

North

DATE	ISSUANCE	NO.
2026.04.30	ISSUED FOR TOWN OF OAKVILLE REVIEW	1

LEGEND

	PROPOSED CATCHBASIN / DOUBLE CATCHBASIN
	PROPOSED DITCH INLET CATCHBASIN / DOUBLE CATCHBASIN
	PROPOSED CATCHBASIN MANHOLE / DOUBLE CATCHBASIN MANHOLE
	PROPOSED DITCH INLET CATCHBASIN MANHOLE (TYPE A) / (TYPE B)
	PROPOSED STORM MANHOLE
	PROPOSED SANITARY MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATERMAIN VALVE
	PROPOSED CURB STOP
	PROPOSED REDUCER
	EXISTING CATCHBASIN / DOUBLE CATCHBASIN
	EXISTING DITCH INLET CATCHBASIN
	EXISTING CATCHBASIN MANHOLE / DOUBLE CATCHBASIN MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING FIRE HYDRANT
	EXISTING WATERMAIN VALVE
	EXISTING CURB STOP
	EXISTING FIRE DEPARTMENT CONNECTION
	EXISTING WELL
	EXISTING SANITARY SERVICE
	EXISTING STORM SERVICE
	EXISTING WATERMAIN
	EXISTING SUBDRAIN
	PROPOSED LAMP STANDARD
	PROPOSED UTILITY / HYDRO POLE
	PROPOSED SIGN
	PROPOSED HYDRO TRANSFORMER

CLIENT
INFRASTRUCTURE ONTARIO

PROJECT
**MECP - MLTSD SCIENCE FACILITY COMPLEX
OAKVILLE, ONTARIO**

TITLE
OVERALL SERVICING PLAN

WALTERFEDY
TORONTO | CALGARY | EDMONTON | KITCHENER | HAMILTON

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SCALE	SHEET NO.
1:750	C-300
DATE: 2026-04-30	
PROJECT NO.: 2025-0550-10	
DRAWN BY: RD, JJ, RN	
CHECKED BY: BV, NN	

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GENERAL NOTES:

- TOWN OF OAKVILLE AND REGION OF HALTON STANDARD DRAWINGS AND OPSS, OPSD WITH REGIONAL AMENDMENTS FOR SANITARY SEWERS AND WATERMANS ARE TO CONSTITUTE PART OF THE ENGINEERING DESIGN AND CONSTRUCTION CONTRACT.
- OTHER MATERIALS MAY BE ACCEPTABLE PROVIDED APPROVAL HAS FIRST BEEN OBTAINED FROM THE TOWN ENGINEERING AND/OR THE REGIONAL COMMISSIONER OF PUBLIC WORKS.
- ANY INFORMATION SHOWN ON THESE PLANS REGARDING LOCATION AND/OR SIZE OF EXISTING UTILITIES OR SERVICES IS APPROXIMATE. THE CONTRACTOR IS TO FIELD VERIFY ALL LOCATIONS AND SIZES.
- NO BLASTING IS PERMITTED.
- GRANULAR BACKFILL AROUND MANHOLES, CATCHBASINS, DITCH INLETS AND VALVE CHAMBERS SHALL BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM OF 95% SPD.
- CLASS 'B' BEDDING ON ALL SEWERS AND CONNECTIONS TO BE AS PER TOWN OF OAKVILLE STD. 8-2 AND REGION OF HALTON STANDARDS, OPSD 802.030, 802.031, 802.032, 802.033, REV.41 UNLESS NOTED OTHERWISE, COMPACTED TO A MINIMUM OF 95% SPD.
- ANY AREAS WITHIN ROW WHICH REQUIRE FILL IN EXCESS OF 0.3m ARE SUBJECT TO COMPACTION TESTS AND SUCH TESTS MUST SHOW A MIN. COMPACTION OF 100% AT ALL DEPTHS.
- MANHOLE AND CATCHBASIN COVERS ARE TO BE SET FLUSH WITH BASE ASPHALT AND ADJUSTED TO GRADE PRIOR TO INSTALLING TOP LIFT OF ASPHALT.
- CURB AND GUTTER (REGION OF HALTON) TO BE OPSD 600.040, UNLESS NOTED OTHERWISE.
- SIDEWALK SHALL BE AS PER TOWN OF OAKVILLE STD 6-3. ALL INTERSECTIONS ARE TO BE INSTALLED WITH DEPRESSIONS UNLESS NOTED OTHERWISE. ALL INTERSECTION RADII TO BE 7.50M UNLESS OTHERWISE NOTED.
- THE FOLLOWING PAVEMENT STRUCTURES SHALL BE USED FOR THE SUBDIVISION ROADWAYS, UNLESS OTHERWISE SPECIFIED

