

## SCHEDULE 9

### Description of Highway 407 West

#### 1. CURRENT STATUS OF HIGHWAY 407 WEST

Figure 2 depicts Highway 407 West. The Ministry of Transportation has initiated and/or completed a significant amount of engineering and construction Work on Highway 407 West. Figures 3, 4 and 5 of Schedule 16 to the Concession Agreement depict the status of the Work.

Highway 407 West between the Freeman Interchange and the Oakville Link Interchange was originally planned as Highway 403. This Highway 403 designation appears on numerous plans, reports and documentation. The Highway 403 designation between these limits should be interpreted to be Highway 407 West.

##### 1.1 Environmental Assessment Status

The section of Highway 407 West, east of Highway 5, is part of the Parkway Belt West and as such was included in the *Environmental Assessment Act* exemption order covering activities in the Parkway Belt (M. TE1-3). The development of the corridor from Highway 5 easterly to the Oakville Link Interchange has been exempted from the full application of the *Environmental Assessment Act* through an EA Exemption under Order-in-Council No. 2487/80 (MTC Exemption 21/2), and Order-in-Council No. 2865/83 (MTC Exemption 52) , as listed in Schedule 17 to the Concession Agreement.

The section of Highway 407 West between the QEW and Highway 5 is outside of the Parkway Belt and was exempted from the full application of the *Environmental Assessment Act* through an EA Exemption under Order-in-Council No. 3002/81 (Ontario Regulation 736/81 MTC Exemption 47) dated October 23, 1981.

The above exemptions under the *Environmental Assessment Act* are collectively referred to as the ("EA Exemptions")

Ministry of Transportation compliance to date with the conditions of exemption regarding environmental status statements has been through the following submissions:

1. "Preliminary Design Report Highway 403 from Freeman Interchange to Highway 403, Oakville Link, May 1984", covering planning and preliminary design and related environmental issues; and
2. design and construction reports, covering detailed design and construction and related environmental issues of the Crown Completed Designs, identified as listed in Schedule 17.

## 1.2 Status of Crown Completed Designs

A Preliminary Design Report was produced in July 1983 (addendum May 1984) for Highway 403 between the Freeman Interchange and the Oakville Link Interchange. The report recommended the construction of a new controlled access highway connecting the Freeman Interchange to the Oakville Link Interchange. The report also outlines the project location and rationale, background information, environmental assessment process, existing and future conditions, alternatives and evaluation, environmental effects and mitigation, design proposals, traffic requirements, preliminary property requirements and utilities at a preliminary level of detail. The report includes preliminary design plates of the plan and profile at a scale of 1:5000.

A Pre-Design study was completed in 1985 which details information necessary to proceed into detail design and contract preparation. The Pre-Design study was based on a rural 16m median cross section. The Pre-Design study includes 1:1000 roll plans and profiles and geometry data sheets.

The Ministry of Transportation has undertaken three detail designs (the "Crown Completed Designs") under the following work projects:

- W.P. 199-77-06 Roadway and structures between Q.E.W. and Highway 5
- W.P. 410-85-00 Structures between Walker's Line and Highway 25
- W.P. 406-85-00 Structures between Sixteen Mile Ck. and Trafalgar Road (not including Neyagawa Blvd.)

The Crown Completed Designs were undertaken a number of years ago and will require updating. Note that the latest revisions have not been incorporated into the final documents and therefore these documents should not be considered complete packages. The available documents for the three Crown Completed Designs, are identified in Schedule 17. The Crown Completed Designs will require modifications to satisfy current Ministry Safety Standards.

The preparation and development of the Crown Completed Designs included discussion and negotiation of the designs with commenting and approving agencies. Approval/agreement of the design was based on conditions documented in the design. The approvals may include expiry dates or limitations such as those under the *Navigable Waters Protection Act*. Other conditions include environmental mitigation measures and utility relocation agreements. The Concessionaire will be responsible to either confirm and meet these conditions, and/or renegotiate the conditions of approval with the respective agencies as required. The Concessionaire will also be responsible for actual costs/conditions incurred as a result of their negotiations with these agencies, regardless of the costs/conditions identified in previous negotiations between the Ministry of Transportation and the agencies.

## 1.3 Status of Crown Completed Facilities

Construction of the Brant Street, Guelph Line and Highway 5 structures over Highway 407 West

have been completed.

Ministry Contract 93-89 is completed at the Freeman Interchange. This work included construction of the Highway 407 West ramp structures at the interchange. Not included in this work are three structures over the North Service Road and the N-W, W-N and N-S ramp connections (part of W.P. 199-77-06 design), which shall be part of Highway 407 West.

A number of ramps and structures have already been constructed at the Oakville Link Interchange. The Highway 407 Central contract included construction of the Ninth Line and the ramps and structures that connect the Highway 407 Central section to existing Highway 403.

The Crown Completed Facilities are those facilities for which construction has been completed as depicted in Figures 3,4 and 5 of Schedule 16 to the Concession Agreement and shown in Table 1 appended to this Schedule 9.

#### **1.4 Changes to Highway 407 West plans, designs, reports and documents**

The previously generated plans, designs, reports, documents and construction for Highway 407 West have been changed as noted below and listed in Schedule 17.

