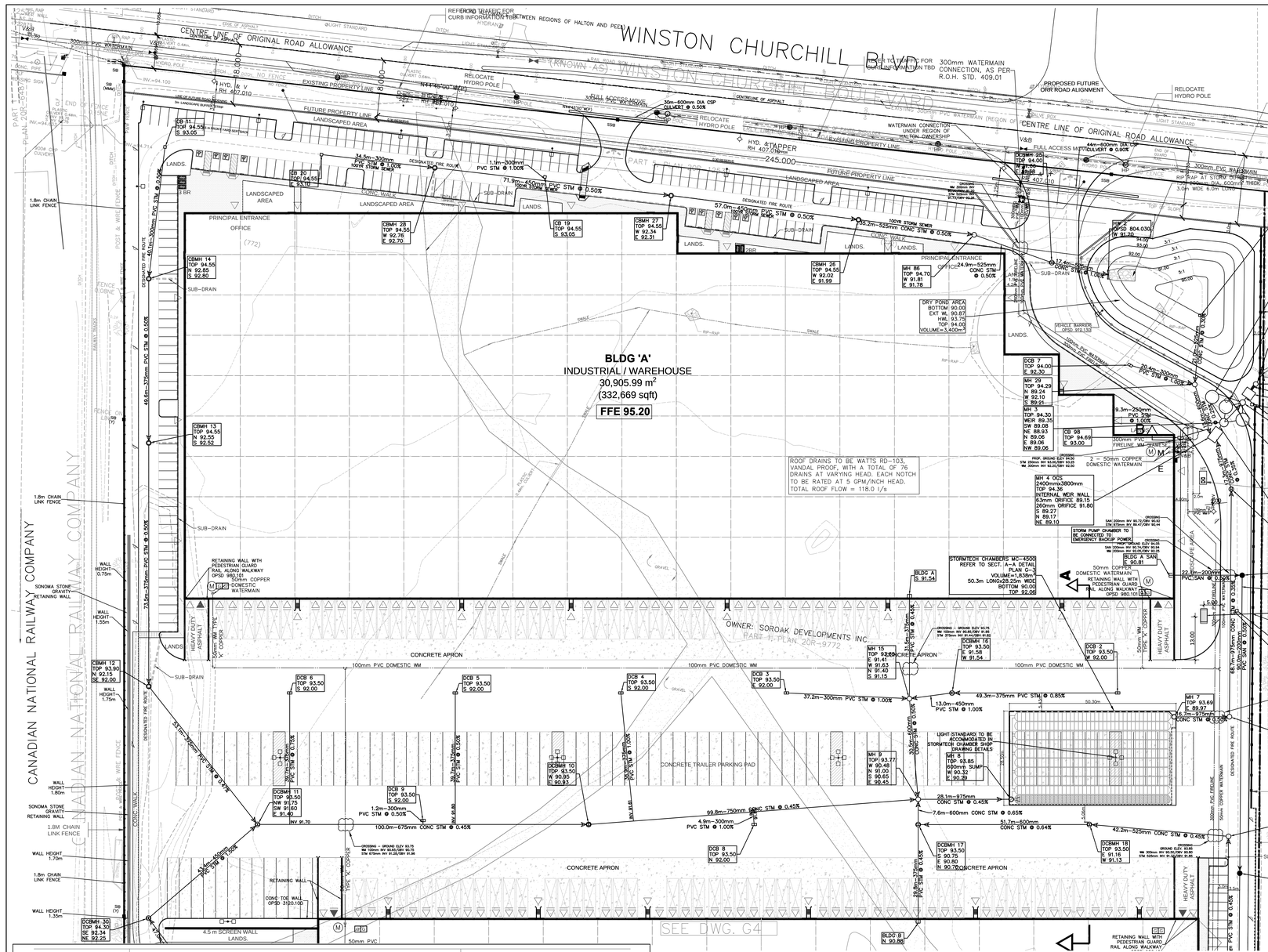


REGION OF PEEL NOTES:

- ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
- WATERMAIN AND / OR WATER SERVICE MATERIALS 100mm (4") AND LARGER MUST BE DR 18 PVC PIPE MANUFACTURED TO A.W.W.A. SPEC. C900-16 SPEC COMPLETE WITH TRACER WIRE. SIZE 50mm (2") AND SMALLER MUST BE TYPE K SOFT COPPER PIPE PER A.S.T.M. B88-49 SPECIFICATION.
- WATERMAINS AND / OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 2.70m (8'-10") AND A HORIZONTAL SEPARATION SPACING OF 1.2m (4') FROM THEMselves AND ALL OTHER UTILITIES.
- PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED WITH AT LEAST A 50mm (2") OUTLET ON 100mm (4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END. THE SAME OUTLET MAY BE USED FOR BOTH FLUSHING AND SAMPLING. ALLOW FOR THE WATER TO DRAIN ONTO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100mm (4") DIAMETER MINIMUM ON A HYDRANT.
- ALL CURB STOPS TO BE 3.0(1') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
- HYDRANT AND VALVE SET TO REGION STANDARD 1 – 6 – 1 DIMENSION A AND B, 0.7m (2') AND 0.9m (3') AND TO HAVE PUMPER NOZZLE.
- WATERMAINS ARE TO BE INSTALLED ACCORDING TO THE APPROVED SITE PLAN. COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR.
- WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3m (12") OVER / 0.5m (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
- ALL WATERMAINS MUST BE KEPT FREE FROM OBSTRUCTIONS AND IN GOOD ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND ONLOADING FROM EXISTING SYSTEMS.
- ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE REGIONAL WATER OPERATIONS SUPERVISOR.
- LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
- THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATES, EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND OVERHEAD UTILITIES WHICH MAY BE REQUIRED TO CROSS OVER, UNDER OR ADJACENT THE AREA OR THEIR WORK WHETHER SHOWN ON THE PLANS OR NOT AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
- THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO THE UTILITIES PRIOR TO CROSSING SUCH UTILITIES, FOR THE PURPOSE OF INSPECTING THE CROSSING UTILITY. THIS INSPECTION WILL BE FOR THE DURATION OF THE CONSTRUCTION. THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
- ALL PROPOSED WATER PIPING MUST BE ISOLATED THROUGH A TEMPORARY CONNECTION THAT SHALL INCLUDE AN APPROPRIATE CROSS-CONNECTION CONTROL DEVICE, AS DETERMINED BY THE DEGREE OF HAZARD, FOR BACKFLOW PREVENTION OF COMPLETE WITHIN THE DISTRIBUTION SYSTEM, CONFORMING TO REGION OF PEEL STANDARDS 1-7-7 OR 1-7-8.

REGION OF HALTON NOTES

GENERAL NOTES

1. THE LOCATION OF ALL UNDERGROUND AND ABOVEGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THESE DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE LOCATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGES TO THEM.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF THE WORKS SHOWN HEREIN SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE CITY/TOWN UNLESS NOTED OTHERWISE.
3. TOWN OF OAKVILLE AND REGION OF HALTON STANDARD DRAWINGS AND O.P.S.D. WITH REGIONAL AMENDMENTS FOR SANITARY SEWERS AND WATERMAINS SHALL CONSTITUTE PART OF THE ENGINEERING DESIGN AND CONSTRUCTION CONTRACT.
4. ALL WORKS SHOWN ON THE PLANS MUST BE CONSTRUCTED APPROVAL HAS FIRST BEEN OBTAINED FROM THE TOWN ENGINEER AND/OR THE REGIONAL COMMISSIONER OF PLANNING AND PUBLIC WORKS.
5. NO BLASTING IS PERMITTED.
6. ANY AREAS WITHIN R.O.W. WHICH REQUIRE FILL IN EXCESS OF 0.30M ARE SUBJECT TO COMPACTION TESTS AND SUCH TESTS MUST SHOW A MINIMUM COMPACTION OF 95% S.P.M. IN ALL DEPTHS.
7. ALL TRENCHES WITHIN EXISTING ROADWAYS SHALL BE COMPLETE FLUSH WITH BASE COURSE ASPHALT AND ADJUSTED TO FINAL GRADE PRIOR TO INSTALLING TOP LIFT OF ASPHALT.
8. ALL TRENCHES WITHIN EXISTING RIGHT-OF-WAY ARE TO BE BACKFILLED IN ACCORDANCE WITH TOWN OF OAKVILLE REQUIREMENTS.

