FUNCTIONAL SERVICING REPORT

Creditmills Development Corp

Type of Document:
Final Report

Project Name:
1295 Sixth Line, Oakville

Project Number:
ALL-23015173-A0

Prepared and Reviewed By:
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Approved By:
Scott Passmore

Date + Time Submitted:
2024-01-25

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1. Introduction

EXP Services Inc. has been retained by Rosethorn Developments ("Owner") to prepare a Functional Servicing Report (FSR) in support of an application for an Official Plan and Zoning By-Law Amendment on approximately 0.38 ha of land in the Town of Oakville and Region of Halton. The subject land is municipally known as 1295 Sixth Line. Refer to Figure 1 for site location plan.

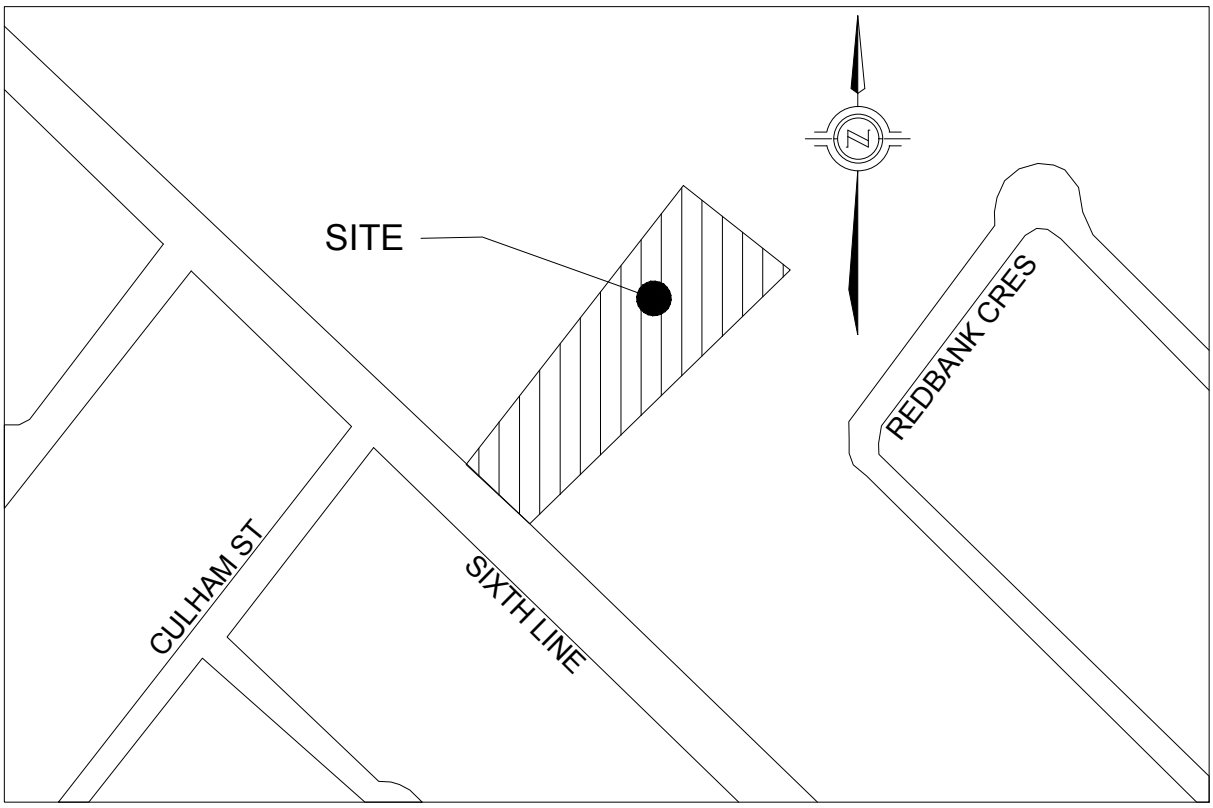
The subject lot is currently occupied by a residential unit with driveway access from Sixth Line. The proposed development will include a six-storey apartment building with 70 units within 6,160.4 m^2 of Gross Floor Area (GFA). A total of 80 parking spaces will be provided through one level of underground parking. Refer to the Owner's Site Plan located in Appendix A for reference.

Finally, the objective of this FSR is to give an overview of the proposed servicing strategy for the site including outlining the required demands on the municipal system while addressing any corresponding capacity concerns.

2. Site Characteristics

The development site is 0.38 hectares in size and is bound by Sixth line to the west, a residential apartment building to the south, and the White Oaks secondary school park block to the north and east. The site is located within the Sixteen Mile Creek watershed outside of Conservation Halton's (CH) regulated area. It has also been confirmed to be outside of the Ministry of Transportation Ontario (MTO) controlled area. Refer to figure 1 for Site Location Plan

The application proposed is to redevelop the site into a six (6) storey residential apartment building with 70 new units including one level of underground parking. Driveway access for the proposed residential apartment building will be to Sixth Line. Refer to the Preliminary Site Plan (prepared by Rick Brown and Associates Inc) in Appendix A for additional information.



Project:	1295 SIXTH LINE, OAKVILLE, ON		
Title:	LOCATION PLAN		
Approved by: S.P	Date: JAN, 2024	Project No.: ALL-23015173-A0	
Drawn by: N.M	Scale: N.T.S.	Figure no.: FIG-01	

E:\MRK\ALL-23015173-A0\60 Execution\65 Drawings\Civil\xxxx-FIG-01 LOCATION PLAN.dwg

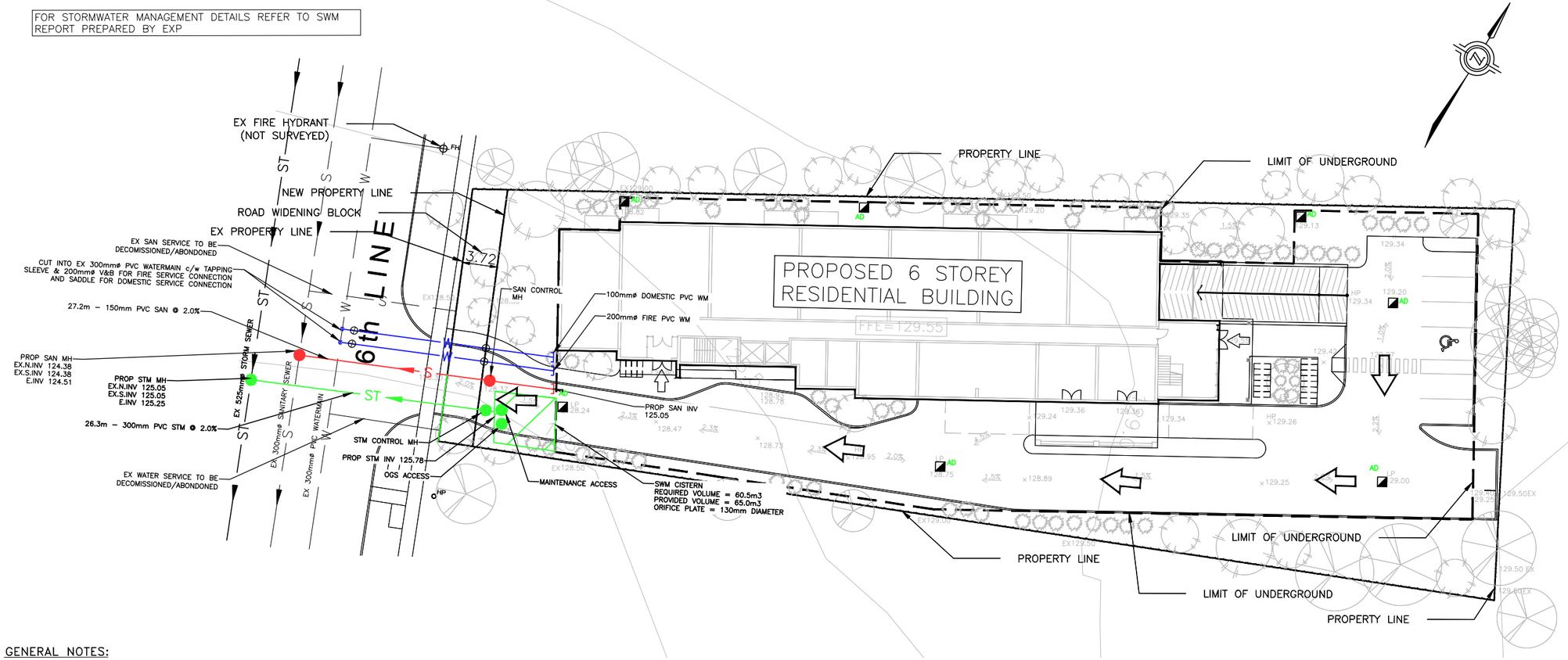
3. Existing Topography and Proposed Grading

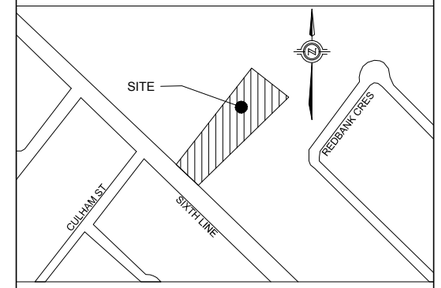
To assess the existing site topography within and surrounding the site, EXP staff reviewed available topographic information of the Town of Oakville GIS mapping and VuMap software. The existing site topography shows elevations falling in the range of approx. 1.5 m from the northeast corner of the property to the southwest corner. Currently, there is a single driveway access to Sixth Line. Refer to the Town of Oakville GIS screenshot which is included in Appendix A for reference.

The proposed grading design generally maintains the existing drainage patterns for the site, while meeting Town of Oakville criteria and ensuring emergency major overland flow is directed west towards Sixth Line and not to the neighbouring property to the north or south.

Overall, the grading design for the site is to be completed in concert with the proposed stormwater management (SWM) strategy for the site which includes a network of high and low points, an underground SWM cistern, and inlets designed to capture and attenuate all storm events up to and including the 100-year storm event and control to the 5-year pre-development levels. For additional grading details refer to the Preliminary Site Servicing and Grading Plan on Figure 2.

FOR STORMWATER MANAGEMENT DETAILS REFER TO SWM REPORT PREPARED BY EXP





LEGEND:

- PROPERTY LINE
- EXISTING WATER VALVE
- EXISTING HYDRO POLE
- EXISTING TREE
- EXISTING TREE DRIPLINE
- EXISTING OVERHEAD HYDRO WIRES
- EXISTING FENCELINE
- EXISTING CURBS
- EX. STORM M.H.
- EX. SANITARY M.H.
- EX. CATCH BASIN
- PROP. STORM M.H.
- PROP. SANITARY M.H.
- PROP. AREA DRAIN
- PROPOSED CURBS
- PROP. STORM SEWER
- PROP. WATERMAIN
- PROP. SANITARY SEWER
- EX. SANITARY SEWER
- EX. STORM SEWER
- EX. WATERMAIN
- EX. HIGH VOLTAGE CONDUIT
- EX. BELL AND FIBEROPTIC CONDUIT
- EX. GAS
- NEW / EXISTING WATER VALVE AND BOX
- PROPOSED / EXISTING HYDRANT
- MAJOR OVERLAND FLOW
- EX/PROPOSED ELEVATION

GENERAL NOTES:

UNLESS OTHERWISE NOTED ON THIS DRAWING THE FOLLOWING REQUIREMENTS SHALL APPLY.

GENERAL

1. CONSTRUCTION OF SEWERS, AND RELATED APPURTENANCES SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE CURRENT STANDARD DRAWINGS OF THE TOWN OF OAKVILLE, THE REGIONAL MUNICIPALITY OF HALTON, AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).
2. ONTARIO PROVINCIAL STANDARD DRAWINGS TO BE READ IN CONJUNCTION WITH THE REGION OF HALTON REVISIONS.
3. ALL DIMENSIONS ARE IN METRES AND ALL DIAMETERS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
4. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WTH "THE OCCUPATIONAL HEALTH & SAFETY ACT". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONTRACTOR AS DEFINED IN THE ACT.
5. THE CONTRACTOR SHALL OBTAIN ALL PERMITS FOR CONSTRUCTION.
6. ALL TEMPORARY TRAFFIC CONTROL AND SIGNAGE DURING CONSTRUCTION, PERMANENT SIGNS AND LANE MARKINGS SHALL BE IN ACCORDANCE WITH ONTARIO TRAFFIC MANUAL FOR TEMPORARY CONDITIONS AND MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
7. FOR ALL SEWERS AND WATERMAIN IN FILL SECTIONS, THE COMPACTION SHALL BE VERIFIED PRIOR TO LAYING OF PIPE.
8. ALL EXCAVATIONS TO BE BACKFILLED WITH NATIVE MATERIAL, APPROVED BY THE ENGINEER, TO 95% SPD.
9. ALL UNDERGROUND SERVICE CONNECTIONS AND TRENCHES WITHIN PAVED PORTION OF AN EXISTING ROAD ARE TO BE BACKFILLED WITH UNSHRINKABLE MATERIAL.
10. ALTERNATIVE CONSTRUCTION MATERIALS MAY BE ACCEPTABLE, PROVIDED THAT APPROVAL HAS BEEN OBTAINED FROM THE REGIONAL ENGINEER, TOWN OF OAKVILLE AND THE ENGINEER .
11. MUNICIPAL APPROVAL OF THESE DRAWINGS IS FOR MATERIAL AND COMPLIANCE WITH TOWN OF OAKVILLE AND PROVINCIAL SPECIFICATIONS AND STANDARDS ONLY. APPROVAL AND INSPECTION OF THE WORKS BY THE TOWN OF OAKVILLE STAFF DOES NOT CERTIFY THE LINE AND GRADE OF THE WORKS NOR RELIEVE THE CONTRACTOR OF CERTIFICATION OF ALL WORKS BY THE OWNER'S ENGINEER.
12. ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR FOR ACCURACY PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES REPORTED TO THE ENGINEER.
13. ALL SERVICES TO MEET ALL REQUIREMENTS OF THE ONTARIO BUILDING CODE PART 7 CURRENT EDITION

LOCATES AND LIABILITY

1. THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO THE ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE TOWN
2. THE LOCATION OF ALL UNDER/ABOVE GROUND UTILITIES AND STRUCTURES ARE APPROXIMATE ONLY, AND WHERE SHOWN ON THE DRAWING(S) THE ACCURACY OF THE LOCATION OF SUCH UTILITIES ARE NOT GUARANTEED THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL SUCH UTILITIES AND STRUCTURES BY CONSULTING THE APPROPRIATE AUTHORITIES OR UTILITY COMPANIES CONCERNED. THE CONTRACTORS SHALL PROVE THE LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE OR RESTORATION TO SAME.
3. THE OWNER SHALL BE NOTIFIED IMMEDIATELY OF ANY CONFLICTS WITH EXISTING SERVICES.
4. ANY UTILITY WHICH CONFLICTS WITH THE CONSTRUCTION IS TO BE RELOCATED BY THE PROPER AUTHORITY AT THE OWNER'S EXPENSE.

