October 31, 2017

City of Ottawa,
Planning and Growth Management Branch
110 Laurier Avenue W. 4th Floor
Ottawa, Ontario K1P 1J1

Attention: Mr. Wally Dubyk
Project Manager, Infrastructure Approvals

Dear Sir:

Reference: 113 and 115 Echo Drive
Transportation Impact Assessment
Our File No. 115105

1.0 INTRODUCTION

A Transportation Overview was prepared in September 2015 in support of Official Plan (OP) and Zoning By-law (ZBL) Amendment applications for the above properties. An addendum was prepared in August 2016 to address City comments and present a revised Site Plan.

The following Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan application. The proposed site plan is generally consistent with the plan presented in the 2016 addendum. The transportation impacts identified in the previous addendum, and the existing conditions identified in the original Transportation Overview have been carried forward in this TIA, as requested by City staff.

This TIA has been prepared in accordance with the City's new 2017 TIA Guidelines and provides a review of the on-site design, parking provisions, boundary streets and proposed access. A review of other studies in the area is provided, including a functional design prepared by the City for a proposed cycle track adjacent to the site.

2.0 PROPOSED DEVELOPMENT

The proposed site plan includes 40 residential units (an increase of three units compared to the previous applications), and 58 underground parking spaces (a decrease of five spaces compared to the previous applications). The proposed driveway is in the same location as previously proposed, a distance of 3.2m from the easterly property line. The proposed site plan is attached in **Appendix A**.

Construction of the proposed development is planned for mid 2019.

3.0 EXISTING CONDITIONS

3.1 Main Street

Main Street is an arterial that runs on a north-south alignment between Colonel By Drive and the Rideau River. Immediately adjacent to the site, Main Street has a two-lane urban cross-section, with

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a third lane developed to facilitate southbound left turns on approach to Greenfield Avenue. Main Street is a designated truck route south of Greenfield Avenue and has a posted speed of 50km/h.

The City of Ottawa *Official Plan* (OP) identifies a requirement to protect a Right-of-Way (ROW) of 23m between Highway 417 and Echo Drive. Through the Official Plan and Zoning process it was determined that the conveyance of a ROW widening to the City was not required in this instance.

3.2 Echo Drive

Echo Drive is a local road that runs on a northeast alignment. East of Main Street, Echo Drive is one-way eastbound street. Echo Drive does not have a posted speed limit and is therefore assumed to be 50km/h. However, this one-way street is approximately 200m long and it is not anticipated that average vehicle speeds reach 50km/h.

3.3 Study Area Intersections

The lane configurations at the Main Street / Echo Drive intersection can be summarized as follows:

- Four leg unsignalized intersection;
- The southbound approach is a single shared lane with a median preventing left turns onto Echo Drive.
- The northbound approach is a single wide shared lane with a stop sign at the Colonel By Drive intersection approximately 10m north of Echo Drive.
- The east leg is a single eastbound lane and therefore no traffic approaches Main Street in the westbound direction.
- The west leg consists of a single lane in each direction and eastbound vehicles are only permitted to turn right onto Main Street.

3.4 Existing Pedestrian Facilities

Pedestrian facilities are currently provided along the study area roadways as follows:

- A sidewalk is provided along both sides of Main Street;
- A sidewalk is provided along the south side of Echo Drive;
- Echo Drive is immediately adjacent to Colonel By Drive which has a multi-use pathway parallel to the Rideau Canal.

3.5 Existing Bicycle Facilities

The City of Ottawa Primary Urban Cycling Network in the *2013 Transportation Master Plan* (TMP) identifies Main Street as a spine route and existing suggested route.

Echo Drive is immediately adjacent to Colonel By Drive which has a multi-use pathway parallel to the Rideau Canal.

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3.6 Existing Transit Facilities

A copy of the 2017 OC Transpo system map for the study area is included in **Appendix B**. This report describes all existing transit facilities within a five-minute walk of the subject site, which equates to a distance of approximately 400m for local stops.

Bus stops #7624 and #7625 are located along Lees Avenue, approximately 400m south of the proposed development and serve Routes 16, 56 and 101. Route 16 operates between Main Street and Britannia Park, 7 days/week in most time periods. Route 56 operates between the Hurdman and Tunney's Pasture transit stations, Monday to Friday in peak periods only. Route 101 operates between St. Laurent and Bayshore, Monday to Saturday, with no Sunday service.

Bus stops # 7635 and #6799 are located on Main Street north and south of Lees Avenue and serve Route 5. Route 5 operates between Billings Bridge and the Rideau Centre seven days/week in most time periods.

An additional stop for Routes 5, 56 and 101 is located on Hawthorne Avenue, immediately west of Main Street.

3.7 Existing Traffic Volumes

Traffic counts for the following intersections were provided by the City of Ottawa:

- Main Street and Greenfield Avenue — Thursday, July 25, 2013
- Greenfield Avenue and Concord Street — Monday, July 28, 2014

Traffic volumes on Main Street are approximately 715vph and 660vph during the AM and PM peak hours, respectively. Southbound traffic on Concord Street north of Greenfield Avenue during the AM and PM peak hours is approximately 15-20vph; approximately 3% of the peak hour traffic on Main Street. Concord Street north of Greenfield Avenue remains two-way. It is anticipated that the traffic on Concord Street is somewhat higher than on Echo Drive adjacent to the proposed site. It is therefore anticipated that typical peak hour traffic volumes on Echo Drive are less than 20vph. Peak hour summary sheets of the above traffic counts are included in **Appendix C**.

4.0 TRAVEL DEMAND FORECASTING

As noted in the 2016 addendum, trips generated by the proposed development during the weekday AM and PM peak hours are shown in the following table.

Table 1: ITE Trip Generation

Land Use	ITE Code	Units	AM Peak (VPH)			PM Peak (VPH)		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Condominium	230	40	4	20	24	18	9	27

Based on the foregoing, the proposed site plan is anticipated to generate 24 trips during the AM peak hour and 27 trips during the PM peak hour. Consistent with the previous study, the trips generated

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by the site are expected to have a negligible impact upon the roadway capacity of Echo Drive and Main Street.

5.0 ON-SITE DESIGN

Pedestrian connections will be provided from the main building entrance to the existing sidewalk along Echo Drive, and from the live/work units on Main Street to the existing sidewalk along Main Street.

Bicycle parking will be provided as outlined in the following section.

Bus stops within a walking distance of 400m are as outlined in **Section 3.6**.

Municipal garbage collection is proposed curbside along Echo Drive. As each building face is within 3m to 15m of the adjacent street, fire access will be provided from the adjacent roadways.

6.0 PARKING

The subject site is located in Area Y of Schedule 1A to the City of Ottawa *Zoning By-law* (ZBL). Minimum vehicular parking space requirements for residents are 0.5 spaces per dwelling unit after the first 12 units (13 spaces) and for visitors are 0.1 spaces per dwelling unit after the first 12 units (3 spaces).

The proposed parking satisfies the City's ZBL requirements with a total of 51 resident parking spaces and 7 visitor parking spaces (total 58 parking spaces). Spillover parking on the local area streets is not anticipated.

