

**Functional Servicing and
Stormwater Management Report
Draft Plan of Subdivision
Block 220: Plan 20M-840**

**193 Nautical Boulevard
Oakville, ON**

Town of Oakville, ON



Prepared for:
Town of Oakville

Prepared by:
Stantec Consulting Ltd.

January 31, 2022

Project No. 1606 23025

**FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT
DRAFT PLAN OF SUBDIVISION
BLOCK 220: PLAN 20M-840**

**193 NAUTICAL BOULEVARD
OAKVILLE, ON**

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FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT DRAFT PLAN OF
SUBDIVISION193 NAUTICAL BOULEVARD OAKVILLE, ON

This document entitled Functional Servicing and Stormwater Management Report Draft Plan of Subdivision193 Nautical Boulevard Oakville, ON was prepared by Stantec Consulting Ltd. ("Stantec") for Menkes Lakeshore Woods Inc. (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

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1.0 Site Location and Description

Stantec Consulting Ltd. (Stantec) has been retained by Menkes Lakeshore Woods Inc. to prepare a Functional Servicing and Stormwater Report (FSSMR) in support of the Draft Plan of Subdivision Application submitted to develop the property located at 193 Nautical Boulevard in the Town of Oakville (Block 220, Plan 20M-840), which is currently vacant. It is an infill block 2.25 ha in size that was identified as being surplus lands by the Halton District School Board, and will provide 37 single family residential lots.

As shown in **Figure 1**, the subject lands are located approximately 0.65km northwest of Lake Ontario and approximately 1.0km south of Bronte Creek. The site is bounded by Nautical Boulevard to the North, Shell Park to the South, and existing homes fronting onto Innville Crescent and Alison Crescent to the east and west respectively.

A copy of the draft plan of subdivision is shown in **Appendix A** to demonstrate the proposed road layout and lot fabric.

This report examines the existing boundary servicing (storm, sanitary and water) and grading conditions and addresses the requirements to service the development by providing a conceptual design for storm and sanitary drainage, water supply, grading, interim erosion and sediment control during construction and stormwater management.

The findings of this report are based primarily on review of the as-constructed engineering drawings and other background documentation for the surrounding New Province Homes Subdivisions (24T-00004) prepared by Schaeffers Consulting Engineers (Schaeffers). These reports and drawings include:

- Stormwater Management Report Pond A & Pond B
- OTTSWMM & HGL Analysis Report
- Schaeffers Drawing TA-2 Storm Tributary Area (DS-432.1) dated June 2006
- Schaeffers Drawing GR-1 Grading Plan (DS-432.8) dated December 2009
- Schaeffers Drawing TA-7 Sanitary Tributary Area (DS-432.1) dated April 2003

It should be noted that the subject lands were originally conveyed to the Halton District School Board at the time of the New Province Homes Subdivision development in the early 2000's. Despite this, Schaeffers assessed the lands from a servicing perspective as additional single-

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family homes as per the subject development proposal. This is demonstrated throughout the New Province Homes Subdivision engineering plans and reporting, which clearly demonstrate lot fabric and road alignment geometry as well as total water/ wastewater demands in keeping with the proposed development.

- Schaeffers plans contemplated 37 single family homes, with a nearly identical road alignment and lot fabric layout to the proposed development. (Schaffers dwg.GR-1, refer to **Appendix B**)
- Schaeffers plans indicate an equivalent water/ wastewater population of 125 for the subject lands. The subject development assumes a population of 124 as per 'Regional Municipality of Halton Water and Wastewater Linear Design Manual', with the small variation resulting from the minimal reduction in parcel area at the SE corner as compared to what was contemplated by Schaeffers. (Schaffers dwg. DS-1, refer to **Appendix E**)

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2.0 Storm Drainage

2.1 PRE-DEVELOPMENT CONDITIONS

The Subject Site is vacant and grassed. The existing topography of the Site is nearly flat with minor sloping from north to south yielding a total grade change of approximately 1.5m. A 0.75m-1.25m tall embankment exists at the west limit of the site to accommodate the higher elevations of the existing lots fronting onto Allison Crescent relative to the subject site. All minor and major flows from the site currently discharge to Shell Park.

2.2 POST-DEVELOPMENT CONDITIONS

The post development grading and drainage will be compatible with the existing residential subdivision (24T-00004) and in conformity with the originally contemplated future development of the Subject Site as represented on Shaeffers Drawing GR-1 Grading Plan (DS-432.8).

The 2002 Pond B SWM Report, the New Province Homes Plan TA-2 Storm Tributary Area (DS-432.1) dated June 2006, and 2009 OTTSWMM and HGL Analysis all accounted for the drainage from the future development of the Subject Site as detailed in the following sections.

Site grading will be designed such that the major and minor flows from the majority of the site (1.91ha) will be captured by the proposed storm sewers within the site and will discharged at a controlled rate into the existing 900mm diameter sewer connection located within the walkway block at the south west corner of the Site connecting into Allison Crescent. Both minor and major flows from this portion of the site will be conveyed to existing SWM Pond B within the New Province Homes Subdivision.

A small portion of the site (0.34ha), which will be predominantly landscaped backyard area, will continue to be conveyed to Shell Park under both minor and major flow conditions.

2.3 STORM SEWERS AND SERVICING CONCEPT

A 900mm diameter storm sewer connection was provided within the walkway block (Block 38) at the southwest corner of the Site connecting into Allison Crescent which discharges through Summerset Court and ultimately into SWM Pond B just west of Great Lakes Blvd. As part of the development of Allison Crescent, an OTTSWMM and HGL Analysis was completed in 2009 which accounted for the future development of the Site assuming a drainage area of 2.04 ha and runoff coefficient of 0.5 with a maximum flow rate of 0.638 m³/s during the 100 year storm.

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The latest Town Standards have a minimum runoff coefficient for single family residential lots of 0.65. As a result, peak flows from the site will be higher than previously assumed. A review of the 2009 HGL was completed to see if additional flow could be conveyed through the downstream storm sewer while maintaining the minimum 0.5m separation from the HGL and existing basements. Unfortunately, any significant increase in peak flow from the Site results in a reduced separation from HGL and existing basements below the Town minimum. Therefore, flows from the Site must be controlled to a maximum flow rate of 0.638 m³/s during the 100 year storm.

In order to satisfy this requirement, storm pipes within the Site have been oversized to capture and store runoff during the 100-year storm, with a controlled release of 0.637 m³/s through a 470mm diameter orifice plate located within the downstream side of MH 6. An onsite storage volume of 100.0 m³ is required and 102.8 m³ is provided with oversized pipes. Calculations are provided within **Appendix C**.

Since onsite pipe storage is needed and the existing storm outfall constrains the amount of pipe cover available, sump pumps will be required on all lots to accommodate the foundation drainage systems.

2.4 STORMWATER MANAGEMENT

The Site is Tributary to existing SWM Pond B for the New Province Homes Subdivision. This SWM Pond was designed in accordance with the Sheldon Creek Watershed Master Plan, October 1993 and is designed as an extended detention wet pond providing Level 2 (Normal) water quality treatment and 24 hour extended detention of the 25mm storm. This pond was designed to service to total catchment of 50ha with a weighted runoff coefficient of 0.54 (imperviousness of 49%). The required and provided storage volumes are summarized in **Table 2.1** below. The latest Town Standards have a minimum runoff coefficient for single family residential lots of 0.65, which is slightly higher than assumed during the pond design. The permanent pool and extended detention calculations were reviewed and revised utilizing the latest runoff coefficient for the Site area only to assess if the pond provides the required volumes to achieve the quality and extended detention storage for the Site. Results are provided in **Table 2.1** below.

Table 2.1: Summary of Existing SWM Pond B Volumes

Storage	2002 Pond B Design Required Volumes (m³)	2002 Pond B Design Available Volumes (m³)	Pond B – Revised Required Volumes (m³)
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Permanent Pool Level 2 – water quality (Normal)	3,179	3,212	3,221
24-hour Erosion Control (25mm event)	6,357	7,270	6,513

As shown, the existing pond has sufficient permanent pool and extended detention storage for the Site drainage area utilizing the latest Town standard runoff coefficient.

3.0 Grading

The topography of Subject Site is currently nearly flat with minor sloping from north to south yielding a total grade change of approximately 1.5m. A 0.75m-1.25m tall embankment exists at the west limit of the site to accommodate the higher elevations of the existing lots fronting onto Allison Crescent relative to the subject site.

Under proposed conditions, the site will match all boundary elevations. Right-of-ways will be designed to slope down in a northerly direction towards Nautical Boulevard at 0.5% to a major system capture location within the site. This will require raising the elevation of the site, particularly at the south end, therefore fill material import is anticipated. A grade transition accommodated by walkout lots will be incorporated at the south end of the site to match the existing elevations with Shell Park. The preliminary grading concept is depicted in **Figure 3**.

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4.0 Watermain Servicing

The Subject Site currently lies within the Pressure Zone OB1. The proposed watermain will be connected to the existing watermain system within the New Province Homes Subdivision via the two 150mm watermain stubs that exist at the Nautical Boulevard site frontage as shown on **Figure 2**, thus yielding a looped system. It should be noted that both stubs have isolation valves to mitigate any impacts to existing residents during tie-ins after watermain commissioning.

Water demand for the site is equivalent to 8,053L/min (134.22L/s) which must be accommodated by the municipal network at a minimum pressure of 140kPa (20PSI). Adequate flow/pressure conditions will be verified via a hydrant flow test, which will be provided with a subsequent submission once weather allows (Region of Halton do not allow hydrant flow testing during Winter months). Refer to **Appendix D** for the water demand calculations.

5.0 Sanitary Drainage and Sewers

The proposed development will be serviced by 200mm diameter sanitary sewers and will discharge to the existing 200mm sanitary sewer outfall located within the walkway block at Alison Crescent as shown on **Figure 2**. The proposed sewer design is in conformance with the original sanitary system design prepared by Schaffers. Per Schaffers dwg.DS-1, an equivalent population of 125 was applied for the subject lands in the design of the sanitary sewer network for the New Province Homes Subdivision, while the proposed development yields an equivalent population of 124 (resulting from the minor decrease in land area at the SE corner of the parcel).

As detailed in **Appendix E**, all sanitary sewers that will convey flows from the site have ample surplus capacity as verified down to the 750mm trunk sewer on Creek Path Ave.

6.0 Utilities

All utility services (including electrical, streetlighting, telecommunication and gas) for the proposed development will be provided through the connection to and extension of services currently in-place along existing streets.

Actual utility requirements will be determined during the detailed design stage of the project.

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7.0 Erosion and Sediment Control

The preliminary ESC plan is depicted on **Figure 4**. The site will be split into two separate drainage areas, each with a catchment just over 1ha. Each area will convey all runoff via swales complete with rock check dams to sediments traps that will provide sedimentation prior to discharging any flows to Shell Park. The sediment trap outlets will be equipped with gabion stone overflow weirs and double 600mm fiber roll check dams to provide additional sedimentation control in high flow events prior to discharge from the site. The site will also be equipped with a perimeter sediment fence to ensure no sediment breaches the site boundary except at the desired sediment trap outlet locations.

A mud mat and silt sacks installed on existing catch basins on Nautical Boulevard will also be incorporated to mitigate mud tracking and the impacts of sedimentation on the existing roads. The mud mat should be installed opposite Turning Lead Road for improved traffic safety and such that the required curb depression is at the ultimate road connection location.

Given that this is an infill development in an established community, signage will be posted alerting pedestrians and motorists of the construction access. Significant fill import is anticipated for the site and during such works appropriate measure will need to be taken to mitigate mud tracking on existing roads as well as airborne dust.

8.0 Conclusions and Recommendations

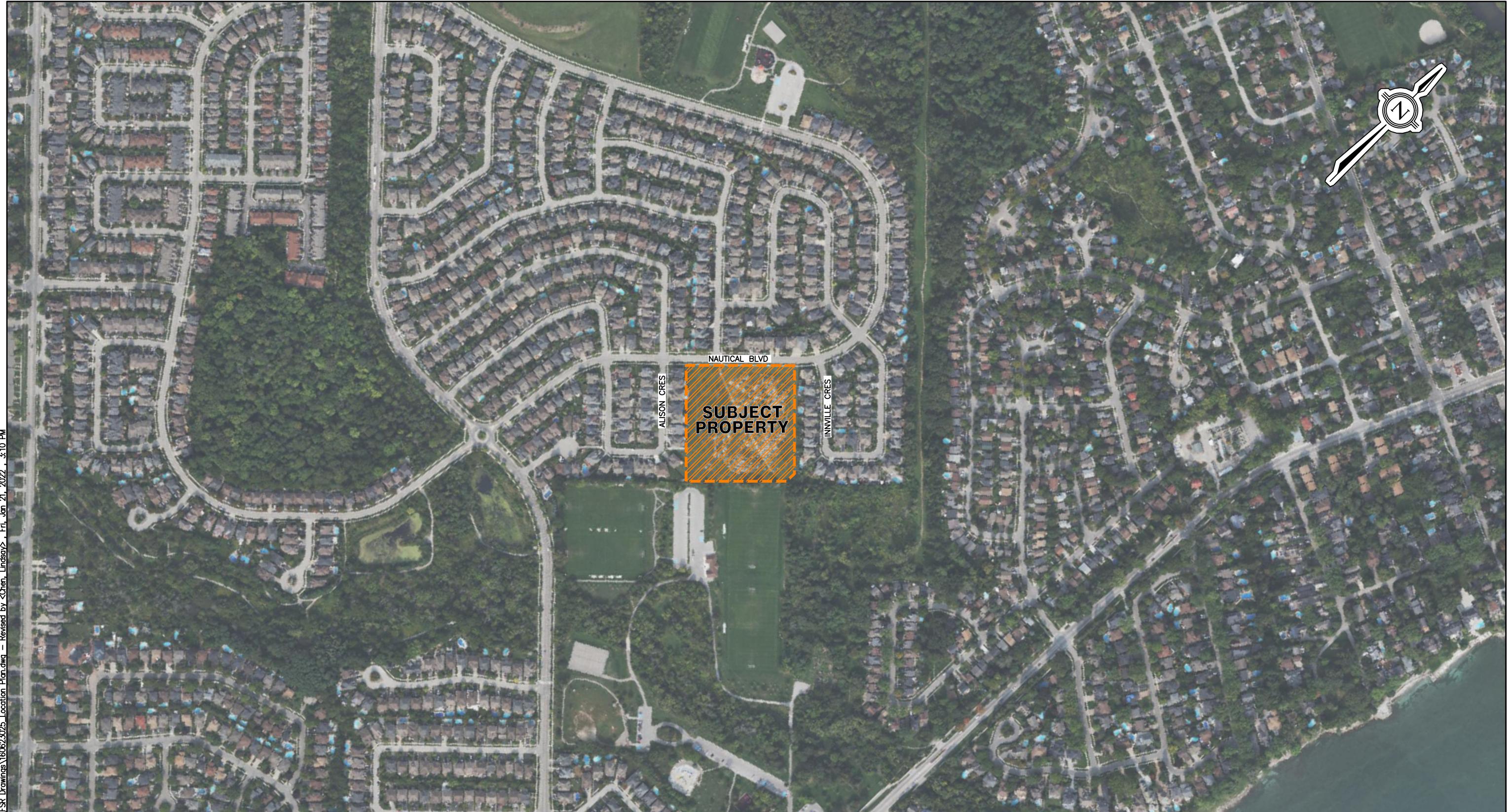
Based on the findings of this report, the conclusions and recommendations are as follows:

- Storm sewer servicing can be achieved by connecting to the existing storm sewer that ultimately conveys storm flows to Pond B.
- Existing SWM Pond B was initially designed to service the Site and also provides sufficient storage utilizing the latest Town standard runoff coefficient for the Site.
- Storm sewers within the Site have been oversized to capture and store runoff onsite during the 100 year storm, with a controlled release of $0.637 \text{ m}^3/\text{s}$ into the existing downstream storm sewer in accordance with the 2009 HGL analysis. Sump pumps will be required on all lots.
- The proposed grading design for the site can be achieved using the conventional subdivision design standards and compliance to the proposed stormwater management and overland flow concept. Fill import is anticipated to accommodate the necessary overland flow conveyance of the ROWs to Nautical Boulevard.

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- The proposed watermain will be looped and connect to the two existing stubs located at the site frontage. Water demand for the site has been established at 8,053L/min which must be provided at a pressure not less than 140kPa. A hydrant flow test will be conducted to verify that the necessary flow and pressure exist in the municipal system. This will be confirmed on the next submission.
- Sanitary sewer servicing can be achieved by connecting to the existing outfall. It has been demonstrated that the existing sewer network was designed to accommodate a population equivalent to what is proposed and that ample capacity exists in all downstream sewers to the 750mm trunk sewer.
- Utility services including electrical, gas, telephone, and cable will connect to the existing services on adjacent streets to service the Subject Site.
- Erosion and sediment control measures will be implemented as indicated on **Figure 4**.



File: V:\01606\Active\160623025\Drawings\FSR Drawings\160623025_Location Plan.dwg - Revised by <Chen, Lindsay>, Fri, Jan 21, 2022, 3:10 PM

Legend

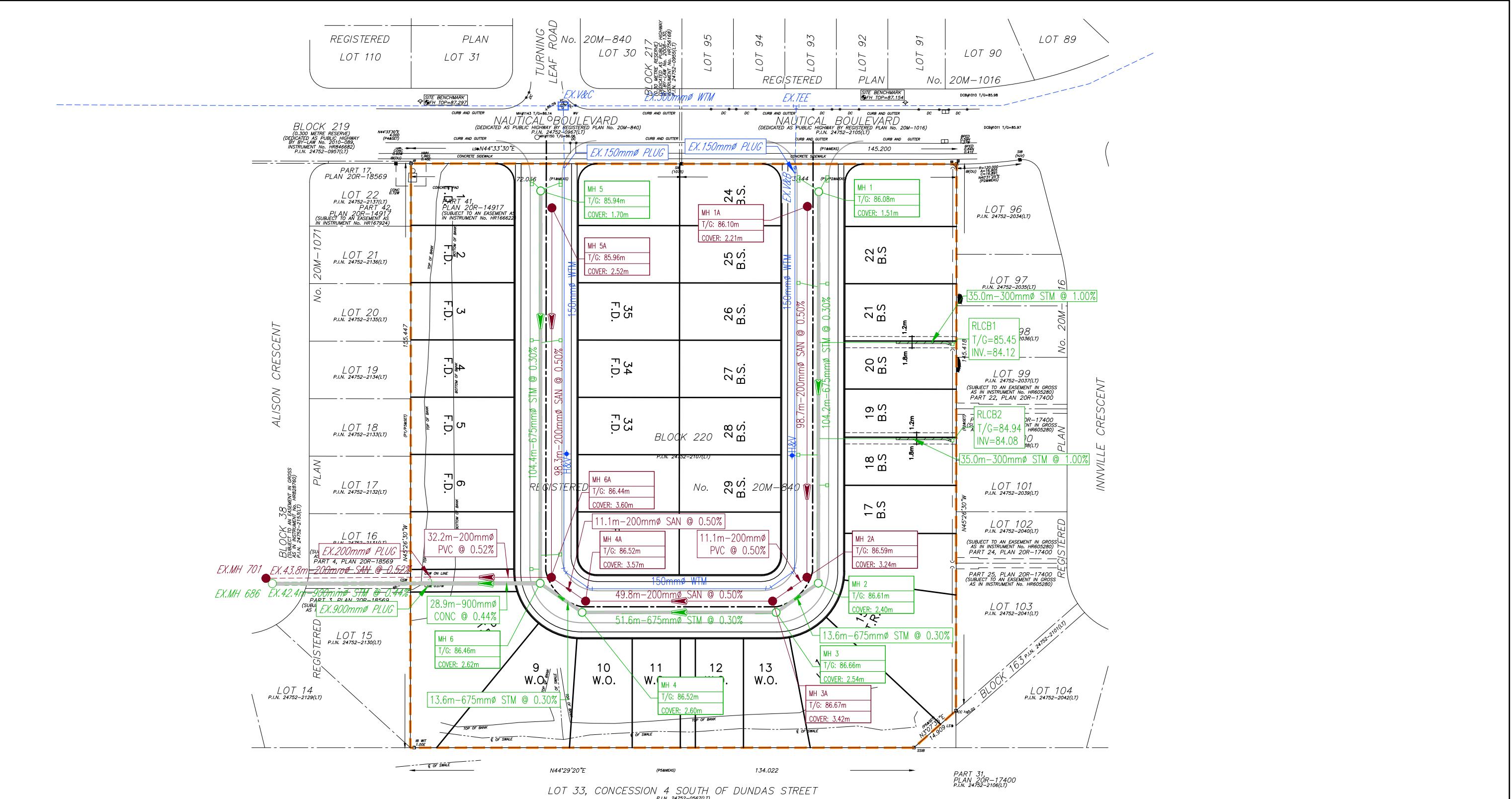
— SUBJECT PROPERTY

SCALE 1:5000

FUNCTIONAL SERVICING REPORT
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FIGURE 1
LOCATION PLAN

January 2022



Stantec

SCALE 1:1000

Legend

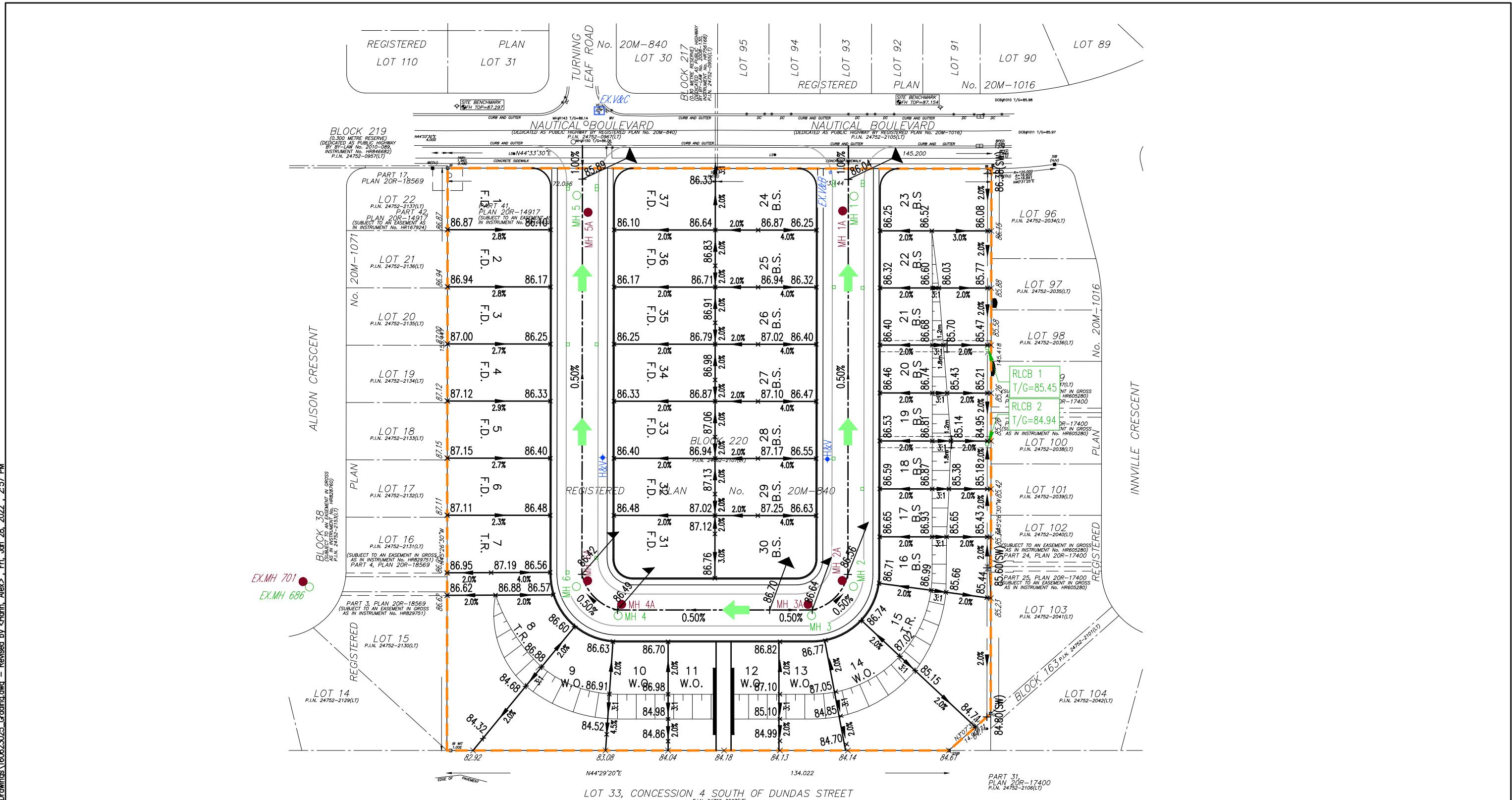
- SUBJECT SITE
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
 - PROPOSED WATERMAIN
 - EXISTING STORM SEWER
 - EXISTING SANITARY SEWER
 - EXISTING WATERMAIN
 - // RLCB LEAD INSULATION
- **ALL LOTS WILL BE EQUIPPED WITH SUMP PUMPS**

FUNCTIONAL SERVICING REPORT
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FIGURE 2

PRELIMINARY
SERVICING PLAN

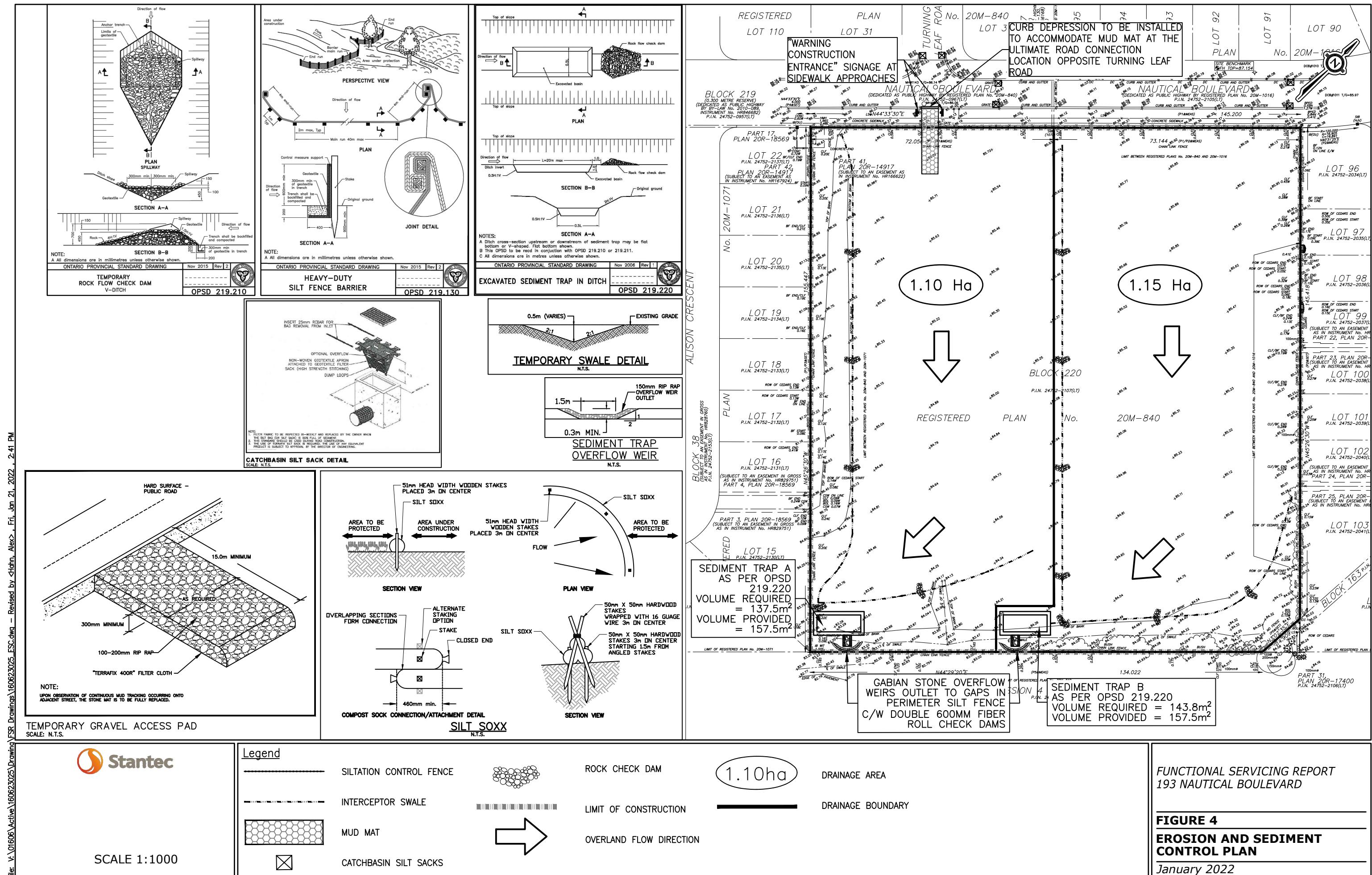
January 2022

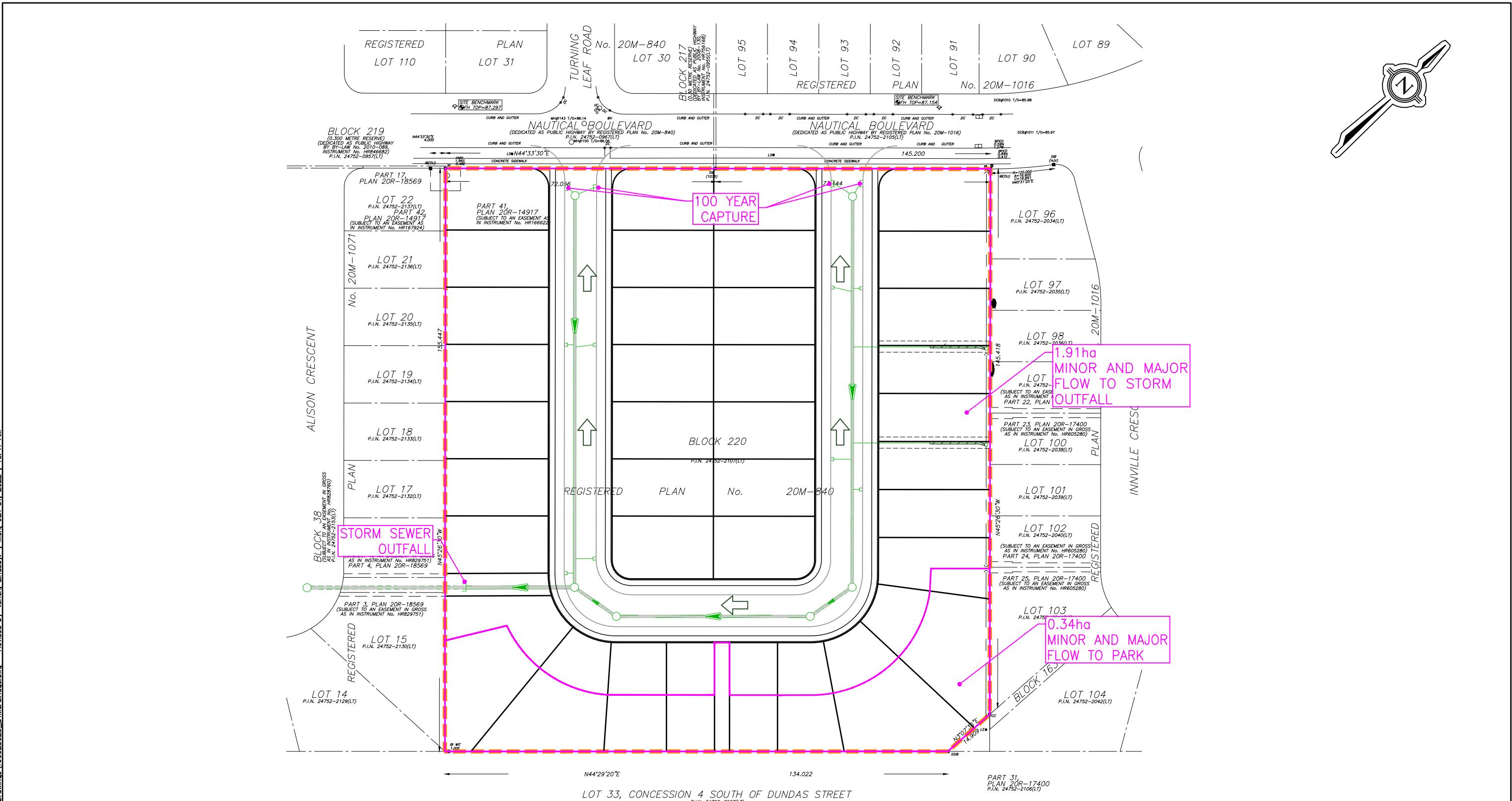

Stantec
Legend

- SUBJECT SITE**
- PROPOSED RETAINING WALL**
- EXISTING SPOT ELEVATIONS**
- PROPOSED SPOT ELEVATION**
- MAJOR OVERLAND FLOW**
- PROPOSED ROAD GRADE**
- HIGH/LOW POINT**
- B.S.** BACKSPLIT LOT
- W.O.** WALKOUT LOT
- F.D.** FRONT DRAINING LOT
- TR** TRANSITION LOT

