

To: Development Services Committee

From: Warren Munro, HBA, RPP, Commissioner,
Development Services Department

Report Number: DS-22-52

Date of Report: March 2, 2022

Date of Meeting: March 7, 2022

Subject: Update on the Lviv Boulevard Design and Ministry of
Transportation's Rehabilitation of Highway 401 and
Replacement of Bridge Structures Contracts

Ward: Ward 5

File: 03-05

1.0 Purpose

On November 4, 2019, City Council considered Item DS-19-187 dated October 16, 2019, a report of the Commissioner of Development Services, regarding a Recommended Option for Lviv Boulevard after Ministry of Transportation (M.T.O.) Widens Crossings at Simcoe Street South and Albert Street. City Council adopted Attachment 4 to Report DS-19-187 dated October 16, 2019, as the City's preferred configuration for Lviv Boulevard following the completion of the widening of Highway 401 including the new crossings over Simcoe Street South and Albert Street (the "Project").

In early February 2022, M.T.O. presented to the City for 90 percent design review package for the rehabilitation of Highway 401 that included:

- Designs for the closure of Lviv Boulevard;
- Designs associated with the pavement rehabilitation and replacement of the Simcoe Street South bridge structure; and,
- The proposed detour plans for the closure of Highway 401 in anticipation of the removal of the bridge structure.

The purpose of this Report is to:

1. Provide an update on the Project status and anticipated construction timing;
2. Present the 90 percent M.T.O. design for Lviv Boulevard;
3. Present the proposed detour plans for the Highway 401 closure in anticipation of the removal of the Simcoe Street South bridge structure over Highway 401; and,

4. Establish the City's comments on both the latest design for Lviv Boulevard and the detour plans.

Attachment 1 is a map showing the limits of the Lviv Boulevard right-of-way and the properties that have been purchased by M.T.O. to advance the Project.

Attachment 2 is a copy of Report DS-19-187, dated October 16, 2019 which can be found at the following link: http://app.oshawa.ca/agendas/development_services/2021/09-13/report_ds-21-144.pdf.

Attachment 3 illustrates M.T.O.'s 2019 proposed design for the termination of Lviv Boulevard.

Attachment 4 illustrates the City's preferred configuration for Lviv Boulevard.

Attachment 5 illustrates M.T.O.'s latest design for Lviv Boulevard.

Attachment 6 illustrates proposed detour routes for the closure of Highway 401 to facilitate the removal of the Simcoe Street South bridge structure.

Attachment 7 illustrates the detour routes for the southbound left turn prohibition at the intersection of Bloor Street and Simcoe Street South.

2.0 Recommendation

That the Development Services Committee recommend to City Council:

1. That Report DS-22-52 dated March 2, 2022 regarding the Update on the Lviv Boulevard Design and Ministry of Transportation's Rehabilitation of Highway 401 and Replacement of Bridge Structures Contracts be endorsed as the City's comments.
2. That a copy of Report DS-22-52 be forwarded to the Ministry of Transportation and the Regional Municipality of Durham.

3.0 Executive Summary

Not Applicable.

4.0 Input From Other Sources

The following have been consulted in the preparation of this Report:

- Commissioner, Community Services
- Ministry of Transportation Ontario

Staff have circulated the latest M.T.O. submission of the design review package to various City departments for comment. The staff comments presented in this Report include all comments received from the various City departments.

5.0 Analysis

5.1 Background

In 2015, M.T.O. completed a Municipal Class Environmental Assessment for the Highway 401 Rehabilitation and Long-Term Widening Needs from Brock Road to Courtice Road.

On June 8, 2017, the City received a Notice of Study Commencement dated June 6, 2017, from M.T.O. to provide notice of undertaking of the Detail Design and Class Environmental Assessment of Highway 401 westbound pavement rehabilitation from Stevenson Road South to Highway 35/115 (approximately 22 kilometres or 13.7 miles) and replacement of three bridge structures in the Regional Municipality of Durham, City of Oshawa and Municipality of Clarington.

As part of the Project, M.T.O. intends to remove and widen both the Simcoe Street South and Albert Street bridge structures over Highway 401.

The original 2015 Municipal Class Environmental Assessment included an intersection at Simcoe Street South and Lviv Boulevard. In 2019, through the detailed design process, it was determined that longer and wider bridge structures were required at both Simcoe Street South and Albert Street to facilitate a wider highway with more lanes and improved acceleration and deceleration lanes. As a result, the intersection with Lviv Boulevard was determined to be not feasible since the longer bridge structure at Simcoe Street South will extend past Lviv Boulevard which would result in the two roads being at different grades. Accordingly, M.T.O.'s design proposed the termination of Lviv Boulevard with a cul-de-sac adjacent to Simcoe Street South as shown in Attachment 3.

On November 4, 2019, City Council considered Item DS-19-187 dated October 16, 2019, a report of the Commissioner of Development Services, regarding a Recommended Option for Lviv Boulevard after M.T.O. Widens Crossings at Simcoe Street South and Albert Street and adopted Attachment 4 as the City's preferred configuration for Lviv Boulevard (see Attachment 4 to this Report).

