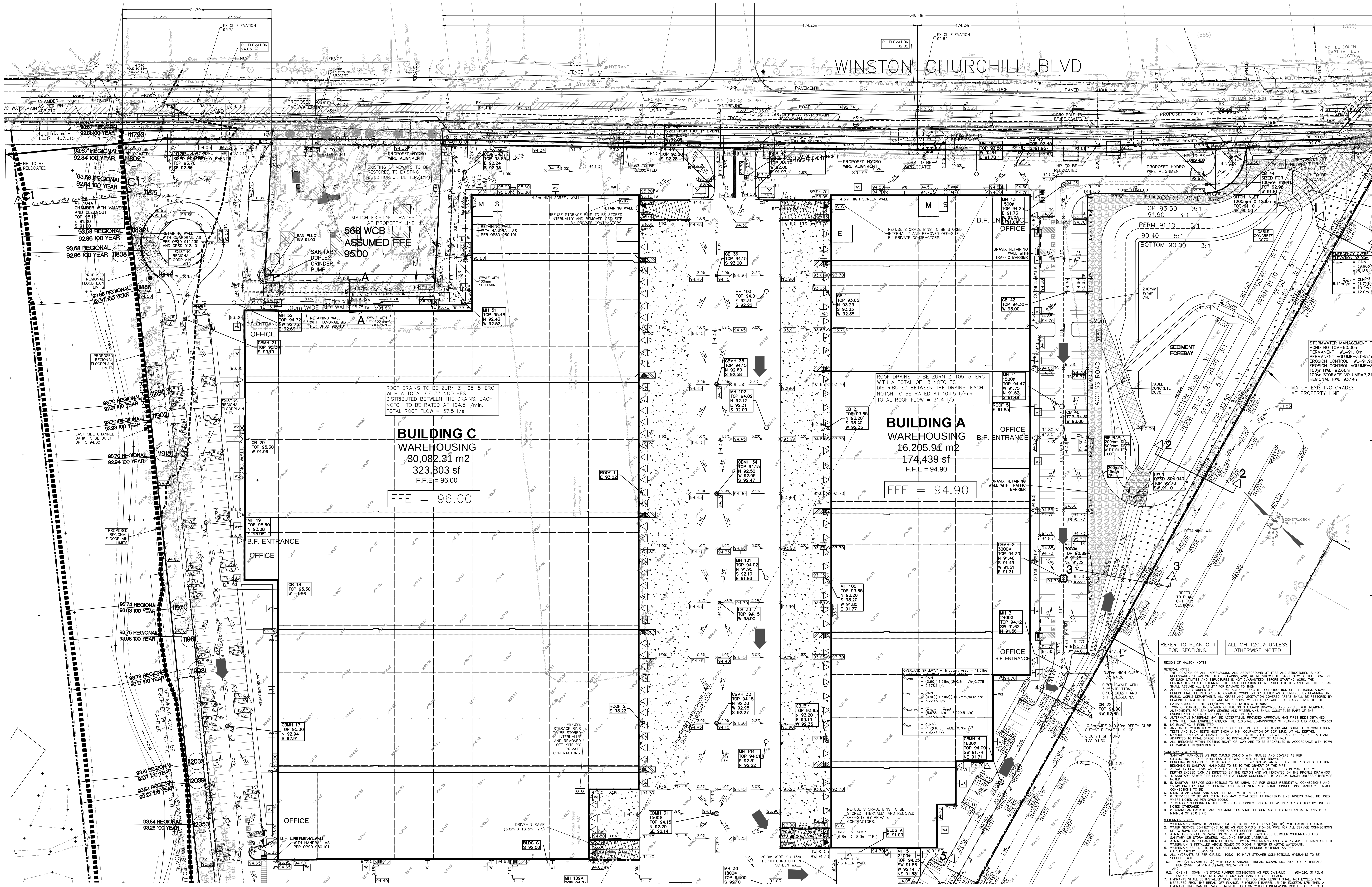
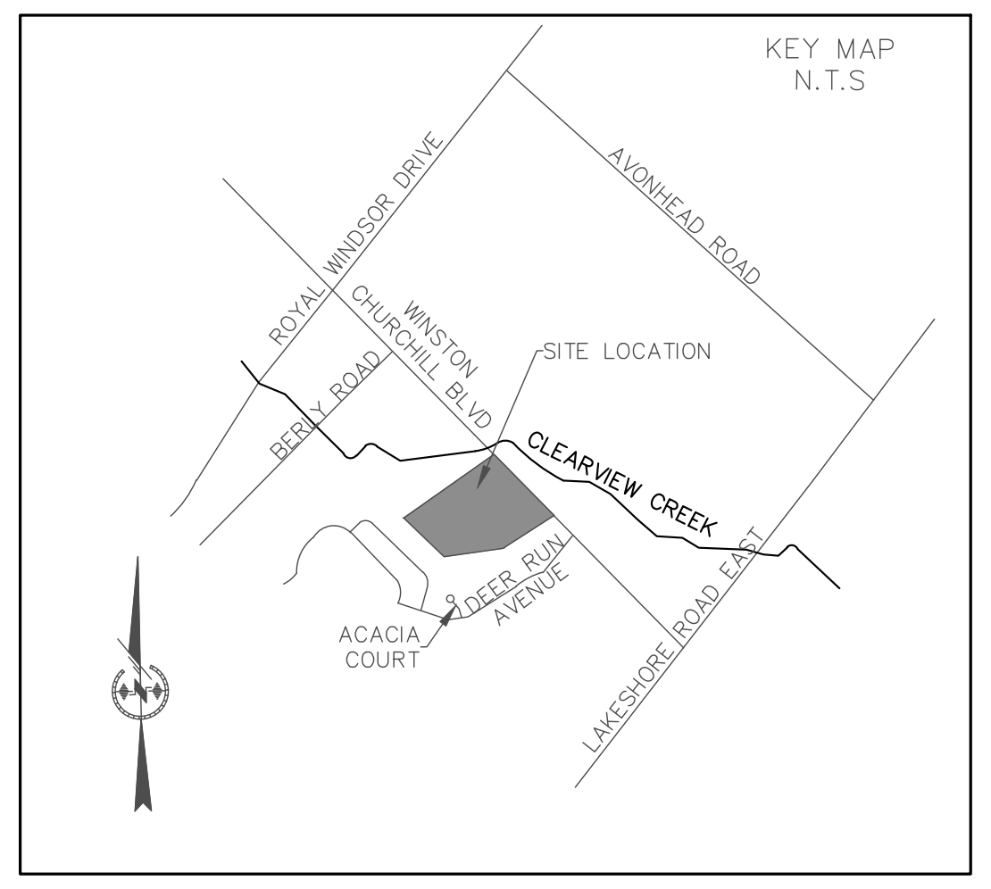