SCALE 1:5000

**FUNCTIONAL SERVICING REPORT
193 NAUTICAL BOULEVARD****FIGURE 3
PRELIMINARY
GRADING PLAN
January 2022**





Stantec

Legend

- | | |
|--|------------------------------|
| | SUBJECT SITE |
| | PROPOSED DRAINAGE BOUNDARIES |
| | OVERLAND FLOW DIRECTION |
| | PROPOSED STORM SEWER |
| | EXISTING STORM SEWER |
| | RLCB LEAD INSULATION |

SCALE 1:1000

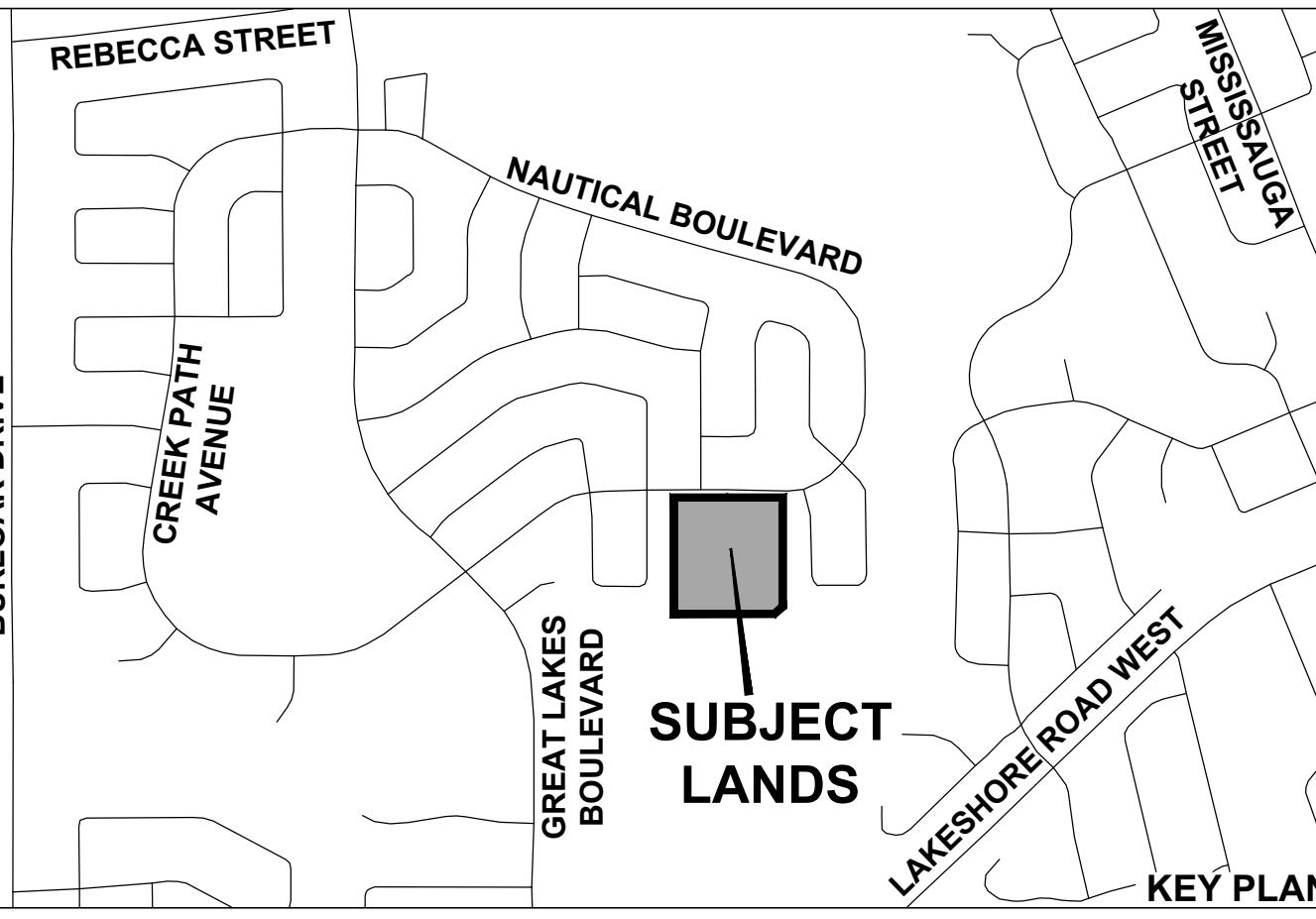
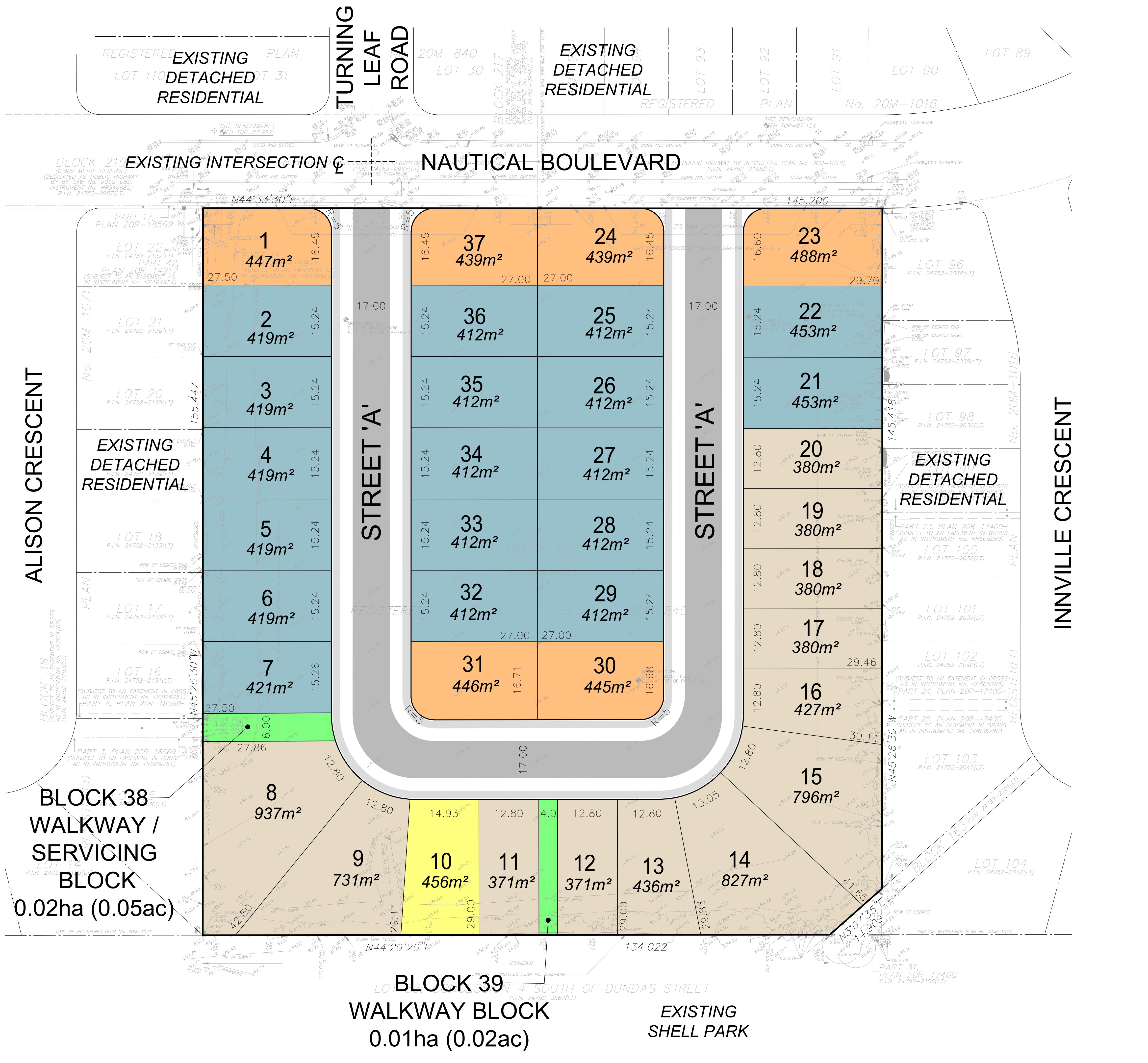
FUNCTIONAL SERVICING REPORT
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FIGURE 5
PROPOSED DRAINAGE AREA
PLAN

January 2022

APPENDIX 'A'

PROPOSED DRAFT PLAN & TOPOGRAPHIC SURVEY



DRAFT PLAN OF SUBDIVISION MENKES LAKESHORE WOODS INC.

FILE # 24T-_____

PART OF BLOCK 220,
REGISTERED PLAN No. 20M-840,
TOWN OF OAKVILLE,
REGIONAL MUNICIPALITY OF HALTON

OWNERS CERTIFICATE

I HEREBY AUTHORIZE GLEN SCHNARR & ASSOCIATES INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF OAKVILLE FOR APPROVAL.

SIGNED: _____ A.S.O.
MENKES LAKESHORE WOODS INC.

DATE: _____

SURVEYORS CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED: _____
PATRICK WOOLLEY, O.L.S.
MTÉ ONTARIO LAND SURVEYORS LTD.

DATE: _____

ADDITIONAL INFORMATION

(UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G,J & L ARE SHOWN ON THE DRAFT AND KEY PLANS.

- H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
- I) SANDY LOAM AND CLAY LOAM
- K) SANITARY AND STORM SEWERS TO BE PROVIDED

LAND USE SCHEDULE

LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY (UPHA)
DETACHED - 12.80m (42')		0.64	1.58	10	15.63
DETACHED - 14.02m (46')	1-37	0.27	0.67	6	22.22
DETACHED - 14.93m (49')		0.05	0.12	3	60.00
DETACHED - 15.24m (50')		0.75	1.85	18	24.00
WALKWAY / SERVICING BLOCK 17.0m LOCAL R.O.W. (LENGTH: 295m)	38.39	0.03	0.07		
TOTAL	39	2.25	5.56	37	7.14

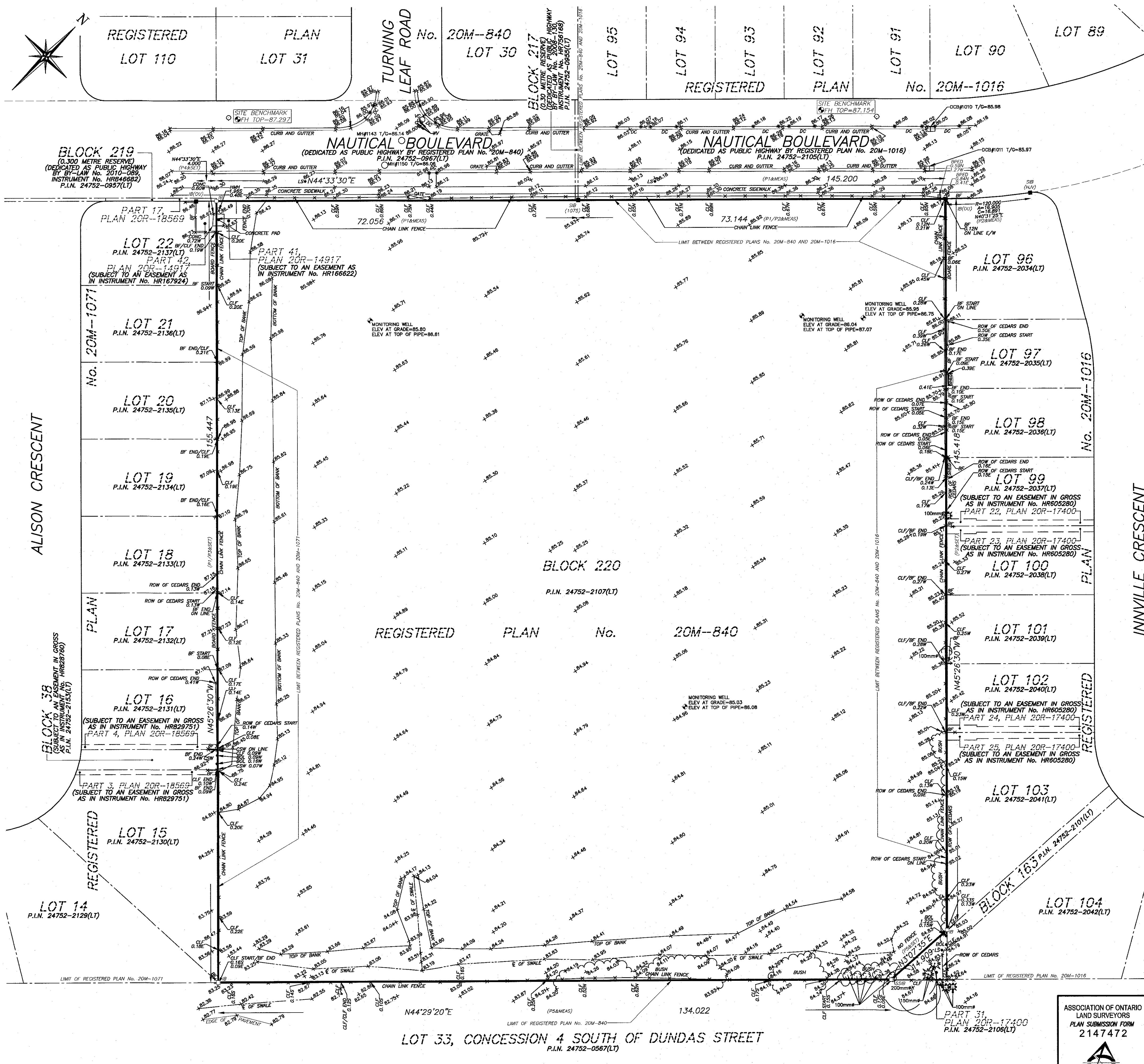
NOTES

- PAVEMENT & SIDEWALK ILLUSTRATIONS ARE DIAGRAMMATIC ONLY

menkes

SCALE 1:400
(24 x 36)
JANUARY 27, 2022

GSAI
Glen Schnarr & Associates Inc.



ASSOCIATION OF ONTARIO
 LAND SURVEYORS
 PLAN SUBMISSION FORM
 2147472



MTE ONTARIO LAND SURVEYORS LTD.
 1016 SUTTON DRIVE, UNIT A
 BURLINGTON, ONTARIO, L7L 6B8
 TEL: 905-639-2552

Code File: P:\V\49485\100\49485-100-SR1.DWG

File No.: 49485-100-SR1(L)

Drawn By: D. DINIZ Checked By: P. WOOLLEY

Last Plot Date: July 15, 2021

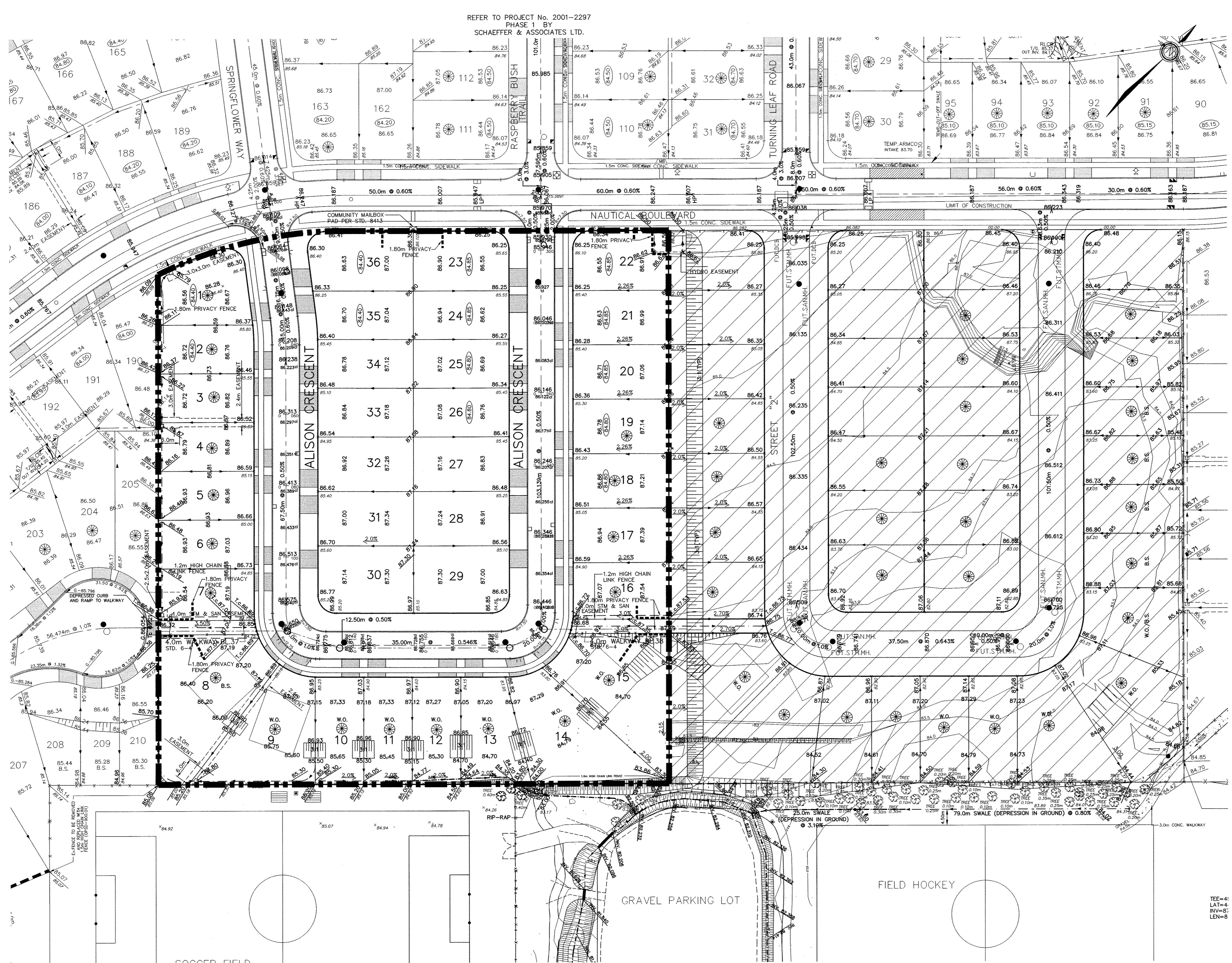
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APPENDIX 'B'

NEW PROVINCE HOMES SUBDIVISION SUPPORTING DOCUMENTS

GRADING PLAN

20M-1071



KEY PLAN

TOWN OF OAKVILLE

THE REGIONAL MUNICIPALITY OF HALTON



ENGINEERING AND CONSTRUCTION DEPARTMENT

Title 24T-00004

NEW PROVINCE HOMES

PHASE 10

GRADING PLAN

20M-1071

20R-18569

Municipal Drawing No.

SD-432.8

Regional File No.

DO-669

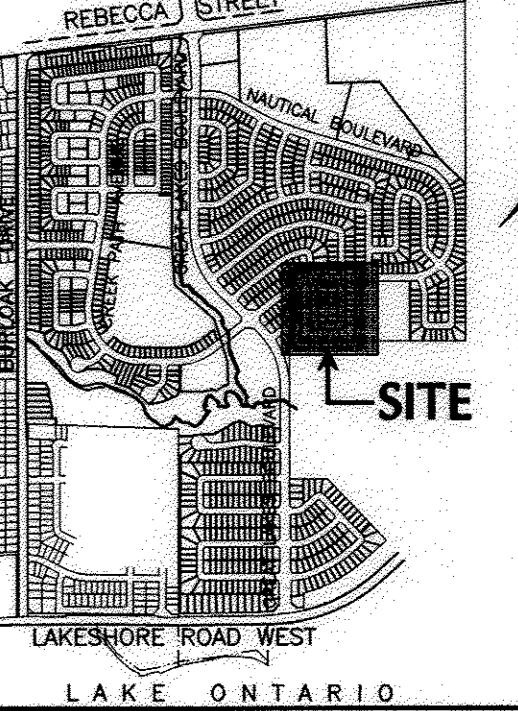
Contract No.

2007-3178

Drawing No.

GR-1

HAs Constructed 3178PH 10-AC3178_GR-1.dwg. 3/8/2013 10:23:48 AM, mihash, User 3 (900.00x600.00)



LEGEND:

- DENOTES AS CONSTRUCTED ROAD C/L ELEVATION
- DENOTES FUTURE DEVELOPMENT
- DENOTES LIMIT OF SUBDIVISION
- DENOTES PRIVACY FENCE
- DENOTES MINIMUM BASEMENT ELEVATION
- DENOTES ENGINEERED FILLED LOTS
- DENOTES AS CONSTRUCTED ROAD C/L ELEVATION

BENCH MARK 229

DESCRIPTION - PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLOAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 1.0m NORTHEAST OF HYDRO POLE, 6.9 m SOUTHEAST OF THE CENTRE LINE OF LAKESHORE ROAD AND 3.8 m SOUTHEAST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. ELEVATION 79.994m

No.	Date	By	Revisions
3.	Dec /09		AS CONSTRUCTED
2.	Dec /04	M.N.	ENG. FILL ADDED ON LOTS 1-5 AND 19
1.	NOV/24/09	M.N.	3:1 SLOPE ADDED FOR WALKOUT LOTS
Design	S.P.	Checked	M.N.
Drawn	J.B.	Checked	P.S.
Scale:	1:500		
			References
Municipal			
			APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
			SIGNED: Heinz Hecht DATE: Nov. 25/2009
			Development Services Department -TOWN OF OAKVILLE
Regional			DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.
Legislative & Planning Services Department			APPROVED PROFESSIONAL ENGINEER M. NINKOVIC December, 2009 PROVINCE OF ONTARIO
Municipality			

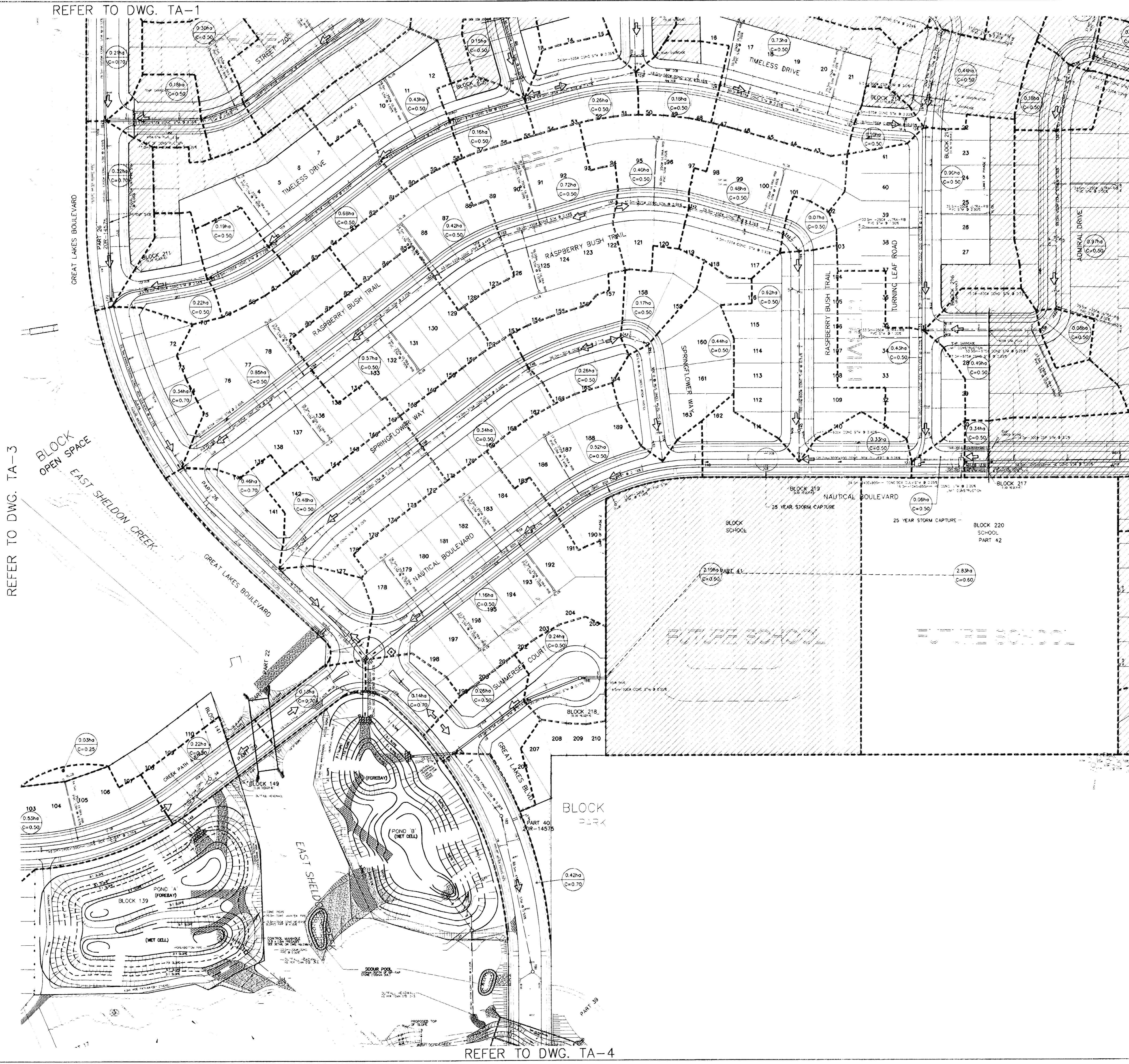
SCHAEFFERS

CONSULTING ENGINEERS

6 Romse Drive, Concord, Ontario L4K 4R3
Tel: (905) 736-6100
Fax: (905) 736-6875
E-mail: design@schaeffers.com

20M-8391840

STORM TRIBUTARY AREA (PART 2)



LEGEND:

- DENOTES FUTURE DEVELOPMENT
- DENOTES OVERLAND FLOW ROUTE
- DENOTES AREA IN HECTARES
- DENOTES RUN-OFF COEFFICIENT

AS CONSTRUCTED JUNE 2006
BENCH MARK 229

DESCRIPTION - PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF
LAKESHORE ROAD AT SOUTH END OF BURLAK DRIVE, 25.8 m
SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF
THE INTERSECTION, 1.0m NORTHEAST OF HYDRO POLE, 6.9 m
NORTHWEST OF THE TOP OF THE BURLAK DRIVE ROAD AND 1.8 m
SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLAK DRIVE
HORIZONTAL CONTROL MONUMENT NO 001653071
ELEVATION 79.994m

2 JUNE 2006	B.	AS CONSTRUCTED JUNE 2006		
JAN 2003	B.	AS BUILT - STORM SEWER SNC		
No.	Date	By		
Design	P.S.	Checked	M.N.	Date
Drawn		Checked	Z.C.	JUNE 2006
Scale	1:1000			
Approvals	Field Notes			
Municipal	APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS			
SIGNED	GEORGE TRENKLER	DATE	02/04/11	
Planning Services Department - TOWN OF OAKVILLE				

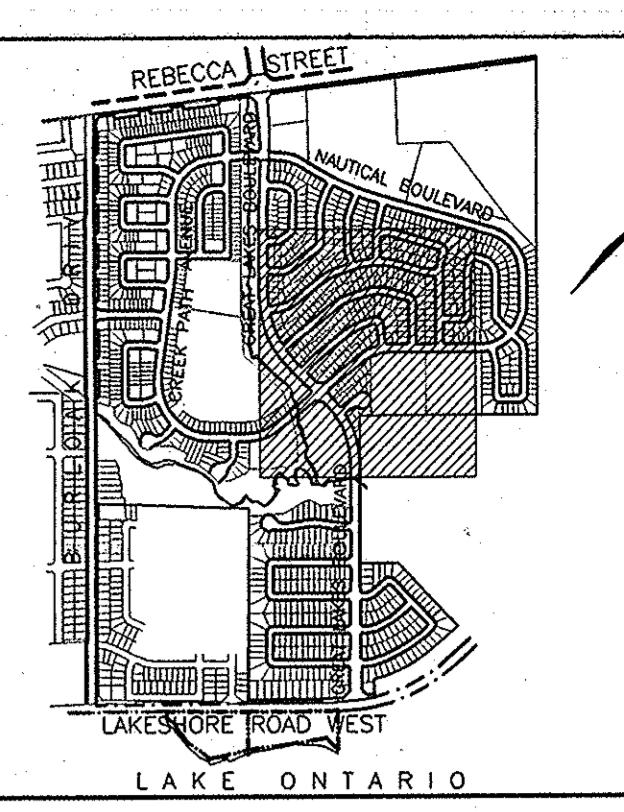
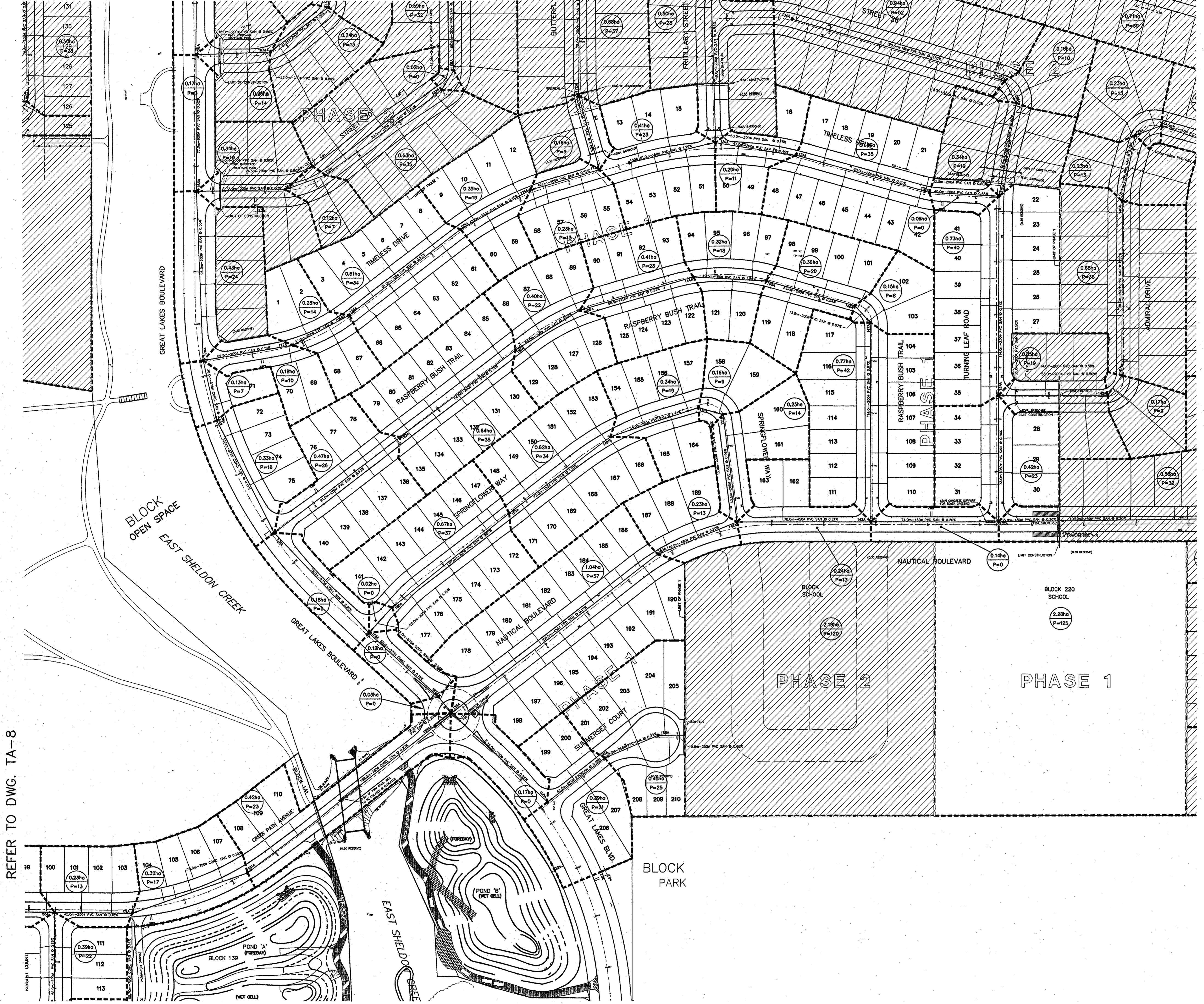
PROFESSIONAL ENGINEER
M. NINKOMC
JUNE 2006

SCHAEFFERS
CONSULTING ENGINEERS
64 Jardin Drive, Concord,
Ontario L4K 3P3
Tel: (905) 738-6100
Fax: (905) 738-5875
Email:
design@schaeffers.com

Municipality
THE REGIONAL MUNICIPALITY OF HALTON
TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

Title		20M-840
NEW PROVINCE HOMES PHASE 2 STORM TRIBUTARY AREA (PART II)		
Municipal Drawing No	Regional File No.	
SD-432.1	D0-542	
Contract No	Drawing No	
2001-2297	TA-2	

REFER TO DWG. TA-6



KEY PLAN SCALE N.T.S.

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

LEGEND

DENOTES FUTURE DEVELOPMENT

DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec.

DENOTES AREA IN HECTARES

DENOTES POPULATION

BENCH MARK 229
DESCRIPTION: PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF
LAKESHORE ROAD AT SOUTH END OF BURLOAK DRIVE, 25.8 m
SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF
THE SECTION ON THE NEAREST HYDRANT LINE 6.0 m
SOUTHEAST OF THE CENTRE LINE OF LAKESHORE ROAD AND 3.8 m
SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE.
ELEVATION 78.924m

2. APR 2003 B.J. AS BUILT - REMEDIED SANITARY SEWERS
1. JUN 2003 B.J. AS BUILT - SANITARY SEWERS ONLY

No. Date By Revisions

Design P.S. Checked M.N. Date

Drawn Checked Z.C. MARCH 2002

Scale: HOR. 1 : 1000 References

Approvals Field Notes

Municipal APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.

SIGNED: GEORGE TRENKLER DATE: 02/04/11

Planning Services Department -TOWN OF OAKVILLE

Region: APPROVAL OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.

MARGARET SMITH 02/04/11 Planning & Public Works Dept -Town of Oakville DATE

SCHAEFFERS CONSULTING ENGINEERS 64 Jordin Drive, Concord, Ontario L4K 3P3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com

Municipality THE REGIONAL MUNICIPALITY OF HALTON

TOWN OF OAKVILLE DEPARTMENT OF PUBLIC WORKS

Title 24T-00004/1734

NEW PROVINCE HOMES PHASE II SANITARY TRIBUTARY AREA (PART II)

Municipal Drawing No. Residential File No.
SD-432.1 O- 13114 2

Contract No. Drawing No.
2001-2297 TA-7

APPENDIX 'C'

STORMWATER MANAGEMENT

Project Description: Oakville Menkes (193 Nautical Blvd)

Job Number: 160623025

Creation Date: 28-Jan-22

Revision Date: 28-Jan-22

Author: AP JP

Pond Name: Pond B

Permanent Pool and Extended Detention Sizing Calculations Taken from February 2002 SWM Report Pond B, New Province Homes

Landuse	Area (ha)	C (Runoff Coef.)	C (weighted value)	Imperviousness (%)	Imperviousness (Weighted Value)
Drainage to Pond B*	50.00	0.54	27.00	49	25
Total	50.00		0.54		49%

* Runoff coef. And imperviousness values from Pond B Design Report

Protection Level Normal Choose Level Enhanced (80%), Normal (70%) or Basic (60%)

Pond Type Wet Pond Choose Infiltration, Wet Pond, Wetland, Hybrid, or Dry Pond (Basic Only)

Imperviousness % 49

MOECC 2003 Table 3.2 Volume 103.6 m³/ha
 63.6 m³/ha Less 40 m³/ha for active storage

Protection and Pond Type	Permanent Pool		Active Pond *	
	Wet Pond (m³)	MOE Guideline (m³)	Extended Detention (m³)	
Normal Wet Pond	3179	2000	6357	

Note: *-the greater of the MOE Guideline and the Extended Detention Runoff is used as the Active Pond volume

$$RV = \boxed{25} \text{ mm} >>>$$

$$Cv = 0.51 \quad Cv = (0.8*I) + 0.12$$

(For minimum of 24 hr extended detention)

Equation that relates imperviousness to Runoff Volumetric Coefficient for Extended Detention Calculations taken from Pond B SWM Report:

$$Cv = 0.8*(Imp.) + 0.12$$

V = Cv*A*P*10 where V=runoff volume, Cv=volumetric runoff coeff, P=Precip (mm)

A=area (ha)

Project Description: Oakville Menkes (193 Nautical Blvd)

Job Number: 160623025

Creation Date: 28-Jan-22

Revision Date: 28-Jan-22

Author: AP JP

Pond Name Pond B

Revised Permanent Pool and Extended Detention Sizing Calculations - For Pond B based on 193 Nautical Blvd Proposed Conditions

Landuse	Area (ha)	C (Runoff Coef.)	C (weighted value)	Imperviousness (%)	Imperviousness (Weighted Value)
Drainage to Pond B*	47.75	0.54	25.79	49	24
Subject Site to Pond B**	2.25	0.65	1.46	67	2
Total	50.00		0.54		50%

* Runoff coef. And imperviousness values from Pond B Design Report $Cv = (0.8*I) + 0.12$

** Proposed percent impervious (I) converted from C values based on Simple Method, $C = 0.05 + 0.009(I)$; (Schueler, 1987)

Protection Level	Normal	Choose Level Enhanced (80%), Normal (70%) or Basic (60%)
Pond Type	Wet Pond	Choose Infiltration, Wet Pond, Wetland, Hybrid, or Dry Pond (Basic Only)
Imperviousness %	50	
MOECC 2003 Table 3.2 Volume	104.4	m^3/ha
	64.4	m^3/ha
		Less 40 m^3/ha for active storage

Protection and Pond Type	Permanent Pool	Active Pond *	
		MOE Guideline (m^3)	Extended Detention (m^3)
Normal Wet Pond	3221	2000	6513

Note: *-the greater of the MOE Guideline and the Extended Detention Runoff is used as the Active Pond volume

$$RV = \boxed{25} \text{ mm} >>>$$

$$Cv = 0.52$$

(For minimum of 24 hr extended detention)

Equation that relates imperviousness to Runoff Volumetric Coefficient for Extended Detention Calculations taken from Pond B SWM Report:

$$Cv = 0.8*(Imp.) + 0.12$$

$$V = Cv*A*P*10 \text{ where } V=\text{runoff volume}, Cv=\text{volumetric runoff coeff}, P=\text{Precip (mm)}$$

$$A=\text{area (ha)}$$



Project: Oakville Menkes (193 Nautical BLVD)
Project Number: 160623025
Project Location: Oakville
Designer: AP JP
Date: January 25th, 2022

Rainfall Intensity and Existing and Proposed Catchment Parameters

Rainfall Intensity Parameters*

Storm	A	B	C
5 Year	1170	5.80	0.843
100 Year	2150	5.7	0.861

Pre-Development Areas

Catchment Description	Catchment ID	Area (ha)	C x A	Runoff Coefficient	$^2C \times A$	$^2\text{Scaled}$ (100 Yr)
Assumed Future Development	101	2.04	1.02	0.50	1.28	0.63
Total		2.04	1.02	0.50	1.28	0.63

Controlled Post-Development Areas

Catchment Description	Catchment ID	Area (ha)	C x A	Runoff Coefficient	$^2C \times A$	$^2\text{Scaled}$ (100 Yr)
Proposed Site Drainage	201	1.91	1.24	0.65	1.55	0.81
Total		1.91	1.24	0.65	1.55	0.81



Project: Oakville Menkes (193 Nautical BLVD)
Project Number: 160623025
Project Location: Oakville
Designer: AP JP
Date: Jan-22

Target Flows

Rational Method

$$Q = 2.78 * C * A$$

Where:

C = Runoff Coefficient¹
A = Site Drainage Area (ha)
i = Rain Intensity (mm/hr)²
Q = Flow (m³/s)

Runoff Coefficients Scaled as Per The MTO Design Chart 1.07

²Note 100 Year Runoff Coefficient is 2/5 Year Runoff Coefficient x 1.25

Storm	A	B	C
100 Year	2150	5.7	0.861

Pre-Development Conditions

Catchment Description	Catchment ID	Area (ha)	C x A	Runoff Coefficient	² C x A	² 100 Year Runoff Coefficient	Time of Concentration (mins)	i (mm/hr) ²	Q (m ³ /s)
Assumed Future Development	101	2.04	1.02	0.50	1.28	0.63	11.75	183.34	0.638
Total		2.04	1.02	0.50	1.28	0.63			0.638

Outlet Location: MH6

Target Flow = **0.638** m³/s Based upon OTTSWM & HGL analysis Report, 2007



Project: Oakville Menkes (193 Nautical BLVD)
Project Number: 160623025
Project Location: Oakville
Designer: AP JP
Date: Jan-22

100 Year Storage Stormwater Management Calculations

Rational Method

$$Q = 2.78 \times C \times i \times A$$

Where:

C = Runoff Coefficient¹

A = Site Drainage Area (ha)

i = Rain Intensity (mm/hr)²

Q = Flow (m³/s)

Runoff Coefficients Scaled as Per The MTO Design Chart 1.07

²Note 100 Year Runoff Coefficient is 2/5 Year Runoff Coefficient x 1.25

Storm	A	B	C
100 Year	2150	5.7	0.861

Target Flow = **0.638 m³/s**

Post Development Conditions

Catchment ID = 201

Area = 1.91 ha

Runoff Coefficient = 0.65

²100 Year Scaled Runoff Coefficient = 0.81

Time of Conc = 12.2 min

Tc based on Proposed Sewer Design

Time Increment = 5.0 min

Design Release Rate = 0.637 m³/s

Maximum Storage = 100 m³

Water Quantity Storage Requirements					
Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (m ³ /s)	Runoff Volume (m ³)	Volume Released (m ³)	Storage Required (m ³)
12.2	179.4	0.774	566.2	466.0	100.3
17.2	145.1	0.626	645.8	657.1	0.0
22.2	122.4	0.528	703.3	848.2	0.0
27.2	106.2	0.458	747.7	1039.3	0.0
32.2	94.0	0.406	783.6	1230.4	0.0



Project: Oakville Menkes (193 Nautical BLVD)
Project Number: 160623025
Project Location: Oakville

Storage Calculations

Pipe Storage

Upstream Manhole	Downstream Manhole	Pipe Diameter (mm)	Pipe Length (m)	Pipe Volume
5	6	675	104.4	37.4
1	2	675	104.2	37.3
2	3	675	13.6	4.9
3	4	675	51.6	18.5
4	6	675	13.6	4.9
102.8				

100 Year Water Level	
Elevation	Location
(m) 84.85	RLCB2



Project: Oakville Menkes (193 Nautical BLVD)
Project Number: 160623025
Project Location: Oakville
Designer: AP JP

Outlet Control Detail Calculations

Orifice Equation: $Q = C_d A (2gh)^{1/2}$

Orifice Control

Invert =	82.83	m		Type of Orifice Control: VERTICAL
Size =	470	mm		Location: MH6
C =	0.62			

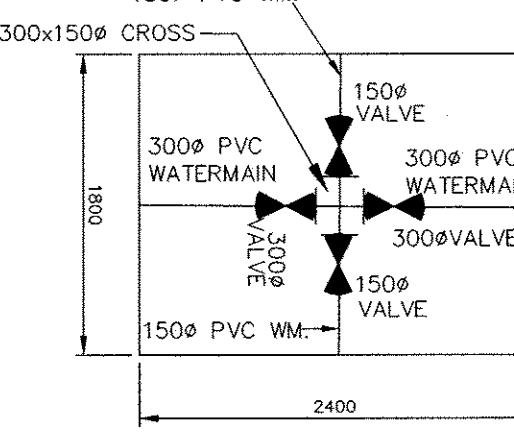
Obvert = 83.30 m inv = 82.82716 m

100 Year Water Level Elevation = 84.85 m

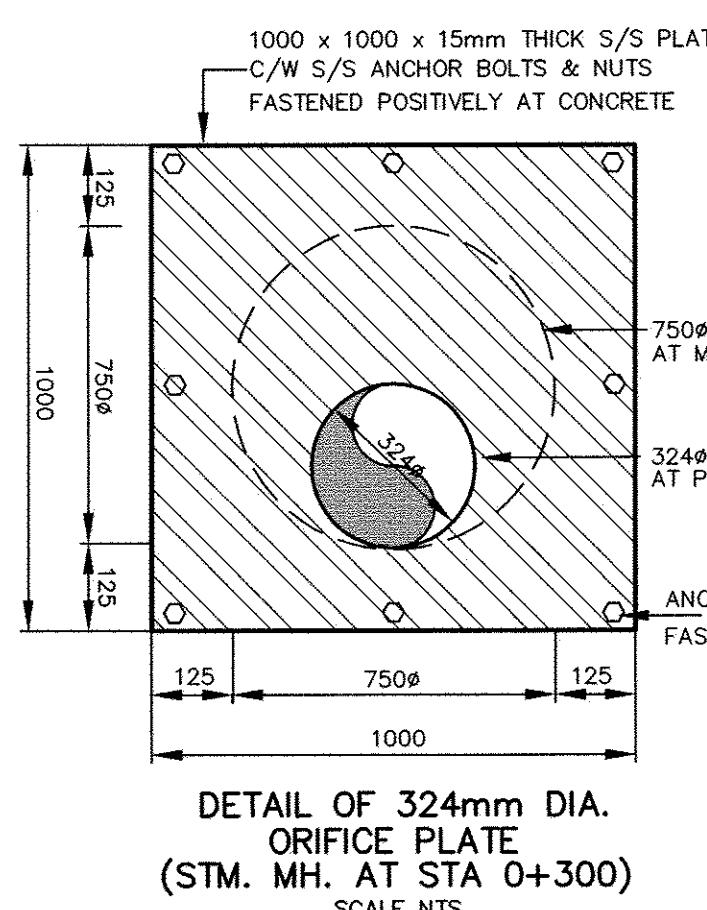
Area = 0.173 m²
Head = 1.79 m

Design Flow = 0.637 m³/s
Target Flow = 0.638 m³/s

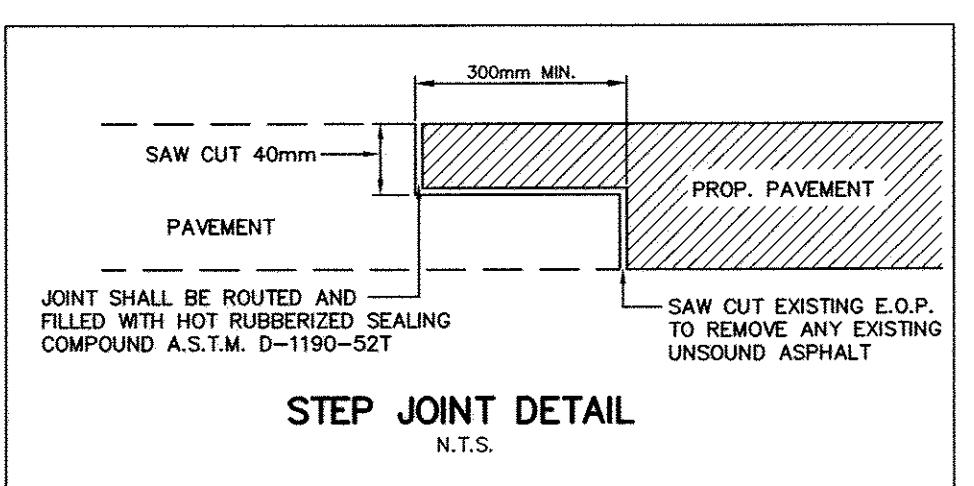
DOWNTSTREAM STORM PNP 1 OF 5



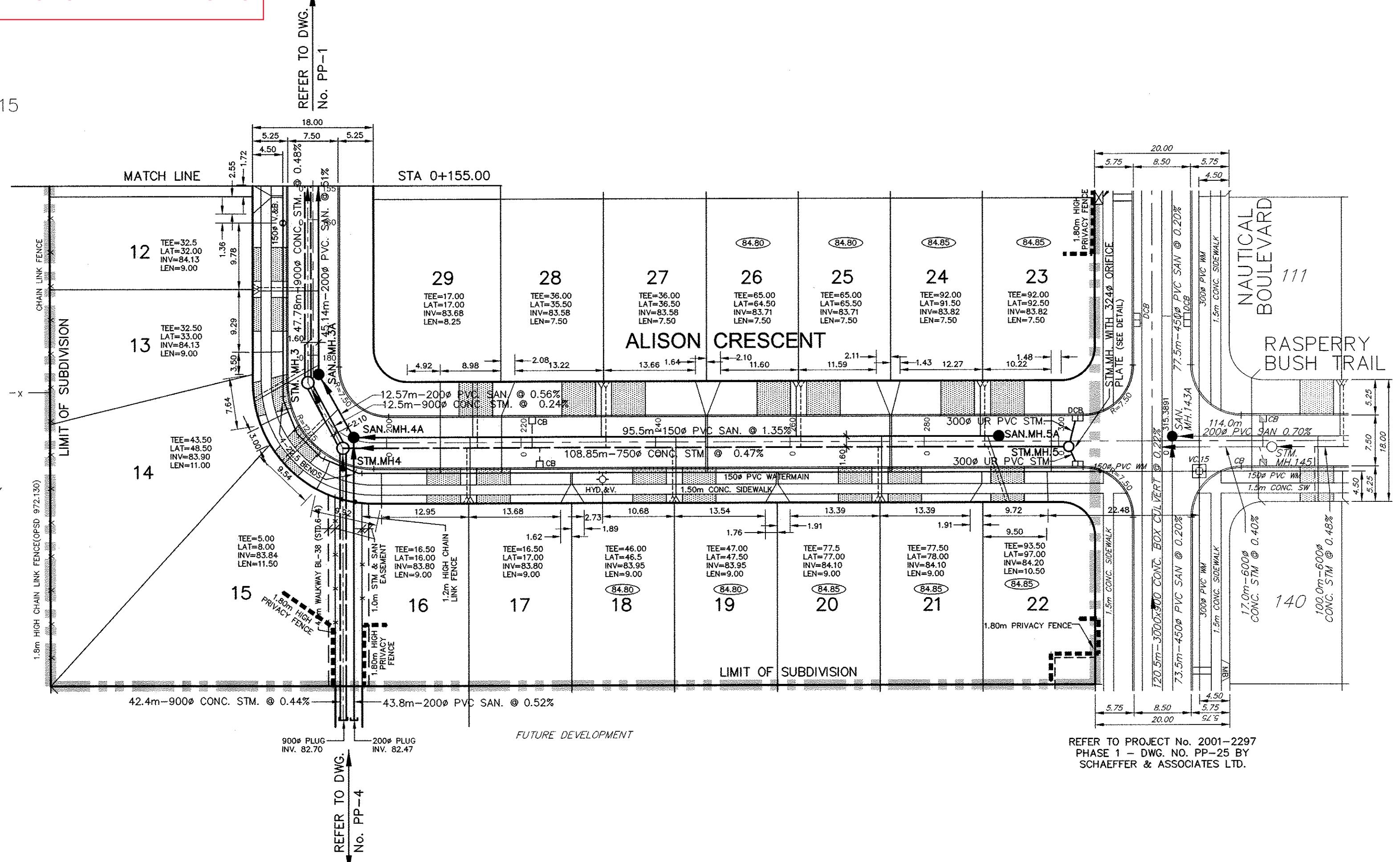
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N.T.S.



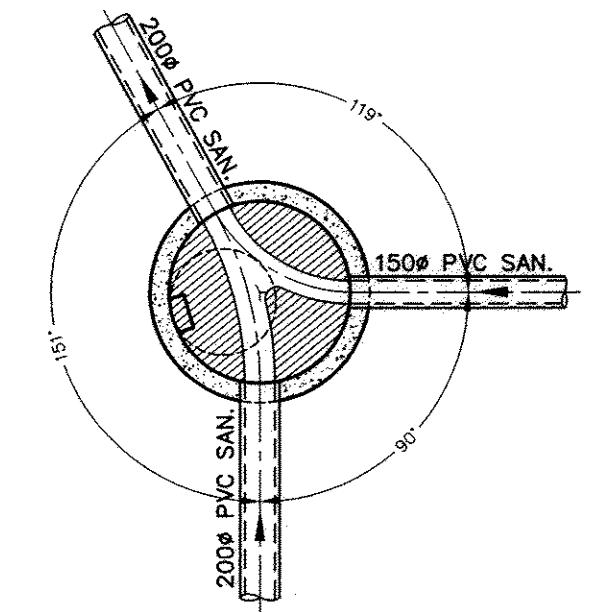
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ORIFICE PLATE
(STM. MH. AT STA 0+300)
SCALE N.T.S.



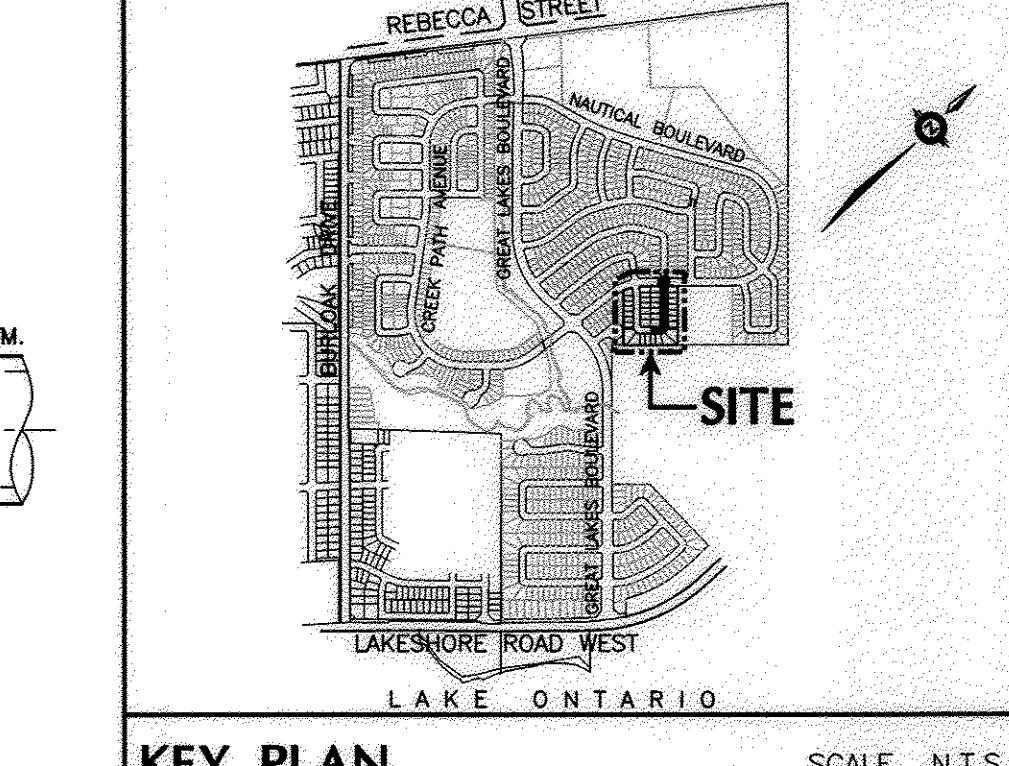
STEP JOINT DETAIL
N.T.S.



BENCHING DETAIL-STM.MH. 4
(OPSD 701.012, 1800#)
SCALE: 1: 50



BENCHING DETAIL-SAN.MH. 4A
(OPSD 701.010, 1200#)
SCALE: 1: 50



KEY PLAN

SCALE N.T.S.

