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21 October 2013 OUR REF: TO3073TOF00

FoTenn Consultants Inc.
223 McLeod Street
Ottawa, ON K2P 0Z8

Attention: Sarah Martin

Dear Sarah:

Re: 93 – 105 Norman Street – Residential Development Transportation Brief Addendum #1

1. Report Context

This Addendum has been prepared to identify the transportation-related implications of the revised Site Plan of the 93 – 105 Norman Street Residential Development (included as Appendix A), which now includes a 9-storey condominium building with 117 proposed dwelling units. This Addendum also addresses the comments received from the City of Ottawa, dated May 16, 2013, with corresponding responses from Delcan.

It is noteworthy that the initial October 2012 Transportation Brief addressed the requirements for a 159 unit project with 153 below-grade parking spaces. As the current proposal is for 117 units and 104 parking spaces, its overall traffic generation/impact will be noticeably less (approximately 30% less).

2. City Comments

Comment 1: What are the references used to produce the Net Site Traffic Generation from Other Area Projects on Table 3? What are the assumptions regarding total number of residential units, the number of residents, trip generation and the modal split to arrive at the Projected Net Vehicle Generated numbers?

While 505 Preston and Pamilla projects are not at the approvals stage, these site and proposals will generate traffic in all modes. Consider including the potential trips from these based on existing zoning or based on area planning studies.

Response 1: *The following Table 1 includes an updated summary of the known development projects within the area and their respective land uses. This update includes the 505 Preston Street, Pamilla (514 Rochester) and Dow Honda (845 Carling) sites, whose traffic assessments have recently been submitted to the City.*

Table 1: Local Area Development

Site	Owner	Land Use	Status
855 Carling	*Arnon*	*400 condos or 479,000 ft^2 office*	*Likely to be revised*
125 Hickory	*Starwood*	*445 condos/townhomes*	*Approved*
100 Champagne	*Domicile*	*100 condo units*	*Under construction*
101 Champagne	*Ashcroft*	*330 condo units*	*Approved*
500 Preston	*Starwood*	*254 condos/ 6,139 ft^2 retail*	*Approved*
505 Preston	*Claridge*	*248 condos/17,900 ft^2 office/5,622 ft^2 retail*	*Approved*
514 to 532 Rochester	*Domicile*	*127 condos*	*Submitted for SPA*
845 Carling	*Richcraft*	*1,123 condos/ 16,255 ft^2 retail*	*Submitted for Rezoning*

The peak hour traffic generation of each development is summarized in Table 2 and was obtained from the Transportation Impact Assessments or subsequent addendums that accompanied each submission. With regard to the Arnon site at 855 Carling, we have assumed for purposes of this analysis that it will be developed as residential.

Table 2: Area Development Peak Hour Traffic Generation

Site	AM Peak Hour (veh/h)			PM Peak Hour (veh/h)		
	In	Out	Total	In	Out	Total
855 Carling	*33*	*143*	***176***	*133*	*75*	***208***
125 Hickory	*30*	*120*	***150***	*110*	*65*	***175***
100 Champagne	*8*	*32*	***40***	*32*	*18*	***50***
101 Champagne	*10*	*43*	***53***	*33*	*20*	***53***
500 Preston	*12*	*53*	***65***	*45*	*27*	***72***
505 Preston	*27*	*39*	***66***	*42*	*39*	***81***
514 to 532 Rochester	*8*	*35*	***43***	*24*	*15*	***39***
Dow Honda	*33*	*118*	***151***	*104*	*71*	***175***
Total	***161***	***583***	***744***	***523***	***330***	***853***

As shown in Table 2, the total projected site-generated vehicle trips from local area development is approximately 750 and 850 veh/h during the weekday morning and afternoon peak hours, respectively. Given the updated total is less than the total projected traffic volumes outlined in Table 3 of the original Transportation Brief, the projected Level of Service at study area intersections will be better than the Level of Service summarized in the original TB. As such, no additional analysis is required as the original TB did not identify any required changes to the off-site roadway geometry or traffic control.

Comment 2: The person trip generation calculations for total morning and afternoon peak travel seem to be low for this type of development, the potential resident profile and the inner city location.

This building will be appealing to young urban dwellers who may predominately work and travel to destinations within the inner area of the City. The development is proposed to have approximately 159 units that may result in just over 200 residents. It is most likely that they will depart in higher numbers during a late day am peak than traditional buildings. Travel peak number of less than half of the potential building population (98 am and 91 pm peak) seems low.

