

SECTION 2 – GENERAL DEFINITIONS AND REFERENCES

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External Review

SECTION 2 – GENERAL DEFINITIONS AND REFERENCES

2.01 DEFINITION OF DEFINED TERMS (REVISE? TBD 2025)

Unless otherwise defined, a word or expression has the meaning assigned to it in the *Local Government Act*, *Community Charter*, *Interpretation Act*, *Water Sustainability Act*, and *Motor Vehicle Act*. Where no definition can be found in this document, the definition provided in the *Subdivision and Development Standards Bylaw* and the *Zoning Bylaw* will apply. (REVISE? New TBD 2025)

- .1 “ANNUAL EXCEEDANCE PROBABILITY (AEP)” is expressed as a ratio or percentage and indicates the probability of a specific event occurring within a given year. This term replaces ‘recurrence interval’ or ‘return period’, which can be misleading. For example, a ‘1-in-100-year event’ is often misunderstood as an event that happens only once every 100 years. Statistically, a 1% AEP (1:100 AEP) event has a 1% probability of occurring in any given year and a 67% probability of occurring at least once within a 100-year period. (REVISE? New TBD 2025)
- .2 “APPROVAL” ~~shall~~ or ‘approved by’ means the ~~documented~~ approval granted by the City Engineer unless otherwise noted. (REVISE? TBD 2025)
- .3 “CITY” ~~shall~~ means ~~a duly authorized representative of the City of Nanaimo.~~ (REVISE? TBD 2025)
- .3 “DIRECTOR OF ENGINEERING” ~~shall mean the person appointed to the office of Director of Engineering acting, either directly or through authorized staff, or agents acting severally within the scope of the particular duties entrusted to them.~~
- .4 “CONSULTANT” ~~shall mean a Professional Engineer acting either directly or through his/her authorized agents, acting severally within the scope of the particular duties entrusted to them.~~
- .5 “CONTRACT DOCUMENTS” or “CONTRACT” ~~shall mean the complete set of documents, specifications, drawings, and addenda incorporated therein, as listed in the Table of Contents.~~
- .6.4 “CONTRACTOR” ~~shall~~ means the ~~Contractor~~ company named in the Contract Agreement. (REVISE? TBD 2025)
- .7.5 “CITY ENGINEER” ~~shall~~ means the Director of Engineering. (REVISE? TBD 2025)
- .8.6 “ENGINEER” or “DESIGN ENGINEER” ~~see Professional of Record.~~ ~~shall mean:~~ (REVISE? TBD 2025)
 - (a) ~~the City Engineer acting either directly or through his/her properly authorized agents, Professional Engineers, Consultants, and authorized staff, acting severally within the scope of the particular duties entrusted to them; or~~
 - (b) ~~for Private developments, the Consultant acting on behalf of the developer. The City Engineer will monitor the Consultant and retains the right to direct the Consultant’s application of the Engineer’s responsibilities.~~
- .9 “EQUIPMENT” ~~shall mean anything and everything except persons used by the Contractor in performance of the work and except material as defined herein.~~

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.10.7 "HEREIN" and "HEREOF" and similar expressions wherever used in the Contract Documents, shall relate to the whole of the Contract Documents and not to any one (1) paragraph alone, unless the context specifically requires it.

.11.8 "INSPECTOR" shall means a person or company authorized by the City Engineer or by the Owner to inspect the work or any part of it. (REVISE? TBD 2025)

.12 "MATERIAL" or "MATERIALS" shall, unless otherwise specified, mean anything and everything other than persons or the Contractor's equipment which is manufactured, processed or transported to the site, or existing on the site, and incorporated into the completed works.

