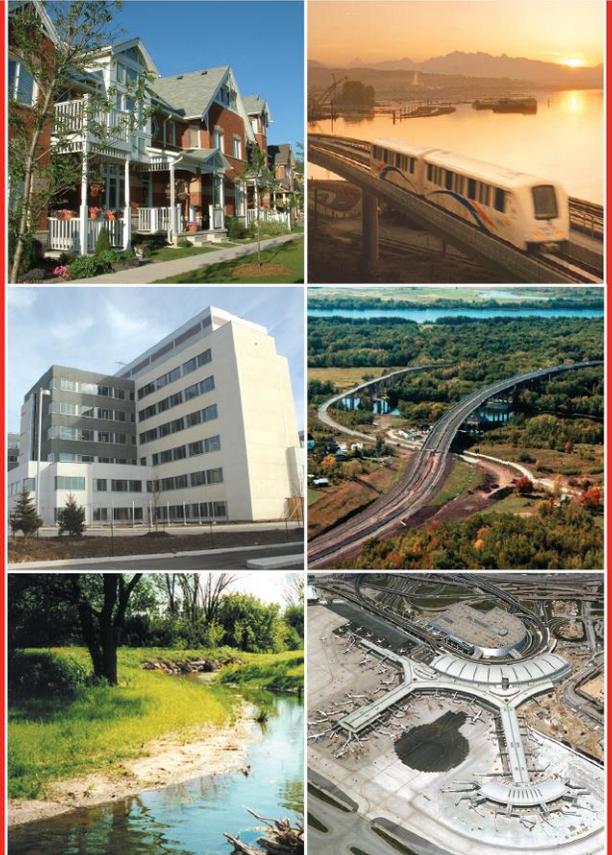


MMM Group Limited



Design and Construction Report

Detailed Design Study to Advance Construction for
Highway 7 New: Victoria Street Widening and Bridge
Replacement and Shirley Avenue Extension and Widening

GWP 3040-14-00

GWP 3103-15-00

GWP 3104-15-00

Prepared for the Ministry of Transportation

COMMUNITIES
TRANSPORTATION
BUILDINGS
INFRASTRUCTURE



February 2016 | 16.08027

Design and Construction Report

Detailed Design Study to Advance Construction for Highway 7
New: Victoria Street Widening and Bridge Replacement, and
Shirley Avenue Extension and Widening

GWP 3040-14-00, GWP 3103-15-00 &
GWP 3104-15-00

Prepared for the Ministry of Transportation

By MMM Group Limited

February 3, 2016

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This document is available for public review and comments for a period of thirty (30) days between February 8 and March 8, 2016 at the following locations.

Review Locations

Ministry of the Environment and Climate Change

Environmental Assessment & Approvals Branch 2 St. Clair Avenue West, Floor 12 A Toronto, Ontario	West Central Regional Office 119 King St. West 12 th Floor Hamilton, Ontario	Guelph District Office 1 Stone Road West Guelph, Ontario
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Regional Municipality of Waterloo

Clerk's Department
150 Frederick Street
Kitchener, Ontario

Kitchener Public Library

85 Queen Street North
Kitchener, Ontario

Ministry of Transportation

West Region
Front Lobby
659 Exeter Road
London, Ontario

City of Kitchener

Clerk's Department
200 King Street West
Kitchener, Ontario

A digital copy of this report has been made available to the review locations above, as well as the following: County of Wellington, Township of Guelph/Eramosa, Township of Woolwich and the City of Guelph.

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Executive Summary

This project followed the Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000) process for Group 'A' projects. Therefore, this Design and Construction Report (DCR) has been prepared to document the detail design for the Victoria Street widening, Victoria Street Bridge replacement over Highway 85 (Kitchener-Waterloo Expressway) and the Shirley Avenue widening and extension, in the City of Kitchener. These works are part of the advanced construction of Highway 7 New from Highway 85 Kitchener-Waterloo Expressway in the City of Kitchener easterly to Highway 6 (Hanlon Expressway) in the City of Guelph (GWP 408-88-00).

The planning study for the Highway 7 New project was conducted as an Individual EA, which was approved by the Minister of the Environment (Minister) in March 2007. The study is documented in the 2004 Highway 7 Kitchener to Guelph Amendment to the Environmental Assessment Report, 1997. Following approval of the EA, a Value Engineering (VE) Study was carried out by the Ministry of Transportation (MTO) in 2007 to identify opportunities to improve the design, provide updates and improve the overall value of the project. The proposed VE changes were documented in a Transportation Environmental Study Report (TESR) to Amend the Individual EA (May 2012) and received Environmental Clearance in October, 2012. Upon completion of the initial design (30% completion), an Initial Design Report (IDR) was prepared to document the further development and refinements of the approved EA design, and incorporation of the VE design improvements. The IDR was published for public review between April 9, 2014 and May 9, 2014.

The MTO is advancing several components of the Highway 7 New project under separate contracts. In addition to this assignment for Victoria Street and Shirley Avenue, work on the Guelph Street Bridge to accommodate the ultimate design requirements for Highway 7 New was carried out and documented in a separate DCR. This DCR documenting the study for the Guelph Street Bridge widening was filed for public review on January 23, 2015. Additionally, these nearby projects will be carried out under a separate MTO assignment will be constructed in conjunction with the Victoria Street Bridge replacement: Rehabilitation works on the CNR Subway and Wellington Street Underpasses of Highway 85. The EA process was documented in a separate Environmental Screening Document (ESD), which is on file with the MTO.

The work on Victoria Street incorporates design and study elements identified by the Regional Municipality of Waterloo (RMW), from their Schedule B Class Environmental Assessment (EA) in 2013 that proposed improvements to Victoria Street from Edna Street to Bruce Street. The Project File Report was made available for 30-day public review between April 26, 2013 and May 27, 2013. No Part II Order requests were received.

Utilities and municipal services that cross Highway 85 at the Victoria Street Bridge will be relocated to accommodate the new bridge and future construction of the Highway 7 New / Highway 85 freeway to freeway interchange. This work will be undertaken in the first of three contracts. The second contract will involve the extension and widening of Shirley Avenue from Wellington Street easterly to Bingeman Centre Drive as well as improvements to the Highway 85/Wellington Street interchange. The third and final contract involves the replacement of the Victoria Street Bridge and widening of Victoria Street.

Environmental technical studies carried out for this assignment included archaeology assessment, vegetation and wildlife surveys, groundwater well survey and environmental site assessment.

Of the ten properties surveyed for private water wells within the study area on Shirley Avenue, only one was found to have a water supply well. This well is buried and is no longer in use.

The study area was cleared of archaeological resources based on studies undertaken during the preliminary and initial design for Highway 7 New, supported by additional investigations carried out at select locations during detail design of Shirley Avenue extension and widening.

No rare, significant, or specialized habitats were identified in the study area. Two SAR birds were recorded during the 2015 field surveys and potential habitat for four SAR is present within the study area. Impacts to the species are not anticipated, however, the contractor will be made aware of their potential to be present and provided guidance on what to do if they are encountered. The vegetation communities, species and associated habitats are common and cultural in nature.

Groundwater contamination from chlorinated solvents is considered to be present at 68 Shirley Avenue. Since a small portion of this property will be impacted during construction of the cul-de-sac there is the potential that contaminated groundwater may be encountered. In the event that construction activities intercept the water table, groundwater removed from the excavation may require treatment prior to discharge through agreement with the RMW to the municipal sanitary sewer. No exceedances of controlled substances were noted within the remainder of the study area for Shirley Avenue.

Presence of contaminants is known to occur on properties adjacent to the Victoria Street Bridge. During relocations of utilities and municipal services, removal of groundwater will be required. Discharge of groundwater to the municipal sewer system will be required to meet sewer use criteria. Similarly, where groundwater removal is

required during work on Shirley Avenue, discharge to the municipal sanitary sewer will need to meet sewer use criteria.

The sequence of construction contracts will involve the widening and extension of Shirley Avenue and the relocation of the municipal utility services at the Victoria Street Bridge to be completed before construction for the Victoria Street Bridge replacement to alleviate traffic congestion issues in the area. Demolition and construction of the Victoria Street Bridge will result in impacts to traffic and access to businesses on Victoria Street.

No archaeological resources were encountered during Stage 2 archaeological assessments on Shirley Avenue, therefore the study corridor may be considered free of further archaeological concern. The Victoria Street project limits were cleared of archaeological concerns during the Initial Design Study.

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APPENDICES

APPENDIX A: Public Consultation

APPENDIX B: Design Plates – Victoria Street Widening & Bridge Replacement

APPENDIX C: Design Plates – Shirley Avenue Extension

1 Overview

1.1 Summary of Description of the Undertaking

The Ministry of Transportation, Ontario (MTO) has retained MMM Group Limited (MMM) to complete the detail design and environmental assessment study for the Victoria Street widening and bridge replacement, and the widening and extension of Shirley Avenue in Kitchener, Ontario (Figure 1).

This project followed the Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000) process for Group 'A' projects, building upon the Individual Environmental Assessment (EA) process followed for Highway 7 New (GWP 408-88-00). This Design and Construction Report (DCR) has been prepared to document the two components of the detail design on Victoria Street and Shirley Avenue.

The widening of Victoria Street, replacement of the Victoria Street Underpass will generally include the following:

- ▶ Replacement of Victoria Street Bridge over Highway 85 on the existing alignment
- ▶ Modifications to the vertical alignment (profile) of Victoria Street to allow for the new bridge deck depth and maintain the required vertical clearance over Highway 85
- ▶ Widening of Victoria Street to accommodate a two-way centre left turn lane between Edna Street and Bruce Street
- ▶ Intersection improvements at Victoria Street/Bruce Street
- ▶ Installation of a new median barrier on Victoria Street between Edna Street and Bruce Street
- ▶ Modifications to the Bruce Street on-ramp
- ▶ Installation of street lights between Edna Street and Bruce Street
- ▶ Relocation of municipal services
- ▶ Relocation of municipal services at the bridge
- ▶ Construction of retaining walls

The Shirley Avenue extension/widening will generally include the following:

- ▶ Extension and widening of Shirley Avenue to four lanes plus a continuous two-way left turn lane
- ▶ Construction of sidewalks and bike lanes on Shirley Avenue

- ▶ Utility relocations
- ▶ Entrance modifications
- ▶ Illumination
- ▶ Installation of storm sewers and stormceptors
- ▶ Construction of retaining wall
- ▶ Improvements to the Highway 85/Wellington Street interchange

The Guelph Street Bridge widening was originally identified in the Notice of Study Commencement for Highway 7 New on August 30, 2014 in the Waterloo Region Record, and on September 3, 2014 in the Turtle Island News and Two Row Times. However, work on this bridge was advanced under a separate contract in conjunction with work on Highway 85 (Conestoga Parkway) (GWP 3110-09-00). To accommodate this advanced construction schedule a separate DCR was prepared to document the Guelph Street Bridge widening and filed for a 30-day public review period on January 23, 2014.

The planning study for the Highway 7 New project was conducted as an Individual EA which was approved by the Minister of the Environment (Minister) in March 2007. The study is documented in the 2004 Highway 7 Kitchener to Guelph Amendment to the Environmental Assessment Report, 1997. A Value Engineering (VE) Study was subsequently carried out by the MTO in 2007 to identify opportunities to improve the design, provide updates and improve the overall value of the project. The proposed VE changes were documented in a Transportation Environmental Study Report (TESR) to Amend the Individual EA (May 2012) and received Environmental Clearance in October, 2012. An Initial Design Report (IDR) was prepared to document further developments and refinements of the approved EA design and incorporation of the VE design improvements (April, 2014).

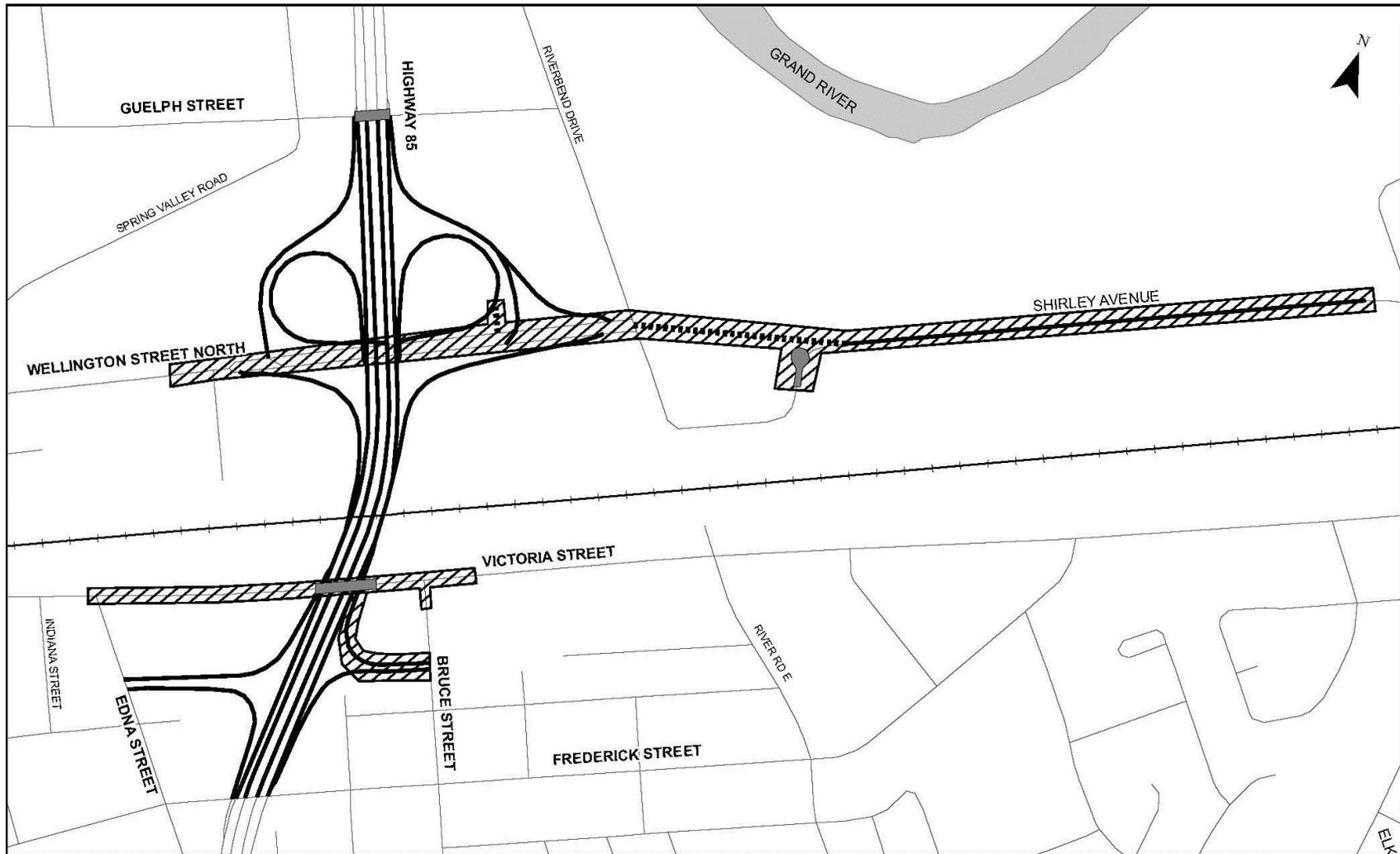


Figure 1: Project Location

The MTO, through this detailed design work on Victoria Street and Shirley Avenue, and the additional components detailed under a separate assignment for Highway 85 (GWP 3110-09-00), are part of the works to advance construction of Highway 7 New assignment (GWP 408-88-00). The Environmental Assessment (EA) process and detailed design for the Highway 85 components have been carried out under a separate assignment. General description of these works is included in this DCR for reference only as these works are commonly linked to the larger Highway 7 New assignment and construction will be carried out concurrently with Victoria Street and Shirley Avenue. The Highway 85 components include the widening of the Guelph Street Bridge over Highway 85; rehabilitation works on the Canadian National Railway (CNR) Subway over Highway 85; and, select rehabilitation of the Wellington Street Underpasses. The environmental assessment process has been documented in separate environmental documents, which are on file with MTO. General details for these works are presented in section 3.3.6 of this DCR.

The Regional Municipality of Waterloo (RMW) completed a Schedule B Class Environmental Assessment (EA) in 2013 describing the improvements to Victoria Street from Edna Street to Bruce Street. The Project File Report was made available for 30-day public review between April 26, 2013 and May 27, 2013. No Part II Order requests were received. During the detail design MTO and MMM staff collaborated with the City of Kitchener and RMW to advance the widening on Victoria Street in conjunction with the replacement of the Victoria Street Bridge.

1.2 Canadian Environmental Assessment Act

The *Canadian Environmental Assessment Act* has recently undergone significant changes and is no longer “trigger” based. On July 6, 2012 CEAA (2012) came into effect which focuses on assessment of “designated projects.” Projects can be designated projects under CEAA (2012) if they meet the criteria for physical activities under the schedule, Sections 2 to 4. The proposed works for this assignment were considered as the most likely to meet the criteria for physical activities that would require a review of the project under CEAA:

- ▶ New public highway in a Wildlife area – per section 2 of the Wildlife Area Regulations; and/or Migratory bird sanctuary – as set out in the schedule to the Migratory Bird Sanctuary Regulations.

After reviewing the Regulations Designating Physical Activities, it is understood that the proposed works for the Shirley Avenue and Victoria Street are not considered a “designated project.” Therefore, an assessment under the Canadian Environmental Assessment Act (2012) is not necessary.

1.3 Purpose of Report

The Design and Construction Report (DCR) documents the detail design and environmental assessment for the Victoria Street Bridge Replacement, Victoria Street widening and Shirley Avenue widening and extension.

2 Consultation and Engagement

Consultation is an integral component of the Class EA process and is carried out in conjunction with transportation engineering and environmental principles. It involves contact with external agencies (provincial, federal, municipal); the public and interested stakeholders and provides an opportunity for input and comment throughout the study process.

External agencies and interested stakeholders were contacted and informed of the proposed work. They had an opportunity to comment on the design during the study. The public consultation involved the use of an Ontario Government Notification (OGN) for the Study Commencement, and the Study Completion. These OGNs were published in local papers (Waterloo Region Record, Two Row and Turtle Island News) and notification distributed by letter to specific individuals, businesses, government agencies and First Nation and Métis Communities. A project contact list was created using local contact originally contacted as part of the Highway 7 New consultation program, the RMW Municipal Class EA for the Victoria Street improvement and residents identified for notification under the municipal noise by-law. The contact list will be maintained for the duration of the EA for the remainder of Highway 7 New.

The Notice of Study Completion notifies the public and agencies of the filing of this DCR and provides direction on how to provide comments. The DCR is not eligible for a Part II Order ('Bump-up') request.

Copies of the Notifications for the project are presented in Appendix A.

2.1 External Agencies and Municipalities

Provincial, federal and municipal agencies were contacted to inform them of the proposed work and involve them in the study process. Letters were mailed to each contact as part of the Study Commencement and the Study Completion. Copies of the letters are found in Appendix A. The following list identifies those who were notified:

- ▶ Indigenous and Northern Affairs Canada
- ▶ Department of Fisheries and Oceans
- ▶ Environment Canada
- ▶ Grand River Conservation Authority

- ▶ Kitchener Fire Department
- ▶ Local Member of Provincial Parliament (MPP)
- ▶ Ministry of Aboriginal Affairs
- ▶ Ministry of Agriculture, Food and Rural Affairs
- ▶ Ministry of Community & Social Services
- ▶ Ministry of Economic Development, Employment and Infrastructure
- ▶ Ministry of Municipal Affairs and Housing
- ▶ Ministry of Natural Resources and Forestry
- ▶ Ministry of the Attorney General
- ▶ Ministry of the Environment and Climate Change
- ▶ Ministry of Tourism, Culture and Sport
- ▶ Ontario Provincial Police, Western Region Headquarters
- ▶ Regional Municipality of Waterloo
- ▶ The Corporation Of The City Of Kitchener
- ▶ Township of Guelph/Eramosa
- ▶ Township of Woolwich
- ▶ Transport Canada
- ▶ Waterloo Regional Police Service

The MTO worked closely with the City of Kitchener and RMW, where applicable to advance the designs for work on Victoria Street and Shirley Avenue.

2.2 First Nations and Métis Communities

In addition to publication of the OGN in the First Nation newspapers (Two Rows and Turtle Island News), the following First Nations, Métis and Aboriginal groups were contacted as part of the filing for this DCR:

- ▶ Alderville First Nation
- ▶ Beausoleil First Nation (Christian Island)
- ▶ Chippewas of Georgina Island
- ▶ Chippewas of Rama First Nation
- ▶ Chippewas of the Thames First Nation

- ▶ Curve Lake First Nation
- ▶ Grand River Community Métis Council
- ▶ Hiawatha First Nation
- ▶ Mississaugas of Scugog Island
- ▶ Mississaugas of the New Credit First Nation
- ▶ Six Nations of the Grand River
- ▶ Six Nations of the Grand River Territory, Haudenosaunee Confederacy Chiefs Council
- ▶ Williams Treaties First Nations

2.3 Public

Letters were sent to the project contact list to notify stakeholders, who may have an interest in the project at strategic stages of the Study Commencement and filing of this DCR. The letters included a key plan and contact information for the design team in order to request additional information or to comment on the design.

In addition to the public consultation for the environmental assessment process, local residents in the vicinity of the Victoria Street Bridge were notified of noise producing activities during the study to satisfy the City of Kitchener noise by-law exemption process. These contacts will be notified of noise producing activities prior to construction, in accordance with noise by-law requirements.

During the detail design study several comments were received from interested stakeholders in response to the Notice of Study Commencement. Table 1 provides a summary of the comments received and MTO responses.

Table 1: Summary of Public Comments and MTO Responses

Comment	MTO Response
What dates are targeted for the one year closure of the Victoria Street Bridge?	Construction of the Victoria Street Bridge is anticipated to begin in 2017.
When will the Wellington Street access (southeast ramps) be under construction? Will the modifications require this access to be closed?	The existing southeast ramp will remain open while the connection is being construction off of the southwest ramp to Wellington Street. Once the connection is open to traffic the existing southeast ramp will be closed. Signage will be in place to direct drivers to use the connection to access eastbound on Wellington Street.
When the Victoria Street Bridge is closed, will access to the expressway between Victoria Street and Bruce Street be maintained?	<p>Access to Highway 85 at Bruce Street will be maintained.</p> <p>Vehicles turning left onto Bruce Street from Victoria Street and those turning right onto Victoria Street from Bruce Street will be maintained.</p> <p>Only local traffic will be permitted from Edna Street to the west side of the bridge</p>
When will the Wellington-Shirley extension take place?	Construction of the Shirley Avenue extension and widening is anticipated to begin in 2016.
Will Shirley Avenue extension be widened to 5-lane standard to match Bingemans Centre Drive?	Shirley Avenue will be widened to match the existing number of lanes and width of existing Bingemans Centre Drive.
Will work on the Shirley Avenue extension affect access to the businesses at the west end of Shirley Avenue?	Access to all businesses will be maintained during construction.
Concern over access to businesses between Edna Street and Victoria Street Bridge during the closure. "Will access be possible for delivery trucks and customers at all times?"	<p>Access for local traffic between the Victoria Street Bridge and Edna Street will be maintained during construction.</p> <p>Temporary closure of entrances for paving and tie-in work will be required; however, access to businesses will be maintained and at least one entrance will be maintained at all times for vehicles.</p>

Comment	MTO Response
<p>Will there be intersection improvements at Wellington Street, Riverbend Road and Shirley Avenue and will there be a plan to improve the rate of traffic flow at the intersection, as it is common to see a large number of vehicles waiting to get through that intersection.</p>	<p>As an interim configuration, the existing T-intersection will be converted to a full intersection with the Shirley Ave realignment connecting to the intersection, creating the east leg. New traffic signals will be installed at this location.</p> <p>A short section of existing Shirley Ave will remain and at the east end where the bend is now will be converted into a cul-de-sac</p> <p>For the ultimate configuration, when Highway 7 New is constructed, Riverbend will no longer intersect Wellington/Shirley at its current location as it will be realigned to the east. The traffic signals will be removed and a stop sign added on the remaining section of Shirley Avenue.</p>

3 Description of the Recommended Design

The project is divided into three major components. These involve:

- ▶ Relocation of the municipal utility services in the vicinity of the Victoria Street Bridge,
- ▶ Shirley Avenue extension and widening from Wellington Street to Bingemans Centre Drive.
- ▶ Highway 85/Victoria Street Bridge Replacement with widening on Victoria Street between Edna Street and Bruce Street,

Shirley Avenue extension and widening will be completed prior to the replacement of the Victoria Street Bridge. This will minimize the overall impact on traffic along Victoria Street during the temporary road closure required for the bridge replacement.

The utility relocations works on Shirley Avenue are underway. They will be completed prior to the start of construction of Shirley Avenue which is scheduled to begin in early 2016 with advance clearing of the site. Utility relocation work required for the widening of Victoria Street and replacement of the Victoria Street Bridge will be undertaken in 2016 to facilitate the planned replacement of Victoria Street Bridge replacement.

In addition to the previously mentioned municipal utilities, both Kitchener Wilmot Hydro and Kitchener Utilities have identified conflicts with their utilities as a result of the proposed works on Victoria Street.

- ▶ Kitchener Wilmot Hydro has an aerial line that is located on the south side of Victoria Street and the Victoria Street Bridge.
- ▶ Kitchener Utilities has a gas main that will be impacted by the new bridge construction at both the east and west sides of Highway 85 (KW Expressway). This underground crossing is planned to be located between Victoria Street and Frederick Street.

