): The crushed surfacing shall meet the requirements of Section 9-03.9(3) of the Standard Specifications except that the material should have not more than 6% by dry weight of material passing the No. 200 sieve (wet sieve test).
- B. Asphalt Concrete Pavement:
  - 1. For on-site paving, conform to the requirements and details in the Contract Drawings, compacted thickness per Drawings.
  - 2. For off-site paving, conform to City of La Center requirements.
- C. Soil Sterilant: if shown on the plans.

**PART 3 EXECUTION**

**3.01 OFF-SITE IMPROVEMENTS (WITHIN PUBLIC RIGHT-OF-WAY)**

- A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of LaCenter Engineering Standards for Construction, and Details.
- C. For work to be performed on-site, the requirements of this section shall apply.

### **3.02 SUB GRADE FOR SURFACING**

- A. In preparing the area for surfacing, the Contractor shall;
  - 1. Remove, immediately before placing paving materials, all brush, weeds, vegetation, grass and other debris.
  - 2. Dispose of all debris off-site in a legal manner.
  - 3. Drain water from all low spots or ruts.
  - 4. Shape the entire sub grade to a uniform surface running reasonably true to the line, grade and cross-section staked by the Contractor.
  - 5. If necessary, the Contractor shall process the sub grade in cut areas to remove materials too coarse for mechanical trimming and compaction.
  - 6. Compact the sub grade to a depth of 6-inches. Compaction shall achieve 95% of the maximum density as determined by ASTM D-1557. If the underlying material is too soft to permit proper compaction of the sub grade, the Contractor shall loosen, aerate, and compact the sub grade until the top layer can be compacted as required.
  - 7. Remove excess material that does not drift to low spots during blading and shaping. The Contractor shall dispose of this excess by placing it where the sub grade lacks material or by disposing off-site.
  - 8. Add materials where the sub grade needs more to bring it up to grade. The Contractor shall water and compact these added materials as needed to produce a true finish sub grade.

### **3.03 GEOTEXTILE FABRIC**

- A. If indicated on the plans, place geotextile fabric in accordance with manufacturer's instructions.

### **3.04 ASPHALT PAVEMENT**

- A. Spreading and Finishing: The mixture shall be laid upon an approved surface, spread and struck off to the grade and elevation established.
- B. Compaction: Immediately after the asphalt mixture has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted. The completed course shall be free from ridges, ruts, humps, depressions, objectionable marks, or irregularities and in conformance with the line, grade, and cross-section shown in the Drawings.
- C. Surface Smoothness: The completed surface shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The complete surface shall not vary more than 1/8-inch from the lower edge a 10-foot straight edge.

### **3.05 WEATHER LIMITATIONS**

- A. Refer to section 5-04.3(1) for paving weather limitations.
- B. Hot Mix Asphalt shall not be placed on any wet surface, or when weather conditions otherwise prevent the proper handling or finishing of the bituminous mixture.

### **3.06 CLEAN UP**

- A. All dirt, soil, debris, excess materials of any nature shall be removed and disposed of off site and areas shall present a clean workmanlike appearance.

**END OF SECTION**

**SECTION 32 13 13**  
**CONCRETE PAVING**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Other Contract Documents complement the requirements for this section.
- B. Other sections of this Specification may relate to and may impose additional work and/or additional materials upon this section. Coordinate any cross-referencing of specification sections.
- C. Provide all labor, material, equipment, transportation and services to furnish and install cast in place cement concrete curbs, sidewalks, wheel stops, pavement and appurtenances as shown on the drawings and specified herein.
- D. This section includes provisions for demolition, concrete removal, preparing sub-grade, place and compact base course materials, concrete curbs, concrete pavement complete with reinforcement, finish and joint pattern.

**1.02 REFERENCE STANDARDS**

- A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter (WSDOT/APWA). Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of La Center Engineering Standards for Construction, and Details. The City of La Center specifications and requirements shall take precedence for concrete paving work onsite.
- C. ASTM C150 – Portland Cement.
- D. ASTM C94 – Ready-Mix Concrete.
- E. ASTM C260 – Air Entrainment.
- F. ASTM C33 – Concrete Aggregates.
- G. ASTM D1751 – Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- H. ASTM C309 – Liquid membrane – Forming Compounds for Curing Concrete.
- I. ACI 301 – Specifications for Structural Concrete for Buildings.
- J. ACI 306 – Specifications for Cold Weather Concreting.
- K. ACI 308 -- Standard Practice for Curing Concrete.

**1.03 QUALITY ASSURANCE**

- A. Inspection and Tests: Inspection and tests are specified in Division 1.
- B. Tolerances:
  - 1. Concrete shall meet tolerances of ACI 117.
  - 2. Walks and paving shall meet requirements of ACI 302.1 R-96, Chapter 8.
- C. Obtain materials from same source throughout.

#### **1.04 ENVIRONMENTAL REQUIREMENTS**

- A. Maintain materials and surrounding air temperatures at minimum 40 degrees F, prior to, during, and for 24 hours after completion of Work. Do not pour concrete at temperatures below 40 degrees F.

#### **1.05 SUBMITTALS**

- A. Certificate: Prior to ordering or placing any concrete, furnish Owner a written statement of proposed design mix with satisfactory evidence that such mix will produce concrete of quality and strength specified.
- B. Delivery Tickets: Furnish with each load of concrete delivered to site in accordance with ASTM C94, Section 13 and shall be kept on file by Contractor's Superintendent.
- C. Provide manufacturer's certification that products meet or exceed specifications.
- D. Prior to starting work, the Contractor shall provide a layout sketch of proposed expansion and contraction joint locations for review and approval by the Owner.
- E. Provide layout and shop drawings for all precast concrete wheel stops including installation details and attachment details to HMA for approval by the Owner.
- F. Provide layout and shop drawings for all ADA truncated warning including attachment method and details.

#### **1.06 SAMPLES**

- A. Prepare samples of both "heavy broom finish" and "broom finish" for the Owner's approval.

### **PART 2 PRODUCTS**

#### **2.01 SUB-GRADE MATERIALS**

- A. Crushed Surfacing (Gravel Base): The gravel base shall meet the requirements of Section 9-03.9(3) of the Standard Specifications (WSDOT/APWA).

