

ATTACHMENT 'B'
AMENDMENT RECORD OF ALL CHANGES INCLUDED IN THE
MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS EDITION No. 12

CITY OF NANAIMO
MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS
AMENDMENT RECORD

Manual Revision # 12

Revision Date: November 2019

The November 2019 Edition of the Manual of Engineering Standards and Specifications (MoESS) was NOT re-printed in its entirety. Only three sections were re-printed, these include Section 2.0, 3.0, 10.0 and the Introduction.

The footer for these sections has been revised to represents this revision 'November 2019 Edition'. This represents the most current edition of the manual. The other sections remain 'November 2016 Edition'.

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 within Section 4.0, 12.0 and 14.0 that had revisions within Edition No.12 are noted with the manual text in (*BOLD ITALICS*)

The standard drawings for Section 10.0 and one Section 1.0 drawing all include a footer that reads;

Engineering Standards and Specifications
 November 2019 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 Therefore, manual holders are cautioned about immediately discarding superseded and cancelled standards.

The Manual of Engineering Standards and Specifications is revised as follows:

Superseded / Added / Cancelled / Removed	Page Revised / New Insert / New Dwg No.	Section No. / Dwg No. Affected	Remarks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 November 2019.
Superseded	All	Contents and Introduction	Section 2.0 title changed from General Conditions to General Definitions and References. Update the Introduction to reflect section titles and the section content regarding Section 2.0 and Section 3.0.
Revised	G-7	G-7	Street Light Attribute Table and Traffic Sign Table: Revised the street light table to include data required with the inclusion of LED lighting standards as part of the Section 10.0 comprehensive sectional review. The identifier footer was updated.
Superseded	All	2.00	Entire section is superseded in MoESS due to updating and formatting of the information and the update of the identifier footer. The entire Section 2.0, including all Articles were part of a sectional review to revise the section to current best practices for Contracts and Purchasing Agreements. All contract language was removed from the manual and the Definitions and References from Section 3.0 were added into the revised Section 2.0.

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-	2-3	2.01	Definition of Terms: Removed as Article 1 and revised as Section 2.01, Definition of Terms. Revised 2.01.3 for the definition of City Engineer to be Director of Engineering, and revised 2.01.7 for the definition of Director of Engineering and Public Works to be City Engineer as part of the newest City corporate structure. Revised 2.01.8 to include Design Engineer and revised as per the sectional review. Articles 2 to Article 8 were removed entirely.
-	2-4	2.01A	Specifications, Standards or Methods: Removed from Section 3.01 and moved into Section 2.0 in its entirety.
-	2-9	2.01B	References: Removed from Section 3.01A and moved into Section 2.0 in its entirety. Revised list to include ASTM updates.
-	2-14	2.01C	Supplementary Documents: Removed from Section 3.01B and moved into Section 2.0 in its entirety. Revised links and added to list.
-	2-16	2.01D	City Bylaws: Removed from Section 3.01C and moved into Section 2.0 in its entirety.
-	2-21	2.02	Engineer, Owner, Contractor Relations: Revised to be named -Not Used- , Article 9 to Article 22 were removed entirely.
-	2-27	2.03	Materials and Workmanship: Revised to be named -Not Used-. Article 23 to Article 29 were removed entirely.
-	2-31	2.04	Legal Responsibility and Public Safety: Revised to be named -Not Used-. Article 30 to Article 35 were removed entirely.
-	2-33	2.05	Progress, Completion of Work, and Payment: Revised to be named -Not Used-. Article 36 to Article 53 were removed entirely.
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. The entire Section 3.0 was part of a sectional review to revise the section to current best practices for Contracts and Purchasing Agreements. All contract language was removed from the manual and only sections required that support general requirements and do not interfere with contract documents remain.
-	3-4	3.01	Specifications, Standards or Methods: Revised to be named -Not Used- content moved to 2.01A
-	3-9	3.01A	References: Revised to be named -Not Used- content moved to 2.01B
-	3-14	3.01B	Supplementary Documents: Revised to be named -Not Used- content moved to 2.01C
-	3-15	3.01C	City Bylaws: Revised to be named -Not Used- content moved to 2.01D
-	3-17	3.02	Construction Program: Removed section content from the manual, section title changed to -Not Used-.
-	3-18	3.04	Operating Manuals: Revised from Special Tools, Operating Manuals and Shop Drawings. Removed 3.04.3 entirely.
-	3-18	3.05	Explosives: Revised clause 3.05.1 to remove the reference, Workers Compensation Act and replace with, OH&S Regulation Part 21. Removed the excess weight of 68kg from clause 3.05.2.
-	3-18	3.06	Blasting: Removed the section content from the manual, section title changed to -Not Used-.
-	3-20	3.09	Work Within Road Rights-Of-Way: Removed 3.09.1 (a) (b) (c) and (i).
-	3-21	3.10	WorkSafeBC: Removed section content from the manual, section title changed to -Not Used-.
-	3-23	3.20	Scope: Removed section content for Existing Structures and Utility Works, section title changed to -Not Used-.
-	3-23	3.21	Supply of Materials: Removed section content from the manual, section title changed to -Not Used-.
-	3-23	3.22	Location of Structures: Removed clause 3.22.3.
-	3-23	3.23	Protection, Adjustment, and Salvage of Structures: Revised to remove instructions to deliver to the Works Yard, 3.23.1. Also removed 3.23.2 the regulations for asbestos cement pipe entirely.
-	3-25	3.24	Emergency Situations: Removed 3.24.4 entirely.
-	3-25	3.26	Curtailment of Utility Service: Revised 3.26.2 to increase the hours for notice from 24 to 48 hours and to require a notification letter.
-	3-27	3.29	Work Within Rail Rights of Way: Removed the section content from the manual, section title changed to -Not Used-.
-	3-28	3.30	Highway Crossing: Removed the section content from the manual, section title changed to -Not Used-.

