

This table is a list of the changes made to the 2023 edition of the City of Seattle Standard Specifications and Standard Plans to create the NEW 2026 editions.

Check our website for redlined versions of Standard Plans showing what has changed from the 2023 edition. 2026 edition CAD files are also located on the website:

<https://www.seattle.gov/utilities/construction-resources/standards-and-guidelines/standard-specs-and-plans>

Section # or Plan #	Current Title	Text
1-01.3	DEFINITIONS	<p>Delete the entire PDF BID FILE item with no replacement.</p> <p>Replace BID FORM with BID FORMS and replace the definition with the following:</p> <p>BID FORMS The forms provided by the Owner on OpenGov which must be submitted with a Bid.</p>
1-03.6 1-05.13(2) 1-07.9(1)D1 1-07.11 1-07.18(2) 1-07.18(5) 1-07-28	VARIES:	<p>Replace the mailing address with:</p> <p><u>Mailing address for USPS:</u> City of Seattle Department of Finance and Administrative Services – Purchasing and Contracting PO Box 94687, Seattle, WA 98124-4687</p>
PREFACE 1-01.2(1) 1-03.1(2) 1-03.6 1-05.13(2) 1-07.18(2) 1-07.18(5)	VARIES:	<p>Change Department of Facilities and Administrative Services name to:</p> <p>Department of Finance and Administrative Services</p>
1-02.1	RESPONSIBLE BIDDER	<p>Replace the third paragraph with:</p> <p>The apparent low Bidder, see Section 1-03.1(3), must also demonstrate compliance with the following City requirements:</p> <ol style="list-style-type: none"> The Bidder must show substantial compliance with social equity Contract requirements on past projects or evidence to responsibly perform, including, but not limited to, compliance with the Inclusion Plan, Social Equity Plan, or Community Workforce Agreement. The Bidder must have a current Seattle Business License and must be current on all Business and Occupancy Taxes pursuant to SMC 5.55.030 A, before Award when the Work is in the City of Seattle, the Bidder conducts business in the City of Seattle, or the Contractor owes Taxes to the City of Seattle. The Bidder must not owe any monetary disincentive assessments or penalties regarding Apprentice Utilization on prior projects before Award. The Bidder must be registered on the City of Seattle’s Procurement Portal, powered by OpenGov, before Award: https://procurement.opengov.com/portal/seattle Equal Benefits (SMC 20.45): Except as may be provided in the Equal Benefits Program Rules, the apparent low Bidder must submit the Equal Benefits Declaration as part of the SBRC. Labor Standards (SMC 14.16, 14.17, 14.19, 14.20): Except as may be provided in the Office of Labor Standards rules, the Apparent Low Bidder must demonstrate compliance with the City’s fair labor standards. Campaign Contributions (SMC 2.04): The Bidder must not be found in violation of earning more than \$250,000 in City contracts in the last fiscal year and contributed to a City elected official’s campaign. The Bidder must comply with any additional requirements as a condition of state or federal funding, loans, or grants for the Work.

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1-02.4(1)	GENERAL	<p>Replace the last paragraph with the following:</p> <p>The Bidder has a responsibility to ask about any perceived defect or ambiguity in the Bid Documents. Bidders who need an explanation or clarification of the Bid Documents must make this request in writing before 5:00 p.m. on that Thursday preceding the Bid opening. A claim will not be allowed if a Bidder failed to request clarification or if a reasonably prudent contractor would have discovered such defects or ambiguities while preparing their Bid.</p>
1-02.4(2)	SUBSURFACE INFORMATION	<p>Replace the second paragraph with the following:</p> <p>In addition to the above data, SDCI has geotechnical reports for private property located in an Environmentally Critical Area Geographically Hazardous zone if the private property has been under SDCI permit review. This data is available for the Contractor's review at: SDCI, Soils Reports, 700 Fifth Avenue, 22nd Floor, Seattle, WA 98104, (206) 684-8950.</p>
1-02.5	FORM AND STYLE OF BID	<p>Replace this Section with the following:</p> <p>A Bid must only be submitted on the Bid Form provided on OpenGov. A price must be submitted for each Bid Item listed.</p> <p>The Bidder must not make a stipulation on the Bid Forms or qualify the Bid in any manner. A Bid amount must be included for every bid item listed on the Bid Form. A person authorized to legally bind the Bidder must provide an Electronic Signature on the Declaration page.</p>
1-02.6	ADDENDA	<p>Replace the last paragraph with the following:</p> <p>The Bidder must acknowledge receipt of each Addendum by checking the appropriate boxes on OpenGov.</p>
1-02.7	BID GUARANTY	<p>Replace the fifth paragraph with the following:</p> <p>A Bid Guaranty must accompany all Bids. Bidders must upload a scanned copy of the wet signed and notarized Bid Guaranty through OpenGov as a PDF file. The Bidder must mail Bid Guaranty originals with a postmark no later than one Business Day following the Bid Opening Date. PC will not accept Electronic Signatures or electronic notarizations on the Bid Guaranty originals. Mail original Bid Guaranty documents to:</p> <p>FAS - Purchasing and Contracting City of Seattle P.O. Box 94687 Seattle, WA 98124-4687</p> <p>Replace the sixth paragraph with the following:</p> <p>A Bid may be declared non-responsive if a Bidder submitting an electronic Bid fails to mail a hard copy original of the Bid Guaranty with the required USPS postmark.</p>
1-02.8	NONCOLLUSION REQUIREMENT	<p>Replace this Section with the following:</p> <p>The Bidder declares by signing the Declaration that they have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in the preparation and submission of its Bid. The Bidder and other potential Bidders or participants in collusion may be declared not responsible under Section 1-02.14 and may be debarred under SMC Chapter 20.70.</p>

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1-02.9(1)	GENERAL	<p>Replace this Section with the following:</p> <p>The Bid must be submitted through OpenGov by the time and date specified in the Advertisement for Bids or as modified by Addenda. The Bid, together with the Bid Guaranty and any other required documents due at the Bid submittal deadline, must be submitted through OpenGov. Any required documents that are due after the Bid submittal deadline must be emailed as a PDF file(s) to FAS_PWSecureBid@seattle.gov by the appropriate deadline; OpenGov cannot accept submittals after the Bid submittal deadline.</p> <p>PC designates the official Bid clock. The Bidder is responsible for the timely submittal of the Bid. A Bid submitted or received after the Bid submittal deadline will not be accepted, unless determined by the Owner that the lateness was outside of the Bidder's control and that there is no bidding advantage to accepting a late Bid.</p> <p>Bidders must submit Bids electronically through OpenGov by the Bid submittal deadline. PC will accept Electronic Signature for the Declaration and the Bidder/Subcontractor List, if applicable.</p> <p>Email additional required documents due after the Bid submittal deadline as a PDF File(s) with a maximum individual file size of 15MB. Email additional required documents to FAS_PWSecureBid@seattle.gov by the appropriate deadline.</p> <p>Identify both the email and the attached PDF file with the full Public Works Contract Number (PW#) and name of the Bidder (e.g. "PW# 2020-001 – Pat's Construction").</p> <p>Bids must be entered and submitted by 2:00 PM through OpenGov on the Bid Opening Date. OpenGov will not allow any Bid submission after the 2:00 PM Bid submittal deadline. Any required documents that are due after the 2:00 PM deadline must be submitted by email as a PDF file(s) to FAS_PWSecureBid@seattle.gov.</p> <p>The Email Time Stamp constitutes the official time for electronic submittal receipt for required documents that are due after the Bid submittal deadline and are submitted by email.</p> <p>If mandatory pre-bid meetings were required as part of the Bid's solicitation, the Bidder's company must be represented on the pre-bid meeting sign-in sheet, or the Bid will not be accepted.</p> <p>If the Bidder/Subcontractor List is required, it must be included with the Bid Forms per RCW 39.30.060.</p>
1-02.9(3)	BIDDER/SUBCONTRACTOR LIST	<p>Replace this Section with the following:</p> <p>In compliance with RCW 39.30.060 for all projects estimated to cost \$1,000,000 or more, all Bidders must complete and submit the Bidder/Subcontractor List, Section 0-01.5 of the Project Manual. The completed Bidder/Subcontractor list must identify the Subcontractors the Bidder will contract with for HVAC, plumbing, electrical, structural steel, or rebar installation work; or indicate the Bidder intends to self-perform the work, if awarded the Contract; or that category of work is not applicable. The Bidder/Subcontractor List must be submitted with the Bid Forms. The Bidder is responsible for the timely delivery of the Bidder/Subcontractor List.</p> <p>The Bidder may list no more than 1 Subcontractor for each category of work, unless Subcontractors vary with Bid Alternates, Additives, or Deductives, in which case the Bidder must indicate on a separate Bidder/Subcontractor List which Subcontractor will be used for which Alternate, Additive, or Deductive.</p> <p>If the HVAC, plumbing, electrical, structural steel, or rebar installation specialty is left blank, meaning either the name of a Subcontractor is blank or a checkbox is not checked, the City will accept the blank as self-performance. The Bidder is bound to self-performance of that specialty for the duration of the Project.</p> <p>The Bid will be rejected as non-responsive if the Bidder/Subcontractor list is not provided. The Bidder/Subcontractor List must be submitted with the Bid Forms per RCW 39.30.060.</p> <p>If awarded the Contract, the Bidder agrees to use the Subcontractors identified on the Bidder/Subcontractor List unless the City agrees to a substitution.</p>
1-02.10	MODIFICATION OR WITHDRAWAL OF BID	<p>Replace this Section with the following:</p> <p>After submitting a Bid, but prior to the Bid submittal deadline, a Bidder may either (1) withdraw or (2) revise its Bid through OpenGov.</p>
1-02.12	PUBLIC OPENING FOR BIDS	<p>Replace this Section with the following:</p>

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		<p>Bids submitted through OpenGov will be opened and read aloud via Microsoft Teams following the 2:00 PM Bid submittal deadline specified in the Advertisement for Bids or in an Addendum. There is no in-person Bid opening.</p> <p>Microsoft Teams' call-in information is:</p> <ol style="list-style-type: none"> 1. Phone number to connect: <ol style="list-style-type: none"> a. 1-206-686-8357 (Seattle) or (United States) 2. Meeting Number ID: 190 706 876#
1-02.13	IRREGULAR BIDS	<p>Replace this Section with the following:</p> <p>The Owner has the right to review Bids for material irregularities. If the Owner determines a Bid to be irregular and rejects it, notification will be sent to the Bidder in writing containing the reason for the determination.</p> <ol style="list-style-type: none"> 1. A Bid will be considered irregular and non-responsive if: <ol style="list-style-type: none"> a. The authorized Bid Forms are not used; b. The completed Bid Forms contains any unauthorized additions, deletions, alternate Bids, or conditions; c. The Bidder did not Bid on all Alternates, Additives, or Deductives, when required; d. The Bid Guaranty is not included with the Bid; e. For projects estimated to cost \$1,000,000 or more, the Bidder did not comply with the Bidder/Subcontractor list requirements, see Section Error! Reference source not found., Bidder/Subcontractor List; f. The Bid does not constitute a definite and unqualified offer to comply with the material terms of the Bid invitation; g. The Inclusion Plan is not submitted with the Bid when required; or h. The Inclusion Plan does not receive the minimum score as identified in the plan to be considered responsive when submitted with the Bid when required. 2. A Bid may be considered irregular and non-responsive if: <ol style="list-style-type: none"> a. The Bid Guaranty is not complete or not sufficient; b. Any of the Bid Item prices are excessively above or below the amount of a reasonable Bid, to the potential detriment of the Owner; c. A lump sum Bid is excessively lower than other Bids; d. Receipt of Addenda is not acknowledged; e. The Bidder is a member of a joint venture or partnership and the joint venture or partnership submits a Bid for the same project. In such an instance, both Bids may be rejected; f. The Bid is not properly Executed; or g. Proof of license for named subcontractors (if applicable) is not provided per RCW 39.30.60.
1-03.1(1)	BID TABULATION	<p>Replace this Section with the following:</p> <p>If a minimum Bid amount has been established for any item and the Bidder's unit or lump sum price is less than the minimum specified amount, the Owner will revise the unit or lump sum price, to the minimum specified amount and recalculate the extension and/or the total Bid price.</p>
1-03.1(1)A	RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS	<p>Delete the second paragraph.</p>
1-04.4(3)	CLAIMS	<p>Replace item 9.d. with the following:</p>

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		d. The Contractor's written explanation of the reason for the requested change including the method of analysis used and, where appropriate, referring to the relevant schedules; and supporting documents such as look-ahead, As-Builts , daily records, time sheets, and the basis for the rates of affected tasks that the baseline CPM schedule was founded on, may be required by the Engineer.
1-05.3(1)C	BULK SAMPLE SUBMITTALS	Replace the phone number in the last sentence with: (206)-733-9524
1-05.3(4)	SUBMITTAL CONTROL DOCUMENT	Replace the last two sentences of the first paragraph with the following: The Contractor may reference the baseline CPM schedule and must show major submittals and review times in the CPM. The initial Submittal Control Document must be submitted with the baseline CPM schedule . See Section 1-08.3(1) for time requirements for baseline CPM schedule.
1-07.3(1)	GENERAL	Delete Item 6. in the list in this Section, and replace it with the following: 6) Providing the Engineer copies of all documentation pertaining to waste generation, recycling, and disposal within 30 Calendar Days of waste generation. The Contractor is prohibited from using disposal sites or waste transporters that require the Owner to agree to: a) Indemnify disposal sites or waste transporters; or b) Any other terms that could otherwise be interpreted to be a violation of any applicable law. Accordingly, the Engineer will: 1. Reject the use of disposal sites or waste transporters that require the Owner to agree to: a. Indemnify disposal sites or waste transporters; or b. Any other terms that could otherwise be interpreted to be a violation of any applicable law; and 2. Require the Contractor to identify and use alternative disposal sites or waste transporters. Contractor must bear any costs associated with the rejection of disposal sites or waste transporters by the Engineer.
1-07.3(2)	SUBMITTALS	Replace item 4 with the following: 4. Provide a waste management plan for any wastes that are to be stored on the Project Site before recycling or disposal. The waste management plan must provide procedures to ensure that wastes are stored in a safe, secure manner that does not allow for leakage or other releases of waste. Add the following after item 5: 6. Include all documentation that will apply to or must be completed by the Engineer under the Contract, including, but not limited to, the following: a. Waste acceptance criteria for the facility, including any physical characteristics and maximum allowable chemical parameters. b. Waste profile forms. c. Waste acceptance or approval documents. d. Bills of lading or other shipping documents required to be presented at the receiving facility; and e. All other documents required to be completed and submitted by the Engineer for waste review, approval, acceptance, and receipt at the facility. At the Owner's option, all documentation may be reviewed specified in Section 1-07.3(1).
1-07.8	HIGH VISIBILITY APPAREL	Replace this Section with the following: The Contractor must require all personnel under their control including service providers, Subcontractors, and lower tier Subcontractors that are on foot in the work zone and are exposed to vehicle traffic or construction equipment to wear the high visibility apparel described in this Section. The Contractor must ensure that a competent person as identified in the MUTCD selects the appropriate high-visibility apparel suitable for the Job Site conditions. High-visibility garments must always be the outermost garments worn in a manner to ensure 360 degrees of uninterrupted background and retroreflective material encircling the torso.

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		High-visibility garments must be labeled as, and in a condition compliant with the ANSI/ ISEA 107-2015 publication entitled "American National Standard for High-Visibility Safety Apparel and Accessories", or equivalent revisions.
1-07.8(1)	TRAFFIC CONTROL PERSONNEL	<p>Replace Item 1 in this Section with the following:</p> <p>1. During daylight hours with clear visibility, workers must wear a high-visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that are fluorescent yellow green, fluorescent orange-red, or fluorescent red in color; a high visibility hardhat meeting the high-visibility headwear requirements of WAC 296-155-305; and</p>
1-07.8(2)	NON-TRAFFIC CONTROL PERSONNEL	<p>Replace this Section with the following:</p> <p>All personnel, except those performing the Work described in Section 1-10 must wear high-visibility apparel meeting the ANSI/ISEA 107 Type R Class 2 or 3 standard.</p>
1-07.11	SOCIAL EQUITY IN CONTRACTING	<p>Replace the first paragraph with the following:</p> <p>The City provides assistance to Contractors that desire to Bid on, or have been awarded a City Contract, to comply with equal opportunity, non-discrimination, Affirmative Efforts, and Apprenticeship provisions. Should a Contractor desire assistance or information in recruiting, tutoring, and training or otherwise preparing potential employees and Subcontractors, a Contractor may contact PC at (206) 684-0444. Direct all questions, reports, or other submittals regarding the requirements of this Section to PC. Telephone: (206) 684-0444.</p>
1-07.11(4)A	ACCEPTABLE WORK SITE	<p>Add the following NEW Section:</p> <p>The Contractor must ensure an Acceptable Work Site and must include this Section in all subcontracts.</p> <p>The intent of the person that appears to violate the Acceptable Work Site is not a measure of whether such behaviors are appropriate; rather the standard is whether a reasonable person should have known that such behavior would cause a worker to be humiliated, intimidated, or otherwise treated in an inappropriate, discriminatory, or differential manner.</p> <p>Behaviors that violate an Acceptable Work Site include but are not limited to:</p> <ol style="list-style-type: none"> 1. Persistent conduct that to the reasonable person would be perceived as offensive and unwelcome; 2. Conduct that a reasonable person would perceive to be harassing or bullying in nature; 3. Conduct that a reasonable person would perceive to be hazing; 4. Verbal references that a reasonable person would perceive to be offensive stereotypes or racial/gender slurs; 5. Jokes about race, gender, or sexuality that a reasonable person would perceive to be offensive; 6. Task assignments that stratify, or give a perception of stratification, based on race, gender, or other defining characteristics; 7. Language that a reasonable person would perceive to be offensive based on race, gender, or oriented towards sexuality; 8. Name-calling, cursing or unnecessary yelling, including from a supervisor, foreman, or other more senior person that a reasonable person would perceive as offensive; 9. Repeating rumors about individuals in the Work Site that a reasonable person would perceive as harassing or harmful to the individual's reputation; 10. Refusal to hire someone based on race, gender, sexuality, or any other protected class; and 11. Reference to or requests for immigration status other than those required by law, religious affiliation, gender affiliation, criminal background, or other related aspects of a worker unless mandated by federal law. <p>To maintain an Acceptable Work Site, all Work must be assigned in a manner that respects training objectives for apprentices and ensures an equitable distribution of meaningful work, training, and assignments among all workers.</p> <p>While maintaining and managing an Acceptable Work Site is the Contractor's responsibility, each subcontractor must also have accountability for performance in sustaining and managing their Work Sites. Purchasing and Contracting (PC) will monitor Work Sites and determine whether a risk or circumstance exists that may merit a remedy. Monitoring may include proactive observations of the Work Site, interviews of individuals familiar with the Work Site, collection of data that may evidence disparities, investigation of complaints by an individual familiar with the Work Site, or other evidence. If risks or circumstances that may merit a remedy are discovered, PC will notify and collaborate with the prime Contractor to discuss appropriate remedies</p>

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		<p>and may likewise notify subcontractors and appropriate unions when necessary for the resolution of the situation, except when unusual circumstances require confidentiality. PC may also require other remedies such as those found in Section 1-08.1(3), if PC regards the situation as urgent, of potential harm, or without timely resolution.</p> <p>This Section is for the benefit of the Owner and its interest in the Project. It does not create any third-party beneficiaries or form the basis of any action against the Owner by a third party.</p>
1-07.16(3)	<p>FENCES MAILBOXES, AND MISCELLANEOUS ITEMS</p> <p>Note: also see changes to Section 1-07.28 item 15</p>	<p>Replace the second paragraph with the following:</p> <p>The Contractor must comply with all requirements of the U.S. Postal Service for maintenance and relocation of postal service, collection, and mail receptacles. Where U.S. Postal Service Structures need to be temporarily relocated, the Contractor must make the notification specified in Section 1-07.28. Information to be provided to the Post Office includes the Location I.D. Number included on the box label or, if no label, the street location; date needed for temporary relocation, and approximate date the area impacted by construction will be completed. All U.S. Postal Service Structure relocation must be done by the Contractor once written permission has been granted by the U.S. Post Office. Do not impair access to existing or temporarily relocated postal Structures. Upon completion of the Work which required the relocation of mail receptacles, the Contractor must notify the U.S. Postal Service in writing that the box has been reinstalled to the original location.</p>
1-07.16(4)	SEATTLE MONORAIL	<p>Replace this Section with the following:</p> <p>Adjacent to the Seattle Monorail columns, excavation is restricted within the zone measured at street level, 5.5 ft. from the center of each column face, perpendicular to the column face, forming a rectangle around the column and extending outward and downward at 45 degrees.</p> <p>Any Work to be performed in or near the restricted area must have prior written approval from the Seattle Center director, or the Seattle Center director's designated representative. Excavations in the restricted area may be possible provided a professional engineer designs a site-specific support system and the Seattle Center provides written approval. All excavations must be monitored to assure column footing stability.</p> <p>At or above grade: The piers above ground level must not be moved, nor can any items such as lighting or signage be attached to the piers without prior written approval from the Seattle Center director, or the Seattle Center director's designated representative. Monorail piers must not be painted. Landscaping must not occur adjacent to piers or within 10 feet of a Monorail structure without prior written consent of the Seattle Center director, or the Seattle Center director's designated representative.</p> <p>Any construction activity in the area of the power rails must comply with OSHA and WISHA guidelines and must comply with WAC 296.45 for working around high voltage.</p> <p>Construction equipment must remain outside the 14-foot operational envelope from each side of the beam at all times except for permitted work windows when prior written approval is provided by the Seattle Monorail facilities at least 15 Working Days in advance of the work.</p> <p>Contractors must employ spotters and must provide a method to delineate the operational envelope when any construction activity occurs within 25 feet of the beams.</p> <p>For additional information, please review the Monorail Proximity Guidelines and Requirements for Development Adjacent to City of Seattle Monorail Line: https://www.seattlemonorail.com/working-near-the-monorail/ For notification requirement contact information for work adjacent to Seattle Monorail facilities or the restricted areas described above, see Section 1-07.28, item 5.</p>
1-07.16(5)	PAYMENT	<p>Re-number the Payment Section as Section 1-07.16(6) and insert New Section 1-07.16(5) Waterfront Park as follows:</p> <p>1-07.16(5) WATERFRONT PARK</p> <p>Waterfront Park, as established in Ordinance 126444, includes specialty high-end finishes, and critical structures such as the Elliott Bay Seawall, Overlook Walk and other structures. Work within or abutting Waterfront Park must be reviewed and approved by both the Seattle Department of Parks and Recreation and Seattle Department of Transportation. Below are key restrictions:</p> <ol style="list-style-type: none"> 1. Construction within 40 feet of waters edge (Mean Sea Level per Standard Plan 001a) along the entire length of the Waterfront Park requires prior written approval from the Seattle Department of Transportation via a Street Use Permit. 2. No equipment, Supplies, or appurtenances are permitted on the sidewalk with embedded glass. 3. Excavations in the restricted area may require a professional engineer to design a site-specific plan limiting excavation volumes and mass balancing the 15-ft cantilevered sidewalk where required.

