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.

October 13, 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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OAKVILLE, ON

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

193 NAUTICAL BOULEVARD
OAKVILLE, ON

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-1 Storm Tributary Area (SD-432.8) dated May 2009
- Schaeffers Drawing TA-2 Storm Tributary Area (SD-432.1) dated June 2006
- Schaeffers Drawing GR-1 Grading Plan (SD-432.8) dated December 2009
- Schaeffers Drawing TA-7 Sanitary Tributary Area (SD-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-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**)

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 (SD-432.8).

The 2002 Pond B SWM Report, the New Province Homes Plan TA-2 Storm Tributary Area (SD-432.1) dated June 2006, storm drainage plan TA-1 (SD 432.8) dated September 2009 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 (2.04ha) 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 (0.21ha), which will be predominantly landscaped backyard area, will continue to be conveyed to Shell Park for minor and major flow conditions, in keeping with the storm drainage plan TA-1 dated September 2009, by Shaeffers Consulting Engineers. Preliminary flow calculations of the pre and post development flows discharged to Shell park are included in **Appendix C**. Post development peak flows are significantly reduced to 25% (5 year) and 10% (100 year) of the predevelopment flows.

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 m^3/s during the 100 year storm.

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 increase in peak flow from the Site results in a reduced separation below the Town minimum from the HGL and existing basements downstream of the Site. Therefore, flows from the Site must be controlled to a maximum flow rate of 0.638 m^3/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 m^3/s through a 470mm diameter orifice plate located within the downstream side of MH 6. An onsite storage volume of 139.0 m^3 is required and 153.3 m^3 is provided with oversized pipes and manholes. Calculations are provided within **Appendix C**.

Major system inlet capture calculations for road catch basins accounting for blockage has been completed and included in **Appendix C.** Calculations confirm that major system runoff can be captured at the low points south of Nautical Blvd within the Site.

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 within the Site 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 (m^3)	2002 Pond B Design Available Volumes (m^3)	Pond B – Revised Required Volumes (m^3)
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 requested by the Town, CB shields will be installed within the road catch basins on Site to provide additional quality treatment within the site upstream of the pond to offset the $9m^3$ shortfall in permanent pool.

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

2.5 WATER BALANCE

The Town has requested that a best efforts approach be implemented for the Site to maintain a post to pre water balance. To mitigate the reduction in infiltration and evapotranspiration and increase in runoff the LID strategy for the site consists of roof downspout disconnection to the surface in conjunction with topsoil depths increased to 300mm within the lots. Calculations for the infiltration mitigation are included in **Appendix C**.

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.**

4.0 Watermain Servicing

4.1 EXISTING WATER SUPPLY

The Subject Site currently lies within the Pressure Zone OB1. The existing watermain is a 300mm main that runs parallel to Nautical Boulevard within the north boulevard.

4.2 PROPOSED WATER DISTRIBUTION

The proposed watermain will be connected to the 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. Two private hydrants will provide fire coverage for the site. Refer to watermain layout on the preliminary service plan in **Figure** __.

4.3 WATERMAIN DEMAND RESULTS

In Accordance with Halton's water/ wastewater manual's design criteria, water demands for the site were established by assessing the greater of Maximum Daily Demand + Fire Flow, or Maximum Hourly Demand. Maximum Daily Demand + Fire Flow was calculated to be significantly higher than Maximum Hourly Demand at **134.22 L/sec**. Refer to **Appendix A** for the water demand calculations.

The hydrant fronting 210 Nautical Blvd. (ID 22178) was tested for the flow of the system. At the minimum allowable pressure of 140 kPa (20 psi), the watermain at this location yields **494L/sec** (7836 gpm) of flow, significantly greater than the demands of the proposed development. Refer to **Appendix A** for the hydrant flow test breakdown and 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 Schaeffers 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.

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.
- CB shields will be installed within the road catch basins on 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 m^3/s into the existing downstream storm sewer in accordance with the 2009 HGL analysis. Sump pumps will be required on all lots on site.
- Roof downspouts will be disconnected to surface and topsoil depths within the lots will be increased to 300mm.

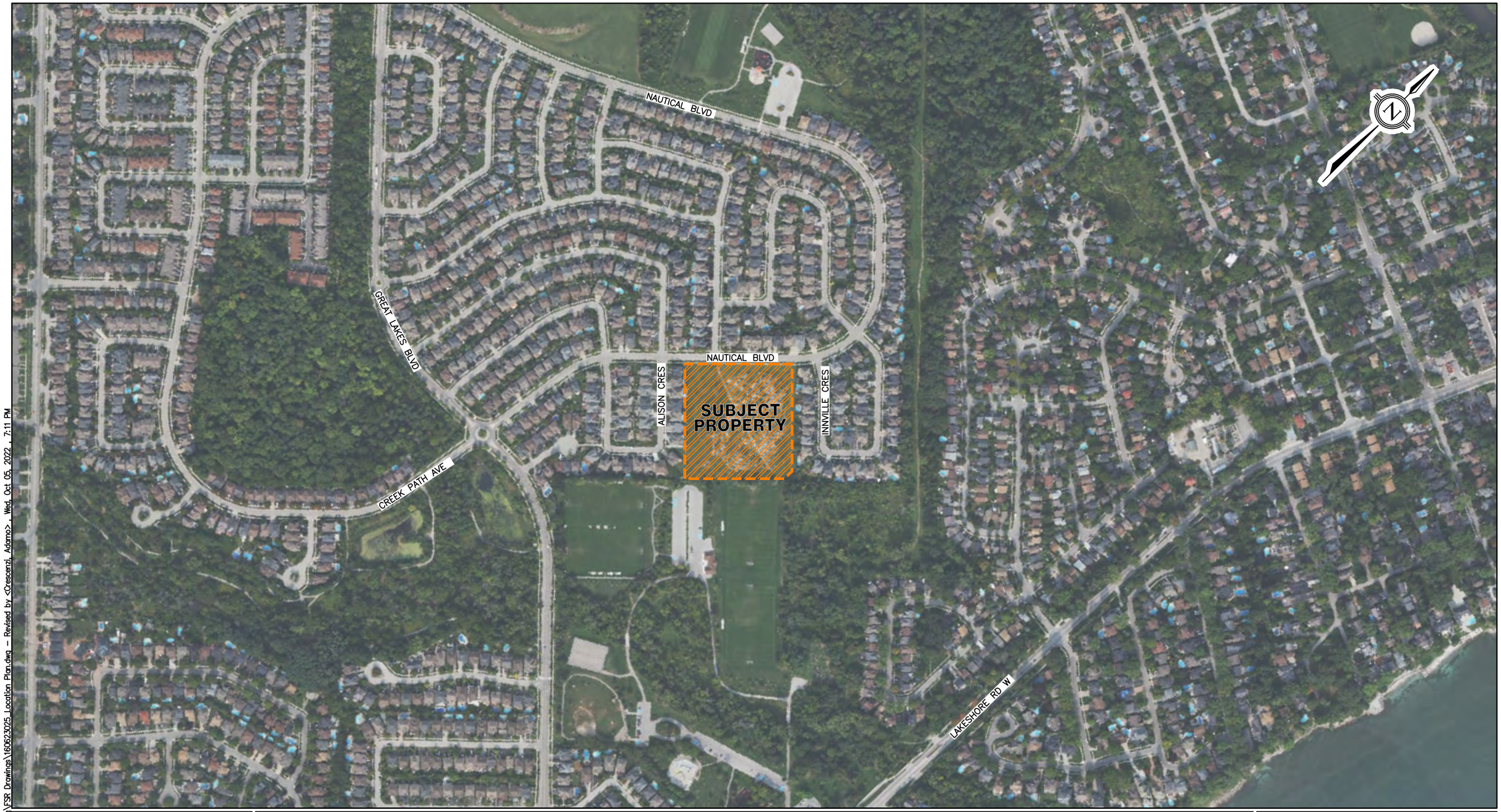
- The proposed grading design for the site can be achieved using the conventional subdivision design standards and compliance to the proposed stormwater management and overland flow concept. Fill import is anticipated to accommodate the necessary overland flow conveyance of the ROWs to Nautical Boulevard.

- 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.**



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Legend

SUBJECT PROPERTY

FUNCTIONAL SERVICING REPORT
193 NAUTICAL BOULEVARD

FIGURE 1

SITE LOCATION PLAN

OCTOBER 2022

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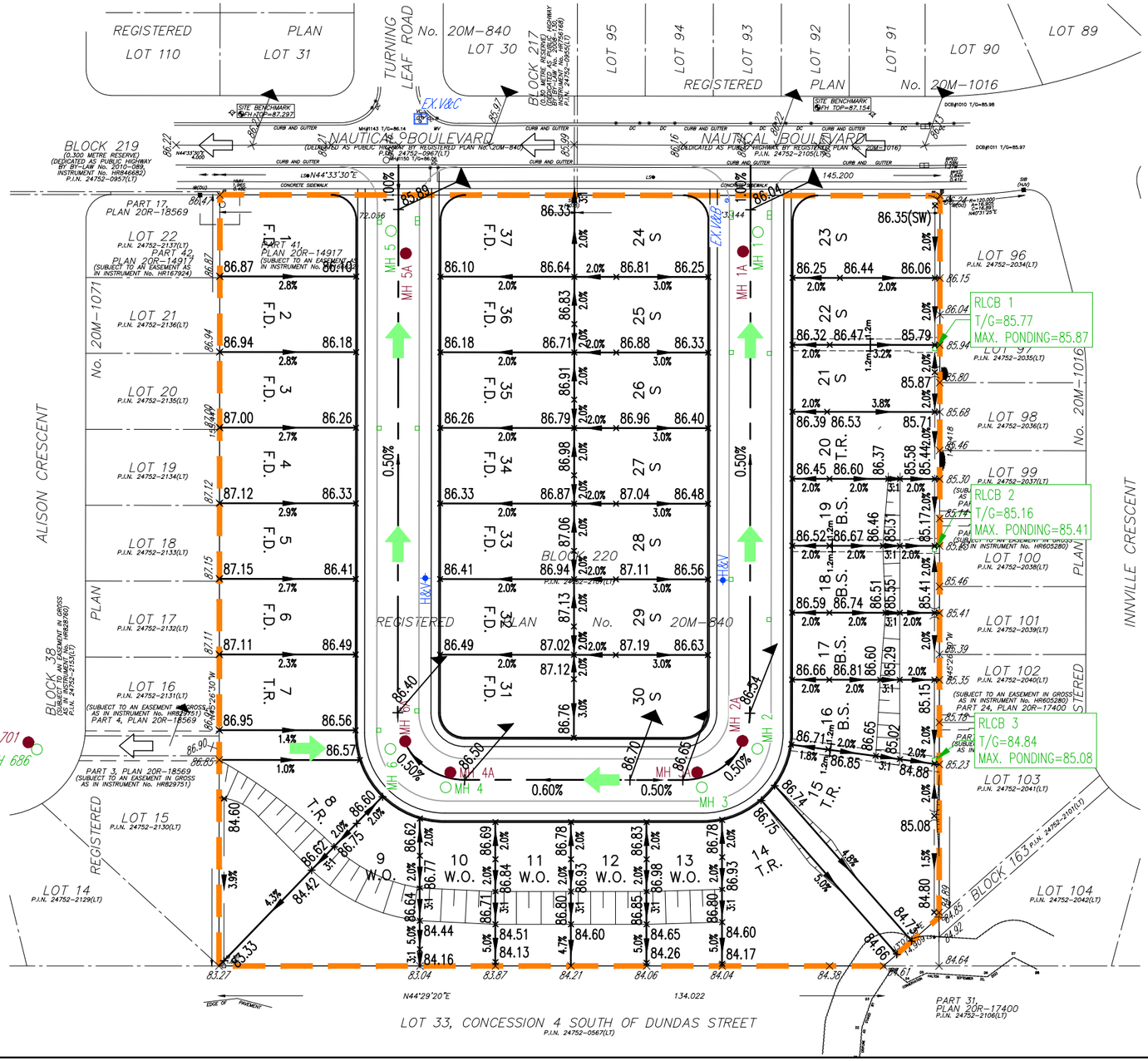

Stantec

SCALE 1:1000

Legend

- SUBJECT SITE
- PROPOSED RETAINING WALL
- 296.40 EXISTING SPOT ELEVATIONS
- 257.67 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

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FIGURE 2
PRELIMINARY GRADING PLAN

OCTOBER 2022

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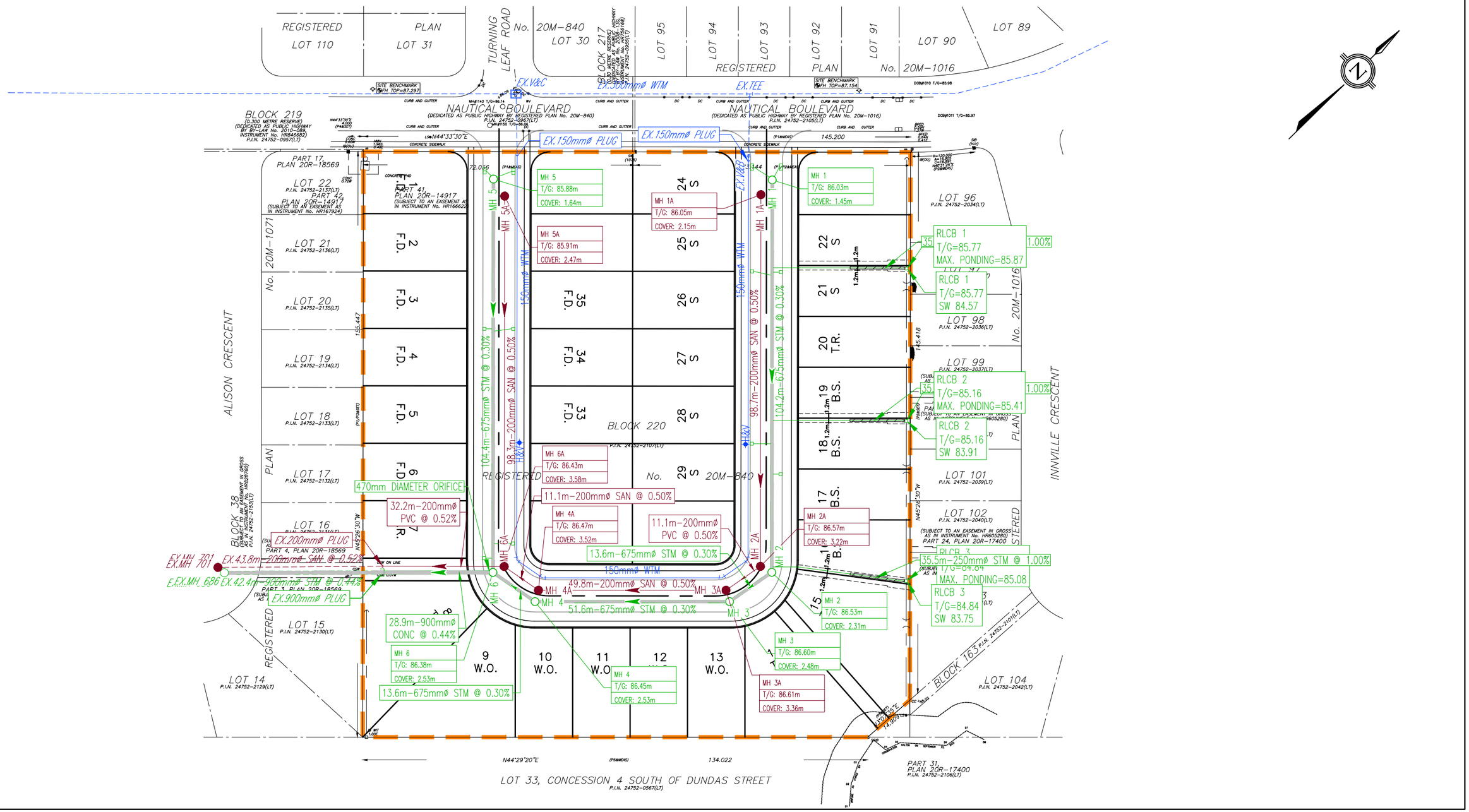

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Legend

- SUBJECT SITE
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- RLCB LEAD INSULATION

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FIGURE 3
PRELIMINARY SERVICING PLAN

OCTOBER 2022

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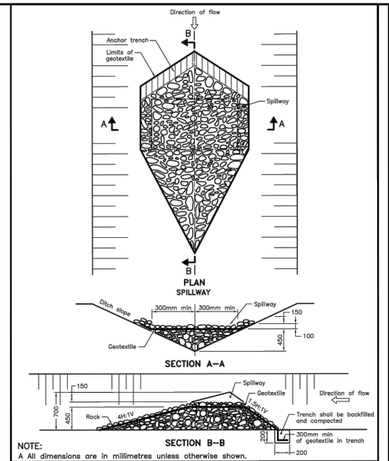
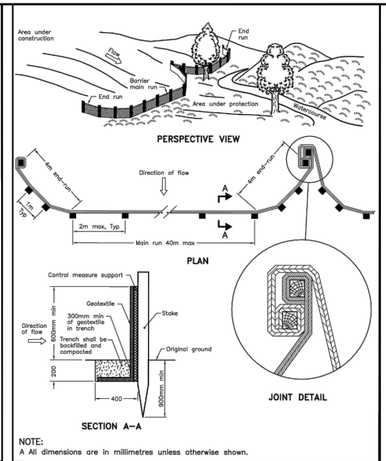


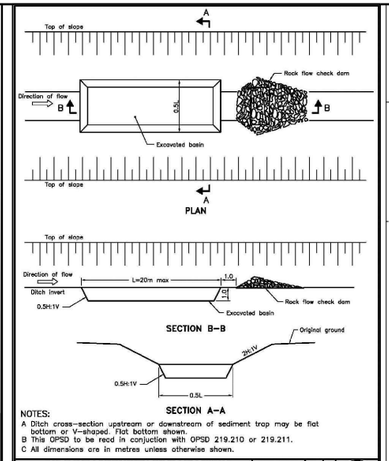
NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
TEMPORARY ROCK FLOW CHECK DAM V-DITCH		OPSD 219.210



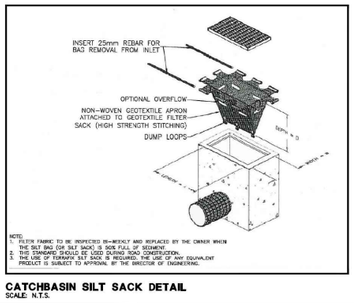
NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
HEAVY-DUTY SILT FENCE BARRIER		OPSD 219.130

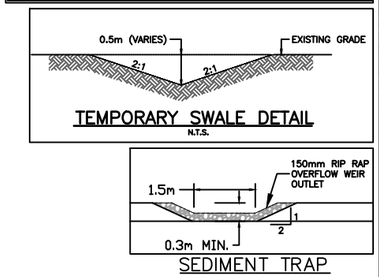


NOTES:
A Ditch cross-section upstream or downstream of sediment trap may be flat bottom or V-shaped. Flat bottom shown.
B This OPSD to be read in conjuction with OPSD 219.210 or 219.211.
C All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2006	Rev 1
EXCAVATED SEDIMENT TRAP IN DITCH		OPSD 219.220

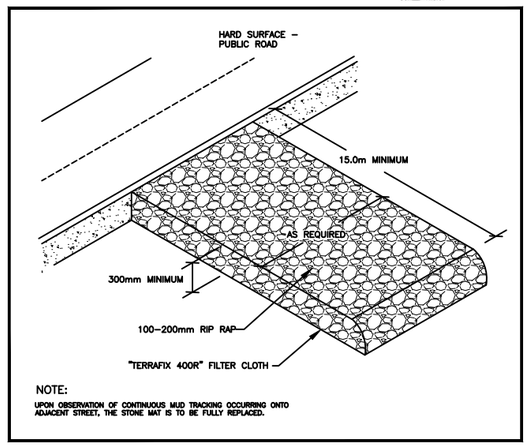


CATCHBASIN SILT SACK DETAIL
SCALE N.T.S.



TEMPORARY SWALE DETAIL
N.T.S.

SEDIMENT TRAP OVERFLOW WEIR
N.T.S.



TEMPORARY GRAVEL ACCESS PAD
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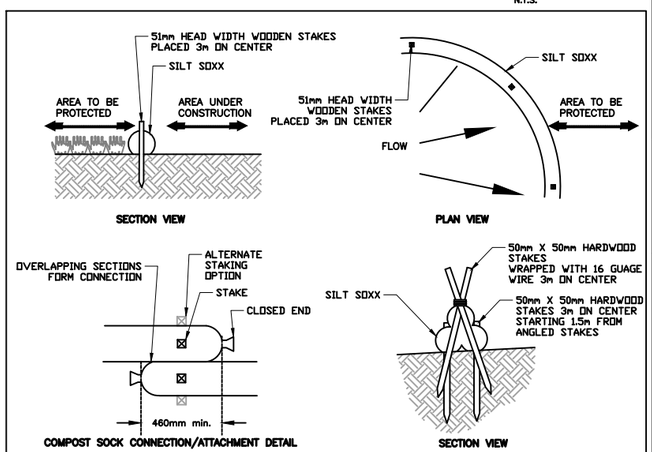
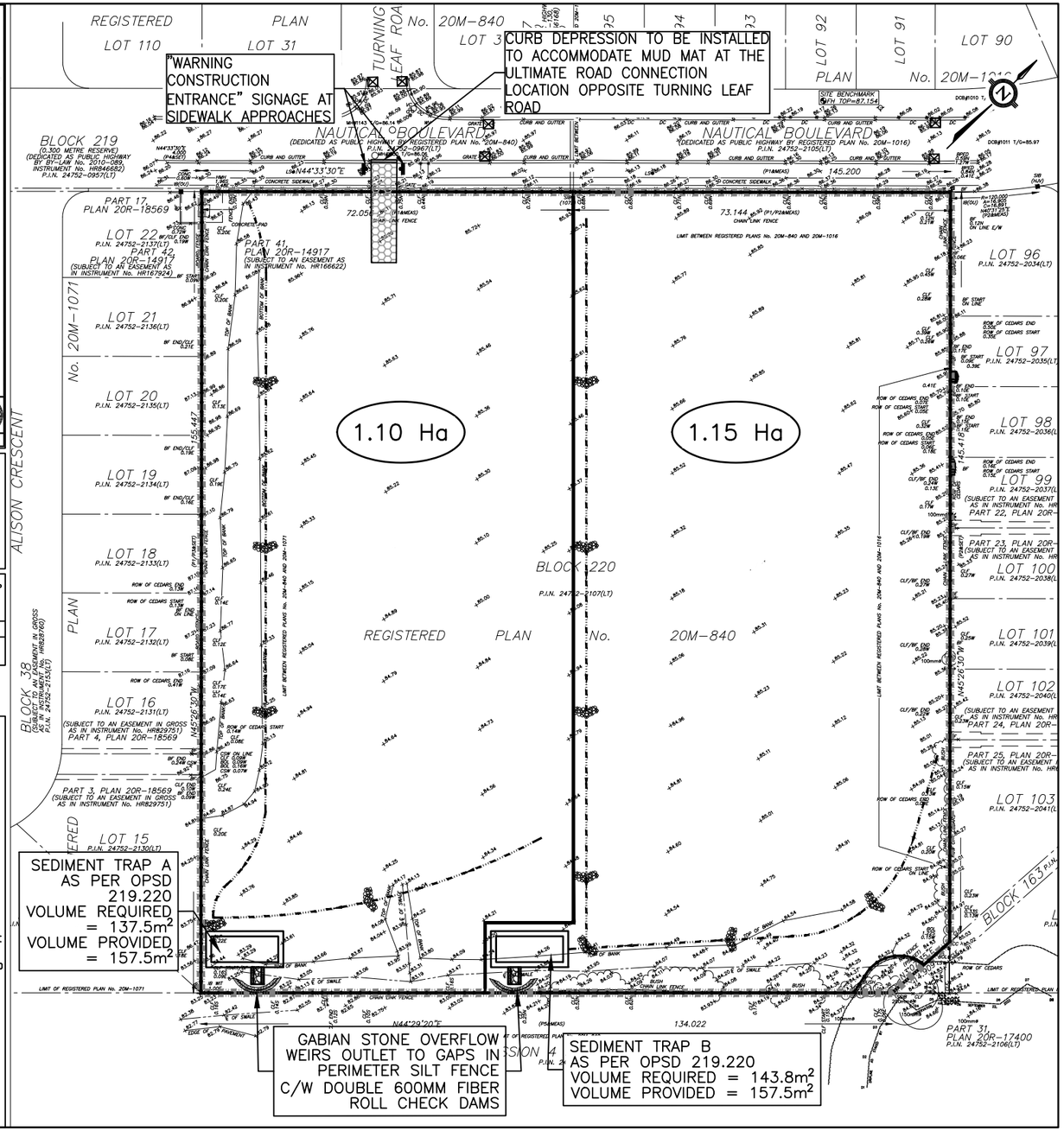


SILT SOXX
N.T.S.