In early February 2022, M.T.O. made a submission to the City for the 90 percent design review package that included:

- Designs for the closure of Lviv Boulevard;
- Designs associated with the pavement rehabilitation and replacement of the Simcoe Street South bridge structure; and,
- The proposed detour plans for the closure of Highway 401 in anticipation of the removal of the bridge structure.

5.2 Project Status Update

The Highway 401 westbound pavement rehabilitation from Stevenson Road South to Highway 35/115 and the replacement of three bridge structures project is divided into five contracts. Contracts one and two are in the Municipality of Clarington and have been

completed. The other three contracts are in the City of Oshawa. Their description and project status are provided below:

- Contract 3 – Highway 401 Westbound Pavement Rehabilitation, from 0.9 kilometres west of Stevenson Road South easterly to 0.3 kilometres west of Simcoe Street South and from Drew St easterly to 2.1 kilometres west of Courtice Road (5.2 km), and rehabilitation of the Hwy 401 Oshawa Creek Bridge Structures. Construction for this contract is expected to be completed in 2022.
- Contract 4 – Highway 401 Shoulder Widening at Simcoe Street South, and replacement of the Simcoe Street Bridge. Construction for this contract is expected to start in 2022.
- Contract 5 – Highway 401 Westbound Pavement Rehabilitation, from 0.3 kilometres west of Simcoe Street South, easterly to Drew Street, extension of Hwy 401 westbound on-ramp at Drew Street, and replacement of the Albert Street Bridge. Construction is anticipated to begin in 2024.

Details of Contracts 4 and 5 are provided in Sections 5.2.1 and 5.2.2 of this Report.

5.2.1 Contract 4

Construction activities related to Contract 4 has been identified to commence in 2022 and includes the following:

- Simcoe Street South bridge structure over Highway 401 replacement and reconstruction of the intersection approaches to Simcoe Street South;
- Retaining wall construction along the north side of Highway 401;
- Highway 401 eastbound and westbound widening;
- Bloor Street westbound reconstruction;
- Lviv Boulevard cul-de-sac construction and walkway construction (from Simcoe Street South to approximately 15 metres (49.2 ft.) east of 8 Lviv Boulevard;
- Lviv Boulevard and Simcoe Street South storm sewer replacement; and,
- Region of Durham sanitary sewer and fire hydrant relocations along Simcoe Street South and Lviv Boulevard.

5.2.2 Contract 5

Construction activities related to Contract 5 is anticipated to commence in 2024 and includes the following:

- Albert Street bridge structure over Highway 401 replacement and reconstruction of the intersection approaches to Albert Street;

- Retaining wall construction along the north side of Highway 401;
- Retaining wall construction along the south side of Highway 401;
- Highway 401 eastbound and westbound widening from west of Simcoe Street South to Drew Street;
- Lviv Boulevard reconstruction of the remaining portion to Albert Street;
- Resurfacing of three Highway 401 westbound ramps; and,
- Resurfacing of Highway 401 westbound lanes from west of Simcoe Street South to Drew Street.

It should be noted that prior to any construction work on City owned right of ways it is common practice for the M.T.O. to acquire responsibility for those portions of public highway that will be impacted as part of the proposed work. Following the completion of the project the M.T.O. will return those portions of public highway back to the ownership of the municipality. These sections of public highway will typically be transferred back to the municipality by Order in Council, pursuant to applicable subsections of the Public Transportation and Highway Improvement Act. This means that the ownership of these sections of public highway and infrastructure thereon will then be vested in the City and become part of the local road network.

5.3 90 Percent Design for Lviv Boulevard

As part of Contract 4, the latest M.T.O. design for Lviv Boulevard is illustrated in Attachment 5.

Contrary to the November 4, 2019 Council direction, the latest design for Lviv Boulevard is consistent with M.T.O.'s design proposed in 2019 as shown in Attachment 3 and not with the City's preferred configuration as illustrated in Attachment 4.

Through consultations, the following was brought to our attention by M.T.O.:

- The Council preferred design for Lviv Boulevard does not accommodate a sidewalk or pedestrian access to Simcoe Street South.
- The Council preferred design showed an approximate 8 metre (26.3 ft.) radius, matching the City of Oshawa's minimum standard for a Temporary Cul-De-Sac.
- As the Lviv Boulevard cul-de-sac will not be temporary, M.T.O. had concerns that the smaller radius would not be sufficient for all emergency vehicles to use.
- The 8 metre (26.3 ft.) radius cul-de-sac is also much smaller than the M.T.O. design standard and the City of Oshawa's standard for Typical Residential Cul-De-Sac at 15 metres (49.2 ft.) and there would be insufficient right-of-way to construct a Standard cul-de-sac at the location proposed in the Council preferred design.

- A standard cul-de-sac located next to the St. George's Ukrainian Catholic Church parking lot would impact the Church property by reducing their parking capacity and altering their driveway access points to the parking lot. Furthermore, direct access from Lviv Boulevard would be restricted for the lots at 597 Simcoe Street South and 8 Lviv Boulevard, both of which have been subsequently demolished.

M.T.O. further pointed out that their latest design for Lviv Boulevard would minimize impacts to adjacent property owners, provide a larger turning area for emergency vehicles, and provide pedestrian access to Simcoe Street South by maintaining a sidewalk connection. For the above reasons, M.T.O. has decided to proceed with their original design for Lviv Boulevard.