3.1 General Project Staging Components

The three main components of construction staging for Victoria Street and Shirley Avenue are anticipated to be carried out as follows:

First Component: All major utilities within the footprint of the bridge will be relocated and both the SW and SE retaining walls will be constructed. At the same time, the private utilities on Shirley Avenue will be relocated (Contract 1). Utility information is described for each area (Shirley Avenue – Section 3.2.4 and Victoria Street – Section 3.3.1.9 and 3.3.3).

Second Component: Shirley Avenue will be constructed as per the staging detailed in Section 3.2.3. All private utilities along Victoria Street will be relocated to allow for the future widening of Victoria Street (Contract 2).

Third Component: Victoria Street widening and the Victoria Street Bridge replacement will be constructed as per the staging detailed in Section 3.3.5 (Contract 3).

3.2 Shirley Avenue Extension and Widening – Major Features of the Proposed Work

The work includes:

- ▶ Modifications to the Wellington Street interchange to accommodate the closure of the S-E and E-N ramps
- ▶ Extension of Shirley Avenue to Wellington Street North/Riverbend intersection
- ▶ Widening of Shirley Avenue to four lanes plus a continuous left turn lane, and connect the proposed cross section to Bingemans Centre Drive
- ▶ Installation of bike lanes and sidewalk on the north side of Shirley Avenue.
- ▶ Utility relocations
- ▶ Entrance modifications

- ▶ Illumination
- ▶ Cul-de-sac with emergency access
- ▶ Conversion from a rural section to an urban section with storm sewer system

3.2.1 Road Widening

Shirley Avenue within the project limits is currently a two-lane, rural road. At the east end of Shirley Avenue, the road transitions to a four-lane, urban cross section with a continuous left turn lane called Bingemans Centre Drive. Widening of Shirley Avenue will provide a continuous four-lane urban section from the Riverbend/Wellington Intersection in the west to Victoria Street (via Bingemans Centre Drive) in the east. The new, widened right-of-way will also include a continuous left turn lane, bike lanes and sidewalks on both the north and south sides of the street. The sidewalk on the north side of Shirley Avenue will be constructed as part of this contract. The sidewalk on the south side of Shirley Avenue will be constructed in the next phase of construction.

3.2.2 Road Extension

In order to extend Shirley Avenue from Bingemans Centre Drive to Wellington Street the intersection at Riverbend Drive and Wellington Street will be reconfigured. This new intersection will be a signalized intersection with dedicated left turn lanes in eastbound and westbound directions. The remaining portion of existing Shirley Avenue south of the intersection will be terminated with a cul-de-sac at the east end, at approximately 68 Shirley Avenue. This cul-de-sac will include an emergency access to the new, widened section of Shirley Avenue.

A retaining wall will be constructed along the south side of the Shirley Avenue extension portion to mitigate the impact to properties (Design Plates NC3 & NC4). This retaining wall will be approximately 150m long and 4.5m high at its highest point.

3.2.3 Construction Staging

The expected construction staging for the Shirley Avenue extension and widening will occur in 5 stages and will include work on the ramps at the Highway 85/Wellington Street interchange. These stages generally include the following:

Stage 1: The construction of the S-W Ramp connection, traffic signals at the S-W Ramp connection, E/W-N Ramp and Wellington intersection and widening of the pavement on the south side of Shirley Avenue will be completed.

Stage 2: Westbound traffic on Wellington Street will be shifted to the eastbound lane. At Shirley Avenue, traffic is shifted to the south using the newly widened pavement. The S-W Ramp connection is open to traffic. . The S-E Ramp, E/N-N Ramp and E-N Ramp will be closed. The widening of E/W-N Ramp, north side of Wellington Street, widening

of Riverbend Drive, north half of existing Shirley Avenue and extension of Shirley Avenue will all be under construction.

Stage 3: On Wellington Street, traffic will be shifted to the north side while on Shirley Avenue traffic will remain on the south side. The south side of Wellington will be under construction and the construction of the north side of Shirley Avenue will continue throughout this stage.

Stage 4: Traffic on Wellington Street will be shifted to the final lane configuration. Traffic will be shifted to the north side of Shirley Avenue. The south side of Shirley Avenue and the cul-de-sac will be under construction.

Stage 5: The existing pavement on Wellington Street will be milled and the associated ramps and paving the surface course throughout the length of the project and completing the final pavement marking.

3.2.4 Utilities

The following utility companies were contacted to confirm if they have utilities within the limits of the project.

- ▶ Kitchener Wilmot Hydro Inc.
- ▶ Kitchener Utilities
- ▶ Regional Municipality of Waterloo Utilities
- ▶ Bell Canada
- ▶ Rogers
- ▶ Telus
- ▶ Allstream

Telus, Allstream and the RMW Utilities confirmed that they have no utilities in the area that will be affected by the construction on Shirley Avenue. However, the widening and profile changes on Shirley Avenue will require relocation of gas main, Rogers underground and aerial cables, Hydro and Bell lines, and the relocation/specific replacement of the watermain where conflicts occur. The details of these relocations are described in this section.

The existing sanitary sewer manholes on Shirley Avenue will need to be elevated to meet the new grade. In addition, a storm sewer system will be added to Shirley Avenue as this area is being converted from a rural section to an urban section. An existing storm sewer system on Wellington Street will need adjustment and/or replacement to accommodate the new configuration of lanes on Wellington Street between Riverbend Drive and the Highway 85 underpass. This will involve the removal as well as

adjustment of catch basins and catch basin leads. The existing storm sewer system on Bingemans Centre Drive will not be impacted by the construction. Due to the invert elevations of the existing storm sewer systems at either end of the project, the new system will not be able to connect into either existing system. The new storm sewer system will include two outlets to the Grand River at each of the low points of the system. Both outlets will have stormceptors for oil and grit separation as per the City of Kitchener standard.

Approximately 400 m of the existing watermain on Shirley Avenue will be replaced in order to accommodate the profile lowering of the road. The new section will be a 300 mm PVC pipe, which replaces the existing 12" ductile iron pipe. The smaller pipe will allow for greater depth of cover that meets the City of Kitchener/RMW requirements. The new section will also be shifted horizontally by 1 m so that the work can be completed offline. This will limit disruption of the water supply to local businesses and residents.

To facilitate access for future maintenance and repairs, the gas main between the future cul-de-sac and Bingemans Centre Drive will be relocated to the boulevard prior to construction of Shirley Avenue.

The existing overhead shared KW Hydro and Rogers poles, and underground Rogers lines will be relocated outside of the proposed roadway prior to construction on Shirley Avenue. The Bell line will remain in its current location and any above ground structures will be adjusted for the new grade along Shirley Avenue.

3.3 Victoria Street – Major Features of the Proposed Work

The work on Victoria Street will generally include:

- ▶ Replacement of the Victoria Street Bridge over Highway 85 on the existing alignment
- ▶ Widening of Victoria Street to accommodate a two-way centre left turn lane with a median island between Edna Street and Bruce Street
- ▶ Intersection improvements at Victoria Street/Bruce Street
- ▶ Modifications to the Bruce Street on-ramp
- ▶ Utility relocations
- ▶ Entrance modifications; and,
- ▶ Illumination

3.3.1 Victoria Street Bridge Replacement

A Structural Design Report (SDR) for the Victoria Street Underpass (Site No. 33-235) has been prepared and filed with the MTO. Various bridge alternatives were evaluated to meet the design requirements and standards for bridges as outlined in the SDR.

In order to accommodate the left turn lane requirements on Victoria Street and installation of a raised median, the new bridge will be wider than the current bridge. Additionally, the bridge will be lengthened to accommodate future ramps within the future Highway 7/85 freeway to freeway interchange. The existing bridge therefore requires replacement involving a new four-span bridge supported on piles or caissons at piers and both abutments. Two alternatives were examined to determine a feasible and economical bridge type and layout for the new bridge.

Alternative 1: Semi-integral abutment 1000 mm to 1500 mm deep post-tensioned solid concrete deck; with spans: 35.00 m, 37.00 m, 34.00 m, 24.00 m

Alternative 2: Semi-integral abutment bridge with 1600 NU precast prestressed concrete girders and expansion joints at the end of approach slabs; with spans: 35.00 m, 37.00 m, 34.00 m, 24.00 m; and, girder spacing: 2,400 m.

Recommended Bridge: Based on the comparison of the two alternatives relative to satisfying the various requirements and comparison of construction cost estimates, Alternative 1 is the recommended bridge alternative. Therefore, the new Victoria Street underpass bridge will be a four-span post-tensioned solid deck semi-integral abutment type with expansion joints and sleeper slabs at the end of both approach slabs. The span lengths are as described above from west to east.

3.3.1.1 Bridge Depth

Overall structural depth from the top of asphalt to the underside of deck varies from 1090 mm to 1590 mm.

3.3.1.2 Victoria Street Underpass Cross-Section

The following cross-section details are shown in the General Arrangement drawing (Appendix B).

Concrete Parapet Wall:	0.30 m
North Sidewalk:	1.50 m
Shoulder:	0.25 m
WB Lane (2 lanes @ 3.65 m):	7.30 m
Median:	0.40 – 0.60 m
Left turn Lane:	3.00 m
EB Lane (2 lanes @ 3.65 m):	7.30 m

Shoulder:	0.25 m
South Sidewalk:	1.50 m
Concrete barrier wall:	0.30 m

Total Width:	22.20 m
---------------------	----------------

3.3.1.3 Skew Angle

The proposed bridge will be constructed at a skew of 28.15° approximately.

3.3.1.4 Abutments

The west and east abutments will be supported on 900 mm diameter caissons to Elevation 298.0 m and 302.0 m respectively. Caissons were chosen to avoid wider lane closures on Highway 85 for the construction of pile caps and reduce the time for abutment construction.

3.3.1.5 Wingwalls

All wingwalls are limited to 4.0 +/- m long conventional cast-in-place concrete walls.

3.3.1.6 Piers

The pier columns will be supported on single 2.1 m diameter caisson for each column to Elevation 291.0 m for Pier 1 and 289.0 m for piers 2 and 3. The pier columns will be 1.5 m diameter circular columns to the underside of the deck. Caissons were chosen to avoid wider lane closures on Highway 85 for the construction of pile caps and reduce the time for pier construction.

3.3.1.7 Retaining Walls

Long retaining walls were identified during the Highway 7 New Preliminary Design Study to limit acquiring more properties for the construction of the Highway 7 New/Highway 85 freeway to freeway interchange.

Retaining walls are required at all four quadrants of the new bridge. Large sections of the southwest and southeast retaining walls will be constructed as part of the Victoria Street municipal utility relocation work. The remaining retaining walls and connection to the already constructed retaining wall will be completed during the Victoria Street Bridge replacement project.

3.3.1.8 Bearings

All bearings will be pot bearings at both abutments and piers.

3.3.1.9 Utilities

The bridge will be illuminated on both sides. Two 50 mm diameter electrical ducts for illumination will be provided in the parapet walls. The existing watermain hanging on the

north side of the existing bridge will be removed and placed underground as part of the Victoria Street municipal utility relocation.

3.3.1.10 Deck Drainage

Deck drains are not required.

3.3.2 Victoria Street Widening

3.3.2.1 Intersection Improvements

The Edna Street intersection at the west limit will be widened slightly to the south to accommodate the widening of Victoria Street. The Bruce Street intersection at the east limit will be modified to accommodate the grade raise on Victoria Street as well as the closure of the plaza entrance on the north leg of the intersection. Both intersections are controlled by traffic signals and will permit U-turns.

3.3.2.2 Entrances

All entrances will be maintained during construction. Most entrances will require reconstruction to match the new grade on Victoria Street; however, every effort will be taken to minimize the limits of disturbance. Three entrances will be closed permanently due to the widening of the Victoria Street Bridge; the entrance on the northeast quadrant of the bridge across from Bruce Street and the first two entrances on the northwest quadrant of the bridge. The entrance at 686 Victoria Street will be relocated to the west side of the property to better sightlines off of the new bridge.

3.3.2.3 Turning Lanes

Designated left turn lanes will be maintained at the Bruce Street and Edna Street intersections which will now permit U-turns. An eastbound right turn lane will be maintained at the Bruce Street intersection. The northbound through and left lane on Bruce Street will be converted to a designated left turn lane as the entrance on the north leg of the intersection will be closed.

3.3.2.4 Median Barrier

RMW has proposed to widen Victoria Street to accommodate a two-way centre left turn lane between Edna Street and Bruce Street to address traffic issues on Victoria Street until the completion of Highway 7 New. This work on Victoria Street will address congestion issues on Victoria Street, long queues at Edna Street and collisions resulting from vehicles turning into or out of businesses between Edna Street and the Victoria Street Bridge.

As an interim measure, a median island within the two-way center left turn lane will be constructed to preclude access to and from business and thus eliminate the left turn collisions. To maintain access to businesses on both side of Victoria Street, U-turns will

be permitted at the intersections. Once the Highway 85/Highway 7 New freeway to freeway interchange is constructed it is expected that left turns at Edna Street and traffic volumes on Victoria Street will be lower. Traffic backups and associated collision rates will therefore be reduced and the centre median can be removed without substantial modifications to Victoria Street.

3.3.3 Utilities

The following utility companies were contacted to confirm if they have utilities within the limits of the Victoria Street component of the project.

- ▶ Kitchener Wilmot Hydro Inc.
- ▶ Kitchener Utilities
- ▶ Regional Municipality of Waterloo Utilities
- ▶ Bell Canada
- ▶ Rogers
- ▶ Telus
- ▶ Allstream

The proposed grade raise, widening of Victoria Street and the Victoria Street Bridge replacement will impact several utilities along Victoria Street and within the bridge footprint. The utilities along Victoria including; Kitchener Wilmot Hydro, Bell and Rogers will all be relocated prior to the commencement of work on Victoria Street. The design and relocation of these utilities will be the responsibility of the utility owners and will follow the typical MTO cost sharing agreement.

Through consultation with RMW and the City of Kitchener it was determined that several major utilities, such as a sanitary forcemain, storm sewer, watermain, sanitary gravity sewer and gas main, would be impacted by the widening and replacement of the Victoria Street Bridge. Due to the complexity of the relocations and resource constraints at the City of Kitchener and RMW, these utilities have been combined into a separate contract which will go to construction in 2016.

To complete these relocations lane closures will be required on Victoria Street, Highway 85 and the Bruce Street-N Ramp. Micro tunneling will be used to cross Highway 85 and minimize the impact to traffic. Both the SW and SE retaining walls will be constructed as part of the contract to facilitate the relocation of sewers that are very close to the walls and to eliminate the need to excavate in these areas in the future.

3.3.4 Illumination

The need to maintain or provide additional lighting within the project limits due to the road widening was reviewed. Within the project limits, there are existing street lights along the south side of Victoria Street, excluding the limits of the bridge where there are no lights. It was determined that new lighting will be added to the new Victoria Street Bridge and additional illumination is required on the north side of Victoria Street. Based on recommendations by the RMW, for street lighting on the south side of the road luminaires will be attached to the hydro poles to avoid having too many poles along the road. Street lighting on the north side will be on standalone poles.

3.3.5 Construction Staging

Relocation of the municipal utilities will be carried out before the Victoria Street Bridge can be demolished. It is anticipated that relocation of the utilities will be started in 2016 and finished prior to April 2017.

The existing Victoria Street Bridge will be closed and removed during night closures of Highway 85. Bridge piers can be constructed with temporary lane closures on Highway 85. No closure is required for abutment walls construction as it is further away from Highway 85. During deck construction, falsework will be constructed to maintain two lanes of traffic on Highway 85 for both the collector and core lanes in each direction.

Traffic on Victoria Street will be diverted to Frederick Street and Bingeman Centre Drive/New Shirley Avenue/Wellington Street. Traffic on Victoria Street from the east side of the bridge will access Highway 85 northbound lane (NBL) through the Bruce Street realigned ramp.

Construction on Victoria Street is anticipated to be completed over three phases as outlined below:

Phase 1: During the first phase, construction will mobilize and demolition of the existing Victoria Street Bridge will be completed, followed by construction of the abutments and new retaining walls at the northwest and northeast quadrants of the new bridge and construction of the remaining retaining walls section at the southwest and southeast quadrants. Construction for the widening of Victoria Street will be started. This is also the stage where the construction of the Bruce Street detour ramp will be completed. Retaining walls at the southwest and southeast quadrants of the bridge will be mostly constructed as part of the utility relocation in 2016.

Phase 2: Construction of the east and west piers for the new bridge will be constructed, while proceeding with Victoria Street construction. To accommodate the west pier construction, the Wellington Street W-S Ramp will be closed and the Highway 85 southbound collector lanes will be reduced to one lane. For the east pier

construction, traffic accessing Hwy 85 northbound will be using the newly constructed Bruce Street detour ramp. The Highway 85 northbound collector will be reduced to one lane. The Wellington Street S-E Ramp will be closed. Traffic accessing eastbound on Wellington will use the newly constructed Wellington Street S-W Ramp connection which will be constructed as part of the Shirley Ave extension and widening. Approximately 50 m of Bruce Street will be reconstructed as part of the grade raise on Victoria Street.

Phase 3: The median piers will be constructed. During this time, the Highway 85 core lanes will be reduced to one lane in each direction. Once the piers are complete, the superstructure for the new bridge will be completed. Remaining construction on Victoria Street will be completed through the project limits.

Road Closures:

Victoria Street will be closed from Edna Street to Bruce Street during the construction of the Victoria Street Bridge replacement. Local road detours will be in place while Victoria Street is being reconstructed and the Victoria Street Bridge is being replaced. Access to the businesses located at the west end of Victoria will be available only from the Edna Street Intersection.

3.3.6 Incorporating the Highway 85 Work

The following work from MTO assignment GWP 3110-09-00 will be incorporated into the Victoria Street Bridge/Widening contract:

1. All of the works on Guelph Street Overpass
 - ▶ Partial depth removal and repair then overlay in strips in stages.
 - ▶ East barrier wall removal at the northbound lane (NBL), West barrier replacement at the southbound lane (SBL).
 - ▶ Median barrier wall infill.
 - ▶ Overlay of the existing approach slabs.
 - ▶ Widening of the existing approach slabs for the widened bridge
2. CNR subway
 - ▶ Work zones are required for the west abutment refacing work and core piers carbon fibre reinforced polymer (CFRP) wrapping
 - ▶ Soffit patch repairs and concrete sealer application – night closures required
 - ▶ Fascia crack injections

3. Wellington St. Under passes

- ▶ Westbound lane (WBL) core pier CFRP wrapping
- ▶ WBL & EBL soffit patch repairs and concrete sealer application – night closures required

The work on the Guelph Street Overpass has been documented in a separate DCR issued for a 30-day public review period between January 23, 2015 and February 22, 2015. Rehabilitation of the CNR subway and Wellington Street Underpass are documented in a separate Environmental Screening Document (ESD) (Ecoplans-MRC, 2012). Both environmental documents are on file with the MTO.

4 Environmental Issues and Commitments

Environmental issues and commitments are described in the following sections. The first section documents common environmental components for both Victoria Street and Shirley Avenue, followed by specific environmental components for each project area (Victoria Street or Shirley Avenue).

4.1 Victoria Street and Shirley Avenue

4.1.1 Emergency Services

Emergency Medical Services (EMS), Fire and Police have been notified of the project through the consultation process to advise them of the required road closure and detour routes during construction. Alternate routes and provisions to allow access for EMS to properties within the project limits will be included in the contract package. The following are a list of contacts for the local EMS.

Staff Sergeant Mike Haffner

Waterloo Regional Police Service
P.O. Box 3070
200 Maple Grove Road
Cambridge, ON N3H 5M1
T: (519) 653-7700

Stephen Van Valkenburg,

Director/Chief, Emergency Medical Services
Regional of Waterloo Emergency Medical
Services
120 Maple Grove Road
Cambridge, Ontario N3H 4R6
T: (519) 650-8295

Jon Rehill

Fire Chief
Kitchener Fire Department
Fire Headquarters
270 Strasburg Road
Kitchener, ON N2E 3M6
T: (519) 741-2496

Detachment Commander

OPP – Cambridge
500 Beaverville Road
Cambridge, ON N3C 2V3
T: (519) 654-0150

4.1.2 Cultural Heritage Resources

There are no built heritage resources within the project limits for Shirley Avenue Widening and Extension, and the Victoria Street Bridge Replacement/Victoria Street Widening.

An archaeological assessment (AA) was carried out under the environmental assessment program for Highway 7 New by New Directions (2004) and Archeoworks (2010). Additional investigations were carried out on Shirley Avenue in 2014 and 2015 to review and assess areas within the study area that were identified to occur beyond the study area for the Highway 7 New project. An AA was undertaken within the study area for the Shirley Avenue widening and extension. Results are documented in a Stage 1-2 AA report on file with the MTO and MTCS.

The majority of the study area was cleared of archaeological potential during Stage 1 AA based on the limited potential for the recovery of archaeological resources within the limits of construction. Stage 2 AA was undertaken through the study corridor, including a 0.07 hectare portion of Lot 122, German Tract which was surveyed using test pit archaeological survey at five to 10 metre intervals. Monitoring of archaeological investigations during Stage 2 AA test pit survey was completed by representatives from HDI (Haudenosaunee Development Institute) and Grand River Six Nations Council, based on an agreement between the MTO and Six Nations community.

Despite careful scrutiny, no archaeological resources were encountered during the Stage 2 AA. The entirety of the study corridor exhibited disturbed conditions. Therefore, the study corridor may be considered free of further archaeological concern. The MTCS entered the Stage 1-2 AA report into the Ontario Public Register on September 23, 2015.

4.1.2.1 Advice on Compliance with Legislation

Should deeply buried archaeological remains be found on the property during construction activities, the Ministry of Tourism, Culture and Sport, along with the Six Nations of the Grand River should be notified immediately.

Should previously unknown or unassessed deeply buried archaeological resources be uncovered during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.

The Cemeteries Act, R.S.O. 1990 c. C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person

discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

4.1.3 Noise

The proposed new bridge and improvements to Victoria Street are not considered to impact Noise Sensitive Areas (NSAs) as there is not anticipated to be an increase in noise levels. As such, a review of noise mitigation was not warranted for this project. Noise mitigation and commitments applicable to these works that are specified in the EA documentation for Highway 7 New will be applied to the project as outlined in Table 4 in Section 6 of this report.

A City of Kitchener noise by-law exemption was obtained for geotechnical investigations during the study. A separate noise by-law exemption may be required to cover specific construction works. This may include night work, which will be required periodically during construction to minimize traffic delays on Highway 85.

The Contractor will be required to adhere to conditions of the noise by-law exemption and contract specifications related to noise. Despite compliance with any noise control measures identified in the contract documents and approvals, complaints regarding noises will be addressed in accordance with the construction noise complaint process outline in *MTO's Environmental Guide for Noise (2006)*.

4.2 Victoria Street Bridge Replacement

The following describes the environmental issues and commitments related to works at the Victoria Street Bridge replacement and road works between Bruce Street and Edna Street.

4.2.1 Natural Environment

There are no natural environment concerns related to this project. There are no watercourses and the presence of habitat for wildlife is negligible given the highly urbanized and developed nature of the study area. Vegetation is limited to ornamental street trees west of the bridge to Edna Street.

There are no designated areas within the study area, including Environmentally Significant Policy Areas (ESPA), Areas of Natural and Scientific Interest (ANSI) or Provincially Significant Wetlands (PSW).

The nearest feature is the Grand River Valleyland, which is a deciduous and coniferous valleyland slope and tableland forest.

The contractor will be responsible for ensuring that active nests of migratory birds are not impacted by construction activities. Disturbance to nesting birds can be minimized by timing vegetation removal, grading and other aspects of construction to occur outside

of the nesting period. This period is considered to occur from April 1st August 31st for most species. During construction any non-migratory bird nests found can be removed as humanely as possible. It is expected that any birds that would use the bridge for roosting will move away when disturbed by construction works. Birds will likely be discouraged from building or using existing nests on the bridge as construction will be underway between April and September.

4.2.2 Species at Risk

There are no Species at Risk considered to be present within the project limits for Victoria Street. Species known to occur in the general area, based on natural science investigations for Shirley Avenue are described in Section 4.3.2. Based on the landscaped and urban features these species are considered to have a low to unlikely potential to occur within the limits of the Victoria Street Widening and Victoria Street Bridge replacement.

In the event that a Species at Risk is encountered during construction, the Contractor shall ensure that works do not contravene Section 9 and 10 of the *Endangered Species Act* (ESA).

4.2.3 Contaminated Property

During the Initial Design Study for the Highway 7 New project, a Contaminated Overview Study was completed within the project limits. It was noted during that there are both moderate and high risk potential areas within the limits of the Victoria Street Bridge replacement and Shirley Avenue widening.

Following the Initial Design phase for Highway 7 New Environmental Site Assessments (ESA) and Designated Substances and Hazardous Material Surveys (DSHMS) were undertaken separately by WSP (2015) on behalf of the MTO for the following properties: 663 Victoria Street North (WSP 2015a), 800 Victoria Street North (2015b) and 808 Victoria Street North (WSP 2015c). The following is a summary of findings for each property:

- ▶ 663 Victoria Street North (SW Quadrant of the bridge)
 - The current operation of an automotive dealership, service and repair facility immediately adjacent to the west of the Site, which is considered to be upgradient from the study area, represents an issue of potential environmental concern for the Site.
 - The presence of the surrounding fuel storage facilities and a former footwear manufacturing warehouse represents an issue of potential environmental concern for the Site. However, due to distance from the

Site and locations downgradient, potentially contaminating activities at these locations are unlikely to have affected the Site.