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		<ol style="list-style-type: none"> 4. Excavations may require a vibration and settlement monitoring plan to be submitted as part of the Street Use Permit approval process. 5. All finishes must be restored in kind. 6. Surface mounted appurtenances including, but not limited to, lighting and / or signage cannot be attached to any element of the public Right-of-Way without prior written approval from SPR and SDOT. 7. Contractors must delineate the work zone and follow the requirements of Section 1-10. 8. Work within Waterfront Park requires notification per Section 1 07.28, Item 2, f.
1-07.17(1)	GENERAL	<p>Replace the SDCI website in the 6th paragraph with the following:</p> <p>https://maps.seattle.gov/sideseewercardviewer/</p>
1-07.17(1)	GENERAL	<p>Replace the fifth paragraph with the following:</p> <p>The Contractor may encounter side Sewers during Work operations. Side Sewers typically extend from a tee or wye connection on a Sewer or Storm Drain to a property. Beyond the property line, the side Sewer may be a single pipe or may branch into multiple pipes. Up to date plats of as-built side Sewer constructions are maintained by the SPU geographic information systems (GIS) staff. GIS mapping is available online at https://www.seattle.gov/utilities/construction-resources/water-and-sewer-map, http://web1.seattle.gov/dpd/sideseewercardsv2/ or by e-mail request: sidesewerinfo@seattle.gov. It is the Contractor's responsibility to locate and protect these existing side Sewers.</p>
1-07.23(2)	PEDESTRIAN CONTROLL AND PROTECTION	<p>Change "2009 MUTCD" to "11th Edition MUTCD"</p>
1-07.28	NOTIFICATIONS RELATIVE TO CONTRACTOR'S ACTIVITIES	<p>In item 2, insert the new sub-item f. as follows:</p> <ol style="list-style-type: none"> f. To request a partial or complete closure of east and/or west side sidewalks from the boundary of Waterfront Park to the edge of the water provide at least 10 Working Days advance notice to Seattle Department of Transportation at (206) 684-7623 and Seattle Department of Parks and Recreation at (206) 684-4075 Monday to Friday 8:00 a.m. to 5:00 p.m.
1-07.28	NOTIFICATIONS RELATIVE TO CONTRACTOR'S ACTIVITIES	<p>Replace item 3. with the following:</p> <ol style="list-style-type: none"> 3. City of Seattle - Signage, Parking Pay Stations, Parking Meters: <ol style="list-style-type: none"> a. Parking Meters, Parking Pay Stations, and sidewalk containing parking or loading signs, posts, and numbered base plates: 10 Working Days advance notice is required for the following: <ol style="list-style-type: none"> 1) To request covering of parking meters and placing no parking markers on numbered base plates where parking pay stations exist, contact (206) 684-5086. Also see Section 1-10.3(3)N. 2) To request removal of parking meters, parking pay stations, and sidewalk containing parking or loading signs, posts, and numbered base plate, contact (206) 684-8175. Also see Section 2-02.3(3)F. 3) After completion and acceptance of newly constructed sidewalk, to request installation of parking pay station, parking or loading signage, and numbered base plates, contact (206) 684-8175. 4) The Contractor must reimburse SDOT for lost parking revenue unless this is an SDOT Project.
1-07.28	NOTIFICATIONS RELATIVE TO CONTRACTOR'S ACTIVITIES	<p>Replace item 5 with the following:</p> <p>Seattle Monorail: When work is within 25 feet of any portion of the monorail structure above or below ground, there are two notification requirements.</p> <ol style="list-style-type: none"> 1. Email review@seattlemonorail.com to obtain prior written approval per Section 1-07.16(4).

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	Note: also see changes to Section 1-07.16(3)	<p>2. Email coordinate@seattlemonorail.com at least fifteen (15) Working Days in advance of construction to schedule a safe and mutually agreed upon time for the performance of the work.</p> <p>For emergencies only: Contact the Seattle Monorail Services On-Duty Operations Supervisor at (206) 396-5009.</p>
1-07.28	<p>NOTIFICATIONS RELATIVE TO CONTRACTOR'S ACTIVITIES</p> <p>Note: also see changes to Section 1-07.16(3)</p>	<p>Replace item 15 with the following:</p> <p>15.U.S. Postal Service Collection Boxes, Mail Receptacles, and other structures: the Contractor must receive written permission from the local U.S. Post Office to relocate a Collection Box, Mail Receptacle or structure. The U.S. Postal Service recommends contacting them at least 7 Calendar Days in advance for approval for the Contractor to relocate a Collection Box, Mail Receptacle or other U.S. Postal structure. See Section 1-07.16(3).</p>
1-07.28	NOTIFICATIONS RELATIVE TO CONTRACTOR'S ACTIVITIES	<p>Changed the link in Item 17. to the following: https://dnr.wa.gov/sites/default/files/2025-03/eng_plso_permit_application.pdf</p>
1-08.1(2)A	PRECONSTRUCTION CONFERENCE	<p>Replace this Section with the following:</p> <p>After the Contract has been Executed, but before the Contractor starts Work, a preconstruction conference will be held for the Contractor, the Engineer and such other interested parties as may be invited.</p> <p>The purpose of the preconstruction conference will be:</p> <ol style="list-style-type: none"> 1. To review the preliminary critical path schedule indicating major work activities including the order and duration of work activities, milestones and time frames required in the Contract, and the critical path. 2. To establish a working understanding among the various parties affected by the Work. 3. To establish and review procedures for items including but not limited to progress estimates and cut-off Dates, notifications, approvals, reviews, and submittal delivery methods. 4. To establish normal working hours for the Work. 5. To review safety standards, traffic control, and maintaining cleanliness. 6. To review the Construction Stormwater Pollution Prevention Submittal requirements and leads specified in Sections 1-05.13, 1-07.5, 1-07.15, and Section 8-01 and related permits, as applicable. 7. To review Material sources as may be applicable. 8. To discuss such other related items as may be pertinent to the work. <p>See Section 1-05.3(5) for submittals due at the preconstruction conference.</p>
1-08.3(1)B3	CPM SCHEDULE UPDATE	<p>Replace Item 2. a. with the following:</p> <p>a. Schedule updates must be presented in a Tracking Gantt format, showing 2 sets of Gantt-style progress bars consisting of 1) the latest accepted baseline CPM schedule versus 2) a combination of the actual start/finish progress of completed tasks and projected start/finish Dates of uncompleted tasks.</p>
1-09.1	MEASUREMENT OF QUANTITIES	<p>Delete the reference to AASHTO M 32 in item b) Gauge and replace with the following:</p> <p>; and in the measurement of wire as specified in AASHTO M 336 and ASTM A 1064.</p>

Section # or Plan #	Current Title	Text				
	Note: also see changes to Section 9-07					
1-09.9(4)A	REQUEST FOR CONTRACT COMPLETION DATE	<p>Replace the first paragraph and item #1 with the following:</p> <p>The Engineer will submit an acceptance package with supporting documents to PC after the Physical Completion Date and after all obligations, including disputes and settlements, of the Contract except retainage release have been completed. In order for PC to declare the project complete, PC requires the following:</p> <ol style="list-style-type: none"> 1. Documents that all Work is completed: <ol style="list-style-type: none"> a. The State Notice of Completion (NOC) of Public Works Contract form (LNI form F215-038-000) filled out electronically by the administering department with as much information as possible (PC will submit the form); b. NTP, Substantial, and Physical Completion Notices with Dates; c. All Change Orders; d. All calculations of Liquidated Damages; e. All claims under Section 1-04.4 resolved and the Final Contract Price set; f. All permit conditions completed; g. The Contractor Performance Evaluation is completed for all applicable projects; and h. Evidence that all other requirements of the Work are met. 				
1-10.1(2)	MATERIALS	<p>Supplement the table with the following:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Temporary Pedestrian Curb Ramps</td> <td style="text-align: right;">9-38.16</td> </tr> <tr> <td>Pedestrian Channelizing Devices</td> <td style="text-align: right;">9-38.17</td> </tr> </table>	Temporary Pedestrian Curb Ramps	9-38.16	Pedestrian Channelizing Devices	9-38.17
Temporary Pedestrian Curb Ramps	9-38.16					
Pedestrian Channelizing Devices	9-38.17					
1-10.2(5)C	GENERAL TRAFFIC CONTROL RESTRICTIONS	<p>Replace the last paragraph with the following:</p> <p>The Contractor must discontinue Work if a conflict exists with special events such as parades, sporting events, miscellaneous rallies, and large public meetings or with seasonal conditions, such as the Holiday Construction Moratorium. Information concerning such events can be obtained by emailing: dot_events@seattle.gov.</p>				
1-10.3(1)C	TRAFFIC CONTROL PEACE OFFICERS	<p>Replace this Section with the following:</p> <p>Only use an off-duty uniformed peace officer as a flagger to:</p> <ol style="list-style-type: none"> 1. Countermand a traffic signal indication at a signalized intersection. 2. Direct vehicle and pedestrian traffic when a traffic signal indication is turned off or inoperative. 3. Perform flagging duties <u>outside of the required uses in items 1 or 2 above only if it is determined by the Engineer that such work would present an extenuating safety risk if not performed by personnel who are Uniformed Peace Officers. Such use of Uniformed Peace Officers must be specified in the accepted traffic control plan. when and where specified in the accepted traffic control plan or elsewhere in the Contract.</u> 4. If flagging duties indicated exclude the required uses in item 1, or and 2 or 3 above, or any combination of the above, then the Engineer will may direct the Contractor to stop use of the Uniformed Peace Officer before the next Working Day. <p>For new traffic signal Work, officers are also required. as specified in Section 8-31.3(1)A. The off-duty uniformed peace officer must be provided by the Contractor. On the next Working Day, the Contractor must submit to the Engineer a copy of the daily timecard for Traffic Control Peace Officers showing the hours actually worked.</p>				

Section # or Plan #	Current Title	Text
1-10.3(3)L	PAINT LINES AND LEGENDS	<p>Replace this Section with the following:</p> <p>Temporary pavement markings must be provided for all lane shifts resulting from construction activities, or when permanent markings are removed because of construction operations. Temporary pavement markings must be maintained in serviceable condition and removed only on installation of permanent traffic channelization. When lane shifts resulting from construction activities will be in place for more than 15 Calendar days, temporary centerline striping and temporary dashed lane line striping must be installed.</p> <p>Temporary centerline striping must consist of placing yellow strips of pressure sensitive pavement marking tape or temporary paint at 15-foot intervals along the centerline. Temporary markings s-tape must be placed in sets of two 36-inch strips of yellow 4-inch wide markings s-tape set 16 inches apart and parallel to the center line with each set of 3-foot double line spaced every 15 feet along the center line of the roadway, or the equivalent surface area in yellow temporary lane markers.</p> <p>Temporary dashed lane line striping must consist of placing white strips of pressure sensitive pavement marking tape or temporary paint at 15-foot intervals along the dashed lane lines, separating multiple lanes of traffic moving in the same direction. Temporary markings s-tape must be placed in 36" strips of white 4- inch wide marking spaced every 15 feet along the lane lines, or the equivalent surface area in white temporary lane markers.</p> <p>Temporary stop bars must conform to the dimensions and location requirements provided in Standard Plan 712. Stop bars may consist of parallel adjacent 4-inch strips of temporary pavement marking tape.</p> <p>When permanent green pavement markings are temporarily removed during construction, and the temporary traffic control plans require the bike lanes to remain operational in the same location, install temporary skip lines for the outer edge of the bike lane or cross-bike using the same skip pattern of the permanent markings as provided in Standard Plans 780 and 781. Infilling with green markings is not required.</p> <p>Temporary crosswalks must be "ladder style" conforming to the dimensions and placement requirements in Standard Plan 712. Crosswalks may consist of parallel adjacent 4-inch strips of temporary pavement marking tape.</p> <p>Temporary symbols and legends must conform to the dimensions of permanent installations as provided in the 700 series Standard Plans using white temporary marking tape or approved traffic paint with reflectivity.</p> <p>Pressure-sensitive pavement marking tape or temporary paint used on the wearing course before installation of permanent lane markers, traffic buttons, or permanent paint striping must be removed from the pavement current with, or immediately after, the installation of permanent pavement markings.</p> <p>Temporary pavement markings must be maintained in serviceable condition by the Contractor for the duration of time it is in use. The Contractor must lay out temporary markings for the permanent marking application and, after installation of the permanent markings, must remove the temporary striping.</p> <p>Temporary pavement marking tape and paint must comply with Section 9-29. Damage to the pavement resulting from removal of temporary pavement marking, including the use of high heat sources, must be repaired by the Contractor at no expense to the Owner.</p>
2-02.3(3)F	REMOVE SIDEWALK	<p>Delete the second and third paragraphs.</p>
2-02.3(3)J	REMOVE PAVEMENT MARKING	<p>Replace the first sentence with the following:</p> <p>Pavement paint and plastic stripes and markings, traffic buttons, and lane markers to be removed, as described in the Contract, must be obliterated until blemishes caused by pavement marking removal conform to the coloration of the adjacent pavement.</p>
2-02.3(3)K	REMOVE SIGN AND POST	<p>Delete the first Paragraph in this Section and replace it with the following:</p> <p>Unless the Contract specifies otherwise, SDOT is responsible for removal of parking pay stations, D-22 signage ("Pay L", "Pay R", "Pay H", and "Pay LR" signs and posts) and numbered base plates, and parking meters. KCM is responsible for removal of bus stop signs. Advance notification is required to coordinate work by others. The Contractor must also provide notification in advance of removing any parking or loading zone sign called out for removal by the Contractor. See Section 1-07.28 for notification requirements.</p>
2-02.3(3)K		<p>Insert the following between the first and second paragraphs of this Section:</p> <p>The Contractor must also provide notification per Section 1-07.28 in advance of removing any parking or loading zone sign called out for removal by the Contractor.</p>

Section # or Plan #	Current Title	Text
2-02.3(7)C	ILLUMINATION, SIGNALS, ELECTRICAL AND SIGNS	<p>Replace the second paragraph with the following:</p> <p>The Contractor must deliver items 1 through 4 to City Light South Service Center at Fourth Avenue South and South Spokane Street. Call (206) 386 1707 before delivery of wood poles, metal poles, high pressure sodium, induction and LED luminaires, lamps, photoelectric cells, and aluminum bracket arms.</p>
2-02.4	MEASUREMENT	<p>Replace the 7th and 8th paragraphs with the following:</p> <p>"Remove Paint Striping" and "Remove Plastic Striping" is measured by the actual linear foot. Unpainted skips in pavement marking removal, and removal of traffic buttons and lane marker incidental to pavement marking removal, will not be measured.</p> <p>"Remove Paint Legend/Symbol" and "Remove Plastic Legend/Symbol" is measured per each.</p>
2-02.5	PAYMENT	<p>Replace the paragraph regarding traffic sign posts under item 4 with the following:</p> <p>Payment for removal of sign posts includes all costs for the removal of the post, sign(s), mounting hardware and restoration of the surface where sign posts were removed. No separate payment will be made for removal and salvage of signs from a removed post that is paid as "Remove Post, (Description)".</p> <p>Replace the paragraph regarding pavement marking removal under item 4 with the following:</p> <p>The Bid item price for "Remove Paint Striping", "Remove Plastic Striping", "Remove Paint Legend/Symbol" and "Remove Plastic Legend/Symbol" includes all costs for the work required to remove and dispose of pavement marking including traffic buttons and lane markers. Pavement materially damaged by Contractor removal methods requiring restoration of the damaged pavement will be at the sole expense of the Contractor and no separate or additional payment will be made. No payment will be made for removal of pavement marking when the underlying pavement is removed.</p> <p>Add the following after the last paragraph under item 4.</p> <p>Required sawcutting on the perimeter of sidewalk removal is paid as "Sawcut Asphalt Concrete, Full Depth" or "Sawcut Cement Concrete Sidewalk, Full Depth." All other sawcutting associated with removal of sidewalk is considered incidental to the removal Bid Item. Sidewalk removal areas are shown on the Drawings or directed by the Engineer. Adjacent sidewalk removal areas are considered 1 area regardless of the method of Work.</p>
5-04.3(10)B1	GRINDING CONCRETE FOR BUTT JOINTS	<p>Add the following NEW Section:</p> <p>Grinding concrete for butt joints must be accomplished with abrasive grinding equipment utilizing diamond cutting blades. The equipment must be self-propelled machinery specifically designed for grinding Portland cement concrete pavement. The equipment must be such that it doesn't strain or damage the underlying pavement that is to remain. The grinder must have depth control allowing for accurately cutting to specified depth and for making wedge cuts necessary for butt joints. The equipment must be capable of cutting or planing up to 3 feet in width on one pass.</p> <p>Residue from grinding operations must be picked up by means of a vacuum attachment to the grinding machine and any slurry must not be allowed to flow across the pavement or left on the pavement. Pavement must be left in a washed clean condition, free of all slipperiness from slurry. Grindings and slurry must become the property of the Contractor and disposed of in accordance with Section 1-07.3.</p> <p>Grinding must not produce a smooth or polished surface. The blades utilized for grinding must provide a rough surface to achieve an acceptable bond between cement concrete and asphalt pavement.</p>
5-04.4	MEASUREMENT	<p>Add the following to the end of this Section:</p> <p>Measurement of "Cement Concrete Grinding for Butt Joint, 0-2-inch Depth" will be by the square yard, based on the actual width and length of the grind.</p>

Section # or Plan #	Current Title	Text
5-04.5	PAYMENT	<p>Add the following immediately after item 10. and before remaining paragraphs:</p> <p>12. "Cement Concrete Grinding for Butt Joint, 0-2-inch Depth", per square yard</p> <p>The Bid item price for "Cement Concrete Grinding for Butt Joint, 0-2-inch Depth" is full payment for all costs to complete the work. Costs for grinding, removing and disposing of grindings and slurry and cleaning pavement of all slurry are included in the unit cost of the work.</p>
5-05.3(8)	JOINTS - ROADWAY	<p>Replace the last paragraph with the following:</p> <p>Where called for on the Drawings or directed by the Engineer, the vertical face of the joint between new cement concrete base pavement and existing cement concrete pavement must be covered with a bond breaking Material such as polyethylene film, roofing paper, or other Materials approved by the Engineer.</p>
5-05.3(8)A4	WEAKENED PLANE CONTRACTION JOINTS (BASE ONLY)	<p>Replace the first sentence of the first paragraph with the following:</p> <p>A weakened plane must be made in the plastic concrete to match existing joints or cracks as designated by the Engineer or as shown on the Drawings and Standard Plans.</p> <p>Replace the first sentence of the second paragraph with the following:</p> <p>The plane must be weakened with a joint cutter to a minimum depth of 1/3 to 1/2 depth of base pavement. Bulging caused by the joint cutter must be corrected by floating.</p>
5-05.3(8)B	CONSTRUCTION JOINTS	<p>Replace the third paragraph with the following:</p> <p>Except for base paving, all transverse and longitudinal construction joints, including the joint between new and existing pavement when widened must be formed and sealed with a 3/8-inch thick premolded joint filler as specified in Section 9-04.1(1) or as shown on the Drawings or Standard Plans.</p>
5-05.3(8)E1	TRANSVERSE JOINTS	<p>Replace the last sentence in the fifth paragraph with the following:</p> <p>In the event uncontrolled cracks in the existing lane are too frequent or in random locations and impossible to match with a uniform spacing, the 2 lanes must be completely separated by a longitudinal through joint (for non-base paving) or a bond breaking material (for base paving) when directed by the Engineer.</p>
5-05.3(9)	CASTINGS AND STEEL REINFORCEMENT IN CONCRETE PAVEMENT	<p>Replace the first paragraph and points 1 and 2 with the following:</p> <p>Unless otherwise specified in the Drawings or directed by the Engineer, use reinforcing steel to reinforce cement concrete in rigid pavement around all maintenance hole castings, drainage structures, vaults and monument casings in the roadway. Reinforcing steel not required when the casting crosses or is less than 18 inches from any pavement joint unless otherwise specified in the Drawings or directed by the Engineer.</p> <p>Use one of the following methods of reinforcement:</p> <ol style="list-style-type: none"> 1. Steel Reinforcement (Wire Mesh): Install square or rectangle steel reinforcement around the casting at mid depth of the concrete pavement slab as shown on Standard Plan 406. The centered hole cut for the casting must be cut a minimum of 3 inches to a maximum of 4 inches from the casting at mid depth of the concrete pavement. Wire mesh must be W4.0 with spacing of 4 inches on-center in both the lateral and transverse directions. Wire mesh for concrete reinforcement must conform to the requirements of Section 9-07.7. 2. Steel Reinforcement (Rebar): Install #5 rebar at 12 inches on center each way, around the casting at mid depth of the concrete pavement slab as shown on Standard Plan 406. Rebar must be tied at rebar intersection points as shown. Reinforcing steel must not be within 2-1/2 inches of any cement concrete pavement surfaces or the flange of a casting. Rebar must be as specified in Section 9-07.2.

