

Functional Servicing Report

**NEIGHBOURHOODS OF DELPHI POINT
DELPHI COURT**

**THE NEIGHBOURHOODS AT
DELPHI POINT INC.**

PREPARED BY:

**C.F. CROZIER & ASSOCIATES INC.
40 HURON STREET, SUITE 301
COLLINGWOOD, ONTARIO
L9Y 4R3**

MARCH 2013

CFCA FILE NO. 226-2678

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1.0 Introduction

CF Crozier & Associates Inc was retained to complete a Functional Servicing Report for the proposed Delphi Court portion of the residential condominium, "Neighbourhoods of Delphi Point". This report has been prepared to support the draft plan application for Delphi Court.

The proposed 12.89 ha development is located in the Town of The Blue Mountains, County of Grey and is situated on the north side of Highway 26, directly across from Georgian Peaks Ski Club. Refer to Figure 1 for the site location. Delphi Court will consist of 7 townhouse units, 2 semi-detached units, and 2 existing chalets.

2.0 Background

In July 2009 the Developer (The Neighbourhoods at Delphi Point Inc.) received an Official Plan and Zoning amendment approval for the Delphi Court lands. The current Draft Plan reflects input received during pre-consultation discussions amongst the proponent, the Town, MTO and Grey County. A significant change is the removal of the road connection between Delphi Court and Street E on the Phase 2 lands.

RJ Burnside & Associates Limited prepared a report entitled "Functional Servicing and Stormwater Management Report" (October 2003), which in turn was updated by the "Supplementary Servicing and Stormwater Report" (January 2005), prepared by C.F. Crozier & Associates. This was in support of rezoning and draft plan applications for the Delphi Point and Phoebus applications and was presented to the Ontario Municipal Board. Other supporting studies were undertaken to support the draft approval of the Phoebus and Delphi Point applications. These included environmental work prepared by Gartner Lee Limited and costal engineering by Shoreplan Engineering Limited. The current application has incorporated much of the engineering and environmental recommendations presented in these reports where applicable.

This Functional Servicing Report is intended to meet the requirements for the approval of the draft plan application for the subject property. A Stormwater Management Implementation Report has been prepared and submitted under separate cover.

3.0 Sanitary Sewage System

Municipal sanitary services have been recently constructed for the Camperdown Service Area. The sanitary sewer system was commissioned in the fall of 2006.

A municipal pumping station is located west of the Delphi Lane and Highway 26 intersection. A low pressure sewer line exists along the north side of the Highway 26 right-of-way and across Delphi Lane, and it outlets to the pumping station. As part of the servicing of the first phase of the overall Neighbourhoods of Delphi Point project a low pressure forcemain was installed on Delphi Lane. Both of these forcemains are public systems, owned and operated by the Town. A similar low pressure forcemain is proposed to service Delphi Court and the 11 units; however this system will be private and operated by the condominium corporation. Waste water generated from Delphi Court will be conveyed to the pumping station via the Delphi Lane and Highway 26 forcemains. Refer to Figures 3 and 4 for details of the proposed system.

4.0 Potable Water Supply

One connection to the existing 200mm diameter municipal watermain along Delphi Lane is proposed.

Potable water for Delphi Court will be provided by a 200mm diameter watermain as per Figure 3 and 4. The watermain will be capped at the cul-de-sac and an auto-flusher system will be installed to ensure required chlorine residuals are maintained for this dead-end watermain.

Fire hydrants will be spaced as required to provide the necessary fire protection.

Our office prepared a design brief for the Town of The Blue Mountains entitled “Water Distribution Update” (July 2009) for the entire Neighbourhoods of Delphi Point Development. In this report the following conclusions were reached.

1. The existing water distribution system surrounding the Neighbourhoods of Delphi Point development has suitable pressure and flows to supply the proposed development.
2. A 200mm diameter watermain will be required to provide suitable velocities and adequate fire flow up to the level of protection as suggested by the Fire Underwriter’s Survey for the subject development.
3. System pressure within all phases of the proposed development are acceptable based on MOE standards under ADD, MDD, PHD and fire flow simulations.

These conclusions are applicable to the Delphi Court lands. Detailed methodology and modeling results are available upon request.

5.0 Road Standard

Delphi Court will be a privately owned roadway and will intersect with Delphi Lane, which is a public roadway constructed as part of Phase 1A of the overall project. This private condominium roadway will consist of a 6 metre wide asphalt platform complete with curb and gutter and storm sewer. An adequate turning radius for emergency vehicles has been provided in the cul-de-sac, and Figure 5 illustrates the typical private roadway section.

6.0 Utilities

The subject property will be serviced with natural gas, telephone, cable TV and hydro. All such utilities are available along Delphi Lane and Highway 26.

7.0 Conclusions

The Plan of Condominium for Delphi Court will be fully serviced by low pressure sanitary system and watermain. Based on the foregoing, we conclude that the proposed Plan of Condominium can be adequately serviced.

Respectfully Submitted,

C.F. Crozier & Associates Inc.



Kevin Morris, P.Eng.

