

ATTACHMENT 'A'
AMENDMENT RECORD OF ALL CHANGES INCLUDED IN THE
MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS EDITION No. 13

CITY OF NANAIMO
MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS
AMENDMENT RECORD

Manual Revision # 13

Revision Date: 2020

The Revision No.13 Edition of the Manual of Engineering Standards and Specifications (MoESS) was re-published in its entirety.

The footer for these sections has been revised to represents this revision 'May 2020 Edition'. This represents the most current edition of the manual.

In addition to the footer, the manual text continues to include the revision date in (*BOLD ITALICS*) at the end of the paragraph affected by the technical amendment. This represents the technical amendments that are incorporated into the MoESS for this revision year.

The sub-sections that had revisions within Edition No.13 are noted with the manual text in (*BOLD ITALICS*)

The standard drawings include a footer that reads;

Engineering Standards and Specifications
 May 2020 Edition

Each Manual holder is responsible for determining implementation dates of the Manual of Engineering Standards and Specifications revisions. Therefore, manual holders are cautioned about immediately discarding superseded and cancelled standards.

Superseded / Added / Cancelled / Removed	Page Revised / New Insert / New Dwg No.	Section No. / Dwg No. Affected	Remarks
Title Page	Title Page	Title Page	Updated to May 2020.
Superseded	All	Contents and Introduction	Section 4.0 title changed from Trench, Excavation, Bedding and Backfill to Excavation, Trenching and Backfill. Section 8.0 title changed from Curbs, Sidewalks and Walkways to Transportation. Section 9.0 title changed from Streets, Traffic Signs and Markings to Aggregates and Granular Material. Section 11.0 title changed from Reinforced and Plain Concrete Works to Cast In Place Concrete Works. Section 13.0 title changed from Concrete Pavers to Surface Treatments. Update to the Introduction to reflect section titles and the section content regarding Sections 4.0, 8.0, 9.0, 11.0 and 13.0.
Superseded	All	1.00	Entire section, including written specifications and standard drawings, is superseded in MoESS due to a complete sectional review and update to Section 1.0. The revision included providing standard specifications for the Tree Management Plan to support the Management and Protection of Trees Bylaw and standard requirements to begin the digital submission of drawings to support the GIS Data Management Strategy.
-	1-3	1.01	General Requirements: Revised clause 1.01.1 to include (j) Tree Management Plan. Revised clause 1.01.9 to include (e) City of Nanaimo Logo.
-	1-4	1.02	Site Plan and Key Plan: Revised clause 1.02.5 to update (e) the Provincial department name change, Ministry of Forests, Lands, Natural Resource Operations and Rural Development.

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-	1-10	1.11	Landscape and Irrigation Plan Preparation: Revised clause 1.11.3(d) to include trees as per the Management and Protection of Trees Bylaw. Added clause 1.11.3(g) in its entirety.
Added	1-11	1.11A	Tree Management Plan: Added sub section in its entirety.
-	1-13	1.16	Survey Control Monuments: Revised clause 1.16.1 to update (e) the Provincial department name change, Ministry of Forests, Lands, Natural Resource Operations and Rural Development.
-	1-14	1.20	General Requirements: Revised clause 1.02.6(j) to include the revised reference to Section 8.0.
-	1-17	1.22	Digital Submission of Record Drawings: Revised clause 1.22.1 to include AutoCAD or Civil 3D (C3D). Added reference to Section 1.40.6. Removed sentence in clause 1.22.2 referencing survey point layers. Revised clause 1.22.3 with revised layer names.
-	1-19	1.40	Computer Aided Drafting Standards Overview: Added clause (d) to Section 1.40.2. Revised clause 1.40.3 to use C3D. Added clause 1.40.4. Removed and replaced Clause 1.40.5 completely to utilize the C3D pipe networks. Revised clause 1.40.6 to adjust the abbreviations to be C3D and GIS from Civil 3D and G.I.S.
-	1-19	1.41	Template Drawings: Revised clause 1.41.1 to include pipe catalogs to the requirement and reference to the location and names of these resources.
Superseded	All	2.00	Entire section is superseded in MoESS due to updating and formatting of the information and the update of the identifier footer.
-	2-2	2.01	Definition of Terms: Revised clause 2.01.15 with name change of the BC engineering association to be 'Engineers and Geoscientist of BC'.
-	2-8	2.01B	References: Removed ASTM C76. Removed ASTM D1248. Added ASTM D3261. Added ASTM D3350. Added ASTM F2620. Added AWWA C105. Added AWWA C217. Added AWWA C515. Added AWWA C550. Removed AWWA M11. Added CSA B137.1.
-	2-13	2.01C	Supplementary Documents: Removed CoN Traffic and Highway Installation Guidelines. Added clause 2.01C(p) BC Building Access Handbook.
	2-15	2.01D	City Bylaws: Removed duplicate listing for the Tree Protection Bylaw.
Superseded	All	3.00	Entire section is superseded in MoESS due to updating and formatting of the information and the update of the identifier footer. Removed the 'Not Used' sections and renumbered accordingly. Added the standards to support the Tree Protection bylaw.
-	3-2	3.01	Temporary Construction Facilities: Renumbered from 3.03 to 3.01.
-	3-2	3.02	Operating Manuals: Renumbered from 3.04 to 3.02.
-	3-2	3.03	Explosives: Renumbered from 3.05 to 3.03.
-	3-3	3.04	Site Maintenance and Cleanup: Renumbered from 3.07 to 3.04.
-	3-3	3.05	Time of Installation: Renumbered from 3.08 to 3.05.
-	3-3	3.06	Work within Roads Right-of-Way: Renumbered from 3.09 to 3.06.
-	3-4	3.20	Location of Structures: Renumbered from 3.22 to 3.20.
-	3-4	3.21	Protection, Adjustment and Salvage of Structures: Renumbered from 3.23 to 3.21.
-	3-4	3.22	Emergency Situations: Renumbered from 3.24 to 3.22.
-	3-4	3.23	Access Maintained: Renumbered from 3.24 to 3.23.
-	3-5	3.24	Curtailment of Utility Services: Renumbered from 3.26 to 3.24.
-	3-5	3.25	Support of Structures: Renumbered from 3.27 to 3.25.
-	3-6	3.26	Drainage Facilities: Renumbered from 3.28 to 3.26.
-	3-6	3.27	Tree Protection: Added as clause 3.27.
	3-7	3.60	Control of Public Traffic - General: Renumbered from 3.61 to 3.60.
Added	TP-1	TP-1	Tree Protection Fencing: Added Standard Drawing.

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Superseded	All	4.00	Entire section, including written specifications and standard drawings, is superseded in MoESS due to a complete sectional review and update to Section 4.0. The entire Section 4.0, Specifications and Installation and Standard Drawings were part of a sectional review to revise the section to current best practices for engineering design and construction with the most current standards and specifications for the industry. The revisions are identified in this amendment record.
-	4-3	4.01	Scope: Revised clause 4.01.1 and removed 4.01.3.
-	4-3	4.02	Testing: Revised to removed all content and reference Section 9.0.
-	4-3	4.04	Precutting Paved Surfaces: Revised to removed 'Pavement that has been removed by grinding may be reused as backfill is approved by the Engineer' from clause 4.04.4 . Revised reference within 4.04.5.
-	4-5	4.07A	Common Excavation: Revised to add clause 4.07A.2 to 4.07A.4.
-	4-5	4.07B	Rock Excavation: Revised to remove clause (d) and (e) from 4.07B.1 and add clause (d) and (e) and edit 'approved granular fill' from 'imported granular fill' in (c) from 4.07B.2.
Added	4-7	4.09A	Authorized Over excavation: Added, moved and revised from Section 9.0.
Added	4-7	4.09B	Unauthorized Over excavation: Added, moved and revised from Section 9.0.
-	4-7	4.10	Stockpiling of Excavated Trench Material: Revised to change the word 'piling' to 'stockpiling'. Revised to change 'native' to 'granular' in clause 4.10.5.
-	4-8	4.11	Disposal of Excavated Material: Revised to add 'property' to clause 4.11.5.
-	4-9	4.14	Trench Bottom Conditions: Revised to change 'import granular fill' to 'approved granular material' within clause 4.14.2(a).
-	4-10	4.17	Bedding within Pipe Zone: Revised to add 'C136M' to 'ASTM C136/C136M' within clause 4.17.1.
-	4-11	4.18	Trench Dams: Revised the association name from 'APEGBC' to 'EGBC'.
-	4-12	4.19	Backfill and Compaction: Revised references in clause 4.19.1. and parameters for clause 4.19.2(c) and (d). Revised the word 'native' to granular' in clause 4.19.2(e) . Revised clause 4.19.3(c) to include RAM. Revised 4.19.3(d) to include field testing. Revised 4.19.4(b) to include 'or material specified in Section 4.19'.
-	4-13	4.20	Not Used: Imported Granular Backfill was removed from the manual, Section 4.0, 8.0 and 9.0 were revised within a comprehensive sectional review.
-	4-14	4.21	Concrete: Revised from 20MPa to 32MPa as per the Section 11.0 comprehensive review.
-	4-14	4.22	Not Used: Road Sub-Base Gravel Course was removed from Section 4.0, 8.0 and consolidated in 9.0 as part of the comprehensive sectional review.
-	4-14	4.22A	Not Used: Road Base Gravel Course was removed from Section 4.0, 8.0 and consolidated in 9.0 as part of the comprehensive sectional review.
-	4-14	4.23	Not Used: Approved Native Backfill was removed from Section 4.0, 8.0 and consolidated in 9.0 as part of the comprehensive sectional review.
-	4-15	4.25	Not Used: Variation in Specification Requirements for Traveled Surfaces was removed from Section 4.0, 8.0 and consolidated in 9.0 as part of the comprehensive sectional review.
-	4-16	4.27	Surface Restoration: Revised as part of the comprehensive review of granular materials and asset management to improve roadway service lives. 50mm to 75mm etc. and the reference to the new Standard Drawings within Section 8.0. Revised clause 4.27.2(b) to 300mm lifts and reference section 9.21.
-	4-18	4.28	Final Cutting Paved Surface: Moved from 4.29 and revised.
-	4-18	4.29	Pavement Restoration: Moved from 4.28 to 4.29, revised to incorporate the Section 9.0 requirements from the granular materials comprehensive review. Removed clause 4.29.9 Temporary RAP Patching.
-	T-1	T-1	Trench Details: Revised to reference to approved backfill materials rather than approved imported granular fill.