NOTES:

1. THE LOCATION OF ALL UNDERGROUND AND ABOVE GROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON CONTRACT DRAWINGS, AND WHERE SHOWN THE ACCURACY OF THE LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITIES OF DAMAGE.
2. ALL AREAS SUBJECT TO RESTRICTION ARE IN ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF OAKVILLE AND REGION OF HALTON ENGINEERING DEPARTMENT. GRASSED AREAS TO BE TOPPED WITH 100mm TOPSOIL AND SODDED AS PER OPSD 218.01. ALL EXISTING SERVICES TO BE ADJUSTED TO SUIT NEW GRADES.
3. FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES SHALL BE INSTALLED BELOW LEAD PIPE EXCAVATION. FOOTINGS MUST BE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANT'S VERIFICATION REQUIRED.
4. FOR GENERAL NOTES REFER TO DWG. NO. GN-1.

LEGEND

DENOTES LIMIT OF SUBDIVISION
 DENOTES MINIMUM BASEMENT ELEVATION

BENCH MARK 229

DESCRIPTION- PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLAKE DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 1.0m NORTHEAST OF HYDRO POLE, 6.1m SOUTHEAST OF THE INTERSECTION OF LAKESHORE ROAD AND 3.8 m SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLAKE DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

1. Dec./09 AS CONSTRUCTED			
No.	Date	By	Revisions
Design	S.P.	Checked	M.N.
Drawn	J.B.	Checked	P.S.
Scale:	HOR. 1:500 VER. 1:50	References	
Municipal APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.			
Signed: Heinz Hecht Date: Nov. 25/2009 Development Services Department - TOWN OF OAKVILLE			
Regional DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.			
Ronald MacKenzie Nov. 25/2009 Legislative & Planning Services Department			
LICENCED PROFESSIONAL ENGINEER M. NINKOVIC October, 2009 PROVINCE OF ONTARIO			

SCHAFFERS CONSULTING ENGINEERS 6 Ronrose Drive, Concord, Ontario L4K 4R3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaaffers.com

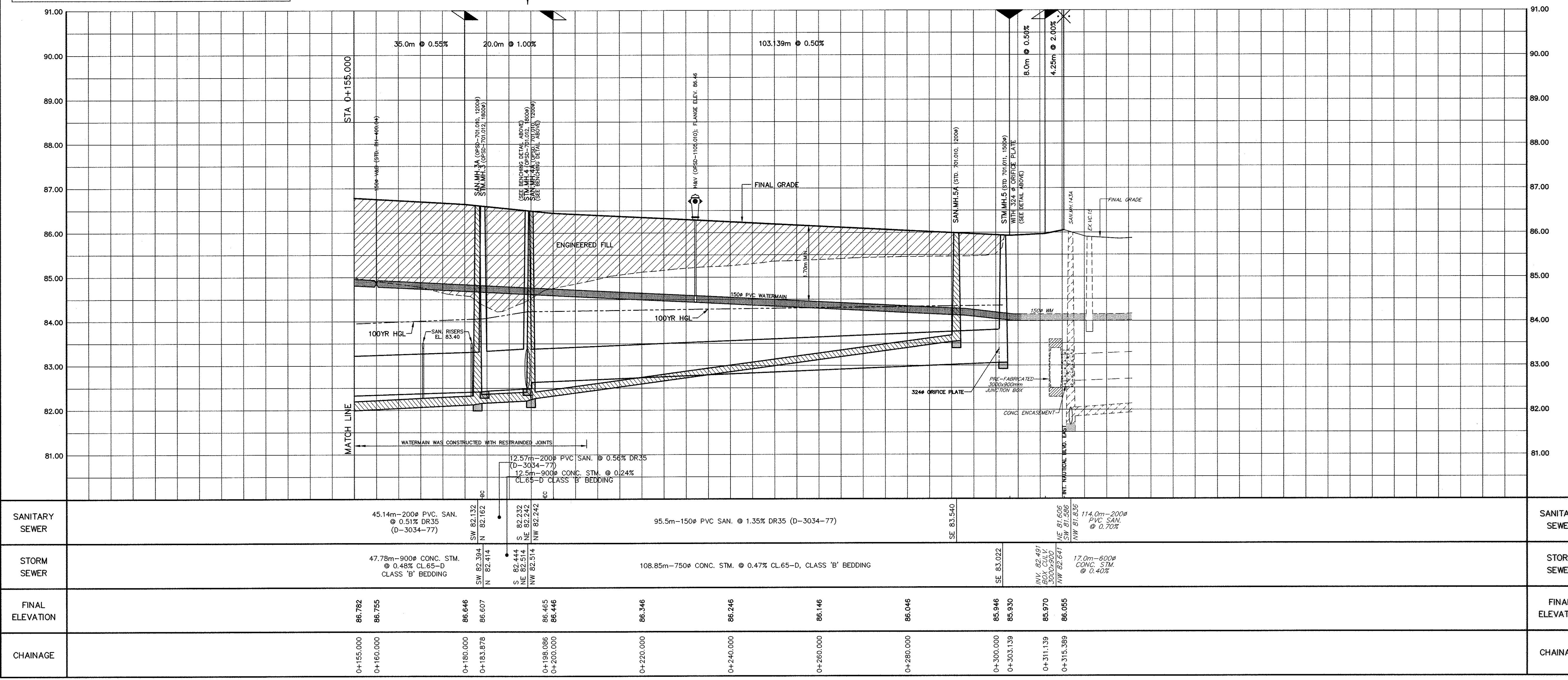
SCHAFFER & ASSOCIATES LTD.

Municipality THE REGIONAL MUNICIPALITY OF HALTON

TOWN OF OAKVILLE

ENGINEERING AND CONSTRUCTION DEPARTMENT

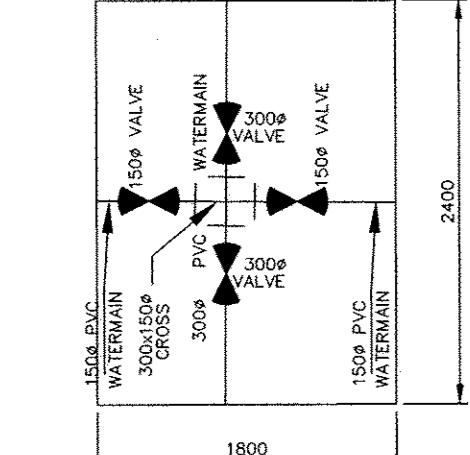
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NEW PROVINCE HOMES PHASE 10	
PLAN AND PROFILE OF ALISON CRESCENT	
FROM STA. 0+155.000 TO STA. 0+315.389	
20M-1071	20R-18569
Municipal Drawing No.	Regional File No.
SD-432.8	DO-669
Contract No.	Drawing No.
2007-3178	PP - 2



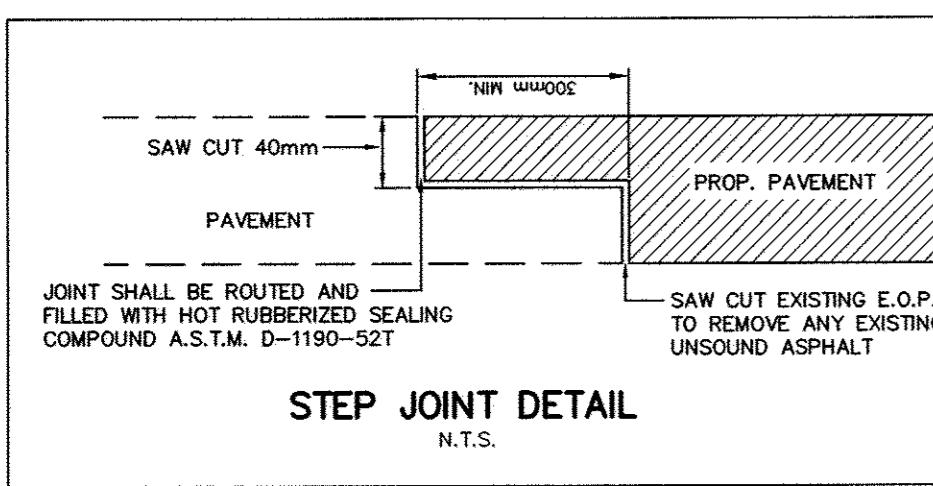
ALISON CRESCENT STA. 0+000.000 TO STA. 0+155.000

20M-1071

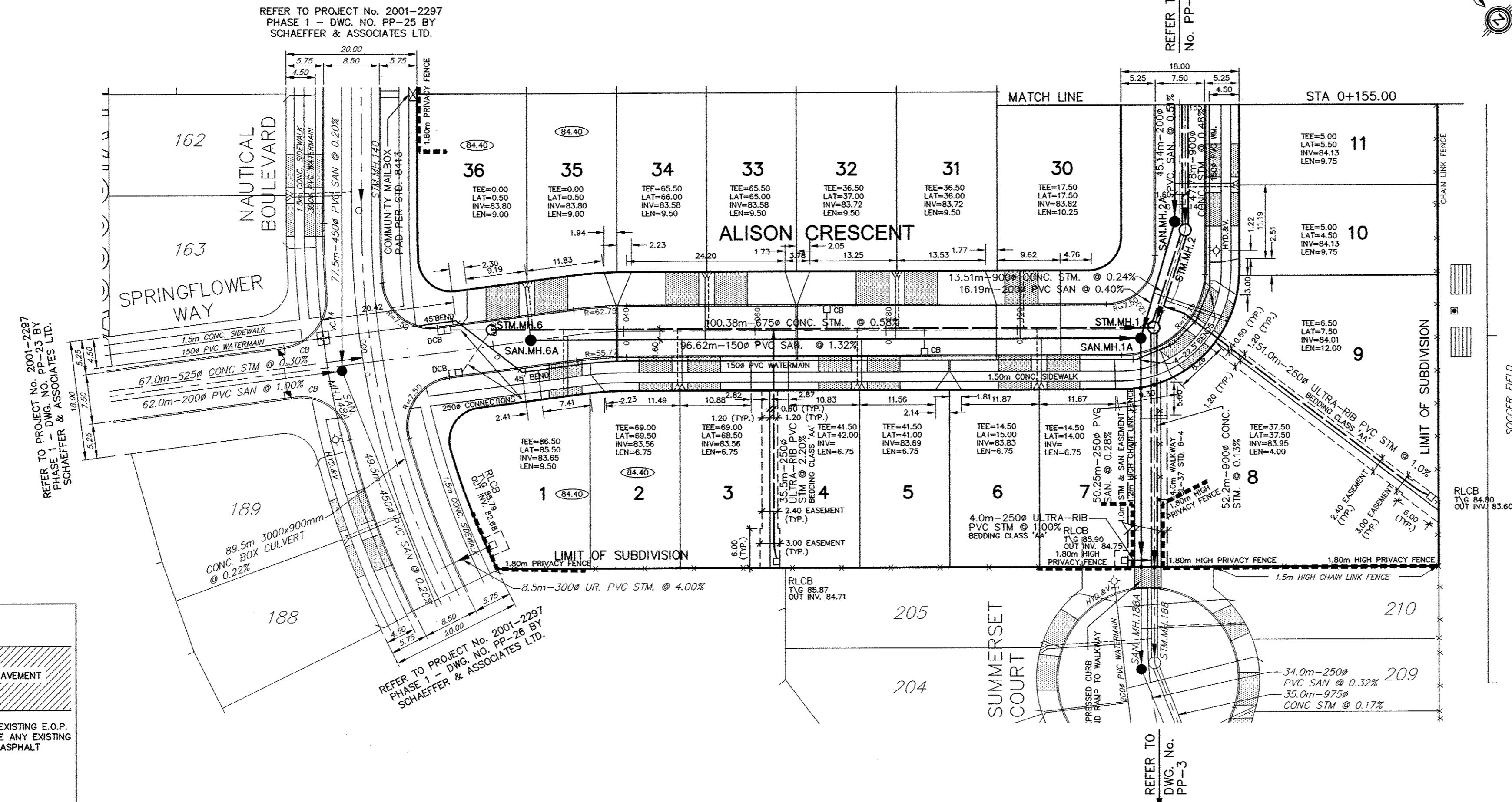
DOWNSTREAM STORM PNP 2 OF 5



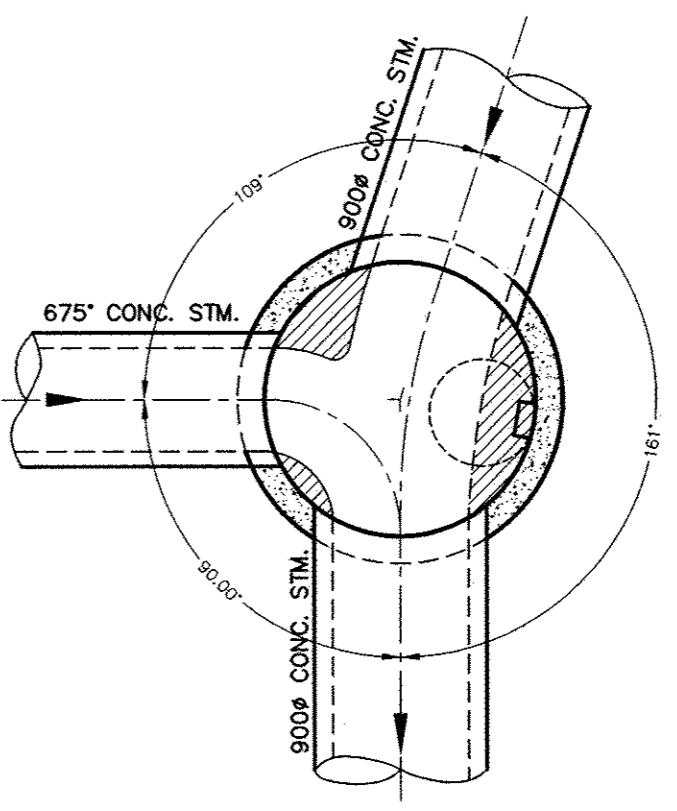
DETAIL OF VC.14
(STD RH 400.02)
N.T.S.



STEP JOINT DETAIL
N.T.S.



BENCHING DETAIL-STM. MH. 1
(OPSD 701.012, 1800#)
SCALE: 1:50



- NOTES:
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 - ALL AREAS DISTURBED DURING CONSTRUCTION OF SEWERS AND WATERMAINS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF OAKVILLE AND REGION OF HALTON ENGINEERING DEPARTMENT. GRASSED AREAS TO BE TOPPED WITH 100mm TOPSOIL AND SODDED AS PER OPSD 218.01. ALL EXISTING SERVICES TO BE ADJUSTED TO SUIT NEW GRADES.
 - FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES SHALL BE INSTALLED BELOW LEAD PIPE. EXCAVATION FOOTINGS MUST BE CONSTRUCTED ON UNDISTurbed SOIL. SOIL CONSULTANT'S VERIFICATION REQUIRED.
 - FOR GENERAL NOTES REFER TO DWG. NO. GN-1.

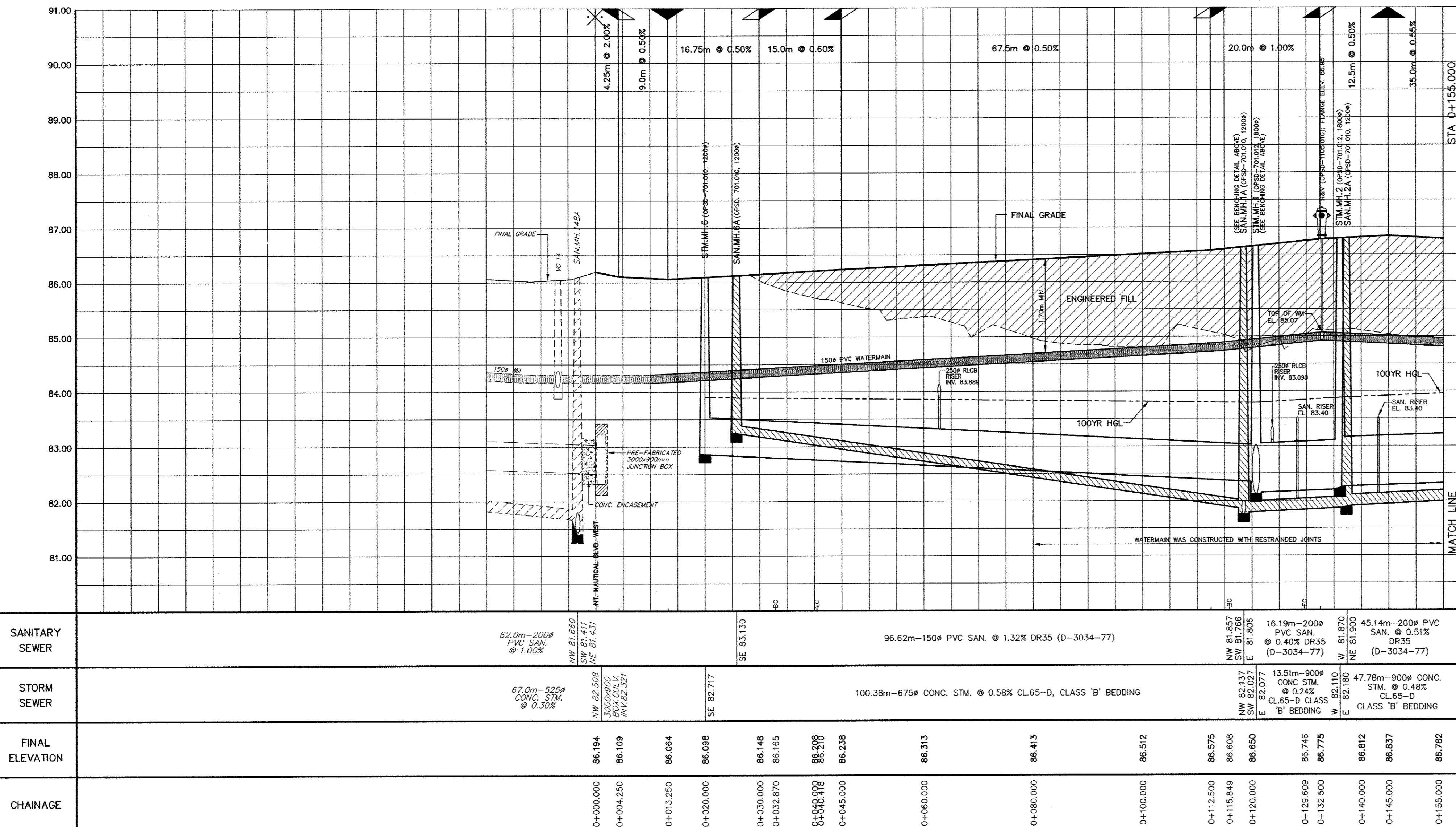
LEGEND

— DENOTES LIMIT OF SUBDIVISION
— DENOTES MINIMUM BASEMENT ELEVATION

BENCH MARK 229
(OPSD 701.010, 1200#)
SCALE: 1:50

DESCRIPTION: PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLOAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHEAST CORNER OF THE INTERSECTION OF THE 1.0m NORTHEAST OF HYDRANT, 6.0 m SOUTHEAST OF THE 1.0m NORTHEAST OF HYDRANT, 3.8 m SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

AS CONSTRUCTED												
No.	Date	By	Revisions									
Design	S.P.	Checked	M.N.	Date								
Drawn	J.B.	Checked	P.S.	References								
Scale:	HOR. 1:500 VER. 1:50			Field Notes								
Municipal	APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.											
Heinz Hecht	SIGNED: Nov. 25/2009 Development Services Department -TOWN OF OAKVILLE											
Regional	DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.											
Ronald MacKenzie	Nov. 25/2009 Legislative & Planning Services Department											
SCHAEFFERS CONSULTING ENGINEERS 6 Ronrose Drive, Concord, Ontario L4K 4R3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com												
Municipality	THE REGIONAL MUNICIPALITY OF HALTON											
TOWN OF OAKVILLE												
ENGINEERING AND CONSTRUCTION DEPARTMENT												
Title	NEW PROVINCE HOMES PHASE 10											
PLAN AND PROFILE OF ALISON CRESCENT FROM STA. 0+000.000 TO STA. 0+155.000												
20M-1071	24T-00004											
Municipal Drawing No.	PLAN AND PROFILE OF ALISON CRESCENT FROM STA. 0+000.000 TO STA. 0+155.000											
SD-432.8	20R-18569											
Contract No.	Drawing No.											
2007-3178	PP - 1											

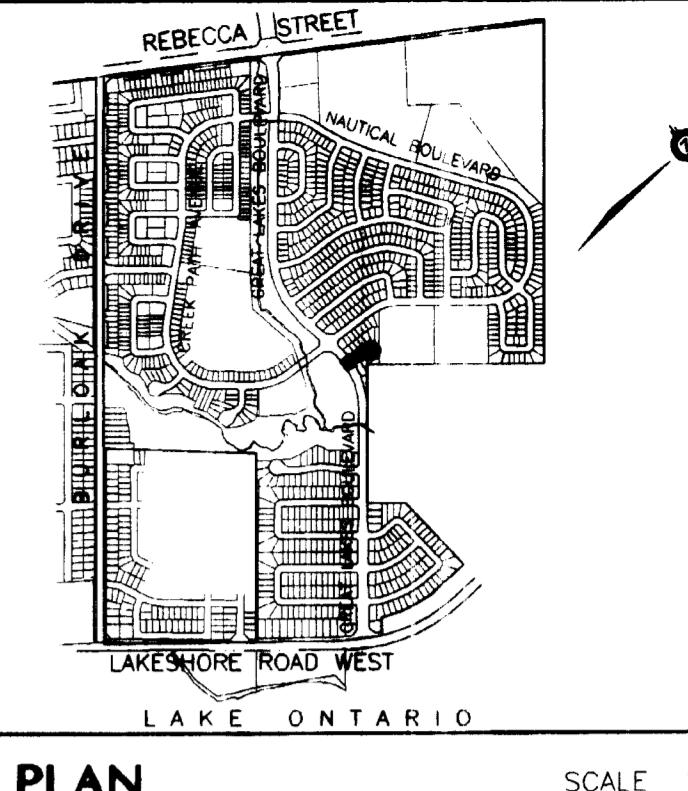
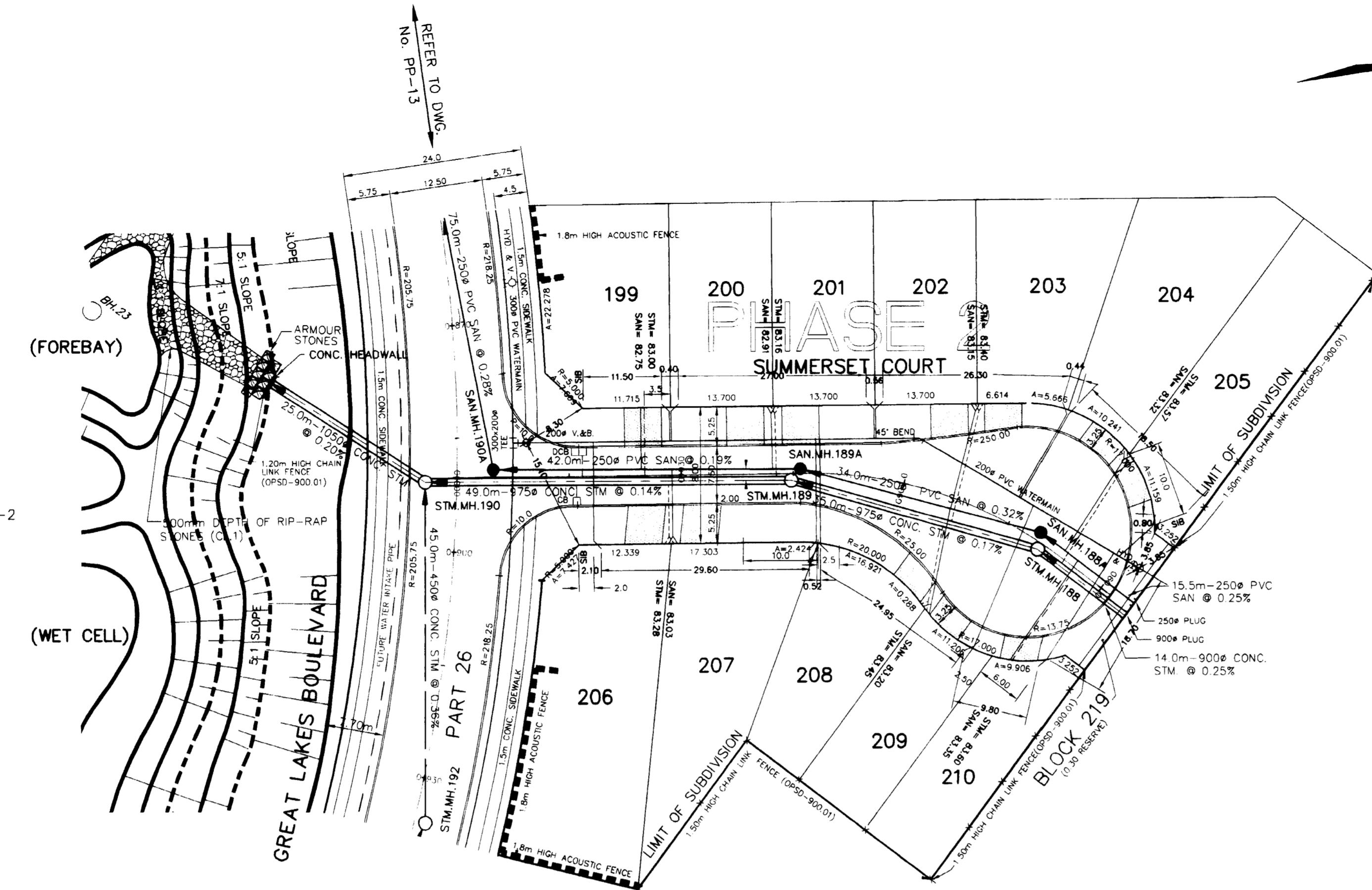


20M-839/840

P.H. 2 Summerset Court

DOWNSTREAM STORM PNP 3 OF 5

POND 'B'
REFER TO DWG. NO.SWM-2



KEY PLAN

SCALE N.T.S.

NOTES:

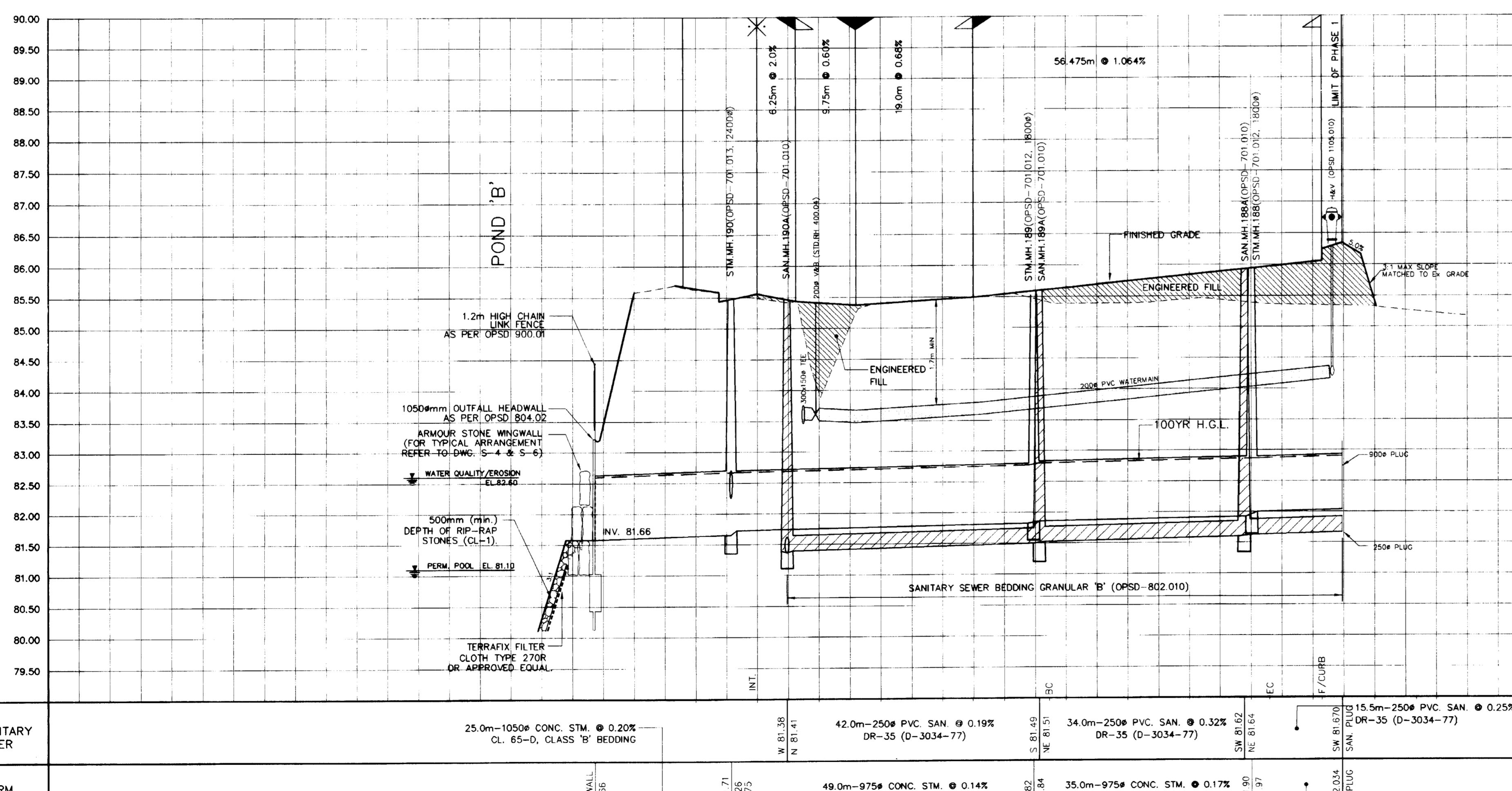
- FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES WERE INSTALLED BELOW LEAD PIPE. EXCAVATION FOOTINGS WERE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANT'S VERIFIED CONSTRUCTION.
- FOR GENERAL NOTES REFER TO IWC NO. GN-1.