It should be noted that M.T.O. has already acquired 589 and 597 Simcoe Street South and 8 Lviv Boulevard.

5.4 Proposed Detour Plans

5.4.1 Simcoe Street South Bridge Removal

The removal and replacement of the Simcoe Street South bridge structure over Highway 401 is proposed in two stages over two years. The first stage would entail the removal of half of the bridge structure (west side) and would require the full closure of Highway 401 and Simcoe Street South from Highway 401 westbound on-ramp to Bloor Street for a short period of time. The removal will occur on a weekend during the off-peak hours from 11:00 p.m. Saturday to 7:00 a.m. Sunday for a total closure of 8 hours.

The closure of the Highway 401 and Simcoe Street South would require traffic to be detoured along separate signed detour routes along the adjacent nearby municipal road network.

Attachment 6 illustrates the proposed detour routes for the Highway 401 closure.

The closure of Highway 401 will entail the closure of the:

- Eastbound lanes east of the eastbound off-ramp at Simcoe Street;
- Westbound lanes west of the westbound off-ramp at Drew Street;
- Both eastbound on-ramps at Stevenson Road South;
- Westbound on-ramp at Drew Street;
- Northbound left turn lane at the intersection of Drew Street and First Avenue; and,
- Westbound on-ramp at Harmony Road South.

Eastbound traffic along Highway 401 would be required to exit the highway using the Simcoe Street off-ramp and use Bloor Street to travel east and return to the highway using the eastbound Ritson Road on-ramp.

Westbound traffic along Highway 401 would be required to exit the highway using the Drew Street off-ramp, travel north along Drew Street, make a left at First Avenue, make a left at Simcoe Street South, and return to Highway 401 using the Simcoe Street South westbound on-ramp.

To provide efficient traffic flow for detoured traffic, police patrol will be provided at the following intersections:

- Drew Street and Toronto Avenue;
- First Avenue and Drew Street;
- First Avenue and Albert Street;
- Simcoe Street South and First Avenue;
- Simcoe Street South and Highway 401 westbound on-ramp;
- Bloor Street West and Highway 401 Simcoe Street eastbound off-ramp;
- Bloor Street and Simcoe Street South; and,
- Bloor Street East and Highway 401 Ritson Road eastbound on-ramp.

Both Drew Street and First Avenue are classified as Collector Roads with approximately 9.8 metres of pavement width (32.1 ft.).

First Avenue has four residential properties with direct access while Drew Street, south of First Avenue, has 20 residential properties that have direct access and would be impacted by the proposed detour routes.

M.T.O. has indicated that due to the existing condition of Drew Street, they expect to repave Drew Street south of First Avenue as part of Contract 4. However, First Avenue has not been identified for repaving but, a decision will be made following pre and post-construction inspections. City staff have already advised M.T.O. staff that the City's expectations are that First Avenue will be repaved as well.

5.4.2 Simcoe Street South Bridge Replacement – Stage 1 of Construction

Once the first half of the bridge structure (west side) is removed, stage 1 of the construction will commence for its replacement, which would last for approximately one year. During this construction period:

- The sidewalk along the west side of Simcoe Street South from 582 Simcoe Street South to Bloor Street will be closed;
- Access to Lviv Boulevard from Simcoe Street South will be restricted to right turns only;
- Southbound left turns will be prohibited at Bloor Street;
- Trucks will not be allowed to turn left to head north from Bloor Street West (eastbound left and westbound right turns from Bloor Street);
- All Highway 401 eastbound and westbound lanes will be maintained open during peak hours; and,
- Temporary Highway 401 eastbound and westbound lane closures will be required during off-peak hours.

Attachment 7 illustrates the detour routes for the southbound left turn prohibition at the intersection of Bloor Street and Simcoe Street South.

Southbound traffic along Simcoe Street South that is headed eastbound along Bloor Street East can choose one of the following two detours:

- Continue southbound along Simcoe Street South past Bloor Street, make a left at Wentworth Street East, make a left at Ritson Road South, and make a right at Bloor Street East; or,
- Make a left at First Avenue, make a right at Ritson Road South, and make a left at Bloor Street East.

5.4.3 Simcoe Street South Bridge Replacement – Stage 2 of Construction

Following stage 1 of the construction, the second half of the Simcoe Street South bridge structure (east side) would be removed and stage 2 of the construction would commence, which would last for approximately one more year. During this construction period:

- The sidewalk along the east side of Simcoe Street South from 589 Simcoe Street South to Bloor Street will be closed;
- Lviv Boulevard and the existing sidewalk will be closed mid-way and access to the west portion would be restricted to construction traffic only;
- Southbound left turns will be prohibited at Bloor Street; and;
- Trucks will not be allowed to turn left to head north from Bloor Street West (eastbound left turn).

The detours routes for the southbound left turn prohibition at the intersection of Bloor Street and Simcoe Street South would be similar to what is proposed for stage 1 as illustrated in Attachment 7.

5.5 Staff Comments

Staff comments related to Lviv Boulevard and the proposed detour routes are provided in the below sections. Comments on other items submitted will be provided directly by staff.