SANITARY SEWER NOTES

1. SANITARY MANHOLES AS PER O.P.S.D 701.010 WITH FRAMES AND COVERS AS PER O.P.S.D. 401.01 TYPE 'A' UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. SANITARY SEWER PIPE TO BE PVC DR 35 UNLESS OTHERWISE NOTED BY THE REGION OF HALTON. BEDDING IN SANITARY MANHOLES TO BE TO THE OBVERT OF THE PIPE.
3. SAFETY PLATFORMS AS PER O.P.S.D. 404.020 TO BE INSTALLED ONLY IN MANHOLES WHERE DROPS EXCEED 0.7m. DROP CONNECTIONS TO BE INSTALLED IN ACCORDANCE WITH O.P.S.D. 701.021.
4. SANITARY SEWER PIPE SHALL BE PVC SDR35 CONFORMING TO A.S.T.M. D3034 UNLESS OTHERWISE NOTED.
5. SANITARY SERVICE CONNECTIONS TO BE 125MM DIA FOR SINGLE RESIDENTIAL CONNECTIONS AND 150MM DIA FOR DUAL RESIDENTIAL AND SINGLE NON-RESIDENTIAL CONNECTIONS. SANITARY SERVICE CONNECTIONS TO BE:
6. MINIMUM 2% GRADE AND SHALL BE NON-WHITE IN COLOUR.
7. SERVICES TO BE MIN. 2.13M AND MAX. 2.77M DEEP AT PROPERTY LINE. RISERS SHALL BE USED FOR SERVICES DEEPER THAN 2.77M.
8. CLASS 'B' BEDDING ON ALL SEWERS AND CONNECTIONS TO BE AS PER O.P.S.D. 1005.02 UNLESS NOTED OTHERWISE.
9. GRANULAR BACKFILL AROUND MANHOLES SHALL BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM OF 95% S.P.D.