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-	T-2	T-2	Sanitary and Storm Sewer in Common Trench: Revised to reference to approved backfill materials rather than approved imported granular fill.
-	T-4	T-4	Pavement Restoration - Type 1 (Asphalt Thickness 75mm): Revised the thickness of minimum asphalt to be 75mm from 50mm
-	T-5	T-5	Concrete Encasement for Watermain / Sewer Separation: Revised Note 1 to be 'Petrolatum tape wrapping' instead of 'concrete encasement'.
-	T-8	T-8	Trench Dams - Type 1 for all Utility Mains: Revised to removed reference of diameter of pipes.
-	T-9	T-9	Private Utilities - Underground Electrical Common Trench Details: Revised to removed reference of pavement location and added Note 1.
-	T-10	T-10	Private Utilities - Underground Electrical Typical Service Box Location: Revised to change reference in Note 1. and add Note 6.
Superseded	All	5.00	Entire section, including written specifications and standard drawings, is superseded in MoESS due to a complete sectional review and update to Section 5.0. The entire Section 5.0, Design Criteria, Specifications, Installation and Standard Drawings were part of a sectional review to revise the section to current best practices for engineering design and construction with the most current standards and specifications for the industry and to incorporate the Cross Connection Control Bylaw. The revisions are identified in this amendment record.
-	5-4	5.01A	Water Demand: Revised clause 5.01A(c) Fire Demand to clarify the distribution of the residual pressure at all flowing hydrants, at 22 psi and no other point in the system to be less than 5 psi.
-	5-7	5.02	Water Pressure: Revised to clarify both clause 5.02.1 and 5.02.2 for peak hour demand and allowable pressures to be compatible with industry standards.
-	5-7	5.02A	Velocity: Revised clause 5.02A.2 to change velocity during fire flow conditions from 3.0 m/s to 3.5 m/s.
-	5-8	5.05	Water Distribution Piping: Revised to removed clause (d) to be placed in subsections 5.05A and 5.05B. Revised to reflect current best practices and standards.
Added	5-8	5.05A	External Pie/Fitting Corrosion Report: Revised to move content from 5.05 and update to best practices and standards.
Added	5-9	5.05B	Corrosion Protection Required for Buried Metals: Revised to move content from 5.05 and update to best practices and standards.
-	5-9	5.06	Service Connections: Revised to add clause 5.06.1 to incorporate the Cross Connection Control Bylaw. Revised clause 5.06.4 to provide clarity in the design requirements for valve design criteria.
-	5-10	5.07	Hydrants: Revised design criteria for hydrant assembly in clause 5.07.4 to provide clarification of the requirements. Revised clause 5.06.6 for section reference from 9.0 to 8.0.
-	5-12	5.09	Thrust Blocks and Joint Restraints: Revised to design criteria for restraint requirements for best practices and current standards.
-	5-12	5.10	Watermain Location, Depth and Grade: Revised clause 5.10.2 to be City Engineer.
-	5-13	5.11	Pressure Reducing Stations: Revised clause 5.11.1 to include the psi measurement with the kPA. Revised clause 5.06.2(e) to conform with the City standard practice to have PRV stations enclosed in above ground units rather than below ground chambers.
-	5-14	5.13	Meter Chambers/Vaults and Boxes: Revised clause 5.13.3 with references to the standard drawings. Revised clause 5.13.6(c) for criteria regarding additional required valve boxes.
Added	5-16	5.13A	Backflow Prevention Assemblies Chambers/Containment Structures: Added to Design Criteria to provide requirements for the Cross Connection Control Bylaw.
-	5-16	5.14	Air Valves: Revised clause 5.14.5 wording from 'must' to 'shall'.
-	5-17	5.15	Flushouts: Revised clause 5.15.4 for section reference from 9.0 to 8.0.
-	5-17	5.16	Floor Drain Chamber Assembly: Revised title from 'Floor Assembly Chamber Design' to 'Floor Drain Chamber Assembly'.

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-	5-19	5.21	Material Testing: Revised clause 5.21.1 so that Engineer shall arrange for a certified material testing firm to carry out testing. Removed clause 5.21.2.
-	5-19	5.22	Watermain Pipe: Revised to provide the current best practices and industry standards and specifications for Ductile Iron, Steel Pipe, PVC and HDPE.
-	5-22	5.23	Watermain Fittings: Revised to remove clause 5.23.1(a) and revised clause 5.23.3 in its entirety for specifications on the rubber gasket.
-	5-23	5.24	Watermain Valves: Revised to provide the current best practice and industry standards and specifications for watermain valves. Removed Gate Valves from the MoESS. Updated the specification clauses for Resilient Wedge Gate Valves.
-	5-24	5.25	Watermain Valve Boxes: Revised to removed 'C900/C905' from clause 5.25.1.
-	5-24	5.26	Watermain Valve Markers: Revised clause 5.26.2 'on site at a location' to be 'at a safe and reasonable location'.
-	5-25	5.27	Hydrants: Revised clause 5.27.1(a) to add 'for dry barrel hydrants.' Revised clause 5.27.1(f) to provide self-draining with drain outlets. Revised reference within clause 5.27.3(c).
-	5-26	5.29	Air Valves and Fittings: Revised to provide the latest specification references within clause 5.29.1 and 5.29.2.
-	5-27	5.30	Water Service Connections: Revised to provide the current best practices and industry standards and specifications for water service connections for services up to and including 50mm diameter, corporation stops, curb stops, service fittings, service connections greater than 50mm diameter, meter service boxes, box extensions and lids, pipe saddles, meters, backflow prevention assemblies, pipe in chambers, gate valves domestic service and gate valves fire line service.
-	5-32	5.34	Meter Chambers: Revised clause 5.34.6(a) to reference Section 11.0.
-	5-34	5.40	Trench Excavation, Bedding and Backfill: Revised the reference to include the revised section title name for section 4.0.
-	5-35	5.47	Pipe Restraint: Revised the reference to include the revised section title name for section 11.0.
-	5-35	5.48	Fittings: Revised clause 5.48.1 to be City Engineer.
-	5-36	5.52	Hydrants: Revised clause 5.52.2(d) and (e) to be City Engineer. Revised clause 5.52.3(a) to add 'in consultation with the City Engineer. Approval by the City Engineer is required. Revised clause 5.52.4(d) reference to be 9.47.
-	5-37	5.53	Flushout Installation: Revised clause 5.53.1 to add 'in consultation with the City Engineer'.
-	5-37	5.54	Air Valve Installation: Revised clause 5.54.1 to add 'in consultation with the City Engineer'.
-	5-38	5.56	Water Service Connection Installation: Revised clause 5.56.3(a) to be as shown on the drawings. Removed clause 5.56.4(g) and revised clause 5.56.4(j), 5.56.5(a) and 5.56.6(a) 'and City Engineer'.
-	5-39	5.58	Meter Chambers: Revised clauses that reference Section 4.0 and 11.0. Revised clause 5.58.9(c) to be City Engineer.
-	5-41	5.61	Pressure and Leakage Testing: Revised 'City Works Inspector' to be 'City Inspector' and revised to add psi units with the kPa.
-	5-43	5.62	Flushing Chlorination and Bacterial Sampling: Revised City Works Inspector to be City Inspector in clause 5.62.2. Revised 5.62.3 to add 'in consultation with the City Engineer.'
-	5-43	5.63	Notification to City Engineer - System Tests and Final Connection: Revised City Works Inspector to be City Inspector in clause 5.63.1 and 5.63.6.
Added	5-45	5.70-5.81	Cross Connection Control Sub-Section: Added an entire subsection to Section 5.0 for Cross Connection Control to support the City's CCC Bylaw.
Added	5-45	5.70	Legal Authority: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-45	5.71	Owner's Responsibility: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-46	5.72	Acceptable Backflow Preventers: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.