Minimum bicycle parking space requirements are identified in the City's ZBL as 0.5 spaces per dwelling unit (19 spaces). Thirty-four bike spaces are proposed on parking level one, with an additional 26 bike spaces on parking level two, for a total of 60 bike parking spaces.

7.0 BOUNDARY STREET DESIGN

7.1 Main Street Reconstruction Project

The Main Street Reconstruction Project was recently completed, transforming Main Street south of Highway 417 to a complete street. The project provided a sidewalk and an off-road cycle track on both sides of Main Street south of Harvey Street. The project also implemented curb extensions at select intersections to reduce crossing distance for pedestrians south of Harvey Street.

7.2 Rideau Canal Corridor Pedestrian Crossing Study

A Rideau Canal Corridor Pedestrian Crossing Study was prepared for the National Capital Commission (NCC) by Stantec in June 2011. This study reviewed pedestrian crossings and intersections along Queen Elizabeth Drive between Preston Street and Laurier Avenue and along Colonel By Drive between Hog's Back Road to Daly Avenue.

This report reviewed the operations at the Main Street/Colonel By Drive intersection. The report identified that a signalized pedestrian crossing is not warranted. Although a pedestrian crossing is

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not warranted, the report suggested that the following intersection improvements warrant consideration:

- Extend the median at northbound approach (Colonel By Drive) to provide an improved pedestrian refuge for Main Street crossing.
- Provide cross walk at Main Street intersection crossing Main Street to facilitate pedestrian and cyclist crossings. This improvement will facilitate/encourage some pedestrians from Concord Street to divert to Main Street to cross Colonel By Drive.

The intersection improvements recommended in the Rideau Canal Corridor Pedestrian Crossing Study are shown in **Figure 1**.

Figure 1: Main Street/Colonel By Drive Intersection Improvements

It is noted that the report did not recommend pedestrian and cycling improvements along Main Street in the vicinity of Colonel By Drive.

7.3 Greenfield Study

The City is currently undertaking a study to improve pedestrian and cycling facilities along Greenfield Avenue, including Main Street north of Harvey Street. This study is referred to as the "Greenfield Project". A functional design has been prepared for a new sidewalk and off-road cycle track within the ROW along Main Street north of Harvey Street. An exhibit showing the proposed functional design is included in **Appendix D**. The project also includes new on-street parking along Echo Drive across from the subject site.

The proposed design along Main Street north of Harvey Street is consistent with the Main Street Reconstruction Project. A road narrowing is required along the frontage of the subject site to accommodate the cycling facility and address an existing building constraint on the adjacent property to the east. Roadway Modification Approval (RMA) is required for the proposed change to the

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existing curbline. Following the RMA, the project will proceed to detailed design. City staff have indicated that construction will likely proceed post 2020.

An overlay of the proposed site plan and the City's proposed functional design along Main Street is shown in **Figure 2**.

In the interim, the proposed development will tie in to the existing sidewalk along Main Street and Echo Drive until the planned roadway modifications are constructed.

8.0 PROPOSED ACCESS

8.1 Location and Design

The proposed access is 6.0m in width and located approximately 3.2m from the easterly property line. The driveway location conforms to the City of Ottawa's *Private Approach By-Law*. In the case of a parking garage, the City's *Zoning By-Law* (ZBL) indicates that a driveway must have a minimum width of 6.0m for a double traffic lane, with a maximum permitted width of 6.7m for a double traffic lane that leads to 20 or more parking spaces. The proposed width meets the requirements of the City's ZBL.

Table 3.2.9.1 of the Transportation Association of Canada (TAC) *Geometric Design Guidelines* suggests the width of a two-way residential driveway may vary from 3.0m to 7.3m. The proposed driveway width meets TAC standards and is anticipated to operate in a safe and efficient manner.

The sidewalk across the proposed access will be depressed and continuous. The sidewalk and curb across the existing private approach to be closed will be reconstructed.

8.2 Sight Distance

The original Transportation Overview prepared in support of the OP/ZBL amendment applications identified a minimum stopping sight distance (SSD) requirement of approximately 40m, assuming a design speed of 35km/h (accounting for reduced operating speeds following the right turn from Main Street). Based on the original buildout layout, narrowing the lane widths on Main Street and Echo Drive through pavement marking was proposed to achieve the required SSD.

Since the original submission, the buildout layout has been revised. A SSD of approximately 50m will now be provided, measured from 0.6m in from the centerline on Main Street to the center of the eastbound lane on Echo Drive adjacent to the proposed access, assuming that the height of the proposed terrace wall limits the available sight distance. The City's proposed road narrowing on Main Street will further improve the available sight distance by shifting vehicles slightly further west of the proposed terrace wall.

9.0 CONCLUSIONS

Based on the results of the foregoing analysis, the main conclusions and recommendations of this assessment are as follows:

- The trips generated by the site are expected to have a negligible impact upon the roadway capacity of Echo Drive and Main Street.

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- The proposed vehicle and bicycle parking satisfies the minimum requirements identified in the City of Ottawa's *Zoning By-law*. Spillover parking on the local area streets is not anticipated.
- The Greenfield project includes a road narrowing and cycle track along Main Street adjacent to the site, as well as new on-street parking along Echo Drive across from the site. Construction of the Greenfield project will likely proceed post 2020.
- In the interim, the proposed development will tie in to the existing sidewalk along Main Street and Echo Drive until the planned roadway modifications are constructed.
- The private approach conforms to the minimum requirements of the City of Ottawa's *Private Approach By-law* and *Zoning By-Law*.
- The proposed driveway width meets TAC standards and is anticipated to operate in a safe and efficient manner.
- A SSD of approximately 50m will be provided, which meets the minimum requirement assuming a design speed of 35km/h. The City's proposed road narrowing on Main Street will further improve the available sight distance by shifting vehicles slightly further west of the proposed terrace wall.

