

## **4.0 ALTERNATIVE DESIGNS**

### **4.1 Roadway Cross Section**

#### **4.1.1 Travelled Pavement**

The roadway capacity analysis carried out in the Traffic Analysis and Planning Report assumed a lane width of 3.65 m (12'). For heavily travelled roadways the City has typically used a lane width of 3.65 m, (12 ft. -eg. Dougall Avenue, Huron Church Road and Howard Avenue) and has recently completed planning studies which have used a pavement width of 3.65 m. However, taking into account construction and property costs and the possible reduction or elimination of Provincial subsidy for roadway construction, a reduced lane width was considered.

Ministry of Transportation of Ontario and Transportation Association of Canada design standards indicate that a 3.5 m lane width is satisfactory for a multi-lane divided urban roadway with a design speed less than 80 km/hr. which is the case for Tecumseh Road East. The use of 3.5 m lanes would reduce construction cost by less than 2%. Because a reduced lane width could negatively affect capacity and accidents and to maintain consistency with current projects, the 3.65 m lane width was adopted.

Design standards suggest that left turn lanes of 3 m are adequate when the width of the median gutter is taken into account. However, because most intersections will have a number of turning trucks, the left turn lane width was set at 3.25 m for planning purposes. Similarly, where right turn lanes are indicated by high turning volumes, a width of 3.25 m was used.

As noted in Section 3.6.8 , Lauzon Road from Clairview to Hawthorn is paralleled by a designated future secondary bikeway. The City's Official Plan requires that arterial road upgrading projects examine the effectiveness of providing additional pavement to accommodate the City's plans for providing bicycle facilities. Accordingly, the curb lane width proposed for Lauzon Road includes a 1.5 m bikelane and 3.65 m vehicle lane. The bike lane is measured to the face of curb.

#### 4.1.2 Medians

A key component of the recommended solution is the inclusion of a raised median. There are several factors involved in selecting the width for the raised median:

- minimum width produces minimum cost
- adequate space as refuge area for pedestrians caught at the end of a walk cycle (particularly those using wheelchairs or motorized buggies)
- offset to traffic signal poles from the curb line
- continuity of through lanes

Taking into account the above factors, the offset to traffic signal poles dictates a minimum raised median width of 2.5m (edge of pavement to edge of pavement and assuming a 0.45 m gutter pan). This width would provide a 1.6m refuge area which is considered sufficient.

The 2.5m raised median in intersection areas plus the 3.25m left turn lane creates a median area (space between through lanes) of 5.75m. In a typical mid-block areas where no left turn lanes are required, the median area could be reduced to 2.5m (2m would be the minimum because there are no signal pole hazards). This would result in a horizontal deflection of about 1.6m (3.25m left turn lane width split equally on each direction). This deflection of traffic would have a negative affect on traffic capacity and safety but maintaining the 5.75 median area would add extra construction cost. Therefore, to maintain capacity and safety it was agreed to maintain a wide median area but to reduce the mid-block median area width to 5m. The result will be a 0.375m deflection which is considered acceptable.

On other roadways in the Improvement Corridor, raised medians are required only in intersection areas.

In addition to median width, median type was examined. Four median types were compared:

- wide median with a 560 mm high barrier curb
- concrete median barrier with flush shoulders

- concrete median barrier with mountable curbs at edge of pavement
- wide median with 250 mm high barrier curb.

The details of the comparison of these alternatives are included in Appendix C.

For cost and safety reasons, the wide median 250 mm high was selected as the preferred alternative. Its accident reduction potential is good, although less than the concrete median barrier, and is easier to design and build because severe height transitions are not required.

### **4.1.3 Boulevard**

The width of the boulevard is based on accommodating sidewalks and illumination poles as well as providing distance between the sidewalk and roadway for comfortable pedestrian use. A reasonable boulevard for a major arterial would be 4.0 m as shown on Figure 4.1. Depending on the right-of-way adopted and difficulties in obtaining property, the boulevard width could vary slightly.

### **4.1.4 Typical Cross Sections**

#### **4.1.4.1 Tecumseh Road East**

Figure 4.2 shows the cross section elements for Tecumseh Rd. E. as previously adopted, including 3.65m travelled lanes and a 5m wide raised median. As called for in the Official Plan, 36m was adopted for planning purposes as the basic right-of-way ( Class I Arterial). The resulting boulevard is 4.175m, with the extra width allocated for utilities behind the sidewalk.

