



Technical Memorandum

To: Syed Rizvi – Town of Oakville Date: 2021-01-08

Cc: Adam Cairns, Star Oak Developments Limited
Christopher Gordon – CGH Transportation

From: Mark Crockford, P.Eng. Project Number: 2020-108

Re: Star Oak North Oakville (Part Lot 16, Concession 1)-Neighbourhood 9/10/11 Transportation Impact Study Addendum

1 Introduction

To support several residential developments in the Neighbourhood 9/10/11 areas of North Oakville, a Transportation Impact Study (TIS) was prepared and finalized in late May 2020. This study used the initial concept plan for each development to develop a TIS that examined the overall impact of the subject developments on the transportation network. The Neighbourhood 9/10/11 TIS, referred to herein as the TIS, forms the basis for this memo. This addendum accompanies the the Neighbourhood 9/10/11 TIS.

This addendum has been prepared to support Star Oak’s development and will examine the changes between the original concept plan considered in the TIS and the current plan that is being put forward. This includes examining the unit count and type, preparing an updated trip generation (using the same factors as those presented in the TIS), and, if significant changes to the trip generation are noted, providing updated Synchro results at key Study Area intersections.

2 Site Plan Comparison

The previous concept plan considered in the TIS is included as Attachment 1. The updated plan, to be analyzed through this memo, is included as Attachment 2. Table 1 summarizes the unit count changes between the previous concept and the updated plan.

Table 1: Land Use Statistic Comparison

	Single Family Detached Housing LUC 210	Multifamily Housing (Low-Rise) LUC 220
Original	105	63
Updated	68	141
Change	-37	78
% Change	-35%	123%

As shown above, the revised plan would reduce the single family detached units by 37 (35% of the total number of detached dwellings) and increase the number of townhouse units by 78 (123% of the total number of townhouse units). Due to the change in unit counts the trip generation has been examined to determine if the proposed changes would significantly differ relative to the trip generation originally considered. The trip generation equations for the townhouse units, and single family detached units were used in the TIS as the rates produced using these equations were within the range of rates listed in the data statistics for each land use code. The trip generation factors used for each of the land uses are summarized in Table 2.

Table 2: ITE Trip Generation Factor

	Single Family Detached (210)	Multifamily Housing (Low-Rise) LUC 220
AM Peak	$T = 0.71(X) + 4.8$	$\ln(T) = 0.95 \ln(T) - 0.51$
PM Peak	$\ln(T) = 0.96 \ln(T) + 0.20$	$\ln(T) = 0.89 \ln(T) - 0.02$

Using the above trip generation rates the total vehicle trip generation for the site has been recalculated. The following tables document the impacts of the changes:

- Table 3 compares the original and revised trip generation of the Star Oak site
- Table 4 summarizes the changes to the overall TIS resulting from the Star Oak site
- Table 5 presents all the changes to developments (as of the date of this memo)

Table 3: Vehicle Trip Generation Comparison – Star Oak Site Only

Scenario	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Original TIS	22	70	92	76	45	121
Updated	24	75	99	79	47	126
Difference	2	5	7	3	2	5
% Difference	9%	7%	8%	4%	4%	4%

Table 4: Vehicle Trip Generation – Original TIS Comparison

Scenario	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Original TIS	346	1090	1437	1184	703	1888
Updated	348	1095	1444	1187	705	1893
Difference	2	5	7	3	2	5
% Difference	0.57%	0.46%	0.48%	0.25%	0.28%	0.26%

Table 5: Vehicle Trip Generation – Updates Available to Date

Scenario	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Original TIS	346	1090	1437	1184	703	1888
ARGO Change	6	10	15	17	13	31
Digram Change	17	48	65	51	32	83
Remington Change	0	1	0	1	0	1
Star Oak Change	2	5	7	3	2	5
Total Change	25	64	87	72	47	120
Total to Date	371	1154	1524	1256	750	2008
Overall Change % Difference	7%	6%	6%	6%	6%	6%

As shown above, the changes to the trip generation of the Star Oak site, independent of the other developments, will result in a net increase of less than 10% in vehicle traffic. When the entire trip generation of all developments considered in the TIS is considered, the resulting changes to the trip generation will result in a net increase of less than 1% change in vehicle traffic. When considering all the changes to the area developments the changes result in a total increase in traffic of 6-7% over the original TIS. This is a relatively minor change, and the results of the original TIS are the nominally the same. Additionally, the changes to the subject development, Star Oak, would result in a very minor impact on traffic volumes (less than 1%), therefore no updated operational analysis is required.

3 Parking

Surface parking will be provided in accordance with the Town of Oakville Parking Zoning By-Law requirements for both the townhouse and the single detached residential units. Additionally, 146 parking spaces will be provided via on-street parking throughout the development. The proposed parking plan can be found in Attachment 3.

4 Site Specific Transportation Review

This memo has been prepared to address some site-specific considerations for Star Oak's development including Transit Facilities Plan, Road Cross-Sections, Pedestrian Circulation Plan, Cycling Facilities Plan, and Parking Provisions.

4.1 Transit Facilities Plan

A Transit Facilities Plan was created as part of the Neighbourhood 9/10/11 TIS. The Transit Facilities Plan has been recreated, focusing on the Star Oak development and is included in Drawing 001, Attachment 4. As per the Transit Facilities Plan, all of the residential units are within 400 metres of at least one proposed transit station.

4.2 Road Cross-sections

The proposed right-of-ways and cross-sections are illustrated on Drawing 002, Attachment 4. These cross-sections are proposed to be consistent with the North Oakville Urban Design and Open Space. The cross-sections used in this plan from these guidelines have been included in Attachment 5.

4.3 Pedestrian Concept Plan

Sidewalk provisions are illustrated on Drawing 003, Attachment 4, and are generally per the road cross-section. Sidewalks are provided on both sides of the 17 metre Local Roads and the 22 metre Avenue/Transit Corridors.

4.4 Cycling Facilities Plan

A Cycling Facilities Plan was created as part of the Neighbourhood 9/10/11 TIS. The Cycling Facilities Plan has been recreated, focusing on the Star Oak development. This plan is included in Drawing 004, Attachment 4. Per the Cycling Facilities Plan, a signed route is provided along Marvin Avenue and a bicycle lane is provided along Sixth Line.

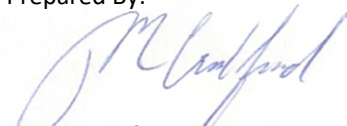
5 Conclusions

The proposed Star Oak development concept has been refined since the original TIS was prepared. This addendum has verified that the changes to the unit counts and land uses will have no meaningful impact on the operational analysis, and that the Neighbourhood 9/10/11 TIS conclusions remain valid.