.9 "OWNER" shall means the City of Nanaimo. (REVISE? TBD 2025)

.10 "OVERLAND FLOW PATH" means a surface water route that forms when heavy rainfall or snowmelt overwhelms the capacity of the drainage works and flows on the surface following existing topography. (REVISE? New TBD 2025)

.11 "PROPERTY OWNER" has the same meaning as the *Land Title Act*. (REVISE? New TBD 2025)

.12 "PROFESSIONAL OF RECORD" means the Professional responsible for a specific portion of the project plans. Engineer of Record is included within this term. The Professional is an individual who is a practicing professional registrant as defined in Engineers and Geoscientists BC's Bylaws. (REVISE? New TBD 2025)

.13 "PROVIDE" shall mean the same as SUPPLY.

.14 "SUBCONTRACTOR" shall mean any person, engaged by the Contractor or another Sub-Contractor to perform or provide part or parts of the work or to supply material intended to be incorporated into the completed works, but does not include a worker or a person engaged by an architect, an engineer or a material supplier.

.15 "SUPPLY" shall mean supply and pay for or provide and pay for.

.16 "WORK" or "WORKS" shall, unless the context otherwise requires, mean the whole of the work, equipment, materials, labour, matters and things required to be done, furnished, and performed by the Contractor under this Contract.

2.01A SPECIFICATIONS, STANDARDS OR METHODS

.1 When references to the following capitalized abbreviations are made, they refer to Specifications, Standards or Methods of the respective Association. Abbreviations listed herein but not mentioned in the specifications shall be disregarded.

.2 The numbers and letters following the abbreviations denote the Association's serial designation for the Specification or Standard to which reference is made. All references to these Specifications, Standards or Methods shall, in each instance, be understood to refer to the latest adopted revision, including all amendments.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AIEEE	American Institute of Electrical and Electronics Engineers

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AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWPA	American Wood Preservers' Association
AWS	American Welding Society
BCLNA	British Columbia Landscaping and Nursery Trades Association
BCNTA	British Columbia Nursery Trades Association
BCSLA	British Columbia Society of Landscape Architects
CEC	Canadian Electrical Code
CEMA	Canadian Electrical Manufacturers Association
CGA	Canadian Gas Association
CGSB	Canadian General Standards Board
CISC/ICCA	Canadian Institute of Steel Construction
CMHC	Canada Mortgage and Housing Corporation
CPCI	Canadian Prestressed Concrete Institute
CRCA	Canadian Roofing Contractors Association
CSA	Canadian Standards Association
CIU	Canadian Institute of Underwriters Association
CWB	Canadian Welding Bureau
CSPI	Corrugated Steel Pipe Institute
EEI	Edison Electric Institute
IEC	International Electrotechnical Commission
IET	Institute of Engineers and Technology
IEEE	Institute of Electrical and Electronics Engineers, I (formerly IRE and IEE)
IES	Illuminating Engineering Society
ICEA	Insulated Cable Engineers Association
ISA	Instrument Society of America
IOS	International Organization for Standardization
MOTI	Ministry of Transportation and Infrastructure
NBC	National Building Code of Canada
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NLGA	National Lumber Grades Authority
TAC	Transportation Association of Canada
SAE	Society of Automotive Engineers
UL	Underwriters' Laboratories, Inc.
WORKSAFEBC	Workers' Compensation Board
WCLIB	West Coast Lumber Inspection Bureau

2.01

[CONVENTION FOR UNITS AND CONVERSIONS \(REVISE? New TBD 2025\)](#)

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- .1 ~~2.01A.3~~ All static and dynamic units on drawings and specifications are International System of Units (SIU) ~~S.I. units~~, conforming to Can-3-Z234.2-73, the International System of Units (S.I.) and Can/CSAS234.1, Metric Practice Guide. *(REVISE? TBD 2025)*
- .2 ~~2.01A.4~~ The ~~S.I. Units~~ SIU accepted for the purpose of these standards, together with conversion factors relating them to equivalent imperial units are tabulated as follows: *(REVISE? TBD 2025)*