CONSTRUCTION RESPONSIBILITIES

1. LOCATION OF EXISTING UTILITIES SHOWN AND ALL OTHER EXISTING UTILITIES TO BE ESTABLISHED BY CONTRACTOR IN THE FIELD. THE CONTRACTOR HAVING UNCOVERED ANY UTILITIES THAT ARE NOT SHOWN ON THE PLAN OR STAKED OUT BY BELL, HYDRO, CABLE & GAS UTILITY COMPANIES WILL IMMEDIATELY ADVISE THE ENGINEER FOR APPROPRIATE ACTION. THE CONTRACTOR IS RESPONSIBLE FOR TRACING AND IDENTIFYING ALL EXISTING PRIVATE UTILITIES WTHIN THE WORK AREAS.
2. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATING, SUPPORTING AND PROTECTING ALL UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF HIS WORK, WHETHER SHOWN ON THE PLANS OR NOT, AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
3. TWO LANES OF TRAFFIC ARE TO BE MAINTAINED AT ALL TIMES DURING THE PERFORMANCE OF THE WORK ON SIXTH LINE. THE CONTRACTOR SHALL ADVISE THE TOWN OF OAKVILLE IN WRITING NOT LESS THAN 48 HRS IN ADVANCE OF START OF CONSTRUCTION AND SHALL ACQUIRE THE APPROPRIATE PARTIAL ROAD CLOSURE PERMITS AS NECESSARY.
4. ALL EXISTING PAVEMENTS, CURBS, SIDEWALKS, DRIVEWAYS AND SODDED BOULEVARD AREAS DISTURBED BY THE WORK ARE TO BE REINSTATED EQUAL TO EXISTING AND TO THE SATISFACTORY OF THE TOWN OF OAKVILLE.
5. NEW MANHOLES AND VALVE BOXES, EXISTING VALVE AND CHAMBERS, HYDRANT AND BELL PEDESTALS AND UTILITIES TO BE SET TO FINAL BOULEVARD AND PAVEMENT GRADES.
6. THE CONTRACTOR SHALL NOTIFY IN ADVANCE, AS REQUIRED, THE APPROPRIATE AUTHORITY HAVING JURISDICTION FOR THE ROAD PRIOR TO COMMENCING ANY WORK AND SHALL ACQUIRE AND SATISFY THE REQUIREMENTS OF THE APPROPRIATE PERMITS (FEES, INSPECTIONS, SIGNAGE, TRAFFIC MAINTENANCE, DIVERSION, ETC) FROM THE AUTHORITY.
7. THE CONTRACTOR SHALL SUPPLY AND PLACE TRAFFIC SIGNAGE IN CONFORMANCE WITH THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PRIOR TO COMMENCING ANY WITHIN THE MUNICIPAL ROAD/LANE ALLOWANCE.

SANITARY SEWERS

1. SANITARY SEWERS SHALL BE PVC. PVC PIPE IS TO BE BELL AND SPIGOT AND COMPLY TO ASTM D-3034 WITH MINIMUM SDR 35.
2. MINIMUM BEDDING REQUIREMENTS FOR ALL SANITARY SEWER MAINS AND RELATED CONNECTIONS IN A SINGLE TRENCH SHALL BE CLASS B GRANULAR BEDDING AS PER OPSD 802.010 UNLESS OTHERWISE NOTED.
3. SANITARY SEWER MANHOLES FRAME AND COVER AS PER OPSD 401.01.
4. ALL PVC LATERALS TO BE SDR 28 AND SHALL BE ANY COLOUR EXCEPT WHITE. MINIMUM SLOPE OF LATERAL TO BE 2.0%.
5. SINGLE SERVICE CONNECTIONS TO BE MINIMUM 150mm DIA PIPE.
6. TAPPING AT EXISTING SANITARY SEWERS SHALL BE UNDERTAKEN IN ACCORDANCE WITH REGION OF HALTON REQUIREMENTS.
7. ALL SEWERS TO BE VIDEO INSPECTED.
8. ALL SEWERS TO BE FLUSHED PRIOR TO VIDEO INSPECTION.
9. ALL PVC SEWERS ARE TO BE TESTED FOR DEFLECTION (MANDREL PASSAGE) AFTER INSTALLATION. SANITARY SEWERS SHALL ALSO BE TESTED FOR LEAKAGE (LOW AIR PRESSURE). PRIOR TO ASSUMPTION BY THE TOWN, PIPE DEFLECTION TESTING SHALL BE REPEATED.

STORM SEWERS

1. ALL PIPES GREATER THAN 375mm DIA SHALL BE STEEL REINFORCED CONCRETE AND SHALL CONFORM TO OPSS 1820 MATERIAL SPECIFICATION.
2. ALL SEWER PIPE UP TO AND INCLUDING 375mm DIA SHALL BE PVC, BELL AND SPIGOT AND SHALL COMPLY TO ASTM D-3034 WITH MINIMUM SDR 35.
3. MINIMUM BEDDING REQUIREMTNS FOR ALL SINGLE STORM SEWER MAINS AND ALL RELATED CONNECTIONS SHALL BE HIGH PERFORMANCE CLEAR STONE (HL-8 GRADED) AS PER TOWN OF OAKVILLE STANDARD DRAWING S-188.
4. STORM SEWER MANHOLES SHALL BE IN ACCORANCE WITH OPSD 701.010 AND 703.010. FRAME AND COVER AS PER OPSD 401.01 TYPE A. FRAMES TO BE STAMPED "DANGER" AND "STORM".
5. MANHOLE TOPS SHALL BE INITIALLY SET TO BASE COURSE ASPHALT ELEVATION AND ADJUSTED TO GRADE PRIOR TO PLACEMENT OF TOP LIFT OF ASPHALT.
6. ALL TRENCH EXCAVATIONS ARE TO BE BACKFILLED WITH SELECT NATIVE MATERIAL PLACED IN MAXIMUM 200mm LIFT THICKNESS WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO A MINIMUM OF 95% SPD, UNLESS OTHERWISE SPECIFIED.
7. ALL SEWERS TO BE VIDEO INSPECTED.
8. ALL SEWERS TO BE FLUSHED PRIOR TO VIDEO INSPECTION.
9. ALL PVC SEWERS ARE TO BE TESTED FOR DEFLECTION (MANDREL PASSAGE) AFTER INSTALLATION. PRIOR TO ASSUMPTION BY THE CITY, PIPE DEFLECTION TESTING SHALL BE REPEATED.

WATERMAINS

1. FLEXIBLE WATERMAIN PIPE UP TO 300mm DIAMETER TO BE PVC DR-18 AND CONFORM TO A.W.W.A. C-900 WITH MECHANICAL JOINTS AS PER A.W.W.A. C-110, AND TO BE INSTALLED WITH A 10 GAUGE TRACER WIRE.
2. FLEXIBLE PIPE BEDDING TO BE OPSD 802.010 WITH COMPACTED GRANULAR B MATERIAL.
3. MINIMUM COVER TO BE 1.7m TO TOP OF PIPE.
4. DEFLECTION AT JOINTS NOT TO EXCEED 2.5 DEGREES AND SHALL BE EQUAL AT ALL JOINTS.
5. GATE VALVES AND BOXES FOR 150mm DIAMETER WATERMAINS AS PER A.W.W.A. STANDARD C-500 AND ARE TO OPEN TO THE LEFT (COUNTER CLOCKWISE).
6. HYDRANTS SHALL MEET THE REQUIREMENTS OF A.W.W.A. STANDARD C-502 AND SHALL BE SET IN ACCORDANCE WITH REGION OF HALTON, AND TOWN OF OAKVILLE BUILDING DEPARTMENT STANDARDS, COMPLETE WITH STEAMER CONNECTIONS. THE 100mm STEAMER PORT SHALL FACE THE FIRE ROUTE AND SHALL BE UNOBSTRUCTED BY ANY PROPOSED LANDSCAPING.
7. ALL FITTINGS TO HAVE MECHANICAL RESTRAINTS THAT MEET UNI-B-13-92.
8. ALL TEMPORARY AND PERMANENT WATERMAIN PLUGS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH OPSD 1103.01.
9. TAPPING AT EXISTING WATERMAINS SHALL BE UNDERTAKEN IN ACCORDANCE WITH REGION OF HALTON REQUIREMENTS.
10. ALL WATER CUSTOMERS SUPPLIED BY A WATERMAIN TO BE SHUT DOWN SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 48 HOURS IN ADVANCE OF THE SHUT DOWN AS PER REGION OF HALTON SPECIFICATIONS. NOTIFICATION SHALL TAKE PLACE UNDER THE ENGINEER'S DIRECTION.
11. MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAINS (INCLUDING PRIVATE SERVICES) AND STORM AND SANITARY SEWERS SHALL BE 2.5m. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARNACE OF 150mm OVER AND 500mm UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.

NOTE:
- SITE PLAN PREPARED BY RICK BROWN & ASSOCIATES INC.
- EXISTING SERVICING INFORMATION TAKEN FROM TOWN RECORD DRAWINGS AND REGION RECORD DRAWINGS

SCALE: 1:500

	DRAWN BY	CHECKED BY
exp.	N.M	S.P.

PRELIMINARY SITE SERVICING AND GRADING PLAN

FIGURE 2

1295 SIXTH LINE
TOWN OF OAKVILLE

PROJECT NUMBER: ALL-23015173-A0

DATE: JANUARY 2024

4. Water Servicing

Available record drawings show that there is an existing 300 mm diameter watermain located on Sixth Line adjacent to the site, where the site is located within the Region of Halton's Pressure Zone 02. The Town's record drawing for Sixth Line shows that the site is currently serviced through an existing water service connection to the existing 300mm diameter watermain at the southwest of the site. EXP staff then reviewed Town record drawing and confirmed through available images that there is an existing municipal fire hydrant north of the site on Sixth Line. Refer to Appendix A for the Sixth Line record drawing and Appendix B for the Region Water Operating Map.

The Owner's site plan includes one building which is to be constructed under a single phase of construction. Therefore, the water servicing design proposes the following watermain configuration:

- A new private fire service connection to the existing 300 mm diameter watermain on Sixth Line; and,
- A new private domestic service connection to the existing 300 mm diameter watermain on Sixth Line.

The future building plumbing designs are to be coordinated to ensure the proposed FDC connections are within 45 m of the existing fire hydrant in vicinity of the site as per OBC requirements. For additional details regarding the water servicing design refer to the Preliminary Site Servicing and Grading Plan on Figure 2.

To determine the post development domestic water demand on the municipal watermain, the water consumption calculations were prepared in accordance to the Region of Halton criteria. The calculations show that under maximum day conditions, a proposed demand of 1.6 L/s should be considered for the site. Then using the Fire Underwriter's Survey, a fire demand was calculated to be in the range of 183.0 L/s, giving a maximum day plus fire demand of 184.6 L/s to be used for the purposes of reviewing required fire protection measures. For additional details on the proposed water demand refer to calculations provided in Appendix B.

To verify existing flows and pressures within the municipal watermain against proposed demands, it is recommended that a hydrant flow test be completed for the site once the weather permit and any required fire protection measures or building construction be confirmed with the Architect upon the receipt of the flow test results.

5. Sanitary Servicing

Available record drawings show that there is an existing 300 mm diameter sanitary sewer on Sixth Line which flows in the southerly direction. The Town's record drawing shows that an existing sanitary service connection has been provided to the property line adjacent to the site. Refer to Appendix A for the Town's record drawing and Appendix C for the Region Wastewater Operating Map.

The Owner's site plan includes one building which is to be constructed under a single phase of construction. Therefore, the sanitary servicing design proposes the following sanitary configuration:

- One (1) new private sanitary service to the existing 300 mm diameter sanitary sewer on Sixth Line.