WATERMAIN NOTES

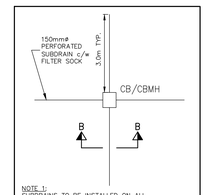
1. WATERMAINS 150MM TO 300MM DIAMETER TO BE P.V.C. CL150 (DR-18) WITH GASKETED JOINTS.
2. WATER SERVICE CONNECTIONS TO BE AS PER O.P.S.D. 1104.01. PIPE FOR ALL SERVICE CONNECTIONS TO BE TYPE 'K' SOFT COPPER UNLESS NOTED OTHERWISE.
3. A MIN. HORIZONTAL SEPARATION OF 2.0M MUST BE MAINTAINED BETWEEN WATERMAINS AND SANITARY OR STORM SEWERS, INCLUDING SERVICE LATERALS.
4. A MIN. VERTICAL SEPARATION OF 0.15M BETWEEN WATERMAINS AND SEWERS MUST BE MAINTAINED IF THE WATERMAIN IS ABOVE THE SEWER. 1.0M IF THE WATERMAIN IS BELOW THE SEWER.
5. WATERMAIN BEDDING TO BE SUITABLE GRANULAR BEDDING MATERIAL AS PER O.P.S.D. 1102.01, CLASS 'B'.
6. ALL HYDRANTS AS PER O.P.S.D. 1105.01 TO HAVE STEAMER CONNECTIONS. HYDRANTS TO BE SUPPLIED WITH:
   6.1. ONE (1) 113.0MM (2 1/2)NH CSA STANDARD THREAD, 63.5MM I.D., 79.4 O.D., 5 THREADS PER 25MM, 31.75MM SQUARE OPERATING NUT;
   AND
   6.2. ONE (1) 100MM (4") STORZ PUMPER CONNECTION AS PER CAN/ULC -S515-03, 31.75MM SQUARE OPERATING NUT, AND STORZ CAP PAINTED GLOSS BLACK.
7. HYDRANTS SHALL BE INSTALLED SUCH THAT THE ROD STEM LENGTH SHALL NOT EXCEED 1.7M MEASURED FROM THE BREAK-OFF FLANGE. IF HYDRANT BARREL LENGTH EXCEEDS 1.7M THEN A HYDRANT THAT CAN BE RAISED FROM THE BOTTOM WITHOUT INCREASING ROD LENGTH IS TO BE INSTALLED.
8. ALL METALLIC WATERMAINS, FITTINGS, HYDRANTS AND RESTRAINERS TO HAVE CATHODIC PROTECTION IN ACCORDANCE WITH REGION OF HALTON STANDARD DRAWINGS RH 420.01 AND RH 420.02.
9. ALL SACRIFICIAL ANODES SHALL CONFORM TO A.S.T.M. B-418 TYPE II AND SHALL BE MADE OF HIGH GRADE ELECTROLYTIC ZINC, 99.90% PURE.
10. ANODE INSTALLATION IS NOT REQUIRED WITHIN VALVE-CHAMBERS, DRAIN CHAMBERS OR AIR RELEASE CHAMBERS.
11. ALL WELD CONNECTIONS TO BE COATED WITH "TC MASTIC"OR APPROVED EQUIVALENT.
12. ALL WATERMAIN FITTINGS SHALL BE WRAPPED IN 8 MIL POLYETHYLENE FOR CATHODIC PROTECTION. A CADWELDER AND CA-15 OR EQUIVALENT CARTRIDGE SHALL BE USED. WELDS INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
13. WHERE NEW PIPE IS TO BE CONNECTED TO EXISTING DUCTILE IRON OR CAST IRON PIPE A 14.5KG MINIMUM ANODE IS TO BE CONNECTED TO THE FIRST LENGTH OF EXISTING PIPE. AS PER REGION STANDARD RH 420.02 AND RH 420.03.
14. ALL VALVES TO OPEN LEFT (COUNTER-CLOCKWISE) AND SHALL HAVE AWWA STANDARD AWWA OPERATING NUT.
15. ALL FITTINGS, VALVES AND BENDS SHALL BE MECHANICALLY RESTRAINED AS PER MANUFACTURER'S SPECIFICATIONS. RESTRAINTS SHALL MEET UNI-B-13-92.
16. RECOMMENDED RESTRAINED LENGTH ARE AS FOLLOWS:

RECOMMENDED RESTRAINED LENGTH OF PVC PIPE INSTALLED IN SAND-SILT:

NOM. PIPE SIZE	90° BEND	45° BEND	11.25° BEND	22.5° BEND	45° VERT. BEND DOWN/UP	VALVE/HYD DEAD-END
150	3.7m	1.6m	0.8m	0.4m	4.6m/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

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)/8.5m (MAIN)
300x200	8.9m (BRANCH)/1.8m (MAIN)	300	18.9m (BRANCH)/13.3m (MAIN)

