1. PART 1 – GENERAL

1.1 References

.1 Canadian Standards Association (CSA)
- .1 CAN/CSA C22.2 No. 18, Outlet Boxes, Conduit Boxes, and Fittings and Associated Hardware.
- .2 CSA C22.2 No. 45, Rigid Metal Conduit.
- .3 CSA C22.2 No. 56, Flexible Metal Conduit and Liquid Tight Flexible Metal Conduit.
- .4 CSA C22.2 No. 83, Electrical Metallic Tubing.
- .5 CSA C22.2 No. 211.2, Rigid PVC (Unplasticized) Conduit.
- .6 CAN/CSA C22.2 No. 227.3, Flexible Nonmetallic Tubing.

2. PART 2 – PRODUCTS

2.1 Conduits

.1 Rigid metal conduit: to CSA C22.2 No. 45, galvanized steel hot dipped galvanized steel aluminum threaded.
.2 Epoxy coated conduit: to CSA C22.2 No. 45, with zinc coating and corrosion resistant epoxy finish inside and outside.
.3 Electrical metallic tubing (EMT): to CSA C22.2 No. 83, with couplings with expanded ends.
.4 Rigid PVC conduit: to CSA C22.2 No. 211.2.
.5 Flexible metal conduit: to CSA C22.2 No. 56, steel aluminum liquid tight flexible metal.
.6 Flexible PVC conduit: to CAN/CSA C22.2 No. 227.3.

2.2 Conduit fastenings

.1 One hole malleable iron steel straps to secure surface conduits NPS 50 mm and smaller. Two hole steel straps for conduits larger than NPS 50 mm.
.2 Beam clamps to secure conduits to exposed steel work.
.3 Channel type supports for two or more conduits.
.4 Threaded rods, 6 mm dia., to support suspended channels.
.5 PVC spacers with stainless steel fastenings.

2.3 Conduit fittings

.1 Fittings: manufactured for use with conduit specified. Coating: same as conduit.
.2 Factory made elbows where 90º bends are required for NPS 1 and larger conduits.

2.4 Expansion fittings for rigid conduit

.1 Weatherproof expansion fittings with internal bonding assembly suitable for 100 mm linear expansion.
.2 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection in all directions.
.3 Weatherproof expansion fittings for linear expansion at entry to panel.

2.5 Fish cord

.1 Polypropylene.

3. PART 3 – EXECUTION

3.1 General

.1 Unless otherwise indicated, use following conduits:

.1 Outside:	☐ galvanized steel
	☐ aluminum
	☒ PVC
	☐
.2 Encased in slab (concrete):	☐ galvanized steel
	☒ PVC
.3 Dry area:	☒ EMT
	☐ galvanized steel
	☐
.4 Damp and wet areas:	☐ galvanized steel
	☐ aluminum
	☒ PVC
.5 Damage prone area:	☒ galvanized steel

3.2 Installation

.1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
.2 Conceal conduits except in mechanical and electrical service rooms in unfinished areas.
.3 Surface mount conduits except as indicated.
.4 Use flexible metal conduit for connection to transformers, motors, and vibrating equipment.
.5 Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations.
.6 Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.
.7 Mechanically bend steel conduit over 19 mm dia.
.8 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.
.9 Install fish cord in empty conduits.
.10 For each flush mounting panel board, run 2-25 mm spare conduits up to ceiling space. Terminate these conduits in 300 x 300 x 150 mm junction boxes in ceiling space.
.11 Remove and replace blocked conduit sections. Do not use liquids to clean out conduits.
.12 Dry conduits out before installing wire.
.13 For PVC conducts, install dilatation fittings in accordance with manufacture's instructions.
.14 Install green wire of required rating in all conduits.

3.3 Surface conduits

.1 Run parallel or perpendicular to building lines.
.2 Locate conduits behind infrared or gas fired heaters with 1.5 m clearance.
.3 Run conduits in flanged portion of structural steel.
.4 Group conduits wherever possible on suspended surface channels.
.5 Do not pass conduits through structural members except as indicated.
.6 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.
.7 In food areas, install conduits on spacers for clearance from walls and ceilings.

3.4 Concealed conduits

.1 Run parallel or perpendicular to building lines.
.2 Do not install horizontal runs in masonry walls.
.3 Do not install conduits in terrazzo or concrete toppings.

3.5 Underground conduits

.1 Slope conduits to provide drainage.
.2 Waterproof joints (PVC excepted) with heavy coat of bituminous paint.