KM:bh

J:\200\226 - Centennial Construction & Contracting\2678\Reports\Delphi Court FSR March 2013 DRAFT.doc

APPENDIX A

Preliminary Storm Sewer Design Sheet



**CROZIER
& ASSOCIATES**
Consulting Engineers

Project: Neighbourhoods of Delphi Point
 Project No.: 226-2678
 File: Forcemain Design
 Prepared by: J.O./K.J.F.
 Date: March 7, 2013

Phase 2 - East

Zone Number	Connects to Zone	No. of Pumps	Accum. Pumps	Max on	Max flow (L/s)	Pipe Dia. (mm)	Max Velocity (m/s)	Length (m)	Friction Loss This Zone (m)	Accum Loss (m)	Max. Elev. Main	Lowest Pump Elev.	Elevation Difference (m)
1	4	9	13	4	2.76	50	2.20	50	12.51	19.94	180.50	187.50	2.00
2	1	4	4	3	2.07	50	1.65	52	7.63	27.57	180.50	178.50	2.00
3	5	20	31	6	4.14	75	1.42	100	6.80	11.32	180.50	178.00	2.50
4	5	9	22	5	3.45	75	1.18	60	4.50	7.43	180.50	178.50	2.00
5	5	7	60	7	4.83	75	1.65	50	9.05	4.52	180.50	179.50	1.00
15	3	3	3	2	1.38	50	1.10	33	6.93	13.61	180.50	178.00	2.50
16	3	8	8	3	2.07	50	1.65	60	14.68	20.13	181.00	179.00	2.00

Phase 2 - West

Zone Number	Connects to Zone	No. of Pumps	Accum. Pumps	Max on	Max flow (L/s)	Pipe Dia. (mm)	Max Velocity (m/s)	Length (m)	Friction Loss This Zone (m)	Accum Loss (m)	Max. Elev. Main	Lowest Pump Elev.	Elevation Difference (m)
9	8	2	2	2	1.38	50	0.70	76	1.759	1.76	178.50	177.50	1.00
10	8	17	17	4	2.76	50	1.41	125	10.444	12.20	177.50	177.00	0.50
8	7	17	36	6	4.14	50	2.11	130	23.016	23.02	177.50	177.00	0.50
7	MH 4	4	40	6	4.14	75	2.11	70	12.570	12.57	177.50	177.00	0.50