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ITEM	BASIC SI UNIT	(SIU) ABBREVIATION	EQUIVALENT IMPERIAL UNIT (EIU)	CONVERSION FACTOR (CF) (CF X EIU = SIU)
Length	metre	m	foot	0.3048
Length	millimeter	mm	inch	25.4
Area	square metre	m^2	square foot	0.0929
Area	square metre	m^2	square yard	0.836
Volume	cubic metre	m^3	cubic foot	0.0283
Volume	cubic metre	m^3	cubic yard	0.765
Volume	litre	L	imperial gallon	4.546
Mass	kilogram	kg	pound	0.454
Mass	tonne	t	ton (short)	0.907
Density	kilogram per cubic metre	kg/m^3	pound per cubic inch	27,680.0
Temperature	degree Celsius	C	degree Fahrenheit	$(F-32) \times 5/9 = C$

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ITEM	BASIC SI UNIT	(SIU) ABBREVIATION	EQUIVALENT IMPERIAL UNIT (EIU)	CONVERSION FACTOR (CF) (CF X EIU = SIU)
Force	newton	N	pound force	4.448
Pressure*	kilopascal	kPa	pound per sq. inch or psi	6.8948
Pressure*	kilopascal	kPa	inch water column	0.2491
Pressure, stress (concrete)	megapascal	MPa	pound per sq. inch or psi	0.0069
Volume flow	litre per second	l/s	imperial gallon per minute	0.07758
Volume flow	cubic metre per second	m ³ /s	cubic feet per second	0.0283
Volume flow	litre per second	l/s	cubic feet per second	28.316
Power	kilowatt	kW	horsepower (electric)	0.746
Energy	joule	J	British Thermal Unit	1055.06
Illuminance	lux	lux	footcandles	10.76391
Frequency	hertz	Hz	Cycles per second	1.0

*As used in these standards, pressure shall mean gauge pressure unless otherwise noted

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Standard Sieve Sizes

EIU	SI	EIU	SI	EIU	SI
4 ^{1/2}	100 mm	1-1/2 ^{1/2}	37.5 mm	3/8 ^{1/2}	9.5 mm
3 ^{1/2}	75 mm	1 ^{1/2}	25 mm	1/4 ^{1/2}	6.3 mm
2-1/2 ^{1/2}	63 mm	3/4"	19 mm		
2 ^{1/2}	50 mm	1/2"	12.5 mm		
#4	4.75 mm	#20	0.85 mm	#60	0.25 mm
#8	2.36 mm	#30	0.6 mm	#80	0.18 mm
#10	2 mm	#40	0.425 mm	#100	0.15 mm
#16	1.18 mm	#50	0.3 mm	#200	0.075 mm

Standard Pipe Sizes

EIU	SI	EIU	SI	EIU	SI
1/2"	12.5 mm	4"	100 mm	15"	375 mm
3/4"	19.0 mm	6"	150 mm	18"	450 mm
1"	25.0 mm	8"	200 mm	21"	525 mm
1-1/2"	37.5 mm	10"	250 mm	24"	600 mm
2"	50.0 mm	12"	300 mm	42"	1050 mm
2-1/2"	65.0 mm				

Concrete Strengths

EIU	SI
2200 psi	15 MPa
2500 psi	18 MPa
2900 psi	20 MPa
3700 psi	25 MPa
4500 psi	30 MPa
5000 psi	36 MPa

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Reinforcing Steel

Comparison of Imperial and Metric Sizes
(Note: % difference based on area of bars in in²)

IMPERIAL BAR			METRIC BAR			
SIZE	AREA in ²	AREA mm ²	SIZE	AREA in ²	AREA mm ²	METRIC BAR IS
#3	.11	71	10M	.16	100	45% L
#4	.20	129	10M	.16	100	20% S
#4	.20	129	15M	.31	200	55% L
#5	.31	200	15M	.31	200	SAME
#6	.44	284	20M	.47	300	6.8% L
#7	.60	387	20M	.47	300	22% S
#7	.60	387	25M	.78	500	30% L
#8	.79	510	25M	.78	500	1.3% S
#9	1.00	645	30M	1.09	700	9% L
#10	1.27	819	30M	1.09	700	14% S
#10	1.27	819	35M	1.55	1000	22% L
#11	1.56	1006	35M	1.55	1000	0.6% S
#14	2.25	1452	45M	2.33	1500	3.5% L
#18	4.00	2581	55M	3.88	2500	3.0% S
L = LARGER						
S = SMALLER						