After reviewing the conceptual site plan and proposed servicing strategy it was not recommended that the existing sanitary service lateral be reused. Therefore, the existing sanitary lateral is to be decommissioned as per Region of Halton Standards. For calculating the peak sanitary demand for the proposed development, the Region of Halton Criteria and a typical bedroom breakdown equivalent population was used. Based on the Preliminary Site Plan and statistics the total estimated equivalent population for the site was calculated to be approximately 123 persons. After determining the equivalent population the Region of Halton's sanitary demand criteria and corresponding peaking factors were used to give a peak sanitary demand of 1.7 L/s including infiltration. Refer to Appendix C for sanitary calculations.

Downstream Sanitary Analysis

Once the sanitary calculations showed a post development increase for the site, EXP Staff reached out to Region Staff to discuss available sanitary capacity within the existing infrastructure. EXP staff held a meeting with Region Staff on January 10th, 2024 to reviewed the sanitary capacity allowances for the site. Through the meeting it was agreed that EXP would conduct a Sanitary Downstream Analysis of the sanitary catchment to an agreed upon termination point. Record drawings obtained from Town and Region staff show a sanitary catchment with a catchment area of 23.85 ha and corresponding equivalent population of 2,164 persons.

The results of the analysis show that under dry weather conditions there additional flows from the development increase the full flow capacity of the most critical section of the sanitary spine by 1.4% where no surcharging is expected and all flow remains within the sewer below the Reigion's 80% flowing full standards. Under extreme wet weather conditions the analysis shows that the most critical section of the sanitary sewer sees an additional increase in the full flow capacity of approximately 1.3%.

The analysis shows that under dry weather conditions the proposed development increases the full flow capacity of the most critical section of the sanitary spine by 1.4%. In a similar way, under extreme wet weather conditions the most critical section of the sanitary sewer saw an additional increase of 1.3%. Therefore, the slight increase on the sanitary demand can be accommodated within the Region sanitary sewer system without any surcharging and below the Region's 80% flowing full standards. See the sanitary catchment plan and downstream sanitary capacity calculations located in Appendix D for reference.

6. Storm Servicing

Record Drawings from the Town of Oakville and the Region of Halton show the following existing stormwater sewers in the vicinity of the site.

- 525mm diameter storm sewer flowing in a southerly direction down Sixth Line.

Town's record drawings do not identify that any existing storm service connection have been provided to the property line. Refer to Appendix A for Town's Record Drawings. Through EXP staff's analysis of the existing elevations, it is believed that the drainage from the site is captured by existing catchbasins on Sixth Line and conveyed south thought the 525mm diameter storm sewer.

After reviewing the Owner's conceptual site plan, it has been confirmed that the development is to one building with one level of underground parking, it was confirmed that a new storm service connection would be required to the existing 525mm diameter storm sewer on Sixth Line. The proposed SWM strategy also includes an underground SWM cistern positioned in the underground parking level to meet the required SWM quantity control requirements. The above mentioned SWM cistern will also incorporate a oil and grit filtration system to meet the sites SWM quality control requirements. For additional details regarding the storm servicing design refer to the Preliminary Site Servicing and Grading Plan on Figure 2. The proposed SWM measures are outlined further in the SWM report prepared by EXP.

7. Groundwater

After reviewing the Owner's Preliminary Site Plan it was noted that the plan is to incorporate one level of underground parking to service the parking needs of the proposed development. EXP staff reviewed the Town of Oakville's standards and recommend that a hydrogeological investigation be conducted as part of the detailed design process. Once completed, EXP Staff will review the findings of the investigation and provide a groundwater management strategy that is in accordance with the Town of Oakville Standards. It is noted that as per the Town Standards and the notes provided within the site's pre-consultation meeting that the Town of Oakville does not support the permanent dewatering of underground parking structures into municipal infrastructure.

8. Utilities

Through correspondence with the active utility agencies in the area, all the required utilities are located within the Sixth Line right-of-way adjacent to the site. Based on the nature of the proposed development and estimated load demands, utility staff have not indicated any issues with providing the necessary utility service for the development to date.

9. Conclusions

In summary, our findings outlined in this FSR report demonstrate that the proposed development can be adequately serviced where the results can be summarized as follows:

- Water servicing can be provided with new fire and domestic water service connections to the existing 300 mm diameter watermain located on Sixth Line
- Adequate fire protection can be provided based on the proposed building design where a hydrant flow test is recommended once weather permits
- Sanitary servicing can be provided with a new sanitary service connection to the existing 300 mm diameter sanitary sewer on Sixth Line
- Sanitary capacity is available within the existing municipal sanitary system based on the findings from the downstream sanitary capacity analysis completed by EXP
- Storm servicing can be provided with a new storm service connection to existing 525 mm diameter storm sewer on Sixth Line
- Stormwater management requirements can be met with the proposed SWM control measures outlined in the SWM Report prepared by EXP
- Groundwater can be adequately managed in accordance to Town of Oakville standards where a hydrogeological investigation is recommended as part of the detailed process

Sincerely,

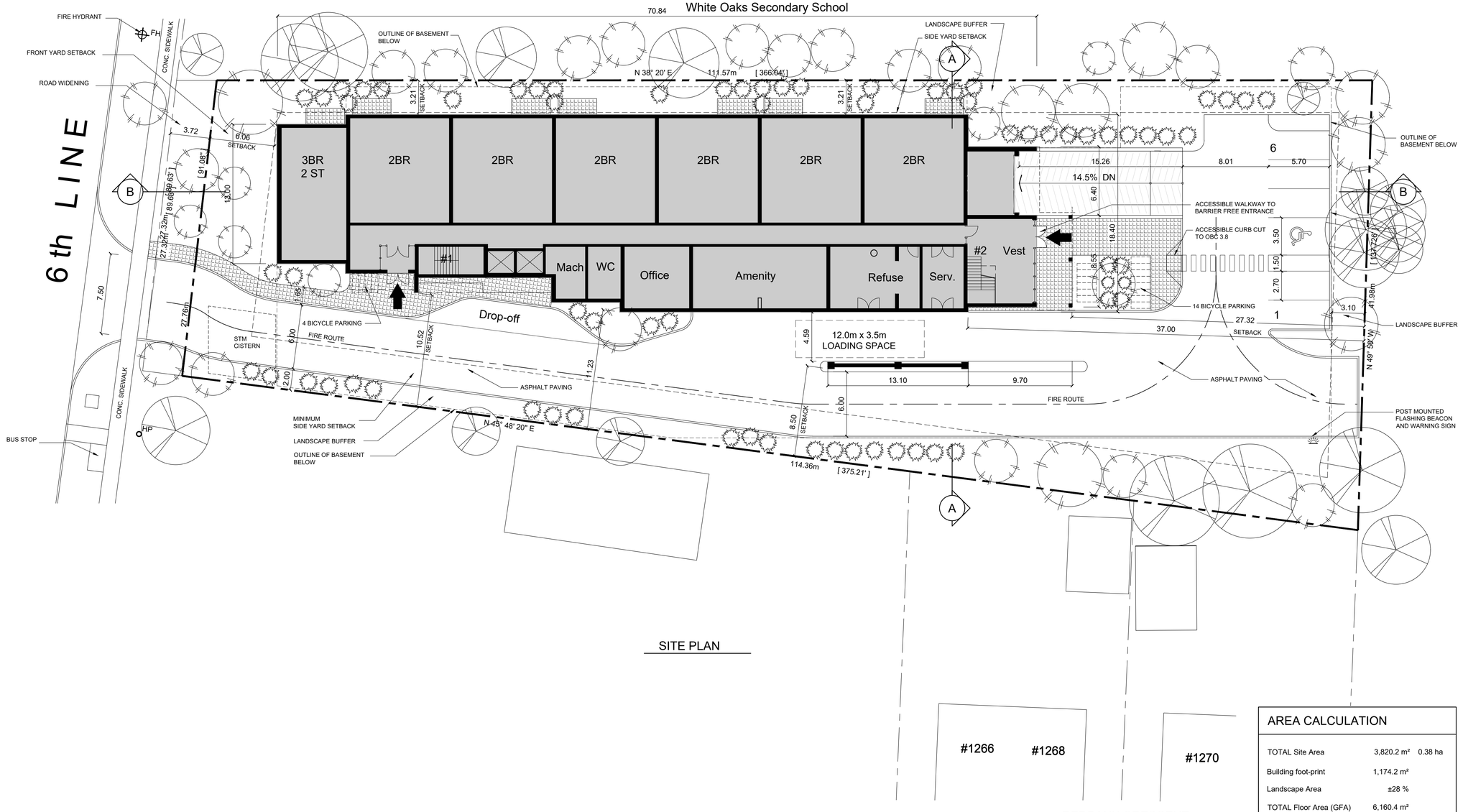
EXP Services Inc.

LICENSED PROFESSIONAL ENGINEER
S.W. PASSMORE
90539925
JAN 23/24
PROVINCE OF ONTARIO

Scott W. Passmore, P.Eng.
Vice President, Land Development

Nicholas Melatti, B.Eng.
Project Coordinator, Land Development

Appendix A – Site Plan and Background Documents



SITE PLAN

UNIT MIX

FLOOR	GFA	1 BR	2 BR	3 BR	TOTAL	NRA	PKG
GROUND	1128.6 m²	0	6	-	6	650.8 m²	9
SECOND	1113.9 m²	0	10	1	11	865.3 m²	15.5
THIRD	1025.0 m²	11	2	1	14	803.1 m²	14.5
FOURTH	1025.0 m²	11	2	1	14	803.1 m²	14.5
FIFTH	1025.0 m²	11	2	1	14	803.1 m²	14.5
SIXTH	842.6 m²	9	2	0	11	624.0 m²	11.5
TOTAL	6160.1 m²	42	24	4	70	4549.4 m²	80

AREA CALCULATION

TOTAL Site Area	3,820.2 m²	0.38 ha
Building foot-print	1,174.2 m²	
Landscape Area	±28 %	
TOTAL Floor Area (GFA)	6,160.4 m²	
No. of Units	70units	
Building Height	6 storeys	
TOTAL Parking required	80 spaces	
TOTAL Parking provided	80 spaces	
Bicycle Parking required	70 spaces	
Bicylcle Parking provided	52 + 18V = 70 spaces	
Units / hectare - proposed	184.2 units/ha	
Floor Space Index	1.61	
TOTAL Unit Area	4,605.7 m²	

#	ISSUED FOR	
1	ISSUED FOR PRELIMINARY REVIEW	07 /03/23
2	APARTMENT DESIGN REVIEW	14 /02 /23
3	REVISED DRIVEWAY ENTRANCE	17 /03 /23
4	ISSUED FOR PRELIMINARY REVIEW	11 /04/ 23
5	ISSUED FOR PRELIMINARY REVIEW	24 /11/23
6	ISSUED FOR O.P.A.	15 /12/23
7	ISSUED FOR O.P.A.	06 /02/24

GENERAL NOTES:

1. DO NOT SCALE THIS DRAWING. CHECK ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING.
2. THIS IS AN METRIC DRAWING.
3. LAST APPROVED DRAWINGS ONLY TO BE USED FOR CONSTRUCTION.
4. SUBMIT ALL SHOP DRAWINGS (SUCH AS TRUSS ETC.) TO THE DESIGNER FOR REVIEW.
5. ALL CONSTRUCTION AND SERVICES MUST COMPLY WITH OBC (ONTARIO BUILDING CODE)

PRELIMINARY NOT FOR CONSTRUCTION

RICK BROWN & ASSOCIATES INC.
1100 CENTRAL PARKWAY WEST
SUITE 30, 2nd FLOOR
MISSISSAUGA, ON, L5C 4E5

T: 905 897-0388
C: 905 510-2579
rick@RBAdesign.ca

BUILDING NORTH

NORTH

PROJECT NAME & ADDRESS:

PROPOSED RESIDENTIAL INFILL DEVELOPMENT

1295 SIXTH LINE,
OAKVILLE, ON

SCALE:	DATE:	DRAWN BY:	JOB No.:
1 : 200	JUNE 27, 2022	RB / MS	202212

SITE PLAN

DRAWING No.: SP1

November 28, 2023 8:56:45 AM
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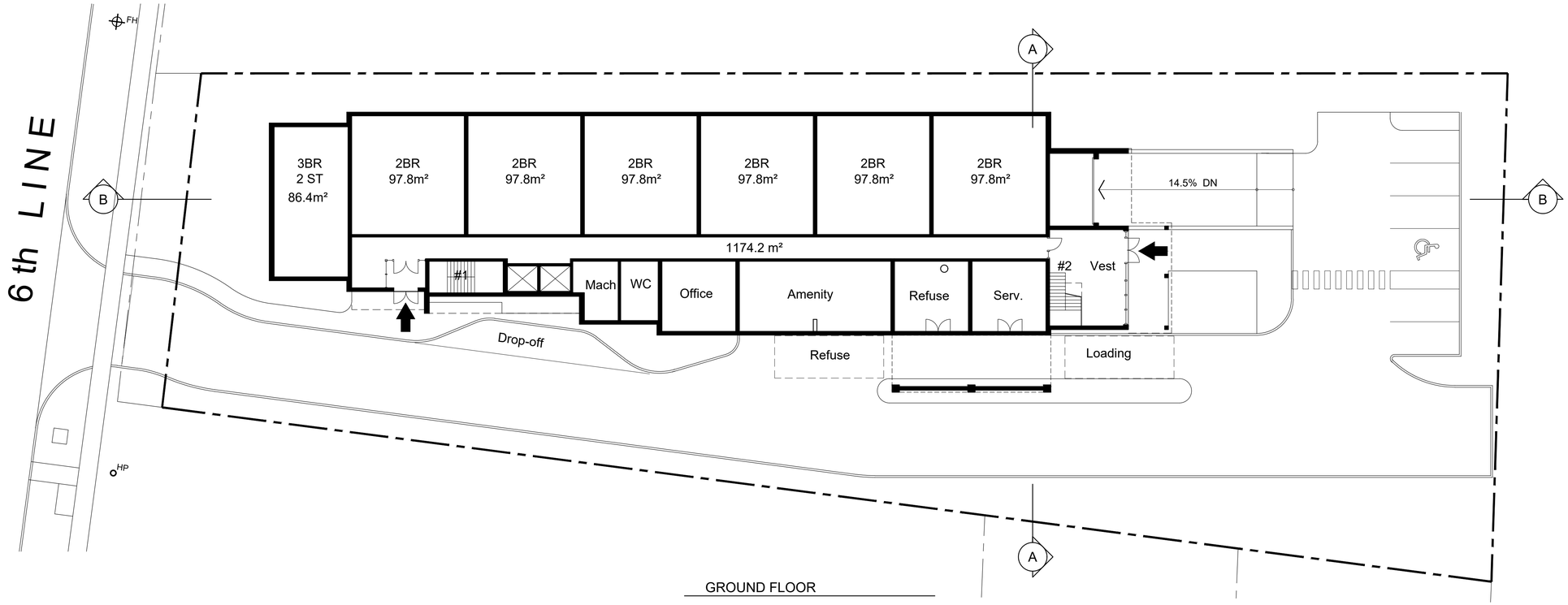
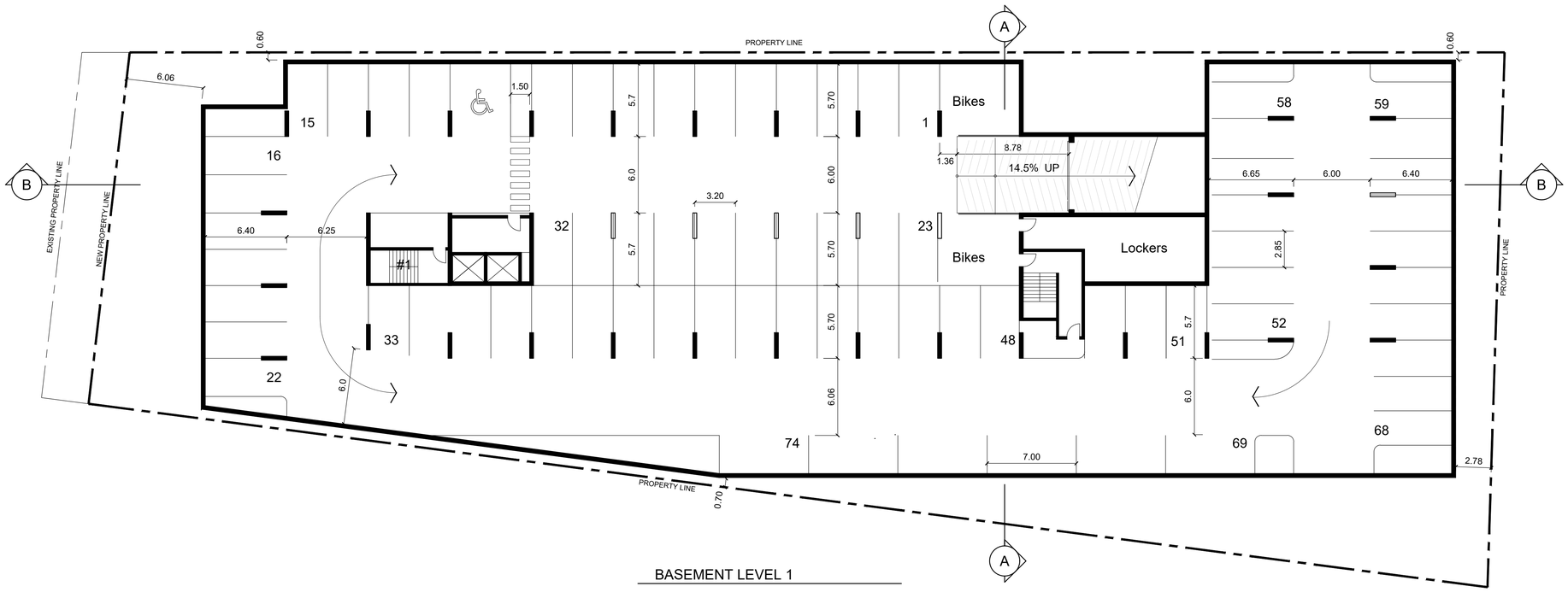


GROUND FLOOR



BASEMENT LEVEL 1

#	ISSUED FOR	
1	ISSUED FOR PRELIMINARY REVIEW	07 /03/23
2	APARTMENT DESIGN REVIEW	14 /02 /23
3	REVISED DRIVEWAY ENTRANCE	17 /03 /23
4	ISSUED FOR PRELIMINARY REVIEW	11 /04/ 23
5	ISSUED FOR PRELIMINARY REVIEW	24 /11/23
6	ISSUED FOR O.P.A.	15 /12/23

GENERAL NOTES:

1. DO NOT SCALE THIS DRAWING. CHECK ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING.
2. THIS IS AN METRIC DRAWING.
3. LAST APPROVED DRAWINGS ONLY TO BE USED FOR CONSTRUCTION.
4. SUBMIT ALL SHOP DRAWINGS (SUCH AS TRUSS ETC.) TO THE DESIGNER FOR REVIEW.
5. ALL CONSTRUCTION AND SERVICES MUST COMPLY WITH OBC (ONTARIO BUILDING CODE)

PRELIMINARY NOT FOR CONSTRUCTION

RICK BROWN & ASSOCIATES INC.
1100 CENTRAL PARKWAY WEST
SUITE 30, 2nd FLOOR
MISSISSAUGA, ON. L5C 4E5

T: 905 897-0388
C: 905 510-2579
rick@RBAdesign.ca

BUILDING NORTH

NORTH

PROJECT NAME & ADDRESS:
PROPOSED RESIDENTIAL INFILL DEVELOPMENT
1295 SIXTH LINE,
OAKVILLE, ON

SCALE:	DATE:	DRAWN BY:	JOB No.:
1 : 200	JUNE 27, 2022	RB / MS	202212

SITE PLAN and GROUND FLOOR BASEMENT PARKING

DRAWING No.: P-01

November 28, 2023 8:56:45 AM
S:\Projects\Current Projects\1-R-Brown\202212-6th Line\PRELIM-SPA\PRELIM DWGS\6th Line Apt 2023-12-15.dwg


Records: 260,087
White Oaks Secondary School Trail
REDBANK CRES
REDBANK CRES
OSBORNE CRES
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1321
1317
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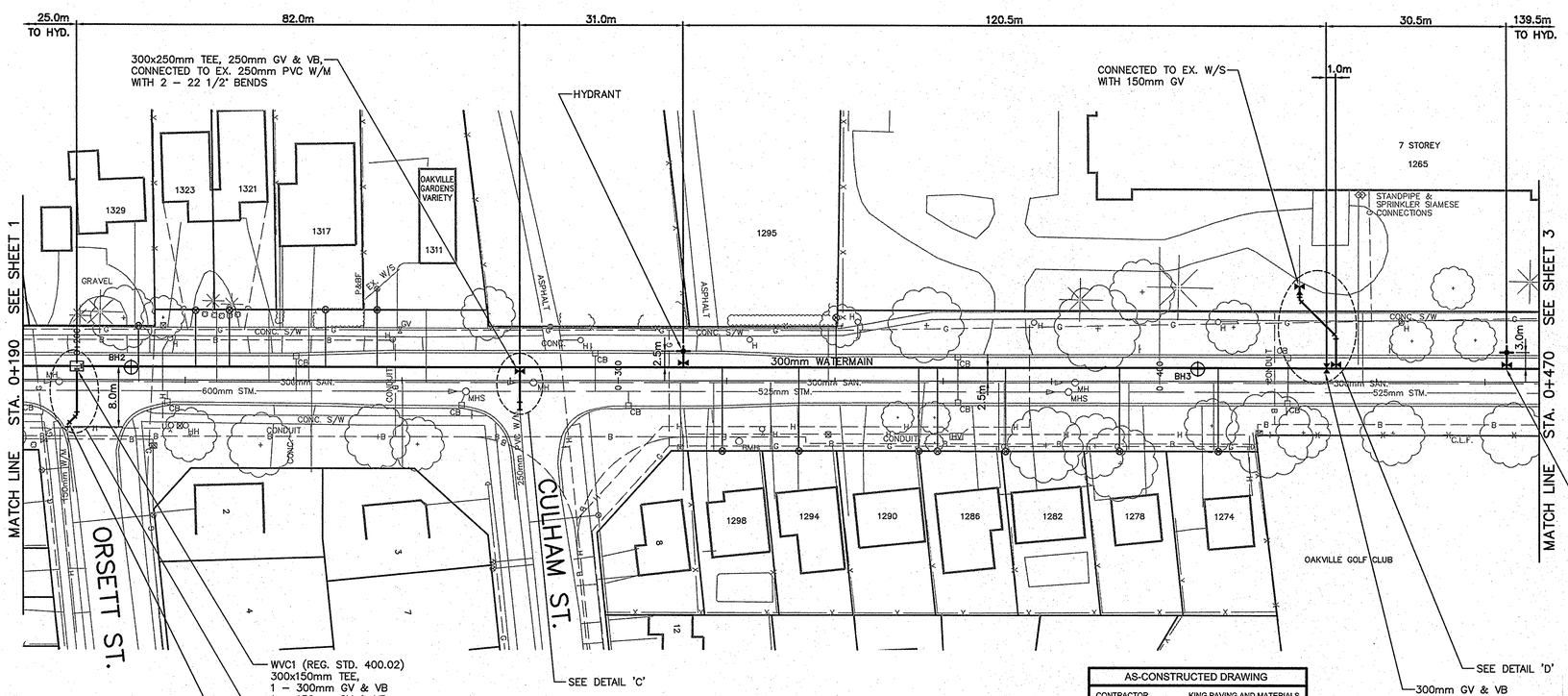
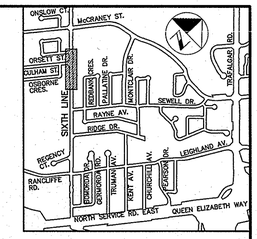
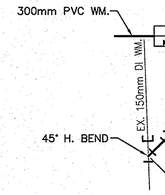
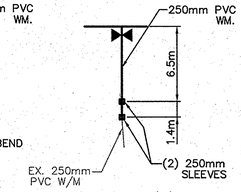
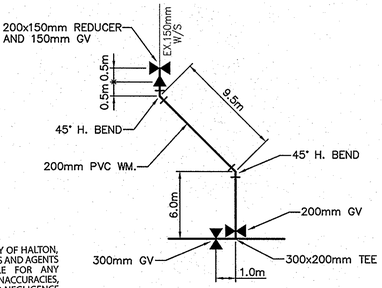
City of Hamilton, City of Toronto, Town of Oakville, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, AAFC, NRCan
Powered by Esri

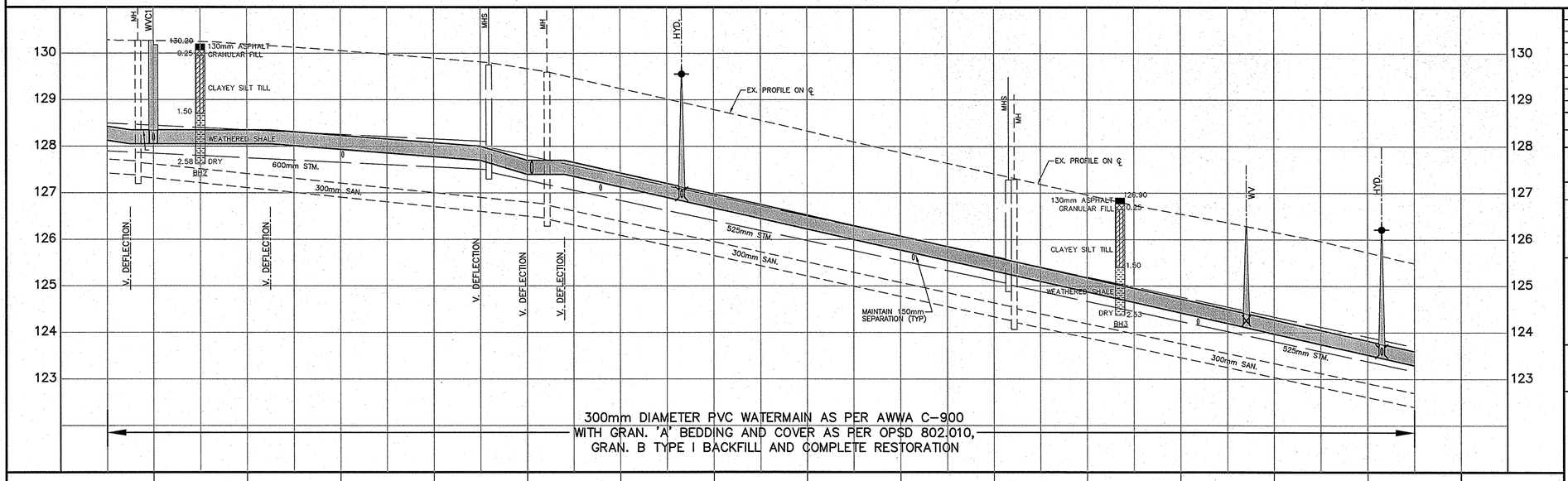












AS-CONSTRUCTED DRAWING

CONTRACTOR	KING PAVING AND MATERIALS
WORK COMMENCED	AUGUST 2011
WORK COMPLETED	JULY 2012
INSPECTOR	RYAN STONEMAN
INSPECTOR'S DIARIES	1105 / 1120

The Regional Municipality of Halton makes no warranties with respect to the accuracy of this drawing and assumes no responsibility for its use. All information should be verified.

