

APPENDIX A
MATERIALS LIST

APPENDIX A – MATERIALS LIST

STREET LIGHTING

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
1.0 LIGHTING				
Electrical Handholes	CSA	Precast concrete type complete with cover, 460mm Dia., as per OPSD 2112.02.		
Pole Bases		460 or 600 mm Diameter Concrete Pole Bases as specified by the pole manufacturer Spec E-2.01 or E-2.02		
Ducts	CSA C22.2, No.211.1 CSA C22.2, No.211.2 CSA Standard B137.1, Series 75 or ENT CSA C22.2, No.227.1	In boulevard, rigid PVC DB2 duct, 53mm Dia. Below roadways, rigid PVC Thickwall duct, 53mm Dia. Flexible duct (Polypipe) to be used for protection of cables entering the wiring aperture in the concrete poles.		
Cables	CSA C22.2 No.38	Power supply cables shall be 3-#2 AWG copper RWU90 (no ground wire), with cross-linked polyethylene insulation rated 600 volt.		

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
1.0 LIGHTING (cont'd)				
Cables	CSA C22.2 No.38	<p>Street light cables shall be 3-#6 AWG copper RWU90 as above with 1-#6 AWG stranded copper green ground.</p> <p>Riser wires from pole handhole to luminaire shall be #12 AWG stranded copper type RWU90 insulation.</p> <p>Insulation colour for line conductors for 1-phase, 3-wire 240/120V system shall be "Red" and "Black" and for 1 phase, 2-wire 120V system shall be "Red".</p> <p>Insulation colour of all neutral conductors shall be "White".</p> <p>Cable connectors in pole handholes shall be compression connectors with insulating covers.</p>		
Fuses		Fuse holders in pole handholes shall be in-line break-away type rated 600V complete with 10 amp KTK fuse.		

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
1.0 LIGHTING (cont'd)				
Grounding	CSA C22.2 No.41	Ground rods shall be solid steel, 19mm Dia., 3.0m long, copper clad for full length.		
2.0 POLES				
Standard Roadway Lighting Poles	CSA A14-M1979	<p>Direct Buried, Class "B" spun concrete, tapered round with natural concrete smooth mold finish, complete with handhole cover plate, nameplate and ground lug.</p> <p>Arterial Roads – 12.2m (40Ft.) Collector Roads – 10.7m (35 ft.) or 12.2m Local Roads – 9.8m (32 ft.) or 10.7m</p> <p>Base mounted galvanized octagonal steel poles as per OPSD-2415.010.</p> <p>Arterial Roads – 10.5m Collector Roads – 9.0m/10.5m Local Roads –7.5m/9.0m</p>	StressCrete Sky Cast U.S.I.	

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
2.0 POLES (cont'd)				
Poles for Walkways/Bikeways		<p>Base mounted contemporary pole with high tensible carbon steel shaft round (76mm) welded to top and bottom of anchor plate.</p> <p>Pole to be black semi-gloss powder coat finish complete with base cover assembled with stainless steel hardware.</p> <p>Photobutton light control recessed near top of pole.</p>		
Poles for Commercial Sites		<p>Poles shall be metal type octagonal or round to suit the luminaire style and shall be base mounted. Poles shall have durable powder coat finish, colour to match the luminaire.</p> <p>Poles in parking areas shall be restricted to 30 ft. (9.1m) in height. Poles may be reduced in height down to 12 ft. (3.65m) level for pedestrian pathway applications.</p>		

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
2.0 POLES (cont'd)				
Poles for Commercial Sites (cont'd)		<p>Wherever feasible, poles shall be located off the edge of pavement, behind barrier curbs (islands).</p> <p>Concrete bases in parking areas shall be protected by bollards or shall be raised to minimum 900mm above grade and be 760mm diameter.</p>		
3.0 BRACKETS				
Standard Roadway Lighting Brackets		<p>Tapered elliptical aluminium brackets as per OPSD 2420.01. The length of the bracket depends on offset from pavement and pole height.</p> <p>Arterial Roads – 2.4m (10Ft.) preferred, 3.0m maximum Collector Roads – 1.8m (8 ft.) preferred Local Roads – 1.2m (6 ft.)</p>		
Walkways/Bikeways Brackets		<p>Single or double brackets with bend aluminium tubing with decorative aluminium rod, welded assembly and cast aluminium adaptor.</p>		