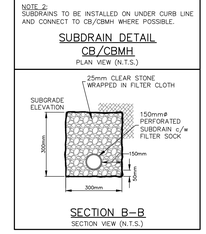
17. WHERE WATERMAIN IS PLACED IN FILL OR IN PREVIOUSLY DISTURBED GROUND ALL JOINTS TO BE MECHANICALLY RESTRAINED.
18. MINIMUM DEPTH OF COVER OVER WATERMAIN SHALL BE 1.70M MEASURED FROM THE ROAD SURFACE TO THE PIPE.
19. THE DEPTH OF WATER SERVICES AT PROPERTY LINE SHOULD BE A MINIMUM OF 1.7M AND A MAXIMUM OF 2.0M. THE DISTANCE BETWEEN THE GROUND ELEVATION AND THE TOP OF THE ROD SHOULD BE BETWEEN 0.6M AND 1.0M.
20. WHERE THE DEPTH OF WATER SERVICE EXCEEDS 2.0M DEEP TO VALVE MIN. 1.70M OF COVER, WHERE THIS CANNOT BE ACHIEVED, WATER SERVICE IS TO CROSS UNDER STORM SEWER.
21. GATE VALVES CONFORMING TO A.W.W.A. C500 STANDARDS ARE REQUIRED ON WATERMAINS 300MM AND UNDER. LINE GATE VALVES SHALL HAVE AUGER OR SCREW TYPE VALVE BOXES.
22. ALL WATERMAIN BENDS TO BE SUPPORTED BY THRUST BLOCKS.
23. VERTICAL AND HORIZONTAL ALIGNMENT OF WATERMAIN TO BE ACHIEVED BY DEFLECTION OF JOINTS AS PER MANUFACTURER'S SPECIFICATIONS. DEFLECTION IN THE BARREL IS NOT PERMITTED.
24. TRACER WIRE IS TO BE INSTALLED ON ALL NEW INSTALLATIONS OF PVC WATERMAIN PIPE. FOR LOCATING PURPOSES, A SOLID 12 GAUGE T.W.U. COPPER WIRE IS TO BE INSTALLED ALONG THE PIPE, PLACED TO THE PIPE AT 5 METRE INTERVALS. JOINTS IN THE WIRE BETWEEN VALVES ARE NOT PERMITTED.
25. THE INSPECTOR MAY TEST THE TRACING WIRE FOR CONDUCTIVITY. IF THE TRACING WIRE IS NOT CONDUCTIVE, OR IF THE WIRE IS CUT TO VALVE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPLACE OR REPAIR THE WIRE.
26. ALL WATER CUSTOMERS SUPPLIED BY A WATERMAIN TO BE SHUT DOWN SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 24 HOURS IN ADVANCE OF THE SHUT DOWN AS PER REGION OF HALTON SPECIFICATIONS. NOTIFICATION SHALL TAKE PLACE UNDER THE ENGINEER'S DIRECTION.
27. ALL WATERMAIN VALVES TO BE OPERATED BY REGION OF HALTON STAFF ONLY.
28. FIRE HYDRANT CAPS SHALL BE COLOUR CODED AS PER NFPA STANDARDS.



NOTE 1:
SUBDRAINS TO BE INSTALLED ON ALL CB/CBMH WITHIN PAVED AREAS EXTENDING 3.0m WHEN POSSIBLE.

NOTE 2:
SUBDRAINS TO BE INSTALLED ON UNDER CURB LINE AND CONNECT TO CB/CBMH WHERE POSSIBLE.

SUBDRAIN DETAIL
CB/CBMH
PLAN VIEW (N.T.S.)



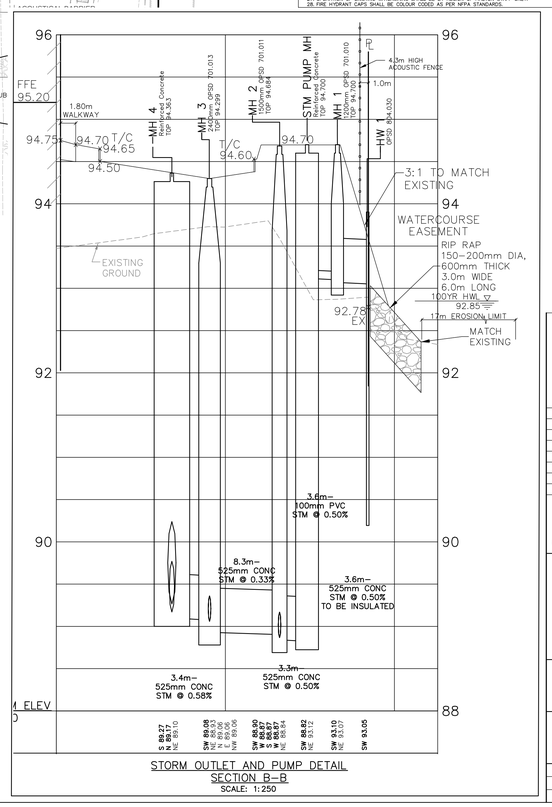
SECTION B–B
SECTION VIEW (N.T.S.)