- Residential population for the building should be based on approx. 1.2 to 1.3 persons per unit and person trip generation rates of 0.5 to 0.7 may be appropriate.
- Person trip generated at the peak hours may be more compressed than for similar development in other areas of the city because of the proximity of travel destinations resulting in short trip times and the availability of a diversity of travel options.

The report recognizes that traditional ITE vehicle trip generation calculations are based on suburban American precedence, and that adjustment factors may be necessary.

But the process to develop the Modified Person Trip Generation as a factor of ITE Trip Generations Rates seems complex;

- What is the "available literature" resource on which you based these combined factors of approximately 1.3?
- Please expand on the person trip generation work "summarized" in Table 5;
- What time of days are assumed to be the Peak Hours?
- Tables 5 and 6 while the Modal Site Trip Generation is understood, the Modified Person Trip Generation seem low and should be generated based on the recommendations above.

Response 3: *The trip generation rate used in the original TB is taken from the most recent edition (9th) of the Institute of Transportation Engineers Trip Generation Manual for high-rise condominium/townhouse (ITE 232), which is defined as a building having three or more levels. The TIA Guidelines recommend the ITE Trip Generation Manual as a method for calculating site-generated trips in the absence of trip generation surveys from similar developments in the City. As site-generated trip surveys from similar sites within the City are not available to us at this time, the rates found in the ITE Trip Generation Manual are considered to be appropriate.*

The rates found in the ITE Trip Generation Manual that were used in the original TB are based on the number of dwelling units, not the number of residents. As such, it would not be appropriate to base the number of site-generated person trips on the residential population of the development by using the suggested 'person per dwelling unit' factor mentioned about. The rates found in the ITE Trip Generation Manual already account for residential population.

However, ITE rates were adjusted based on vehicle occupancy and modal splits to develop the Modified Person Trips summarized in Table 5 of the original TB to better reflect the type of area where the subject site is located. The 1.15 vehicle occupancy value and the 10% transit/non-motorized modal share split used to calculate the 1.3 factor are based on recent available census data for the United States.

Given that the Site Plan has been revised, the total person trips have been re-calculated based on the revised number of dwelling units. The following Table 3 includes the total person trips calculated using the method outlined in the original TB and the total person trips calculated using the City's suggested method (outlined above) for the revised Site Plan.

Table 3: Modified Person Trip Generation

Land Use	Data Source	Units	AM Peak (persons)			PM Peak (persons)		
			In	Out	Total	In	Out	Total
High-Rise Condominium[(1)]	ITE 232	117 Units	15	65	80	43	27	70
High-Rise Condominium[(2)]	-	117 Units	18	80	98	43	27	70
Original TB Modified Person Trip Generation								
High-Rise Condominium	ITE 232	159 Units	18	80	98	56	35	91

Note: (1) 1.3 factor to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%.
(2) The suggested rates used were as follows:
1.2 person/unit factor and 0.7 (AM peak) and 0.5 (PM peak) person trip generation rate.

As shown in Table 3, the suggested methodology produces the same or similar results as the methodology outlined in the original TB. As both of the resultant person trip totals are less than or equal to the person trips total from the original TB, the projected Level of Service at study area intersections will be the same or better than the projected Levels of Service summarized in the original report. As such, no additional analysis is required as the original TB did not identify any required changes to the off-site roadway geometry or traffic control.

With regard to peak hour operations for this development, the analysis was performed for the hour during which the adjacent road network experiences the heaviest morning and afternoon traffic volumes. For a residential development it is appropriate to assume that this peak hour analysis will constitute the "worst case" scenario. Should the majority of person traffic from the proposed development travel outside of this peak hour, in terms of traffic operations, the impact would be less outside the peak hour, given there would be fewer vehicles overall on study area roads.

Comment 4: The development will generate a lot of pedestrian traffic at all times of the day. The existing sidewalk is approx. 1.2 m wide, with its depressions at driveways and should be replaces in the vicinity of this development. It is too narrow to provide easy and accessible travel for pedestrians. A 2.0 m, without further reduction of the road surface, is recommended.

Response 4: *Noted, and the proponent has been advised.*

Comment 5: Since the near-by LRT station would be accessed by the Champagne Corridor Pathway, ensure that there is a connection between the pathway and the sidewalks on Norman to improve accessibility for pedestrians generated by the development.