This addendum has also addressed the site-specific issues including, parking, multi-modal transportation facilities, and roadway cross-sections. Through the plans prepared as part of this work it has been shown that the proposed development will have adequate cycling, pedestrian, and transit facilities and that the proposed right of ways are sufficient to support the appropriate cross-sections.

If you have any questions or comments, please do not hesitate to contact the undersigned.

Prepared By:



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Reviewed By:



Christopher Gordon, P.Eng.

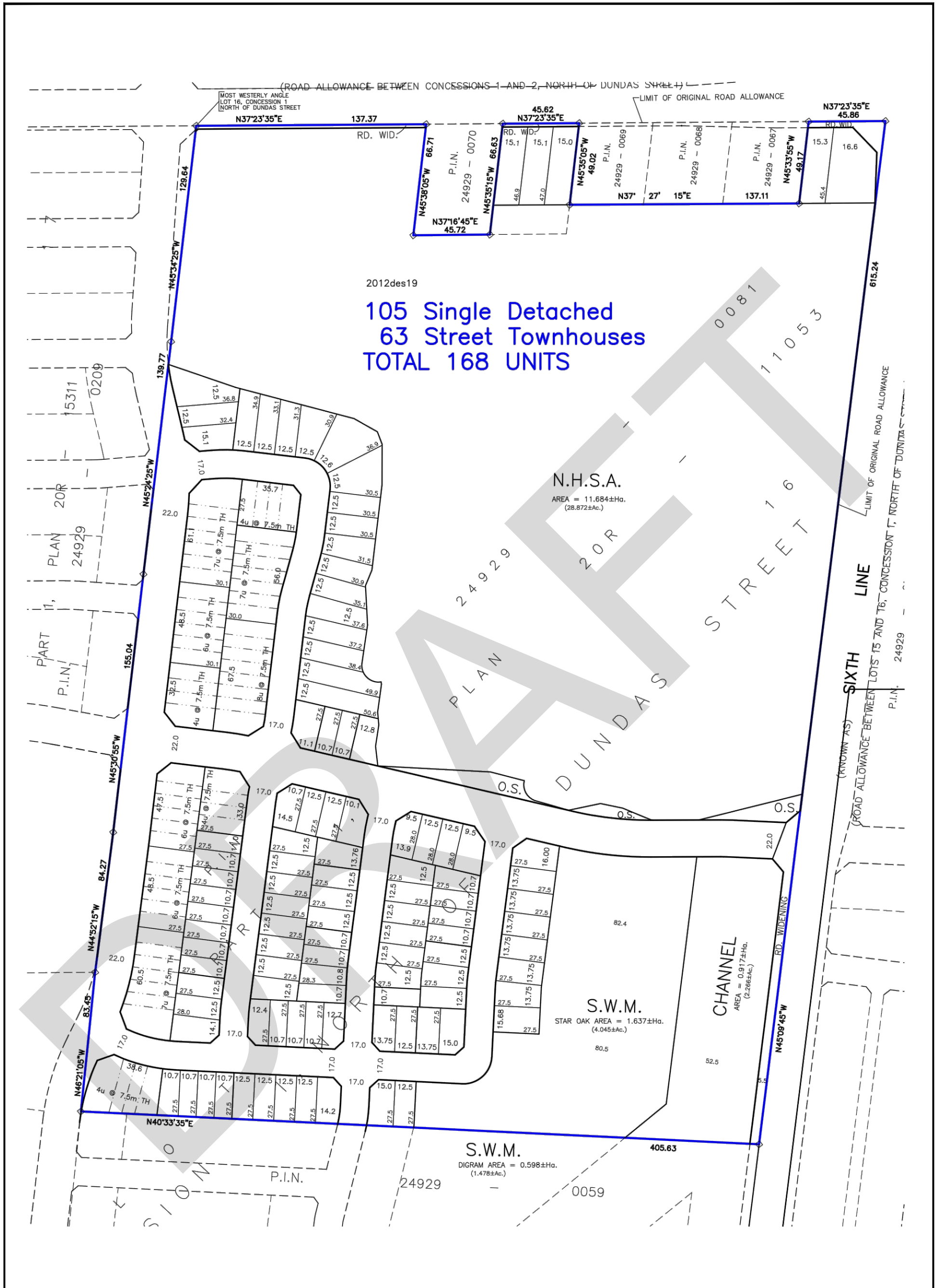
CGH Transportation Inc.

P: 343-999-9117

E: Christopher.Gordon@CGHTransportation.com

Attachment 1

Original Concept Plan



**ENVIRONMENTAL IMPLEMENTATION
REPORT AND FUNCTIONAL SERVICING
STUDY ADDENDUM
UPPER WEST MORRISON CREEK UWM1
NORTH OAKVILLE**