- A Phase II ESA is not recommended at this time for the Site. However, should contaminated materials be encountered during the anticipated construction activities, it is recommended for MTO staff and/or sub-contractors to properly assess, characterize and handle the materials in accordance with applicable standards and regulations.
- ▶ 800 Victoria Street (NE Quadrant of the bridge):
 - DSHMS: no asbestos found in the building materials tested; however asbestos containing materials (ACM) may be concealed. Lead based paints were noted within units 1, 3 and 4. Lead is also assumed to be present in soldering and ceramic glazing of sinks/toilets. Refrigerator/freezer units may contain ozone-depleting substances. Other designated substances and hazardous materials identified during surveys of the building include: mercury, PCBs, silica, Benzene
- ▶ 808 Victoria Street (East of NE Quadrant of the bridge):
 - DSHMS: no asbestos found in the building materials tested; however asbestos containing materials (ACM) may be concealed. Soldering of pipe joints may contain lead. Ozone-depleting substances are considered present in the air conditioning unit. Other designated substances and hazardous materials identified during surveys of the building include: mercury, PCBs, Silica and benzene.

A permit to take water (PTTW) will be required for the relocation of utilities under Highway 85. Due to the presence of controlled substances on properties where excavations and drilling will occur, water will be discharged through agreement with the RMW / City of Kitchener to the municipal sanitary sewer system. Discharged water will be required to meet sewer use criteria.

4.2.4 Socio-economic

The land use within the study area is predominantly commercial.

Based on the Preferred 2015 Transit Service Improvement Plan there are routes that will be directly impacted by the construction of Victoria Street Bridge. The 204 iXpress travels east/west along Victoria Street North across the Victoria Street Bridge. During closure of Victoria, this route will be detoured to Frederick Street at Edna and Bruce. Delays to travel times will be experienced during construction.

An existing sidewalk that runs along the north side of Victoria Street between Edna Street and Bruce Street will be retained. Currently there is no sidewalk on the south

side of Victoria Street to the west of the bridge. As part of the project, a new sidewalk will be built along the south side of Victoria Street westerly from the bridge to Edna Street. Sidewalks on both sides of the Victoria Street Bridge will be included in the design to connect pedestrian traffic between Edna Street and Bruce Street.

During construction, pedestrian and vehicle access will be detoured along local roads between Bruce Street and Edna Street using Frederick Street.

Following construction, the new centre median on Victoria Street will restrict left in/left out turns to access businesses along Victoria Street. To advise drivers that U-turns are permitted at the Edna Street/Victoria Street and Bruce Street/Victoria Street intersections, signs will be posted at each intersection.

Delivery trucks needing to access businesses will be required to alter their routes using the Edna Street/Frederick Street/Bruce Street corridor to avoid left in/left out turns.

4.2.4.1 Access

Access through the limits of construction between Edna Street and Bruce Street will be restricted during construction of the bridge, with the closure of Victoria Street along this section closed for a period of one year. Local access to businesses between Victoria Street Bridge and Edna Street will be allowed while construction of the bridge is underway; however, access will be restricted during road works on Victoria Street.

The existing entrance to #680 Victoria Street North will be closed as it is too close to the end of the new Victoria Street Bridge. A new entrance will be constructed to the west at the edge of the property, providing access to the businesses at this location. The entrances to properties at #686 and #800 Victoria Street North will be permanently closed as the properties have been purchased by MTO. The lights at the entrance to #800 Victoria Street North and Bruce Street will be modified to account for the closure of this entrance. The contractor will maintain access to entrances during construction.

The Shirley Avenue widening will be completed prior to demolition of the Victoria Street Bridge to provide an alternate access for local traffic to Highway 85 and alleviate potential traffic congestion.

4.2.4.2 Property Requirements

Property has been acquired or is in the process of being acquired for the Highway 7 New, including lands within the study areas for the Victoria Street Bridge replacement and Shirley Avenue Widening.

4.3 Shirley Avenue

The following describes the environmental issues and commitments related to works on Shirley Avenue between Wellington Road/Riverbend Road and the through connection of Shirley Avenue and Bingemans Centre Drive.

4.3.1 Natural Environment

Ecology staff undertook field investigations over multiple site visits in 2014 and 2015 to document existing conditions within the study area for the Shirley Avenue widening and extension. The purpose was to document vegetation communities, wildlife habitat and to determine the potential for Species at Risk (SAR) or their habitat to occur within the project.

The developed areas within and adjacent to the study area are dominated by commercial and light industrial land uses. Habitat along the south side of Shirley Avenue within the vicinity of the proposed widening includes manicured areas, cultural meadow embankments and roadside drainage ditches. Planted and regenerating trees and shrubs occur sporadically throughout the cultural meadow. North of Shirley Avenue, culturally modified fields, woodlands, and wetlands are present, which provide limited habitat opportunities for wildlife.

Based on the available background information and field survey findings, no rare, significant, specialized or unique species or features were identified in the study area. No SAR were recorded during field surveys; however, habitat for several SAR is present.

The vegetation communities, species and associated habitats are common and culturally influenced.

Impacts associated with the proposed Shirley Avenue extension and widening will include vegetation removals from a number of vegetation communities. This will include removal of several mid-aged to mature trees, and incremental loss of edge habitat for wildlife.

Impacts associated with the proposed widening of the existing portion of Shirley Avenue will be limited generally to the ROW, with some incremental edge impacts to vegetation communities and wildlife habitats present beyond the ROW.

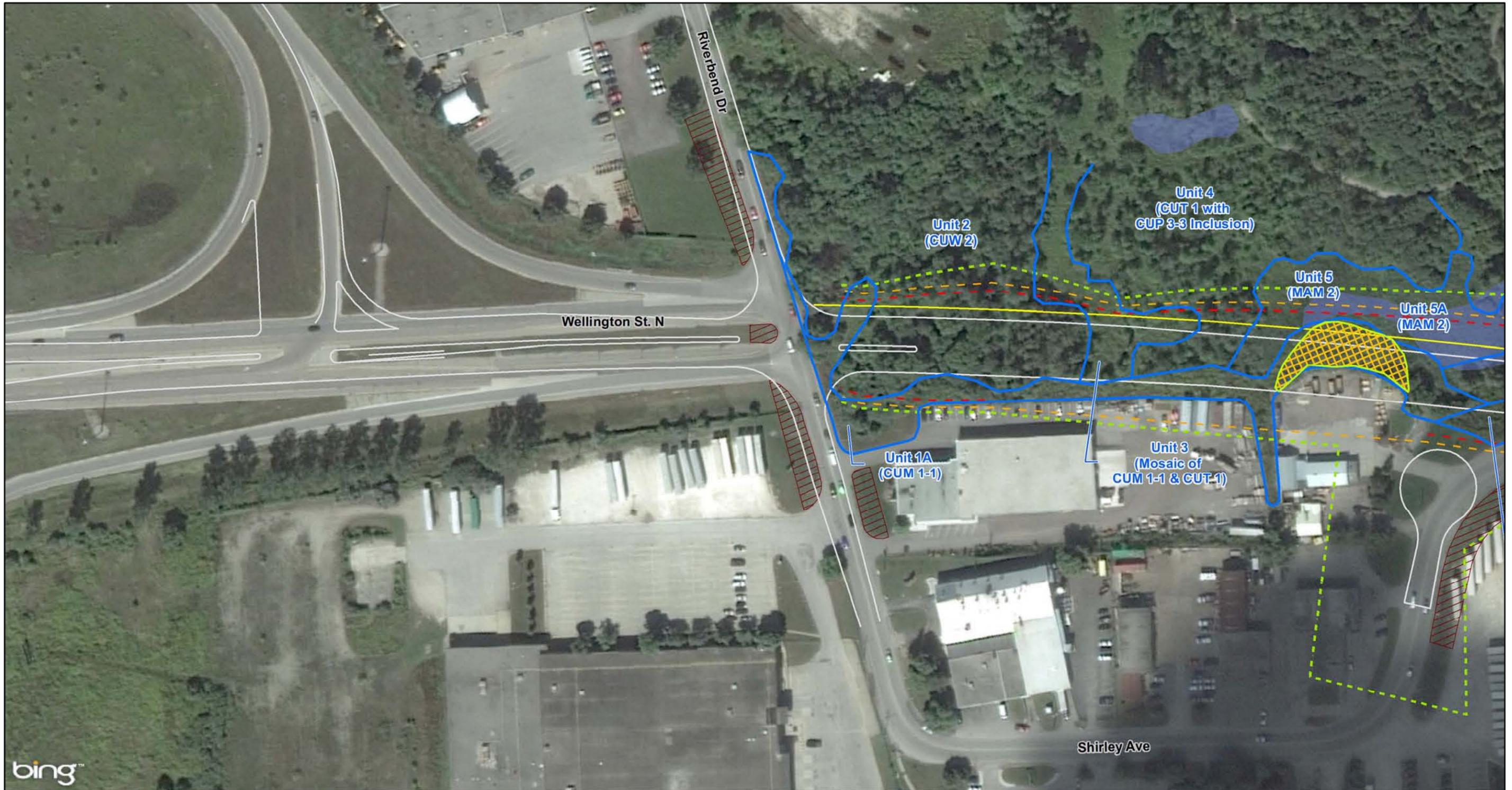
With the implementation of the recommended mitigation measures outlined below, potential impacts of the proposed works on environmental features can be avoided or minimized. All of the recommended construction mitigation measures will be incorporated into the Contract documents.

4.3.1.1 Vegetation

Vegetation removals will be required in the western portion of the study area, associated with the construction of the new Shirley Avenue extension and widening (Figure 2). The following calculations are based on the 'worst case' scenario, using the 3 m setback from the proposed grading limits (as shown on Appendix A); thus, providing a conservative estimate of the amount of vegetation to be removed from each vegetation unit. We note that units 2, 4, 6A, 6B and 8 are directly associated with removals identified for a clearing contract to be carried out in advance of general construction. Other areas of vegetation habitat that are not tree covered are also identified for removal.

- ▶ Units 1A and 1B: Dry-Moist Old Field Meadow: approximately 0.69 ha to be removed – limited to early successional species that are tolerant to disturbance; may include scattered young trees and shrubs.
- ▶ Unit 2: Mineral Cultural Woodland: 0.47 ha to be removed – including a number of mid-aged to mature trees.
- ▶ Unit 3: Mosaic of Dry-Moist Old Field Meadow and Mineral Cultural Thicket: approximately 0.10 ha to be removed – generally limited to early successional species that are tolerant to disturbance, including young trees and shrubs.
- ▶ Unit 4: Mineral Cultural Thicket with Scotch Pine Coniferous Plantation inclusion: 0.19 ha to be removed – including a number of young to mid-aged trees.
- ▶ Units 5A and 5B: Mineral Meadow Marsh: approximately 0.24 ha to be removed – dominated by disturbance-tolerant exotic wetland species.
- ▶ Units 6A and 6B: Mineral Cultural Woodland: 0.40 ha to be removed – including some mid-aged to mature trees.
- ▶ Unit 8: Mineral Cultural Woodland: 0.10 ha to be removed – includes mid-aged to mature trees.

Impacts related to the proposed widening of the existing Shirley Avenue in the easterly portion of the study area are expected to be limited to localized temporary disturbance and removal of old field meadow vegetation within the existing ROW (i.e., vegetation unit 1C). These will result from construction and staging and incremental edge impacts of some areas beyond (i.e., vegetation Units 7 and 8), to accommodate new ROW and grading limits. Removal of vegetation from Units 10 and 11 will affect only weedy disturbed areas and mown lawn and therefore this is not considered to result in an impact. None of the potentially impacted vegetation communities or associated species recorded or expected in the area, or their habitat values, are rare or limiting within the broader landscape of the study area.

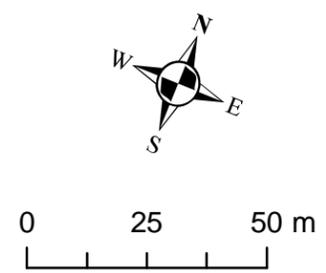


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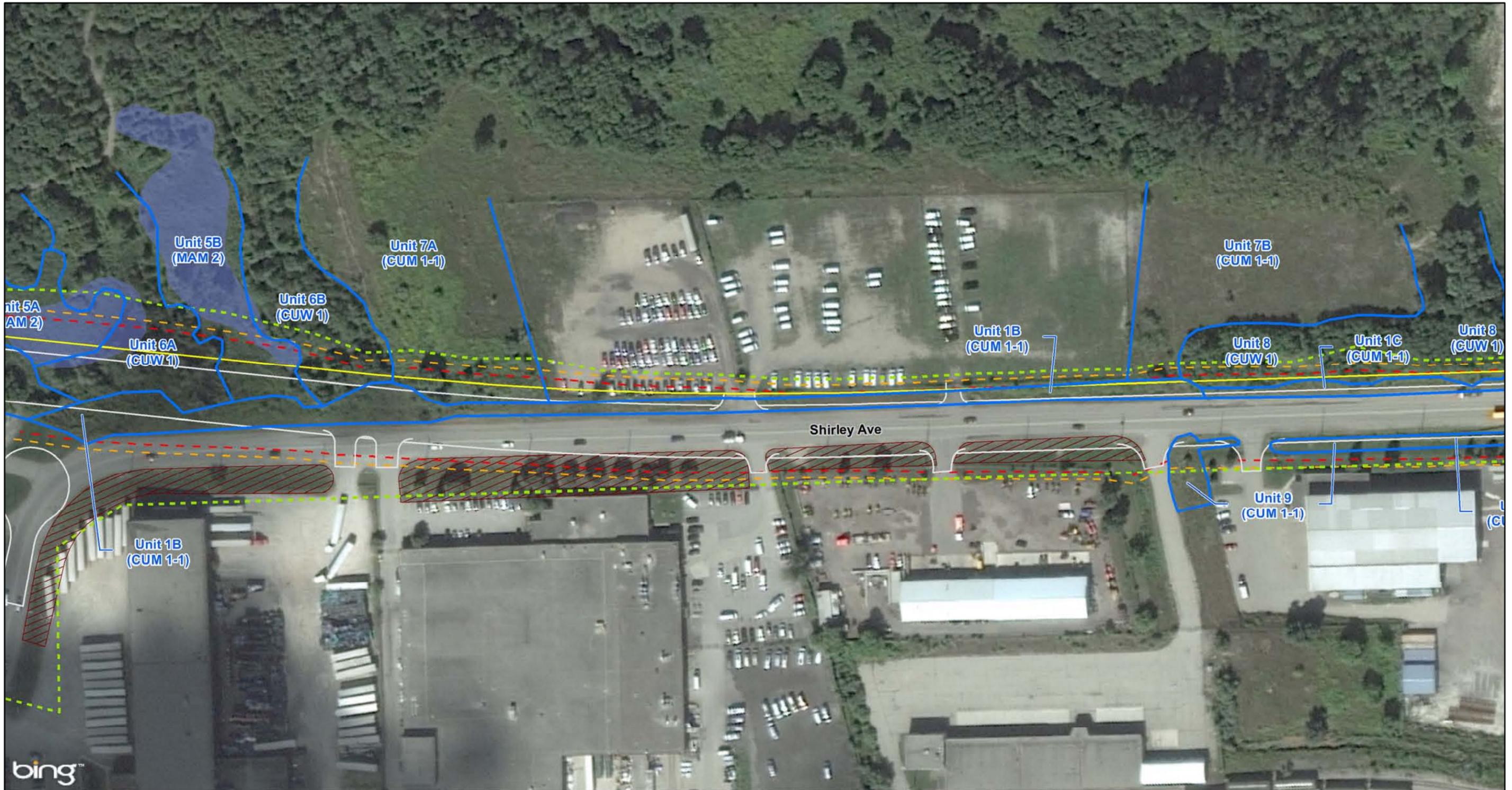
- Vegetation Communities
- CUM 1-1: Dry-Moist Old Field Meadow
- CUT 1: Mineral Cultural Thicket
- CUW 1: Mineral Cultural Woodland
- CUP 3-3: Scotch Pine Coniferous Plantation
- MAM 2: Mineral Meadow Marsh
- CGL_4: Recreational
- CVC_1: Business Sector

- Edge of Pavement
- Right-of-Way
- - - Grading Limits
- - - 3m Grading Limit Setback
- - - ROW +5m (Potential Impact Limit)

- Manicured Areas
- Unevaluated Wetland
- Potential Snake Hibernaculum



Client:	Ministry of Transportation	
Title:	Shirley Avenue Extension: Detailed Design Study to Advance Construction of Highway 7 Natural Environment Conditions	
Prepared by:	MMM GROUP	
16-08027-003-EN4	Scale as Shown	Review: SR
Date: February 2016		
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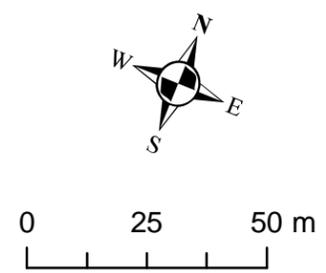


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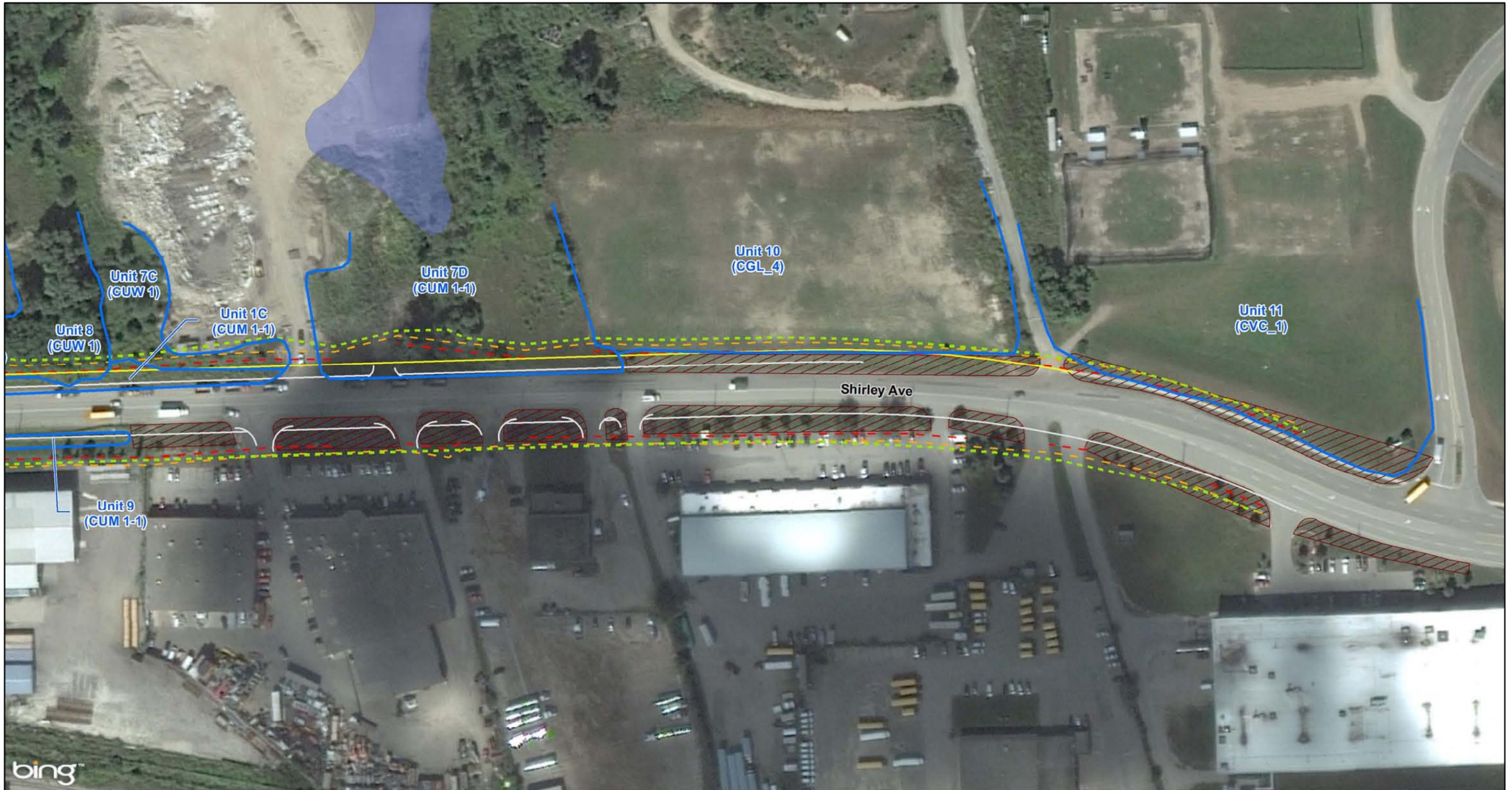
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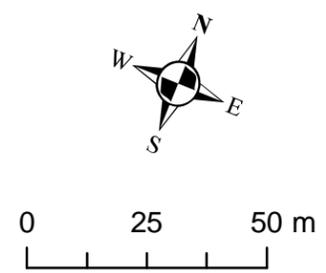


Legend

- Vegetation Communities
- CUM 1-1: Dry-Moist Old Field Meadow
- CUT 1: Mineral Cultural Thicket
- CUW 1: Mineral Cultural Woodland
- CUP 3-3: Scotch Pine Coniferous Plantation
- MAM 2: Mineral Meadow Marsh
- CGL_4: Recreational
- CVC_1: Business Sector

- Edge of Pavement
- Right-of-Way
- - - Grading Limits
- - - 3m Grading Limit Setback
- - - ROW +5m (Potential Impact Limit)

- Manicured Areas
- Unevaluated Wetland



Client: Ministry of Transportation		
Title: Shirley Avenue Extension: Detailed Design Study to Advance Construction of Highway 7 Natural Environment Conditions		
Prepared by: MMM GROUP		
16-08027-003-EN4	Scale as Shown	Review: SR
Date: February 2016		Figure 2 - Plate 3
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Following stabilization, seeding and planting of native shrub and tree species of the temporarily disturbed areas, similar vegetation is expected to regenerate naturally in those areas of the ROW temporarily disturbed for construction and staging.

4.3.1.2 Wildlife

Impacts to wildlife and wildlife habitat are limited to local incremental impacts since the road improvement works are limited to widening the existing Shirley Avenue and constructing the new Shirley Avenue extension and widening within edge habitats that have some level of disturbance.

As outlined above, there will be direct removals along the edges of cultural and tolerant vegetation communities required throughout the project limits and the wildlife habitat associated with these communities will be removed. These vegetation communities provide habitat that supports common tolerant species. The majority of the wildlife species observed in the study area are common, tolerant species and potential impacts can be managed through the implementation of the mitigation measures outlined in Section 4.3.1.3.

There is potential for birds to be nesting in the vegetation where temporary or permanent clearing is proposed, and these may include species protected by the federal Migratory Birds Convention Act, 1994 (MBCA). Potential impacts include disturbance to nesting activity or possibly loss of any nests present in the year of construction, depending on timing.

In addition, there is potential for other wildlife (e.g., snakes, small mammals, etc.) to enter the proposed work areas. There is potential for destruction of active Groundhog burrows present within the lawn along the Shirley Avenue; however, this species is common throughout southern Ontario and other suitable habitat for burrows is available nearby.

4.3.1.3 General Mitigation Measures

The following mitigation measures are recommended to minimize effects to the local vegetation communities and their associated habitat functions:

- ▶ Stabilize and re-vegetate exposed surfaces as soon as possible upon completion of works at those locations.
- ▶ Clearly delineate vegetation clearing / vegetation retention zones using silt fencing and shown on both the construction drawings. Equipment, materials and other construction activities will not be permitted in vegetation retention zones.
- ▶ The Contract Administrator (CA) will be notified in the event the Contractor needs to clear additional vegetation beyond the above limits, as specified in the

Contract documents, and these limits will be reviewed in the field for acceptability.

- ▶ Fell trees and shrubs to be removed into the existing road / work area, to avoid disturbance to retained vegetation and habitats.
- ▶ Dispose of cut material through chipping or other appropriate means.
- ▶ Avoid all unnecessary traffic, dumping and storage of materials over tree root zones adjacent to the ROW.
- ▶ In dust-sensitive areas (e.g., adjacent to wetlands, etc.), control dust using water and not chemical suppressants.
- ▶ Conduct vehicle maintenance and fueling at the designated and properly contained maintenance areas in the works yards or at commercial garages located well away from wetlands and outside of retained vegetation areas. The Contractor will have a Spills Prevention plan and required materials on site at all times in accordance with OPSS 100.
- ▶ Remove and dispose of all spoil and other construction-related debris following construction in appropriately designated areas.
- ▶ Inspection to occur during construction to ensure that all mitigation measures are implemented properly, maintained and repaired, and remedial measures introduced, if required.

Nesting migratory birds are protected under the MBCA. No work is permitted to proceed that would result in the destruction of active nests (nests with eggs or young birds), or the wounding or killing of birds species protected under the MBCA and / or Regulations under that Act.

In order to protect nesting migratory birds, in accordance with the MBCA, the contractor will:

- ▶ Ensure that no active nests (nests with eggs or young birds) will be removed or disturbed in accordance with the MBCA.
- ▶ Avoid vegetation clearing (including grubbing) during the breeding bird season (approximately end of March to end of August).

For the protection of wildlife in general, the Contractor will ensure that:

- ▶ Any wildlife incidentally encountered during construction will not be knowingly harmed and will be allowed to move away from the construction area on its own if possible.

- ▶ In the event that an animal encountered during construction does not move from the construction zone, or is injured, the Contract Administrator will be notified.

4.3.2 Species of Conservation Concern

The term “species of conservation concern” (SCC) is used to describe species that are “designated” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and/or listed under the Species at Risk Act (SARA); species that are “designated” by the Committee on the Status of Species at Risk in Ontario (COSSARO); species that are endangered and regulated (Endangered-Regulated) under Ontario’s Endangered Species Act (ESA); and provincially rare species (S-rank of S1 to S3). This section describes those species that have been identified through background information or field investigations as having potential to occur or where suitable habitat may be present.