Yours truly,

NOVATECH

LICENSED PROFESSIONAL ENGINEER
J.L. LUONG
100061569
Oct 31, 2017
PROVINCE OF ONTARIO

Jennifer Luong, P. Eng.
Senior Project Manager | Transportation/Traffic

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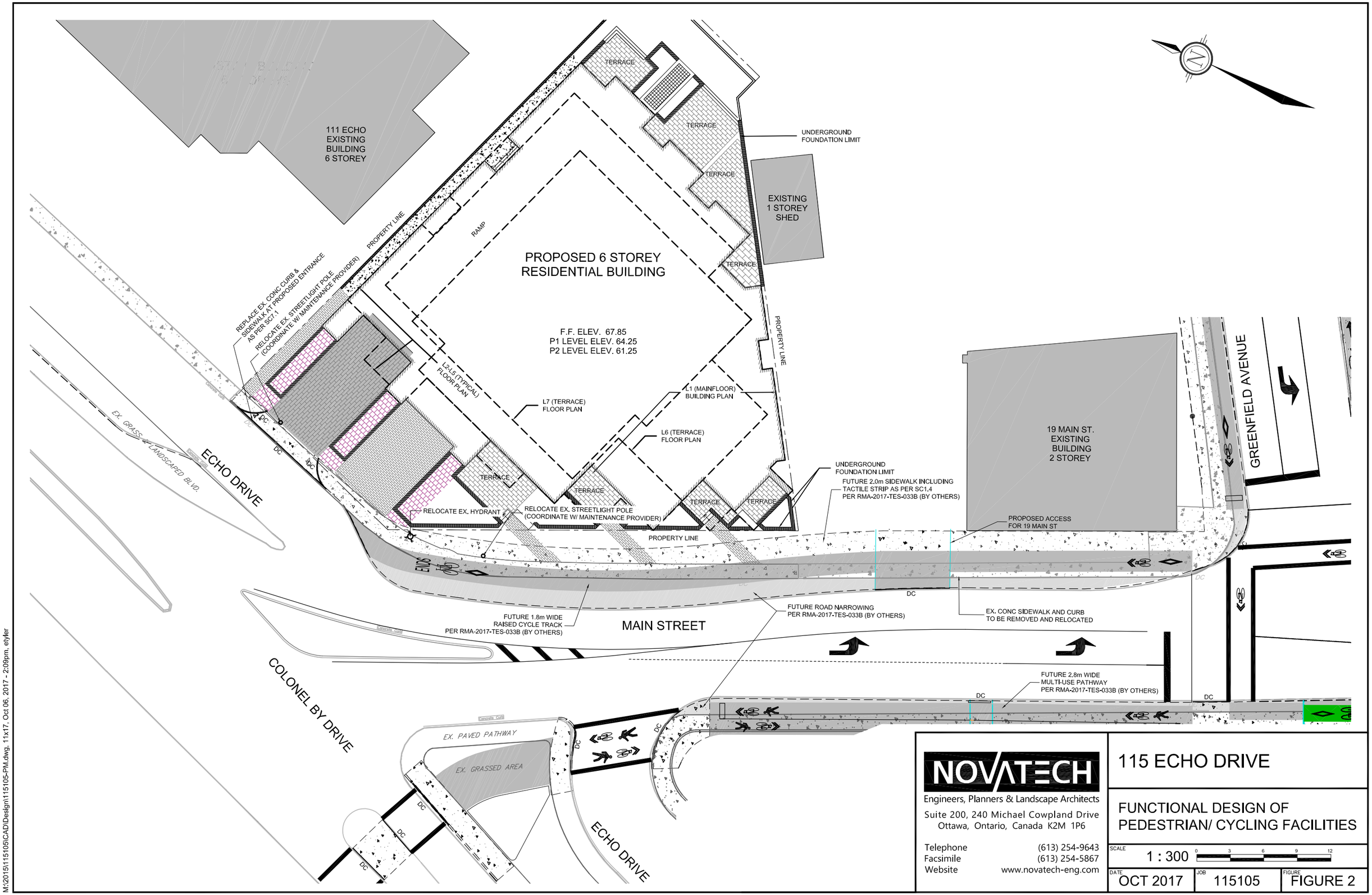
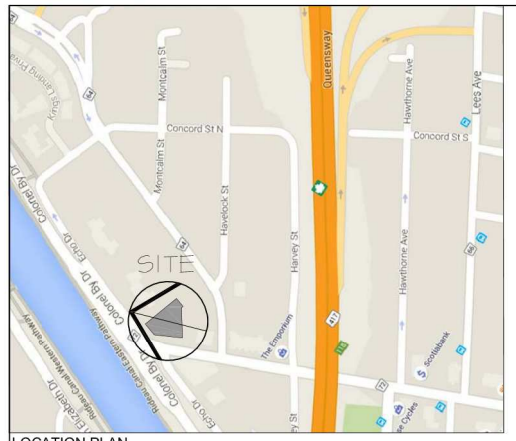
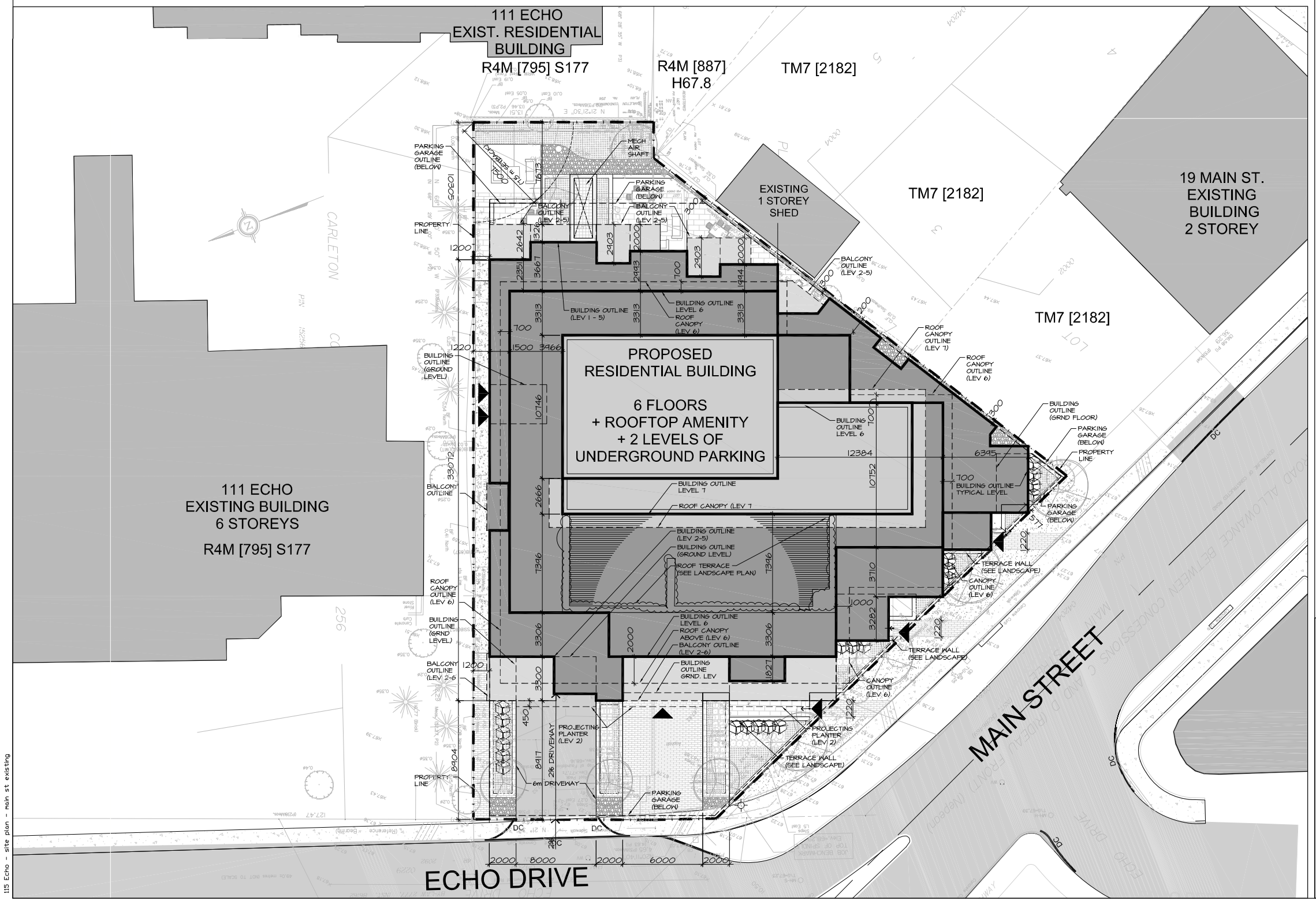

