



2026

SCHEDULE C

MMCD SUPPLEMENTARIES



Schedule C – Delta MMCD Supplementaries

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.1 General	Reference:	33 11 01 2.1.4
Change Summary	Watermain material specification to be used west of Burlington Northern Railway		
Currently			
Should Be	2.1.4 PVC pipe only in all areas west of the Burlington Northern Railway unless approved cathodic protection is provided.		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.1
Change Summary	Indicate pressure class for pipes 100mm to 300mm diameter		
Currently	<p>.1 Ductile iron pipe:</p> <p>(1) Pipes: to AWWA C151, to Pressure Class or Special Thickness Class specified in Contract Documents, and standard cement mortar lined to AWWA C104/A21.4.</p> <p>(2) Joints: Single rubber gasket for push-on bell and spigot type joint and/or mechanical pipe joints: to AWWA C111 Tyton.</p>		
Should Be	<p>.1 Ductile iron pipe:</p> <p>(1) Pipes: to AWWA C151:</p> <p>(1) For pipes 100mm to 300mm diameter, pipes shall be Pressure Class PC 350 DR18;</p> <p>(2) For pipes 350mm diameter and larger, pipes shall be DR14 and Pressure Class or special Class shall be as specified on Contract Drawings.</p> <p>(3) Standard cement mortar lined to AWWA C104/A21.4</p> <p>(2) Joints: Single rubber gasket for push-on bell and spigot type joint and/or mechanical pipe joints: to AWWA C111.</p> <p>(3) Each pipe length shall have electrical conductivity strips attached or copper wedges shall be used at each joint unless specific cathodic protection provisions, approved by the Contract Administrator, have been specified on the Contract Drawings.</p>		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4 (4)
Change Summary	Fittings		
Currently	(4) PVC fabricated fittings shall conform to either AWWA C900 and be certified to CSA B137.3. Fabricated fittings to be made from CSA certified PVC pipe of the same pressure class or pressure rating as the pipe.		
Should Be	(4) PVC fabricated fittings shall conform to AWWA C900 and be certified to CSA B137.3. Fabricated one-piece C900 DR14 are permitted provided that they are thermal formed from one continuous piece of C900 DR14 pipe. Bends shall be CSA certified per CSA B137.3.		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4(6)
Change Summary	Flanged Joints		
Currently	(6) Flanged joints: (1) Flat faced conforming to the face dimension and drilling of ANSI/ASME B16.1, Class 125 (2) On AWWA C110 fittings to AWWA C110 with minimum pressure rating 1035 kPa or higher as specified in Contract Documents. (3) On AWWA C153 fittings to AWWA C153 with minimum pressure rating of 1723 kPa or higher as specified in Contract Documents.		
Should Be	(6) Flanged joints: (1) Flat faced conforming to the face dimension and drilling of ANSI B16.1, Class 125. (2) On AWWA C110 fittings to AWWA C110 with minimum pressure rating 1725 kPa or higher as specified in Contract Documents. (3) Compact ductile iron fittings – not acceptable.		