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SCALE 1:1000

Legend

- SILTATION CONTROL FENCE
- INTERCEPTOR SWALE
- MUD MAT
- CATCHBASIN SILT SACKS
- ROCK CHECK DAM
- LIMIT OF CONSTRUCTION
- OVERLAND FLOW DIRECTION
- 1.10ha — DRAINAGE AREA
- DRAINAGE BOUNDARY

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FIGURE 4
EROSION AND SEDIMENT CONTROL PLAN
OCTOBER 2022

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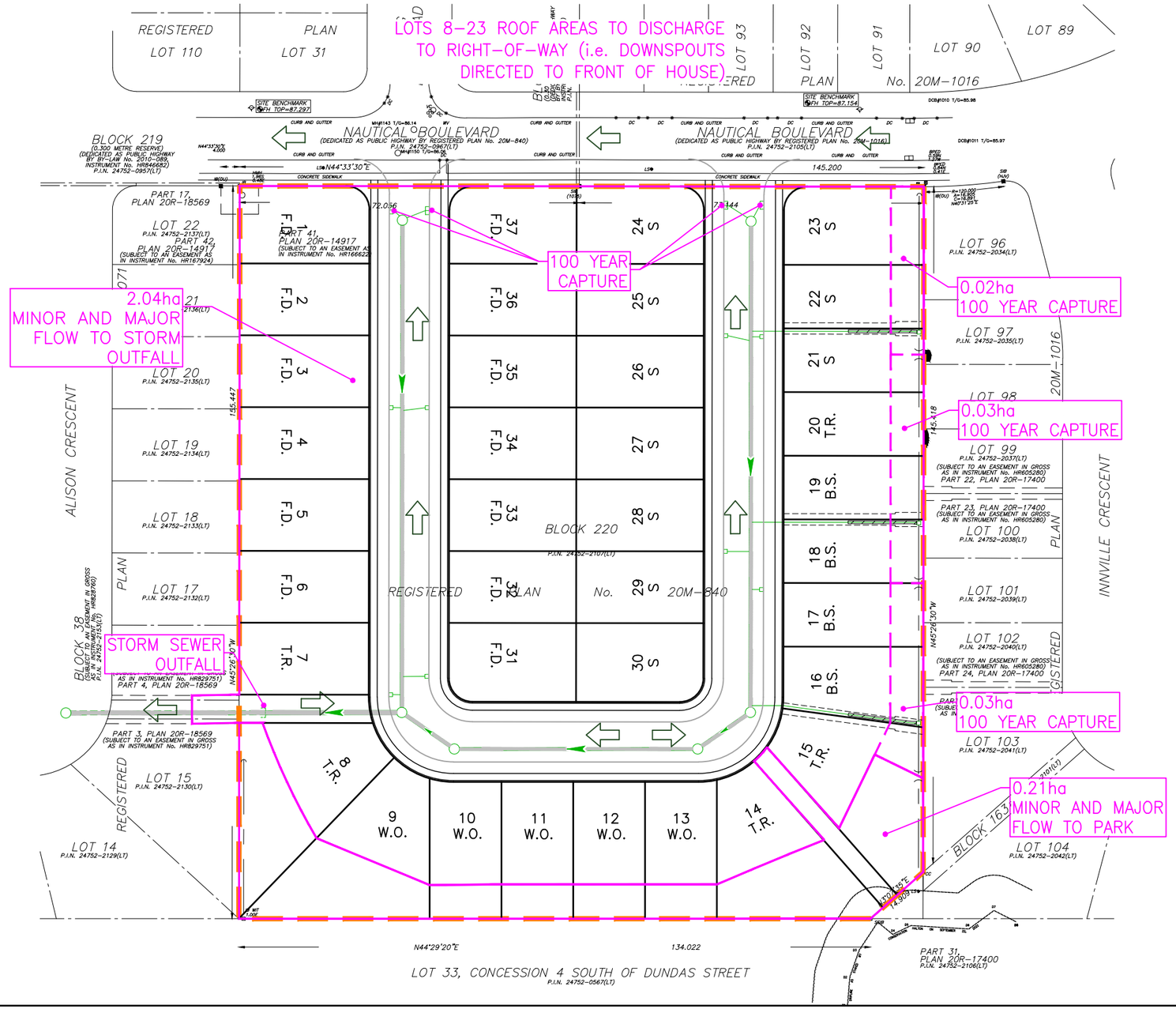

Stantec

SCALE 1:1000

Legend

- SUBJECT SITE
- PROPOSED DRAINAGE BOUNDARIES
- SUB–CATCHMENT DRAINAGE BOUNDARIES
- OVERLAND FLOW DIRECTION
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- RLCB LEAD INSULATION

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FIGURE 5

PROPOSED DRAINAGE AREA PLAN

OCTOBER 2022

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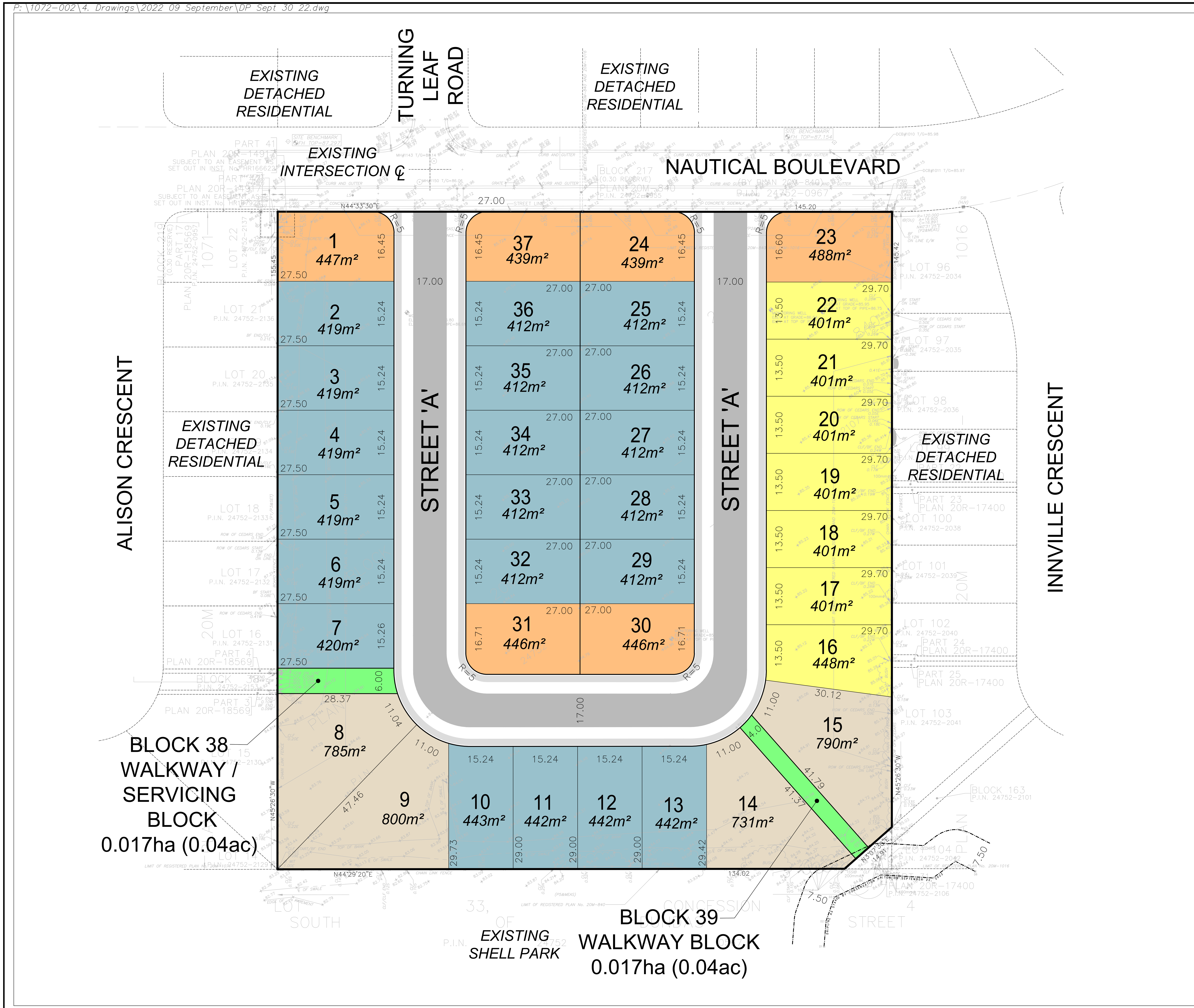
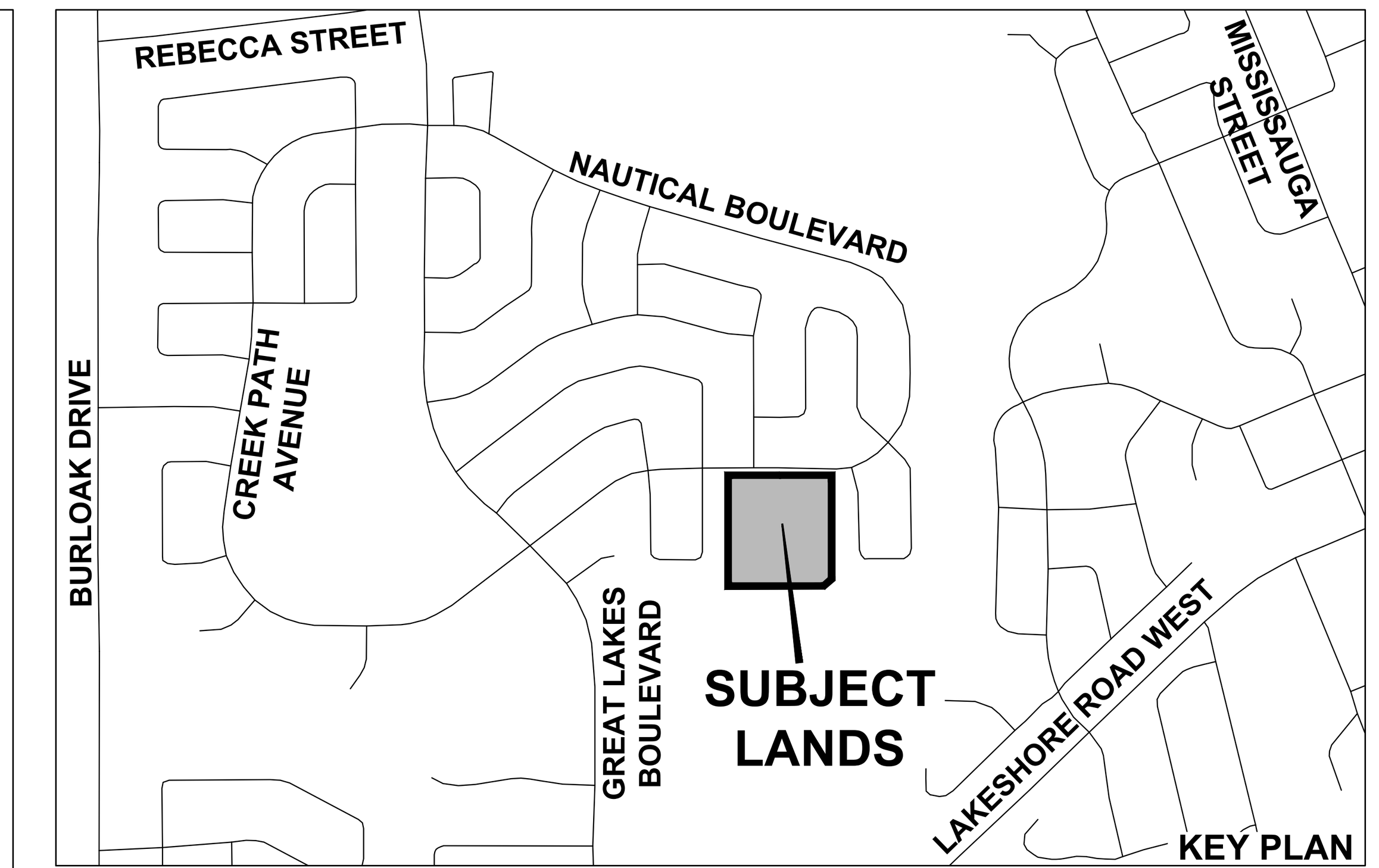
APPENDIX ‘A’

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: ______________________ DATE: ___________

STEVEN MENKES, A.S.O.
MENKES LAKESHORE WOODS INC.

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: ______________________ DATE: MAR. 23, 2022

PAUL EDWARD, O.L.S.
R-PE SURVEYING LTD.

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')	1-37	0.31	0.77	4	12.90
DETACHED - 13.50m (44')		0.29	0.72	7	24.14
DETACHED - 14.02m (46')		0.27	0.67	6	22.22
DETACHED - 15.24m (50')		0.84	2.08	20	23.81
WALKWAY / SERVICING BLOCK	38,39	0.03	0.07		
17.0m LOCAL R.O.W. (LENGTH: 295m)		0.51	1.26		
TOTAL	**39**	**2.25**	**5.56**	**37**	**21.51**

NOTES

- PAVEMENT & SIDEWALK ILLUSTRATIONS ARE DIAGRAMMATIC ONLY

SCALE 1:400
(24 x 36)
SEPTEMBER 30, 2022

Glen Schnarr & Associates Inc.

PLAN OF SURVEY AND TOPOGRAPHY
OF
PART OF BLOCK 220
REGISTERED PLAN No. 20M–840
TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON

SCALE 1:400

0 2 4 6 8 10 15 20 25 METRES

MTE OLS LTD.
ONTARIO LAND SURVEYORS

METRIC:

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTE:

0.30 METRE WIDE RESERVES HAVE BEEN EXAGGERATED FOR CLARITY.

BENCHMARK NOTE:

BENCHMARK No. OBM#68
SOURCE: TOWN OF OAKVILLE BENCHMARK SYSTEM
VERTICAL DATUM: CGVD2:78

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO A CUT CROSS ON THE CONCRETE BASE OF THE LIGHT STANDARD ON THE NORTHEAST CORNER OF BURLOAK DRIVE AND REBECCA STREET.

ELEVATION = 91.857 METRES

SITE BENCHMARKS ARE SHOWN ON THE FACE OF THIS PLAN.

INTEGRATION:

BEARINGS ARE UTM GRID, DERIVED FROM GPS OBSERVATIONS USING THE CAN–NET NETWORK AND ARE REFERRED TO UTM ZONE 17, NAD83 (CSRS v6) EPOCH 2010.00.

DISTANCES ON THIS PLAN ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999723765.

LEGEND:

□	DENOTES PLANTED MONUMENT
■	DENOTES FOUND MONUMENT
SIB	DENOTES STANDARD IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
IB	DENOTES IRON BAR
OU	DENOTES ORIGIN UNKNOWN
MEAS	DENOTES MEASURED
1075	DENOTES PAUL TRESS HOLDING, O.L.S.
HJV	DENOTES HOLDING JONES VANDERVEEN INC, O.L.S.
MTE	DENOTES MTE OLS LTD.
P1	DENOTES REGISTERED PLAN No. 20M–840
P2	DENOTES REGISTERED PLAN No. 20M–1016
P3	DENOTES REGISTERED PLAN No. 20M–1071
P4	DENOTES PLAN 20R–14917
P5	DENOTES PLAN 20R–17400

BF	DENOTES BOARD FENCE
BOL	DENOTES BOLLARD
BPED	DENOTES BELL PEDESTAL
℄	DENOTES CENTRELINE
CLF	DENOTES CHAIN LINK FENCE
CONC	DENOTES CONCRETE
CSW	DENOTES CONCRETE SIDEWALK
DC	DENOTES DRIVEWAY DROP CURBING
DCB	DENOTES DOUBLE CATCHBASIN
ELEV	DENOTES ELEVATION
FH	DENOTES FIRE HYDRANT
HMH	DENOTES HYDRO MANHOLE
LS	DENOTES LIGHT STANDARD
MH	DENOTES MANHOLE
T/G	DENOTES TOP OF GRATE ELEVATION
VC	DENOTES VALVE CHAMBER
WV	DENOTES WATER VALVE

DENOTES CENTRELINE OF SWALE

DENOTES FENCE GATE
DENOTES BENCHMARK
DENOTES CONIFEROUS TREE
DENOTES DECIDUOUS TREE
DENOTES EXISTING ELEVATION

SURVEYOR'S CERTIFICATE:

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 14TH DAY OF JULY, 2021.

JULY 15, 2021
DATE

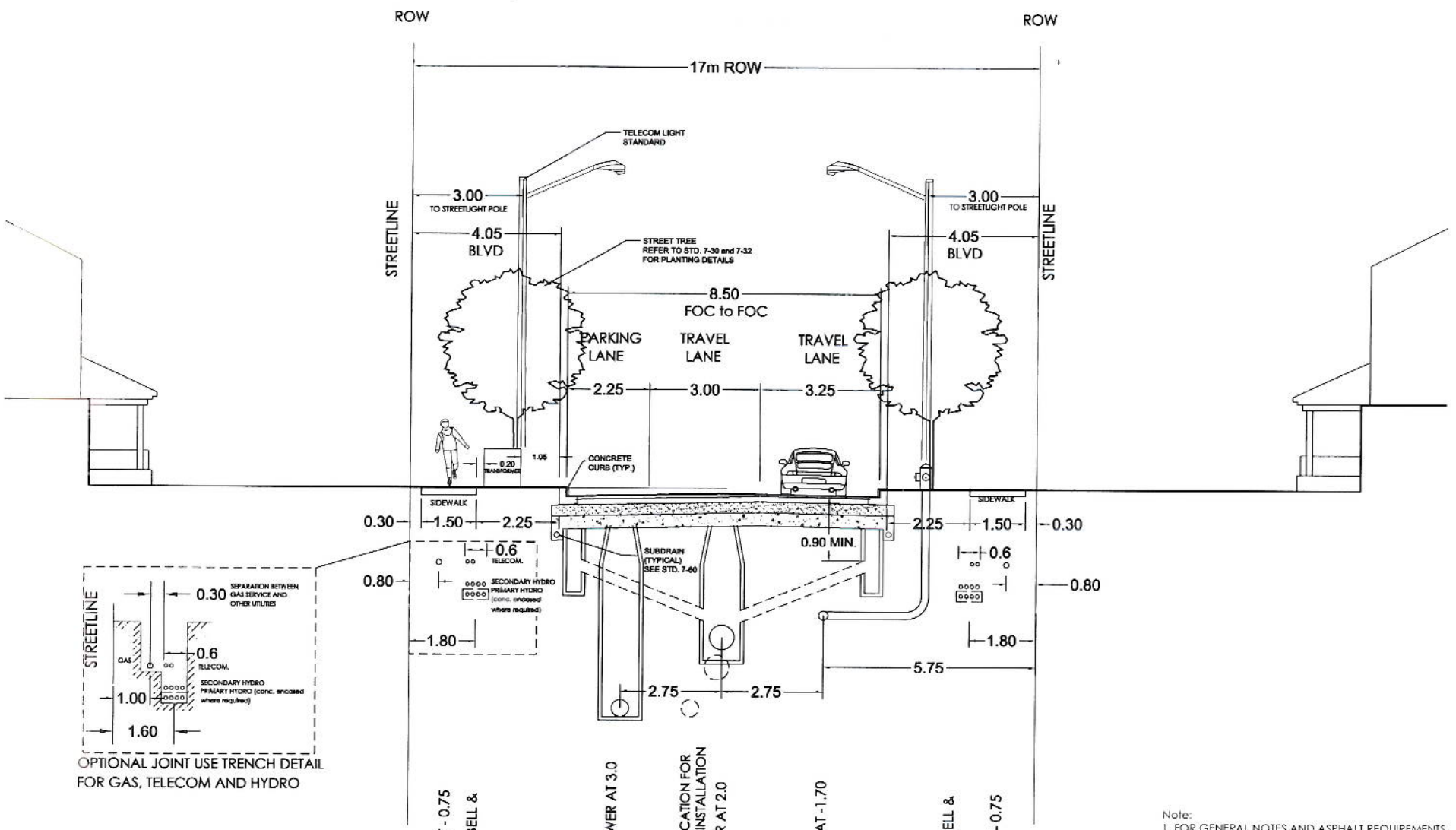
PATRICK WOOLLEY
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2147472

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29(3)

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

Cad File: P:\P\49485\100\49485–100–SR1.DWG | COGO: 49485–100–UTMGROUND.CSV
Drawn By: D. DINIZ | Checked By: P. WOOLLEY | File No: 49485–100–SR1(L)
LAST PLOT DATE: July 15, 2021



OPTIONAL JOINT USE TRENCH DETAIL
FOR GAS, TELECOM AND HYDRO

Note:
1. FOR GENERAL NOTES AND ASPHALT REQUIREMENTS REFER TO STD. 7-20

TOWN OF OAKVILLE

STANDARD STREET SECTION

LOCAL ROADWAY
17.0m RIGHT OF WAY
MODIFIED BOULEVARD SPACE

APPROVED

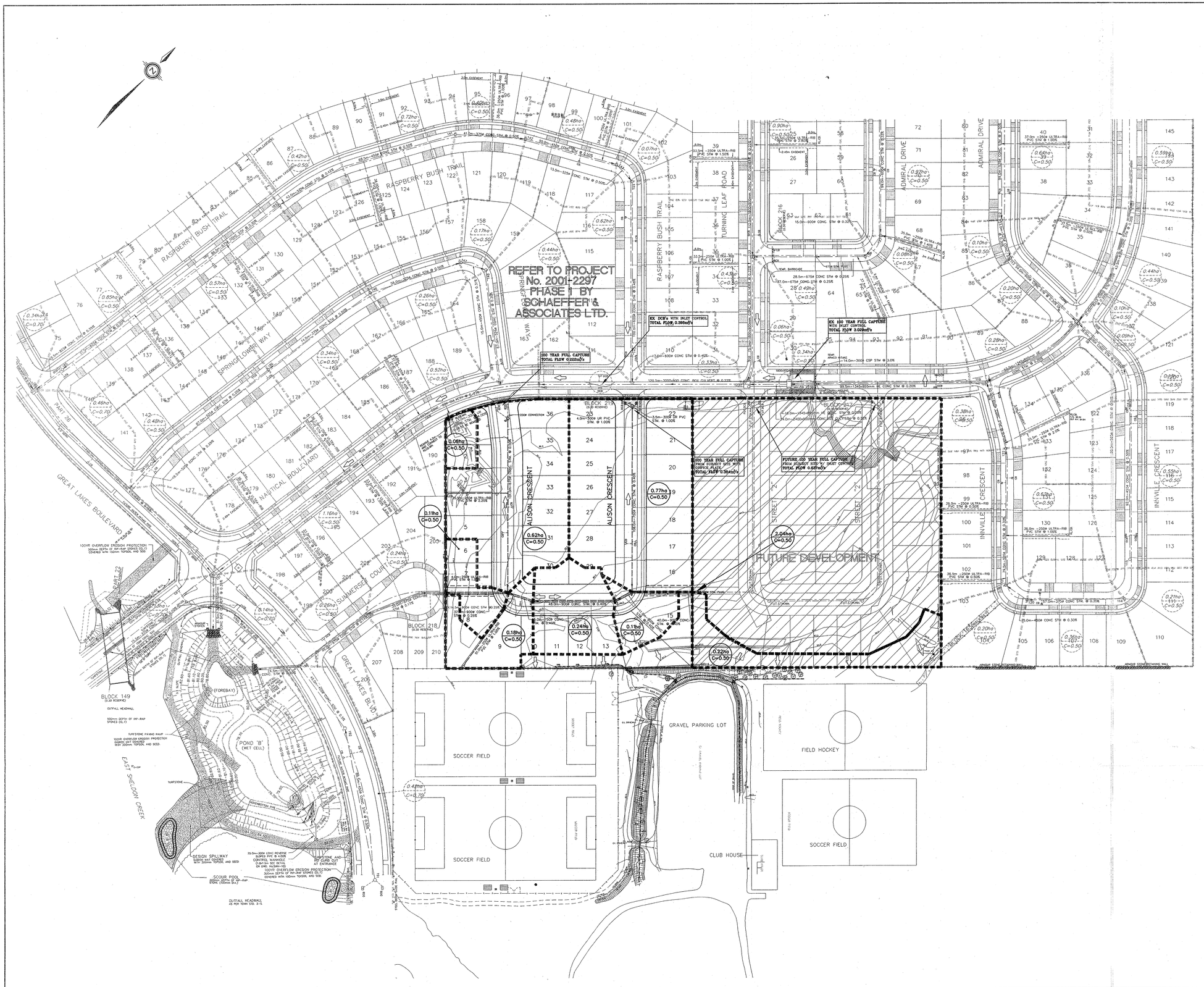
DIRECTOR OF ENGINEERING AND CONSTRUCTION

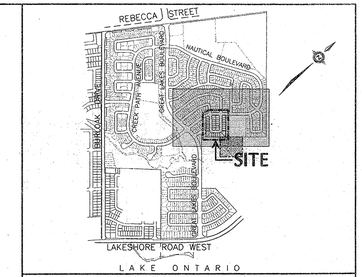
STD 7-22A

REVISION DATE
July 3, 2012

APPENDIX ‘B’

NEW PROVINCE HOMES SUBDIVISION SUPPORTING DOCUMENTS





KEY PLAN

SCALE N.T.S.