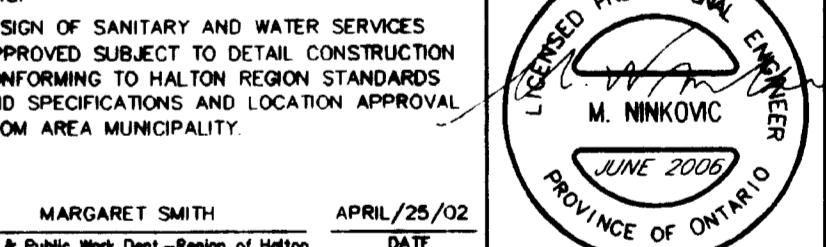
LEGEND

- Diagonal hatching: DENOTES FUTURE DEVELOPMENT
- Solid black line: DENOTES LIMIT OF PHASE CONSTRUCTION
- Small square: DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec

AS CONSTRUCTED JUNE 2006
BENCH MARK 229

DESCRIPTION - PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLOAK DRIVE. 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 100 m NORTHEAST OF HYDRANT 5.9 m SOUTHEAST OF THE PRODUCTION OF BURLOAK DRIVE AND 3.8 m SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

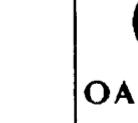


No.	Date	By	Revisions
Design	P.S.	Checked	M.N.
Drawn	H.R.	Checked	Z.C.
Scale:	HOR. 1 : 500 VERT. 1 : 50		
Approvals			
Municipal	APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.		
SIGNED:	GEORGE TRENLER	DATE:	APRIL/11/02
Planning Services Department - TOWN OF OAKVILLE			
Regional	DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY		
MARGARET SMITH	APRIL/25/02	Engineering & Public Works Dept - Region of Halton	
			

64 Jardin Drive, Concord, Ontario L4K 3P3
Tel: (905) 738-6100
Fax: (905) 738-6875
E-mail: design@schaeffers.com

Municipality

THE REGIONAL MUNICIPALITY OF HALTON

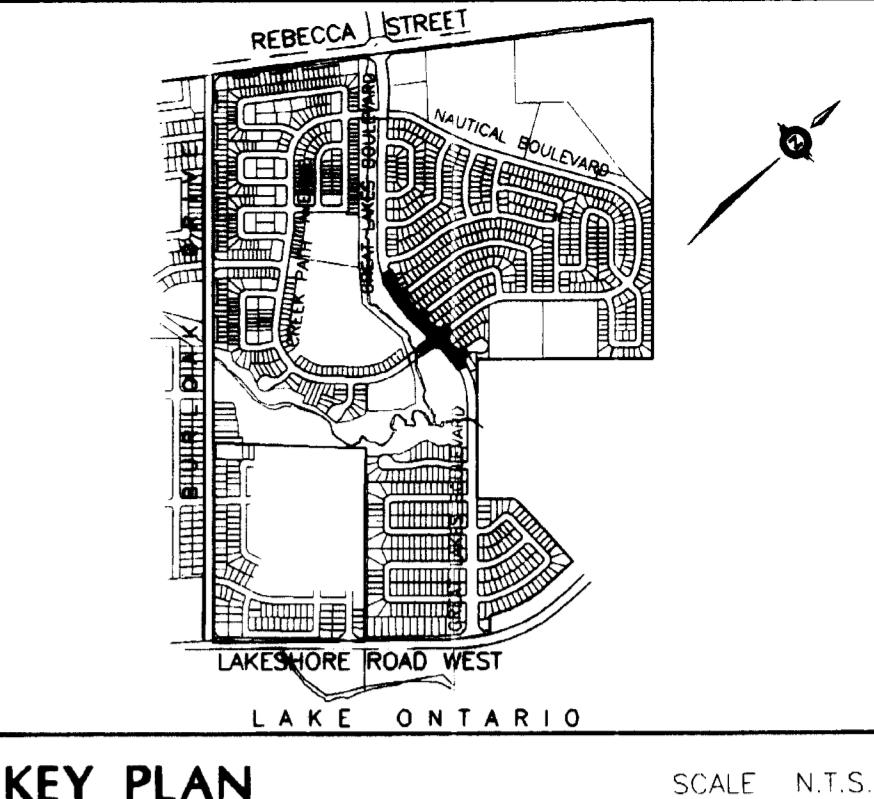
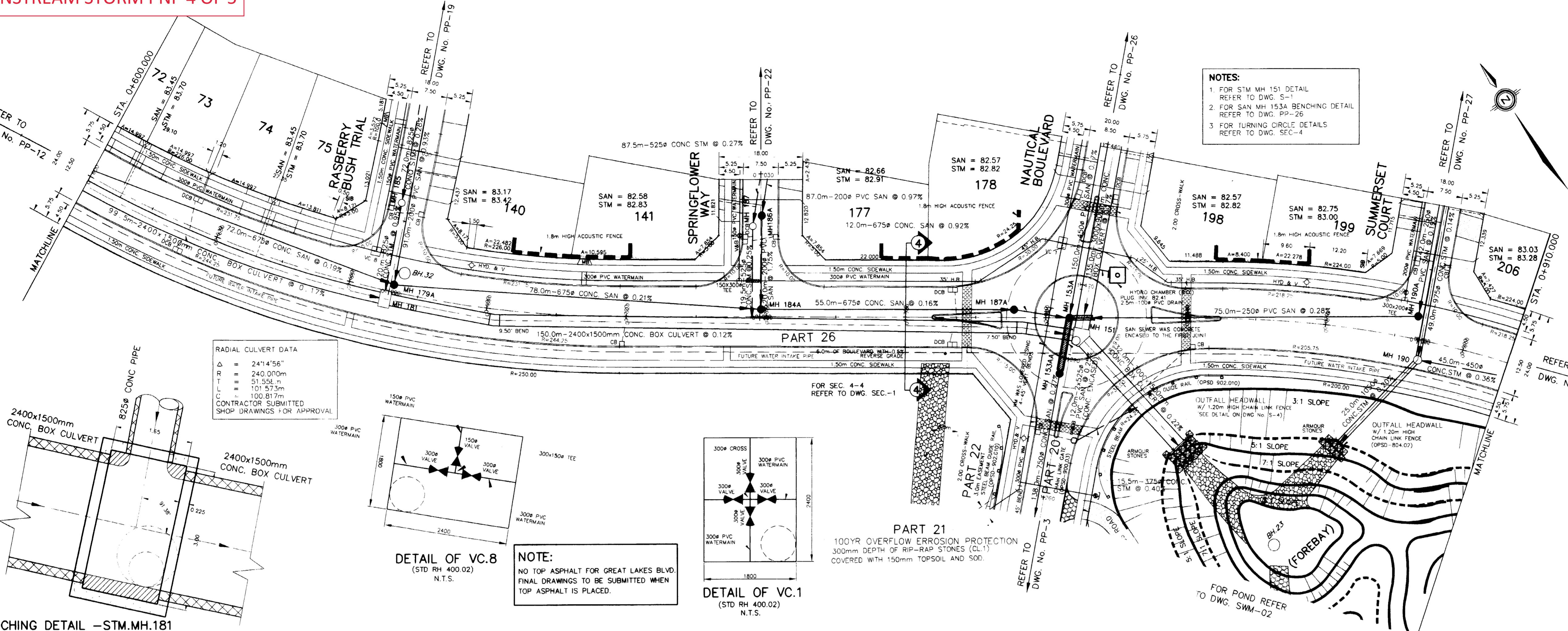
 OAKVILLE
TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

Title	20M-840
NEW PROVINCE HOMES PHASE 2 PLAN AND PROFILE OF SUMMERSSET COURT STA. 0+000.000 TO STA. 0+092.020	
Municipal Drawing No.	SD-432.1
Regional File No.	D0-542
Contract No.	2001-2297
Drawing No.	PP-27

20m-839/840

P.H.142 Great Lakes Blvd.

DOWNSTREAM STORM PNP 4 OF 5



KEY PLAN

NOTES:

- 1 FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES WERE INSTALLED BELOW LEAD PIPE EXCAVATION. FOOTINGS WERE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANTS VERIFIED CONSTRUCTION.
- 2 FOR GENERAL NOTES REFER TO DWG. NO. GN-1.

LEGEND

DENOTES FUTURE DEVELOPMENT
DENOTES LIMIT OF PHASE 1 CONSTRUCTION
DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec

AS CONSTRUCTED JUNE 2006

BENCH MARK 229

DEMONSTRATION POINT IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 1.0m NORTHEAST OF HYDRO POLE, 6.9 m SOUTHEAST OF THE CENTRE LINE OF LAKESHORE ROAD AND 3.8 m SOUTHWEST OF THE PROJECTION OF THE CENTRE LINE OF BURLAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 78.994m

No.	Date	By	Revisions
4	JUNE 2006	B.J.	AS CONSTRUCTED - JUNE 2006
3	JAN 2003	B.J.	AS BUILT - REVISED SANITARY SEWER FROM MH 179A TO MH 187A
2	JAN 2003	B.J.	AS BUILT - STORM & SANITARY SEWERS ONLY
1	02/05/17	F.T.	HYDRO CHAMBER & DRAIN ADDED; WATERMAIN LAYOUT REVISED
Design	P.S.	Checked	M.N.
Drawn	H.R.	Checked	Z.C.
Scale	HOR. 1 : 500 VERT. 1 : 50		References
Approvals			Field Notes
Municipal	APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.		Bell <input type="checkbox"/> Hydro <input type="checkbox"/> Gas <input type="checkbox"/> Cable <input type="checkbox"/>
Signed	GEORGE TRENNLER	Date	APRIL/11/02
Planning Services Department - TOWN OF OAKVILLE			
Region	DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.		
MARGARET SMITH	APRIL/25/02		
Planning & Public Works Dept. - Region of Halton			



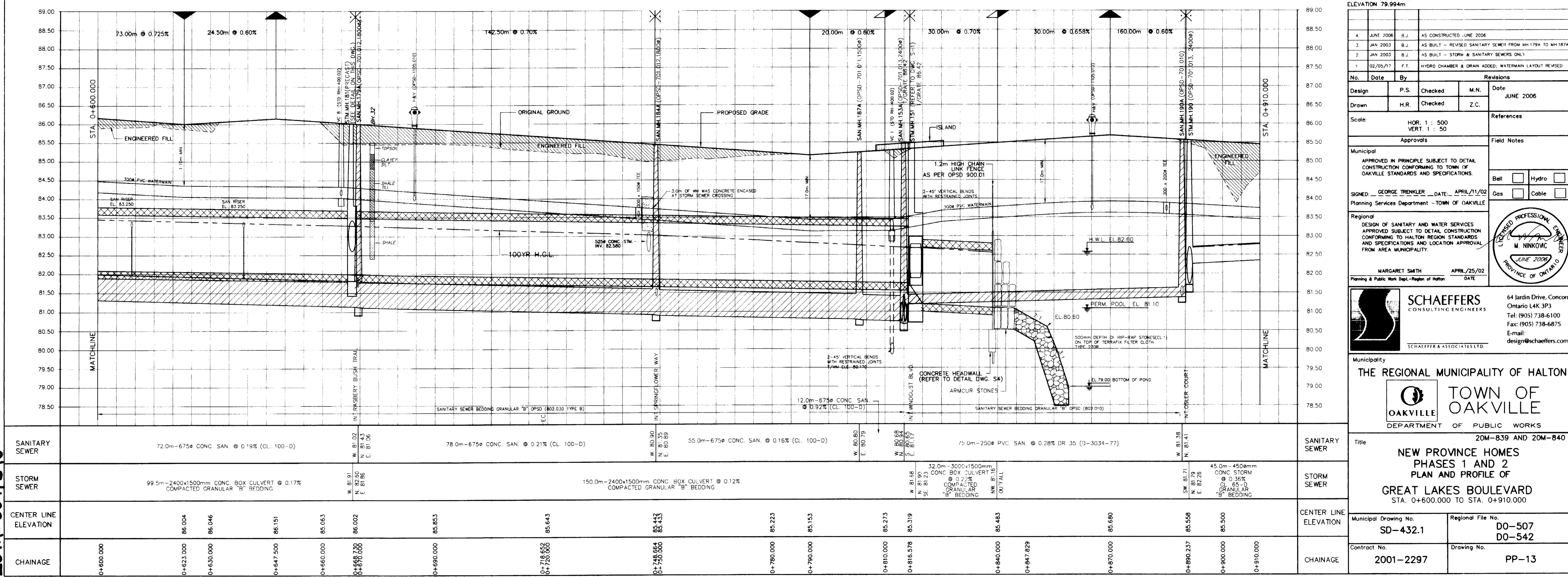
SCHAFFERS
CONSULTING ENGINEERS
64 Jardin Drive, Concord,
Ontario L4K 3P3
Tel: (905) 738-6100
Fax: (905) 738-6875
Email:
design@schaefers.com

Municipality
THE REGIONAL MUNICIPALITY OF HALTON
TOWN OF OAKVILLE
OAKVILLE DEPARTMENT OF PUBLIC WORKS

Title		20M-839 AND 20M-840
NEW PROVINCE HOMES PHASES 1 AND 2 PLAN AND PROFILE OF GREAT LAKES BOULEVARD STA. 0+600.000 TO STA. 0+910.000		
Municipal Drawing No.	Regional File No.	DO-507 DO-542
SD-432.1		
Contract No.	Drawing No.	2001-2297 PP-13

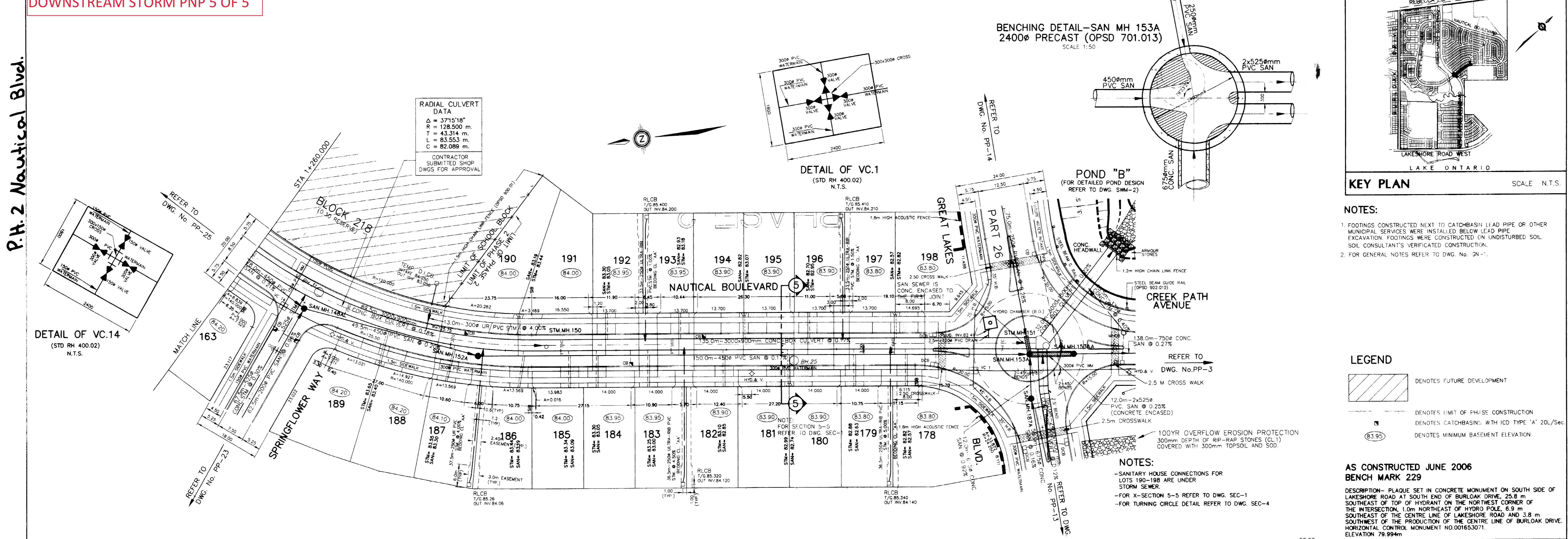
BENCHING DETAIL - STM.MH.181
(3000X1650 PRECAST)

SCALE: 1:50



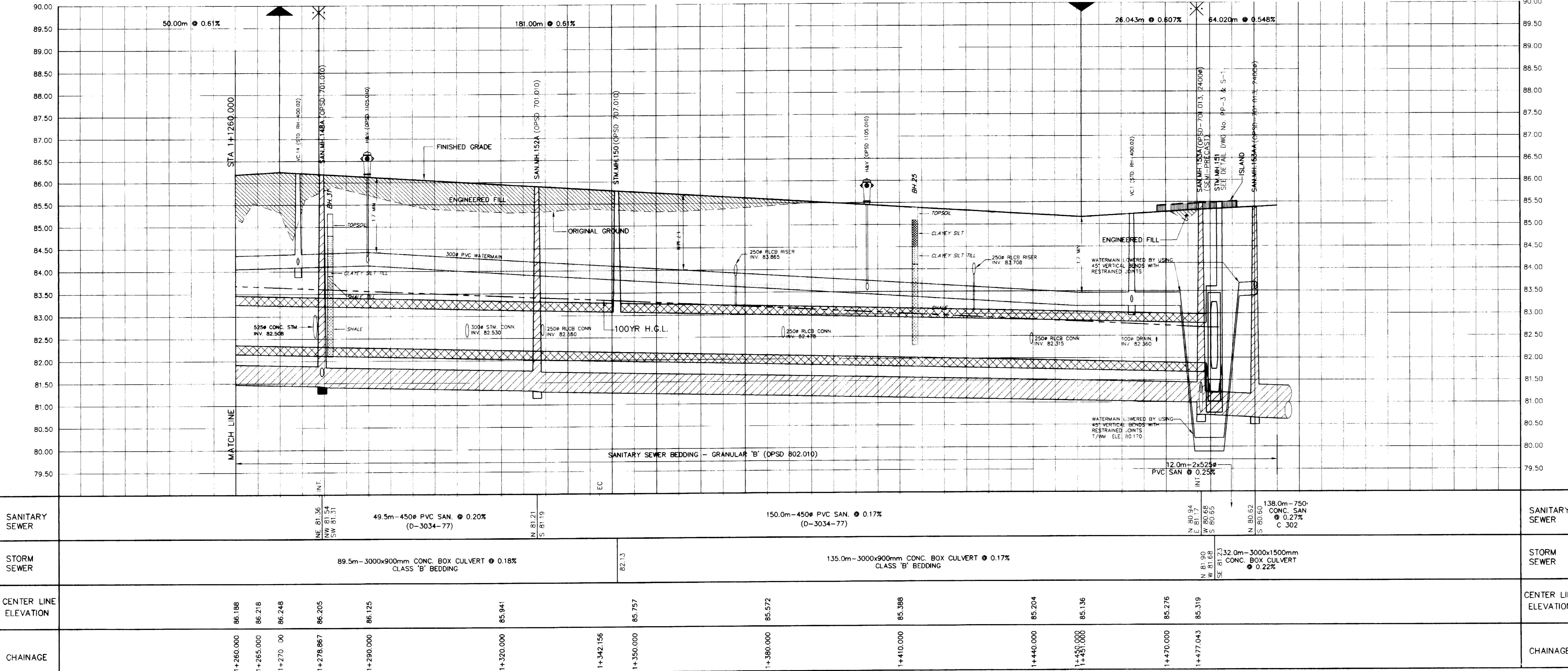
DOWNTOWN STORM PNP 5 OF 5

P.H. 2 Nautical Blvd.



AS CONSTRUCTED JUNE 2006
BENCH MARK 229

DESCRIPTION - PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLAO DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 1.0m NORTHEAST OF HYDRO POLE, 6.9 m SOUTHEAST OF THE CENTRE LINE OF LAKESHORE ROAD AND 3.8 m SOUTHEAST OF THE PRODUCTION OF THE CENTRE LINE OF BURLAO DRIVE. HORIZONTAL CONTROL MONUMENT NO.0016530.1. ELEVATION 79.994m



3. JUNE 2006 B.J.	AS BUILT - CENTER LINE ELEVATION ADDED
2 JAN 2003 B.J.	AS BUILT - STORM & SANITARY SEWERS ONLY
1. 02/05/17 F.T.	HYDRO CHAMBER & DRAIN ADDED; WATERMAIN LAYOUT REVISED
Revisions	
Design P.S. Checked M.N. Date JUNE 2006	
Drawn H.R. Checked Z.C.	
Scale: HOR. 1 : 500 VERT. 1 : 50	
Approvals	
Municipal APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.	
SIGNED: GEORGE TRENIKAR DATE: APRIL/11/02 Planning Services Department - TOWN OF OAKVILLE	
Regional DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.	
MARGARET SMITH APRIL/25/02 Planning & Public Works Dept - Region of Halton DATE	
SCHAFFERS CONSULTING ENGINEERS	
64 Jardin Drive, Concord, Ontario L4K 3P3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaefers.com	
Municipality THE REGIONAL MUNICIPALITY OF HALTON TOWN OF OAKVILLE DEPARTMENT OF PUBLIC WORKS	
Title 20M-840	
NEW PROVINCE HOMES PHASE 2 PLAN AND PROFILE OF NAUTICAL BOULEVARD STA. 1+260.000 TO STA 1+477.043	
Municipal Drawing No. SD-432.1	Regional File No. DO-542
Contract No. 2001-2297	Drawing No. PP-26

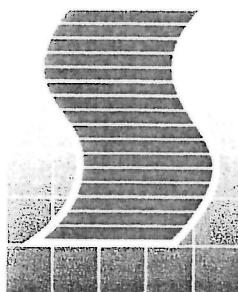
*library copy
(Don't remove!)*

Pond 28E +W
SD 432.
24T-00004 A/B
20N-840/1839

Stormwater Management Report
Pond A & Pond B
New Province Homes Ltd. (24T-00004/1734)
Town of Oakville

File No. 2001-2297

August, 2001
Revised: February, 2002



SCHAEFFERS
Consulting Engineers

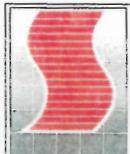
SCHAEFFER & ASSOCIATES LTD.



01-E-2297
FEBRUARY 2002

SCALE: N.T.S.

FIGURE 2
POND LOCATION AND
TRIBUTARY AREAS



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LEGEND

- | | |
|---|------------------|
| | POND A TRIBUTARY |
| | POND B TRIBUTARY |
| ● | SWM POND |

February, 2002

3.2 Pond B Design

3.2.1 Water Quality Treatment

The water quality component of Pond B will also consist of a permanent pool and an extended detention volume based on a Level 2 receiving watercourse habitat, in accordance with the '*Stormwater Management Practices Planning and Design Manual*'. The required water quality volumes for the pond are as follows :

TABLE 3.2
POND B - QUALITY WET POND VOLUME REQUIREMENTS
IMPERVIOUSNESS = 49 %, DRAINAGE AREA = 50 HA

Total Volume for the Development Impervious Level (SWMP Table 4.1)	103.6 m ³ /ha
SWMP Permanent Pool Requirement	63.6 m ³ /ha
SWMP Active Storage Requirement	40 m ³ /ha
SWMP Permanent Pool Requirement	50 ha x 63.6 m ³ /ha = 3179 m ³
SWMP Active Storage Requirement	50 ha x 40 m ³ /ha = 2000 m ³
24 Hour Erosion Control Volume (25 mm storm event)	Vol. = C _v x 25 mm x 10 x 50 ha, Volume = 6357 m ³

Note : Extended detention component of facility is selected as greater of SWMP Active Storage volume and Erosion Control volume.

Design of the sediment forebay is once again in accordance with the SWMP manual guidelines. The manual states that the sediment forebay should be designed such that particles as small as 150 microns in diameter will settle out of the first flush discharge. The larger of two criteria - settling or dispersion- governs the minimum length of the forebay. In this case, the forebay is governed by the dispersion length with a minimum required length of 56 m. Please refer to Appendix A for calculations regarding water quality treatment components of Pond A and Figure 5 for Pond B layout plan.



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3.2.2 Water Quality Treatment Outlet Structure

The provided extended detention volume of 7,270 m³ will fluctuate through a depth of 1.5 m to a maximum elevation of 82.6 m. As per the SCWMP it will be discharged over a 24 hour period. This detention time will be achieved through the use of a 300 mm reverse sloped pipe structure submerged in the permanent pool and fitted with a 230 mm orifice plate, such that the outflow allows for the desired drain-down time, which in this case results in a peak discharge of 0.130 m³/s. The orifice plate invert will be located at the control manhole at an elevation of 81.1 m, which is the top of the permanent pool. The hickenbottom outlet will be a minimum of 0.5 m above the bottom of the pond to prevent blockage due to sedimentation. Details of the quality control structure are shown in Figure 6.

Water Quality and Erosion Control for SWM Ponds

Job #: 2001-2297
Date: February, 2002

User Input

Parameters	POND A	POND B
Area (ha)	22	50
Weighted Runoff Coefficient (C)	0.59	0.54
Calculated Volumetric Coef. (Cv)	0.57	0.51
Imperviousness %	56	49
Precipitation (mm)	25	25
Summary		
Level of Protection	2	2
Type of SWMP Facility	3	3
Quality and erosion volume (m3)	3111	6357
MOEE Permanent Pool (m3)	1561	3179
MOEE Active Pool (m3)	880	2000
Total Volume (m3)	4672	9536

Note 1 : n/a (not applicable) means that the user has used a measured imperviousness and not used the weighted runoff coefficient.

Note 2 : Level of Protection and Type of Facility is Listed in Table 4.1 MOEE SWMP

Note 3 : Active volume is the greater of Quality and Erosion volume or MOEE Active Pool

Note 4 : Total volume is the greater of Quality and Erosion volume or MOEE Active Pool plus MOEE permanent pool

Table 4.1 Water Quality Storage Requirements based on Receiving Waters

Protection Level	SWMP Type	Storage Volume (m ³ /ha) for Impervious Level %			
		35	55	70	85
Level 1	1 Infiltration	25	30	35	40
	2 Wetlands	80	105	120	140
	3 Wet Pond	140	190	225	250
	4 Dry Pond (Batch)	140	190	210	235
Level 2	1 Infiltration	20	20	25	30
	2 Wetlands	60	70	80	90
	3 Wet Pond	90	110	130	150
	4 Dry Pond (Batch)	60	80	95	110
Level 3	1 Infiltration	20	20	20	20
	2 Wetlands	60	60	60	60
	3 Wet Pond	60	75	85	95
	4 Dry Pond (Batch)	40	50	55	60
	5 Dry Pond	90	150	200	240
Level 4	1 Infiltration	15	15	15	15
	2 Wetlands	60	60	60	60
	3 Wet Pond	60	60	60	65
	4 Dry Pond (Batch)	25	30	35	40
	5 Dry Pond	35	50	60	70

based on MOEE Table 4.1, Page 173, SWMP Planning & Design Manual, 1994

POND 2 New Province Homes - Pond B

User Input	(defined in blue)	Answer
Weighted Runoff Coefficient (C)	0.54	Total Storage Volume Required
Estimated Imperviousness as	49	103.6 (m ³ /ha)
Area in Hectares (ha)	50	Permanent Pool Volume:
Level of Protection	2	63.6 (m ³ /ha)
SWMP Type	3	Active Storage Volume:
		40 (m ³ /ha)

Calculated imperviousness This value should be a blank if weighted C is used.

IMPERVIOUS used in calc's 49

Note that IMPERVIOUSness used in calculations will be the estimated imperviousness unless a value for CALCULATED Imperviousness is used.

STAGE-STORAGE RELATIONSHIPS

POND A

POND B

ELEV.	VOLUME
m	m ³

80.70	0
81.00	376
81.50	1,701
81.70	2,401
82.00	3,676
82.50	6,301
82.70	7,497
83.00	9,426

ELEV.	VOLUME
m	m ³

79.00	0
80.00	400
80.60	1,705
81.10	3,212
81.60	5,257
82.60	10,482
	Ext. Det.