Supplementary Specification:	33 11 01 - Waterworks																	
Affected Document(s)	2019 Edition	Change Type	Replacement															
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4(9)															
Change Summary	Tie Rods and Nuts																	
Currently	<p>(9) Tie Rods and Nuts:</p> <p>(1) Tie rods to be continuous threaded, quenched and tempered alloyed steel to ASTM A354, Grade BC. To be zinc plated to ASTM B633 or cadmium plated to ASTM B766. Tie rod sizes to be minimum 19mm diameter or greater as shown on Contract Drawings.</p> <p>(2) Nuts and internally threaded couplings to be heavy hex finish to ASTM A563. Washers to be flat hardened steel to ASTM F436/F426M. All to be zinc plated to ASTM B633 or cadmium plated to ASTM B766.</p>																	
Should Be	<p>(9) Tie Rods and Nuts:</p> <p>(1) Tie rods to be fabricated from carbon steel to ASTM A36 (redi rod with minimum yield strength of 36,000 psi) and shall be hot dip galvanized to ASTM A153, zinc plated to ASTM B633 or cadmium plated to ASTM B766. Rods may be threaded over full length.</p> <p>(2) Nuts to be heavy hex carbon steel Grade A to ASTM A563. Washers to be hardened steel to ASTM F436. Nuts and washers to be zinc plated to ASTM B633 or cadmium plated to ASTM B766.</p> <p>(3) Field coating of all fittings, valves, hydrants, bolts, tie-rods, clamps, etc. and repair to damaged coated areas on fittings to be done with a minimum of one (1) coat of anti-corrosion coating (as per Approved Materials and Products List).</p> <table border="1" data-bbox="750 1312 1416 1522"> <thead> <tr> <th>Fitting Size</th> <th>Min. # of Tie Rods</th> <th>Min. Tie Rod Size</th> </tr> </thead> <tbody> <tr> <td>100 – 200mm</td> <td>2</td> <td>19mm</td> </tr> <tr> <td>250 – 300mm</td> <td>2</td> <td>25mm</td> </tr> <tr> <td>350mm</td> <td>4</td> <td>32mm</td> </tr> <tr> <td>400 – 600mm</td> <td>6</td> <td>32mm</td> </tr> </tbody> </table> <p>Note: Low strength steel bars to ASTM A36 can be used at the above sizes and quantities for test pressures up to 225 psi. If higher pressures are to be encountered or smaller diameter bars are necessary (i.e. mechanical joint fittings) high strength bars may be required.</p>			Fitting Size	Min. # of Tie Rods	Min. Tie Rod Size	100 – 200mm	2	19mm	250 – 300mm	2	25mm	350mm	4	32mm	400 – 600mm	6	32mm
Fitting Size	Min. # of Tie Rods	Min. Tie Rod Size																
100 – 200mm	2	19mm																
250 – 300mm	2	25mm																
350mm	4	32mm																
400 – 600mm	6	32mm																