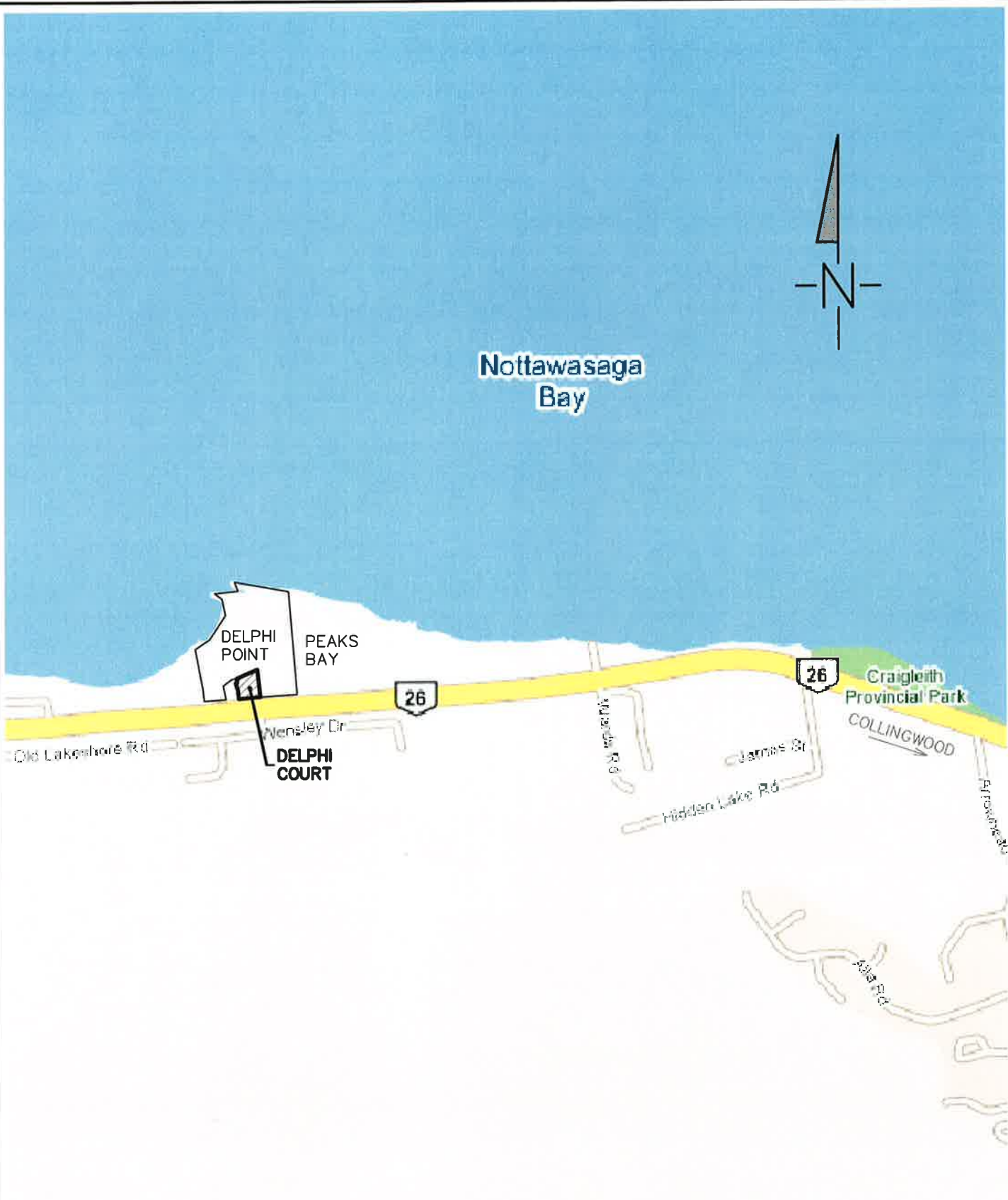
Delphi Court


Zone Number	Connects to Zone	No. of Pumps	Accum. Pumps	Max on	Max flow (L/s)	Pipe Dia. (mm)	Max Velocity (m/s)	Length (m)	Friction Loss This Zone (m)	Accum Loss (m)	Max. Elev. Main	Lowest Pump Elev.	Elevation Difference (m)
6	6	11	11	2	2.76	50	2.20	65	7.670	7.67	181.00	179.00	2.00


Friction loss calculations based on roughness coefficient C of: 100

FIGURES

Figure 1:	Site Location
Figure 2:	Delphi Court Draft Plan
Figure 3:	General Servicing Plan
Figure 4:	Plan & Profile of Delphi Court
Figure 5:	Typical 7.0 m Common Element Cross Section

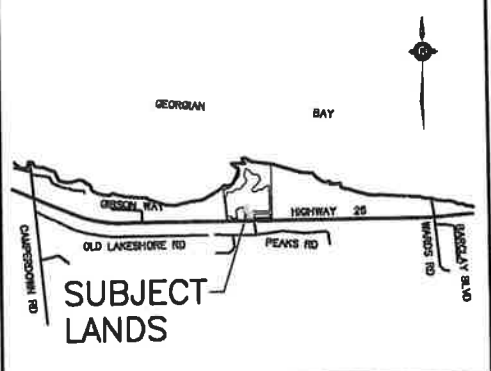
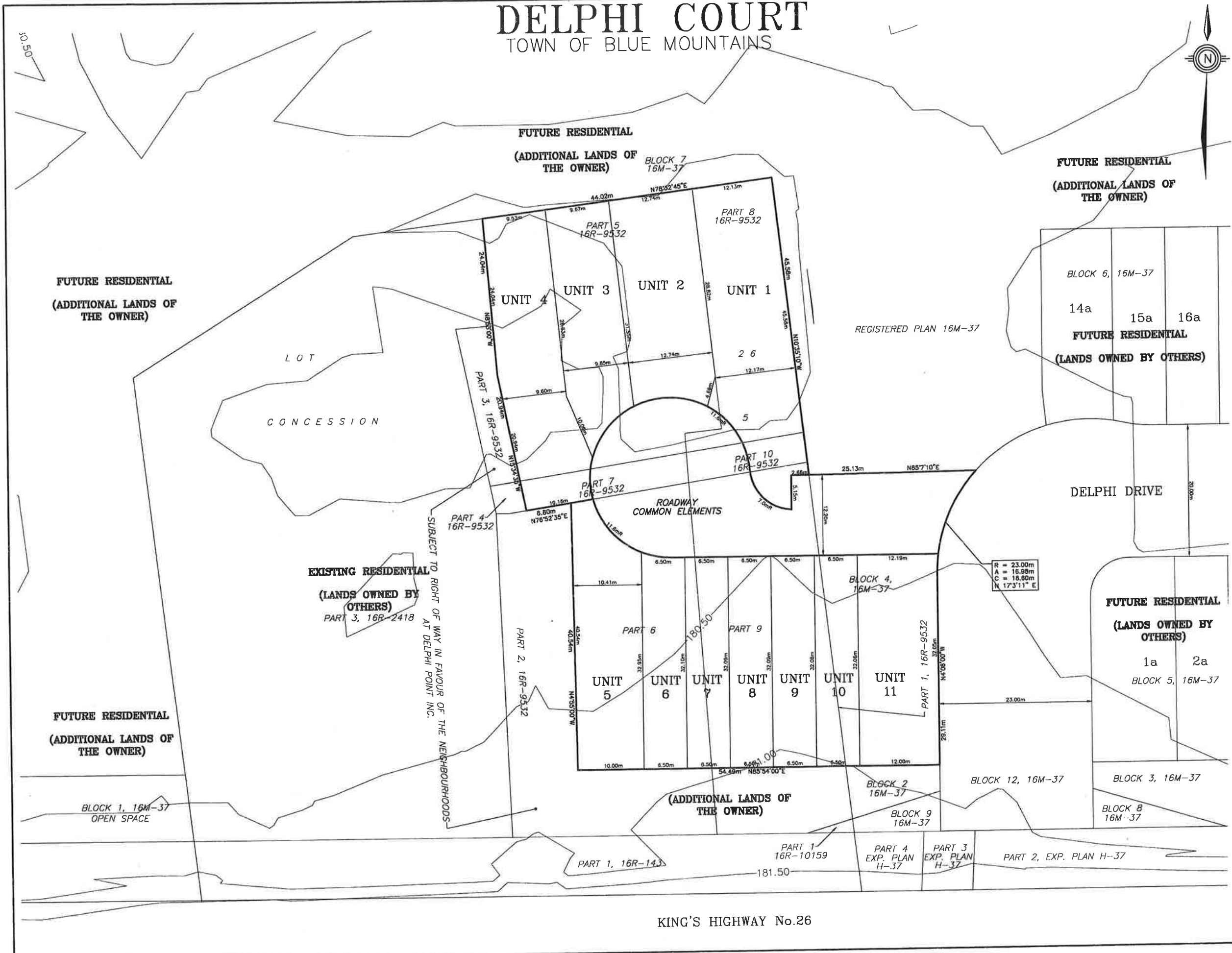


