

ASPHALT 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)
 - 350mm** GRANULAR 'B'*** (b) (c)
- C. CONNECTOR ROADS AND LOCAL ROADS (SUPPORTING TRANSIT)
 - 40mm HL3 (PGAC 64-28)*
 - 80mm HL8 (PGAC 64-28)*
 - 150mm GRANULAR 'A'*** (a)
 - 350mm** GRANULAR 'B'*** (b) (c)

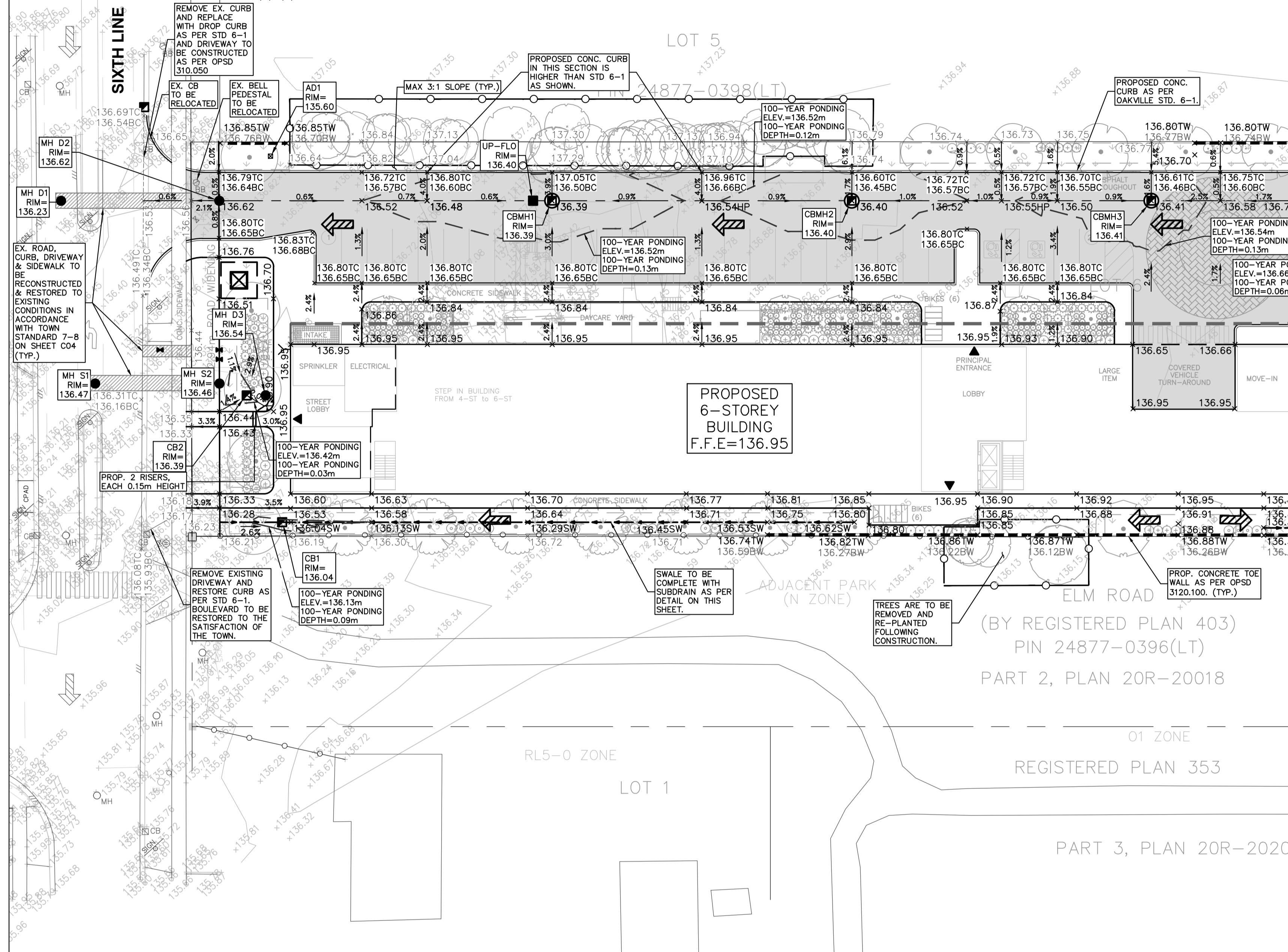
- D. AVENUES AND MINOR ARTERIAL ROADS
 - 40mm HL3 HS (PGAC 64-22)*
 - 100mm HDBC (PGAC 64-22)*
 - 150mm GRANULAR 'A'*** (a)
 - 350mm** GRANULAR 'B'*** (b) (c)
- **- ALL HOT LAID ASPHALTIC CONCRETE SHALL MEET OR EXCEED OPS 1150.
- **- WHERE THE PROJECT OR DEVELOPMENT GEOTECHNICAL REPORT SPECIFIES A GREATER 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 IN GRANULAR 'B' TYPE II OR TYPE I MATERIAL

TO PERFORM QA TESTING PER RELEVANT OPS SPECIFICATIONS AND THE RESULT OF THE QA TESTING WILL DETERMINE THE ACCEPTANCE OR REJECTION OF PLACED MATERIALS.

(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.

(A)-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. STEEL SLAG NOT PERMITTED IN GRANULAR 'A'.