Section # or Plan #	Current Title	Text
		Delete the second paragraph.
5-05.3(10)A	"NEW TO EXISTING" JOINTS – TIE-BARS AND DOWELS	<p>Replace the second paragraph with the following:</p> <p>Tie bars are not required when the existing pavement is less than 8 inches thick. Dowel bars are not required when the existing pavement is 8 inches or less in thickness. Tie bars or dowels are not required when indicated on the Drawings or when the Engineer determines the existing concrete to be incompetent.</p>
5-05.3(13)A	CURING COMPOUND	<p>Replace the first paragraph with the following:</p> <p>Liquid membrane-forming concrete curing compound Type 2 meeting the requirements of Section 9-23.2 must be applied to the entire area of the exposed surface of the concrete with an approved mechanical spray machine. The spray fog must be protected from the wind with an adequate shield. It Curing compound must be applied uniformly in two coats at the rate of 1 gallon to not more than 150 square feet for the combined total of both coats. Apply the second coat approximately at right angles to the direction of application of the first coat. Coat the surfaces in contact with forms immediately after the forms are removed. Reapply the curing compound after removing surface imperfections with a carborundum brick or cleaning the slurry from sawn decorative scoring.</p> <p>Replace the fifth paragraph with the following:</p> <p>Before placing the curing compound in the spray tank, it must be thoroughly agitated as recommended by the Manufacturer, and the curing compound must be properly mixed and ready for spraying. Do not dilute the compound by adding solvents, or alter it in any manner. If the compound has become chilled to the extent that it is too viscous for proper stirring or application or if portions of the vehicle have been precipitated from solution, it must be heated to restore proper fluidity but not above 100 °F or manufacturer's recommendations. All curing compound must have been accepted in accordance to Section 1- 05.3 before placing in the spray tanks.</p> <p>Replace the sixth paragraph with the following:</p> <p>The curing compound must be applied immediately after the concrete has been finished and after any bleed water that has collected on the surface has disappeared, or at a time designated by the Engineer. The compound must form a uniform, continuous, coherent film that will not check, crack, or peel and must be free from pinholes or other imperfections. If pinholes, abrasion, or other discontinuities exist, apply an additional coat to the affected areas within 30 minutes.</p> <p>If hairline cracking develops in the pavement before finishing is completed, the Engineer may direct the application of the curing compound at an earlier stage, in which event any concrete cut from the surface in finishing operations must be removed entirely from the pavement. If additional mortar is then needed to fill torn areas, it must be obtained ahead of the spraying operations. All areas cut by finishing tools after the application of the curing compound must immediately be given new applications at the rate specified above.</p>
5-05.4	MEASUREMENT	<p>Replace the second and third paragraphs following points 1. and 2. with the following:</p> <p>If Bid Item is included in the Bid Form, dowel bar will be measured per each for the actual number of bars used in the completed Work, otherwise, no measurement will be made.</p> <p>If Bid Item is included in the Bid Form, Tie bar with drill hole will be measured per each for the actual number of bars used in the completed Work, otherwise no measurement will be made.</p>
5-05.5	PAYMENT	<p>Replace the 2nd sentence of item 8. with the following:</p> <p>If no Bid Items for "Dowel Bar" and "Tie Bar with Drill Hole" are included in the Bid Form this work is included in the unit Contract price per square yard for "Roadway Cement Concrete".</p>

Section # or Plan #	Current Title	Text
6-02.3(6)E	TOLERANCES	<p>Supplement this Section with the following:</p> <p>Bridge deck, bridge approach slab, and bridge traffic barrier expansion joint gaps with a specified temperature range, measured at a stable temperature: ±0.25 inch.</p> <p>Horizontal deviation of centerline of bearing pad, oak block or other bearing assembly: ±0.125 inch.</p> <p>Horizontal deviation of centerline of supported element from centerline of bearing pad, oak block or other bearing assembly: ±0.25 inch.</p> <p>Vertical deviation of top of bearing pad, oak block or other bearing assembly: ±0.125 inch.</p>
7-08.5	PAYMENT	<p>Add the following to item 7. Other Payment Information:</p> <p>All costs for the work required to furnish and install Polyethylene Foam between utilities must be included in the applicable Bid Item price for pipe.</p>
7-11-1	DESCRIPTION	<p>Supplement the end of this Section with the following:</p> <p>Work will also include assisting SPU Water Operations with the cut, cap, and blocking of existing Water Mains; temporary and permanent Water Main connections - including the furnishing of pipe materials, fittings, and valves for these connections; and temporary and permanent water services connection transfers.</p>
7-11.3(2)C	HANDLING HIGH-DENSITY POLYETHYLENE (HDPE) PIPE	<p>Add the following NEW Section:</p> <p>7-11.3(2)C HANDLING HIGH-DENSITY POLYETHYLENE (HDPE) PIPE</p> <p>HDPE pressure pipe must be handled in accordance with the manufacturer's recommendations and per AWWA M55, AWWA C906, and ASTM D2774. Cut out and remove sections of pipe with cuts or gouges in excess of 10 percent of the pipe wall thickness. Rejoin the undamaged portions of the pipe using heat fusion joining.</p>
7-11.3(3)	CUTTING PIPE	<p>Supplement the end of this Section with the following:</p> <p>Cut HDPE pipe per the pipe manufacturer's recommendations. The Contractor must submit method for cutting pipe at least 10 Working Days in advance of installation, including a manufacturer's certificate of compliance stating the cutting process does not adversely impact the pipe material or integrity of the joint.</p>
7-11.3(4)D1	INSTALLING HDPE PIPE ON CURVES	<p>Add the following NEW Section:</p> <p>7-11.3(4)D1 INSTALLING HDPE PIPE ON CURVES</p> <p>Install HDPE pipe as shown on the Drawings and per the Line Layout Plan as specified in Section 7-11.3(6)F1.</p> <p>For HDPE pipe shown curved, either horizontal or vertical, on the Drawings and no special fittings are indicated, the Contractor may cold (field) bend the pipe if the following conditions are met:</p> <ol style="list-style-type: none"> 1. Minimum, long-term cold bending radius per AWWA M55 (based on the pipe's dimension ratio and outside diameter) and pipe manufacturer's recommendations is achieved. Submit to the Engineer the pipe manufacturer's minimum bending radius recommendations indicating minimum bend radius is within allowable AWWA limits and for the ambient air temperatures anticipated during install. 2. Minimum cover as specified in Section 7-11.3(4)C and utility vertical and horizontal separation requirements as specified in Section 1-07.17(2) are maintained.

Section # or Plan #	Current Title	Text
		<p>3. Line and grade for all tangent sections are maintained.</p> <p>If fittings, electrofusion couplings, or connections are present in the bend, then the minimum cold radius must be at a minimum 100 times the outside diameter of the pipe or per the pipe manufacturer's recommendations, whichever is greater. Cold temperatures increase the energy required to bend HDPE. Effective minimum radius of cold-bending may exceed 70 times the diameter during cold weather. Include the consideration of HDPE material property changes, due to cold or hot temperatures, in construction scheduling decisions and construction resource planning.</p> <p>If the conditions for field bending cannot be met, or, where indicated on the Drawings, fittings must be installed.</p>
7-11.3(6)A	INSTALLING AND JOINTING UCLTILE IRON PIPE AND APPURTENANCES	<p>Supplement the end of this Section with the following:</p> <p>At transitions between ductile iron pipe and mechanical joint fittings, wedge restraint glands must be used to restrain mechanical joint fittings.</p>
7-11.3(6)F	INSTALLING AND JOINTING OF HDPE PIPE AND APPURTENANCES	<p>Add the following NEW Sections:</p> <p>7-11.3(6)F INSTALLING AND JOINING OF HDPE PIPE AND APPURTENANCES</p> <p>Install HDPE pipe in accordance with the pipe and fitting manufacturer's recommendations, AWWA M55, ASTM D2774, and as specified herein. HDPE pipe joining methods used must be per the pipe and fitting manufacturer's recommendations.</p> <ol style="list-style-type: none"> 1. Ensure kinking or bending of the pipe in excess of the minimum allowable bend radius of the pipe does not occur during the installation process. 2. Laterally support the pipe upon placement in the trench to meet dimensional requirements, as shown on Drawings, for placement of pipe bedding Material on both sides and under the haunches of the pipe. 3. Utilize occasional sand bags (which may be left in the finished backfill), pre-placement of pipe bedding Material, or other approved separation method, to separate pipe from the trench wall around curves and to control snaking of the pipe prior to backfill. 4. Control pipe temperature prior to and during installation to avoid undesired pipe movement following backfill. <p>7-11.3(6)F1 PROJECT FIELD MANUAL FOR HDPE PIPE</p> <p>Submit the Installer's Project Field Manual, which must include:</p> <ol style="list-style-type: none"> 1. All equipment and O&M instructions for fusion technicians for all fusion operations required, including but not limited to the following: <ol style="list-style-type: none"> a. Field Operating Instructions: Simplified, "need-to-know" information, organized step-wise, and customized for the project. Field operating instructions may be supplemented by, but not replaced with, industry or manufacturer reference documents. b. Butt fusion equipment O&M instructions. c. Electrofusion fitting or coupling equipment O&M instructions, where electrofusion fittings or couplings are proposed and approved by the Engineer. d. Flanged adapter equipment O&M instructions, where flanged adapters are proposed and approved by the Engineer. e. O&M instructions for on-site McElroy (or approved equal) Guided Side Bend Tester equipment and procedures for performing the side bend test. 2. Methods for pipe delivery, storage, staging, and installation, including handling and support information, details, and descriptions which indicate the type, number, and other pertinent details of the slings, strutting, and other methods proposed for pipe support and handling during transport and installation. 3. Methods for environmental controls (wind, dust, precipitation, heat, cold) for fusion operations, and pipe storage and installation. 4. Detailed layout of staging area for typical fusion equipment set-up and pipe layout. 5. Methods for pipe defect identification and measurement, including methods and equipment for removal and repair per the pipe manufacturer's recommendation. 6. Identify equipment to be used for welding. Equipment used for welding must include a continuous data logger that records the plate temperature, pressure applied, and a graphic representation of the fusion cycle. 7. Welding procedure specifications, adapted for each fusion machine utilized, including but not limited to the following information: <ol style="list-style-type: none"> a. Clarify distinction between interfacial pressure, drag pressure, heat pressure, fusion pressure, and gauge pressure.

Section # or Plan #	Current Title	Text
		<ul style="list-style-type: none"> b. Measure of actual drag pressure in-situ. c. Pipe mounting and clamping. d. Pipe and equipment cleaning. e. Joint facing. f. Alignment tolerances, angular and horizontal. g. Setup and use of Continuous Data Logger. h. Heating element temperature. i. Shifting sequence for fusion machine. j. Identification of initial bead-up. k. Proper heating pressure following bead-up (drag pressure). l. Minimum heat soak time. m. Special procedures for fusing non-equal thickness pipe ends. n. Acceptable appearance of heated ends. o. Maximum lag time between heating and fusion. p. Calculated fusion gauge pressure for each wall thickness. q. Graphic and dimensional descriptions of acceptable joint beads. r. Joint identification stamp (initials and joint number) and large marking with metallic pen for visibility. s. Cooling time and handling instructions following joining. t. Procedure for removing defective joints. u. Download, processing, and analysis instructions of Data Logger records. <p>8. Forms for field quality control records, including but not limited to:</p> <ul style="list-style-type: none"> a. Equipment maintenance check lists. Equipment must be maintained and calibrated per manufacturer's requirements and recommendations. Submit manufacturer's recommendations for equipment maintenance. b. Butt Joint Acceptance Checklist for Engineer to complete c. Electrofusion Joint Acceptance Checklist, where proposed and approved by the Engineer, for Engineer to complete. d. Flanged Joint Acceptance Checklist, where proposed and approved by the Engineer, for Engineer to complete. Submit flanged adapter and gasket manufacturer's recommendations for flange bolting and installation procedures, including the maximum allowable torque that can be applied and the anticipated compressive loads from the flange assembly that are needed to hold gaskets in place. Indicate the procedures for "retorque" if applicable. e. Data Logger Records for each installed joint. f. Joint map, station location of each installed joint. <p>7-11.3(6)F2 HDPE PIPE LINE LAYOUT DRAWINGS</p> <p>Submit a HDPE Pipe Line Layout Plan to the Engineer at least 20 Working Days before pipe installation. The Pipe Line Layout Plan must include the following:</p> <ul style="list-style-type: none"> 1. Designation or serial number of pipe section and fitting and manufacturer's recommended joining methods. Include unique piece number for each molded or fabricated fitting, special, outlet, or any joint with the exception of standard in-line butt fusion joints between straight pipe segments. <ul style="list-style-type: none"> a. Product details of molded or fabricated fittings must include its designation or serial number information for easy comparison between the Line Layout Plan and the product detail. 2. Drawings indicating the location and details of temporary bulkheads for hydrostatic leakage testing of the pipeline, and details for the removal of the test bulkheads and closure of the finished pipeline. 3. Pipe station and elevation of each pipe section laid. Elevation must be indicated at invert elevation for pipe. 4. Invert elevations of pipeline crossings, including diameters. 5. Invert elevations of connections to existing Water Main. 6. Elements of curves and bends, both in horizontal and vertical alignment, including elements of the resultant true angular deflections in cases of combined curvature. Include information that verifies minimum requirements as specified per this Section for cold (field) bending are met. 7. Details and locations of closures for length adjustment and for construction convenience. 8. Temporary restraint system for pipe to perform field bending, if proposed by the Contractor.

Section # or Plan #	Current Title	Text
		<p>7-11.3(6)F3 HDPE JOINTS</p> <p>Unless otherwise indicated, butt fusion connections are the only joining method for all HDPE pipe and fittings.</p> <p>Electrofusion is acceptable only if specifically approved in writing by the Engineer. Flanged connections are acceptable joining methods for HDPE fittings to other pipe materials. Each fusion joint must be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine that must register and/or record the parameters required by the manufacturer and these specifications.</p> <ol style="list-style-type: none"> 1. Butt Fusion: <ol style="list-style-type: none"> a. Use procedures outlined in ASTM F2620 and perform in accordance with the pipe manufacturer's recommendations. Inspect and test butt fusion joints in accordance with joint field inspection and quality control requirements as specified in Section 7-11.3(6)F4. b. The pipe manufacturer must be consulted to obtain machinery and expertise for the joining by butt fusion of HDPE pipe and fittings. c. Personnel joining HDPE pipe or fittings by butt fusion must meet the qualification requirements as specified in Section 7-11.3(6)F5 for hands on training of fusion procedures per ASTM F2620. d. Perform butt fusion between pipe ends, or pipe ends and fittings that have the same outside diameter and are not different in wall thickness by more than one standard dimension ratio (SDR) step. Make transitions between unlike wall thickness greater than one SDR step with a fabricated transition where the inside pipe diameter has been machined to match the thinner pipe end. 2. Electrofusion, where approved by the Engineer: <ol style="list-style-type: none"> a. Use procedures outlined in ASTM F1290 and perform in accordance with the pipe and coupling manufacturer's recommendations. Inspect and test joints in accordance with joint field inspection and quality control requirements as specified in Section 7-11.3(6)F4. b. Electrofusion fittings and joints must be manufactured and tested in accordance with ASTM F1055 and AWWA C906. c. The pipe and coupling manufacturer must be consulted to obtain machinery and expertise for the joining by electrofusion and HDPE pipe and fittings. d. Personnel joining HDPE pipe or fittings by electrofusion must meet the qualification requirements as specified in Section 7-11.3(6)F5 for hands-on training of electrofusion procedures per ASTM F1290. 3. Flanges, where approved by the Engineer: <ol style="list-style-type: none"> a. Use procedures in accordance with the flange adapter and gasket manufacturer's recommendations and PPI-TN38. Inspect and test joints in accordance with joint field inspection and quality control requirements as specified in Section 7-11.3(6)F3. b. The pipe manufacturer must be consulted to obtain machinery and expertise for the joining of HDPE pipe and fittings by flanges. <p>7-11.3(6)F4 HDPE PIPE JOINT FIELD INSPECTION AND QUALITY CONTROL</p> <p>Provide a minimum of 24-hour notice to Engineer prior to commencing in-field fusion or joining operations and provide a minimum 4-hour notice to Engineer of fusion joints ready for inspection. Do not install fused HDPE pipe in trench prior to review by Engineer.</p> <p>The Engineer may request up to 5 percent of all joints welded in the field be subject to a side bend test per ASTM F3183. Remove and replace disqualified joints at Contractor's expense. For every failed test, the Engineer may request the replacement joint and nearby joints on each side of the failing test be removed for destructive testing.</p> <p>Have at all times onsite a McElroy (or approved equal) Guided Side Bend Tester and supporting equipment with which to perform joint bending tests to qualify joints.</p> <p>The Engineer may disqualify any joint where the fusion procedure deviates from the Contractor's submitted plans, with or without visual or data logger evidence of a defect. The Contractor is responsible for removing and replacing disqualified joints at the Contractor's sole expense.</p> <p>The critical parameters of each fusion joint, as required by the manufacturer and these specifications, must be recorded by an electronic data logging device. All fusion data must be included in a Fusion Technician's Joint Report per ASTM F3124, which shall be prepared and submitted by the Contractor within 2 days after joining. The Fusion Technician's Joint Report shall include the following:</p> <ol style="list-style-type: none"> 1. Fusion Technician identification. 2. Fusion equipment size and identification. 3. Identify the type of joint made for each joint ID (butt fusion, electrofusion, or flanged). 4. Each joint shall be assigned a specific ID and shall be correlated to the data logger of the machine. The joint ID shall be noted on the As-Builts at the joint's final location. 5. The critical parameters of each fusion joint (butt fusion or electrofusion), as required by the manufacturer and this Section, shall be recorded. <p>Data Logger records.</p>

Section # or Plan #	Current Title	Text
		<p>7-11.3(6)F5 HDPE PIPE QUALIFICATIONS</p> <p>See Section 7-11.3(17) for Submittal requirements.</p> <p>In addition to requirements listed elsewhere in the Contract, only qualified personnel, whether by the Contractor or Subcontractor, must be responsible for and perform the proposed joining and installation procedures for HDPE pipe. The Contractor must identify the qualified personnel who will be responsible for performing each joining procedure proposed, and submit the following for each qualified person indicated by the Contractor:</p> <ol style="list-style-type: none"> 1. A record or certificate of training that verifies qualifications for being able to make each type of fusion joint per ASTM F3190, including proof of: <ol style="list-style-type: none"> a. Current and formal training on all fusion equipment utilized on the project. Contractor's personnel joining HDPE pipe by pipe or fitting manufacturer's recommended joining method(s) must be trained and qualified or re-qualified in the pipe or fitting manufacturer's recommended procedures within the last 12 months before commencing construction. Training more than two years prior to operation with no evidence of activity within the past 6 months must not be considered current. b. Classroom and hands-on training of fusion procedures per ASTM F2620 and PPI TN-42 for butt fusion and per ASTM F1290 for electrofusion. c. Minimum 4-hour equipment-specific field training by fusion equipment manufacturer's authorized training specialist.
7-11.3(9)D	TEMPORARY WATER MAINS AND SERVICES	<p>Replace this Section with the following:</p> <p>The Contractor's critical path schedule must allow adequate time for installation and connection of these temporary Water Mains and services. Provide the Engineer a minimum of 10 Working Days advance written notice for scheduling of the temporary Water Main and service work. Temporary Water Mains and Services must be maintained by the Contractor in such a manner as to provide constant, adequate water supply to customers and to avoid impeding traffic and access to abutting properties.</p> <p>Temporary Water Mains and Services must be furnished and installed by the Contractor unless otherwise noted on the Drawings or Project Manual. If work is identified to be completed by SPU Water Operations, the Contractor must support SPU by furnishing pipe and performing all required excavation, backfill, and compaction.</p> <p>All temporary Water Mains must be disinfected, flushed, and sampled for bacteriological testing by the SPU Customer Service / Inspection Services. When found acceptable, the temporary Water Mains will be placed in service per Section 7- 11.3(9)B. Transfer existing Water Services to the Temporary Water Main or Service per Section 7-15.3.</p> <p>The Contractor is solely responsible for maintaining private water service laterals in service. When it is necessary to provide temporary water supply, the Contractor is responsible for providing temporary services on the private side of the water service. Should construction activity damage or disrupt private water service laterals or appurtenances, immediately notify the Engineer of any such damage or disruption. The Contractor must start repairs immediately as directed by the Engineer, and work continuously until the water service lateral is restored.</p>
7-11.5	PAYMENT	<p>Add item i. to the list following item h.:</p> <ol style="list-style-type: none"> i. Costs required for removal and disposal of existing pipe and fittings within trench neat line limits when pipe replacement is called for in the Contract.
7-11.3(10)	LOCATING WIRE AND TRENCH MARKER TAPE	<p>Replace Section 7-11.3(10) LOCATING WIRE with the following NEW title and content:</p> <p>7-11.3(10) LOCATING WIRE AND TRENCH MARKER TAPE</p> <p>7-11.3(10)A LOCATING WIRE</p> <p>Install locating wire 6 inches directly above the centerline of all nonmetallic and non-HDPE pipe, except that the locating wire must be bonded by exothermic welds to all metallic fittings, valves and valve boxes to form an electrically continuous system.</p>

Section # or Plan #	Current Title	Text
		<p>For HDPE pipe, the locating wire must be centered on the pipe as shown on the Drawings. Locating wire must be secured to the crown of the HDPE pipe with 7 mil plastic tape every 5 feet, except the locating wire must be bonded by exothermic welds to all ductile iron fittings and valves to form an electrically continuous system per Standard Plan 362.</p> <p>After all the trench backfill operations are successfully completed and prior to the final paving, the Contractor must perform continuity and trace tests on all tracer wire in the presence of the Engineer. If the tracer wire is found to be not continuous after testing, the Contractor must repair or replace the failed segment of wire.</p> <p>7-11.3(10)B TRENCH MARKER TAPE</p> <p>For pipe installed under paving, install continuous marker tape directly above the centerline of the pipe and just below the sub-base of the roadway or sidewalk during backfilling operations. For pipe installed in landscaped areas, install continuous marker tape directly above the centerline of the pipe and 12 inches below finished grade during backfilling operations.</p> <p>For wall anchor blocks, the marker tape must be placed on top of the wall anchor blocks in grid pattern with one-foot spacing between tapes and also extending out a minimum of 2 feet beyond the perimeter of the wall anchor block.</p>
7-11.3(13)A	WALL ANCHOR BLOCK	<p>Add the following NEW Section:</p> <p>7-11.3(13) WALL ANCHOR BLOCK</p> <p>Place wall anchor blocks as shown on the Drawings. Wall anchor blocks must be Class 3000, as specified in Section 6-02, concrete mix poured in place.</p> <p>Wall anchor blocks must bear against solid, undisturbed earth at the sides and bottom of the trench excavation and be shaped so as not to obstruct access to the joints of the pipe or fittings.</p> <p>Provide the Engineer at least 1 Working Day advance notice before pouring concrete wall anchor blocks and 1 Working Day advance notice for inspection and approval of all wall anchor blocks before backfilling. Protect all metallic components of wall anchor blocks from corrosion by a wax tape system or another method approved by the Engineer. Unacceptable wall anchor blocking and corrosion protection must be replaced at the Contractor's expense.</p>
7-14.3(3)	RESETTING EXISTING HYDRANTS	<p>Supplement the end of this Section with the following:</p> <p>Unless otherwise noted, the Contractor must assist SPU Water Operations with resetting the hydrant, and is responsible for the following elements of work:</p> <ol style="list-style-type: none"> 1. Protection of the Water Main and services during construction 2. Coordination with the Engineer and SPU Water Operations, including excavation, dewatering, support and safety systems, and traffic control. 3. Establishing staking points. Do not install hydrants within 3 feet of a traveled roadway. In addition, provide a minimum 4-foot radius unobstructed working area around all hydrants. 4. Providing equipment and operators required for trench excavation and to move component parts of the hydrant and connection pipe into position. 5. Furnishing and installing concrete shear block with rebar, as shown by the hydrant details on Standard Plan 310a through 311b, as indicated in the Contractor or as directed by the Engineer. Construction, Materials, and finishing of the concrete shear block must conform to Section 8-14. The shear block must be set flush with the immediately surrounding finish grade. 6. Removal of abandoned pipes and appurtenances 7. Placement of bedding and backfill, compaction, and placement of temporary pavement patch. 8. Furnishing and installing hydrant markers.
7-14.3(4)	RELOCATING EXISTING HYDRANTS	<p>Replace this Section with the following:</p> <p>Relocating hydrants, or moving an existing hydrant and connection pipe to a new location, will be done by SPU Water Operations crews. Unless otherwise noted, the Contractor must assist SPU Water Operations with the hydrant and hydrant connection pipe relocation, and is responsible for the following elements of work:</p>

Section # or Plan #	Current Title	Text
		<ol style="list-style-type: none"> 1. Protection of the Water Main and services during construction 2. Coordination with the Engineer and SPU Water Operations, including excavation, dewatering, support and safety systems, and traffic control. 3. Establishing staking points. Do not install hydrants within 3 feet of a traveled roadway. In addition, provide a minimum 4-foot radius unobstructed working area around all hydrants. 4. Providing equipment and operators required for trench excavation and to move component parts of the hydrant and connection pipe into position. 5. Furnishing and install concrete shear block with rebar, as shown by the hydrant details on Standard Plan 310a through 311b, as indicated in the Contractor or as directed by the Engineer. Construction, Materials, and finishing of the concrete shear block must conform to Section 8-14. The shear block must be set flush with the immediately surrounding finish grade. 6. Removal of abandoned pipes and appurtenances 7. Placement of bedding and backfill, compaction, and placement of temporary pavement patch. 8. Furnishing and installing hydrant markers.
7-14.4	MEASUREMENT	<p>Replace this Section with the following:</p> <p>Measurement for rock facing walls will be as specified in Section 2-13.4 as for the Bid Item "Rock Facing".</p> <p>Measurement for hydrant and hydrant connection will be per each.</p> <p>Measurement for Assisting SPU with hydrant reset will be per each.</p> <p>Measurement for Assisting SPU with hydrant and hydrant connection pipe relocation will be per each.</p> <p>Measurement for Mineral Aggregate for hydrant walls will be by the ton.</p>
7-14.5	PAYMENT	<p>Add the following NEW items 2. and 3. immediately following item 1. Renumber item 2. Other payment information to 4. Other payment information:</p> <ol style="list-style-type: none"> 2. "Assist SPU with Resetting Existing Hydrant", per each The Bid Item price for "Assist SPU with Resetting Existing Hydrant" includes all costs for labor, material, and equipment to assist SPU with resetting of an existing hydrant, including but not limited to the concrete shear block, excavation, safety systems, backfilling and compaction, disposal of material, and hydrant markers. 3. "Assist SPU with Relocating Existing Hydrant", per each The Bid Item price for "Assist SPU with Relocating Existing Hydrant" includes all costs for labor, material, and equipment to assist SPU with the hydrant and hydrant connection pipe relocation, including but not limited to installation of the concrete shear block, excavation, safety systems, backfilling and compaction, and hydrant markers.
7-15.3	CONSTRUCTION REQUIREMENTS	<p>Replace the 4th paragraph and numbered list with the following:</p> <p>SPU will, at no cost to the Contractor, mark the exact field locations of service taps and tees on services 2 inches and smaller. Locations of services larger than 2 inches will be identified on the Drawings. The Contractor must assist SPU Water Operations and the Contractor is responsible for the following elements of work:</p> <ol style="list-style-type: none"> 1. Protection of the Water Main and services during construction. 2. Excavation for the water service connections, including shoring and dewatering. 3. Installation of bedding for water service connection pipe. Bedding must be the same as the for the Water Main. 4. Furnish and install valve boxes for curb stops on 1.5-inch and 2-inch water services as shown on Standard Plan 316. SPU Water Operations will furnish the necessary equipment, pipe, and fittings for 2 inches diameter and smaller services, unless otherwise noted in the Contract. 5. Removal of abandoned pipes, appurtenances, and blocking. 6. Backfill, compaction, and placement of temporary pavement patch. Maintain the temporary pavement patch until completion of all work by SPU Water Operations. 7. Upon completion of work by SPU Water Operations, make all final adjustments of valve boxes, water meter boxes, and rings and covers to final grade at no cost to the Owner, and then make the final surface restorations as specified in the Contract.