**FIGURE 7.1D
STAR OAK SOUTH-CONCEPT PLAN**

PROJECT 17-528	SCALE:	NTS	NOV. 2018
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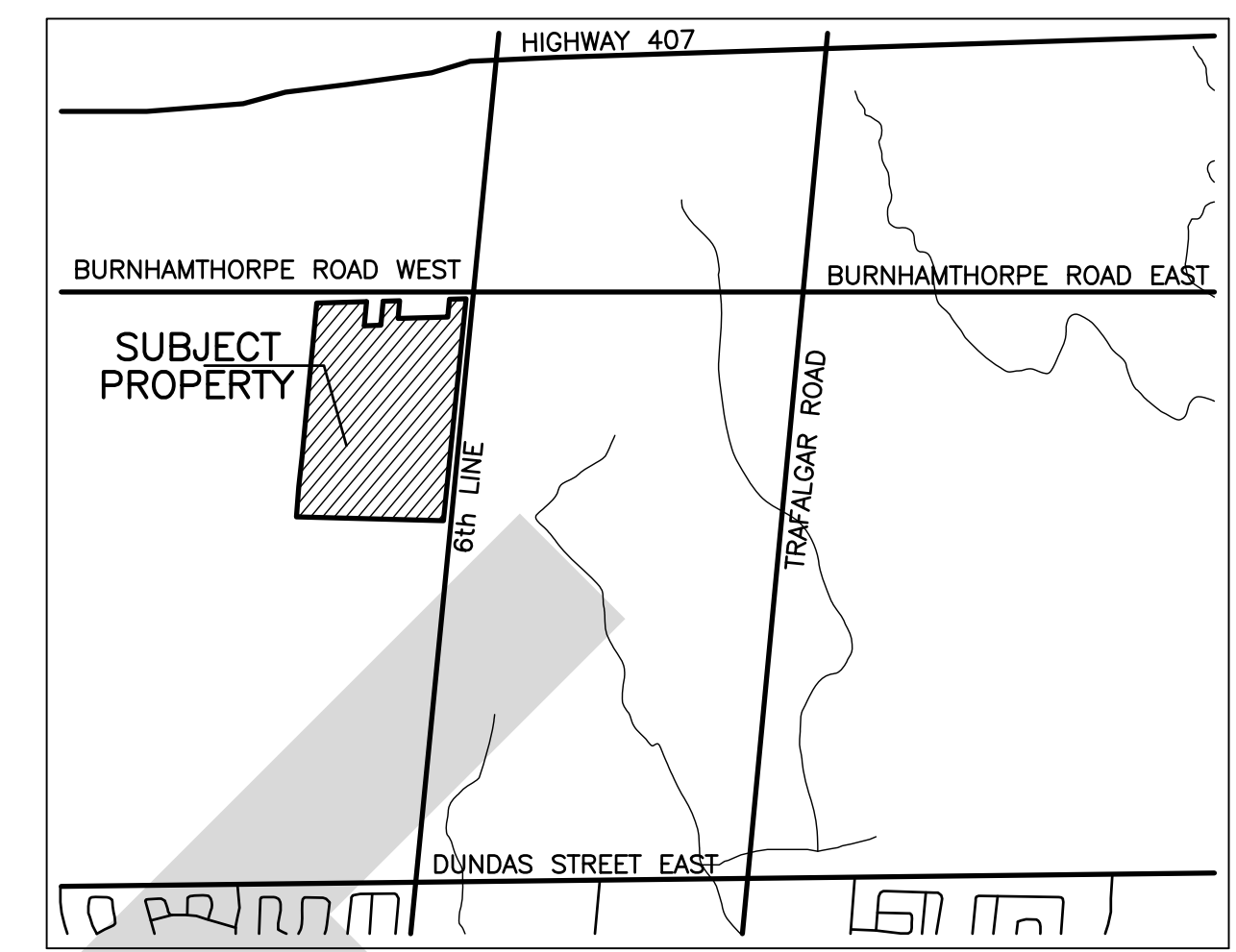
Attachment 2

Updated Draft Plan

DRAFT PLAN OF SUBDIVISION PART OF LOT 16, CONCESSION 1 NORTH OF DUNDAS STREET (GEOGRAPHIC TOWNSHIP OF TRAFALGAR) TOWN OF OAKVILLE REGIONAL MUNICIPALITY OF HALTON

SCALE 1:1250

DRAFT PLAN T-



KEY PLAN

SECTION 51, PLANNING ACT, ADDITIONAL INFORMATION

- A. AS SHOWN ON DRAFT PLAN
- B. AS SHOWN ON DRAFT PLAN
- C. AS SHOWN ON DRAFT PLAN
- D. SEE SCHEDULE OF LAND USE
- E. AS SHOWN ON DRAFT PLAN
- F. AS SHOWN ON DRAFT PLAN
- G. AS SHOWN ON DRAFT PLAN
- H. MUNICIPAL PIPED WATER AVAILABLE AT TIME OF DEVELOPMENT
- I. CLAY-LOAM
- J. AS SHOWN ON DRAFT PLAN
- K. SANITARY AND STORM SEWERS, GARBAGE COLLECTION, FIRE PROTECTION
- L. AS SHOWN ON DRAFT PLAN

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE CORRECTLY SHOWN.

DATE -----, 2020
C. P. EDWARD OLS

OWNER'S CERTIFICATE

I AUTHORIZE KLM PLANNING PARTNERS INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF OAKVILLE FOR APPROVAL.

OWNER

STAR OAK DEVELOPMENTS LIMITED

145 REYNOLDS STREET
SUITE 400
OAKVILLE, ONTARIO
L6J 0A7

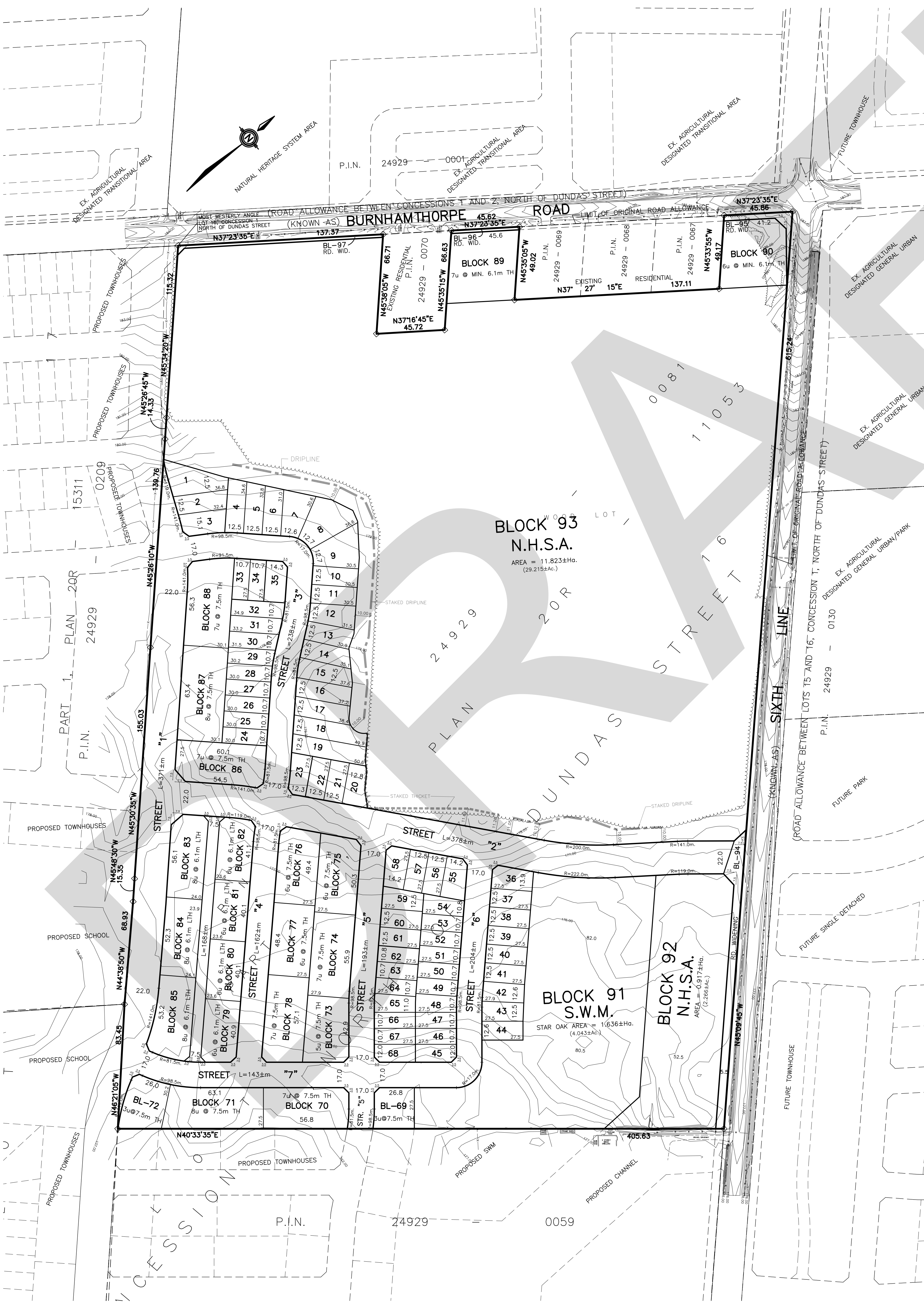
SILVIO GUGLIETTI A.S.O.

