

COMMITTEE OF THE WHOLE – SEPTEMBER 19, 2005

YONGE STREET CORRIDOR PUBLIC TRANSIT IMPROVEMENTS INDIVIDUAL ENVIRONMENTAL ASSESSMENT – REGION OF YORK COMMENTS TO THE MINISTRY OF THE ENVIRONMENT EA FILE NO. MU-1033

Recommendation

The Commissioner of Engineering and Public Works and the Commissioner of Planning, in consultation with the City Manager, recommend:

1. That the Ministry of the Environment be advised that the City of Vaughan supports the approval of the Yonge Street Corridor Public Transit Improvements Environmental Assessment, dated July, 2005, as submitted by the Regional Municipality of York;
2. That the Region of York be advised that, given the importance of achieving quality streetscapes on Yonge Street particularly in, but not limited to the heritage areas, the City of Vaughan and affected communities continue to be consulted in the development of detailed designs for the road allowance, with the final plans resulting from the joint Markham-Vaughan "Thornhill Yonge Street Study" being incorporated as required;
3. That this report be forwarded to the Region of York, the Town of Markham and the Town of Richmond Hill for information purposes.

Economic Impact

There are no immediate economic impacts resulting from the adoption of this report.

Purpose

The purpose of this report is to provide the Ministry of the Environment with the City of Vaughan's comments on the Region of York's Yonge Street Corridor Public Transit Improvements Environmental Assessment, as requested by the Ministry by letter dated July 27, 2005.

Background – Analysis and Options

a) Background

The Regional Official plan provides for a series of Regional Centres in Markham, Vaughan, Richmond Hill and Newmarket, which are to be linked by higher order transit services. In 2002 the Region approved the *Transportation Master Plan*. It confirmed the need to develop a balanced transportation system, by establishing a rapid transit system, which focuses on the Yonge Street and Highway 7 corridors, including a link from the Vaughan Corporate Centre to the Spadina Subway and a connection from the Markham Centre to the Sheppard Subway.

In June 2002, Regional Council endorsed a proposal by the York Consortium 2002 to establish a public-private partnership to implement the York Rapid Transit Plan. Studies on the Yonge Street leg of the system commenced in August 2002. On June 30, 2004, the Ministry of the Environment approved the Terms of Reference for the EA and in July of 2005, the Region submitted the EA to the Ministry for approval.

By letter dated July 27, 2005, the Ministry of the Environment has requested comments from affected agencies and municipalities. The comments are required by September 23, 2005. The Region of York has also submitted the "Highway 7 Corridor Public Transit Improvements

Environmental Assessment" (August 2005). The Ministry has requested comments on this EA by October 26, 2005 and it will be the subject of a future report to Council.

b) Overview of the Environmental Assessment

The Purpose of the Undertaking

The undertaking responds to two main objectives. The first is to improve accessibility to current and planned development in York Region by introducing a high quality transit alternative, which will reduce dependence on the private automobile. The second is to meet the Regional Official Plan objectives of making the Region's urban areas more liveable, pedestrian-oriented and economically viable, while supporting a sustainable natural environment.

The purpose of the undertaking is to provide improved public transit infrastructure in the Yonge Street corridor, which is the system's main north-south link. The undertaking will increase transit ridership in the Yonge corridor, both within the York system as a whole and across regional boundaries with the necessary connections to other GTA transit systems. This will allow for the implementation of improved public transit that supports the Region's centres and corridors strategy. It calls for higher density, mixed-use, transit oriented and pedestrian friendly development, in accordance with the approved official plans.

The Study Area

The study area used to evaluate the route alternatives has the following boundaries (See Attachment 1):

- South: Steeles Avenue;
- West: Dufferin Street;
- North: 19th Avenue/Gamble Road; and
- East: A line approximately one kilometre to the east of Highway 404.

Need and Justification

The Region of York completed the *Yonge Street Transitway Need and Justification Study* in July of 2002. It examined the need for improved transit services to the year 2021 in the context of a projected growth in the Region's population from 800,000 to 1,200,000. Subsequently, Yonge Street was identified as the preferred north-south corridor in the study area and two primary routing alternatives were identified in the Terms of Reference: Yonge Street and the CN Rail Bala Subdivision, with the alignment confined to the Yonge Street road allowance from Steeles Avenue to Langstaff Road.

The Selected Alternative to the Undertaking

A range of potential solutions was identified as the alternatives to the undertaking. A total of five alternatives were developed including: the "do nothing" option; proceed on the basis of current road and transit commitments plus demand management; rely solely on road expansion; enhance commuter rail and inter-regional bus connections; and a multi-modal solution characterized as the "York Region Rapid Transit Corridors Initiative" strategy.

The alternative undertakings were assessed on the basis of four main criteria. They were: Protect and enhance the social environment; protect and enhance the natural environment; promote smart growth and economic development; and the effectiveness of the solution at meeting the projected travel demand. On evaluation, the "York Region Rapid Transit Corridor Initiatives" strategy was determined to be the best response.

The strategy includes the following measures: Completing the already committed road and highway improvements; improvements in local and inter-regional bus services; transportation demand management measures; and public transit improvements like bus service/light rail in dedicated transitways while assuming the extension of the TTC subway into the Region. This alternative was determined to best meet the long-term growth needs and planning objectives of the Region while offering the opportunity to mitigate high costs and local environmental impacts by maximizing the use of existing corridors.

Alternative Methods of Carrying Out the Undertaking

Three rapid transit alignments were developed as the alternative means of carrying out the undertaking. These included a Yonge Street only route, a Yonge Street route by-passing the Richmond Hill downtown adjacent to the CN Bala Subdivision and another Yonge Street route that by-passes south Richmond Hill and its downtown starting at Highway 7. The Yonge Street only route was common to all alternatives between Steeles Avenue and Langstaff Road (See Attachment 1).

The selection of the preferred alternative method of carrying out the undertaking was based on an evaluation of the following objectives:

- To improve mobility by providing a fast, convenient and efficient transit service;
- To protect and enhance the social environment in the corridor;
- To protect and enhance the natural environment in the corridor; and
- To promote smart growth and economic development in the corridor.

Other aspects of the alternatives were evaluated concurrently, including the type of rapid transit technology to be employed and conformity of the potential infrastructure with a series of planning and design objectives.

The preferred rapid transit alternative was determined to be the "Yonge Street Only" route, which largely uses the existing road allowance. It was selected for the following reasons:

- Potential to attract greater ridership;
- Reinforces the main street role of Yonge Street, supporting intensification;
- While running in mixed traffic through old Richmond Hill, travel time will not be increased as the alternative (the Bala Subdivision Diversion) is 2 km longer;
- Will not displace adjacent homes or businesses and will have only minor impacts on traffic patterns, such as access to individual properties and minor streets;
- Can support major improvements to urban design;
- The transitway is marginally more expensive to construct but avoids significant property acquisition and displacement of residential units;
- Supports Richmond Hill's planning focus on the Yonge Street corridor.

The Undertaking

The form of the undertaking recommended by the Environmental Assessment is summarized below.

i. System Capacity

Based on projected ridership in 2021 the system will be required to provide the following capacity:

- 3,000 – 4,400 passengers per hour, (peak direction), between Major Mackenzie Drive and Crosby Avenue;
- 4,800 – 5,100 passengers per hour, (peak direction) approaching the Langstaff Gateway;

- 6,800 – 7,100 passengers per Hour (peak direction) across the Steeles boundary.

North of Langstaff Road, with the transitway operating at-grade and with BRT upgrading to LRT technology, the system can accommodate the projected volumes as well as some additional growth. The volumes on the Langstaff – Steeles link can also be carried on the planned transitway. However, when the York Region surface transit traffic is combined with the TTC bus routes, between Steeles Avenue and Finch station in Toronto, the services in this section may become unreliable due to vehicle volumes exceeding intersection capacity.

If the projected volumes were realized, the transit link in Toronto from Steeles Avenue to Finch Station would have to be grade separated. These options could include a subway extension or a 2 km section of grade separated BRT or LRT. This would require a subsequent EA with Toronto as the main proponent. During the monitoring program, consultation with the TTC and City of Toronto will include a review of the TTC subway extension priorities in order to determine when an extension of the subway to Highway 7 may be forthcoming.

ii. System Technology

The system is designed to operate as either a BRT service or an LRT service. LRT technology is able to carry more passengers, but at a higher initial capital cost. It is the intent that the system operate initially as a Bus Rapid Transit service, with the transition to Light Rail occurring when warranted, at the initiative of Regional Council. At 2021, the estimated level of service on the Langstaff to Steeles link would be 85 articulated (18 m) buses per hour, operating in two vehicle platoons, with one or two platoons per traffic signal cycle.

iii. System Infrastructure

The recommended system is composed of the following infrastructure:

- A 12.5 kilometre transitway in the Yonge Street Corridor from Steeles Avenue to 19th Avenue, approved for BRT and LRT technology;
- A 1 kilometre section in downtown Richmond Hill operating in mixed traffic;
- Replacement of the existing HOV Lanes with the median transitway on the bridge over the CN Line in Thornhill, between Clark Avenue and Doncaster Road;
- Stations at approximately 1 kilometre spacing, generally at major intersections including the following stations in the Markham-Vaughan leg of Yonge Street:
 - Meadowview Avenue;
 - Clark Avenue;
 - John Street; and
 - Royal Orchard Boulevard.
- The transitway alignment will take transit vehicles on and off Yonge Street to connect to the Richmond Hill (Langstaff) Intermodal Terminal (GO Rail/Bus Service, Local YRT Service and interface with the YRTP (Viva) rapid transit services on Yonge Street and Highway 7);
- A combined BRT/LRT maintenance facility located in the southeast quadrant of the Yonge Street – Highway 407 intersection (off Langstaff Road in Markham), to accommodate up to 300 buses and 50 LRT vehicles;
- Periodic crossings in the median for the use of emergency vehicles;
- Streetscaping of the entire right of way.