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
4.0 LUMINAIRES - Standard Roadway Luminaries: LED				
Arterial/Industrial Roads			Philips Lumec "Roadstar"	
Local and Collector Roads			Philips Lumec "Roadstar"	
Photocontroller		TRS Series 20 Year Photo control, or approved equal		
Standard Roadway Luminaires: LED		<p>Luminaire – Cobra Head style, type 2 or 3 distribution pattern, rugged die cast aluminum housing with surge and brown-out protection, LED drivers and electronic transfer switch. Temperature control by robust heat sink ensuring a minimum of 80,000 hours L70 at 40C operating ambient.</p> <p>Operating range from – 40 to + 50C with light engines meeting the dust and moisture rating of IP-66. Luminaire design to meet CSA-C22.2 number 250 for 40C, wet location and to be ROHS compliant. Maximum total harmonic distortion to conform to ANSI C82.77:2002.</p>	<p>Holophane. Cooper Lighting Ruud Lighting Philips Lumec</p>	<p>Ledgend OVF LED Cobrahead Ledway Series Roadstar</p>

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
4.0 LUMINAIRES - Standard Roadway Luminaires: LED (cont'd)				
Standard Roadway Luminaires: LED (cont'd)		Solid state 120 volt 60 Hz electronic drivers with extended life to 100,000 hours minimum. LED colour temperature 4000 K nominal. 5 year limited warranty on LED light engine, LED drivers and all non electrical components.		
Park Walkway/Bikeway Luminaires:			Philips Lumec	MetroScape MPTRCR - LED
Commercial Site Luminaires: LED		In general shall be of the “Architectural Site Lighting” style, contributing a cohesive look to the overall site lighting system. The architectural outdoor luminaires may be shoe-box or round type with good optics and full cut-off with optional house side shielding. Luminaires at lower mounting heights shall have a vandal proof lens.		

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
4.0 LUMINAIRES - Standard Roadway Luminaires: LED (cont'd)				
Commercial Site Luminaires: LED (cont'd)		<p>The luminaires shall be post top arm mounted suitable for 1A to 4C configurations and also be suitable for optional wall mount applications.</p> <p>Luminaire housings shall be diecast type with durable powder coat finish colour to match site architectural features.</p> <p>Lamp wattage for parking lot and site roadway lighting shall be in the 150 to 400 watt range, subject to application. Lamp wattage for pedestrian scale pathway and building zone lighting may be reduced to 70 watt metal halide.</p>		
5.0 POWER SUPPLY DISCONNECT				
Pole Mounted Disconnects		<p>Pole mounted power supply disconnects shall be outdoor weatherproof type 240/120 V rated 100 amps with 60 amp 2 pole main breaker suitable for service entrance.</p>	Square 'D' (CQO)	

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
5.0 POWER SUPPLY DISCONNECT (cont'd)				
Pedestal Mounted Disconnects		<p>Pedestal mounted power supply disconnect shall be outdoor heavy gauge galvanized steel with lockable removable front cover complete with precast concrete base.</p> <p>Colour to be equipment green with powder coat finish.</p> <p>Interior power supply disconnect shall be 240/120 V rated 100 amps with 60 amp 2 pole main breaker suitable for service entrance. Branch breakers to be 30 amps 1 pole 120V.</p>	Pedestal Solutions Inc.	

APPENDIX A – MATERIALS LIST

STORM SEWER

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
1.0 SEWER MAIN				
PVC (300mm to 450mm)	CSA B182.2	DR 35 Rubber gasket in integral bell and spigot joints Green in colour	IPEX Royal Pipe Rehau Diamond Pipe	As per individual manufacturer
Concrete	CSA A257.2	Rubber gasket type joints certified to CSA A257.3	OCPA Plant Prequalification Member	
Reinforced Concrete	CSA A257.2 Class 1,2,3	All pipes over 450mm dia. Shall be constructed of reinforced concrete pipe Strength class 50-D, 65-D, 100-D and 140-D	OCPA Plant Prequalification Member	
HDPE (300mm to 600mm)	CSA B182.6-02	320 kPa pipe stiffness Rubber gasket in integral bell and spigot joints	Armtec	Boss Poly-Tite