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Added	5-46	5.73	Hazard Category: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-46	5.74	Devices Required for Premises Isolation: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-47	5.75	Properties, Hazard Classification and Premised Isolation Required:
Added	5-50	5.76	Testing, Maintenance and Reporting: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-51	5.77	Installation Standards for Backflow Prevention Assemblies for Premises Isolation:
Added	5-53	5.78	Fire Protection Systems: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-54	5.79	Distribution System Protection: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-55	5.80	Use of Fire Hydrants and Standpipes: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Added	5-55	5.81	Irrigation Systems: Added section as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
-	W-1	W-1	Water Service Connection (19 dia.- 50 dia.): Revised to add coiled service line within the box and revised dimensions for the depth of added section as part of the full sectional review to provide standards and e box and height of the service marker.
-	W-11	W-11	Meter / DCVA Backflow Prevention Assembly Chamber Precast Vault: Revised to added Note 9 and Note 10 and DVCA to the table as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
-	W-13	W-13	Fire / Domestic Water Meter - Piping Layout (100 dia. - 250 dia.): Revised as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
-	W-14	W-14	Domestic Water Meter - Piping Layout (75 dia. - 250 dia.): Revised as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
-	W-14A	W-14A	Domestic Water Meter - Piping Layout (38 dia. - 50 dia.): Revised as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
-	W-15	W-15	Detector Check Fire Line Service - Piping Layout (100 dia. - 250 dia.): Revised as part of the full sectional review to provide standards and specifications to incorporate the Cross Connection Control Bylaw.
Superseded	All	6.00	Entire section, including written specifications and standard drawings, is superseded in MoESS due to a complete sectional review and update to Section 6.0. The entire Section 6.0, Design Criteria, Specifications, Installation and Standard Drawings were part of a sectional review to revise the section to current best practices for engineering design and construction with the most current standards and specifications for the industry. The revisions are identified in this amendment record.
-	6-4	6.01A	Sewage Flows: Removed "(shown graphically on drawing SAN-1) note as this drawing was removed from Section since the equation is more reliable than curve on drawing SAN-1. Revise Clause 6.01A.4 to update sanitary sewer modeling requirement from a service population of 1000 to a service population of 100.
-	6-6	6.03	Hydraulics: Revised Clause 6.03.4 to include upgrade instructions for new developments
-	6-6	6.04	Piping: Revised Clause 6.04.2 to update requirements for deflected sewers where bending of pipe barrel will not be permitted and horizontal and vertical curves require approval from City Engineer. Updated Clause 6.04.3A to indicate that low pressure sewers are preferred over gravity sewers for utilities crossing private lands.

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-	6-8	6.04A	Manholes: Updated Clause 6.04A.4 to include minimum drop in invert elevation across manholes. Updated Clause 6.04A.4(a) to require that drop manholes to be permitted by City Engineer. Added Clause 6.04A.9 to require sealed manholes on trunk sewers to accommodate surcharging.
-	6-10	6.05	Pumping Stations: Updated Clause 6.05.2 for clarity. Added Clause 6.05.3 to include provisions for odour control.
-	6-10	6.06	Force Mains: Updated Clause 6.06.1 to clarify consideration for odour control. Added Clause 6.06.4 to include roughness coefficient for force mains.
Added	6-10	6.06A	Low Pressure Sewer: Addition of entire design criteria section.
-	6-20	6.20	Scope: Clause 6.20.2 revised for Section 4 new title.
-	6-21	6.22	Piping, Fittings and Services: Reference to industry standards updated, spelling mistakes corrected, and fitting requirements updated in Clause 6.22.6.
-	6-22	6.22A	Force Mains: Reference to industry standards. Updated Clause 6.22A.3(b) for clarity. Updated Clause 6.22A.3(b) to increase diameter to max of 900mm.
Added	6-23	6.22B	Low Pressure Force Mains: Addition of specification section.
-	6-23	6.23	Joints: Updated Clause 6.23.2 c) for clarity.
-	6-23	6.24	Service Junctions: Added the word "Connection" to 6.24 title. Updated Clause 6.24.1 (a) for clarity. Added Clause 6.24.2 c) for condition of prefabricated service saddle connections use. Updated Clause 6.24.3 (b) for clarity.
-	6-25	6.25A	Precast Manhole Bases: Clause 6.25A.1 revised to reference updated specifications from ASTM.
-	6-25	6.26	Manhole Tops: Updated Clause 6.26.1 to clarify H-20 loading requirement.
-	2-25	6.27	Manhole Covers and Frames: Updated Clause 6.27.1 to clarify H-20 loading requirement.
-	2-26	6.30	Concrete: Revised 6.30.1 for clarity
-	2-26	6.31	Precast Concrete Grade Rings: Added clause 6.31.2 to require use of adjustable manhole frame assembly.
-	6-28	6.40	Trench Excavation, Bedding and Backfill: Clause 6.40.1 revised for Section 4 new title.
Added	6-29	6.42B	Low Pressure Force Main Installation: Addition of installation section.
-	6-29	6.43	Joints at Rigid Structures: Removed word "dresser" as refers to specific brand.
-	6-29	6.44	Horizontal and Vertical Curves: Updated requirements for deflected sewers where bending of pipe barrel will not be permitted. Horizontal and vertical curves require approval from City Engineer.
-	6-29	6.45	Deflection: Updated requirements for deflected sewers where bending of pipe barrel will not be permitted.
-	6-30	6.47	Connection to Existing Piping and Appurtenances: Removed word "dresser" in Clause 6.47.2 as refers to specific brand. Updated Clause 6.47.4 to reflect current practices for connections to existing piping.
-	6-31	6.49	Cast in Place Manhole Concrete Bases: Clauses 6.49.2 and 6.49.3 revised for Section 4 new title. Updated Clause 6.49.10 for clarity.
-	6-33	6.52	Concrete: Revised 6.52.1 for clarity
-	6-33	6.53	Frames and Covers: Clause 6.53.1(a) revised to require use of adjustable height manhole frame; Clause 6.53.2(b) revised for clarity.
-	6-34	6.58A	Pumping Stations: Revised for clarity.
-	6-34	6.59	Service Connections Installation: Clause 6.59.3(c) revised for Section 4 new title. Clause 6.59.3(i) revised to reflect standard detail drawing update.
-	6-36	6.60	Cleaning and Flushing: Clause 6.60.1 revised to require additional video inspection within one month prior to the end of the maintenance period. Clauses 6.60.3, 6.60.4 and 6.60.5 revised for clarity.
-	6-36	6.61	Notification to City of Nanaimo: Revised for clarity.

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Superseded / Added / Cancelled / Removed	Page Revised / New Insert / New Dwg No.	Section No. / Dwg No. Affected	Remarks
-	6-37	6.62	Leakage Testing of Gravity Sewers: Clause 6.62.2(c) revised to include hydro/tel/cable. Clause 6.62.2(d) revised for clarity. Clause 6.62.4(a) updated to clarify hydraulic grade line requirements.
-	6-39	6.64	Video Inspecting Mains and Service Connections: Clause 6.64.2 added to require additional video inspection within one month prior to the end of the maintenance period. Clause 6.64.3 updated to require video inspection where a new sewer pipe crosses and existing sewer pipe; Corrected grammar. Clause 6.64.4, 6.64.5 and 6.64.6 updated to require regular card for inspection data and not DVD or CD.
-	6-41	6.65	Smoke testing: Update staff title in Clauses 6.65.1 and 6.65.2.
-	6-41	6.67	Pipe Video and Manhole Condition Report Format: Clause 6.67.1 revised for clarity. In Clause 6.67.3, Sewer Rating Composite Scores table header and column title updated for clarity.
-	S-2	S-2	Sanitary Manhole: Notes updated to reflect casting tolerances. Corresponding drawing dimension updated.
-	S-3	S-3	Sanitary Drop Manhole: Drain rock width from drop structure reduced to 150mm.
-	S-5	S-5	General Sanitary Service Connection Detail Riser and Non-Riser Types: Extended wood stake to the pipe cap; Added note to refer to Dwg. S-17 for connection to existing piping.
-	S-7	S-7	Commercial Areas Sanitary Service Connection Details Riser and Non-Riser Types: Extended wood stake to the pipe cap; Added note to refer to Dwg. S-17 for connection to existing piping.
Added	S-16	S-16	Low Pressure Sewer Service Connection: Added new detail drawing for a typical low pressure force main service connection.
Added	S-17	S-17	Low Pressure Sewer Service Box: Added new detail drawing to reflect current practices.
Added	S-18	S-18	Low Pressure Sewer Flushout Manhole: Added new detail drawing to reflect current practices.
Added	S-19	S-19	Low Pressure Sewer To Gravity Manhole: Added new detail drawing to reflect current practices.
Added	S-20	S-20	Concrete Encasement for Connections to Existing Sewer Service Connections: Added new detail drawing to reflect current practices.
Removed	SAN-1	SAN-1	Sanitary Sewer Peaking Factor: Drawing removed from manual. The Harmon formula is included in Section 6.01A.4.
Superseded	All	7.00	Entire section, including written specifications and standard drawings, is superseded in MoESS due to a complete sectional review and update to Section 7.0. The entire Section 7.0, Design Criteria, Specifications, Installation and Standard Drawings were part of a sectional review to revise the section to current best practices for engineering design and construction with the most current standards and specifications for the industry in particular related to climate change. The revisions are identified in this amendment record.
-	7-4	7.01	Introduction: Revised clauses 7.01.1, 7.01.2, 7.01.6(a), 7.01.6(b) for clarity of the requirements. Added (v) to clause 7.0106(b) "A rationale explaining which method is chosen and why the method is chosen for hydrological analysis."
-	7-7	7.02	Summary of Stormwater and Environmental Protection Design Criteria: Revised clause 7.02.1 to update the language for clarity.
-	7-8	7.03	Stormwater Runoff: Revised clause 7.03.1 and 7.03.2 to update the language for clarity. Added to clause 7.03.3 'The updated IDF curve takes climate change into account, Standard Drawings No. SW-25' to ensure that consultants are aware that climate change is accounted for. Clarified clause 7.03.3 the use of City provided rainfall data. Revised clause 7.03.7 to provide clarity.
-	7-17	7.06	Pipe Design Details: Revised clause 7.06.6(a) horizontal curves require City Engineer permission - operational preference for straight pipes but curves may be appropriate in some cases. This requires engineer to justify to the city. Revised clause 7.06.6(b) specified that curves can only be done with joint deflections.
-	7-25	7.11	Inlet and Outlet Structures: Updated language for clarity.
-	7-25	7.12	Storage Facilities: Updated clause 7.12.3 language for clarity.
-	7-29	7.13	Rainwater Best Management Practices: Revised language for clarity. Updated to clarify around coal mines not being appropriate for infiltration.
-	7-36	7.15	Climate Change: Revised clause 7.15(a) updated to reflect new IDF curve.