Project Related Effects and Mitigation

As noted, the selection of the preferred alternative was based on an evaluation using the following objectives:

- To improve mobility by providing a fast, convenient and efficient transit service;
- To protect and enhance the social environment in the corridor;
- To protect and enhance the natural environment in the corridor; and
- To promote smart growth and economic development in the corridor.

Once the preferred alternative was selected, it was subjected to a further analysis of the environmental effects and mitigation measures. In Vaughan two particular issues stand out. The first is the implications for the Yonge Street corridor from an urban design perspective and the second is the economic and traffic issues associated with the form and operation of the transitway within a centre median, which confines the opportunities for left turns to signalized intersections.

The plan is described below, focusing on the implications surrounding these issues.

c) Implications for the City of Vaughan

i. Transitway/Road Allowance Design from Steeles Avenue to Langstaff Road

The City of Vaughan has only 4 km of frontage on the west side of Yonge Street, extending from Steeles Avenue to Highway 7. The Town of Markham has the same extent of frontage on the east side of Yonge Street. While not lengthy, parts of this section are challenging and require careful consideration. Foremost of which is the old village of Thornhill and the corresponding Thornhill Heritage Conservation District. Also of interest will be the integration of the York Region transit system with the TTC system south of Steeles Avenue.

Attachments 2a through 2i illustrate the recommended transitway design through the portion of Yonge Street from Steeles Avenue to the Richmond Hill Intermodal Terminal. These plans show the transitway, the stations, traffic lanes, sidewalks and landscaped areas and their respective widths. Attachments 3a and 3b show a typical transitway BRT cross-section between stations and typical section through a station site on a 36 m road allowance. It is noted that the number of travel lanes on Yonge Street will be consistent from Steeles to Langstaff, having two in each direction.

For the most part the proposed transitway system can be accommodated within the existing right of way. Some property acquisition will be required. It is estimated that .3 ha of additional land will be required between Steeles Avenue and Centre Street and a further .2 ha will be required between Centre Street and Highway 7. These are the combined totals for both the Markham and Vaughan sides of Yonge Street.

Attachments 2a and 2b show two design alternatives for the transitway at Steeles Avenue. The Attachment 2a version shows a design assuming a connection to a TTC median transitway south of Steeles Avenue, connecting to Finch Station. The TTC is undertaking a Class EA to develop this connection and it is currently nearing completion. For the most part, this section of Yonge Street employs the cross-section shown in Attachment 3a, with the median landscape strip. A station is provided at Meadowview Avenue (Markham), which is opposite the entrance to the Auto Mall in Vaughan.

Attachment 2b shows the interim solution, should the TTC transitway not proceed concurrently with the York Region Plan. Under this scenario the median transitway starts immediately to the north of Crestwood Road.

Attachment 2c details the section through the Yonge Street bridge over the CN Rail line to just past the Clark Avenue Station. The standard transitway design as shown in Attachments 3a and 3b prevails throughout most of this portion of Yonge Street.

Attachment 2d illustrates the portion of Yonge Street that leads into old Thornhill and the Heritage District. From the Clark Station to the Arnold Avenue/Elgin Street intersection the standard transitway configuration is used. North of Arnold Avenue the road allowance begins to narrow. The landscaped centre median is discontinued approaching Thornridge Drive and the John Street station. The station platforms are located north (northbound) and south (southbound) of John Street. This is one of most constricted areas in the corridor and it will be a special design challenge.

Through the Arnold Avenue to Centre Street section, travel lane widths are reduced from 3.5 m to 3.25 m; the transit lanes are reduced from 3.5 m to 3.3 m; the boulevards are reduced from the standard 5.2 m to 3.2 m and the median landscaped strip is reduced from 4.0 m to 1.0 m. The 3.2 m boulevard section is composed of a 2.0 m sidewalk and a 1.2 m landscaping strip located adjacent to the travelled portion of the road. The plans still provide for street trees within this area. At the narrowest point between the buildings the resulting boulevards are reduced to 3.0 m.

The plan does not show the need for substantial land acquisitions on the Vaughan side of Yonge Street. However, if there were a decision to go to a 5.2 m boulevard throughout then additional land will have to be acquired. It is the intent of the plan to achieve the 5.2 m boulevards wherever practical, at the time of implementation, where cost effective acquisition is possible or through the site plan approval process at the time of development or redevelopment.

North of Centre Street, Attachment 2e shows the transitway continuing without the landscaped centre median and with narrowed boulevards until the entrance to the Toronto Ladies Golf Club. At this point, the landscaped median is reintroduced, the travel lane widths return to 3.5 m and the boulevards revert to 5.2 metres. This condition continues into the Royal Orchard Station.

From Royal Orchard to the Richmond Hill Intermodal Terminal the road configuration varies to accommodate local conditions, as shown in Attachments 2f and 2g. From Royal Orchard Boulevard to Helen Avenue the centre landscaped median has been eliminated and the boulevard widths continue to be variable. The travel lanes have also been reduced to 3.25 m in width. The Bunker Road to Langstaff Road section forgoes the median landscaping strip, with a variable boulevard width between Bunker and Longbridge Roads. Beyond Longbridge Road the boulevards return to a standard 5.2 m width.

Access to and from the Richmond Hill Intermodal Terminal (Attachments 2h and 2i) is obtained from Yonge Street, by way of Langstaff Road. The transitway, rather than crossing Highways 7 and 407 on Yonge Street, proceeds to the east at Langstaff Road and follows the path of the road allowance to the CN Rail Bala subdivision underpass, where it heads north, paralleling the rail line into the intermodal facility.

ii. Impact on Access to Municipal Roads and Private Properties

The introduction of the centre median for transit use will have the effect of limiting access to certain local streets and some individual properties, thereby reducing ingress and egress to right in-right out only. This prohibits two traffic movements: The left turn from northbound Yonge Street into the properties on the west side of Yonge; and the northbound left turn outbound from the properties. In order to ensure that access to the northbound and southbound lanes for customers/residents, employees and service vehicles is maintained, "U-turns" will be permitted at signalized intersections in order to allow traffic to and from these sites to backtrack in their desired direction.

Generally, the effects on Vaughan are relatively minor but a number of municipal roads and properties are affected. The area with the most constraints is the road section from Steeles Avenue to the signalized Meadowview Avenue/Auto Mall driveway intersection. The median is continuous between these two points, preventing north and southbound left turn access and egress to/from approximately six properties and Crestwood Road. Functionally, a number of

these properties already have left turn constraints as a result of the long queues of traffic during peak periods. Provided the "U-turn" at the Meadowview/Auto Mall intersection operates efficiently, the impact of the median can be mitigated for traffic coming from the south. For traffic emerging from the affected lots that wish to proceed northbound, a "U-turn" would have to take place at Steeles Avenue. Alternatively, such traffic could turn west on Steeles Avenue and proceed north on Hilda Avenue.

Between the Meadowview Avenue/Auto Mall intersection and the Arnold Avenue/Elgin Street intersection, only one minor access restriction is introduced. Both the signalized Glen Cameron Road/Apartment Complex intersection and the Clark Avenue intersection will remain. The existing full movement Yonge Street access to the commercial-residential development at the northwest corner of Yonge and Clark will become a right in – right out driveway.

Between the Arnold/Elgin intersection and the Centre Street intersection, a number of restrictions will be introduced as a result of the median. Old Jane Street loses the opportunity for left turns inbound and outbound movements to northbound Yonge Street. Similarly, left turn movements onto Thornridge Drive and onto northbound Yonge Street are prevented by the median. Access and egress to/from Thornridge Drive for residents can be obtained indirectly by the use of either Arnold Avenue or Centre Street. Alternatively, access from northbound Yonge Street can be obtained by making a "U-turn" at the John Street intersection, which is only 40 m to the north of Thornridge Drive. Similarly, access to the Yonge Street northbound lanes can be obtained by making a "U-turn" at the Elgin Street/Arnold Avenue intersection.

A number of private properties are similarly affected. A total of eight properties will not have full movement driveways to/from Yonge Street. Unlike the portion of Yonge Street near Steeles Avenue, the "U-turn" options (John and Centre Street intersections) are in close proximity, making the diversion relatively short.