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
2.0 CONNECTION TEES				
PVC Sewer Main	CSA B182.2	DR 28 Injection molded or factory-fabricated gasketed tee		
Concrete Sewer Main	CSA A257.2,3	Factory-fabricated tee		
HDPE Sewer Main	CSA B182.6-02	Injection molded or factory-fabricated gasketed tee		
3.0 SERVICE LATERALS				
PVC	CSA B182.2	DR 28 Rubber gasket in integral bell and spigot joints White or grey in colour	IPEX Royal Pipe Rehau Diamond Pipe	As per individual manufacturer
4.0 TEST FITTINGS				
PVC	CSA B182.2	Bootjack Fitting for double connections Straight test fitting at property line	IPEX	As per individual manufacturer

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
4.0 TEST FITTINGS (cont'd)				
Cast Iron	CSA B70	Bootjack Fitting for double connections Straight test fitting at property line	Crowle	As per individual manufacturer
5.0 CATCHBASIN LEADS				
Concrete	CSA A257.2	Rubber gasket type joints certified to CSA A257.3	OCPA Plant Pre-qualification Member	
PVC	CSA B182.2	DR 35 Rubber gasket in integral bell and spigot joints Minimum dia. of: SCB- 250mm DCB- 300mm RLCB- 250mm	IPEX Royal Pipe Rehau Diamond Pipe	As per individual manufacturer
HDPE	CSA B182.6-02	320 kPa pipe stiffness Minimum dia. of: SCB- 250mm DCB- 300mm RLCB- 250mm	Armtec	Boss Poly-Tite

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
6.0 SUB-DRAINS				
HDPE	OPSS 1840	210 kPa pipe stiffness Perforated, with geo-textile sock filter	Armtec	Big "O"
7.0 MAINTENANCE HOLES				
Concrete	CSA A257.4	Rubber gasket type joints certified to CSA A257.3 Use pre-cast concrete grade adjustment, units with Moduloc tape between layers or Self-leveling cast iron riser rings for final adjustment Frame & grate as per OPSD 401.010 (open cover) with date cast into the cover	OCPA Plant Pre-qualification Member	
8.0 CATCHBASINS				
Concrete	CSA A257.4	Use pre-cast concrete grade adjustment units with Moduloc tape between layers, as per OPSD 705.01 or 705.02 Frame & grate as per OPSD-400.020	OCPA Plant Pre-qualification Member	

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
8.0 CATCHBASINS (cont'd)				
Concrete (cont'd)		Rear yard catchbasin frame & grate as per OPSD-400.120		
9.0 CULVERTS				
Concrete	CSA A257.2		OCPA Plant Pre-qualification Member	
CSP	CSA G401	Galvanized Wall thickness as recommended by manufacturer for H20 loading. Minimum wall thickness 2.0 mm for road crossing, 1.6 mm for entrance.		
HDPE (up to 600 mm)	CSA B182.6-02	320 kPa pipe stiffness Smooth Interior Wall	Armtec	
10.0 HEADWALL AND ENDWALL TREATMENTS (Only if Approved by the Town)				
Concrete			OCPA Plant Pre-qualification Member	

APPENDIX A – MATERIALS LIST

SANITARY SEWER

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
1.0 SEWER MAIN				
PVC	CSA B182.2 ASTIM DI 784	DR35 Rubber gasket in integral bell and spigot joints Green in colour "Kor-n-seal" gaskets on all pipes entering manholes	IPEX Royal Pipe Rehau Diamond Pipe	As per individual manufacturer
Reinforced Concrete	C.S.A. A275.2, latest revision thereof,	Class 50-D, 65-D, 100-D, or 140-D as required	Munro Hanson	As per individual manufacturer
2.0 CONNECTION TEES				
PVC	CSA B182.2	DR28 Injection molded or factory-fabricated gasketed tees	IPEX Royal Pipe Rehau Diamond Pipe	As per individual manufacturer
3.0 SERVICE LATERALS				
PVC	CSA B182.2	DR28	IPEX	As per individual manufacturer