2.01B REFERENCES

- .1 The Manual of Engineering Standards and Specification contains references to standard specifications for testing, materials, manufacturing installation and design procedures. This section provides the full descriptive title of referenced specifications.
- .2 All references listed shall be understood to refer to the latest adopted revision, including all amendments.
- .3 All references listed and referred to by the Manual of Engineering Standards and Specifications shall be part of the Manual as far as they are applicable to and not inconsistent with the Manual.

SPEC NUMBER	TITLE
ANSI A 300	Standard Tree Care Operations
ANSI B 16.1	Cast Iron Pipe Flanges and Flanged Fittings
ANSI B 16.5	Standard Specification for Pipe Flanges and Flanged Fittings
ANSI/IES RP-8	Roadway Lighting
ANSI/NSF 61	NSF/ANSI 61 Drinking Water System Components—Health Effects

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ASTM 3261	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
ASTM A 48	Standard Specification for Gray Iron Castings
ASTM A 123/A 123M	Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153	Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
ASTM A 354	Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
ASTM A 536	Standard Specification for Ductile Iron Castings
ASTM A 563	Standard Specification for Carbon and Alloy Steel Nuts
ASTM A 653/A 653M	Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvanized) by the Hot Dip Process
ASTM A 746	Standard Specifications for Ductile Iron Gravity Sewer Pipe
ASTM A 775	Standard Specification for Epoxy-Coated Reinforcing Steel Bars
ASTM A 775M	Standard Specification for Epoxy-Coated Reinforcing Steel Bars
ASTM B 42	Standard Specification for Seamless Copper Pipe, Standard Sizes
ASTM B 62	Standard Specifications for Composition Bronze or Ounce Metal Castings
ASTM B 88	Standard Specification for Seamless Copper Water Tube
ASTM B 633	Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
ASTM B 766	Standard Specification for Electrodeposited Coatings of Cadmium
ASTM C 14M	Standard Specification for Non-reinforced Concrete Sewer, Storm Drain, and Culvert Pipe (Metric)
ASTM C 33	Standard Specification for Concrete Aggregates
ASTM C 55	Standard Specification for Concrete Building Brick
ASTM C 67	Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile (REVISED MAY 2020)
ASTM C 76M	Standard Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe (Metric)
ASTM C 88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate
ASTM C 117	Standard Test Method for Material Finer than 0.075mm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate

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ASTM C 131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C 140	Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
ASTM C 144	Standard Specification for Aggregate for Masonry Mortar
ASTM C 295	Standard Guide for Petrographic Examination of Aggregates for Concrete
ASTM C 309	Standard Specification for Liquid Membrane Forming Compounds for Curing Concrete
ASTM C 443	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
ASTM C 443M	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets (Metric)
ASTM C 478	Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
ASTM C 579	Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings and Polymer Concretes
ASTM D 429	Standard Test Methods for Rubber Property – Adhesion to Rigid Substrates
ASTM D 638	Standard Test Methods for Tensile Properties of Plastics
ASTM D 751	Standard Test Methods for Coated Fabrics
ASTM D 977	Standard Specification for Emulsified Asphalt <i>(REVISED MAY 2020)</i>
ASTM D 1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft lbf/ft ³ (2,700 kN m/m ³))
ASTM D 1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
ASTM D 2241	Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
ASTM D 2412	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
ASTM D 2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D 2466	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
ASTM D 2467	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D 2564	Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe Systems