From Centre Street to Royal Orchard Boulevard, there will only be minimal impact on adjacent properties. The lots immediately to the north of Centre Street currently have limited access to Yonge Street. Their driveway accesses are primarily from Old Yonge Street. The EA is proposing a mid-block intersection in the vicinity of the entrance to the Toronto Ladies' Golf Club. This will provide access to the Toronto Ladies Club as well as providing for a northbound "U-turn" opportunity for patrons of the Thornhill Country Club, which is across the street. The final location will be determined in consultation with the property owners during the design phase of the project. There are three properties immediately south of the Royal Orchard intersection. The northerly lot (the Church) will maintain its direct access by way of the intersection. The lot immediately to the south will have to be accessed from the northbound lanes by way of a "U – turn". This is also the situation for the primary access to the Thornhill Country Club, which is sixty metres south of the intersection.

From Royal Orchard Boulevard to Langstaff Road, there is currently only one signalized intersection, which is at Uplands Avenue. The EA recommends that three additional signalized, full movement intersections be introduced. They are to be located at Thornhill Avenue/Baythorn Drive, Bunker Road and at Longbridge Road (intersecting with a realigned driveway to Holy Cross Cemetery). Under this scenario only Helen Avenue would be reduced to right in – right out status.

The introduction of the new intersections, will serve to minimize the impact of the median transitway on the accessibility of the lots fronting onto Yonge Street. Those properties that have flankage on the intersecting streets will have left turn access from Yonge Street indirectly through these streets. The other lots will be better served because the "U turn" opportunities will be in closer proximity to the affected properties. In total, nine properties will have only right in – right out driveways.

Restricting the left turn access/egress to the properties with frontage onto Yonge Street will result in some inconvenience. The transitway is designed mitigate the impacts by providing for "U-turns" at the signalized intersections. For this response to be effective, the design of the intersections will have to ensure that the U-turns can be performed comfortably. In addition the people (customers/residents, employees, service vehicles) destined to or leaving the affected properties will need to be advised of how best to proceed. The EA acknowledges that traffic may attempt to use residential roads to gain access to specific sites. It recommends that this situation be monitored and remedial measures taken if it proves to be a problem.

iii. The Thornhill Heritage Conservation District

Currently Markham and Vaughan are jointly conducting the Thornhill Yonge Street Study. It focuses on the Thornhill Heritage Districts, which were designated by Vaughan and Markham under the *Ontario Heritage Act*. It will provide guidance to both the public and private sectors on the form of development and redevelopment in the area and on streetscaping within the public realm. The study is now nearing completion.

It is noted that there are some inconsistencies between the initial results of the Thornhill Yonge Street Study and the recommendations of the Yonge Street EA Study. For example, the EA Study shows, north of Centre Street, the elimination of sections of the proposed 4 metre landscaped median. Also, travel lane widths south of the Arnold Avenue/Elgin Street intersection are shown as 3.5 metres rather than the proposed 3.25 metre lane widths within the historic area. It is recommended that the Region continue to work with the municipalities to reconcile any discrepancies in order to maintain and optimize the heritage/streetscape character of the affected area. This review should be conducted during the detailed design of the project.

The EA Study acknowledges that there is the potential for disruption of built features and the visual environment in the Heritage Conservation Districts as a result of the transportation improvements. Under proposed mitigation measures (Table 11-2, p. 11-7) it indicates that the, "Detail design must address concerns of the community" and under "Further Mitigation" it proposes to, "Liaise with community and municipalities to obtain desired detail design solutions, especially for architectural treatment of stations in heritage districts."

Given the limited space through the Heritage Districts, the treatment of the flanking boulevards will also be a high priority. In some areas, the boulevards will be reduced to approximately 3.2 m. The completion of the Thornhill Yonge Street Study will provide an ideal opportunity to identify and resolve any issues surrounding the treatment of these critical pedestrian areas. A recommendation has been included advising the Region of the significance the City of Vaughan attaches to this area and the need to continue to work towards achieving the best possible results. As such, the Region will also need to ensure that the project budget is sufficient to ensure that the final design of the Yonge Street boulevards contributes to an attractive, pedestrian friendly environment.

Relationship to Vaughan Vision 2007

Implementation of the services envisioned by the York Rapid Transit Plan is consistent with the objectives of Vaughan Vision 2007. Under Section 3 "Transportation and Transit Infrastructure", Subsection 3.1 identifies the need to, "Support the TTC subway extension projects (Spadina and Yonge Street) with the Spadina line as the top priority. Evidence provided by the EA indicates that the introduction of a rapid transit service on Yonge Street may increase ridership volumes to a point where a subway extension is warranted. Further under Subsection 3.2, "Implement solutions to traffic gridlock", Paragraph 3.2.1 states, "Support the Region of York and other agencies to ensure higher order transit."

Conclusion

The implementation of the York Region Rapid Transit Plan will be an enormously positive step in the evolution of the Region of York and the affected local municipalities. The plan will promote the transformation of southern York Region into a more urban place by shaping the style and intensity of development in the affected corridors, supporting economic development, increasing public mobility and improving environmental quality by offering an alternative to the private automobile. For these reasons the approval of the Environmental Assessment should be supported.

The implementation of the undertaking entails some substantial changes to the Yonge Street road allowance. Yonge is the signature street in York Region acting as both a gateway and main artery. Therefore, it is important that it maintain the highest aesthetic standards possible. This imperative is compounded by the fact that it passes through some of the Region's most historic areas. Functionally, the introduction of the transitway will have an impact on access and egress to and from a number of sites. Mitigation measures include the ability to make "U-turns" at signalized intersections and the introduction of more signalized intersections north of Royal Orchard Boulevard.

A streetscape/landscape plan designed to mitigate the effects of the changes resulting from the transitway has been prepared and it is considered to be an appropriate response. Given the importance of this area, continued involvement of the municipalities and the affected communities will be essential to ensuring that the final designs meet expectations. This response will continue to be informed by the joint Markham-Vaughan Thornhill Yonge Street Study. A recommendation advising the Region of the importance of the area and the need for continuing involvement in the detail design process has been included.

The introduction of improved transit services is one of the precursors to intensification. If Yonge Street is to evolve into the urban street envisaged by the planning documents, the City of Vaughan will have the predominant role in ensuring that private development is attractive and pedestrian oriented. Particular care will have to be taken in ensuring that the character and quality of the Thornhill Heritage Conservation District is maintained. Other areas, like the lands closer to Steeles Avenue, will have greater long-term design flexibility in their potential for redevelopment, as a result of greater lot sizes and the wider municipal boulevards. When intensification begins to occur, a comprehensive assessment of the risks and opportunities should be considered with a view to putting appropriate policy responses in place.

On this basis, it is recommended that the Ministry of the Environment be advised that the City of Vaughan supports the approval of the Yonge Street Corridor Public Transit Improvements Environmental Assessment (July, 2005).

Attachments

Note: A copy of the Yonge Street Corridor Public Transit Improvements Environmental Assessment is available for review in the Clerk's Department.

1. Alternative Route Alignments: Figure 8.5, Primary Route Options;
2. Preferred Alignment for the Yonge Street Corridor:
 - a) Figure 10-1: Interface at Steeles Avenue to Meadowview Avenue (Link to TTC BRT);
 - b) Figure 10-2: Interim Interface at Steeles Avenue (Without link to TTC BRT);
 - c) Figure 10-3: Yonge Street bridge over CN Rail to north of Clark Avenue;
 - d) Figure 10-4: North of Clark Avenue to approaching Centre Street;
 - e) Figure 10-5: Centre Street to south of Royal Orchard Boulevard;
 - f) Figure 10-6: Royal Orchard Boulevard to Uplands Avenue;
 - g) Figure 10-7: Uplands Avenue to Langstaff Road;
 - h) Figure 10-8: Transitway on Langstaff Road;

- i) Figure 10-9: Langstaff Intermodal Terminal.
- 3. Standard Transitway Configurations:
 - a) Figure 10-23: Typical Transitway Cross-Section for BRT between Stations;
 - b) Figure 10-24: Typical Transitway Cross-Section for BRT at Station.

Report prepared by:

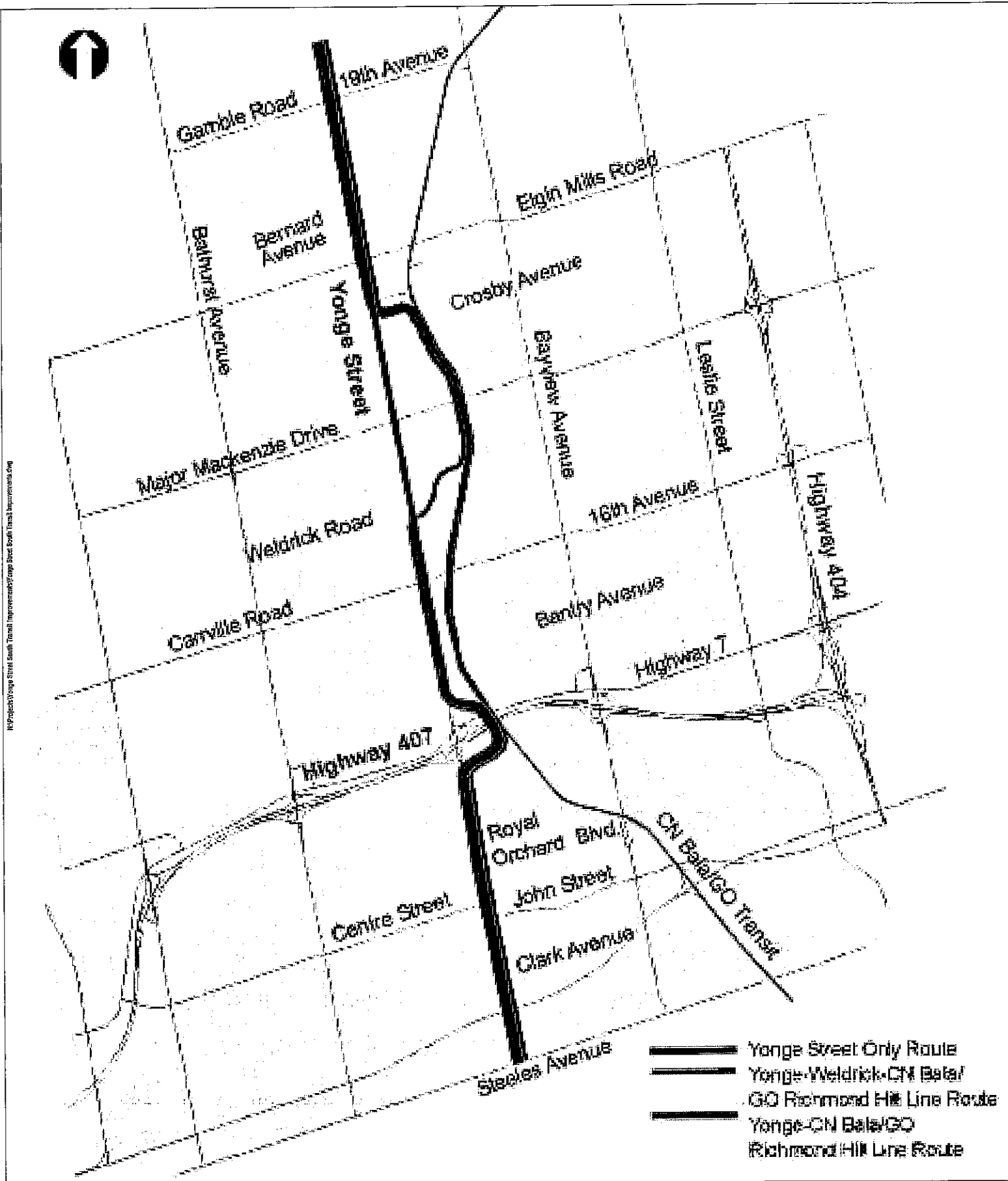
Roy McQuillin, Manager of Corporate Policy, ext. 8211

Respectfully submitted,

Bill Robinson
Commissioner of Engineering and Public Works

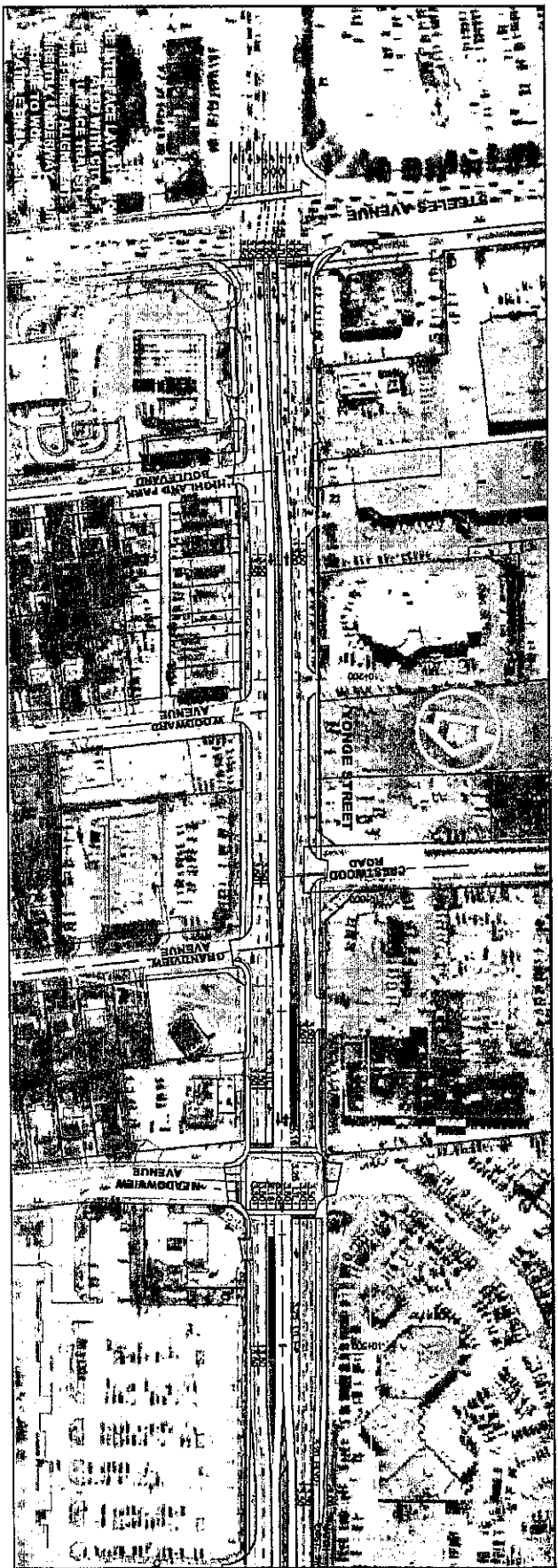
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Commissioner of Planning

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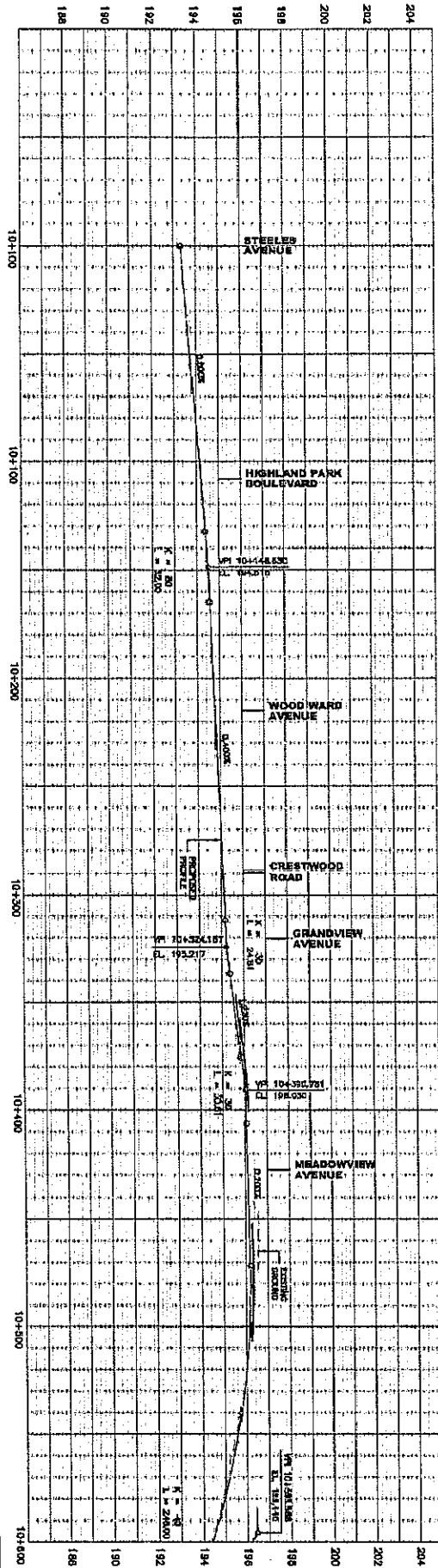


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Yonge Street Corridor Public Transit Improvements EA. Alternative Route Alignments