111 ECHO
EXISTING
BUILDING
6 STOREY
TERRACE
TERRACE
TERRACE
TERRACE
UNDERGROUND
FOUNDATION LIMIT
EXISTING
1 STOREY
SHED
PROPERTY LINE
RAMP
PROPOSED 6 STOREY
RESIDENTIAL BUILDING
F.F. ELEV. 67.85
P1 LEVEL ELEV. 64.25
P2 LEVEL ELEV. 61.25
REPLACE EX. CONC CURB &
SIDEWALK AT PROPOSED ENTRANCE
AS PER SC1.1
RELOCATE EX. STREETLIGHT POLE
(COORDINATE W/ MAINTENANCE PROVIDER)
L2-L5 (TYPICAL)
FLOOR PLAN
L7 (TERRACE)
FLOOR PLAN
L1 (MAINFLOOR)
BUILDING PLAN
L6 (TERRACE)
FLOOR PLAN
EX. GRASS
LANDSCAPED BLVD.
ECHO DRIVE
DC
TERRACE
TERRACE
TERRACE
TERRACE
RELOCATE EX. HYDRANT
RELOCATE EX. STREETLIGHT POLE
(COORDINATE W/ MAINTENANCE PROVIDER)
PROPERTY LINE
UNDERGROUND
FOUNDATION LIMIT
FUTURE 2.0m SIDEWALK INCLUDING
TACTILE STRIP AS PER SC1.4
PER RMA-2017-TES-033B (BY OTHERS)
19 MAIN ST.
EXISTING
BUILDING
2 STOREY
GREENFIELD AVENUE
PROPOSED ACCESS
FOR 19 MAIN ST
EX. CONC SIDEWALK AND CURB
TO BE REMOVED AND RELOCATED
FUTURE ROAD NARROWING
PER RMA-2017-TES-033B (BY OTHERS)
FUTURE 1.8m WIDE
RAISED CYCLE TRACK
PER RMA-2017-TES-033B (BY OTHERS)
MAIN STREET
COLONEL BY DRIVE
FUTURE 2.8m WIDE
MULTI-USE PATHWAY
PER RMA-2017-TES-033B (BY OTHERS)
EX. PAVED PATHWAY
EX. GRASSED AREA
ECHO DRIVE
NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com
115 ECHO DRIVE
FUNCTIONAL DESIGN OF
PEDESTRIAN/ CYCLING FACILITIES
SCALE 1 : 300
0 3 6 9 12
DATE OCT 2017
JOB 115105
FIGURE FIGURE 2
M:\2015\115105\CAD\Design\115105-PM.dwg, 11x17, Oct 06, 2017 - 2:09pm, etyler

APPENDIX A

SITE PLAN



LOCATION PLAN



October 30, 2017
115 Echo - site plan - main st existing

SURVEY INFORMATION TAKEN FROM:

SURVEYOR'S REAL PROPERTY REPORT
PART 1 PLAN OF
REGISTERED PLAN 78 AND
PART OF LOTS 20
REGISTERED PLAN 27
CITY OF OTTAWA
SURVEYED BY,
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.

SITE SUMMARY:

PROPERTY ADDRESS:	115 ECHO DRIVE
ZONING:	TM [2362] S362-H
SITE AREA (SURVEY)	1534.5 m^2
PROPOSED USE:	RESIDENTIAL, MIDRISE APARTMENT BUILDING 6 FLOORS + ROOFTOP AMENITY
BUILDING FOOTPRINT: (GRND FLOOR PLAN)	462 m^2
TOTAL FLOORS	6
TOTAL RESIDENTIAL UNITS	40 UNITS
TOTAL GFA	6, 088 m^2

ZONING SUMMARY:	REQUIRED	PROVIDED
BUILDING HEIGHT	20m MAX.	20m
YARDS:		
SUBJECT TO ZONING SCHEDULE		
FRONT YARD: (MAIN STREET)	8m MIN.	8.9m
CORNER YARD: (ECHO DRIVE)	0m	0m
REAR YARD:	7.5m MIN.	7.6 m^2
INTERIOR SIDE YARD (111 ECHO DR.) (19 MAIN ST.)	1.2 MIN. 0 MIN.	1.2m 0.3 m

VEHICULAR PARKING:	REQUIRED	PROVIDED
RESIDENTIAL PARKING 0.5 / UNITS MINUS THE FIRST 12 UNITS.	(40 UNITS - 12 = 28 UNITS)	
RESIDENTIAL PARKING 28 UNITS X 0.5	14 SPACES	50 SPACES
VISITOR PARKING 40 UNITS X 0.2	8 SPACES	8 SPACES
TOTAL PARKING	22 PACES	58 SPACES
PARKING LEVEL 1		58 SPACES
SURFACE		0 SPACES
TOTAL		58 SPACES

BICYCLE PARKING	REQUIRED	PROVIDED
BICYCLE PARKING 40 UNITS	(MIN. 0.5/UNIT) 20 SPACES	
LEVEL P1		34 SPACES
LEVEL P2		26 SPACES
TOTAL	20 SPACES	60 SPACES

AMENITY	REQUIRED	PROVIDED
AMENITY MIN. 6m^2 / UNIT (40UNITS X 6m^2)	240 m^2	
PRIVATE AMENITY 50 % OF REQ'D	120m2	120m2
COMMON AMENITY 50 % OF REQ'D		
ROOF AMENITY (OUTDOOR)		162.5 m^2
ROOF AMENITY (INDOOR)	120 m^2	96.5 m^2
TOTAL	240 m^2	379 m^2

BUILDING SUMMARY	GROSS	NET
MECHANICAL OPEN AIR CHILLERS	175 m^2	-
MECH/ ROOF AMENITY	284 m^2	-
LEVEL 6	716 m^2	617 m^2
LEVEL 2-5 (X4)	985 m^2 (3,940m^2)	884 m^2 (3,536m^2)
GROUND LEVEL	968 m^2	542 m^2
TOTAL	6, 088 m^2	4, 645 ^{2}
LEVEL P1	1365 m2	-
LEVEL P2	1365 m2	-

SURVEYORS NOTES AND LEGEND

—□—	Denotes	Survey Monument Planted.
—■—	"	Survey Monument Found.
SIB	"	Standard Iron Bar.
SSIB	"	Short Standard Iron Bar.
IBØ		Round Iron Bar.
IB	"	Iron Bar.
Wit.		Witness.
(P1)	"	Plan 5R-4445
(P2)	"	Plan by Fairhall Moffatt & Woodland (dated Mar.31. 2000.)
(P3)	"	Registered Plan 78
Meas.	"	Measured
CLF	"	Chain Link Fence
(D1)	"	Inst. No. N518013
C/L	"	Centreline

Bearings are astronomic derived from the the easterly limit of Main Street shown to be N 22° 54' 10" W on plan 5R-4445.