#### **2.02 CONCRETE MATERIALS**

- A. Concrete sidewalks, plazas and walkways:
  - 1. Portland Cement: ASTM C150; normal type II
  - 2. Fine and Coarse Aggregates: Clean, hard, durable particles of natural sand conforming to ASTM C33 for fine aggregate. Clean, uniformly hard, durable particles of gravel or crushed stone conforming to ASTM C33 for coarse aggregate.
  - 3. Water: Potable
  - 4. Strength: Class 3,000 (psi)
  - 5. Slump: 3 1/2" maximum
- B. Concrete Curbs
  - 1. Concrete for curbs shall conform to the specifications listed in the details on the plans.

#### **2.03 FORMWORK AND ACCESSORIES**

- A. Formwork
  - 1. Straight forms: Metal side forms with base width sufficient to support finishing equipment. Maximum variation 1/8" in 10 feet.
  - 2. Curved forms: metal or wood.
- B. Joint Filler: Minimum 3/8-inch thick asphaltic impregnated fiberboard.
- C. Expansion Joint Sealer: Sika-flex SL-1 or approved equal.

## **2.04 CONCRETE MIX**

- A. Mix and proportion to produce minimum specified strength concrete at 28 days with 5 to 7 percent air entrainment, ASTM C94 and ASTM C260. Cement concrete conforming to the requirements of WSDOT/APWA Section 6-02.3(2)B for Commercial Concrete.
- B. Use accelerating admixtures in cold weather only when acceptable to Owner. Use of admixtures shall not relax cold weather placement requirements. Do not use calcium chloride.
- C. Use set-retarding admixtures during hot weather only when acceptable to Owner.

## **2.05 BONDING AGENT**

- A. Bonding Agent: Conform to WSDOT/APWA Section 9-26.1.

## **2.06 CONCRETE WHEEL STOPS**

- A. Shall meet the details as shown on the plans. Meet dimensioning requirements as shown on the Contract Documents.

## **2.07 ADA DETECTABLE WARNING PATTERN**

- A. Shall meet all applicable federal guidelines. Meet dimensioning requirements as shown on the Contract Documents. Truncated domes shall meet the requirements of WSDOT Section 8-14.3(5).

## **2.08 ADA SIGNAGE**

- A. ADA symbols shall conform to the most recent ADA guidelines.

# **PART 3 EXECUTION**

## **3.01 DEMOLITION**

- A. Remove existing concrete to the limits shown on the plans, or as required to allow new construction.
- B. Sawcut as shown on the plans and as needed to allow for new construction.

## **3.02 PREPARATION OF SUB-GRADE**

- A. Ensure rough grading has brought sub-grade to required elevations.
- B. Fill soft spots and low areas more than ½ inch below established grade with additional fill.
- C. Level and compact sub-grade to 95 percent minimum of maximum dry density.
- D. Moisten base to minimize absorption of water from fresh concrete.
- E. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

## **3.03 FORMING**

- A. Place and secure forms to correct location, dimension and profile.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint fillers vertical in position, in straight lines. Secure to formwork during concrete placement.
- D. Place reinforcement bar plastic receiver at spacing indicated in Drawings.
- E. Provide expansion and contraction joints per the details on the plans and in accordance with industry standards.
- F. Form Review
  - 1. Prior to starting work, the Contractor shall provide a layout sketch of proposed expansion and contraction joint locations for review and approval by the Owner.
  - 2. Owner to review constructed formwork prior to pour.

3. Allow time for revisions to formwork based on Owner review. No additional time or cost shall be added to the contract for formwork revisions.

### **3.04 PLACING CONCRETE**

- A. Place concrete in accordance with ACI 301.
- B. Hot Weather Placement: ACI 301.
- C. Cold Weather Placement: ACI 306.
- D. Ensure reinforcement, inserts, embedded items and formed joints are not disturbed during concrete placement.
- E. Place concrete over the entire width of subgrade between forms to prevent segregation and minimize rehandling.
- F. Thoroughly vibrate along forms or sides and along expansion joints.

### **3.05 CONCRETE FINISHING**

- A. Exterior Paving, Walks, Stairs:
  1. Screed accurately to elevations and slopes shown without irregularities. Place expansion joints. Allow concrete time to bleed naturally before working. Float to compact plastic mass. Do not overwork. Provide finish in direction shown on the plans or as directed. Tool a pattern shown or directed.
  2. For on-site work, provide medium broom finish as shown in the Contract Plans and Details.
  3. Tooled Joints - Tool control and/or isolation joints as shown on the plans and broom finish removing the smooth tool "shiner band" leaving only the tooled control and/or isolation joint.
  4. Sawed Joints - In lieu of tooled control and/or isolation joints, joints may be sawed with a power driven concrete saw to the depths shown on the plans. The contractor shall provide sufficient sawing equipment capable of completing the sawing to the required dimensions and at the required rate to control cracking. Commencement of sawing joints will be dependent upon the setting time of the concrete and shall be done at the earliest possible time following placement of the concrete without tearing or raveling the adjacent concrete. Any damage to the curing material during the sawing operations shall be repaired immediately after the sawing is completed.
  5. Tactile Warning Surface
    - a. Coordinate the installation of cast-in-place truncated dome detectable warning surface, per manufacture recommendations.
  6. Bleed water shall not be finished into the concrete surface.
- B. Concrete Curbs: Form accurately to elevations and layouts. Place expansion joints. Compact thoroughly. Broom finish exposed tops. Form bullnose edges. Remove ties, fins, and other projections. Patch honeycombs and pockets with grout and strike smooth.
- C. Exposed to View Surfaces:
  1. Skim coat all surfaces which will be exposed to view.
  2. At time of application, surface of concrete should be damp. Brush or trowel cement wash onto concrete, scrubbing or forcing the cement wash into all pores and voids. Double back with additional material and press firmly in place. Trowel to a smooth finish.