5.5.1 90 Percent Design for Lviv Boulevard

Although the latest design for Lviv Boulevard is contrary to the November 4, 2019 Council direction, the fact that M.T.O. has already acquired 589, 597 Simcoe Street South and 8 Lviv Boulevard, the City has no choice but to accept the design as proposed.

5.5.2 Proposed Detour Plans

Although the proposed detour routes provide the shortest detour, they have the highest impact to the surrounding residential neighbourhoods and the residents along both First Avenue and Drew Street.

As a result, the following comments are provided to M.T.O.:

- Alternate detour routes that utilize Regional Roads should be considered. For example, using the designated Emergency Detour Route along Bloor Street by closing westbound Highway 401 at Harmony Road South. For this detour, westbound traffic along Highway 401 would exit at Harmony Road South, make a left to head westbound along Bloor Street and return to Highway 401 at Stevenson Road South. The detour for eastbound traffic would remain the same.
- It is the City's expectation that M.T.O. will develop a comprehensive communication plan to engage both residents and businesses via direct mailout to the City's satisfaction; and,
- It is the City's expectation that M.T.O. will provided advance notification of any Highway 401 closures and proposed detours via direct mailout to all residents, property owners and businesses within 500 metres (0.3 miles) of detour routes.

5.5.3 Contract 4 Construction

Given that the scope of Contract 4 includes the reconstruction of the Simcoe Street South and Bloor Street intersection and would require the replacement of the sidewalk along the north side, it is recommended that a multi-use path be provided along Bloor Street to connect the Michael Starr Trail to the Joseph Kolodzie Trail in lieu of a sidewalk. The connection of the multi-use path would extend from Albert Street to Simcoe Street South, transition to the south side of Bloor Street, and connect to the Joseph Kolodzie Trail.

Furthermore, since the Michael Starr Trail connection from Albert Street to Bloor Street will no longer be available during and following the construction, it is further recommended that a multi-use connection be provided from the Albert Street bridge over Highway 401 to Bloor Street to maintain the continuity of the Michael Starr Trail. This could be facilitated either by building the multi-use path on M.T.O. property and conveying it to the City or by building it along Albert Street in lieu of the sidewalk along the west side.

6.0 Financial Implications

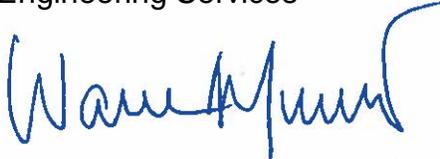
There are no financial implications resulting from the recommendation of this Report.

7.0 Relationship to the Oshawa Strategic Plan

The Recommendation advances the Accountable Leadership goal of the Oshawa Strategic Plan.



Anthony Ambra, P.Eng., Director,
Engineering Services



Warren Munro, HBA, RPP, Commissioner,
Development Services Department

Subject: Update on the Lviv Boulevard Design and Ministry of Transportation's Rehabilitation of Highway 401 and Replacement of Bridge Structures Contracts