GLENORCHY ROAD/THIRD LINE	STREET 'A'	WILLIAM HALTON PARKWAY
50mm HL1 120mm HDDB 150mm GRANULAR 'A' 500mm GRANULAR 'B'	50mm HL1 120mm HDDB 150mm GRANULAR 'A' 500mm GRANULAR 'B'	40mm HL1 OR DFC 70mm HDDB 70mm HDDB 150mm 19mm CRUSHER RUN LIMESTONE 500mm GRANULAR 'B' TYPE IN OR MATCH EXISTING SUBGRADE

- PAVEMENT STRUCTURE DEPTH TO BE CONFIRMED BY GEOTECHNICAL ENGINEER ON SITE.
- PAVEMENT GRANULAR ON REGIONAL ROADS ARE TO BE 19mm CRUSHER RUN LIMESTONE AND GRANULAR B TYPE II (CRUSHED STONE), CRUSHED CONCRETE AND RECYCLED ASPHALT ARE NOT PERMITTED.
- ROAD CROSS-SECTION LAYOUT SHALL BE IN ACCORDANCE WITH TOWN OF OAKVILLE STANDARDS UNLESS OTHERWISE NOTED.
- ALL TOPSOIL AND ORGANIC MATERIAL WITHIN ROAD ALLOWANCES SHALL BE STRIPPED PRIOR TO THE ROADWAY CONSTRUCTION.
- IF ON EXCAVATION, THERE ARE REALLY WEAK SOILS ENCOUNTERED, THAN GEO GRID OR ADDITIONAL GRANULAR MAY BE REQUIRED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- ALL TRENCHES WITHIN EXISTING LOCAL ROW ARE TO BE BACKFILLED WITH GRANULAR 'B' MATERIAL AND COMPACTED TO 95% SPD.
- EROSION AND SILTATION CONTROL WORKS TO BE AS SHOWN IN THE EROSION AND SEDIMENT CONTROL PLAN. SILTATION CONTROL MEASURES MUST BE IN PLACE PRIOR TO START OF CONSTRUCTION.
- FULL LENGTH SUBDRAINS ARE TO BE INSTALLED AS PER TOWN OF OAKVILLE STD 6-2, UNLESS NOTED OTHERWISE.
- ELEVATIONS HEREON ARE REFERRED TO THE TOWN OF OAKVILLE BENCHMARK NO. 273, BEING A CUT CROSS SET IN BASE OF HYDRO TRANSFORMER PAD AT INTERSECTION OF OLD BRONTE ROAD AND DUNDAS STREET WEST (REGIONAL ROAD 5) AT #2512 OLD BRONTE ROAD (PALERMO PLAZA), CUT CROSS SET IN NORTHEAST CORNER OF HYDRO TRANSFORMER # 12088 LOCATED AT SOUTHWEST CORNER OF INTERSECTION, ELEVATION OF 154.275 m, VERTICAL DATUM: CANADIAN GEODETIC DATUM, 1928 (CGVD 1978 SOUTHERN ONTARIO ADJUSTMENT)
- ALL SOILS INFORMATION AS SHOWN ON THE DRAWINGS IS FOR THE REFERENCE OF THE ENGINEER ONLY, AND IS FROM THE SOILS REPORT ENTITLED "PRELIMINARY GEOTECHNICAL INVESTIGATION, HALTON REGION CONSOLIDATED COURTHOUSE DEVELOPMENT" PREPARED BY GHD LTD., DATED MARCH 9, 2018.

STORM SEWER NOTES:

- STORM MANHOLES AS PER OPSD 701.010, 701.011, 701.012, 701.013, 701.014, 701.015 WITH FRAME AND COVER AS PER OPSD 401.01 TYPE 'A' WITH SIZE NOTED ON PLAN AND PROFILE DRAWINGS. SAFETY PLATFORMS TO BE INSTALLED IN MANHOLES WHERE DEPTH EXCEEDS 5.0m.
- MANHOLE TEES TO BE AS PER OPSD 701.010.
- 2400x3000mm MANHOLE TO BE AS PER CON-CAST MONOBOX CULVERT SIZING GUIDE (REFER TO DETAILS) OR APPROVED EQUIVALENT.
- STORM SEWER BENDS TO BE AS PER ATTACHED DETAILS, OR APPROVED EQUIVALENT.
- CONCRETE STORM SEWER PIPE SHALL BE MINIMUM CL 65-D CONFORMING TO CSA A257.2 OR PVC SDR 35 CONFORMING TO CSA B 182.2.
- CATCHBASIN SHALL CONFORM TO OPSD 705.010 FOR SINGLES AND OPSD 705.020 FOR DOUBLES. CATCHBASIN GRATES AS PER OPSD 400.11. CATCHBASIN CONNECTIONS TO BE: SINGLE CB - 250mm DIA.; DOUBLE CB-300mm DIA. CATCHBASIN LEADS TO BE CSA B 182.2 SDR-35, STREET CB LEADS TO HAVE A MIN. SLOPE OF 2.0% UNLESS NOTED OTHERWISE.
- DITCH INLETS SHALL CONFORM TO OPSD 705.030.
- FILTER FABRIC TO BE USED AT THE GRATES IN ALL STREET CBS TO TRAP SEDIMENT AS SHOWN ON THE EROSION CONTROL DETAILS PLAN. THESE SILT TRAPS ARE TO BE CLEANED REGULARLY BY THE CONTRACTOR AND NOT TO BE REMOVED UNTIL SUCH TIME AS THE CURBS ARE CONSTRUCTED AND BOULEVARDS ARE SODDED. FILTER FABRIC FOR SILT CONTROL TO BE TERRAFIX 270R OR APPROVED EQUIVALENT.
- STORM SEWERS TO HAVE RUBBER GASKETED JOINTS.
- RADIUS PIPE SHALL BE SUPPLIED WITH TRACER WIRE AND SHOULD BE CONTINUOUS FROM MANHOLE TO MANHOLE AND INSTALLED IN ACCORDANCE WITH HALTON STANDARD DRAWING 400.04. THE PIPE SHALL MEET THE REQUIREMENTS OF CSA-257 FOR REINFORCED CONCRETE RADIUS PIPE FOR SIZES 675mm TO 3050mm DIA.
- PROVIDE BENCHING IN MANHOLES TO THE OVERT OF THE OUTLET PIPE.
- STORM SEWER LESS THAN OR EQUAL TO 450mm Ø TO BE PVC OR CONCRETE AND GREATER THAN OR EQUAL TO 525mm Ø SHALL BE CONCRETE.