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-	7-38	7.20	Scope: Revised for Section 4.0 new title.
-	7-39	7.22A	Piping, Fittings and Services: Reference to industry standards updated, spelling mistakes corrected, and fitting requirements updated in Clause 7.22A.6.
-	7-42	7.25B	Precast Manhole Bases: Clause 7.25B revised to reference updated specifications from ASTM.
-	7-43	7.26	Concrete: Revised clause 7.26.1 for clarity.
-	7-43	7.27	Precast Concrete Grade Rings: Added clause 7.27.2 to require use of adjustable manhole frame assembly.
-	7-44	7.32	Inlet and Outlet Structures: Revised clause 7.32.2 to conform with revised Section 11.0
-	7-45	7.35B	Culvert Headwalls: Revised to conform with revised Section 11.0.
-	7-48	7.40	Trench Excavation, Bedding and Backfill: Revised clause 7.40.1 to conform to new title of Section 4.0.
-	7-48	7.42	Pipe Installation: Revised clause 7.40.1 to conform to new title of Section 4.0.
-	7-49	7.44	Horizontal and Vertical Curves: Updated requirements for deflected sewers where bending of pipe barrel will not be permitted. Horizontal and vertical curves require approval from City Engineer.
-	7-49	7.45	Deflection: Updated requirements for deflected sewers where bending of pipe barrel will not be permitted.
-	7-49	7.47	Connections to Existing Piping and Appurtenances: Revised clause 7.47.2 to reflect current practices for connections to existing piping.
-	7-51	7.49	Cast in Place Manhole Concrete Bases: Clauses 7.49.2 and 7.49.3 revised for Section 4 new title.
-	7-53	7.53	Concrete: Revised to conform with revised Section 11.0
-	7-57	7.62A	Cleaning and Flushing: Clause 7.62A.1 revised to require additional video inspection within one month prior to the end of the maintenance period. Clauses 7.62A.3, 7.62A.4 and 7.62A.5 revised for clarity.
-	7-58	7.63	Video Inspecting Mains and Service Connections: Clause 7.63.2 added to require additional video inspection within one month prior to the end of the maintenance period. Clause 7.6.3.3 updated to require video inspection where a new sewer pipe crosses and existing sewer pipe; Corrected grammar. Clause 7.63.4, 7.63.5 and 7.63.6 updated to require regular card for inspection data and not DVD or CD.
-	7-61	7.68	Inlet and Outlet Structures: Revised to conform with revised Section 11.0.
-	7-63	7.70	Pipe Video and Manhole Condition Report Format: Clause 6.67.1 revised for clarity. In Clause 6.67.3, Sewer Rating Composite Scores table header and column title updated for clarity.
-	SW-13	SW-13	Storm Manhole: Notes updated to reflect casting tolerances. Corresponding drawing dimension updated.
-	SW-14	SW-14	Storm Drop Manhole: Drain rock width from drop structure reduced to 150mm.
-	SW-25	SW-25	New IDF Curve that includes climate change
-	SW-21	SW-21	General Storm Service Connection Detail Riser and Non-Riser Types: Extended wood stake to the pipe cap.
-	SW-22	SW-22	Commercial Area Storm Service Connection Detail Riser and Non-Riser Types: Extended wood stake to the pipe cap.
Superseded	All	8.00	Entire section, including written specifications and standard drawings is superseded in MoESS due to a complete sectional review and update to Section 8.0. The entire Section 8.0, Design Criteria, Specifications, Installation and Standard Drawings were part of a multi-sectional review to revise the transportation and material sections of the manual for current best practices in engineering design and construction and to incorporate the City's Complete Streets Guideline. The revisions are identified in this amendment record.
Removed	-	8.00	Scope: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.01	Right-of-Way Pavement Widths: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-4	8.01	Introduction: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.

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Removed	-	8.02	Curbs - General: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-6	8.02	Definitions: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.03	Walkway Vehicle Barricades: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-7	8.03	Street Types and Classifications: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.04	Driveway and Lane Crossings: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-10	8.04	Geometrics: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.05	Standard Longitudinal Grade: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-13	8.05	Intersection: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.06	Sidewalk and Walkway Crossfall Grade: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-14	8.06	Curbs: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.07	Sidewalk and Walkway Thickness: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-14	8.07	Medians and Islands: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.08	Curb, Sidewalk and Walkway - Minimum Base and Sub-base: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-15	8.08	Buffers: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.09	Pedestrian Sidewalk Ramps: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-15	8.09	Flex Zones: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.10	Sidewalks in Cul-de-sacs: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-15	8.10	Pedestrian Facilities: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.11	Termination of Sidewalks: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-17	8.11	Bicycle Facilities: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.12	Stairways: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.

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Added	8-17	8.12	Multi-Use Facilities: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.13	Sidewalks Handrail: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-18	8.13	Transit Facilities: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation and the Aggregate and Granular Material standards and specifications.
Removed	-	8.14	Bus Stop/Pullout Configuration: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-18	8.14	Motor Vehicle Facilities: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Added	8-18	8.15	Bollards: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Added	8-19	8.16	Handrails and Stairways: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Added	8-19	8.17	Fences: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Added	8-19	8.18	Pavement Markings: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Added	8-20	8.19	Traffic Signage: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
-	8-21	8.20	Scope: Revised as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.21	Curb and Sidewalk Concrete: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-21	8.21	Intersections: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.22	Curing Compound: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-21	8.22	Tactile Warning Surface Indicators (TWSI): Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.23	Curb and Sidewalk Expansion Joints: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-22	8.23	Medians and Islands: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.24	Curb and Sidewalk Isolation Joints: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-22	8.24	Buffers: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.25	Reinforcing Steel: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-22	8.25	Pavement Markings: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.26	Common Excavation: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.

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Added	8-22	8.26	Traffic Signage: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.27	Imported Granular Fill: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.28	Earth Fill: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.29	Imported Earth Fill: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.30	Granular Base: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.31	Select Granular Sub-base: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.32	Forms: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.33	Extruding Machine: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.34	Transition Sidewalk: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.35	Screeds: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.36	Asphalt: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.37	Not Used: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.38	Not Used: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.39	Walkway Barriers: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
-	8-23	8.40	Scope: Revised section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.41	Common Excavation: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-23	8.41	Removals: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.42	Cutting and Removal of Existing Asphaltic and Concrete Pavement, Sidewalk, Curb, and Curb and Gutter: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-23	8.42	Backfill and Grading: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.43	Subgrade, Subbase and Base Preparation: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-24	8.43	Tactile Warning Surface Indicators (TWSI): Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.44	Cross Section: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-24	8.44	Pavement Markings: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.45	Placing Concrete: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-24	8.45	Traffic Signage: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.46	Hand Formed Concrete Sections: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	8-25	8.46	Clean Up: Added section as part of the full sectional review to incorporate the Complete Street Guideline and the separation of Transportation (8.0) and the Aggregate and Granular Material (9.0) standards and specifications.
Removed	-	8.46A	Extruded Concrete Sections: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.