OWNER
UNIFORM URBAN DEVELOPMENTS

SURVEYOR
ANNIS O'SULLIVAN, VOLLEBEKK LTD.
14 CONCOURSE GATE. SUITE 500
OTTAWA, ONTARIO

E.H. HERNEYER
TEL (613) 727-0850

GEOTECHNICAL
PATERSON GROUP INC.

154 COLONNADE ROAD SOUTH
OTTAWA, ONTARIO K2E 7J5

CARLOS P. DA SILVA, P.ENG
TEL (613) 226-7381

TRANSPORTATION ENGINEER
PARSONS

1223 MICHAEL STREET, SUITE 100
PERTH, ONTARIO K1J 7T2

RONALD JACK, P.ENG.
TEL (613) 738-4160

LANDSCAPE ARCHITECT
CSW LTD.
SUITE 200, 1460 SCOTT STREET
OTTAWA, ONTARIO K1Z 8L8

MARTHA LUSH
TEL (613) 724-4536 X 231

SITE SERVICING ENGINEER
DAVID SCHAEFFER ENGINEERING LTD.

120 IBER ROAD, UNIT 203
STITTSVILLE, ONTARIO K2S 1E9

ADAM D. FOBERT. P.ENG.
TEL (613) 836-0856 X 231

no.	date	revision
01	OCT 31 2017	ISSUED FOR SITE PLAN CONTROL

It is the responsibility of the appropriate contractor to check and verify all dimensions on site and report all errors and/ or omissions to the architect.

All contractors must comply with all pertinent codes and by-laws.

Do not scale drawings.

This drawing may not be used for construction until signed.

Copyright reserved.

ONTARIO ASSOCIATION OF ARCHITECTS
CARL J. HOBIN
LICENCE
3049

Hobin Architecture Incorporated
63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7
T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com
hobinarc.com

HOBIN ARCHITECTURE

PROJECT/LOCATION:
115 ECHO
Residential Apartment Building
115 Echo Drive

DRAWING TITLE:
Site Plan

DRAWN BY:	DATE:	SCALE:
RL.	2017-10-30	1:150

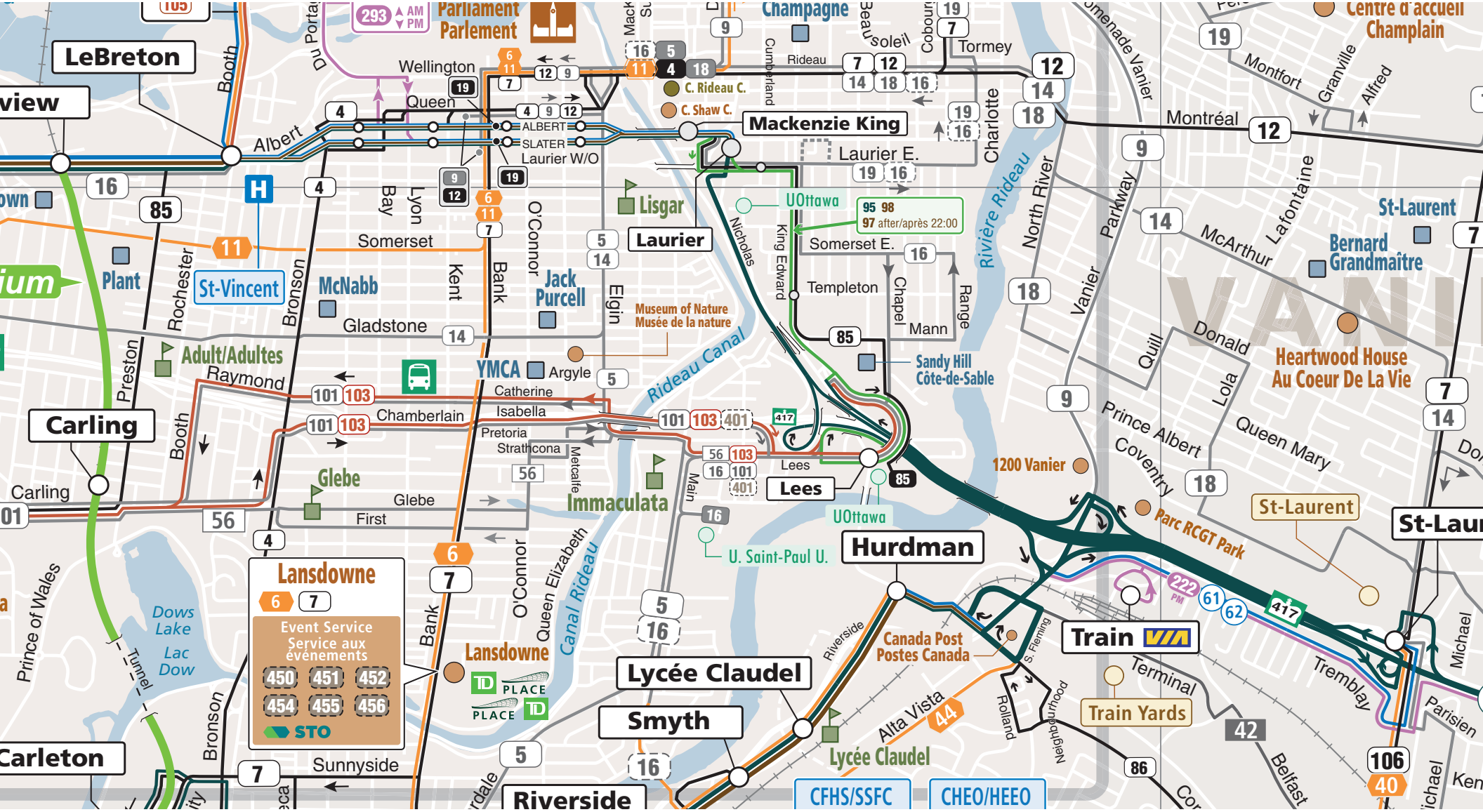
PROJECT: 1405

DRAWING NO.: A1.01

REVISION NO.:

APPENDIX B

OC TRANSPO SYSTEM MAP


LeBreton
Parliament
Parlement
Wellington
Queen
Albert
ALBERT
SLATER
Laurier W/O
Mackenzie King
Laurier E.
Champagne
Rideau
C. Rideau C.
C. Shaw C.
Tormey
Montréal
Centre d'accueil Champlain
Montfort
Granville
Alfred
Lisgar
Laurier
UOttawa
95 98
97 after/après 22:00
Somerset E.
Templeton
Mann
Sandy Hill
Côte-de-Sable
Rivière Rideau
Rideau Canal
Somerset
Gladstone
Raymond
Chamberlain
Catherine
Isabella
Pretoria
Strathcona
Argyle
YMCA
Jack Purcell
McNabb
St-Vincent
Plant
Adult/Adultes
Museum of Nature
Musée de la nature
Carling
Glebe
First
Immaculata
Lees
Hurdman
U. Saint-Paul U.
1200 Vanier
Parc RCGT Park
Heartwood House
Au Coeur De La Vie
St-Laurent
Bernard Grandmaître
McArthur
Lafontaine
Donald
Lola
Quill
Prince Albert
Coventry
Queen Mary
Train
Train Yards
Terminal
Tremblay
Canada Post
Postes Canada
Lansdowne
Event Service
Service aux événements
450 451 452
454 455 456
STO
Lycée Claudel
Smyth
Riverside
Alta Vista
Sunnyside
Carleton
Dows Lake
Lac Dow
Prince of Wales
Tunnel
Canal Rideau
Bank
O'Connor
Queen Elizabeth
Bronson
Rochester
Preston
Booth
Kent
Lyon
Bay
Elgin
Nicholas
King Edward
Chapel
Range
Charlotte
Cumberland
Cobourg
Beau soleil
Mackenzie
Du Portage
Promenade Vanier
North River
Parkway
Vanier
Quill
Riverside
S. Fleming
Rolland
Neighbourhood
Belfast
Parisien
Michael
CFHS/SSFC
CHEO/HEEO

