

**Section B1 – List of Approved Materials**

Reference	Item Description	Approved Product/Supplier	Standard	Comments/Restrictions
<b>1. Waterworks</b>				
1.1 Pipe	1.1.1 Polyvinyl Chloride Pipe (PVC)	Ipex Napco	AWWA C900 DR25, 18 and 14; CSA B137.3	C900 Sizes 100 – 300 mm C905 Sizes 350 – 1200 mm CSA B137.3 100 – 1200 mm
1.2 Fittings	1.2.1 Cast Iron Fittings	Terminal City	Exterior Coating to ANSI/AWWA C151/A21.5.1 Hot Coal Tar Enamel to AWWA C203 ASTM C110-82	Corrosion protection in accordance to recommendations from Owners Geotechnical Engineer
	1.2.2 Ductile Iron Fittings	Terminal City	ANSI/AWWA C151/A21.53 Exterior Coating to ANSI/AWWA C151/A21.5.1 Hot Coal Tar Enamel to AWWA C203 Cement Mortar Lined to ANSI/AWWA C104/A21.4 ASTM A337	Corrosion protection in accordance to recommendations from Owners Geotechnical Engineer
	1.2.3 PVC Extruded Fittings	Ipex Inc. Napco	AWWA C907 (100-900 mm) CSA B137.2 and B137.3	Long Body 5° Bends Long Radium Bends
1.3 Couplings	1.3.1 Couplings	Robar Smith-Blair Ipex Certified Hymax	ANSI/AWWA C219 Bolted, Sleeve-Type Couplings for Plain-end Pipe.	Corrosion protection in accordance to recommendations from Owners Geotechnical Engineer
	1.3.2 Adapter Flanges	Uni-Flange Terminal City	ANSI B16.1 125lb ANSI D16.5 150lb	Epoxy coated Type 304 SS Bolts Flanges and all bolts to be wrapped in petrolatum tape
1.4 Restraining Devices		Uni-Flange Ford	ASTM A536	Series 1300 – 1390 for PVC Pipe Series 1300, 1390, 1400 and 1450 for DI Pipe Epoxy coated Type 304 SS Bolts All bolts to be wrapped in Denso tape

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1.5	Tapping Sleeves	1.5.1		Robar Industries Ltd. Terminal City	AWWA C223-19	Wrap in Denso tape Stainless Steel or Mild Steel (Epoxy Coated)
1.6	Fire Hydrants & 50 mm Standpipes	1.6.1		Terminal City Canada Valve Clow Canada	AWWA C502	Painted Red (Hydrant) Compression Type Confirm depth of bury with design Corrosion protection in accordance to recommendations from Owners Geotechnical Engineer
1.7	Repair Clamps	1.7.1		Robar Industries Ltd. Mueller Canada Pipe Clow Canada Ford	Stainless Steel "Two Piece Type"	Sizes 100 – 600 mm
1.8	Valves	1.8.1	Mainline Gate Valves	Mueller	Electrostatically Applied Fusion Bonded Epoxy Coated	Resilient Seat Sizes 100 – 350 mm Corrosion protection in accordance to recommendations from Owners Geotechnical Engineer
		1.8.2	Butterfly Valves	Mueller Rotork	AWWA C504 – Class 150B	Electrostatically Applied Fusion Bonded Epoxy Coated Resilient Seat Sizes 400 – 900 mm Direct Bury Corrosion protection in accordance to recommendations from Owners Geotechnical Engineer
		1.8.3	Valve Boxes	Terminal City	Hot Coal Tar Enamel to AWWA C203 Exterior coating to ANSI/AWWA C151/A21.5.1	Terminal City <u>MR Type</u> North American Manufactured