LOCAL SANITARY SEWER NOTES:

- SANITARY MANHOLES AS PER OPSD 701.010, REV 5 WITH FRAMES AND COVER AS PER OPSD 401.01 TYPE 'A'.
- SANITARY SEWER PIPE SHALL BE PVC SDR35 CONFORMING TO CSA B-182.2, OPSS 1841 AND OPSD 306.06 UNLESS OTHERWISE NOTED.
- RISERS ARE REQUIRED ON ALL SANITARY CONNECTIONS WHERE COVER ON MAIN SEWER EXCEEDS 4.50m.

WATERMAIN NOTES:

- WATERMANS 150mm TO 300mm DIA. TO BE PVC AWWA C900, C905, C907 CL150 (DR-18) WITH GASKETED JOINTS.
 - WATERMANS 400mm DIA. TO BE PVC AWWA C900, C905, C907 CL150 (DR-18) WITH GASKETED JOINTS.
 - WATER SERVICE CONNECTIONS TO BE AS PER OPSD 1104.01. PIPE FOR ALL SERVICE CONNECTIONS UP TO 50mm DIA. SHALL BE COPPER TYPE K SOFT COPPER TUBING.
 - A MIN. HORIZONTAL SEPARATION OF 2.5m AND A MIN. VERTICAL SEPARATION OF 0.15m BETWEEN WATERMANS AND SEWERS MUST BE MAINTAINED IF WATERMAIN IS ABOVE SEWER. OR 0.5m IF SEWER IS ABOVE WATERMAIN.
 - WATERMAIN BEDDING TO BE SUIABLE GRANULAR BEDDING MATERIAL AS PER OPSD 802.030, 802.031, 802.032 AND 802.033 REV. 41 COMPACTED TO 95% SPD.
 - MINIMUM 150mm (5") OF GRANULAR MATERIAL TO BE USED AS A CAP ON TOP OF "HIGH PERFORMANCE BACKFILL" TO THE ASPHALT SUBBASE. COMPACTED TO 100% PROCTOR DENSITY.
 - ALL SACRIFICIAL ANODES SHALL CONFORM TO ASTM B-418 TYPE II AND SHALL BE MADE OF HIGH GRADE ELECTROLYTIC ZINC, 99.99% PURE.
 - ALL METALLIC WATERMANS, FITTINGS, HYDRANTS AND RESTRAINERS TO HAVE ONE ZINC ANODE PER LENGTH OF PIPE IN SIZES ACCORDING TO THE FOLLOWING TABLE AND INSTALLED IN ACCORDANCE WITH REGION OF HALTON STANDARD DRAWING RH 420.01 AND RH 420.02.
 - ALL HYDRANTS AS PER OPSD 1105.010 AND RH400.02 TO HAVE STEAMER CONNECTIONS.
 - STORZ PUMPER CONNECTIONS
 - TWO (2) 63.5mm (2 1/2") WITH CSA STANDARD THREAD, 63.5mm I.D., 78.4mm O.D., 5 THREADS PER 25mm, 31.75mm SQUARE OPERATING NUT, AND ONE (1) 100mm (4") STORZ PUMPER CONNECTION AS PER CANULIC #S-520, 31.75mm SQUARE OPERATING NUT, AND STORZ CAP PAINTED GLOSS BLACK.
 - ANODE INSTALLATION IS NOT REQUIRED WITHIN VALVE-CHAMBERS, DRAIN CHAMBERS OR AIR RELEASE CHAMBERS.
 - ALL WELD CONNECTIONS TO BE COATED WITH "IC MASTIC" OR APPROVED EQUIVALENT.
 - FOR ALL ANODES CONNECTED TO NEW PIPE, FITTINGS OR TO EXISTING METALLIC WATERMANS, A CADWELDER AND CA-15 OR EQUIVALENT CARTRIDGE SHALL BE USED. ANODE INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
 - WHERE NEW PIPE IS TO BE CONNECTED TO EXISTING DUCTILE IRON OR CAST IRON PIPE A 14.5kg MAGNESIUM ANODE IS TO BE CONNECTED TO THE FIRST LENGTH OF EXISTING PIPE, AS PER REGION OF HALTON STANDARD DRAWING RH 420.01.
 - ALL VALVES TO OPEN LEFT (COUNTER-CLOCKWISE) AND SHALL HAVE 50mm SQUARE STANDARD AWWA OPERATING NUT.
 - ALL PIPES, CAPS, TEES AND BENDS SHALL BE MECHANICALLY RESTRAINED AS PER MANUFACTURERS SPECIFICATIONS, WITH THE FOLLOWING EXCEPTIONS:
 - WATERMANS WITH 300mm DIA. OR SMALLER
 - HORIZONTAL BENDS
 - MECHANICALLY RESTRAINED JOINTS - BETWEEN ELBOW AND PIPES AND BETWEEN PIPE SECTIONS WITHIN THE PREDETERMINED LENGTH OF THE WATERMAIN ON BOTH SIDES OF THE ELBOW.
 - VERTICAL BENDS
 - MECHANICALLY RESTRAINED JOINTS ONLY BETWEEN ELBOW AND PIPES AND BETWEEN PIPE SECTIONS WITHIN THE PREDETERMINED LENGTH OF THE WATERMAIN ON BOTH SIDES OF THE ELBOW.
 - HYDRANT LATERALS
 - STRAIGHT LATERALS VERTICALLY (NO CHANGE OF VERTICAL ELEVATION), AT ANCHORED TEE AND HYDRANT BOOT OR MECHANICALLY RESTRAINED JOINTS ALONG THE ENTIRE LENGTH OF THE LATERAL.
 - DEAD ENDS
 - MECHANICALLY RESTRAINED JOINTS.
- WATERMANS WITH 400mm DIA. OR LARGER