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Removed	-	8.47	Transition Sidewalk and Walkway: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.48	Curb and Sidewalk Expansion Joints: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.49	Curb and Sidewalk Contraction Joints: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.50	Curb and Sidewalk Isolation Joints: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.51	Curb and Sidewalk Edging and Finishing: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.52	Curing Concrete: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.53	Protecting Concrete: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.54	Damaged Concrete: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.55	Asphalt Walkways: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.56	Concrete Walkways: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.57	Boulevards: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.58	Catch Basins and Manholes: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.59	Not Used: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.60	Backfill and Cleanup: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.61	Concrete Testing: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.62	Walkway Barriers: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	8.63	Asphalt Curb: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-1	CS-1	Non-Mountable Monolithic Curb and Gutter Construction: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-1A	CS-1A	Valley Curb and Flat Curb: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-2	CS-2	Non-Mountable Curb Construction: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-3	CS-3	Standard Curb for Traffic Islands and Medians: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-4	CS-4	Mountable Monolithic Curb and Gutter: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-4A	CS-4A	Interim Road Standard - Curb Types: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-5	CS-5	Typical Sidewalk and Driveway Crossing Type 1: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-5A	CS-5A	Typical Sidewalk and Driveway Crossing Type 2: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-5B	CS-5B	Typical Sidewalk and Driveway Crossing Type 3: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.

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Removed	CS-6	CS-6	Typical Sidewalk Construction and Finishing Details: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-7A	CS-7A	Pedestrian Sidewalk Ramp for Non-Mountable Curb - Single: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-7B	CS-7B	Pedestrian Sidewalk Ramp for Non-Mountable Curb - Double: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-8	CS-8	Island Pedestrian Crosswalk Ramp: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-9	CS-9	Curb Extension Detail: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-10	CS-10	Walkway in 3.0m Right-of-Way: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-10A	CS-10A	Urban Hard Surface Walkway: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-10B	CS-10B	Urban Soft Surface Walkway: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-10C	CS-10C	Park Connector Walkway: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-12	CS-12	Asphalt Curb: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-13	CS-13	Walkway Barrier: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-14	CS-14	Removable Barrier Post: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-15	CS-15	Fire Lane Telescoping Bollard: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-16	CS-16	Concrete Stairway and Landing: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-16A	CS-16A	Handrail for Concrete Stairway: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-17	CS-17	Wooden Stairway and Landing: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-17A	CS-17A	Handrail for Wooden Stairway: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-18	CS-18	Sidewalk Handrail: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-19	CS-19	Wood Rail Fence: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-20	CS-20	Bus Stop Configuration for Raised Sidewalk: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	CS-21	CS-21	Bus Stop Configuration for Paved Shoulder: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	MA-XS1	-	Street Types & Cross Sections - Mobility Arterial: Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	MC-XS1	-	Street Types & Cross Sections - Mobility Collector (Boulevards): Added as part of the full sectional review to incorporate the Complete Street Guideline.

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Added	MC-XS2	-	Street Types & Cross Sections - Mobility Collector (Parking): Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	ML-XS1	-	Street Types & Cross Sections - Mobility Local: Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	UA-XS1	-	Street Types & Cross Sections - Urban Arterial: Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	UC-XS1	-	Street Types & Cross Sections - Urban Collector (Turn Lane): Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	UC-XS2	-	Street Types & Cross Sections - Urban Collector: Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	UL-XS1	-	Street Types & Cross Sections - Urban Local: Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	IC-XS1	-	Street Types & Cross Sections - Industrial Collector: Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	IL-XS1	-	Street Types & Cross Sections - Industrial Local: Added as part of the full sectional review to incorporate the Complete Street Guideline.
Added	RL-XS1	-	Street Types & Cross Sections - Rural Local: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing R7-XS5.
Added	L-XS1	-	Street Types & Cross Sections - Lane: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing R8-XS1.
Added	R-CDS	-	Street Types and Cross Sections: Cul-de-sac: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing R7-CU2.
Added	R-TT	-	Street Types & Cross Sections - Temporary Turnaround: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing R7-CU5.
Added	R-PI	-	Intersections - Protected: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	R-PRI	-	Intersections - Protected Roundabout: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	R-RLI	-	Intersections - Raised Local: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	R-II	-	Intersections - Industrial: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-1	-	Curbs - Barrier Curb and Gutter: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-1.
Added	CS-2	-	Curbs - Drop Curb and Gutter: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-1.
Added	CS-3	-	Curbs - Rollover Curb and Gutter: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-4.
Added	CS-4	-	Curbs - Flat and Valley Gutter: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-1A.
Added	CS-5	-	Curbs- Temporary Curb - Type 1: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-2.
Added	CS-6	-	Curbs - Temporary Curb - Type 2: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-4A.

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Added	CS-7	-	Medians and Islands - Raised Centre Median: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-8	-	Sidewalk Finishing Details: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-6.
Added	CS-12	-	Curb Ramps - Orientations: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-13	-	Curb Ramps - Type S - Separated: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-14	-	Curb Ramps - Type C - Constrained (Preferred): Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-15	-	Curb Ramps - Type C - Constrained: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-16	-	Curb Ramps - Type M - Mid-Block: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-17	-	Curb Ramps - Type B - Bikeway: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-20	-	Multi-Use Paths - Splitter Island: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-21	-	Multi-Use Paths - Path or Walkway (Hard Surface): Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-10A.
Added	CS-22	-	Multi-Use Paths - Path or Walkway (Soft Surface): Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-10B.
Added	CS-23	-	Transit Facilities - Reinforced Bus Slab: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-24	-	Driveways and Crossings - Grades: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing R11-DW2.
Added	CS-25	-	Driveways and Crossings - Typical Urban Collector: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-26	-	Driveways and Crossings - Typical Urban Local: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-27	-	Driveways and Crossings - Curb Extension: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-9.
Added	CS-30	-	Bollards - Removable Barrier Post: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-14.
Added	CS-31	-	Handrails and Stairways - Sidewalk Handrail: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-18.
Added	CS-32	-	Handrails and Stairways - Handrail for Concrete Stairway: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-16A.
Added	CS-33	-	Handrails and Stairways - Concrete Stairway and Landing: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-16.
Added	CS-34	-	Handrails and Stairways - Guardrail for Wooden Stairway: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-17A.
Added	CS-35	-	Handrails and Stairways - Wooden Stairway and Landing: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-17.
Added	CS-36	-	Fences - Wood Rail: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawing CS-19.
Added	CS-37	-	Fences - Split Rail: Added as part of the full sectional review to incorporate the Complete Street Guideline
Added	CS-40	-	Traffic Signage - Round Stock Sign: Added as part of the full sectional review to incorporate the Complete Street Guideline

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Added	CS-41	-	Traffic Signage - Perforated Steel Sign: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawings R-S1 and R-S6.
Added	CS-42	-	Traffic Signage - Signs on Steel Poles: Added as part of the full sectional review to incorporate the Complete Street Guideline. Replaced old drawings R-S7 and R-S8.
Superseded	All	9.00	Entire section, including written specifications and standard drawings is superseded in MoESS due to a complete sectional review and update to Section 8.0. The entire Section 9.0, Design Criteria, Specifications, Installation and Standard Drawings were part of a multi-sectional review to revise the transportation and material sections of the manual for current best practices in engineering design and construction and to incorporate the City's Complete Streets Guideline. The revisions are identified in this amendment record.
-	9-3	9.01	Scope: Revised to include revised section references for Section 8.0 Transportation and revised content for Section 9.0 Aggregates and Granular Material.
Removed	-	9.02	Minimum Width of Right of Way: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	9-3	9.02	Minimum Base and Pavement Strengths: Added, moved from Section 9.06.
Removed	-	9.03	Minimum Width of Pavement: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.04	Design Cross Sections: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.05	Description of Road Classes: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.06	Minimum Base and Pavement Strengths: Removed and moved to Section 9.02.
Removed	-	9.07	Standard Longitudinal Grade: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.08	Standard Crown and Crossfall Grades: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.09	Geometrics: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.10	Earthwork: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.11	Standard Cross Sections and Utilities: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.12	Access Driveways: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.13	Not Used: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.14	Street Name and Traffic Signs: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.15	Street Markings: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.16	Temporary Turn A Round: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.17	Roundabouts and Traffic Circles: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
-	9-4	9.20	Scope: Revised to remove aggregates and materials from being references on the City's Approved Product List
-	9-4	9.21	Testing: Revised to removed all content from Section 8.0 and updated within Section 9.0 within a comprehensive sectional review.
Removed	-	9.24A	Stripping: Removed and moved to 9.25.