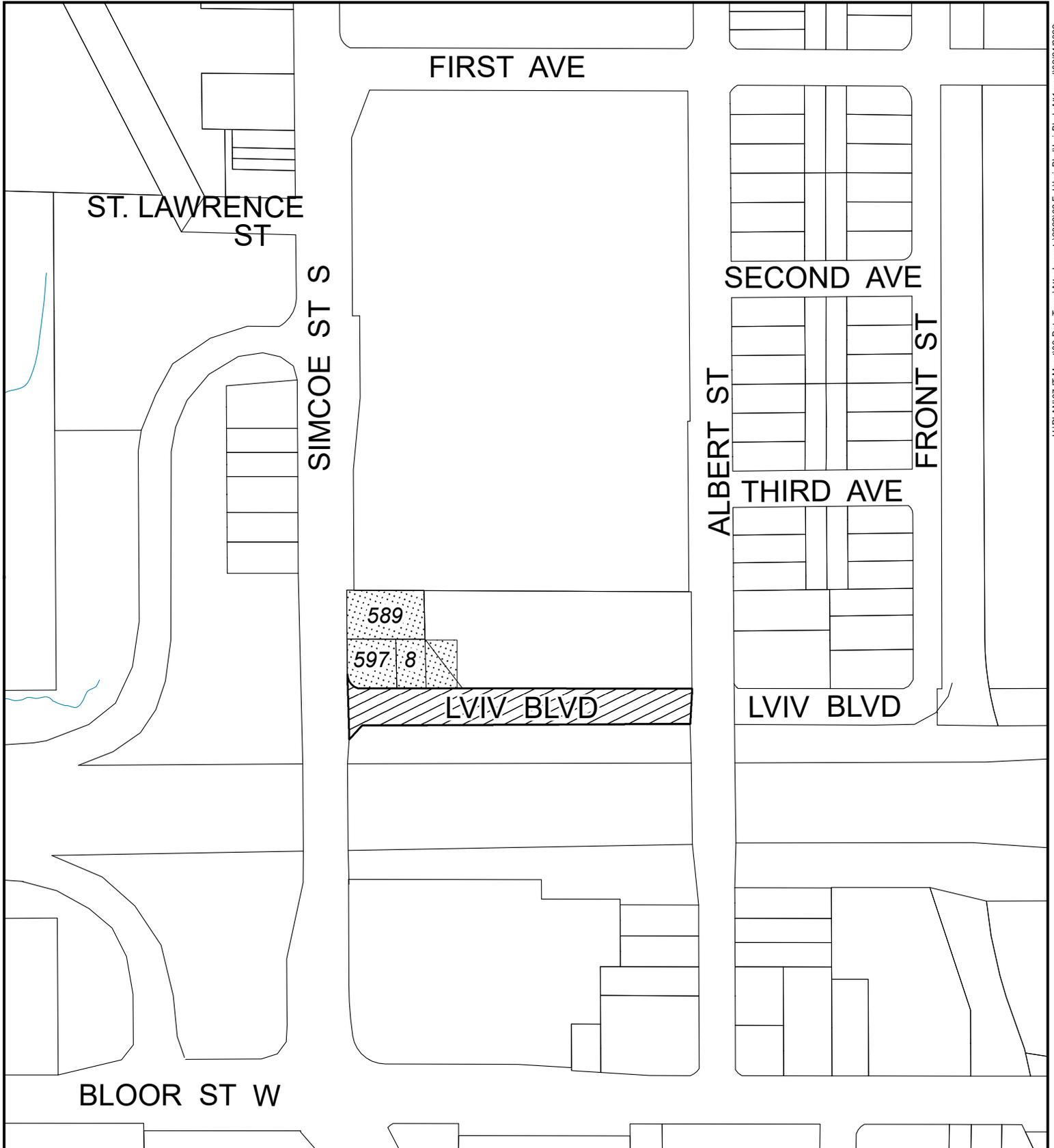
Item: DS-22-52
Attachment 1

Ward: Ward 5
File: 03-05



-  Subject Site
-  Sites required by MTO

City of Oshawa
Development Services Department 



Title: M.T.O.'s 2019 proposed design for the termination of Liviv Boulevard
 Subject: Update on the Liviv Boulevard Design and Ministry of Transportation's Rehabilitation of Highway 401 and Replacement of Bridge Structures Contracts
 Ward: Ward 5
 File: 03-05