SCHEDULE OF LAND USE

TOTAL AREA OF LAND TO BE SUBDIVIDED = 23.583±Ha. (58.275±Acs.)

DETACHED DWELLINGS	BLOCKS	LOTS	UNITS	±Ha.	±Acs.
LOTS 1-22, 35-44, and 55-61 MIN. LOT FRONTAGE=12.5m. MIN LOT AREA=340sq.m.		39	39	1.657	4.095
LOTS 23-34, 45-54, and 62-68 MIN. LOT FRONTAGE=10.7m. MIN LOT AREA=290sq.m.		29	29	0.912	2.254
TOWNHOUSES DWELLINGS					
BLOCKS 69-78 and 86-88 MIN. UNIT FRONTAGE 7.5m.	13		80	1.887	4.663
BLOCKS 79-85, 89, and 90 MIN. UNIT FRONTAGE 6.1m.	9		61	1.190	2.940
SUBTOTAL	22	68	209	5.646	13.952
BLOCK 91 - STORM WATER MANAGEMENT		1		1.636	4.043
BLOCKS 92 and 93 - NATURAL HERITAGE SYSTEM AREA		2		12.740	31.481
BLOCKS 94-97 - ROAD WIDENING		4		0.189	0.467
STREETS				3.372	8.332
22.0m. WIDE TOTAL LENGTH= 748m. AREA= 1.648Ha.					
17.0m. WIDE TOTAL LENGTH= 940m. AREA= 1.598Ha.					
8.5m. WIDE TOTAL LENGTH= 168m. AREA= 0.126Ha.					
TOTAL				LENGTH=1857m. AREA= 3.372Ha.	
TOTAL	29	68	209	23.583	58.275

NOTE - ELEVATIONS RELATED TO CANADIAN GEODETIC DATUM



PROJECT No. P-2012
SCALE 1:1250 NOV. 2, 2020
(2012DES36) X-REF: (2012MAS4 & 2012MTO92)
KLM DWG. No. - 20:1
64 JARDIN DRIVE - UNIT 1B, CONCORD ONTARIO L4K 3P3
PLANNING PARTNERS INC. TEL: (905)669-4055 FAX: (905)669-0097 design@klmplanning.com
Planning • Design • Development

Attachment 3

Parking Plan



Notes:

TYPICAL ON STREET PARKING SPACES

* Subject to adjustment during detailed engineering design
 ** Per North Oakville Parking Strategy

Street Townhouse Dwellings
63 Residential Units
Single Detached Dwellings
105 Residential Units
Street Parking Within Development
146 Parking Spaces

REV:	DESCRIPTION:	BY:	DATE:
-	-	-	xx/xx/xx
STATUS: -			

CGH Transportation
 628 Haines Road
 Newmarket, ON
 L3Y 6V5
 (905) 251-4070

CLIENT:	Star Oak South Developments
ARCHITECT:	

SITE:	Neighbourhood 9/10/11		
TITLE:	On-Street Parking Concept Plan		
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2021-01-20		
PROJECT NO:	DRAWING NO:	REVISION:	
2020-108	005		