Section # or Plan #	Current Title	Text
7-15.3(1)	HDPE WATER SERVICE CONNECTIONS	<p>Add the following NEW Section:</p> <p>7-15.3(1) HDPE WATER SERVICE CONNECTIONS</p> <p>Water service connections to HDPE pipe must be made using HDPE tee fittings or mechanical-type saddles as defined in Section 9-30.5(2). HDPE tee fitting connections must be installed in accordance with Section 7-11.3(6). Mechanical-type saddles must be installed in accordance with the connection manufacturer's recommendations.</p>
7-17.5	PAYMENT	<p>Add the following to the end of item 9. Other Payment Information:</p> <p>All costs for the work required to furnish and install Polyethylene Foam between utilities must be included in the applicable Bid Item price for pipe.</p>
7-18.1	DESCRIPTION	<p>Replace the first paragraph with the following:</p> <p>Section 7-18 describes Work consisting of locating and placing a side Sewer, locating tees, and testing of side Sewers. This Section also accommodates private construction in the Right of Way under permit by SPU and SDOT Street Use.</p>
7-18.3(1)A	SIDE SEWER CONSTRUCTION / GENERAL	<p>Delete the third paragraph of this Section:</p> <p>Unless noted otherwise in the Contract, side Sewer Work within the Right of Way must be performed by a registered side Sewer Contractor.</p>
7-18.3(6)B	TESTING	<p>Replace the last paragraph with the following:</p> <p>Side Sewer installed with pipe extending beyond the Right of Way margin that includes other connection, such as runoff or downspout, and is associated with private construction under the inspection of SPU, is not part of the Contract, and may require testing of the entire side Sewer system including pipe in the Right of Way.</p>
7-18.3(7)C	PLUGS	<p>Replace this Section with the following:</p> <p>In the Right of Way, securely seal unused side Sewer openings with a water tight plug fastened in place. The only exception is private construction under permit from SPU and SDOT Street Use where unused side Sewer openings in private property and side Sewer openings in the Right of Way, must be closed with a water tight plug fastened in place as approved by SPU.</p>
7-18.3(7)D	SEPTIC TANKS AND CESSPOOLS – PRIVATE PROPERTY	<p>Replace this Section with the following:</p> <p>Do not construct side Sewer through or adjacent to an existing cesspool or septic tank. If Job Site conditions prohibit any other location, abate the cesspool or septic tank by such means as the Engineer may direct.</p>
7-18.3(8)	RESTORATION, FINISHING, AND CLEANUP – PRIVATE CONSTRUCTION	<p>Replace this Section with the following:</p> <p>Restoration, finishing, and cleanup due to private construction in Seattle's street Right of Way under Street Use permit and SPU permit, must comply with the Right-of-Way Opening and Restoration Rule.</p>

Section # or Plan #	Current Title	Text										
7-18.3(9)	EXTENDING SIDE SEWER INTO PRIVATE PROPERTY	<p>Replace this Section with the following:</p> <p>Extending side Sewer into private property is not part of the Contract and will not be allowed. Unless authorized by Title 21 of the SMC, private property owners who wish to extend side Sewer into the Right of Way or connect with Sewer or Storm Drain, must do so under permit with SPU and SDOT Street Use.</p>										
7-18.5	PAYMENT	<p>Replace the last paragraph with the following:</p> <p>All costs relating to construction in private property, and to private construction in Seattle's Right of Way under the jurisdiction of SPU and SDOT Street Use, is not part of the Contract and no separate or additional payment will be made.</p>										
7-21.2	MATERIALS	<p>Replace the first line of the table in the Section with the following:</p> <table border="1" data-bbox="786 731 1532 848"> <thead> <tr> <th data-bbox="786 731 1162 788">Material</th> <th data-bbox="1162 731 1532 788">Section</th> </tr> </thead> <tbody> <tr> <td data-bbox="786 788 1162 848">Bioretention Soil (Type)</td> <td data-bbox="1162 788 1532 848">Section 9-14.1(4)</td> </tr> </tbody> </table> <p>Add the following two rows beneath line 1 of the table:</p> <table border="1" data-bbox="786 929 1532 1106"> <thead> <tr> <th data-bbox="786 929 1162 985">Material</th> <th data-bbox="1162 929 1532 985">Section</th> </tr> </thead> <tbody> <tr> <td data-bbox="786 985 1162 1042">Bioretention Polishing Layer Media</td> <td data-bbox="1162 985 1532 1042">Section 9-14.1(8)</td> </tr> <tr> <td data-bbox="786 1042 1162 1106">Impermeable Liner for Bioretention</td> <td data-bbox="1162 1042 1532 1106">Section 2-15</td> </tr> </tbody> </table> <p>Add the following after the last paragraph:</p> <p>Unless otherwise specified or shown on the Drawings, bioretention soil refers to bioretention soil, type 7030.</p>	Material	Section	Bioretention Soil (Type)	Section 9-14.1(4)	Material	Section	Bioretention Polishing Layer Media	Section 9-14.1(8)	Impermeable Liner for Bioretention	Section 2-15
Material	Section											
Bioretention Soil (Type)	Section 9-14.1(4)											
Material	Section											
Bioretention Polishing Layer Media	Section 9-14.1(8)											
Impermeable Liner for Bioretention	Section 2-15											
7-21.3(1)	GENERAL	<p>Supplement the third paragraph of this Section with the following:</p> <p>The requirements for bioretention soil in this Section also apply to bioretention polishing layer media.</p>										
7-21.3(2)A	EXCAVATION	<p>Replace this Section with the following:</p> <p>At the locations shown on the Drawings, excavate bioretention cells to the depth necessary to accommodate the placement of bioretention soil and, if applicable, bioretention polishing layer media and Mineral Aggregate, Type 26.</p> <p>Excavation within 6 inches of final native soil grade is not permitted if the Project Site soil is frozen, has standing water, or has been subjected to more than 1/2 inch of precipitation within 48 hours.</p> <p>Where shown on the Drawings, place construction geotextile for separation and impermeable liner for bioretention as specified in Section 2-15.</p> <p>Provide the Engineer the opportunity to inspect the excavation at least 1 Working Day before placement of any Materials or subgrade soil scarification.</p> <p>After excavation to subgrade, if any sediment laden runoff has entered the cell before placement of bioretention soil, bioretention polishing layer media, or Mineral Aggregate, Type 26, remove the sediment deposition by over-excavating the cell by 3-inch minimum, and place an additional 3 inches of bioretention soil, at no expense to the Owner.</p>										

Section # or Plan #	Current Title	Text
7-21.3(2)B	SUBGRADE	<p>Supplement the end of this Section with the following:</p> <p>The requirements for bioretention soil in this Section also apply to bioretention polishing layer media.</p> <p>Where shown on the Drawings, bioretention polishing layer media must be placed in loose lifts, hand raked and tamped to final grade. Should sediment laden runoff enter the cell before placement of bioretention soil, the Contractor must remove and replace all contaminated bioretention polishing layer media (3 inches minimum) and replace with clean bioretention polishing layer media at no expense to the Owner.</p>
7-21.3(2)C	PLACEMENT OF BIORETENTION SOIL	<p>Supplement the end of this Section with the following:</p> <p>The requirements for bioretention soil in this Section also apply to bioretention polishing layer media.</p>
7-21.3(2)C4	PLACEMENT	<p>Replace the first sentence of in this Section with the following: i</p> <p>Place bioretention soil and bioretention polishing layer media loosely in even lifts no deeper than 6 inches on the underlying material in conformity with the lines, grades, depth, and typical cross-section shown on the Drawings or as established by the Engineer.</p>
7-21.3(2)C8	HIGH PERFORMANCE BIORETENTION SOIL MEDIA (HPBSM) FLUSHING	<p>Add the following NEW section 7-21.3(2)C8:</p> <p>7-21.3(2)C8 HIGH PERFORMANCE BIORETENTION SOIL MEDIA (HPBSM) FLUSHING</p> <p>All bioretention cells with high performance bioretention soil media (HPBSM) discharging to an underground injection control (UIC) well, including those called "drilled drains", must be flushed prior to receiving stormwater as follows:</p> <ol style="list-style-type: none"> 1. If UIC wells downstream of HPBSM cell(s) are constructed with an offline bypass such as a valve or temporarily installed pipe plug, keep cell(s) in an offline state until the upstream HPBSM cell(s) has been flushed with potable water. 2. Contact the Engineer 72 hours prior to potable water flushing and provide the time, date and location of flushing so they may observe. 3. To flush the bioretention cells apply 50 gallons of clean potable water per square foot of cell bottom area uniformly across the cell and wait for all water to drain from the cells. 4. Water from potable water flushing that accumulates in the underdrains must be removed by a pump or other means so it does not enter the UIC well. Prepare any necessary pumps such that all water which exits the underdrain of the bioretention cell(s) is pumped around the downstream UIC well and discharged to the public storm drain system. 5. When directed by the Engineer, put the UIC well(s) online by either removing the pump or pipe plug or opening the valve.
8-01.3(2)B	TREE, VEGETATION AND SOIL PROTECTION PLAN (TVSPP)	<p>Replace the second paragraph after the numbered list on Page 8-4 with the following:</p> <p>For protection of rain gardens or bioretention areas, as specified in item 6. above, and where construction operations abut, impact, or are within the limits of rain gardens or bioretention areas for a duration of more than 30 Calendar Days, protection per Standard Plan 132a, surrounding the entire area as shown on the Drawings is required. Where construction operations are within the limits shown on the Drawings for a duration of 30 Calendar Days or less, a Standard Plan 132b enclosure must surround the entire area and be anchored and maintained in a stable upright condition.</p>
8-02.1	DESCRIPTION	<p>Replace the first sentence with the following:</p> <p>Section 8-02 describes the Work consisting of the preparation of soil; furnishing, planting, and maintaining of lawns and planting beds; furnishing and installing paver blocks, grid blocks, cedar edging, bollards, benches, root barriers, and tree grates; and furnishing and installing soil cell systems. Finished soil cell systems will provide subsurface storage for stormwater management, extend tree rooting volume under HL-93 load bearing surfaces, and create favorable conditions to grow large trees in urban areas.</p>

Section # or Plan #	Current Title	Text
		<p>Supplement the end of this Section with the following:</p> <p>Soil cell systems must be furnished and installed in accordance with the Drawings, Specifications, Standard Plans 150a, 150b, 151 and 152, manufacturer's requirements, and/or as directed by the Engineer.</p>
8-02.2	MATERIALS	<p>Add the following item 13. to the numbered list:</p> <p>13. Soil cell: Soil cells must conform to Section 9-14.20.</p> <p>Supplement the end of this Section with the following:</p> <p>Protect soil cell components from damage during delivery, storage, and handling. Deliver packaged components in original, unopened containers. Cover soil cell components with a tarp to protect them from sunlight when storage exceeds 30 days prior to installation.</p>
8-02.3(1)C	SOIL CELL INSTALLER QUALIFICATIONS	<p>Add the following NEW Section:</p> <p>8-02.3(1)C SOIL CELL INSTALLER QUALIFICATIONS</p> <p>Soil Cells must be installed by a Contractor with a minimum of 5 years of experience installing soil cells or successful installation of planting soils and planter drainage systems, underground piping, chambers and vault structures of similar size and scope having similar work tasks as shown on the Drawings. The Contractor must submit to the Engineer, for acceptance at least 20 Working Days prior to installation, the qualifications of the Soil Cell Installer, including a list of completed projects of similar scope and size demonstrating capabilities and experience.</p> <p>The installer and the field supervisor must have a minimum of five years of successful experience with construction of similar scope in dense urban areas.</p> <p>Installer is required to maintain an experienced full-time supervisor on the Project Site when work is in progress. This person must be identified during the Preconstruction Meeting as defined in Section 8-02.3(27)B, with appropriate contact information provided, as necessary. The same supervisor must be utilized throughout the duration of the project, unless a substitution is submitted and approved in writing per Section 1-05.13.</p>
8-02.3(3)	PESTICIDES	<p>Replace this Section with the following:</p> <p>All uses of pesticides and herbicides (hereafter 'pesticide') within the municipal limits of the City of Seattle must comply with the City of Seattle's pesticide reduction strategy (as found under the keyword "pesticide reduction" at http://www.seattle.gov). The City's strategy attempts to (1) eliminate use of the most hazardous pesticides and (2) achieve a 30% reduction in overall pesticide use. Pesticides include, but are not restricted to, any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, including but not limited to, insecticides, herbicides, fungicides, adjuvants, and additives, including plant regulators, defoliant, and desiccants.</p> <p>The City's Integrated Pest Management Interdepartmental Team (IPM-IDT) is responsible for evaluating the hazardous characteristics of pesticides and the City's use of those pesticides. The Contractor must submit a Weed and Pest Control Plan to the Engineer for review a minimum of 10 Working Days before scheduled use so the City has sufficient time to allow review by the IPM-IDT. The Contractor's submittal must include:</p> <ol style="list-style-type: none"> 1. Means and methods of pest control, including a site plan indicating where the pest control will be implemented; site-specific restrictions such as avoidance of surface waters and permit condition-related requirements; and the plan to ensure worker safety until pesticide re-entry periods are met; 2. Application rate and Safety Data Sheet (SDS) for the pesticide product; 3. Verification the pesticide product complies with all laws and regulations and is registered for use within the State of Washington; 4. Verification the pesticide product is not a soil residual pesticide and is not toxic to non-target landscaping and lawn, unless the Contract specifies otherwise; and 5. The name of the pesticide applicator, including a copy of the applicator's current Washington State pesticide applicator license with applicable endorsements for the intended application. <p>Apply pesticides per pesticide label recommendations, the Washington State Department of Ecology requirements, City of Seattle environmentally critical area (SMC 25.09) and Shoreline Management (SMC 23.60A) regulations, and Washington State Department of Agriculture laws and regulations, including Chapter 16-228 WAC. All personnel applying pesticides within the project limits, including off-site mitigation and staging and stockpile areas, must be licensed by the State of Washington as a Commercial Applicator or Commercial Operator, with additional endorsements as required by physical</p>

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		<p>work locations, or the proposed Weed and Pest Control Plan. All licenses and endorsements must be current and in good standing for the duration of the project.</p> <p>The Contractor must ensure pesticide application is confined to the target area(s). Broadcast spray-applied pesticides must use anti-drift and activating agents and a spray pattern indicator, unless otherwise allowed by the Engineer. Pesticide application must be restricted when near surface waters as specified in Section 1-07.5. Pesticide must not be applied during unreasonable wind conditions, when wet conditions exist, or when wet weather is forecast within 24 hours of pesticide application, unless the pesticide manufacturer recommends otherwise as provided in the submittal. The Contractor must notify the Engineer at least 2 Working Days in advance of the location of any pesticide application.</p> <p>The Contractor must post information on pesticide application at the Project Site for 24 hours post-application. Postings must include the name of licensed applicator, pesticide used, time of application, method of application, and target vegetation or pest. The Contractor is responsible for rendering any area unsatisfactory for planting by reason of pesticide application. Damage to adjacent areas, either on or off the Project Site, must be repaired to the satisfaction of the Engineer or the property owner at no additional cost to the Owner.</p>
8-02.3(27)	SOIL CELLS	<p>Add the following NEW Sections:</p> <p>8-02.3(27) SOIL CELLS</p> <p>Install soil cells at the depths and locations shown in the Drawings and in accordance with Standard Plans 150a, 150b, 151 and 152 and the manufacturer's instructions. When conflicts arise between the manufacturer's instructions and these Specifications, the Engineer will determine and direct the applicable requirements to resolve the conflict, per Section 1-05.3(6).</p> <p>8-02.3(27)A SUBMITTALS</p> <p>All submittals must be made in accordance with the requirements of Sections 1-05.3 and 1-06.1.</p> <p>The Contractor must submit catalog data for soil cell systems and other appurtenances per Section 1-05.3(11). Shop Drawings must include typical cross sections, profiles and plan views; minimum cover requirements; complete system configuration, including connection details, elevations, and restraint mechanisms; interface points with pavement, utilities, tree openings, and drainage elements; material specifications confirming compliance with performance and structural standards.</p> <p>No fabrication or installation may begin prior to written Engineer acceptance of submittals.</p> <p>For each facility, submit a soil cell layout installation plan per Section 1-05.3. The Engineer will review and accept this submittal before any ground-disturbing activity begins.</p> <p>The plan must include:</p> <ol style="list-style-type: none"> 1. A facility layout plan identifying product configuration, soil cell spacing, elevations, dimensions, and all temporary lateral support requirements; 2. Measures for protection of the prepared subgrade, including methods to prevent weather damage, runoff intrusion, erosion, or contamination; 3. Procedures for subgrade preparation, verification of bearing capacity, and any conditioning of native materials prior to placement of imported fill; 4. A material management plan identifying sourcing, blending, hauling, protection, and placement methods, including compaction and consolidation criteria; 5. Identification and sequencing of all major work activities, showing coordination with other Project Site utilities, pavements, and plantings; 6. Details for installation of geotextiles, geogrids, aggregates, pavement and soil cell systems; 7. Step-by-step work sequence for constructing each facility; 8. Inspection and quality assurance activities, per Sections 8-02.3(27); 9. Performance testing procedures, such as compaction testing, geomembrane seam testing, subgrade condition assessment, soil cell condition inspection, geogrid and geotextile installation verification, or other verification required under these Specifications; 10. Planting plan and schedule with species identification, procurement timelines, and sequence relative to facility completion; and 11. Identification of responsible work crews, trades, and Subcontractors. <p>Any deviations from the approved soil cell installation plan require resubmission of the revised portion of the plan to the Engineer for review. The Contractor must obtain written approval for the deviation, as specified in Section 1-05.3, before implementing changes.</p> <p>The Contractor must describe how soil cell installation activates align with the Temporary Discharge Plan (TDP) outlined in Section 8-0.3(2)D. The TDP must explicitly address or cross-reference other submittals to demonstrate measures that ensure no negative impacts on surface water leaving the Project Site.</p>

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		<p>All work activities related to each soil cell must be incorporated into the most current versions of the look-ahead schedule. The schedule must include inspection activities as specified in Section 8-02.3(27).</p> <p>Refer to Section 1-08.3(1)B4 for additional details on look-ahead schedule requirements.</p> <p>At least 20 days prior to installation of the items in this Section, the Contractor must submit the manufacturer's product data including compressive strength, service temperature, and unit weight; the manufacturer's protection recommendations and installation instructions; and a product sample for review. Reviewed and accepted samples will be kept at the Project Site for comparison purposes and will not be returned to the Contractor.</p> <p>At least 20 days prior to installation of the items in this Section, the Contractor must submit a letter from the soil cell manufacturer confirming their review and acceptance of the project, including Drawings and Specifications, Addenda, clarifications and modifications, and compliance with product installation requirements.</p> <p>At least 20 days prior to installation of the items in this Section, the Contractor must also submit a test and evaluation report, including the following:</p> <ol style="list-style-type: none"> a. Compaction testing results required by these Specifications for acceptance. b. Compost material testing results demonstrating materials meet the requirements of Section 9-14.4(8). c. Mineral Aggregate testing results demonstrating materials meet the requirements of Section 9-03.0. d. Planting soil testing results demonstrating materials meet the requirements of Section 9-14.1(2). <p>Prior to project closeout, submit the manufacturer's warranty, fully executed.</p> <p>8-02.3(27)B PRECONSTRUCTION MEETING</p> <p>Prior to the start of construction of the soil cell system, including excavation and any required shoring, the Contractor must coordinate, schedule and attend a preconstruction meeting at the Project Site with the Engineer and soil cell installer. The meeting must include:</p> <ol style="list-style-type: none"> 1. Review of installation layout, procedures, and means and methods (including shoring); 2. Verification of existing conditions, such as utilities and site constraints; and 3. Identification of the field supervisor and their contact information. <p>8-02.3(27)C LAYOUT AND ELEVATION CONTROL</p> <p>Prior to excavation, stake the limits of the soil cell excavation tree pit openings using horizontal points established from the stationing, offsets, and dimensions as shown in the Drawings. Submit a layout with ties to project control for Engineer acceptance.</p> <p>After excavation and acceptance of the prepared subgrade, re-establish vertical control using project benchmarks and verify the subgrade conforms to the requirements in Section 1-05.4.</p> <p>Mark the following on the prepared subgrade as shown in the Drawings:</p> <ol style="list-style-type: none"> 1. Inside dimensions and centerlines of all tree pit openings; 2. Locations of light pole bases, drain inlets, utility structure and other project features within or adjacent to the soil cell layout; 3. Required minimum horizontal and vertical clearances to all existing and proposed utilities; and 4. Extent of soil cell modules to be omitted, trimmed or modified around conflicting features. <p>Submit a final layout for the Engineer's acceptance prior to placing and soil cell components.</p> <p>8-02.3(27)D INSTALLATION REQUIREMENTS</p> <p>8-02.3(27)D1 EXCAVATION</p> <p>Excavate to the depths, lines, grades, and dimensions shown in the Drawings. The base of the excavation for the soil cells must be uniform, level, and free of lumps, debris, or soft yielding subgrade areas.</p> <p>Questions about the base of excavation, including about unsuitable soils or other soil conditions, must be directed to the Engineer. The Engineer will accept the subgrade conditions prior to placement of geotextile and aggregate subbase.</p> <p>If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with the Drawings and as directed by the Engineer. If indications of the water table are observed during excavation, the Engineer must be notified in writing to provide recommendations. Do not begin installation of soil cells until unsatisfactory subgrade conditions are accepted by the Engineer.</p>