City of Oshawa
 Development Services Department



NOT FOR CONSTRUCTION - PRELIMINARY

METRIC

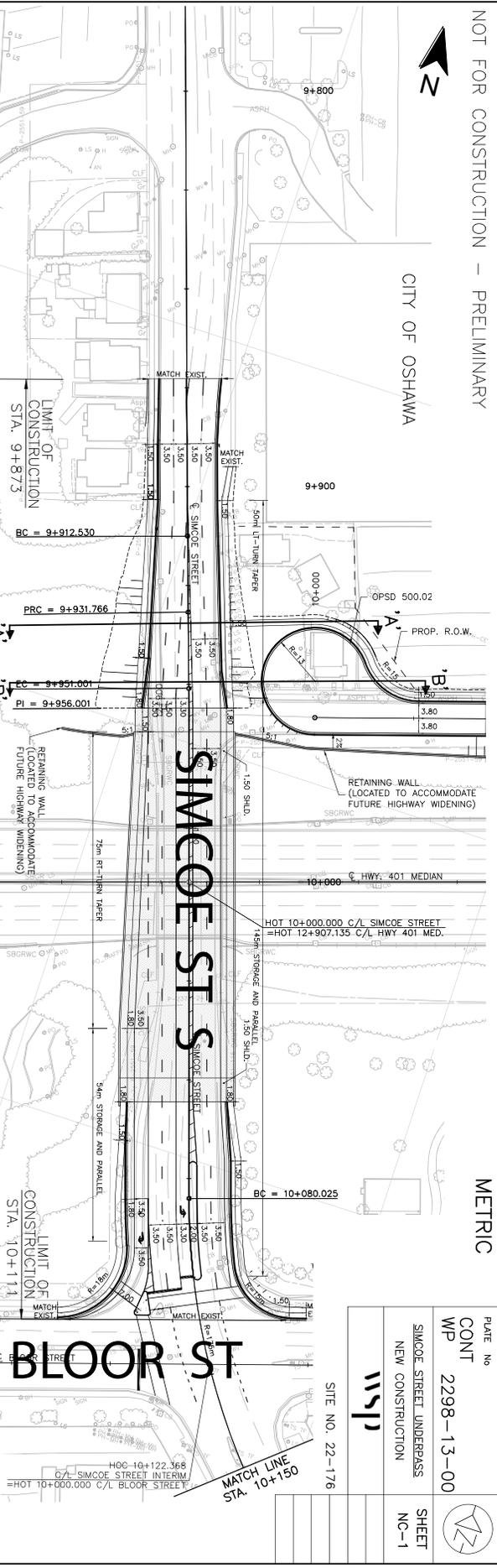


CITY OF OSHAWA

PLATE No	CONT
WP	2298-13-00
SIMCOE STREET UNDERPASS NEW CONSTRUCTION	
SHEET	NC-1

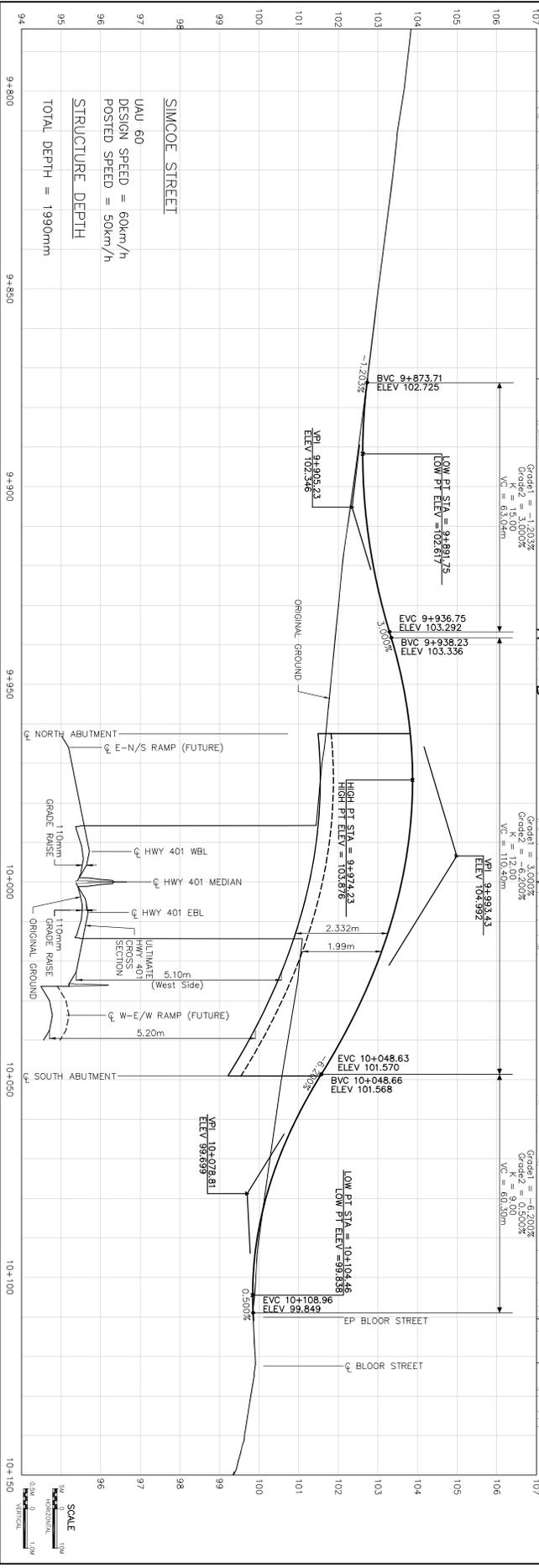


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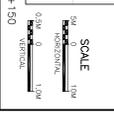


BLOOR ST

SIMCOE ST S



SIMCOE STREET
 UAU 60
 DESIGN SPEED = 60km/h
 POSTED SPEED = 50km/h
 STRUCTURE DEPTH
 TOTAL DEPTH = 1990mm



Subject: Update on the Lviv Boulevard Design and Ministry of Transportation's Rehabilitation of Highway 401 and Replacement of Bridge Structures Contracts **Item: DS-22-52 Attachment 4**

Ward: Ward 5

File: 03-05

- Proposed Cul-de-Sac Concept
- ▨ Sites required by MTO
- ▭ Proposed Reduced LVIV Boulevard
- ▨ Proposed Closed LVIV Boulevard Right of Way