(B)-GRANULAR 'B' TYPE II SHALL BE 100% QUARRIED BEDROCK MEETING OR EXCEEDING OPS 1010. GRANULAR 'B' TYPE I COMPRISED OF 100% RECYCLED CONCRETE MEETING OR EXCEEDING OPS 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



REGISTERED PLAN 353

PART 3, PLAN 20R-20203

GENERAL NOTES:

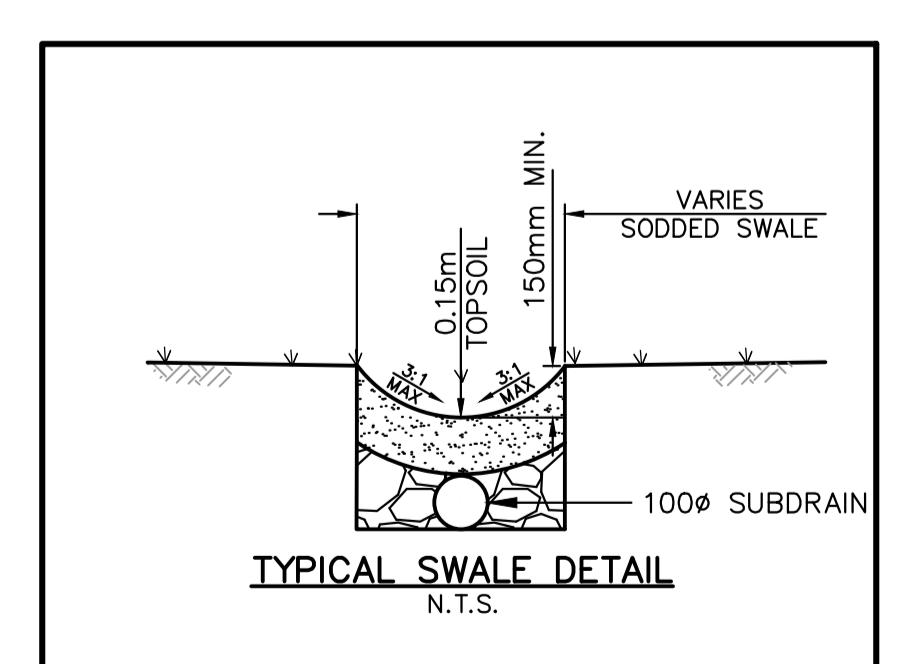
- THE ELEVATION AT STREET LINE FOR LOT DRAINAGE SHALL BE 150mm HIGHER THAN THE FINISHED ROAD CROWN.
- ALL MATERIALS SHALL MEET OR EXCEED ONTARIO PROVINCIAL STANDARD AND TOWN STANDARD SPECIFICATIONS.
- WATERMAINS AND SANITARY SEWERS TO CONFORM TO LATEST REGIONAL MUNICIPALITY OF HALTON SPECIFICATIONS AND REQUIREMENTS
- CONTRACTOR TO VERIFY THE LOCATION AND INVERTS OF EXISTING WATER, STORM AND SANITARY CONNECTIONS TO THE SITE. REPORT TO THE ENGINEER ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
- ALL BUILDINGS & ROADS ARE TO BE LOCATED BY CO-ORDINATES AS CALCULATED BY A ONTARIO LAND SURVEYOR.
- THE CONTRACTOR MUST CONTACT THE ENGINEER PRIOR TO CONSTRUCTION TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING DURING WHICH CONSTRUCTION METHODS, TIMING, AND INSPECTION WILL BE DISCUSSED.
- NO ROOFTOP STORAGE PROPOSED
- THE DEPTH OF PONDING AND DEPTH OF FLOW WILL NOT EXCEED 0.3m.

SITE GRADING:

- ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
- ALL ELEVATIONS ARE TO GEODETIC DATUM.
- ALL EXCAVATION, FILL PLACEMENT AND COMPACTION TO BE IN ACCORDANCE WITH GEOTECHNICAL CONSULTANTS REPORT.
- CONTRACTOR TO EMPLOY GEOTECHNICAL CONSULTANT FOR PERFORMANCE OF IN PLACE TESTING DURING THE PREPARATION OF THE SUBGRADE AND CONSTRUCTION OF THE ROAD STRUCTURE TO VERIFY THE ADEQUACY OF PROPOSED ROAD STRUCTURE AND SUBGRADE.
- CHANGES TO GRADE SHALL BE FORMED BY SMOOTH CURVES.
- IT IS THE RESPONSIBILITY OF THE APPLICANT TO ENSURE COMPLIANCE WITH ALL APPLICABLE PROVINCIAL STANDARDS AND TO OBTAIN ALL PROVINCIAL APPROVALS, INCLUDING BUT NOT LIMITED TO ENVIRONMENTAL COMPLIANCE APPROVALS.

STREET SECTION DETAILS:

- MAXIMUM ROADWAY PROFILE GRADIENT SHALL BE 6%. MINIMUM ROADWAY PROFILE GRADIENT SHALL BE 0.5%.
- SUB-GRADE SHALL HAVE A CROSS-FALL OF -3% FROM CENTRELINE OF ROAD.
- ALL GRANULARS AND ASPHALT LAYERS SHALL HAVE A CROSSFALL 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)
- TOP COURSE ASPHALT 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.
- FULL LENGTH SUB-DRAINS ARE TO BE INSTALLED ON BOTH SIDES OF THE ROAD.
- CONCRETE CURBS SHALL BE OPSD 600.060 FOR STANDARD STREET SECTION STD 7-21A AND 7-22B (LANEWAYS).
- 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 OF 600.040 IN NEW DEVELOPMENT AREAS WHERE TWO STAGE CURB AND GUTTER IS REQUIRED.
- EARTHEND BOULEVARD AREAS SHALL BE OVERLAIN WITH 200mm TOPSOIL AND NO. 1 NURSERY SOD PER PARKS AND OPEN SPACE DEPARTMENT SPECIFICATIONS.
- SIDEWALKS SHALL CONFORM TO OPSD 310.010.
- SIDEWALK RAMPS AT INTERSECTIONS AND MID-BLOCK CROSSINGS SHALL CONFORM TO OPSD 310.030 WITH THE REQUIREMENT THAT THE RAMP GRADIENT SHALL NOT EXCEED 5%.