### **3.06 JOINTS**

- A. Prior to starting work, the Contractor shall provide a layout sketch of proposed expansion and contraction joint locations for review and approval by the Owner.
- B. Surface/Score Joints: As required per the details on the plans, and:
  - 1. Sidewalks/Walkways: Every 5'
- C. Control Joints: As required per the details on the plans, and:
  - 1. Every 15 feet
  - 2. Construct per the details shown on the plans.
- D. Expansion Joints: As required per the details on the plans, and:
  - 1. Every 45 feet
  - 2. At points of tangency of a curb, cold joints, and each side of structures or driveways
  - 3. Construct per the details shown on the plans.
- E. Construction/Cold Joints: As required per the details on the plans, and:
  - 1. At close of each day's work or when the work is stopped or interrupted for more than 30 minutes.
  - 2. Do not locate within 10 feet of an expansion or control joint.
  - 3. Form with wood header or saw to full depth.
  - 4. Remove surplus concrete and other refuse prior to resuming operations.
- F. Sawn Joints: Acceptable at transverse joints and where control or expansion joints are not indicated.
- G. Sealant: As specified in Part 2 of this Section.
  - 1. Install in all joints prior to traffic use.
- H. Reinforced Concrete
  - 1. Where steel reinforcements are specified in the concrete, the steel bars shall be stopped a minimum of 2" of each side of joints (excluding surface/score joints).

### **3.07 CURING**

- A. Conform with ACI 308 for water curing.
- B. Immediately after finishing as soon as marring of concrete will not occur, install white polyethylene sheeting over entire surface.
- C. Lap sheeting 18 inches, minimum.
- D. Leave sheeting in place minimum 7 days.

### **3.08 PROTECTION**

- A. Immediately after placement, protect concrete from premature drying, excessive hot or cold temperatures, and injury.
- B. Provide protection from vandalism. Remove vandalized concrete from site and replace per specification at no extra cost to Owner.

### **3.09 ADA CURB RAMPS**

- A. ADA curb ramps shall meet current ADA requirements, including but not limited to the following:
  - 1. Longitudinal slope no greater than 1 unit of rise in 12 units of run.
  - 2. Cross slope no greater than 1 unit of rise in 48 units of run.
  - 3. On private property, ramp length shall not be greater than 6-feet.



4. Truncated dome detectable warning surface shall be installed across the full width of ramp throat (not including wings).
5. Installation of the detectable warning surfaces shall be installed per CASTinTACT 3 concrete tactile warning panels manufacture recommendations or approved equal.

**END OF SECTION**

**SECTION 32 91 13**  
**SOIL PREPARATION**

**PART 1 GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes the following:
  - 1. The work covered in this section consists of furnishing all labor, materials and equipment for testing, preparation, and placement of topsoil, water quality media and compost as indicated by the drawings and as specified.
  - 2. Coordinate placement of topsoil or water quality media and required soil amendments with the establishment of rough grades.
  - 3. Coordinate depths of soil amendments and topsoil with grading specifications for rough and finish grades.
  - 4. All rough grading operations shall be completed as required by these specifications. Topsoil placement or backfilling in areas to be landscaped shall not occur until the Owner's Representative has issued written approval of the rough grade and topsoil.

**1.3 DEFINITIONS**

- A. Soil classifications standards used herein for existing and imported soils include but are not limited to the following.
  - 1. ASTM Soil Quality Standards.
  - 2. Classification: ASTM D 2487-00.
  - 3. Gradation of Soils: ASTM D 422-63 (1998).
  - 4. Liquid Limit and Plasticity Index: ASTM D 4318-94(2001)e1.
  - 5. Moisture-Density Relations: ASTM D 1557-00.
  - 6. Permeability of Soils: ASTM D 2434-68(2000).
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- E. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.
- F. Subgrade Soil: Friable soil, free from contaminants and materials deleterious to plant growth to depth as specified.

**1.4 SUBMITTALS**

- A. A Preconstruction Meeting shall be held prior to any project involving landscaping activities in the vicinity of existing underground or overhead utility systems. The meeting shall include appropriate representatives of the City, the Program Manager, the Design Team, and the Contractor. At that meeting, a procedure will be discussed for notification by the Contractor to the other parties when activities in the vicinity of utilities or requiring interruption of utility services are imminent. A Utility Activity Coordination Form (UACF) will be provided that will have to be submitted a minimum of two (2) weeks in advance of any proposed activity falling into the categories described above.
- B. The Contractor will be required to prepare and submit the UACF's for approval, attaching any sketches, drawing excerpts, or step-by-step sequences/schedules required to fully-explain the proposed activities. The Contractor shall also be required to contact the appropriate agencies for utility locates.
- C. At least 7 working days prior to use on site or the start of work, the Contractor shall submit the following information to the Owner's Representative. All product samples must include sufficient volume for the Owner's Representative to make a reasonable analysis.
  - 1. Certified Analysis:
    - a. All compost mixture components required by these specifications or as required by testing laboratories to bring soil into compliance with these specifications. All samples must be tested within six months of anticipated use.
    - b. All fertilizer mixes required by the specifications or as required by testing laboratories to bring soil into compliance with these specifications.
    - c. All on-site or imported topsoil or water quality soil media required by these specifications. All samples must be tested within six months of anticipated use.
  - 2. Where any tests show results failing to conform to the required standards the Contractor shall include with the testing report a recommended treatment plan to bring the material into conformance.
  - 3. Available Testing Laboratories:
    - a. Soil and Plant Laboratory, Inc. – 503-557-4959.
    - b. Western Agricultural Laboratories – 503-968-9225.
  - 4. Product Samples:
    - a. Backfill Soil Mixture.

## 1.5 QUALITY ASSURANCE

- A. A representative of the City's Facility Operations Staff shall be contacted when landscaping materials are being brought onto the site. The City's representative will have the option to inspect and approve or reject such materials as they arrive.
- B. Include in the Contract Documents that a representative of the City's Facility Operations Staff shall be contacted when fill and topsoil materials are to be delivered and placed. The City's representative will have the option to monitor such activities and provide input regarding the suitability of the materials and placement methodology.
- C. Soil Preparation - All soil preparation work shall be done under the supervision of a Contractor having experience in landscape construction. All work shall be done in accordance with proper horticultural practices.
- D. Herbicide Application - Applications of herbicide for weed control, as required, shall be made only by an applicator currently licensed under State and Federal law.