LEGEND

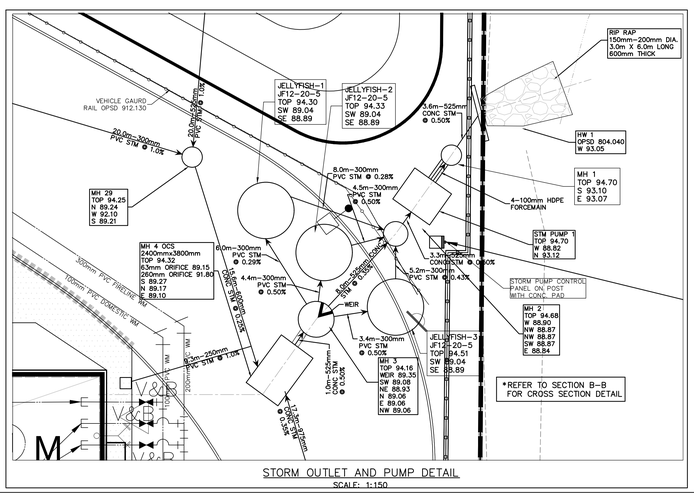
418.62	EXISTING ELEVATION
×120.00EX	EXISTING ELEVATION
×120.00	PROPOSED ELEVATION
×120.00TC	PROPOSED TOP OF CURB ELEVATION
×120.00TW	PROPOSED TOP OF WALL ELEVATION
×120.00BW	PROPOSED BOTTOM OF WALL ELEVATION
×120.00SW	PROPOSED SWALE ELEVATION
	CATCHBASIN
	CATCHBASIN MANHOLE
	STORM MANHOLE
	SANITARY MANHOLE
	VALVE AND BOX
	HYDRANT AND VALVE
M	WATER METER
	REGIONAL FLOODLINE
12094	SECTION NUMBER
93.90 / 90.43	REGIONAL FLOOD ELEVATION / 100YEAR FLOOD ELEVATION
	OVERLAND FLOW ROUTE
	ACOUSTIC FENCE
	VEHICLE GUARD RAIL OPSD 912.130
	SUB-DRAIN (SEE DETAIL DWG G-3)

CONTRACTOR TO BE RESPONSIBLE FOR VERIFYING THE LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTING SERVICES. THE CONTRACTOR SHALL ADVISE THE ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH CONSTRUCTION. VARIOUS UTILITIES CONCERNED TO BE GIVEN REQUIRED ADVANCED NOTICE PRIOR TO ANY DIGGING FOR STAKE OUT. THE CONSULTING ENGINEER INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING UTILITIES AS INDICATED ON THIS DRAWING.

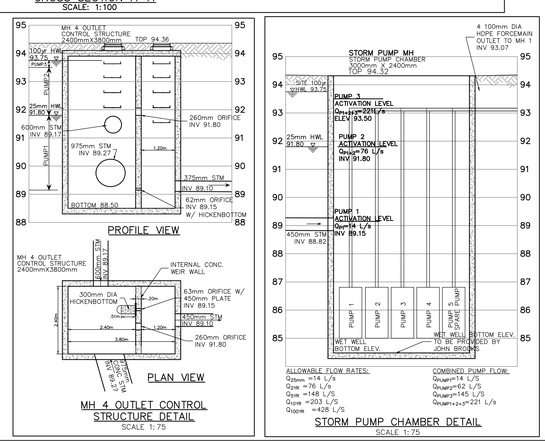
100 YEAR AND REGIONAL FLOODLINE INFORMATION TAKEN FROM CVC FLOOD HAZARD MAP FOR CLEARVIEW CREEK WATERSHED, SHEET 3