RECOMMENDED RESTRAINED LENGTH OF PVC PIPE INSTALLED IN SAND/SILT						
NOM. PIPE SIZE	90 BEND	45 BEND	22.5 BEND	11.25 BEND	45 VERT BEND DOWN/UP	VALVE/HYD DEAD END
150	3.7m	1.6m	0.8m	0.4m	4.8m/1.6m	11.1m
200	4.8m	2.0m	1.0m	0.5m	2.9m/1.0m	14.4m
300	6.8m	2.5m	1.4m	0.7m	8.6m/2.9m	20.7m
400	7.8m	3.3m	1.6m	0.8m	11.1m/1.9m	26.9m

NOM. PIPE SIZE	REDUCING TEE	NOM. PIPE SIZE	STRAIGHT TEE
200x150	6.2m (BRANCH ONLY)	150	8.5m (BRANCH) / 2.9m (MAIN)
300x150	3.7m (BRANCH ONLY)	200	12.1m (BRANCH) / 6.5m (MAIN)
300x200	8.9m (BRANCH) / 1.8m (MAIN)	300	18.8m (BRANCH) / 13.3m (MAIN)

- WATERMAIN INSTALLATION WITHIN EXISTING REGION RIGHTS OF WAY SHALL BE BACKFILLED WITH GRANULAR 'A'.
- MINIMUM DEPTH OF COVER OVER WATERMAIN SHALL BE 1.70M MEASURED FROM THE ROAD CENTERLINE ELEVATION.
- GATE VALVES CONFORMING TO AWWA C500 STANDARDS ARE REQUIRED ON WATERMANS 400mm DIA. AND UNDER. LINE GATE VALVES SHALL HAVE AUGER OR SCREW TYPE VALVE BOXES.
- FOR WATERMAIN 400mm DIAMETER AND GREATER, VALVE CHAMBERS, AS PER DETAIL, ARE TO BE USED TO ACCOMMODATE ALL VALVES, CROSSES, TEES, AND OTHER ANCILLARY EQUIPMENT
- ALL WATERMAIN FITTINGS SHALL HAVE MECHANICAL JOINTS.
- VERTICAL AND HORIZONTAL ALIGNMENT OF PVC WATERMAIN TO BE ACHIEVED BY BEDDING OF PIPE BARREL AS PER MANUFACTURERS SPECIFICATIONS.
- TRACER WIRE IS TO BE INSTALLED ON ALL NEW INSTALLATION OF PVC WATERMAIN PIPE FOR LOCATING PURPOSES. A SOLID 12 GAUGE T.W.U. COPPER WIRE IS TO BE INSTALLED ALONG THE PIPE, STRAPPED TO THE PIPE AT SIX (6) METER INTERVALS.
- THE WIRE IS TO BE INSTALLED BETWEEN EACH VALVE AND/OR THE END OF THE NEW PVC WATERMAIN. JOINTS IN THE WIRE BETWEEN VALVES IS NOT PERMITTED. AT EACH VALVE A LOOP OF WIRE IS TO BE BROUGHT UP INSIDE THE VALVE BOX TO THE TOP OF THE BOX AS PER REGION OF HALTON STANDARD RH 400.04.
- THE INSPECTOR MAY TEST THE TRACING WIRE FOR CONDUCTIVITY. IF THE TRACING WIRE IS NOT CONTINUOUS FROM VALVE TO VALVE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPLACE OR REPAIR THE WIRE.
- HYDRANTS SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C502 AND SHALL HAVE STEAMER PORTS AS PER REGION STANDARD SPECIFICATIONS. ALL HYDRANTS SHALL BE INSTALLED AS PER OPSD 1105.010.
- HYDRANTS TO BE INSTALLED SUCH THAT THE LOWER ROD STEM SHALL NOT EXCEED 1.7m MEASURED FROM THE BREAKOFF FLANGE.
- ALL WATERMAIN WILL BE SUBJECT TO PRESSURE TESTING AND FLOW TESTING AS DIRECTED BY HALTON REGION.
- MINIMUM SEPARATION DISTANCE FROM THE EDGE OF DRIVEWAY TO FACE OF FIRE HYDRANT SHALL BE 1.0m.
- ALL HYDRANTS SECONDARY VALVE AS PER OPSD 1105.010.

OTHER

- ALL TRAFFIC SIGNALS TO BE EQUIPPED WITH OPTICOM DEVICES IN ACCORDANCE WITH TOWN OF OAKVILLE SPECIFICATIONS AND REQUIREMENTS. REFER TO PLANS BY MOON-MATZ LTD. FOR TRAFFIC SIGNAL DESIGN, INCLUDING LAYOUT ADJUSTMENTS, CONTROL AND WIRING MODIFICATIONS.