- E. The Contractor shall store fertilizer and other required materials in a dry place and free from the intrusion of moisture.
- F. All topsoil and compost must be tested by an independent testing laboratory and certified that it is in conformance with the requirements of these specifications.
- G. Soil/Compost Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- H. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
  - 1. Topsoil Analysis Report must include analysis of suitability of topsoil for plant growth. State recommended quantities of nitrogen, phosphorus, and potash nutrient, soil conditioners and soil amendments to be added to produce satisfactory topsoil.
- I. Compost Analysis: Furnish compost analysis by a qualified testing laboratory stating the volumes, quantities, and ratios of component parts specified.
  - 1. Compost Analysis Report must include analysis of suitability of compost for plant growth. State volumes and quantities of recommended amendments necessary to produce satisfactory compost.

## **1.6 PROJECT CONDITIONS**

- A. Prior to the work of this section all rough graded surfaces shall be free of:
  - 1. Concrete, asphalt, and other construction debris;
  - 2. Limbs, twigs, cones, seed-pods and other woody material; and
  - 3. Rock, gravel or other material not suitable for plant growth.
- B. In all plant bed areas the sub-grade shall be free of unsuitable material such as stumps, roots, rocks, concrete, asphalt, or metals, for a minimum depth of 24 inches and in all lawn or seeded areas the sub-grade shall be free of unsuitable material for a minimum depth of 12 inches.
- C. The Contractor shall provide protective covers and barriers as necessary to prevent damage and staining to all site improvements.
- D. The Contractor shall prepare topsoil only when weather and soil conditions allow. Do not attempt soil preparation work when weather or soil conditions would contribute to poor or improper mixing, voids or other adverse conditions.
- E. The Contractor shall take all reasonable precautions to prevent runoff of topsoil and fertilizers from leaving site or entering storm systems, or any waterway.

## **1.7 SEQUENCING AND SCHEDULE**

- A. Coordinate soil preparation work with installation of other site improvements and planting of trees, shrubs, ground covers and lawns.

## **PART 2 PRODUCTS**

### **2.1 PLANTING SOILS**

- A. Planting Soil:

1. ASTM D 5268.
2. Acidity range (pH) of 5.5 to 7.
3. A minimum of 4 percent, and a maximum of 20 percent organic material content by volume.
4. A maximum of 25 percent decaying content by volume.
5. Free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.
6. Textural Class Requirements: Topsoil textural analysis shall fall within the following gradations.

Textural Class	% of Total Weight	Average %
Sand (0.05-2.0mm dia.)	45 – 75	60%
Silt (0.002-0.05mm dia.)	15 – 35	25%
Clay (less than 0.002mm dia.)	05 – 20	15%

- B. Subgrade Soil: Friable soil, free from contaminants and materials deleterious to plant growth to depth as specified in Part 1 – General, Project Conditions.

## 2.2 WATER QUALITY MEDIA

### A. Water Quality Media:

1. NRCS Soil Textural Classification shall be loamy sand with less than 5% clay content by dry weight.
2. Acidity Range 5.5 to 7.0.
3. A mix depth of 18 inches to finished grade elevation.
4. The mix shall be equal parts imported organic topsoil, course sand, and native soil.
5. The final soil mix shall infiltrate water without immediate ponding on the surface. If ponding occurs, retil the soil with additional sand and organic topsoil until infiltration occurs. The completed facility shall infiltrate water at a rate of 1 inch per hour or greater.

## 2.3 INORGANIC SOIL CONDITIONERS

- A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:
- B. Class: Class T, with a minimum 99 percent passing through No. 8 sieve and a minimum 75 percent passing through No. 60 sieve.
- C. Class: Class O, with a minimum 95 percent passing through No. 8 sieve and a minimum 55 percent passing through No. 60 sieve.
- D. Provide lime in form of dolomitic limestone.
- E. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.
- F. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- G. Aluminum Sulfate: Commercial grade, unadulterated.
- H. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.
- I. Sand: Clean, washed, natural or manufactured, free of toxic materials.
- J. Diatomaceous Earth: Calcined, diatomaceous earth, 90 percent silica, with approximately 140 percent water absorption capacity by weight.

- K. Calcined Clay: An inorganic soil amendment formed by expanding clay at high temperatures (calcining), and used to alter soil strength by affecting its ability to retain moisture.
- L. EarthLite Filter Media, as manufactured by Sunmark Seeds; 1.888.214.7333; Contact – Robin Cook.
- M. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.
- N. For bidding assume placement and incorporation of 35 lbs. of dolomitic lime per 1,000 square feet.

## **2.4 SOIL AMENDMENTS**

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 deciSiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows"
  - 1. Organic Matter Content: 50 to 60 percent of dry weight.
  - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8.
- C. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.
- D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.
  - 1. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with at least 0.15 lb of ammonium nitrate or 0.25 lb of ammonium sulfate per cubic foot of loose sawdust or ground bark.
- E. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.
- F. For bidding assume planting and seeding beds and areas be amended with 2" of compost tilled into the top 6" of finished grade.

## **2.5 FERTILIZERS**

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.
- B. Cottonseed meal: typical 7-3-2 ratio, mix at rate of 10 lbs/100 square feet.
- C. Alfalfa pellets: typical 2-1-2 ratio. Avoid product with weed seeds. Mix at rate of 2 – 5 lbs/100 square feet.
- D. Bat guano: powder, typical 3-10-1 or 10-3-1 ratio. Mix at rate of 5 lbs/100 square feet.
- E. Composted manure: follow manufacturer's directions for application rates. Typical 500 lbs/1000 square feet to 70 lbs/1000 square feet.

## **2.6 PRE-EMERGENT HERBICIDE**

- A. Pre-emergent herbicide shall be naturally organic, such as corn gluten or cottonseed meal.

## **2.7 POST-EMERGENT HERBICIDE**

- A. Spray herbicides such as glyphosate (such as Roundup®) shall not be used.