APPENDIX C

TRAFFIC COUNTS

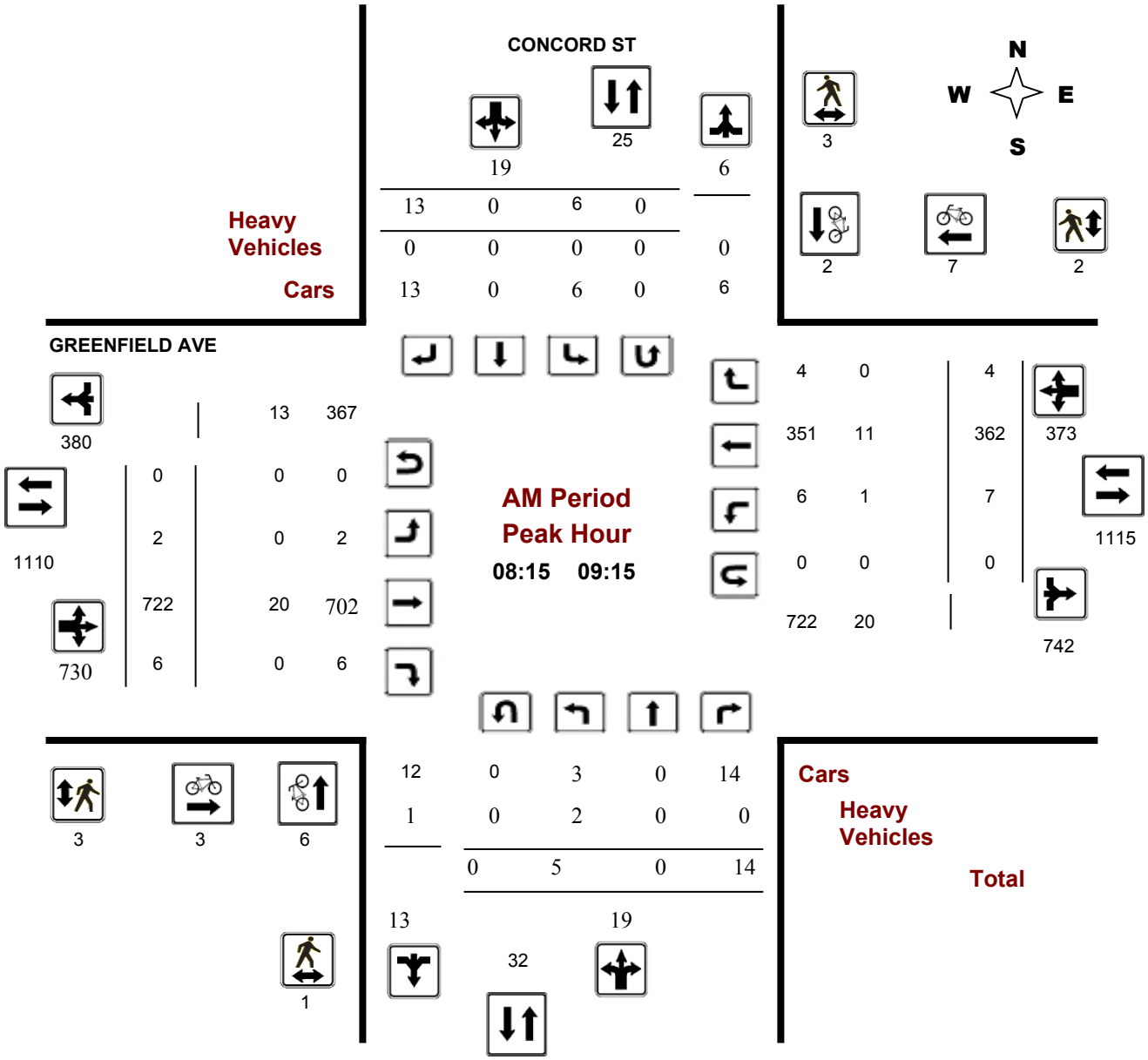
Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

CONCORD ST @ GREENFIELD AVE

Survey Date: Monday, July 28, 2014
Start Time: 07:00

WO No: 29389
Device: Jamar Technologies, Inc



Comments

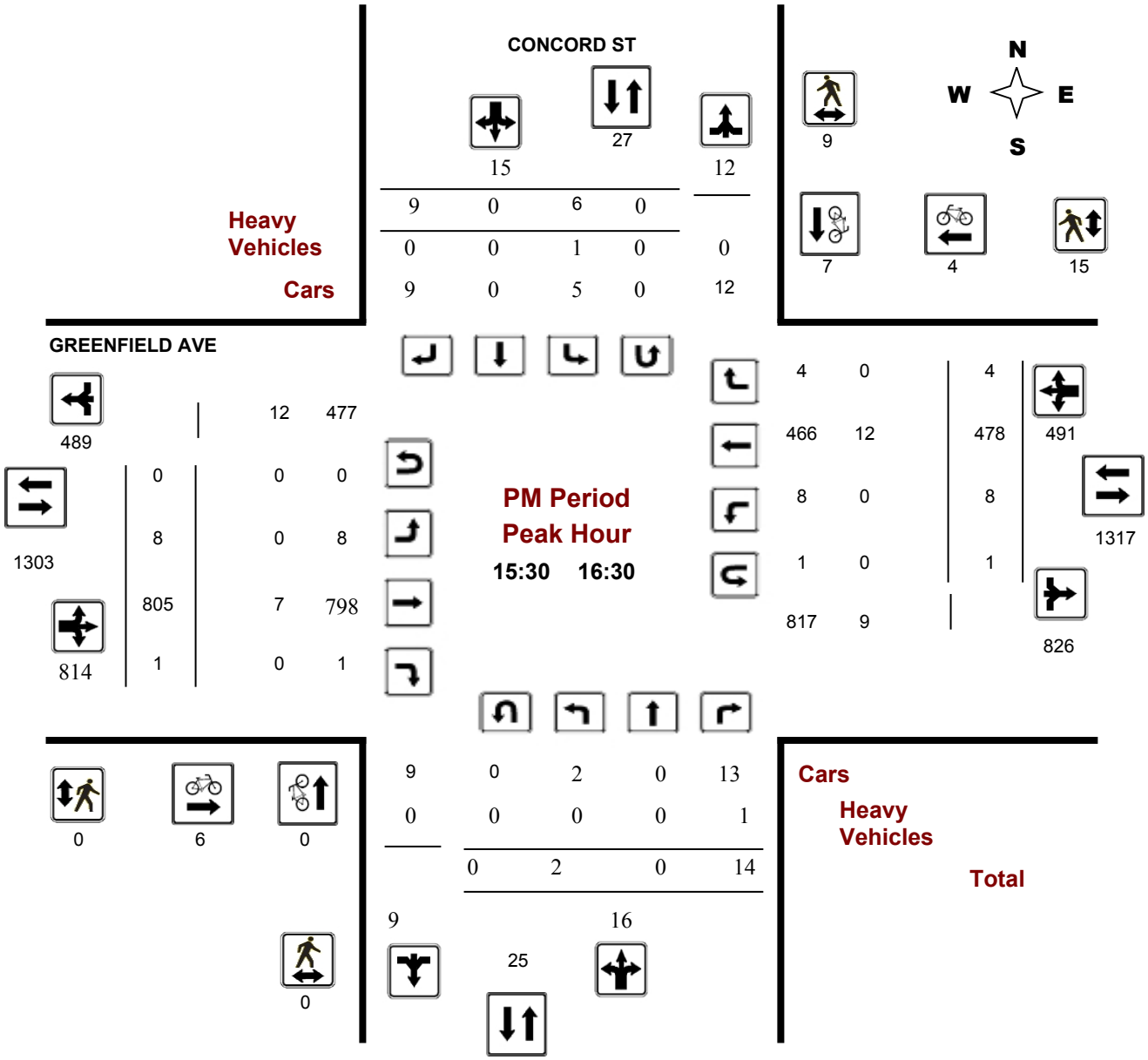
Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