HALTON REGION OPSD AMENDMENTS

SECTION ABBREVIATION	OPSD No.	REVISIONS OR ADDITIONS	
	100.010 to 100.060	1. Additional abbreviations to be found in Region of Halton's "A Guide for the Production of Engineering Contract Drawings"	
	101.010 to 103.011	1. Subdrain to be labeled with size and 'S/UB' 2. Additional requirements to be found in the Region of Halton's "A Guide for the Production of Engineering Contract Drawings"	
	203.04	1. Not permitted in the Region of Halton	
GRADING SECTIONS	203.04	1. Not permitted in the Region of Halton	
SITE ENTRANCES	301.01	1. The Region of Halton requires a 10m radii on farm entrances	
	301.02	1. The Region of Halton requires a 10m radii on farm entrances	
FRAMES AND GRATES	301.03	1. The Region of Halton requires a 10m radii on farm entrances	
	400.02	1. Not permitted in the Region of Halton	
	400.070 to 400.110	1. Not permitted in the Region of Halton	
	401.01	1. The word "SAN", "STORM", or "WATER" to be cast into lid in addition to "DANGER". The minimum letter size shall be 75mm (3 inches) in height.	
	401.02	1. Not permitted in the Region of Halton	
	401.03	1. The word "SAN", "STORM", or "WATER" to be cast into lid in addition to "DANGER". The minimum letter size shall be 75mm (3 inches) in height.	
	401.040 to 401.050	1. Not permitted in the Region of Halton	
	402.010 to 402.021	1. Not permitted in the Region of Halton	
	402.03	1. The words "DANGER" and "WATER" to be cast into lid. The minimum letter size shall be 75mm (3 inches) in height.	
	404.020 to 404.022	1. Not permitted in the Region of Halton	
	404.022	1. Reclanging stainless steel steps are not permitted in the Region of Halton.	
	406.02	1. Not permitted in the Region of Halton	
	CURBS AND GUTTERS	600.070 to 600.090	1. Not permitted in the Region of Halton
		600.090	1. Not permitted in the Region of Halton
CATCH BASINS AND MANHOLES	701.010 to 701.015	1. Manhole adjustment units are to be minimum 150mm to 300mm maximum. 2. In all wastewater manholes, benching is to be to overt of pipe. 3. Manhole depth less than 10m, safety platform is not required. Depths between 10m and 15m, safety platform required at mid-point.	
	701.021	1. In all wastewater manholes, benching is to be to overt of pipe. 2. Maximum size hie in wall chart shall apply to both pre-cast or cast-in-place riser sections.	
	705.01	1. Note 2 - Outlet pipe size to be specified.	
	705.02	1. Note 2 - Outlet pipe size to be specified.	
	705.03	1. Note 2 - Outlet pipe size to be specified.	
	705.04	1. Note 2 - Outlet pipe size to be specified.	
	708.02	1. Not permitted in the Region of Halton	
	709.010 to 709.040	1. Not permitted in the Region of Halton	
	CULVERTS AND DRAINS	802.010 to 802.014	1. Cover material to be 300mm MTO Granular 'A' with compaction at 95% S.P.D. 2. When using non-shrinkable fill, the fill is to be placed on top of the cover material.
		802.030 to 802.034	1. Cover material to be 300mm MTO Granular 'A' with compaction at 95% S.P.D. 2. When using non-shrinkable fill, the fill is to be placed on top of the cover material.
SANITARY SEWERS, MANHOLES AND CATCHBASINS	804.05	1. Hinge to be a 22mm diameter steel rod bent as shown.	
	1003.01	1. Tee drop structures are not permitted in the Region of Halton	