#### **4.1.4.2 Jefferson Boulevard**

As shown on Figure 4.2, the cross section elements for Jefferson Blvd. will generally fit on the existing 26.2m (86 ft.) right-of-way. Included is a 4m TWLTL which is slightly wider than the adjacent through lanes to provide a higher comfort level for motorists using the turning lane and lower the probability of improper use affecting through lanes. Additional right-of-way width is required for the channelized intersection at Tecumseh Rd. E.

#### 4.1.4.3 Lauzon Road

Figure 4.2 shows 3.65m inside through lanes and 4.7m curb lanes on Lauzon Rd. The 4.7m curb lane accommodates a 1.5m dedicated bikelane. A 3.65 m TWLTL was included. Generally, this section will fit on the existing 26.2 m (86') right-of-way.

These cross sections have been used in the development of alternative designs in the following sections.

#### 4.1.5 Planning Criteria

The following criteria were used in the development of alternative alignments and designs:

1. Road Classification	- Tecumseh Rd. E.	-	Urban Arterial Divided
	- Jefferson Blvd.	-	Urban Arterial Undivided
	- Lauzon Rd.	-	Urban Arterial Undivided
2. Speed - design		-	70 km/hr.
- posted		-	60 km/hr.
3. Basic Number of Lanes	- Tecumseh Rd. E.	-	3 (each direction)
	- Jefferson Blvd.	-	2 (each direction)
	- Lauzon Road	-	2 (each direction)
4. Through Lane Width		-	3.65m
5. Auxillary Lane Width		-	3.25m
6. Medians	- Tecumseh Rd. E.	-	2.5 m raised (min) 5.0 m raised (max)
	- Jefferson Blvd.	-	4m (TWLTL)
	- Lauzon Rd.	-	3.65m (TWLTL)
7. Sidewalks		-	1.5 (min)
8. Minimum Horizontal Curvature		-	190 m (@6% super elevation)
9. Boulevard Width (typical distance edge of pavement to front of sidewalk)		-	Tecumseh Rd.E. - 1.5m
		-	Jefferson Blvd. - 1.2m
		-	Lauzon Rd. - .65m
10. Basic Right-of-Way Width Roadway		-	Tecumseh Rd. E. - 36m
		-	Jefferson Blvd. - 26.2 (existing)
		-	Lauzon Rd. - 26.2 (existing)

## **4.2 Alternative Alignments**

### **4.2.1 Evaluation Methodology**

A major part of Phase 3 of the Class E.A. process involves the development and evaluation of alternative designs based on the recommended solution. In this study, the main problem was identified as insufficient traffic capacity in the existing roadway corridors. The solution identified in Phase 2 (widening of existing roadways) can be accommodated generally within the existing corridors. Alternative designs which implement the widening solution in the existing corridors are very concentrated and the differences between the alternatives relative to their traffic operation effectiveness, construction cost and adherence to desirable design standards was considered negligible. For example, where raised medians are called for in the recommended solution, travel patterns to existing businesses will be affected; however, these effects are deemed to be comparable to all alternative designs, i.e. their differences are negligible. Similarly, the opportunity to provide effective areas to turn around, necessitated by the raised median, are deemed equal to all alternatives.

The main area where design alternatives differ is their impacts on abutting properties. Because the operational characteristics of the design alternatives are considered comparable, to establish the relative property impacts, only alternative alignments incorporating the typical right-of-way requirements were developed. The following criteria were adopted for comparing alternative alignments and a brief description of each follows:

- number of properties affected
- area of property required for right-of-way
- estimated property costs
- number of businesses affected
- estimated number of buyouts
- potential effects on business viability

### Number of Properties Affected

This involves a count of all existing residential and business properties where negotiations will be required to purchase property for right-of-way requirements. It is an indication of the general property effects of each alternative alignment.

### Area of Property Required

This criteria is included for situations where a small number of properties are significantly affected. The total area required could be higher for a smaller number of properties impacted. The measurement is based on a calculation of the area required as shown on Figures 4.4A-F.