REFER TO PLAN C-1 FOR SECTIONS.

ALL MH 1200ø UNLESS OTHERWISE NOTED.



LEGEND

□	CATCHBASIN
▣	CATCHBASIN MANHOLE
○	STORM MANHOLE
●	SANITARY MANHOLE
M	MECHANICAL ROOM
+118.02	EXISTING ELEVATION
×120.00 EX	EXISTING ELEVATION
×120.00	PROPOSED ELEVATION
×120.00 TC	PROPOSED TOP OF CURB ELEVATION
×120.00 TW	PROPOSED TOP OF WALL ELEVATION
×120.00 BW	PROPOSED BOTTOM OF WALL ELEVATION
×120.00 SW	PROPOSED SWALE ELEVATION
▬ ▬ ▬ ▬	EXISTING REGIONAL FLOODLINE
■■■■■■	REGIONAL FLOODLINE
(11981)	SECTION NUMBER
▬ x ▬ x ▬	TREE PROTECTION

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

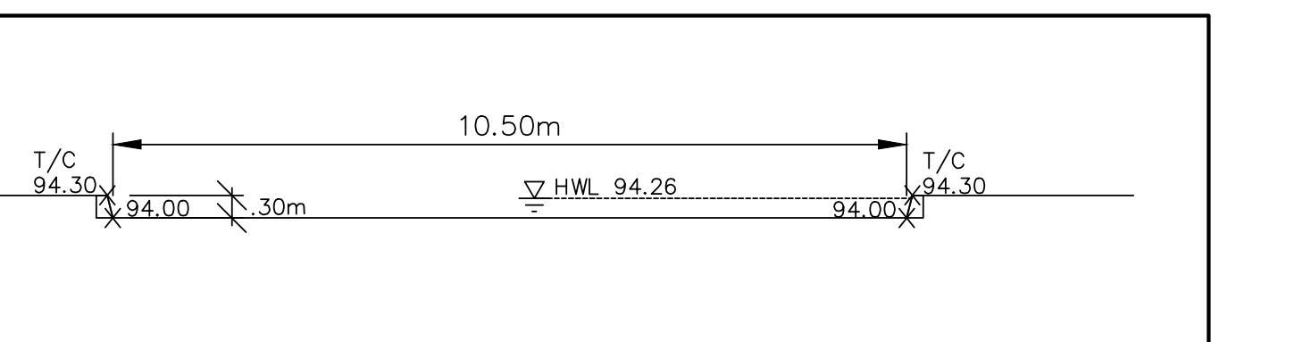
OVERLAND SPILLWAY – Tributary Area = 11.31ha