	<p>(4) High Strength Tie Rods (if specified)</p> <ol style="list-style-type: none"> 1. Tie rods to be fabricated from alloy steel to ASTM A193, Grade B7. Rods may be threaded over full length. Tie-rods to be hot dip galvanized or zinc plated by approved methods for high strength steel. 2. Nuts to be to ASTM A194 Grade 2H. Nuts shall have heavy hex finish and be zinc plated to ASTM B633 or cadmium plated to ASTM B766. Washers to be hardened steel to ASTM F436 and zinc plated to ASTM B633 or cadmium plated to ASTM B766. 3. Field coating of all fittings, valves, hydrants, bolts, tie-rods, clamps, etc. and repair to damaged coated areas on fittings to be done with a minimum of one (1) coat of anti-corrosion coating (as per Approved Materials and Products List).
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Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4(11)(2) and (3)
Change Summary	Approved Manufacturer of Couplings and Flanged Coupling Adapters		
Currently	<p>(11) Couplings and Flanged Coupling Adapters</p> <ol style="list-style-type: none"> (2) Plain end or transition couplings as specified in Contract Documents. (3) Flanged coupling adapters as specified in Contract Documents. 		
Should Be	<p>(11) Couplings and Flanged Coupling Adapters</p> <ol style="list-style-type: none"> (2) Plain end or transition couplings as per Approved Materials and Products List. (3) Flanged coupling adapters as per Approved Materials and Products List. 		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4(12)(11)
Change Summary	Approved Manufacturer of Joint Restraint Devices		
Currently			
Should Be	<p>(12) Joint Restraint Devices: General Requirements:</p> <p>(11) Approved manufacturer:</p> <p>.1 As per Approved Materials and Products List.</p>		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4(13)(2)
Change Summary	Acceptable tapping sleeve models for taps other than size-on size.		
Currently	<p>(2) Tapping sleeves for cast iron, ductile iron, asbestos cement, PVC to AWWA C900, pre-stressed concrete pressure pipe or steel mains for taps other than size-on size:</p> <ol style="list-style-type: none"> 1. Split assembly to incorporate an annular gasket cemented or mechanically held in place on the branch end or split assembly incorporating ring seals and wrap around sleeve length gasket liner. 2. Acceptable models: as specified in Contract Documents. 		
Should Be	<p>(2) Tapping sleeves for cast iron, ductile iron, asbestos cement, PVC to AWWA C900, PVCO to AWWA C909, pre-stressed concrete pressure pipe or steel mains for taps other than size-on size:</p> <ol style="list-style-type: none"> 1. Split assembly to incorporate an annular gasket cemented or mechanically held in place on the branch end or split assembly incorporating ring seals and wrap around sleeve length gasket liner. 2. Acceptable Manufacturers: <ul style="list-style-type: none"> .1 As per Approved Materials and Products List 		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4(13)(3)
Change Summary	Acceptable tapping sleeve models for taps size-on size.		
Currently	<p>(3) Tapping sleeves for size on size taps on cast iron, ductile iron, asbestos cement, PVC to AWWA C900, pre-stressed concrete pressure pipe or steel:</p> <ol style="list-style-type: none"> 1. Split assembly incorporating ring seal and wrap around sleeve length gasket/liner. 2. Acceptable models: as specified in Contract Documents. 		
Should Be	<p>(3) Tapping sleeves for size on size taps on cast iron, ductile iron, asbestos cement, PVC to AWWA C900, PVCO to AWWA C909, pre-stressed concrete pressure pipe or steel:</p> <ol style="list-style-type: none"> 1. Split assembly incorporating ring seal and wrap around sleeve length gasket liner. 2. Acceptable models: as per Approved Materials and Products List 		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Mainline Pipe, Joints and Fittings	Reference:	33 11 01 2.2.4.(13)(4)
Change Summary	Reference to Approved Materials and Products List		
Currently	<p>(4) Tapping sleeves for size on size taps on ductile iron pipe and PVC to AWWA C900 only:</p> <ol style="list-style-type: none"> 1. Acceptable models: as specified in Contract Documents. 		
Should Be	<p>(4) Tapping sleeves for size on size taps on ductile iron pipe, PVC to AWWA C900, and PVCO to AWWA C909 only:</p> <ol style="list-style-type: none"> 1. Acceptable Manufacturers: as per Approved Materials and Products. 		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.3 Valves and Valve Boxes	Reference:	33 11 01 2.3.2(7)
Change Summary	Acceptable manufacturers for mainline gate valves		
Currently	(7) Acceptable manufacturers are as specified in Contract Documents.		
Should Be	(7) Acceptable manufacturers: (1) As per Approved Materials and Products List.		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.3 Valves and Valve Boxes	Reference:	33 11 01 2.3.3
Change Summary	Mainline Butterfly Valves		
Currently	.3 Mainline butterfly valves: Butterfly valves: to AWWA C504 Class 150B, as specified in Contract Documents.		
Should Be	.3 Mainline Butterfly Valves: (1) Butterfly valves to be wafer style conforming to AWWA C504. (2) Valves to be class 150 and bubble tight at the normal operating pressure of 1200 kPa. (3) Drilling and bolt circle to conform in dimension to ANSI 16.1 Class 125. (4) Valve operator to be permanently lubricated and sealed for buried service and equipped with a 50mm operating nut. (5) Valves to be equipped with a valve operator extension stem suitable for secure attachment to the operating nut. Length of stem to suit the installation. (6) Acceptable products: (1) As per Approved Materials and Products List		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.3 Valves and Valve Boxes	Reference:	33 11 01 2.3.5.(5) and (6)
Change Summary	Air Release, Air/Vacuum and Combination Air Valves		
Currently			
Should Be	<p>(5) Air Release, Air/Vacuum and Combination Air Valves:</p> <p>(1) All air valves shall have a schedule 40 PVC vent pipe as shown in the Delta Standard Drawing DSD-W.4.</p> <p>(6) Acceptable products:</p> <p>(1) As per Approved Materials and Products List</p>		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.3 Valves and Valve Boxes	Reference:	33 11 01 2.3.6
Change Summary	Mainline Valve Boxes		
Currently	<p>.6 Mainline Valve Boxes:</p> <p>(1) To be as specified in Contract Documents: telescoping, cast iron, top flange type service box:</p> <p>(1) Rectangular type to be as specified in Contract Documents.</p> <p>(2) Circular type to be as specified in Contract Documents.</p> <p>(2) Valve box riser pipe to be 150mm diameter PVC DR 35 or better</p>		
Should Be	<p>.6 Mainline Valve Boxes:</p> <p>(1) Valve boxes to be circular, telescopic, cast iron with drop-in cast iron lid, see Delta Standard Drawing DSD-G.1.</p> <p>(2) Valve box riser pipe to be 150 mm diameter PVC SDR 35 or better.</p> <p>(3) Acceptable manufacturers:</p> <p>(1) As per Approved Materials and Products List</p>		