### Estimated Property Cost

This comparison criteria reflects the extent to which alternative alignments affect land or business operations of varying value. Typical unit costs for various land classifications were provided by the Property Department and applied to the area calculations. This measurement includes any buyout cost or business viability allowance. The estimates are presented as low, moderate, or high according to the following definition:

low	<	\$100,000
moderate		\$100,000 - \$250,000
high	>	\$250,000

### Number of Businesses Affected

This is an indication of the general economic effects when, for example, alternative alignments affect existing business versus residential properties where redevelopment is planned. Vacant businesses were not counted.

### Estimated Buyouts

Where properties appear to be impacted in a major way, estimates were made as to whether continued use of the remaining property was possible. If not, they were identified

as a "buyout" and a cost estimate was included to buy the total property, whether business or residence. The tables include a count of the locations and the estimated cost is included under the criterion Estimated Property Cost.

#### Business Viability Impacts

Where businesses, in particular, appeared to be impacted such that continued profitable operation might be affected, a viability impact was identified. An example would be reduction of parking which might limit customers. Similar to "Estimated Buyouts", locations of viability impacts were counted. Costs are included under the Estimated Property Cost item.

#### Other Criteria

For some evaluations, additional criteria were used such as "alignment compatibility with existing roadways". However, they are used only where appropriate and are considered self-explanatory.

#### **4.2.2 Jefferson Boulevard**

The traffic flow analysis at the Tecumseh Rd. E. - Jefferson Blvd. Intersection, using Passer 2<sup>13</sup>, was adjusted several times to approach optimum levels of service on the critical traffic movements. The resulting lane configuration is as follows:

- left turn lane on both north and south legs
- 2 through lanes north bound (outside lane dropped north of Diamonds)
- 1 through lane south bound
- north bound right turn lane
- south bound right turn lane

The existing conditions in the area of this intersection are shown on Figure 4.3. The right-of-way on the north side of Tecumseh Road E. is 20 m while on the south side, it is 26.2 m.

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<sup>13</sup> Passer 2 is a computer analysis tool used by Traffic Engineering Department to establish timing for a group of traffic signals.

The 6.2 m difference in right-of-way width is split approximately equally on both sides and the alignment is straight.

Figure 4.3 shows 3 intersection quadrants occupied by businesses:

- northwest - Sofos Submarine, Onyx Engineering, Adaptable Software and Tally Ho Distributing
- northeast - Diamonds, Sassy Scissors, Attard Clothing
- southeast - Vallant Tool and Machine Inc.

The southwest corner is vacant and is zoned commercial (previously occupied by Esso gas station). North of the commercial development on the north side are residences. Offsets from the right-of-way to houses on the west side are in the order of 5.5 m while on the east side, houses are set back about 10m.

On the northeast side, a laneway has been incorporated into Diamonds parking area. Slightly further north on the west side, a laneway serves the rear of the businesses on Tecumseh Road E. just west of Jefferson Blvd.

The alignment concepts examined for Jefferson Blvd. At Tecumseh Road E. were:

- Alternative 1 - use centreline of existing right-of-way
- Alternative 2 - hold the west right-of-way and widen to the east
- Alternative 3 - hold the east right-of-way and widen to the west

For either Alternative 1 or 2, which require widening to the east, Diamonds would be affected to the extent that a costly buyout is required. For Alternative 1, Sofos would be affected as well. Since Alternative 1 affects both sides and there are no offsetting benefits, it was abandoned and only Alternatives 2 and 3 were analyzed. Therefore, one side or the other is affected, not both.

Figure 4.3 shows the alignments for Alternative 2 and Alternative 3 respectively. Operationally, the two alignments are comparable and the only reasonable comparison criteria are property impacts.