LEGEND:

- DENOTES DRAINAGE AREA BOUNDARY
- 0.15ha C=0.50 — DENOTES AREA IN HECTARES, DENOTES RUN-OFF COEFFICIENT
- DENOTES OVERLAND FLOW ROUTE
- DENOTES FUTURE DEVELOPMENT
- DENOTES LIMIT OF SUBDIVISION
- DENOTES CB WITH ICD
- DENOTES DCB MH. WITH ORIFICE PLATE

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 SOUTHWEST OF THE PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

No.	Date	By	Revisions

Design	S.P.	Checked	M.N.	Date MAY 15, 2009
Drawn	J.B.	Checked	P.S.	
Scale: 1:1000				References

Approvals

Municipal

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

SIGNED:_____ DATE:_____

Development Services Department–TOWN OF OAKVILLE

Regional

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

Legislative & Planning Services Department DATE:

Field Notes

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC SEPT. 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

TOWN OF OAKVILLE

ENGINEERING AND CONSTRUCTION DEPARTMENT

Title

24T–00004

NEW PROVINCE HOMES PHASE 10

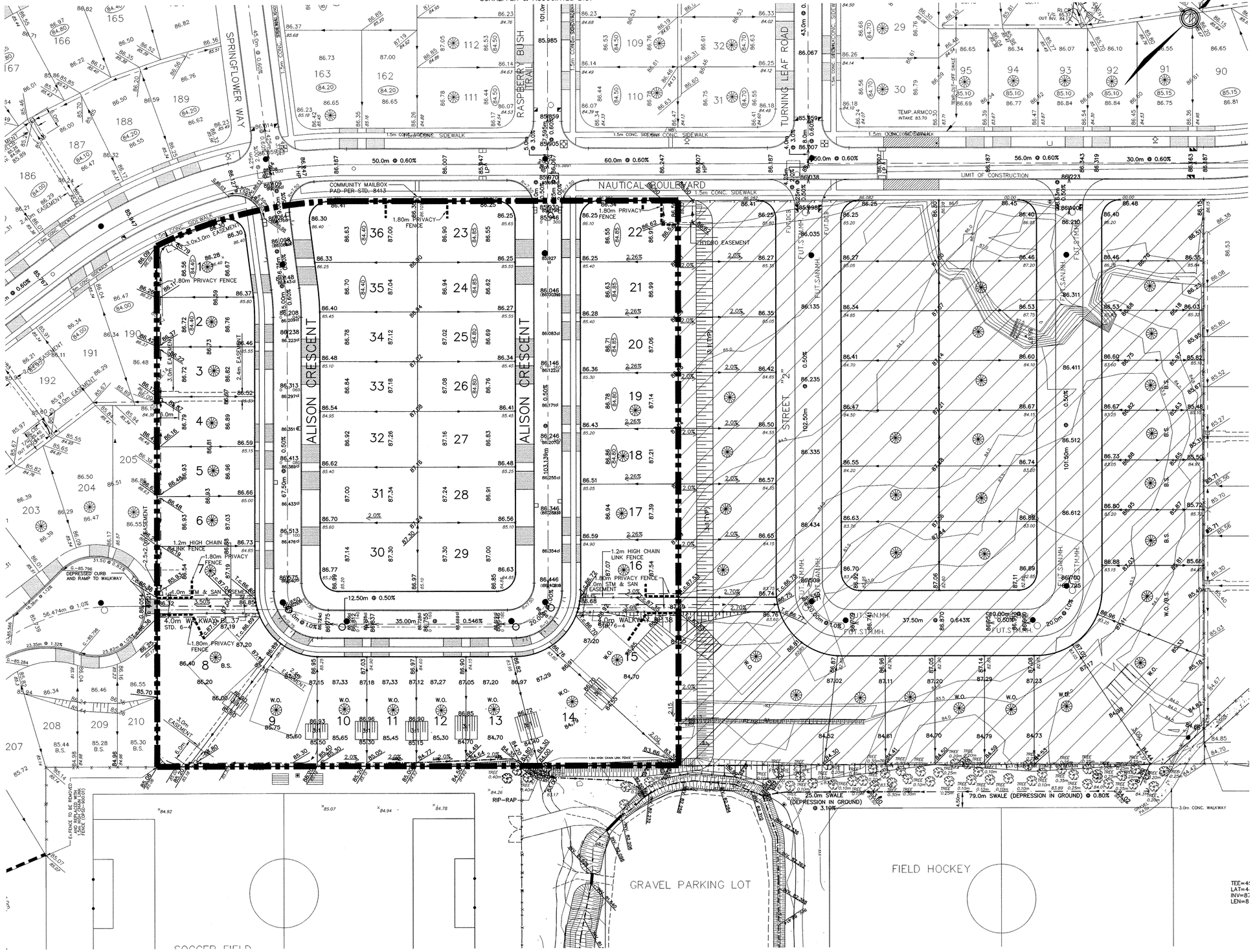
STORM TRIBUTARY AREA

Municipal Drawing No.	Regional File No.
SD–432.8	DO–669
Contract No.	Drawing No.
2007–3178	TA–1

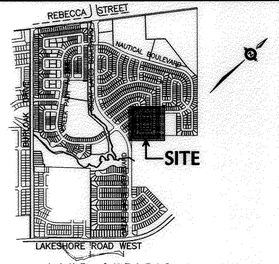
20M-1071

GRADING PLAN

REFER TO PROJECT No. 2001-2297
PHASE 1 BY
SCHAEFFER & ASSOCIATES LTD.



FOR RETROFIT OF EXISTING DITCH REFER TO DRAWING No. GR-2



KEY PLAN

SCALE N.T.S.

cl 86.486 DENOTES AS CONSTRUCTED ROAD C/L ELEVATION

LEGEND:

- DENOTES FUTURE DEVELOPMENT
- DENOTES LIMIT OF SUBDIVISION
- DENOTES PRIVACY FENCE
- (84.50) DENOTES MINIMUM BASEMENT ELEVATION
- DENOTES ENGINEERED FILLED LOTS
- 86.486 cl 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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

No.	Date	By	Revisions
3.	Dec./09		AS CONSTRUCTED
2.	Dec. 04/09	M.N.	ENG. FILL ADDEDE 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.	Date APRIL 30, 2009
Drawn	J.B.	Checked	P.S.	

Scale: 1:500

References

Field Notes

Municipal

APPROVED IN PRINCIPLE SUBJECT TO DETAIL 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 DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.

Legislative & Planning Services Department DATE:

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

LICENSED PROFESSIONAL ENGINEER M. NIMKOWC December, 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

TOWN OF OAKVILLE

ENGINEERING AND CONSTRUCTION DEPARTMENT

Title

24T-00004

NEW PROVINCE HOMES
PHASE 10

GRADING PLAN

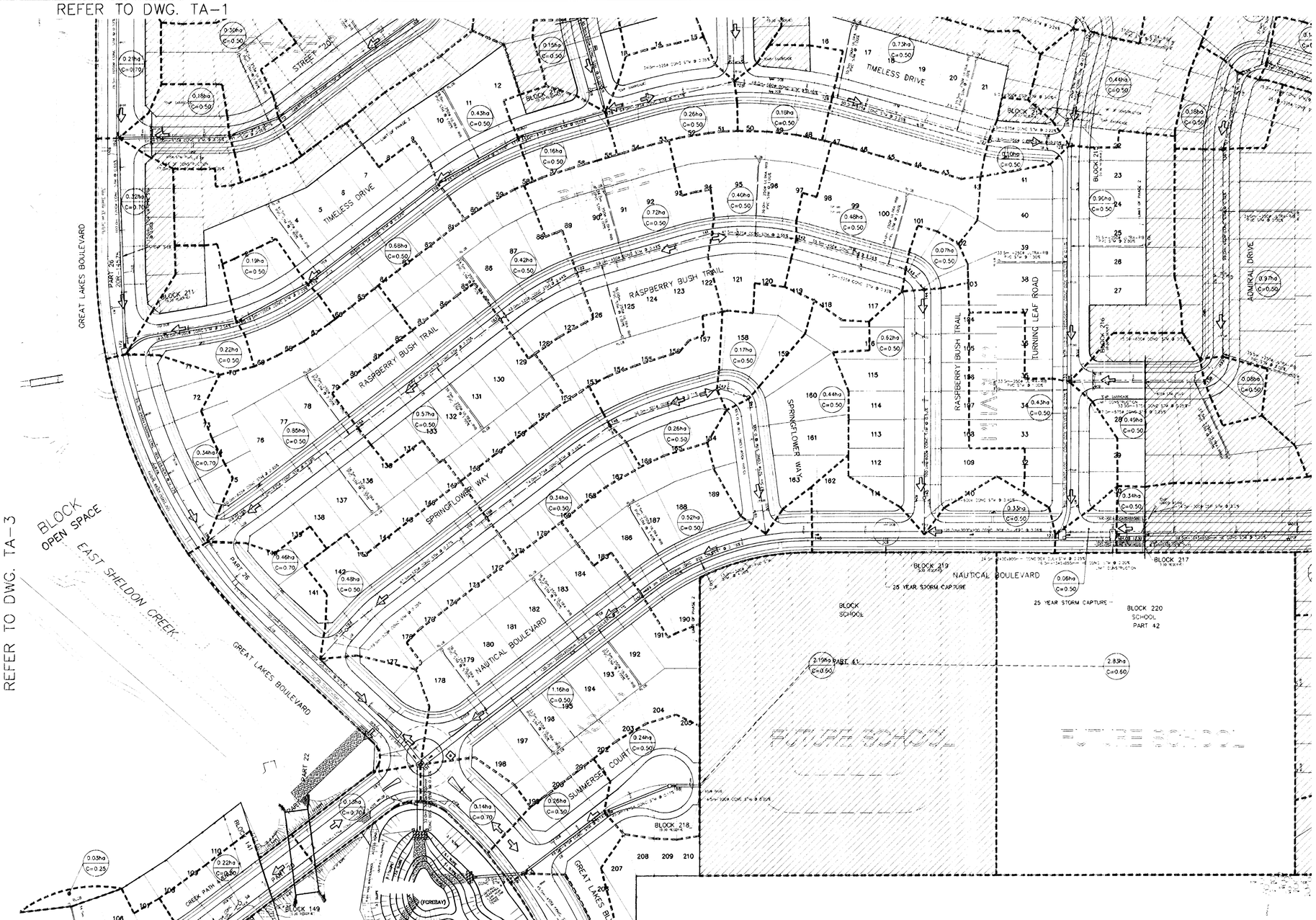
20M-1071 20R-18569

Municipal Drawing No.	Regional File No.
SD-432.8	DO-669
Contract No.	Drawing No.
2007-3178	GR-1

H:\As Constructed\3178PH 10-AC\3178_GR-1.dwg, 3/8/2013 10:23:48 AM, mkhan, User 3 (900.00 x 600.00 MM)

STORM TRIBUTARY AREA (PART 2)

REFER TO DWG. TA-1



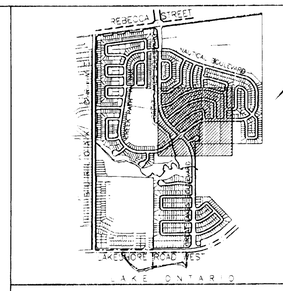
REFER TO DWG. TA-3

REFER TO DWG. TA-4

20M-839/840

KEY PLAN

SCALE N.T.S



LEGEND:

- DENOTES FUTURE DEVELOPMENT
- DENOTES OVERLAND FLOW ROUTE
- 0.15ha C=0.50 — 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 BURLOAK DRIVE. 25.8 m SOUTHEAST OF TOP OF HYDRANT ON THE NORTHEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071 ELEVATION 79.994m

No.	Date	By	Revisions
2	JUNE 2006	B.J.	AS CONSTRUCTED JUNE 2006
1	JAN 2002	B.J.	AS BUILT - STORM SEWERS ONLY

Design	P.S.	Checked	M.N.	Date	JUNE 2006
Drawn		Checked	Z.C.		
Scale	1:1000			References	

Approvals

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

Field Notes

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC JUNE 2006 PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
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

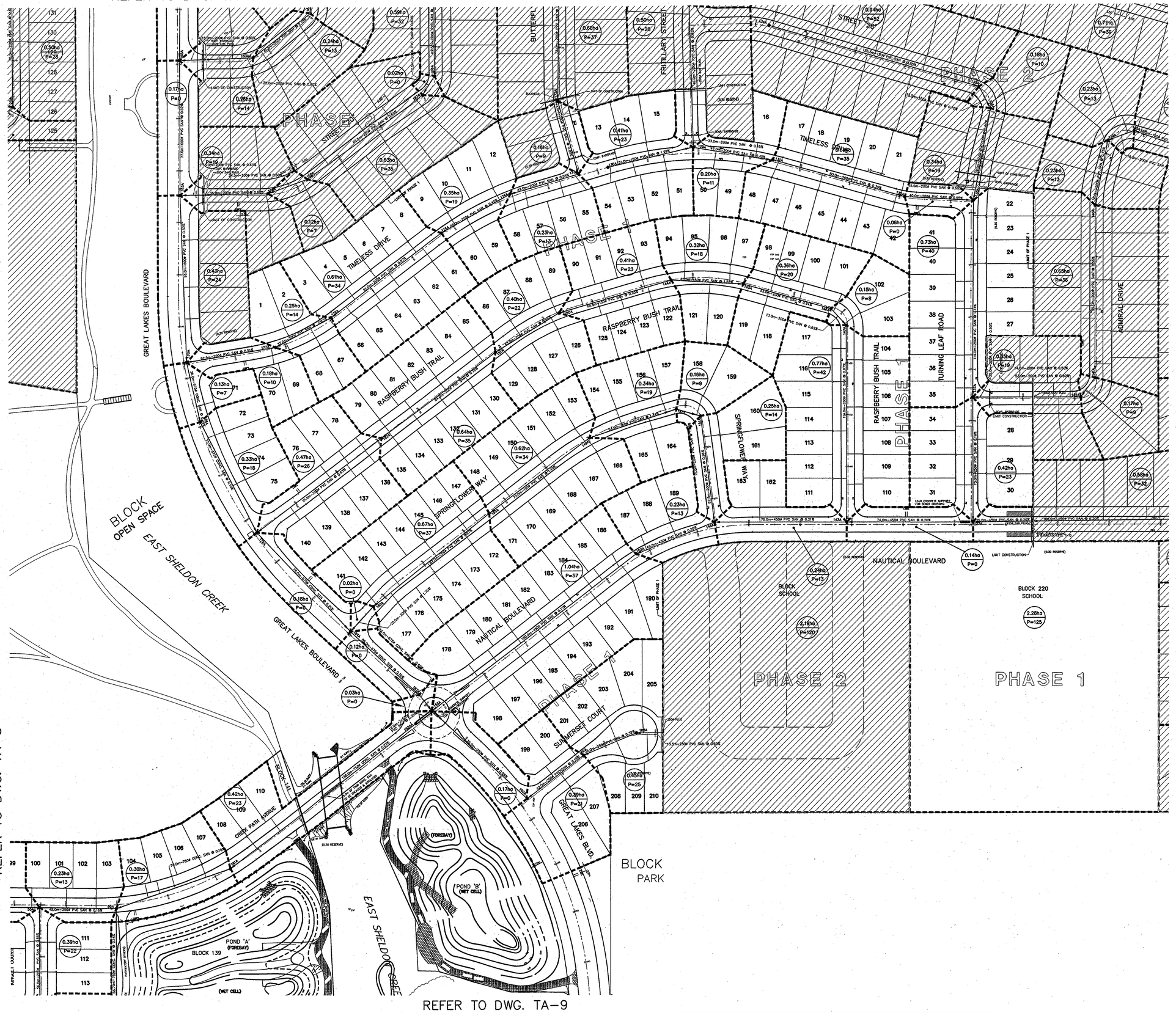
Title

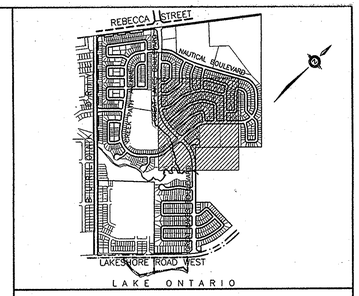
20M-840

NEW PROVINCE HOMES PHASE 2 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, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.

LEGEND

DENOTES FUTURE DEVELOPMENT

DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec.
0.15ha / P=12 — 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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071.
ELEVATION 79.994m

No.	Date	By	Revisions
2.	APR 2003	B.J.	AS BUILT - REVISED SANITARY SEWERS
1.	JAN 2003	B.J.	AS BUILT - SANITARY SEWERS ONLY

Design	P.S.	Checked	M.N.	Date
Drawn		Checked	Z.C.	MARCH 2002
Scale: HOR. 1 : 1000				References

Approvals

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

Regional
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 02/04/25
Planning & Public Work Dept.-Region of Halton DATE:

Field Notes
Bell ☐ Hydro ☐
Gas ☐ Cable ☐

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC APRIL 05, 2002 PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
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
TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

Title
24T-00004/1734
NEW PROVINCE HOMES
PHASE II
SANITARY TRIBUTARY AREA
(PART II)

Municipal Drawing No.	Regional File No.
SD-432.1	O- 13114 :2
Contract No. 2001-2297	Drawing No. TA-7

O- 13114

APPENDIX 'C'

STORMWATER MANAGEMENT

Stantec

Project:	**Oakville Menkes (193 Nautical BLVD)**
Project Number:	**160623025**
Project Location:	**Oakville**
Designer:	**AP JP**
Date:	**10/6/2022**

Rainfal 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-Devleopment Areas

Catchment Description	Catchment ID	Area (ha)	C x A	Runoff Coefficient	^{2}C x A	^{2}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	^{2}C x A	^{2}Scaled (100 Yr)
Proposed Site Drainage	201	2.04	1.33	0.65	1.66	0.81
Total		**2.04**	1.33	**0.65**	1.66	**0.81**

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

Target Flows

Rational Method

Q = 2.78*C*i*A
Where:
C = Runoff Coefficient [1]
A = Site Drainage Area (ha)
i = Rain Intensity (mm/hr) [2]
Q = Flow (m^3/s)

Runoff Coefficients Scaled as Per The MTO Design Chart 1.07
[2]Note 100 Year Runoff Coefficient is 2/5 Year Runoff Coefficient x 1.25

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

Post-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** m^3/s Based upon OTTSWM & HGL analysis Report, 2007

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

Target Flows

Rational Method

Q = 2.78*C*i*A

Where:

C = Runoff Coefficient [1]
A = Site Drainage Area (ha)
i = Rain Intensity (mm/hr) [2]
Q = Flow (m^3/s)

Runoff Coefficients Scaled as Per The MTO Design Chart 1.07
[2]Note 100 Year Runoff Coefficient is 2/5 Year Runoff Coefficient x 1.25

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

Pre-Development Flows to Shell Park

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)
Existing Site to Park		2.04	0.51	0.25	0.64	0.31	10	200.80	0.356
Total		**2.04**	0.51	**0.25**	0.64	**0.31**			**0.356**

Storm Event	i (mm/hr) 2	Q (m3/s)
5-year	114.21	0.162
100-year	200.80	0.356

Post Development Flows to Park

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)
Uncontrolled Backyard Area		0.21	0.05	0.25	0.07	0.31	10	200.80	0.037
Total		**0.21**	0.05	**0.25**	0.07	**0.31**			**0.037**

Storm Event	i (mm/hr) 2	Q (m3/s)
5-year	114.21	0.017
100-year	200.80	0.037

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

Target Flows

Rational Method

$Q = 2.78*C*i*A$

Where:

C = Runoff Coefficient [1]
A = Site Drainage Area (ha)
i = Rain Intensity (mm/hr) [2]
Q = Flow (m^3/s)

Runoff Coefficients Scaled as Per The MTO Design Chart 1.07
[2]Note 100 Year Runoff Coefficient is 2/5 Year Runoff Coefficient x 1.25

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

100-year uncontrolled Flows to CB's

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)
Area to RLCB 1		0.03	0.02	0.65	0.02	0.81	10	200.80	0.014
Area to RLCB2		0.03	0.02	0.65	0.02	0.81	10	200.80	0.014
Area to RLCB3		0.02	0.01	0.65	0.02	0.81	10	200.80	0.014
Area to Road CB		1.96	1.27	0.65	1.59	0.81	12.2	179.36	0.794
Total		**2.04**							**0.835**

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

100 Year Storage Stormwater Management Calculations

Rational Method

Q = 2.78*C*i*A
Where:
C = Runoff Coefficient [1]
A = Site Drainage Area (ha)
i = Rain Intensity (mm/hr) [2]
Q = Flow (m^3/s)

Runoff Coefficients Scaled as Per The MTO Design Chart 1.07
[2]Note 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** m^3/s

Post Development Conditions

Catchment ID =	201		
Area =	2.04	ha	
Runoff Coefficient =	0.65		
[2]100 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	m^3/s	
Maximum Storage =	139	m^3	

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	0.827	604.8	466.0	138.8
17.2	145.1	0.669	689.8	657.1	32.7
22.2	122.4	0.564	751.1	848.2	0.0
27.2	106.2	0.489	798.6	1039.3	0.0
32.2	94.0	0.433	836.9	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	825	104.4	55.8
1	2	750	104.2	46.0
2	3	750	13.6	6.0
3	4	750	51.6	22.8
4	6	825	13.6	7.3
				137.9

100 Year Water Level	
Elevation	Location
(m) 84.85	RLCB2

Manhole Storage

Manhole	Size (mm)	Rim Elev. (m)	Outlet Invert (m)	Height (m)	Storage Volume (m^3)
MH201	1500	86.03	84.25	0.60	1.1
MH202	1500	86.59	83.59	1.26	2.2
MH203	1500	86.67	83.51	1.34	2.4
MH204	1500	86.48	83.28	1.57	2.8
MH205	1500	85.88	83.81	1.04	1.8
MH206	1800	86.40	82.82	2.03	5.2
					15.4

Total Storage = **153.3**

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	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	m^2
Head =	1.79	m
Design Flow =	**0.637**	m^3/s
Target Flow =	**0.638**	m^3/s

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

LID Mitigation

Typical Roof Area (m²)=	200
50% of Roof Area (m²)=	100
# of Roofs =	37
Total Roof Area Discharged to Surface(m²)=	3700
Total Annual Precipitation depth (mm) from Royal Botanical Gardens Hamilton (1971-2000) =	893
Estimated evaporation from impervious areas is 15% of rainfall depth(mm)=	133.95
[1]Rooftop Runoff directed to surface (m³/yr) =	2808.5
[2] [3]Projected Infiltration by directing roof to surface (m³/yr) =	702.1

[1]Rooftop runoff directed to LID is estimated to be 85% of total annual precipitation accounting for reduction due to evaporation of 15%.

[2]Runoff Reduction Estimate (as per Table 4.3.2 in CVC/TRCA Low ImpactDevelopment Stormwater Management Planning and Design Guide - Version 1.0).

50% on Hydrologic Soil Group (HSG) Type "A" and "B" soils
25% on Hydrologic Soil Group (HSG) Type "C" and "D" soils
where,
HSG A = sand, loamy soil or sandy loam types
HSG B = silt loam or loam types
HSG C = sandy clay loam types
HSG D = clay loam, silty clay loam, sandy clay, silty clay or clay

[3]Surficial soils in the Study area predominantly belong to Hydrologic Soil Groups "C" and "D".