Attachment 4

Transit Facilities Plan

Road Cross-Section Plan

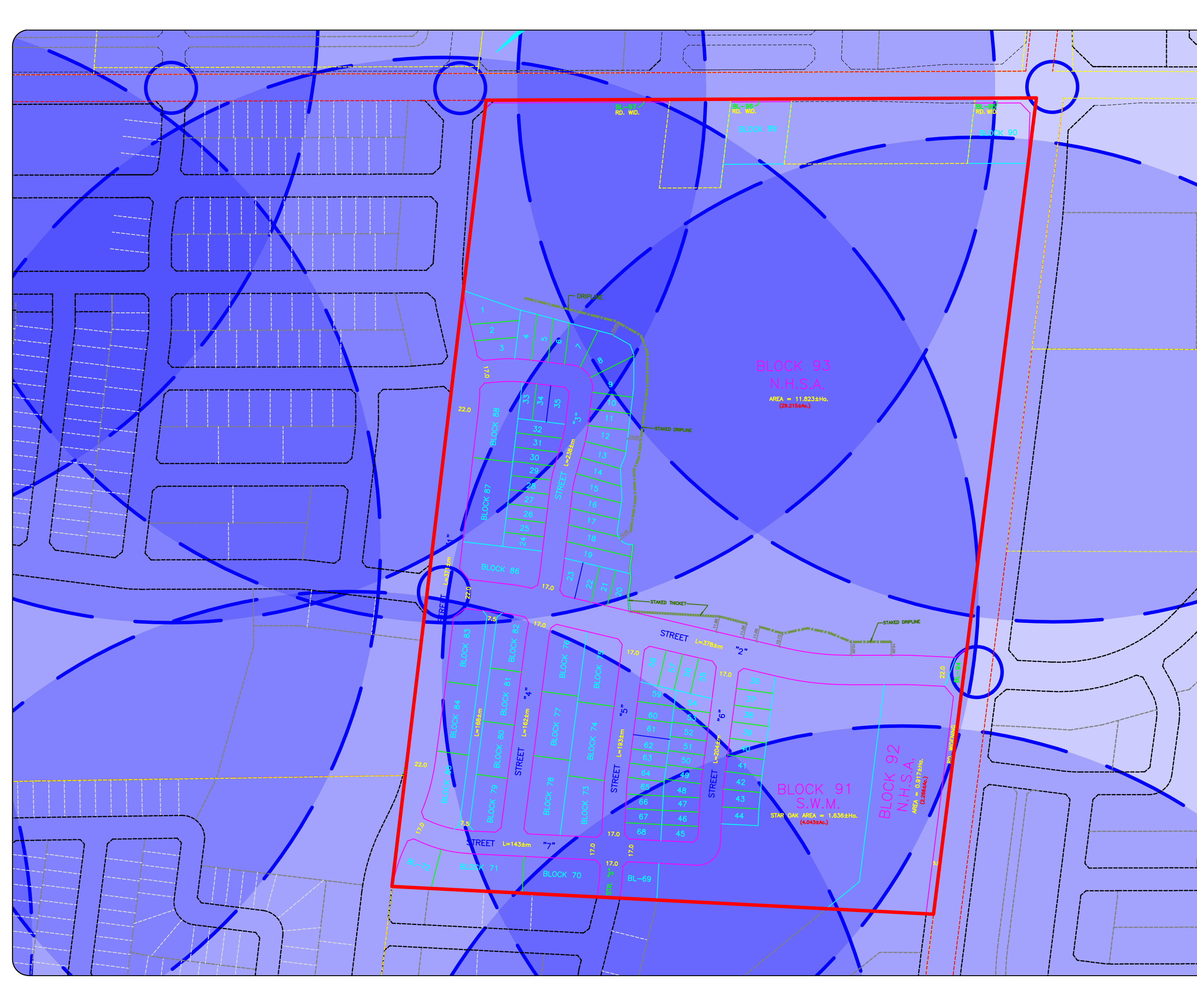
Pedestrian Concept Plan

Cycling Facilities Plan

Notes:

LEGEND:

- 400m Transit Walking Distance



REV:	DESCRIPTION:	BY:	DATE:
-	-	-	xx/xx/xx
STATUS:			status

CGH Transportation
 628 Haines Road
 Newmarket, ON
 L3Y 6V5
 (905) 251-4070

CLIENT: Star Oak South Developments

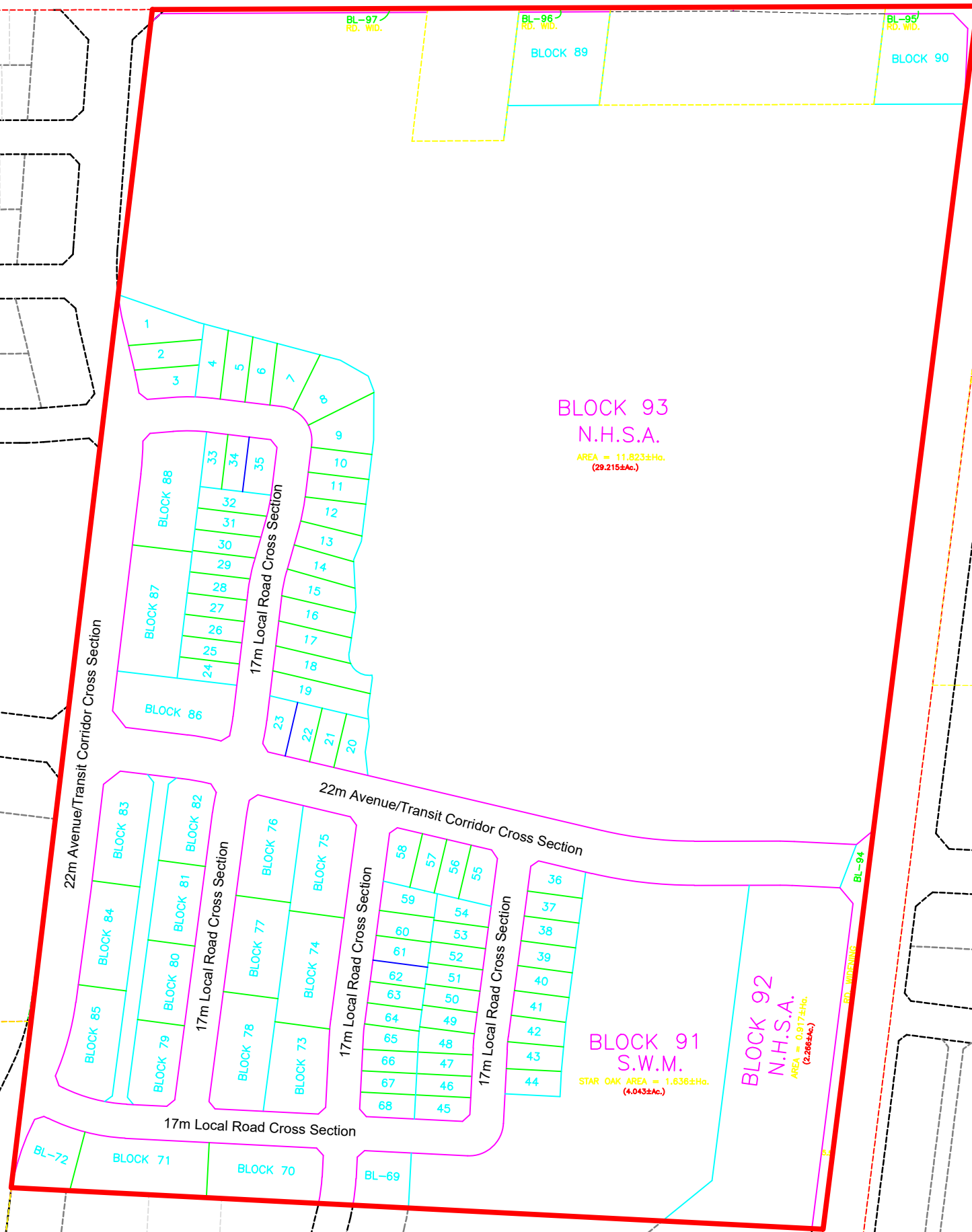
ARCHITECT:

SITE: Neighbourhood 9/10/11

TITLE: Transit Facilities Concept Plan

SCALE AT A3: NTS	DATE: 2021-01-08	DRAWN:	CHECKED:
PROJECT NO: 2020-108	DRAWING NO: 001	REVISION:	

Notes:



REV: -	DESCRIPTION: -	BY: -	DATE: xx/xx/xx
STATUS: status			

CGH Transportation
 628 Haines Road
 Newmarket, ON
 L3Y 6V5
 (905) 251-4070

CLIENT: Star Oak South Developments

ARCHITECT:

