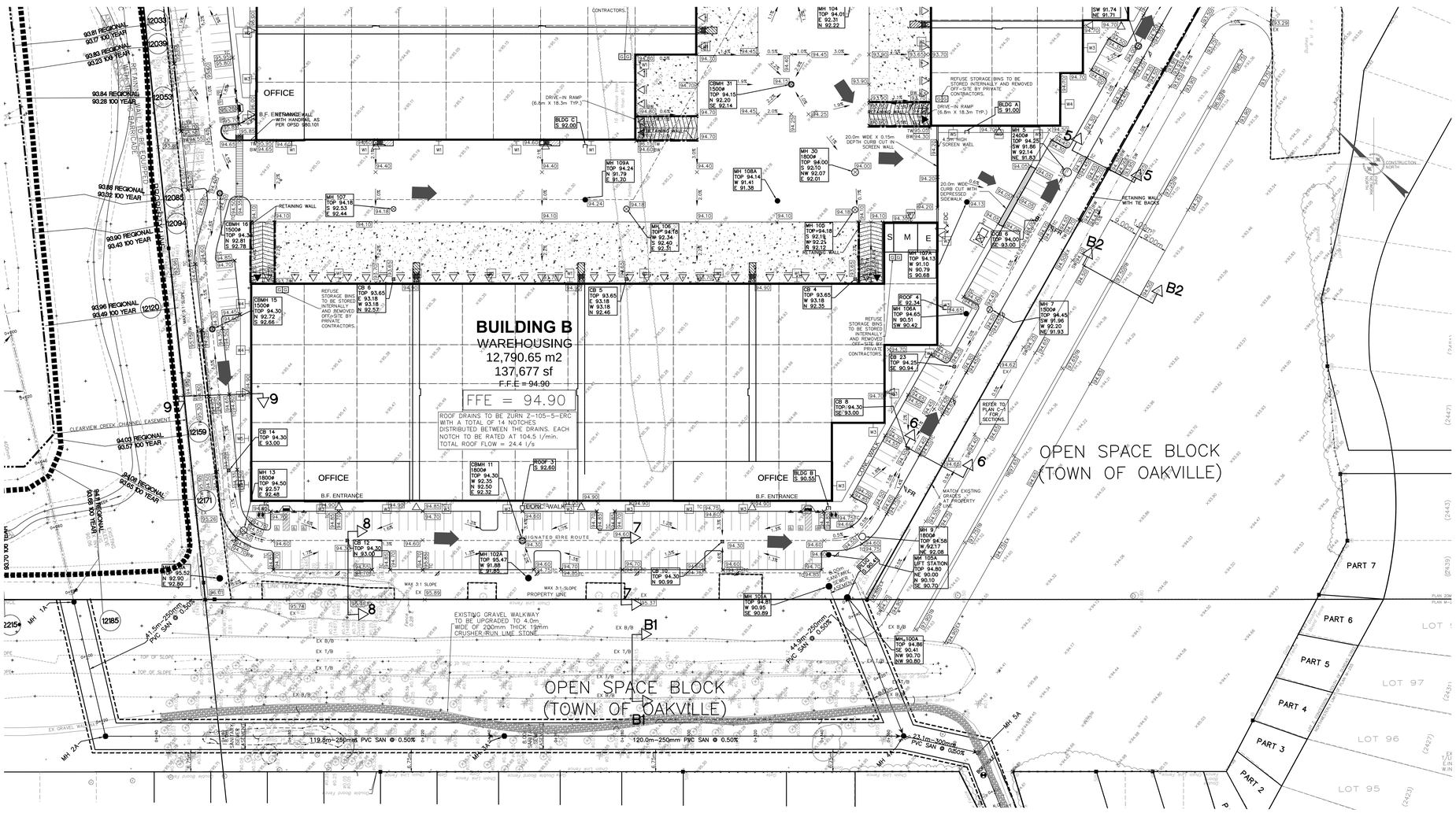


THE PAVEMENT STRUCTURE SHALL BE CONSTRUCTED OF THE FOLLOWING MATERIALS, AS STATED IN THE TOWN OF OAKVILLE STANDARD DRAWING 7-2 AND 7-20:

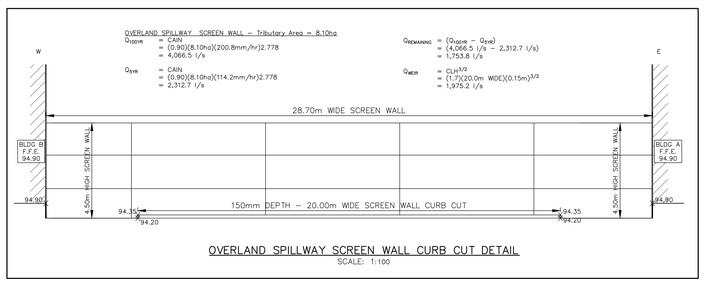
INDUSTRIAL AND COLLECTOR ROADS
OR BUS ROUTES
40mm HL3
80mm HL8
150mm OF GRANULAR 'A' (A)
350mm OF GRANULAR 'B' (B)(C)

A. GRANULAR 'A' TO MEET OR EXCEED OPSS 1010 AND SHALL BE QUARRIED BEDROCK OR RECYCLED CONCRETE MATERIAL. 30% RAP MAY BE PRESENT IN GRANULAR 'A' MATERIAL. STEEL SLAG NOT PERMITTED IN GRANULAR 'A'.

B. GRANULAR 'B' TYPE II SHALL BE 100% QUARRIED BEDROCK MEETING OR EXCEEDING OPSS 1010. GRANULAR 'B' TYPE I COMPRISED OF 100% RECYCLED CONCRETE MEETING OR EXCEEDING OPSS 1010 MAY BE USED IN LIEU OF GRANULAR 'B' TYPE II. NEITHER FURNACE SLAG NOR NICKEL SLAG IS PERMITTED FOR USE IN GRANULAR 'B' TYPE II OR TYPE I MATERIAL.

C. AN EXTRA 150mm THICKNESS SHALL BE PLACED WITHIN ARTERIAL AND INDUSTRIAL ROAD INTERSECTIONS. THE EXTRA THICKNESS SHALL EXTEND FOR A MINIMUM OF 15m BEYOND THE PROPERTY LINE OF THE INTERSECTING STREET.

OR AS SPECIFIED IN THE GEOTECHNICAL REPORT PREPARED BY A SOILS ENGINEER, WHICHEVER IS GREATER.



OVERLAND SPILLWAY SCREEN WALL CURB CUT DETAIL
SCALE: 1:100

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 IS NOT GUARANTEED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2. ALL AREAS DISTURBED BY THE CONTRACTOR DURING THE CONSTRUCTION OF THE WORKS SHOWN HEREIN SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AS DETERMINED BY PLANNING AND PUBLIC WORKS. THE COST OF SUCH RESTORATION SHALL BE INCLUDED IN THE TENDERED PRICE FOR WORK BY PLACING 100MM OF TOPSOIL AND NO. 1 NURSERY SOD TO ESTABLISH A GRASS COVER TO THE SATISFACTION OF THE CITY/TOWN UNLESS NOTED OTHERWISE.
3. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL 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. ALTERNATIVE MATERIALS MAY BE ACCEPTABLE, PROVIDED APPROVAL HAS FIRST BEEN OBTAINED FROM THE TOWN ENGINEER AND/OR THE REGIONAL COMMISSIONER OF PLANNING AND PUBLIC WORKS. THE USE OF SUCH MUST BE NOTED.
5. ANY AREAS WITHIN R.O.W. WHICH REQUIRE FILL IN EXCESS OF 0.6m SHALL BE SUBJECT TO COMPACTION TESTS AND SUCH TESTS MUST SHOW A MIN. COMPACTION OF 95% S.P.D. AT ALL DEPTHS.
6. MANHOLE AND VALVE CHAMBER COVERS ARE TO BE SET FLUSH WITH BASE COURSE ASPHALT AND ADJUSTED TO FINAL GRADE PRIOR TO INSTALLING TOP LIFT OF ASPHALT.
7. ALL DISTURBED AREAS WITHIN 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. BENDING IN MANHOLES TO BE AS PER O.P.S.D. 701.021 AS AMENDED BY THE REGION OF HALTON. BENCHING IN SANITARY MANHOLES TO BE TO THE CROWN OF THE PIPE.
3. DROP PIPES TO BE INSTALLED IN ACCORDANCE WITH O.P.S.D. 701.020 ONLY IN MANHOLES WHERE DEPTHS EXCEED 5.0M AS DIRECTED BY THE REGION AND AS INDICATED ON THE PROFILE DRAWINGS.
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. TO BE INSTALLED TO A MAX. 2.75M DEEP AT PROPERTY LINE, RISERS SHALL BE USED WHERE NOTED AS PER OPSD 1006.02.
8. 7. CLASS 'B' BEDDING ON ALL SEWERS AND CONNECTIONS TO BE AS PER O.P.S.D. 1005.02 UNLESS OTHERWISE NOTED.
9. 8. GRANULAR BACKFILL AROUND MANHOLES SHALL BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM OF 95% S.P.D.