Project:	Oakville Menkes (193 Nautical BLVD)
Proect No.:	160623025

Super Catchbasin Capacity		
Depth above grate =	0.150	m
Area of Orifice =	0.0041	m^2
Orifice Coefficient =	0.6	
Total Discharge, Q=	0.004	m^3/sec
Discharge Vel., V=	1.029	m/sec

Honeycomb Grating

Grating Length =	0.6	m
Grating Width =	1.2	m

Super Catchbasin Opening

Length =	0.454	m
Width =	1.054	m
Area =	0.479	m^2
Length of Structural Support (if any) =		m
Width of Structural Support (if any) =		m
Lost Area to Structural Support =	0.000	m^2
Area Lost to Grating/Opening =	0.0009104	m^2
Orifice Opening Area =	0.0041	m^2
Effective number of Openings =	94	
Grating Open Area =	0.388	m^2
Assumed Blockage =	**50.0**	**%**
Effective Grating Open Area =	0.194	m^2
Effective flow Capacity =	0.1997	m^3/sec
Super CB Lead Diameter =	0.250	m
Head over Lead Invert =	1.35	m
Super CB Lead Capacity =	0.19	m^3/sec
Number of Super Catchbasins =	1	
Super Catchbasin Capacity =	0.200	m^3/sec
Number of Std. Double CB's =	0	
Double Catchbasin Capacity =		m^3/sec (sag capacity)
Total Inlet Capacity =	**0.200**	m^3/sec

Flows to CB's

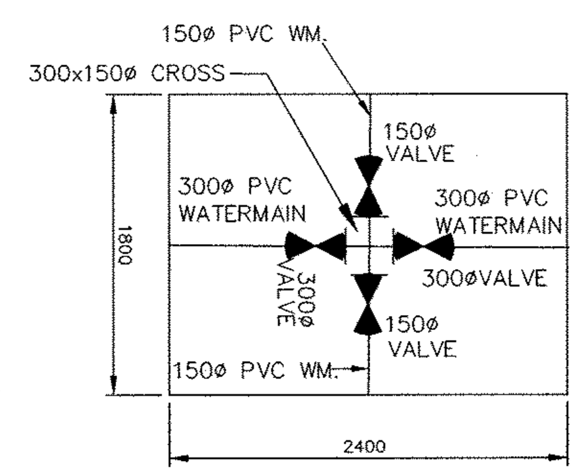
Catchment Description	Area (ha)	C x A	100 Year Runoff Coefficient	Time of Concentration (mins)	i (mm/hr) [2]	Q (m^3/s)
Flows to Road CB	1.96	1.59	0.81	12.2	179.36	0.794

100-year uncontrolled flow to Road CB's(m^3/s)=	0.794
Total inlet Capture for 1 DCB with 50% blockage(m^3/s)=	0.200
Total inlet capture with Blockage for 4 DCB within low points south of Nautical BLVD(m^3/s)=	0.80

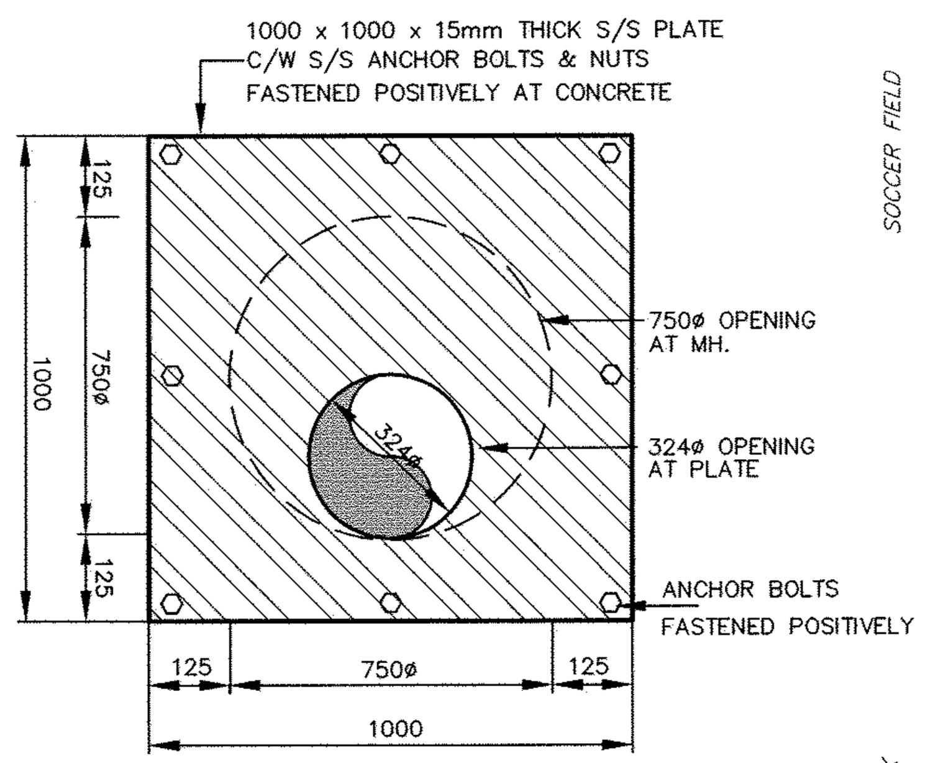
ALISON CRESCENT STA. 0+155.000 TO STA 0+315.389

20M-1071

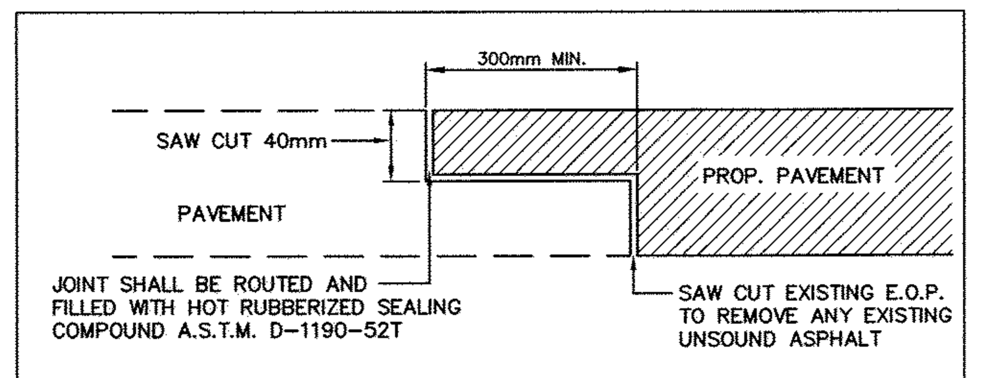
DOWNSTREAM STORM PNP 1 OF 5



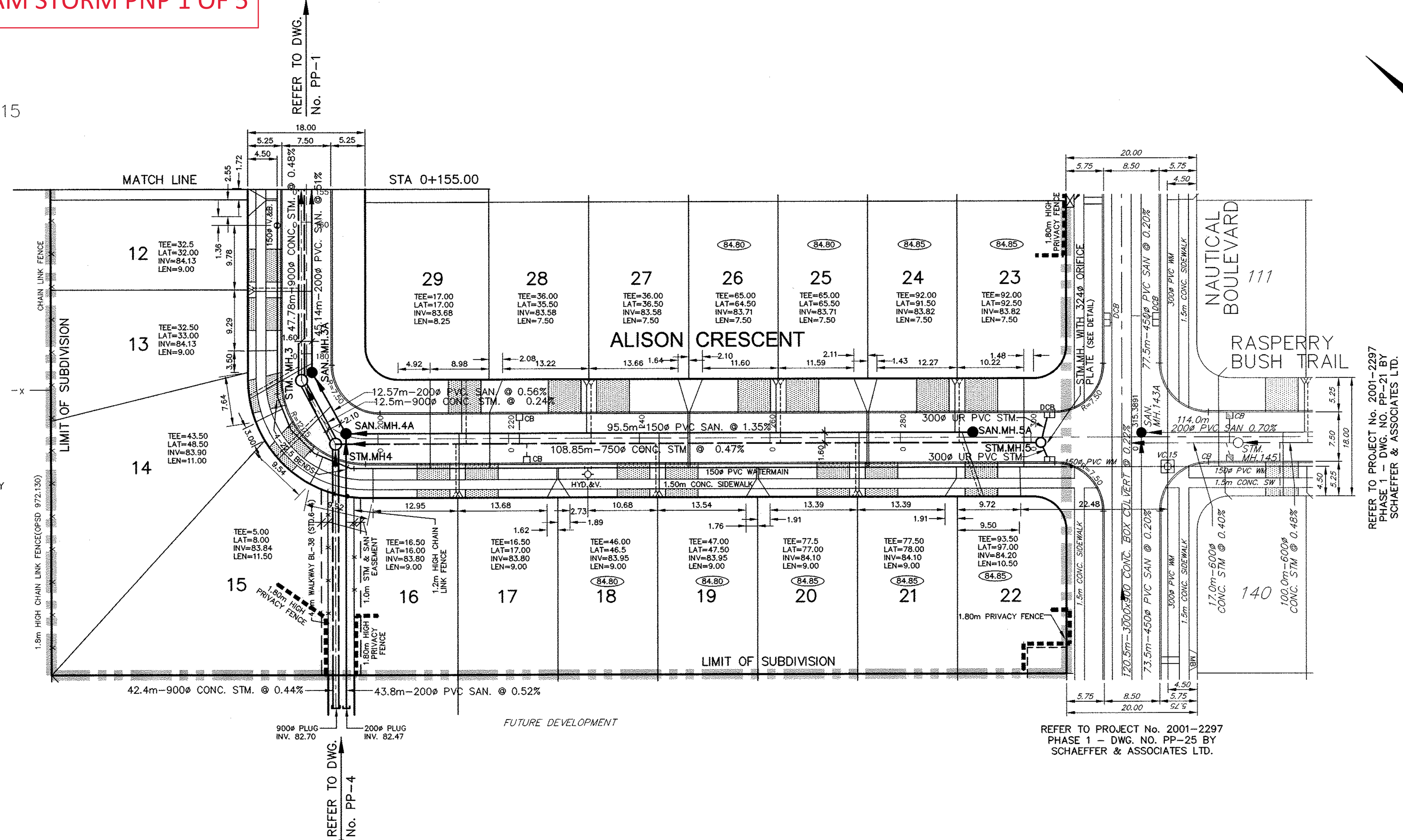
DETAIL OF VC.15
(STD RH 400.02)
N.T.S.

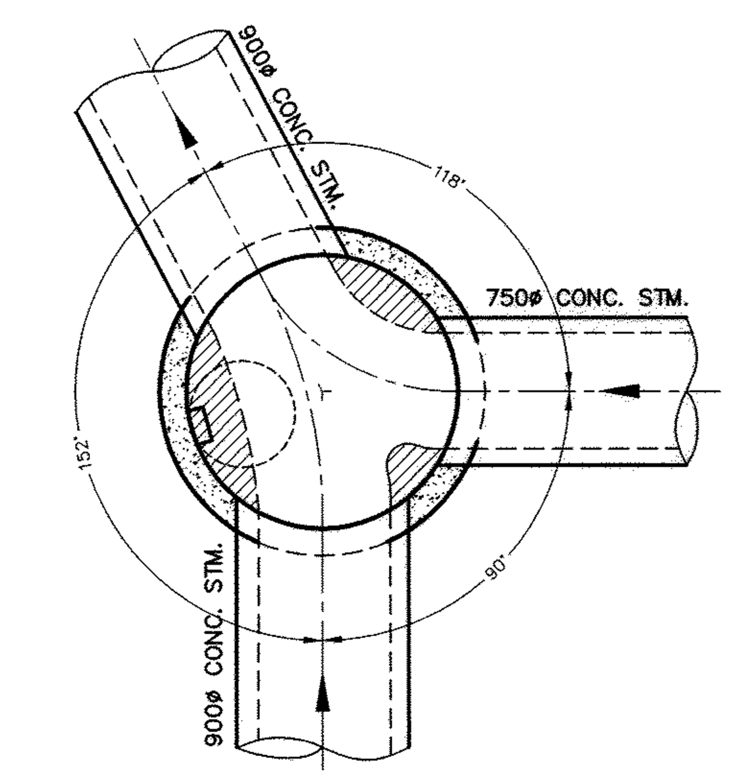


DETAIL OF 324mm DIA. ORIFICE PLATE
(STM. MH. AT STA 0+300)
SCALE NTS

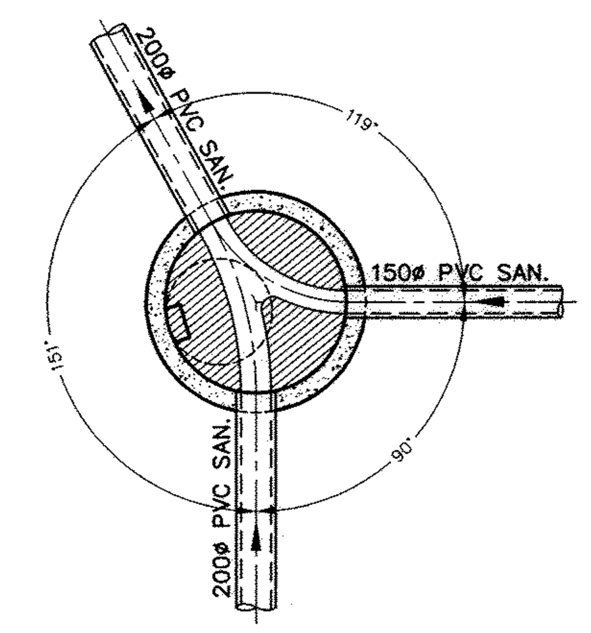


STEP JOINT DETAIL
N.T.S.

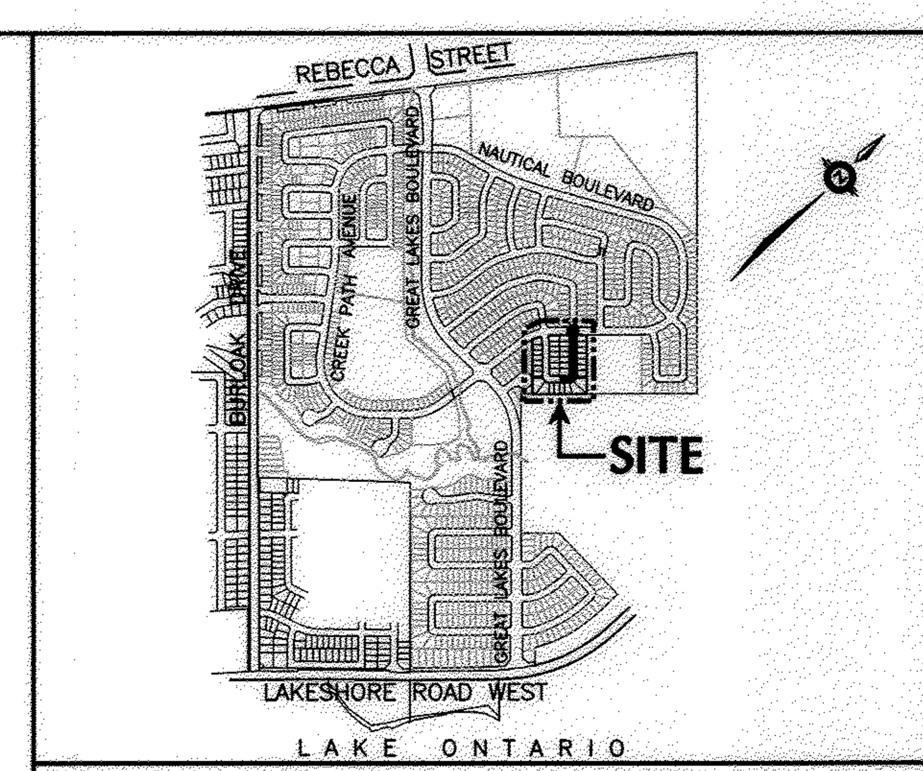




BENCHING DETAIL-STM.MH. 4
(OPSD 701.012, 1800ø)
SCALE: 1:50



BENCHING DETAIL-SAN.MH. 4A
(OPSD 701.010, 1200ø)
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 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.
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.

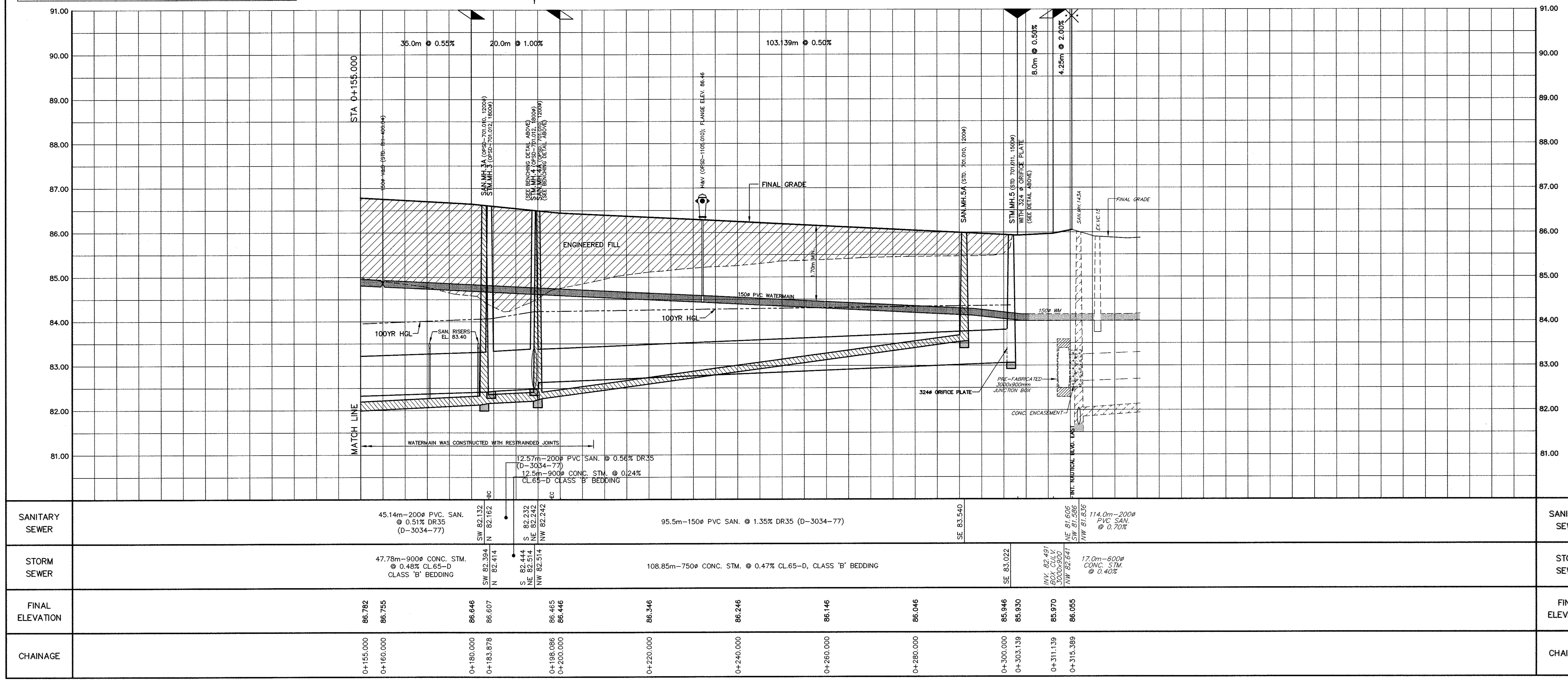
LEGEND

DENOTES LIMIT OF SUBDIVISION

(84.50) 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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071.
ELEVATION 79.994m



No.	Date	By	Revisions
1.	Dec./09		AS CONSTRUCTED

Design	S.P.	Checked	M.N.	Date APRIL 30, 2009
Drawn	J.B.	Checked	P.S.	

Scale: HOR. 1:500 VER. 1:50

References

Field Notes

Municipal
APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
SIGNED: Heinz Hecht DATE: Nov. 25/2009
Development Services Department -TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional
DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.
Ronald MacKenzie Nov. 25/2009
Legislative & Planning Services Department DATE:

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

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
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

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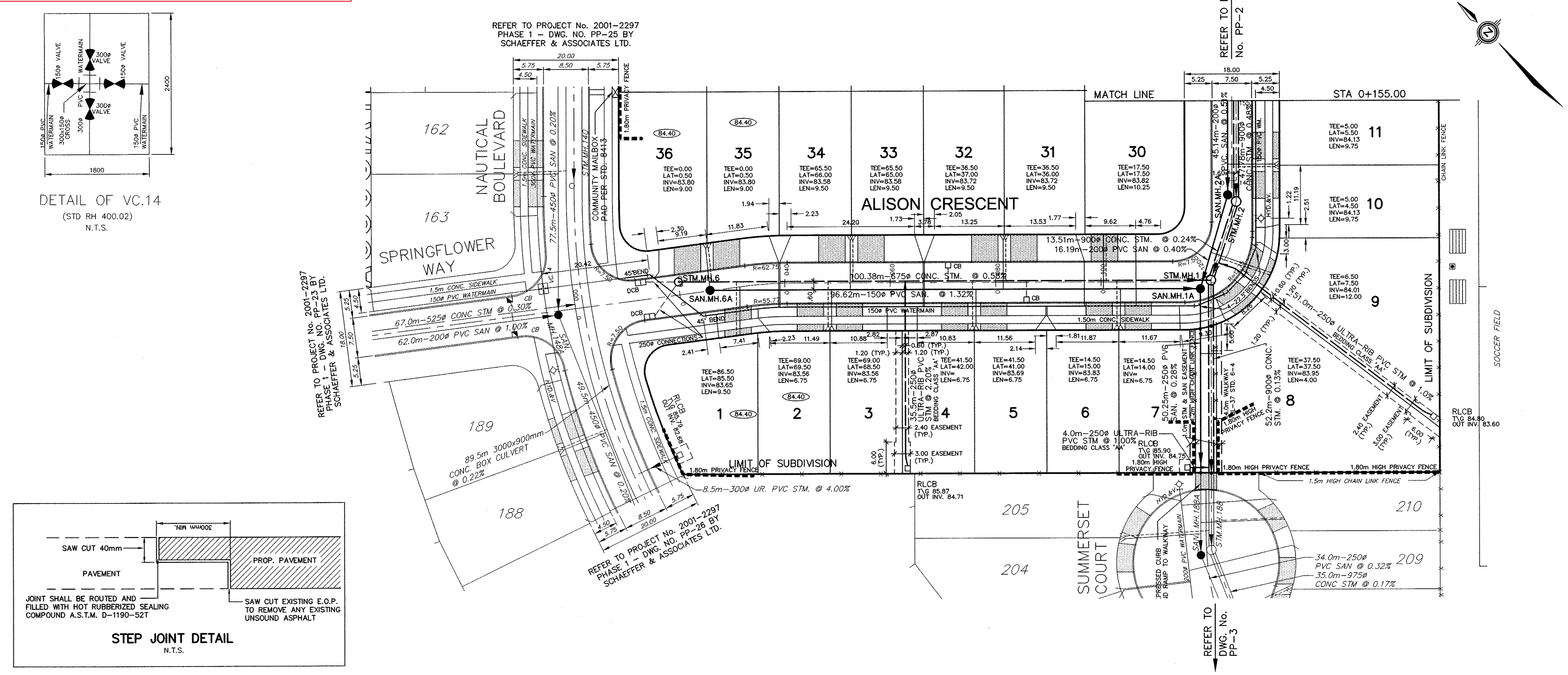
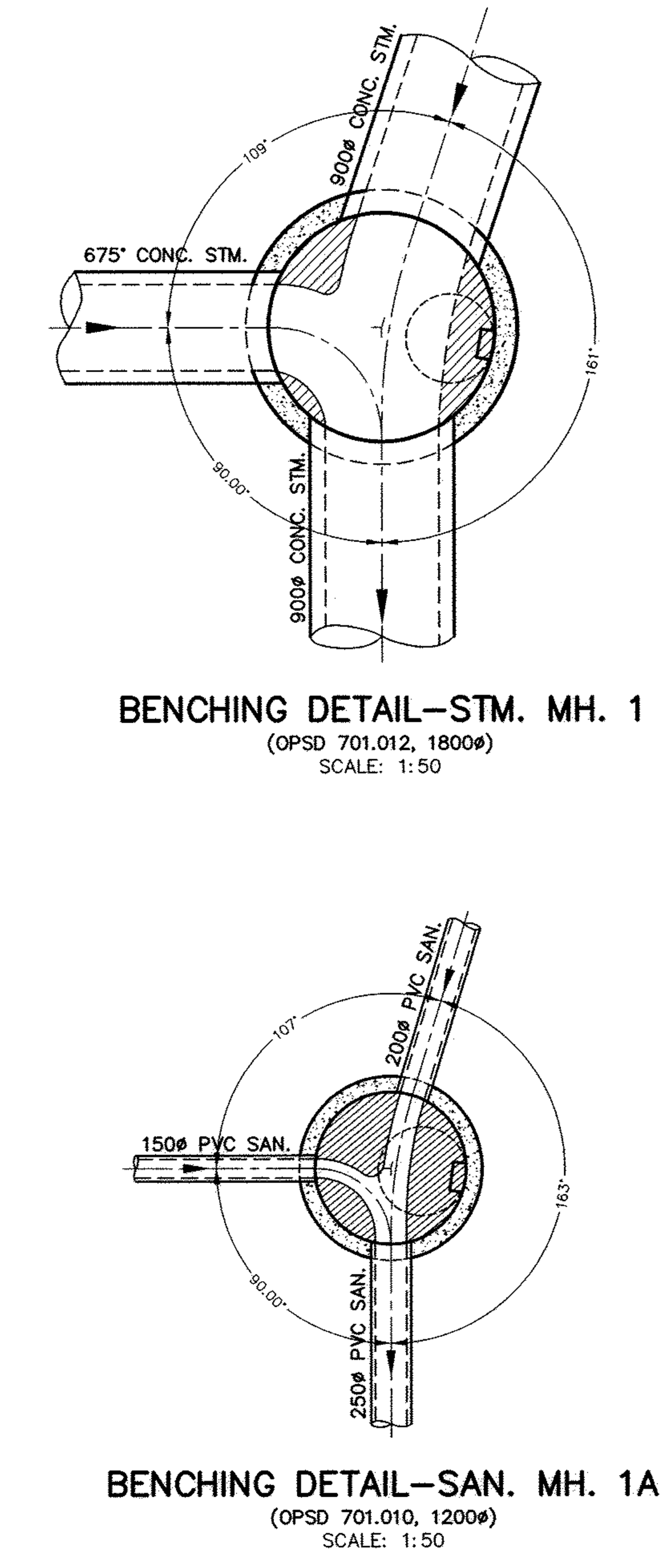
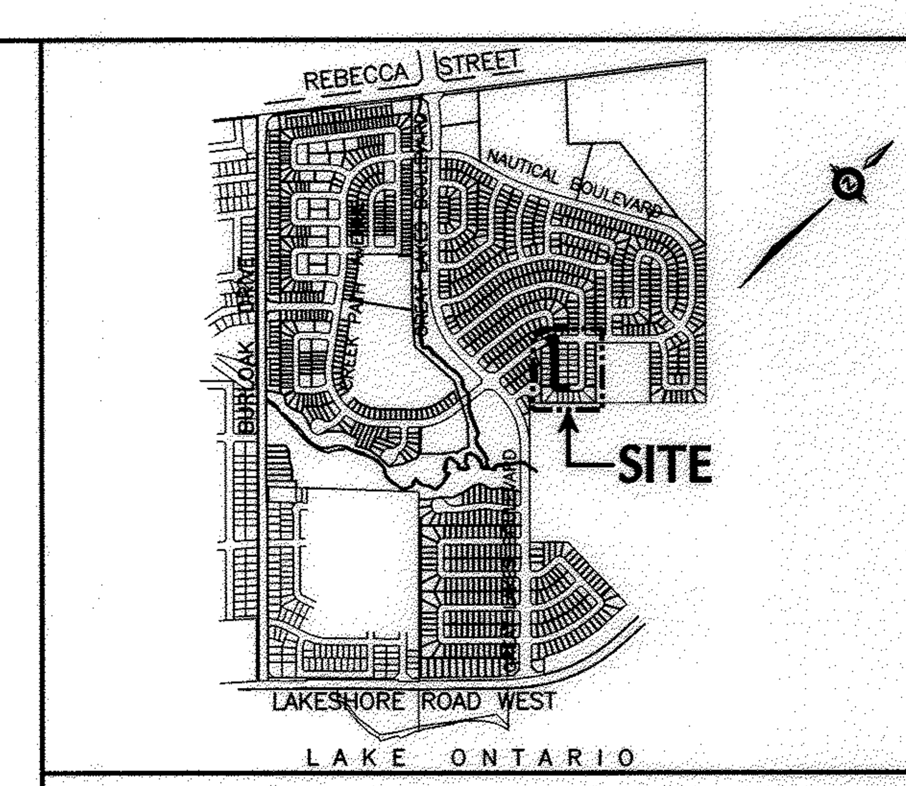
DOWNSTREAM STORM PNP 2 OF 5