SCC with Potential to Occur

Based on the existing conditions and background information, a number of SCC have potential to be present in the study area based on habitat suitability. However, none of these species were recorded during the field surveys and several of the species have very restricted ranges. Therefore, despite the presence of potentially suitable habitat conditions, only the following Species at Risk (SAR) were considered as having reasonable potential to occur in the study area:

- ▶ Eastern Wood Pewee (*Contopus virens*), which is listed as Special Concern under the ESA, may pass through the study area and has marginally suitable breeding habitat within the semi-mature forest areas within the study area (Unit 2); however, this species was not recorded during field surveys and is more likely to use suitable breeding habitat found >200 m from Shirley Avenue along the Grand River
- ▶ Wood Thrush (*Hylocichla mustelina*), which is designated as threatened by COSEWIC, and listed as Special Concern under the ESA, may pass through the study area and nest in mature forest adjacent to the study area; however, this species was not recorded during field surveys and is unlikely to nest within the study area given the lack of mature trees.
- ▶ Milksnake (*Lampropeltis triangulum*), which is listed as Special Concern under the ESA, may use rock spoil piles or small mammal burrows, present in the vicinity of the proposed Shirley Avenue extension, as hibernacula; however, no confirmed or significant hibernacula features (e.g. deep cracks/crevices in rocks) were noted during field surveys.

- ▶ Monarch (*Danaus plexippus*), which is listed as Special Concern under the ESA and SARA, may use cultural meadow habitats containing milkweed (*Asclepias* sp.), present throughout the study area.

Correspondence with Guelph District MNRF (Appendix A) reported records of two additional Species at Risk (SAR) in the general vicinity of the study area: Bald Eagle (*Haliaeetus leucocephalus*) and Barn Swallow (*Hirundo rustica*) (in addition to Eastern Meadowlark, which is addressed below). However, through refined assessment of the field conditions and understanding of the limited scope of the project, Bald Eagle are not expected to be present within the study area, for the following reason:

- ▶ Bald Eagle, which is listed as Special Concern under the ESA, is known to use habitat associated with the Grand River, located north of the study area. The habitat that this species requires for nesting (i.e., large, super-canopy trees) and foraging (i.e., wetlands, lakes and rivers with fish or waterfowl concentrations) is not present in the study area. There is low potential for this species use trees within the study area (given its known occurrence to the north) as non-breeding, roost locations; however, this is unlikely due to generally unsuitable conditions – young to mid-aged trees, and overall level of disturbance.

Barn Swallow, which is listed as Threatened under the ESA and by COSEWIC, may use the buildings, bridges and culverts adjacent to the study area for nesting and individuals were observed flying/foraging over the fields in Unit 7B; however, no breeding evidence was observed and no suitable nesting sites (e.g. culverts or barns) are present within the study area. Additionally, none of the bridges that may be used by this species will be impacted by the proposed works.

Although not identified by the MNRF, Bank Swallow (*Riparia riparia*, Threatened – ESA and COSEWIC) was observed nesting in the construction area (soil storage) between Unit 7C and 7D. Six nest holes were counted in an exposed slope of a soil pile and four adults were flying nearby.

Based on recommendations by the MNRF, habitat for SAR bats was examined in the extension portion of the Shirley Avenue works. This involved a habitat/cavity tree assessment throughout the study area. Surveyors searched potential habitat features using wandering transects and noted any suitable cavity trees. Effort was made to observe trees from all angles and special attention was given to any large or mature trees. No suitable bat maternity colony or roosting habitat was found. There are a number of semi-mature willows in the study area with broken branches and separated bark; however, these were thoroughly inspected and determined to be unsuitable for bat habitat and no evidence of bat activity (e.g. guano) was observed.

While it is unlikely that any SAR will be using habitat within the ROW that will be disturbed by the construction activities, there is some potential for SAR to be present, as identified above. To protect these species and any other SAR generally, all relevant handling and MNRF notification protocols will be adhered to:

- ▶ In the event that a SAR, or potential SAR, is found within the construction area, the Contractor will immediately cease all work that could potentially harm the animal and will contact the Contract Administrator for direction, as these animals are protected under the Ontario Endangered Species Act (2007). The Contract Administrator or his Environmental Inspector will then contact the MNRF SAR Biologist for advice.
- ▶ Specialized mitigation measures for certain species include:
 - **Milksnake:**
 - Conduct earthworks/grading between June 1 and August 30 to avoid potential disturbance or harm to snakes that could have occupied the potential hibernacula.
 - Erect temporary exclusion fencing prior to June 1 to prevent snakes from entering the construction zones located in terrestrial areas. It should be feasible to combine the exclusion fencing with silt fencing requirements, by modifying them to use wire-backed silt fencing and hooking the ends to redirect wildlife away from the construction zones (as shown on construction drawings). Fencing should meet the MNRF Best Practices guidelines for Reptile and Amphibian fencing: http://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_tx_rptl_amp_fnc_en.pdf
 - Prior to starting works each day, the contractor will examine the length of the fence to repair any damages and remove any snakes (or other wildlife) that may have entered the construction zone. Refer to the MNRF SAR Handling Manual on how to safely handle snakes and birds, and how to report SAR encounters: http://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_tx_sar_hnd_mnl_en.pdf

Earthworks/grading for the Shirley Avenue extension in the area of the potential snake hibernation habitat (Figure 2) will be undertaken in June and July, 2016, which is within the recommended timing window. Light-duty silt fencing will be installed, with the base secured in the ground just beyond the limits of grading to isolate the work area and provide erosion and sediment control protecting features beyond the work area. It is

anticipated that these measures as well as routine inspection of the work area for the presence of snakes, will mitigate potential impacts to milksnake that may be present in the area.

- **Monarch:**
 - Conduct vegetation clearing in areas that contain milkweed prior to Monarch egg-laying (i.e., before June).
 - Where seeding is required, use a native seed mix that includes milkweed, in order to aid the recovery of Monarch.

Regionally Significant Species

Black Walnut (*Juglans nigra*), which is ranked as 'W*+' in the RMW Significant Species List (RMW 1999), was recorded in the study area. This ranking means that it is considered significant, with the expectation that additional research may prove otherwise, and only if demonstrably indigenous (as most local populations are thought to be of non-indigenous origin). Given the disturbed nature of the woodlands where Black Walnut was found, and their close proximity to Shirley Avenue, it is unlikely that these trees are of indigenous origin. They have likely grown through regeneration of nearby planted individuals. Therefore, Black Walnut is not considered to be a SCC.

One Regionally Significant (Waterloo Region) bird species was detected during the 2015 surveys: Red-bellied Woodpecker (*Melanerpes carolinus*) in Unit 2. However, no nesting activity or nesting cavities were observed in the study area and this species is more likely to be nesting in the mature trees found near the Grand River.

4.3.3 Contaminated Property

A Phase One and Two Environmental Site Assessment (ESA) for two study areas within the project limits for the Shirley Avenue extension and widening were carried out between 2014 and 2015. Both ESA reports are on file with the MTO. These two sections are described as:

- ▶ **Study Area 1:** Shirley Avenue Extension and cul-de-sac (Figure 3)
- ▶ **Study Area 2:** Shirley Avenue Right-of-Way expansion to accommodate road widening (Figure 4)



J:\1442 Projects by Job Number\2014\16-08027-003-EN4 Shirley Ave Extension\06 Table-Figures-Maps\MXD\Shirley Ave Area 1\Figure 3 Monitoring Locations.mxd

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Legend

- Proposed Alignment
- Borehole
- ◆ Monitoring Well
- Subject Property
- Waterbodies

Client: Ministry of Transportation		
Title: Monitoring Locations		
Prepared By: MMM GROUP		
16-08027-003	Scale as Shown	Review: CIA
Date: July 2015		Figure 3
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J:\1442 Projects by Job Number\2014\16-08027-003-EN4 Shirley Ave Extension\06 Table-Figures-Maps\MXD\Shirley Ave Area 2\Figure 3 Monitoring Locations.mxd

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Legend

- Proposed Alignment
- Borehole
- ◆ Monitoring Well
- Subject Property

Client: Ministry of Transportation		
Title: Monitoring Locations		
Prepared By: MMM GROUP		
16-08027-003	Scale as Shown	Review: CIA
Date: March 2015	Figure 4	
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The principle objective of the ESA was to ascertain the presence or absence of soil and groundwater contamination within the two study areas. The Phase One and two ESA was conducted according to current industry standards, as outlined in the Canadian Standards Association (CSA) Z768-01 *Phase I Environmental Site Assessment* and CSA Z769-00 *Phase II Environmental Site Assessment*, respectively. The Phase One and Two ESA was also conducted in general accordance with the requirements of O. Reg. 153/04, as amended (July 2011), made under the *Environmental Protection Act*. The results of the Phase One and Two ESA identified areas of environmental concern. These are noted in the Table 2.

A permit to take water (PTTW) will not be required for construction on Shirley Avenue as the amount of water that may be encountered is anticipated to be less than 50,000 litres/day. However, in the event that water is encountered during construction in the area of the cul-de-sac and 68 Shirley Avenue, the water can be discharged through agreement with the RMW / City of Kitchener to the municipal sanitary sewer system. In order to be discharged, water must meet sewer use criteria.

4.3.4 Excess Material Management Plan

Based on the findings of the ESA a plan for the management of excess materials that may be generated during construction will be prepared prior to tendering and included in the contract package for Shirley Avenue widening and extension. The EMMP will document the type and quantity of excess materials expected to be generated during the construction stage and identify suitable receiving sites for the excess material. Excess materials will include but not limited to excess earth, contaminated soil and/or groundwater, and excess construction waste (i.e. signs, electrical components, etc.).

Table 2: Summary of Phase One and Two ESA

Study Area Location	Phase One ESA	Phase Two ESA
Study Area #1	<ul style="list-style-type: none"> • Current and historical operations present a moderate potential for environmental impacts • Current and historical land uses present the potential to impact soil and groundwater within the study area from contaminant migration through groundwater movement. Contaminants of concern include metals, PAHs, PHCs, and VOCs in soil and groundwater. • There is potential for environmental impacts to soil and groundwater from the application of road salts on Shirley Avenue. • Study area was used for agricultural purposes up until the 1960s, and has been vacant from the 1960s to present. Potential for environmental impacts are not anticipated from this land use. • Adjacent properties have been used for commercial and industrial purposes for nearly 60 years. Past operations identified on surrounding lands that are inferred to be hydraulically upgradient or transgradient to the study area include: vehicle and repair garages; a retail fuel station; lumber yard; and, commercial trucking terminals. • The commercial property located at 68 Shirley Avenue is known to have groundwater contamination from chlorinated solvents. It is possible that contamination on this site has migrated into the project limits. 	<ul style="list-style-type: none"> • As groundwater was not encountered, groundwater quality was evaluated from information in a groundwater monitoring report for 68 Shirley Avenue (AECOM 2014). <ul style="list-style-type: none"> ○ Based on the static water level measurements report for 68 Shirley Avenue, the groundwater elevation along the roadway ranges from 321.44 to 323.67 masl. Construction in the area is anticipated to reach depths of approximately 323.5 masl, which may intersect the top of the water table. ○ The concentrations of tetrachloroethylene in the groundwater exceeded the MOECC Standards for potable groundwater conditions in the area of 68 Shirley Avenue that is adjacent to and south of the study area. Wells located in the study limits were not contaminated. It is possible that groundwater at the south end of the proposed cul-de-sac contains tetrachloroethylene at concentrations exceeding the MOECC Standard. • No soil parameters analyzed by the laboratory exceeded the applicable 2011 MOE Standards; • In the event that construction activities extend deeper than planned and groundwater is intercepted, groundwater may require treatment prior to discharge.

Study Area Location	Phase One ESA	Phase Two ESA
Study Area #2	<ul style="list-style-type: none"> • Current and historical operations present a moderate potential for environmental impacts • Current and historical land uses present the potential to impact soil and groundwater within the study area from contaminant migration through groundwater movement. Contaminants of concern include metals, PAHs, PHCs, and VOCs in soil and groundwater. • There is potential for environmental impacts to soil and groundwater from the application of road salts on Shirley Avenue. • The area was used for agricultural purposes up until the 1960s, and following that was vacant until the 1980s, when Shirley Avenue was built and the study area became the ditches alongside the road • Adjacent properties have been used for commercial and industrial purposes for nearly 60 years. Past operations identified on surrounding lands that are inferred to be hydraulically upgradient to the study area include a private fueling station, storage and maintenance of transportation vehicles, and commercial trucking terminals. 	<ul style="list-style-type: none"> • Groundwater was not observed at MW02, therefore only MW01 was sampled (Figure 4) • Elevated concentrations of barium, cobalt, molybdenum, sodium and chloride were identified for metals and inorganics in groundwater at MW01 • Elevated concentrations of benzo(a)pyrene and phenanthrene were identified for PAHs in groundwater at MW01 • Elevated concentrations of F2 PHCs were identified in groundwater. Concentrations of VOCs were all measured below Table 2 Standards. • No soil parameters analyzed by the laboratory exceeded the applicable 2011 MOE Standards;

4.3.5 Well Survey

A Private Water Well survey was conducted from December 2014 to January 2015 for properties potentially affected by the Shirley Avenue widening and extension. The results of the survey are documented in the *Highway 7 and Shirley Avenue Extension, Private Water Well Survey Report* (MMM Group, 2015) on file with the MTO. Eleven water well record forms were obtained from the Ministry of Environment and Climate Change (MOECC) database, which included: three monitoring well clusters with three or more wells each; four individual monitoring wells or test hole records; two records of water wells which were decommissioned (removed); and, two private water supply well records.

The following table summarizes the results of the private water well survey.

Table 3: Summary of Well Survey

Properties	Property Use	Water Well	Septic System
5 Shirley Ave	Industrial	No	No
9 Shirley Ave	Industrial	No	No
31 Shirley Ave	Industrial	Unknown	Unknown
41 Shirley Ave	Industrial	No	No
57 Shirley Ave	Industrial	No	No
61 Shirley Ave	Industrial	No	Yes
150 Shirley Ave	Industrial	No	Yes
200 Shirley Ave	Industrial (Vacant Lot)	No (Assumed)	No (Assumed)
250 Shirley Ave	Industrial	Yes (Not in use)	No

Only one unused water supply well was located during the study. Therefore, based on the well survey results no impacts to water active supply wells will occur because of the Shirley Avenue extension.

4.3.6 Socio-economic

The Socio-Economic environment includes the human and built aspects of the environment. Socio-economic features of the study area can generally be described as an urban environment consisting of commercial businesses, land use, community facilities and recreation. Shirley Avenue is considered to be a secondary arterial road, providing service to general and heavy industrial, and arterial commercial properties.

The Walter Bean Grand River Trail (WBGRT) is the nearest recreational trail to the project. A single secondary trail connects the WBGRT to Shirley Avenue on the north side of the road, across from #100 Shirley Avenue. This is an informal trail and not mapped as part of the WBGRT. No change to trail access will occur because of this project.

Meetings and consultation with the City of Kitchener have been carried out for the duration of the project. The Shirley Avenue cross section is based on City of Kitchener standards, which include sidewalks, curb and gutter and allowance for bike lanes.

The Grand River Transit (GRT) Bus route #34 services Shirley Avenue within the project limits. This route and those stakeholders who use this bus will experience both temporary and permanent impacts. Temporary impacts during construction will be delays due to lane reductions and construction staging. Installation of the cul-de-sac and extension of Shirley Avenue to Wellington Street North will eliminate the flow through traffic along the existing loop of Shirley Avenue at the west limit of the project. Once Shirley Avenue is realigned east of the Wellington-Riverbend intersection, the route will be revised to operate straight through from Wellington St. N. to the realigned Shirley Avenue, requiring 3 current stops to be relocated. The GRT is involved in the design process and their comments on staging plans will be taken into consideration to ensure that disruption to public transportation is minimized.

Within the project limits for this component, approximately eighty-one (81) landscape trees may be removed. Final landscape designs plans will be developed through consultation with the City of Kitchener and implemented during construction for the rest of Highway 7 New.

4.3.6.1 Access

Access to businesses along Shirley Avenue will be maintained throughout construction.

4.3.6.2 Property Requirements

As per section 4.2.4.2 property has been acquired or is in the process of being acquired for Highway 7 New, including lands within the Shirley Avenue extension and widening study area.

5 Environmental Protection Plan

Environmental Protection Plan (EPP) guideline sheets were developed during the preliminary design for Highway 7 New (MRC, 2004, Appendix J). The applicable guideline sheets for this project include: Clearing and Grubbing, Grading, Dewatering, Erosion and Sediment Control Installation and equipment Maintenance & Fueling. The Pile Driving EPP does not apply to the proposed works at Victoria Street and Shirley Avenue. As part of the detail design, these guideline sheets were considered along with the results of impact assessments to develop appropriate mitigation measures. The resulting environmental protection measures are presented in this DCR and have been incorporated into the contracts.

6 Summary of Environmental Effects, Proposed Mitigation, Commitments to Further Work

The following table summarizes the environmental effects, mitigation and commitments to further work as identified in the Initial Design Report for Highway 7 New and where identified, updated to provide the mitigation, protection and monitoring to address requirements specific to this project.

Table 4: Summary of Environmental Concerns and Commitments

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring	Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
1.0	Environmental Assessment <ul style="list-style-type: none"> Conditions of Approval 	Government Review Team MOECC MTO	1.1	<ul style="list-style-type: none"> Review and address environmental and design commitments identified as a condition of EA Approvals or commitment made during preliminary design (MOE, 2007): <ul style="list-style-type: none"> “1.0 The Proponent shall comply with the provisions of the EA all of which are incorporated herein by reference except as provided in these conditions and except as provided in any other approvals or permits that may be issued.” “2.0 These conditions do not prevent more restrictive conditions being imposed under other statutes.” “3.0 Where a document is required for the Public Record, it shall be provided to the Director for filing with the Public Record maintained for this undertaking. Additional copies of such documents will be provided by the Proponent for public access to: <ul style="list-style-type: none"> The Regional Director; The Clerk’s offices of the Regional Municipality of Waterloo, County of Wellington, City of Kitchener, City of Guelph, Township of Woolwich, and Township of Guelph/Eramosa; The Proponent’s head office.” “4.0 The Proponent shall implement the commitments made and recorded in Appendices B and C of the ministry Review, except as provided for in these conditions or as provided by other approvals, authorizations or permits required for the undertaking.” “4.1 The Proponent shall consult with Six Nations of the Grand River during the detailed design phase of the undertaking, pursuant to the workplan developed jointly by the Proponent and Six Nations of the Grand River, which forms a part of the EA.” “4.2 The Proponent (MTO) shall prepare and submit to the Director for the Public Record an Environmental Assessment Compliance Monitoring Program. The Program shall be prepared for the monitoring of the Proponents fulfillment of the provisions of the EA for mitigation measures, public consultation, and additional studies and work to be carried out, and of all other commitments made during the preparation of the EA and the subsequent review of the EA for mitigation measures, public consultation and additional studies to be carried out. The Program shall be submitted one year from the date of approval of the undertaking or 60 days before the commencement of construction, whichever is earlier. A statement must accompany the Program when submitted to the Director indicating that the Program is intended to fulfill this condition. The Program, as amended by the Director, must be carried out by the Proponent.” “4.3 The Proponent shall prepare an annual Compliance Report which describes compliance with the conditions of approval as set out in the Notice of Approval and which describes the results of the Environmental Assessment Compliance Monitoring Program. The first Compliance Report shall be submitted no later than April 30th following the date of the Directors acceptance of the Compliance Monitoring Program and on the anniversary of this date thereafter, for which the Compliance Report shall cover the previous calendar year. The Proponent shall submit to the Director for placement on the Public Record a copy of the Compliance Report. The Proponent shall submit Compliance Reports until all conditions are satisfied. When all conditions have been satisfied, the Proponent shall indicate in the Compliance Report that this is the final submission.” 	No Change	

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring	Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
2.0	Breeding Birds	MNRF EA	2.2	<ul style="list-style-type: none"> To minimize impacts to migratory birds, vegetation clearing should be scheduled to avoid the nesting period between April 1 and August 31 during each year of construction. Same window is to apply to the demolition of buildings/bridges that may support nesting barn swallow, chimney swift and other species. 	No Change	
			2.2	<ul style="list-style-type: none"> Confirm the extent of buffers that may be required to protect individual species within associated habitat areas during detailed design. 	No Change No buffers are required for the proposed works.	
			2.3	<ul style="list-style-type: none"> In the event that a bird nest is discovered during vegetation clearing or other construction, work should cease and the area within the specified limit from the nest, and the area avoided until the nesting effort has been completed as determined by an avian biologist. 	No Change	
3.0	Species At Risk	MNRF	3.1	<ul style="list-style-type: none"> The Contractor shall comply with the prohibitions Section 9 and 10 of the Endangered Species Act, 2007 (ESA), which provides for the protection of Species at Risk in Ontario. <ul style="list-style-type: none"> Section 9 of the Act prohibits the killing, harming, harassing, taking, possessing, transporting, collecting, buying, selling, leasing or trading or offering to buy, sell, lease or trade of species listed as endangered, threatened or extirpated on the Species at Risk in Ontario (SARO) List. Section 10 of the Act prohibits the damage or destruction of the habitat of endangered or threatened species that have general or regulated habitat protection under the Act. 	No Change	
			3.2	<ul style="list-style-type: none"> Complete the MNR Information Gathering Form (IGF) and Avoidance Alternative Form (AAF) and submit to MNR for review under sections 9 and 10 of the ESA, subject to the technical requirements of Section 3.14 of the current ERHD. (2014 IDR, Table 5.1: I.D. 8.1) 	No Change	
			3.3	<ul style="list-style-type: none"> Consultation with the MNR will be required in order to confirm the permitting and species survey requirements prior to construction. (2014 IDR, Table 5.1: I.D. 8.2) 	No Change	
			3.4	<ul style="list-style-type: none"> Obtain SARA and ESA permits as required (2014 IDR, Table 5.1: I.D. 8.3) 	No Change ESA or SARA permits not required	

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring		Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
4.0	Newly listed SAR Species		4.1	<ul style="list-style-type: none"> Where there is a change in the status of a species, additional surveys or a review of potential impacts may be required under Sections 9 and 10 of the <i>Endangered Species Act</i> and the <i>Species at Risk Act</i>. 		No Change	
			4.2	<ul style="list-style-type: none"> Consult with MNR to confirm additional species to be investigated and the survey protocol to be used. 		No Change MNRF Waterloo Region SAR list identified the presence of the 3 bat species. A screening level investigation to identify cavity trees was carried out in order to identify if further consultation with MNRF was required. As no cavity trees were found, the potential for these species to occupy the site was considered low and therefore consultation with MNRF was not required.	
5.0	Emergency Services	Waterloo Regional Police Service Kitchener Fire Department RMW Emergency Medical Services OPP	5.1	<ul style="list-style-type: none"> Emergency services are to be notified a minimum of two weeks prior to the start of construction. The contractor shall provide detailed information of road closures, detour routes, access restrictions and the timing of work. 		Yes Updated contact information for Emergency Services contact information.	
				Staff Sergeant Shaena Morris Waterloo Regional Police Service P.O. Box 3070 200 Maple Grove Road Cambridge, ON N3H 5M1 T: (519) 653-7700 F: (519) 650-1793	Fire Chief Kitchener Fire Department Fire Headquarters 270 Strasburg Road Kitchener, ON N2E 3M6	WRPS Staff Sergeant: Mike Haffner (2015)	

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring	Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
				<p>Stephen Van Valkenburg, Director/Chief, Emergency Medical Services Region of Waterloo Emergency Medical Services 120 Maple Grove Road Cambridge, Ontario N3H 4R6 Tel. 519-650-8295 Fax. 519-650-3855</p> <p>Detachment Commander OPP – Cambridge 500 Beaverdale Road Cambridge, ON N3C 2V3 Phone: 519-654-0150 Fax: 519-654-9650</p>		
5.0	Noise By-Law Exemptions	City of Kitchener RMW MOECC MTO	5.1	<ul style="list-style-type: none"> Confirm noise by-law exemptions during detailed design and update the Noise Study to reflect the updated traffic study results, changes in the mitigation criteria when sound level is in excess of 65 dBA or if sound is increased by 5 dBA above existing conditions, and new criteria for the selection/identification of Noise Sensitive Areas (NSAs) to address the most exposed side of a residential property, where previously on the backyard was considered. (2014 IDR, Table 5.1: ID 12.2) 	<p>Yes</p> <p>Noise by-law exemption sought for night time work during construction through consultation with the City of Kitchener.</p> <p>An update to the Noise Study was not carried out given the highly urbanized nature of the study area and limited NSAs potentially affected by night time works.</p>	
			5.2	<ul style="list-style-type: none"> Construction to be carried out in accordance with local municipal by-laws. Duration of any work outside of the time period identified in the by-law will require, as necessary, an exemption to the by-law. (2014 IDR, Table 5.1: ID 12.3) 	No Change	
			5.3	<ul style="list-style-type: none"> Where receivers are anticipated to experience an increase greater than 5 dBA noise mitigation designs must consider the following during detailed design: <ul style="list-style-type: none"> MTO will investigate noise control measures within the ROW Noise control measures, if applied, will be designed to achieve levels as close to 55 dBA, or pre-construction ambient noise levels as is technically or economically feasible Noise control measures, where applied, would be cost effective and achieve a minimum attenuation of 5 dBA averaged over the first row receivers. (2014 IDR, Table 5.1: ID 12.4) 	No Change	
6.0	Future EA Documentation	MOECC MTO	6.1	<ul style="list-style-type: none"> Prepare and file Design and Construction Reports (DCR) for each detailed design section, which is to include detailed mitigation measures. The DCRs are to be filed for public review, for a period of 30-days and are not be eligible for a Part II Order “bump-up” request. 	<p>No Change</p> <p>This DCR is filed for public review.</p>	