 = SUBJECT WORK

Project		DELPHI COURT TOWN OF THE BLUE MOUNTAINS		
Drawing		SITE LOCATION PLAN		
			CROZIER & ASSOCIATES Consulting Engineers	THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3 705 446-3510 T 705 446-3520 F WWW.CROZIERCA INFO@CROZIERCA
Drawn By	J.O.	Check By	K.M.	Project No. 226-2678
Scale	N.T.S.	Date	03/11/2013	Drawing No. FIG. 1

DELPHI COURT

TOWN OF BLUE MOUNTAINS



KEY PLAN
(N.T.S.)

DELPHI COURT
VACANT LAND
DRAFT PLAN OF CONDOMINIUM

LEGAL DESCRIPTION
BLOCK 4 REGISTERED PLAN 16M-37 AND PART OF LOT 26 CONCESSION 5 (FORMERLY TOWNSHIP OF COLLINGWOOD) TOWN OF BLUE MOUNTAINS COUNTY OF GREY

OWNER'S CERTIFICATE
THE NEIGHBOURHOODS AT DELPHI POINT INC. BEING THE REGISTERED OWNERS, WE HEREBY AUTHORIZE UPPER CANADA CONSULTANTS TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE GREY COUNTY PLANNING DEPARTMENT FOR APPROVAL.

F:\0555\Green files\rwh_signiture.tif
DATE

SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY SHOWN ON THIS PLAN

PAUL B. THOMSEN OLS
ONTARIO LAND SURVEYOR
ZUBEK EMO, PATTEN & THOMSEN LTD.
COLLINGWOOD
DATE

REQUIREMENTS OF SECTION 51(17) OF THE PLANNING ACT

- a) SEE PLAN
- b) SEE PLAN
- c) SEE PLAN
- d) SEE PLAN
- e) SEE PLAN
- f) SEE PLAN
- g) SEE PLAN
- h) MUNICIPAL WATER
- i) SAND, SILT
- j) SEE PLAN
- k) MUNICIPAL SAN.
- l) SEE PLAN

LAND USE SCHEDULE

LAND USE	UNITS	NO OF UNITS	AREA(m ²)	%AREA
SINGLE FAMILY	UNIT 1,2	2	948	21.64
SEMI	UNIT 3,4	2	780	17.81
TOWNHOUSES	UNIT 5,6,7,8,9,10,11	7	1812	41.37
ROADWAY			840	18.18
TOTAL		11	4380	100.00
DENSITY			25.114u/ha	