ALISON CRESCENT STA. 0+000.000 TO STA 0+155.000 20M-1071







KEY PLAN SCALE N.T.S.

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

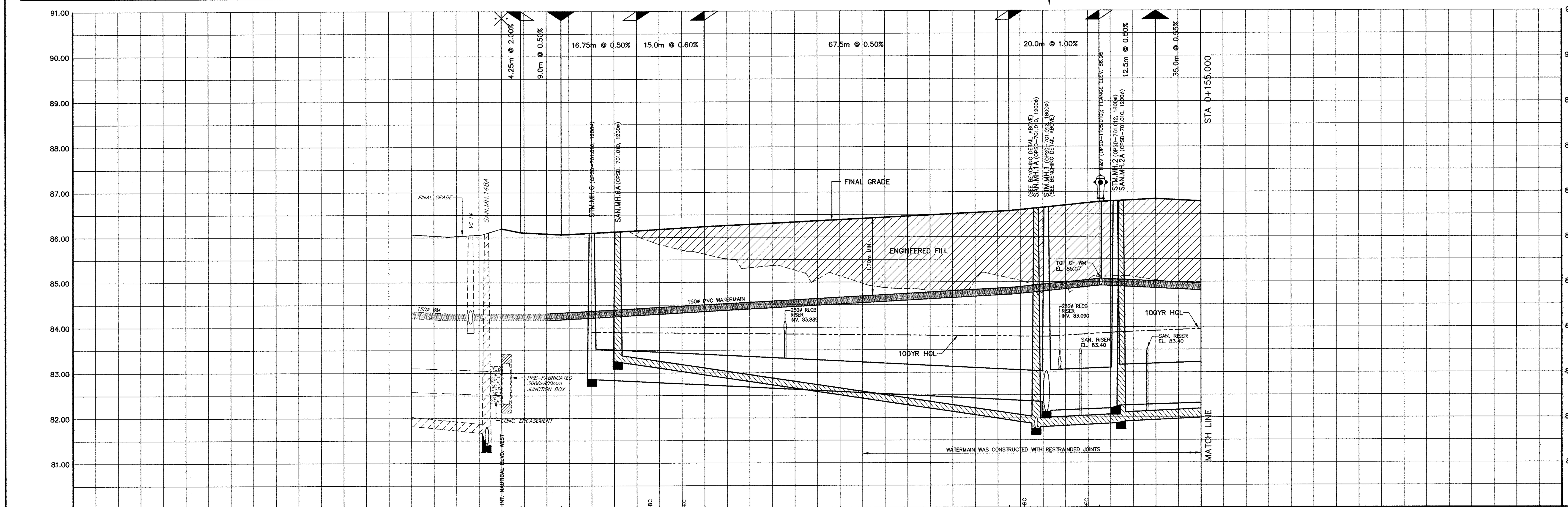
LEGEND

▬ ▪ ▪ ▬ DENOTES LIMIT OF SUBDIVISION

(84.50) 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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m



SANITARY SEWER	62.0m-200ø PVC SAN. @ 1.00% · NW 81.660 · SW 81.411 NE 81.431 · SE 83.130 · 96.62m-150ø PVC SAN. @ 1.32% DR35 (D-3034-77) · NW 81.857 SW 81.766 E 81.806 · 16.19m-200ø PVC SAN. @ 0.40% DR35 (D-3034-77) · W 81.870 NE 81.900 · 45.14m-200ø PVC SAN. @ 0.51% DR35 (D-3034-77)
STORM SEWER	67.0m-525ø CONC. STM. @ 0.30% · NW 82.508 · 3000x900 BOX.CULV. INV.82.321 · SE 82.717 · 100.38m-675ø CONC. STM. @ 0.58% CL.65-D, CLASS 'B' BEDDING · NW 82.137 SW 82.027 E 82.077 · 13.51m-900ø CONC STM. @ 0.24% CL.65-D CLASS 'B' BEDDING · W 82.110 E 82.180 · 47.78m-900ø CONC. STM. @ 0.48% CL.65-D CLASS 'B' BEDDING
FINAL ELEVATION	86.194, 86.109, 86.064, 86.098, 86.148, 86.165, 86.208, 86.210, 86.238, 86.313, 86.413, 86.512, 86.575, 86.608, 86.650, 86.746, 86.775, 86.812, 86.837, 86.782
CHAINAGE	0+000.000, 0+004.250, 0+013.250, 0+020.000, 0+030.000, 0+032.870, 0+040.000, 0+040.418, 0+045.000, 0+060.000, 0+080.000, 0+100.000, 0+112.500, 0+115.849, 0+120.000, 0+129.609, 0+132.500, 0+140.000, 0+145.000, 0+155.000

No.	Date	By	Revisions
1.	Dec./09		AS CONSTRUCTED

Design	S.P.	Checked	M.N.	Date APRIL 30, 2009
Drawn	J.B.	Checked	P.S.	

Scale: HOR. 1:500 VER. 1:50

References

Field Notes

Municipal
APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
SIGNED: Heinz Hecht DATE: Nov. 25/2009
Development Services Department -TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional
DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.
Ronald MacKenzie DATE: Nov. 25/2009
Legislative & Planning Services Department

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

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
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
OAKVILLE TOWN OF OAKVILLE
ENGINEERING AND CONSTRUCTION DEPARTMENT

Title 24T-00004
NEW PROVINCE HOMES
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.	Regional File No.
SD-432.8	DO-669
Contract No. 2007-3178	Drawing No. PP - 1

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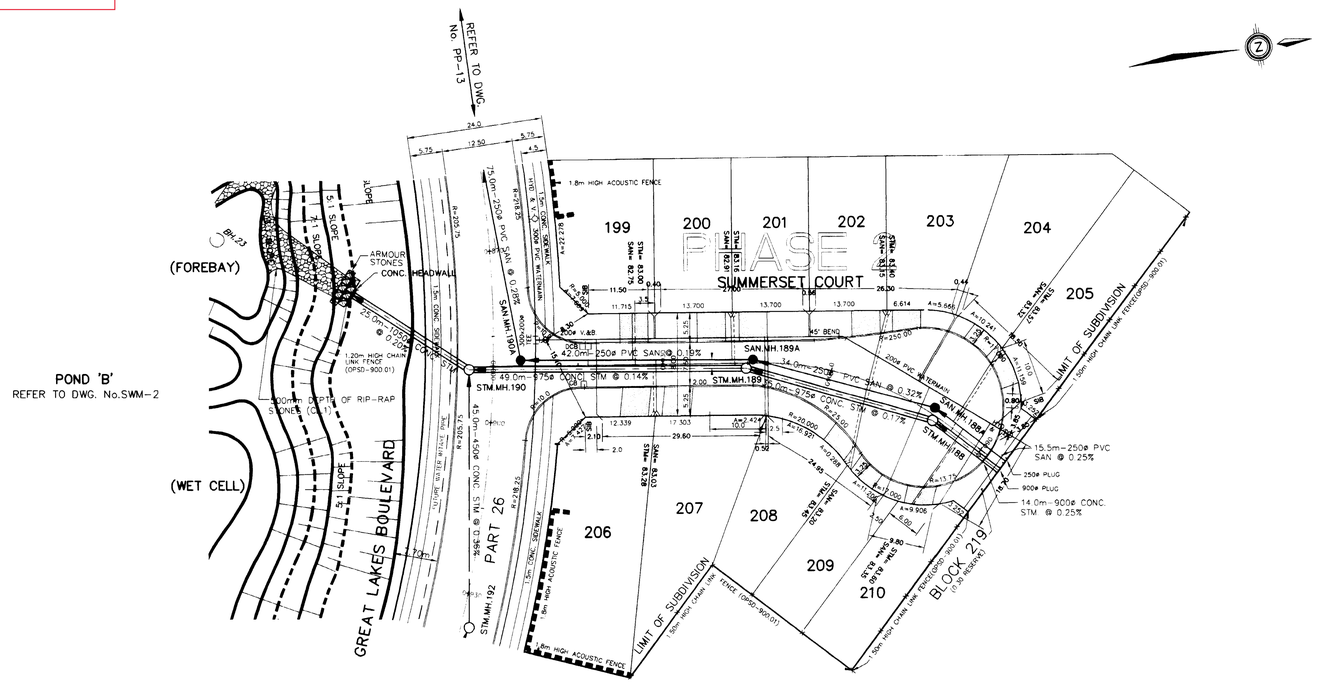
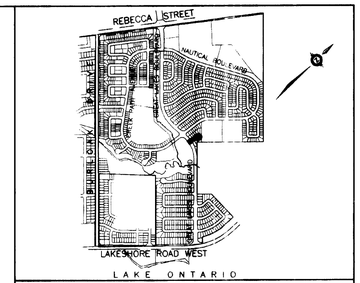
P.H. 2 Summerset Court

DOWNSTREAM STORM PNP 3 OF 5





KEY PLAN SCALE N.T.S.

NOTES:

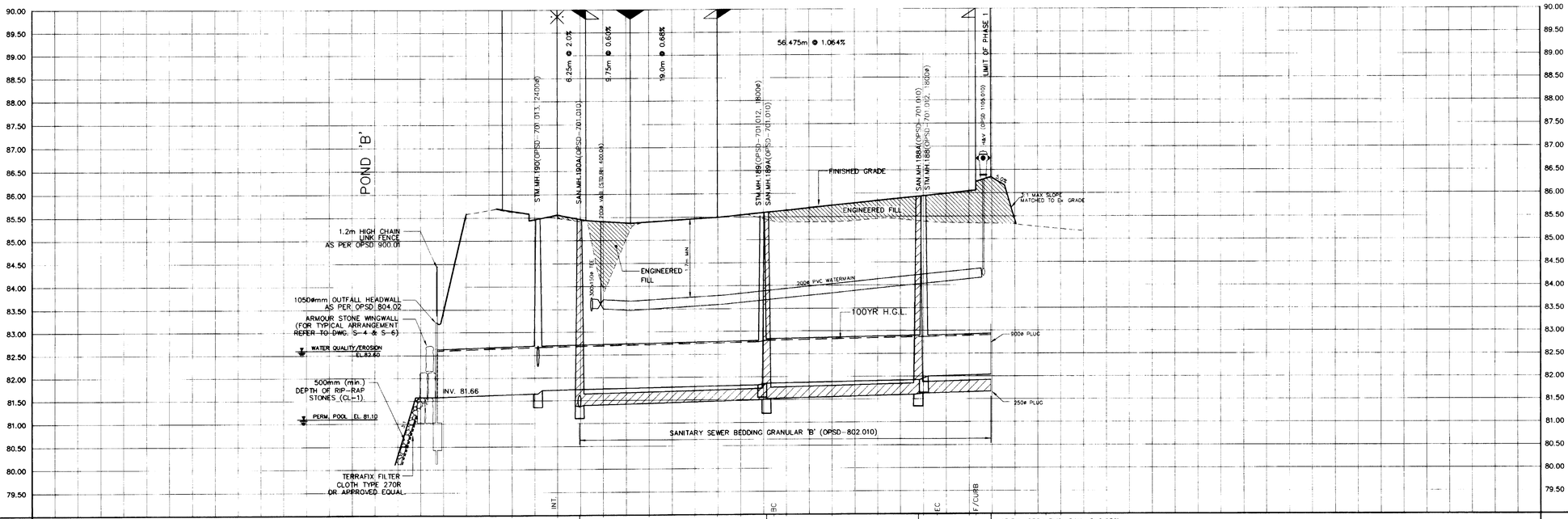
1. FOOTINGS CONSTRUCTED NEXT TO CATCHBASIN LEAD PIPE OR OTHER MUNICIPAL SERVICES WERE INSTALLED BELOW LEAD PIPE EXCAVATION. FOOTINGS WERE CONSTRUCTED ON UNDISTURBED SOIL. SOIL CONSULTANT'S VERIFICATION OF CONSTRUCTION.
2. FOR GENERAL NOTES REFER TO DWG. No. GN-1

LEGEND

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

PAVEMENT STRUCTURE (SUMMERSET COURT):

40mm COMPACTED DEPTH OF H.L. 3 ASPHALT TOP COURSE (COMPACTED TO 97 % LAB DENSITY)
50mm COMPACTED DEPTH OF H.L. 8 ASPHALT BINDER COURSE (COMPACTED TO 97 % LAB DENSITY)
150mm COMPACTED DEPTH OF 19mm CRUSHER RUN LIMESTONE (COMPACTED TO 100 % STANDARD PROCTOR DENSITY)
275mm COMPACTED DEPTH OF 50mm CRUSHER RUN LIMESTONE (COMPACTED TO 100 % STANDARD PROCTOR DENSITY)



SANITARY SEWER	25.0m-1050ø CONC. STM. @ 0.20% CL. 65-D, CLASS 'B' BEDDING	42.0m-250ø PVC. SAN. @ 0.19% DR-35 (D-3034-77)	34.0m-250ø PVC. SAN. @ 0.32% DR-35 (D-3034-77)	15.5m-250ø PVC. SAN. @ 0.25% DR-35 (D-3034-77)	SANITARY SEWER
STORM SEWER	HEADWALL N. 81.66 / SW 81.71 E. 82.26 N 81.75	49.0m-975ø CONC. STM. @ 0.14% CL. 65-D, CLASS 'B' BEDDING	35.0m-975ø CONC. STM. @ 0.17% CL. 65-D, CLASS 'B' BEDDING	14.5m-900ø CONC. STM. @ 0.25% CL. 65-D, CLASS 'B' BEDDING	STORM SEWER
CENTER LINE ELEVATION	85.558 / 85.433	85.318 / 85.413 / 85.447 / 85.500	85.713	86.032 / 86.048	CENTER LINE ELEVATION
CHAINAGE	0+000.000 / 0+008.250	0+016.000 / 0+030.000 / 0+035.000 / 0+040.000	0+047.286 / 0+060.000	0+083.048 / 0+090.000 / 0+091.475 / 0+106.743	CHAINAGE

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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

No.	Date	By	Revisions
2.	JUNE 2006	B.J.	AS BUILT - CENTER LINE ELEVATION ADDED
1.	JAN 2003	B.J.	AS BUILT - STORM & SANITARY SEWERS ONLY

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

Scale: HOR. 1 : 500, VERT. 1 : 50

References

Field Notes

Approvals

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

SIGNED: GEORGE TRENKLER DATE: APRIL/11/02
Planning Services Department -TOWN OF OAKVILLE

Regional: 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 Work Dept.-Region of Halton — DATE

Belt ☐ Hydro ☐ Gas ☐ Cable ☐

REGISTERED PROFESSIONAL ENGINEERS — M. NINKOVIC — JUNE 2006 — PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
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
TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

20M-840

Title
NEW PROVINCE HOMES
PHASE 2
PLAN AND PROFILE OF
SUMMERSET COURT
STA. 0+000.000 TO STA. 0+092.020

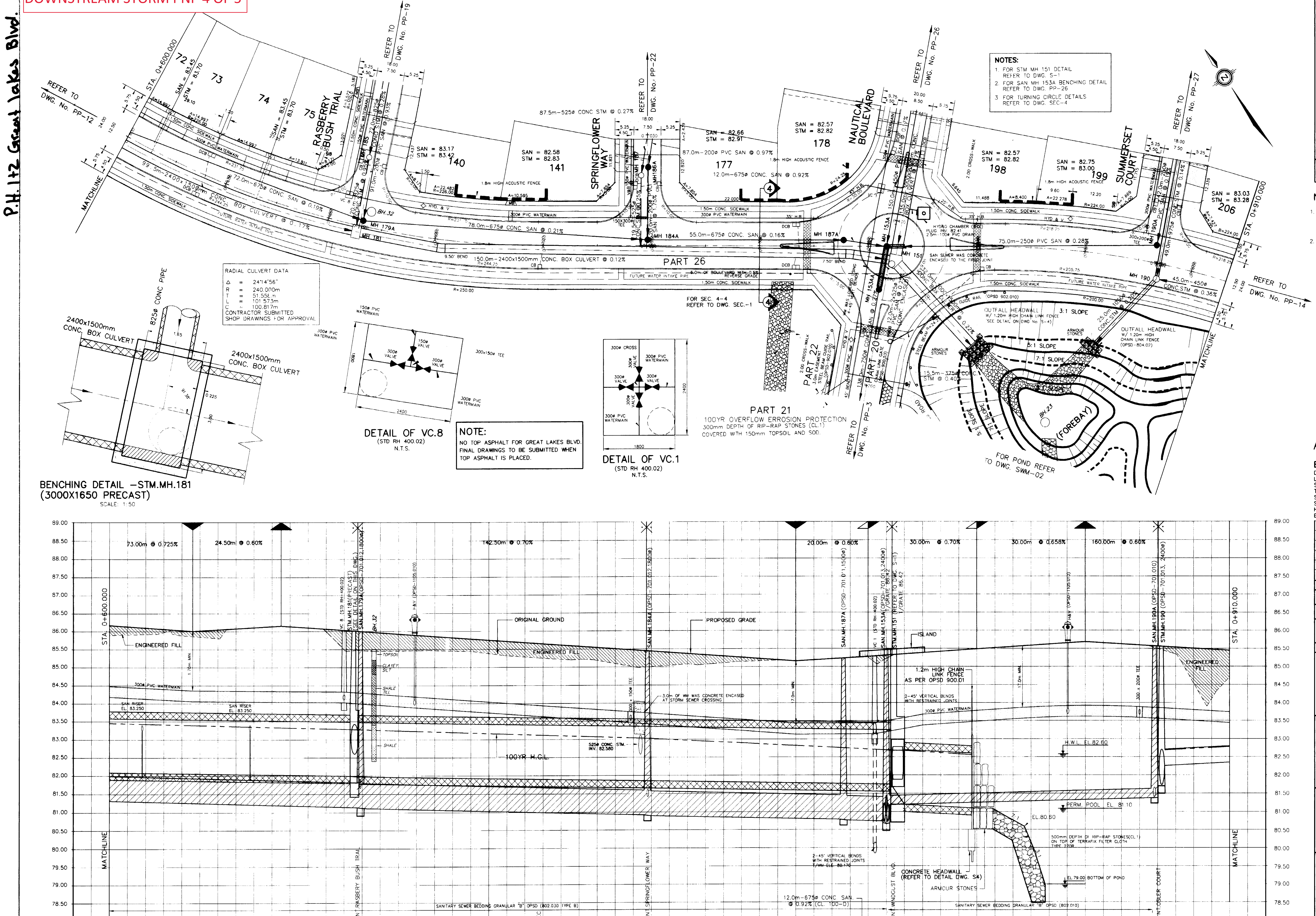
Municipal Drawing No.	Regional File No.
SD-432.1	D0-542
Contract No.	Drawing No.
2001-2297	PP-27

20M-839/840

DOWNSTREAM STORM PNP 4 OF 5

P.H. 1+2 Great lakes Blvd.

20m-839/840



SANITARY SEWER	72.0m-675ø CONC. SAN. @ 0.19% (CL. 100-D)	W. 81.02 N. 81.43 E. 81.06	78.0m-675ø CONC. SAN. @ 0.21% (CL. 100-D)	W. 80.90 N. 81.35 E. 80.89	55.0m-675ø CONC. SAN. @ 0.16% (CL. 100-D)	W. 80.80 E. 80.79	W. 80.68 N. 80.94 S. 80.65 E. 81.17	75.0m-250ø PVC. SAN. @ 0.28% DR 35 (D-3034-77)	W. 81.38 N. 81.41									
STORM SEWER	99.5m-2400x1500mm CONC. BOX CULVERT @ 0.17% COMPACTED GRANULAR "B" BEDDING	W. 81.91 N. 82.60 E. 81.86	150.0m-2400x1500mm CONC. BOX CULVERT @ 0.12% COMPACTED GRANULAR "B" BEDDING	W. 81.68 N. 81.90 SE. 81.23	32.0m-3000x1500mm CONC BOX CULVERT @ 0.22% COMPACTED GRANULAR "B" BEDDING	NW. 81.16 OUTFALL	SW. 81.71 N. 81.79 E. 82.26	45.0m-450ømm CONC STORM @ 0.36% CL. 65-D GRANULAR "B" BEDDING										
CENTER LINE ELEVATION	86.004	86.046	86.151	85.063	86.002	85.853	85.643	85.442 85.433	85.223	85.153	85.273	85.319	85.483	85.680	85.558	85.500		
CHAINAGE	0+600.000	0+623.000	0+630.000	0+647.500	0+660.000	0+668.730 0+670.000	0+690.000	0+718.652 0+720.000	0+748.664 0+750.000	0+780.000	0+790.000	0+810.000	0+816.578	0+840.000	0+847.829	0+870.000	0+890.237	0+900.000	0+910.000

KEY PLAN

SCALE N.T.S.