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
3.0 SERVICE LATERALS (cont'd)				
PVC (cont'd)		Rubber gasket in integral bell and spigot joints Green or black in colour	Royal Pipe Rehau Diamond Pipe	
4.0 TEST FITTINGS				
PVC	CSA B182.2,3,4	Straight test fitting at property line	IPEX	As per individual manufacturer
4.0 TEST FITTINGS				
PVC	CSA B182.2,3,4	Straight test fitting at property line	IPEX	As per individual manufacturer
5.0 SERVICE SADDLES				
		For use as a new service connection to an existing municipal sewer only		
6.0 MAINTENANCE HOLES				
Concrete	CSA A257.4 ASTIM SPECIFICATIO N C478	Rubber gasket type joints certified to CSA A257.3 "Kor-n-seal" gaskets on all pipe connections	OCPA Plant Pre-qualification Member	

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
6.0 MAINTENANCE HOLES (cont'd)				
Concrete (cont'd)		<p>Frame & grate as per OPSD-0401.0100 (Closed Cover) with the date and the word "SANITARY" cast into the cover.</p> <p>Pre-cast concrete grade adjustment units with Moduloc tape between layers or Self-leveling cast iron riser rings for final adjustment</p>		
7.0 – SEWER LINE PLUGS				
Clay Plugs		<p>Shall be used in the trench and be placed 2-3 meters upstream of any manhole that is suspected of being susceptible to high water levels of inflow/infiltration</p>		

APPENDIX A – MATERIALS LIST

WATER DISTRIBUTION

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
1.0 WATERMAIN				
PVC Pipe	AWWA C900 (Pipe ≤ 300mm)	DR18, Class 150	IPEX	As per individual manufacturer
PVC Bionax	AWWA C905 (Pipe ≥ 350mm) CSA B137.3	Rubber gasket in integral bell and spigot joints Colour coded "Blue" CI OD	Royal Pipe	
Polyethylene	AWWA C906 CSA B137.1	DR17, Class 100 Thermal butt fusion joining of pipe CI OD	KWH Pipe	As per individual manufacturer
Concrete	AWWA C301(L)	Pre-stressed concrete lined cylinder pipe	Munro Pipe Hanson Pipe LaFarge	
Concrete	AWWA C301(E)	Pre-stressed concrete lined embedded cylinder pipe	Munro Pipe Hanson Pipe	

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
2.0 WATER SERVICES				
Copper	ASTM B88-88	Type 'K' Heavy wall Soft copper Horizontal gooseneck		
Polyethylene	CSA B137.1 CSA B137.5	Series 160 psi CTS Use Stainless Steel Support Lines	Municipex	As per manufacturer
3.0 WATERMAIN FITTINGS				
Ductile Iron Compact Ductile Iron	AWWA C110/A21.10 AWWA C153/A21.53 AWWA C104/A21.4 AWWA C111/A21.11 AWWA C-907 CSA B138.2	Minimum Pressure Class 350 Cement Mortar Lined Mechanical joint	Magotteax Sigma Star Bibby St. Croix Tyler Pipe	As per manufacturer

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
4.0 WATERMAIN VALVES - All valves 300mm dia. and larger shall be installed inside valve chambers				
Gate Valves	AWWA C509 AWWA C515 AWWA C111/A21.11	Non-rising stem and 50mm square operating nut Open counter clockwise Resilient seat gate Epoxy coating internal and external per AWWA C550 Mechanical joints with restrainers Bond breaker between concrete support and valve body	Mueller Clow AVK	A2360 F-6100 Series 25/00 As per manufacturer
Pressure Reducing Valves	AWWA C530	Flanged Epoxy coating internal and external as per AWWA C116/A21.16	Singer CLA-VAL	106 PR-2PG
Air Release Valve	NSF – 61	Slow Closing	Apco A.R.I LA-VAL	Model #65 D-040/D-090-P 34AR-332-3/4"

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
5.0 FIRE HYDRANTS				
Fire Hydrant	AWWA C502 AWWA C509-01 OPSD 1105.010	1.98 m barrel length Post type dry barrel compression shutoff with ball valve closing with flow, opening counter clockwise M.J elbow 125mm valve ball 2 side outlets with 2.5" CSA standard hose nozzle threads 1 -4" Storz pumper nozzle outlet Breakaway flange Self draining PVC DR18 Hydrant laterals Mechanical Restraints Hydrants shall be painted Tremclad Red 4-5mm thick paint when wet hydrant barrel shall be safety red M20-21	Mueller Century AVK McAvity	Series 27 M-67B