REV#	DESCRIPTION	DATE	BY
0	ISSUED FOR APPROVAL		

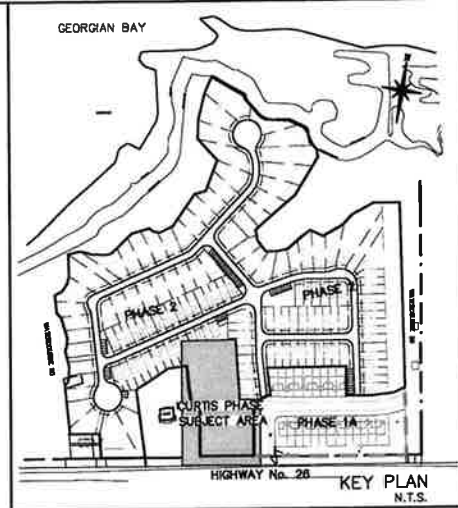
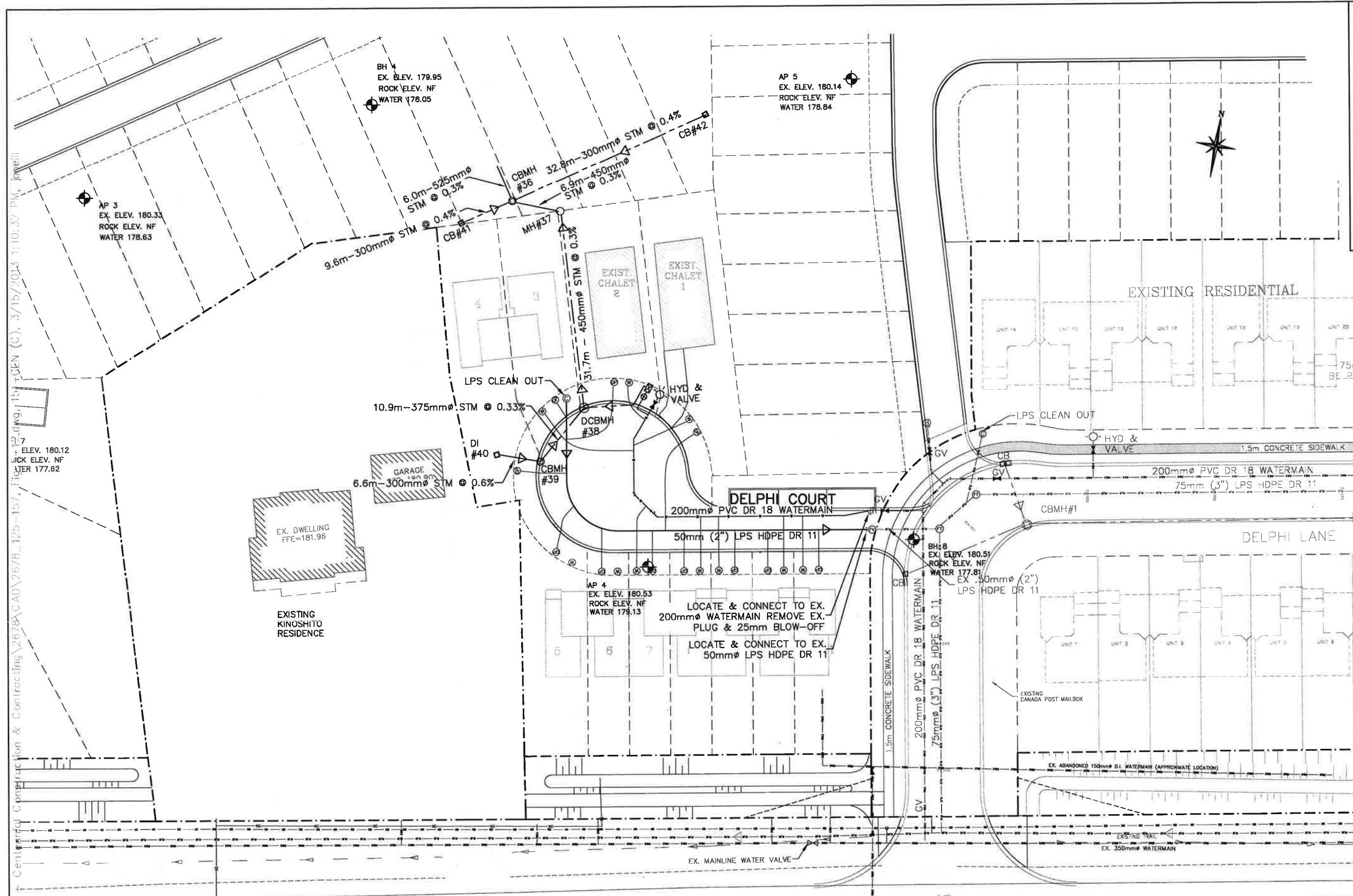
DRAWN BY: B.V. DATE: FEBRUARY 15, 2013
SCALE: 1 : 250 DRAWING No: 0555-DP

UPPER CANADA CONSULTANTS
ENGINEERS/PLANNERS

281 Marlborough Rd. #1
St. Catharines, Ontario
L2W 1A1
Phone: (905) 886-9400
Fax: (905) 886-9274

FIG. 2

KING'S HIGHWAY No.26



LEGEND

EXISTING FEATURES (EX)

- EX U³ EX UTILITY POLE
- EX BELL PED
- EX LIGHT STD
- EX DITCH
- EX U/G GAS MAIN
- EX LPS FORCEMAIN
- EX U/G BELL
- EX WATERMAIN & VALVE
- EX SAN SEWER & MH
- EX STM SEWER & MH
- EX FIRE HYD.
- EX STREET SIGN
- EX CANADA POST MAIL BOX

PROPOSED FEATURES (PR)

- PR WATER SERVICE
- PR SANITARY SERVICE - GRAMTY
- PR SANITARY SERVICE - LPS
- PR WATERMAIN & VALVE
- PR STM SEWER & MH
- PR SAN SEWER & MH
- PR LPS HDPE DR 11
- PR LPS ISOLATION VALVE
- PR LPS CLEAN OUT
- PR LPS TEE
- PR LPS BEND
- FIRE HYDRANT & VALVE
- W/M VALVE
- STOP SIGN
- CANADA POST MAILBOX
- DOUBLE CATCHBASIN
- CATCHBASIN
- STREET NAME SIGN
- PR 25mm BLOW-OFF

Central Construction & Contracting \2678\CAD\2678_125-157_Fig 3.dwg, 157 GEN (C), 3/15/2013 1:10:32 PM, jowell

1. This drawing is the exclusive property of C.F. Crozier & Associates Inc. and the reproduction of any part without prior written consent of this office is strictly prohibited.

