

SECTION 00 10 00

LICENSED ENGINEER APPROVALS

In accordance with WAC 196-23-020 for Engineers, specifications that are prepared by or under the direct supervision of a licensee shall contain the seal/stamp, signature of the licensee and the date of signature.

The following technical specifications shall be deemed approved by these signatures and stamps:

02 41 16 Structure Demolition

31 22 00 Grading

31 23 33 Trenching

31 25 00 Erosion and Sedimentation Control

32 12 16 Asphalt Paving

32 13 13 Concrete Paving

33 11 13 Water Systems

33 31 13 Sanitary Sewer

33 41 14 Storm Drainage



10/2/2025

END OF SECTION

SECTION 02 41 16
STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of buildings and site improvements.
 - 2. Abandoning in-place, Removing below-grade construction.
 - 3. Disconnecting, capping or sealing, and abandoning in-place, removing site utilities.
 - 4. Salvaging items for reuse by Owner.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and store. Include fasteners or brackets needed for reattachment elsewhere.

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. Indicate proposed locations and construction of barriers.
 - 1. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings to remain including means of egress from those buildings.
- B. Schedule of Building Demolition Activities: Indicate the following:
 - 1. Detailed sequence of demolition work, with starting and ending dates for each activity.
 - 2. Temporary interruption of utility services.
 - 3. Shutoff and capping or re-routing of utility services.

- C. Predemolition Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by salvage and submit before the Work begins.

1.5 FIELD CONDITIONS

- A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.
- B. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.
 - 1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
 - 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
- C. 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 materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. On-site storage or sale of removed items or materials is not permitted.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting 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. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

- A. Salvaged Items: Comply with the following:
 - 1. Clean salvaged items of dirt and demolition debris.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Utilities to Be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.
 - 1. Arrange to shut off utilities with utility companies.
 - 2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
 - 3. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
 - 4. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.4 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.
- B. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of demolition.
- C. Existing Utilities to Remain: Maintain utility services to remain and protect from damage during demolition operations.
 - 1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
 - 2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
 - a. Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.
- D. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with requirements in Section 015000 "Temporary Facilities and Controls."

1. Protect adjacent buildings and facilities from damage due to demolition activities.
 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 5. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 6. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.
- E. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.5 DEMOLITION, GENERAL

- A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 2. Maintain fire watch during and for at least 1 hour after flame-cutting operations.
 3. Maintain adequate ventilation when using cutting torches.
 4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.
 2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

3.6 DEMOLITION BY MECHANICAL MEANS

- A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
- B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.

- C. Salvage: Items to be removed and salvaged are indicated on Drawings.
- D. Below-Grade Construction: Demolish foundation walls and other below-grade construction.
 - 1. Remove below-grade construction, including basements, foundation walls, and footings, completely.
- E. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.

3.7 REPAIRS

- A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.8 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.
- B. Do not burn demolished materials.

3.9 CLEANING

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

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 and foundations
 - 4. Base course for concrete and asphalt paving
 - 5. Retaining wall drainage and backfill
 - 6. Borrow pits for the purpose of extracting gravel are not allowed.

1.03 UNIT PRICES (SEE ALSO SECTION 01 22 00)

Deleted

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: Topographical data as shown is based on a survey by Harper Houf Peterson Righellis Inc. dated 3/19/2025.

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.
 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. Exterior paving, 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 4,000 (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 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 TM, 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 the Standard Specifications, and as shown on the Plans. 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 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 include ductile iron sewer pipe per section 9-05.13.
 - 3. Roof drains and fittings shall be as specified on the plans.
- 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:
 - a. Meets the definition of "composted material" in WAC 173-350-100 and complies with testing parameters and other standards in WA 173-350-220.
 - b. 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>
 - c. 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.
 - d. Stable (low oxygen use and CO₂ generation) and mature (capable of supporting plant growth) by tests shown below.
 - e. Moisture content range: no visible free water or dust produced when handling the material
 - f. 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.
 - g. 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

- h. 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.
- i. Minimum organic matter content of 40% (TMECC 05-07-A "Loss on Ignition")
- j. Soluble salt content less than 4.0 dS/m (mmhos/cm) (TMECC 04.10-A "Electrical Conductivity, 1:5 Slurry Method, Mass Basis")
- k. 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.
- l. Stability of 7 mg CO₂-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