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Removed	-	9.25	Common Excavation: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Added	9-5	9.25	Stripping: Added, moved from 9.24A as part of the comprehensive sectional review for Transportation and Aggregates and Materials.
Removed	-	9.25A	Rock Excavation: Removed from Section 8.0 and 9.0, added to Section 4.0 within a comprehensive sectional review.
Removed	-	9.26	Authorized Over excavation: Removed from Section 8.0 and 9.0, added to Section 4.0 within a comprehensive sectional review.
Added	-	9.26	Earth Fill: Added, moved from Section 9.27 as per the comprehensive sectional review.
Removed	-	9.26A	Unauthorized Over excavation: Removed, moved to Section 4.0 as per the comprehensive sectional review.
Removed	-	9.27	Earth Fill: Removed, added to Section 9.26 as per the comprehensive sectional review.
Added	9-6	9.27	Imported Earth Fill: Added, moved from Section 9.27A as per the comprehensive sectional review.
Removed	-	9.27A	Imported Earth Fill: Removed, moved to Section 9.27 as per the comprehensive sectional review.
Removed	-	9.28A	Imported Granular Fill: As per the comprehensive sectional review.
Removed	-	9.29	Road Sub-Base Gravel Course: As per the comprehensive sectional review.
Added	9-6	9.29	Approved Granular Fill: As per the comprehensive sectional review.
Removed	-	9.30	Road Sub-Base Gravel Course: As per the comprehensive sectional review.
Added	9-7	9.30	Road Sub-Base Gravel Course: As per the comprehensive sectional review.
Removed	-	9.31	Reclaimed Asphalt Products: As per the comprehensive sectional review.
Added	9-7	9.31	Road Base Gravel Course: As per the comprehensive sectional review.
Removed	-	9.32	Reclaimed Asphalt Products: As per the comprehensive sectional review.
Removed	-	9.32	Recycled Aggregate Material: Added to the MoESS as per the comprehensive sectional review for Aggregates and Materials.
Removed	-	9.33	Not Used: Removed and reused as a section for Clear Crush as per the comprehensive sectional review.
Added	9-9	9.33	Clear Crush: Added section as per the comprehensive sectional review.
Removed	-	9.34	Street Name Signs: Removed and content revised and added to Section 8.0 Transportation as per the comprehensive sectional review.
Added	9-10	9.34	Pea Gravel: Added section as per the comprehensive sectional review.
Removed	-	9.35	Traffic Signs: Removed and content revised and added to Section 8.0 Transportation as per the comprehensive sectional review.
Removed	-	9.36	Fasteners - Street Name and Traffic Signs: Removed and content revised and added to Section 8.0 Transportation as per the comprehensive sectional review.
Removed	-	9.37	Street Name and Traffic Sign Posts: Removed and content revised and added to Section 8.0 Transportation as per the comprehensive sectional review.
Removed	-	9.38	Street Markings: Removed and content revised and added to Section 8.0 Transportation as per the comprehensive sectional review.
Removed	-	9.40	Borrow Pit Development: As per the comprehensive sectional review.
Added	9-11	9.40	Stockpiling: Added, moved to Section 9.40 as per the comprehensive sectional review.
Removed	-	9.41	Stockpiling: Removed, moved to Section 9.40 as per the comprehensive sectional review.
Added	9-11	9.41	Roadway Construction Conditions: As per the comprehensive sectional review.
Removed	-	9.42	Road Alignment and Grade: As per the comprehensive sectional review.
Added	9-11	9.42	Stripping: Added, moved from Section 9.44 as per the comprehensive sectional review.
Removed	-	9.43	Roadway Construction Conditions: As per the comprehensive sectional review.
Added	9-11	9.43	Subgrade Preparation: Added, moved from Section 9.50 as per the comprehensive sectional review.
Removed	-	9.44	Stripping: Removed, moved to Section 9.42 as per the comprehensive sectional review.

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Added	9-12	9.44	Watering For Compaction and Dust Control: As per the comprehensive sectional review.
Removed	-	9.45	Common Excavation: As per the comprehensive sectional review.
Added	9-12	9.45	Earth Fills: Added, moved and revised from Section 9.52 as per the comprehensive review.
Removed	-	9.46	Rock Excavation: As per the comprehensive sectional review.
Added	9-13	9.46	Rock Fills: Added, moved from 9.46 and revised as per the comprehensive sectional review.
Removed	-	9.47	Authorized Over excavation: As per the comprehensive sectional review.
Added	9-13	9.47	Placing and Compacting Aggregates: As per the comprehensive sectional review.
Removed	-	9.48	Unauthorized Over excavation: Removed, moved to Section 4.0 as per the comprehensive sectional review.
Added	9-14	9.48	Finished Grade: As per the comprehensive sectional review.
-	9-14	9.49	Cleanup: Moved from 9.59 as per the comprehensive review.
Removed	-	9.50	Subgrade Preparation: Removed, moved to Section 9.43.
-	9-14	9.50	Boulevards Grading: Moved from 9.50 as per the comprehensive review. Subgrade Preparation moved to 9.43.
Removed	-	9.51	Watering For Compaction and Dust Control: As per the comprehensive sectional review.
Removed	-	9.52	Earth Fills: Removed, moved to 9.45 as per the comprehensive review.
Removed	-	9.53	Rock Fills: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.54	Placing and Compacting Sub-base and Base Course: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.55	Finished Grade: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.56	Proof Rolling: Removed and added to Section 9.21 within a comprehensive sectional review.
Removed	-	9.57	Benkelman Beam Testing: Removed and added to Section 9.21 within a comprehensive sectional review.
Removed	-	9.58	Not Used: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.59	Cleanup: Removed and moved to Section 9.49 as part of the Section 8.0 and 9.0 comprehensive sectional review.
Removed	-	9.60	Boulevards: Removed and moved to Section 9.50 as part of the Section 8.0 and 9.0 comprehensive sectional review.
Removed	-	9.61	Street Name and Traffic Signs: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	-	9.62	Street Markings: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R1-XS1	R1-XS1	Urban Arterial (four lanes): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R1-XS2	R1-XS2	Urban Arterial (five lanes): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R2-XS1	R2-XS1	Major Collector (four lanes): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R2-XS2	R2-XS2	Major Collector (five lanes): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R3-XS1	R3-XS1	Minor Collector (two lanes): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R3-XS2	R3-XS2	Minor Collector (two lanes, turn lane): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R4-XS1	R4-XS1	Commercial (two lanes + parking): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.

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Removed	R5-XS1	R5-XS1	Industrial (two lanes + parking): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R6-XS1	R6-XS1	Neighbourhood Collector (two lanes + parking): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-XS1	R7-XS1	Urban Local: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-XS2	R7-XS2	Urban Local (hillside cross-section): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-XS3	R7-XS3	Urban Local (low volume): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-XS4	R7-XS4	Urban Local (low volume in existing 20.0m R/W): Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-XS5	R7-XS5	Rural Local: Removed from the manual replaced with new RL-XS1 within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing RL-XS1.
Removed	R8-XS1	R8-XS1	Lane: Removed from the manual replaced with new L-XS1 within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing L-XS1.
Removed	R9-XS1	R9-XS1	Half Road Section: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R10-XS1	R10-XS1	Alternative Sidewalk Location with Boulevard: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R11-DW1	R11-DW1	Access Fronting Roads without Concrete Curbs - Type 1: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R11-DW2	R11-DW2	Access Fronting Roads with Concrete Curbs - Type 1: Removed from the manual replaced with new CS-24 within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replace with new drawing CS-24.
Removed	R11-DW3	R11-DW3	Access Fronting Roads without Concrete Curbs - Type 2: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R11-DW4	R11-DW4	Access Fronting Roads with Concrete Curbs - Type 2: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R12-ME1	R12-ME1	Raised Centre Median: Removed from the manual replaced with new CS-7 within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replace with new drawing CS-7.
Removed	R4-CU1	R4-CU1	Commercial Offset Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R4-CU2	R4-CU2	Commercial Standard Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R5-CU1	R5-CU1	Industrial Offset Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R5-CU2	R5-CU2	Industrial Standard Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-CU1	R7-CU1	Urban Local Offset Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-CU2	R7-CU2	Urban Local Standard Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing R-CDS.

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Removed	R7-CU3	R7-CU3	Urban Local (low volume) Offset Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-CU4	R7-CU4	Urban Local (low volume) Standard Cul-de-sac: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R7-CU5	R7-CU5	Temporary Turnaround - Standard: Removed from the manual replaced with new R-TT within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing R-TT.
Removed	R7-CU6	R7-CU6	Temporary Turnaround - Offset: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	RT-1	RT-1	City of Nanaimo Custom Garbage Truck Turning Template: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	RT-2	RT-2	City of Nanaimo Custom fire Truck Turning Template: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R-S1	R-S1	Perforated Steel Base for Signs: Removed from the manual replaced with new CS-41 in Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing CS-41.
Removed	R-S2	R-S2	Round Stock Sign Base Detail in Concrete: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R-S3	R-S3	Round Stock Sign Base Detail in Pavers: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R-S4	R-S4	Signs on Perforated Steel Tubing Sheet 1: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R-S5	R-S5	Signs on Perforated Steel Tubing Sheet 2: Removed from the manual, Section 8.0 and 9.0 were revised within a comprehensive sectional review.
Removed	R-S6	R-S6	Standard Traffic Sign Installation Details: Removed from the manual replaced with new CS-41 within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing CS-41.
Removed	R-S7	R-S7	Signs on Steel Poles Sheet 1: Removed from the manual replaced with new CS-41 within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing CS-42.
Removed	R-S8	R-S8	Signs on Steel Poles Sheet 2: Removed from the manual replaced with new CS-42 within Section 8.0, Section 8.0 and 9.0 were revised within a comprehensive sectional review. Replaced with new drawing R-S8.
Superseded	All	10.00	Entire section, including written specifications and standard drawings, are superseded in MoESS due to updating and formatting of the requirements and the update of the identifier footer.
-	10-6	10.01	Roadway Lighting: Revised clause 10.01.1(b) reference to Section 9.0 to Section 8.0. Added clause 10.01.1(c), (e) and (h). Added to clause 10.01.1(f) "This higher lighting zone shall be extended to include the conflicts resulting at crosswalks, sidewalks, bike paths, and multi-use paths." Revised Table 1 to incorporate the new road classifications from the Section 8.0 review to comply with the Complete Streets Guideline.
-	10-14	10.21	Conduit: Revised clause 10.21.3 to conform to the sectional review of Section 11.0.
-	10-15	10.24	Concrete Boxes: Revised clause 10.24.3 to conform to the sectional review of Section 11.0.
-	10-16	10.26	Conductors: Added clarification to clause 10.26.1 and 10.26.5 for aluminum wire specifications.
-	E-1.1	E-1.1	Base Index: Revised to removed reference to the old R-S4 and R-S5 references.
-	E-1.2	E-1.2	Type A & B Form Tube Concrete Bases: Revised name from Type A & B Sonotube Concrete Bases to Type A & B Form Tube Concrete Bases.