SITE: Neighbourhood 9/10/11

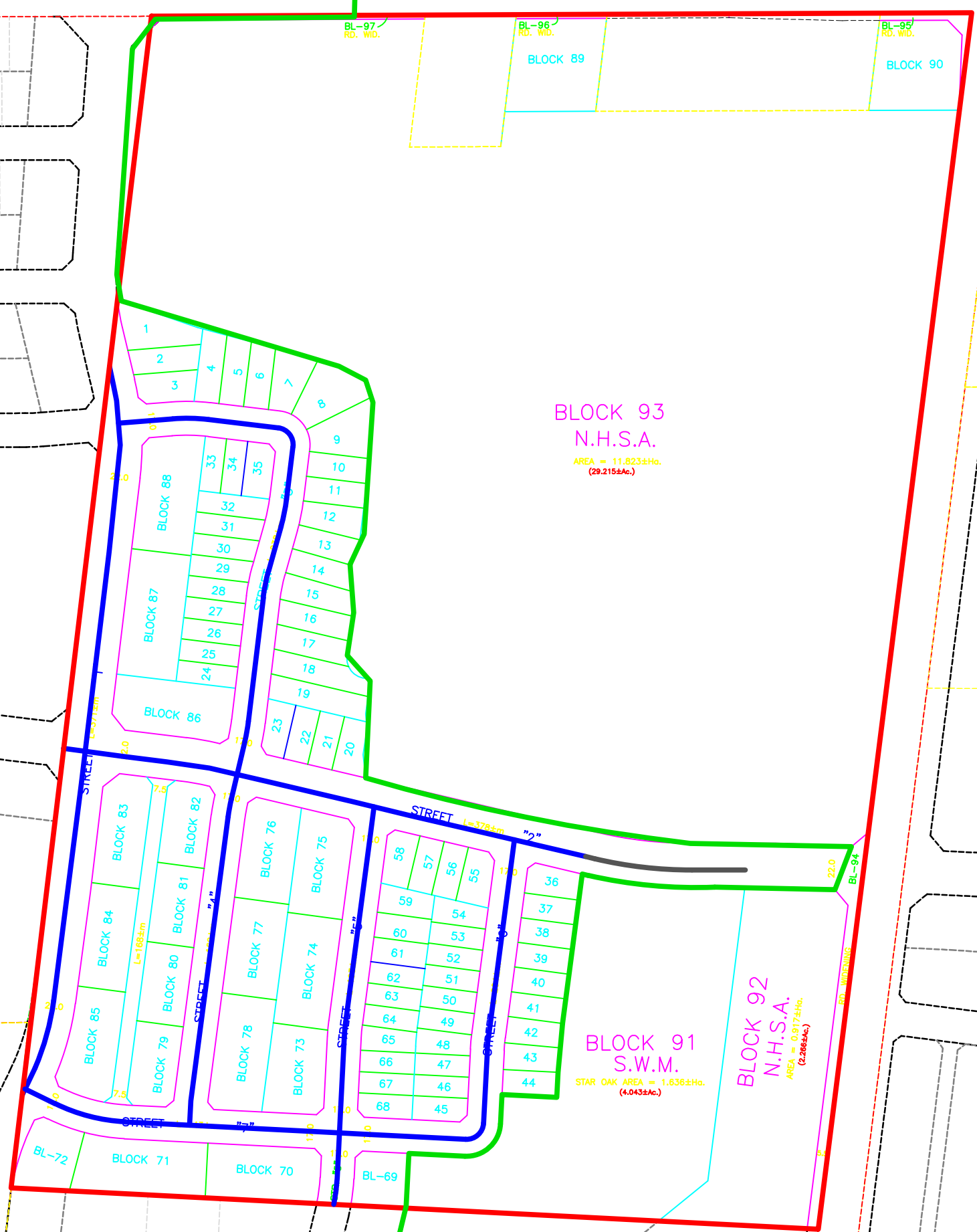
TITLE: Road Cross-Section Concept Plan

SCALE AT A3: NTS	DATE: 2021-01-08	DRAWN:	CHECKED:
PROJECT NO: 2020-108	DRAWING NO: 002	REVISION:	

Notes:

LEGEND:

- Both Side Sidewalk
- Off-Road Trail
- Single Side Sidewalk



BLOCK 93
N.H.S.A.
AREA = 11.823±Ha.
(29.215±Ac.)

BLOCK 91
S.W.M.
STAR OAK AREA = 1.638±Ha.
(4.043±Ac.)

BLOCK 92
N.H.S.A.
AREA = 0.917±Ha.
(2.268±Ac.)

REV: -	DESCRIPTION: -	BY: -	DATE: xx/xx/xx
STATUS: status			

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Star Oak South Developments

ARCHITECT:

SITE: Neighbourhood 9/10/11

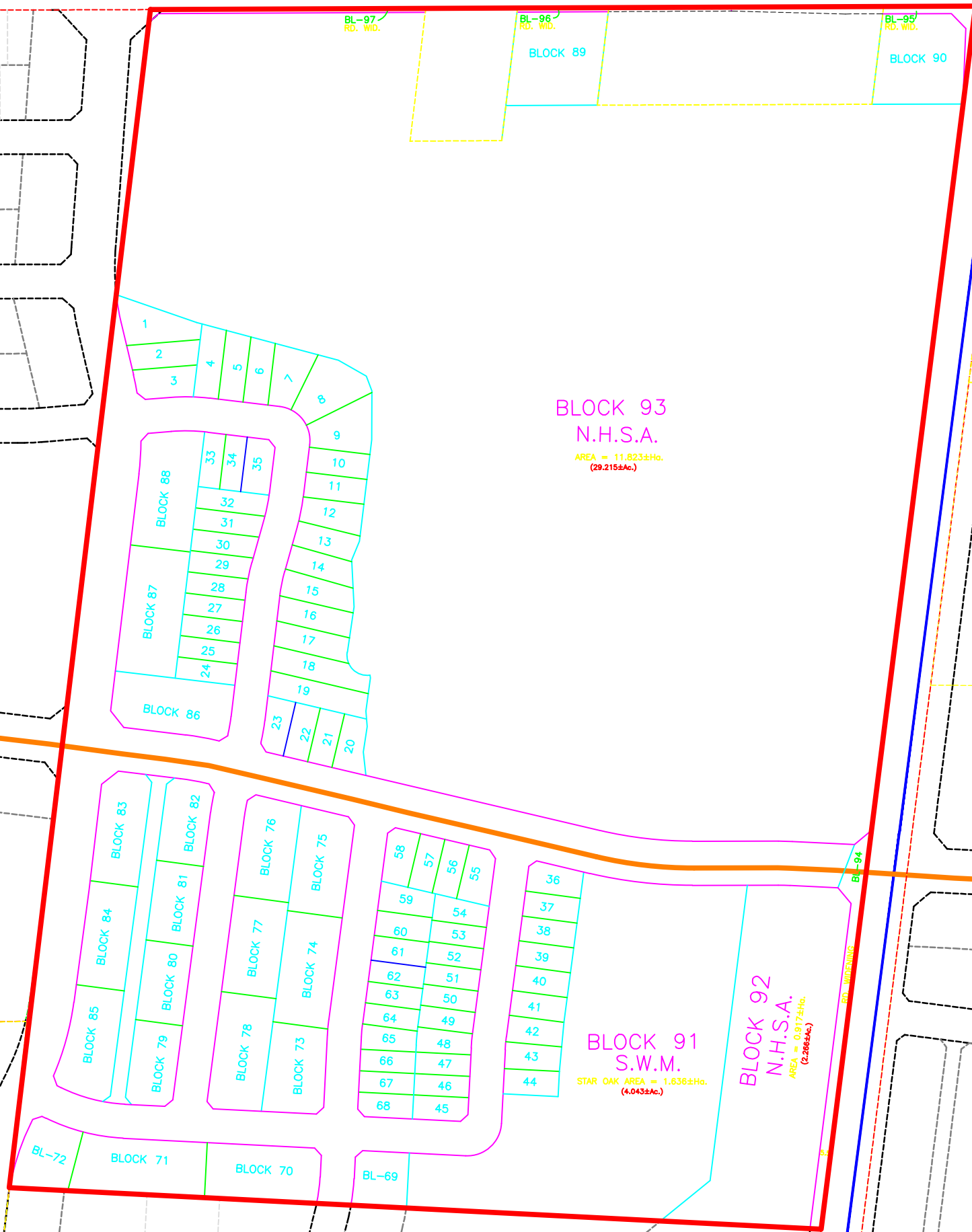
TITLE: Pedestrian Facilities
Concept Plan

SCALE AT A3: NTS	DATE: 2021-01-08	DRAWN:	CHECKED:
PROJECT NO: 2020-108	DRAWING NO: 003	REVISION:	

Notes:

LEGEND:

-  Signed Route
-  Bicycle Lane



REV:	DESCRIPTION:	BY:	DATE:
-	-	-	xx/xx/xx
STATUS:			status

CGH Transportation
 628 Haines Road
 Newmarket, ON
 L3Y 6V5
 (905) 251-4070

CLIENT: Star Oak South Developments

ARCHITECT:

SITE: Neighbourhood 9/10/11

TITLE: Cycling Facilities Concept Plan

SCALE AT A3: NTS	DATE: 2021-01-08	DRAWN:	CHECKED:
PROJECT NO: 2020-108	DRAWING NO: 004	REVISION:	

Attachment 5

Proposed Cross-Sections – North Oakville Urban Design and Open Space Guidelines

5.2.4. Local Road

Local Roads will be designed to provide access to individual properties and serve internal residential neighbourhood, Core Area or Employment District travel demands. Local Roads will also connect individual properties to other Local Roads, Avenue/ Transit Corridors or Connector/Transit Corridors.

The treatment of the boulevard will reflect adjacent land use and whether on-street parking is provided.

Specific technical details of the cross-section (i.e. plant material, soil type, engineering standards) will be determined through the appropriate design review process.