Perm. Pool = 3212 m³

Ext. Det. = 10482 - 3212 = 7270 m³

Perm. Pool = 2401 m³

Ext. Det. = 7497 - 2401 = 5096 m³

Water Quality Facility Calculations

By: Bentley Harris
Date: February, 2002

FOREBAY SIZING		Pond B	Reference:	Ultimate Condition
Orifice Sizing Calculations				
Active Volume to be Detained for 24 hours	[m^3]	7270	Erosion Volume = Cv x A x 25mm x 10 $Cv = 0.8 \times I + 0.12$	
Average Release Rate	[m^3/s]	0.084	Volume / 24 hours	
Peak Release Rate	[m^3/s]	0.126	Average Rate x 1.5	
Minimum Forebay Lengths				
Total Drainage Area to Facility	[ha]	50	Measured on Plan	
Runoff C		0.55	Calculated based on land use type	
Peak 5 Yr Inflow Estimate	[m^3/s]	7.35	OTTSWMM Peak Flow to Pond B Forebay	
Settling Length Calculation				
Length to width ratio		2:1	Measured on Plan	
Peak Outflow Rate	[m^3/s]	0.126	Calculated Above	
Settling Velocity	[m/s]	0.0003	SWMP Manual	
Required Distance	[m]	29.0	(Length:Width x Peak Outflow / Settling Velocity)^0.5	
Dispersion Length				
Depth of Permanent Pool	[m]	2.3	Measured on Plan	
Desired Velocity in Forebay	[m/s]	0.5	SWMP Manual	
Required Distance	[m]	51	(8 x Peak Inflow Rate / Depth / Velocity)	

OTTSWMM & HGL ANALYSIS REPORT

NEW PROVINCE HOMES PHASE 10

TOWN OF OAKVILLE

20M-1071

PROJECT: 2007 - 3178 MAY, 2009
REF: 2001-2297 REVISED SEPT. 2009

50-432.8



SCHAEFFERS
CONSULTING ENGINEERS

9 Ronrose Drive
Concord, Ontario L4K 4R3

File: 2009-9-22-HGL.xls
 Job#: 2007-3178
 User: Sheila Gonbadi
 Date: 9/22/2009

Project Name: New Province Homes Phase 10
 Location: Town of Oakville

LOCATION/ DESCRIPTION	PIPE NUMBER	MANHOLES		INVERT ELEV		Slope	GROUND	COVER	BASEMENT	Circular Pipe Parameters		'n'	TOTAL FLOW (cms)	Qcap (m³/s)	Qin/ Qcap	Surch. (U/S)	OBV(U/S)	HGL(U/S)	HGL(D/S)	Dist (m)	COMPUTATIONAL COLUMNS								
		U/S	D/S	U/S	D/S		U/S	U/S	U/S	Diameter (mm)	Length (m)										pipe A (m²)	R (m)	L/D	f	Vf (m/s)	V²/2g (m)	HI Pipe	HI MH	HI TOTAL (m)
Summerset Court	197	190	HW	81.710	81.660	0.0020	85.45		n/a	1050	25	0.013	1.5838	1.2212	1.30	0.17	82.76	82.93	82.68	2.52	0.866	0.263	23.8	0.021	1.829	0.171	0.084	0.171	0.255
Summerset Court	196	189	190	81.820	81.750	0.0014	85.50	1.70	83.80	975	49	0.013	1.3417	0.8470	1.58	0.36	82.80	83.16	82.93	0.64	0.747	0.244	50.3	0.021	1.797	0.165	0.176	0.049	0.225
Summerset Court	195	188	189	81.900	81.840	0.0017	85.93	1.70	84.23	975	35	0.013	1.2965	0.9279	1.40	0.45	82.88	83.32	83.16	0.90	0.747	0.244	35.9	0.021	1.736	0.154	0.117	0.046	0.163
Easement	1101	1	188	82.126	81.997	0.0025	86.65	1.70	84.95	900	51.5	0.013	1.3155	0.9060	1.45	0.79	83.03	83.81	83.32	1.14	0.636	0.225	57.2	0.022	2.068	0.218	0.272	0.218	0.490
Street 1	1102	2	1	82.206	82.146	0.0040	86.75	1.70	85.05	900	15	0.013	1.0442	1.1449	0.91	0.80	83.11	83.90	83.81	1.15	0.636	0.225	16.7	0.022	1.641	0.137	0.050	0.041	0.091
Street 1	1103	3	2	82.418	82.226	0.0040	86.65	1.70	84.95	900	48	0.013	1.0150	1.1449	0.89	0.78	83.32	84.09	83.90	0.86	0.636	0.225	53.3	0.022	1.595	0.130	0.151	0.039	0.190
Street 1	1104	4	3	82.482	82.438	0.0040	86.50	1.70	84.80	900	11	0.013	1.0150	1.1449	0.89	0.88	83.38	84.26	84.09	0.54	0.636	0.225	12.2	0.022	1.595	0.130	0.035	0.130	0.164
Street 1	1105	5	4	83.064	82.632	0.0040	85.95	1.06	64.89	750	108	0.013	0.3834	0.7041	0.54	0.57	83.61	84.39	84.26	0.50	0.442	0.188	144.0	0.023	0.868	0.038	0.128	0.000	0.128
Street 1	1106	6	1	82.856	82.351	0.0050	86.00	1.60	84.41	675	101	0.013	0.2535	0.5944	0.43	0.37	83.53	83.90	83.81	0.50	0.358	0.169	149.6	0.024	0.708	0.026	0.092	0.000	0.092
Easement	1100	FUT.	4	82.784	82.502	0.0040	86.56	1.66	84.90	900	70.5	0.013	0.6375	1.1449	0.56	0.71	83.68	84.40	84.26	0.50	0.636	0.225	78.3	0.022	1.002	0.051	0.087	0.051	0.139

n/a

Pipe with no basement connection
 Pipe with minimum basement elevation

$= 2.78 \times A \times C \times i$
 $\cup = \text{IMPERVIOUS COEFF.}$
 $I = \text{RAINFALL INTENSITY}$
 $= \text{AREA IN HECTARES}$

$$I_{5\text{yr}} = \frac{491.7}{(t + 0.19)^{0.65}}$$

TOWN OF OAKVILLE
 DEPARTMENT OF PUBLIC WORKS
 STORM SEWER DESIGN SHEET
NEW PROVINCE HOMES DEVELOPMENT - PHASE 10



SCHAEFFERS
 Consulting Engineers
 FILE No.: 2007-3178

PREPARED BY: S.P.
 CHECKED BY: M.N.
 DATE: September 23, 2009

10 min. ENTRY TIME

Street	From MH	To MH	A (ha)	C (ha)	A x C (ha)	Accum. A x C (ha)	Entry Time t_i (min)	i (mm/hr)	Q, flow (m³/s)	Pipe Dia (mm)	Grade (%)	Capacity (m³/s)	Vel. (m/s)	Length (m)	Time in Sect. (min)	Final Time t_f (min)	Remarks	
Future Residential																		
From Future Residential Segment		Plug	2.04	0.50	1.020	1.020											Time of contraction=10+210/(2*60)=11.75min	
From Future Residential Segment	Plug	4	0.00	0.00	0.000	1.020	11.75	98.10	0.278	900	0.50	1.335	2.03	40.0	0.33	12.08		
Alison Crescent	5	4	0.77	0.50	0.385	0.385	10.00	108.74	0.116	750	0.40	0.735	1.61	108.0	1.12	11.12		
From Easement on Alison Crescent							1.020	12.08										
Alison Crescent	4	3	0.11	0.50	0.055	1.460	12.08	96.38	0.391	900	0.40	1.194	1.82	11.0	0.10	12.18		
Alison Crescent	3	2	0.24	0.50	0.120	1.580	12.18	95.87	0.421	900	0.40	1.194	1.82	48.0	0.44	12.62		
Alison Crescent	2	1	0.18	0.50	0.090	1.670	12.62	93.72	0.435	900	0.40	1.194	1.82	15.0	0.14	12.76		
Alison Crescent	6	1	0.62	0.50	0.310	0.310	10.00	108.74	0.094	675	0.50	0.620	1.68	101.0	1.00	11.00		
Alison Crescent							0.310	11.00										
Alison Crescent							1.670	12.76										
From Alison Crescent Segment							0.310	11.00										
From Alison Crescent Segment	1	Ex. Plug	0.11	0.50	0.055	2.035	12.76	93.07	0.527	900	0.25	0.944	1.44	37.0	0.43	13.18		
Summerset Court		Ex. Plug	Ex. 188	0.00	0.000	2.035	13.18	91.12	0.515	900	0.25	0.944	1.44	14.5	0.17	13.35	Existing	
Summerset Court		Ex. 188	Ex. 189	0.24	0.50	0.120	2.155	13.35	90.38	0.541	975	0.17	0.964	1.25	35.0	0.47	13.82	Existing
Summerset Court		Ex. 189	Ex. 190	0.26	0.50	0.130	2.285	13.82	88.42	0.562	975	0.14	0.875	1.14	49.0	0.72	14.54	Existing
Summerset Court							2.285	14.54										
On Alison Crescent																		
On Alison Crescent	Ex. BOX	0.06	0.50	0.030	0.030	10.00												
On Ex. Nautical Blvd.	Ex. 140						9.160	22.96										
From Ex. Springflower Way	Ex. BOX						0.435	12.09										
Nautical Boulevard	Ex. 140	Ex. 150	0.52	0.50	0.260	9.885	22.96	63.79	1.753	3.0x0.9	0.22	4.803	1.78	89.5	0.84	23.80		
Nautical Boulevard	Ex. 150	Ex. 151	1.16	0.50	0.580	10.465	23.80	62.33	1.813	3.0x0.9	0.22	4.803	1.78	134.5	1.26	25.06		
Nautical Boulevard							10.465	25.06										

REFER TO PROJECT No. 2001-2297 BY SCHAEFFERS & ASSOCIATES LTD.

APPENDIX 'D'

WATER DEMAND CALCULATIONS

PRELIMINARY ESTIMATE of Expected Water Demand

193 Nautical Blvd.
Oakville, Ontario

January 2022

Project #160623025

Design Water Demand

System demands to be designed to the greater of:

- a. Max Daily Demand + Fire Flow
- b. Max Hourly Demand

Program Details

	Development Type	*Average day service demands (m ³ /ha/day)	*Equivalent Population Density (Pers./ha)	Site Area (ha)	*Source: Regional Municipality of Halton Water and Wastewater Linear Design Manual
Residential:	Single Family	15.125	55	2.25	

Domestic Demands

Equivalent Population: **124 persons** *Source: Regional Municipality of Halton Water and

***Residential flowrate per capita:** **0.275 m³/pers./day** Wastewater Linear Design

***Maximum Daily Demand Peaking Factor:** **2.25**

***Maximum Hourly Demand Peaking Factor:** **4.00**

Max Daily Demand: **76.57 m³/day**

0.89 L/s

Max Hourly Demand: **136.13 m³/day**

1.58 L/s

Fire Flow Demands

Per notes D, J and H of the Fire Underwriters Survey "Water Supply for Public Fire Protection", 1999, Single family homes with less than 3m of separation and non-combustible singles, shall require 8,000L/min to accommodate fire protection requirements.

Fire Flow: **8000.00 L/min**
133.33 L/s

Verification of Design Flow Requirements

a. Max Daily Demand + Fire Flow
= **134.22 L/s**

b. Max Hourly Demand
= **1.58 L/s**

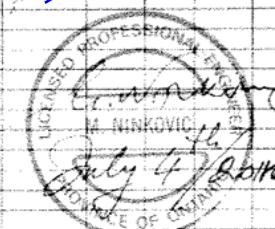
a > b therefore:

DESIGN FLOW: 134.22 L/s

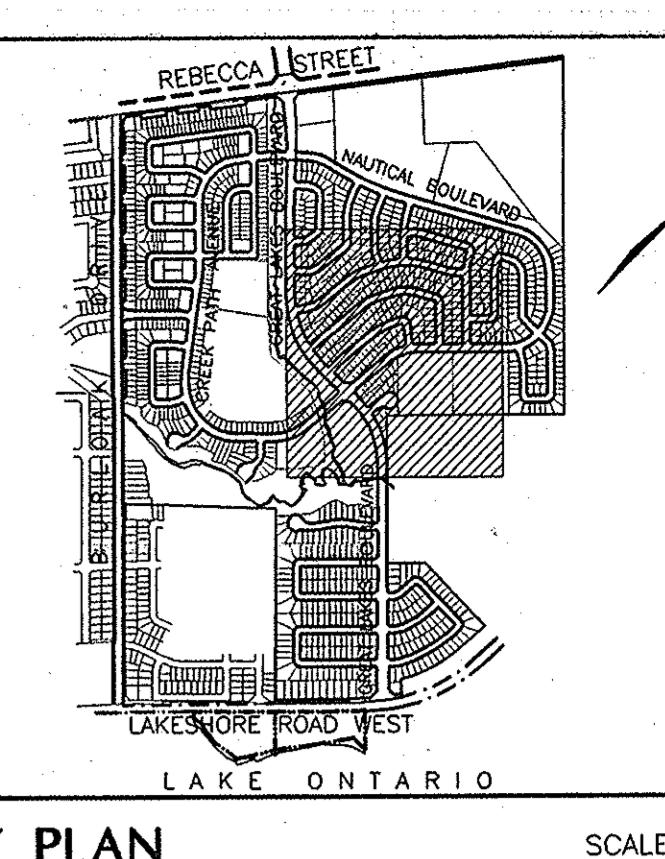
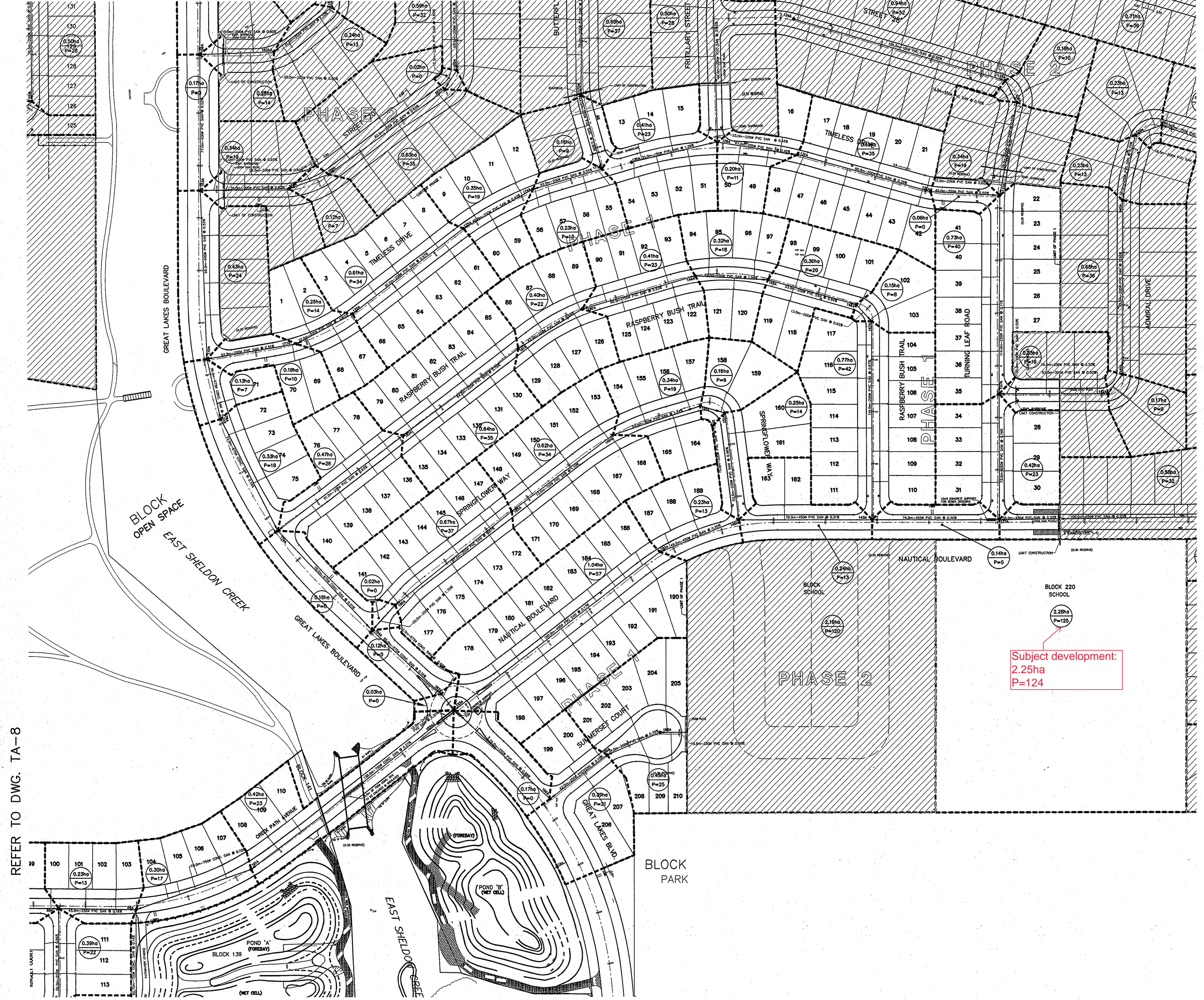
APPENDIX 'E'

DOWNSTREAM SANITARY SEWER CAPACITY

Sanitary sewer design sheet extracted from Schaffers – New Province Homes Phase 10 dwg.DS-1 (As-Recorded – April 30, 2009)

THE REGIONAL MUNICIPALITY OF HALTON SANITARY SEWER DESIGN NEW PROVINCE HOMES DEVELOPMENT - PHASE 10 AS CONSTRUCTED DECEMBER 2009															Date	4-Jul-12				
Project No. Location															Designed By: S.P.		Checked By: M.N.			
	2007-3178 Oakville		Pipe Roughness Coeff. (PVC): 0.013 Pipe Roughness Coeff. (Conc): 0.013		Population Tributary		Average	Average	Peaking	MAX	infiltration	MAX	SEWER	PIPE	Type	Class	REMARKS			
Street	Manhole From	Length in metres To	Tributary Area Hectares Increment	Total	Res. Comm. Ind.	Population Tributary Increment	Average m/s m³/s Incr.	Average m/s m³/s Total	Peaking Factor	MAX m³/s	infiltration m³/s	MAX FLOW EXPECT	Size mm	Slope %	Q m³/s	V m/s	Type Class	REMARKS		
<p>Population of 125 accounted for the subject development. Per 'Halton Region Wastewater Linear Design Manual' Table 3-1, single family homes yield an equivalent population of 55 persons/ hectare. Site area per Draft Plan = 2.25 ha, therefore an equivalent population of 124 Persons.</p>																				
From School Block Easement	Plug	2.25	2.26	2.26	0	125	0.00000	0.00040	4.22	0.0017	0.0006	0.0023	200	0.52	0.0237	0.75	0.4578 PVC			
	Plug	4A	43.80	0.00		2.26		125												
Alison Crescent	5A	4A	95.50	0.78		0.78	43	43	0.00014	0.00014	4.33	0.0006	0.0002	0.0008	150	1.35	0.0177	1.00	0.4861 PVC	
From Easement		4A				2.26		125												
From Alison Crescent		4A				0.78		43												
Alison Crescent	4A	3A	12.57	0.12		3.16	7	175	0.00002	0.00056	4.17	0.0023	0.0009	0.0032	200	0.56	0.0245	0.78	0.5234 PVC	
	3A	2A	45.14	0.35		3.51	19	194	0.00006	0.00062	4.15	0.0026	0.0010	0.0036	200	0.51	0.0234	0.75	0.5244 PVC	
	2A	1A	16.19	0.21		3.72	12	205	0.00004	0.00065	4.14	0.0027	0.0011	0.0038	200	0.40	0.0207	0.66	0.4915 PVC	
						3.72		205												
Alison Crescent	6A	1A	96.62	0.76		0.76	42	42	0.00013	0.00013	4.33	0.0006	0.0002	0.0008	150	1.32	0.0175	0.99	0.4787 PVC	
						0.76		42												
From Alison Crescent	1A					3.72		205												
From Alison Crescent	1A					0.76	0	42	0.00000	0.00013	4.33	0.0006	0.0002	0.0008	250	0.25	0.0297	0.61	0.2566 PVC	
Easement	1A	Ex.188A	50.25	0.00		4.48	0	247	0.00000	0.00079	4.11	0.0032	0.0013	0.0045	250	0.28	0.0315	0.64	0.4423 PVC	
Summerset Court	Ex.188A	Ex.189A	34.00	0.45		4.93	25	272	0.00008	0.00086	4.10	0.0035	0.0014	0.0050	250	0.32	0.0336	0.69	0.4769 PVC	
	Ex.189A	Ex.190A	42.00	0.39		5.32	21	293	0.00007	0.00093	4.08	0.0038	0.0015	0.0053	250	0.19	0.0259	0.53	0.4083 PVC	
						5.31		292	292											
Great Lakes Blvd.	Ex.190A	Ex.153A	75.00	0.17		5.48		292	0.00000	0.00093	4.08	0.0038	0.0016	0.0054	250	0.28	0.0318	0.64	0.4423 PVC	
Creek Path Ave.	Ex.153A	Ex.153AA	12.00												TWIN 525	0.25	0.427	0.99	CONC.	
	Ex.153AA	WEST	138.00												750	0.27	0.576	1.31	CONC.	
TRUNK SEWER																				
REFER TO PROJECT No. 2001-2297 BY SCHAEFFERS & ASSOCIATES LTD.																				
<p>NOTE: As detailed herein, the sewer network was designed to accommodate the flows contributed by the subject site (2.26ha and population of 125 accounted for, development parameters for subject lands = 2.25ha and population of 124)</p> <p>As shown, all sewers have ample excess capacity down to the connection with the trunk sewer at Great Lakes Blvd. and Creek Path Ave.</p>																				
																				

REFER TO DWG. TA-6



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

LEGEND

	DENOTES FUTURE DEVELOPMENT
	DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec.
	DENOTES AREA IN HECTARES
	DENOTES POPULATION

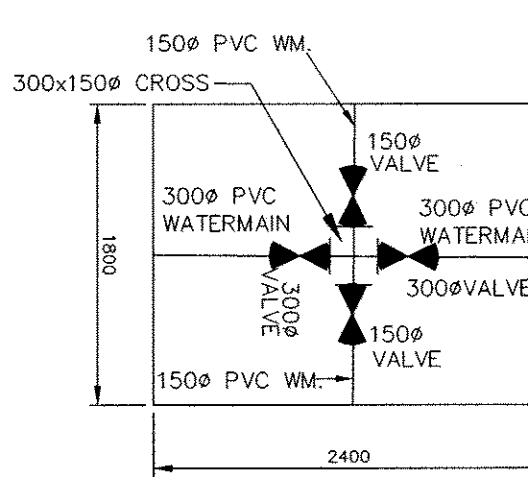
BENCH MARK 229
DESCRIPTION: PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLOAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE SECTION OF BURLOAK DRIVE NEAREST HYDRANT 6.0 m SOUTHEAST OF THE CENTRE LINE OF LAKESHORE ROAD AND 3.8 m SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. ELEVATION 78.924m

2. APR 2003	B.J.	AS BUILT - REMEDIED SANITARY SEWERS	
1. JUN 2003	B.J.	AS BUILT - SANITARY SEWERS ONLY	
No. Date	By	Revisions	
Design	P.S.	Checked M.N.	Date
Drawn		Checked Z.C.	MARCH 2002
Scale:	HOR. 1 : 1000		
Approvals	Field Notes		
Municipal	APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.		
Signed	GEORGE TRENKLER DATE 02/04/11		
Planning Services Department - TOWN OF OAKVILLE			
Region:			
DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.			
Margaret Smith 02/04/11 Planning & Public Works Dept - Town of Oakville			
SCHAEFFERS CONSULTING ENGINEERS 64 Jordin Drive, Concord, Ontario L4K 3P3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com			
Municipality THE REGIONAL MUNICIPALITY OF HALTON			
TOWN OF OAKVILLE DEPARTMENT OF PUBLIC WORKS			

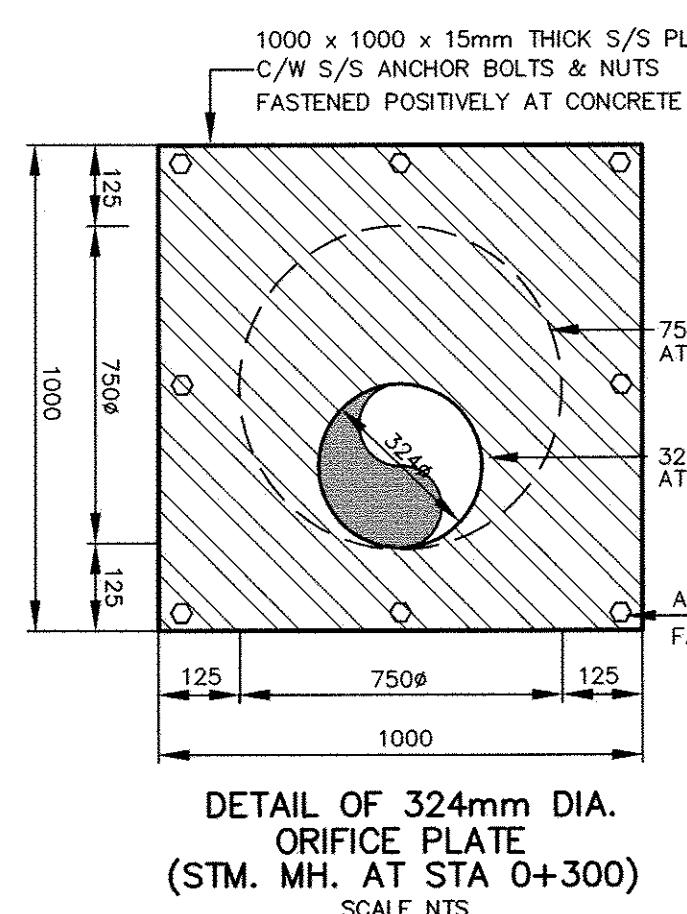
24T-00004/1734

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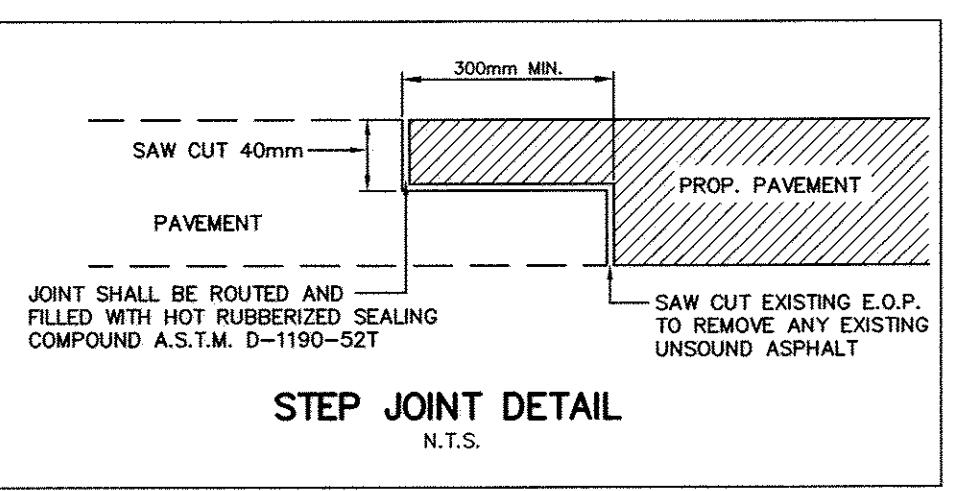
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SD-432.1	O- 13114 2
Contract No.	Drawing No.
2001-2297	TA-7



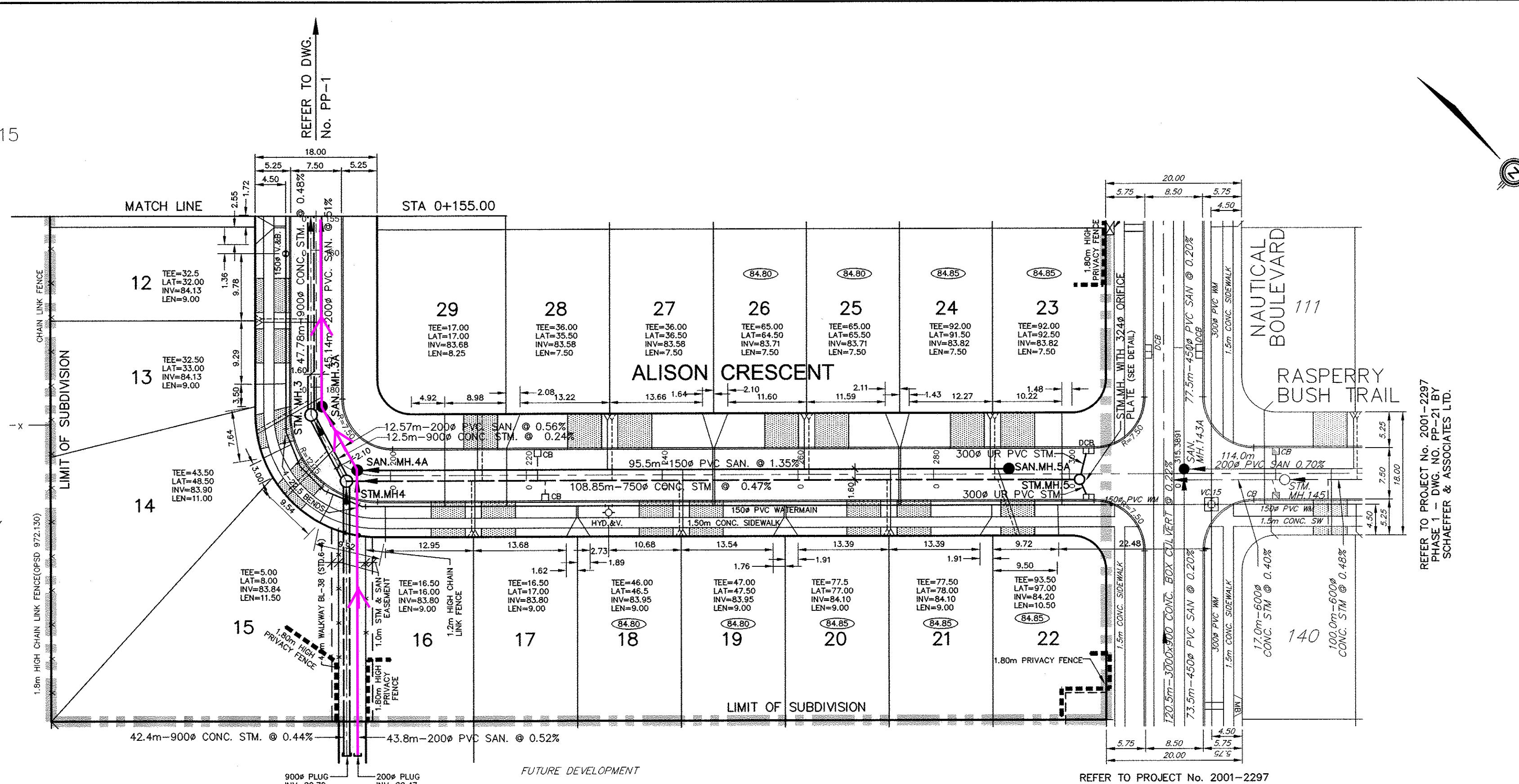
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(STD PH 400.02)
N.T.S.