Response 5: *Noted, and the proponent has been advised.*

Comment 6: The street ROW and the road surface are very narrow. The street is a dead end. The assumed on-street parking (7 spots) has the potential to significantly reduce the travel surface and impact on turn-around maneuvers for vehicles serving the building.

Response 6: *Noted, and the proponent has been advised. There is currently on-street parking provided along Norman Street at this location, however, should the width of the roadway become a concern, appropriate signage could be implemented to restrict on-street parking in front of the proposed development.*

Comment 7: The provision of a high number of cycling parking (approx. one per unit) is a strong contributor to the potential of this mode being a viable choice.

Response 7: *Noted, however, the revised Site Plan proposes 60 bicycle parking spaces, which meets the City's minimum By-Law requirement.*

Comment 9: Site area enhancements will be required to enable non-private travel to be a viable alternative from the site.

Response 9: *Agreed, and the proponent has been advised.*

3. Revised Site Plan Review

This section provides an update to the Site Plan Review (Section 5 of the original TB) based on the recent changes made to the proposed Site Plan (included as Appendix A).

Parking

A total of 94 residential vehicle parking spaces are proposed to serve the development which meets the City's minimum By-Law requirement. However, a total of 10 visitor parking spaces are proposed to serve the development, which does not meet the City's minimum requirement of 21 visitor parking spaces. Therefore, a By-Law variance may be required for this reduced amount of visitor parking.

Bicycles
A total of 60 bicycle parking stalls have been proposed, which satisfies the minimum By-Law requirements of 59 bicycle parking stalls.

Emergency Vehicle Access
Norman Street is a dead-end street and as such, emergency vehicles will have to drive in from Preston Street and either back out or turn around and drive forward back to Preston Street, as they would currently do. Depending on how the west end of Norman Street is integrated with the adjacent 3 m wide north-south multi-use pathway, there may also be the possible option for emergency vehicles to access/egress the site via the pathway.

Based on the foregoing, the proposed 93 – 105 Norman Street residential development is recommended from a transportation perspective. If there are any questions, please call.

Prepared By:

André Jane Sponder, B.A.Sc.
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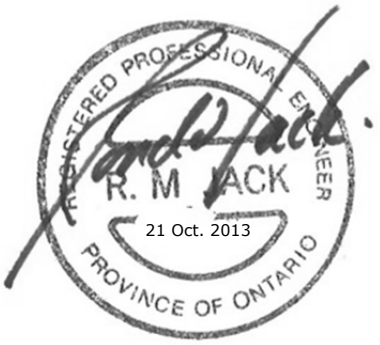
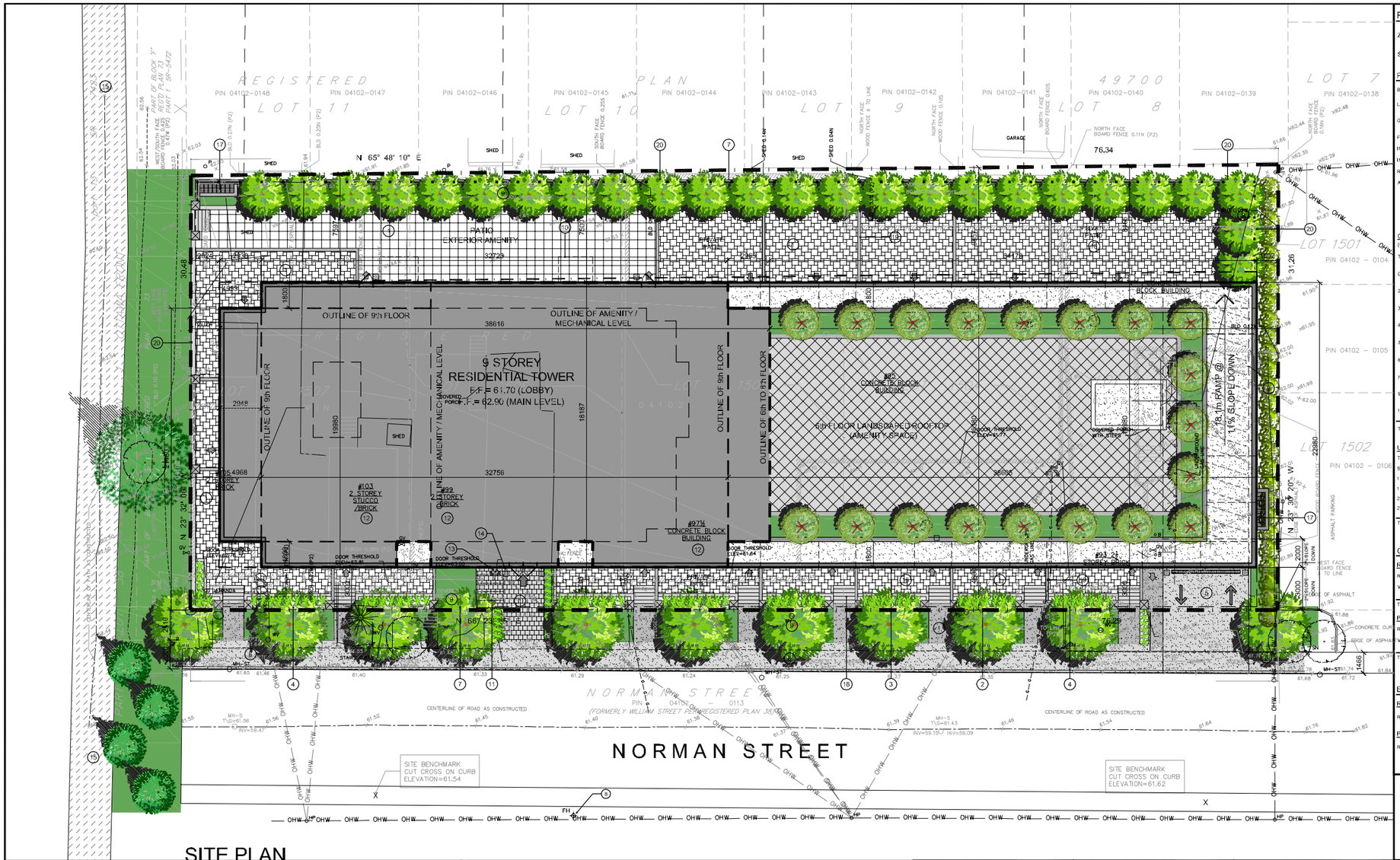
Ottawa Operations