## **2.8 WATER**

- A. Water shall be suitable for irrigation, free from oil, acid, alkali, salt or other substances harmful to plant life.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. The Contractor shall examine the entire site for conditions that will adversely affect execution, permanence and quality of work, and survival of plant materials. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Rough Grading Inspection - Contractor shall notify Owner's Representative a minimum of 72 hours in advance for inspection of rough grades.
- C. The Contractor shall verify that rough grades and slopes of areas to be planted areas are set at sufficient depth to allow for placement of specified materials. If the site is not suitable for landscaping operations, the Contractor shall perform necessary corrective work.

### **3.2 GENERAL PREPARATION OF GROUND SURFACES – ALL PLANTING OR SEEDING AREAS**

- A. The Contractor shall eliminate uneven areas and low spots, remove lumber, stones, sticks, mortar, concrete, rubbish, debris, contaminated soil and any other material harmful to plant life, in shrub and ground cover beds.
- B. The Contractor shall verify that invasive species and weeds have been eliminated prior to the placement of topsoil. The Contractor must not place topsoil until all living weed matter has been eliminated.
- C. Weed eradication shall include non-herbicide methods. Eradication shall include and is not limited to elimination of the following invasive species and weeds:

- Cirsium arvense (Canadian Thistle).
- Convolvulus spp. (Morning Glory).
- Cytisus scoparius (Scotch Broom).
- Dipsacus sylvestris (Common Teasel).
- Equisetum spp. (Horsetail).
- Festuca arundinaceae (Tall Fescue).
- Hedera helix (English Ivy).
- Holcus canatus (Velvet Grass).
- Lolium spp. (Rye Grasses).
- Lotus corniculatus (Bird's Foot Trefoil).
- Lythrium salicaria (Purple Loose Strife).
- Melilotus spp. (Sweet Clover).
- Myriophyllum spicatum (Eurasian Milfoil).
- Phalaris arundinaceae (Reed Canary Grass).

Rubus discolor (Himalayan Blackberry).

Solanum spp. (Nightshade).

Trifolium spp. (Clovers).

1. Herbicide application by manual 'spot spraying', wicking, or backpack methods is strictly prohibited.
2. Remove invasive plant material and dispose legally off-site.
3. After initial removal of weeds, and prior to placing topsoil, the contractor shall water the subgrade sufficiently to germinate dormant weed seeds.
  - a. Prior to this weed crop producing seeds, the contractor shall pull weeds and remove them from the site.
  - b. Before continuing with topsoil placement the contractor shall verify with the Owner's Representative whether or not to repeat this treatment.
4. Existing or new plantings damaged or killed by herbicide application shall be replaced immediately at no additional cost to the Owner.

### **3.3 PLACING PLANTING SOILS**

- A. Verify that planting soil is stockpiled in sufficient quantities to be placed at depths specified. The Contractor shall notify the Owner's Representative immediately if supplies are inadequate or do not meet specifications for topsoil. The Contractor shall provide imported topsoil meeting the requirements of this section if the supply of existing on-site topsoil is insufficient.
- B. Planting soil shall be placed at specified grades between any existing or constructed points on the site, such as curbs, walls, walks and paving.

### **3.4 SOIL PREPARATION IN PLANTING BEDS**

- A. Prepare subgrade to depth as specified in Part 1 – General, Project Conditions.
- B. Loosen subgrade of planting beds to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  1. Apply organic fertilizer at recommended rates per soils analysis directly to subgrade before loosening.
  2. Thoroughly blend planting soil mix off-site before spreading.
    - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
    - b. Mix lime with dry soil before mixing fertilizer.
  3. Spread planting soil mix to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
    - a. Spread approximately 4 inches of planting soil mix over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil in 4 inch lifts.
    - b. Allow sufficient depth of topsoil placement to allow for finish grade to be one 1" below any paved surface after placement of bark mulch.
- C. Finish Grading: Grade planting beds to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.



- D. Restore planting beds if eroded or otherwise disturbed after finish grading and before planting.

### 3.5 SOIL PREPARATION IN SOD AND SEEDED AREAS

- A. Limit lawn subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  - 1. Apply organic fertilizer at recommended rate of per manufacturer's directions directly to subgrade before loosening.
  - 2. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
    - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
    - b. Mix lime with dry soil before mixing fertilizer.
  - 3. Spread planting soil mix to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
    - a. Spread approximately 4 inches of planting soil mix over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil in 4 inch lifts.
    - b. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:
  - 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
  - 2. Loosen surface soil to a depth of at least of 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
    - a. Apply organic fertilizer recommended rate per soils analysis directly to subgrade before loosening.
  - 3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
  - 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- D. Seeded Field grass:
  - 1. Rototill surface of seedbed to a minimum depth of 6 inches. Apply porous ceramic soil conditioner at rate of 3700 lbs/1000 sf and till into top 4 inches.
  - 2. Regrade and float to final finish grade, adding topsoil where required, with final grade to match existing or revised slopes, banks, etc. Grade to eliminate washing and puddling. Slope to drain water away from all buildings or structures.
- E. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.
- F. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- G. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

### **3.6 CLEANUP**

- A. Keep project site free from accumulation of debris, topsoil, and other material.
- B. At completion of each area of work, completely remove debris, equipment and surplus materials.
- C. Any paved area or surfaces stained or soiled from landscaping materials shall be cleaned with a power sweeper using water under pressure. Building surfaces shall be washed with proper equipment and materials as approved by the Owner's Representative.

**END OF SECTION**

## **SECTION 33 11 13 WATER SYSTEMS**

### **PART 1 GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. The other Contract Documents complement the requirements of this section.
- B. Other sections of this Specification may relate and impose additional work and/or additional materials upon this section. Contactor to coordinate any cross-referencing of Specification sections.

#### **1.02 DESCRIPTION OF WORK**

- A. This Section includes water piping, fittings, appurtenances, accessories, trenching, bedding, backfill, and surface restoration, as shown on the Drawings and specified herein.

#### **1.03 STANDARD SPECIFICATIONS**

- A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter (WSDOT/APWA). Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of La Center Engineering Standards for Construction, and Details.
- C. Additional reference specification shall be the latest edition of the Uniform Plumbing Code as amended by the State of Washington.