Supplementary Specification:	33 11 01 – Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.3 Valves and Valve Boxes	Reference:	33 11 01 2.3.7(6)
Change Summary	Service Valve Boxes		
Currently			
Should Be	(6) Acceptable manufacturers: (1) As per Approved Materials and Products List		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.5 Service Connections, Pipe, Joints and Fittings	Reference:	33 11 01 2.5.3(2)(1)
Change Summary	Ductile Iron Service Saddles		
Currently	.3 Service Saddles: (2) Saddles for ductile iron pipe: (1) Saddles for 19 to 50mm services to have ductile iron body to ASTM A536.		
Should Be	.3 Service Saddles: (2) Saddles for ductile iron pipe: (1) Saddles for 19 to 50mm services to have bronze body to ASTM B62 or stainless steel to ANSI T304.		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.5 Service Connections, Pipe, Joints and Fittings	Reference:	33 11 01 2.5.3(2)(4)
Change Summary	Ductile Iron Service Saddles		
Currently			
Should Be	.3 Service Saddles: (2) Saddles for ductile iron pipe: (4) Acceptable products: .1 As per Approved Materials and Products List		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.5 Service Connections, Pipe, Joints and Fittings	Reference:	33 11 01 2.5.3(3)
Change Summary	PVC Service Saddles		
Currently	.3 Service Saddles: (3) Saddles for PVC pipe to AWWA C900:		
Should Be	.3 Service Saddles: (3) Saddles for PVC C900 and PVCO C909 pipe should be to AWWA C909:		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.5 Service Connections, Pipe, Joints and Fittings	Reference:	33 11 01 2.5.3(3)(3)
Change Summary	PVC Service Saddles		
Currently	.3 Service Saddles: (3) Saddles for PVC pipe to AWWA C900:		
Should Be	.3 Service Saddles: (3) Saddles for PVC C900 and PVCO C909 pipe should be to AWWA C909: (3) Acceptable products: .1 As per Approved Materials and Products List		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.5 Service Connections, Pipe, Joints and Fittings	Reference:	33 11 01 2.5.6
Change Summary	Tapping couplings for PVC pipe		
Currently			
Should Be	.6 Tapped couplings for PVC pipe: (1) PVC tapped couplings must conform to AWWA C907 and CSA B137.2. (2) Threads on tapping to be AWWA iron pipe thread. (3) Acceptable only for use on PVC pipe 300mm diameter and under.		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.6 Hydrants	Reference:	33 11 01 2.6.3
Change Summary	Acceptable products:		
Currently	.3 Approved standard 150mm Fire Hydrants are as specified in Contract Documents or Municipal Supplementary Specifications.		
Should Be	.3 Approved standard 150mm Fire Hydrants: (1) As per Approved Materials and Products List		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.7 Underground Service Line Valves and Fittings	Reference:	33 11 01 2.7.2(2)
Change Summary	Corporation Stops:		
Currently	(2) To be as specified in Contract Documents.		
Should Be	(2) Acceptable products: (1) As per Approved Materials and Products List		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.7 Underground Service Line Valves and Fittings	Reference:	33 11 01 2.7.3(3)
Change Summary	Curb Stops:		
Currently	(3) To be full flow, full port, as specified in Contract Documents.		
Should Be	(3) To be full flow, full, Approved products are listed in the Approved Materials and Products Lists.		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.7 Underground Service Line Valves and Fittings	Reference:	33 11 01 2.7.3(6)
Change Summary	Curb Stops		
Currently			
Should Be	<p>(6) Curb stops for Type B blow-off assemblies as per Delta Standard Drawing DSD-W.2 and DSD-W.3.</p> <p>(1) Acceptable Products:</p> <p>.1 As per Approved Materials and Products List</p>		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.7 Underground Service Line Valves and Fittings	Reference:	33 11 01 2.7.3(7) & (8)
Change Summary	Curb Stop Fittings		
Currently			
Should Be	<p>(7) Couplings used for the extension of service pipe: 3-part union compression x compression.</p> <p>(1) Acceptable products:</p> <p>.1 As per Approved Materials and Products List</p> <p>(8) Adapters required for iron pipe thread fittings:</p> <p>(1) Acceptable products:</p> <p>.1 As per Approved Materials and Products List</p>		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	3.6 Pipe Installation	Reference:	33 11 01 3.6.15 & 16
Change Summary	Execution		
Currently			
Should Be	<p>.15 A flexible joint shall be provided at locations where the pipe is held in fixed position by a rigid support or structure. The distance from the support or structure to depend on the diameter or type of pipe being installed and is to be in accordance with manufacturer's recommended practice. The purpose of the flexible joint is to prevent pipe failure due to uneven support under the pipe and settlement.</p> <p>.16 Pipe on horizontal or vertical curves to be laid true to the curve of the radius shown on the Contract Drawings and in accordance with field lines and grades for each curve supplied by the Engineer. Variations in vertical curves and grades within allowable pipe deflections may be allowed where deemed expedient or economical by the Engineer.</p>		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	3.9 Under-crossing	Reference:	33 11 01 3.9.19 & 20
Change Summary	Execution		
Currently			
Should Be	<p>.19 All pipe in carrier must have joints restrained.</p> <p>.20 Pipe lines under railway tracks to conform to current regulations regarding pipe line crossings under railroads as issued and amended by the Board of Transport Commissioners for Canada or where laws or orders of public authority prescribe a higher degree of protection, then the higher degree of protection as specified is to be adhered to.</p>		