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THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY & HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE & PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

DESIGN	DATE	SCALE
IA	JUNE 2025	1:300
DRAWN	PROJECT NO.	
HS	25-7018	
CHECKED	DRAWING NO.	
JC	C01	2
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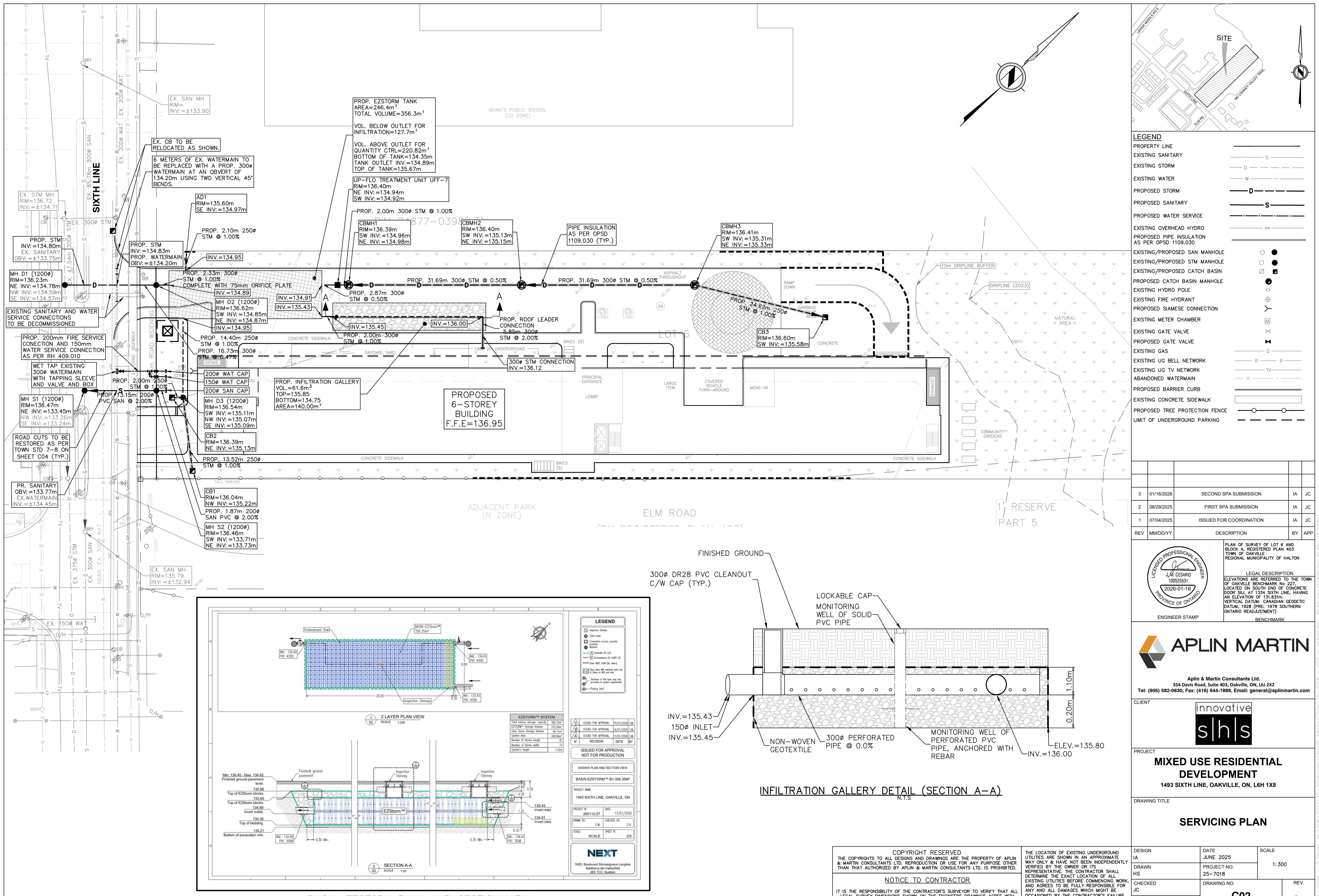
APLIN MARTIN
Aplin & Martin Consultants Ltd.
354 Davis Road, Suite 403, Oakville, ON, L6J 2X2
Tel: (905) 582-0630, Fax: (416) 644-1889, Email: general@aplinmartin.com