- The Oakville Link Interchange as identified in the Preliminary Design Report and Pre-Design study has been re-configured to maintain mainline continuity of Highway 407. The Highway 407 Central contract incorporated these changes. The Concessionaire will be required to design and build the interchange to this new configuration.
- In order to provide enhanced motorist safety, the Concessionaire shall design and build Highway 407 West using an urban cross section with a centre tall wall concrete median barrier and storm sewers. The tall wall concrete median shall include appropriate ducts and junction boxes to accommodate future high mast lighting. It is noted that the Crown Completed Designs and Crown Completed Facilities will require modification to incorporate the urban median.
- The Concessionaire will be required to install tall wall concrete median barrier in the curve section of Highway 407 at the Oakville Link Interchange. The tall wall concrete median barrier shall be offset to maximize stopping sight distance around the curve, as described in the "Highway 407/Highway 403 Interchange, Functional Design Study" (referenced in Schedule 17).
- A new interchange will be constructed at Neyagawa Blvd. in accordance with the requirements outlined in Section 2.6.
- The "race track" type design for the truck inspection stations has been changed to a "layby" type design. The requirements of which are described in Section 2.12.

- The road and cul-de-sac north of Highway 5 on the west side of Highway 407 West as shown in the Highway 403 Preliminary Design Report are not required.
- Burnhamthorpe Road, on the west side of Bronte Creek, will not be extended on a new alignment on the north side and parallel to Highway 407 West, as shown on the Preliminary Design Report and Pre-Design Study drawings. Burnhamthorpe Road shall terminate in a cul-de-sac at Highway 407 West right of way as described on the plan that is listed in Schedule 17.
- The Crown Completed Designs for W.P. 199-77-06 do not reflect the most current ground elevations and earth excavation requirements. Under Ministry Contract 93-89 changes were made to the amount and location of earth removal within the highway corridor. As built information on grade changes is included in the documents listed in Schedule 17 to the Concession Agreement; however, the Province does not make any guarantee with respect to the validity of the information. The Concessionaire is responsible to confirm changes in the field.
- A developer has constructed a temporary diversion of the West Rambo Creek to East Hager Creek on the east side of the Highway 407 West corridor, south of Brant Street. This falls within the limits of W.P. 199-77-06. The Concessionaire will be responsible for determining the status of this temporary diversion and incorporating any resulting changes into the Work. Pertinent documentation (including maintenance responsibilities for the temporary diversion until such time as the permanent diversion is constructed under this contract), is included with the W.P. 199-77-06 documents, listed in Schedule 17.
- There are changes to barrier installation as shown in W.P. 199-77-06 along existing Highway 403 in Burlington in the vicinity of the King Road structure. These changes are needed to provide protection for a Freeway Traffic Management System (FTMS) structure installed under Contract CRC 20-96-401. Pertinent documentation is included with W.P. 199-77-06, listed in Schedule 17.
- The FTMS components identified in W.P. 199-77-06 have been modified. The changes are documented in an OTCC memo-to-file dated November 8, 1996 and listed in Schedule 17.

## **2. WORKS TO BE COMPLETED**

When used in this Schedule, "Work" refers to the design and construction of Highway 407 West and includes all development, design, materials and construction for Highway 407 West and appurtenances required to open a completed electronic toll highway to vehicular traffic. The Work also includes all supporting highway infrastructure/components, including but not limited to, grading, granular base, paving, structures, drainage system(s) including watercourse realignments, guiderail, illumination, traffic signals, pavement markings, signing, sign gantries,

truck inspection stations, carpool lots, traffic management, landscaping, noise and other environmental measures.

Highway 407 West is to be designed and built as a 6 lane controlled access highway with an urban cross section and tall wall concrete median. The design and construction must accommodate provision for widening to 8 lanes in future.

Highway 407 West shall be designed and built in accordance with Ministry Safety Standards and other regulatory agency standards, specifications and guidelines, policies and practices. Highway 407 West shall be designed to 120 km/hr, freeway design standards. Where appropriate, acceleration, deceleration and auxiliary lanes shall be included. Fully paved shoulders and rumble strips shall be provided on both sides of the roadway.

## **2.1 Project Limits**

The works to be constructed include all Work required to effectively tie in Highway 407 West with connecting highways and intersecting roads. The limits consists not only of the physical roadway connection but incorporate all other highway infrastructure needs such as: ramp tapers, matching grade points, grading, paving, drainage, traffic signals, illumination, fencing and signing. Signing needs include advance signing and route markers some distance away from the interchange itself.

At the west end (Burlington), the Concessionaire will be required to tie in Highway 407 West to the existing Highway 403 and the Q.E.W. At the east end (Oakville-Mississauga boundary), the Concessionaire will be required to tie in Highway 407 West to Highway 407 Central and Highway 403.

## **2.2 Alignment**

The alignment of Highway 407 West shall be based on the most current information available. The alignment for Highway 407 West shall be designed and constructed in accordance with Ministry Safety Standards for Comparable Controlled Access Highways with a design speed of 120 km/h.

The Concessionaire must ensure that the stopping sight distance is not compromised by the tall wall concrete median on horizontal curves. If alignment changes cannot be made to correct the stopping sight distance, the tall wall concrete median may be shifted off centre line so as to maximize the stopping sight distance. However, a minimum 2.5m shoulder must be maintained at all times.