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
5.0 FIRE HYDRANTS (cont'd)				
Fire Hydrant (cont'd)		All Bonnets shall be blue Colour Coated Rings McGard hydrant lock anti-tamper device (as required)		
6.0 VALVE BOXES				
		150mm cover Guide Plate Extension 300mm Extension 450mm Extension 600mm	Bibby Emco/Concord	VB800 5SL-48 VB875 GP VB700 5SL-18E VB705 5SL-18E VB710 5SL-24E
7.0 VALVE STEM EXTENSIONS				
MJ Retaining Gland for Ductile Iron Water Main		Required for additional depth over 1.7m 52mm top operating c/w set screw	Bibby	VB950

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
8.0 JOINT RESTRAINT DEVICES				
MJ Retaining Water Main		Colour code black for ductile iron, red for PVC	Clow Canada Romac Industries EBAA Iron Uni-Flange	Tuff Grip Series 300, 360, 390 Grip Ring Sigma – PV-Lok, One-Lok Series 400, 1300, 1350, 1360
9.0 SERVICE SADDLES				
For PVC (for 19 to 50mm services)		Stainless Steel	Robar Cambridge Brass	2706 Series 812
For Ductile Iron Water Main (for 19 to 50mm services)		Cast Double strap		
Tapping Sleeve – PVC Water Main	No size on size > 150mm	Stainless Steel	AFC Robar	6606
Tapping Sleeve – Ductile Iron Water Main	Cast epoxy coated Double Strap		AFC Robar	6606

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
10.0 REPAIR CLAMPS				
			Hymax	
11.0 REPAIR SLEEVE				
			Hymax	
12.0 CATHODIC PROTECTION				
Cathodic Nuts and Sacrificial Caps		99.9% high grade Zinc Steel core Coated with low resistant depolarizing material: 175 grams ASTM B-418-73-type II One cap on every Bolt	Protecto Caps (Maple Agencies) Duratron	175P190 DSN0750
Sacrificial Anodes		12 lb on every valve, hydrant and fitting 6lb on copper services using hydroclamp as required		
Anticorrosion wraps, coatings		Cover entire fitting per manufacturer's specifications	Denso Royston	

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
13.0 METALLIC CAUTION TAPE				
		Mylar marking tape c/w metallic backing Lineguard type 2 max bury of 150mm. "Caution Water Main" colour orange.		
14.0 TRACER WIRE				
		12 Gauge TWU solid copper, white plastic coated	Electrical Suppliers Canada Wire Phillips Pirelli Maple Agencies	As per manufacturer
15.0 TIE RODS (19 mm)				
		Stainless steel		As per manufacturer
16.0 SERVICE BOXES				
		Steel boot only	Mueller Emco	D1, D3, Size 8 A-714 - A-716

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
16.0 SERVICE BOXES (cont'd)				
		Steel boot only	Concord Clow Bibby/Trojan Rossland Supply	As per manufacturer D-1, D-2 Size #8 As per manufacturer
17.0 SERVICE BOX RODS				
		36" stainless steel	Mueller Emco Concord Clow Bibby/Trojan	As per manufacturer
18.0 MAIN STOPS				
19 mm - 52mm	AWWA C800		Mueller Cambridge Brass Ford EMCO	H25008 301-A3H3 19mm-FB1000 17072 Compression

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
19.0 CURB STOPS				
19 mm	AWWA C800		Mueller Cambridge Ford EMCO	H-15-209 202-H3H3 B44-333 17402 Ball Compression
20.0 COUPLINGS				
19 mm - 50mm	AWWA C800		Mueller Cambridge Ford McDonald	H-15-403 118-H3H3 C44-33 4758T
21.0 SAMPLING STATION				
			Kupferle Cromer	Eclipse No. 88

APPENDIX A – MATERIALS LIST

<u>MATERIALS</u>	<u>STANDARDS</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>	<u>CATALOGUE NO.</u>
22.0 WATER METERS				
19mm			Sensus – Complete with a remote readout device	
22mm or larger			Sensus	
Meter Wire		3 Wire Black/Red/Green		
Meter Cable		22 AWG fire rated/ CMG LL 39965		
A remote readout water meter (with transmitter) will be required on each residence. Make and model is to be Rockwell/Sensus ECR meter (5/8"x3/4") complete with a remote reader located on an outside wall, adjacent to the hydro meter. (see DWG D106).				
23.0 AUTOMATIC FLUSHERS				
Hydrant mount			Kupferle Mueller	Permanent install model # 9700