2. The contractor shall verify all dimensions, levels, and returns on site and report any discrepancies or omissions to this office prior to construction.

3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.

4. Do not scale the drawings.

5. All existing underground utilities to be verified in the field by the contractor prior to construction.

GEODETIC BENCHMARKS	
BM# 1 IRON PIPE WITH BRASS CAP, NORTH SIDE OF HWY, 0.3km EAST OF PEAKS ROAD, 5.2m WEST OF HYDRO POLE #37.	ELEV. = 181.444m
TEMPORARY BENCHMARKS	
BM# 2 N.W. CORNER OF TRANSFORMER #896 PAD ON STREET 'A' IN FRONT ON UNITS 9 AND 10	ELEV. = 181.753m

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
0	ISSUED FOR REVIEW	07/29/2009
1	SECOND SUBMISSION	03/08/2013

Engineer

K. A. MORRIS

LICENCED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

Project
NEIGHBOURHOODS OF DELPHI POINT TOWN OF THE BLUE MOUNTAINS CURTIS PHASE
Drawing
GENERAL SERVICING PLAN

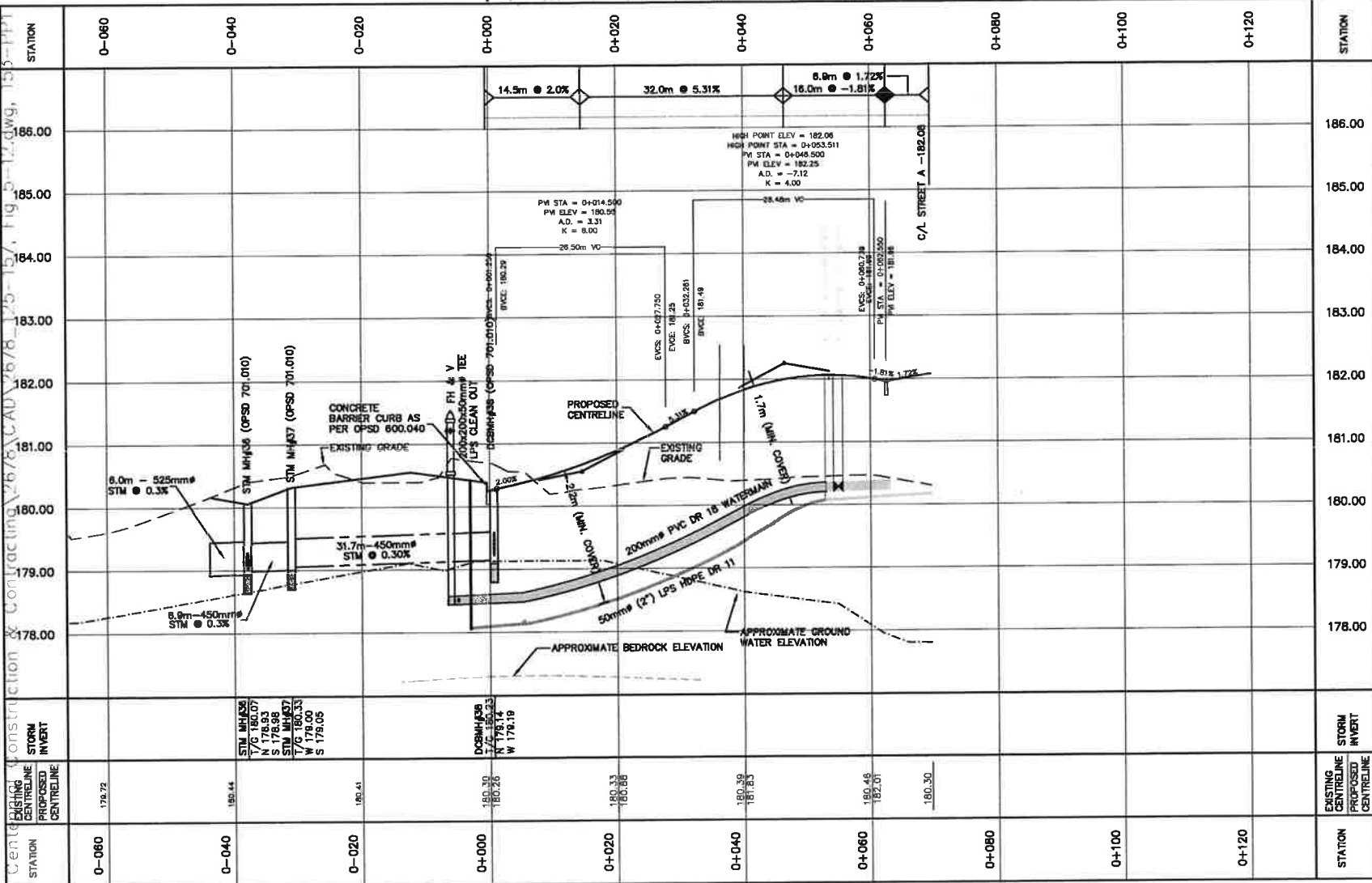
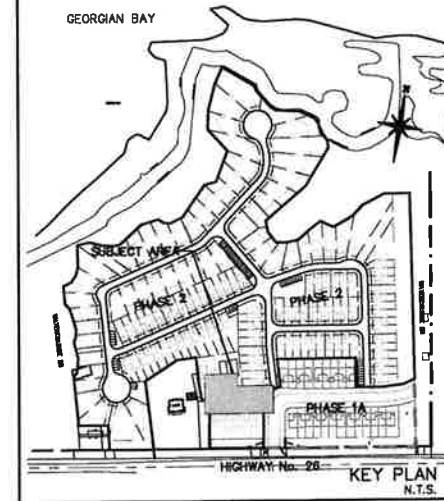
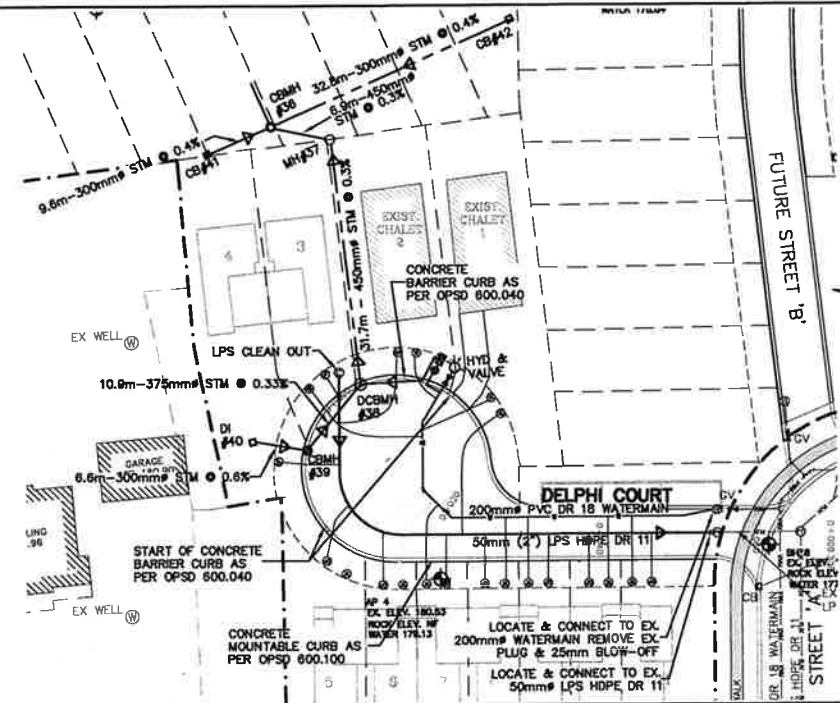
Drawn By	J.O.	Check By	K.J.F.	Project No.	226-2678
Scale	1:600	Date	08/21/2009	Drawing No.	FIG 3