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		<p>Over-excavate beyond the soil cell perimeter to allow for the extension of aggregate subbase a minimum of 6 inches beyond the soil cell frames, and to provide adequate space for compaction of backfill around the soil cell system.</p> <p>Notify the Engineer in writing of any conflicts during excavation and propose actions. Proceed only after written approval.</p> <p>Where applicable, protective systems must be provided in accordance with Section 2-07.3.</p> <p>8-02.3(27)D2 BASE PREPARATION</p> <p>Subgrade for soil cells must be excavated, graded, and compacted as specified in conformance with the lines, grades, and cross-sections shown on the Standard Plans, Drawings, or as established by the Engineer.</p> <p>Compact the subgrade to a minimum of 95 percent of the maximum density as specified in Section 2-11.</p> <p>The subgrade slope must not exceed 5 percent in any direction. If exceeded, consult the manufacturer's representative for guidance.</p> <p>8-02.3(27)D3 GEOTEXTILE INSTALLATION (OVER SUBGRADE)</p> <p>Install geotextile per Section 2-15.3. Geotextile must be placed on the prepared subgrade prior to placing the aggregate subbase. Provide full coverage and prevent the geotextile from being torn. Damaged geotextile must be repaired as indicated by the manufacturer and to the satisfaction of the Engineer. Overlaps of the geotextile must be a minimum 24 inches or to the manufacturer's recommendation, whichever is greater.</p> <p>8-02.3(27)D4 IMPERMEABLE MEMBRANE INSTALLATION</p> <p>An impermeable membrane liner must be installed along the side slope of the roadway zone of influence adjacent to the soil cell system following excavation as shown in the Standard Plans.</p> <p>Unroll the membrane along the side slope, starting at the top and working downward, ensuring alignment with the soil cell boundary. Overlap adjacent panels by a minimum of 12 inches or as specified by the manufacturer. Secure the membrane temporarily with sandbags or approved weights to prevent movement during installation. Ensure temporary anchors do not puncture the membrane.</p> <p>Seal overlaps using manufacture-approved sealant, tape, or thermal welding techniques. Ensure all seams are continuous, watertight, and free of gaps. Test seams for integrity using non-destructive methods as specified by the manufacturer.</p> <p>Secure the membrane at the curb or pavement edge using one of the following methods, unless otherwise specified in the Drawings:</p> <ol style="list-style-type: none"> 1. Anchor Trench: Excavate a shallow anchor trench 6-12 inches deep by 6-12 inches wide immediately adjacent to the curb or pavement edge, parallel to the roadway. Place the membrane's edge into the trench, fold neatly, and backfill with compacted soil or gravel and compact to 95%; or 2. Mechanical Fastening: Fasten the membrane to the back of curb or pavement edge using corrosion-resistant battens or strips. Lay the membrane edge over the curb lip, secure with a batten strip, and fasten with concrete anchors or bolts spaced 2 feet apart. Apply a manufacturer-approved waterproof sealant along the fastening edge to ensure a watertight seal. <p>Secure the membrane along the slope and at the base using corrosion resistant landscape pins or staples as needed to prevent uplift or slippage. At the base of the slope, bury the membrane's lower edge below a thin layer of aggregate.</p> <p>Place non-woven geotextile fabric over the membrane to protect against puncture during installation of aggregate subbase and backfill operations.</p> <p>8-02.3(27)D5 AGGREGATE SUBBASE INSTALLATION BELOW SOIL CELL BASES</p> <p>See Section 4-01.3 for Mineral Aggregate construction requirements.</p> <p>Install Mineral Aggregate Type 22 for discharge subbase gravel to the depths shown in the Drawings, extending a minimum of 6 inches beyond the soil cell frames.</p> <p>Unless addressed elsewhere in the Contact, construction methods used must comply with the applicable requirements of Sections 4-04.3. Ensure the subbase surface slope does not exceed 5 percent. Step soil cells if grades exceed this limit to maintain proper relation to finished grade.</p> <p>8-02.3(27)D6 SOIL CELL SYSTEM AND GEOGRID INSTALLATION</p> <p>Starting at tree pit openings and working outward as shown on the Drawings, place and anchor the soil cell base components on the compacted aggregate subbase following the manufacturer's installation instructions,</p>

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		<p>Ensure full contact with the subbase, adjusting material to eliminate rocking or bending. The maximum tolerance for deviations in the subbase plane under soil cell base is 1/4 inch in 4 feet.</p> <p>Install soil cell bases around, over, or under existing or proposed utility lines, as shown in the Drawings or as directed by the Engineer.</p> <p>Check each component for damage prior to placement. Cracked or chipped units will be rejected.</p> <p>Where showing on the Drawings, install perforated lateral aeration pipes withing 24 inches of the soil cell frame edge in the top layer, with vertical risers at 12-ft intervals, trimmed to 6 inches above pavement level, secured with caps.</p> <p>Wrap geogrid around the sides of the soil cell system, where backfill and planting soil interface, to prevent the clean aggregate backfill from entering the soil cell. Do not place geogrid between the edge of the soil cells and adjacent planting area. Cut geogrid to allow for a 6-inch overlap at the soil cell base and a 12-inch overlap over the soil cell deck or lid. Provide a minimum 12-inch overlap between adjacent geogrid sheets. Secure geogrid with cable ties along post ridges per manufacturer's instructions.</p> <p>8-02.3(27)D7 BACKFILL AND PLANTING SOIL WITHIN SOIL CELL</p> <p>Install backfill and planting soil in lifts with a maximum thickness of 6 inches. Place the first lift of backfill material loosely around the perimeter of the soil cell system, between the geogrid and the excavation sides.</p> <p>Place the first lift of planting soil within the soil cell system to match the backfill level. Level the planting soil throughout the system, moisten and walk through the placed soil to remove air pockets and settle the soil, ensuring compaction does not exceed 80 percent.</p> <p>Compact the first lift of backfill to a minimum of 95 percent of the maximum density as specified in Section 2-11.</p> <p>Continue adding backfill and planting soil in 6-inch lifts as described above until the material is 2 to 3 inches below the top of the soil cell, maintaining geogrid separation. Do not compact backfill until after planting soil has been placed to backfill level.</p> <p>Use special care to ensure the compaction process does not allow machinery to come into contact with the soil cells to prevent damage to the geogrid and soil cells.</p> <p>No compaction equipment is permitted to operate directly on the soil cells.</p> <p>During construction, keep the soil cell system free from foreign materials. The cells must be clean to the satisfaction of the Engineer.</p> <p>Obtain Engineer acceptance for backfill and planting soil before installing decks and geotextile.</p> <p>8-02.3(27)D8 SOIL CELL DECKS AND GEOTEXTILE</p> <p>After Engineer acceptance of planting soil, remove any temporary support structure material, level soil, and install soil cell decks or top units per the manufacturer's instructions, ensuring clips lock into posts.</p> <p>Fold the geogrid, installed between the backfill and planting soil, over the top of the decks, overlapping the decks by at least 12 inches. Obtain Engineer acceptance before proceeding to geotextile installation.</p> <p>Install geotextile over the decks, extending to the excavation edge with a minimum 18-inch joint overlap. Leave sufficient slack for the pavement base course to push the geotextile into gaps between the decks.</p> <p>For soil cell-supported sidewalk sections, install an impermeable membrane liner over the geotextile.</p> <p>For soil cell-supported flexible pavement sections, place and compact final lift of backfill material to a minimum of 95 percent of the maximum density as specified in Section 2-11, such that the backfill is flush with the top of the installed deck. Compacting equipment must not come in contact with the decks. Obtain Engineer acceptance before proceeding.</p> <p>8-02.3(27)D9 PAVEMENT BASE COURSE OR FULL DEPTH SIDEWALK</p> <p>For soil cell-supported sidewalk sections, install reinforced sidewalk directly over the impermeable membrane liner. Install dowel bars between at all transverse through joints per Section 5-05.3(10) and install reinforcement grid in concrete as shown in the Standard Plans.</p> <p>For soil cell-supported flexible pavement sections, immediately install the pavement base course over the geotextile to protect it, working from one side to conform to deck contours, if applicable.</p> <p>Equipment must be kept outside the excavation area to prevent damage. For confined areas, obtain manufacturer acceptance for equipment and procedures.</p> <p>Compact to a minimum of 95 percent of the maximum density as specified in Section 2-11 using a vibration or plate compactor weighing no more than 800 lbs.</p> <p>Obtain Engineer acceptance before installing pavement or sidewalk.</p>

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		<p>8-02.3(27)D10 ROOT BARRIER</p> <p>Install root barrier in accordance with Section 8-02.3(26).</p> <p>8-02.3(27)D11 PLANTING SOIL WITHIN TREE PLANTING AREA</p> <p>Remove all rubble, debris, dust, and silt from the top of the planting soil within the tree opening that may have accumulated after the initial installation of the planting soil within the soil cell.</p> <p>Install additional planting soil within the tree openings to the depths indicated in the Drawings. Use the same soil used within the soil cell for planting soil within the tree openings.</p> <p>Compact planting soil under the tree root ball to between 85 and 90 percent of maximum density in accordance with ASTM D698, Standard Proctor Method, to prevent settlement of the root ball.</p> <p>Place trees in accordance with the Drawings.</p> <p>8-02.3(27)D12 PROTECTION OF SOIL CELLS</p> <p>Keep construction traffic away from the limits of the soil cell system until the final pavement or sidewalk is installed. The soil cell system does not meet full loading strength until the final paving is installed.</p> <p>Provide fencing or other barriers to prevent vehicles from entering the soil cell area.</p>
8-02.4	MEASUREMENT	<p>Supplement the end of this Section with the following:</p> <p>Measurement for "Soil Cell" is measured by the cubic foot based on the vertical neat line limits of the facility's excavation footprint.</p> <p>The vertical neat line limits for measuring the soil cell will be a vertical plane: 1 foot, measured horizontally, outside of and parallel to the neat line of the soil cell footprint. No measurement will be made for material removed outside of the vertical neat line limits.</p>
8-02.5	PAYMENT	<p>Add the following item 25. "Soil Cell", per cubic foot to the numbered list and renumber 25. Other payment information to 26. Other Payment information:</p> <p>25. "Soil Cell", per cubic foot</p> <p>Payment for "Soil Cell" includes all costs for the Work to furnish and install a complete soil cell system as specified and per the manufacturer's requirements within the soil cell vertical neat line limits, including the soil cell system components, excavation, subgrade preparation, aggregates, geotextile, geogrid, geomembrane, anchors, ties, placement of soil in soil cell and tree pit areas, root barrier, backfill, dewatering, and disposal of excavated material.</p> <p>Pavement or sidewalk installed above the soil cell limits and tree planting will be paid separately.</p> <p>Payment for protective system, when applicable, will be as specified in Section 2-07.5.</p>
8-02.5	PAYMENT	<p>Replace the first sentence of item 4. Landscape Establishment...with the following:</p> <p>The Bid Item price for "Landscape Establishment, Min. Bid (\$ _____)" must include all costs for the work required to establish the landscape including all costs to provide and apply water and all costs for the work required in Section 8-02.3(12).</p>
8-03.1	DESCRIPTION	<p>Replace the last sentence of the second paragraph with the following:</p> <p>At least 3 Working Days before backfilling, the Contractor must provide notice to the Engineer for SPU Customer Service Division to inspect and approve the piping and back flow prevention devices in accordance with 1-07.28 item 8D.</p>

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8-03.3(1)	GENERAL	<p>Replace the last sentence of the third paragraph (which will be the fourth paragraph after the previous edit) with the following:</p> <p>The Contractor must request service coordination with the Engineer and must allow 8 weeks for installation by SPU Water Operations.</p> <p>Replace the last paragraph with the following:</p> <p>Where indicated on the Drawings, piping and wiring must be installed within plastic pipe sleeves of sufficient inside diameter to allow easy withdrawal and reinserting of the piping or wire. Pipe sleeves and piping must have a minimum of 12 inches soil cover for water pipes. Electrical conduit including conduit sleeves must have 18 inches soil cover or depth of soil cover conforming to the applicable electrical code for electrical wire or conduit with electrical wire, whichever is greater. The detect-a-tape must be installed 6 inches above the piping or conduit, and 4 inches above the sleeve as shown on Standard Plan 128.</p>
8-03.3(3)	EXCAVATION	<p>Replace the last paragraph with the following:</p> <p>Care must be exercised by the Contractor when excavating near existing trees. In addition to the requirements of Section 1-07.16(2), where roots are 2 inches or more in diameter, the pipe trench must be hand excavated or tunneled. When tree roots 2 inches or larger are exposed, they must be wrapped with heavy burlap for protection and be kept moist to prevent drying. Cutting of tree roots larger than 2 inches will not be allowed. When tree roots 2 inches or less in diameter are exposed during excavation, the Contractor must clean cut the exposed roots to minimize further damage to the tree. Tree roots must not be removed by pulling them from the soil. Trenches with exposed tree roots must be backfilled within 24 hours. Trenches with burlapped roots must have the burlap removed before backfilling.</p>
8-03.3(4)	PIPING	<p>Replace the first paragraph with the following:</p> <p>All lateral lines and power supply lines must be a minimum of 18 inches below finished grade measured from the bottom of the pipe, and all mainlines and sleeved pipe must be a minimum 24 inches below finished grade measured from the bottom of the pipe or sleeve (see Standard Plan 128). All irrigation pipe placed under pavement, without exception, must be placed in sleeves. Such sleeves must extend a minimum of 1 foot beyond the limits of pavement.</p> <p>All jacking operations must be performed per an approved jacking plan which must be submitted to the Engineer at least 5 Working Days in advance for review. Where possible, mains and laterals or section piping must be placed in the same trench and horizontally separated by 6 inches. Bedding Material must extend from 4 inches below to 6 inches above laterals, mainlines, and sleeves with the exception that power supply lines do not require 4-inch excavation or bedding below the conduit.</p> <p>Replace the second paragraph (which will be third paragraph after the previous edit) with the following:</p> <p>Mainlines and lateral lines are defined as follows:</p> <p>Mainlines: All pressurized supply pipe and fittings between the water meter and the irrigation control valves.</p> <p>Lateral lines: All supply pipe and fittings between the irrigation control valves and the connections to the irrigation heads. Swing joints, thick-walled pipe, flexible risers, rigid pipe risers, and associated fittings are not considered part of the lateral line but are considered incidental components of the irrigation heads.</p>
8-03.3(7)	ELECTRICAL WIRE AND CONTROLLER INSTALLATION	<p>Replace the NOTE under the table with the following:</p> <p>NOTE: Wire sizes in the above table are AWG.</p>
8-03.3(11)	BACKFILL	<p>Replace the second paragraph with the following:</p> <p>Detectable marking tape must be placed in the trench 6 inches directly above, parallel to, and along the entire length of all nonmetallic water pipes and all nonmetallic and aluminum conduits placed under existing or future pavement. The width of the tape must be as recommended by the manufacturer for the maximum burial depth to be encountered on the project.</p>

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8-04.3(6)	DRAIN CURB CUT FOR BIORETENTION CELL	<p>Add the following NEW section 8-04.3(6):</p> <p>8-04.3(6) DRAIN CURB CUT FOR BIORETENTION SWALE Drain curb cuts must be constructed at locations shown on the Drawings per Standard Plans 295a – 295d.</p> <p>8-04.3(6)A DRAIN CURB CUT NOTIFICATION requirements The Contractor must notify the Engineer of the completion of the first drain curb cut constructed on the Project Site for the Engineer’s review and approval per Section 1-05.6. The Contractor must have the Engineer’s approval of the first installation before additional drain curb cuts are constructed.</p> <p>8-04.3(6)B DRAIN CURB CUT GUTTER FLOW TEST Gutter flow tests must be performed for all drain curb cuts, inlets and catch basin discharging into a bioretention cell. The flow tests must be performed prior to planting bioretention cells. Gutter flow test procedure: 1. All gutter flow tests will be recorded on video in the presence of the Engineer. 2. Ensure roadway and gutter upstream of the drain curb cut and/or inlet and catch basin are free of sediment and debris. Remove debris and sediment as needed prior to conducting flow test. 3. Flow test will use potable water, see Section 2-12.3(2) for hydrant permit requirements, if applicable. 4. Remove temporary plug or other flow diversion measures used at drain curb cuts, inlets or catch basins. 5. Place the discharge hose in the traveled lane a minimum of 15 feet upstream along the gutter line of the drain curb cut, inlet or catch basin to be tested and 3 feet away from the gutter line. 6. Adjust the flow of water and/or the upstream distance as necessary such that the flow in the gutter line spreads to cover 18 inches from the curb, 1 foot prior to reaching the drain curb cut, inlet or catch basin. For an inlet test, the flow in the gutter will spread 24 inches from the curb 1 foot prior to reaching the inlet. 7. Videotape gutter flow test to document flow patterns through each drain curb cut, inlet or catch basin in presence of Engineer. 8. All water in the gutter must flow through the drain curb cut, inlet or catch basin into the bioretention cell. 9. Upon completion of the gutter flow test, replace the temporary plug. 10. If flow is not freely flowing through the drain curb cut, inlet or catch basin to the bioretention cell as required, the Engineer will note deficiencies where adjustments are required including, but not limited to, adjusting or grinding drain curb cuts or pavement, adjusting landscaping boulders, adjusting frame and grates on new inlets and new catch basins, removing and replacing drain curb cuts, removing debris and other material inhibiting gutter flow from freely flowing into cell. 11. If erosion occurs, restore soils and plants and other materials affected. 12. Once adjustments are made, re-conduct gutter flow test including the video taping in the presence of the Engineer to confirm water flows through the drain curb cut, inlet or catch basin as required. Upon completion of the additional gutter flow test, replace the temporary plug. 13. Bioretention cell must not be planted until gutter flow test is successfully completed and documented.</p> <p>8-04.3(6)C GUTTER FLOW TEST VIDEO SUBMITTAL REQUIREMENTS Within 5 Working Days of completion of each gutter flow test, the Contractor must submit a video recording of the flow test to the Engineer. Video recording files must be submitted in MP4 format or as requested by the Engineer. Corresponding data files must be named to indicate the location of the drain curb cut. The videos must be submitted in accordance with Section 1-05.3, with a transmittal letter defining the contents. Include the following information in the transmittal letter for each gutter flow test: 1. Date and time of day flow test performed. 2. Names of test crew members and their company name. 3. Project name, vault plan number listed on Drawings, and Drawing sheet number. 4. Location (e.g., NW 130th St, 2nd Ave NW to 3rd Ave NW).</p> <p>:</p>

Section # or Plan #	Current Title	Text
8-04.4	MEASUREMENT	<p>Supplement this Section with the following:</p> <p>Measurement for "Drain Curb Cut (Type)" will be per each.</p>
8-04.5	PAYMENT	<p>Supplement this Section with the following:</p> <p>7. "Drain Curb Cut (Type)", per each. The Bid Item price for "Drain Curb Cut (Type)" includes all costs for the Work to install a drain curb cut, perform flow tests, and make one initial adjustment if the flow rate test results are unacceptable. Payment for gutter flow tests and performing one initial adjustment if necessary for inlets or catch basins will be incidental to the payment for those structures. No separate payment or extension of time will be allowed for delay to schedule based on rejection of any drain curb cut by the Engineer.</p>
8-14.3(4)B	FINISHING CONCRETE	<p>Supplement the end of this Section with the following:</p> <p>Soil cell supported sidewalk must be brushed and scored to distinguish it from on-grade supported sidewalk. The surface must be brushed in a diagonal direction and scored with a 1-foot by 2-foot pattern with the 1-foot grooves in the transverse direction and 2-foot grooves in the longitudinal direction, matching the pattern of the existing adjacent sidewalk.</p>
8-14.3(7)B	RESERVED	<p>Replace the Title and Section with the following:</p> <p>8-14.3(7)B WASTE ACCESS RAMP</p> <p>Waste access ramps must be as shown on the Drawings and Standard Plan 433. Waste access ramps must adhere to the construction requirements for curb ramps except detectable warning plate will not be installed. Tactile directional indicator must be installed at top of ramp as indicated.</p>
8-14.4	MEASUREMENT	<p>Add the following after the 7th paragraph:</p> <p>Measurement for "Tactile Directional Indicator" will be by the linear foot.</p>
8-14.5	PAYMENT	<p>Add the following immediately after item 8. "Detectable Warning Plate Retrofit" as a new number 9. Then renumber the list making the numbered list end at item 17. Other Payment Information:</p> <p>9. "Tactile Directional Indicator, (Type)", per linear foot. The Bid Item price for "Tactile Directional Indicator, (Type)" must include all costs for the work required to furnish and install the tactile directional indicator.</p> <p>Add the following to the end of item 17. Other Payment Information:</p> <p>Payment for waste access ramps will be paid as "Curb Ramp" per square yard.</p>
8-18.1	DESCRIPTION	<p>Replace the last sentence with the following:</p> <p>See Standard Plans 440a, 440b, 440c, 440d, 441, 442, and 443.</p>