ULTIMATE INTERFACE DESIGN AT STEELES AVENUE



10-1

FIGURE

**PREFERRED ALIGNMENT
FOR THE YONGE STREET
CORRIDOR**

10-1

FIGURE

10-1

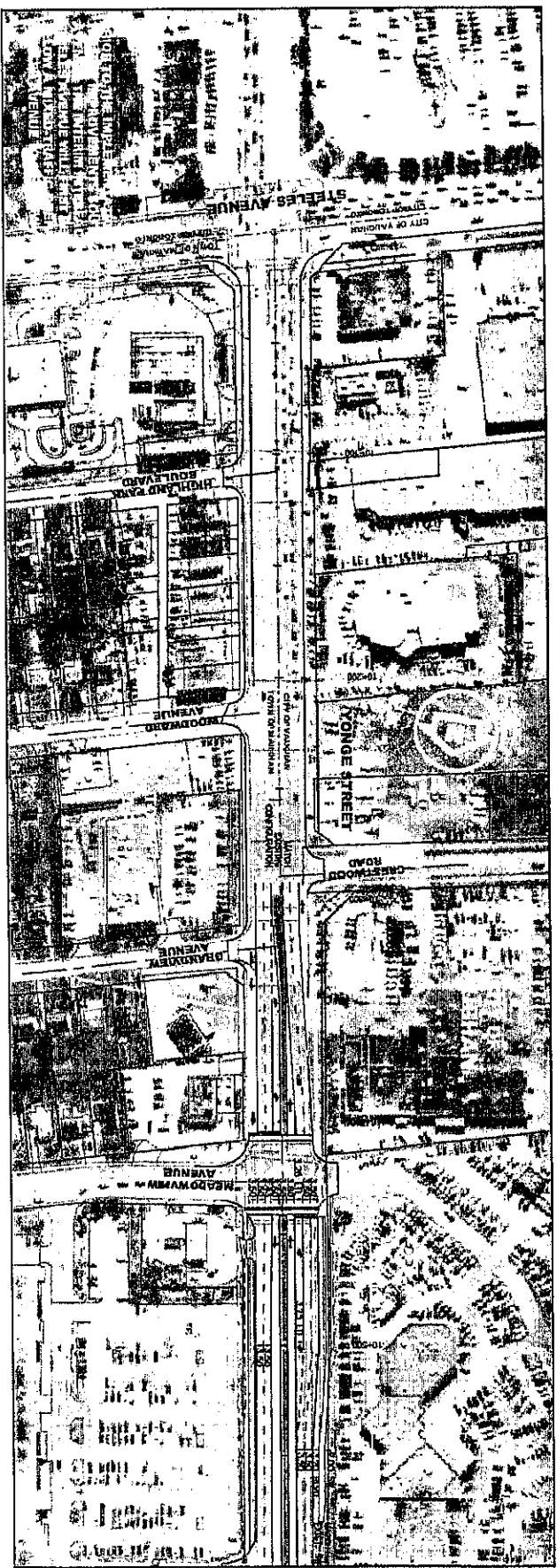
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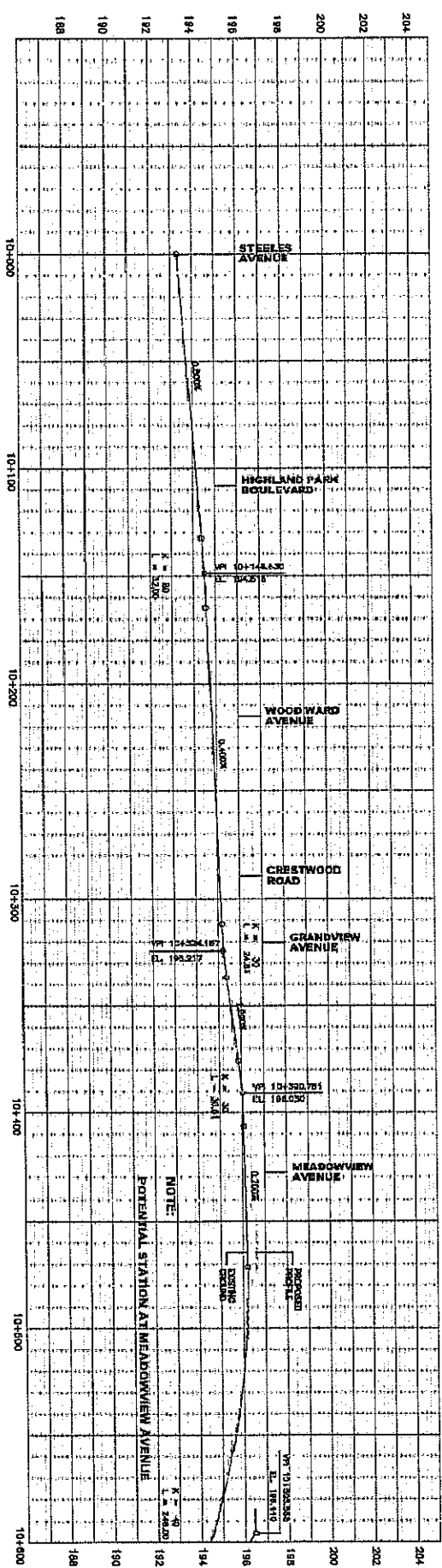
FIGURE

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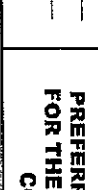
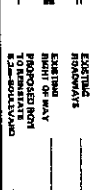
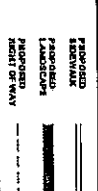
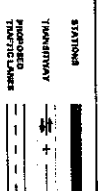
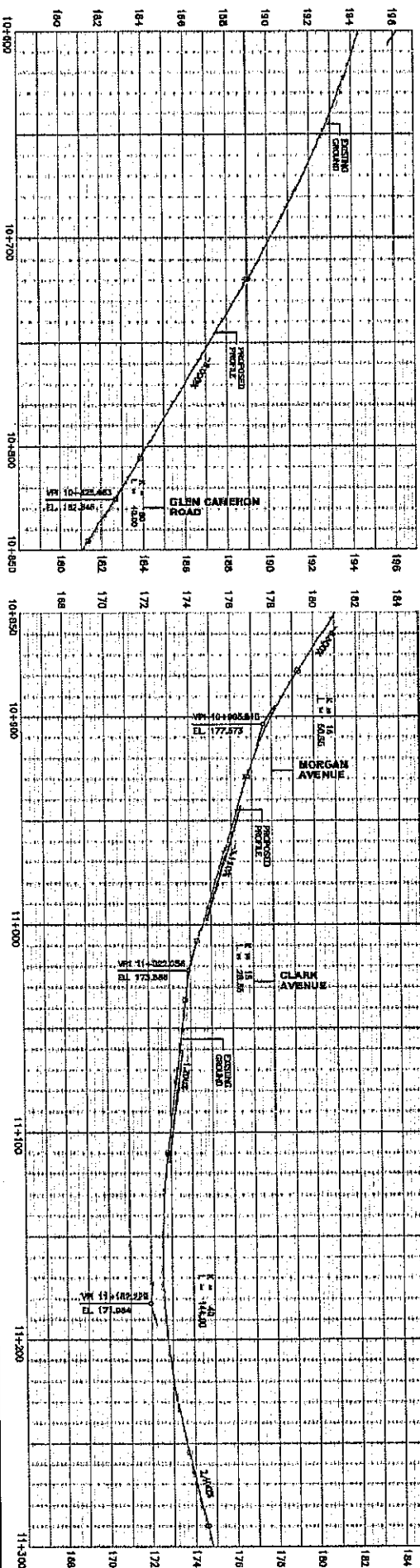
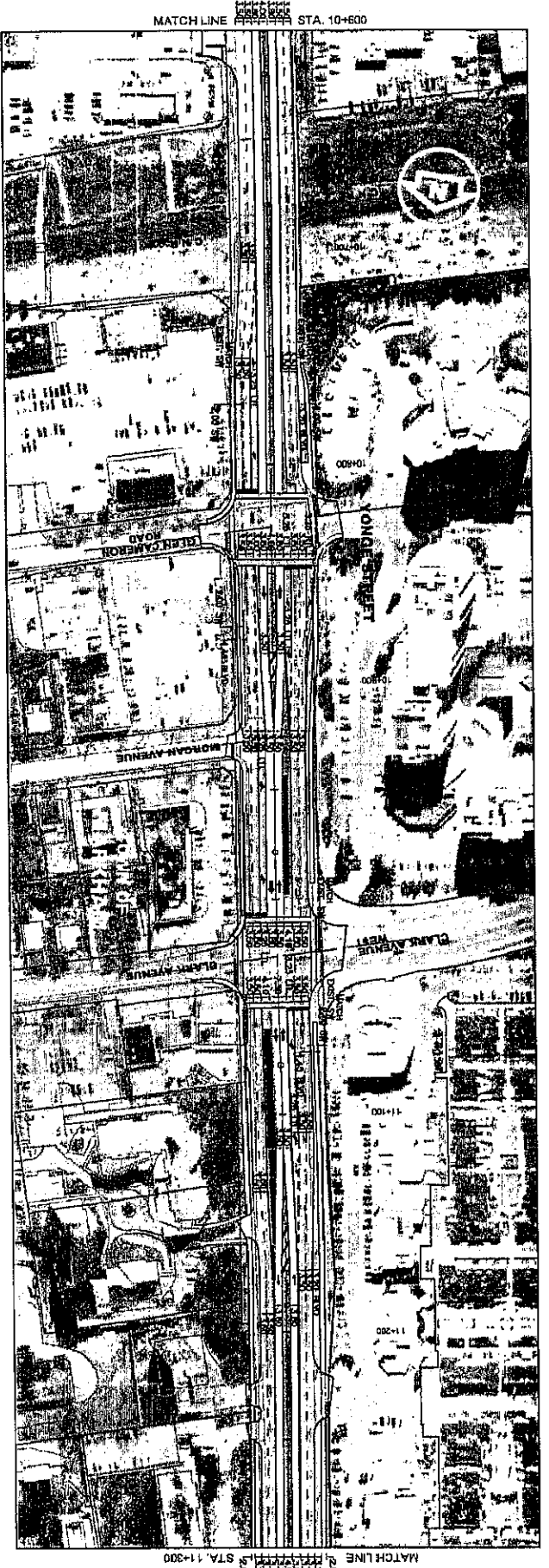
FIGURE