$$Q_{100YR} = CAIN = (0.90)(11.31ha)(200.8mm/hr)2.778 = 5{,}678.1\ l/s$$

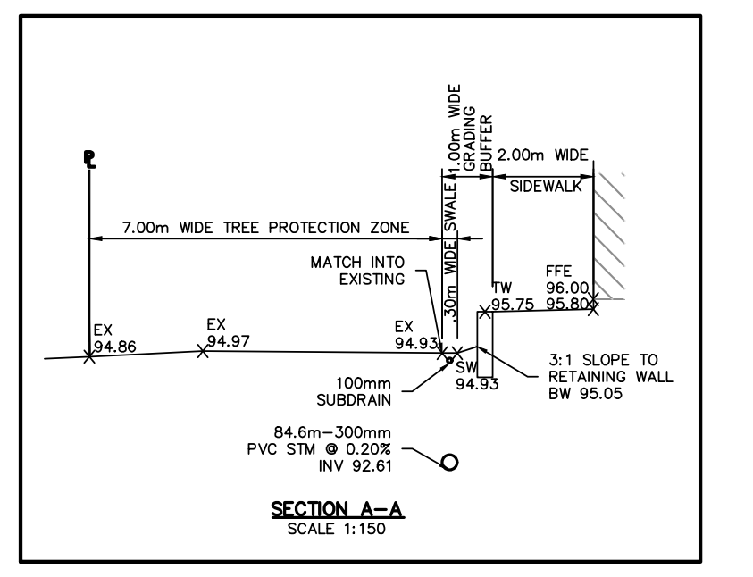
$$Q_{5YR} = CAIN = (0.90)(11.31ha)(114.2mm/hr)2.778 = 3{,}229.5\ l/s$$

$$Q_{REMAINING} = (Q_{100YR} - Q_{5YR}) = (5{,}678.1\ l/s - 3{,}229.5\ l/s) = 2{,}448.6\ l/s$$

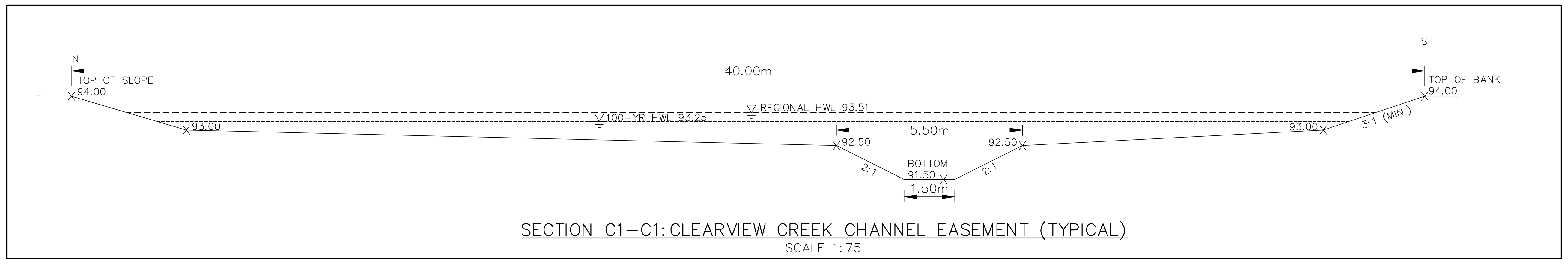
$$Q_{WEIR} = CLH^{3/2} = (1.7)(10.5m\ WIDE)(0.30m)^{3/2} = 2{,}933.1\ l/s$$



OVERLAND SPILLWAY CURB CUT DETAIL
SCALE: 1:100



SECTION A-A
SCALE 1:150



SECTION C1–C1: CLEARVIEW CREEK CHANNEL EASEMENT (TYPICAL)
SCALE 1:75

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.