CONCORD ST @ GREENFIELD AVE

Survey Date: Monday, July 28, 2014
Start Time: 07:00

WO No: 29389
Device: Jamar Technologies, Inc



Comments

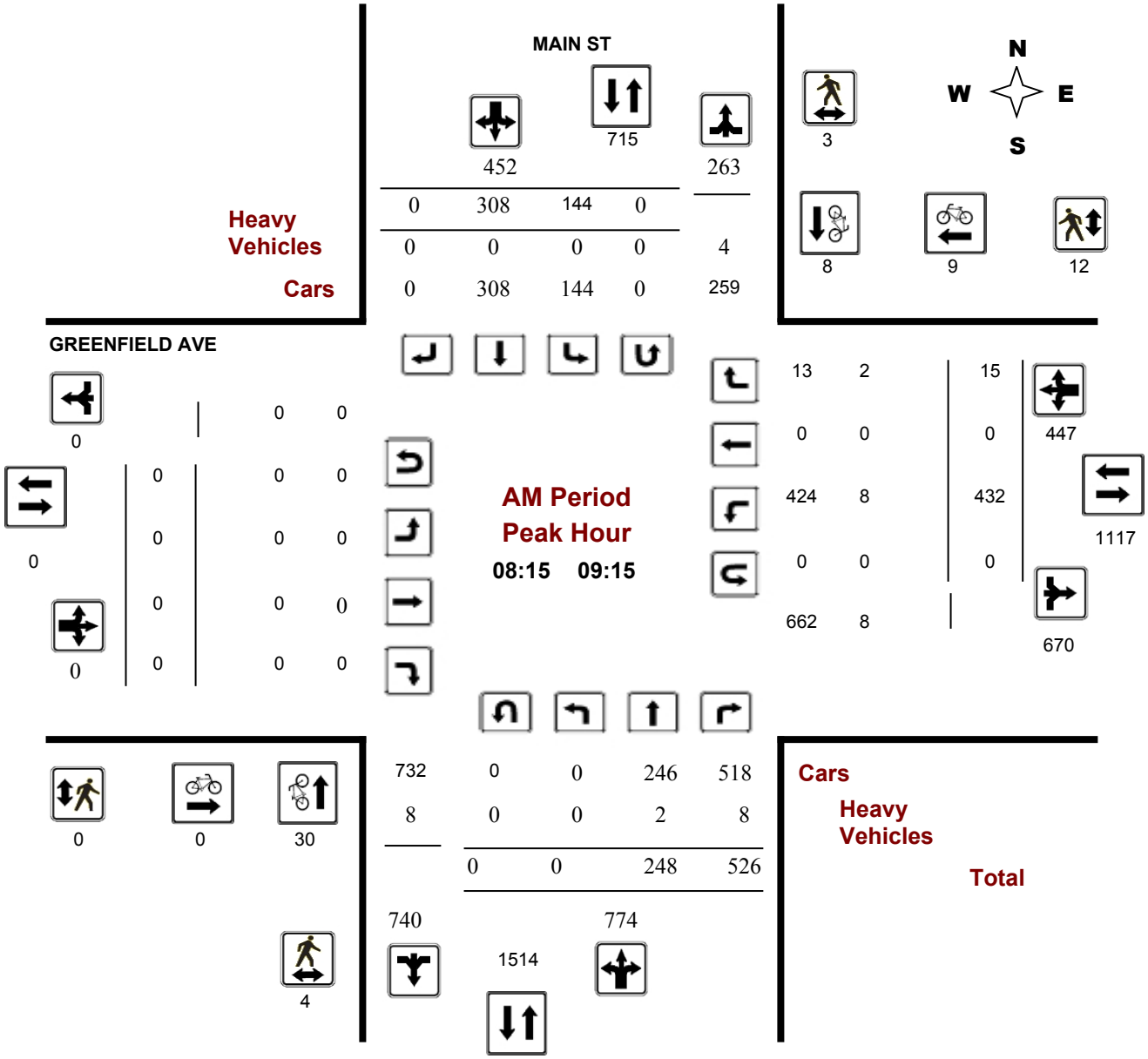
Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