The current vertical alignment has some minimum crest and sag curves between the Freeman Interchange and Highway 5. Consideration should be given to improving these curves if cut and fill balances are to be recalculated.

### **2.3 Cross Section**

Highway 407 West cross section has been changed from that identified in the earlier Ministry of Transportation designs, plans and documentation. The Concessionaire will be required to construct a 6 lane urban cross section (tall wall concrete median), as identified in documents listed in Schedule 17 including but not limited to any transitions that are needed to facilitate tie-ins to existing infrastructure, or modifications to the Crown Completed Designs and Crown Completed Facilities. The location of Ministry of Transportation designed ramp alignments shall be retained (suitable for future 8 lane widening); ramp bullnoses shall be shifted accordingly.

The cross section shall be designed to allow provision for an ultimate 8 lane urban highway.

Grading to the top of subgrade and ditching shall be designed and built to the ultimate 8 lane cross section.

### **2.4 Pavement Structure**

The Work includes the construction of the pavement structure for the entire length of Highway 407 West including all ramps, lanes, structures, truck inspection stations, and carpool lots. Pavement and geotechnical designs are shown in the Consolidated Pavement Design Report listed in section Schedule 17. The Concessionaire is not obliged to use these pavement designs in the Work.

The pavement shall be designed and constructed to accommodate future widening requirements.

### **2.5 Drainage**

The Concessionaire will be responsible to provide stormwater quality and quantity drainage requirements for the Work. The Concessionaire will be responsible for securing external agency approvals for all outstanding stormwater management and watercourse crossing strategies. The scope of Work to be undertaken in accordance with the Highway 407 Drainage and Hydrology Guideline referenced in Schedule 17.

Pavement drainage design and stormwater management must conform to Ministry Safety Standards. The drainage quantity and quality design must be able to accommodate the future 8 lane cross section, including paved shoulders, tall wall concrete median barrier, car pool lots, truck inspection stations and storm sewer system. Drainage structures and ditches, where appropriate, shall be located to suit the ultimate 8 lane cross section.

The construction of a tall wall concrete median will necessitate the design and construction of a storm sewer system under the median. The storm sewer system must be off-set from the concrete barrier so as to avoid a possible conflict with future high mast lighting pole foundations.

External stakeholder agencies (including regulating agencies) must participate in the design criteria and concept development. The Concessionaire will be responsible for securing external agency approvals for the final stormwater management and watercourse crossing strategy. Drainage management of the highway is focused on the prevention or mitigation of adverse environmental impacts upstream, within the Highway 407 Lands and downstream of Highway 407.

## **2.6 Interchanges and Grade Separations**

Parclo A4 interchanges shall be provided at Highway 5, Appleby Line, Highway 25, and Trafalgar Road. Arterial road interchanges shall be designed using urban standards, with a minimum 50m inner loop radius and 0.08 m/m superelevation (designs based on the minimum standard shall only be used where constraints exist). Ramp terminals that are situated across from carpool lot entrances shall be designed and built in accordance with the lane arrangement shown on the typical carpool lot drawings provided in Schedule 17.

A new interchange, shall be designed and built at Neyagawa Blvd. The preliminary design for the interchange shown in the Environmental Study Report and the Highway 403 Preliminary Design Report has since been value engineered. Therefore, the preliminary plan listed in Schedule 17 supersedes any other preliminary plans for the interchange.

Grade separations are to be provided at the North Service Road, Upper Middle Road, Walkers Line, Tremaine Road, Sixth line, the Oakville Link Interchange and the C.N.R. Halton Subdivision east of Bronte Creek. There are two major water crossings at Bronte Creek and Sixteen Mile Creek which are also to be constructed by the Concessionaire.

Provisions shall be made that allow for a possible future interchange at Upper Middle Road.

## **2.7 Roadside Safety**

The Concessionaire shall ensure that the design and construction of Highway 407 West and sideroads meets Ministry Safety Standards. At all locations where guide rail is warranted along Highway 407 West or associated interchanges, steel beam guide rail shall be the considered the minimum acceptable treatment.

## **2.8 Structures**

The Concessionaire shall design and construct all necessary structures required to accommodate Highway 407 and the crossing roads.

Structural needs are identified in the Design Criteria, Pre-Design report, Structural Planning Report, Neyagawa Blvd. interchange plans and new configuration of the Oakville Link Interchange. The structural designs completed as part of the Crown Completed Designs will

require updating to current code requirements and Ministry Safety Standards to accommodate the changes identified in this Schedule 9 (Note: a decision to build an urban cross section instead of the rural cross section significantly affects a number of structures). Structural openings shall be designed and built for ultimate lane widening requirements.

It is noted that previous approvals were received from the Coast Guard (Navigable Waters) for crossings at Bronte Creek and Sixteen Mile Creek; and the National Transportation Agency for the C.N.R. crossing (based on the Crown Completed Designs). The Concessionaire will assume full responsibility for the Work, scheduling and cost associated with any resubmission for approval, resulting from time delays and changes identified in this Schedule 9.

The Concessionaire shall ensure that in addition to the standard requirements, each structure barrier wall incorporates one spare 50mm and one spare 70mm duct. Sufficient and appropriate access points must also be provided to these ducts.