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.

FOR GENERAL NOTES AND ROAD RESTORATION DETAIL SEE SHEET 1.

NO	Date	By	REVISIONS	MANU	CAD
1	FEB 2013	RWB	AS CONSTRUCTED		X

Design	R.R.	Ch'kd		Date JUNE 2011
Drawn	EWS/RWB	Ch'kd		

Scale 1:500 Horiz. 1:50 Vert.

References

APPROVALS

Municipal

Field Notes

Stamp

Regional

SEE SHEET W1 FOR ORIGINAL SIGNATURE
Director

SEE SHEET W1 FOR ORIGINAL SIGNATURE
Manager

Halton REGION

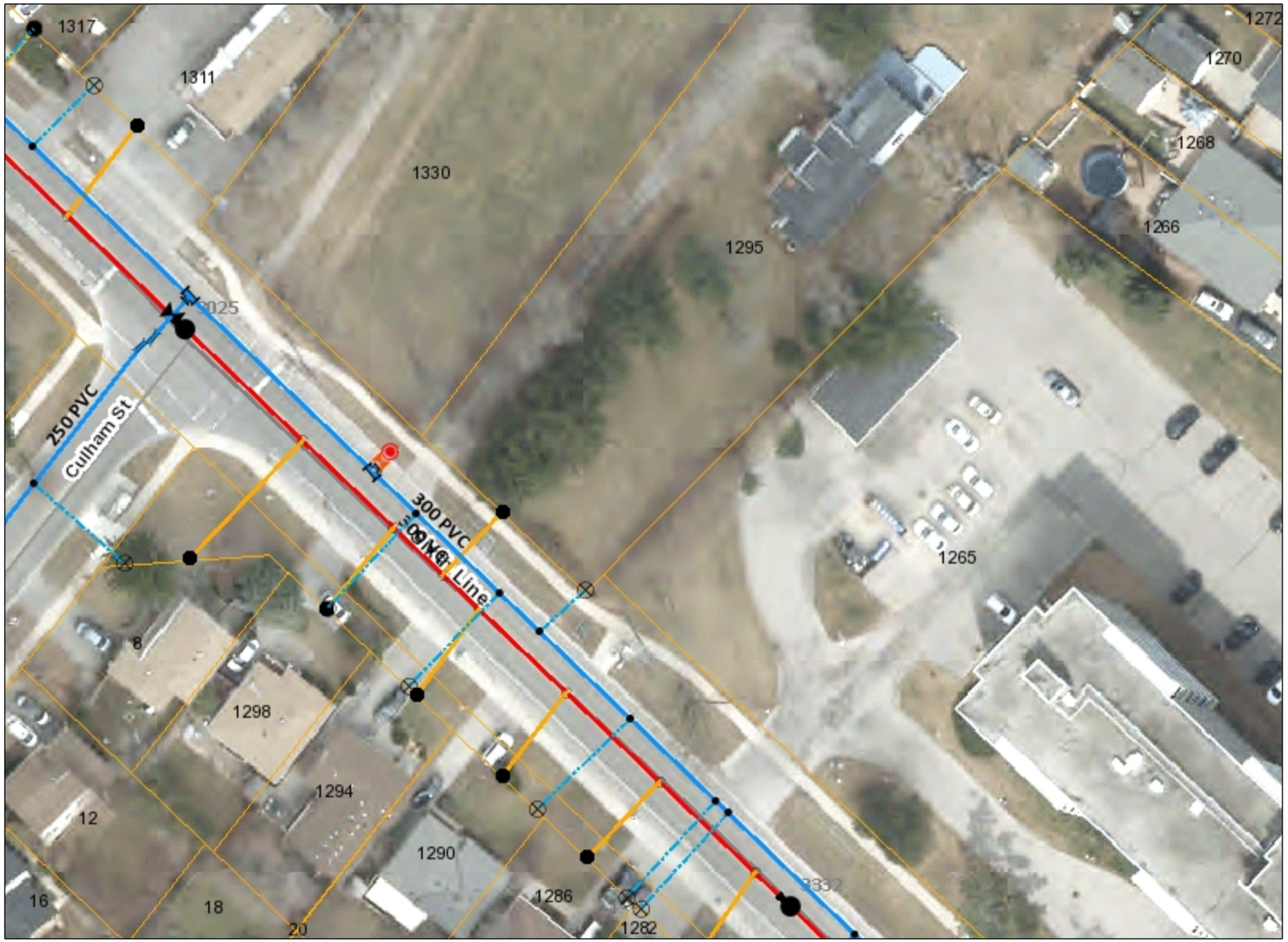
WATERMAIN REPLACEMENT ON
SIXTH LINE
IN THE TOWN OF OAKVILLE
FROM 15m N. OF ORSETT DR. TO
185m S. OF CULHAM DR.

Consultant File NO **O-18657**

CONTRACT NO (PR2432–11) R–465–10

Drawing NO SHEET W2 OF W7

1295 Sixth Line, Oakville



Legend

Water Control Valve
- System
- SystemDP
- Zone
- ZoneDP

Water Service Valve
- CurbStop
- PropertyLine
- Secondary
- TappingValve

Water Hydrant

Water Fitting
- Cap
- Cross
- HBend
- MainStop
- Reducer
- Sleeve
- TappingSleeve
- Tee
- VBend

Water Chamber
- Chamber

Notes:

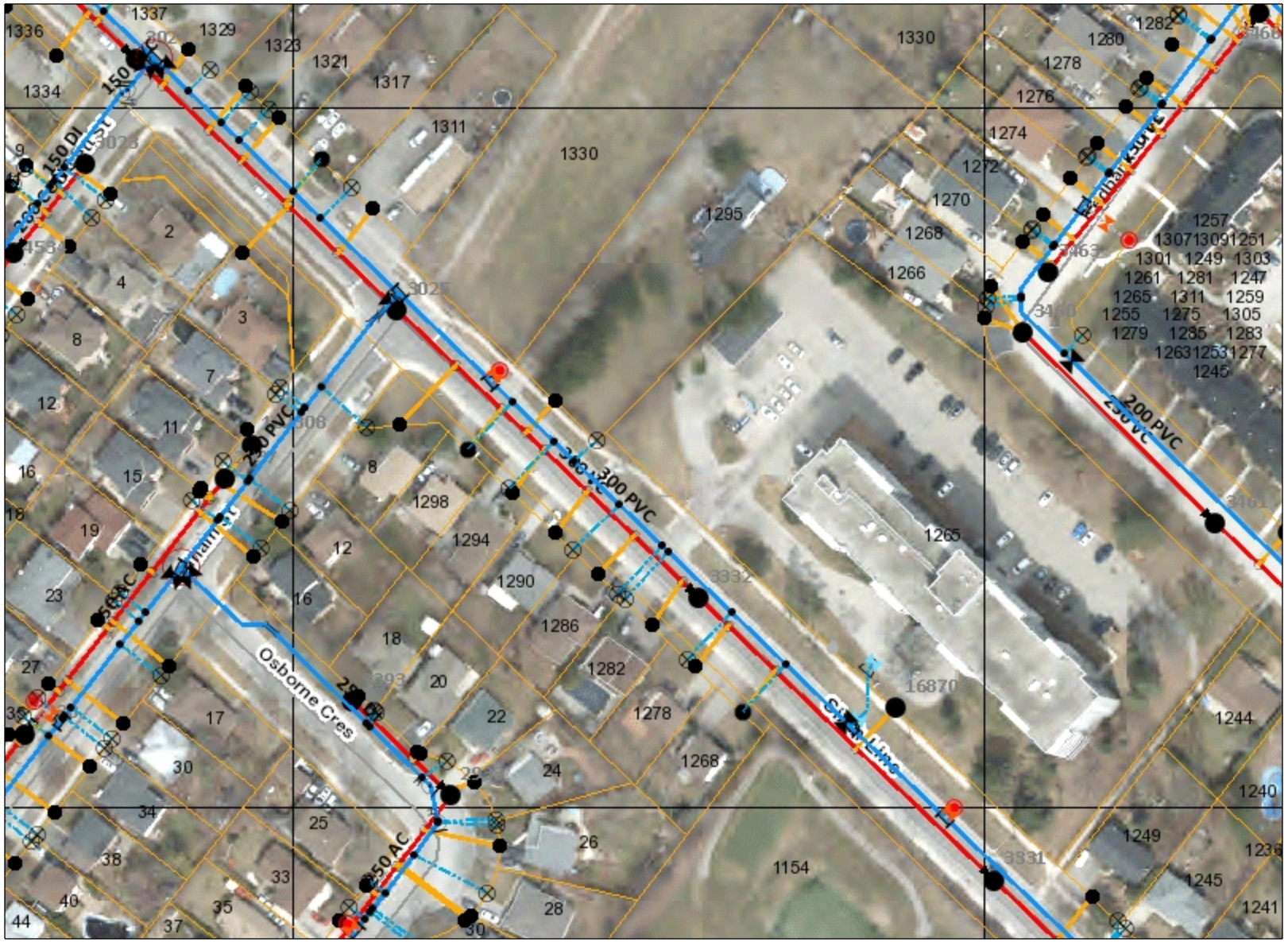
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Information Valid as of: 12/12/2023

36.2 0 18.10 36.2 Metres

1: 724

1295 Sixth Line, Oakville



Legend

Water Control Valve
- System
- SystemDP
- Zone
- ZoneDP

Water Service Valve
- CurbStop
- PropertyLine
- Secondary
- TappingValve

Water Hydrant

Water Fitting
- Cap
- Cross
- HBend
- MainStop
- Reducer
- Sleeve
- TappingSleeve
- Tee
- VBend

Water Chamber
- Chamber

Notes:

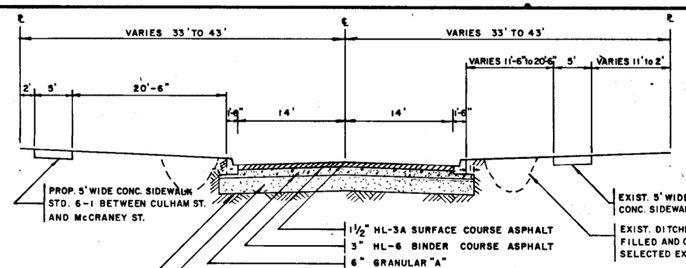
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Information Valid as of: 12/12/2023

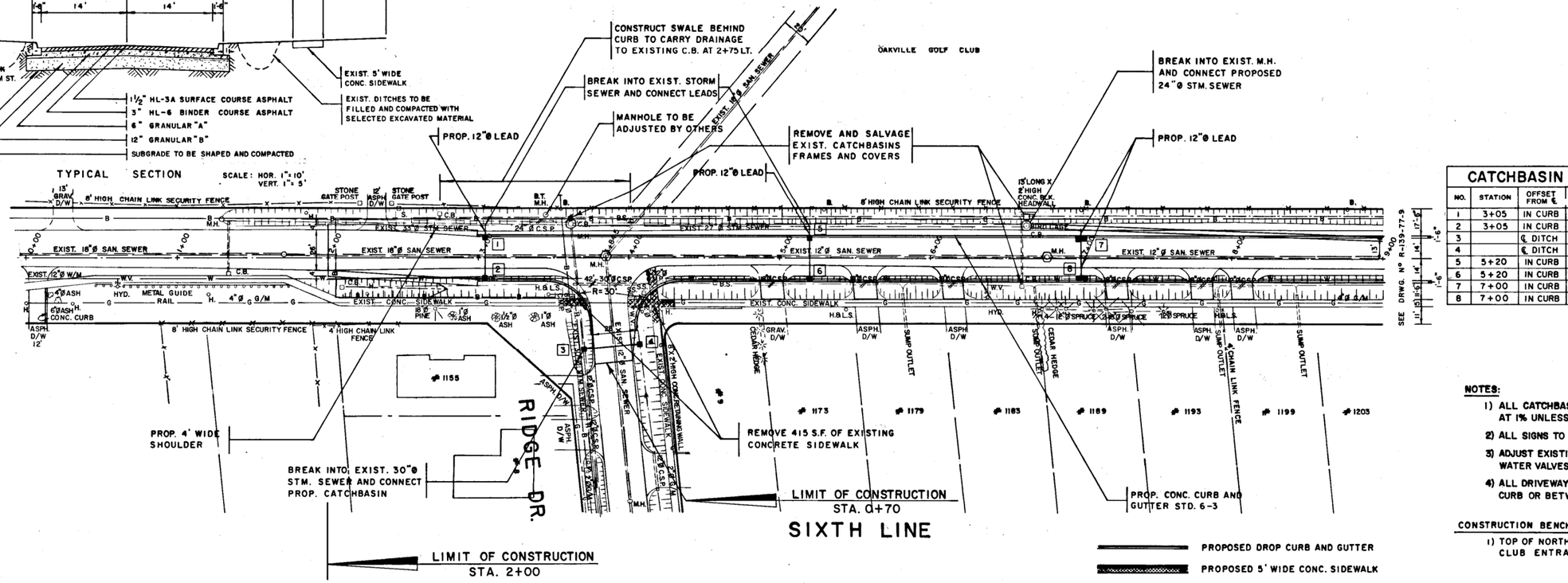
72.4 0 36.19 72.4 Metres

1: 1,448

SIXTH LINE R-139-77 5



TYPICAL SECTION SCALE: HOR. 1"=10' VERT. 1"= 5'