GREENFIELD AVE @ MAIN ST

Survey Date: Thursday, July 25, 2013 **WO No:** 31411

Start Time: 07:00 **Device:**



Comments

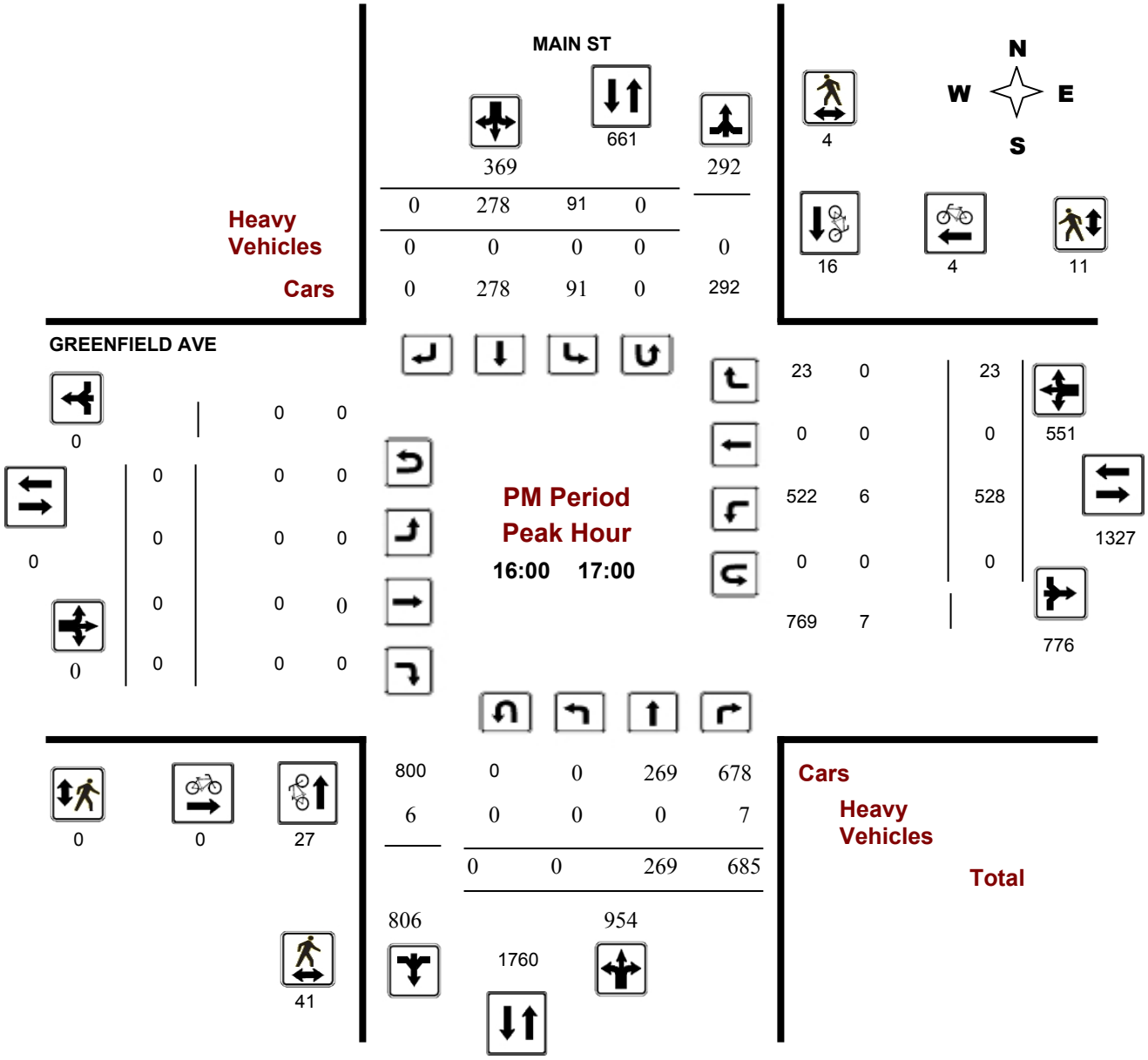
Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

GREENFIELD AVE @ MAIN ST

Survey Date: Thursday, July 25, 2013 **WO No:** 31411

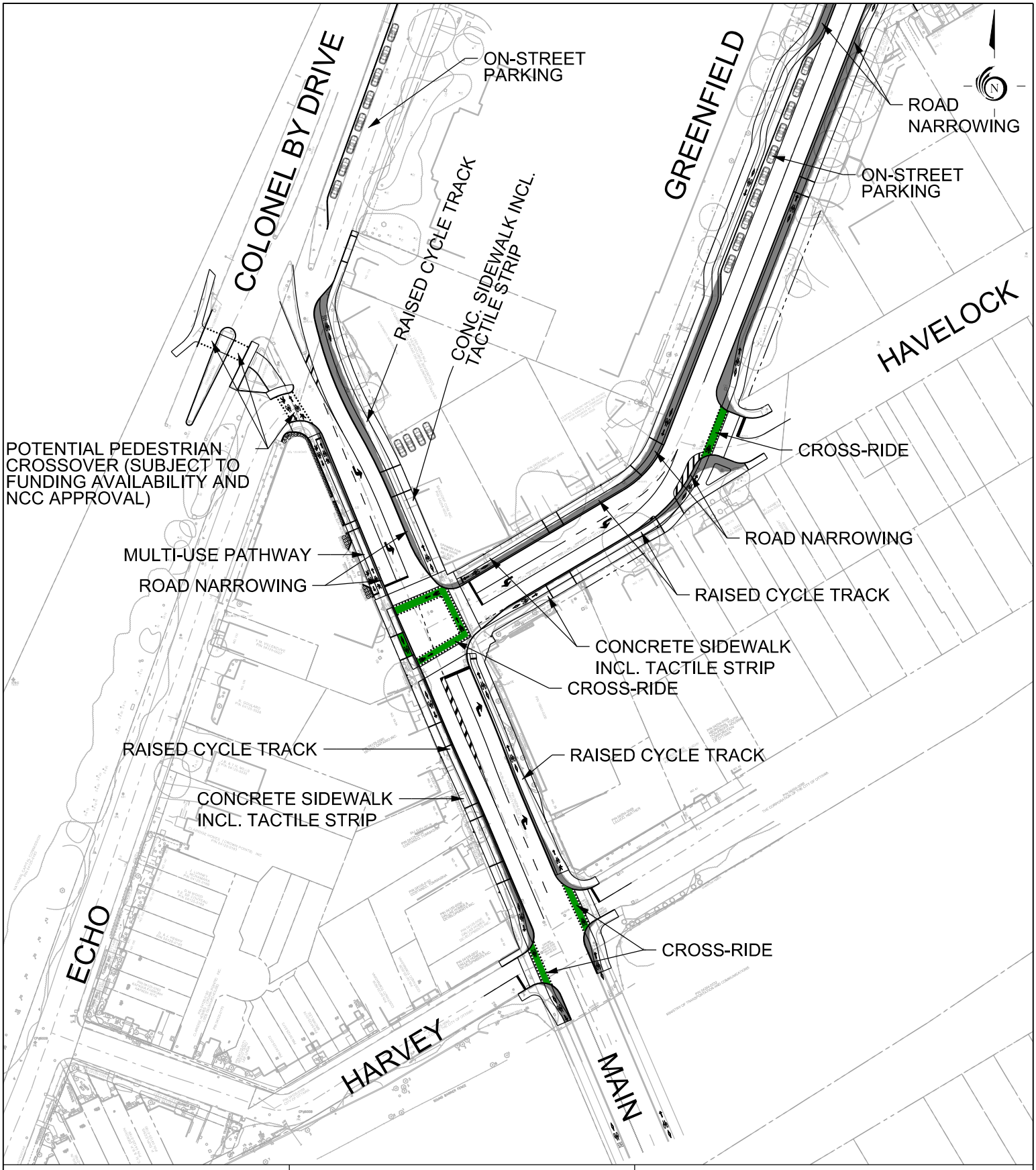
Start Time: 07:00 **Device:**



Comments

APPENDIX D

GREENFIELD PROJECT
ROAD MODIFICATIONS



Ottawa

TRANSPORTATION SERVICES DEPT

PROPOSED MODIFICATIONS

MAIN STREET
COLONEL BY DR. TO HARVEY ST.

Transportation Engineering Services Branch

Approved By: V. Black	Drawing No.: RMA-2017-TES-033B
Completed By: PARSONS	
Scale: N.T.S.	Date: July 28, 2017