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	1.8.4	Check Valves	Apco Mueller	ANSI/AWWA C508 Swing- Check Valves for Waterworks Service. 2 in. (50mm) Through 24 in. (600mm) NPS. ANSI/AWWA C510 Double Check Valve Backflow- Prevention Assembly.	Sizes 100 – 400 mm AWWA C504 Flanges Corrosion protection in accordance to recommendations from Owners Geotechnical Engineer
	1.8.5	Air Release, Air/Vacuum and Combination Air Valves	Apco (DeZurick) Val-Matic Pratt	AWWA C512 (2070 kPa)	
1.9 Water Service	1.9.1	Water Service Pipe 19 – 50 mm	Ipex Napco	AWWA C901 ANSI H23.1 ASTM F1281 ASTM B88 CSA B137.1 WWT-799	Municipal Polyethylene Type K Soft Copper
	1.9.2	Taped Coupling	Ipex Robar	AWWA C907 CSA B137.2 AND B137.3	IP Thread
	1.9.3	Water Service Saddles	Robar	AWWA C 800-14	Double Strap Stainless Steel IP Thread Brass Epoxy Coated Robar product 2706 CD2 or SC2
	1.9.4	Corporation Stops	Ford	AWWA C 800-14	Sizes 19 – 50 mm IP Thread and Compression
	1.9.5	Curb Stop Residential (Stop & Drain) Irrigation (Stop & Drain)	Ford	AWWA C 800-14	Sizes 10 – 50 mm Full Flow, Full Port IP x IP

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	1.9.6	Service Box	Trojan Mueller	AWWA C 800-14	2.75 m Bury 1.5 m Internal Stainless Steel Rod Epoxy Coated Boot 12 pound zinc anode Trojan Product SSB1 Mueller product A726 Mueller Product A728
<b>2. Sewer</b>					
2.1 Storm Pipe	2.1.1	Concrete Pipe	Ocean Construction	ASTM C14, ASTM C76 ASTM C655	600 mm and Larger Type 50 Cement
	2.1.2	Polyvinyl Chloride Pipe	Ipex Napco	ASTM D2412 NQ3624-060	DR28 100 – 150 mm DR35 150 – 900 mm
	2.1.3	Ultra-Rib	Ipex Napco	ASTM F794 CSA B182.4	300 mm and Larger
	2.1.4	Perma-Loc Class 5	Ipex Rehau Industries Ltd.	CSA B182.4	600 mm and Larger
	2.1.5	Corrugated High Density Polyethylene Pipe	ADS Hancor Big O Boss 2000 Big O Boss 1000 (Culverts Only)	ASTM D3350, ASTM D1248 ASTM F405 ASTM F667 CSA B182.6 – M92	Bell and Spigot with Gaskets Screw on Coupler
	2.1.6	Corrugated Steel Pipe Spir-L-Ok	Armtec Inc. Atlantic Industries	CSA G401	2.0 mm Gauge Minimum 400 mm Galvanized Coated Minimum 2.0mm thickness Coating as per Canadian Durability Guideline for CSP – CSPI
2.2 Vaults	2.2.1	Pre-Cast Reinforced Concrete	Grosso Leko	CAN/CSA -A231.2 ASTM C478	Precast Concrete Minimum 960 Opening H20/CS-600 Loading Type 50 Cement

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2.3	Catchbasins	2.3.1 Barrels	Grosso Leko	CAN/CSA -A231.2 ASTM C478	Pre-Cast Concrete Type 50 Cement 1500 Deep H20/CS-600 Loading 750 mm and 900 mm Diameter
		2.3.2 Complete Bases and Lids	Grosso Leko	CAN/CSA -A231.2 ASTM C478	Pre-Cast Concrete 360 maximum 640 mm Opening H20/CS-600 Loading Type 50 Cement
		2.3.3 Lawn Basin	Le-Ron Plastics Ocean Leko	For PVC CSA B137.2 and B137.3 For Concrete CAN/CSA -A231.2 ASTM C478	70A06 with B33 Grate B22A grate Type 50 Cement
		2.3.4 Frame and Grate	Terminal City	ASTM 1143-19	Type 1 and Type 2 Style B39B, B18 and B19 TF-33 Grate to indicate that stormwater drains to fish habitat or stream
2.4	Headwalls	2.4.1 Pre-Cast Concrete HDPE	Grosso Leko Armtec	CAN/CSA -A231.2 ASTM C478	Pre-Cast Concrete Type 50 Cement
2.5	Storm and Sanitary Manholes	2.5.1 Barrels-Storm	Grosso Leko	ASTM C478	Pre-Cast Concrete Minimum 1050 mm H20/CS-600 Loading Type 50 Cement