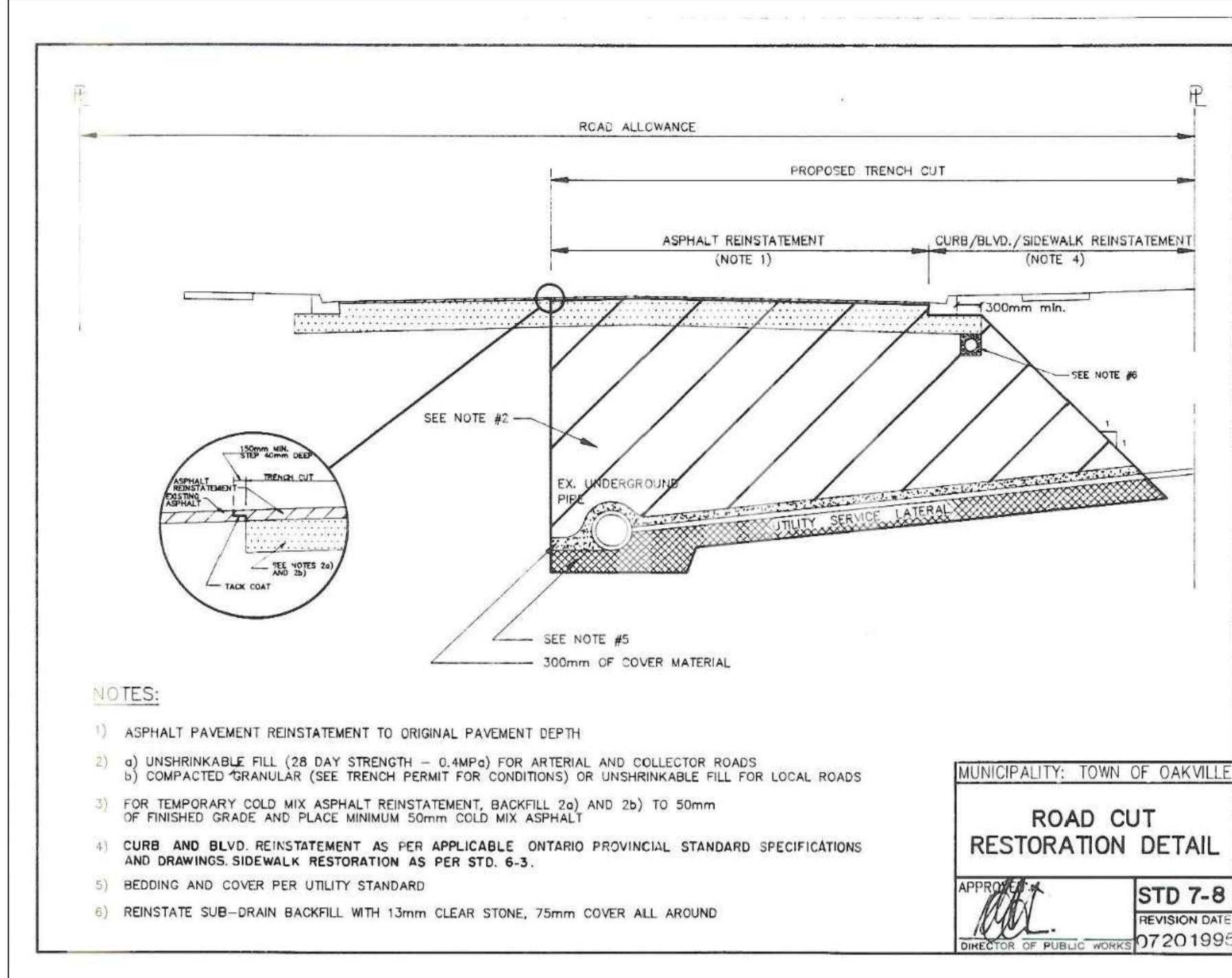
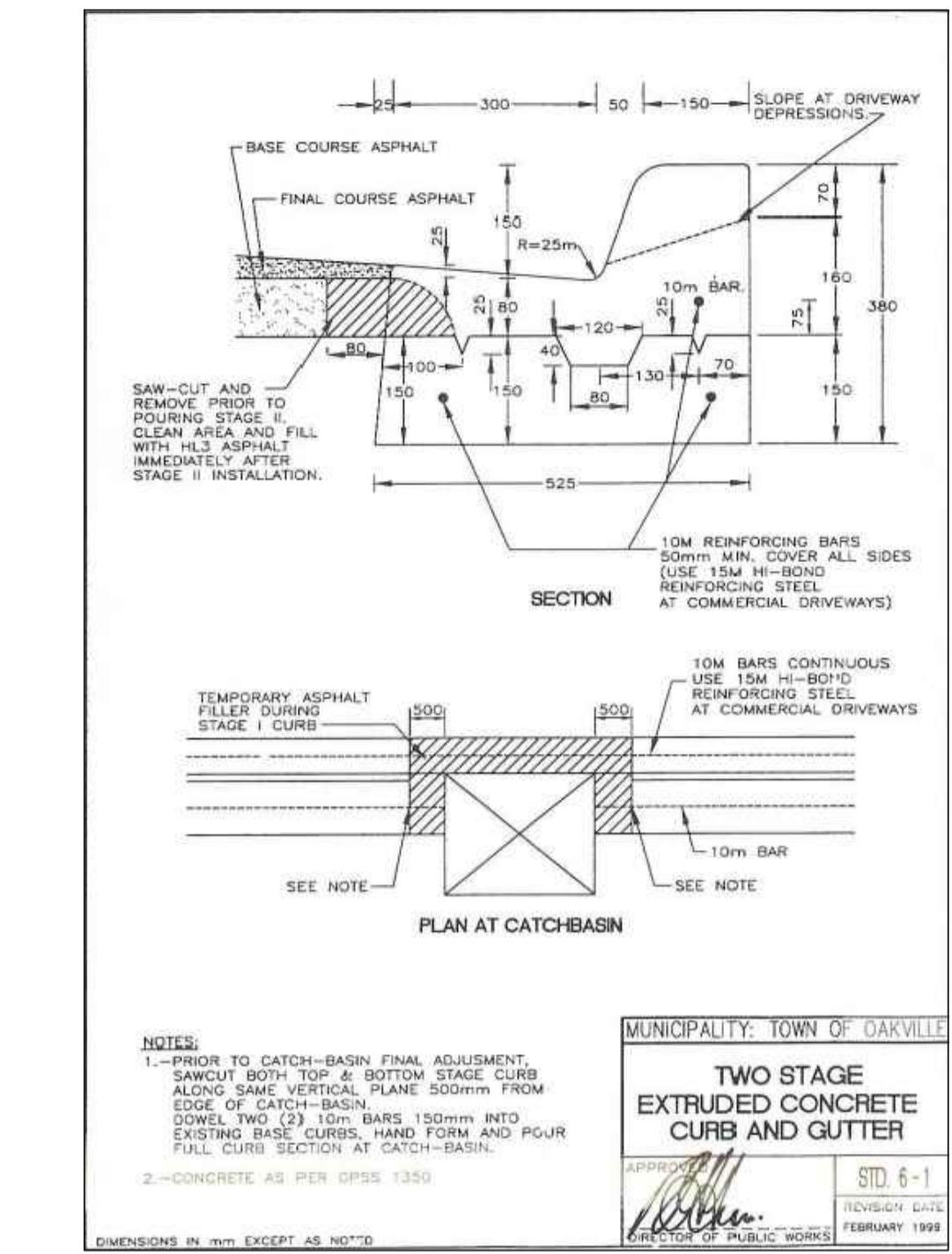
CLIENT
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PROJECT
MIXED USE RESIDENTIAL DEVELOPMENT
1493 SIXTH LINE, OAKVILLE, ON, L6H 1X8