	1003.02	1. In all wastewater manholes, benching is to be to overt of pipe. 2. Overt of the drop pipe to meet overt of the receiving sewer. 3. Non-shrinkable fill is to be used instead of concrete. 4. Note 2 do not apply.	
	1003.030 to 1003.031	1. Not permitted in the Region of Halton.	
	1006.01	1. Backfill to riser may be HLB stone or 25mm maximum size clear stone. 2. Bedding as specified to be as per OPSD 802.030, 802.031, 802.032 and 802.033. 3. Note E - Non-shrink grout to be used for larger diameter field made tees.	
	1006.02	1. Backfill to riser may be HLB stone or 25mm maximum size clear stone. 2. Bedding as specified to be as per OPSD 802.010, 802.013 and 802.014. 3. Maximum deflection as per OPSD 1006.010 with HLB stone in place of concrete.	
WATERMANS	1100.01	1. To be used as a line valve chamber only. 2. Removable roof slab to be used only at the discretion of the Design Engineer. 3. 125mm diameter valve box and sleeve is required above valve in chamber. 4. Adjustment units to be 150mm to 300mm max. 5. 1:3 non-shrink mortar mix to be used to fill wall openings for waterain.	
	1100.011	1. Flanged or uni-flanged joints are not permitted in the Region of Halton.	
	1101.01	Meter Chamber 1. Drain with "p" trap to storm sewer can be provided as an alternative to the sump pit. 2. Hole for remote reading cable and conduit must be provided and pargeted with 1:3 non-shrink mortar mix. Valve Chamber 1. To be used as a line valve chamber only. 2. 125mm diameter valve box and sleeve is required above valve in chamber. 3. Adjustment units to be 150mm to 300mm max. 4. 1:3 non-shrink mortar mix to be used to fill wall openings for watermain. 5. Valve operator to be opposite frame and cover opening. Sump to be directly under frame and cover opening.	
	1101.03	1. Flanged or uni-flanged joints are not permitted in the Region of Halton.	
	1103.01	2. Valve operator to be opposite frame and cover opening.	
	1103.02	1. Not used in the Region of Halton.	
	1103.02	1. Not used in the Region of Halton.	
	1104.01	1. The minimum cover to water service at property line to be 1.7m. 2. Note C is not required in the Region of Halton. 3. Bedding to be MTO Granular 'A'. 4. Saddles not required for PVC watermain 150mm diameter or larger. 5. Water services to be tapped in a spiral to avoid splitting pipe. 6. Soldered joints are not allowed before the meter or between the watermain and the curb stop.	
	1104.02	1. The minimum cover to water service at property line to be 1.7m. 2. Bedding to be MTO Granular 'A' 3. In areas of high water or wet sand the curb stop and box must be wrapped with a geotextile to 300mm above joint. 4. Buffalo Box is only allowable service box. 5. Soldered joints are not allowed before the meter or between the watermain and the curb stop.	
	1104.03	1. Not permitted in the Region of Halton.	
1105.01	1. A hydrant anchor tee with the 150mm mechanical joint secondary gate valve bolted to the anchor tee is required. 2. Clear stone bedding is to be used for the entire lateral trench. 3. Ground flange to the minimum at grade to 50mm maximum. 4. Ground flange to boot to be maximum 1.7m. 5. Geotextile to be used in place of Polyethylene sheet.		
1107.010 to 1107.030	1. Not permitted in the Region of Halton.		
1108.01	1. Not permitted in the Region of Halton.		