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-	E-1.2A	E-1.2A	Type D & D1 Form Tube Precast or Cast-In-Place Concrete Bases: Revised name from Type D & D1 Sonotube Precasest or Cast-In-Place Concrete Bases.
-	E-3.4	E-3.4	Conduit Entry into Concrete Vault or Junction Box: Revised name to include 'Vault or'
-	E-5.1	E-5.1	Luminaire Pole (Highways Type 2 Shaft): Revised to represent the LED luminaire.
-	E-5.11	E-5.11	Signal Pole (Highways Type L Shaft): Revised to represent the LED luminaire.
-	E-5.17	E-5.17	Post Top Luminaire Poles: Revised the Post Top Pole Bolt Kit table and added Detail A.
-	E-5.20	E-5.20	Minimum Clearances to Overhead Power lines: Revised to represent the LED luminaire.
Superseded	All	11.00	Entire section, is superseded in MoESS due to a complete sectional review and update to Section 11.0. The entire Section 11.0, revised to be Specification and Installation were part of a sectional review to revise the section to current best practices for engineering design and construction with the most current standards and specifications for the industry. The revisions are identified in this amendment record.
-	11-2	11.20	Scope: Revised with minor edits, adding 'cast in place' in front of 'concrete'.
Removed	-	11.21	Codes and Standards: Removed and moved to 11.22
Added	11-2	11.21	Related Sections: Added section for references to relevant sections in MoESS.
Removed	-	11.22	Form Release Agent: Removed from MoESS.
Added	11-2	11.22	References: Moved from 11.21 and revised to add clause 11.22.1 to 11.22.5.
-	11-3	11.23	Submittals: Revised to add specification.
Removed	-	11.23	Supports, Chairs and Spacers: Removed, moved and revised as a clause within 11.24 Materials.
Removed	-	11.24	Reinforcement: Removed, moved and revised as a clause within 11.24 Materials.
-	11-3	11.24	Materials: Revised to incorporate and list the materials and current specifications.
Removed	-	11.25	Forms: Removed, moved and revised as a clause within 11.24 Materials.
Added	11-4	11.25	Concrete Mixes: Added a section to incorporate the specifications for current best practices in mix design.
Removed	-	11.26	Premoulded Joint Filler: Removed, moved and revised as a clause within 11.24 Materials.
Added	11-5	11.26	Construction: Added installation specifications for construction.
Removed	-	11.27	Cement: Removed, moved and revised as a clause within 11.24 Materials.
-	11-27	11.27	Formwork: Moved from 11.43.
Removed	-	11.28	Aggregate: Removed, moved and revised as a clause within 11.24 Materials.
-	11-7	11.28	Hooks and Bends in Reinforcement: Moved from 11.44
Removed	-	11.29	Mixing and Curing Water: Removed, moved and revised as a clause within 11.24 Materials.
-	11-7	11.29	Cleaning Reinforcement: Moved from 11.45.
Removed	-	11.30	Admixtures: Removed, moved and revised as a clause within 11.24 Materials.
-	11-7	11.30	Placing Reinforcement: Moved from 11.46.
Removed	-	11.31	Concrete: Moved, revised within Section 11.25. -Not Used-
-	11-7	11.31	Splices: Moved from 11.47.
Removed	-	11.32	Concrete Accessories: Removed, moved and revised as a clause within 11.26 Construction.
-	11-8	11.32	Cover for Reinforcement: Moved from 11.48.
Added	11-8	11.33	Concrete Joints: Added to incorporate and list the specification and installation requirements for joints.
-	11-9	11.34	Sleeves and Openings: Moved from 11.38.
-	11-10	11.35	Embedded Items: Moved form 11.39.
-	11-10	11.36	Mixing, Placing and Consolidating: Revised title from 'Mixing, Placing and Compacting' and added clause 11.36.5.
-	11-10	11.37	Surface Finishing: Moved from 11.43. Renamed from 'Screeding'. Revised clause 11.37.1

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-	11-10	11.38	Types of Finishing: Moved from 11.44
-	11-12	11.39	Surface Finishing: Moved from 11.58. Added clause 11.39.3 and revised 11.39.4.
Removed	-	11.40	General: Removed, moved and revised as a clause within 11.26 Construction.
-	11-12	11.40	Protection and Curing: Moved from 11.59 and 11.60 and revised to incorporate best practices.
Removed	-	11.41	Notification to the Engineer: Removed, moved and revised as a clause within 11.26 Construction.
Removed	-	11.42	Concrete Testing: Removed, moved and revised as a clause within 11.26 Construction.
Removed	-	11.43	Formwork: Moved to 11.27. -Not Used-
Removed	-	11.44	Hooks and Bends in Reinforcement: Moved to 11.28. -Not Used-
Removed	-	11.45	Cleaning Reinforcement: Moved to 11.29. -Not Used-
Removed	-	11.46	Placing Reinforcement: Moved to 11.30. -Not Used-
Removed	-	11.47	Splices: Moved to 11.31. -Not Used-
Removed	-	11.48	Cover for Reinforcement: Moved to 11.32. -Not Used-
Removed	-	11.50	Construction Joints: Removed, moved and revised as a clause within 11.33 Concrete Joints.
Removed	-	11.51	Sleeves and Openings: Moved to 11.34. -Not Used-
Removed	-	11.52	Embedded Items: Moved to 11.35. -Not Used-
Removed	-	11.53	Cold Weather Requirements: Removed, moved and revised as a clause within 11.26 Construction.
Removed	-	11.54	Hot Weather Requirements: Removed, moved and revised as a clause within 11.26 Construction.
Removed	-	11.55	Mixing, Placing and Compacting: Moved to 11.36. -Not Used-
Removed	-	11.56	Screeding: Moved to 11.37. -Not Used-
Removed	-	11.57	Types of Finishes and Tolerance: Moved to 11.38. -Not Used-
Removed	-	11.58	Surface Finishing: Moved to 11.39. -Not Used-
Removed	-	11.59	Protection: Removed, moved and revised as a clause within 11.40 Protection and Curing. -Not Used-
Removed	-	11.60	Curing: Removed, moved and revised as a clause within 11.40 Protection and Curing. -Not Used-
Superseded	All	12.00	Entire section, including written specifications and standard drawings, are superseded in MoESS due to updating and formatting of the requirements and the update of the identifier footer.
Superseded	12-8	12.42	Cutting and Removal of Existing Pavement: Revised the reference to conform with the revised Section 4.0 clause.
Superseded	All	13.00	Entire section, is superseded in MoESS due to a complete sectional review and update to Section 13.0. The entire Section 13.0, Design Criteria, Specifications, Installation were part of a sectional review to revise the section to current best practices for engineering design and construction with the most current standards and specifications for the industry and to comply with the Complete Streets Guideline. The revisions are identified in this amendment record.
-	13-2	13.01	Scope: Revised to incorporate the content for Surface Treatments, added clause 13.01.1(a), (b), (c) and clause 13.01.2.
Removed	-	13.02	Roadway and Sidewalk Design: Removed from section.
Added	13-2	13.02	Objectives: Added to section to incorporate the Complete Streets Guidelines and re-organization of materials within the sections.
-	13-2	13.03	Edge Restraints: Revised clause 13.03.1(a) and (b) with revised section references and removed clause 13.03.1(c), (d) and (e).
Added	13-2	13.04	Thickness: Revised clause 13.04.1 and 13.04.2 and removed 13.04.3 to incorporate the Complete Streets Guidelines.
-	13-3	13.05	Base and Sub-base: Revised reference to be for Section 9.0 instead of to a standard drawing within clause 13.05.1. Revised clause 13.05.3 to clarify pavers in traffic must be grouted.
-	13-3	13.06	Patterns: Revised clause 13.06.1 - 13.06.4 to incorporate the Complete Street Guidelines.
-	13-3	13.07	Utility Surrounds: Revised to add clause 13.07.1 and 13.07.2.
Removed	-	13.08	Longitudinal and Crossfall Grades: Removed from section, -Not Used-