DRAWING TITLE

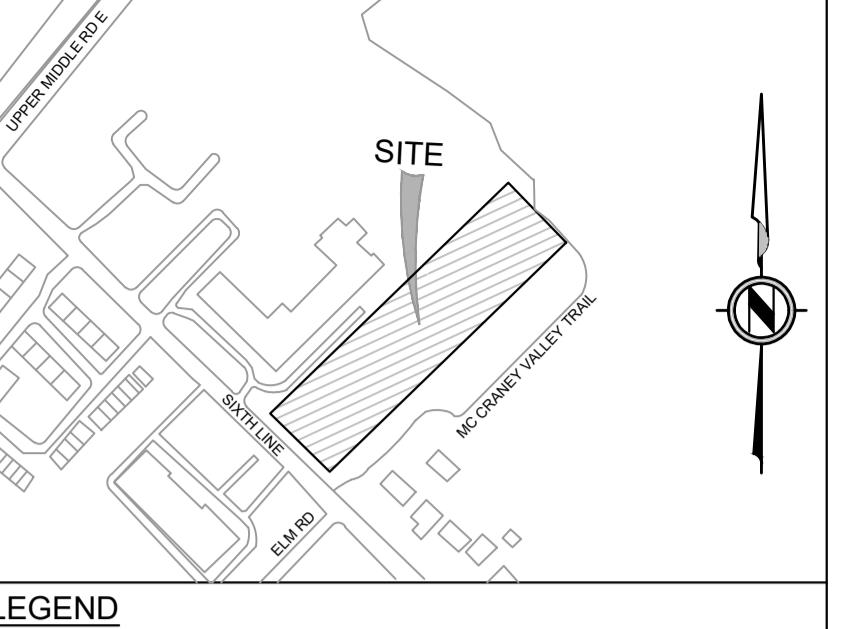
GRADING PLAN





GENERAL NOTES:

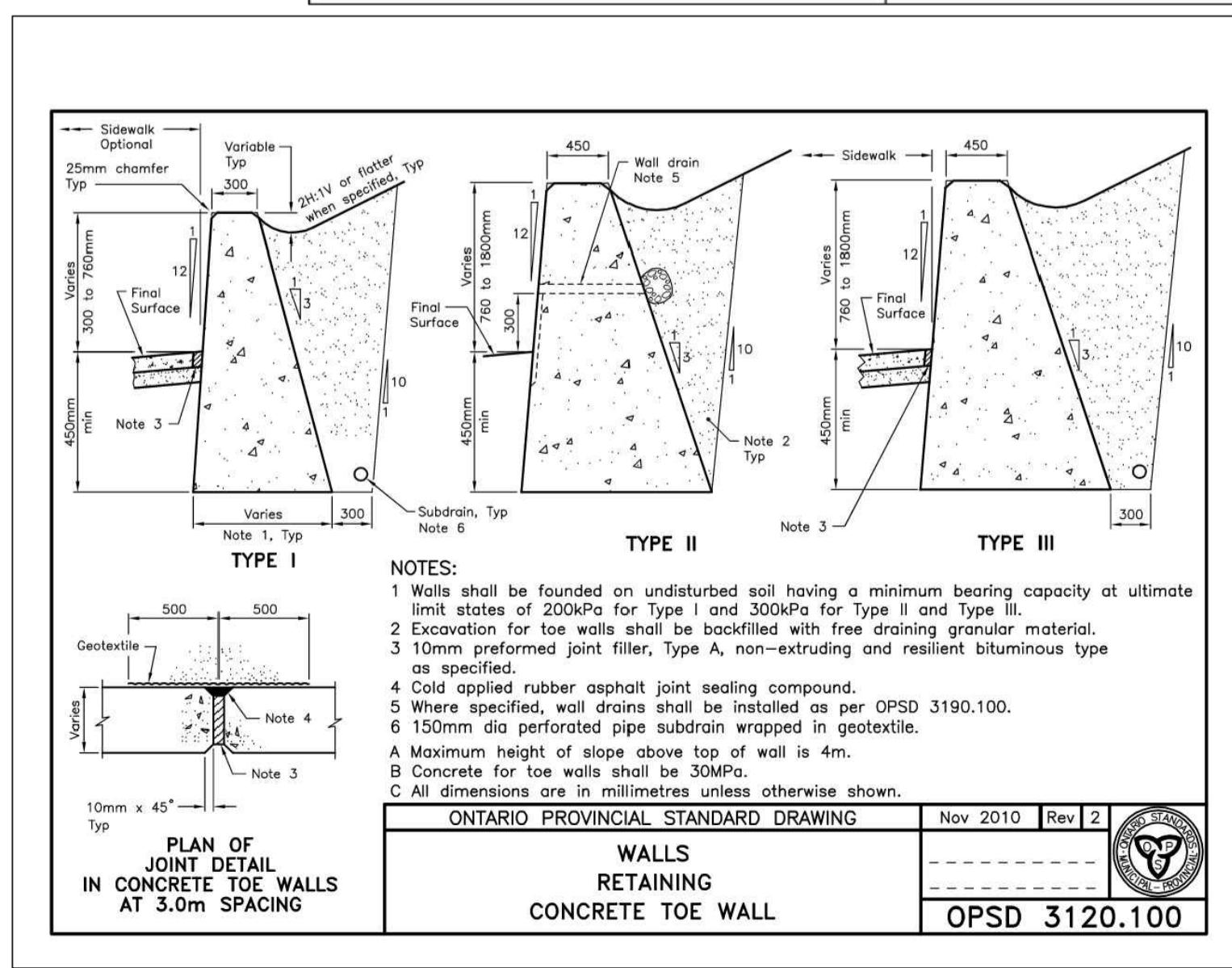
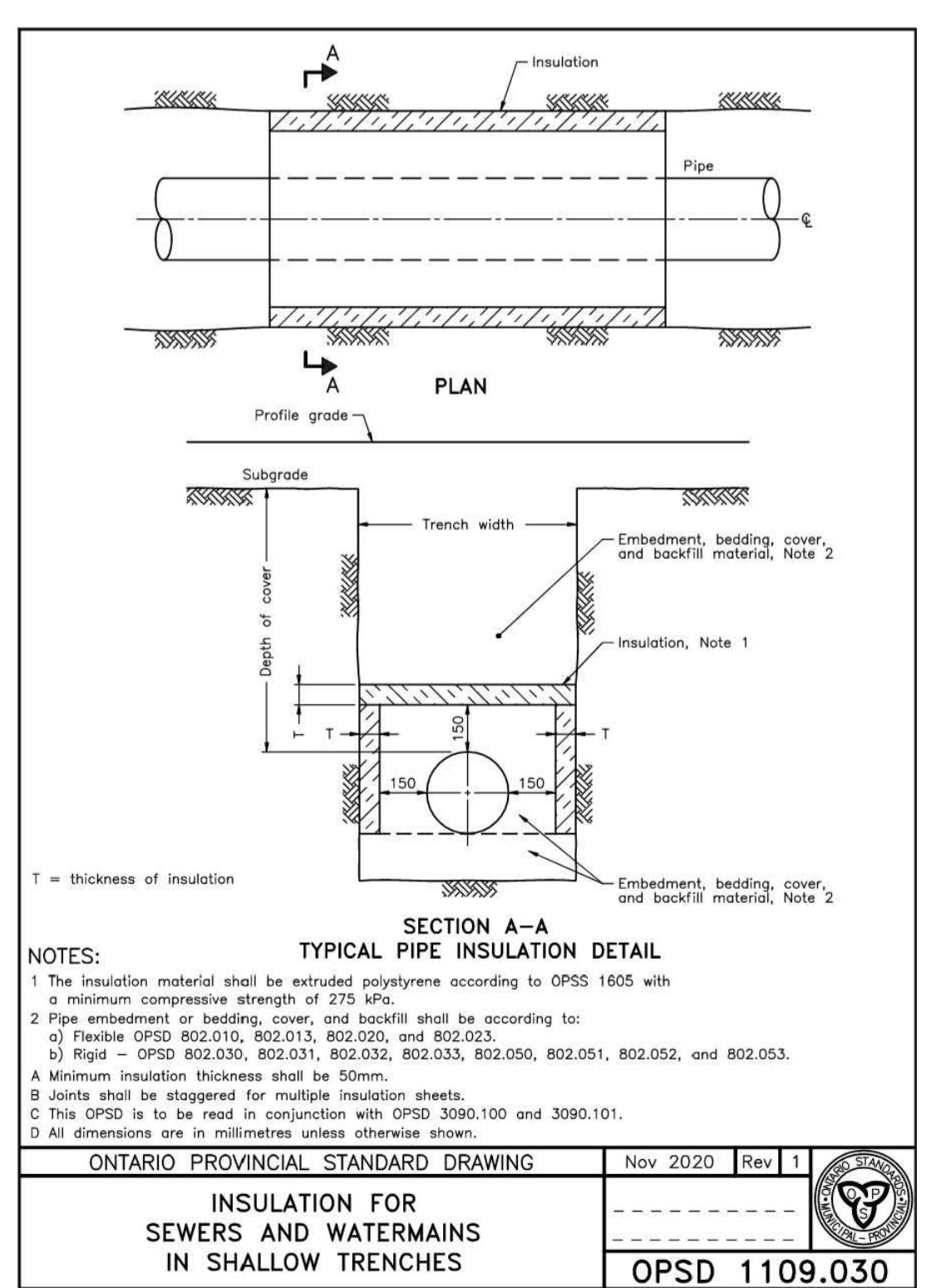
1. STANDARD DRAWINGS AND SPECIFICATIONS OF THE TOWN OF OAKVILLE AND THE REGION OF HALTON SHOULD BE READ IN CONJUNCTION WITH THE INFORMATION HEREIN.
2. MATERIAL SUBSTITUTIONS MUST HAVE PRIOR APPROVAL OF THE ENGINEER, TOWN OF OAKVILLE & REGION OF HALTON AND ANY OTHER REGULATORY AGENCIES HAVING JURISDICTION.
3. NO BLASTING IS REQUIRED OR ALLOWED.
4. COMPACTION OF GRANULAR BACKFILL AROUND CATCHBASINS AND MANHOLES TO BE 95% S.P.M.D.D. AND SHALL BE COMPACTED MECHANICALLY.
5. SEWER BEDDING TO BE AS PER TOWN OF OAKVILLE STANDARDS.
6. FILL AREAS GREATER THAN 0.3m WITHIN MUNICIPAL RIGHT-OF-WAY ARE SUBJECT TO COMPACTION TESTS TO ACHIEVE 100% S.P.M.D.D.
7. SET MANHOLE AND CATCHBASIN TOPS FLUSH WITH HLB ASPHALT AND ARE TO BE ADJUSTED TO FINAL GRADE PRIOR TO PLACING FINAL LIFT OF ASPHALT.
8. TOWN OF OAKVILLE STANDARD 6-1 TO BE USED FOR CURB AND GUTTER WITHIN THE RIGHT-OF-WAY UNLESS OTHERWISE NOTED.
9. TOWN OF OAKVILLE STANDARD 6-3 TO BE USED FOR ALL SIDEWALK WITHIN THE RIGHT-OF-WAY. SIDEWALK DEPRESSIONS TO BE INSTALLED AT INTERSECTIONS. INTERSECTION RADIUS TO BE 7.50m UNLESS OTHERWISE NOTED.