INTERIM INTERFACE DESIGN AT STEELES AVENUE



<p>10m 0 20m</p> <p>Horizontal</p> <p>Vertical</p> <p>SCALES</p>	<p>STANDARD</p> <p>TRANSITIVITY</p> <p>PROPOSED</p> <p>TRAFFIC LANE</p>	<p>PROPOSED</p> <p>ARCHWAY</p> <p>PROPOSED</p> <p>LANDSCAPE</p> <p>PROPOSED</p> <p>RIGHT OF WAY</p>	<p>EXISTING</p> <p>ROADWAYS</p> <p>EXISTING</p> <p>RIGHT OF WAY</p> <p>PROPOSED</p> <p>RIGHT OF WAY</p>	<p>PREFERRED ALIGNMENT FOR THE YONGE STREET CORRIDOR</p>	<p>10-2</p> <p>FIGURE</p>
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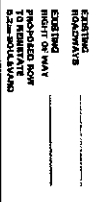
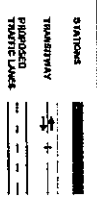
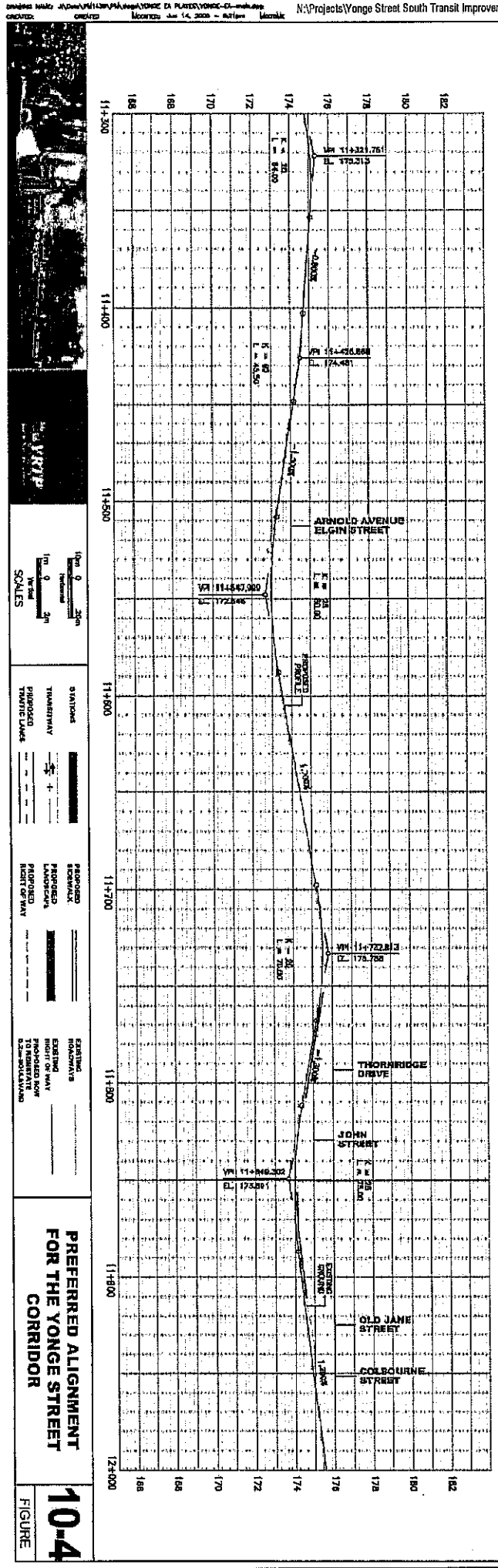
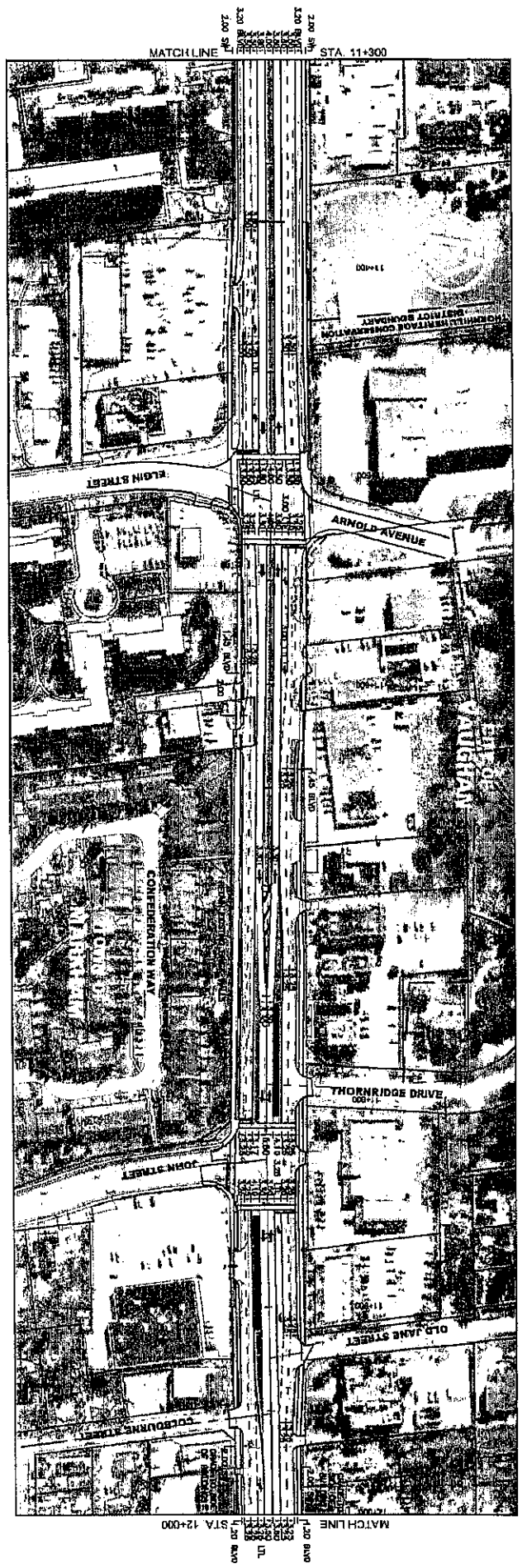


Yonge Street Corridor Public Transit Improvements EA.
Yonge Street bridge over CN Rail to north of
Clark Avenue

City of Vaughan
The City Above Toronto
Development Planning Department

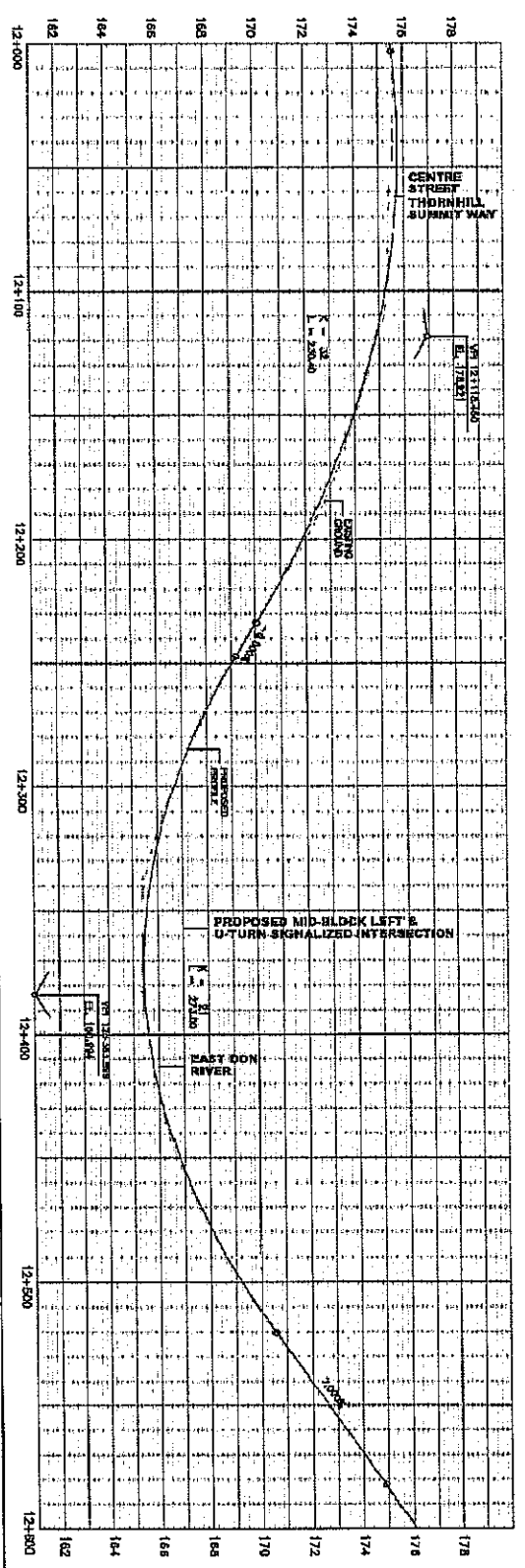
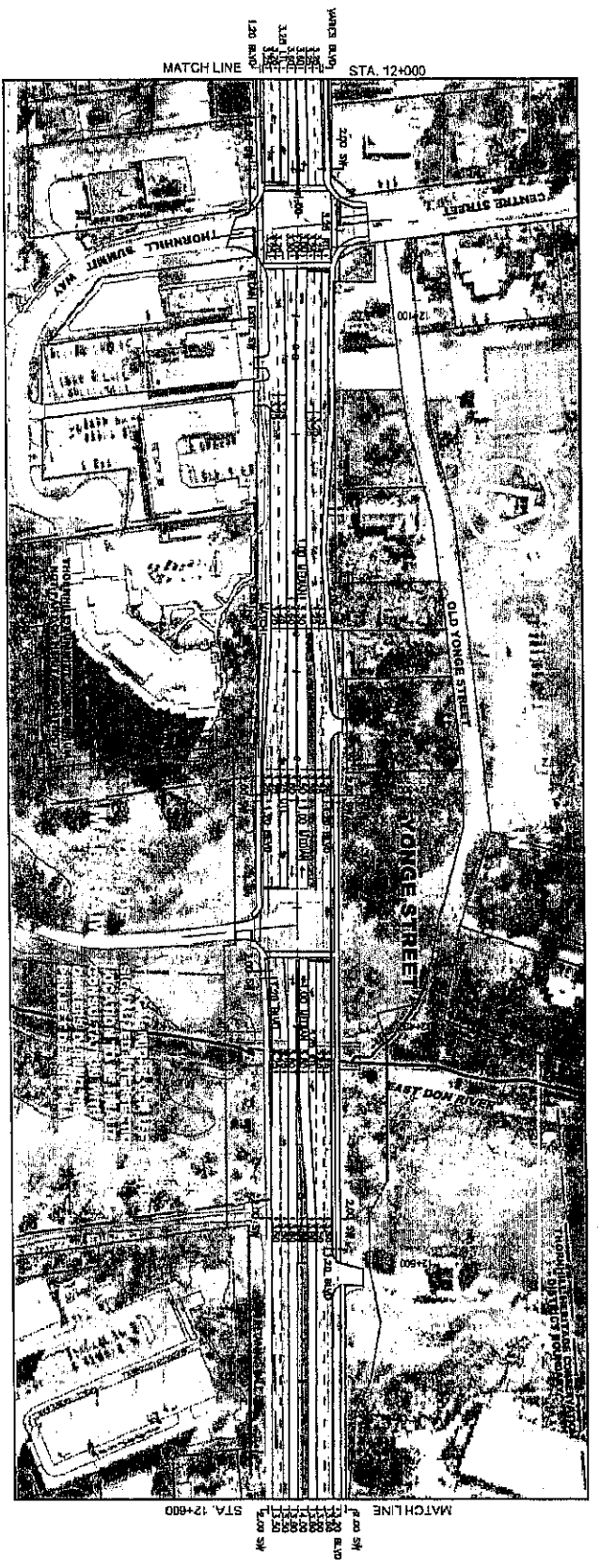
Attachment
File:
Transit Improvements
Date:
August 30, 2005
20