LEGEND

<ul style="list-style-type: none"> CLLS OP OLP COMP EX. SIGN EX. GV BELL CAT TV HYDRO-GRINDER EX. CB EX. DCB EX. MH EX. CBMH EX. DCBMH EX. DI EX. SAN. HYD EX. HYD EX. IW EX. CS BR No. 1 GA EX. FENCE EX. SANITARY SEWER EX. STORM SEWER EXISTING UNDER GROUND HYDRO 	<p>PROPERTY LINE</p> <p>EXISTING LIGHT STANDARD</p> <p>EXISTING UTILITY POLE</p> <p>EXISTING TRAFFIC LIGHT POLE</p> <p>EXISTING CROSS WALK POST</p> <p>EXISTING GUYWIRE</p> <p>EXISTING SIGN</p> <p>EXISTING GAS VALVE</p> <p>EXISTING BELL BOX</p> <p>EXISTING CABLE BOX</p> <p>EXISTING HYDRO TRANSFORMER</p> <p>EXISTING DITCH</p> <p>EXISTING CATCHBASIN</p> <p>EXISTING DOUBLE CATCHBASIN</p> <p>EXISTING STORM MANHOLE</p> <p>EXISTING STORM CATCHBASIN MANHOLE</p> <p>EXISTING DOUBLE CATCHBASIN MANHOLE</p> <p>EXISTING DITCH INLET</p> <p>EXISTING SANITARY MANHOLE</p> <p>EXISTING FIRE HYDRANT</p> <p>EXISTING WATER VALVE</p> <p>EXISTING CURB STOP</p> <p>EXISTING BOREHOLE LOCATION</p> <p>EXISTING DITCH</p> <p>EXISTING WATERMAIN</p> <p>EXISTING BELL SERVICE</p> <p>EXISTING GAS AND BELL SERVICE</p> <p>EXISTING GASMAIN</p> <p>EXISTING FENCE</p> <p>EXISTING SANITARY SEWER</p> <p>EXISTING STORM SEWER</p> <p>EXISTING UNDER GROUND HYDRO</p>	<ul style="list-style-type: none"> CB MH CBMH DCBMH DICB DICB HYD HYD WV REDUCER CS <p>PROPOSED STORM SEWER</p> <p>PROPOSED SANITARY SEWER</p> <p>PROPOSED WATERMAIN</p> <p>PROPOSED HYDRO LINE</p> <p>PROPOSED 150mm Ø SUBDRAIN</p> <p>PROPOSED 1.8m CHAINLINK FENCE</p> <p>PROPOSED CATCHBASIN</p> <p>PROPOSED DOUBLE CATCHBASIN</p> <p>PROPOSED STORM MANHOLE</p> <p>PROPOSED STORM CATCHBASIN MANHOLE</p> <p>PROPOSED STORM DOUBLE CBMH</p> <p>PROPOSED STORM DITCH INLET CBMH</p> <p>PROPOSED STORM DITCH INLET</p> <p>PROPOSED SANITARY MANHOLE</p> <p>PROPOSED FIRE HYDRANT</p> <p>PROPOSED WATER VALVE</p> <p>PROPOSED REDUCER</p> <p>PROPOSED CURB STOP</p> <p>PROPOSED STREET LIGHTING</p> <p>PROPOSED DRP</p> <p>PROPOSED DROP CURB</p> <p>PROPOSED ASPHALT</p> <p>EXISTING DITCH</p> <p>PROPOSED CONCRETE</p> <p>PROPOSED CHAIN LINK FENCE</p> <p>PROPOSED EMBANKMENT (3:1 MAX. UNLESS OTHERWISE NOTED)</p> <p>PROPOSED STREET TREE (REFER TO LANDSCAPE PLANS)</p>
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CULTEC Stormwater Design Calculator

Date: October 10, 2025
Project Information: CULTEC Phase 1 Chamber
Project Number: 2020-0040-10
Calculations Performed By: Nathan Neufeld