10. PAVEMENT STRUCTURES ARE AS PER SOIL INVESTIGATION REPORT TO BRONTE GREEN CORPORATION "PROPOSED RESIDENTIAL DEVELOPMENT" BY SOIL ENGINEERS LTD., REFERENCE NO. 1611-S034(A), DATED APRIL 2017: 40mm HLB ASPHALT SURFACE COURSE 50mm HLB ASPHALT BINDER COURSE 150mm GRANULAR 'A' BASE 350mm - 50mm CRUSHER-RUN LIMESTONE GRANULAR SUB-BASE
11. ANY ORGANIC MATERIAL OR TOPSOIL WITHIN FUTURE ROAD ALLOWANCES SHALL BE STRIPPED PRIOR TO CONSTRUCTION.
12. ALL TRENCHES WITHIN EXISTING R.O.W. TO BE BACKFILLED WITH GRANULAR MATERIAL AND COMPACTED TO 95% S.P.M.D.D.
13. ALL TRENCHES WITHIN A REGIONAL R.O.W. TO BE BACKFILLED WITH GRANULAR MATERIAL AND COMPACTED TO 98% S.P.M.D.D.
14. SUBDRAINS TO BE INSTALLED AS PER TOWN OF OAKVILLE STD. 6-2 UNLESS OTHERWISE NOTED.
15. ALL MATERIALS SHALL MEET OR EXCEED ONTARIO PROVINCIAL STANDARD AND TOWN STANDARD SPECIFICATIONS
16. 17. WATERMAINS AND SANITARY SEWERS TO CONFORM TO LATEST REGIONAL MUNICIPALITY OF HALTON SPECIFICATIONS AND REQUIREMENTS.
17. REFER TO ONTARIO BUILDING CODE SECTION 7.2.4.4 REGARDING FITTINGS RESTRICTED IN USE.
18. REFER TO ONTARIO BUILDING CODE SECTION 7.2.10.5 REGARDING SADDLE HUBS.
19. REFER TO ONTARIO BUILDING CODE SECTION 7.3.5.4 REGARDING FROST PROTECTION OF SERVICES.
20. REFER TO ONTARIO BUILDING CODE SECTION 7.3.5.7 REGARDING SPATIAL SEPARATION OF SERVICES.