Reviewed By:

Ronald Jack, P.Eng.
Vice President Transportation
Manager Ottawa Operations



Appendix A
Proposed Site Plan



SITE PLAN

SCALE 1:100

KEY MAP

DRAWING NOTES

1. HARD SURFACE PAVING, SEE LANDSCAPE PLANFOR PATTERN AND TYPE
2. PROPERTY LINE
3. EXISTING ZONING SETBACKS
4. LOW PLANTER WALL
5. VEHICLE ENTRANCE RAMP WITH TRENCH DRAINTO U/G PARKING GARAGE
6. EXISTING CITY OF OTTAWA STREET CURB & SIDEWALK TO BE REPLACE WITH NEW TO CITY STANDARDS
7. OUTLINE OF UNDERGROUND PARKING LEVELS
8. APPROXIMATE LOCATION EXISTING FIRE HYDRANT
9. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
10. OUTLINE OF PRIVATE TERRACE ABOVE
11. BICYCLE RACKS, SEE LANDSCAPE FOR SPEC
12. EXISTING RESIDENTIAL / COMMERCIAL BUILDING TO BE REMOVED
13. SIAMESE CONNECTION
14. WALL MOUNTED LIGHT FIXTURE
15. EXISTING ASPHALT RECREATIONPATH
16. PRIVATE TERRACES FOR GROUND FLOOR UNITS
17. AIR INTAKE / EXHAUST GRILL
18. CONCRETE STEPS
19. PRIVACY SCREEN
20. EDGE OF RAISED LANDSCAPED PATIO

SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE MAIN ENTRY
- CONCRETE UNIT PAVERS SURFACE PRIVATE PATIOS
- CONCRETE UNIT PAVERS SURFACE COMMUNAL PATIO
- EXISTING ASPHALT REC PATH / WALK
- CONCRETE SURFACE
- CONCRETE CITY SIDEWALK
- PODIUM LEVEL ROOF DECK
- GRAVEL ROOF DECK
- WALL MOUNTED LIGHT
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- COMMERCIAL ENTRANCE AND OR FIRE EXIT
- BOLLARD STYLE BIKE RACK
- PROPERTY LINE
- RETAINING WALL

PROJECT INFORMATION

ZONING — Zoning By-Law 2008-250 — R4T

SITE AREA — 2,936.2 sq. m. / 31,601 sq. ft.