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

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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

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 JUNE 2006
Drawn	H.R.	Checked	Z.C.	

Scale: HOR. 1 : 500 VERT. 1 : 50

References

Field Notes

Approvals

Municipal

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

SIGNED: GEORGE TRENKLER DATE: APRIL/11/02

Planning Services Department - TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional

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 Work Dept.-Region of Halton DATE

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC JUNE 2006 PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS

SCHAEFFER & ASSOCIATES LTD.

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-839 AND 20M-840

NEW PROVINCE HOMES PHASES 1 AND 2 PLAN AND PROFILE OF GREAT LAKES BOULEVARD

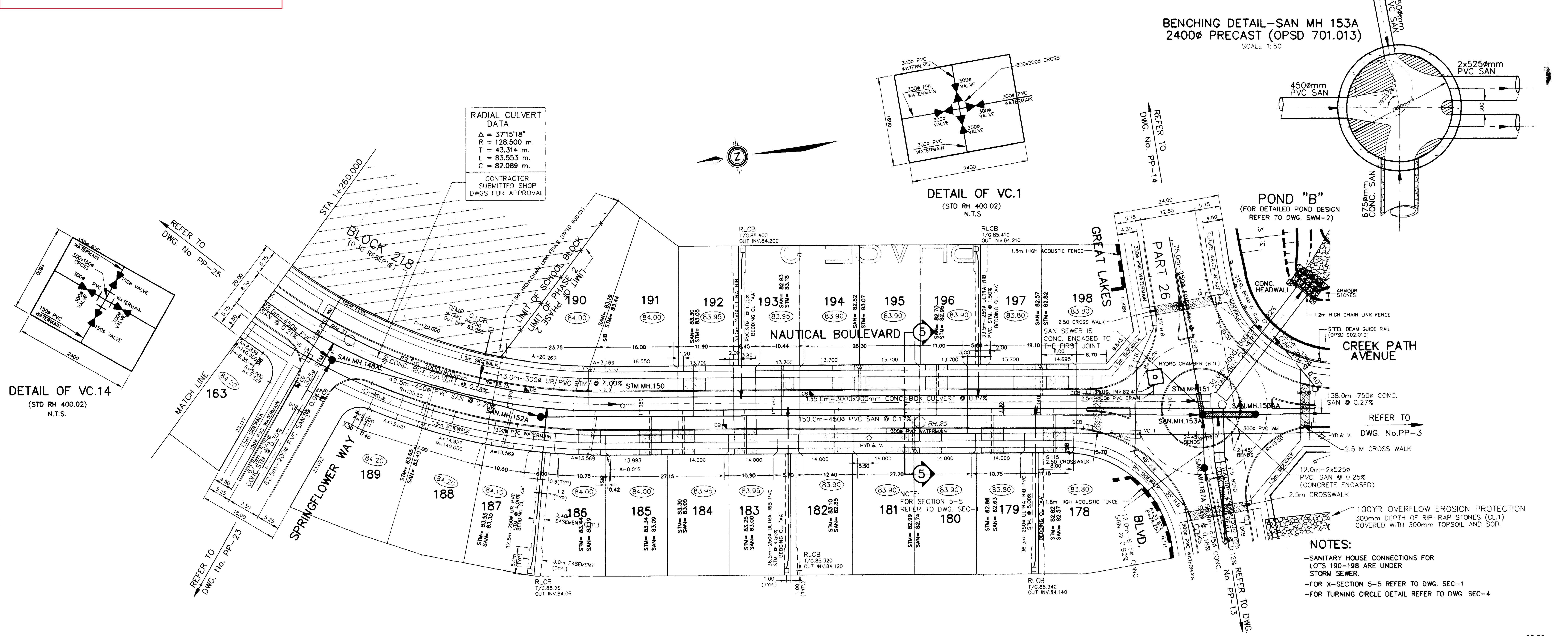
STA. 0+600.000 TO STA. 0+910.000

Municipal Drawing No. SD-432.1	Regional File No. DO-507 DO-542
Contract No. 2001-2297	Drawing No. PP-13

DOWNSTREAM STORM PNP 5 OF 5

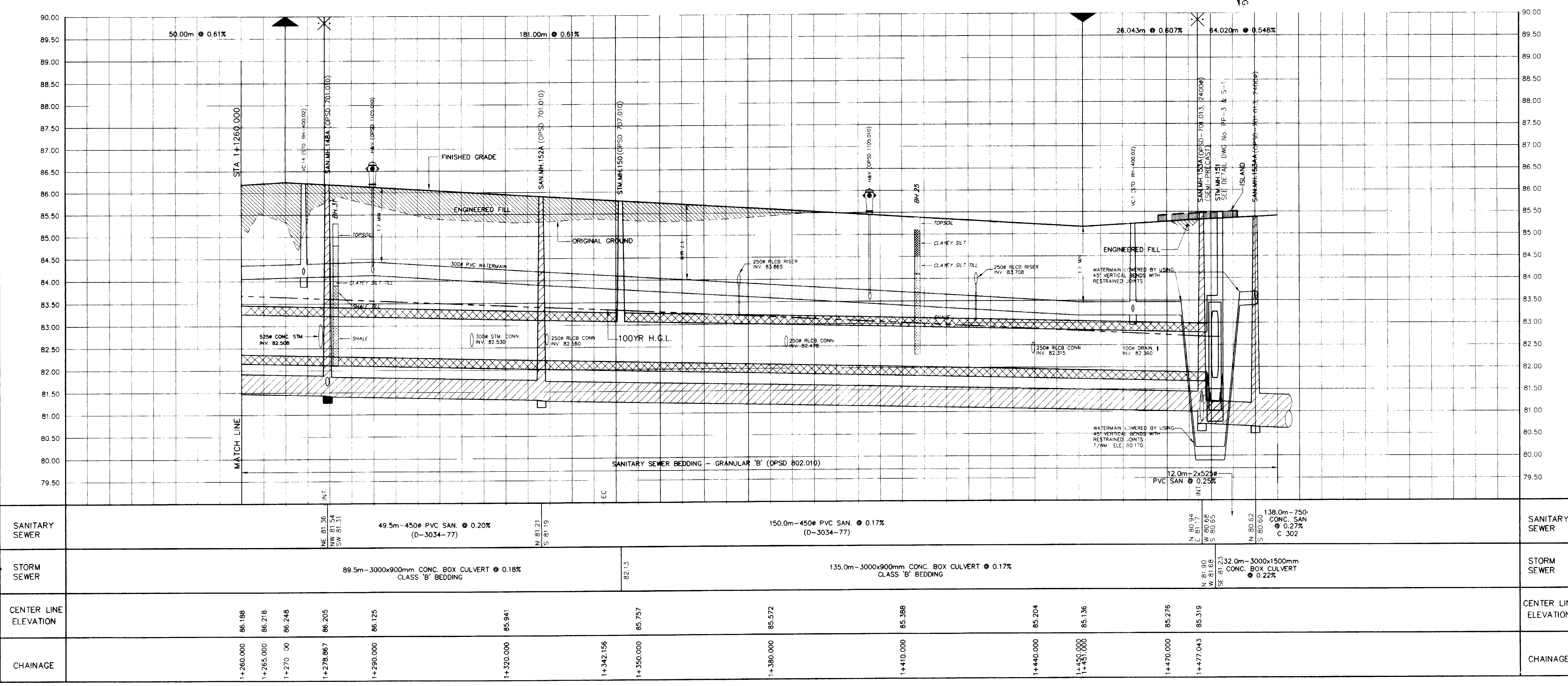
P.H. 2 Nautical Blvd.

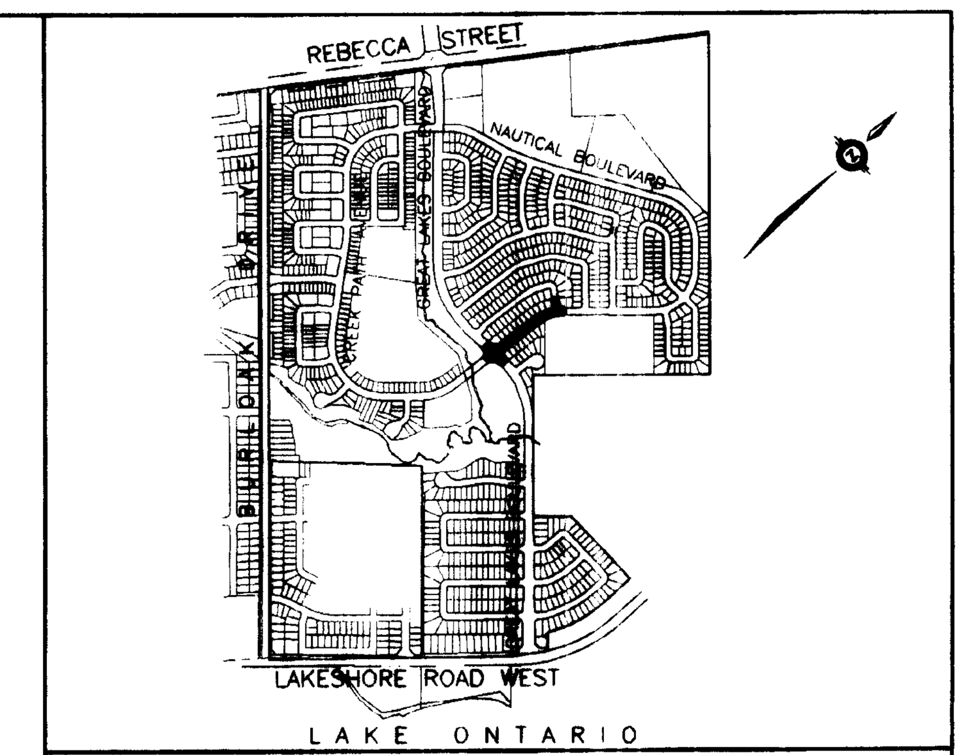
20M-839/840



NOTES:

- SANITARY HOUSE CONNECTIONS FOR LOTS 190-198 ARE UNDER STORM SEWER.
- FOR X-SECTION 5-5 REFER TO DWG. SEC-1
- FOR TURNING CIRCLE DETAIL REFER TO DWG. SEC-4





KEY PLAN SCALE N.T.S.

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 CONSULTANT'S VERIFICATED CONSTRUCTION.
2. FOR GENERAL NOTES REFER TO DWG. No. GN-1.

LEGEND

(hatched)	DENOTES FUTURE DEVELOPMENT
(dashed line)	DENOTES LIMIT OF PHASE CONSTRUCTION
(symbol)	DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec.
(83.95)	DENOTES MINIMUM BASEMENT ELEVATION

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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071.
ELEVATION 79.994m

No.	Date	By	Revisions
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

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

Scale: HOR. 1 : 500 VERT. 1 : 50

References

Field Notes

Approvals

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SIGNED: GEORGE TRENKLER DATE: APRIL/11/02
Planning Services Department - TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional
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 Work Dept.-Region of Halton DATE

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC JUNE 2006 PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS
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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
NAUTICAL BOULEVARD
STA. 1+260.000 TO STA 1+477.043

Municipal Drawing No.	Regional File No.
SD-432.1	D0-542
Contract No. 2001-2297	Drawing No PP-26

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

SCHAEFFERS CONSULTING ENGINEERS

HYDRAULIC GRADELINE ANALYSIS

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 U/S	MANHOLES D/S	INVERT ELEV U/S (m)	INVERT ELEV D/S (m)	Slope	GROUND U/S (m)	COVER U/S (m)	BASEMENT U/S (m)	Circular Pipe Parameters Diameter (mm)	Length (m)	'n'	TOTAL FLOW (cms)	Qcap (m^3/s)	Qin/ Qcap	Surch. (U/S) (m)	OBV(U/S) (m)	HGL(U/S) (m)	HGL(D/S) (m)	Dist (m)	COMPUTATIONAL COLUMNS pipe A (m^2)	R (m)	L/D	f	Vf (m/s)	$V^2/2g$	HI Pipe (m)	HI MH U/S (m)	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	84.89	750	108	0.013	0.3834	0.7041	0.54	0.57	83.81	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

Printed on: 9/24/2009 9:14 AM

= 2.78 x A x C x i
C = IMPERVIOUS COEFF.
I = RAINFALL INTENSITY
= AREA IN HECTARES

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

10 min. ENTRY TIME

TOWN OF OAKVILLE

DEPARTMENT OF PUBLIC WORKS
STORM SEWER DESIGN SHEET
NEW PROVINCE HOMES DEVELOPMENT - PHASE 10
WATERSHED - POND 'B'

PROFESSIONAL ENGINEER M. NINKOVIC Sept. 24/09 PROVINCE OF ONTARIO

SCHAEFFERS Consulting Engineers

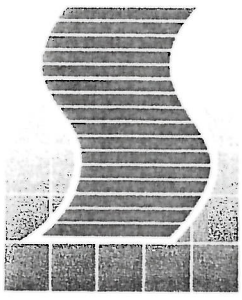
PREPARED BY: S.P.
CHECKED BY: M.N.
DATE: September 23, 2009
FILE No.: 2007-3178

Street	From MH	To MH	A (ha)	C	A x C (ha)	ACCUM. A x C (ha)	Entry Time t_i (min)	i (mm/hr)	Q, flow (m^3/s)	Pipe Dia (mm)	Grade (%)	Capacity (m^3/s)	Vel. (m/s)	Length (m)	Time in Sect. (min)	Final Time t_f (min)	Remarks
ıture Residential		Plug	2.04	0.50	1.020	1.020						*Time of contraction=10+210/(2*60)=11.75min*					
From Future Residential						1.020	11.75										
ısement	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	
						1.020	12.08										
˙ison 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	
						0.385	11.12										
From Easement						1.020	12.08										
om Alison Crescent						0.385	11.12										
ison 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	
	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	
	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	
						1.670	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	
						0.310	11.00										
˙om Alison Crescent						1.670	12.76										
From Alison Crescent						0.310	11.00										
ısement	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	
	Ex. Plug	Ex.188	0.00	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
	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
						2.285	14.54										
				REFER TO PROJECT No. 2001-2297 BY SCHAEFFERS & ASSOCIATES LTD.													
omAlison Crescent		Ex.BOX	0.06	0.50	0.030	0.030	10.00										
om Ex. Nautical Blvd.		Ex.140				9.160	22.96										
From Ex. Springflower Way		Ex.BOX				0.435	12.09										
˙autical 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	
	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	
						10.465	25.06										

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

SCHAEFFERS
Consulting Engineers

LEGEND
POND A TRIBUTARY
POND B TRIBUTARY
SWM POND

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.

3.2.2 Water Quality Treatment Outlet Structure

The provided extended detention volume of 7,270 m^3 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 m^3/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 (m3/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 Mannual, 1994

POND 2 New Province Homes - Pond B

User Input (defined in blue)

Weighted Runoff Coefficient (C)	0.54
Estimated Imperviousness as	49
Area in Hectares (ha)	50
Level of Protection	2
SWMP Type	3

Answer

Total Storage Volume Required	103.6 (m3/ha)
Permanent Pool Volume:	63.6 (m3/ha)
Active Storage Volume:	40 (m3/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-STRORAGE RELATIONSHIPS

POND A

ELEV. m	VOLUME m3	
80.70	0	
81.00	376	
81.50	1,701	
81.70	2,401	Perm. Pool
82.00	3,676	
82.50	6,301	
82.70	7,497	Ext. Det.
83.00	9,426	

Perm. Pool = 2401 m^3
Ext. Det. = 7497 - 2401 = 5096 m^3

POND B

ELEV. m	VOLUME m3	
79.00	0	
80.00	400	
80.60	1,705	
81.10	3,212	Perm. Pool
81.60	5,257	
82.60	10,482	Ext. Det.

Perm. Pool = 3212 m^3
Ext. Det. = 10482 - 3212 = 7270 m^3

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 x 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)

APPENDIX ‘D’

WATER DEMAND CALCULATIONS

HYDRANT INSPECTION & FLOW REPORT

SUGGESTED NFPA RATING	
BLUE	CLASS AA
7836 gpm @ 20 psi (138 kPa)	

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Prepared By: The Ontario Clean Water Agency
Prepared For: Stantec
Residual Hyd Andrew Cruickshank
Flow Hyd(s) Kelly Smith

Date: 8-Sep-22 Time: 9:11 AM

HYDRANT DESCRIPTION

Hydrant ID:	16544	Side of Street:	West	Make:	Canada Valve	Open Dir:	Left
Address:	193 Nautical Blvd			Model:	Century	Latitude:	
Location:	Oakville ON			Year:	2002	Longitude:	

GENERAL INSPECTION

OK - Good Condition *FR - Future Repair Required* *N/A - Not Applicable* *CF - Component Failure*

Upper Section	OK	FR	N/A	CF
Bonnet	☐	☐	☑	☐
Operating Nut	☐	☐	☑	☐
Gaskets / Bolts	☐	☐	☑	☐
O-Ring(s)	☐	☐	☑	☐

Mid Section	OK	FR	N/A	CF
Port Height	☐	☐	☑	☐
Caps / Nozzles	☐	☐	☑	☐
Chains	☐	☐	☑	☐
Traffic Flange	☐	☐	☑	☐

General	OK	FR	N/A	CF
Accessibility	☐	☐	☑	☐
Position / Height	☐	☐	☑	☐
Paint Cond	☐	☐	☑	☐
Drain Ports	☐	☐	☑	☐

Hydrostatic Leak Testing		
Hydrant Closed	Above Grade Leak	N/A
	Subsurface Leak	N/A
Hydrant Open	Above Grade Leak	N/A
	Subsurface Leak	N/A

Maintenance	
Lubricate Operating Nut	N/A
Lubricate & Clean Nozzle Threads	N/A
Lubricate & Clean Cap Threads	N/A
Water Removed (if non-draining)	N/A

Auxiliary / Secondary Valve	
Located / Accessible	N/A
Operated/Exercised	N/A
Number of Turns	N/A
Open Direction	

Comments:

Auxiliary Valve Location:

FLUSHING

*If hydrants are being flow tested, inspections and flushing are completed prior to testing

Hydrant Operated	Clear Flow Obtained	Cl2 Residual	Time Flushed	Flow	Total Flow	Dechlorinated
Yes - Easily Operated	Yes	N/A	5 minutes	1693 gal	8466 gal	Yes

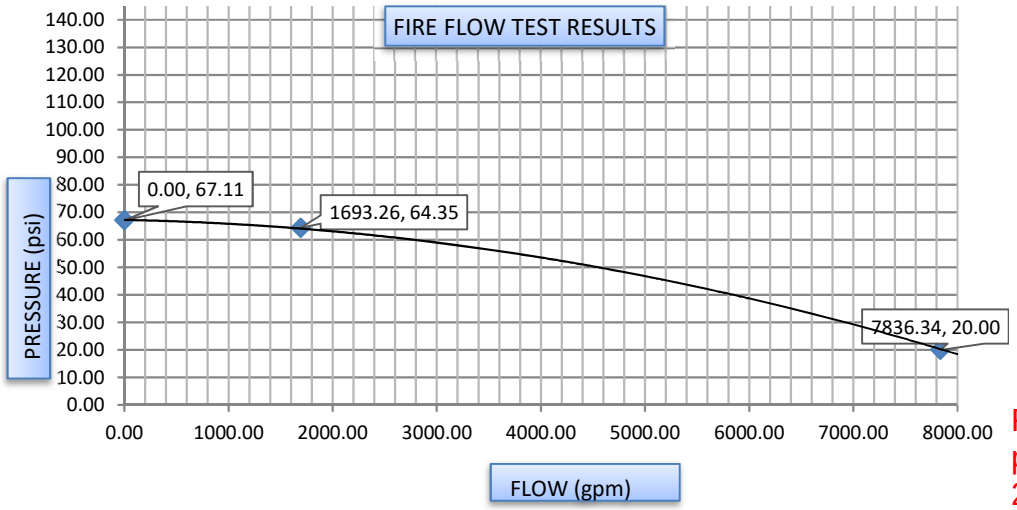
Comments: **STATIC AFTER FLOW TEST WAS PERFORMED 67.33 PSI**

FLOW TESTING

*Flow testing results may be from previous year(s). Note date & time

Date: 8-Sep-22 Time: 9:11 AM

Flow Hydrant								Test Hydrant		
ID	Flow Device Used	Size	Coefficient	Time Flushed	Flow	Total Flow	Pitot	ID	Static	Residual
22178	Pollard Diffuser	2.5"	0.832	5.0 minutes	918 gal	4588 gal	35 psi	16544	67.11	64.35
22178	Pollard Diffuser	2.5"	0.832	5.0 minutes	776 gal	3878 gal	25 psi			



Calculated Results	
Calculated Flow @ 20 psi	7836 gpm
Calculated Flow @ 0 psi	9486 gpm
Pressure Drop	4.11%

Comments: 300mm water main

Flow hydrant is in front of 210 Nautical Blvd. Test hydrant is near 193 Nautical Blvd.

Flow at minimum allowable pressure 140kPa (20PSI) = 29,662 L/min = 494 L/sec

HYDRANT LOCATIONS/ IDs

PRELIMINARY ESTIMATE of Expected Water Demand ***January 2022***

193 Nautical Blvd. *Project #160623025*

Oakville, Ontario

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 Densite (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

*Source: Regional Municipality of Halton Water and Wastewater Linear Design

Equivalent Population:	**124**	**persons**
***Residential flowrate per capita:**	**0.275**	**m^3/pers./day**
***Maximum Daily Demand Peaking Factor:**	**2.25**	
***Maximum Hourly Demand Peaking Factor:**	**4.00**	
Max Daily Demand:	**76.57**	**m^3/day**
	0.89	**L/s**
Max Hourly Demand:	**136.13**	**m^3/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**

Provided flow of 494L/s at 140kPa exceeds the required flow of 134L/s @ 140kPa, therefore the existing infrastructure has ample capacity to support to proposed development

APPENDIX ‘E’

DOWNSTREAM SANITARY SEWER CAPACITY

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

SCHAEFFERS
Consulting Engineers

Pipe Roughness Coeff. (PVC): 0.013
Pipe Roughness Coeff. (Conc): 0.013

THE REGIONAL MUNICIPALITY OF HALTON
SANITARY SEWER DESIGN
NEW PROVINCE HOMES DEVELOPMENT - PHASE 10
AS CONSTRUCTED DECEMBER 2009

Date 4-Jul-12
Designed By: S.P.
Checked By: M.N.

Project No. 2007-3178
Location Oakville

Street	Manhole From	Manhole To	Length in metres	Tributary Area Hectares Increment Res.	Comm.	Ind.	Total	Population Tributary Increment Res.	Comm.	Ind.	Total	Average m3/s Incr.	Average m3/s Total	Peaking Factor	MAX m3/s	infil-tration m3/s	MAX FLOW EXPECT	SEWER Size mm	Slope %	Q m3/s	V m/s Full Flow	V m/s Act. Fl.	PI PE Type	PI PE Class	REMARKS
From School Block		Plug				2.25	~~2.26~~			124	~~125~~														
Easement	Plug	4A	43.80	0.00			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		
							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		
							0.78				43														
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	~~5.32~~			292	~~293~~														
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		
																		TWIN 525	0.25	0.427	0.99		CONC.		
Creek Path Ave.	Ex.153A	Ex.153AA	12.00															750	0.27	0.576	1.31		CONC.		
	Ex.153AA	WEST	138.00																						

Population of 125 accounted for the subject development. Per 'Halton Region Wastewater Linear Desgin 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.