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-	3-28	3.31	Electrical Power, Telephone, Television, City and Private Owner Fibre Optics, Cables and Conduits: Removed the section content from the manual, section title changed to -Not Used-.
-	3-28	3.32	Gas Pipelines: Removed the section content from the manual, section title changed to -Not Used-.
-	3-28	3.33	Power Line Crossing: Removed the section content from the manual, section title changed to -Not Used-.
-	3-28	3.34	Work in Vicinity of Overhead Power Lines: Removed the section content from the manual, section title changed to -Not Used-.
-	3-29	3.35	Relocation of Existing Piping: Removed the section content from the manual, section title changed to -Not Used-.
-	3-29	3.36	Watercourse Crossing: Removed the section content from the manual, section title changed to -Not Used-.
-	3-29	3.37	Detours: Removed the section content from the manual, section title changed to -Not Used-.
-	3-30	3.50	Scope: Removed the section content for Clearing and Grubbing, section title changed to -Not Used-.
-	3-30	3.51	Supply of Materials: Removed section content from the manual, section title changed to -Not Used-.
-	3-30	3.52	Clearing and Grubbing: Removed section content from the manual, section title changed to -Not Used-.
-	3-30	3.53	Burning: Removed section content from the manual, section title changed to -Not Used-.
-	3-31	3.54	Merchantable Timber: Removed section content from the manual, section title changed to -Not Used-.
-	3-32	3.60	Scope: Removed the section content for Control of Public Traffic, section title changed to -Not Used-.
-	3-32	3.61	Control of Public Traffic - General: Revised to include new clauses 3.61.1 to 3.61.7 removing the previous clauses 3.61.1 to 3.61.11.
-	3-36	3.62	Use of Flag Persons: Removed section content from the manual, section title changed to -Not Used-.
-	3-36	3.63	Use of Traffic Control Devices: Removed section content from the manual, section title changed to -Not Used-.
Superseded	4-19	4.30	Trench Settlement During Gurantee Period: Revised to remove the reference to the removed Section 2.03 Materials and Workmanship Article 29 as part of the sectional review of Section 2.0.
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. The entire Section 10.0 was part of a sectional review to revise the section to current best practices for the inclusion of LED Streetlight standards as well as the change in specification to require aluminum rather than copper wiring.
-	10-6	10.01	Roadway Lighting: Revised the design criteria to revise the lighting levels for Standard Roadways and include lighting level design criteria for Roundabouts, Mid-Block Crosswalks and Cul-De-Sacs. Within Table 1, Urban and Rural Local Road Classifications lux levels were increased from 4 to 6 lux. Revised the ratio for Walkway classifications from 6:1 to 10:1. Revised clause 10.01.5(e) Pole Spacing to include criteria for the Clear Zone. Revised Table 2, the Urban Arterial from just staggered to either Staggered or Opposite. Clause 10.02.6 Luminaire Types, Pole Types and Wattages was revised to removed Wattages and add Lumen Output criteria. Revised Table 3 was revised with lumen output criteria. Revised clause 10.02.7 Lighting Calculations to incorporate the LED standards into the design criteria. Removed Figure 1 and Figure 2.
-	10-15	10.02	Traffic Signals: Revised clause 10.02.2 and clause 10.02.3 criteria for clarity.
-	10-15	10.04	Junction Boxes: Revised clause 10.04.3 for clarification on uses of concrete junction boxes and added clause 10.04.4.
-	10-16	10.05	Conductors: Revised the design criteria to for aluminum wiring rather than copper.
-	10-16	10.06	Service Equipment: Revised clause 10.06.2 and 10.06.3 clarity and replaced contractor with contactor.
-	10-16	10.07	Concrete Bases: Revised clause 10.07.01 to include an engineer's report for soil conditions.
-	10-18	10.20	Scope: Added clause 10.20.5(d) to specify pole locking handhole covers to reduce wire theft.