CATCHBASIN DATA - SYMBOL ☐

NO.	STATION	OFFSET FROM ℄	STRUCTURE	COVER	COMMENTS
1	3+05	IN CURB	3-1	5-4	
2	3+05	IN CURB	3-1	5-4	
3		℄ DITCH	3-1	5-2	RIDGE DR.
4		℄ DITCH	3-1	5-2	RIDGE DR.
5	5+20	IN CURB	3-1	5-4	
6	5+20	IN CURB	3-1	5-4	
7	7+00	IN CURB	3-2	5-4	
8	7+00	IN CURB	3-2	5-4	

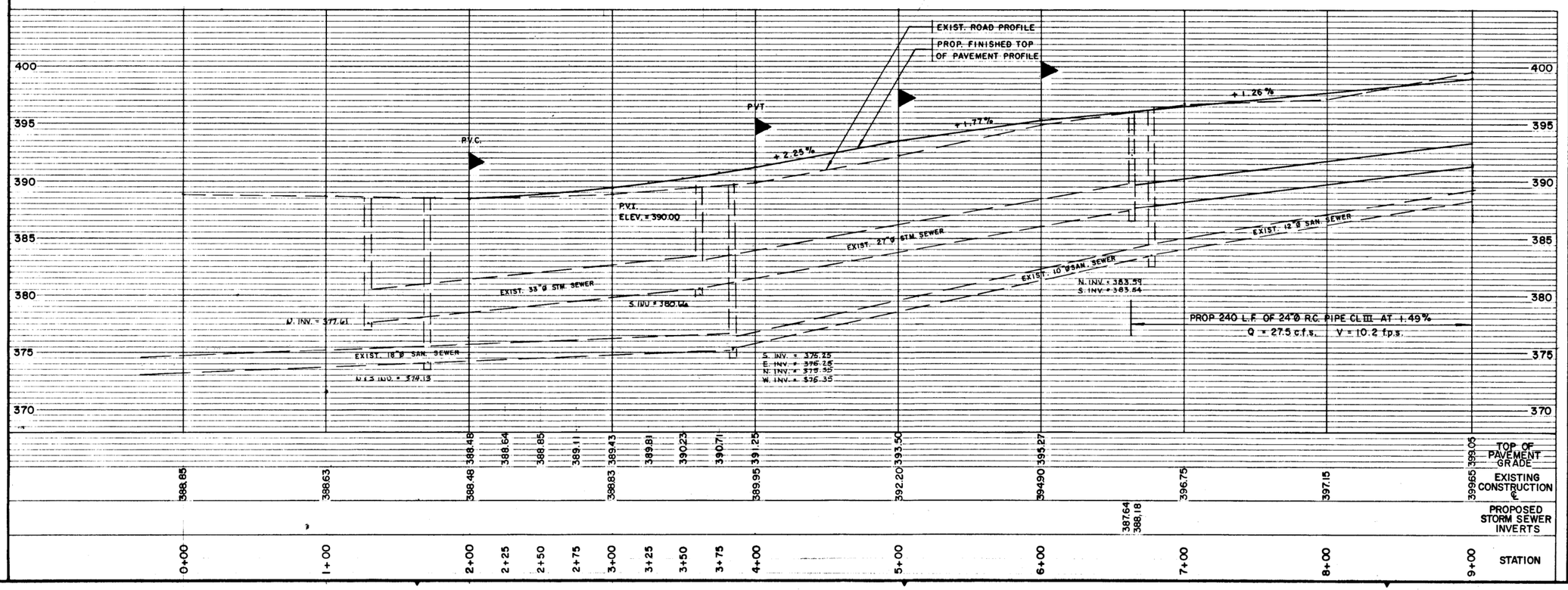
SEE DRWG. N° R-139-77-9

NOTES:

1) ALL CATCHBASIN LEADS TO BE 10"Ø E.S. CONCRETE PIPE AT 1% UNLESS OTHERWISE SHOWN.
2) ALL SIGNS TO BE RELOCATED BY OTHERS.
3) ADJUST EXISTING MANHOLE FRAMES AND COVERS, AND WATER VALVES TO SUIT FINISHED GRADE. SYMBOL ○
4) ALL DRIVEWAYS TO BE PAVED BETWEEN SIDEWALK AND CURB OR BETWEEN CURB AND PROPERTY LINE.

CONSTRUCTION BENCH MARKS

1) TOP OF NORTH STONE PILLAR AT OAKVILLE GOLF CLUB ENTRANCE ELEV'N 389.65



GENERAL NOTES

- ALL DRIVEWAYS GRAVEL UNLESS OTHERWISE NOTED.
- ALL SERVICE LOCATIONS ARE APPROXIMATE AND MUST BE LOCATED ACCURATELY IN THE FIELD.
- U/G HYDRO AS SHOWN
- WATER AS SHOWN
- U/G BELL AS SHOWN
- SAN. SEWERS AS SHOWN
- STM. SEWERS AS SHOWN
- GAS AS SHOWN

LEGEND

STM. M.H.	DENOTES BENCH MARK ELEVATION
SAN. M.H.	STORM SEWER & MANHOLE
W W W W W	SANITARY SEWER & MANHOLE
G G G G G	WATERMAIN & VALVE
B B B B B	GASMAIN & VALVE
H.P.	BELL TELEPHONE BURIED CABLE
HYD.	HYDRO POLE & GUY ANCHOR
	HYDRANT

TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

PROPOSED ROAD RECONSTRUCTION ON SIXTH LINE FROM STATION 0+00 TO STATION 9+00

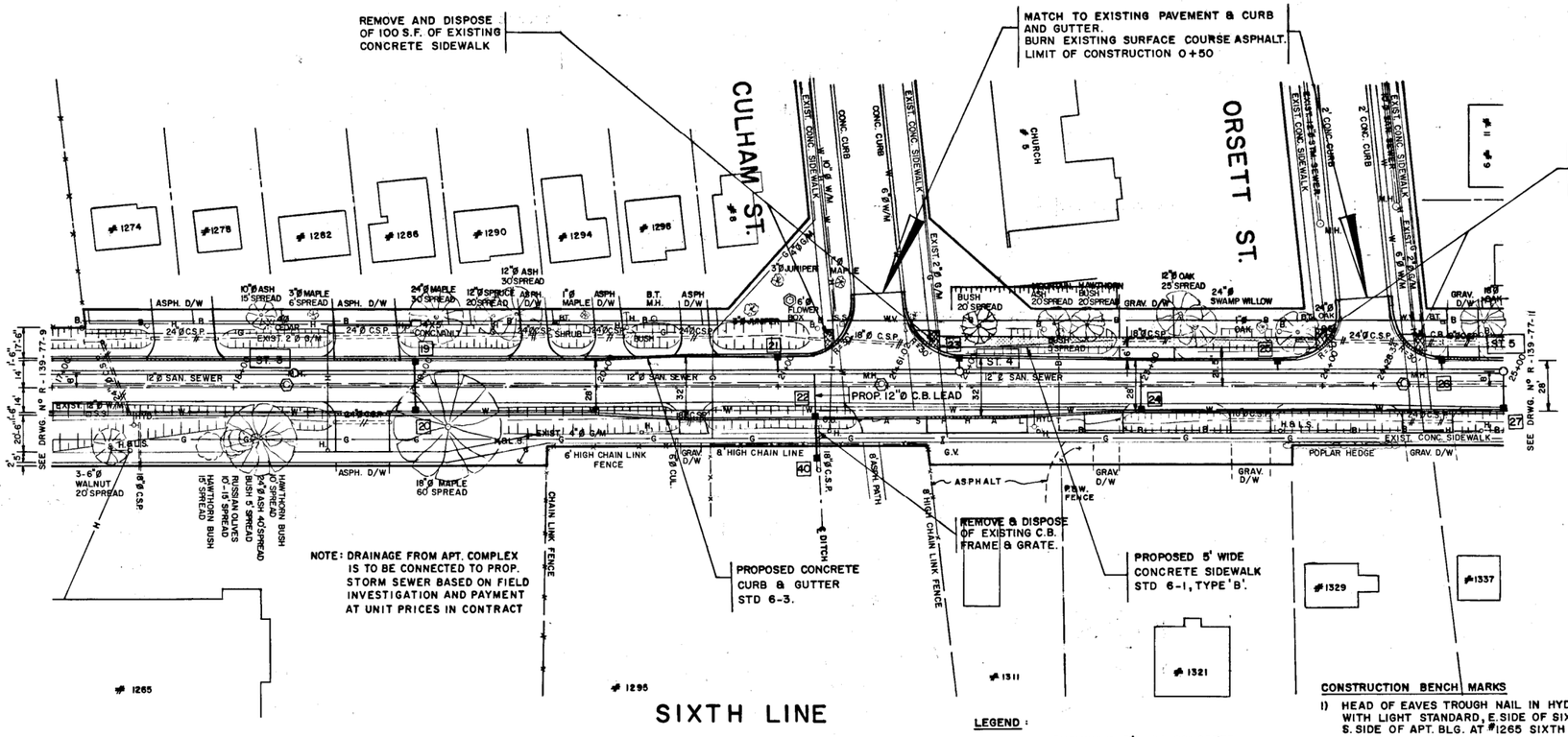
FLD. BK. No. J.A.-	
SCALES —	HOR: 1"= 40' VERT: 1"= 5'
DATE: MAY, 1977	DESIGN BY: R.G.G.
DRAWN BY: D.A.	SURVEY BY: J.A./M.D.
CH'KD BY: L.D.McL.	INSPECTOR:
FILE N°: R-139-77	CONTRACTOR:

PLAN N° R-139-77-5
SHEET 5 OF 26

REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO — CIVIL — O. H. ELLIS

DATE	REVISIONS	BY
JAN. 4 1978	STM. INVERTS AS CONSTRUCTED	B.W.

SIXTH LINE R-139-77 7



STORM SEWER DATA - SYMBOL ST.					
NO	STATION	OFFSET FROM ℄	STRUCTURE	COVER	COMMENTS
3	18+35	8' L	2-1	5-1	
4	22+00	8' L	2-1	5-1	
5	25+00	8' L	2-1	5-1	

CATCHBASIN DATA - SYMBOL □					
NO.	STATION	OFFSET FROM ℄	STRUCTURE	COVER	COMMENTS
19	19+00	IN CURB	3-1	5-4	
20	19+00	IN CURB	3-1	5-4	
21	21+00	IN CURB	3-1	5-4	
22	21+20	IN CURB	3-1	5-4	
23	22+00	IN CURB	3-1	5-4	
24	23+00	IN CURB	3-1	5-4	
25	23+75	IN CURB	3-1	5-4	
26	24+65	IN CURB	3-1	5-4	
27	25+00	IN CURB	3-1	5-4	
40	21+20	40'R	3-1	5-2	

NOTES:

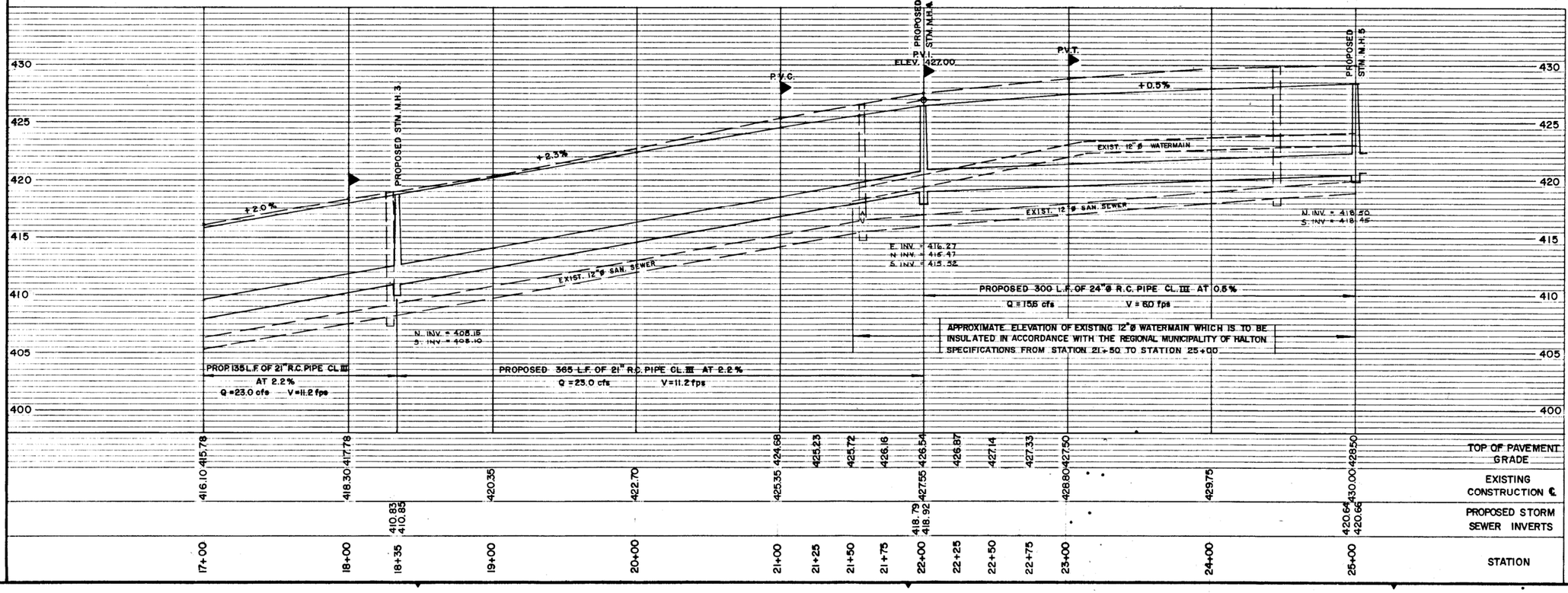
1) ALL CATCHBASIN LEADS TO BE 10"Ø E.S. CONCRETE PIPE AT 1% SLOPE, UNLESS OTHERWISE SHOWN.
2) ADJUST EXISTING MANHOLE FRAMES & COVERS AND WATERVALVES TO SUIT FINISHED GRADE - SYMBOL ⬡.
3) ALL DRIVEWAYS TO BE PAVED BETWEEN SIDEWALK AND CURB OR BETWEEN CURB AND PROPERTY LINE.
4) ALL SIGNS TO BE RELOCATED BY OTHERS.
5) EXISTING BELL POLES TO BE REMOVED BY OTHERS.