City of Oshawa
Development Services Department 



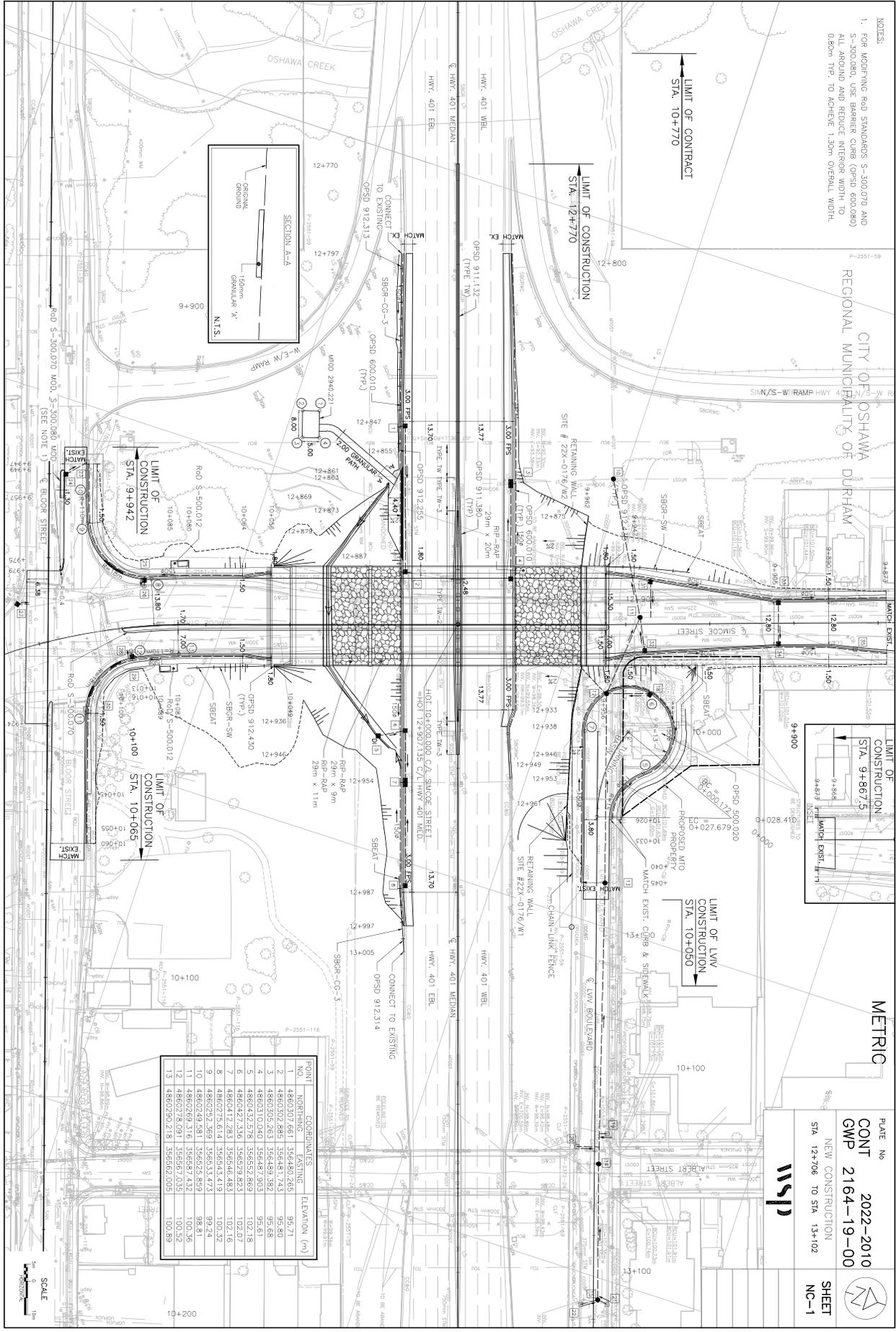
H:\PLAN\07-IT Mgmt\09-Data Trans\Attachments\2022\02 Feb\LvivBlvd\LvivBlvd_A13.mxd\02/24/2022

Title: M.T.O.'s Latest Design for Liviv Boulevard
 Subject: Update on the Liviv Boulevard Design and Ministry of Transportation's Rehabilitation of Highway 401 and Replacement of Bridge Structures Contracts
 Ward: Ward 5
 File: 03-05

City of Oshawa
 Development Services Department



- NOTES:
- FOR MODIFYING ROAD STANDARDS 5-300.070 AND 5-300.080, USE BARRIER CURB (O.P.S.D. 600.060) ALL AROUND AND REDUCE INTERIOR WIDTH TO 0.80m TYP. TO ACHIEVE 1.30m OVERALL WIDTH.



POINT	NORTHING	EASTING	ELEVATION (m)
1	4860307.661	356480.265	95.71
2	4860302.888	356481.743	95.80
3	4860305.263	356489.382	95.68
4	4860310.040	356489.903	95.61
5	4860429.578	356552.889	102.18
6	4860427.530	356552.823	102.07
7	4860275.614	356553.479	100.32
8	4860252.560	356553.473	99.24
9	4860249.481	356552.859	98.81
10	4860289.316	356587.432	100.36
11	4860278.091	356587.035	100.52
12	4860290.218	356587.005	100.89