All Highway 407 West mainline structures shall incorporate shoulders of no less than 2.5m.

All bridge decks shall be waterproofed according to Ministry Safety Standards.

The current listing and status of the structures is contained in Table 1.

The Ministry of Transportation has identified a number of alternate structural designs that may be used instead of the Crown Completed Designs. General arrangement drawings (GA) have been prepared for these alternate structural designs, listed as 407 ETR West, Alternatives for Bridge Structures, in Schedule 17. The Concessionaire is not obliged to use any of the provided designs in the Work.

The reference documents listed in Schedule 17 include foundation investigation, design reports, designs, subsurface information, foundation design recommendations and other technical information. The Concessionaire must satisfy itself as to the accuracy and sufficiency of the information presented and obtain any updating or additional information, and perform any studies, analyses or investigations that the Concessionaire deems necessary to finalize its designs.

## **2.9 Arterial Crossing Roads**

The Concessionaire will be responsible to secure all municipal and land-owner approvals required to carry out all construction on the arterial road crossings.

The arterial road crossings shall be designed and constructed in accordance with the approved Design Criteria, as defined in the Crown Completed Designs. The arterial road cross-section is defined in the approved Ministry Design Criteria under GWP's 199-77-06, 406-85-00 & 410-85-00. A cross section for Neyagawa Blvd. is provided with the supporting information on Neyagawa Blvd.



## 2.10 Illumination and Traffic Signals

All temporary and permanent illumination shall be provided in accordance with Ministry Safety Standards.

Where full illumination is required, design and construction shall be based on high mast lighting. Where partial illumination has been identified, the lighting system must be designed to permit future expansion to full illumination (with high mast lighting if applicable). Illumination must be designed to meet Ministry Safety Standards.

Illumination according to Ministry Safety Standards is required at truck inspection stations.

Ducts, junctions boxes and other appurtenances for high mast lighting must be provided for with the construction of the tall wall concrete median, as a provision for future installation.

The Concessionaire is responsible for designing, supplying and installing traffic signals at all intersections that meet traffic signal warrants, in accordance with Ministry Safety Standards and the guidelines and standards of the road authority that will be assuming the future maintenance and operation of the traffic signal system.

The Concessionaire shall prepare and submit traffic signal layout drawings in accordance with the following:

- i. The Concessionaire prepares PHM-125 drawings and submits to the Ministry of Transportation, Central Region Traffic Office for technical and legal approval. Once approved, the Central Region Traffic Office will submit the drawings to the road authority that will be assuming the future maintenance and operation of the traffic signal system, for their technical comments.
- ii. The road authority that will be assuming the future maintenance and operation of the traffic signal system will test equipment, inspect installation, commission and take over maintenance upon activation.
- iii. The road authority that will be assuming the future maintenance and operation of the traffic signal system undertakes the timing for signals.
- iv. The road authority that will be assuming the future maintenance and operation of the traffic signal system maintains the controller cabinet.
- v. Until activation of the traffic signal system, the Concessionaire is responsible for maintenance of the installation.
- vi. The Concessionaire supplies controller cabinets and coordinates the purchase of the controller cabinets in accordance with the requirements of the road authority that will be assuming the future maintenance and operation of the traffic signal system.

The obligations with respect to operation, maintenance and power consumption charges for traffic signal and illumination installations are outlined as follows:

1. Temporary Installations (traffic signal and illumination)

Where required, the Concessionaire will supply, install, maintain and remove (until permanent installation is activated) the temporary installation. Where the temporary installation replaces an existing installation, the costs of maintenance and power charges will remain with the authority having jurisdiction over the existing installation. Where the temporary installation is a new installation, not relocated "in kind", the costs of maintenance and power charges shall be paid by the Concessionaire.

2. Permanent Installations (traffic signal and illumination)

The Concessionaire will supply and install the permanent installation ready for activation. The installation will be energized for use as warranted with the permission and approval of the respective agency. Following activation of the installation, the respective agency will assume all responsibilities for the cost of operation, maintenance and power consumption of the installation.

**2.11 Signing and Pavement Markings**

The Concessionaire will be responsible for sign layouts, designing, manufacturing and installing all signs, including but not limited to: regulatory, warning, hazard, information, advance, temporary and toll highway signs; and hazard, trail blazer, name of cross road, 500 metre and snow plow markers; and supporting frames in accordance with Ministry Safety Standards. For the purpose of this Schedule, the term signs and markers includes the necessary supporting frame structures or supporting poles. All walkways on overhead sign frames shall cover the ultimate width of the roadway.

The Concessionaire will be responsible for the supply, placement, inspection and maintenance of all signage (including crossing roads).

At the Oakville Link Interchange, under the Highway 407 Central contract, signs were installed to satisfy existing conditions. The Concessionaire will be responsible to provide any additional signs and to modify existing signs as necessary to provide the complete signing requirements for the interchange.

For any signage on intersecting highways and municipal facilities, the Concessionaire will be responsible for obtaining Approval for sign layout and location from the applicable authority, such as the Ministry of Transportation and municipalities.

The Concessionaire shall be responsible for all temporary and permanent pavement markings within the limits of Highway 407 West, in accordance with Ministry Safety Standards.