PROJECT STATISTICS

BUILDING HEIGHT (9 STOREYS)		29.5
LANDSCAPE OPEN SPACE	(38%)	891.75 sq. m. / 9,600 sq. ft.
GROSS FLOOR AREA	7,444.1 sq. m. / 80,128 sq. ft.	9.2
FRONT YARD SETBACK		3.0 m
INTERIOR YARD SETBACK (WEST)		2.0 m
INTERIOR YARD SETBACK (EAST)		1.5 m
REAR YARD SETBACK		7.5 m
AMENITY SPACE	PRIVATE PATIOS =	1,170 sq. m.
	COMMUNAL (AT GRADE) =	375 sq. m.
	COMMUNAL (6th FLOOR) =	470 sq. m.
	COMMUNAL (ROOF) =	163 sq. m.
	TOTAL =	2,180 sq. m.

GROSS BUILDING - AREAS
(CITY OF OTTAWA DEFINITION)

TYPICAL PARKING LEVEL		
GROUND FLOOR		826.0 sq. m. / 8,891 sq. ft.
2nd FLOOR		1,182.4 sq. m. / 12,727 sq. ft.
3rd FLOOR		1,117.3 sq. m. / 12,027 sq. ft.
4th FLOOR		1,048.0 sq. m. / 11,281 sq. ft.
5th FLOOR		1,009.7 sq. m. / 10,868 sq. ft.
6th FLOOR		580.8 sq. m. / 6,338 sq. ft.
7th & 8th FLOOR	2 x 598.1 sq. m. / 2 x 6,438 sq. ft.	1,196.2 sq. m. / 12,876 sq. ft.
9th FLOOR		475.7 sq. m. / 5,120 sq. ft.
10th FLOOR		
TOTAL AREA		7,444.1 sq. m. / 80,128 sq. ft.

UNIT STATISTICS

TOWNHOUSE UNIT (2 LEVELS)	9
STUDIO UNIT	12
1 BEDROOM UNIT	44
1 BEDROOM + DEN UNIT	18
2 BEDROOM UNIT	33
2 BEDROOM + DEN UNIT	4
TOTAL	117

CAR PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT (117 UNITS)	59
VISITOR	- 0.2 PER DWELLING UNIT (AFTER 12 UNITS)	21
TOTAL		80

PROVIDED

RESIDENCE	- 0.8 PER UNIT (117 UNITS)	94
VISITOR	- 0.083 PER DWELLING UNIT	10
TOTAL		104

BICYCLE PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT (117 UNITS)	59

PROVIDED

RESIDENCE		60

LEGAL DESCRIPTION

LOTS 1503, 1504, 1505, 1506, 1507
REGISTERED PLAN 38
CITY OF OTTAWA
MUNICIPALITY OF OTTAWA-CARLETON

Stantec Geomatics Ltd.

PROJECT DEVELOPER

TAMARACK HOMES
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SURVEYOR

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CIVIL ENGINEER

David Schaeffer Engineering ltd.
120 Iber Road, Unit 203
Stittsville, ON K2S 1E9
Tel: (613) 836-0856
Fax: (613) 836-7183

LANDSCAPE ARCHITECT

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (SN) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- (A) INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- (W) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (DR) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- DETAIL NUMBER
- TITLE
- DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

GENERAL NOTES:

A. REFER TO TYPICAL ASSEMBLIES SHEET FOR WALL, PARTITION, ROOF CEILING & FLOOR TYPES.

B. FOR DOOR TYPES AND HARDWARE REQUIREMENTS REFER TO DOOR SCHEDULE ON A900 SERIES.

C. ALL INTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF DRYWALL.

D. ALL EXTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF CLADDING.

E. ALL EXTERIOR WALLS ARE TO BE TYPE 'W1' UNLESS NOTED OTHERWISE.

F. ALL INTERIOR PARTITIONS ARE TO BE TYPE 'P1' UNLESS NOTED OTHERWISE.

No.	DESCRIPTION	DATE
1	ISSUED FOR ZONING AMENDMENT	Oct 16, 13

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK A. LAHEY — LICENCE 4375 — SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: TAMARACK — TAMARACKHOMES.COM

ARCHITECT: RODERICKLAHEY ARCHITECT INC
1501 CARLING AVENUE, SUITE 200 OTTAWA, ONTARIO K1Z 7M1
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PROJECT TITLE:
101 NORMAN STREET
OTTAWA ONTARIO

SHEET TITLE:
SITE PLAN

DRAWN:	CHECKED:
RV	J.S.
SCALE: 1:100	SHEET No. SP-1
PROJECT No. 1115	