LEGEND:

- PROPOSED 5' WIDE CONCRETE SIDEWALK.
- PROPOSED DROP CURB & GUTTER.

CONSTRUCTION BENCH MARKS

1) HEAD OF EAVES TROUGH NAIL IN HYDRO POLE WITH LIGHT STANDARD, E. SIDE OF SIXTH LINE, S. SIDE OF APT. BLG. AT #1265 SIXTH LINE.
2) N.E. CORNER OF CONCRETE FOOTING AT ST. SIMONS CHURCH ON SIXTH LINE, JUST NORTH OF CULHAM ST.



GENERAL NOTES

- ALL DRIVEWAYS GRAVEL UNLESS OTHERWISE NOTED.
- ALL SERVICE LOCATIONS ARE APPROXIMATE AND MUST BE LOCATED ACCURATELY IN THE FIELD.
- U/G HYDRO AS SHOWN
- U/G BELL AS SHOWN
- SAN. SEWER AS SHOWN
- STM. SEWER AS SHOWN
- GAS AS SHOWN
- WATER AS SHOWN

LEGEND

⊕	DENOTES	BENCH MARK ELEVATION
STM. M.H.	=	STORM SEWER & MANHOLE
SAN. M.H.	=	SANITARY SEWER & MANHOLE
W W W W W	=	WATERMAIN & VALVE
G G G G G	=	GASMAIN & VALVE
B B B B B	=	BELL TELEPHONE BURIED CABLE
H.P.	=	HYDRO POLE & GUY ANCHOR
HYD.	=	HYDRANT

TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

PROPOSED ROAD RECONSTRUCTION ON SIXTH LINE FROM STATION 17+00 TO STATION 25+00

FLD. BK. No. J.A. -

SCALES —	HOR: 1"= 40' VERT: 1"= 5'
DATE: MAY, 1977	DESIGN BY: R.G.G.
DRAWN BY: D.A.	SURVEY BY: J.A./M.D.
CH'KD BY: L. D. McL.	INSPECTOR:
FILE N°: R-139-77	CONTRACTOR:

PLAN N° R-139-77-7
SHEET 7 OF 11

REGISTERED PROFESSIONAL ENGINEER — CIVIL — O. H. ELLIS — PROVINCE OF ONTARIO

DATE	REVISIONS	BY
AUG. 10, 1977	- PROPOSED SIDEWALK LOCATION REVISED BETWEEN CULHAM ST. AND STA. 25+00. - NOTE 5 ADDED. - TREE AT STA 22+10 TO BE SAVED.	R.G.G.
JAN. 4, 1978	- STM. SEWER INVERTS AS CONSTRUCTED	BW

Appendix B – Water Calculations and Background Documents

Domestic Water Demand Calculations

PROJECT: **1295 Sixth Line**
PROJECT No: **ALL-23015173-A0**
CREATED BY: **N.M**
CHECKED BY **S.P**

Average Day

Halton Water Wastewater Linear Design Manual - Design Factors page 5

Per Capita Demand = 275 L/caps/d 0.00318287 L/cap/s

Type of Development	**Population Density**	
Bedroom Breakdown	123	Person/ha
Area	0.38	ha
Population total =	123	People

1 **Average Day Demand = 0.39 L/s**

Halton Water Wastewater Linear Design Manual - Max Daily Demand Peaking Factor page 5

Maximum Daily Demand Peaking Factor	4

2 **Max Daily Demand 1.57 L/s**

3	**Max Daily Demand**	**1.57**	**L/s**

Fire Flow Calculation

PROJECT: **1295 Sixth Line**
PROJECT No: **ALL-23015173-A0**
CREATED BY: **N.M**
CHECKED BY **S.P**

Fire Underwriters Survey 2010

1 **Estimate of the required fire flow for a given area can be determined by the formula:** $F = 220C\sqrt{A}$

Where F = required fire flow in litres/minute
C = coefficient related to the type of construction
A = total floor area in square meters

For Ordinary construction: C =	1	
Total area : A =	6,160	m²

Therefore F = 220 x 1.0 x (4405)½ =	**17,267**	**L/m**

Fire Underwriters Survey 2010

2 **Reduction for fire hazard**

Non-combustible	25%	
	12,950.56	**L/m**

3 **Reduction for Sprinkler protection**

Sprinkler	30%	
Fully Supervised system	10%	
	5,180	**L/m**

4 **Addition for Structures exposed within 45m**

3.1m to 10m	20%	
	2,590	**L/m**

5 **Total Estimated Fire flow** **10,360** **L/m**

The estimated fire flow is approx.	**11,000**	**L/m**
	183	**L/s**

EXCERPT FROM REGION OF HALTON WATER OPERATING MAPS

REGIONAL MUNICIPALITY OF HALTON
Department of Public Works

WATER OPERATING MAPS

TOWN OF OAKVILLE

Protection Valve Type
- Q Air Release
- N Check
- ° Pressure Reducing
- Surge
- Vacuum

Control Valve
- Valve In Chamber
- System
- Zone Isolation, No ByPass
- Zone Isolation, With ByPass

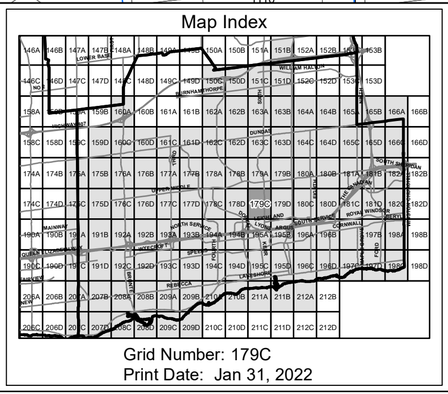
Fittings
- o Cap
- p Cross
- q Reducer
- v Sleeve
- r Tee
- s Tapping Sleeve

System Structure
- K Booster Station
- L Intake
- J Municipal Well
- I Reservoir
- H Tank
- G Water Purification Plant

Other
- In Service Watermain
- Proposed Watermain
- Private Watermain/Service Lead
- M System Meter
- U Hydrant
- Chamber
- Pressure Zone
- Municipal Boundary

Meters
0 25 50 100 150 200

Map Index



Grid Number: 179C
Print Date: Jan 31, 2022

Appendix C – Sanitary Calculations and Background Documents

Sanitary Flow Calculations

PROJECT: **1295 Sixth Line**
PROJECT No: **ALL-23015173-A0**
CREATED BY: **N.M**
CHECKED BY **S.P**
DATE: **17-Jan-24**

Unit Type	Population Density	
1 bedroom	1.4	
2 bedroom	2.1	
3 bedroom	3.1	
4 bedroom	4	
Commercial/retail	1.1	persons/100m2

Site Stats taken from Architect Plans

Building	Units	Population	Rounded Pop.
1 bedroom	42	58.8	59
2 bedroom	24	50.4	51
3 bedroom	4	12.4	13
4 bedroom	0	0	0
Totals:	**70**	**121.6**	**123**

Sanitary Flow Calculations

PROJECT: **1295 Sixth Line**
PROJECT No: **ALL-23015173-A0**
CREATED BY: **N.M**
CHECKED BY **S.P**

Average Day

Per Capita Demand = 275 L/caps/d 0.00318287 L/cap/s

Type of Development	**Population Density**	
Bedroom Breakdown Number	123	Person/ha
Area	0.38	ha
Population total =	123	People
Flow	**0.39**	**L/s**

1 | **Average Day Demand =** | **0.39** | **L/s**

Halton Water Wastewater Linear Design Manual - Peak Wastewater Flow Factor page 5
Peak Factor = 1+(14/(4+(P/1000)^1/2))

2 | **Peaking Factor** | **4.00**

Halton Water Wastewater Linear Design Manual

Infiltration allowance 0.286 L/s/ha
Total Area 0.38 ha

3 | **Infiltration** | **0.109** | **L/s**

Halton Water Wastewater Linear Design Manual

Design Flow = average dry weather flow x peaking factor + infiltration allowance

4 | **Design Flow =** | **1.67** | **L/s**

EXCERPT FROM REGION OF HALTON SANITARY OPERATING MAP

Halton REGION

REGIONAL MUNICIPALITY OF HALTON
Department of Public Works

SANITARY OPERATING MAPS

TOWN OF OAKVILLE

Sewer Types

- Treated Discharge Sewer
- Untreated Discharge Sewer
- ForceMain
- Proposed ForceMain
- Gravity Sewer (In Service)
- Gravity Sewer (Out of Service)
- Proposed Gravity Sewer

Maintenance Hole Types

- Maintenance Hole
- Chamber

Major System Facilities

- Wastewater Storage Tank
- WWTP — Wastewater Treatment Plant
- PS — Pumping Station
- Municipal Boundary

0 25 50 100 150 200 Meters

Map Index

Grid Number: 179C
Print Date: Dec 10, 2021

Appendix D – Downstream Sanitary Capacity Analysis

SANITARY CATCHMENT PLAN

See page 2 for catchment upstream

Upstream
19.66 ha
1636 persons

Site
0.38 ha
123 persons

Catchment 1
0.48 ha
27 persons

Catchment 2
1.58 ha
381 persons

Catchment 3
0.34 ha
19 persons

Catchment 4
0.45 ha
25 persons

Catchment 5
0.52 ha
29 persons

Catchment 6
0.44 ha
25 persons

300mm dia SAN sewer @ 2.3%

300mm dia SAN sewer @ 2.1%

300mm dia SAN sewer @ 2.0%

300mm dia SAN sewer @ 2.5%

300mm dia SAN sewer @ 2.9%

300mm dia SAN sewer @ 0.5%

REGIONAL MUNICIPALITY OF HALTON
Department of Public Works

SANITARY OPERATING MAPS

TOWN OF OAKVILLE

Sewer Types
- Treated Discharge Sewer
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- Proposed ForceMain
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- Gravity Sewer (Out of Service)
- Proposed Gravity Sewer

Maintenance Hole Types
- Maintenance Hole
- Chamber

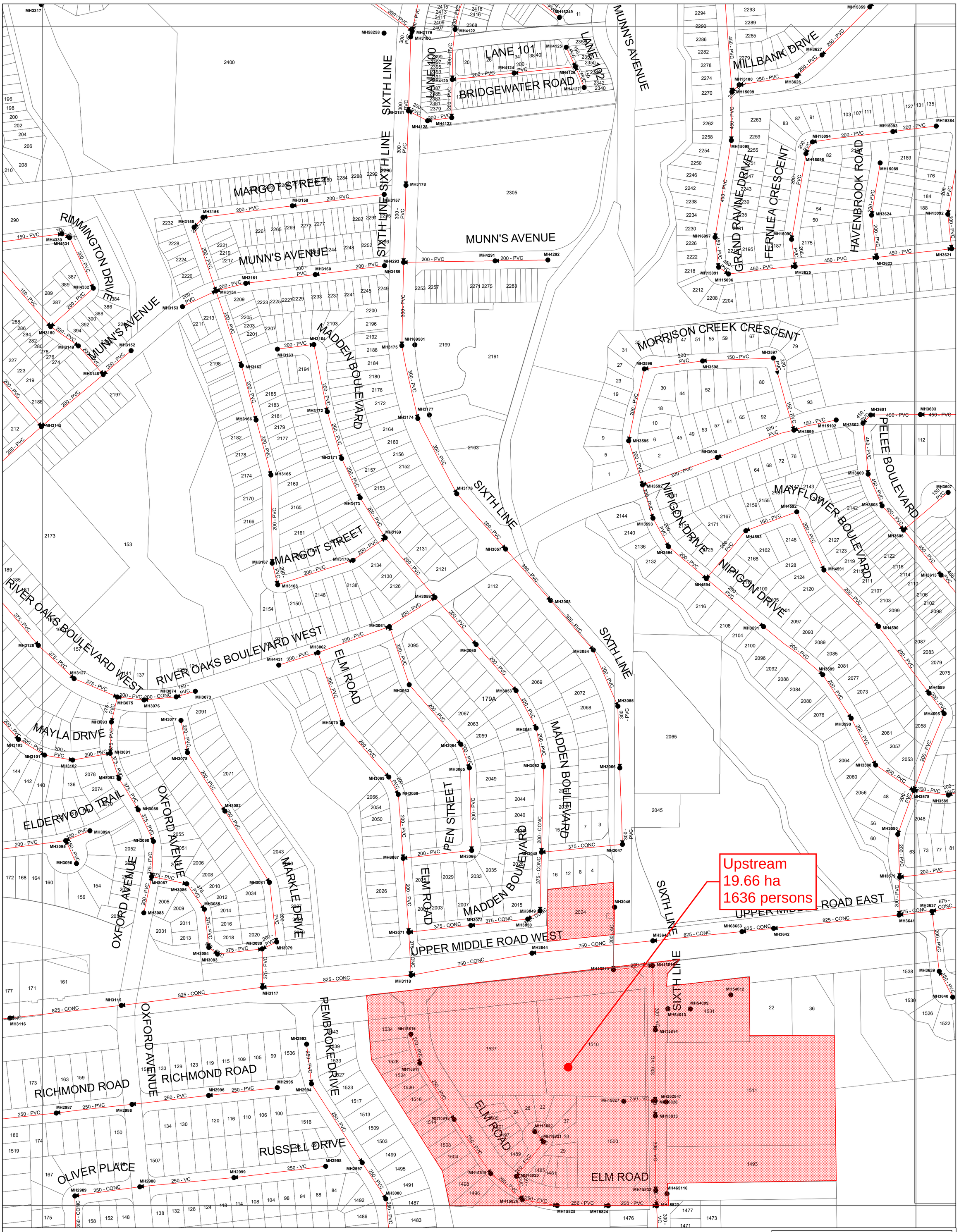
Major System Facilities
- Wastewater Storage Tank
- Wastewater Treatment Plant
- Pumping Station
- Municipal Boundary