GENERAL NOTES:

1. THE ELEVATION AT STREET LIE FOR LOT DRAINAGE SHALL BE 150mm HIGHER THAN THE FINISHED ROAD CROWN.
2. ALL MATERIALS SHALL MEET OR EXCEED ONTARIO PROVINCIAL STANDARD AND TOWN STANDARD SPECIFICATIONS.
3. WATERMAINS AND SANITARY SEWERS TO CONFORM TO LATEST REGIONAL MUNICIPALITY OF HALTON SPECIFICATIONS AND REQUIREMENTS.

DRIVEWAYS

4. RESIDENTIAL DRIVEWAY APRONS BETWEEN THE SIDEWALK AND THE ROAD CURB SHALL BE CONSTRUCTED WITH 180mm CONCRETE AND 75mm OF 19mm CRUSHER RUN LIMESTONE.
5. ALL DRIVEWAYS BETWEEN CURB AND SIDEWALK PLAIN CONCRETE.

STREET SECTION DETAILS

6. MAXIMUM ROADWAY PROFILE GRADIENT SHALL BE 6%. MINIMUM ROADWAY PROFILE GRADIENT SHALL BE 0.5%.
7. SUB–GRADE SHALL HAVE A CROSS–FALL OF –3% FROM CENTRELINE OF ROAD.
8. ALL GRANULARS ND ASPHALT LAYERS SHALL HAVE A CROSS–FALL OF:
   –3% FROM CENTRELINE OF ROAD (FOR PAVEMENT WIDTHS OF 8.5m OR LESS)
   2% FROM CENTRELINE OF ROAD (FOR PAVEMENT WIDTHS GREATER THAN 8.5m)
9. TOP COURSE ASPHALTIC CONCRETE SHALL BE PLACED ONLY AFTER ADJACENT BUILDINGS (HOMES, INDUSTRIAL, COMMERCIAL, ETC.) HAVE BEEN CONSTRUCTED AND ONLY WITH THE CONSENT OF THE DIRECTOR OF ENGINEERING AND CONSTRUCTION.
10. FULL LENGTH SUBDRAINS ARE TO BE INSTALLED ON BOTH SIDES OF THE ROAD.
11. CONCRETE CURBS SHALL BE OPSD 600.060 FOR STANDARD STREET SECTION STD. 7–21A AND 7–22B (LANEWAYS).
12. CONCRETE CURBS SHALL BE OPSD 600.040 FOR ALL STANDARD STREET SECTIONS EXCEPT STD. 7–21A AND 7–22B. OPSD 600.070 SHALL BE USED IN LIEU OR 600.040 IN NEW DEVELOPMENT AREAS WHERE TWO STAGE CURB AND GUTTER IS REQUIRED.
13. EARTHEND BOULEVARD AREAS SHALL BE OVERLAIN WITH 200mm TOPSOIL AND NO. 1 NURSEY SOD PER PARKS AND OPEN SPACE DEPARTMENT SPECIFICASTIONS.
14. SIDEWALKS SHALL CONFORM TO OPSD 310.010.
15. SIDEWALK RAMPS AT INTERSECTIONS AND MID–BLOCK CROSSING SHALL CONFORM TO OPSD 310.030 WITH THE REQUIREMENT THAT THE RAMP GRADIENT SHALL NOT EXCEED 5%.

ASPHALT AND GRANULAR REQUIREMENTS:

A. LANEWAYS AND LOCAL ROADS (NOT SUPPORTING TRANSIT)
   - 40mm HL3 (PGAC 58–28) *
   - 50mm HL8 (PGAC 58–28) *
   - 150mm GRANULAR 'A' *** (a)
   - 350mm GRANULAR 'B' *** (b)

B. LOCAL EMPLOYMENT ROADS (NOT SUPPORTING TRANSIT)
   - 40mm HL3 (PGAC 58–28) *
   - 80mm HL8 (PGAC 58–28) *
   - 150mm GRANULAR 'A' *** (a)
   - 50mm GRANULAR 'B' *** (b) (c)

C. CONNECTOR ROADS AND LOCAL ROADS (SUPPORTING TRANSIT)
   - 40mm HL3 HS (PGAC 64–22) *
   - 80mm HL8 (PGAC 64–22) *
   - 150mm GRANULAR 'A' *** (a)
   - 350mm GRANULAR 'B' *** (b)(c)

D. AVENUES AND MINOR ARTERIAL ROADS
   - 40mm HL3 HS (PGAC 64–22) *
   - 100mm HDBC (PGAC 64–22) *
   - 150mm GRANULAR 'A' *** (a)
   - 350mm GRANULAR 'B' *** (b)(c)

* – ALL HOT LAID ASPHALTIC CONCRETE SHALL MEET OR EXCEED OPSS 1150.