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ASTM D 2657	Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings
ASTM D 2726	Standard Test Method for Bulks Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D 3034	Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM D 3139	Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
ASTM D 3261	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing (REVISED MAY 2020)
ASTM D 3350	Standard Specification for Polyethylene Plastics Pipe and Fittings Materials (REVISED MAY 2020)
ASTM D 3549	Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens
ASTM D 4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 6928	Standard Test Method for Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro Deval Apparatus
ASTM D 6938	Standard Test Methods for In Place Density and Water Content of Soil and Soil Aggregate by Nuclear Methods (Shallow Depth)
ASTM F 436	Standard Specification for Hardened Steel Washers
ASTM F 477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F 593	Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
ASTM F 594	Standard Specification for Stainless Steel Nuts
ASTM F 679	Standard Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F 2620	Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings (REVISED MAY 2020)
AWWA C 104	Cement Mortar Lining for Ductile Iron Pipe and Fittings
AWWA C 105	Polyethylene Encasement for Ductile Iron Pipe Systems (REVISED MAY 2020)
AWWA C 110	Ductile Iron and Grey Iron Fittings
AWWA C 111	Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings
AWWA C 150	Thickness Design of Ductile Iron Pipe
AWWA C 151	Ductile Iron Pipe, Centrifugally Cast
AWWA C 153	Ductile Iron Compact Fittings
AWWA C 200	Steel Water Pipe, 6in (150mm) and Larger
AWWA C 203	Coal Tar Protective Coatings and Linings for Steel Water
AWWA C 206	Field Welding of Steel Water Pipe
AWWA C 208	Dimensions for Fabricated Steel Water Pipe Fittings

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AWWA C 209	Cold-Applied Tape Coatings for Steel Water Pipe, Special Sections, Connections and Fittings
AWWA C 210	Standard Specification for Liquid – Epoxy Coatings and Linings for Steel Water Pipe and Fittings
AWWA C 213	Standard Specification for Fusion – Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings
AWWA C 217	Standard Specification for Petrolatum and Petroleum Wax Tape Coatings for the Exterior of Connections and Fittings for Steel Water Pipelines (REVISED MAY 2020)
AWWA C 219	Standard Specification for Bolted, Sleeve – Type Couplings for Plain – End Pipe
AWWA C 500	Metal Seated Gate Valves for Water and Sewerage Systems
AWWA C 502	Dry Barrel Fire Hydrants
AWWA C 504	Rubber-Seated Butterfly Valves
AWWA C 509	Resilient-Seated Gate Valves for Water Supply Services
AWWA C 515	Reduced Wall, Resilient-Seated Gate Valves for Water Supply Service (REVISED MAY 2020)
AWWA C 550	Protective Interior Coatings for Valves and Hydrants (REVISED MAY 2020)
AWWA C 600	Installation of Ductile Iron Water Mains and Their Appurtenances
AWWA C 651	Disinfecting Water Mains
AWWA C 800	Underground Service Line Valves and Fittings
AWWA C 900	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 Inch Through 12 Inch (100mm through 300mm), for Water Transmission Distribution
AWWA C 905	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm through 1,620mm), for Water Distribution and Transmission
AWWA C 906	Standard Specification for Polyethylene (PE) Pressure Pipe and Fittings, 4 in (100mm) through 63 in. (1,600mm), for Water Distribution and Transmission (REVISED MAY 2020)
AWWA M 17	Installation, Field Testing, and Maintenance of Fire Hydrants
CAN/CSA A 23.1	Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete
CAN/CSA A 23.2	Methods of Test for Concrete
CAN/CSA A 23.5	Supplementary Cementing Materials
CAN/CSA A 3000	Cementitious Materials Compendium
CAN/CSA Z A 266.2	Chemical Admixtures for Concrete
CAN/CSA G 40.21	General Requirements for Rolled or Welded Structural Quality Steel / Structural Quality Steel
CAN/CSA Z 234.1	Canadian Metric Practice Guide
CGSB 41-GP 25M	Pipe, Polyethylene, for the Transport of Liquids