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-	10-19	10.23	Junction Boxes: Revised specifications for clause 10.23.3 and 10.23.4 that custom concrete junction boxes will be specified on the drawings and all junction boxes shall have galvanized steel lids.
-	10-20	10.26	Conductors: Removed specifications and added clause 10.26.1 to 10.26.8 as part of the sectional review to replace copper wiring with aluminum.
-	10-22	10.29	Signal Head, Signal Device and Sign Mounting Hardware: Revised title from Signal Head and Sign Mounting Hardware.
-	10-22	10.33	Connectors: Revised to include aluminum wiring as the primary specification rather than copper wiring.
-	10-24	10.36	Grounding Electrodes: Revised title from Grounding Rods, added clause 10.36.1 and 10.36.2 and revised 10.36.3.
-	10-24	10.37	Pedestrian Push Buttons: Removed clause 10.37.4 and 10.37.5.
-	10-25	10.39	Luminaires: Revised to replace the HPS specifications with LED standards. Removed clause 10.39.3 and 10.39.4.
-	10-27	10.43	HID Lamps: Removed section content from the manual, section title changed to -Not Used-.
-	10-27	10.47	Traffic Controllers: Added clause 10.47.8 to the specification.
-	10-29	10.64	Electrical Power Supply: Revised clause 10.64.3 with updated application link.
-	10-30	10.66	Concrete Bases: Revised to add clause 10.66.3(d).
-	10-30	10.67	Junction Boxes: Revised clause 10.67.2 and added 10.67.3 for clarity on installation requirements.
-	10-30	10.68	Conduits: Revised clause 10.68.5 for clarity and added clause 10.68.7.
-	10-31	10.70	Poles: Revised clause 10.70.7 for clarity, revised clause 10.70.10 to clarify 2 coats added clause 10.70.11 for locking handhole covers.
-	10-32	10.72	Audible Signals: Removed reference link to CNIB.
-	10-33	10.74	Luminaires and Photocells: Added clause 10.74.4 to clarify the installation requirements of the cobra head luminaires.
-	10-34	10.75	Median Signage and Post Mounted Flashers: Added reference to Ministry of Transportation and Infrastructure material standards to both clause 10.75.1 and 10.75.2.
-	10-34	10.77	Service Panel: Revised clause 10.77.1 for clarity of installation and revised 10.77.2 to reference E-10.4 instead of standard drawing E-10.5.
-	10-34	10.78	Wiring: Revised 10.78.7 to include 'device' and 10.78.17 to clarify copper (Cu).
-	10-38	10.82	Grounding: Added 'plates' to clause 10.82.2 and replaced 'Ground' with 'Bond' in clause 10.82.3.
-	E-1.1	E-1.1	Base Index: Revised Type B to be 4.5m to 7.5m poles from 4.0m, 6.0m & 7.5m poles.
-	E-1.2	E-1.2	Type A & B Sonotube Concrete Bases: Revised Type B to be 4.5m to 7.5m poles from 4.0m & 6.0m poles.
-	E-1.4A	E-1.4A	Type C & Type C1 Trapezoidal Shape Concrete Bases with Irrigation: Revised title to correct spelling.
-	E-1.13	E-1.13	Pole Base Installation Details: Added Note 3.
-	E-1.14	E-1.14	Pole Base Installation Details: Added Note 5.
-	E-4.1	E-4.1	Underground Conduit in Paved Areas: Revised company name from B.C.Tel to Telus.
-	E-4.2	E-4.2	Underground Conduit in Non-Paved Areas: Revised company name from B.C.Tel to Telus.
-	E-5.1	E-5.1	Luminaire Pole (Highways Type 2 Shaft): Revised to include locking handhole cover and reference to detail on E-5.19.
-	E-5.2	E-5.2	Luminaire Pole (Highways Type 2 Shaft): Revised to include locking handhole cover as Item B and reference to detail on E-5.19.
-	E-5.16	E-5.16	Post Top Luminaire Poles: Revised the 4.0m Pole Detail to be 4.5m Pole Detail and to remove the 6.0m Pole Detail.
-	E-5.17	E-5.17	Post Top Luminaire Poles: Revised Item A to be a locking handhole cover and reference to detail E-5.19.
-	E-5.18B	E-5.18B	100A – Overhead Drop Service (Installation Details): Removed reference to DWG E-5-18C and reference the MoTi Highway Specification. Removed the variation of 1000-1200 and revised to be 1000 Typical 800 with frangible base.
-	E-5.19	E-5.19	Pole Accessories (Highways Type): Revised to show octagonal pole in details.