** – WHERE THE PROJECT OR DEVELOPMENT GEOTECHNICAL REPORT SPECIFIES A GREATER THICKNESS, THAT SPECIFIED THICKNESS SHALL BE THE REQUIREMENT.

*** – ALL GRANULAR A AND GRANULAR B MATERIALS – QC TESTING SHALL BE UNDERTAKEN BY THE CONTRACTOR COMPLETING THE WORKS AS PER RELEVANT OPS SPECIFICATIONS. ALL PROJECT ADMINISTRATORS AND DEVELOPERS ARE REQUIRED TO PERFORM QA TESTING PER RELEVANT OPS SPECIFICATIONS AND THE RESULTS OF THE QA TESTING WILL DETERMINE THE ACCEPTANCE OR REJECTION OF PLACED MATERIALS.

(a) – 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.

(b) – GRANULAR 'A' TO MEET OR EXCEED OPS 1010 AND SHALL BE QUARRIED BEDROCK OR RECYCLED CONCRETE MATERIAL. 30% RAP MAY BE PRESENT IN GRANULAR 'A' MATERIAL. STELL SLAG NOT PERMITTED IN GRANULAR 'A'.

(c) – 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.

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 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 DEPARTMENT. ALL GRASS AND VEGETATION COVERED AREAS SHALL BE RESTORED 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. 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. 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.
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 MIN. COMPACTION OF 95% S.P.D. AT ALL DEPTHS.
7. 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.
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. BENCHING 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 OBVERT OF THE PIPE.
3. 3. SAFETY PLATFORMS AS PER O.P.S.D. 404.020 TO BE INSTALLED ONLY IN MANHOLES WHERE DEPTHS EXCEED 5.0M AS DIRECTED BY THE REGION AND AS INDICATED ON THE PROFILE DRAWINGS.
4. 4. SANITARY SEWER PIPE SHALL BE PVC SDR35 CONFORMING TO A.S.T.M. D3034 UNLESS OTHERWISE NOTED.
5. 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. 6. SERVICES TO BE MIN. 2.15M AND MAX. 2.75M DEEP AT PROPERTY LINE. RISERS SHALL BE USED WHERE NOTED AS PER OPSD 1006.01.
8. 7. CLASS "B" BEDDING ON ALL SEWERS AND CONNECTIONS TO BE AS PER O.P.S.D. 1005.02 UNLESS NOTED OTHERWISE
9. 8. 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 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 0.15M BETWEEN WATERMAINS AND SEWERS MUST BE MAINTAINED IF WATERMAIN IS INSTALLED ABOVE SEWER OR 0.50M IF SEWER IS ABOVE WATERMAIN.
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. TWO (2) 63.5MM (2 ½") WITH 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 #S–520, 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 USED.
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, 99.99% 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 ALL 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 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 MAGNESIUM ANODE IS TO BE CONNECTED TO THE FIRST LENGTH OF EXISTING PIPE, AS PER REGION OF HALTON STANDARD DRAWING RH 420.01.
14. ALL VALVES TO OPEN LEFT (COUNTER–CLOCKWISE) AND SHALL HAVE 50MM SQUARE STANDARD AWWA OPERATING NUT.
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)/6.5m (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 CENTRELINE ELEVATION.
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 0.5M 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 AND UNDER. LINE GATE VALVES SHALL HAVE AUGER OF SCREW TYPE VALVE BOXES.
22. ALL WATERMAIN FITTINGS SHALL HAVE MECHANICAL JOINTS.
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 10 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 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. OPERATION OF EXISTING WATERMAINS SHALL BE BY REGION OF HALTON STAFF ONLY.
28. FIRE HYDRANT CAPS SHALL BE COLOUR CODED AS PER NFPA STANDARDS.

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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Email: civil@amcai.com

560, 570 AND 580 WINSTON CHURCHILL BLVD.

TOWN OF OAKVILLE
REGION OF HALTON

GRADING PLAN - NORTH

SCALE: 1:500	DATE: MAY 2019	PROJ No.
DRAWN: A.D.D.	CHK'D: A.M.C.	PLAN No. G-3
DESIGNED: A.M.C.	SHEET 1 OF 2	

FILENAME: O:\1870\1870 – MAST.dwg
PLOTDATE: Nov 25, 2021 – 3:20pm
PLOTTED BY: Jennifer