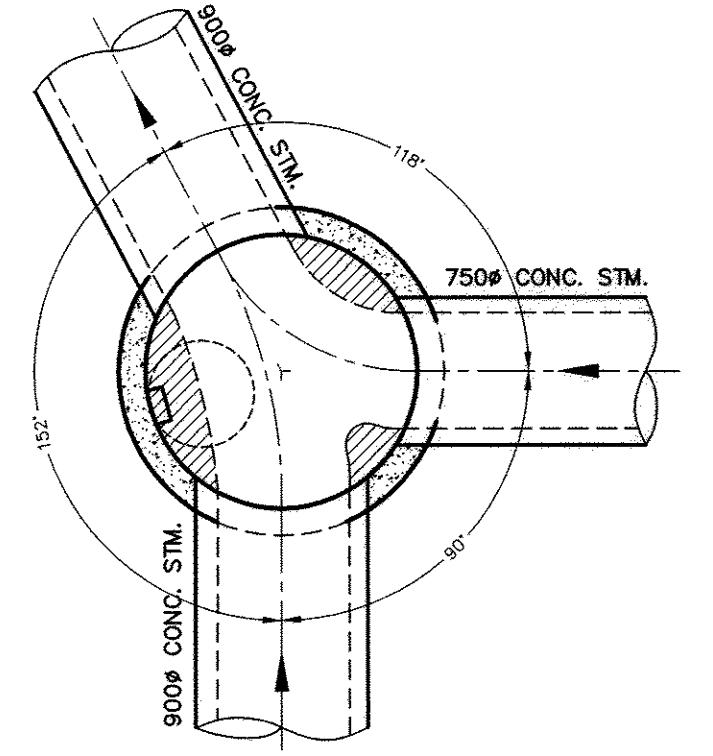
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ORIFICE PLATE
(STM. MH. AT STA 0+300)
SCALE N.T.S.



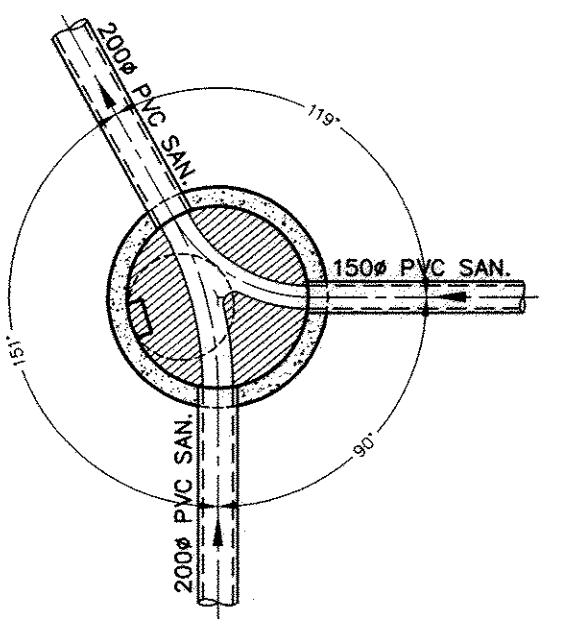
STEP JOINT DETAIL
N.T.S.



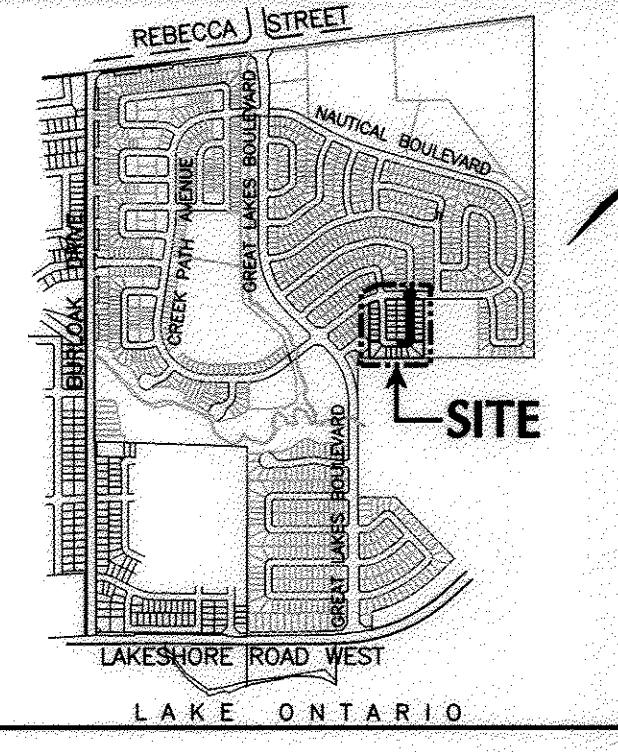
SUBJECT SITE SANITARY
OUTFALL CONNECTING TO
EXISTING SEWER NETWORK



BENCHING DETAIL-STM.MH. 4
(OPSD 701.012, 1800e)
SCALE: 1:50



BENCHING DETAIL-SAN.MH. 4A
(OPSD 701.010, 1200e)
SCALE: 1:50



KEY PLAN

SCALE N.T.S.

NOTES:
1. THE LOCATION OF ALL UNDERGROUND AND ABOVE GROUND UTILITIES AND CONSTRUCTIONS IS NOT NECESSARILY SHOWN ON CONTRACT DRAWINGS, AND WHERE SHOWN THE ACCURACY OF THE LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITIES OF DAMAGE.

2. ALL AREAS SUBJECT TO RESTRICTED USE IN ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF OAKVILLE AND REGION OF HALTON ENGINEERING DEPARTMENT. GRASSED AREAS TO BE TOPPED WITH 100mm TOPSOIL AND SODDED AS PER OPSD 218.01. ALL EXISTING SERVICES TO BE ADJUSTED TO SUIT NEW GRADES.

3. FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES SHALL BE INSTALLED BELOW LEAD PIPE EXCAVATION. FOOTINGS MUST BE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANT'S VERIFICATION REQUIRED.

4. FOR GENERAL NOTES REFER TO DWG. NO. GN-1.

LEGEND

DENOTES LIMIT OF SUBDIVISION
 DENOTES MINIMUM BASEMENT ELEVATION

BENCH MARK 229

DESCRIPTION- PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLOAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 1.0m NORTHEAST OF HYDRO POLE, 6.1m SOUTHEAST OF THE INTERSECTION OF LAKESHORE ROAD AND 3.8 m SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

1. Dec./09 AS CONSTRUCTED			
No.	Date	By	Revisions
Design	S.P.	Checked	M.N.
Drawn	J.B.	Checked	P.S.
Scale:	HOR. 1:500		References
Municipal APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.			
Signed Heinz Hecht Date Nov. 25/2009 Development Services Department - TOWN OF OAKVILLE			
Regional DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.			
Ronald MacKenzie Nov. 25/2009 Legislative & Planning Services Department			

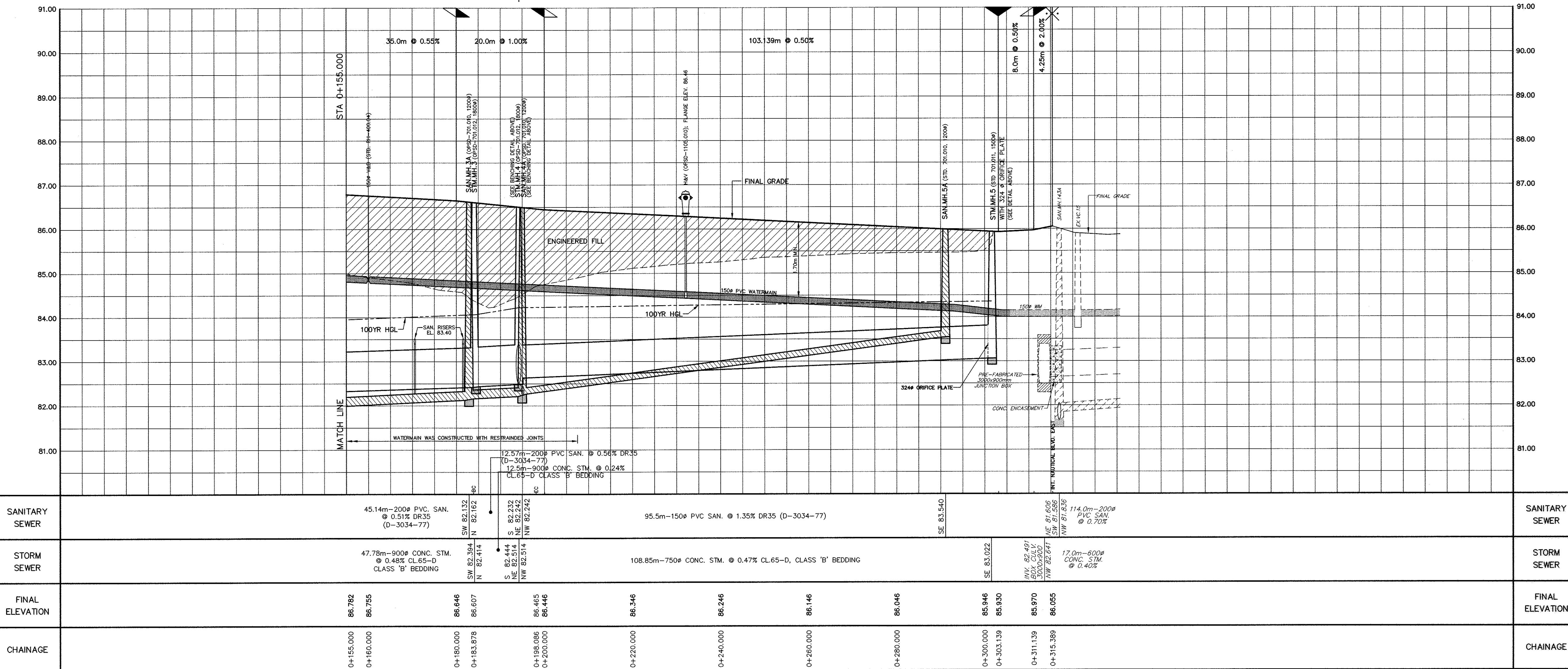
Received Professional Engineer M. NINKOVIC October, 2009 PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS 6 Ronrose Drive, Concord, Ontario L4K 4R3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com

Municipality
THE REGIONAL MUNICIPALITY OF HALTON

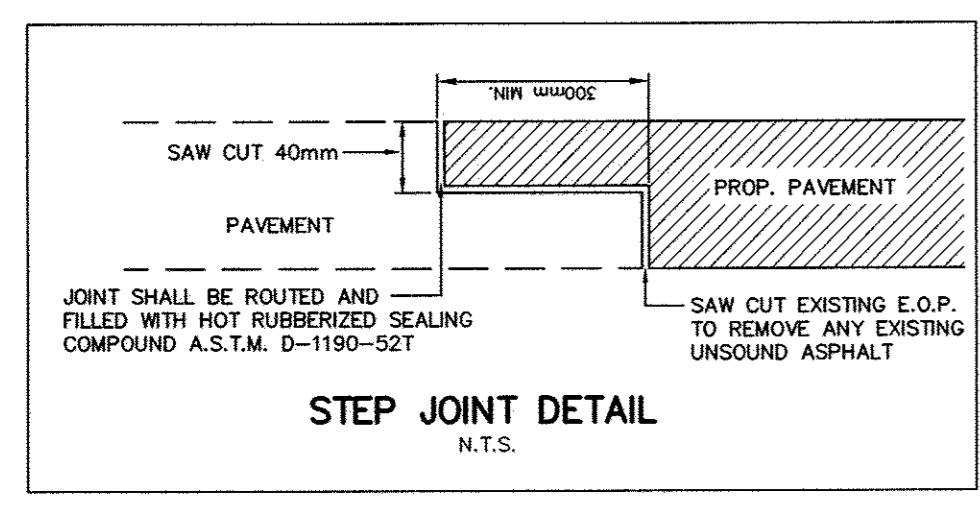
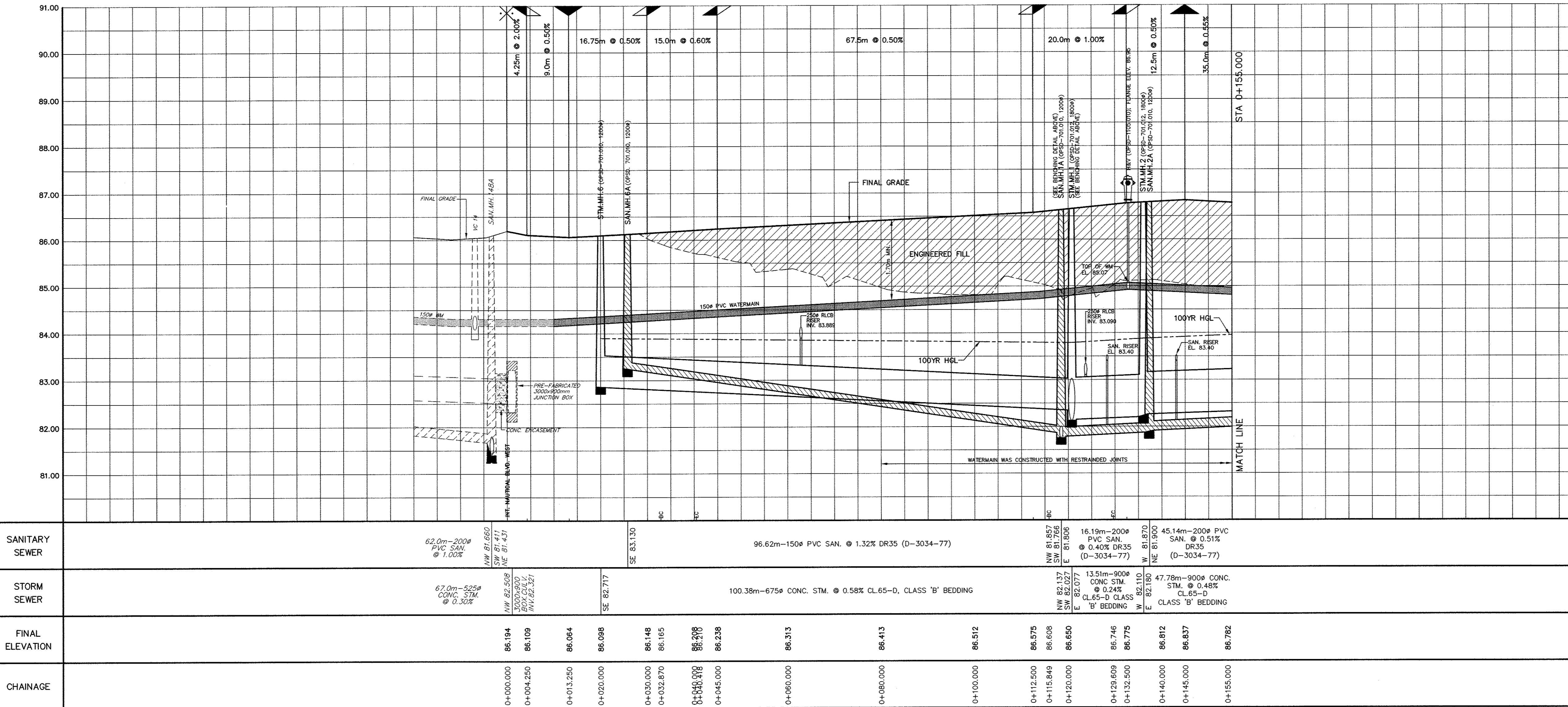
TOWN OF OAKVILLE
ENGINEERING AND CONSTRUCTION DEPARTMENT

Title	24T-00004
NEW PROVINCE HOMES PHASE 10	
PLAN AND PROFILE OF ALISON CRESCENT	
FROM STA. 0+155.000 TO STA. 0+315.389	
20M-1071	20R-18569
Municipal Drawing No.	Regional File No.
SD-432.8	DO-669
Contract No.	Drawing No.
2007-3178	PP - 2

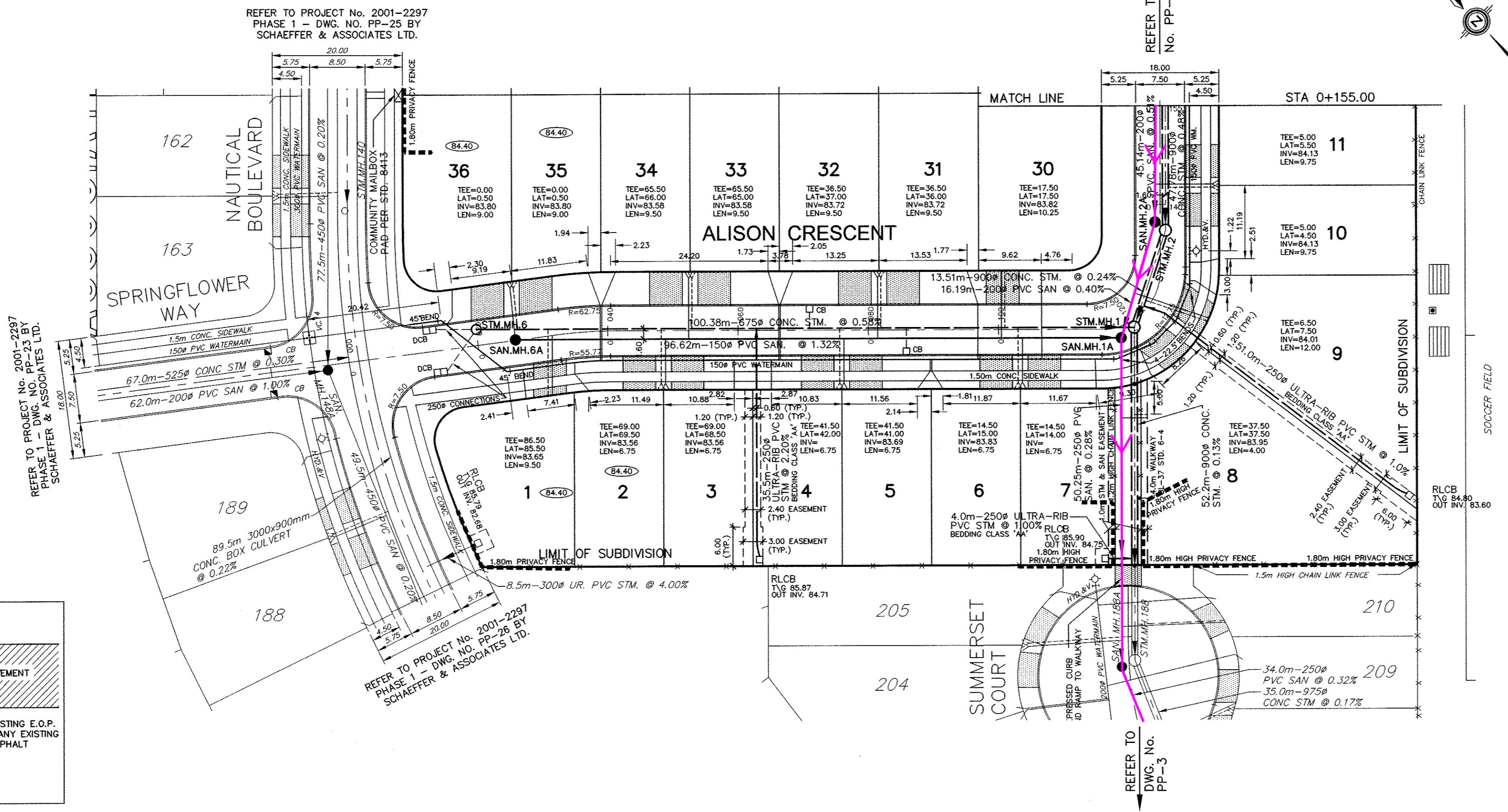


ALISON CRESCENT STA. 0+000.000 TO STA. 0+155.000

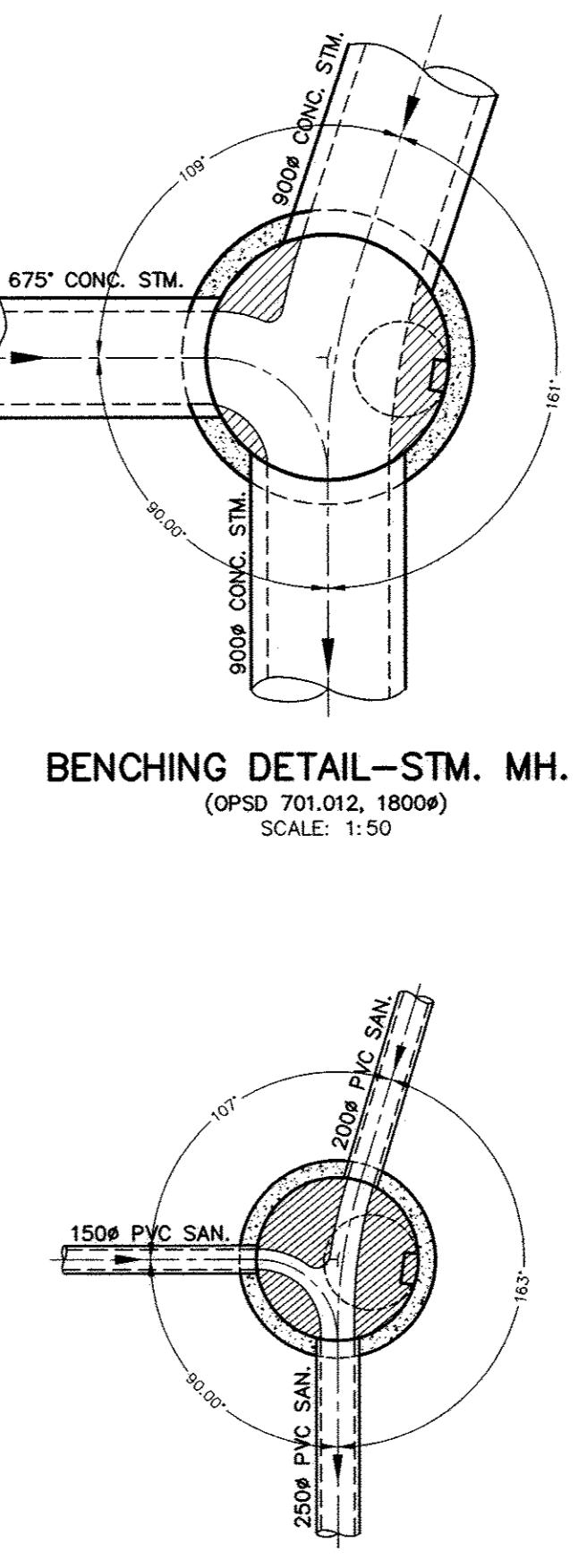
20M-1071



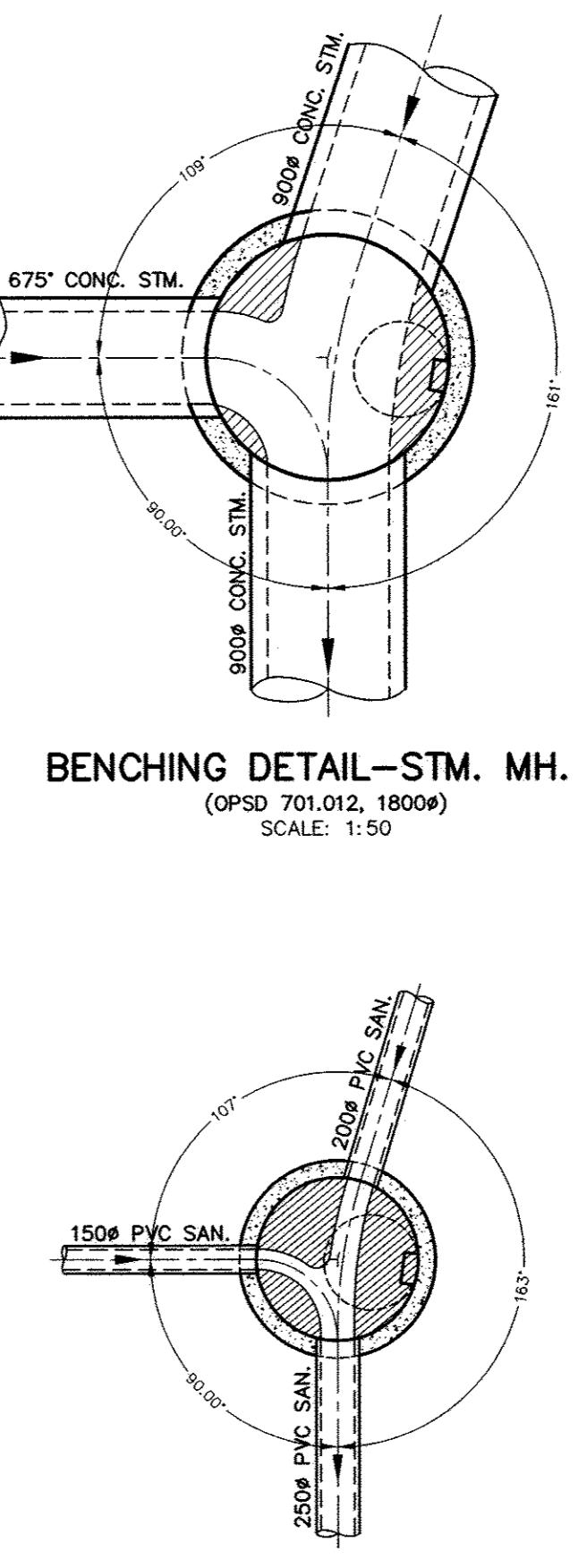
DETAIL OF VC.14
(STD RH 400.02)
N.T.S.



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(OPSD 701.012, 1800#)
SCALE: 1:50



BENCHING DETAIL-SAN. MH. 1A
(OPSD 701.010, 1200#)
SCALE: 1:50



LEGEND

DENOTES LIMIT OF SUBDIVISION
 DENOTES MINIMUM BASEMENT ELEVATION

BENCH MARK 229

DESCRIPTION: PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLOAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHEAST CORNER OF THE INTERSECTION 1.0m NORTHEAST OF HYDRANT, 6.1 m SOUTHEAST OF THE TOP OF BURLOAK DRIVE, AND 3.8 m SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

1. Dec./09	AS CONSTRUCTED		
No.	Date	By	Revisions
Design	S.P.	Checked	M.N.
Drawn	J.B.	Checked	P.S.
Scale:	HOR. 1:500 VER. 1:50		
References			
Municipal			
APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.			
Heinz Hecht Nov. 25/2009			
Development Services Department -TOWN OF OAKVILLE			
Regional			
DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.			
Ronald MacKenzie Nov. 25/2009	Legislative & Planning Services Department		
SCHAEFFERS CONSULTING ENGINEERS 6 Ronrose Drive, Concord, Ontario L4K 4R3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com			

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC October, 2009 PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS 6 Ronrose Drive, Concord, Ontario L4K 4R3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com

SCHAEFFER & ASSOCIATES LTD.

Municipality

THE REGIONAL MUNICIPALITY OF HALTON

OAKVILLE TOWN OF OAKVILLE

ENGINEERING AND CONSTRUCTION DEPARTMENT

Title NEW PROVINCE HOMES 24T-00004
PHASE 10

PLAN AND PROFILE OF
ALISON CRESCENT
FROM STA. 0+000.000 TO STA. 0+155.000

20M-1071 20R-18569

Municipal Drawing No. SD-432.8 Regional File No. DO-669

Contract No. 2007-3178 Drawing No. PP - 1

HdAs Constructed3178PH-10-AC3178_PP-1.dwg.3/8/2013 10:27:03 AM, mshan, User 3 (900 x 600 mm)

KEY PLAN
SCALE N.T.S.