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring	Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
			6.2	<ul style="list-style-type: none"> Update Environmental Protection Plan guideline sheets for: clearing & grubbing, grading, dewatering, erosion and sediment control installation, equipment maintenance & fueling, and pile driving. 	<p>Yes</p> <p>Pile driving not applicable for this assignment.</p>	
7.0	Environmental Documentation & Studies		7.1	<ul style="list-style-type: none"> Develop an Environmental Protection Plan (EPP) during detailed design. 	<p>Yes</p> <p>Standard mitigation measures and special provisions of the contract will be sufficient to provide environmental protection during construction.</p> <p>Specific EPP Guidelines per Item 6.2 will be applicable during construction.</p>	
			7.2	<ul style="list-style-type: none"> Undertake environmental studies to update the results of studies undertaken during Initial detailed design stages. 	<p>No Change</p> <p>Additional environmental studies were undertaken.</p>	
8.0	Contaminated Property	MOECC MTO	8.1	<ul style="list-style-type: none"> MTO will follow a site screening protocol in order to identify potential areas of contaminated soil, prior to property acquisition. If a contaminated property is purchased, then environmental site assessments and remediation activities will be undertaken, in accordance with MOE regulations. (2014 IDR, Table 5.1: ID 13.1) 	<p>No Change</p> <p>Purchased properties on Victoria Street and Shirley Avenue where contaminants were identified have undergone Phase I and II ESA.</p>	
			8.2	<ul style="list-style-type: none"> Undertake a new Contaminant Overview Study (COS) to update the levels of potential contamination for properties within the project limits previously identified in the 2008 COS. The new COS is to provide a current list of properties and associated contamination risk level. (2014 IDR, Table 5.1: ID 13.2) 	<p>Yes</p> <p>Not required for this contract.</p> <p>Phase I/II ESA completed for specific properties and an Environmental Materials Management Plan prepared</p>	
			8.3	<ul style="list-style-type: none"> Conduct a Phase 1 Environmental Site Assessment for those properties identified as having potential to contain contaminated soil. Complete Phase 2 ESA Reports, and Prepare Remedial Work Plan and Site Remediation Report as required. (2014 IDR, Table 5.1: ID 13.3) 	<p>No Change</p> <p>Phase I/II ESA undertaken for Shirley Avenue Extension</p>	

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring	Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
			8.4	<ul style="list-style-type: none"> If contaminated property escapes detection during the design process, and unexpected contamination is identified during construction, the material will be investigated. Contaminated soil will be disposed of in a manner acceptable for its classification. Consultation with MOE will be undertaken, as required. Contaminated materials will be considered in further during detailed design. (2014 IDR, Table 5.1: ID 13.4) 	<p>No Change</p> <p>The contractor will be advised and will adhere to provincial regulations governing the exposure of contaminated substances.</p>	
9.0	Management of Excess Materials	MOECC MTO	9.1	<p>EA 2004:</p> <ul style="list-style-type: none"> For each waste material, an MTO/MOE protocol identifies management options both within and outside the construction area. Re-use or recycling is the preferred approach for excess materials. MTO encourages the re-use of materials, such as excess asphalt by accepting crushed asphalt in Granular “A” and recycled material in specified asphalt binder courses, (typically, the first ‘layer’ of asphalt). For this project, an appropriate proportion of recycled material will be determined during the design stage. (2014 IDR, Table 5.1: ID 13.5) 	<p>No Change</p> <p>Excess Materials Management Plan will identify suitable receiving sites for the excess material. Contractor shall adhere to the special provisions for excess materials identified in the contract.</p>	
			9.2	<ul style="list-style-type: none"> Within the limits of the right-of-way, materials such as asphalt, concrete and earth, may be re-used as construction materials. Materials may also be temporarily stockpiled inside the right-of-way in preparation for these uses. (2014 IDR, Table 5.1: ID 13.6) 	<p>No Change</p> <p>Excess Materials Management Plan will identify suitable receiving sites for the excess material. Contractor shall adhere to the special provisions for excess materials identified in the contract.</p>	
			9.3	<ul style="list-style-type: none"> The options for managing excess materials outside of the right-of-way include re-use, stockpiling for re-use, disposal as waste and, for certain materials, disposal as fill. Site protection is provided through specific constraints adapted from existing legislation. (2014 IDR, Table 5.1: ID 13.7) 	<p>No Change</p> <p>Excess Materials Management Plan will identify excess materials and receiving sites for these materials. Contractor shall adhere to the special provisions for excess materials identified in the contract.</p>	

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring	Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
			9.4	<ul style="list-style-type: none"> Management of excess materials outside the right-of-way also requires the contractor to obtain written agreements with property owners. Where a re-use/recycling option cannot meet the established constraints, another option must be pursued or the material must be disposed of as waste. (2014 IDR, Table 5.1: ID 13.8) 	<p>No Change</p> <p>Excess Materials Management Plan will identify excess materials and receiving sites for these materials. Contractor shall adhere to the special provisions for excess materials identified in the contract, including land owner agreements.</p>	
10.0	Archaeological Resources	MTCS MTO	10.1	<ul style="list-style-type: none"> Should deeply buried archaeological remains be found on the property during construction activities, the Ministry of Culture and Six Nations of the Grand River should be notified immediately. (2014 IDR, Table 5.1: ID 16.7) 	No Change	
			10.2	<ul style="list-style-type: none"> Should previously unknown or unassessed deeply buried archaeological resources be uncovered during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act. (2014 IDR, Table 5.1: ID 16.8) 	No Change	
			10.3	<ul style="list-style-type: none"> The Cemeteries Act, R.S.O. 1990 c. C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services. (2014 IDR, Table 5.1: ID 16.10) 	No Change	
11.0	Erosion and Sediment Control	MOECC MTO	11.1	<ul style="list-style-type: none"> Prepare a Risk Assessment and Two Part ESCP (Main and Supplemental) Plan, and implement the plan during construction. 	<p>Yes</p> <p>Not Applicable for this contract</p>	
			11.2	<ul style="list-style-type: none"> With guidance from the Erosion and Sediment Risk Assessment, erosion and sediment control structures will be designed, installed, maintained and removed according to MTO guidelines and policies in effect at time of design and construction. 	<p>Yes</p> <p>Not Applicable for this contract</p>	
			11.3	<ul style="list-style-type: none"> Erosion control measures should be flexible to incorporate current techniques available at the time of construction. 	No Change	
			11.4	<ul style="list-style-type: none"> The extent and duration of exposed soil areas, particularly near sensitive features (such as watercourses, valleys, woodlands and wetlands), should be minimized to the extent possible. Contingency measures should be in place to handle unexpected weather events that could result in extensive sediment transport. 	No Change	

I.D. #	Issues / Concerns Potential Effects	Concerned Agencies	I.D. #	Mitigation/Protection/Monitoring	Changes to Mitigation / Protection / Monitoring (yes/no – describe)	Agencies responses & Date
			11.5	<ul style="list-style-type: none"> Exposed surfaces will be re-stabilized and re-vegetated as soon as possible. Natural vegetation cover will be retained wherever possible (and root grubbing minimized where possible) to provide natural erosion control (ref: OPSS 201, 206, 503, 507, 572). 	No Change	
			11.6	<ul style="list-style-type: none"> Sediment control structures will be routinely inspected as well as checked after storms and repaired as required. 	No Change	
			11.7	<ul style="list-style-type: none"> Construction inspection will be provided to ensure that measures are in place and working properly prior to and throughout construction. 	No Change	
			11.8	<ul style="list-style-type: none"> The EPP sheets for Sediment and Erosion Control, Clearing and Grubbing and Grading will be updated during detailed design and used for guidance in the development of the mitigation specifications. 	No Change	
12.0	Utility and Infrastructure Regional Utility/Infrastructure Relocation	Utilities Municipalities County / Region MTO	12.1	<ul style="list-style-type: none"> Identify conflicts and develop a relocation plan for approval. Agreements or permits will be required for the relocation of any regionally owned utilities or infrastructure (i.e. watermains, forcemains, stormsewer system, etc.). (2014 IDR, Table 5.1: ID 26.1) 	No Change Coordination and planning for relocations undertaken with the City of Kitchener, RMW and applicable utility companies.	
13.0	Public Transportation	GRT	13.1	<ul style="list-style-type: none"> Grand River Transit shall be provided with notification at least one week prior to construction in order to allow for implementing detours appropriately. (Cheryl McGill, Coordinator, On-Street Passenger Facilities). 	Yes (new) Mitigation was not previously identified during Initial Design.	

7 Monitoring

7.1 Project Specific Technical Monitoring

The Contract Administrator is responsible for providing the Contract Administration Services and Deliverables in accordance with the Construction Administration Legal Agreement including the Construction Administration and Inspection Task Manual (CAITM). During construction, the Contract Administrator (CA) will ensure that the implementation of mitigation measures and key design features are consistent with the contract and external commitments in accordance with Part A and Part B of the CAITM. The CA will continually review the effectiveness of environmental mitigation measures to ensure the following:

- Mitigation measures are providing the expected control and/or protection;
- protection provided by the mitigation measures is adequate; and
- Additional mitigation measures are provided, as required, for any unanticipated environmental problems which may develop during construction.

7.2 Contractor Monitoring

The Contractor is responsible for the day to day maintenance/operations of the construction works including monitoring of all mitigation measures. In the event that the measures do not address the concerns identified, or major problems develop, the appropriate Ministry will be contacted to provide additional input as identified in the contract.

References

- Ecoplans-MRC. 2012. Environmental Screening Document Contract 1, Highway 85 and Highway 7/85 Resurfacing and Bridge Repairs from Krug Street to Regional Road 15 (King Street) GWP 168-89-00 and GWP 311-09-00. Detail Design Study. Regional Municipality of Waterloo. Class Environmental Assessment for Provincial Transportation Facilities. Prepared for: Ministry of Transportation West Region. October 2012.
- MMM Group Limited. 2015. Design and Construction Report. Detailed Design Study to Advance Construction for the Highway 7 New and Highway 85 Interchange E-N Ramp Widening of the Highway 85 and Guelph Street Overpass. Prepared for: Ministry of Transportation. January 2015.
- MMM Group Limited. 2015. Highway 7 and Shirley Avenue Extension, Private Water Well Survey Report (2015)
- MMM Group Limited. 2015. Phase One and Two Environmental Site Assessment. Highway 7/Shirley Avenue Extension Area 1. Kitchener, Ontario. July 2015
- MMM Group Limited. 2015. Phase One and Two Environmental Site Assessment. Highway 7/Shirley Avenue Extension Area 2. Kitchener, Ontario. July 2015
- MMM Group Limited. 2015. Terrestrial Technical Memo; Detailed Design Study to Advance Construction of Highway 7 New, Shirley Avenue Extension, WP 3040-14-00. November 2015.
- MTCS. 2015. Personal Communication; Wai Hadlari, Archaeology Review Officer. Ministry of Tourism, Culture and Sport; September 23, 2015.
- MMM. 2014. Initial Design Report for Highway 7 New, Kitchener to Guelph, 18 km. GWP 408-88-00. Ministry of Transportation. Prepared by MMM Group. April, 2014.
- MMM. 2014. Highway 7/85 and Highway 85 Resurfacing and Bridge Repairs, Natural Environment Impact Assessment Report. Prepared by MMM Group on behalf of the MTO. February 2014.
- MRC. 2004. Highway 7 Kitchener to Guelph. Amendment to the Environmental Assessment Report. 1997. Volume 1. W.P. 408-88-00. Prepared for the Ministry of Transportation. MRC. October 2004.
- RMW. 2013. Class Environmental Assessment Schedule "B" Project File Report for Victoria Street to Bruce Street. Regional Municipality of Waterloo. April, 2013.

WSP. 2015a. Phase 1 Environmental Site Assessment. 663 Victoria Street North, Kitchener, Ontario. June 2015.

WSP. 2015b. Phase 1 Environmental Site Assessment and Designated Substances and Hazardous Materials Survey. 800 Victoria Street North, Kitchener, Ontario. April 2015.

WSP. 2015c. Phase 1 Environmental Site Assessment and Designated Substances and Hazardous Materials Survey. 808 Victoria Street North, Kitchener, Ontario. April 2015.

APPENDIX A: Public Consultation

NOTICE OF STUDY COMPLETION

Detailed Design Study to Advance Construction for Highway 7 New Victoria Street Widening and Bridge Replacement and Shirley Avenue Extension and Widening GWP 3040-14-00, GWP 3103-15-00 & GWP 3104-15-00

THE STUDY

The Ontario **Ministry of Transportation (MTO)** has retained **WSP | MMM Group** to complete the detailed design for the Victoria Street widening and bridge replacement (GWP 3040-14-00); Shirley Avenue extension and widening (GWP 3104-15-00); and relocation of Victoria Street municipal utilities (GWP 3103-15-00). This work is an advanced contract for construction of the approved Highway 7 New – Kitchener to Guelph project (GWP 408-88-00).

The work on Victoria Street will generally include the following:

- Replacement of the Victoria Street Bridge over Highway 85 on the existing alignment
- Modifications to the vertical alignment (profile) of Victoria Street to allow for the new bridge deck depth and maintain the required vertical clearance over Highway 85
- Widening of Victoria Street to accommodate a two-way centre left turn lane between Edna Street and Bruce Street
- Intersection improvements at Victoria Street/Bruce Street
- Installation of a new median barrier on Victoria Street between Edna Street and Bruce Street
- Modifications to the Bruce Street on-ramp
- Installation of street lights between Edna Street and Bruce Street
- Relocation of municipal services

- Relocation of municipal services at the bridge
- Construction of retaining walls

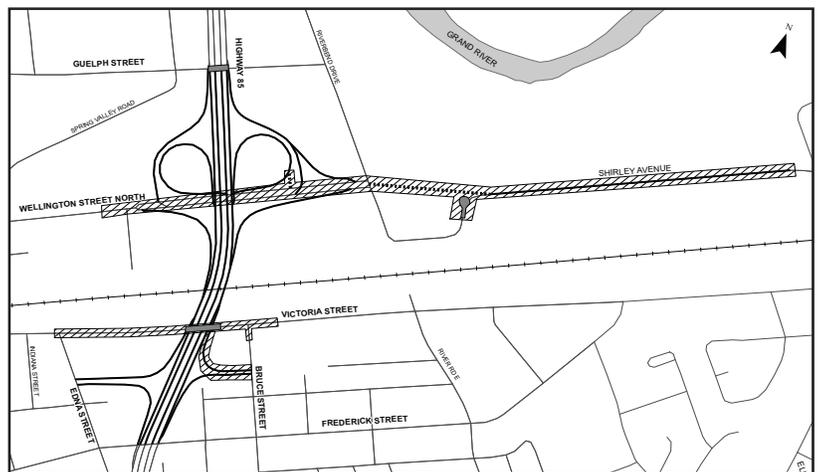
The work on Shirley Avenue will generally include the following:

- Extension and widening of Shirley Avenue to four lanes plus a median two-way left turn lane
- Construction of sidewalks and bike lanes on Shirley Avenue
- Utility relocations
- Entrance modifications
- Illumination
- Installation of storm sewers and stormceptors
- Construction of retaining wall
- Improvements to the Highway 85/Wellington Street interchange

Victoria Street will be closed to through traffic between Edna Street and Bruce Street during the construction of the Victoria Street Bridge replacement. This will require local road detours, which will be in place for at least one year. Local access to businesses on Victoria Street between Edna Street and the Victoria Street Bridge will be provided. This project incorporates the Regional Municipality of Waterloo's planned improvements to Victoria Street as documented in their April 2013 Class EA Schedule "B" planning process to develop an operational and safety improvement strategy for the Victoria Street Corridor between Edna and Bruce Street. The remainder of Highway 7 New will be designed in subsequent phases and constructed under separate contracts.

THE PROCESS

This project followed the *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)* process for Group 'A' projects. Therefore, a Design and Construction Report (DCR) has been prepared to document the detailed design. The DCR will be available for a 30-day public review period beginning **February 8, 2016**. Interested persons are encouraged to review this document and provide comments in writing to the Consultant Project Manager or the MTO Project Manager by **March 8, 2016**. The DCR is not eligible for a Part II Order ('bump up').



The DCR is available for review at the following locations during regular business hours:

Ministry of the Environment and Climate Change

Environmental Assessment & Approvals Branch
2 St. Clair Avenue West, Floor 12 A
Toronto, Ontario

Ministry of the Environment and Climate Change

West Central Regional Office
119 King St. West, 12th Floor
Hamilton, Ontario

Ministry of the Environment and Climate Change

Guelph District Office
1 Stone Road West
Guelph, Ontario

City of Kitchener

Clerk's Department
200 King Street West
Kitchener, Ontario

Regional Municipality of Waterloo

Clerk's Department
150 Frederick Street
Kitchener, Ontario

Kitchener Public Library

85 Queen Street North
Kitchener, Ontario

Ministry of Transportation

West Region, Front Lobby
659 Exeter Road
London, Ontario

COMMENTS

We are interested in hearing your comments regarding this study. Comments and information are being collected to assist the study team in meeting the requirements of the *Environmental Assessment Act*. This information will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record in accordance with the *Freedom of Information and Protection of Privacy Act R.S.O., 1990, c.F.31*.

Please contact either:

Ms. Alla Dinerman, P.Eng.

Manager - Highways
Transportation
MMM Group Limited
100 Commerce Valley Drive West
Thornhill, ON L3T 0A1
tel: 905-882-7212
fax: 905-882-0055
e-mail: dinermana@mmm.ca

Mr. Robert Bakalarczyk, P.Eng.

Senior Project Engineer
Ministry of Transportation, West Region
Planning and Design Section
659 Exeter Road, 3rd Floor
London, ON N6E 1L3
tel: 519-873-4602
fax: 519-873-4600
e-mail: Robert.Bakalarczyk@Ontario.ca

If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members. Pour des renseignements en français veuillez communiquer avec M. Marc St. Louis au tél. : 905 882-4211, poste 6378, courriel : st.louism@mmm.ca.

NOTICE OF COMMENCEMENT

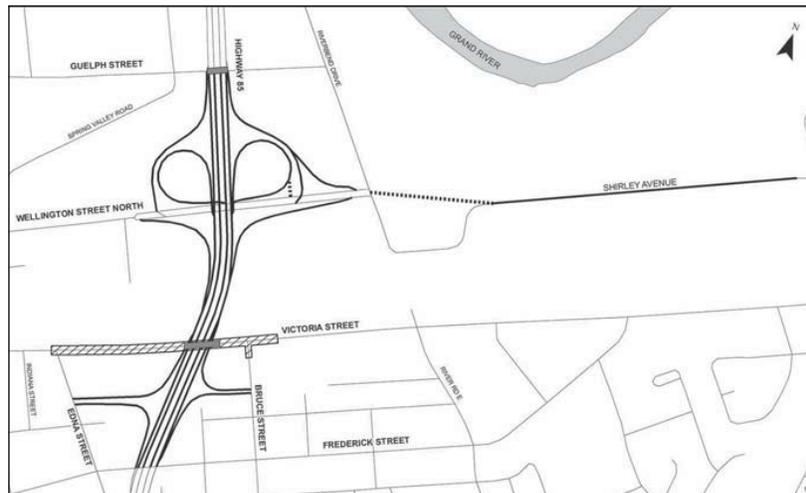
Detailed Design Study to Advance Construction for Highway 7 New Victoria Street Widening and Bridge Replacement and Shirley Avenue Extension

THE STUDY

The Ontario **Ministry of Transportation (MTO)** has retained **MMM Group Limited (MMM)** to complete the detailed design for the Victoria Street widening and bridge replacement and Shirley Avenue extension (key plan), as part of the Ministry's commitment to advance construction work for the approved Highway 7 New – Kitchener to Guelph project. The work will generally include the following:

- Replacement of the Victoria Street Bridge and grade raise over Highway 85
- Widening of Victoria Street to accommodate a two-way centre left turn lane between Edna Street and the future Bruce Street extension to Wellington Street
- Intersection improvements at Victoria Street/Bruce Street
- Installation of a new median barrier on Victoria Street between Edna Street and Bruce Street
- Modifications to the Bruce Street on-ramp
- Modifications to the Wellington Street interchange to accommodate the closure of the south-east ramp
- Extension of Shirley Avenue to Wellington Street North
- Widening of the Guelph Street Bridge
- Utility relocations
- Entrance modifications
- Illumination

Victoria Street will be closed from Edna Street to Bruce Street during the construction of the Victoria Street Bridge replacement. Local road detours will be in place for at least one year with access for local traffic from the Edna Street intersection only.



THE PROCESS

Under the *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)*, this project is identified as a Group 'B' project. A Design and Construction Report (DCR) will be prepared to document the detailed design. The report will be made available for a 30-day public review period with public notice advising the start of the review period. The DCR is not eligible for a Part II Order ('bump-up').

This project incorporates the Regional Municipality of Waterloo's planned improvements to Victoria Street as documented in their April 2013 Class EA Schedule 'B' planning process to develop an operational and safety improvement strategy for the Victoria Street Corridor between Edna and Bruce Street.

The remainder of Highway 7 New will be constructed in subsequent phases.

COMMENTS

We are interested in hearing your comments regarding this study. Comments and information are being collected to assist the study team in meeting the requirements of the *Environmental Assessment Act*. This information will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record in accordance with the *Freedom of Information and Protection of Privacy Act, R.S.O., 1990, c.F.31*.

Please contact either:

Ms. Alla Dinerman, P.Eng.
Manager – Highways
Transportation
MMM Group Limited
100 Commerce Valley Drive West
Thornhill, ON L3T 0A1
tel: 905-882-7212
fax: 905-882-0055
e-mail: dinermana@mmm.ca

Mr. Robert Bakalarczyk, P.Eng.
Senior Project Engineer
Ministry of Transportation, West Region
Planning and Design Section
659 Exeter Road, 3rd Floor
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tel: 519-873-4602
fax: 519-873-4600
e-mail: robert.bakalarczyk@ontario.ca

If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members. Pour des renseignements en français veuillez communiquer avec M. Marc St. Louis au tél : 905 882-4211, poste 6378, courriel : st.louism@mmm.ca.

MMM Group Limited
100 Commerce Valley Drive West
Thornhill, ON Canada L3T 0A1
t: 905.882.1100 | f: 905.882.0055

www.mmm.ca

EXAMPLE

August 26, 2014

16.08027.003.EN4

Mr. Don Boswell
Senior Claims Analyst, Specific Claims Branch
Indian and Northern Affairs Canada
10 Wellington Street
Room 1310
Hull, Quebec K1A 0H4

Dear Mr. Boswell,

Subject: Notice of Study Commencement – Detailed Design Study to Advance Construction for Highway 7 New; Victoria Street Widening and Bridge Replacement, and Shirley Avenue Extension

The Ministry of Transportation, Ontario (MTO) has retained MMM Group Limited (MMM) to complete the detailed design for the Victoria Street widening and bridge replacement, and Shirley Avenue extension (key plan), as part of the ministry's commitment to advance construction work for the approved Highway 7 New – Kitchener to Guelph project. Under the *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)* this project is identified as a Group 'B' project. A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period. The project will include:

- Replacement of the Victoria Street Bridge and grade raise over Highway 85
- Widening of Victoria Street to accommodate a two-way centre left turn lane between Edna Street and the future Bruce Street extension to Wellington Street
- Intersection improvements at Victoria Street/Bruce Street
- Installation of a new median barrier on Victoria Street between Edna Street and Bruce Street
- Modifications to the Bruce Street on-ramp.
- Modifications to the Wellington Street interchange to accommodate the closure of the south-east ramp
- Extension of Shirley Avenue to Wellington Street North
- Widening of the Guelph Street Bridge
- Utility relocations
- Entrance modifications
- Illumination

Victoria Street will be closed from Edna Street to Bruce Street during the construction of the Victoria Street Bridge replacement. Local road detours will be in place for at least one year with access for local traffic from the Edna Street intersection only.

A copy of the newspaper notice is included for your reference. We are interested in hearing your comments regarding this study. Comments and information regarding this project are being collected to assist the study team in meeting the requirements of the Environmental Assessment Act. Please contact the undersigned at (905) 882-7212 or by email at dinermana@mmm.ca, if you require assistance, or additional information.

Yours truly,

MMM Group Limited

A handwritten signature in black ink, appearing to read "Alla Dinerman".

Alla Dinerman, P.Eng.
Manager - Highways
Transportation

cc: Robert Bakalarczyk (MTO), Susan Wagter (MTO), Minh Mach (MMM), Jeff Warren (MMM)
encl. Notice of Study Commencement

With the exception of personal information, all comments will become part of the public record in accordance with the *Freedom of Information and Protection of Privacy Act R.S.O., 1990, c.F.31*.

Ministry of Transportation

Engineering Office
Environmental Section
West Region

659 Exeter Road
London, Ontario N6E 1L3
Telephone: (519) 873-4660
Facsimile: (519) 873-4600
Email: Cathy.Giesbrecht@ontario.ca

Ministère des Transports

Bureau du génie
Section de l'environnement
Région de l'Ouest

659, chemin Exeter
London, (Ontario) N6E 1L3
Téléphone: (519) 873-4660
Télécopieur: (519) 873-4600



August 25, 2014

Chief James R. Marsden
Alderville First Nation
11696 Second Line
P.O. Box 46
Roseneath, ON K0K 2X0

Dear Chief Marsden,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

The Ministry of Transportation, Ontario (MTO) has retained MMM Group Limited (MMM) to undertake the detailed design for the Victoria Street widening and bridge replacement, and Shirley Avenue extension, as part of the Ministry's commitment to advance construction work for the approved Highway 7 New – Kitchener to Guelph project. The enclosed *Ontario Government Notice* provides a key plan and additional details for your reference.

MTO is inviting Alderville First Nation to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period.

Should you have any questions, please contact me at (519) 873-4560, or by email at cathy.giesbrecht@ontario.ca. If you would prefer a meeting with ministry staff, that can also be arranged. Please contact me at your earliest convenience if you are interested in such a meeting.

Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

Ministry of Transportation

Engineering Office
Environmental Section
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659 Exeter Road
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Telephone: (519) 873-4560
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Email: Cathy.Giesbrecht@ontario.ca

Ministère des Transports

Bureau du génie
Section de l'environnement
Région de l'Ouest

659, chemin Exeter
London, (Ontario) N6E 1L3
Téléphone: (519) 873-4560
Télécopieur: (519) 873-4600



August 25, 2014

Chief Roland Monague
Beausoleil First Nation
1 O-Gema Street
Christian Island
Cedar Point, ON L0K 1C0

Dear Chief Monague,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

The Ministry of Transportation, Ontario (MTO) has retained MMM Group Limited (MMM) to undertake the detailed design for the Victoria Street widening and bridge replacement, and Shirley Avenue extension, as part of the Ministry's commitment to advance construction work for the approved Highway 7 New – Kitchener to Guelph project. The enclosed *Ontario Government Notice* provides a key plan and additional details for your reference.

MTO is inviting Beausoleil First Nation to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period.

Should you have any questions, please contact me at (519) 873-4560, or by email at cathy.giesbrecht@ontario.ca. If you would prefer a meeting with ministry staff, that can also be arranged. Please contact me at your earliest convenience if you are interested in such a meeting.

Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

Ministry of Transportation

Engineering Office
Environmental Section
West Region

669 Exeter Road
London, Ontario N6E 1L3
Telephone: (519) 873-4560
Facsimile: (519) 873-4600
Email: Cathy.Giesbrecht@ontario.ca

Ministère des Transports

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Région de l'Ouest

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Télécopieur: (519) 873-4600



August 25, 2014

Chief Phyllis Williams
Curve Lake First Nation
22 Winookeeda Road
Curve Lake, ON K0L 1R0

Dear Chief Williams,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting Curve Lake First Nation to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

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- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

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August 25, 2014

Chief Donna Big Canoe
Chippewas of Georgina Island
RR 2, N 13
Sutton West, ON L0E 1R0

Dear Chief Big Canoe,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting the Chippewas of Georgina Island to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period.

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

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August 25, 2014

Chief Allan McNaughton
Six Nations of the Grand River Territory
Haudenosaunee Confederacy Chiefs Council
RR #2
Ohsweken, ON N0A 1M0

Dear Chief McNaughton,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting the Haudenosaunee Confederacy Chiefs Council to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period.

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. L. Hill, Council Secretary, Haudenosaunee Confederacy Chiefs Council
- H. Hill, Director, Haudenosaunee Development Institute
- R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

Ministry of Transportation

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Télécopieur: (519) 873-4600



August 25, 2014

**Chief Greg Cowie
Hiawatha First Nation
123 Paudash Street
RR #2
Keene, ON K0L 2G0**

Dear Chief Cowie,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting Hiawatha First Nation to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period.

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Yours truly,

**Cathy Giesbrecht
Head, Environmental Section**

Attachment: Ontario Government Notice of Commencement

- c. **R. Bakalarczyk, Senior Project Engineer, MTO**
- S. Wagter, Senior Environmental Planner, MTO**
- L. Currie, Aboriginal Liaison Officer, MTO**
- A. Dinerman, Project Manager, MMM**
- J. Warren, Environmental Planner, MMM**

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August 25, 2014

Ms. Karry Sandy-McKenzie
Barrister/Solicitor
Coordinator for the Williams Treaties
8 Creswick Court
Barrie, ON L4M 2J7

Dear Ms. Sandy-McKenzie,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting the Huron Wendat to participate in this project and to assist us in identifying the environmental, social and cultural values the community may have within the study area.

A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period.

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

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August 25, 2014

Chief Bryan LaForme
Mississaugas of the New Credit
RR 6
2789 Mississauga Road
Hagersville, ON N0A 1H0

Dear Chief LaForme,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting Mississaugas of the New Credit to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. M. Sault, Research Department, Mississaugas of the New Credit
- R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

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Télécopieur: (519) 873-4600



August 25, 2014

Chief Sharon Stinson Henry
Chippewas of Rama First Nation
5884 Rama Road, Suite 200
Rama, ON L3V 6H6

Dear Chief Stinson Henry,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting the Chippewas of Rama First Nation to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

A Design and Construction Report (DCR) will be prepared to document the detail design. The report will be made available for a 30-day public review period with public notice advising the start of the review period.

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. K. Sandy-McKenzie, Barrister/Solicitor, Coordinator for the Williams Treaties
- R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

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Télécopieur: (519) 873-4600



August 25, 2014

Chief Kelly LaRocca
Mississaugas of Scugog Island
22521 Island Road
Port Perry, ON L9L 1B6

Dear Chief LaRocca,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

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- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

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Télécopieur: (519) 873-4600



August 25, 2014

Chief Ava Hill
Six Nations of the Grand River
1695 Chiefswood Rd.
P.O. Box 5000
Ohsweken, ON N0A 1M0

Dear Chief Hill,

**RE: Notice of Study Commencement
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Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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MTO is inviting Six Nations of the Grand River to participate in this project and to assist us in identifying the environmental, social and cultural values your community may have within the study area.

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. J. Thomas, Consultation Supervisor, Six Nations of the Grand River
P. General, Manager, Six-Nations Eco-Centre
R. Bakalarczyk, Senior Project Engineer, MTO
S. Wagter, Senior Environmental Planner, MTO
L. Currie, Aboriginal Liaison Officer, MTO
A. Dinerman, Project Manager, MMM
J. Warren, Environmental Planner, MMM

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Télécopieur: (519) 873-4600



August 25, 2014

Chief Joe Miskokomon
Chippewas of the Thames First Nation
320 Chippewa Road
RR #1
Muncey, ON N0L 1Y0

Dear Chief Miskokomon,

**RE: Notice of Study Commencement
Detailed Design Study to Advance Construction for Highway 7 New
Victoria Street Widening and Bridge Replacement; and Shirley Avenue Extension, Kitchener
MTO W.P. 3023-14-01**

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Yours truly,

Cathy Giesbrecht
Head, Environmental Section

Attachment: Ontario Government Notice of Commencement

- c. R. Elijah, Lands and Environment Director, Chippewas of the Thames First Nation
- F. Burch, Consultation Officer Trainee, Chippewas of the Thames First Nation
- R. Bakalarczyk, Senior Project Engineer, MTO
- S. Wagter, Senior Environmental Planner, MTO
- L. Currie, Aboriginal Liaison Officer, MTO
- A. Dinerman, Project Manager, MMM
- J. Warren, Environmental Planner, MMM

APPENDIX B: Design Plates – Victoria Street Widening & Bridge Replacement

METRIC

PLATE No
CONT XXXX-XXX
WP XXXX-XX-XX



NEW CONSTRUCTION
STA 9+636 TO STA 9+900
Survey _____ Revised _____

SHEET
NC1



MINISTRY OF TRANSPORTATION, ONTARIO
PF-0-707 88-05

← LIMIT OF CONSTRUCTION
STA. 9+635.92

POB 9+618.370

9+700

ENTRANCE 4
9+685

ENTRANCE 8
9+766

ENTRANCE 9
9+799

ENTRANCE 10
9+816

ENTRANCE 12
9+846

ENTRANCE 14
9+878

VICTORIA ST. N.

R=2130

9+900

10.67
7.28

EDNA ST.

ENTRANCE 1
9+645

ENTRANCE 2
9+671

ENTRANCE 3
9+682

ENTRANCE 5
9+720

ENTRANCE 6
9+735

ENTRANCE 7
9+759

ENTRANCE 11
9+818

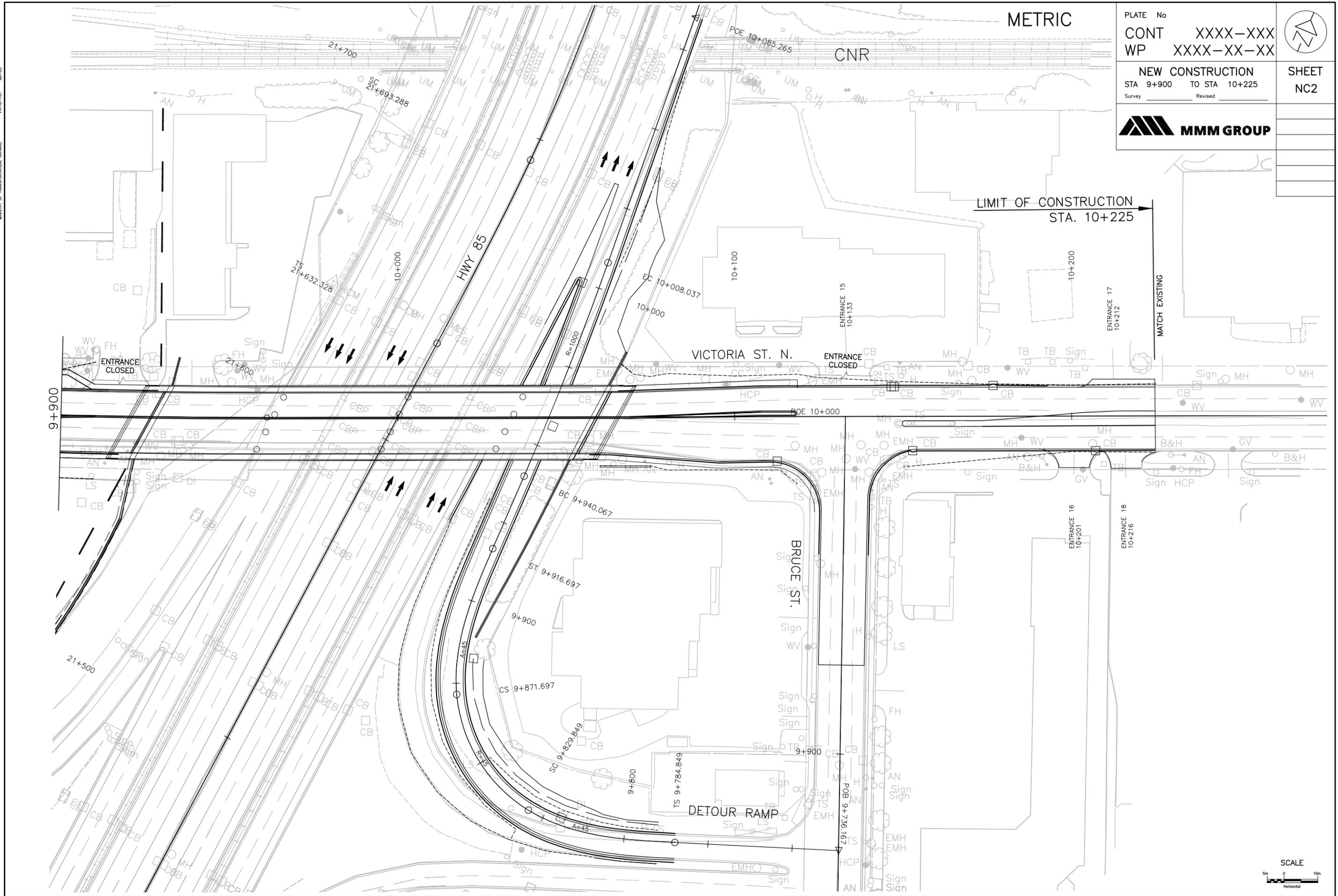
ENTRANCE 13
9+867

SCALE
5m 0 10m
Horizontal

DRAWING NAME: X:\DIV16\2008\16-08027 Hwy 7 New\Victoria St. Bridge Replacement\F_CAD\03 Contract Drawings\New Const. Plan\NC-Plates.dwg
CREATED: Feb 04, 2014
MODIFIED:

DRAWING NAME: X:\DIV16\2008\16-08027 Hwy 7 New\Victoria St. Bridge Replacement\F. CAD\03 Contract Drawings\New Const. Plan\NC-Plates.dwg
CREATED: Feb 04, 2014
MODIFIED:

MINISTRY OF TRANSPORTATION, ONTARIO
PF-0-707
88-05



METRIC

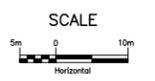
PLATE No
CONT XXXX-XXX
WP XXXX-XX-XX
NEW CONSTRUCTION
STA 9+900 TO STA 10+225
Survey _____ Revised _____

SHEET
NC2



LIMIT OF CONSTRUCTION
STA. 10+225

MATCH EXISTING





GENERAL NOTES:

- CLASS OF CONCRETE
DECK AND PIER COLUMNS 50 MPa
REMAINDER 30 MPa
- CLEAR COVER TO REINFORCING STEEL
FOOTINGS 100±25
DECK TOP 70±20
BOTTOM & SIDES 50±10
REMAINDER 70±20 UNLESS OTHERWISE NOTED
- REINFORCING STEEL
REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE SPECIFIED.
UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES SHALL BE CLASS B.
BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS.
STAINLESS REINFORCING STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 AND HAVE A MINIMUM YIELD STRENGTH OF 500 MPa, UNLESS OTHERWISE SPECIFIED.
- GLASS FIBRE REINFORCED POLYMER (GFRP)
GLASS FIBRE REINFORCED POLYMER (GFRP) REINFORCING BARS SHALL BE GRADE I, GRADE II OR GRADE III AS SPECIFIED IN THE CONTRACT DOCUMENTS.
THE NOMINAL DIAMETER, TENSILE MODULUS OF ELASTICITY AND GUARANTEED MINIMUM TENSILE STRENGTH SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
BAR MARKS WITH THE PREFIX GI DENOTE GRADE I GFRP BARS, BAR MARKS WITH THE PREFIX GII DENOTE GRADE II GFRP BARS AND BAR MARKS WITH THE PREFIX GIII DENOTE GRADE III GFRP BARS.

- LIST OF DRAWINGS:**
- GENERAL ARRANGEMENT
 - BOREHOLE LOCATION & SOIL STRATA I
 - BOREHOLE LOCATION & SOIL STRATA II
 - BOREHOLE LOCATION & SOIL STRATA III
 - BOREHOLE LOCATION & SOIL STRATA IV
 - REMOVALS
 - FOUNDATION LAYOUT
 - FOUNDATION REINFORCEMENT
 - RETAINING WALL FOUNDATION LAYOUT
 - RETAINING WALL FOUNDATION REINFORCEMENT
 - WEST ABUTMENT
 - EAST ABUTMENT
 - RETAINING WALL DETAILS I
 - RETAINING WALL DETAILS II
 - RETAINING WALL DETAILS III
 - PIERS
 - BEARINGS
 - DECK DETAILS I
 - DECK DETAILS II
 - DECK DETAILS III
 - LONGITUDINAL TENDONS I
 - LONGITUDINAL TENDONS II
 - LONGITUDINAL TENDONS III
 - TRANSVERSE TENDONS
 - DECK REINFORCEMENT I
 - DECK REINFORCEMENT II
 - DECK REINFORCEMENT III
 - DECK REINFORCEMENT IV
 - WINGWALLS
 - PARAPET WALL WITH SIDEWALK AND RAILING-PL2 GFRP REBAR
 - PARAPET WALL WITH SIDEWALK AND RAILING-PL2 GFRP REBAR WITH ANCHOR HEAD
 - RAILING FOR BARRIER WALL
 - 6000mm APPROACH SLAB
 - TYPE 'C' STRIP SEAL EXPANSION JOINT AND SLEEPER SLAB FOR INTEGRAL AND SEMI-INTEGRAL ABUTMENT BRIDGES
 - STRIP SEAL EXPANSION JOINT-TYPE 'C' DETAILS
 - STRIP SEAL EXPANSION JOINT ASSEMBLY FOR PARAPET WALLS
 - DETAILS OF CONCRETE SLOPE PAVING
 - STANDARD DETAILS
 - ELECTRICAL EMBEDDED WORK I
 - ELECTRICAL EMBEDDED WORK II
 - RETAINING WALLS - ARCHITECTURAL COMPONENTS
 - EAST ABUTMENT - ARCHITECTURAL COMPONENTS
 - WEST ABUTMENT - ARCHITECTURAL COMPONENTS

- CONSTRUCTION NOTES:**
- THE CONTRACTOR SHALL ESTABLISH THE BEARING SEAT ELEVATIONS BY DEDUCTING THE ACTUAL BEARING THICKNESSES FROM THE TOP OF BEARING ELEVATIONS. IF THE ACTUAL BEARING THICKNESSES ARE DIFFERENT FROM THOSE GIVEN WITH THE BEARING DESIGN DATA, THE CONTRACTOR SHALL ADJUST THE REINFORCING STEEL TO SUIT.

APPLICABLE STANDARD DRAWINGS:

OPSD 0912.430	GUIDE RAIL SYSTEM, STEEL BEAM, STRUCTURE CONNECTION
OPSD 3101.150	WALLS, ABUTMENT, BACKFILL, MINIMUM GRANULAR REQUIREMENTS
OPSD 3102.100	WALLS, ABUTMENT, BACKFILL, DRAIN
OPSD 3360.200	DECK, LIGHT POLE BASES, STRUCTURES WITH PARAPET WALLS
OPSD 3370.100	DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD
OPSD 3370.101	DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE AT ACTIVE CRACKS GREATER THAN 2mm WIDE AND CONSTRUCTION JOINTS
OPSD 3390.100	DECK, DRIP CHANNEL
OPSD 3941.200	FIGURES IN CONCRETE, SITE NUMBER AND DATE, LAYOUT
OPSD 3419.100	BARRIERS AND RAILINGS - STEEL BEAM GUIDE RAIL AND CHANNEL ANCHORAGE
SS113-36	TYPE 'C' STRIP SEAL EXPANSION JOINT AND SLEEPER SLAB FOR INTEGRAL AND SEMI-INTEGRAL ABUTMENT BRIDGES

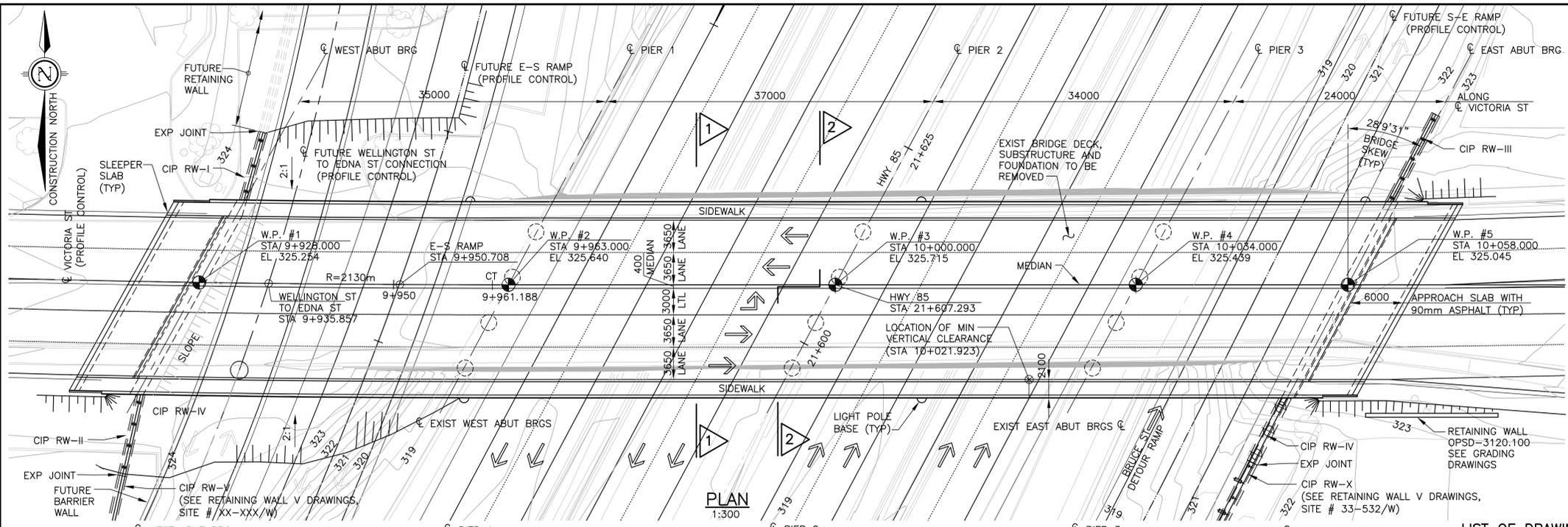
LIST OF DRAWINGS:

- GENERAL ARRANGEMENT
- BOREHOLE LOCATION & SOIL STRATA I
- BOREHOLE LOCATION & SOIL STRATA II
- BOREHOLE LOCATION & SOIL STRATA III
- BOREHOLE LOCATION & SOIL STRATA IV
- REMOVALS
- FOUNDATION LAYOUT
- FOUNDATION REINFORCEMENT
- RETAINING WALL FOUNDATION LAYOUT
- RETAINING WALL FOUNDATION REINFORCEMENT
- WEST ABUTMENT
- EAST ABUTMENT
- RETAINING WALL DETAILS I
- RETAINING WALL DETAILS II
- RETAINING WALL DETAILS III
- PIERS
- BEARINGS
- DECK DETAILS I
- DECK DETAILS II
- DECK DETAILS III
- LONGITUDINAL TENDONS I
- LONGITUDINAL TENDONS II
- LONGITUDINAL TENDONS III
- TRANSVERSE TENDONS
- DECK REINFORCEMENT I
- DECK REINFORCEMENT II
- DECK REINFORCEMENT III
- DECK REINFORCEMENT IV
- WINGWALLS
- PARAPET WALL WITH SIDEWALK AND RAILING-PL2 GFRP REBAR
- PARAPET WALL WITH SIDEWALK AND RAILING-PL2 GFRP REBAR WITH ANCHOR HEAD
- RAILING FOR BARRIER WALL
- 6000mm APPROACH SLAB
- TYPE 'C' STRIP SEAL EXPANSION JOINT AND SLEEPER SLAB FOR INTEGRAL AND SEMI-INTEGRAL ABUTMENT BRIDGES
- STRIP SEAL EXPANSION JOINT-TYPE 'C' DETAILS
- STRIP SEAL EXPANSION JOINT ASSEMBLY FOR PARAPET WALLS
- DETAILS OF CONCRETE SLOPE PAVING
- STANDARD DETAILS
- ELECTRICAL EMBEDDED WORK I
- ELECTRICAL EMBEDDED WORK II
- RETAINING WALLS - ARCHITECTURAL COMPONENTS
- EAST ABUTMENT - ARCHITECTURAL COMPONENTS
- WEST ABUTMENT - ARCHITECTURAL COMPONENTS

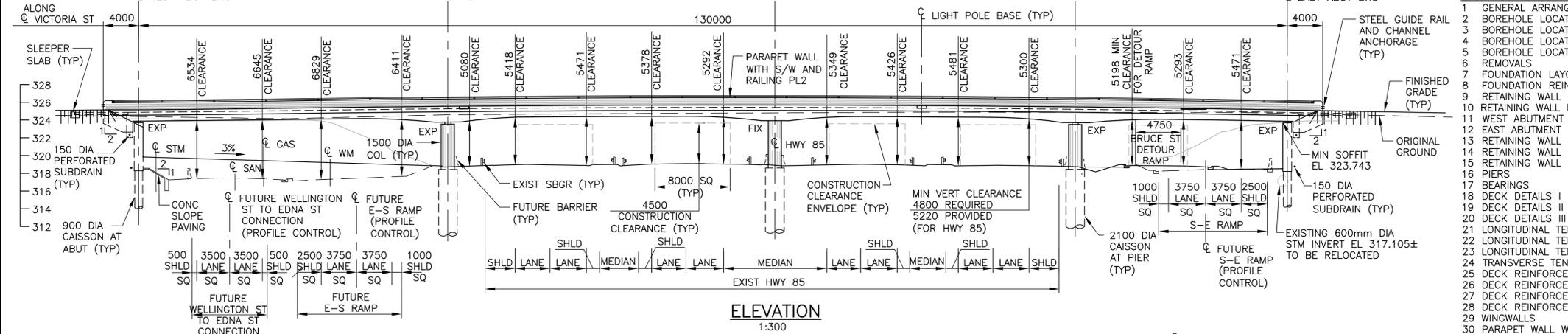
LEGEND:

- CIP CAST IN PLACE
- COL COLUMN
- FIX FIXED
- LVC LATERAL CLEARANCE
- PVI POINT OF VERTICAL INTERSECTION

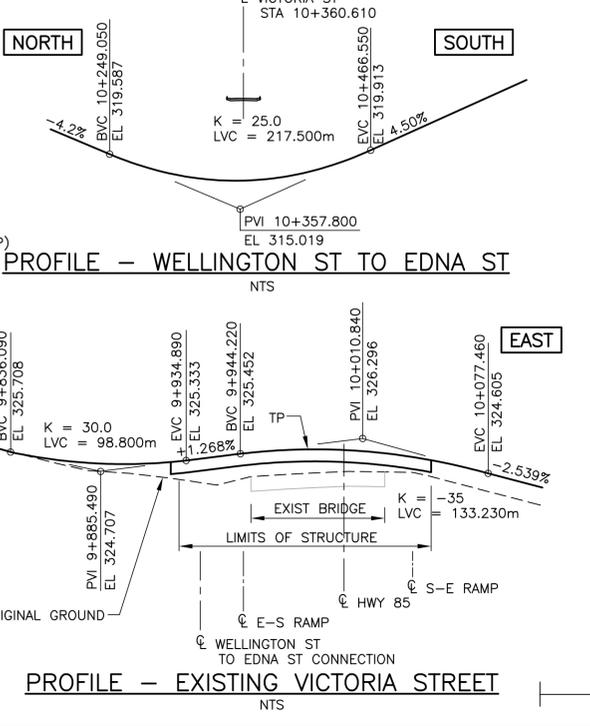
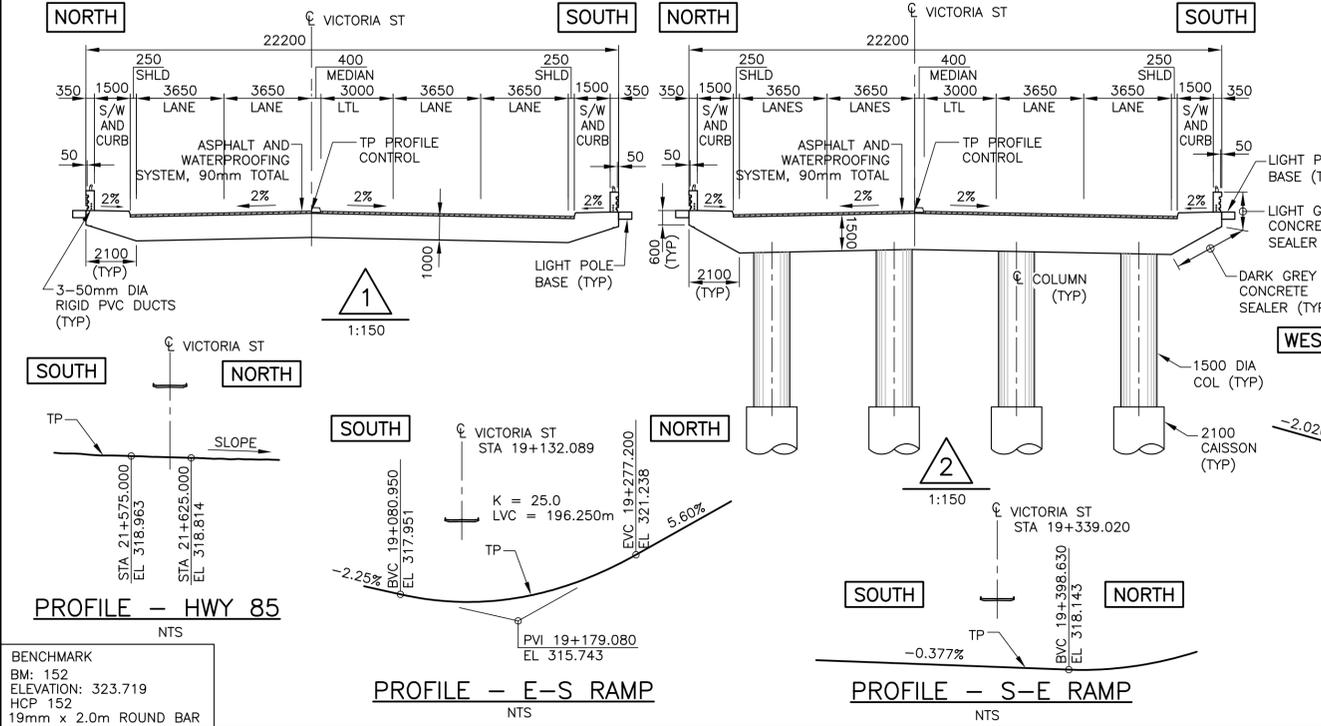
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING



PLAN
1:300



ELEVATION
1:300



PROFILE - VICTORIA ST TO EDNA ST
NTS

BENCHMARK
BM: 152
ELEVATION: 323.719
HCP 152
19mm x 2.0m ROUND BAR

REVISIONS	DESCRIPTION

CAD FILE LOCATION AND NAME: X:\DVI\16\2008\16-08027 Hwy 7 New V. CAD\10 Structural Drawings\Sideroad Bridges\DETAIL DESIGN DRAWINGS\21-VICTORIA ST W\51608027-001.GA.dwg
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 DATE PLOTTED: 12/3/2015 9:20:08 AM BY: PATRICK TSANG

APPENDIX C: Design Plates – Shirley Avenue Extension

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CREATED: Feb 04, 2014 MODIFIED:

MINISTRY OF TRANSPORTATION, ONTARIO
PR-D-707 88-05

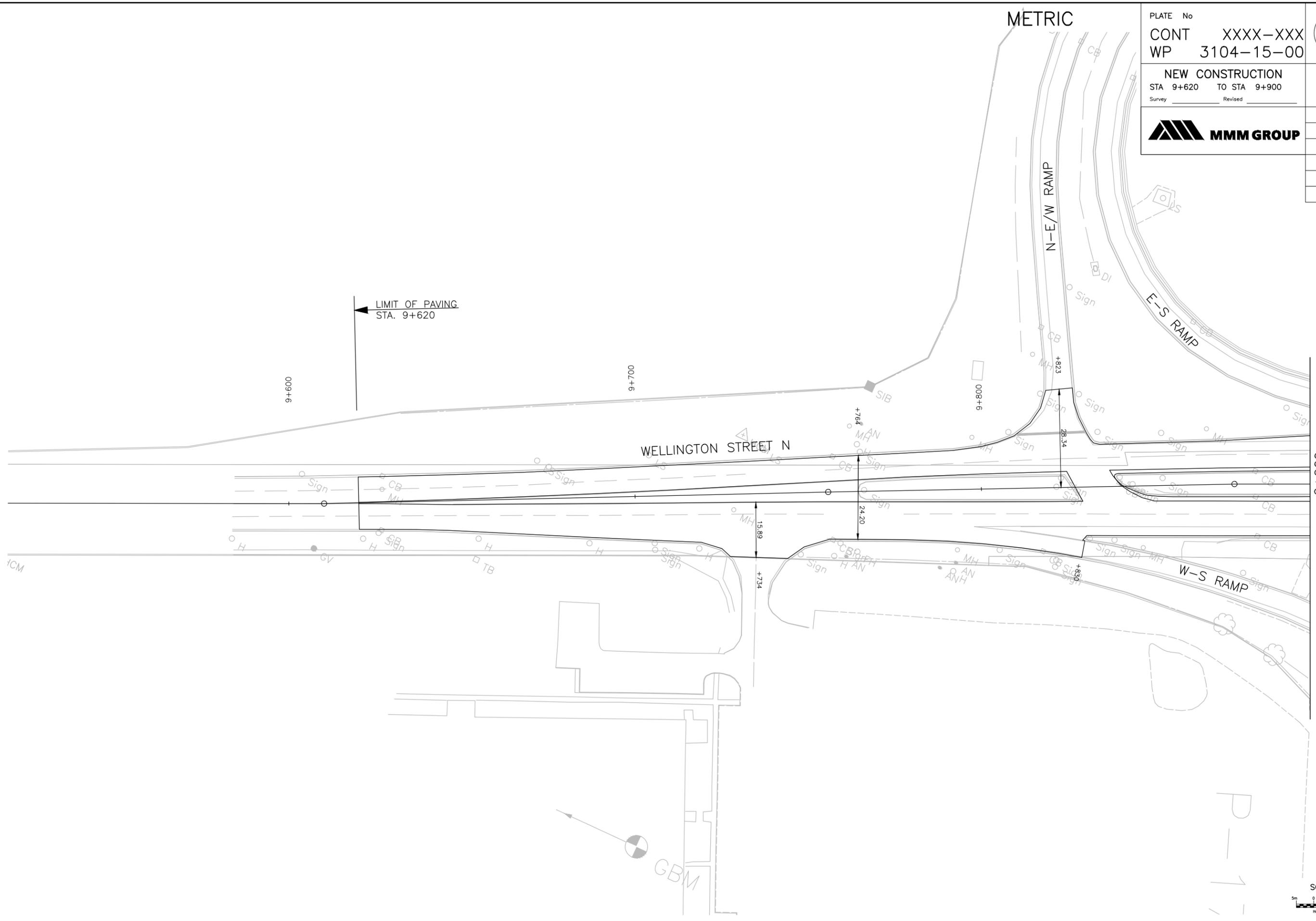
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PLATE No
CONT XXXX-XXX
WP 3104-15-00



NEW CONSTRUCTION
STA 9+620 TO STA 9+900
Survey _____ Revised _____

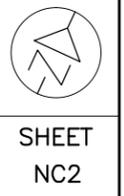
SHEET
NC1



9+900
10.02
3.94
3.59
11.27

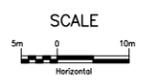
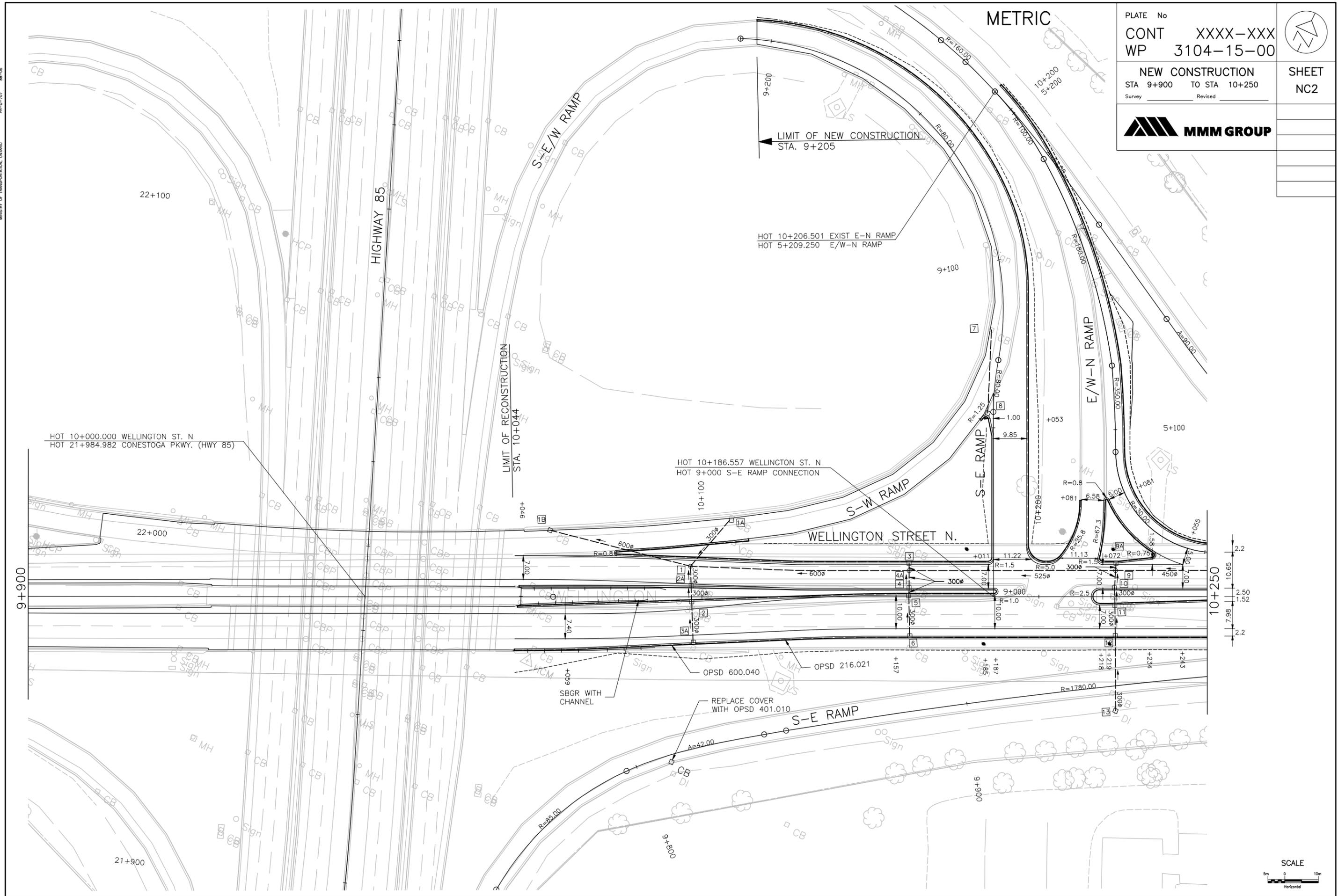
SCALE
5m 0 10m
Horizontal

PLATE No
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 WP 3104-15-00
 NEW CONSTRUCTION
 STA 9+900 TO STA 10+250
 Survey _____ Revised _____



SHEET
 NC2

METRIC



DRAWING NAME: X:\DIV16\2008\16-08027 Hwy 7 New\Shirley Ave\CAD\03 Contract Drawings\New Const Plan\NC-Plates.dwg
 CREATED: Feb 04, 2014 MODIFIED:

PR-D-707 88-05
 MINISTRY OF TRANSPORTATION, ONTARIO

HOT 10+000.000 WELLINGTON ST. N
 HOT 21+984.982 CONESTOGA PKWY. (HWY 85)

HOT 10+186.557 WELLINGTON ST. N
 HOT 9+000 S-E RAMP CONNECTION

LIMIT OF NEW CONSTRUCTION
 STA. 9+205

LIMIT OF RECONSTRUCTION
 STA. 10+044

HIGHWAY 85

WELLINGTON STREET N.

S-E RAMP

REPLACE COVER
 WITH OPSD 401.010

SBGR WITH
 CHANNEL

OPSD 600.040

OPSD 216.021

21+900

22+100

22+000

9+900

10+250

9+300

9+600

9+100

HOT 10+206.501 EXIST E-N RAMP
 HOT 5+209.250 E/W-N RAMP

5+100

10+200
 5+200

E/W-N RAMP

S-E/W RAMP

S-E RAMP

S-W RAMP

MH

CB

Sign

CB

MH

CB

METRIC

PLATE No
CONT XXXX-XXX
WP 3104-15-00

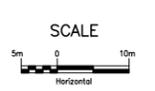
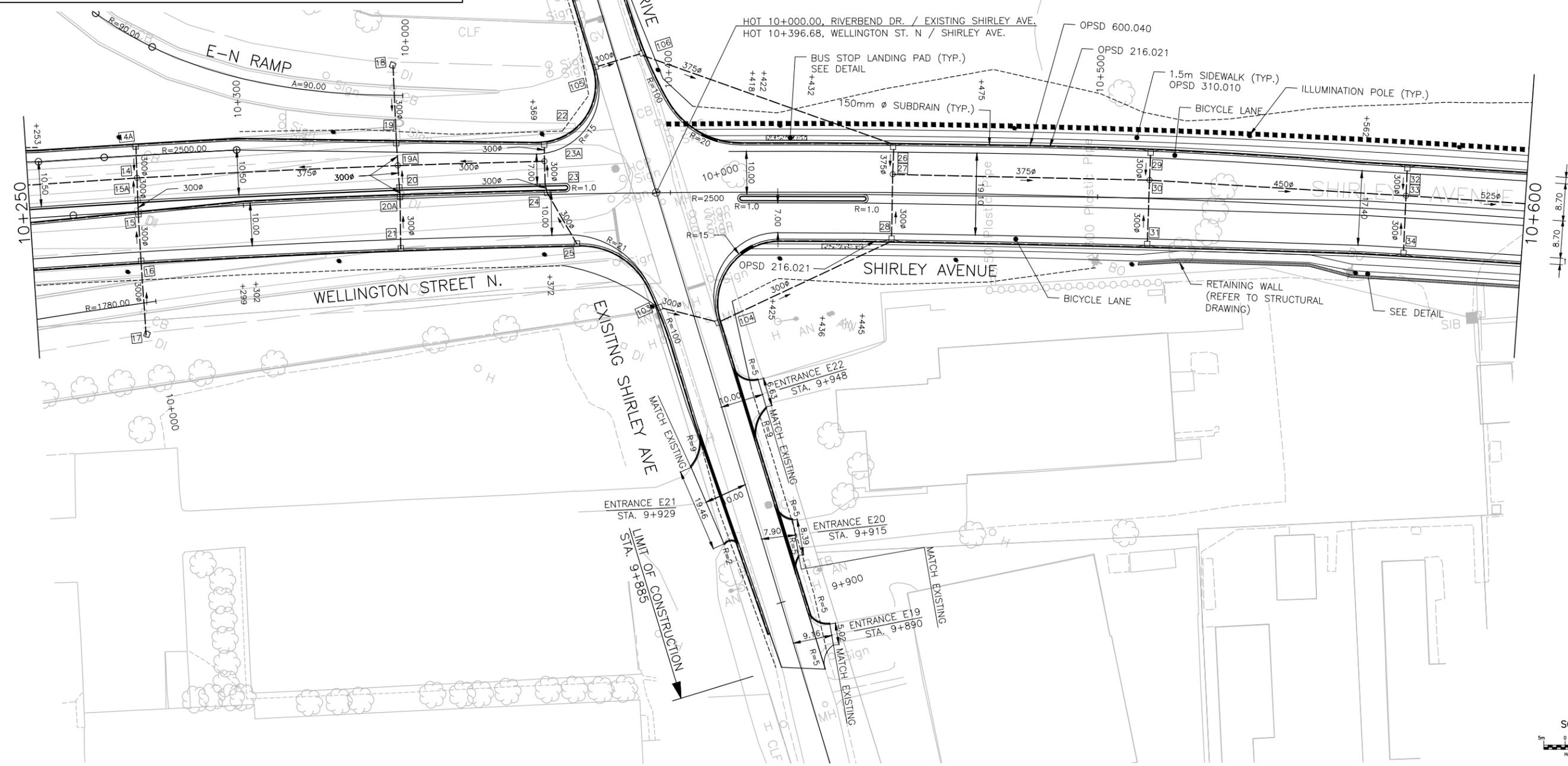
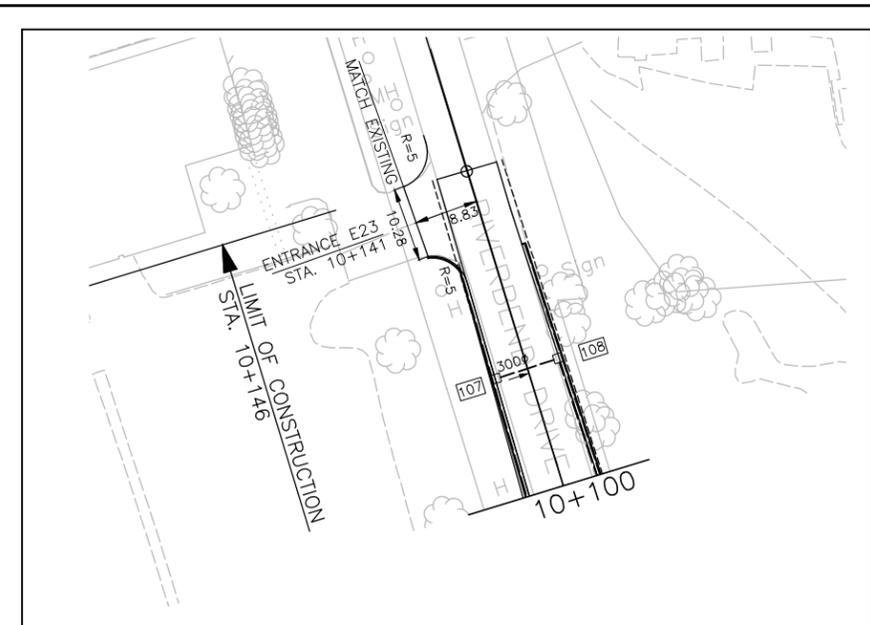


NEW CONSTRUCTION
STA 10+250 TO STA 10+600
Survey _____ Revised _____

SHEET
NC3



PR-D-707 88-05
MINISTRY OF TRANSPORTATION, ONTARIO



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METRIC

PLATE No
CONT XXXX-XXX
WP 3104-15-00



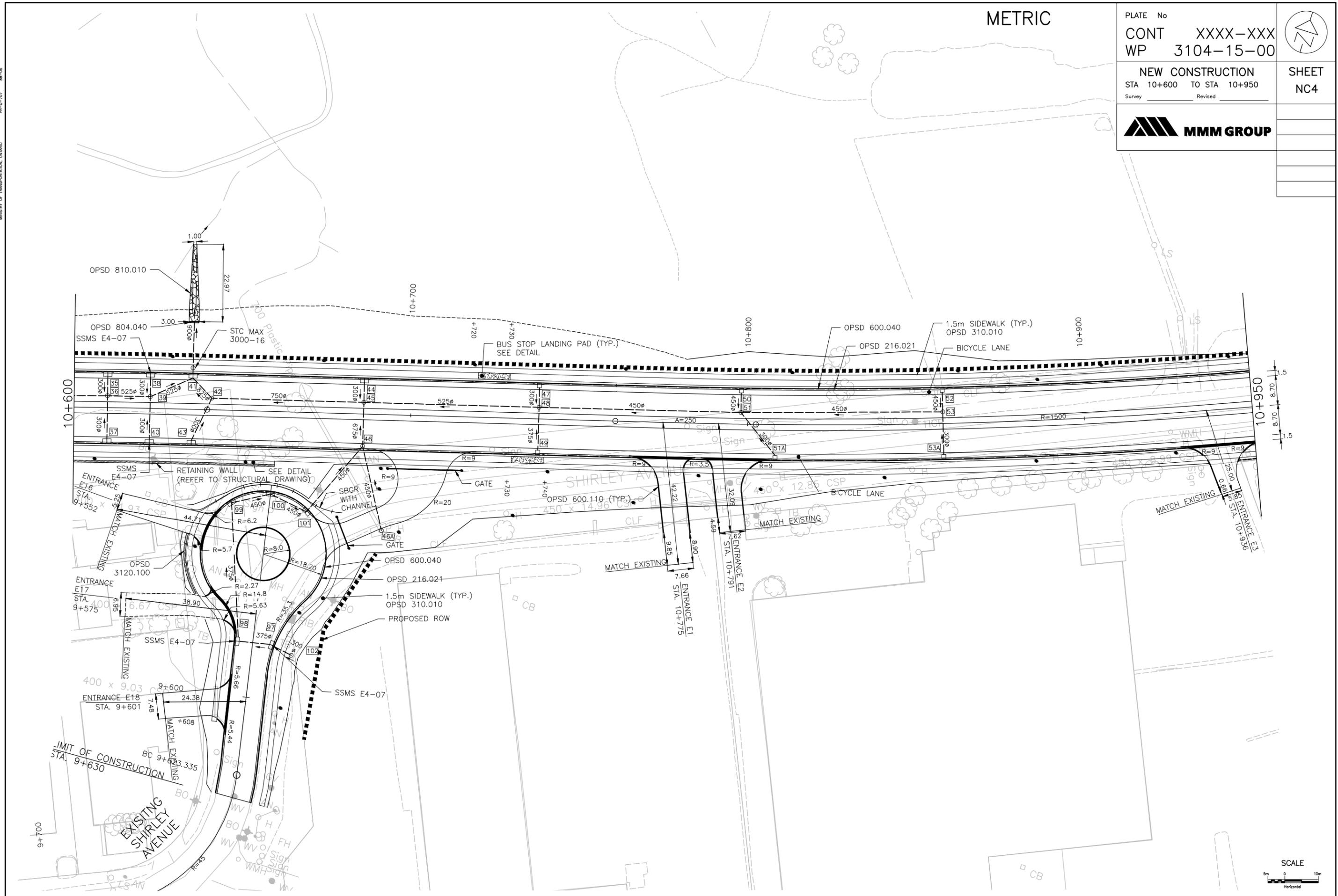
NEW CONSTRUCTION
STA 10+600 TO STA 10+950
Survey _____ Revised _____

SHEET
NC4

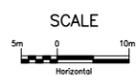


PR-D-707 88-05
MINISTRY OF TRANSPORTATION, ONTARIO

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CREATED: Feb 04, 2014 MODIFIED:



10+950
1.5
8.70
1.5



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MODIFIED: PR-D-707 88-05
MINISTRY OF TRANSPORTATION, ONTARIO

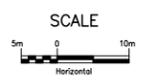
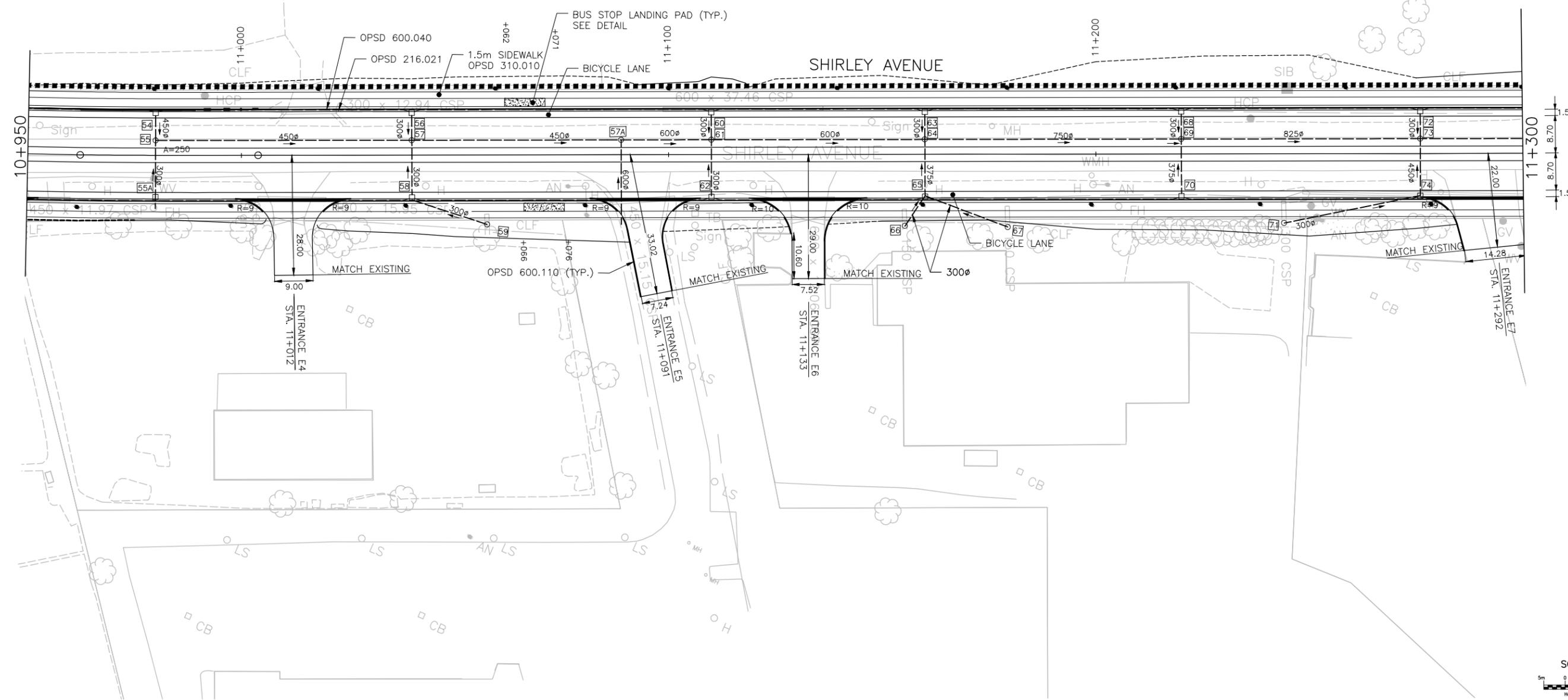
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PLATE No
CONT XXXX-XXX
WP 3104-15-00