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		Barrels-Sanitary	Grosso Leko	CAN/CSA -A231.2 ASTM C478	PVC 1200 mm diameter
	2.5.2	Concrete Lid-Storm	Grosso Leko	CAN/CSA -A231.2 ASTM C478	Pre-Cast Concrete Minimum 1050 mm H20/CS-600 Loading Type 50 Cement
	2.5.3	Pre-Cast Bases-Storm	Grosso Leko	CAN/CSA -A231.2 ASTM C478	GU Liners Type 50 Cement
		Pre-Cast Bases-Sanitary	Grosso Leko	CAN/CSA -A231.2 ASTM C478	PVC lined Type 50 Cement
	2.5.4	Frame and Cover	Terminal City	ASTM 1143-19	C18 Frame and Cover C18D Frame and Cover H20/CS-600 Loading TF-39
2.6 Sanitary Sewer Pipe	2.6.1	Concrete Pipe	Ocean	ASTM C14, C76 or C655	750 mm or Larger Bell and Spigot with Gaskets Type 50 Cement
	2.6.2	PVC Pipes	Ipex Napco	ASTM D2412 CSA B182.2 NQ3624-060	DR28 100 – 150 mm DR35 150 – 900 mm
	2.6.3	High Density Polyethylene Pipe (HDPE)	Phillips Sclair Drisco	AWWA C906	DR32.5 to DR11
2.7 Sanitary and Storm Sewer Services	2.7.1	Service Wyes	Ipex Napco	ASTM D3034 ASTM F1336 CSA B182.2	DR28 Bell and Spigot All new mainline construction

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	2.7.2	Saddles	Ipex Le-Ron Plastics Inc. Robar	ASTM D3034 ASTM F1336 CSA B182.2	Double Strap Wye Only on existing mains	
	2.7.3	Inspection Chamber	Le-Ron Plastics Inc. Ipex Napco	CSA B137.2 and B137.3	100 mm and 150 mm 70A4WOP or 70A6WOP Chamber 73A08HSL Locking Collar 71ALID086L Locking Lid Red – Sanitary Green – Storm	
2.8	Forcemains	2.8.1	PVC Pipe & Fittings	Ipex Napco Rehau Industries Ltd.	AWWA C907 ASTM D1784 CSA B137.2 AND B137.3	DR25 and DR18 C900 Sizes 100 – 300 mm C905 Sizes 350 – 1200 mm
		2.8.2	High Density Polyethylene (HDPE) Pipe and Fittings	Philips	AWWA C906	DR11 to DR32.5
		2.8.3	Series PVC Pipes & Fittings	Ipex Napco	AWWA C900 CSA B137.2 and B137.3	Series 100 to Series 160
		2.8.4	Lift Station Pumps	Flygt		
		2.8.5	Valves	Mueller	AWWA C505	Resilient Seat Sizes 100 – 350 mm
		2.8.6	Services	See 1.9 Water Services		
<b>3. Electrical</b>						
3.1	Luminaires	3.1.1	Post Top Luminaire	Streetworks MPW Woodbridge		
		3.1.2	LED Luminaire	Phillips Lumic		
		3.1.3	LED Cobra Head 16, 32 and 48 LED Luminaire	Phillips StreetView		
3.2	Poles and Anchors	3.2.1	Poles and Anchors	West Coast Engineering Group Ltd.	9010-08-WCE-SD-22-8	