10-3
FIGURE



**PREFERRED ALIGNMENT
FOR THE YONGE STREET
CORRIDOR**

10-4
FIGURE



1" = 200'
 1" = 100'
 1" = 50'

STATIONS
 TRANSITWAY
 PROPOSED
 TRAFFIC LANE

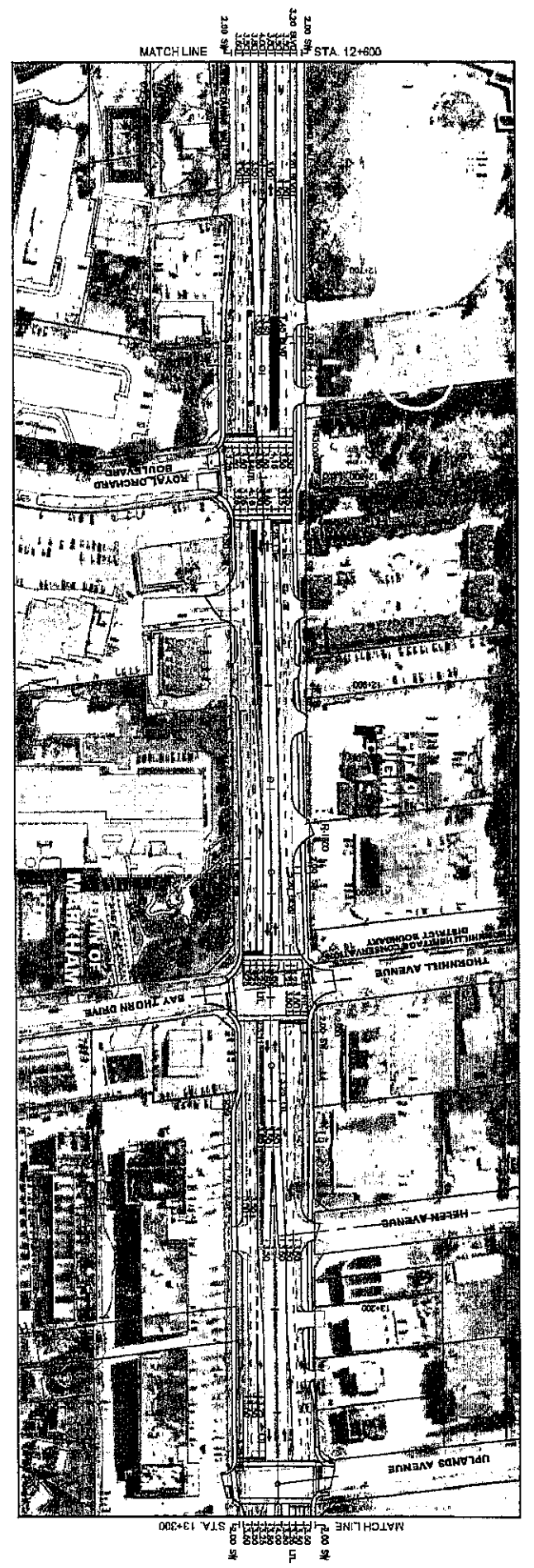
EXISTING
 PROPOSED
 LANDSCAPE
 RIGHT OF WAY

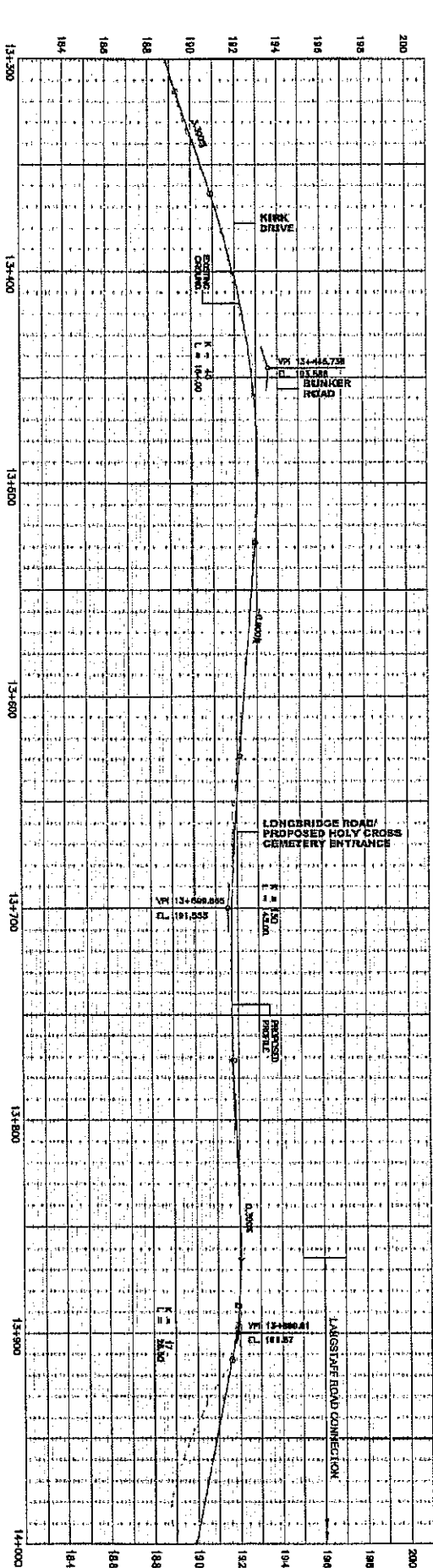
PREFERRED ALIGNMENT
 FOR THE YONGE STREET
 CORRIDOR

FIGURE
 10-5

Yonge Street Corridor Public Transit Improvements EA. Centre Street to south of Royal Orchard Boulevard