TRUNK SEWER

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

M. NINKOVIC
July 4 2012

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)

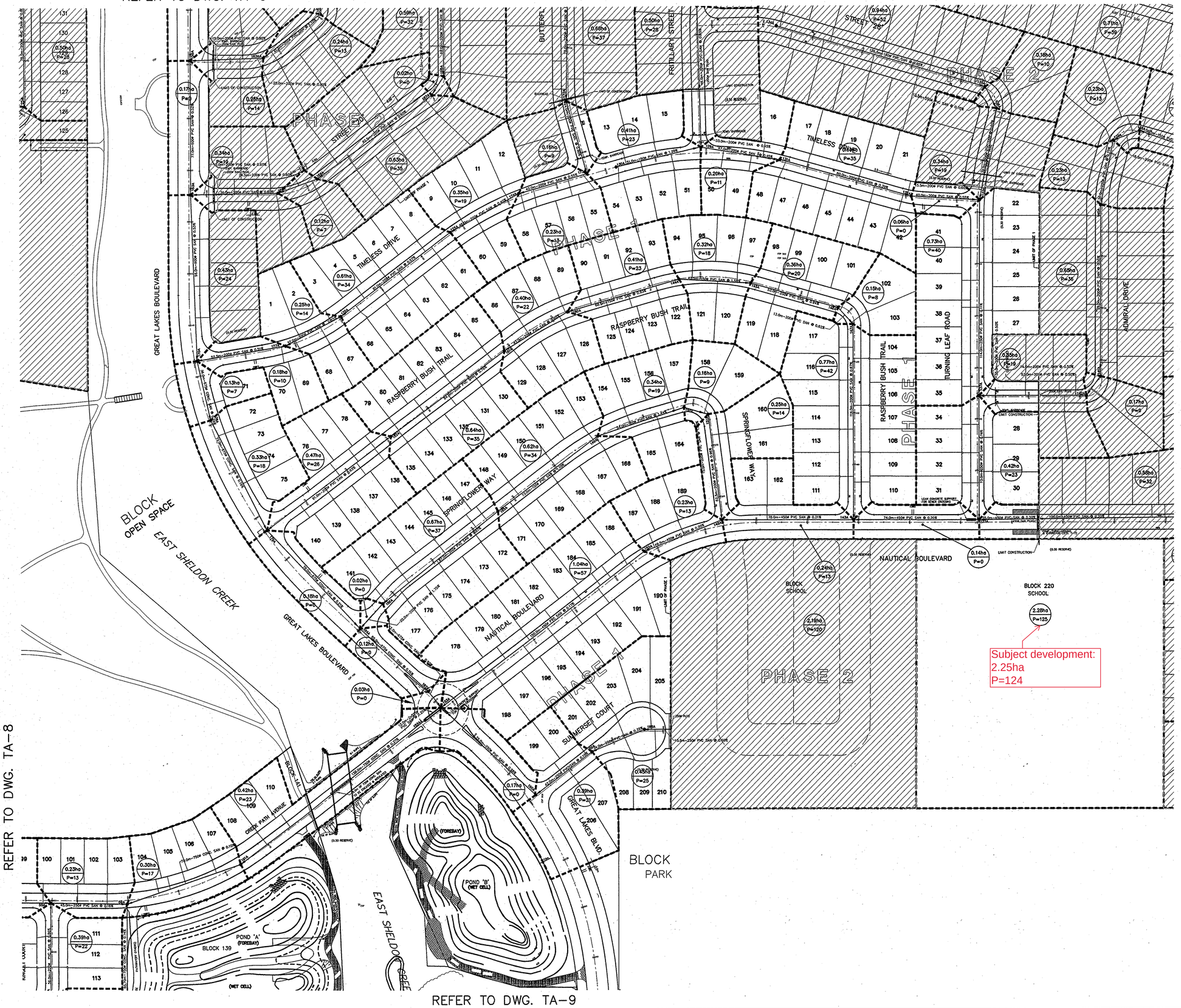
As shown, all sewers have ample excess capacity down to the connection with the trunk sewer at Great Lakes Blvd. and Creek Path Ave.

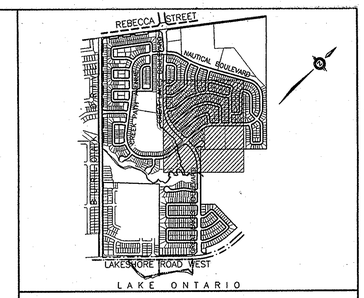
REFER TO DWG. TA-6

REFER TO DWG. TA-8

REFER TO DWG. TA-9

O- 13114





KEY PLAN SCALE N.T.S.

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

LEGEND

DENOTES FUTURE DEVELOPMENT

DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec.
0.15ha P=12 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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071.
ELEVATION 79.994m

No.	Date	By	Revisions
2.	APR 2003	B.J.	AS BUILT - REVISED SANITARY SEWERS
1.	JAN 2003	B.J.	AS BUILT - SANITARY SEWERS ONLY

Design	P.S.	Checked	M.N.	Date
Drawn		Checked	Z.C.	MARCH 2002
Scale: HOR. 1 : 1000				References

Approvals

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

Regional
DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.
MARGARET SMITH 02/04/25
Planning & Public Work Dept.-Region of Halton DATE:

Field Notes

Bell ☐ Hydro ☐
Gas ☐ Cable ☐

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC APRIL 05, 2002 PROVINCE OF ONTARIO

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

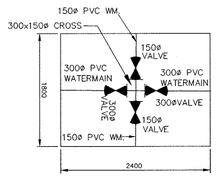
Municipality
THE REGIONAL MUNICIPALITY OF HALTON
TOWN OF OAKVILLE
DEPARTMENT OF PUBLIC WORKS

Title
24T-00004/1734
NEW PROVINCE HOMES
PHASE II
SANITARY TRIBUTARY AREA
(PART II)

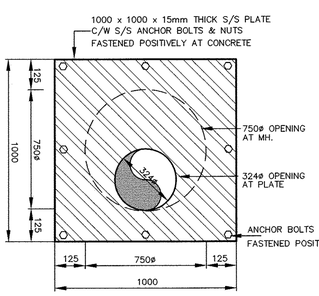
Municipal Drawing No.	Regional File No.
SD-432.1	O- 13114 :2
Contract No. 2001-2297	Drawing No. TA-7

ALISON CRESCENT STA. 0+155.000 TO STA 0+315.389

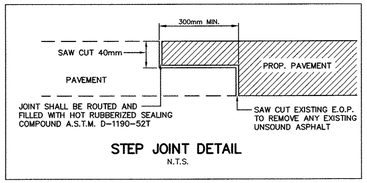
20M-1071



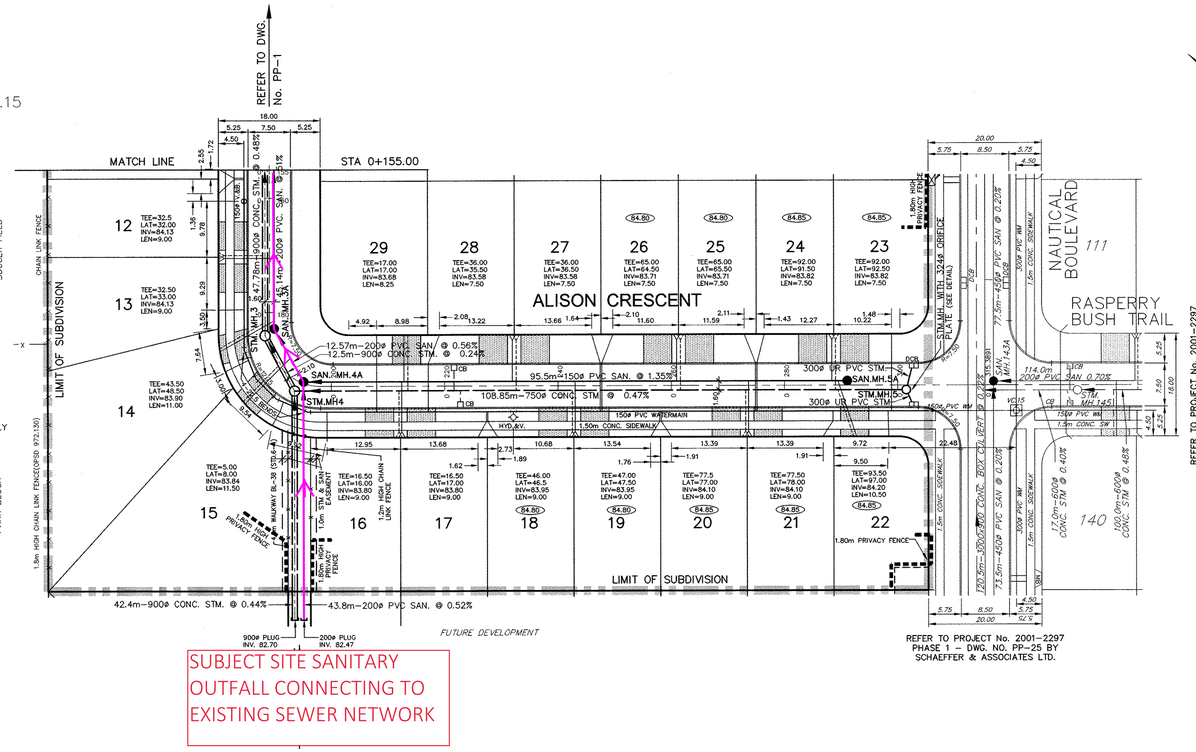
DETAIL OF VC.15
(STD RH 400.02)
N.T.S.



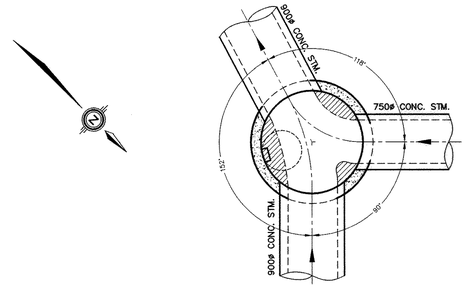
DETAIL OF 324mm DIA. ORIFICE PLATE (STM. MH. AT STA 0+300)
SCALE NTS



STEP JOINT DETAIL
N.T.S.



SUBJECT SITE SANITARY OUTFALL CONNECTING TO EXISTING SEWER NETWORK



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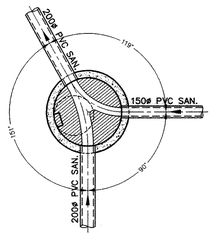

BENCHING DETAIL-SAN.MH. 4A
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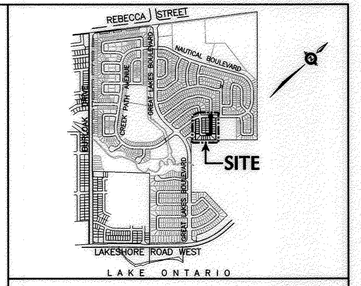


KEY PLAN SCALE N.T.S.

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 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.
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.

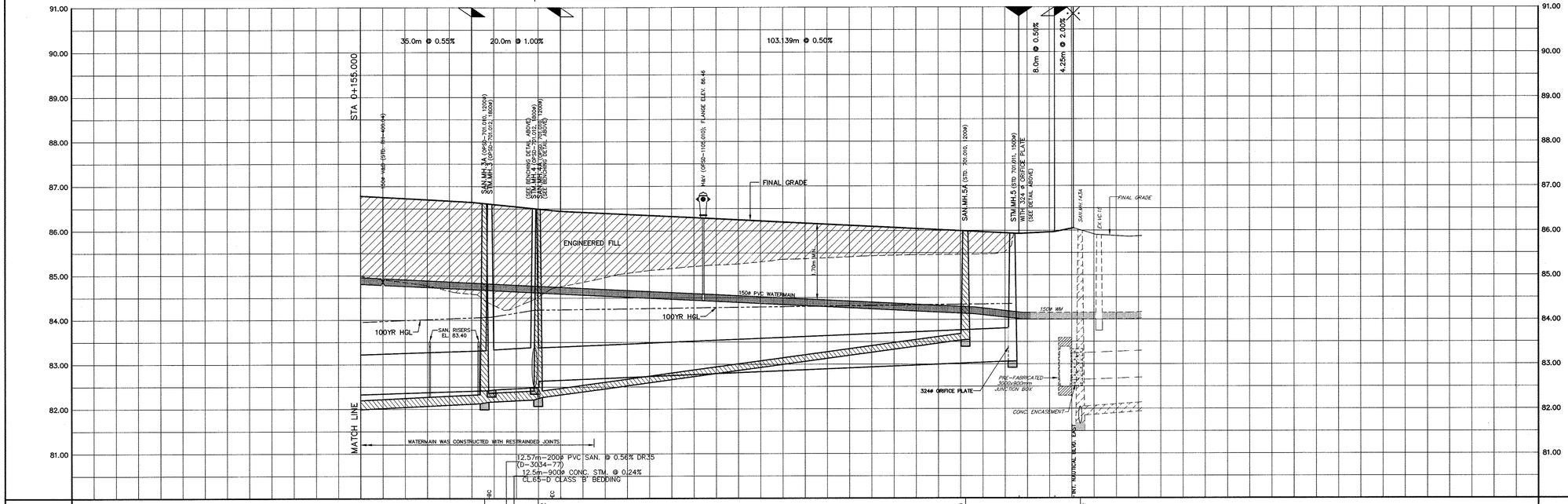
LEGEND

DENOTES LIMIT OF SUBDIVISION

(84.50) 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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m



SANITARY SEWER	45.14m-200ø PVC. SAN. @ 0.51% DR35 (D-3034-77)		SW 82.132 N 82.162	4SC	S 82.232 NE 82.242 NW 82.244	4SC	95.5m-150ø PVC SAN. @ 1.35% DR35 (D-3034-77)							SE 83.540			NE 81.606 SW 81.386	114.0m-200ø PVC SAN. @ 0.70%			SANITARY SEWER
STORM SEWER	47.78m-900ø CONC. STM. @ 0.48% CL.65-D CLASS 'B' BEDDING		SW 82.394 N 82.414		S 82.414 SE 82.424		108.85m-750ø CONC. STM. @ 0.47% CL.65-D, CLASS 'B' BEDDING							SE 83.022			INV. 82.491 BOX CULV. 200x900H INV 82.647	17.0m-600ø CONC. STM. @ 0.40%			STORM SEWER
FINAL ELEVATION	86.782	86.755		86.646	86.607	86.465 86.446		86.346		86.246		86.146		86.046		85.946	85.930	85.970	86.055			FINAL ELEVATION
CHAINAGE	0+155.000	0+160.000		0+180.000	0+183.878	0+198.086 0+200.000		0+220.000		0+240.000		0+260.000		0+280.000		0+300.000	0+303.139	0+311.139	0+315.389			CHAINAGE

No.	Date	By	Revisions
1.	Dec./09		AS CONSTRUCTED

Design	S.P.	Checked	M.N.	Date APRIL 30, 2009
Drawn	J.B.	Checked	P.S.	

Scale: HOR. 1:500 VER. 1:50

References

Field Notes

Municipal
APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
SIGNED: Heinz Hecht DATE: Nov. 25/2009
Development Services Department -TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional
DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.
Ronald MacKenzie Nov. 25/2009
Legislative & Planning Services Department DATE:

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

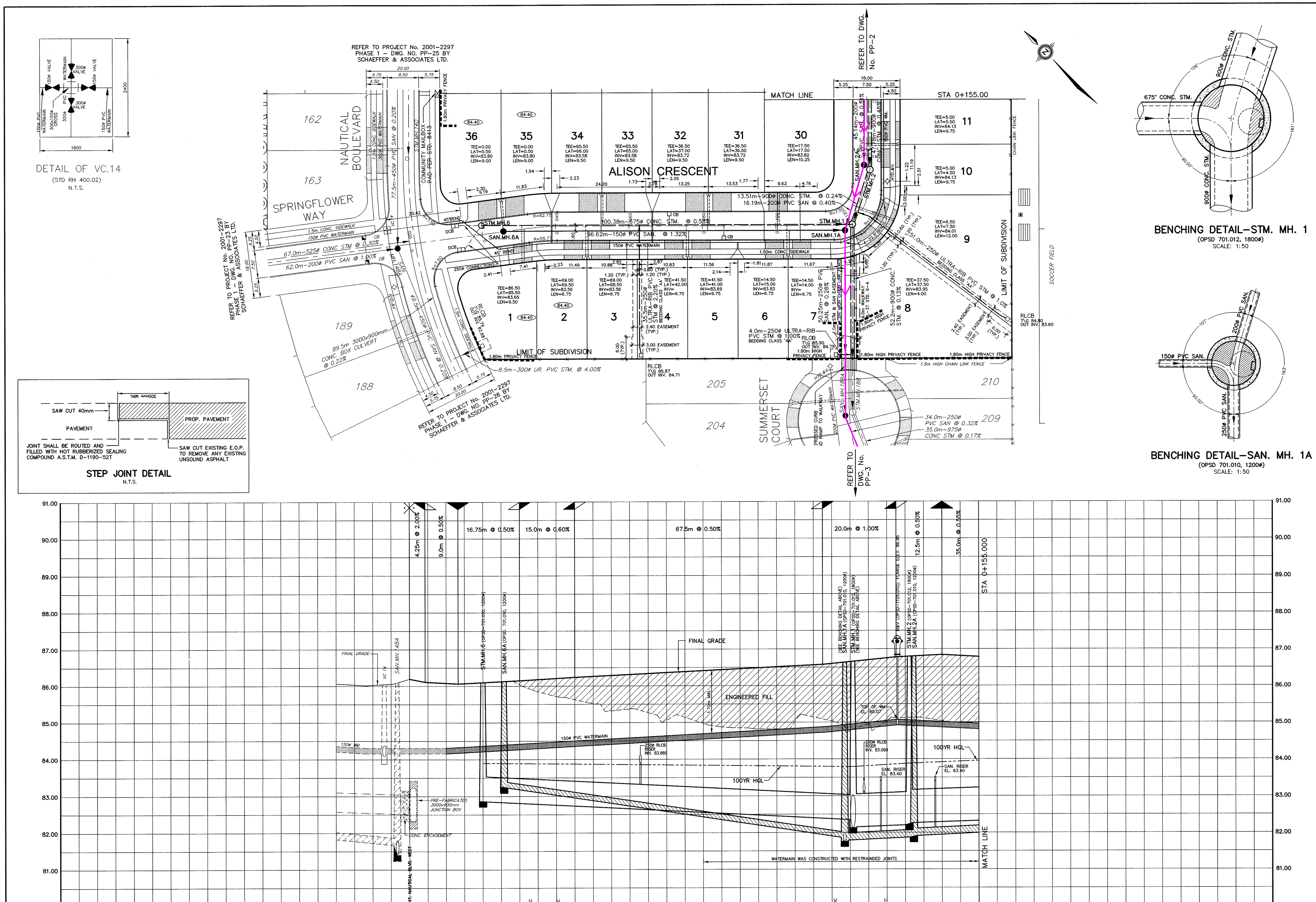
Title
NEW PROVINCE HOMES PHASE 10
PLAN AND PROFILE OF
ALISON CRESCENT
FROM STA. 0+155.000 TO STA. 0+315.389

24T-00004
20M-1071 20R-18569

Municipal Drawing No.	Regional File No.
SD-432.8	DO-669
Contract No.	Drawing No.
2007-3178	PP - 2

H:\As Constructed\3178PH 10-AC\3178_PP-2.dwg, 3/8/2013 10:29:50 AM, mkhan, User 3 (900.00 x 600.00 MM)

ALISON CRESCENT STA. 0+000.000 TO STA 0+155.000 20M-1071



SANITARY SEWER	62.0m-200ø PVC SAN. @ 1.00% · NW 81.660 · SW 81.411 · NE 81.431 · SE 83.130 · 96.62m-150ø PVC SAN. @ 1.32% DR35 (D-3034-77) · NW 81.857 · SW 81.766 · E 81.806 · 16.19m-200ø PVC SAN. @ 0.40% DR35 (D-3034-77) · W 81.870 · NE 81.900 · 45.14m-200ø PVC SAN. @ 0.51% DR35 (D-3034-77)
STORM SEWER	67.0m-525ø CONC. STM. @ 0.30% · NW 82.508 · 3000x900 BOX.CULV. INV.82.321 · SE 82.717 · 100.38m-675ø CONC. STM. @ 0.58% CL.65-D, CLASS 'B' BEDDING · NW 82.137 · SW 82.027 · E 82.077 · 13.51m-900ø CONC STM. @ 0.24% CL.65-D CLASS 'B' BEDDING · W 82.110 · E 82.180 · 47.78m-900ø CONC. STM. @ 0.48% CL.65-D CLASS 'B' BEDDING
FINAL ELEVATION	86.194, 86.109, 86.064, 86.098, 86.148, 86.165, 86.208, 86.210, 86.238, 86.313, 86.413, 86.512, 86.575, 86.608, 86.650, 86.746, 86.775, 86.812, 86.837, 86.782
CHAINAGE	0+000.000, 0+004.250, 0+013.250, 0+020.000, 0+030.000, 0+032.870, 0+040.000, 0+040.418, 0+045.000, 0+060.000, 0+080.000, 0+100.000, 0+112.500, 0+115.849, 0+120.000, 0+129.609, 0+132.500, 0+140.000, 0+145.000, 0+155.000

REBECCA STREET · NAUTICAL BOULEVARD · BURLOAK DRIVE · SITE · LAKESHORE ROAD WEST · LAKE ONTARIO

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 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.
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

(84.50) 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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

No.	Date	By	Revisions
1.	Dec./09		AS CONSTRUCTED

Design	S.P.	Checked	M.N.	Date APRIL 30, 2009
Drawn	J.B.	Checked	P.S.	

Scale: HOR. 1:500 VER. 1:50

References

Field Notes

Municipal
APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
SIGNED: Heinz Hecht DATE: Nov. 25/2009
Development Services Department –TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional
DESIGN OF SANITARY AND WATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.
Ronald MacKenzie Nov. 25/2009
Legislative & Planning Services Department DATE:

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

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

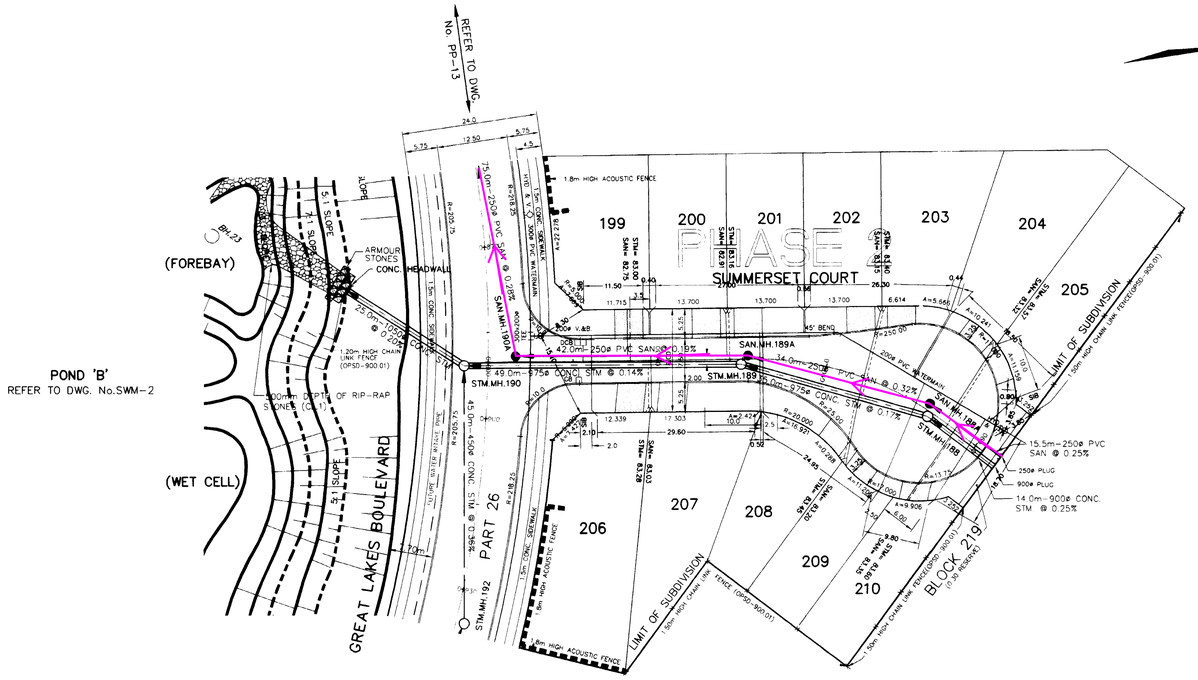
Municipality
THE REGIONAL MUNICIPALITY OF HALTON
OAKVILLE TOWN OF OAKVILLE
ENGINEERING AND CONSTRUCTION DEPARTMENT

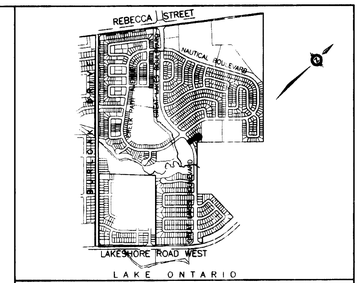
Title 24T-00004
NEW PROVINCE HOMES PHASE 10 PLAN AND PROFILE OF ALISON CRESCENT
FROM STA. 0+000.000 TO STA. 0+155.000
20M-1071 20R-18569

Municipal Drawing No.	Regional File No.
SD-432.8	DO-669
Contract No.	Drawing No.
2007-3178	PP - 1

H:\As Constructed\3178PH 10-AC\3178_PP-1.dwg, 3/8/2013 10:27:03 AM, mkhan, User 3 (900.00 x 600.00 MM)

P.H. 2 Summerset Court





KEY PLAN SCALE N.T.S.