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-	E-5.20	E-5.20	Minimum Clearances to Overhead Power lines: Revised to include a minimum clearance of 1000mm to the Primary Neutral lines and Secondary lines. Added Note 4.
-	E-5.21	E-5.21	One Piece Luminaire Pole for Single Family Residential Zone: Added Note 4. Revised drawing to include a locking handhole cover.
-	E-6.4	E-6.4	Overhead Signal Head Mounting with Plumbizer: Revised to include numbers for Details 1 and 2 both of which are referenced on E-6.5.
-	E-6.5	E-6.5	Overhead Signal Head Mounting with Plumbizer: Revised title of details to be Detail 1 and Detail 2 for clarity.
-	E-6.6	E-6.6	Emergency Vehicle Siren – Activated Pre-emption Unit: Added note arrows for clarification of the labels.
-	E-8.1	E-8.1	Pedestrian Pushbutton with Integral Sign: Revised drawing to remove the manufacturer model, Bulldog.
-	E-9.1	E-9.1	Underground Dip Service: Revised to add detail note for Hot Dipped Galvanized Steel Pilsasster to provide mechanical protection for RPVC. Removed reference to copper.
-	E-10.4	E-10.4	Traffic Signal/Street Lighting – Typical 100A Wiring Diagram (for use in service base): Revised to add 60A to Size 2 contactor.
-	E-10.5	E-10.5	Wiring Diagram: Revised to include the Size 2 (60A) contactor, Group rather than bond, electrode rather than plates and aluminum rather than copper.
-	E-12.1	E-12.1	Luminaire Wiring in Pole Handhole: Revised for copper and aluminum wiring requirements and replaced solderless connectors with split bolt connectors.
-	E-12.2	E-12.2	Signal Cable Wiring in Pole Handhole: Revised to remove the "Marretts and Double Dip" with "Solderless Connectors. Tape over and aim upwards."
-	E-13.1	E-13.1	Pole Mounted Receptacle: Revised to replace the double spring door cover detail with an in-use cover for wet locations.
-	E-15.5	E-15.5	Overhead Extruded Aluminum Advance Warning Sign Assembly Details: Removed the Type C Sign Luminaire detail from the drawing.
-	E-15.6	E-15.6	Overhead Extruded Aluminum Advance Warning Sign Installation Details: Removed the wiring for suit the revision within drawing E-15.5.
-	E-15.7	E-15.7	Overhead Extruded Aluminum Advance Warning Sign Installation Details: Revised to add 'complete with 3M diamond grade reflective sheeting' to Item B.
-	E-15.8	E-15.8	Overhead Extruded Aluminum Advance Warning Sign Installation Details: Removed the sign luminaire detail from the drawing.
Removed	E-15.13	E-15.13	Overhead Extruded Aluminum Advance Warning Sign Installation Details: Removed Drawing from the MoESS.
Superseded	12-8	12.41	Traffic Control: Revised to remove the reference to removed Section 3.62 and 3.63 as part of the sectional review of Section 3.0.
Superseded	12-10	12.44	Testing: Revised to remove the reference to removed Section 2.03 Materials and Workmanship Article 26 and Article 27 as part of the sectional review of Section 2.0.
Superseded	14-14	14.13	Protection: Revised to reference Section 3.0 title from the sub-section title Existing Structures and Utility Work, as part of the sectional review of Section 3.0.
Superseded	14-50	14.92	Vandalism: Revised to remove the reference to removed Section 2.0 Article 30. Added maintenance specifications for 14.92.1 as part of the section review of Section 2.0.