Supplementary Specification:	33 11 01 - Waterworks		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	3.19 Testing Procedure	Reference:	33 11 01 3.19.2
Change Summary	Minimum pressure applied at lowest point of test section		
Currently	<p>.2 Before pipe is filled with water, pipe bedding, concreting of all valves and fittings and backfilling to be completed as required in this specification. Fill each section of pipe and allow to remain full of water for a period of at least 24 hours prior to commencement of any pressure tests. Submit pipeline to a test of 1.5 x working pressure applied at highest elevation in each section, with a minimum of 1380 kPa applied at lowest point of test section. Ensure that test pressure does not exceed pipe or thrust restraint design pressures. Maximum allowable leakage rate at test pressure to not exceed 1.25 litres per millimetre diameter of pipe per kilometre per 24 hour period. Minimum duration of test period to be 2 hours. Maximum test pressures should not exceed those specified in CSA B137.3 – Table 9</p>		
Should Be	<p>.2 All pipe ends 300 mm and under must be reduced down with a reducer to 50 mm temporary blowoff. All pipe 300mm and over must be reduced down with a reducer with a 100 mm temporary blowoff. No caps are permitted. Before pipe is filled with water, pipe bedding, concreting of all valves and fittings and backfilling to be completed as required in this specification. Fill each section of pipe and allow to remain full of water for a period of at least 24 hours prior to commencement of any pressure tests. Submit pipeline to a test of 1.5x working pressure applied at highest elevation in each section, with a minimum of 1550kPa applied at lowest point of test section. Ensure that test pressure does not exceed pipe or thrust restraint design pressures. Maximum allowable leakage rate at test pressure to not exceed 1.25 litres per millimetre diameter of pipe per kilometre per 24 hour period. Minimum duration of test period to be 2 hours. Maximum test pressures should not exceed those specified in CSA B137.3 – Table 9</p>		