WATERMAIN NOTES
1. WATERMAIN 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 UP TO 50MM DIA. SHALL BE TYPE K SOFT COPPER TUBING.
3. A MIN. HORIZONTAL SEPARATION OF 2.5M MUST BE MAINTAINED BETWEEN WATERMAINS AND SANITARY OR STORM SEWERS, INCLUDING SERVICE LATERALS.
4. A MIN. VERTICAL SEPARATION OF 0.45M BETWEEN WATERMAINS AND SEWERS MUST BE MAINTAINED IF WATERMAIN IS INSTALLED ABOVE SEWER OR 0.15M IF SEWER IS ABOVE WATERMAIN.
5. WATERMAIN BEDDING TO BE SUITABLE GRANULAR BEDDING MATERIAL AS PER O.P.S.D. 401.030 TYPE 1.
6. ALL HYDRANTS AS PER O.P.S.D. 1105.01 TO HAVE STEAMER CONNECTIONS. HYDRANTS TO BE SUPPLIED WITH:
6.1. TWO (2) 63.5MM (2 1/2") WITH CSA STANDARD THREAD, 63.5MM I.D., 7.9A O.D., 5 THREADS PER 25MM, 31.75MM SQUARE OPERATING NUT;
6.2. ONE (1) 100MM (4") STORZ PUMPER CONNECTION AS PER CAN/ULC #S-520, 31.75MM SQUARE OPERATING NUT, AND STORZ CAP PAINTED GLOSS BLACK.
7. HYDRANTS SHALL BE INSTALLED SUCH THAT THE STOP 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 INSTALLING ROD LENGTH IS TO BE USED.
8. ALL METALLIC WATERMAINS, FITTINGS, HYDRANTS AND RESTRAINERS TO HAVE CATHODIC PROTECTION PROVIDED BY INSTALLING A MAGNESIUM ANODE AS PER MANUFACTURER'S SPECIFICATIONS.
9. ALL SACRIFICIAL ANODES SHALL CONFORM TO A.S.T.M. B-418 TYPE II AND SHALL BE MADE OF HIGH GRADE ELECTROLYTIC ZINC, 99.99% 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. FOR ANODES CONNECTED TO NEW PIPE, FITTINGS OR TO EXISTING METALLIC WATERMAINS, A CADWELDER AND CA-15 OR EQUIVALENT CARTRIDGE SHALL BE USED. ANODE INSTALLATION SHALL BE CONSISTENT WITH A.W.W.A. STANDARD FOR CATHODIC PROTECTION.
13. 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 WH 420.01.
14. ALL VALVES TO OPEN LEFT (COUNTER-CLOCKWISE) AND SHALL HAVE 50MM SQUARE STANDARD OPERATING NUTS.
15. ALL PLUGS, CAPS, TEES, AND BENDS SHALL BE MECHANICALLY RESTRAINED AS PER MANUFACTURERS 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	22.5° BEND	11.25° BEND	45° VERT. BEND DOWN/UP	VALVE/HYD DEAD-END
150	3.7m	1.6m	0.8m	0.4m	4.6m/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

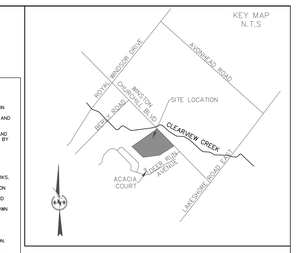
NOM. PIPE SIZE	REDUCING TEE	NOM. PIPE SIZE	STRAIGHT TEE
200x150	6.2m (BRANCH ONLY)	150	8.5m (BRANCH)/2.9m (MAIN)
300x150	3.7m (BRANCH ONLY)	200	12.1m (BRANCH)/8.5m (MAIN)
300x200	8.9m (BRANCH)/1.8m (MAIN)	300	18.9m (BRANCH)/13.3m (MAIN)