Signing Considerations

In addition to Ministry Safety Standards for highway signing identified in Schedule 20, the following highway signing guidelines are to be provided:

- 1 In cases of unusual lane or ramp configurations, priority must be placed on conveying the message on the guide sign to ensure an optimal safe operation of Highway 407 West. Attention shall be given to areas of anticipated weaving within a decision making zone (i.e. drivers wishing to exit within an entrance ramp with considerable volume). Considerable attention must be given to enhanced guide signing at the Freeman and Oakville Link Interchanges.
- 2 The location of the overhead guide signs takes precedence over the location of the tolling gantries. In instances where communication restrictions dictate placement of the gantry system within the immediate vicinity of an overhead guide sign, enhanced guide signing is required.
- 3 In cases where visibility of a guide sign is reduced by a bridge structure, consideration must be given to enhanced signing (i.e. diagrammatic signs). Every effort should be made to ensure maximum sight distance of the guide sign especially in instances of unusual lane arrangement, geometric conditions, or heavy weaving volumes.
- 4 The current G.f-4/G.f-104 standard within the KHGSPM is no longer used to the Ministry of Transportation - Central Region. Layout details for these signs can be obtained from the Ministry of Transportation Central Region Traffic Management Office.
- 5 Careful consideration must be given to the use of chevron (Wa-9) and "diamond reflector" delineation signing. Wa-9 should be installed on highway exit ramps where the combination of multiple changes in horizontal alignment, vertical alignment, and superelevation causes a loss in driver perception of the horizon. Chevrons shall be used at all inner loop ramps.
- 6 Concessionaire shall install all lane designation signs (Rb-41 through Rb-47) on all ramps to assist the driver in choosing the correct lane to minimize weaving at the terminus of the ramp.
- 7 Wa-132 must be used on freeway to freeway ramp lane drops instead of Wa-32.
- 8 All crash cushion attenuator devices and end treatments require hazard markers.
- 9 Combining overhead guide signs with ground mounted guide signs for a given sequence of turn off signs, is an unacceptable practice. The sign designer must select either all guide signs within a single turn off sequence to be mounted overhead or on the ground depending on the criteria of the KHGSPM.
- 10 Wb-102 signal ahead signs are required on all signalized freeway exit ramps.
- 11 G.r-12 advance turn off signs must include an advance turn arrow instead of a straight arrow as shown in the KHGSPM.

- 12 Placement of all new signs on crossing highways must consider maintaining visibility of existing signs. Placement of any new signs must consider any existing object such as a light pole, signal pole, trees and bridge parapet wall.
- 13 All new 407 signs on crossing facilities must be fully covered with a completely opaque tarp until Highway 407 West is opened. Blocking parts of the sign with partial tarps or tabs is unacceptable.
- 14 All low speed freeway to freeway ramps will require enhanced advisory signing (i.e. for low speed inner loop ramps).
- 15 Advisory speed limits should be determined utilizing "Ball-Bank" testing
- 16 Destinations have been used on several freeways when the geographic directions conflict with official route designations. Official destination(s) should be selected by the Ministry of Transportation Traffic Office and guide signs should either include the destination or at least include provisions for a future destination.
- 17 Lane 1 (left most lane in both directions) is 3.5m necessitating a ban on heavy trucks with the appropriate signing.

## **2.12 Truck Inspection Stations (TIS)**

Two truck inspection stations, one per direction shall be constructed as part of the Work. The locations are identified in the Preliminary Design Report and Pre Design plans. The "race track" type design as identified in the Preliminary Design Report and Pre Design plans has now been changed to a "layby" type design. The requirements for the "layby" type design are described in the plans and documentation, as listed in Schedule 17.

The design and construction of the truck inspection station shall include: the grading, pavement, curb & gutter, drainage, stormwater management, illumination, truck weighing scale, power supply, cabinet and other appropriate TIS appurtenances.

## **2.13 Electrical**

The replacement of power supply equipment and the lighting system shall be done to Ministry Safety Standards.

The electrical Work consists primarily of illumination, traffic signals and permanent vehicle presence detectors. Temporary signals and detour illumination may be required as part of the electrical design Work depending upon the construction staging of the Work, design features and other parameters specified for the Work.

All electrical systems shall be designed and installed to Ministry Safety Standards especially with

regards to lighting levels, selected equipment, systems operation and roadside safety.

All electrical work shall be performed in accordance with the Ministry Safety Standards.

Negotiations with different hydro authorities, municipalities and roadway authorities as appropriate shall be carried out with the view of:

- a) selecting suitable power supply equipment and their locations at the appropriate interchanges.
- b) formulating a legal agreement with each hydro authority for the supply of electrical energy and for establishing the cost and billing arrangements for power consumption and applicable engineering standards.
- c) determining the requirements for traffic signal interconnection, equipment, standards and material costs.

Embedded electrical Work in the form of conduits, junction boxes and miscellaneous electrical fittings is required on both sides of each new structure and for installation of future underpass illumination equipment. Where required, pole bases shall be provided on applicable structures for future installation of lighting poles.

The Concessionaire shall conduct negotiations with the appropriate road authority charged with the responsibility for maintaining each traffic signal system in order to determine type of equipment, system operation, requirements for interconnection and traffic signal legal approval procedures and build same.