CROZIER & ASSOCIATES
Consulting Engineers

THE HARBOUR EDGE BUILDING
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705-446-3510 T
705-446-3520 F
WWW.CROZIER.CA
INFO@CROZIER.CA

C:\315\2013\11232 PM, jonell

6 Centreline Construction & Contracting 7676 CAD 7676-157 Fig 5-12.dwg 15-PP1



1. This drawing is the exclusive property of C.F. Crozier & Associates Inc. and the reproduction of any part without prior written consent of this office is strictly prohibited.
 2. The contractor shall verify all dimensions, levels, and depths on site and report any discrepancies or omissions to this office prior to construction.
 3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.
 4. Do not scale the drawings.
 5. All existing underground utilities to be verified in the field by the contractor prior to construction.

GEODETTIC BENCHMARKS	
BM# 1 IRON PIPE WITH BRASS CAP, NORTH SIDE OF HWY, 0.3km EAST OF PEAKS ROAD, 5.2m WEST OF HYDRO POLE #37.	ELEV. = 181.444m
TEMPORARY BENCHMARKS	
BM# 2 N.W. CORNER OF TRANSFORMER #896 PAD ON STREET 'A' IN FRONT ON UNITS 9 AND 10	ELEV. = 181.763m

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
0	ISSUED FOR REVIEW	07/29/2008
1	SECOND SUBMISSION	03/08/2013

Engineer

Engineer

Project	NEIGHBOURHOODS OF DELPHI POINT TOWN OF THE BLUE MOUNTAINS CURTIS PHASE
Drawing	PLAN & PROFILE STREET 'G' (STA 0+000-0+069)