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CSA 22.2 No. 85	Standard Specifications for Rigid PVC Boxes and Fittings
CSA 6164	Standard Specification for Concrete Masonry Units
CSA B 137.1	Thermoplastic Pressure Piping Compendium (REVISED MAY 2020)
CSA B 137.3	Rigid Polyvinyl Chloride (PVC) Pipe for Pressure Applications
CSA B 182.1	Plastic Drain and Sewer Pipe and Pipe Fittings
CSA B 182.2	PSM Type PVC Sewer Pipe and Fittings
CSA B 182.4	Profile PVC Sewer Pipe and Fittings
CSA B 1800	Standard Specification for Thermoplastic Non Pressure Piping Compendium
CSA C 22.2 No. 45.1	Canadian Electrical Code, Electrical Rigid Metal Conduit – Steel
CSA C 22.2 No. 211.2	Canadian Electrical Code, Rigid PVC (Unplasticized) Conduit
CSA A 231.1/A 231.2	Standard Specification for Precast Concrete Paving Slabs/Precast Concrete Pavers
CSA G 30.3	Cold Drawn Steel Wire for Concrete Reinforcement
CSA G 30.5	Welded Steel Wire Fabric for Concrete Reinforcement
CSA G 30.15	Welded Deformed Steel Wire Fabric for Concrete Reinforcement
CSA G 30.18	Carbon Steel Bars for Concrete Reinforcement
CSA G 164	Hot Dip Galvanizing of Irregularly Shaped Objects
CSA S 16	Design of Steel Structures
CSA S 157	Strength Design in Aluminum
CSA S 269.3	Concrete Formwork
CSA W 48	Standard Specifications for Filler Metals and Allied Materials for Metal Arc Welding
CSA W 59	Welded Steel Construction (Metal Arc Welding)
CSA W 186	Welding of Reinforcing Bars in Reinforced Concrete Construction
HMSA 19-1	Standard Specifications for Polyethylene Insulated, Polyvinyl Chloride Jacketed Signal Cable
HMSA 50-2	Standard Specification for Polyethylene Insulated, Polyethylene Jacketed, Loop Detector Lead In Cable
MOTI SS 952	Contractor Supply Asphalt and Paving Materials for Highway Use

2.01C SUPPLEMENTARY DOCUMENTS

.1 The Manual of Engineering Standards and Specifications contains references to guidelines, governances, standards and strategies and reports. The intent of the supplemental documents is to provide additional information. Information provided in the supplemental documents does not replace or supersede the MoESS requirements.