Section # or Plan #	Current Title	Text				
8-18.2	MATERIALS	<p>Replace the first row of the table with the following:</p> <table border="1" data-bbox="786 399 1920 516"> <thead> <tr> <th data-bbox="786 399 1355 455">Materials</th> <th data-bbox="1355 399 1920 455">Section</th> </tr> </thead> <tbody> <tr> <td data-bbox="786 455 1355 516">Cement Concrete</td> <td data-bbox="1355 455 1920 516">Section 6-02</td> </tr> </tbody> </table> <p>Replace the first sentence of the paragraph immediately following the table with the following:</p> <p>The concrete mix must be Class 3000 for steps, stairways, and landings unless shown otherwise on the Drawings.</p>	Materials	Section	Cement Concrete	Section 6-02
Materials	Section					
Cement Concrete	Section 6-02					
8-18.4	MEASUREMENT	<p>Replace this Section with the following:</p> <p>Excavation for stairways, landings, gutters, and bike runnels will be measured by the cubic yard of common excavation as specified in Section 2-04.</p> <p>Measurement of "Steps, Cement Concrete", "Steps, Cement Concrete w/25% Pozzolans", "Stairway, Cement Concrete, (Type)" and "Stairway, Cement Concrete, (Type) w/25% Pozzolans," will be by the square foot of tread surface installed.</p> <p>Handrail of the type specified will be measured by the linear foot of actual handrail installed measured along the top of the top rail from end post to end post including the posts.</p> <p>Concrete landings or walkways outside the stairway measurement limits will be measured as "Sidewalk, Cement Concrete" by the square yard as specified in Section 8-14.4.</p> <p>Asphalt walks will be measured as specified in Section 5-04.4.</p> <p>Gutter will be measured by the linear foot along the gutter end to end including stairway slope, landing, and concrete walk.</p> <p>Measurement for "Bike Runnel, Cement Concrete" and "Bike Runnel, Cement Concrete w/25% Pozzolans" will be by the linear foot for the horizontal distance from end to end of the runnel, including the stairway slope, landings, and concrete walk to the edge of the runnel lip or "walk bike" stamp.</p>				
8-18-5	PAYMENT	<p>Replace this Section with the following:</p> <ol style="list-style-type: none"> 1. "Stairway, Cement Concrete, (Type)", per square foot 2. "Stairway, Cement Concrete, (Type) w/25% Pozzolans", per square foot <p>The Bid Item price for "Stairway, Cement Concrete, (Type)" and "Stairway, Cement Concrete, (Type) w/25% Pozzolans" must include all costs for the work required to construct the concrete stairway to the width described in the Standard Plans. Where stairways are shown in the Drawings with details or dimensions not matching the standard plans, the Type designation will be "Special."</p> <ol style="list-style-type: none"> 3. "Handrail, (Type)", per linear foot <p>The Bid Item price for "Handrail, (Type)" of the type specified must include the costs for the work required to furnish, fabricate and install the handrail along the stairway or sidewalk.</p> <ol style="list-style-type: none"> 4. "Steps, Cement Concrete", per square foot 5. "Steps, Cement Concrete w/25% Pozzolans", per square foot <p>The Bid Item price for "Steps, Cement Concrete" and "Steps, Cement Concrete w/25% Pozzolans" must include all costs for the work required to construct concrete steps.</p> <ol style="list-style-type: none"> 6. "Gutter, Cement Concrete, Type 440", per linear foot <p>The Bid Item price for "Gutter, Cement Concrete, Type 440" must include all costs for the work required to construct a gutter section along the edge of stairways and landings.</p> <ol style="list-style-type: none"> 7. "Bike Runnel, Cement Concrete", per linear foot. 8. "Bike Runnel, Cement Concrete w/25% Pozzolans", per linear foot. <p>The Bid item price for "Bike Runnel, Cement Concrete" and "Bike Runnel, Cement Concrete w/25% Pozzolans" must include all costs for the work required to construct the concrete bike runnel, including "walk bike" stamp or painted text and anti-skate devices, as applicable.</p>				

Section # or Plan #	Current Title	Text
		<p>9. Other payment information</p> <p>Payment for excavation required for stairways, landings, gutter, and bike runnel sections will be paid as "Common Excavation" as specified in Section 2-04.</p> <p>Payment for concrete landings and walkways will be made as "Sidewalk, Cement Concrete" as specified in Section 8-14.</p> <p>Reinforcing steel is considered as incidental to the Bid Item price for the appropriate Bid Item.</p>
8-22.3(7)	TEMPORARY PAVEMENT MARKING	<p>Replace this Section with:</p> <p>See Section 1-07.23(1) and Section 1-10.3(3)L.</p>
8-22.3(9)	RED PAVEMENT MARKING	<p>Replace the Title and Section with the following:</p> <p>8-22.3(9) COLORED PAVEMENT MARKING AREAS</p> <p>Colored pavement marking areas must be installed where shown in the Drawings and per Standard plans. The product used must have a durable, color stable, skid resistant surface meeting the material requirements of MMA or pre-formed thermoplastic.</p> <p>The product used must integrate an aggregate that enables the surface to have a skid resistance greater than 60 units per ASTM E303.</p> <p>The color for MMA and Thermoplastic must be per section 9-29.3(2). Install per the manufacturer's recommendations.</p>
8-22.4	MEASUREMENT	<p>Replace the last sentence in this Section with the following:</p> <p>Measurement for "Pavement Marking Area, (Material), (Color)" will be per square foot of material actually placed.</p>
8-22.5	PAYMENT	<p>Delete item 8 and insert the new item 8 immediately after item 7 and above the payment description paragraph:</p> <p>8. "Pavement Marking Area, (Material), (Color)", per square foot.</p>
8-31.3(3)B	VEHICLE SIGNAL HEADS	<p>Replace the first paragraph with the following:</p> <p>The bottom of vehicle signals mounted over roadways, excluding backplates, must have a range of clearance between 17 feet to 19 feet above roadway grade at the grade of the roadway. On designated truck and overhead trolley routes, the range of clearance must be 18 feet to 19 feet. The top of the vehicle signal face cannot be more than 25.6 feet above roadway grade. Vehicle signals mounted on poles or pedestals must be 12 to 15 feet above sidewalk grade. Vehicular signals mounted to aluminum pedestal poles must be installed with a supplemental pole base collar. The pole base collar is not required for vehicular steel pedestal poles. Pole plates used for bracket mounted installations must be of the type that must fit flush against the pole surface without altering the pole or pole plate.</p> <p>Replace the last paragraph with the following:</p> <p>For signal heads that include a visual restrictor, referred to as optically programmed or geometrically programmed signals, where specified to be span wire mounted, a tether cable must be installed. The tether cable must be complete with connections and hardware as recommended by the signal head manufacturer to provide and maintain proper optical visibility of all indications. The tether cable clamps used must be designed to release under severe wind loads and impact. The tether cable must be ¼" and be installed a minimum 18 feet above roadway grade. Where in proximity to existing or planned trolley wires, span wires or electrical wires tether cable must be insulated. Optically programmed and geometrically programmed traffic signal heads must be programmed before traffic signal system turn on. Programming must be performed in the presence of the Engineer by allowing 2 Working Days advance notice.</p> <p>Move paragraph 6 to the end of the Section after the last paragraph edited above.</p>

Section # or Plan #	Current Title	Text
8-31.3(5)A	INDUCTIVE DETECTOR LOOPS	<p>Delete the 4th paragraph and replace the 5th paragraph with the following:</p> <p>For polyurethane detector sealant, remove all dust, water or other debris from the wire loop prior to installation. After installing detector wire, apply sealant to seal detector wires and fill slot to approximately 1/8" below the roadway surface. Roadway may be reopened as long as sealant is not filled to surface. All additional manufacturer installation instructions must be followed.</p> <p>For hot-applied asphaltic sealant, sealants must be melted in jacketed double boiler melters with effective agitation that meet Appendix X1.1 of ASTM D6690. The melter must be capable of safely heating the product to 420F. Product must be applied to clean, dry pavement at a temperature greater than 40F. Sealant should be installed flush with the pavement surface in a neat manner which fills the sawcut. All additional manufacturer installation instructions must be followed.</p>
8-33.5	PAYMENT	<p>Add the following to Item 8:</p> <p>The (Use) designation in the Bid Item name is optional and intended to clarify the asset owner or intended use. Modification of the Bid Item name to include or exclude the (Use) designation does not change the intent of the Specifications relating to these items.</p>
9-03.9	CRUSHED GRAVEL	<p>Supplement the end of this Section with the following:</p> <p>Mineral Aggregate Types 1G or 2G must not be used as base course materials for asphalt concrete pavement.</p>
9-07.7	WIRE MESH Note: also see changes to Section 1-09.1	<p>Replace this Section with the following:</p> <p>Welded wire for concrete reinforcement must meet the requirements of ASTM A1064, Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete. Welded wire reinforcement manufacturers must participate in the NTPEP Audit Program for Reinforcing Steel (rebar) Manufacturers and must be listed on the NTPEP audit program website displaying NTPEP compliance.</p>
9-07.8	DEFORMED WIRE Note: also see changes to Section 1-09.1	<p>Replace the first sentence with the following:</p> <p>Deformed wire must conform to the requirements of AASHTO M 336, Deformed Steel Wire for Concrete Reinforcement.</p>
9-07.9	COLD DRAWN WIRE Note: also see changes to Section 1-09.1	<p>Replace the first sentence with the following:</p> <p>Cold drawn wire must conform to the requirements of AASHTO M336, Cold Drawn Steel Wire for Concrete Reinforcement.</p>
9-12.7(2)	METAL FRAME AND GRATE AND METAL COVER FOR CATCH BASINS	<p>Supplement this Section with the following:</p> <p>For Project Sites located in the City of Seattle, the Contractor must only procure compost from approved vendors found here: https://www.seattle.gov/utilities/protecting-our-environment/sustainability-tips/landscaping/for-professionals/soil-and-compost. For all other Project Site locations, procure Compost manufactured by facilities which have an active solid waste handling permit from the local jurisdictional Health Department per WAC 173-350-220 or WAC 173-308.</p>

Section # or Plan #	Current Title	Text
9-14.1(1)B	HIGH PERFORMANCE BIORETENTION SOIL MEDIA (HPBSM) TESTING AND SUBMITTAL REQUIREMENTS	<p>Add the following NEW section:</p> <p>9-14.1(1)B HIGH PERFORMANCE BIORETENTION SOIL MEDIA (HPBSM) TESTING AND SUBMITTAL REQ</p> <p>All test results must be within 45 days of blending and be taken from the same stockpile, batch, or source as will be used in the blending. At least 10 Working Days prior to the blending of the HPBSM the Contractor must submit to the Engineer the following:</p> <ol style="list-style-type: none"> 1. <u>Component Sourcing and Testing</u> <ol style="list-style-type: none"> a. <u>Coconut Coir Fiber</u> <ol style="list-style-type: none"> 1) Source certificate or manufacturer cut sheet showing the source for and description of the material. 2) Synthetic Precipitation Leaching Protocol (SPLP) performed by an independent Washington State Department of Ecology certified laboratory. 3) Electrical conductivity (TMECC Method 04.10-A) performed by an independent certified laboratory. 4) Material density in lbs./CF or lbs./CY. b. <u>Filter Sand</u> <ol style="list-style-type: none"> 1) Source certificate or manufacturer cut sheet showing the source for and description of the material. 2) Synthetic Precipitation Leaching Protocol (SPLP) performed by an independent Washington State Department of Ecology certified laboratory. 3) Grain size analysis and coefficient of uniformity results performed by an independent certified laboratory in accordance with Section 9-03.13 for at least the sieves specified in Section 9-03.1(2)C for Mineral Aggregate, Type 6. 4) Material density in lbs./CF or lbs./CY. 5) The grain size analysis testing must be performed on the filter sand at least once for every 100 CY of HPBSM produced. c. <u>Biochar</u> <ol style="list-style-type: none"> 1) Source certificate or manufacturer cut sheet showing the source for and description of the material including feedstocks. 2) Synthetic Precipitation Leaching Protocol (SPLP) performed by an independent Washington State Department of Ecology certified laboratory. 3) Proximate analysis results performed by an independent certified laboratory in accordance with ASTM D1762, Standard Test Method for Chemical Analysis of Wood Charcoal for the criteria shown. 4) Presence of the metals listed per EPA method 6020. 5) Grain size analysis results performed by an independent certified laboratory in accordance with ASTM D422, Standard Test Method for Particle-Size Analysis of Soils for at least the sieves shown in the material descriptions in Section 9-14.1(8). 6) Material density in lbs./CF or lbs./CY. 7) All biochar testing must be performed at least once for every 100 CY of HPBSM produced. 2. <u>Laboratory Information</u>. Include the following information for the laboratories used for the material testing: <ol style="list-style-type: none"> a. Name of Lab b. Address c. Phone number d. Contact person with email e. Date of current certification by STA, ASTM, AASHTO, or the Department of Ecology.
9-14.1(1)C	HIGH PERFORMANCE BIORETENTION SOIL MEDIA (HPBSM) AND BIORETENTION POLISHING LAYER MEDIA BLENDING REQUIREMENTS	<p>Add the following NEW section:</p> <p>9-14.1(1)C HPBSM AND BIORETENTION POLISHING LAYER MEDIA BLENDING REQUIREMENTS</p> <p>The Contractor must submit a "HPBSM and Bioretention Polishing Layer Media Blending, Delivery, and Protection Plan" in accordance with Section 1-05.3. The submittal must be approved by the Engineer prior to any blending of the HPBSM, or bioretention polishing layer media. The submittal must include the completed "HPBSM Blending, Delivery, and Protection Plan Form", as shown here: https://www.seattle.gov/utilities/your-services/sewer-and-drainage/for-our-waters/green-stormwater-infrastructure.</p> <p>The HPBSM and bioretention polishing layer media blending Vendor/Contractor must have at least 3-years of soil blending experience. The blending must occur within 50 miles of Seattle, WA.</p> <p>The Contractor must notify the Engineer at least 72 hours prior to blending of the date, time and location where the blending is to occur so the Engineer may attend and observe the blending.</p> <p>The blending must occur on an impervious (asphalt or concrete) surface pad that has been thoroughly washed clean (e.g., pressure washed) prior to blending or in purpose-built soil blending equipment that has been washed. The blending pad must be large enough to be able to turn and mix the media</p>

Section # or Plan #	Current Title	Text
		<p>without introducing contamination. The blending pad must be free of standing water before blending and must be protected from stormwater run-on from off the pad.</p> <p>The HPBSM and bioretention polishing layer media must be mechanically blended to produce a homogeneous mix. The measurement of the components to be blended must be by weight on scale equipment capable of measuring within 1 pound or in full vessels of a known volume. Estimating the volumes of materials of partially full buckets or vessels must not be used. Prior to blending, the coconut coir fiber must be loose and hydrated such that its density is 4-5 pounds per cubic foot.</p> <p>The materials must be blended until they are in a homogenous mixed state and then protected from contamination or saturation during storage, delivery, stockpiling, and placement.</p> <p>The HPBSM and bioretention polishing layer media must be delivered to the Project Site in "super sack" bulk bags and must not be transported loose in a truck.</p> <p>Suppliers who have demonstrated they can meet the qualifications in the past are provided at: https://www.seattle.gov/utilities/your-services/sewer-and-drainage/for-our-waters/green-stormwater-infrastructure</p>
9-14.1(1)D	BIORETENTION POLISHING LAYER MEDIA TESTING AND SUBMITTAL REQUIREMENTS	<p>Add the following NEW section:</p> <p>9-14.1(1)D BIORETENTION POLISHING LAYER MEDIA TESTING AND SUBMITTAL REQUIREMENTS</p> <p>At least 10 Working Days prior to the blending of the bioretention polishing layer media, the Contractor must submit to the Engineer the following. This information is required even if using the pre-approved Material. The dates of the tests must be within 45 days of blending and be taken from the same stockpile, batch, or source as will be used in the blending. All testing must be by a certified laboratory.</p> <ol style="list-style-type: none"> 1. <u>Component Sourcing and Testing</u> <ol style="list-style-type: none"> a. <u>Filter Sand</u> <ol style="list-style-type: none"> 1) Source certificate or manufacturer cut sheet showing the source for and description of the material. 2) Synthetic Precipitation Leaching Protocol (SPLP) performed by an independent Washington State Department of Ecology certified laboratory. 3) Grain size analysis results performed by an independent certified laboratory in accordance with Section 9-03.13 for at least the sieves specified in Section 9-03.1(2)C for Mineral Aggregate, Type 6. 4) Material density in lbs./CF or lbs./CY. 5) The grain size analysis must be performed on the filter sand at least once for every 50 CY of bioretention polishing layer media produced. b. <u>Activated Alumina</u> <ol style="list-style-type: none"> 1) Synthetic Precipitation Leaching Protocol (SPLP) performed by an independent Washington State Department of Ecology certified laboratory. 2) Producer cut sheet showing the source for and description of the material including Alumina (Al₂O₃) content, bulk density, surface area and gradation for at least the sieves shown in the material description above. 3) Material density in lbs./CF or lbs./CY. Material densities provided by the manufacturer are acceptable for the activated alumina. c. <u>Iron Aggregate</u> <ol style="list-style-type: none"> 1) Producer cut sheet showing the source for and description of the material including Iron content, and gradation for at least the sieves shown in the material description above. 2) Synthetic Precipitation Leaching Protocol (SPLP) performed by an independent Washington State Department of Ecology certified laboratory. 3) Grain size analysis results performed by an independent certified laboratory in accordance with ASTM D422, Standard Test Method for Particle-Size Analysis of Soils for at least the sieves shown in the material descriptions in Section 9-14.1(8). 4) Material density in lbs./CF or lbs./CY. 1. <u>Laboratory Information</u>. Include the following information for the laboratories used for the material testing: <ol style="list-style-type: none"> a. Name of Lab b. Address c. Phone number d. Contact person with email e. Date of current certification by STA, ASTM, AASHTO, or the Department of Ecology.
9-14.1(4)	BIORETENTION SOIL	<p>Replace this Section with the following:</p>

Section # or Plan #	Current Title	Text																
		<p>Procure bioretention soil only from suppliers which have an active solid waste handling permit from the local jurisdictional Health Department as per WAC 173-350-220 or WAC 173-308.</p> <p>Bioretention soil must be a well-blended mixture of Mineral Aggregate and compost measured on a volume basis. Fertilizer must not be added to bioretention soil. Bioretention soil for the types shown below must consist of fine compost as specified in Section 9-14.4(8) and Mineral Aggregate as specified in Section 9-03.2(2) in the ratios shown in the table below. The mixture must be well blended to produce a homogeneous mix and have the organic matter contents shown in the table below determined using the loss on ignition method.</p> <table border="1" data-bbox="888 495 2073 616"> <thead> <tr> <th>Material</th> <th>Mineral Aggregate</th> <th>Fine Compost</th> <th>Organic Matter</th> </tr> </thead> <tbody> <tr> <td>Bioretention Soil, Type 7030</td> <td>68% - 72%</td> <td>28% - 32%</td> <td>3% - 7%</td> </tr> </tbody> </table> <p>The HPBSM must be a blend of the following components in the following ratios.</p> <table border="1" data-bbox="1190 713 1768 945"> <thead> <tr> <th>Component</th> <th>Ratio (by volume)</th> </tr> </thead> <tbody> <tr> <td>Filter Sand</td> <td>70% (+/- 3%)</td> </tr> <tr> <td>Coconut Coir Fiber</td> <td>20% (+/- 2%)</td> </tr> <tr> <td>Biochar</td> <td>10% (+/- 1%)</td> </tr> </tbody> </table> <p>Blending must not commence until the Engineer accepts the complete list of submittals in 9-14.1(1)B. The Engineer will issue written acceptance or rejection within 10 Business Days of receiving the complete list of required submittals.</p>	Material	Mineral Aggregate	Fine Compost	Organic Matter	Bioretention Soil, Type 7030	68% - 72%	28% - 32%	3% - 7%	Component	Ratio (by volume)	Filter Sand	70% (+/- 3%)	Coconut Coir Fiber	20% (+/- 2%)	Biochar	10% (+/- 1%)
Material	Mineral Aggregate	Fine Compost	Organic Matter															
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9-14.1(4)	BIORETENTION SOIL	<p>Add the following NEW sections:</p> <p>9-14.1(4)A COCONUT COIR FIBER</p> <p>The Coconut Coir Fiber must be double rinsed and buffered coco coir meeting the following requirements for quality:</p> <table border="1" data-bbox="786 1266 1905 1681"> <thead> <tr> <th>Test / Method ^a</th> <th>Criterion</th> <th>Requirement</th> </tr> </thead> <tbody> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 353.2</td> <td>NO₃+NO₂</td> <td>0.15 mg/L (Max.)</td> </tr> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and NEMI Method SM 4500-P E-99</td> <td>Ortho-phosphorus</td> <td>0.80 mg/L (Max.)</td> </tr> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 200.8 UCT-KED</td> <td>Copper</td> <td>10 µg/L (Max.)</td> </tr> <tr> <td>Test Methods for the Examination of Compost and Composting (TMECC) Method 04.10-A</td> <td>Electrical Conductivity</td> <td>1.0 mmhos/cm (Max.)</td> </tr> </tbody> </table> <p>^a The Synthetic Precipitation Leaching Protocol testing referenced above must be modified to use deionized water as the extraction fluid in lieu of the diluted acid described in EPA Method 1312. The lab must conduct one extraction per media sample and never conduct serial extractions on the same sample.</p>	Test / Method ^a	Criterion	Requirement	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 353.2	NO ₃ +NO ₂	0.15 mg/L (Max.)	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and NEMI Method SM 4500-P E-99	Ortho-phosphorus	0.80 mg/L (Max.)	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 200.8 UCT-KED	Copper	10 µg/L (Max.)	Test Methods for the Examination of Compost and Composting (TMECC) Method 04.10-A	Electrical Conductivity	1.0 mmhos/cm (Max.)	
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Test Methods for the Examination of Compost and Composting (TMECC) Method 04.10-A	Electrical Conductivity	1.0 mmhos/cm (Max.)																