The Concessionaire shall be responsible for the design, supply and installation and the electrical underground power distribution system for the Toll System and the truck inspection station. This Work shall include, but is not limited to the following: power supply systems, power supply cabinets, conduits, manholes, electrical junction boxes and power cables.

In addition to doing the electrical Work, the Concessionaire shall be responsible for the design, supply and installation of the civil Work necessary for the Toll System.

#### **2.14 Additional Requirements on Highway 403 from Highway 407 to Highway 5**

As part of the overall Work for Highway 407 West an additional lane must be constructed from the southern limit of the existing Highway 407/403 interchange to Highway 5 in the southbound direction. This is an operational requirement to permit the existing Highway 407 North to Highway 403 South Ramp to be converted from a left hand merge to a lane away becoming Lane 1 of Highway 403 southbound. Existing Lane 1 of Highway 403 will become Lane 2 and will develop into an either-or lane at Highway 5. Existing Lane 2 of Highway 403 will be taken off at Highway 5.

This can be achieved by a combination of right & left side widening within the existing property limits. This Work should be carried out as soon as possible and must be in place well before the opening of Highway 407 West.

**2.15 Additional Requirements to Highway 407 West, QEW AND Highway 403 Freeman Interchange (existing QEW/Hwy403 interchange)**

**FROM HIGHWAY 407 WEST TO HIGHWAY 403**

As part of the connection of Highway 407 West ramp to westbound Highway 403, the following conditions will supersede previous documents and plans:

**Changes to Highway 407 West: Ramp Hwy 407 N – Hwy 403 W**

The Highway 407 West ramp lane 1 will merge into ramp lane 2 before the ramp meets Highway 403 westbound. Highway 407 W ramp lane 2 proceeds as a continuous lane, becoming lane 1 of Highway 403 Westbound.

**Changes to Highway 403 Westbound.**

Highway 403 Westbound will be reduced from the existing three lanes to two lanes, merging lane 3 into lane 2, prior to the King Rd structure. These two lanes will be continuous, becoming lanes 2 and 3 of Highway 403 westbound.

**FROM HIGHWAY 407 WEST TO QEW**

As part of the connection of Highway 407 West to the QEW southbound (Niagara), the following conditions will supersede previous documents and plans:

**Changes to Highway 407 West: Ramp Hwy 407 N – QEW S (Niagara)**

The Highway 407 West ramp lanes 1 and 2 shall be continuous onto QEW Niagara. Ramp lane 1 becomes lane 3 of the QEW, with an either/or exit at Eastport Drive/ North Shore Blvd. Ramp lane 2 becomes lane 4 of the QEW Niagara bound, with a “must exit” at Eastport Drive / North Shore Blvd.

**Changes to Highway 403: Ramp Hwy 403 W – QEW S (Niagara)**

The Highway 403 ramp onto the existing QEW South bound, will be extended to merge onto the new Highway 407 West ramp.

**Changes to Fairview St Interchange with the QEW**

The Fairview St loop E-S ramp to the QEW South bound, shall be removed. A left turn lane

shall be constructed on Fairview St to provide access to the QEW south bound via ramp W-S. The Concessionaire shall be responsible to liase with the City of Burlington to gain endorsement for this Work. In addition, ramp W-S shall be modified to facilitate this additional move, along with modification of the signal at the existing ramp terminal.

### **2.16 Carpool Lots**

Paved carpool lots are to be provided at the Highway 5, Appleby Line, Highway 25 and Trafalgar Road interchanges. The carpool lots are to be built according to Ministry Safety Standards and in accordance with the typical carpool drawings provided in Schedule 17. Carpool lots shall accommodate bus turning radii.

## **3. TRAFFIC MANAGEMENT**

The Concessionaire shall be responsible for traffic safety and management during field work and construction of the Work and during the installation and testing of toll equipment. The Work includes the management of traffic during construction with minimal impacts on the traveling public. In addition to the requirements set out in this section, the following minimum requirements are to be implemented during the Work:

- a. Traffic may not be staged on a granular surface at any time during construction. Where construction operations necessitate the working area be less than 4m from the traffic, the Concessionaire shall erect barriers or delineators along the edge of the traveled lane. In no case shall the distance between traffic and working areas be less than 1.5m unless protected by temporary concrete barriers and delineators.
- b. The Concessionaire shall schedule the Work so that there will be no open excavation adjacent to a lane carrying traffic overnight and on non-working days, except where protected by temporary concrete barriers. Excavations within 4m of lanes carrying traffic shall be backfilled with the final granular and/or asphalt material up to profile grade and compacted prior to closing down operations.
- c. Materials and equipment shall not be stored within 4m of the travelled portion of any roadway. The Concessionaire shall seek approval from the respective municipal authorities for traffic management plans associated with Work on municipal roads, from Ministry of Transportation for associated Work on Ministry of Transportation roads.
- d. Where the Concessionaire must work adjacent to traveled lanes on a freeway, the Concessionaire must maintain a minimum lane width of 3.4m with a 1.0m paved shoulder where no parallel run of barrier exists, or a 0.5m shoulder where a parallel run of barrier is used. All operations, with the exception of final paving, must take place behind temporary concrete barrier.