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- (a) City of Nanaimo, Steep Slope Development Permit Area Guidelines <http://www.nanaimo.ca/assets/Departments/Community~Planning/Publications~and~Forms/SSguidelines.pdf>
- (b) (REVISED NOVEMBER 2020) FHWA, Manual of Uniform Control Devices http://mutcd.fhwa.dot.gov/pdfs/2003/pdf_index.htm
- (c) NCHRP, Report 672 – Roundabouts an Informational Guide <http://www.trb.org/Main/Blurbs/164470.aspx>
- (d) Ministry of Transportation and Infrastructure, Manual of Standard Traffic Signs & Pavement Markings http://www.th.gov.bc.ca/publications/eng_publications/electrical/MoST_PM.pdf
- (e) Motor Vehicle Act Regulations – Division 23 – Traffic Control Devices <http://www.bclaws.ca/civix/document/id/complete/statreg/26-58-06>
- (f) BC Hydro, Street Light Information Management System (SLIM) <https://www.bchydro.com/ex/streetlight/>
- (g) City of Nanaimo, Urban Forest Management Strategy <https://www.nanaimo.ca/docs/services/home-and-property/ufms-edited-2012-1.pdf>
- (h) BCLNA, British Columbia Landscape Standards <https://bclna.com/bclna-resource/canadian-landscape-standards/>
- (i) City of Nanaimo, Invasive Plant Management Strategy [https://www.nanaimo.ca/docs/default-document-library/con-invasive-plant-management-strategy-\(final\).pdf](https://www.nanaimo.ca/docs/default-document-library/con-invasive-plant-management-strategy-(final).pdf)
- (j) Nanaimo Transportation Master Plan <https://www.nanaimo.ca/your-government/projects/projects-detail/nanaimo-transportation-master-plan>
- (k) City of Nanaimo, Erosion and Sediment Control Guideline <https://www.nanaimo.ca/docs/property-development/soil-removal/11-erosion-sediment-control.pdf>
- (l) Department of Fisheries and Oceans and the Ministry of Environment, Land Development Guidelines for the Protection of Aquatic Habitat <http://www.dfo-mpo.gc.ca/Library/165353.pdf>
- (m) BC Traffic Control Manual for Work on Roadways. <https://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/engineering-standards-guidelines/traffic-engineering-safety/trafficmanagementmanual>
- (n) TAC Geometric Design Guide for Canadian Roads <https://www.tac-atc.ca/en/publications-and-resources/geometric-design-guide-canadian-roads>
- (o) Ministry of Transportation and Infrastructure Electrical and Traffic Engineering Manual http://www.th.gov.bc.ca/publications/eng_publications/electrical/electrical-and-traffic-eng/Electrical-Signing-Design-Manual/tableofcontents.htm
- (p) BC Building Access Handbook (REVISED MAY 2020) <https://www2.gov.bc.ca/gov/content/industry/construction-industry/building-codes-standards/accessibility>

SECTION 2 – GENERAL DEFINITIONS AND REFERENCES

2.01D CITY BYLAWS

.1 The Manual of Engineering Standards and Specifications shall be used in conjunction with the most current City bylaws that impact construction.

- (a) Building Bylaw No. 7224
<https://www.nanaimo.ca/bylaws/ViewBylaw/7224.pdf>
- (b) Crossing Control Bylaw No. 5174
<https://www.nanaimo.ca/bylaws/ViewBylaw/5174.pdf>
- (c) Development Parking Regulations Bylaw No. 7013
<https://www.nanaimo.ca/bylaws/ViewBylaw/7013.pdf>
- (d) Elimination of Dust Emissions Bylaw No. 4896
<http://www.nanaimo.ca/ByLaws/ViewBylaw/4896.pdf>
- (e) Flood Prevention Bylaw No. 5105
<http://www.nanaimo.ca/ByLaws/ViewBylaw/5105.pdf>
- (f) Management and Protection of Trees Bylaw No. 7126
<https://www.nanaimo.ca/docs/services/home-and-property/tree-protection-bylaw-7126.pdf>
- (g) Noise Control Bylaw No. 4750
<http://www.nanaimo.ca/UploadedFilePath/Bylaws/4750.pdf>
- (h) Official Community Plan Bylaw No. 6500
<https://www.nanaimo.ca/property-development/community-planning-land-use/community-plans/official-community-plan>
- (i) Soil Removal and Depositing Regulation Bylaw No. 1747
<https://www.nanaimo.ca/ByLaws/ViewBylaw/1747.pdf>
- (j) Sewer Regulation and Charge Bylaw No. 2496
<http://www.nanaimo.ca/ByLaws/ViewBylaw/2496.pdf>
- (k) Storm Sewer Regulation and Charge Bylaw No. 3808
<https://www.nanaimo.ca/ByLaws/ViewBylaw/3808.pdf>
- (l) Traffic and Highways Regulation Bylaw 1993 No. 5000
<https://www.nanaimo.ca/bylaws/ViewBylaw/5000.pdf> (REVISED MAY 2020)
- (m) Waterworks Rate and Regulation Bylaw No. 7004
<https://www.nanaimo.ca/ByLaws/ViewBylaw/7004.pdf>
- (n) Zoning Bylaw No. 4500
<http://www.nanaimo.ca/EN/main/departments/Current-Planning/Zoning.html>