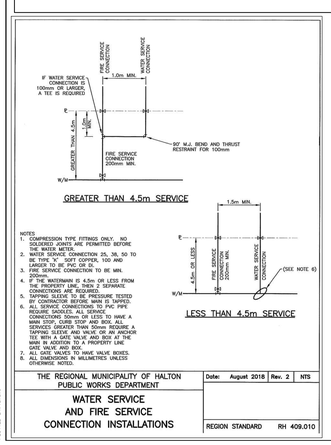


STORM OUTLET AND PUMP DETAIL
SECTION B–B
SCALE: 1:250

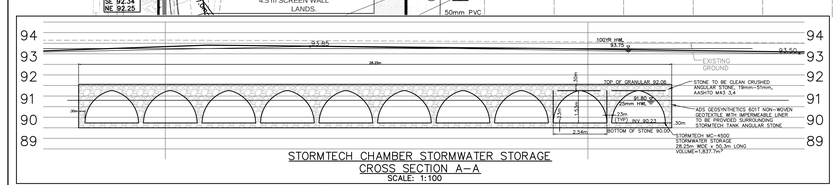


STORM OUTLET AND PUMP DETAIL
SCALE: 1:150




GREATER THAN 4.5m SERVICE
LESS THAN 4.5m SERVICE
NOTES:
1. COMPRESSION TYPE FITTINGS ONLY. NO SOLDERED JOINTS ARE PERMITTED BEFORE THE WATER METER.
2. WATER SERVICE CONNECTIONS 25, 38, 50 TO BE TYPE "K" SOFT COPPER, 100 AND LARGER TO BE PVC DR 35.
3. FIRE SERVICE CONNECTION TO BE MIN. 150mm.
4. IF THE WATERMAIN IS 4.5m OR LESS FROM THE PROPERTY LINE, THEN 2 SEPARATE CONNECTIONS ARE REQUIRED.
5. WATERMAIN AND SERVICE PIPEWORK TESTED BY CONTRACTOR BEFORE MAIN IS TAPPED.
6. ALL SERVICE CONNECTIONS TO PVC PIPE REQUIRE SADDLES. ALL SERVICE CONNECTIONS TO STEEL TO HAVE A MAIN STOP, CURB STOP AND BOX. ALL SERVICES GREATER THAN 50mm REQUIRE A TAPPING SLEEVE AND VALVE, OR AN ANCHOR TEE. ALL SERVICES 50mm AND LESS TO HAVE MAIN IN ADDITION TO A PROPERTY LINE GATE VALVE, AND BOX.
7. ALL 50mm AND LESS TO HAVE VALVE BOXES.
8. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.

THE REGIONAL MUNICIPALITY OF HALTON PUBLIC WORKS DEPARTMENT	Date: August 2018 Rev. 2	NTS
WATER SERVICE AND FIRE SERVICE CONNECTION INSTALLATIONS	REGION STANDARD	RH 409.010



No.	Date	By	REVISIONS
3	DEC 19/22	FP	THIRD SUBMISSION
2	DEC 15/22	FP	SECOND SUBMISSION
1	APR 9/21	FP	FIRST SUBMISSION

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905–850–8020 Fax 905–850–8099
Email: civil@amcal.com

772 WINSTON CHURCHILL BLVD.

SPA 1601.029/01
Region of Peel No. C602647

TOWN OF OAKVILLE
REGION OF HALTON

BELOW GROUND SITE SERVICING AND SWM PLAN - EAST SITE AREA

SCALE: 1:500	DATE: SEPT 2022	PROJ No.	2256
DRAWN: F.P.	CHK'D: A.M.C.	PLAN No.	G-3
DESIGNED: A.M.C.	SHEET 3 OF 6		