Supplementary Specification:	33 30 01 – Sanitary Sewers		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	1.0 General	Reference:	33 30 01 1.0.3
Change Summary	Pipe installation information.		
Currently			
Should Be	.3 All pipe must be installed with label up and inserted to the insertion line, not further. If over inserted, pipe needs to be pulled back. When a pipe is cut, a new insertion line must be drawn on the pipe (as per manufacturer's specification). Pipe cannot be installed in a manner that voids the warranty.		

Supplementary Specification:	33 30 01 – Sanitary Sewers		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.3 Service Connections	Reference:	33 30 01 2.3.11
Change Summary	Sanitary Inspection Chambers		
Currently			
Should Be	.11 Acceptable Products: (1) As per Approved Materials and Products List		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.2 Pipe, Joints and Fittings	Reference:	33 34 01 2.2.4(3)(5)
Change Summary	Compact Ductile Iron Fittings		
Currently			
Should Be	(3) HDPE Fittings: (5) Compact ductile iron fittings to AWWA C153 suitable for pressure rating 2415 kPa will not be permitted. Only butt fusion permitted. All ends to be flange. No electro fuse or couplings to be used unless approved by Delta Engineering.		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.2 Pipe, Joints and Fittings	Reference:	33 34 01 2.2.5(2)
Change Summary	Compact ductile iron fittings		
Currently	(2) Compact ductile iron fittings to AWWA C153 suitable for pressure rating 2415 kPa. Cement mortar lined to AWWA C104/A21.4.		
Should Be	(2) Compact ductile iron fittings to AWWA C153 suitable for pressure rating 2415 kPa will not be permitted. All pipe and fittings to be HDPE.		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.3 Valves and Valve Boxes	Reference:	33 34 01 2.3.1(3)
Change Summary	Valves – General Requirements		
Currently			
Should Be	.1 Valves – General Requirements (3) All valves to be plug valves installed for suspended solids. All valves are to be placed in a manhole suitable for valve size and have surface operation. (4) Acceptable Products: (1) As per Approved Materials and Products List		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.3 Valves and Valve Boxes	Reference:	33 34 01 2.3.4(6) and (7)
Change Summary			
Currently			
Should Be	(6) Must be placed as close to the main as possible, but offset in manhole. (7) Must have plug valve installed for suspended solids in the chamber with surface operation.		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.3 Valves and Valve Boxes	Reference:	33 34 01 2.3.5(1) and (2)
Change Summary	Valves – General Requirements		
Currently	<p>(1) As specified in Contract Documents: telescoping, cast iron, top flange type service box:</p> <p>(1) Rectangular type as specified in Contract Documents.</p> <p>(2) Circular type as specified in Contract Documents.</p> <p>(2) Valve box riser pipe to be 150mm diameter PVC DR35 or better.</p>		
Should Be	<p>(1) As specified in Contract Documents: telescoping, cast iron as per Delta Standard Drawing DSD-G.1 and marked “Sanitary”.</p> <p>(2) Valve box riser pipe to be 150mm diameter PVC DR18 or better.</p> <p>(3) Acceptable manufacturer: As per Approved Materials and Products List.</p>		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.4 Valve Chambers	Reference:	33 34 01 2.4.5(5)
Change Summary	Jointing Materials		
Currently			
Should Be	(5) Must have a double flex joint on each line between wet well and chamber.		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.4 Valve Chambers	Reference:	33 34 01 2.4.7
Change Summary	Ladder requirements		
Currently	.7 Ladder rungs for valve chambers: 20 mm minimum diameter for 76 mm minimum embedment in precast or cast-in-place concrete, minimum rung length 250 mm, minimum projection 100 mm; minimum design live load 1334N, cold rolled steel to CAN/CSA-G164 hot-dip galvanized after fabrication to CAN/CSA-G164 or aluminum alloy #6351 to CAN/CSA S157 and NBC 1977. Rungs to be safety pattern. Hand holds at top entry to conform to minimum design live load and dimensions.		
Should Be	.7 Ladder rungs for valve chambers: 20mm minimum diameter for 76mm minimum embedment in precast or cast-in-place concrete, minimum rung length 250mm, minimum projection 100mm; minimum design live load 1334N, cold rolled steel to CAN/CSA-G164 hot-dip galvanized after fabrication to CAN/CSA-G164 or aluminum alloy #6351 to CAN/CSA S157 and NBC 1977. Rungs to be safety pattern. Hand holds at top entry to conform to minimum design live load and dimensions. Ladder must be accessible with and not impeded by lids or safety grates.		