#### **1.04 QUALITY ASSURANCE**

- A. Hydrostatic Pressure Test: Test water force mains and other pressure pipe under a hydrostatic pressure in accordance with City of La Center code.
- B. Sterilization: Water mains shall be sterilized before placing in service in accordance with the Standard Specifications.
- C. The Contractor shall correct and re-test for approval for all deficiencies revealed in the testing of the system as indicated in the testing requirements.

#### **1.05 SUBMITTALS**

- A. Materials Certificates: materials certificates shall be signed by material supplier and Contractor, certifying that the materials comply with or exceed Specifications.

#### **1.06 SCHEDULING**

- A. Coordinate connection to the existing public water system with the City of La Center Water Department.

#### **1.07 PERMIT REQUIRED**

- A. A separate permit is required for underground fire water line installation downstream of the backflow device per WAC 212-80. Licensed contractor shall be responsible for obtaining permit.

### **PART 2 MATERIALS**

#### **2.01 MATERIALS**

- A. Water system materials for the public water system shall meet the requirements of the City of La Center unless noted otherwise on the plans.
- B. Water system materials for the private site water system shall meet the requirements of the Uniform Plumbing Code unless noted otherwise herein or on the plans.

- C. Materials for surface restoration, including crushed rock and asphalt, shall conform to the specifications indicated on the plans.
- D. Backflow devices. Backflow devices for the project domestic and fire water services shall be state approved and shall meet the performance criteria indicated on the plans.

### **PART 3 EXECUTION**

#### **3.01 WET WEATHER CONSTRUCTION**

- A. The contractor is responsible for all additional measures required in the event of wet weather construction. This includes additional granular working blankets, additional erosion control, varied construction techniques, additional dewatering, and other items and methods needed to account for the impacts of wet weather.

#### **3.02 PIPE INSTALLATION**

- A. General. Install pipe and fittings in accordance with the manufacturer's requirements, and Section 7-09.3(12) of the Standard Specifications. Install valves in accordance with Section 7-12.3 of the Standard Specifications. Lay pipe to the line and grade shown on the Contract Drawings. Keep mud, silt, gravel, and other foreign material out of the pipe and off the joining surfaces. Install a removable plug in the end of the pipe during all periods when construction operations are not in progress. All pipe shall be bedded per Section 7-09.3(9) of the Standard Specifications.
- B. Alignment. Lay pipe on a uniform grade with no sag or over bends between high and low points. Maintain a continuous positive slope from the lowest to the highest points in the line. Maintain minimum 36" cover over pipe unless indicated otherwise on the plans.
- C. Tracer Wire. Bury with the pipe a continuous ribbon of tracer wire and blue color code ribbon over the full length of all non-metallic pipe with two wraps per each joint.

#### **3.03 HYDRANTS**

- A. Install hydrants in accordance with Section 7-14.3 of the Standard Specifications and City of La Center requirements.
- B. All of the joints on fire hydrant mains including the tee are to be mechanically restrained. Thrust blocks for hydrants are not allowed.

#### **3.04 REQUIRED CLEARANCE**

- A. Maintain a minimum of 3-feet of permanent clearance around all fire safety devices, including fire hydrants, F.D.C. standpipe, and backflow vaults. No structure, fence, or landscaping shall be within this clearance area or obstruct visibility of these devices.

#### **3.05 SERVICE CONNECTIONS**

- A. Service connections shall be installed per Section 7-15.3 of the Standard Specifications.

#### **3.06 FIREWATCH**

- A. If a temporary shutdown of an existing fire service is required, provide a firewatch during shutdown as required by International Fire Code. Coordinate with the Fire Marshal.

#### **3.07 HYDROSTATIC PRESSURE TEST**

- A. Test water force mains and other pressure pipe under a hydrostatic pressure per the applicable requirements of the Standard Specifications and/or Uniform Plumbing Code.

### **3.08 THRUST RESTRAINT**

- A. Thrust Blocks. Thrust blocks are only allowed at "live taps" and where connections are made to the end of an existing main. Place blocking against undisturbed earth ensuring that concrete is clear of joints and joint accessories.
- B. Joint Restraint. Bends, valves, and all reducers 4 inches or larger shall be supported from separation by restrained joints. Restraints shall be Megalug Retainer Glands (M.L.R.G.) by EBAA Iron <sup>TM</sup>, or approved equal.

### **3.09 STERILIZATION**

- A. General. Water mains shall be sterilized before placing in service. Sterilizing procedures shall conform to the requirements of Section 7-09.3(24) of the Standard Specifications.
- B. All valves, hydrants, and other appurtenances connected to the water main shall be operated during sterilization to assure that the sterilizing mixture is dispersed into all parts of the line, including dead ends, new services, and similar areas that otherwise may not receive the treated water.
- C. After sterilization, flush the water from the line until the water through the line has the same chemical and bacterial quality as the permanent source of supply.
- D. Disposal of Sterilizing Water. Dispose of sterilizing water by discharging to a storm drain or approved drainage way. Dilute the sterilized water by mixing with equal parts of fresh water prior to disposal.

### **3.10 COORDINATION AND SCHEDULING**

- A. General. The Contractor shall coordinate shutdown and connection work with the City of La Center water department and school district maintenance personnel. The schedule shall include a sequence of such events as connecting to existing water main, disconnecting existing services, installing new services, pressure testing, and disinfecting the system.

### **3.11 CONNECTING TO ASBESTOS CEMENT WATER MAINS (IF ENCOUNTERED)**

- A. General. Connections to existing asbestos cement water mains shall be made in accordance with all applicable OSHA and WISHA requirements and as approved by the Owner. The Contractor shall ensure that all cutting, tapping, removing, or handling of the asbestos cement pipe is accomplished by certified asbestos workers and that such workers take appropriate safety measures. Sections of the existing asbestos cement pipe that are removed shall be disposed of in an approved waste disposal site in accordance with state and federal requirements.