City of Vaughan
The City Above Toronto
 Development Planning Department



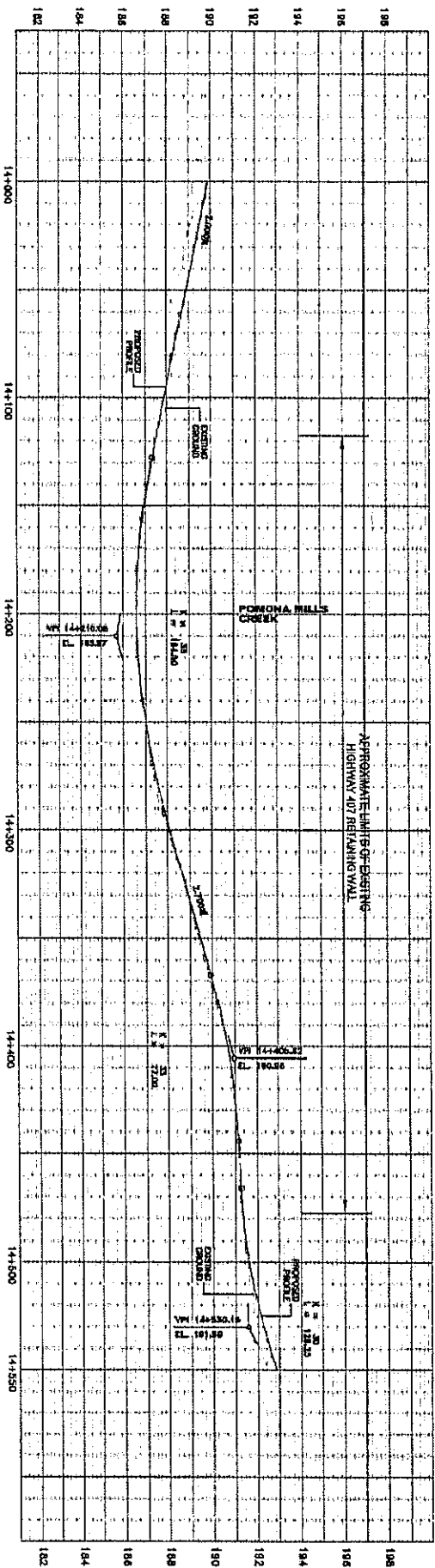


EXISTING ROADWAYS	EXISTING RIGHT OF WAY	PROPOSED ROW TO RESTATE 3.2m ROW/AVED

10-7
FIGURE

Attachment

File:
Transit Improvements
Date:
August 30, 2005



10-8
FIGURE

Attachment

File:
Transit Improvements
Date:
August 30, 2005

2h

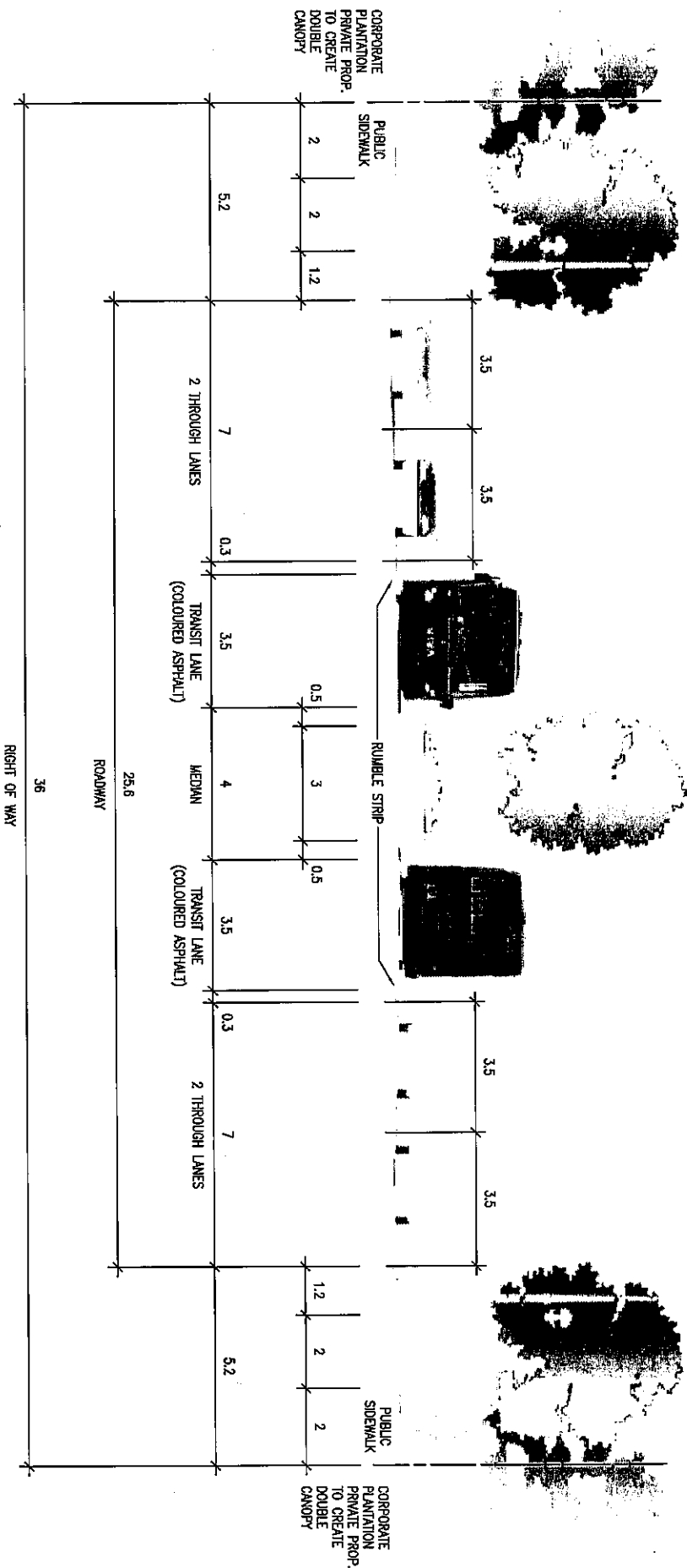
**The City of
Vaughan**

File:
Transit Improvements

August 30, 2005

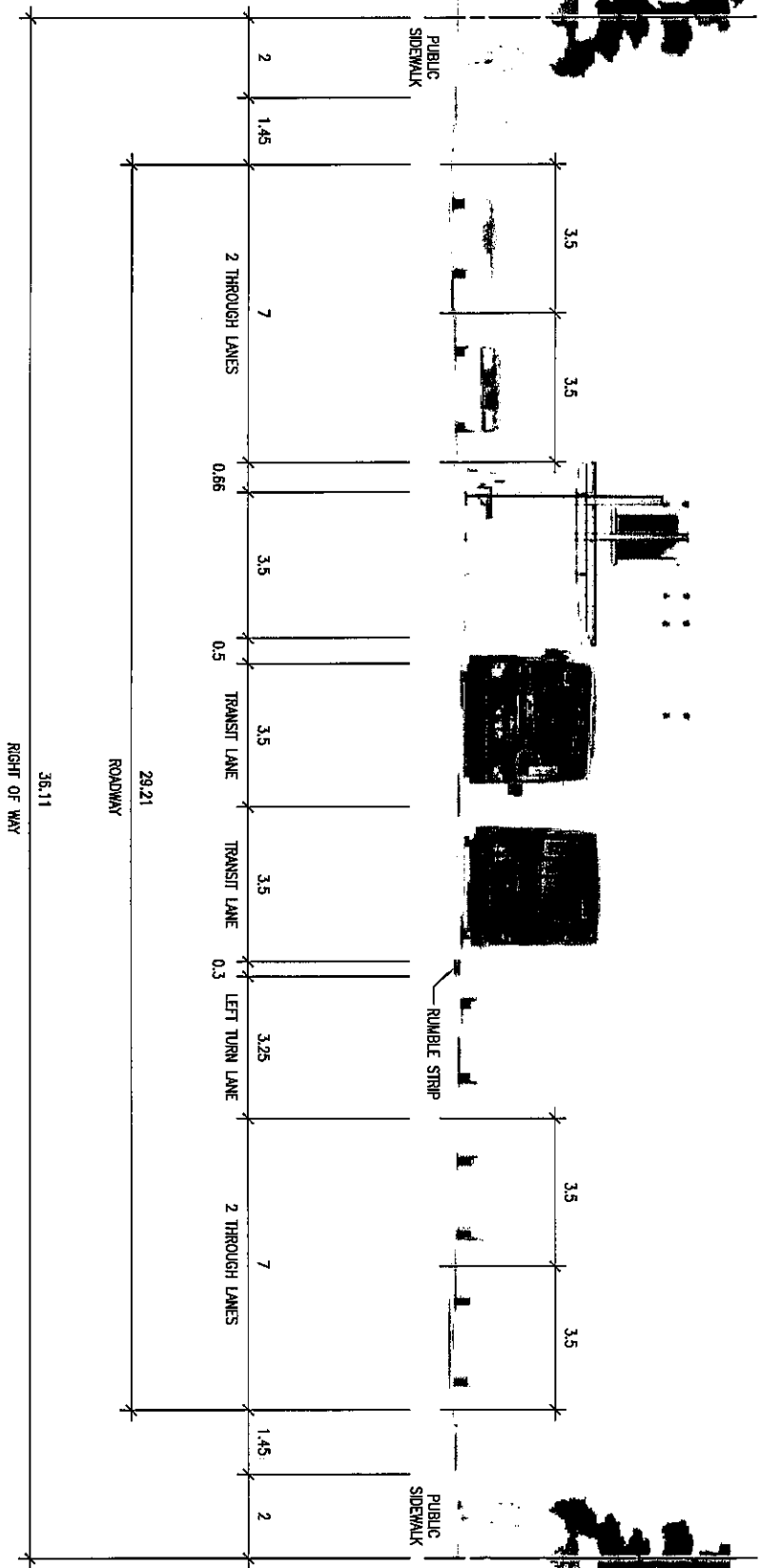


Typical Transitway Cross Section for BRT between Stations



Yonge Street Corridor Public Transit Improvements EA.
Standard Transitway Configuration

Typical Transitway Cross Section
for BRT at Station



Yonge Street Corridor Public Transit Improvements EA.
Standard Transitway Configuration