Supplementary Specification:	33 34 01 – Sewage Forcemains		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	3.17 Wet Well	Reference:	33 34 01 3.17
Change Summary	Wet well requirements		
Currently			
Should Be	.17 Wet wells: (1) Must have grated middle platform. (2) All inlets must have plug valves installed for suspended solids in a manhole suitable for valve size and surface operation. (3) Ladder must be across from pump outlets. (4) Lid must be open side-to-side with drain. (5) Safety grates must open towards pump outlets. (6) Two davits need to be installed on either side of the ladder. (7) Lid must be level with surrounding area. (8) Lid must be broom finished.		

Supplementary Specification:	33 40 01 – Storm Sewers		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.1 Concrete Pipe	Reference:	33 40 01 2.1.1
Change Summary	Non-reinforced Maximum Pipe Diameter		
Currently	.1 Non-reinforced circular concrete pipe and fittings: to ASTM C14M maximum diameter 900mm, strength class as shown on Contract Drawings, designed for flexible rubber gasket joints to ASTM C443M.		
Should Be	.1 675 mm dia. and smaller: (1) Non reinforced concrete pipe and fittings to ASTM C14M. (2) Strength class as shown on Contract Drawings. (3) Designed for flexible rubber gasket joints to ASTM C443M		

Supplementary Specification:	33 40 01 – Storm Sewers		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	2.1 Concrete Pipe	Reference:	33 40 01 2.1.2
Change Summary	Reinforced Maximum Pipe Diameter		
Currently	.2 Reinforced circular concrete pipe and fittings: to ASTM C76M for all pipe greater than 900mm diameter, strength class as shown on Contract Drawings, designed for flexible rubber gasket joints to ASTM C443M.		
Should Be	.2 Over 675 mm dia.: (1) Reinforced concrete pipe and fittings to ASTM C76M. (2) Strength class as shown on Contract Drawings. (3) Designed for flexible rubber gasket joints to ASTM C443M		

Supplementary Specification:	33 40 01 – Storm Sewers		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.2 PVC Pipe, Mainline Smooth Wall	Reference:	33 40 01 2.2.5
Change Summary	Wall Thickness		
Currently			
Should Be	.5 Wall thickness: DR28 (100 mm dia. To 150 mm dia.) DR35 (200 mm dia. To 1200 mm dia.)		

Supplementary Specification:	33 40 01 – Storm Sewers		
Affected Document(s)	2019 Edition	Change Type	Addition
Section:	2.12 Storm Inspection Chambers	Reference:	33 40 01 2.12
Change Summary	Specifications for Storm Inspection Chambers		
Currently			
Should Be	2.12 Storm Inspection Chambers 2.12.1 Acceptable Products: (1) As per Approved Materials and Products List		

Supplementary Specification:	33 40 01 – Storm Sewers		
Affected Document(s)	2019 Edition	Change Type	Replacement
Section:	3.6 Pipe Installation	Reference:	33 40 01 3.6.6(1)
Change Summary	Permissible joint deflection		
Currently	(1) For Concrete, PVC, profile PVC, PP and open profile HDPE pipe do not exceed permissible joint deflection recommended by pipe manufacturer.		
Should Be	(1) For Concrete, PVC, profile PVC and open profile HDPE pipe do not exceed <u>half of</u> permissible joint deflection recommended by pipe manufacturer.		