Drawn By	J.O.	Check By	K.J.F.	Project No.	226-2676
Scale	1:1000	Date	07/10/2009	Drawing No.	FIG 4

THE HARBOUREDGE BUILDING
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705-446-3510
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

7.0m - ROAD CROSS-SECTION

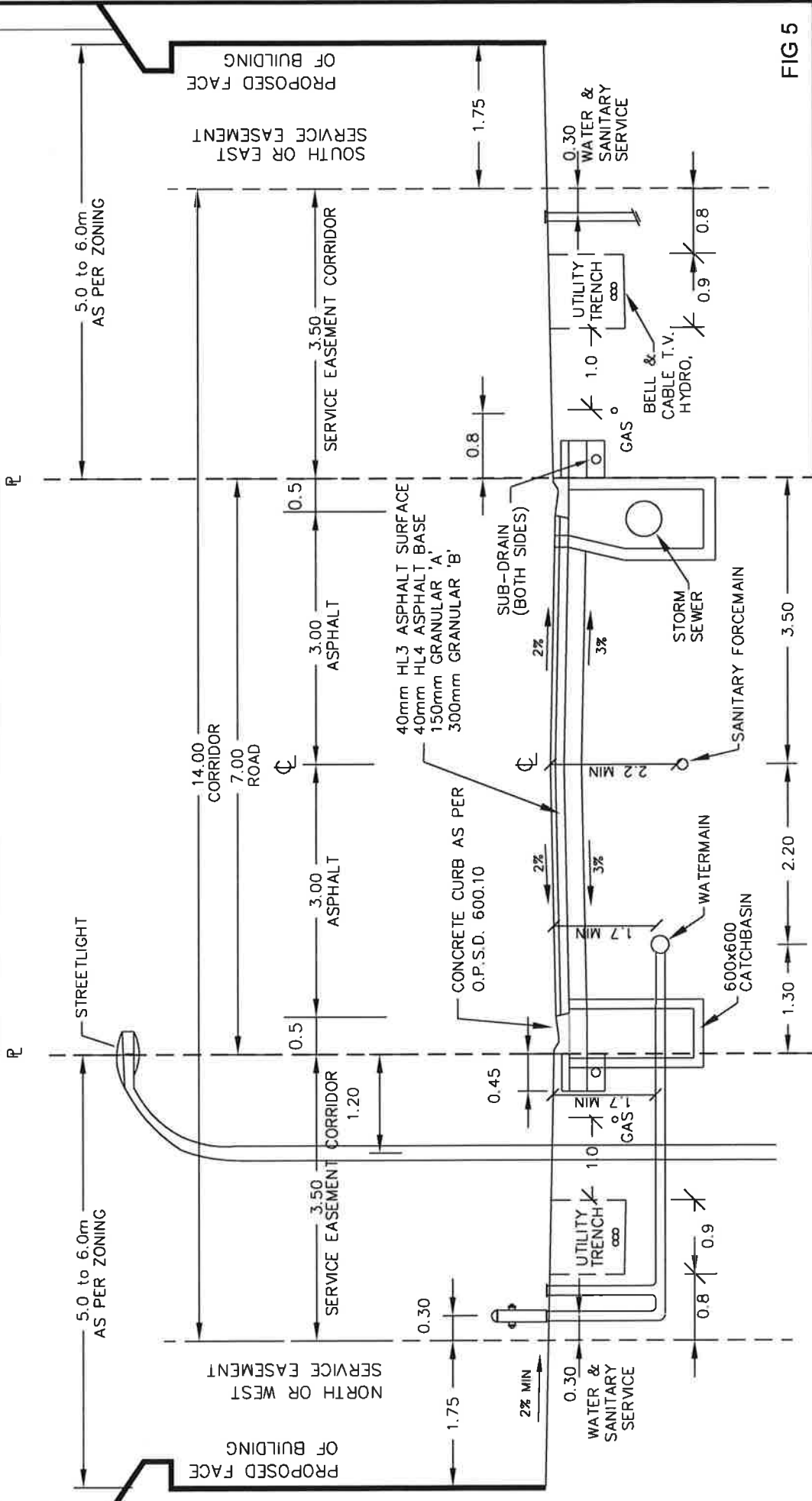


FIG 5

NEIGHBOURHOODS OF DELPHI POINT	
TOWN OF THE BLUE MOUNTAINS	
7m COMMON ELEMENT TYPICAL ROAD STANDARD	
SCALE: 75	CHECKED: JF
DRAWN: JO	DATE: MAR 2013
DRAWING: 7.0m ROW	

- NOTES:
1. TOPSOIL TO BE REMOVED TO ITS FULL DEPTH ALONG ENTIRE WIDTH OF ROAD ALLOWANCE BY CONTRACTOR.
 2. BOULEVARD - 75mm TOPSOIL AND SEED.
 3. DEPTH FOR ALL UTILITIES 0.9m MIN.
 4. SITE SPECIFIC TRANSFORMER LOCATIONS REQUIRED. CONSIDER EXPLOSION PROOF TRANSFORMERS WITH 1.0m SEPARATION TO BUILDING