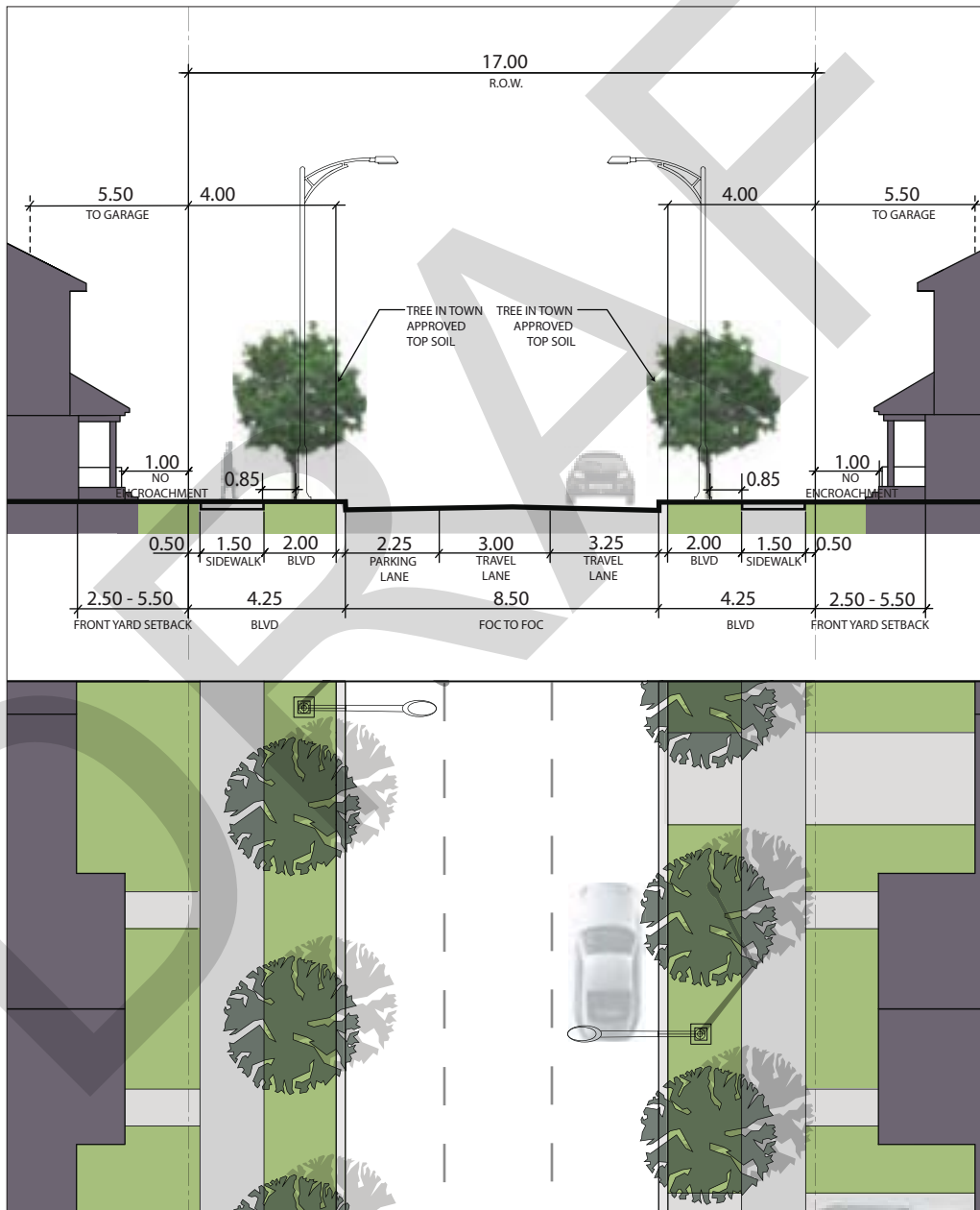


Figure 5.6: Typical Local Road section through the General Urban and Sub Urban Designation. Street tree height at maturity will vary according to species and the availability of optimum growing conditions (i.e. adequate water, sunlight, soil volume), the protection from compacted soils, salt spray, mechanical damage, pests, and maintenance programs. Please refer to tree habitat design guidelines found in Table 9 of Oakville's Urban Forest: Our Solution to Our Pollution (2006).

5.2.2. Avenue/Transit Corridor

Between the Arterial/Transit Corridors, the Avenue/Transit Corridors provide a finer grid of connection within and between neighbourhoods. These connections provide alternative routes for access to Neighbourhood Centres and serve to disperse traffic on a smaller street section.

Avenue/Transit Corridors serve mainly intermediate volumes of intra-neighbourhood/district travel, accommodate local transit, connect Urban Centres Areas and serve as a major internal connector for Urban Core Areas.

The treatment of the boulevard will reflect adjacent land use and whether on-street parking is provided.

Specific technical details of the cross-section (i.e. plant material, soil type, engineering standards) will be determined through the appropriate design review process.

Transit Supportive Uses

Transit supportive land uses are to be encouraged along the right-of-way, such as:

- Walk-up apartments;
- Townhouses; and,
- Small-lot detached homes.

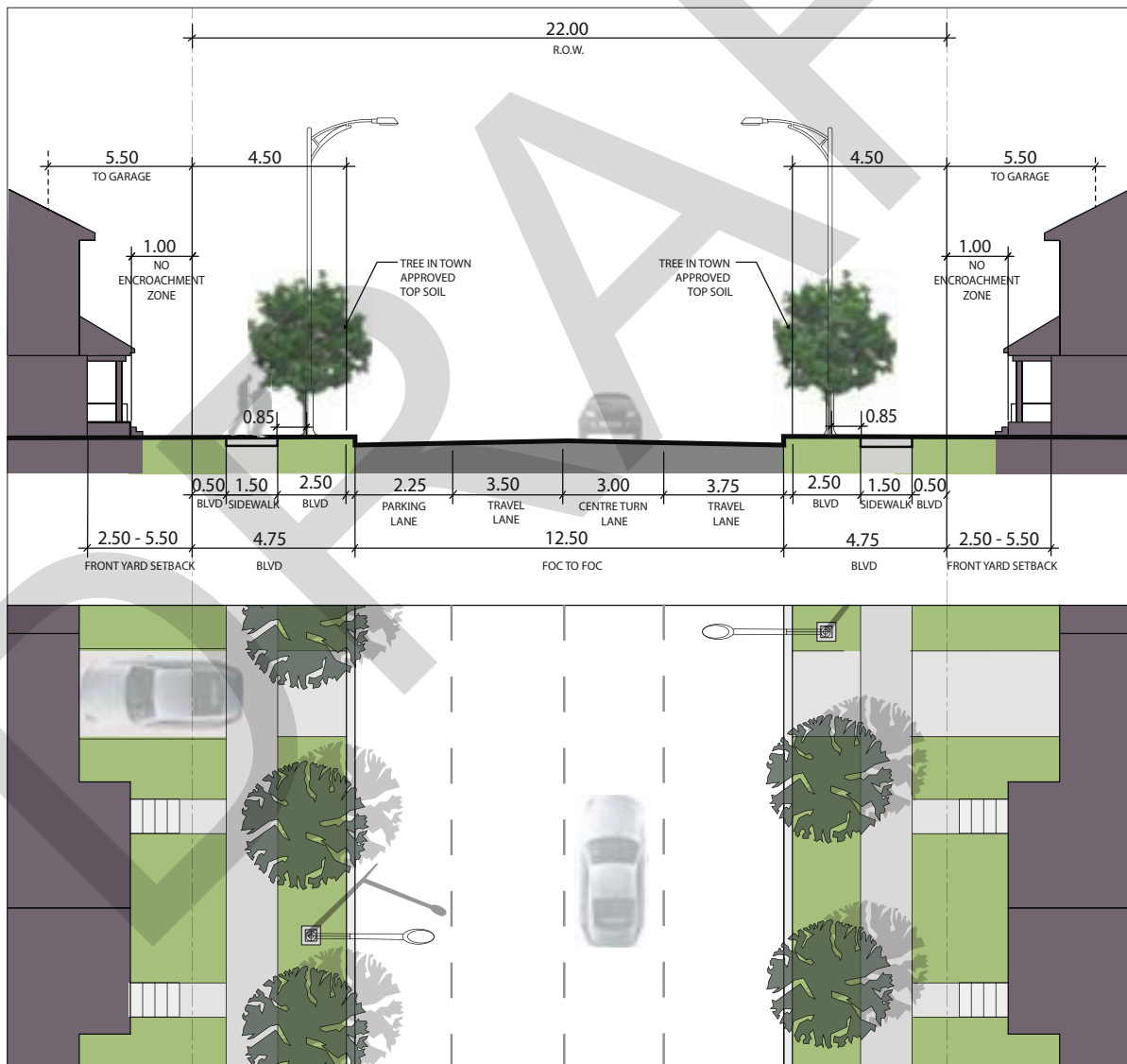


Figure 5.4: Typical Avenue/Transit Corridor section through the General Urban and Sub Urban Design. Street tree height at maturity will vary according to species and the availability of optimum growing conditions (i.e. adequate water, sunlight, soil volume), the protection from compacted soils, salt spray, mechanical damage, pests, and maintenance programs. Please refer to tree habitat design guidelines found in Table 9 of Oakville's Urban Forest: Our Solution to Our Pollution (2006).