METRIC

PLATE No 2022-2010
 CONT 2164-19-00
 NEW CONSTRUCTION
 STA 12+706 TO STA 13+102

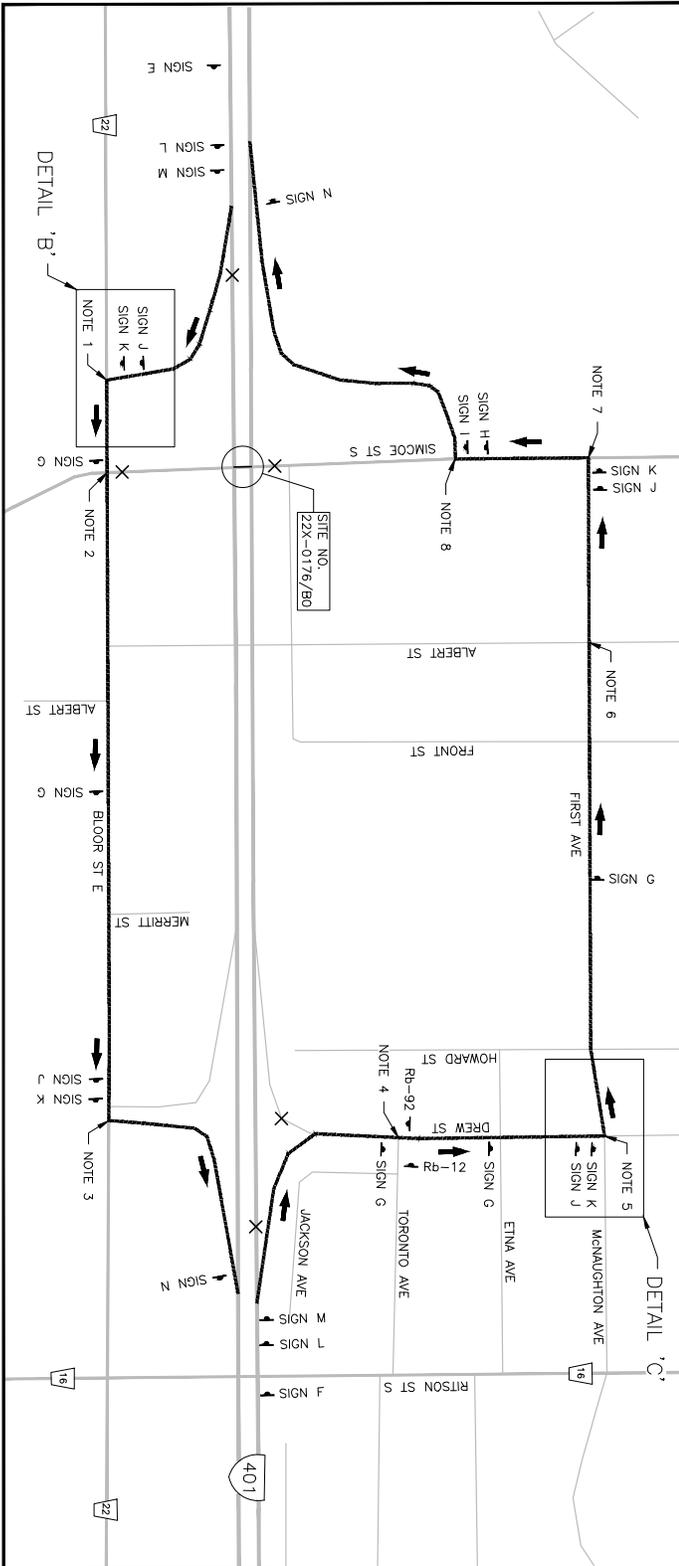
wsp

SHEET NO-1

Item: DS-22-52
Attachment 6

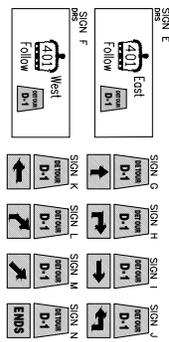
Title: Proposed Detour Routes for the Closure of Highway 401 to Facilitate the Removal of the Simcoe Street South Bridge Structure
Subject: Update on the Liviv Boulevard Design and Ministry of Transportation's Rehabilitation of Highway 401 and Replacement of Bridge Structures Contracts
Ward: Ward 5
File: 03-05

City of Oshawa
 Development Services Department



DETAIL 'A'

- NOTES:
1. POLICE CONTROL REQUIRED AT INTERSECTION TO ALLOW MAXIMUM PRACTICAL FLOW OF DETOUR TRAFFIC TO TURN LEFT ONTO BLOOR STREET (TEMPORARY DOUBLE LEFT TURN).
 2. POLICE CONTROL REQUIRED AT INTERSECTION TO ALLOW MAXIMUM PRACTICAL FLOW OF DETOUR TRAFFIC TO TURN LEFT ONTO SWAMP AT SIGNALIZED INTERSECTION.
 3. POLICE CONTROL REQUIRED AT INTERSECTION TO ALLOW MAXIMUM PRACTICAL FLOW OF EB DETOUR TRAFFIC TURNING LEFT ONTO SWAMP AT SIGNALIZED INTERSECTION.
 4. POLICE CONTROL REQUIRED TO PROVIDE FREE MOVEMENT OF NB DETOUR TRAFFIC THROUGH AL-LAW STOP CONTROLLED INTERSECTION.
 5. POLICE CONTROL REQUIRED TO PROVIDE MAXIMUM PRACTICAL FLOW OF EB DETOUR TRAFFIC TURNING LEFT ONTO SWAMP AT SIGNALIZED INTERSECTION.
 6. POLICE CONTROL REQUIRED TO PROVIDE MAXIMUM PRACTICAL FLOW OF WB DETOUR TRAFFIC THROUGH SIGNALIZED INTERSECTION.
 7. POLICE CONTROL REQUIRED TO PROVIDE MAXIMUM PRACTICAL FLOW OF WB DETOUR TRAFFIC TURNING LEFT ONTO SIMCOE STREET.
 8. POLICE CONTROL REQUIRED TO GUIDE SB DETOUR TRAFFIC TO TURN RIGHT ONTO HWY 401 ON-RAMP.



METRIC

PLATE No	2022-2010
CONT	WP 2164-19-00
HWY 401 FULL CLOSURE DETOUR ROUTES	
wsp	
SHEET	ST-2

Title: Detour Routes for the Southbound Left Turn Prohibition at the Intersection of Bloor Street and Simcoe Street South
Subject: Update on the Livv Boulevard Design and Ministry of Transportation's Rehabilitation of Highway 401 and Replacement of Bridge Structures Contracts
Ward: Ward 5
File: 03-05

City of Oshawa
 Development Services Department



CITY OF OSHAWA
 REGIONAL MUNICIPALITY OF DURHAM

METRIC

PLATE No	2022-2010
CONT	WP 2164-19-00
SIMCOE ST STAGE 1 DETOUR ROUTES	
wsp	
SHEET	ST-4



NOTES:
 1. SOUTHBOUND LEFT TURN FROM SIMCOE STREET TO BLOOR STREET, PROHIBITED.