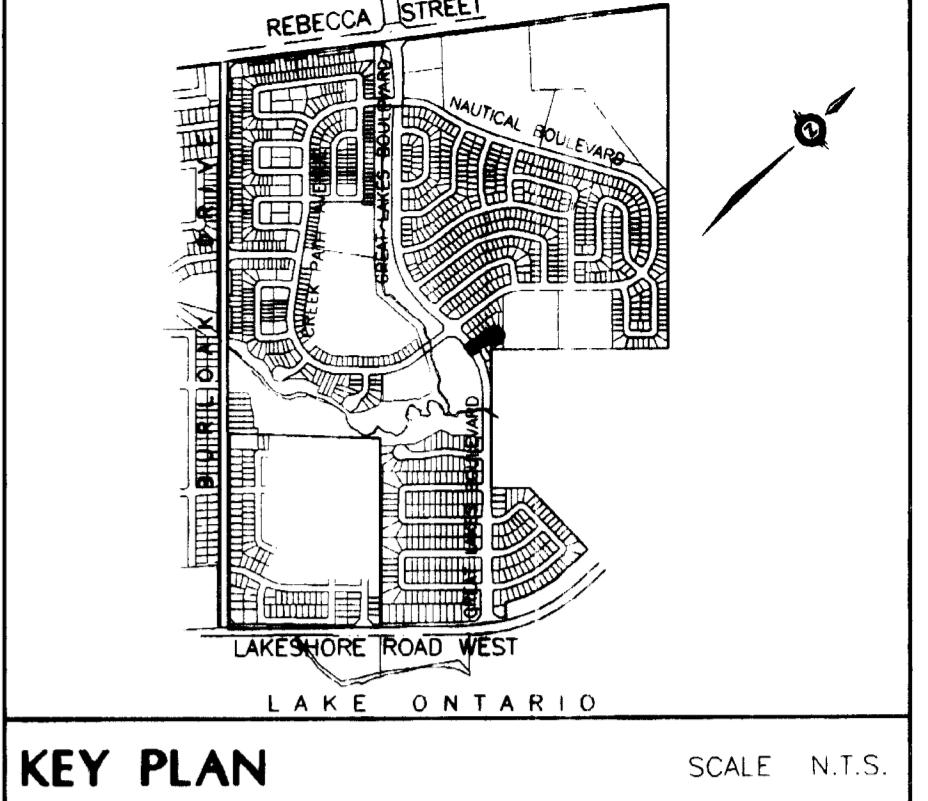
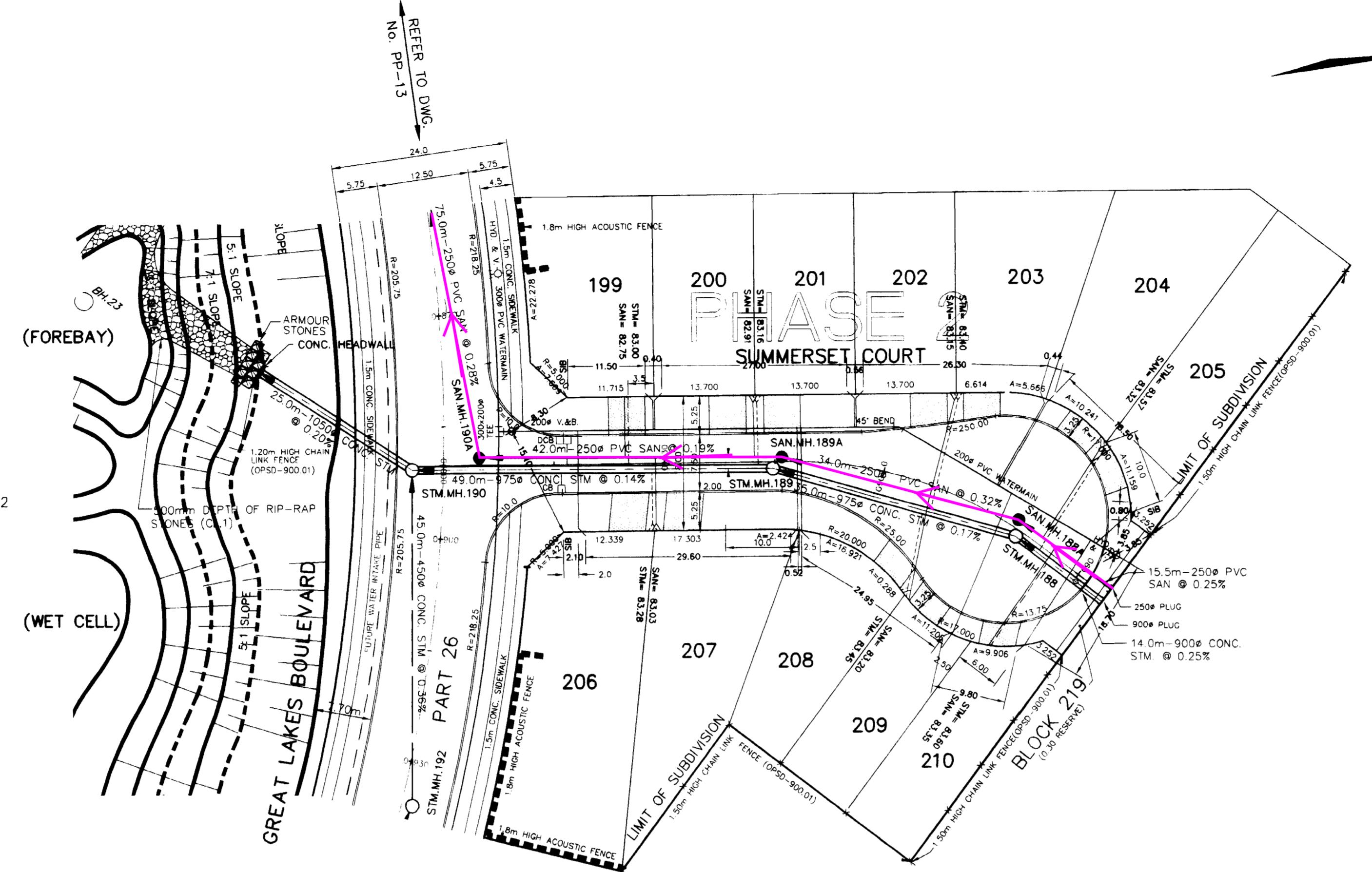
NOTES:
1. THE LOCATION OF ALL UNDERGROUND AND ABOVE GROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON CONTRACT DRAWINGS, AND WHERE SHOWN THE ACCURACY OF THE LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE.

2. ALL AREAS DISTURBED DURING CONSTRUCTION OF SEWERS AND WATERMEN TO BE RESTORED TO ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF OAKVILLE AND REGION OF HALTON ENGINEERING DEPARTMENT. GRASSED AREAS TO BE TOPPED WITH 100mm TOPSOIL AND SODDED AS PER OPSD 218.01. ALL EXISTING SERVICES TO BE ADJUSTED TO SUIT NEW GRADES.

3. FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES SHALL BE INSTALLED BELOW LEAD PIPE. EXCAVATION FOOTINGS MUST BE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANT'S VERIFICATION REQUIRED.

4. FOR GENERAL NOTES REFER TO DWG. NO. GN-1.

POND 'B'
REFER TO DWG. NO. SWM-2



KEY PLAN

SCALE N.T.S.

NOTES:

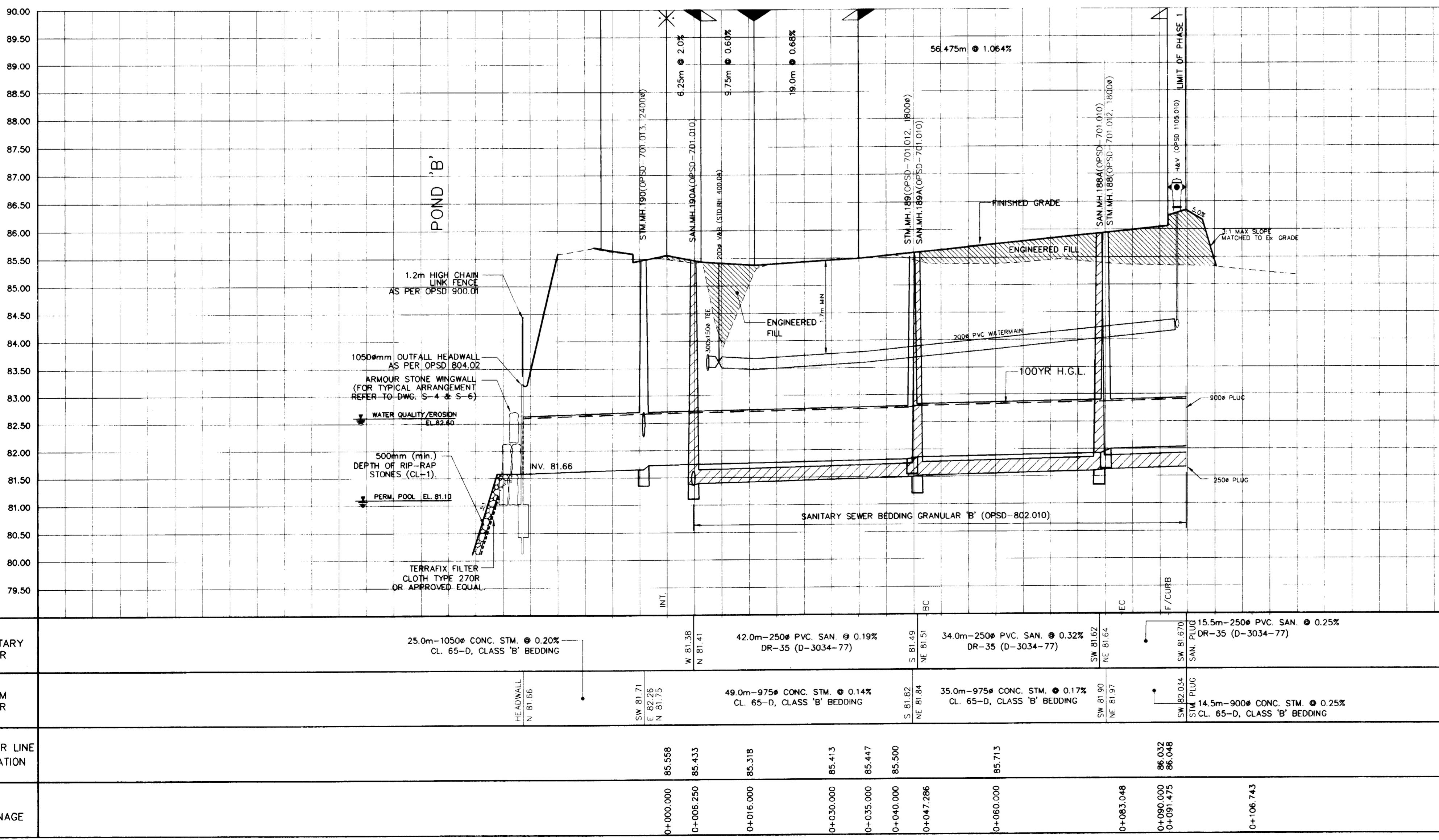
- FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES WERE INSTALLED BELOW LEAD PIPE. EXCAVATION FOOTINGS WERE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANT'S VERIFIED CONSTRUCTION.
- FOR GENERAL NOTES REFER TO IWC NO. GN-1.

LEGEND

	DENOTES FUTURE DEVELOPMENT
	DENOTES LIMIT OF PHASE CONSTRUCTION
	DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec

AS CONSTRUCTED JUNE 2006
BENCH MARK 229

DESCRIPTION - PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKE SHORE ROAD AT SOUTH END OF BURLOAK DRIVE. 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 100 m NORTHEAST OF HYDRAULIC VALVE. 5.9 m SOUTHEAST OF THE PRODUCTION OF THE CENTRE LINE OF LAKE SHORE ROAD. 3.8 m SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m



SANITARY SEWER

25.0m-1050m CONC. STM. @ 0.20% CL. 65-D, CLASS 'B' BEDDING

42.0m-250m PVC SAN. @ 0.19% DR-35 (D-3034-77)

SANITARY SEWER

STORM SEWER

49.0m-975m CONC. STM. @ 0.14% CL. 65-D, CLASS 'B' BEDDING

STORM SEWER

CENTER LINE ELEVATION

35.0m-975m CONC. STM. @ 0.17% CL. 65-D, CLASS 'B' BEDDING

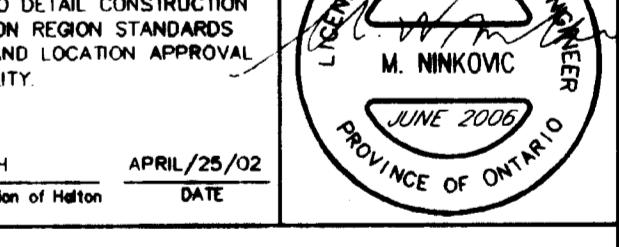
CENTER LINE ELEVATION

CHAINAGE

35.0m-14.5m-900m CONC. STM. @ 0.25% CL. 65-D, CLASS 'B' BEDDING

CHAINAGE

NEW PROVINCE HOMES PHASE 2 PLAN AND PROFILE OF SUMMERSET COURT STA. 0+000.000 TO STA. 0+092.020		20M-840
Municipal Drawing No. SD-432.1	Regional File No. D0-542	
Contract No. 2001-2297	Drawing No. PP-27	

2 JUNE 2006 B.J.	AS BUILT - CENTER LINE ELEVATION ADDED
1 JAN 2003 B.J.	AS BUILT - STORM & SANITARY SEWERS ONLY
No. Date By	Revisions
Design H.R. Checked M.N.	Date JUNE 2006
Drawn H.R. Checked Z.C.	
Scale: HOR. 1 : 500 VERT. 1 : 50	References
Approvals	Field Notes
Municipal	APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
SIGNED: GEORGE TRENLER DATE: APRIL/11/02	Bell <input type="checkbox"/> Hydro <input type="checkbox"/>
Planning Services Department - TOWN OF OAKVILLE	Gas <input type="checkbox"/> Cable <input type="checkbox"/>
Regional	DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY
MARGARET SMITH APRIL/25/02	 Engineering Services Planning & Public Works Dept. - Region of Halton DATE
SCHAEFFERS CONSULTING ENGINEERS	64 Jardin Drive, Concord, Ontario L4K 3P3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com

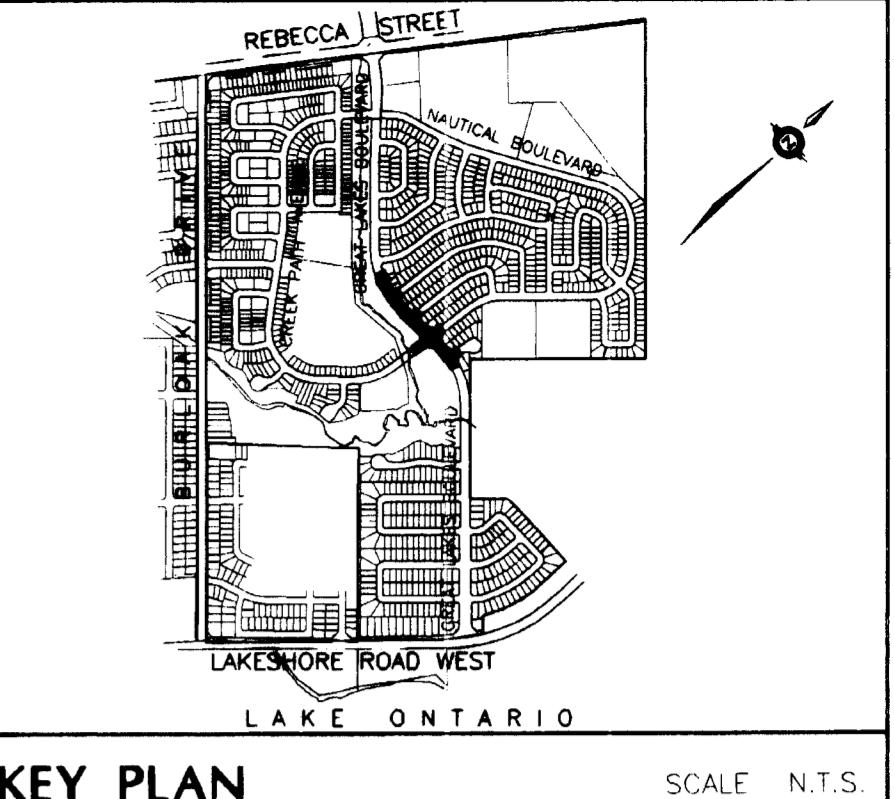
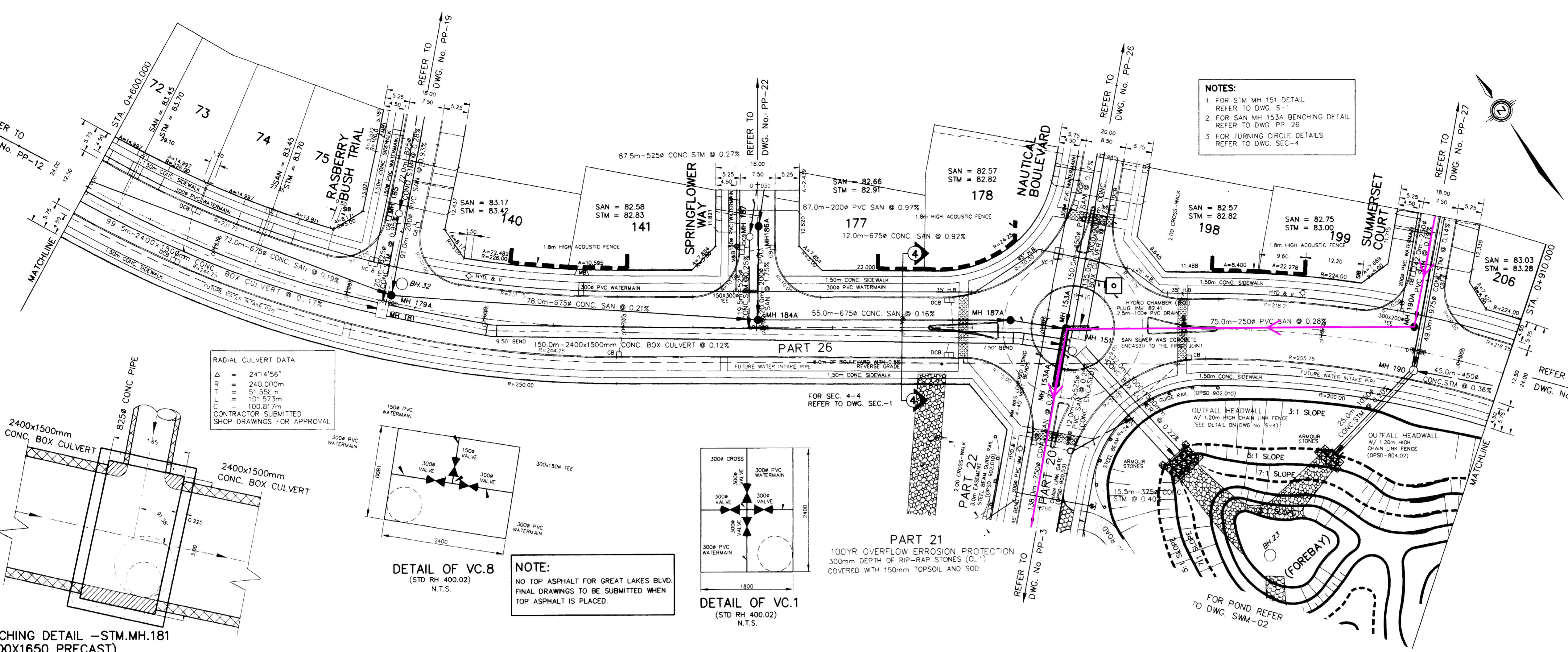
 SCHAEFFERS CONSULTING ENGINEERS

Municipality THE REGIONAL MUNICIPALITY OF HALTON

TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

BENCHING DETAIL -STM.MH.181
(3000X1650 PRECAST)

SCALE: 1:50

**NOTES:**

- 1 FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES WERE INSTALLED BELOW LEAD PIPE EXCAVATION. FOOTINGS WERE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANTS VERIFIED CONSTRUCTION.
- 2 FOR GENERAL NOTES REFER TO DWG. NO. GN-1.

LEGEND

- DENOTES FUTURE DEVELOPMENT
- DENOTES LIMIT OF PHASE 1 CONSTRUCTION
- DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec

AS CONSTRUCTED JUNE 2006**BENCH MARK 229**

DEMONSTRATION PLATE IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKESHORE ROAD AT SOUTH END OF BURLAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 1.0m NORTHEAST OF HYDRO POLE, 6.9 m SOUTHEAST OF THE CENTRE LINE OF LAKESHORE ROAD AND 3.8 m SOUTHWEST OF THE PROJECTION OF THE CENTRE LINE OF BURLAK DRIVE. HONORARY CONTROL MONUMENT NO.001653071. ELEVATION 78.994m

No.	Date	By	Revisions
4	JUNE 2006	B.J.	AS CONSTRUCTED JUNE 2006
3	JAN 2003	B.J.	AS BUILT - REVISED SANITARY SEWER FROM MH 179A TO MH 187A
2	JAN 2003	B.J.	AS BUILT - STORM & SANITARY SEWERS ONLY
1	02/05/17	F.T.	HYDRO CHAMBER & DRAIN ADDED; WATERMAIN LAYOUT REVISED

Design	P.S.	Checked	M.N.	Date
Drawn	H.R.	Checked	Z.C.	JUNE 2006

Scale	HOR. 1 : 500	VERT. 1 : 50
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Approvals	Field Notes
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Municipal	Approved in principle subject to detail construction conforming to Town of Oakville standards and specifications.
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SIGNED — GEORGE TRENNLER — DATE: APRIL 11/02

Planning Services Department — TOWN OF OAKVILLE

MARGARET SMITH — DATE: APRIL 25/02

Planning & Public Works Dept., Region of Halton

APPROVED — DATE: JUNE 2006

PROFESSIONAL ENGINEER

M. NINKOMC — DATE: JUNE 2006

LICENSED PROFESSIONAL ENGINEER

SCHAFFERS CONSULTING ENGINEERS

64 Jardin Drive, Concord, Ontario L4K 3P3

Tel: (905) 738-6100

Fax: (905) 738-6875

Email: design@schaefers.com

SCHAFFERS & ASSOCIATES LTD.

Municipality

THE REGIONAL MUNICIPALITY OF HALTON

OAKVILLE DEPARTMENT OF PUBLIC WORKS

Title

20M-839 AND 20M-840

NEW PROVINCE HOMES PHASES 1 AND 2 PLAN AND PROFILE OF

GREAT LAKES BOULEVARD STA. 0+600.000 TO STA. 0+910.000

Municipal Drawing No.

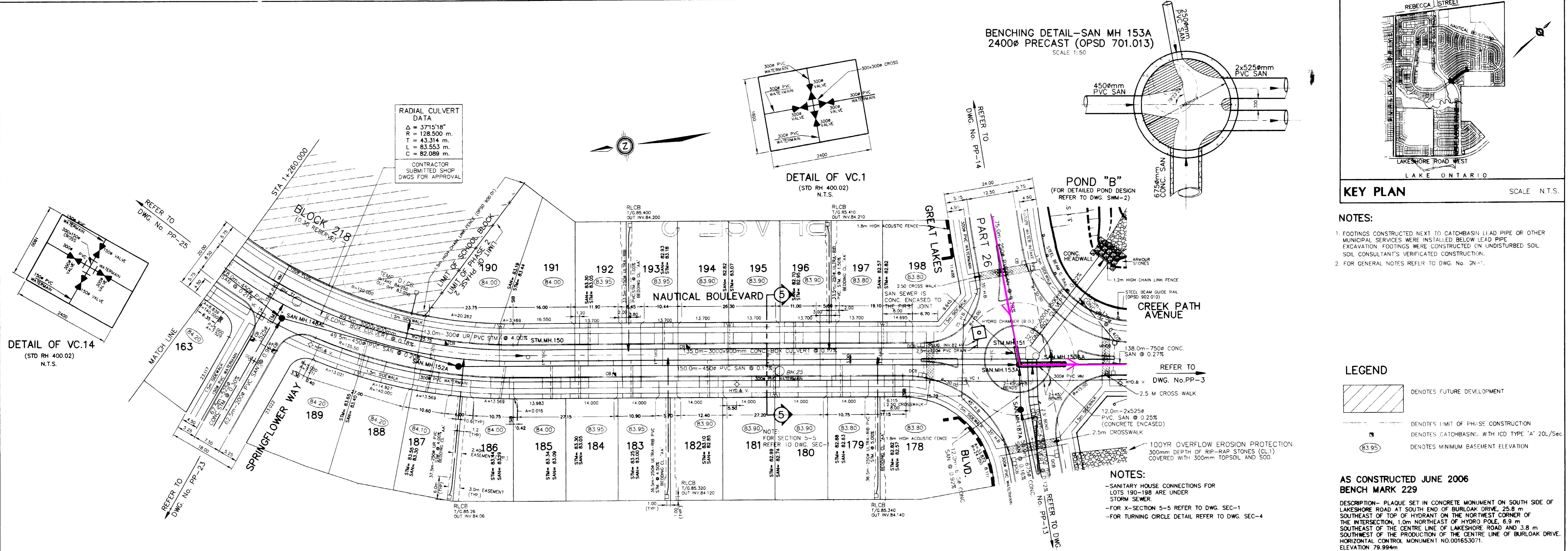
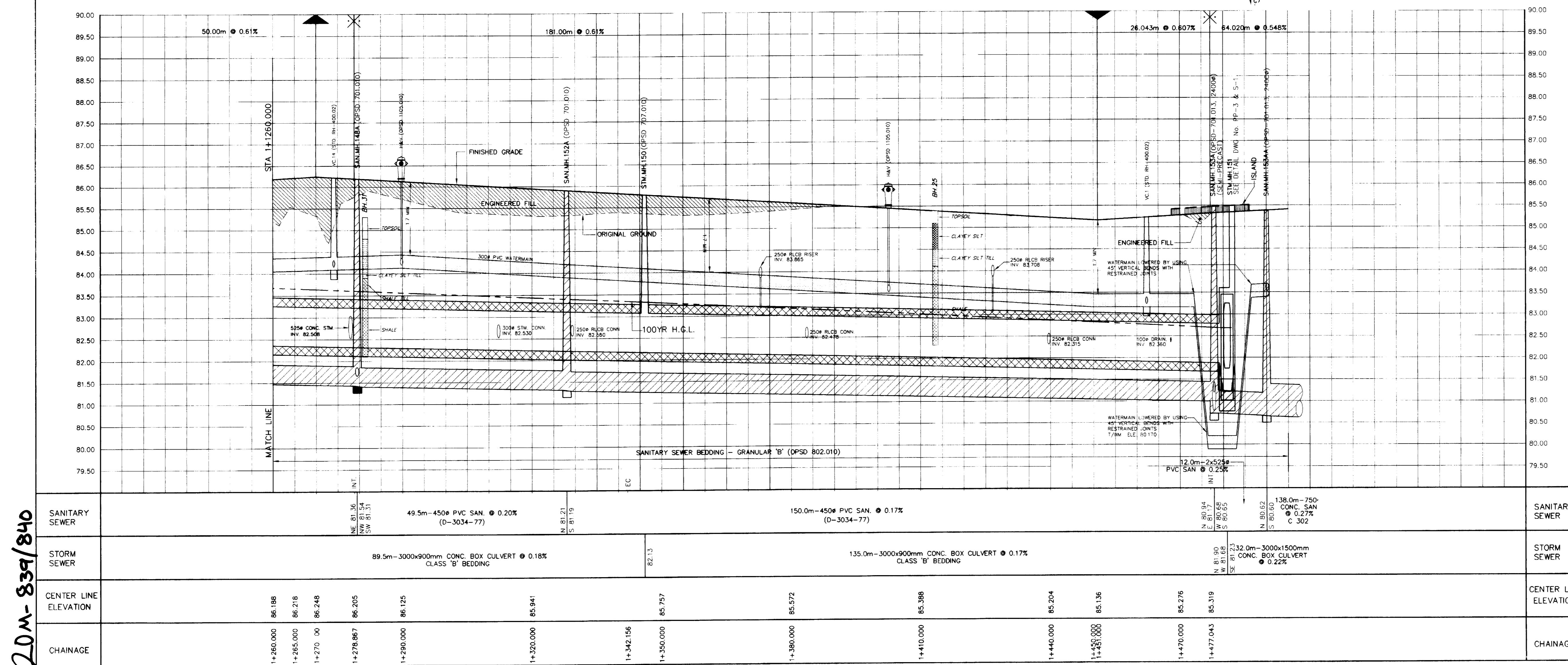
SD-432.1 Regional File No.

DO-507 DO-542

Contract No.

2001-2297 Drawing No.

PP-13



AS CONSTRUCTED JUNE 2006
BENCH MARK 229

DESCRIPTION: PLAQUE SET IN CONCRETE MONUMENT ON SOUTH SIDE OF LAKE SHORE ROAD AT SOUTH END OF BURLAK DRIVE, 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHWEST CORNER OF THE INTERSECTION, 1.0m NORTHEAST OF HYDRAULIC POLE, 6.9 m SOUTHEAST OF THE CENTRE LINE OF LAKE SHORE ROAD AND 3.8 m SOUTHEAST OF THE PRODUCTION OF THE CENTRE LINE OF BURLAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.0016530.1. ELEVATION 79.994m

3. JUNE 2006	B.J.	AS BUILT - CENTER LINE ELEVATION ADDED		
2 JAN 2003	B.J.	AS BUILT - STORM & SANITARY SEWERS ONLY		
1. 02/05/17	F.T.	HYDRO CHAMBER & DRAIN ADDED; WATERMAIN LAYOUT REVISED		
No. Date By				
Design	P.S.	Checked	M.N.	Date JUNE 2006
Drawn	H.R.	Checked	Z.C.	
Revisions				
Scale:	HOR. 1 : 500 VERT. 1 : 50			
Approvals				
Field Notes				
Bell <input type="checkbox"/> Hydro <input type="checkbox"/> Gas <input type="checkbox"/> Cable <input type="checkbox"/>				
<p>Municipal APPROVED IN PRINCIPLE SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.</p> <p>SIGNED: GEORGE TREMPLER DATE: APRIL/11/02 Planning Services Department -TOWN OF OAKVILLE</p> <p>Regional DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAILED CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.</p> <p>MARGARET SMITH APRIL/25/02 Planning & Public Works Dept -Region of Halton DATE</p> <p>SCHAFFERS CONSULTING ENGINEERS SCHAFFERS & ASSOCIATES LTD.</p> <p>TOWN OF OAKVILLE OAKVILLE DEPARTMENT OF PUBLIC WORKS</p> <p>Municipality THE REGIONAL MUNICIPALITY OF HALTON</p>				
64 Jardin Drive, Concord, Ontario L4K 3P3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaaffers.com				
Title 20M-840				
NEW PROVINCE HOMES PHASE 2 PLAN AND PROFILE OF NAUTICAL BOULEVARD STA. 1+260.000 TO STA. 1+477.043				
Municipal Drawing No. SD-432.1		Regional File No. DO-542		
Contract No. 2001-2297		Drawing No. PP-26		