The Concessionaire shall seek approval from the respective municipal authorities for traffic

management plans associated with Work on municipal roads, and from the Ministry of Transportation for associated Work on Ministry of Transportation roads.

Traffic management shall be in accordance with Ministry Safety Standards.

Regarding the approval of speed reductions, the Ministry of Transportation is responsible for approving legal speed reductions on King's Highways. The appropriate municipality, through changes to its by-laws, is responsible for approving legal speed reductions on municipal roads. The Concessionaire is responsible for applying for, and obtaining all approvals.

#### **4. PROPERTY**

As part of the design Work, the Concessionaire will be responsible for ensuring that designs minimize land locking and the severing of Crown land or private property.

The Concessionaire is responsible to provide and install full chain link fencing on both sides of Highway 407 West. All fences within and bordering the Highway 407 Lands are the responsibility of the Concessionaire.

Any failure by the Grantor to provide vacant possession of any portion of the Highway 407 Lands within the time provided in the Highway 407 Lands Availability Schedule which has a material effect on the timing of the performance of the Work shall, notwithstanding anything contained in the Concession Agreement, be deemed to constitute a Delay Event

#### **5. ENVIRONMENTAL REQUIREMENTS**

The Concessionaire shall be responsible to meet any outstanding obligation as the "proponent" as defined under the *Environmental Assessment Act* (the "EA Act") and for complying with all of the conditions under any EA Exemptions, and, to the extent required, under any other applicable provincial and federal environmental legislation.

In undertaking the Work, the Concessionaire shall, to the extent required, address any environmental requirements including: environmental inventory, assessment of impacts, public consultation, design of mitigation, preparing and submitting design and construction reports and other environmental documentation, obtaining of environmental approvals, provision of formal environmental clearance/approvals, provision of mitigation, full compliance with the conditions of the EA Exemptions, monitoring and other environmental services. Complying with the conditions of the EA Exemptions does not preclude more restrictive or additional conditions or requirements being imposed under other statutes.

The Concessionaire will be responsible for completing any additional submissions, addenda or other work, regardless of who completed previous work and submissions. The Concessionaire shall consider and determine whether the previously completed work and submissions require updating. If the Concessionaire determines that the previously completed work and submissions



require up-dating, the Concessionaire shall consult with all regulatory agencies to determine any further requirements. The previously completed work has not been submitted for clearance under the *Canadian Environmental Assessment Act*.

When the Concessionaire is required to undertake the assessment and evaluation of environmental impacts, the Concessionaire shall, in such assessment and evaluation, consider, among others, the following factors:

- sensitivities identified;
- significance of expected condition changes/effects, level of effects, duration and certainty of effects;
- degree to which condition changes/effects can be mitigated (based on previous and concurrent experience); and
- degree of mitigation incorporated in the generation of alternatives.

The Concessionaire shall consider utilizing a wide range of environmental protection measures to address potential environmental impacts identified as described above. Although site specifics have the greatest influence on the selection of environmental measures, the approaches to environmental protection can be generally categorized in order of decreasing preference, as follows:

- avoidance/prevention;
- control/mitigation (reducing the severity of environmental impacts);
- compensation (provision of "equivalent" or countervailing environmental features);
- enhancement (improvement over previous environmental conditions); and
- combinations of the above.

The Concessionaire shall address environmental protection with respect to the following aspects, among others, of planning, design and construction:

- generation and assessment of alternatives;
- evaluation and selection of preferred alternatives; and
- development of the plan/design/approach.

For environmental protection with respect to planning, design and construction the Concessionaire shall undertake, among others, the following activities:

- identification of environmental constraints;
- identification of environmental deficiencies;
- identification of environmental protection strategies;
- identification of environmental design elements;
- identification of environmental mitigation; and
- identification of environmental construction/maintenance constraints.

**Table 1: LIST AND STATUS OF STRUCTURES  
Freeman Interchange to Highway 5:**

Description	Status	WP #	Site #
QEW O'Pass @ Fairview St.	Construction Complete	83-74-04	10-319
403W Ramp over CNR to Plains Rd.	Construction Complete	83-74-04	10-135B
QEW N&S over CNR	Construction Complete	83-74-04	10-135A
403W - QEW S. O'Pass @ 407 S - Plains Rd.	Construction Complete	199-77-04	10-334
403W - QEW E. O'Pass @ 407 N - QEW S.	Construction Complete	199-77-02	10-332
403W - QEW E. Ramp over QEW	Construction Complete	199-77-03	10-333
407N - 403W Ramp	Construction Complete	199-77-08	10-481
403W.- 407N Ramp	Construction Complete	199-77-07	10-480
QEW E. - 403 W over Ramp 407 N - QEW S	Construction Complete	199-77-05	10-335
QEW E - 403 W, Ramp QEW S - 407 N, U'Pass	Construction Complete	83-74-28	10-320
QEW, Ramp QEW S - 407 N, U'Pass	Construction Complete	83-74-29	10-321
Hwy 407 - Upper Middle Rd., U'Pass	Ministry Detail Design	199-77-17	10-476
407N - QEW S., over North Service Rd.	Ministry Detail Design	199-77-11	10-482
407N - 403W, over North Service Rd.	Ministry Detail Design	199-77-09	10-483
403W - 407N, over North Service Rd.	Ministry Detail Design	199-77-10	10-484