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Removed	-	13.09	Standard Drawings: Removed from section, -Not Used-
Removed	-	13.10	Standard Unit Paving Edges: Removed from section, -Not Used-
-	13-5	13.20	Scope: Revised to incorporate references for the manual and best practices of the City.
Removed	-	13.22	Common Excavation: Removed from section.
-	13-5	13.22	Bedding and Joint Sands: Revised to be moved from 13.31 and added clause 13.22.5.
Removed	-	13.23	Rock Excavation: Removed from section.
-	13-6	13.23	Sub-base: Revised to be moved from 13.24 to 13.23.
Removed	-	13.24	Select Granular Sub-base: Revised to be 13.23 and renamed 'Sub-base'.
-	13-6	13.24	Base Materials: Revised to be moved from 13.25 and removed text that no longer complies.
Removed	-	13.25	Base Materials: Moved content to 13.24, -Not Used-
Removed	-	13.26	Earth: Removed from section, -Not Used-
Removed	-	13.27	Imported Earth Fill: Removed from section, -Not Used-
Removed	-	13.28	Rock Fill: Removed from section, -Not Used-
Removed	-	13.29	Imported Granular Fill: Removed from section, -Not Used-
Removed	-	13.30	Concrete: Removed from section, -Not Used-
Removed	-	13.31	Bedding and Joint Sands: Revised to be 13.22. 13.31 not used.
-	13-8	13.40	Scope: Revised clause 13.40.1 and removed clause 13.40.2 and 13.40.3.
Removed	-	13.41	Common Excavation: Removed from section.
-	13-8	13.41	Edge Restraints: Moved from 13.46, revised to incorporate best practices.
Removed	-	13.42	Cutting and Removal of Existing Pavement: Removed from section.
-	13-8	13.42	Bedding Sand: Moved from 13.47.
Removed	-	13.43	Subgrade, Base and Sub-base Preparation: Removed from section.
-	13-8	13.43	Concrete Pavers: Moved from 13.48, added clause 13.43.1 and 13.43.2
Removed	-	13.44	Cross Section: Removed from section.
-	13-9	13.44	Compaction: Moved from 13.49, revised to clarify concrete pavers.
Removed	-	13.45	Concrete Placement: Removed from section.
-	13-9	13.45	Tolerances: Moved from 13.50, added clause 13.45.3.
Removed	-	13.46	Edge Restraints: Moved to be 13.41
-	13-9	13.46	Moisture Protection: Moved from 13.51.
Removed	-	13.47	Bedding Sand: Moved to be 13.42
-	13-9	13.47	Cleanup: Moved from 13.52.
Removed	-	13.48	Concrete Pavers: Moved to be 13.43.
Removed	-	13.49	Compaction: Moved to be 13.44.
Removed	-	13.50	Tolerances: Moved to be 13.45.
Removed	-	13.51	Moisture Protection: Moved to be 13.46.
Removed	-	13.52	Cleanup: Moved to be 13.47.
Removed	BP-1	BP-1	Standard Laying Pattern Detail: Removed from MoESS.
Removed	BP-2	BP-2	Base Paving Details - Flexible, Semi-Rigid Base: Removed from MoESS.
Removed	BP-3	BP-3	Standard Unit Paving Edge Details for Planter Curb and Asphalt /Concrete: Removed from MoESS.
Removed	BP-4	BP-4	Standard Unit Paving Edge Details for Asphalt Edge and Grass Edge: Removed from MoESS.

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Superseded	All	14.00	Entire section, including written specifications and standard drawings, are superseded in MoESS due to updating and formatting of the requirements and the update of the identifier footer and the incorporation of sectional review updated to include the Cross Connection Control for irrigation, Complete Streets Guideline and the Tree Management Strategy.
-	14-5	14.01	Scope: Revised to add clause 14.01.3(c) and added clause 14.01.5 to provide maintenance specifications.
-	14-7	14.04	Minimum Landscape Area Dimensions and Maximum Grades: Revised the word paved to be poured. Revised concrete finish from exposed aggregate to reference the standard drawings and broomed finish.
-	14-7	14.05	Plant Material Selection: Revised minimum one year water demand to two year minimum. Revised clause 14.05.3(a) to current best practices to provide variety of tree species to maintain health of the assets. Revised table 14-2 Part 1, 2, 4 and 5 to provide an increases soil volume for each Part and removed and replaced tree species to prevent disease and mortality rate of the tree assets. Removed Table 14-2 Part 3.
Added	14-11	14.05A	Riparian and Restoration Plant Material Size, Spacing and Location: Added to provide specifications for best practices under the Urban Tree Management Strategy.
-	14-12	14.07A	Structural Soil Composites: Revised title and context to include the word 'composites'.
-	14-12	14.08	General Irrigation Deign Requirements: Revised table within clause 14.08.2 to include the revised road cross section types as part of the incorporation of the Complete Streets Guideline.
-	14-12	14.09	Irrigation Service Connections: Revised clause 14.09.2 to include reference to Section 5.0 Cross Connection Control subsection.
-	14-16	14.13	Protection: Revised to include trees into the clause.
-	14-19	14.17A	Growing Medium Properties: Revised Level 1, 2, 3, 4, 5, 6 areas with added text 'after the end of the Construction Maintenance Period as specified within Section 14.87.4.'
-	14-25	14.26	Tree. Plant Materials, Riparian and Restoration: Revised title to include trees and riparian and restoration into the title and added clause 14.26.2.
-	14-31	14.31A	Structural Soil Composites: Revised title and context to include the word 'composites'. Added clause 14.31A.2-14.31A.5.
-	14-32	14.32	Irrigation - Scope: Revised to add 'assembly' to clause 14.32.1(b) and added clause 14.32.1(c)
-	14-33	14.34	Standards: Revised to add clause 14.34.1(b)(v) and the word 'Active' to the specification title for clause 14.32.2(c).
-	14-36	14.50	Backflow Prevention Assembly: Revised clause 14.50.1 wording to be current language, assembly not device. Added clause 14.50.2 - 14.50.5.
-	14-41	14.59	Tree Planting: Revised description of planting pit, removing the 'upper third' and replacing 'after' with 'before' to be revised with current best practices.
-	14-43	14.60	Riparian and Restoration Planting: Revised title from 'Shrub and Ground Cover Planting'.
-	14-48	14.72A	Structural Soil Composites: Revised title to include 'Composites'
-	14-49	14.76	Excavation and Trenching: Revised reference to Section 4.0 to be the updated section title.
-	14-54	14.87	Scope: Revised clause 14.87.4 to increase the end of maintenance period from one year to two. Revised clause 14.87.5 to provide detail '...occur once per month for April to October, throughout the specified maintenance period and shall...'
-	14-56	14.90	Protection: Revised to include clause 14.90.5.
-	-	14.98	Trees, Shrubs and Ground Cover: Revised to add '...once per month, from April to October...' to clause 14.98.1 and added clause 14.98.1(f).
-	14-60	14.102	Irrigation System: Revised clause 14.102.3 to include '...backflow prevention assemble device field testing/documentation/tagging and submittal,...'
-	P-1	P-1	Tree Planting Root Zone Volume: Revised to include specifications for structural soils.
-	P-4	P-4	Shrub Planting in Median: Revised to include references to Section 8.0, Standard Drawings.

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-	P-5	P-5	Tree Planting in Concrete Sidewalk: Revised to provide specifications for structural soils and growing medium, added notes 1-6.
-	P-7	P-7	Tree Planting in Unit Paving Surface: Revised to provide specifications for structural soils, added notes 3-8.
-	I-1	I-1	19mm to 50mm Diameter Service Irrigation Backflow Preventer and Point of Connection: Revised to add Notes 3-5. Removed the 19mm Bronze Quick Coupler on Riser and Revised to add more details to the hose bib and cap.
-	I-3	I-3	Valve Box Schematic Piping Configuration at Valve Cluster: Revised to add dimension limits from the valves to provide clearance within the box.
-	I-5	I-5	Popup Spray Head Turf Rotary Head: Removed Note No.3 regarding dimensions.
-	I-7	I-7	Irrigation Controller Cabinet Details: Revised for housekeeping.
Removed	I-8	I-8	Quick Coupler Valve Detail: Removed drawing.
-	I-10	I-10	Irrigation Bubbler: Removed Note No.2 regarding dimensions
-	I-11	I-11	Irrigation Underground Electrical Service with Pole: Removed Note No.3 regarding dimensions and added Pressure Treated type for the wood pole.
Superseded	All	Appendices	Entire appendix is superseded in MoESS due to updating of the identifier footer.
Removed	Appendix B	Appendix B	Section Cross Reference: Removed placeholder from appendix.
-	Appendix E	Appendix E	Substantial Completion Statistics Record Assets For (From) Development: Revised Transportation Assets to include the Complete Street assets.
-	Appendix F3	Appendix F3	Building Development Water Meter Information Sheet: Revised for clarity on what parameters shall be documented.