LEGEND

WATERMAINS:

1. 150mm DIA. TO 300mm DIA. WATERMAIN TO BE PVC CL.235 (DR-18) WITH GASKETED JOINTS PER AWWA C-900, C-905 & C-907.
2. MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMAINS AND SEWERS. A 0.5m SEPARATION BETWEEN WATERMAINS AND SEWERS MUST BE MAINTAINED AT ALL CROSSING LOCATIONS.
3. BEDDING TO BE SUITABLE GRANULAR 'A' MATERIAL WITH MINIMUM 150mm DEPTH AND SHALL CONFORM TO OPSS 514
4. ALL WATERMAIN WILL BE SUBJECT TO PRESSURE TESTING AND FIRE FLOW TESTING AS DIRECTED BY HALTON REGION
5. SACRIFICIAL ANODES SHALL CONFORM TO ASTM B-418 TYPE II AND SHALL BE MADE OF HIGH GRADE ELECTROLYTIC ZINC, 99.99% PURE.
6. ALL METALLIC WATERMAINS, FITTING, HYDRANTS AND RESTRAINERS TO HAVE ONE ZINC ANODE PER LENGTH OF PIPE IN SIZES IN ACCORDANCE WITH TABLE IN OAKVILLE GENERAL ENGINEERING NOTES AND INSTALLED IN ACCORDANCE WITH REGION OF HALTON STANDARD DRAWING RH 420.01 AND RH 420.02.
7. ANODES ARE NOT REQUIRED WITHIN VALVE-CHAMBERS, DRAIN CHAMBERS OR AIR RELEASE CHAMBER.
8. WELD CONNECTIONS TO BE COATED WITH "TC MASTIC" OR APPROVED EQUIVALENT.
9. 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.
10. WHERE NEW PIPE IS TO BE CONNECTED TO EXISTING DUCTILE IRON OR CAST IRON PIPE A 14.5 KG MAGNESIUM ANODE IS TO BE CONNECTED TO THE FIRST LENGTH OF EXISTING PIPE, AS PER REGION OF HALTON STANDARD DRAWING RH 420.01.
11. VALVES TO OPEN LEFT (COUNTER CLOCKWISE) AND HAVE A STANDARD 50mm SQUARE OPERATION NUT.
12. ALL PLUGS, CAPS, TEES & HYDRANTS AND BENDS WILL HAVE APPROVED MECHANICAL THRUST RESTRAINTS. CONCRETE THRUST BLOCKS SHALL ONLY BE USED IN SPECIAL CIRCUMSTANCES WITH THE APPROVAL OF THE REGION OF HALTON.
13. WATERMAIN INSTALLATION WITHIN EXISTING R.O.W. SHALL BE BACKFILLED WITH GRANULAR 'A'.
14. GATE VALVES CONFORMING TO AWWA C500 AND THE REGION OF HALTON SPECIFICATIONS SHALL BE PROVIDED ON WATERMAINS UP TO AND INCLUDING 300mm DIA.
15. WATERMAIN FITTINGS TO HAVE MECHANICAL JOINTS.
16. VERTICAL OR HORIZONTAL PIPE DEFLECTION TO BE IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATIONS.
17. TRACER WIRE SHALL BE INSTALLED ON ALL NEW PVC AND POLYETHYLENE PIPE. A SOLID GAUGE TWU COPPER WIRE SHALL BE INSTALLED ALONG THE TOP OF THE PIPE STRAPPED TO THE PIPE AT 6m INTERVALS. THE WIRE SHALL BE INSTALLED BETWEEN EACH VALVE AND/OR THE END OF THE NEW PVC WATERMAIN. JOINTS IN THE WIRE ARE 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 HALTON STD DRAWING RH 4-4-4.04 OR RH 400.05
18. HYDRANTS TO BE INSTALLED SUCH THAT THE LOWER ROD STEM SHALL NOT EXCEED 1.7m MEASURED FROM THE BREAKOFF FLANGE.
19. ALL HYDRANTS AS PER O.P.S.D. 1105.010 AND RH400.02 TO HAVE STEAMER CONNECTIONS.
20. MINIMUM DEPTH OF COVER OVER WATERMAIN SHALL BE 1.70m MEASURED FROM THE ROAD CENTERLINE ELEVATION.
21. MINIMUM SEPARATION DISTANCE BETWEEN THE EDGE OF DRIVEWAY AND FACE OF FIRE HYDRANT IS 1.0



STORM SEWERS:

1. MANHOLES TO BE AS PER O.P.S.D. 701.010 - 701.015 WITH COVER AND FRAME AS PER O.P.S.D.
2. CONCRETE PIPE TO BE CLASS 65-D AS PER CSA A257.2, PVC SDR 35 OR RIBBED PVC CONFORMING TO CSA B.182.2 (MAX PVC = 600mm DIA).
3. CATCHBASINS TO BE AS PER O.P.S.D. 705.01 FOR SINGLES AND 705.02 FOR DOUBLES. GRATES TO BE AS PER O.P.S.D. 400.11. CATCHBASINS LEADS TO BE 250mm DIA. FOR SINGLES AND 300mm DIA FOR DOUBLES AS PER CSA B182.2 SDR-35.
4. ALL POLYVINYL CHLORIDE (PVC) PIPE SHALL MEET THE C.S.A. REQUIREMENTS AS NOTED WITHIN THE OPSS 1841, THE PIPE MATERIAL SHALL HAVE A CELL CLASSIFICATION OF 12454-B OR 12454-C OR ASTM D-3034 AND OPSS 1841.
5. SILT TRAPS WITH FILTER FABRIC TO BE INSTALLED ON ALL CATCHBASINS AS PER THE EROSION AND SEDIMENT CONTROL PLAN. TRAPS TO BE CLEANED REGULARLY BY THE CONTRACTOR. TRAPS ARE NOT TO BE REMOVED UNTIL CURBS ARE CONSTRUCTED AND BOULEVARDS ARE SODDED AND BACKYARDS ARE GRADED AND SODDED.
6. RUBBER GASKETED JOINTS ARE TO BE USED ON ALL STORM SEWER.
7. CONNECTIONS TO MAIN SEWERS SHALL BE ACHIEVED USING 'Y' FITTINGS ONLY.
8. THE AREA DRAIN SPECIFIED BY THE MECHANICAL ENGINEER IS AS FOLLOWS: ZURN Z-610-H-ADJ 12" [305] SQUARE TOP ADJUSTABLE FLOOR DRAIN, DURA-COATED CAST IRON BOTTOM OUTLET BODY, CLAMPING COLLAR, ADJUSTABLE LEVELING FRAME, WITH HEAVY-DUTY CAST IRON HINGED SLOTTED GRATE.