<b>Description</b>	<b>Status</b>	<b>WP #</b>	<b>Site #</b>
QEW S. - 407N over North Service Rd.	Construction Complete	83-74-12	10-339
QEW - over Brant St. U'Pass	Construction Complete	83-74-08	10-138
Hwy 403 - Brant St. U'Pass	Construction Complete	83-74-13	10-340
Hwy 407 - Guelph Line U'Pass	Construction Complete	199-77-19	10-227
Hwy 407 - Hwy 5 U'Pass	Construction Complete	199-77-21	10-477

**Highway 5 to Highway 25:**

<b>Description</b>	<b>Status</b>	<b>WP #</b>	<b>Site #</b>
Walkers Line O'Pass	Ministry Detail Design	411-85-04	10-228
Appleby Line U'Pass	Ministry Detail Design	411-85-02	10-229
Bronte Creek O'Pass	Ministry Detail Design	410-85-02	10-220
CNR U'Pass	Ministry Detail Design	408-85-01	10-478
Tremaine Rd. U'Pass	Ministry Detail Design	409-85-04	10-230
Hwy 25 U'Pass	Ministry Detail Design	409-85-02	10-479

**Sixteen Mile Creek to Trafalgar Rd.:**

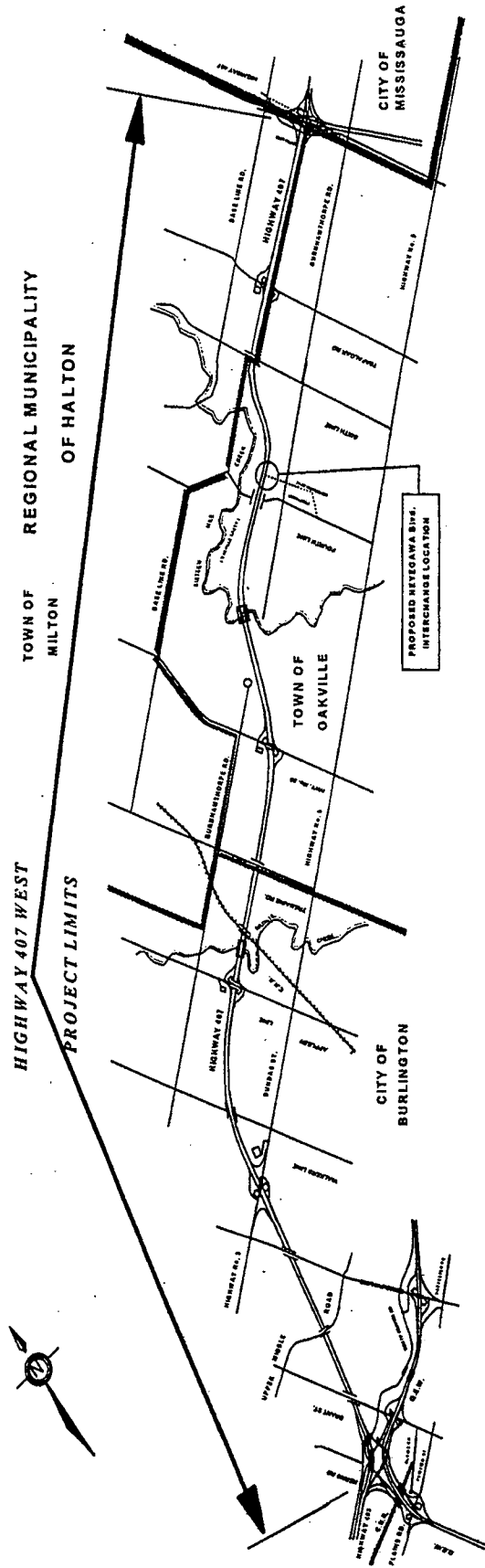
<b>Description</b>	<b>Status</b>	<b>WP #</b>	<b>Site #</b>
Sixteen Mile Creek O'Pass	Ministry Detail Design	406-85-00	10-490

Neyagawa Blvd. O'Pass	GA available	N/A	N/A
Sixth Line U'Pass	Ministry Detail Design	406-85-00	10-489
Trafalgar Rd. U'Pass	Ministry Detail Design	406-85-00	10-329

**Oakville Link Interchange:**

Description	Status	WP #	Site #
403S - 407N O'Pass @ 407/403 O'Pass	Construction Complete	199-77-06	10-326
407N - 403S/E O'Pass @ 407/403 EW Ramps	Construction Complete		10-509
407 O'Pass @ 403E - 407W	GA available		10-510
407N - 403S/E O'Pass @ 407 & 9 th Line	Construction Complete		10-511
9 th Line O'Pass @ 403 S- 407N & 403E - 407N	Construction Complete		10-512
407W - 403S O'Pass @ 9 th Line	Construction Complete	199-77-06	10-328
9 th Line O'Pass @ 407/403 EW Ramps	Construction Complete	199-77-06	10-327
403E-403S Ramp O'Pass @ 407/403 EW & SN Ramps	Construction Complete	199-77-06	10-325

# HIGHWAY 407 West - QEW to Highway 403



Not to Scale

Figure 2

Figure 2 - Highway 407 West - QEW (Freeman I.C.) to Highway 403 (Oakville Link I.C.)