17. WHERE WATERMAIN IS PLACED IN FILL OR IN PREVIOUSLY DISTURBED GROUND ALL JOINTS TO BE MECHANICALLY RESTRAINED.
18. THE MINIMUM COVER OVER WATERMAIN SHALL BE 1.70M MEASURED FROM THE ROAD CENTRELINE ELEVATION.
19. THE DEPTH OF WATER SERVICES AT PROPERTY LINE SHOULD BE A MINIMUM OF 1.7M AND A MAXIMUM OF 2.75M. THE DIFFERENCE BETWEEN THE GROUND ELEVATION AND THE TOP OF THE ROD SHOULD BE BETWEEN 0.5M AND 1.0M.
20. WATER SERVICES CROSSING THE STORM SEWER TO HAVE 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 DIAMETER AND LARGER. VALVES TO BE INSTALLED IN CONCRETE VALVE CHAMBERS.
22. ALL WATERMAIN FITTINGS SHALL HAVE MECHANICAL JOINTS.
23. VERTICAL AND HORIZONTAL ALIGNMENT OF WATERMAIN TO BE ACHIEVED BY DEFLECTION OF JOINTS WHERE POSSIBLE. ADDITIONAL BENDS MAY BE REQUIRED TO ACHIEVE ALIGNMENT IF NECESSARY.
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, STRAPPED TO THE PIPE AT 6 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 CONTINUOUS FROM VALVE TO VALVE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPLACE OR REPAIR THE WIRE.
26. ALL VALVE CHAMBERS 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. OPERATION OF EXISTING WATERMAINS SHALL BE BY REGION OF HALTON STAFF ONLY.
28. FIRE HYDRANT CAPS SHALL BE COLOUR CODED AS PER NFPA STANDARDS.

REFER TO PLAN C-1 FOR SECTIONS.

ALL MH 1200Ø UNLESS OTHERWISE NOTED.

KEY MAP
N.T.S



LEGEND

- CATCHBASIN
- CATCHBASIN MANHOLE
- STORM MANHOLE
- SANITARY MANHOLE
- EXISTING SANITARY MANHOLE
- M MECHANICAL ROOM
- x118.50 EXISTING ELEVATION
- x120.00EX EXISTING ELEVATION
- x120.00 PROPOSED ELEVATION
- x120.00TC PROPOSED TOP OF CURB ELEVATION
- x120.00TW PROPOSED TOP OF WALL ELEVATION
- x120.00BW PROPOSED BOTTOM OF WALL ELEVATION
- x120.00SW PROPOSED SWALE ELEVATION
- EXISTING REGIONAL FLOODLINE
- REGIONAL FLOODLINE
- (198) SECTION NUMBER
- TREE PROTECTION

100 YEAR AND REGIONAL FLOODLINE INFORMATION TAKEN FROM PLAN PREPARED BY CVC FLOOD HAZARD MAP.

LICENSED PROFESSIONAL ENGINEER
2021-11-25
A. M. CANDARAS
PROVINCE OF ONTARIO

No.	Date	By	REVISIONS
6	NOV.25/21	J.M.N.	ISSUED FOR THIRD SUBMISSION
5	NOV.09/21	J.M.N.	ISSUED FOR COORDINATION
4	FEB.26/21	J.M.N.	ISSUED FOR SECOND SUBMISSION
3	JAN.25/21	J.M.N.	ISSUED FOR SECOND SUBMISSION
2	DEC.23/20	J.M.N.	ISSUED FOR COORDINATION
1	JUL.11/19	ADD	FIRST SUBMISSION

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560, 570 AND 580 WINSTON CHURCHILL BLVD.

TOWN OF OAKVILLE
REGION OF HALTON

GRADING PLAN - SOUTH

SCALE: 1:500	DATE: MAY 2019	PROJ No.	1870
DRAWN: A.D.D.	CHK'D: A.M.C.	PLAN No.	G-4
DESIGNED: A.M.C.	SHEET 2 OF 2		

FILENAME: G:\1870\1870 - MASTER.dwg
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PLOTTED By: Andrew Dias