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		<p>Suppliers who have demonstrated they meet the qualifications for this component in the past are provided at: https://www.seattle.gov/utilities/your-services/sewer-and-drainage/for-our-waters/green-stormwater-infrastructure</p> <p>9-14.1(4)B FILTER SAND</p> <p>The filter sand must be fine aggregate for Portland cement concrete, type 6 (Class 1) as per Sections 9-03.1(2)A, 9-03.1(2)B and 9-03.1(2)C. The filter sand must also meet the following requirements for quality:</p> <table border="1" data-bbox="789 522 1905 848"> <thead> <tr> <th>Test / Method ^a</th> <th>Criterion</th> <th>Requirement</th> </tr> </thead> <tbody> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 200.8 UCT-KED</td> <td>Copper</td> <td>10 µg/L (Max.)</td> </tr> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 353.2</td> <td>NO₃+NO₂</td> <td>0.15 mg/L (Max.)</td> </tr> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and NEMI Method SM 4500-P E-99</td> <td>Orthophosphorus</td> <td>0.15 mg/L (Max.)</td> </tr> </tbody> </table> <p>^a The Synthetic Precipitation Leaching Protocol testing referenced above must be modified to use deionized water as the extraction fluid in lieu of the diluted acid described in EPA Method 1312. The lab must conduct one extraction per media sample and never conduct serial extractions on the same sample.</p> <p>9-14.1(4)C BIOCHAR</p> <p>The biochar must consist of screened and processed organic and inorganic residue remaining after the thermal processing of biomass in an oxygen-controlled environment.</p> <p>The biomass feed-stocks must be limited to clean cellulosic material from:</p> <ol style="list-style-type: none"> Woody by-products of Pacific Northwest forestry operations (including cut residues left after a timber harvest, cut trees that are not marketable as lumber); Chipped trees and brush from biomass reduction operations (i.e. commercial tree trimming); and Agricultural residues such as nut shells, straw, orchard pruning, seeds, hulls, and pits. <p>The biomass feedstocks must not include any post-consumer or post-industrial sourced woody biomass (i.e., construction or demolition waste, wood contaminated with paints or sealers, metal, plastic, or other deleterious materials).</p> <p>The biochar must be sourced from a producer with at least 3-years of experience producing biochar for soil amendments and/or water filtration and meet the following requirements for quality and grading:</p> <table border="1" data-bbox="789 1374 1905 1778"> <thead> <tr> <th>Test / Method ^a</th> <th>Criterion</th> <th>Requirement</th> </tr> </thead> <tbody> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 353.2</td> <td>NO₃+NO₂</td> <td>0.20 mg/L (Max.)</td> </tr> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and NEMI Method SM 4500-P E-99</td> <td>Ortho-phosphorus</td> <td>0.80 mg/L (Max.)</td> </tr> <tr> <td>Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 200.8 UCT-KED</td> <td>Copper</td> <td>10 µg/L (Max.)</td> </tr> <tr> <td>Total C and H analysis by dry combustion-elemental analyzer</td> <td>Organic Carbon (C_{org})</td> <td>60% (Min.)</td> </tr> </tbody> </table>	Test / Method ^a	Criterion	Requirement	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 200.8 UCT-KED	Copper	10 µg/L (Max.)	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 353.2	NO ₃ +NO ₂	0.15 mg/L (Max.)	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and NEMI Method SM 4500-P E-99	Orthophosphorus	0.15 mg/L (Max.)	Test / Method ^a	Criterion	Requirement	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 353.2	NO ₃ +NO ₂	0.20 mg/L (Max.)	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and NEMI Method SM 4500-P E-99	Ortho-phosphorus	0.80 mg/L (Max.)	Synthetic Precipitation Leaching Protocol (EPA Method 1312) and EPA Method 200.8 UCT-KED	Copper	10 µg/L (Max.)	Total C and H analysis by dry combustion-elemental analyzer	Organic Carbon (C _{org})	60% (Min.)
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9-14.1(8)	BIORETENTION POLISHING LAYER MEDIA	<p data-bbox="637 1481 1010 1512">Add the following NEW sections:</p> <p data-bbox="637 1532 1289 1562">9-14.1(8) BIORETENTION POLISHING LAYER MEDIA</p> <p data-bbox="699 1592 1787 1622">The bioretention polishing layer media must be a blend of the following components in the following ratios.</p> <table border="1" data-bbox="1196 1653 1756 1824"> <thead> <tr> <th data-bbox="1196 1653 1507 1703">Component</th> <th data-bbox="1507 1653 1756 1703">Ratio (by volume)</th> </tr> </thead> <tbody> <tr> <td data-bbox="1196 1703 1507 1753">Filter Sand</td> <td data-bbox="1507 1703 1756 1753">91% (+/- 1%)</td> </tr> <tr> <td data-bbox="1196 1753 1507 1824">Activated Alumina</td> <td data-bbox="1507 1753 1756 1824">6.5% (+1% / - 0%)</td> </tr> </tbody> </table>	Component	Ratio (by volume)	Filter Sand	91% (+/- 1%)	Activated Alumina	6.5% (+1% / - 0%)																								
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9-14.4(8)	COMPOST	<p>Replace the first paragraph in this Section with the following:</p> <p>For Project Sites located in the City of Seattle, the Contractor must only procure compost from approved vendors found here: https://www.seattle.gov/utilities/protecting-our-environment/sustainability-tips/landscaping-for-professionals/soil-and-compost . For all other Project Site locations, procure Compost manufactured by facilities which have an active solid waste handling permit from the local jurisdictional Health Department per WAC 173-350-220 or WAC 173-308.</p>																														

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9-14.20	SOIL CELL	<p>Add the following NEW Sections:</p> <p>9-14.20 SOIL CELL</p> <p>9-14.20(1) SOIL CELLS</p> <p>Soil cells must be modular, structural systems capable of supporting loads up to AASHTO HL-93 when used with accepted pavement profiles. Each module must be structurally independent from adjacent soil cells to allow for utility installations and future repairs.</p> <p>Soil cells must be open on all vertical faces and, for stacked cells, horizontal planes with no interior walls or diaphragms, providing a contiguous soil volume that allows:</p> <ol style="list-style-type: none"> 1. Placement and compaction of specified soil in 6-inch lifts; 2. Movement and growth of tree roots within the soil volume; 3. Movement of water, including lateral capillary movement, within the soil volume; and 4. Installation and maintenance of utilities within, adjacent to, or below the soil cell. <p>At least 20 days prior to the start of installation, the Contractor must submit to the Engineer for acceptance the manufacturer's product literature with technical data sufficient to demonstrate that the product meets these requirements.</p> <p>9-14.20(2) AGGREGATE SUBBASE</p> <p>Aggregate subbase must comply with the requirements of Mineral Aggregate, Type 22 per Section 9-03.14 unless otherwise specified in the Drawings.</p> <p>9-14.20(3) PAVEMENT BASE COURSE</p> <p>Pavement base course must comply with the requirements of Mineral Aggregate, Type 2 per Section 9-03.14.</p> <p>9-14.20(4) ANCHORS</p> <p>Soil cell base anchors must be as specified by the soil cell manufacturer.</p> <p>9-14.20(5) GEOGRID</p> <p>Geogrid used for soil cells must be uniaxial or biaxial woven polyester fabric with PVC coating, inert to biological degradation and resistant to naturally occurring chemicals, alkalis, and acids.</p> <p>Geogrid must meet the following properties or meet the manufacturer's recommendations, whichever is more stringent:</p> <table border="1" data-bbox="1013 1332 1942 1743"> <thead> <tr> <th>Property</th> <th>Value</th> <th>Test Method</th> </tr> </thead> <tbody> <tr> <td>Tensile strength at ultimate</td> <td>1850 lbs/ft minimum</td> <td>ASTM D6637</td> </tr> <tr> <td>Creep reduced strength</td> <td>1000 lbs/ft minimum</td> <td>ASTM D5262</td> </tr> <tr> <td>Long-term allowable design load</td> <td>950 lbs/ft minimum</td> <td>GRI GG-4</td> </tr> <tr> <td>Grid aperture size (MD)</td> <td>0.8 inch minimum</td> <td>N/A</td> </tr> <tr> <td>Grid aperture size (CD)</td> <td>1.28 inch maximum</td> <td>N/A</td> </tr> <tr> <td>Roll Size</td> <td>6-foot width preferred, up to 18 feet</td> <td>N/A</td> </tr> </tbody> </table>	Property	Value	Test Method	Tensile strength at ultimate	1850 lbs/ft minimum	ASTM D6637	Creep reduced strength	1000 lbs/ft minimum	ASTM D5262	Long-term allowable design load	950 lbs/ft minimum	GRI GG-4	Grid aperture size (MD)	0.8 inch minimum	N/A	Grid aperture size (CD)	1.28 inch maximum	N/A	Roll Size	6-foot width preferred, up to 18 feet	N/A
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Creep reduced strength	1000 lbs/ft minimum	ASTM D5262																					
Long-term allowable design load	950 lbs/ft minimum	GRI GG-4																					
Grid aperture size (MD)	0.8 inch minimum	N/A																					
Grid aperture size (CD)	1.28 inch maximum	N/A																					
Roll Size	6-foot width preferred, up to 18 feet	N/A																					

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		<p>Geogrid must be as manufactured or distributed by:</p> <ol style="list-style-type: none"> 1. Miragrid 2XT from Ten Cate Nicolon, Norcross, GA, http://www.tencate.com (Distributed by Geosynthetic Systems in Ontario); 2. Fortrac 35 Geogrid from Huesker, Charlotte, NC, http://www.hueskerinc.com/; 3. SF 20 Biaxial Geogrid from Synteen, Lancaster, SC, http://www.synteen.com; 4. Stratagrid SG 150 from Strata, Cumming, GA, http://www.geogrid.com; 5. Or approved equal. <p>The Contractor must submit to the Engineer for acceptance at least 20 days in advance, the manufacturer's technical datasheets indicating all Specifications are met.</p> <p>9-14.20(6) GEOTEXTILE</p> <p>Geotextile must be composed of high tenacity polypropylene yarns woven into a network to retain relative position, inert to biological degradation, and resistant to naturally occurring chemicals, alkalis, and acids.</p> <p>Geotextile must meet the following properties or meet the manufacturer's recommendations, whichever is more stringent:</p> <table border="1" data-bbox="780 770 2178 1356"> <thead> <tr> <th rowspan="2">Property</th> <th rowspan="2">Test Method</th> <th rowspan="2">Unit</th> <th colspan="2">Minimum Average Roll Value</th> </tr> <tr> <th>Machine Direction (MD)</th> <th>Cross Direction (CD)</th> </tr> </thead> <tbody> <tr> <td>Tensile strength at ultimate</td> <td>ASTM D4595</td> <td>lbs/ft</td> <td>5100</td> <td>5100</td> </tr> <tr> <td>Tensile strength at 2% strain</td> <td>ASTM D4595</td> <td>lbs/ft</td> <td>960</td> <td>1560</td> </tr> <tr> <td>Tensile strength at 5% strain</td> <td>ASTM D4595</td> <td>lbs/ft</td> <td>2400</td> <td>3600</td> </tr> <tr> <td>Tensile strength at 10% strain</td> <td>ASTM D4595</td> <td>lbs/ft</td> <td>5040</td> <td></td> </tr> <tr> <td>Factory Seam Strength</td> <td>ASTM4884</td> <td>lbs/ft</td> <td colspan="2">3000</td> </tr> <tr> <td>Flow Rate</td> <td>ASTM D4491</td> <td>gal/min/ft²</td> <td colspan="2">30</td> </tr> <tr> <td>Apparent Opening Size</td> <td>ASTM D4751</td> <td>U. S. Sieve</td> <td colspan="2">30</td> </tr> <tr> <td>UV Resistance (at 500 hours)</td> <td>ASTM D4355</td> <td>% strength retained</td> <td colspan="2">80</td> </tr> </tbody> </table> <p>Geotextile must be manufactured or distributed by:</p> <ol style="list-style-type: none"> 1. Mirafi 180 N from Ten Cate Nicolon, Norcross, GA, http://www.tencate.com; 2. Geotex 801 from Propex Geosynthetics, Chattanooga, TN, http://www.geotextile.com; 3. Or approved equal. <p>The Contractor must submit to the Engineer for acceptance at least 20 days in advance, the manufacturer's technical datasheets indicating all Specifications are met.</p> <p>9-14.20(7) IMPERMEABLE MEMBRANE</p> <p>Geomembrane must be composed of a smooth High Density Polyethylene (HDPE) sheeting material and must conform to the following:</p> <table border="1" data-bbox="1013 1735 1945 1814"> <thead> <tr> <th>Property</th> <th>ASTM</th> <th>High Density Polyethylene (HDPE)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Property	Test Method	Unit	Minimum Average Roll Value		Machine Direction (MD)	Cross Direction (CD)	Tensile strength at ultimate	ASTM D4595	lbs/ft	5100	5100	Tensile strength at 2% strain	ASTM D4595	lbs/ft	960	1560	Tensile strength at 5% strain	ASTM D4595	lbs/ft	2400	3600	Tensile strength at 10% strain	ASTM D4595	lbs/ft	5040		Factory Seam Strength	ASTM4884	lbs/ft	3000		Flow Rate	ASTM D4491	gal/min/ft ²	30		Apparent Opening Size	ASTM D4751	U. S. Sieve	30		UV Resistance (at 500 hours)	ASTM D4355	% strength retained	80		Property	ASTM	High Density Polyethylene (HDPE)			
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9-21.2(1)	PHYSICAL PROPERTY Note: also see changes to SP 700	<p data-bbox="624 1689 2331 1717">Replace the table with the following:</p> <table border="1" data-bbox="789 1741 1908 1804"> <thead> <tr> <th data-bbox="789 1741 1162 1804">Lane Marker (Description)</th> <th data-bbox="1162 1741 1535 1804">Lane Marker Type 2A</th> <th data-bbox="1535 1741 1908 1804">Lane Marker Type 2B</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Lane Marker (Description)	Lane Marker Type 2A	Lane Marker Type 2B																																										
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		Dimensions of Plastic Shells	See Std Plan 700	See Std Plan 700							
		Slope of Reflecting Face	20-35 deg	20-30 deg							
		Area of Each Reflecting Surface	2.60-3.25 square in	1.87 square in							
9-30.1(1)	DUCTILE IRON PIPE	<p>Replace item 3. with the following:</p> <p>3. Restrained joints must be as specified in Section 9-30.2(3).</p>									
9-30.1(1)A	EARTHQUAKE RESISTANT DUCTILE IRON PIPE	<p>Replace this Section with the following:</p> <p>Earthquake resistant ductile iron pipe (ERDIP) must meet the performance requirements specified in this Section as verified by an independent (third party) testing laboratory.</p> <ol style="list-style-type: none"> Pipe joints must be able to expand by at least 1 percent of the pipe segment length and must be able to contract by at least 1 percent of the pipe segment length. Pipe joints must be able to resist a pull-out force as determined by the following formula: $F_p = 17,000d$ <p>Where: F_p = Minimum pull-out resistance in pounds. d = Nominal pipe diameter in inches.</p> <p>Fittings used on an ERDIP system must also meet the minimum pull-out force requirement.</p> Pipe joints or joint assemblies must be able to deflect in all directions as specified in the table below. Deflections are based on a pipe system reference lay length of 19.7 feet. The pipe system lay length is defined as one full length of pipe plus adapters. The required joint deflection angle may be adjusted by multiplying it by the pipe system lay length and dividing by the reference length. <table border="1" data-bbox="1168 1151 1790 1348" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Nominal Pipe Diameter</th> <th>Minimum Joint Deflection (degrees)</th> </tr> </thead> <tbody> <tr> <td>4"-16"</td> <td>8</td> </tr> <tr> <td>18"-36"</td> <td>7</td> </tr> </tbody> </table>				Nominal Pipe Diameter	Minimum Joint Deflection (degrees)	4"-16"	8	18"-36"	7
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9-30.1(3)	PLASTIC PIPE AND ASBESTOS CEMENT PIPE	<p>Replace this Section with the following:</p> <p>PVC, polybutylene, and asbestos cement material pipe must not be used as Water Main to convey potable water.</p> <p>Add the following NEW section:</p> <p>9-30.1(3)A HIGH-DENSITY POLYETHYLENE (HDPE) PIPE</p> <ol style="list-style-type: none"> HDPE pipe must be solid wall and must conform to AWWA C906, "Polyethylene (PE) Pressure Pipe and Fittings, 4 in. through 65 in. for Waterworks." Polyethylene Materials for the manufacture of HDPE pipe and fittings must meet or exceed the requirements of Plastic Pipe Institute (PPI) TR4 designation PE4710 and must have a minimum cell classification of PE445574C. 									

Section # or Plan #	Current Title	Text
		<ol style="list-style-type: none"> 3. Pipe must be manufactured in accordance with ASTM D3035 and contain no recycled compounds except that generated in the manufacturer's own plant from the resin of the same specification from the same raw material. 4. Pipe must be homogenous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects. 5. Pipe must be rated for use at test pressures of 200 psi; however, the pressure rating table for PE 3406/3408 with a design factor of 0.5 must be utilized for wall thickness design. 6. Wall thickness design must not be based on the proposed PE4710 design factor of 0.63. The outside diameter of the pipe must be based upon ductile iron pipe size (DIPS) sizing system and nominal diameters are as indicated in the Drawings. 7. The pipe manufacturer must be ISO 9001 certified and be able to demonstrate experience manufacturing HDPE pipe in similar size and pressure rating and length. 8. HDPE pipe joining methods used must be per the manufacturer's recommendations. Unless otherwise indicated or approved by the Engineer butt fusion connections are the only joining method for all HDPE pipe as specified in Section 7-11.3(6)F.
9-30.2(13)	HDPE PIPE FITTINGS	<p>Add the following NEW section:</p> <p>9-30.2(13) HDPE PIPE FITTINGS</p> <p>Fittings for HDPE pipe must be made of HDPE material meeting the minimum material designation code and cell classification code for pipe as specified in Section 9-30.1(3)A.</p> <p>HDPE fittings must be capable of providing a working pressure rating no less than that of the HDPE pipe to which the fitting is connected. The pressure rating table for PE 3406/3408 with a design factor of 0.5 must be utilized for wall thickness design. Wall thickness design must not be based on the proposed PE4710 design factor of 0.63. The outside diameter of the pipes must be based on DIPS and nominal diameters of fittings are as indicated in the Drawings.</p> <p>Acceptable HDPE fittings include molded fittings per ASTM D3261 and fabricated fittings complying with AWWA C906 and ASTM F2206. Fabricated fittings must be manufactured using a McElroy Data Logger or approved equal to record fusion pressure and temperature and must be stamped with unique joint number that corresponds to the Fusion Technician's Joint Report. Data Logger records must be maintained on fabricated fittings and must be made available upon request. Field fabricated fittings are not allowed. Butt fusion, electrofusion (if approved by Engineer), and flanged connections are acceptable joining methods for HDPE fittings to pipe as specified in Section 7-11.3(6)F.</p> <p>The pipe/fitting manufacturer for wall anchor fittings used in wall anchor blocks must determine the ring dimensions. The pipe/fitting manufacture must certify the wall anchor fitting meets the same HDPE material and working pressure rating requirements for HDPE fittings as specified herein. Wall anchor fittings must be made with sufficient length to be clamped in the butt fusion-joining machine without the use of a stub-end holder.</p> <p>The fitting manufacturer must be ISO 9001 certified and be able to demonstrate experience manufacturing HDPE fittings in similar size and pressure rating and length.</p> <p>Flanged connections via flanged adapters, where approved by the Engineer, must be manufactured and tested per AWWA C906, and accompanied with gaskets, back-up rings, bolts, nuts, washers, and spacers (if required). The HDPE flange adapter must be made of HDPE material meeting the minimum material designation code, cell classification code, and pressure rating of the connected HDPE pipe or fitting. Flange adapters must be made with sufficient length to be clamped in the butt fusion-joining machine without the use of stub-end holder. The pipe manufacturer must determine the flange adapter thickness required to provide a pressure rating equivalent to the connected HDPE pipe.</p> <p>Back-up rings, gaskets, bolts, nuts, washers, and spacers (if required) must provide a long-term service pressure rating equal to the pipe for which the flange adapter assembly will be used; and the back-up rings, bolts, nuts, washers, and spacers (if required) must be properly protected from corrosion using three-part wax tape as specified in Section 9-30.1(4)F and compatible with the materials of the connecting pipes and appurtenances.</p> <p>Gasket materials must be full-face and recommended for use with HDPE flanges by the gasket manufacturer. Gaskets must be compatible with the internal fluid and external environment and must have an inner diameter matching the pipe for which the flange assembly will be used. Gaskets must be rated for use at 200 psi and also capable of maintaining seals at the anticipated compressive stresses induced by the HDPE flange assembly. Yield strength of back-up rings, bolts, nuts, washers, and spacers (if required) must be capable of achieving the minimum required compressive stress of gaskets to maintain a seal.</p> <p>Electrofusion fittings and electrofusion couplings for joints, where approved by the Engineer, must be manufactured and tested in accordance with ASTM F1055 and AWWA C906 and must be capable of providing a long-term service pressure rating equal to the fitting for which the electrofusion joint or coupling will be used. Electrofusion fittings and couplings must be made of HDPE material meeting the minimum material designation code, cell</p>

Section # or Plan #	Current Title	Text
		<p>classification code, and pressure rating of the connected HDPE fitting. The electrofusion processor must be capable of reading and storing the input parameters and the fusion results for later download to a record file.</p> <p>The electrofusion fitting manufacturer and electrofusion coupling manufacturer must have experience with installations where electrofusion fitting product was successfully used to join HDPE pipe and fittings for the same nominal diameter pipe and pressure rating as proposed.</p> <p>Fabricated transition pieces, where required, must meet the requirements for HDPE pipe as specified in Section 9-30.1(3)A. Where indicated on the Drawings, ductile iron (DI) fittings connected to HDPE pipe must meet the requirements as specified in Section 9-30.2(1).</p>
9-30.3(2)A	GATE VALVES DOUBLE DISC	<p>Replace the first paragraph with the following:</p> <p>In addition to 9-30.3(1), gate valves 3-inch through 12-inch must conform to AWWA C500, be equipped with nonrising stems and O-ring stuffing box, and with double disc gates or rotating double disc gates having a bronze wedging device.</p> <p>Replace the sixth paragraph with the following:</p> <p>Double disk gate valves must be manufactured by Clow, M & H, American Flow Control (ACIPCo), Pratt/Mueller, M&H/Kennedy, or approved equal in sizes 12 inches or less. Rotating double disk gate valves must be manufactured by McWane/Kennedy, J & S Valve, or approved equal in sizes 12 inches or less.</p>
9-30.5(2)	SADDLES	<p>Replace this Section with the following:</p> <p>Unless otherwise indicated, saddles must be ductile iron, or bronze, double straps with thread standard outlet tapping. Saddles must be of a size designed by the manufacturer to fit the pipe called for on the Drawings.</p> <p>Service connections on HDPE pipes must be done in accordance with Section 7-15.3(1) and selected in accordance with the following criteria:</p> <ol style="list-style-type: none"> 1. Service connection of 2-inch-diameter and smaller on HDPE pipes must be the following: <ol style="list-style-type: none"> a. Mechanical-type, ductile iron saddle with full-circle double straps and thread standard outlet tapping. The mechanical-type, ductile iron saddle product must be manufactured for HDPE pipe and approved by the connection manufacturer for use on HDPE pipe at the pipe's required pressure class and diameter. The mechanical-type, ductile iron saddle must be rated for a minimum test pressure of 200 psi. Saddles must be of a size designated by the manufacturer to fit the pipe size indicated in the Drawings. Wax tape coating per Section 9-30.1(4)F must be applied to all metallic components. 2. Service connections larger than 2-inch-diameter on HDPE pipes must be made with HDPE tee fittings. HDPE tee fittings must meet the requirements as specified in Section 9-30.2(13).
9-30.11	LOCATING WIRE	<p>Supplement the end of this Section with the following:</p> <p>Locating wire for HDPE pipe must be AWG #14 solid copper wire or copper clad steel wire with high molecular weight polyethylene insulation (blue). Direct bury wire nuts and lugs must be waterproof and corrosion-proof that accepts wire ranges #14 - #10 AWG solid and stranded copper and specifically designed for low voltage tracer splices and cathodic applications up to 50V. Temperature rating must be -45 degrees F to 400 degrees F. Direct bury wire nuts must be Dryconn Direct Bury Wire Nut (10444) manufactured by King Innovation or approved equal. Direct bury lugs must be Dryconn Direct Bury Lug as manufactured by King Innovation or approved equal.</p>
9-30.12	COATING FOR ALL BOLTS, LUGS, AND SHACKLE RODS	<p>Replace Section 9-30.12 COATING FOR ALL BOLTS AND SHACKLE RODS with the following NEW title and content:</p> <p>9-30.12 COATING FOR ALL BOLTS, LUGS, AND SHACKLE RODS</p> <p>On corrosion protected Water Mains, all shackle rods, concrete blocking anchor rods, lugs, and shackle clamps must have a factory applied protective coating with fusion bonded epoxy per ASTM A755. After threading and assembly, the threaded ends, nuts, and washers must be coated with a wax tape coating system per Section 9-30.1(4)F.</p>