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 VERIFICATED CONSTRUCTION.
2. FOR GENERAL NOTES REFER TO DWG. No. GN-1

LEGEND

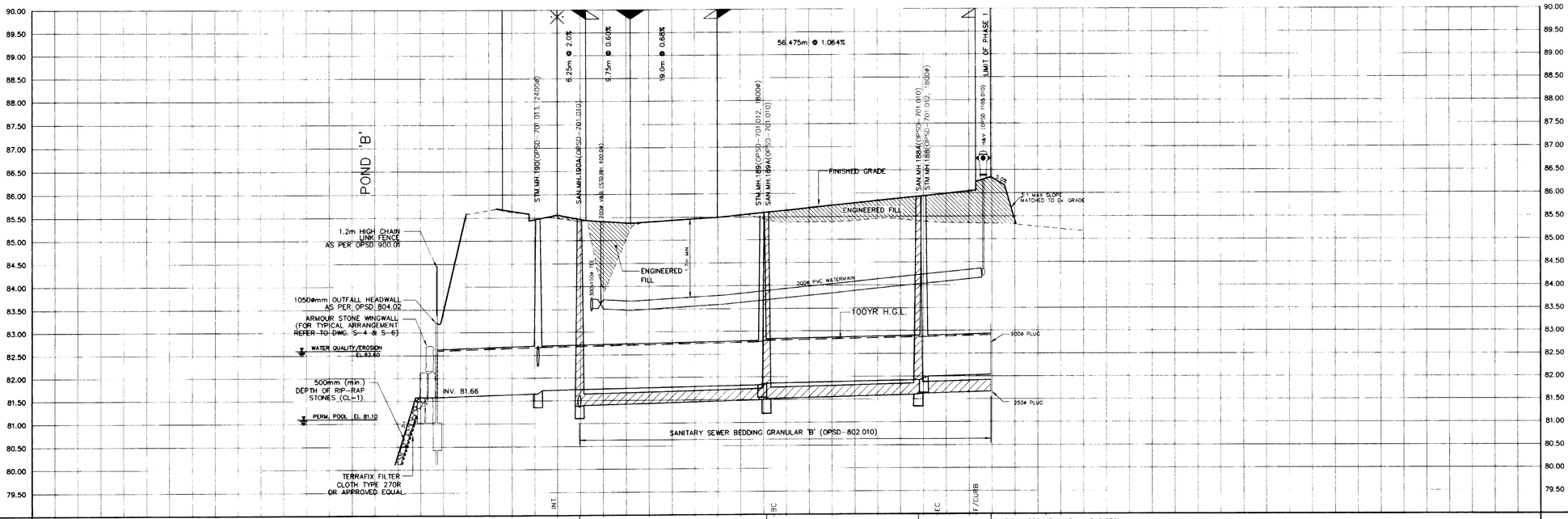
- DENOTES FUTURE DEVELOPMENT
- DENOTES LIMIT OF PHASE CONSTRUCTION
- DENOTES CATCHBASINS WITH ICD TYPE 'A' 20L/Sec.

PAVEMENT STRUCTURE (SUMMERSET COURT):

40mm COMPACTED DEPTH OF H.L. 3 ASPHALT TOP COURSE (COMPACTED TO 97 % LAB DENSITY)
50mm COMPACTED DEPTH OF H.L. 8 ASPHALT BINDER COURSE (COMPACTED TO 97 % LAB DENSITY)
150mm COMPACTED DEPTH OF 19mm CRUSHER RUN LIMESTONE (COMPACTED TO 100 % STANDARD PROCTOR DENSITY)
275mm COMPACTED DEPTH OF 50mm CRUSHER RUN LIMESTONE (COMPACTED TO 100 % STANDARD PROCTOR DENSITY)

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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m



SANITARY SEWER	25.0m-1050ø CONC. STM. @ 0.20% CL. 65-D, CLASS 'B' BEDDING		W 81.38 N 81.41	42.0m-250ø PVC. SAN. @ 0.19% DR-35 (D-3034-77)		S 81.49 NE 81.57	34.0m-250ø PVC. SAN. @ 0.32% DR-35 (D-3034-77)		SW 81.62 NE 81.64	SW 81.670 SAN. PLUG	15.5m-250ø PVC. SAN. @ 0.25% DR-35 (D-3034-77)			SANITARY SEWER
STORM SEWER	HEADWALL N. 81.66	SW 81.71 E. 82.26 N 81.75		49.0m-975ø CONC. STM. @ 0.14% CL. 65-D, CLASS 'B' BEDDING		S 81.82 NE 81.84	35.0m-975ø CONC. STM. @ 0.17% CL. 65-D, CLASS 'B' BEDDING		SW 81.90 NE 81.97	SW 82.034 STM. PLUG	14.5m-900ø CONC. STM. @ 0.25% CL. 65-D, CLASS 'B' BEDDING			STORM SEWER
CENTER LINE ELEVATION			85.558	85.433	85.318	85.413	85.447	85.500	85.713		86.032 86.048			CENTER LINE ELEVATION
CHAINAGE			0+000.000	0+006.250	0+016.000	0+030.000	0+035.000	0+040.000	0+047.286	0+060.000	0+083.048	0+090.000 0+091.475	0+106.743	CHAINAGE

No.	Date	By	Revisions
2.	JUNE 2006	B.J.	AS BUILT - CENTER LINE ELEVATION ADDED
1.	JAN 2003	B.J.	AS BUILT - STORM & SANITARY SEWERS ONLY

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

Scale: HOR. 1 : 500 VERT. 1 : 50

References

Field Notes

Approvals

Municipal
APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
SIGNED: GEORGE TRENKLER ...DATE:... APRIL/11/02
Planning Services Department -TOWN OF OAKVILLE

Regional
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 Work Dept.-Region of Halton — DATE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

LICENSED PROFESSIONAL ENGINEERS — M. NINKOVIC — JUNE 2006 — PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
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

20M-840

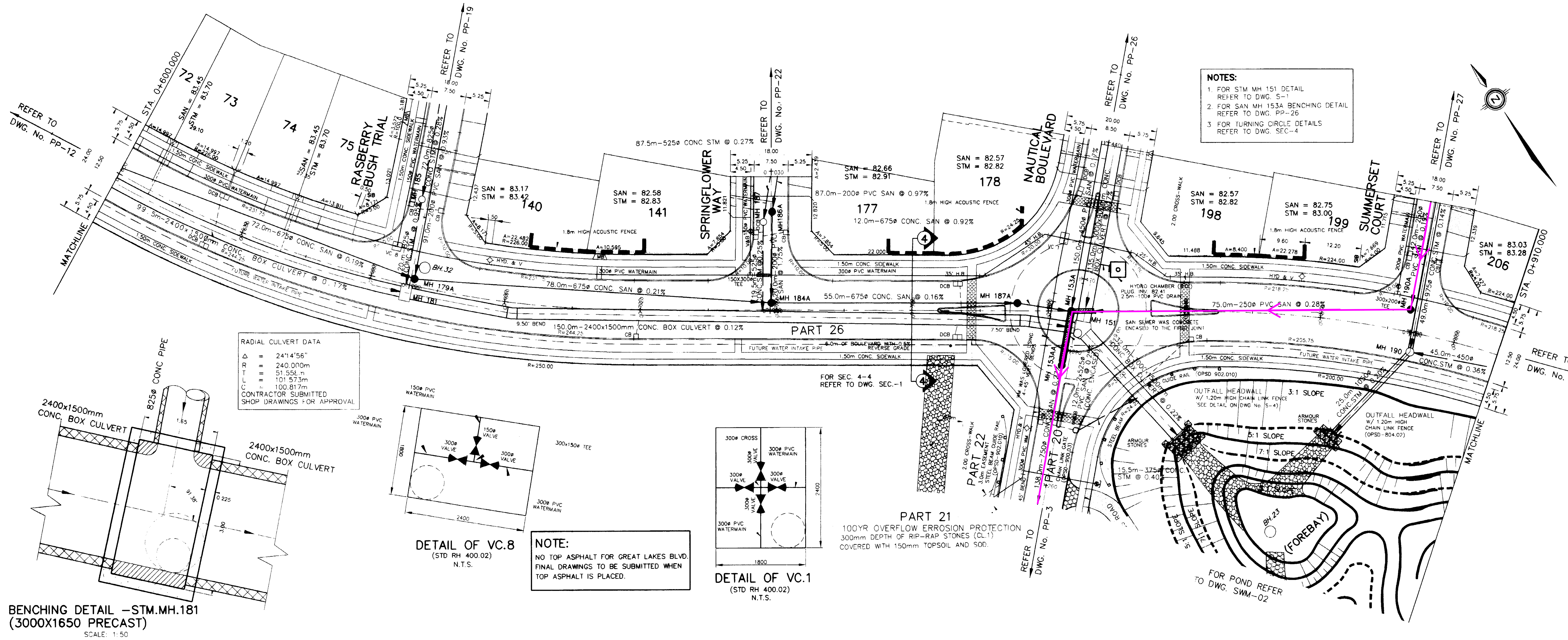
Title
NEW PROVINCE HOMES
PHASE 2
PLAN AND PROFILE OF
SUMMERSET COURT
STA. 0+000.000 TO STA. 0+092.020

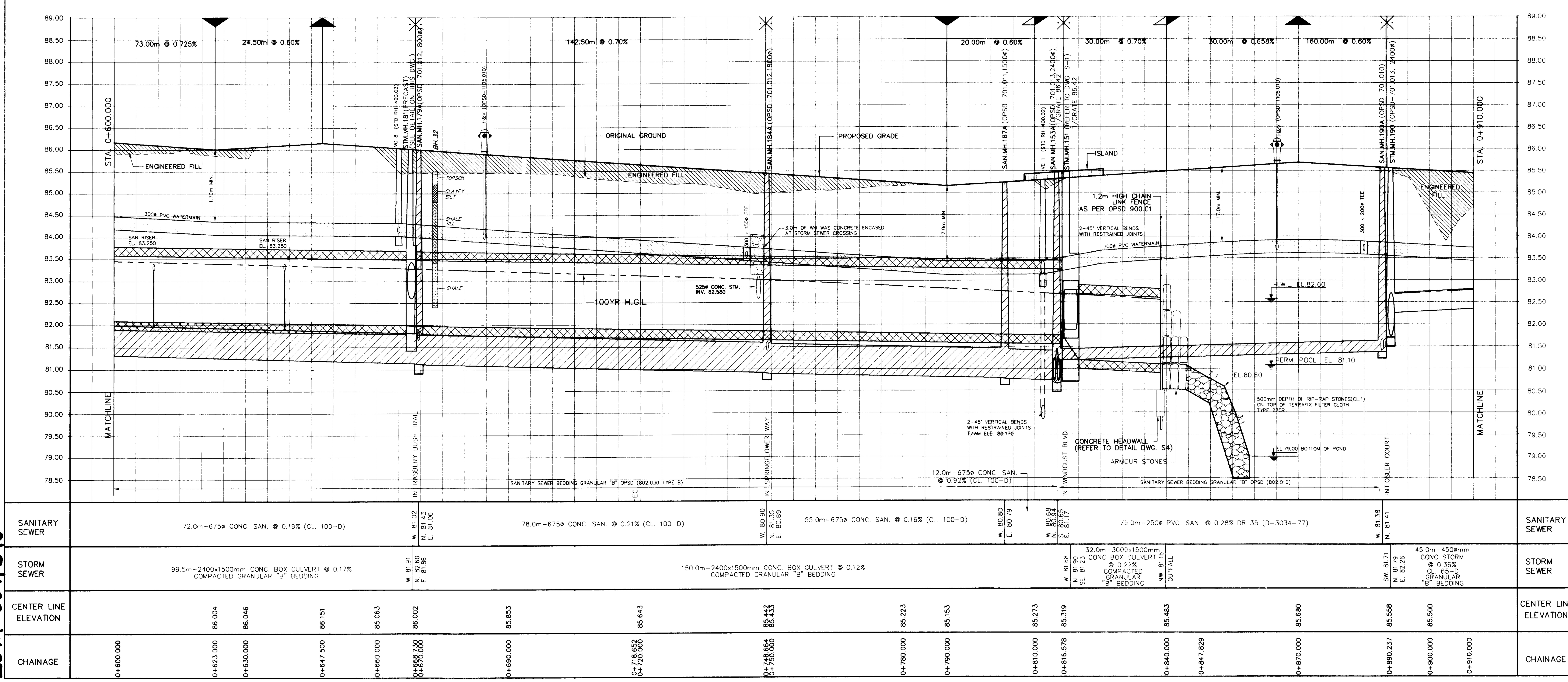
Municipal Drawing No.	Regional File No.
SD-432.1	D0-542
Contract No. 2001-2297	Drawing No. PP-27

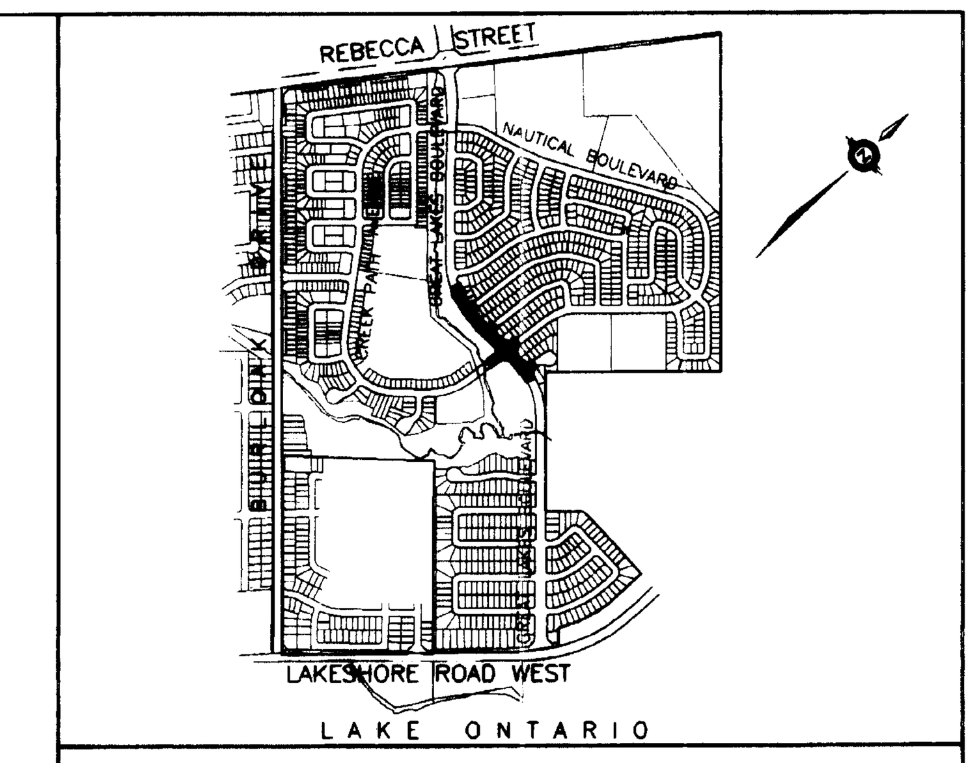
20M-839/840

P.H. 1+2 Great lakes Blvd.

20m-839/840







KEY PLAN SCALE N.T.S.

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

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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071. ELEVATION 79.994m

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 JUNE 2006
Drawn	H.R.	Checked	Z.C.	

Scale: HOR. 1 : 500 VERT. 1 : 50

References

Field Notes

Approvals

Municipal

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

SIGNED: GEORGE TRENKLER DATE: APRIL/11/02

Planning Services Department - TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional

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 Work Dept.-Region of Halton DATE

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC JUNE 2006 PROVINCE OF ONTARIO

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
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-839 AND 20M-840

NEW PROVINCE HOMES PHASES 1 AND 2

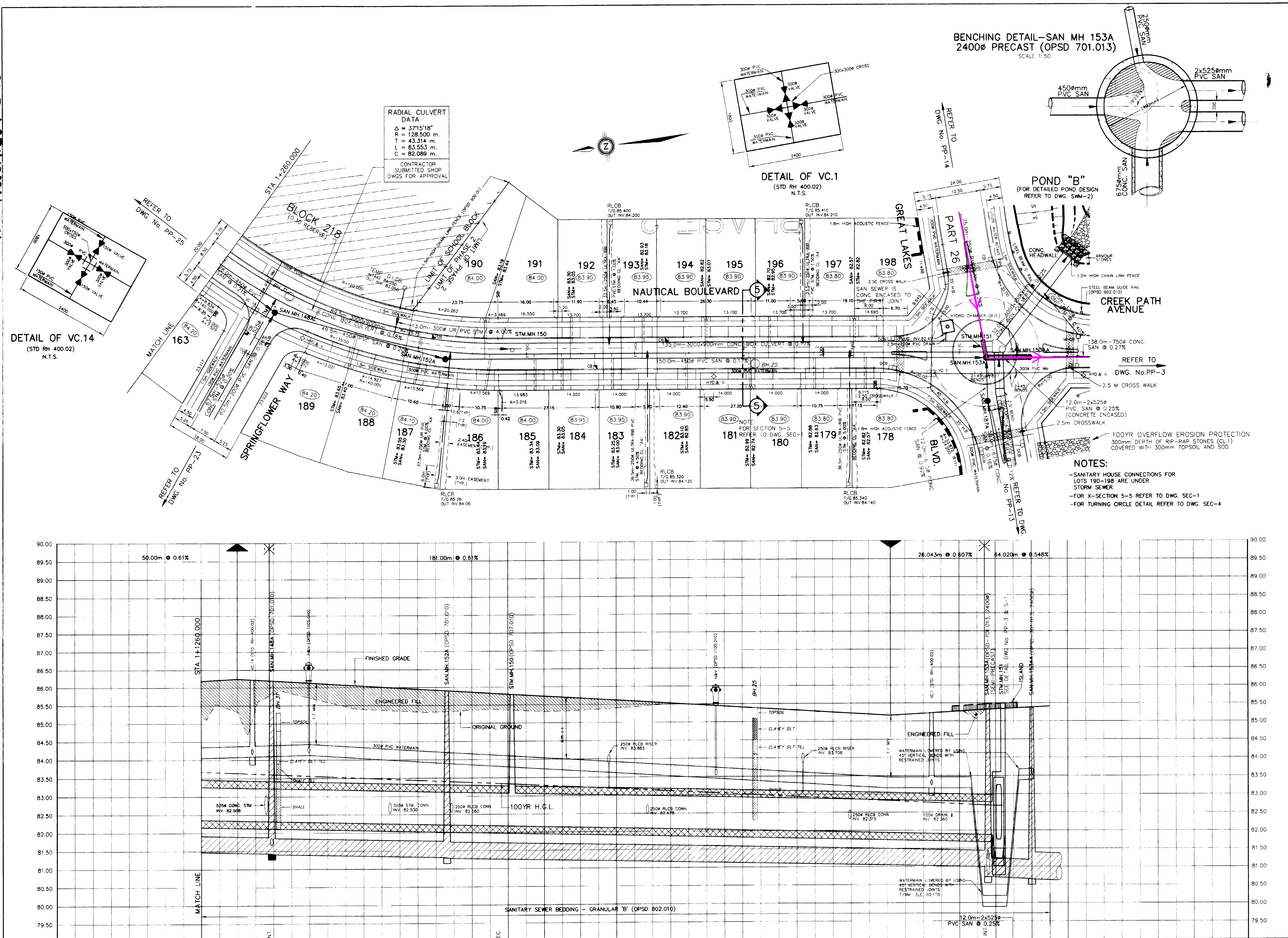
PLAN AND PROFILE OF

GREAT LAKES BOULEVARD

STA. 0+600.000 TO STA. 0+910.000

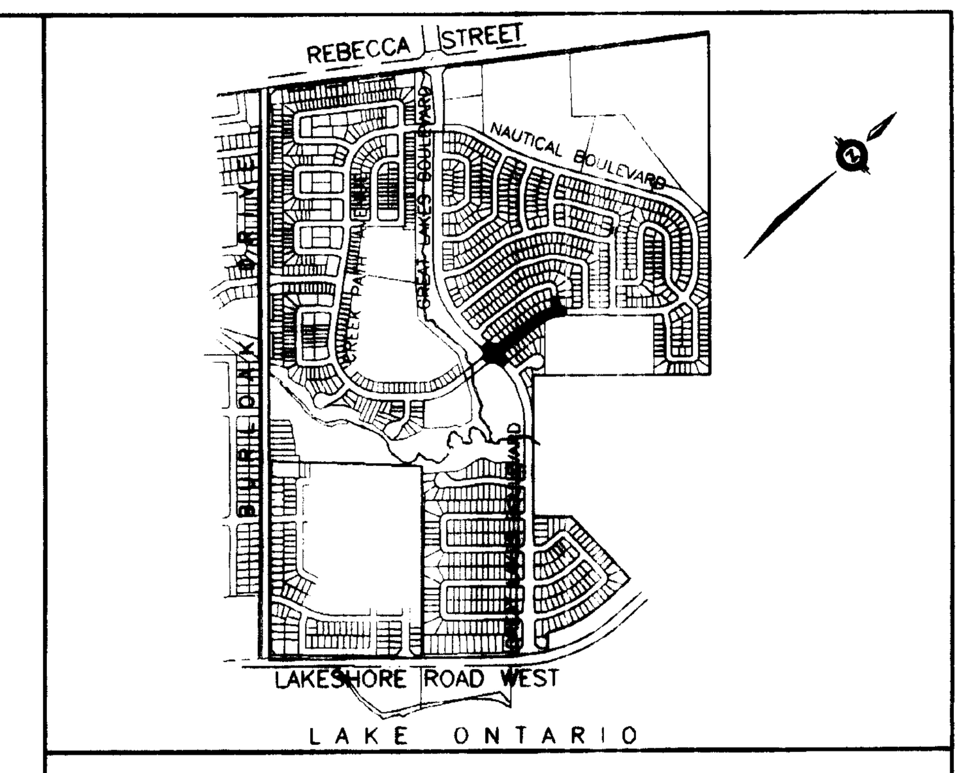
Municipal Drawing No.	Regional File No.
SD-432.1	DO-507 DO-542
Contract No. 2001-2297	Drawing No. PP-13

P.H. 2 Nautical Blvd.



SANITARY SEWER	NE 81.36 / NW 81.54 / SW 81.31 — 49.5m-450ø PVC SAN. @ 0.20% (D-3034-77) — N 81.21 / S 81.19 — 150.0m-450ø PVC SAN. @ 0.17% (D-3034-77) — N 80.94 / E 81.17 / W 80.68 / S 80.65 — N 80.62 / S 80.60 — 138.0m-750ø CONC. SAN @ 0.27% C 302													
STORM SEWER	89.5m-3000x900mm CONC. BOX CULVERT @ 0.18% CLASS 'B' BEDDING — 82.13 — 135.0m-3000x900mm CONC. BOX CULVERT @ 0.17% CLASS 'B' BEDDING — N 81.90 / W 81.68 / SE 81.23 — 32.0m-3000x1500mm CONC. BOX CULVERT @ 0.22%													
CENTER LINE ELEVATION	86.188	86.218	86.248	86.205	86.125	85.941		85.757	85.572	85.388	85.204	85.136	85.276	85.319
CHAINAGE	1+260.000	1+265.000	1+270.00	1+278.867	1+290.000	1+320.000	1+342.156	1+350.000	1+380.000	1+410.000	1+440.000	1+450.000 1+451.000	1+470.000	1+477.043

20M-839/840



KEY PLAN SCALE N.T.S.

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 CONSULTANT'S VERIFICATED CONSTRUCTION.
2. FOR GENERAL NOTES REFER TO DWG. No. GN-1.

LEGEND

DENOTES FUTURE DEVELOPMENT

DENOTES LIMIT OF PHASE CONSTRUCTION

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

(83.95) DENOTES MINIMUM BASEMENT ELEVATION

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 NORTWEST 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 PRODUCTION OF THE CENTRE LINE OF BURLOAK DRIVE. HORIZONTAL CONTROL MONUMENT NO.001653071.
ELEVATION 79.994m

No.	Date	By	Revisions
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

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

Scale: HOR. 1 : 500 VERT. 1 : 50

References

Field Notes

Approvals

Municipal
APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS.
SIGNED: GEORGE TRENKLER DATE: APRIL/11/02
Planning Services Department -TOWN OF OAKVILLE

Bell ☐ Hydro ☐ Gas ☐ Cable ☐

Regional
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 Work Dept.-Region of Halton DATE

LICENSED PROFESSIONAL ENGINEER M. NINKOVIC JUNE 2006 PROVINCE OF ONTARIO

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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. D0-542
Contract No. 2001-2297	Drawing No PP-26