NEW CONSTRUCTION
STA 10+950 TO STA 11+300
Survey _____ Revised _____

SHEET
NC5



MINISTRY OF TRANSPORTATION, ONTARIO
PR-D-707 88-05
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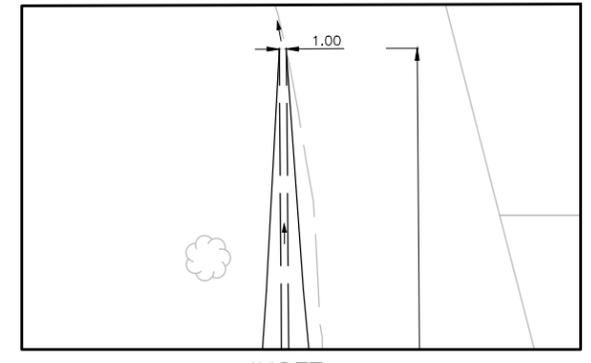
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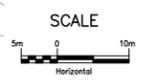
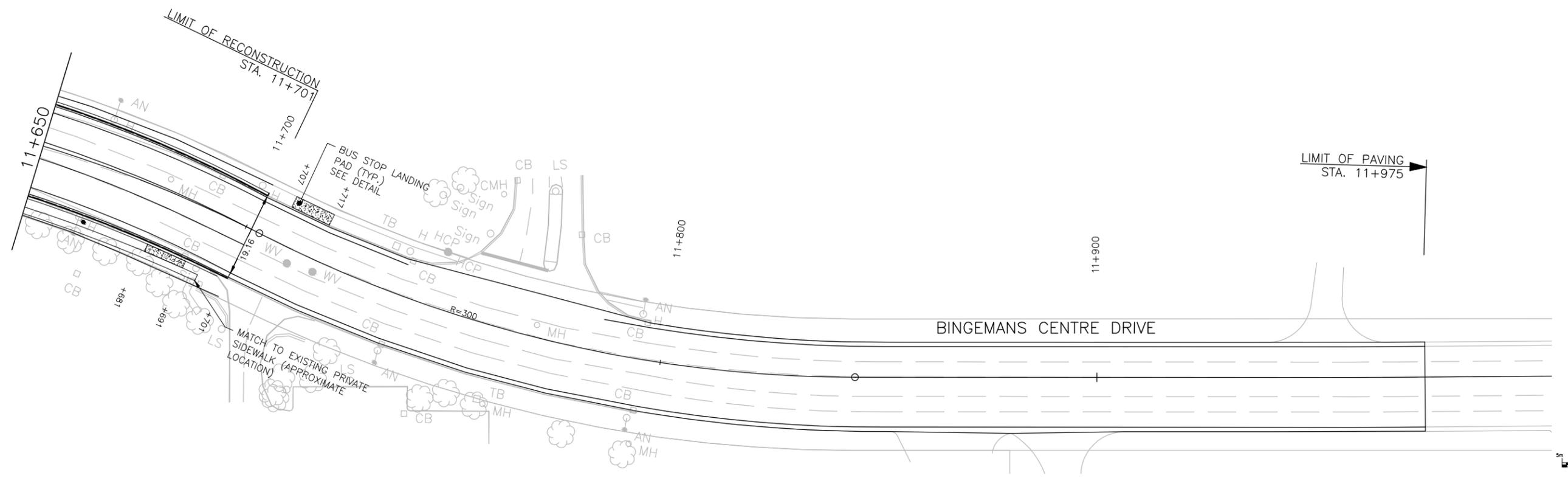
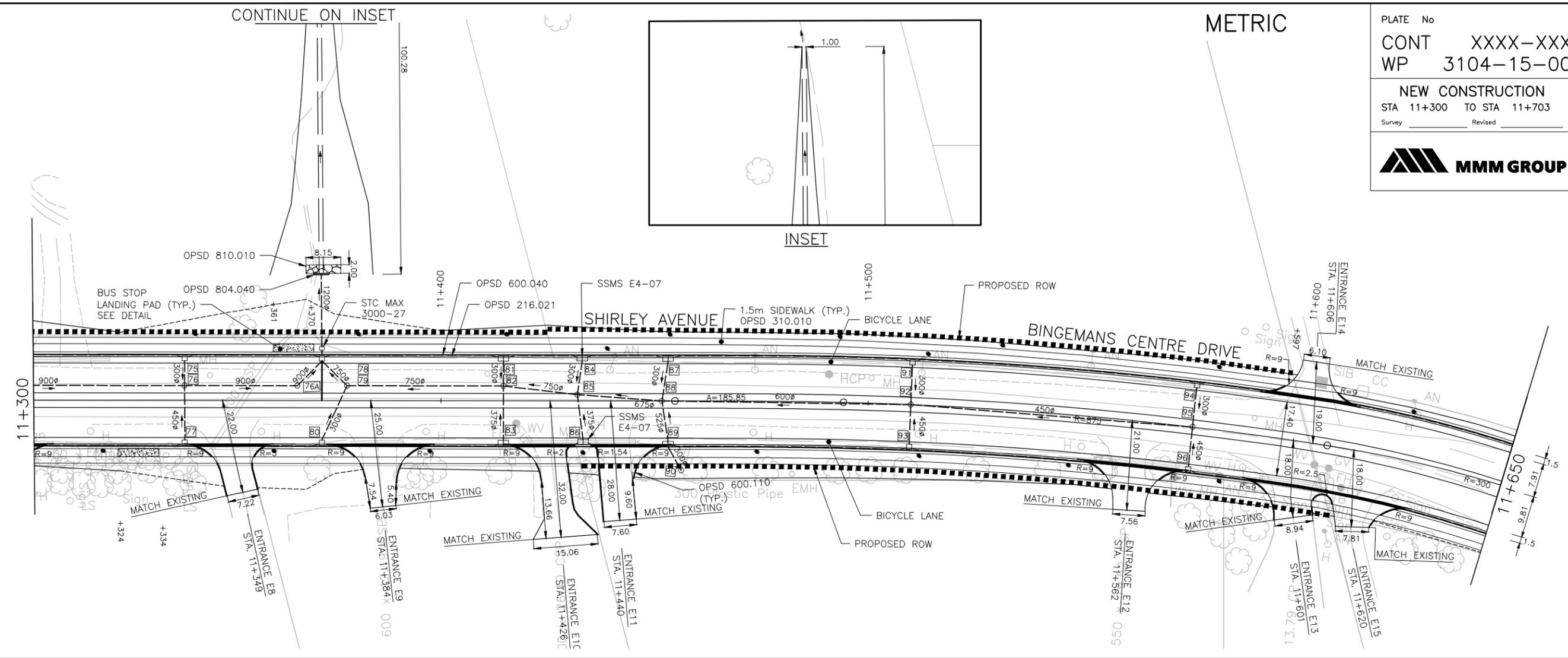
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WP 3104-15-00
NEW CONSTRUCTION
STA 11+300 TO STA 11+703
Survey _____ Revised _____



SHEET
NC6



INSET



METRIC

PLATE No
CONT XXXX-XXX
WP 3104-15-00



PAVEMENT ELEVATIONS
STA TO STA
Survey Revised

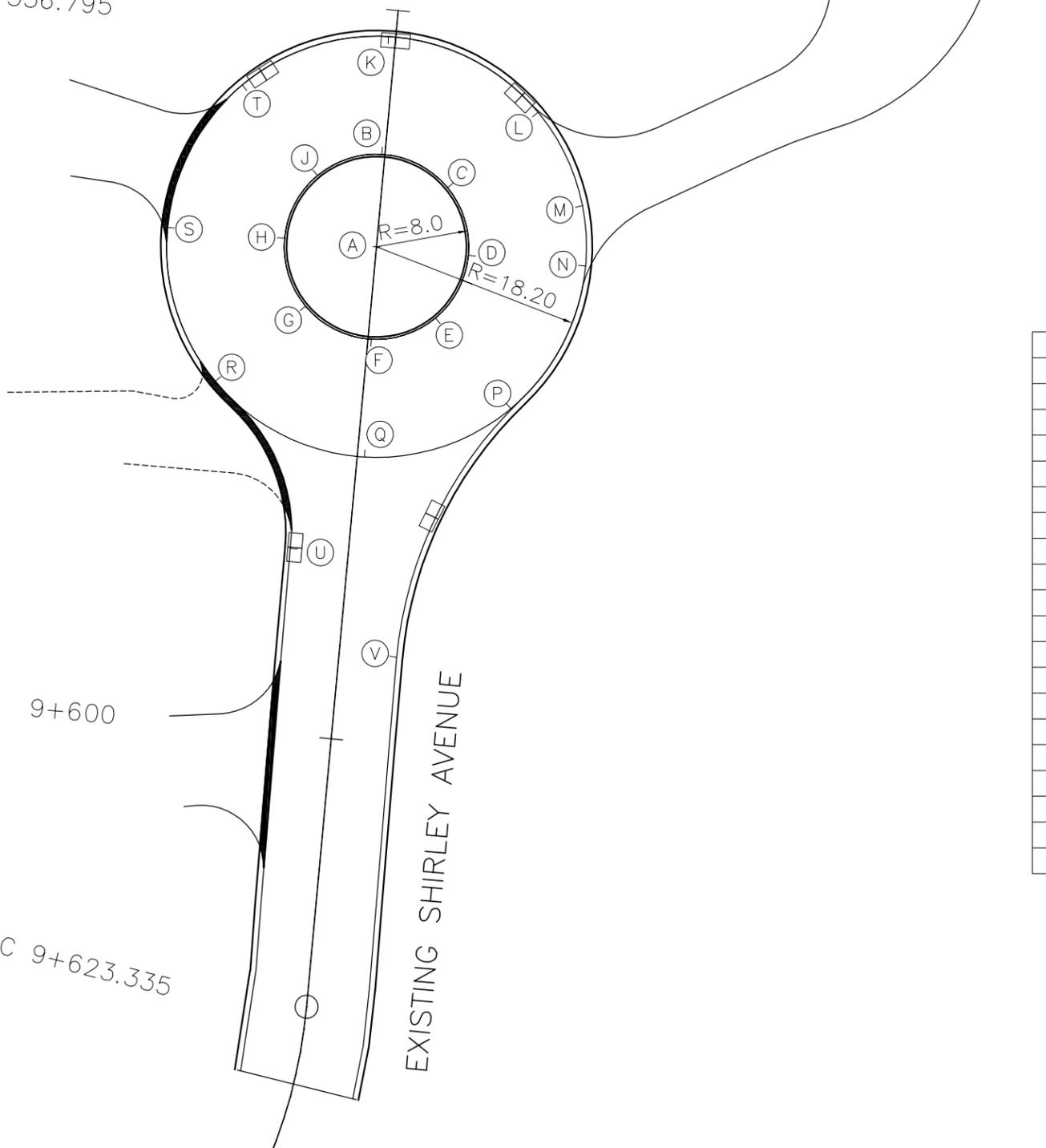
SHEET
PE1



MINISTRY OF TRANSPORTATION, ONTARIO
PF-0-707
88-05

SHIRLEY AVENUE

POB 9+536.795



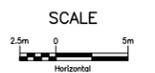
CUL-DE-SAC PAVEMENT ELEVATIONS

POINT	ELEVATION	NORTHING	EASTING
A	325.392	4814601.306	226778.912
B	324.922	4814609.106	226777.135
C	324.922	4814607.926	226783.405
D	324.922	4814602.810	226786.770
E	324.922	4814596.814	226785.532
F	324.922	4814593.506	226780.690
G	324.922	4814594.686	226774.420
H	324.922	4814599.801	226771.055
J	324.922	4814605.798	226772.293
K	324.503	4814619.051	226774.868
L	324.573	4814616.366	226789.132
M	324.616	4814609.669	226795.077
N	324.645	4814619.051	226774.868
P	324.718	4814591.056	226794.028
Q	324.718	4814583.561	226782.957
R	324.718	4814586.246	226768.693
S	324.645	4814597.883	226761.037
T	324.573	4814611.525	226763.852
U	324.611	4814574.175	226778.957
V	324.936	4814567.670	226790.448

BC 9+623.335

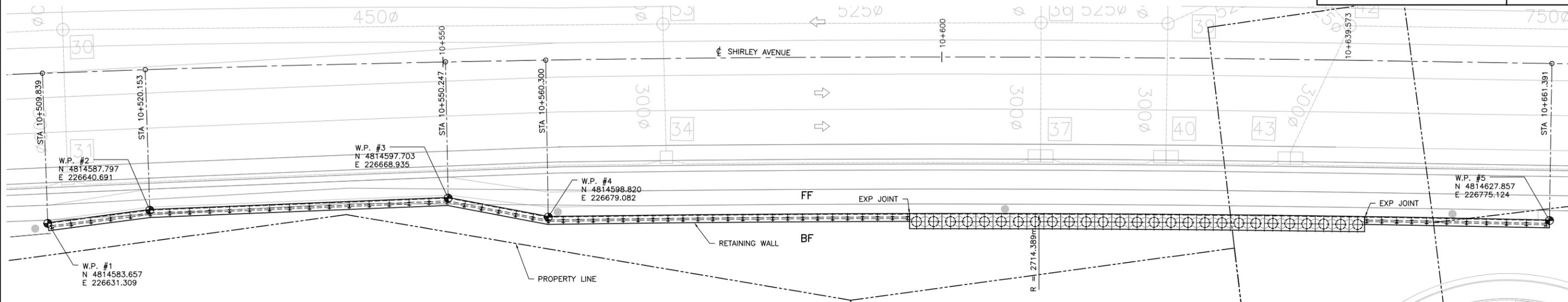
EXISTING SHIRLEY AVENUE

9+600

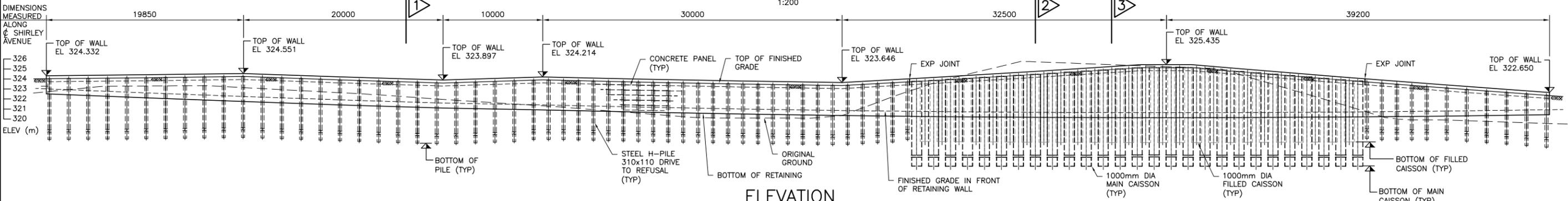


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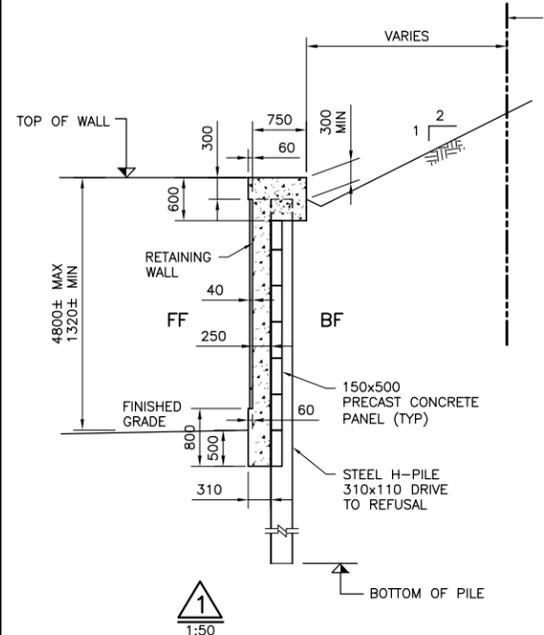
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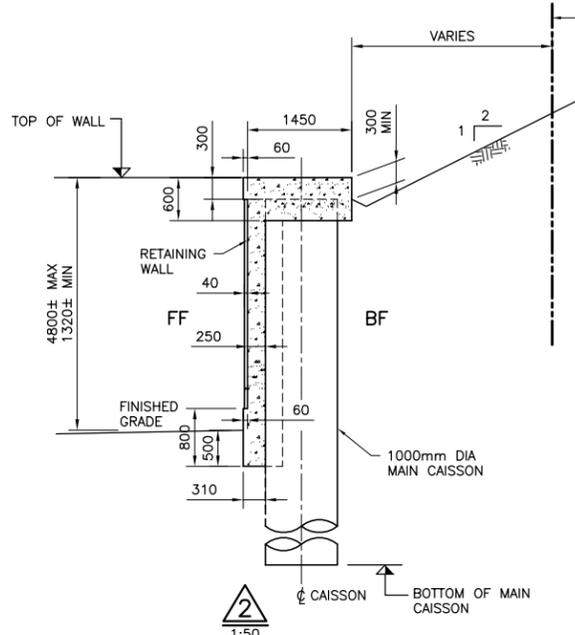
PLAN
1:200



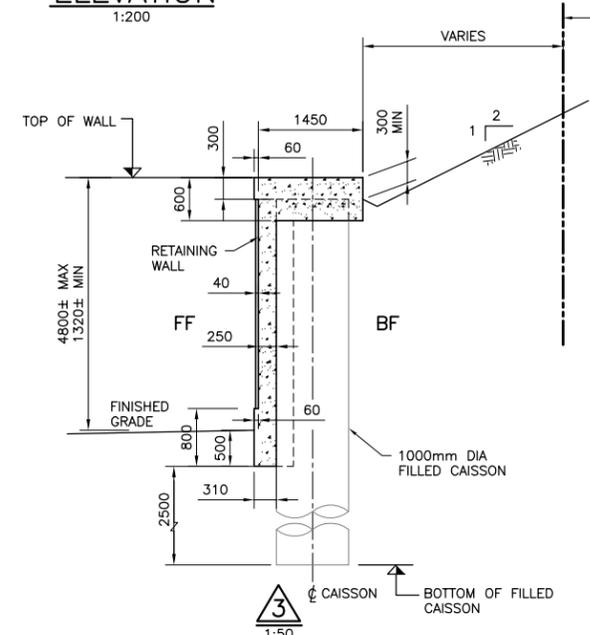
ELEVATION
1:200



1
1:50



2
1:50



3
1:50

LIST OF DRAWINGS:

- GENERAL ARRANGEMENT
- FOUNDATION LAYOUT
- REINFORCEMENT
- RETAINING WALL FACADE TREATMENT

GENERAL NOTES:

- CLASS OF CONCRETE
 MAIN CAISSON 30 MPa
 FILLING CAISSON 3 MPa
 REMAINDER 30 MPa
- CLEAR COVER TO REINFORCING STEEL
 FOOTINGS 100±25
 WALLS 60±10
 REMAINDER 70±20 UNLESS OTHERWISE NOTED
- REINFORCING STEEL
 REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE SPECIFIED.
 UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES SHALL BE CLASS B.
- ALL DIMENSIONS ARE IN MILLIMETERS ALL ELEVATIONS AND STATIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

REVISIONS	DESIGN	CHK	CODE	LOAD	DATE
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	P.T.	X.X	SITE	STRUCT	DWG 1

DISTRICT
CONT. No.
WP No. 3104-15-00



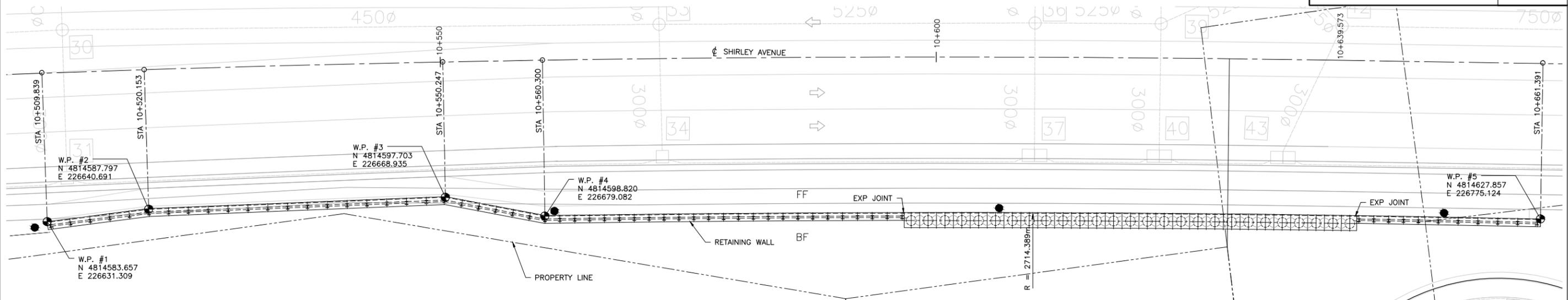
SHIRLEY AVENUE RETAINING WALL
RETAINING WALL FACADE TREATMENT

SHEET
STR4

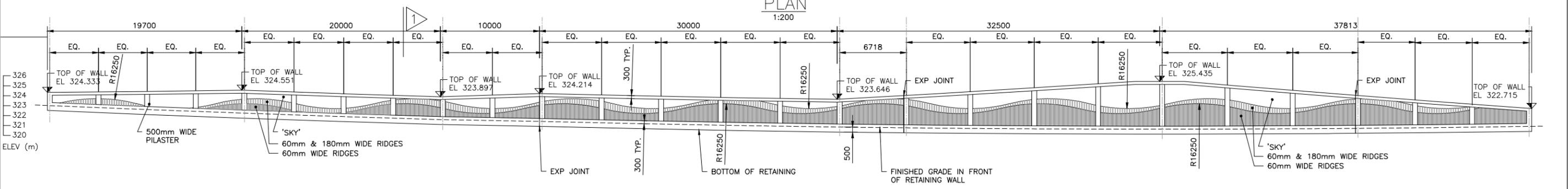


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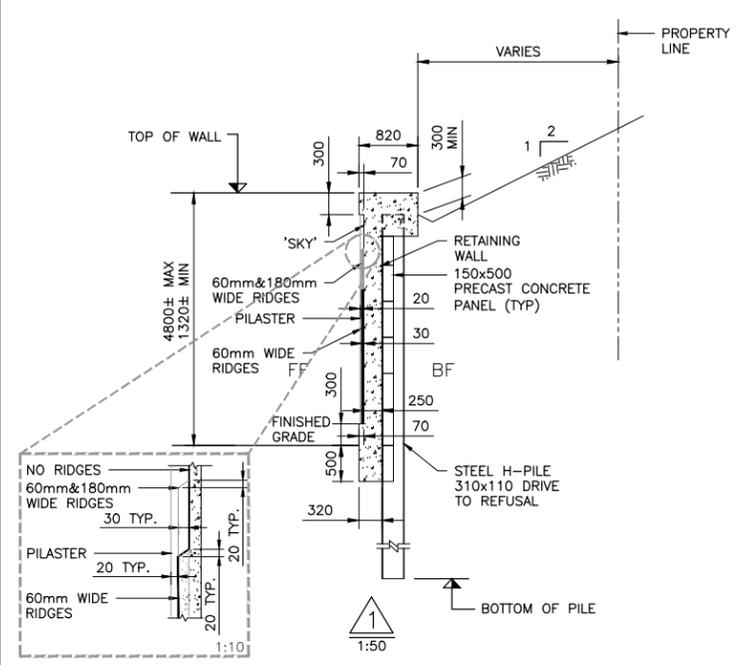
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 DATE PLOTTED: 10/22/2015 4:41:41 PM BY: ZEVEY RAJMAN



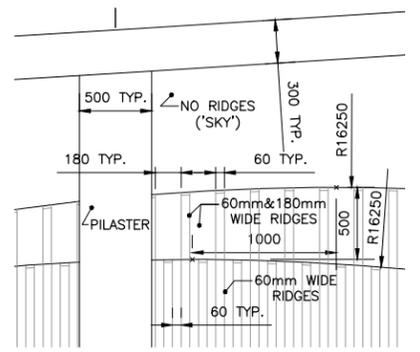
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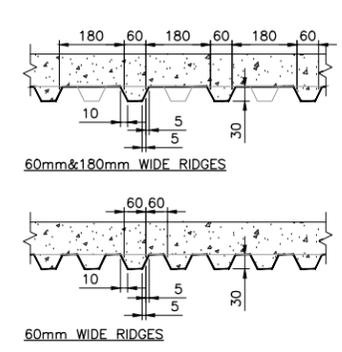
ELEVATION
1:200



1:50



FRONT ELEVATION
1:25



PLAN VIEW
1:10

DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

REVISIONS		DESCRIPTION			
NO.	DATE	BY	CHK	APP	DESCRIPTION

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