Section # or Plan #	Current Title	Text																										
9-30.14	TRENCH MARKER TAPE	<p>Add the following NEW section:</p> <p>9-30.14 TRENCH MARKER TAPE</p> <p>Marker tape for HDPE pipes must be an inert plastic film specifically formulated for prolonged underground use. Minimum thickness must be 4 mm thick with a minimum width of 3 inches. Marker tape must be blue in color and must have 2-inch black lettering with the inscription "CAUTION: HDPE WATER LINE BURIED BELOW". The message must be printed out at maximum intervals of 2 feet.</p>																										
9-32.4	DETECTOR LOOPS	<p>Add the following NEW sections:</p> <p>9-32.4(1) INDUCTIVE LOOP DETECTOR SEALANT</p> <p>Loop detector sealant must be one part, moisture curable, self-leveling polyurethane or hot-applied, rubberized asphalt material.</p> <p>Polyurethane sealant must match roadway color, require no mixing, and totally encapsulate the detector conductors. Polyurethane sealant must also meet the following specifications:</p> <table border="0" data-bbox="624 836 1631 1018"> <tr> <td>Test</td> <td>Specification Limits</td> </tr> <tr> <td>Skin Time at 77° F</td> <td>2 hours maximum</td> </tr> <tr> <td>Cure Time at 77° F</td> <td>48 hours maximum</td> </tr> <tr> <td>Tensile Strength (ASTM D-142)</td> <td>600 psi minimum</td> </tr> <tr> <td>Elongation (ASTM D-412)</td> <td>300 % maximum</td> </tr> <tr> <td>Linear Shrinkage (ASTM D-2566)</td> <td>0 %</td> </tr> <tr> <td>Hardness Shore A (ASTM D-2240)</td> <td>70 minimum</td> </tr> </table> <p>Hot-applied asphaltic sealant must be meet the following specifications when heated to in accordance with ASTM D5167:</p> <table border="0" data-bbox="624 1108 1631 1270"> <tr> <td>Test</td> <td>Specification Limit</td> </tr> <tr> <td>Termosel Viscosity at 400°F (ASTM D-4402)</td> <td>4000 cp maximum</td> </tr> <tr> <td>Penetration, 125°F, 50 g, 5 s (ASTM D5)</td> <td>50 maximum</td> </tr> <tr> <td>Penetration, 77°F, 100g, 5 s (ASTM D5)</td> <td>10-25</td> </tr> <tr> <td>Softening Point (ASTM D36)</td> <td>210°F minimum</td> </tr> <tr> <td>Ductility, 77°F (ASTM D113)</td> <td>15 cm minimum</td> </tr> </table> <p>9-32.4(2) PREFORMED DETECTOR LOOP</p> <p>Preformed detector loops are used for actuating traffic-actuated controllers and traffic counting applications. The complete loop/lead-in assembly must be suitable for applications in which the loop lead-in assembly will be placed on compacted aggregate sub-base and overlaid with concrete.</p> <p>The loop cable must be a four-conductor, double-jacketed cable with a nominal outer diameter of 0.360". The individual conductors must be #18 AWG wire (formed from seven strands of #26 AWG copper wire) with a 0.020" thick layer of cross-linked polyethylene (XLPE) insulation. The inner jacket must be 0.040" thick cross-linked polyethylene (XLPE). The void between the conductors and the inner jacket must be spiral wrapped with a clear, moisture resistant binder tape and filled with an amorphous water-block compound. The outer jacket must be 0.035" thick cross-linked polyethylene (XLPE).</p> <p>The lead-in cable must be a two-conductor, double-jacketed cable with a nominal outer diameter of 0.360". The individual conductors must be #16 AWG wire (formed from nineteen strands of #28 AWG copper wire) with a 0.020" thick layer of cross-linked polyethylene (XLPE) insulation. The inner jacket must be 0.040" thick cross-linked polyethylene (XLPE). The void between the conductors and the inner jacket must be spiral wrapped with a clear, moisture resistant binder tape and filled with an amorphous water-block compound. The outer jacket must be 0.042" thick cross-linked polyethylene (XLPE).</p> <p>The cross-linked polyethylene (XLPE) insulation used for wire insulation and cable jacketing must be capable of withstanding temperatures up to 426 degrees Fahrenheit. Splices between the individual loop cable conductors, and the splices between the loop cable conductors and the lead-in cable</p>	Test	Specification Limits	Skin Time at 77° F	2 hours maximum	Cure Time at 77° F	48 hours maximum	Tensile Strength (ASTM D-142)	600 psi minimum	Elongation (ASTM D-412)	300 % maximum	Linear Shrinkage (ASTM D-2566)	0 %	Hardness Shore A (ASTM D-2240)	70 minimum	Test	Specification Limit	Termosel Viscosity at 400°F (ASTM D-4402)	4000 cp maximum	Penetration, 125°F, 50 g, 5 s (ASTM D5)	50 maximum	Penetration, 77°F, 100g, 5 s (ASTM D5)	10-25	Softening Point (ASTM D36)	210°F minimum	Ductility, 77°F (ASTM D113)	15 cm minimum
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Hardness Shore A (ASTM D-2240)	70 minimum																											
Test	Specification Limit																											
Termosel Viscosity at 400°F (ASTM D-4402)	4000 cp maximum																											
Penetration, 125°F, 50 g, 5 s (ASTM D5)	50 maximum																											
Penetration, 77°F, 100g, 5 s (ASTM D5)	10-25																											
Softening Point (ASTM D36)	210°F minimum																											
Ductility, 77°F (ASTM D113)	15 cm minimum																											

Section # or Plan #	Current Title	Text																					
		conductors must be soldered, sealed, and waterproofed. The enclosure that encapsulates the spliced connections must be fabricated from a high impact glass impregnated plastic with a minimum thickness of 0.240". The two halves of the splice enclosure must be sealed with a water resistant gasket material. The interior cavity of the splice enclosure must be completely filled with an amorphous water block compound. The splice enclosure must be submerged in a saltwater solution for three (3) days. At the end of this three-day period, the electrical integrity of these splices must be verified by using a 500 Volt DC MegaOhm meter to ensure that the resistance between either lead-in conductor and the saltwater solution is 200 MegaOhms or greater.																					
9-32.8	SERVICE CABINET	<p>Add the following at the end of the first paragraph:</p> <p>The service cabinet service address and system labels must be permanently mounted phenolic labels with location of mounting, background and letter size per SCL Standards. The Contractor must coordinate with the SCL Electrical Service Representative to confirm correct labelling prior to installation.</p>																					
9-36.2	DETECTABLE WARNING PLATE – CAST-IN-PLACE	<p>Replace this Section with the following:</p> <p>Cast-in-place Materials must be wet set, replaceable tiles listed in WSDOT’s Qualified Products List (QPL).</p> <p>For products not on the QPL, the Contractor must provide the Engineer with a submittal on the alternate Material as specified in section 9-36.4 and 8-14.3(7).</p>																					
9-36	DETECTABLE WARNING	<p>Add the following TWO NEW Sections:</p> <p>9-36.5 TACTILE DIRECTIONAL INDICATOR – CAST-IN-PLACE</p> <p>The tactile directional indicator must be cast-in-place material and match the dimensions shown in the Drawings and Standard Plan 422i. The tactile directional indicator must be Federal Safety Yellow, non-slip surface and be installed per manufacturer’s recommendations. Contractor must provide the Engineer with a submittal of manufacturer’s details for review.</p> <p>9-36.6 TACTILE DIRECTIONAL INDICATOR – SURFACE APPLIED</p> <p>The tactile directional indicator must be capable of being bonded to an existing cement concrete and asphalt surface. The surface of the tactile directional indicator, including the tactile bumps, must not be more than 3/8 inch above the finished grade after installation.</p> <p>The tactile directional indicator must be all-season methyl methacrylate (MMA) and match the dimensions shown on the Drawings or as shown in the Standard Plans. The MMA must be retro-reflective, durable, color stable, non-slip surface meeting the material requirements of Section 9-29.3(4) and be installed per manufacturer’s recommendations.</p> <p>Material properties: Methyl methacrylate mixed with quartz aggregate for increased skid resistance. The finished tactile directional indicator must meet the following:</p> <table data-bbox="708 1427 1790 1507"> <tr> <td>Skid</td> <td>>60</td> <td>ASTM E274</td> </tr> <tr> <td>Hardness</td> <td>50-60</td> <td>ASTM D2240</td> </tr> <tr> <td>Solids</td> <td>99 %</td> <td>ASTM D1644</td> </tr> </table> <p>Federal Yellow MIMA Resin:</p> <table data-bbox="708 1598 1790 1709"> <tr> <td>Tensile</td> <td>>2000 PSI</td> <td>ASTM D638</td> </tr> <tr> <td>Elongation</td> <td>>70%</td> <td>ASTM D638</td> </tr> <tr> <td>Flash Point</td> <td>>IOC</td> <td>ASTM D1310</td> </tr> <tr> <td>Density</td> <td>12.86</td> <td>LBs/Gal</td> </tr> </table> <p>Aggregate:</p>	Skid	>60	ASTM E274	Hardness	50-60	ASTM D2240	Solids	99 %	ASTM D1644	Tensile	>2000 PSI	ASTM D638	Elongation	>70%	ASTM D638	Flash Point	>IOC	ASTM D1310	Density	12.86	LBs/Gal
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Section # or Plan #	Current Title	Text														
		<table border="0"> <tr> <td data-bbox="708 294 895 344">Dry Bulk Density g/cm3</td> <td data-bbox="913 294 1006 314">Porosity</td> <td data-bbox="1112 294 1286 395">Saturated Hydraulic Conductivity Ks, cm/s</td> <td data-bbox="1317 294 1411 314">D₁₀, mm</td> <td data-bbox="1504 294 1597 314">D₅₀,mm</td> <td data-bbox="1690 294 1783 314">D₆₀, mm</td> <td data-bbox="1908 294 2032 344">Uniformity Coefficient</td> </tr> <tr> <td data-bbox="708 455 770 475">1.60</td> <td data-bbox="913 455 975 475">0.397</td> <td data-bbox="1112 455 1174 475">0.55</td> <td data-bbox="1317 455 1379 475">0.62</td> <td data-bbox="1504 455 1566 475">0.88</td> <td data-bbox="1690 455 1752 475">0.90</td> <td data-bbox="1908 455 1970 475">1.5</td> </tr> </table> <p data-bbox="708 516 2147 667"> Formulation: 2 gallons of Federal Yellow MMA resin 25 lbs. hard wearing aggregate Catalyst as recommended by manufacturer for ambient and road temperature Material must be installed as specified with manufacturer's certification. Contractor must have installation certification approved prior to install. </p>	Dry Bulk Density g/cm3	Porosity	Saturated Hydraulic Conductivity Ks, cm/s	D ₁₀ , mm	D ₅₀ ,mm	D ₆₀ , mm	Uniformity Coefficient	1.60	0.397	0.55	0.62	0.88	0.90	1.5
Dry Bulk Density g/cm3	Porosity	Saturated Hydraulic Conductivity Ks, cm/s	D ₁₀ , mm	D ₅₀ ,mm	D ₆₀ , mm	Uniformity Coefficient										
1.60	0.397	0.55	0.62	0.88	0.90	1.5										
9-38	TEMPORARY TRAFFIC CONTROL MATERIALS	<p data-bbox="640 727 1006 747">Add the following NEW Sections:</p> <p data-bbox="640 778 1193 798">9-38.16 TEMPORARY PEDESTRIAN CURB RAMPS</p> <p data-bbox="640 808 2094 868">Temporary pedestrian curb ramps must be constructed as shown in the traffic control plans or be pre-manufactured devices meeting the requirements of the ADA Accessibility Standards, see Chapter 4: Ramps and Curb Ramps at www.access-board.gov.</p> <p data-bbox="640 919 1162 939">9-38.17 PEDESTRIAN CHANNELIZING DEVICES</p> <p data-bbox="640 949 2200 1030">When exposed to vehicular traffic, pedestrian channelizing devices must meet the crashworthiness requirements of NCHRP 350 or MASH as described in Section 1-10.2(5)B. The bottom and top surfaces of the pedestrian channelizing device must have 6-inch retroreflective bands matching the body color of the device fabricated from Type IV (High Intensity) or a higher type reflective sheeting.</p>														
SP 002	ABBREVIATIONS	<p data-bbox="640 1080 975 1100">Several abbreviations added.</p>														
SP 003H	STANDARD SYMBOLS SEWER & DRAINAGE	<p data-bbox="640 1161 1255 1181">Add new symbols for junction box type 277A and 277B.</p>														
SP 020B	MONUMENT FRAME & COVER	<p data-bbox="640 1292 1100 1312">Note 2 revised, "shall" changed to "must".</p>														
SP 100A	DECIDUOUS TREE PLANTING IN PLANTING STRIP	<p data-bbox="640 1403 975 1423">New detail and call out added.</p>														
SP 113	MEDIAN PLANTING	<p data-bbox="640 1534 975 1554">New detail and call out added.</p>														
SP 115A	IRRIGATION POINT OF CONNECTION DIAGRAM	<p data-bbox="640 1614 851 1634">New Standard Plan.</p>														
SP 115B	IRRIGATION POINT OF CONNECTION	<p data-bbox="640 1745 851 1766">New Standard Plan.</p>														

Section # or Plan #	Current Title	Text
	DIAGRAM FOR BATTERY OPERATED CONTROLLERS	
SP120	IRRIGATION MASTER VALVE AND FLOW SENSOR	New Standard Plan.
SP 121	IRRIGATION HOSE BIB ASSEMBLY AND QUICK COUPLER VALVE	New detail added, revisions to Materials and reduced depth dimensions.
SP 126	POP UP & FIXED IRRIGATION HEADS	Clearance clarifications revised.
SP 128A	IRRIGATION TRENCHES	Renumbered to 128A from 128 due to addition of 128B. Details and notes also revised.
SP 128B	IRRIGATION TRENCHES	New Standard Plan showing scenarios with multiple non potable water pipes, conduit and wires in trench.
SP 150A	SOIL CELL	New Std Plan showing plan and section for soil cells.
SP 150B	SOIL CELL	New Std Plan showing sections for soil cells.
SP 151	IRRIGATION FOR TREE PITS WITH SOIL CELLS	New Std Plan showing plan and section for soil cells irrigation.
SP 152	IRRIGATION FOR PLANTING STRIPS WITH SOIL CELLS	New Std Plan showing irrigation layout for soil cells in planting strips.
SP 204.5A	TYPE 204.5A MAINTENANCE HOLE	Concentric cone corrected for correct shape.
SP 230	2'-0" DIAMETER FRAME AND COVER	Revise note 5.

Section # or Plan #	Current Title	Text
SP 233A	OUTSIDE DROP CONNECTION	Call out revised to change "FLANGE" to "plug".
SP 233B	INSIDE CRIP CONNECTION	"STAINLESS STEEL BLIND FLANGE & BOLTS" changed to "DIP PLUG & STAINLESS STEEL BOLTS".
SP 241B	TYPE 241 CATCH BASIN INSTALLATIONS	Callout added, detail title revised.
SP 250	TYPE 250 INLET	Allowable outlet location revised.
SP 252	TYPE 252 INLET	Allowable outlet location revised.
SP 260A	INLET/CATCH BASIN LOCATION & INSTALLATION	Notes 1 & 2 revised, note 3 removed.
SP 260B	CATCH BASIN & INLET INSTALLATION	"TYPE 240D" corrected to "TYPE 242B".
SP 260C	CATCH BASIN & INLET INSTALLATION WITH STANDARD PLAN 263B ALTERNATIVE HOOD	Correct "TYPES" shown in both upper graphics.
SP 264	INLET FRAM & GRATE	Spec Sec 9-12.7(2) added.
SP 265A	VANED GRATE	Dimensions added to section A-A, notes added.
SP 265B	VANED GRATES	New Standard Plan.
SP 266	TYPE 266 REPLACEMENT VANED GRATE	Dimensions added, note 2 corrected.

Section # or Plan #	Current Title	Text
SP 281	BIORETENTION UNDER DRAIN CLEAN-OUT AND OBSERVATION PORT	“BIO SWALE BOTTOM, TYP” changed to “BIORETENTION BOTTOM, TYP”.
SP 283	SIDE SEWER INSTALLATION	Previous note 12 removed.
SP286A	SEWER/ STORM DRAIN & WATER SPACING AND CLEARANCES	Title and call-outs revised to include Storm Drains.
SP 286B	SEWER AND WATER SPACING AND CLEARANCES	Change the second comment on the right to: INSPECTED BY AUTHORIZED REPRESENTATIVE OF SEATTLE PUBLIC UTILITIES
SP 295A, 295B 295C 295D	TYPICAL DRAIN CURB CUT LOCATION FOR BIORETENTION WITH SLOPED SIDES	Section reference added.
SP 310B	TYPE 310 HYDRANT SETTING DETAIL	Conc shear block revised.
SP 311A	TYPE 311 HYDRANT SETTING DETAIL	Bleeder revised.
SP 314A	FIRE HYDRANT LOCATIONS & CLEARANCES	Note 6 added, fire hydrant dimension added, “BACK OF SIDEWALK” callout added.
SP 314B	CLEARANCES FOR TYPICAL WATER SERVICE VAULTS & METER BOXES	Title Revised – many notes revised to add clarity and to provide congruence with other City provided guidance.
SP 315B	CAST IRON VALVE BOX & OPERATING NUT EXTENSION	Previous note 2 removed.

Section # or Plan #	Current Title	Text
SP 316	WATER SERVICE CONNECTION TO NEW WATER MAIN	New Standard Plan.
SP 320	AIR RELEASE AIR VACCUM VALVE	Notes revised, "Meter Box" changed to "HANDHOLE", "UNION" changed to "COMPRESSION COUPLIN", numerous other callouts revised or added.
SP 330A	WATERMAIN THRUST BLOCKING VERTICAL FITTINGS	"4 TURNBUCKELS" changed to "2 TURNBUCKLES".
SP 361A	TYPE 361A VALVE CHAMBER FRAME & COVER IN VEHICULAR TRAVELWAYS	Notes added, "H=4 1/4...." callout revised.
SP 361B	TYPE 361B VALVE CHAMBER FRAME & COVER IN PEDESTRIAN PATHWASYS	Notes added, "H=4 1/4...." callout revised.
SP 400	HALF SECTION, GRADING	"1" MIN" added to planting strip callout, note added.
SP 405A	STREET PAVING & APPURTENANCES	Revised Notes: 2, 3 and 4. Renumbered Notes: 3 to 5 and 4 to 6. Add the word "pavement" to the end of Note 1.
SP 405B	STREET PAVING & APPURTENANCES	New detail added.
SP 405C	STREET PAVING & APPURTENANCES	New Notes 6 and 7 added. See adjustment to the first row of the table under heading DEPTH (D) OF RDWY CEM. CONC.
SP 406	STREET PAVING & APPURTENANCES	New Note 2 added. New CLEARANCE REQUIREMENTS added. New labels on top image and revised wire mesh detail. New additions to lower image.

Section # or Plan #	Current Title	Text
SP 420	CONCRETE SIDEWALK DETAILS	“SEE NOTE 5” callout added, notes 3 & 5 revised.
SP 421	SIDEWALK WITH MONOLITHIC CURB	“MAX” added to 2% slope.
SP 422A	CURB RAMP DETAILS	Several callouts and dimensions revised.
SP 422B	CURB RAMP DETAILS	Note 4 revised.
SP 422C	CURB RAMP DETAILS	Note 3 revised, callouts revised, “5’-0” MIN” circle and dimension added.
SP 422D	CURB RAMP DETAILS	Dimensions revised.
SP 422E	CURB RAMP DETAILS	Callouts and dimensions revised.
SP 422F	CURB RAMP DETAILS	Note 4 revised dimensions and callouts revised.
SP 422G	CURB RAMP DETAILS	Dimensions revised.
SP 422H	CURB RAMP DETAILS	Title revised, note 3 revised, detectable warning layout revised.
SP 422I	CURB RAMP DETAILS	Titles changed, notes revised.
SP 422K	CURB RAMP DETAILS	Notes 4, 8, 9 revised, note 18 added, dimension revised.
SP 422L	CURB RAMP SECTIONS	Dimensions revised.

Section # or Plan #	Current Title	Text
SP 424A	EXPANDABLE TREE PIT DETAIL	Add root barriers and remove callouts for Type A and Type B stating: "Flexible Porous Surface Treatment over 2" Min Depth Mnrl Agg Type 22".
SP 425	ALTERNATIVE WALKWAYS	"2.0% MAX" added to HOT MIX ASPHALT PAVEMENT SIDEWALK SECTION
SP 432A	MULTI-PURPOSE TRAIL AT STREET CROSSING	Note 10 added, "6" CURB RAMP....." callout revised.
SP 432A	MULTI-PURPOSE TRAIL AT STREET CROSSING	Callouts revised, callouts added, "8-14" REF STD SPEC SEC added.
SP 433	WASTE ACCESS RAMP	New Standard Plan.
SP 456A	TEMPORARY PEDESTRIAN WALKWAY	SP renumbered, notes 2, 3 & 4 revised, note 6 added, "DETECTION PLATE" added, "RAMP" callout revised.
SP 456B	TEMPORARY PEDESTRIAN CURB RAMP	New Standard Plan.
SP 501A	SERVICE CABINET FOUNDATION DETAIL	"LIFT-OFF SERVICE COVER..." callout revised.
SP 530B	DETECTOR LOOP DETAILS	New bike symbol inserted.
SP 700	TRAFFIC BUTTONS & LANE MARKERS Note: also see Section 9-21.2(1)	Revised dimensions for Lane Marker 2A.
SP 712	TYPICAL CROSSWALK & STOP LINE INSTALLATION DETAILS	Note 2 revised.

Section # or Plan #	Current Title	Text
SP 770	BIKE SYMBOL WITH ARROW	Bike symbol revised.
SP 771	SHARROW & BIKE SYMBOLS	Bike symbol was removed from lower right corner.
SP 772	BICYCLE DETECTOR SYMBOL	Bike symbol revised, 2'-0" dimension revised to 3'-6".
SP 780	CROSS BILE PAVEMENT MARKING	Skewed layouts, 780SA & 780SB, added.
SP 781	BIKE LANE PAVEMENT MARKING AT DRIVEWAY	Bike symbol changed, "S-_770" changed to "S-_770A".

End of document