0 25 50 100 150 200 Meters

Map Index

Grid Number: 179C
Print Date: Dec 10, 2021

SANITARY CATCHMENT PLAN



REGIONAL MUNICIPALITY OF HALTON
Department of Public Works

SANITARY OPERATING MAPS

TOWN OF OAKVILLE

Sewer Types

- Treated Discharge Sewer
- Untreated Discharge Sewer
- ForceMain
- Proposed ForceMain
- Gravity Sewer (In Service)
- Gravity Sewer (Out of Service)
- Proposed Gravity Sewer

Maintenance Hole Types

- Maintenance Hole
- Chamber

Major System Facilities

- Wastewater Storage Tank
- Wastewater Treatment Plant
- Pumping Station
- Municipal Boundary

Meters
0 25 50 100 150 200

Map Index

Grid Number: 179A
Print Date: Dec 10, 2021

Town of Oakville
1295 Sixth Line
Project Number: ALL-23015173-A0
Sanitary Sewer Design Calculations (Existing Condition - Dry Weather Flow)

PIPE ROUGHNESS (n)		
< 600	=	0.013
≥ 600	=	0.013
DESIGN VELOCITIES		
MIN =	0.60	m/s
MAX =	3.00	m/s

PEAKING FACTOR
$M = 1 + (14/(4 + P^{0.5}))$
P = Population in Thousands
FLOW FACTOR (L/day/capita)
Ex. Residential 275
Ex. Commercial 275
INFILTRATION RATE (L/sec/ha)
0.29

DESIGNED BY : Nicholas Melatti & Preerinder Kaur 23-Jan-24
CHECKED BY: Scott Passmore, P.Eng. 23-Jan-24

STREET NAME	MANHOLE		AREA		POPULATION					FLOW CHARACTERISTICS (L/sec)					PROPOSED SEWER DESIGN			CAPACITY (L/s)	Full VELOCITY (m/s)	PERCENT FULL (%)
			SECT.	ACCUM.	RESIDENTIAL		COMMERCIAL		TOTAL	PEAK FACTOR	PEAK Q_{peak}	INFILT Q_{infilt}	GW Q_{fdn}	TOTAL Q_{tot}	DIAMETER (mm)	TYPE	GRADE (%)			
	FROM	TO	(ha)	(ha)	SECT.	ACCUM.	SECT.	ACCUM.												
Sixth Line	EXT1	MH3025	19.66	19.66	1438	1438	198	198	1636	3.65	19.02	5.62	0.00	24.6						
Site	Site	MH3332	0.38	0.38	22	22	0	0	22	4.00	0.28	0.11		0.4						
Sixth Line	MH3025	MH3332	0.48	20.52	27	1487	0	198	1685	3.64	19.54	5.87	0.00	25.4	300	VC	2.30	153.263	2.10	16.6%
Sixth Line	MH3332	MH3331	1.58	22.10	381	1868	0	198	2066	3.57	23.51	6.32	0.00	29.8	300	VC	2.14	147.836	2.02	20.2%
Sixth Line	MH3331	MH3333	0.34	22.44	19	1887	0	198	2085	3.57	23.70	6.42	0.00	30.1	300	VC	2.00	142.918	1.96	21.1%
Sixth Line	MH3333	MH3330	0.45	22.89	25	1912	0	198	2110	3.57	23.96	6.55	0.00	30.5	300	VC	2.45	158.182	2.17	19.3%
Sixth Line	MH3330	MH3335	0.52	23.41	29	1941	0	198	2139	3.56	24.26	6.70	0.00	31.0	300	VC	2.86	170.905	2.34	18.1%
Sixth Line	MH3335	MH3334	0.44	23.85	25	1966	0	198	2164	3.56	24.51	6.82	0.00	31.3	300	VC	0.54	74.263	1.02	42.2%

1) Sewer information based on Town's records.

Town of Oakville
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PIPE ROUGHNESS (n)		
< 600	=	0.013
≥ 600	=	0.013
DESIGN VELOCITIES		
MIN =	0.60	m/s
MAX =	3.00	m/s

PEAKING FACTOR
$M = 1 + (14/(4 + P^{0.5}))$
P = Population in Thousands
FLOW FACTOR (L/day/capita)
Ex. Residential 275
Ex. Commercial 275
INFILTRATION RATE (L/sec/ha)
0.29

DESIGNED BY : Nicholas Melatti & Preerinder Kaur 23-Jan-24
CHECKED BY: Scott Passmore, P.Eng. 23-Jan-24

STREET NAME	MANHOLE		AREA		POPULATION					FLOW CHARACTERISTICS (L/sec)					PROPOSED SEWER DESIGN			CAPACITY (L/s)	Full VELOCITY (m/s)	PERCENT FULL (%)
			SECT.	ACCUM.	RESIDENTIAL		COMMERCIAL		TOTAL	PEAK FACTOR	PEAK Q_{peak}	INFILT Q_{infilt}	GW Q_{fdn}	TOTAL Q_{tot}	DIAMETER (mm)	TYPE	GRADE (%)			
	FROM	TO	(ha)	(ha)	SECT.	ACCUM.	SECT.	ACCUM.												
Sixth Line	EXT1	MH3025	19.66	19.66	1438	1438	198	198	1636	3.65	19.02	5.62	0.00	24.6						
Site	Site	MH3332	0.38	0.38	123	123	0	0	123	4.00	1.57	0.11		1.7						
Sixth Line	MH3025	MH3332	0.48	20.52	27	1588	0	198	1786	3.62	20.60	5.87	0.00	26.5	300	VC	2.30	153.263	2.10	17.3%
Sixth Line	MH3332	MH3331	1.58	22.10	381	1969	0	198	2167	3.56	24.54	6.32	0.00	30.9	300	VC	2.14	147.836	2.02	20.9%
Sixth Line	MH3331	MH3333	0.34	22.44	19	1988	0	198	2186	3.56	24.74	6.42	0.00	31.2	300	VC	2.00	142.918	1.96	21.8%
Sixth Line	MH3333	MH3330	0.45	22.89	25	2013	0	198	2211	3.55	24.99	6.55	0.00	31.5	300	VC	2.45	158.182	2.17	19.9%
Sixth Line	MH3330	MH3335	0.52	23.41	29	2042	0	198	2240	3.55	25.29	6.70	0.00	32.0	300	VC	2.86	170.905	2.34	18.7%
Sixth Line	MH3335	MH3334	0.44	23.85	25	2067	0	198	2265	3.54	25.54	6.82	0.00	32.4	300	VC	0.54	74.263	1.02	43.6%

1) Sewer information based on Town's records.

Town of Oakville
1295 Sixth Line
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Sanitary Sewer Design Calculations (Existing Condition - Wet Weather Flow)

PIPE ROUGHNESS (n)		
< 600	=	0.013
≥ 600	=	0.013
DESIGN VELOCITIES		
MIN =	0.60	m/s
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PEAKING FACTOR
$M = 1 + (14/(4 + P^{0.5}))$
P = Population in Thousands
FLOW FACTOR (L/day/capita)
Ex. Residential 275
Ex. Commercial 275
INFILTRATION RATE (L/sec/ha)
3.00

DESIGNED BY : Nicholas Melatti & Preerinder Kaur 23-Jan-24
CHECKED BY: Scott Passmore, P.Eng. 23-Jan-24

STREET NAME	MANHOLE		AREA		POPULATION					FLOW CHARACTERISTICS (L/sec)					PROPOSED SEWER DESIGN			CAPACITY (L/s)	Full VELOCITY (m/s)	PERCENT FULL (%)
			SECT.	ACCUM.	RESIDENTIAL		COMMERCIAL		TOTAL	PEAK FACTOR	PEAK Q_{peak}	INFILT Q_{infilt}	GW Q_{fdn}	TOTAL Q_{tot}	DIAMETER (mm)	TYPE	GRADE (%)			
	FROM	TO	(ha)	(ha)	SECT.	ACCUM.	SECT.	ACCUM.												
Sixth Line	EXT1	MH3025	19.66	19.66	1438	1438	198	198	1636	3.65	19.02	58.98	0.00	78.0						
Site	Site	MH3332	0.38	0.38	22	22	0	0	22	4.00	0.28	1.14		1.4						
Sixth Line	MH3025	MH3332	0.48	20.52	27	1487	0	198	1685	3.64	19.54	61.56	0.00	81.1	300	VC	2.30	153.263	2.10	52.9%
Sixth Line	MH3332	MH3331	1.58	22.10	381	1868	0	198	2066	3.57	23.51	66.30	0.00	89.8	300	VC	2.14	147.836	2.02	60.7%
Sixth Line	MH3331	MH3333	0.34	22.44	19	1887	0	198	2085	3.57	23.70	67.32	0.00	91.0	300	VC	2.00	142.918	1.96	63.7%
Sixth Line	MH3333	MH3330	0.45	22.89	25	1912	0	198	2110	3.57	23.96	68.67	0.00	92.6	300	VC	2.45	158.182	2.17	58.6%
Sixth Line	MH3330	MH3335	0.52	23.41	29	1941	0	198	2139	3.56	24.26	70.23	0.00	94.5	300	VC	2.86	170.905	2.34	55.3%
Sixth Line	MH3335	MH3334	0.44	23.85	25	1966	0	198	2164	3.56	24.51	71.55	0.00	96.1	300	VC	0.54	74.263	1.02	129.4%

1) Sewer information based on Town's records.

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< 600	=	0.013
≥ 600	=	0.013
DESIGN VELOCITIES		
MIN =	0.60	m/s
MAX =	3.00	m/s

PEAKING FACTOR
$M = 1 + (14/(4 + P^{0.5}))$
P = Population in Thousands
FLOW FACTOR (L/day/capita)
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Ex. Commercial 275
INFILTRATION RATE (L/sec/ha)
3.00

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STREET NAME	MANHOLE		AREA		POPULATION					FLOW CHARACTERISTICS (L/sec)					PROPOSED SEWER DESIGN			CAPACITY (L/s)	Full VELOCITY (m/s)	PERCENT FULL (%)
			SECT.	ACCUM.	RESIDENTIAL		COMMERCIAL		TOTAL	PEAK FACTOR	PEAK Q_{peak}	INFILT Q_{infilt}	GW Q_{fdn}	TOTAL Q_{tot}	DIAMETER (mm)	TYPE	GRADE (%)			
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Sixth Line	EXT1	MH3025	19.66	19.66	1438	1438	198	198	1636	3.65	19.02	58.98	0.00	78.0						
Site	Site	MH3332	0.38	0.38	123	123	0	0	123	4.00	1.57	1.14		2.7						
Sixth Line	MH3025	MH3332	0.48	20.52	27	1588	0	198	1786	3.62	20.60	61.56	0.00	82.2	300	VC	2.30	153.263	2.10	53.6%
Sixth Line	MH3332	MH3331	1.58	22.10	381	1969	0	198	2167	3.56	24.54	66.30	0.00	90.8	300	VC	2.14	147.836	2.02	61.4%
Sixth Line	MH3331	MH3333	0.34	22.44	19	1988	0	198	2186	3.56	24.74	67.32	0.00	92.1	300	VC	2.00	142.918	1.96	64.4%
Sixth Line	MH3333	MH3330	0.45	22.89	25	2013	0	198	2211	3.55	24.99	68.67	0.00	93.7	300	VC	2.45	158.182	2.17	59.2%
Sixth Line	MH3330	MH3335	0.52	23.41	29	2042	0	198	2240	3.55	25.29	70.23	0.00	95.5	300	VC	2.86	170.905	2.34	55.9%
Sixth Line	MH3335	MH3334	0.44	23.85	25	2067	0	198	2265	3.54	25.54	71.55	0.00	97.1	300	VC	0.54	74.263	1.02	130.7%

1) Sewer information based on Town's records.

End Document