### **3.12 VAULTS**

- A. Excavation and Backfill. Conform to the applicable requirements of Section 31 11 00 (Site Preparation) of the Technical Specifications.
- B. Foundation Stabilization. If material in bottom of excavation is unsuitable of supporting the vault, excavate below subgrade as directed and backfill to required grade with gravel.
- C. Vault Placement. Place vault on undisturbed base or compacted gravel base. Clean joint between vault base, sections and top slab prior to placing jointing material. It is the intent that the interior and exterior end faces of the section to be placed seat fully on the previously placed section.
- D. Pipe Connection to Vault. Break out existing wall as specified or directed. Grout in new pipe to provide watertight seal. Provide watertight rubber grommet or seal. Smooth and finish the interior wall of the vault.
- E. Vault Grade. The top slab shall be set at a grade so the ground around the vault can be graded to slope away from the vault. In general, the vault top shall be set 1" to 2" above the surrounding finished grade.
- F. Sump Pump. Provide sump pump, electrical connection and outfall if shown on plans.

**3.13 ABANDONMENT OF EXISTING UTILITIES**

- A. Utilities to be abandoned under new building footprint shall be removed.
- B. Utilities to be abandoned outside of new building footprint shall be plugged and abandoned in place or removed as necessary to allow for new construction. Plug all cut or abandoned ends of pipe.
- C. Abandonment of water lines shall be per W.S.D.O.T. and City of La Center standards.

**3.14 AS-BUILTS**

- A. Contractor shall be responsible for supplying reproducible water system "as-built" drawings along with record documents under provisions of the Contract.

**END OF SECTION**

**SECTION 33 31 13**  
**SANITARY SEWER**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The other Contract Documents complement the requirements of this section.
- B. Other sections of this Specification may relate and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.

**1.02 DESCRIPTION OF WORK**

- A. This work shall consist of constructing manholes, cleanouts, and sanitary sewer pipe of the types and sizes designated, in reasonably close conformity with the lines and grades as shown on the Drawings. Work also includes removal of all septic systems.

**1.03 STANDARD SPECIFICATIONS**

- A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of La Center Engineering Standards for Construction, and Details.
- C. Reference specifications shall be the latest edition of the International Building Code and Uniform Plumbing Code, and their revisions and supplements.

**1.04 SUBMITTALS**

- A. Furnish reproducible sanitary sewer "as-built" drawings.
- B. Provide materials certificates showing that products meet or exceed specifications.

**1.05 WARRANTY/BONDING**

- A. Furnish labor and material warrantee or maintenance bond for all work in public right-of-way, or easement, in accordance with requirements of jurisdiction having authority.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Materials shall meet the requirements of Section 7-05.2, Section 7-17.2, Section 7-18.2 and section 7-19.2 of the Standard Specifications. Sanitary sewer pipe 6" and greater diameter shall be PVC Sewer Pipe in accordance with 9-05.12 of the Standard Specifications. Sanitary sewer pipe 4" and less in diameter shall be schedule 40 PVC with solvent welded joints. Use Class 52 ductile iron pipe where shown on the Drawings.
- B. Materials shall also meet the requirements of the local agency having jurisdiction.

**PART 3 EXECUTION**

**3.01 CONSTRUCTION REQUIREMENTS**

- A. All work shall be performed per the requirements of the WSDOT/APWA and City of La Center Specifications.
- B. Tracer wire shall be installed with all non-metal pipe. Tracer wire shall be #14 copper wire, uncoated.

**3.02 FIELD QUALITY CONTROL AND TESTING**

- A. Inspection: Inspect interior of piping to determine whether line displacement or other damage has occurred.
  - 1. Make inspections after pipe between manholes and manhole locations have been installed and approximately 2 feet of backfill is in place, and again at completion of project.

2. All private sanitary sewer pipes following trench backfill and complete installation shall be video inspected. The video information shall be submitted and demonstrate no manufacturing or installation defects, or any debris in the pipes.
  3. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, the Contractor shall correct such defects and notify Owner for re-inspection.
- B. All public sanitary sewer construction shall be tested per the City of La Center requirements, including video inspection.
- C. Vacuum testing of manholes (if applicable) shall be performed.
- D. Contractor shall test all sanitary sewer piping per the requirements of the Standard Specifications.

### **3.03 ABANDONMENT OF EXISTING UTILITIES**

- A. Utilities to be abandoned under new building footprint shall be removed.
- B. Utilities to be abandoned outside of new building footprint shall be plugged and abandoned in place or removed as necessary to allow for new construction. Plug all cut or abandoned ends of pipe.
- C. Abandonment of sanitary sewer lines shall be per WSDOT/APWA standards.

### **3.04 AS-BUILTS**

- A. Contractor shall be responsible for supplying reproducible sanitary sewer "as-built" drawings along with record documents under provisions of the Contract.

**END OF SECTION**



**SECTION 33 41 14**  
**STORM DRAINAGE**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The other Contract Documents complement the requirements of this section.
- B. Other sections of this Specification may relate and may impose additional work and/or additional materials upon this section. Contractor to coordinate any cross-referencing of Specification sections.

**1.02 DESCRIPTION OF WORK**

- A. This work shall consist of constructing manholes, grate inlets, drop inlets, catch basins, area drains, curb inlets, combination curb inlets, cleanouts, drywells, trench drains, sedimentation basins and storm sewer pipe in reasonable close conformity with the lines and grades as shown on the drawings, in general 5-feet outside of the building footprint (sitework).

**1.03 STANDARD SPECIFICATIONS**

- A. Standard specifications referenced herein shall be the latest edition of the WSDOT/APWA Standard Specifications as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter. Technical specifications only, Division 1 and measurement and payment portions of the Standard Specifications do not apply.
- B. Reference Specification is City of La Center Engineering Standards for Construction, and Details.
- C. Reference specifications shall be the latest edition of the International Building Code and Uniform Plumbing Code, and their revisions and supplements.

**1.04 SUBMITTALS**

- A. Provide materials certificates showing that products meet or exceed specifications.