RECHARGER 180HD

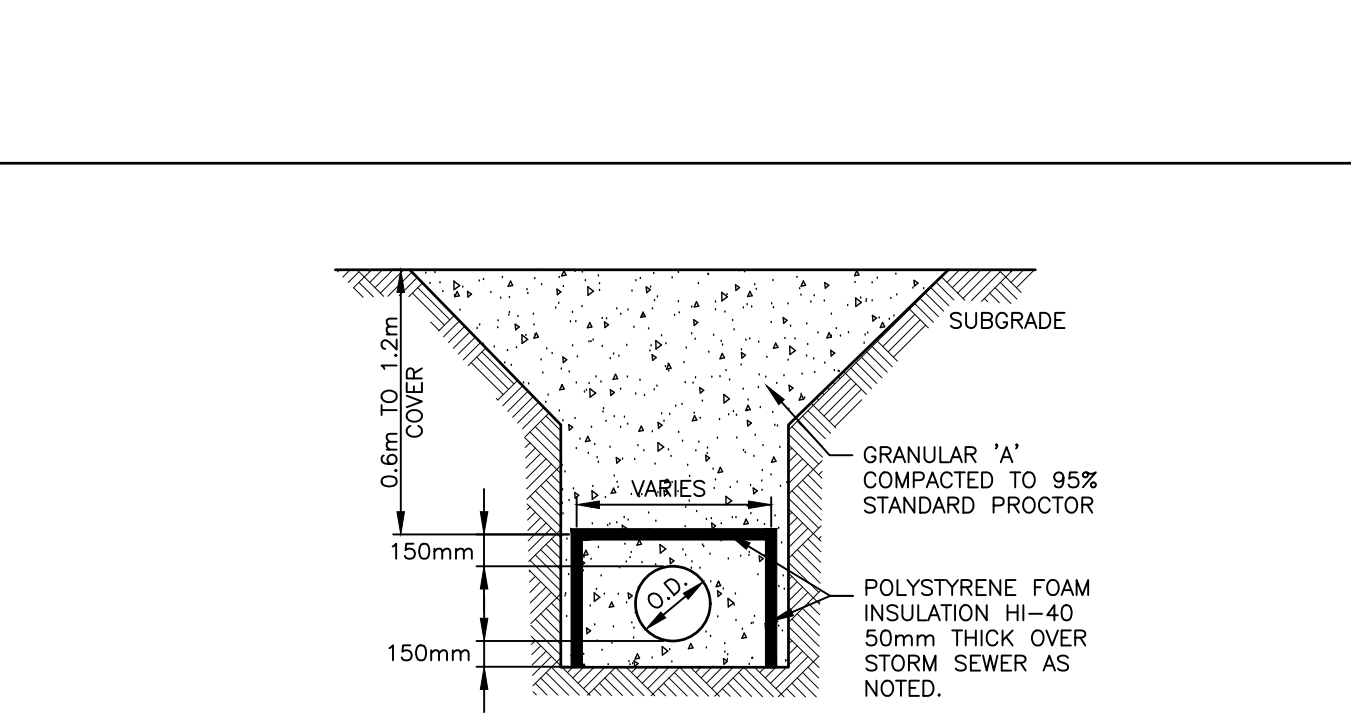
Recharger 180HD Chamber Specifications	Breakdown of Storage Provided by Recharger 180HD Stormwater System
Height: 521 mm	Within Chambers: 72.35 cu. meters
Width: 914 mm	Within Feed Connectors: 8.23 cu. meters
Length: 2.23 meters	Within Stone: 58.79 cu. meters
Installed Length: 1.93 meters	Total Storage Provided: 139.37 cu. meters
Bare Chamber Volume: 0.42 cu. meters	Feed Storage Required: 110.00 cu. meters
Installed Chamber Volume: 1.00 cu. meters	

Materials List

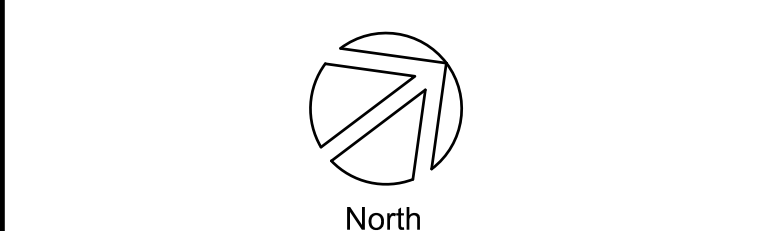
Recharger 180HD	Bed Detail	Bed Layout Information
Total Number of Chambers Required: 114 pieces	Number of Chambers Long: 19 pieces	Number of Chambers Long: 19 pieces
Separator Box Chambers: 19 pieces	Chamber Row Width: 18.75 meters	Chamber Row Width: 18.75 meters
Starter Chambers: 19 pieces	Chamber Row Length: 11.88 meters	Chamber Row Length: 11.88 meters
End Chambers: 19 pieces	Bed Width: 13.35 meters	Bed Width: 13.35 meters
WGL FC-24 Feed Connectors: 36 pieces	Bed Length: 241.75 m. meters	Bed Length: 241.75 m. meters
CULTEC No. 410 Non-Woven Geotextile: 670 sq. meters	Bed Area Required: 241.75 sq. meters	Bed Area Required: 241.75 sq. meters
CULTEC No. 4800 Woven Geotextile: 91 sq. meters	Length of Separator Row: 11.88 meters	Length of Separator Row: 11.88 meters
Stone: 127 cu. meters		

Cross Section Table Reference

Letter	Description	Value	Unit
A	Depth of Stone Base	192	mm
B	Chamber Height	521	mm
C	Depth of Stone Above Units	152	mm
D	Depth of 95% Compacted Fill	203	mm
E	Max. Depth Allowed Above the Chamber	3.66	meters
F	Chamber Width	914	mm
G	Center to Center Spacing	0.91	meters
H	Effective Depth	0.82	meters
I	Bed Depth	1.02	meters



NOTE: NOT TO BE USED FOR WATERMAIN
SHALLOW PIPE INSULATION DETAIL
N.T.S.



DATE	ISSUANCE	NO.
2026.04.30	ISSUED FOR TOWN OF OAKVILLE REVIEW	1

CLIENT: INFRASTRUCTURE ONTARIO

PROJECT: MECP - MLITSD SCIENCE FACILITY COMPLEX OAKVILLE, ONTARIO

TITLE: GENERAL NOTES AND DETAILS

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SCALE: DATE: 2026-04-30 SHEET NO.: PROJECT NO.: 2025-05