**1.05 WARRANTY/BONDING**

- A. Furnish labor and material warrantee or maintenance bond for all work in public right-of-way, or easement, in accordance with requirements of jurisdiction having authority.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Storm Piping
  - 1. Pipes: Acceptable pipe material shall be smooth interior, high density polyethylene corrugated pipe per section 9-05.1(6) for pipe diameters less than or equal to 10-inches (AASHTO M252), or per section 9-05.1(7) for 12-inches through 36-inches diameter pipe (AASHTO M294). Pipe shall be smooth interior (Type S) or smooth interior with perforations (Type SP).
  - 2. Acceptable pipe material shall be ductile iron sewer pipe per section 9-05.13.
- B. Grates
  - 1. All grates shall be one-piece cast iron (not welded), manufactured to conform to an H-20 wheel load and comply with Americans With Disabilities Act (ADA) requirements.
  - 2. All drain grates to be set to final grade by use of concrete rings and adjustment collars made for that purpose.
  - 3. All drain inlet grates shall have the wording "Dump No Waste – Protect Your Groundwater" embossed on them. Pavement stenciling is an approved alternate.
  - 4. Domed grates: Domed grates shall be Nyloplast™ domed grate or approved equal. Size per plans.
- C. The Bioretention Soil Mixture shall meet the requirements of the Department of Ecology Default Bioretention Soil Mixture (BSM).
  - 1. Mineral Aggregate:

- a. Percent Fines: A range of 2 to 4 percent passing the #200 sieve is ideal and fines should not be above 5 percent for a proper functioning specification according to ASTM D422.
2. Aggregate Gradation:

Sieve Size	Percent Passing
3/8"	100
#4	95-100
#10	75-90
#40	25-40
#100	4-10
#200	2-5

3. Compost: The following compost standards are required:
- Meets the definition of "composted material" in WAC 173-350-100 and complies with testing parameters and other standards in WA 173-350-220.
  - Produced at a composting facility that is permitted by the jurisdictional health authority. Permitted compost facilities in Washington are included on a list available at <http://www.ecy.wa.gov/programs/swfa/organics/soil/html>
  - The compost product must originate a minimum of 65 percent by volume from recycled plant waste comprised of "yard debris", "crop residues", and "bulking agents" as those terms are defined in WAC 173-350-100. A maximum of 35 percent by volume of "post-consumer food waste" as defined in WAC 173-350-100, but not including biosolids, may be substituted for recycled plant waste.
  - Stable (low oxygen use and CO<sub>2</sub> generation) and mature (capable of supporting plant growth) by tests shown below.
  - Moisture content range: no visible free water or dust produced when handling the material
  - Tested in accordance with the U.S. Composting Council "Test Method for the Examination of Compost and Composting" (TMECC), as established in the Composting Council's "Seal of Testing Assurance" (STA) program. Most Washington compost facilities now use these tests.
  - Screened to the following size gradations for Fine Compost when tested in accordance with TMECC test method 02.02-B, Sample Sieving for Aggregate Size Classification"

Fine Compost shall meet the following gradation by dry weight.

Sieve Size	Percent Passing
2"	100
1"	99
5/8"	90
1/4"	75

- pH between 6.0 and 8.5 (TMECC 04.11-A). "Physical contaminants" (as defined in WAC 173-350-100) content less than 1% by weight (TMECC 03.08-A) total, not to exceed 0.25 percent film plastic by dry weight.
- Minimum organic matter content of 40% (TMECC 05-07-A "Loss on Ignition")
- Soluble salt content less than 4.0 dS/m (mmhos/cm) (TMECC 04.10-A "Electrical Conductivity, 1:5 Slurry Method, Mass Basis")
- Maturity indicators from a cucumber bioassay (TMECC 05.05-A "Seedling Emergence and Relative Growth") must be greater than 80% for both emergence and vigor.
- Stability of 7 mg CO<sub>2</sub>-C/g OM/day or below (TMECC 05.08-B "Carbon Dioxide Evolution Rate")

- m. Carbon to nitrogen ratio (TMECC 05.02-A "Carbon to Nitrogen Ratio" which uses 04.01 "Organic Carbon" and 04.02-D "Total Nitrogen by Oxidation") of less than 25:1. The C:N ratio may be up to 35:1 for plantings composed entirely of Puget Sound Lowland native species and up to 40:1 for coarse compost to be used as a surface mulch (not in a soil mix).

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. The Contractor shall perform all work in accordance with the plans, details, specifications, and best industry practices.
- B. Storm sewer pipe shall be constructed per the requirements of Section 7 of the Standard Specifications. Catch basins, manholes, and other storm structures shall be constructed per the requirements of Section 7 of the Standard Specifications.
- C. All work shall be performed so as to eliminate sediments from being transported into the drainage system during the construction phase. Provide all necessary temporary filtration devices and drain inlet protection to capture runoff sediment.
- D. Best Management Practices (BMP's) shall be used to protect drainage system and catch basins from soil erosions and other pollutants. Refer to Section 31 25 00 Erosion and Sedimentation Control.
- E. The contractor shall leave the pipe joints uncovered until hydrostatic pressure testing is successfully completed.
- F. Tracer wire shall be installed with all non-metal pipe. Tracer wire shall be #14 copper wire, uncoated.

#### **3.02 FIELD QUALITY CONTROL AND TESTING**

- A. All storm drain pipe shall be Hydrostatically Pressure tested.
- B. Inspection: Inspect interior of piping to determine whether line displacement or other damage has occurred.
  - 1. Make inspections after pipe between manholes and manhole locations have been installed and approximately 2 feet of backfill is in place, and again at completion of project.
  - 2. All private storm sewer pipes following trench backfill and complete installation shall be video inspected. The video information shall be submitted and demonstrate no manufacturing or installation defects, or any debris in the pipes.
  - 3. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, the Contractor shall correct such defects and notify Owner for re-inspection.
- C. All public storm sewer construction shall be inspected per the City of La Center requirements, including video inspection.
- D. Contractor shall test all stormwater piping per the requirements of the Standard Specifications.

#### **3.03 ABANDONMENT OF EXISTING UTILITIES**

- A. Utilities to be abandoned under new building footprint shall be removed.
- B. Utilities to be abandoned outside of new building footprint shall be plugged and abandoned in place, or removed as necessary to allow for new construction. Plug all cut or abandoned ends of pipe.
- C. Abandonment of storm drainage lines shall be per WSDOT/APWA standards.

#### **3.04 AS-BUILTS**

- A. Contractor shall be responsible for supplying reproducible storm drainage "as-built" drawings along with record documents under provisions of the Contract.

**END OF SECTION**