**TABLE 4.1**  
**TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT**  
 JEFFERSON BLVD. TO BANWELL ROAD  
**ALIGNMENT EVALUATION - JEFFERSON BOULEVARD**

EVALUATION CRITERIA	ALTERNATIVE 2	ALTERNATIVE 3
NUMBER OF PROPERTIES AFFECTED	9	11
AREA OF PROPERTY REQUIRED (sq.m.)	866	677
ESTIMATED PROPERTY COST	HIGH	HIGH
NUMBER OF BUSINESSES AFFECTED	3	2
ESTIMATED BUY-OUTS	3	0
BUSINESS VIABILITY IMPACTS	0	2
<b>SUMMARY</b>	- major impacts result from closeness of Diamonds to the existing R.O.W. - higher property cost	- property impacts considered lower  <div style="text-align: center; background-color: #cccccc; padding: 2px;"><b>PREFERRED</b></div>

The following criteria were used:

- number of properties affected
- number of businesses affected
- number of buyouts
- area of property required
- property cost

Table 4.1 summarizes the evaluation of alternatives relative to the evaluation criteria. As shown, the overall property impacts of **Alternative 3** are lower and it was identified as the **recommended alternative** by the Project Team.

#### **4.2.3 Tecumseh Road East Alignment**

##### **4.2.3.1 Corridor Review**

Prior to proceeding with development of alternative alignments, it is appropriate to examine the existing right-of-way. Figure 3.6 shows the approximate right-of-way widths at spot locations along the Corridor. Examination of the various right-of-way widths and where they occur help in the development of design alternatives. For example, from Rose City Ford to Lauzon Parkway much of the right-of-way on the south side has been already widened consistent with an overall 36 m right-of-way. Similarly on the north side, although not as extensive, widenings have occurred to create the full 36 m. Between Lauzon Parkway and Lauzon Road, the right-of-way has been widened, primarily to the north, to about 34 m to accommodate a continuous left turn lane. The remainder of the right-of-way to the east City Limits reflects a basic 30 m (100') right-of-way.

The existing and future land use pattern in the Improvement Corridor shows differing characteristics for different sections which are factors in developing and evaluating alignments. The existing development pattern on the south side of the Corridor is consistent with the City's Official Plan and little or no change from existing is anticipated. The exceptions are the areas either side of Little River and from Robinet Lane easterly where the existing land use and designations are expected to change. In contrast on the north side, where the land use designation is industrial, considerable change is expected within the 20 year study period.

Because of the differing characteristics, the Improvement Corridor was broken into 6 sections, as shown on Figure 3.6 and on Figures 4.4A-F, to facilitate evaluation of alternatives for Tecumseh Rd. E. The sections and their main characteristics are summarized below.

<b>Section</b>	<b>Main Characteristics</b>
1	<ul style="list-style-type: none"><li>- 24 m right-of-way</li><li>- development mature both sides</li></ul>
2	<ul style="list-style-type: none"><li>- mature commercial development south side</li><li>- industrial redevelopment expected on north side</li><li>- allowance for 36 m right-of-way already made for majority of south side</li></ul>
3	<ul style="list-style-type: none"><li>- 34 m right-of-way</li><li>- mature commercial development on south side</li><li>- shopping centre occupies most of north side</li></ul>
4	<ul style="list-style-type: none"><li>- 30 m right-of-way</li><li>- mature development on north side</li><li>- redevelopment pending on south side</li><li>- shopping centre occupies about 1/3 of north side</li></ul>
5	<ul style="list-style-type: none"><li>- 30 m right-of-way</li><li>- mature residential area on south side</li><li>- redevelopment expected on north side</li></ul>
6.	<ul style="list-style-type: none"><li>- 30 m right-of-way</li><li>- existing business on both sides and redevelopment expected</li></ul>

#### 4.2.3.2 Alignment Alternatives

Three basic approaches to implementing the widening of Tecumseh Road E. to 6 lanes considered:

Alternative 1. Centre of the existing road (approximately centre of right-of-way).

Alternative 2. Hold the south right-of-way limit and widen only to the north.

Alternative 3. Hold the north right-of-way limit and widen only to the south.

Centreline alignments were developed and the necessary right-of-way identified according to the typical cross section. The edges of pavement and intersection designs were not developed on each alternative as there was no evaluation factor requiring that level of detail.

##### **Alternative 1**

Figures 4.4 A-F show the alignment concept developed for Alternative 1. It generally coincides with the existing roadway centreline which is basically centred in the right-of-way except for the widened areas noted previously. The right-of-way was offset 18 m either side of centreline consistent with the typical section for Tecumseh Rd. E. The alignment is a best fit of the alignment controls.

##### **Alternative 2**

Figures 4.4 A-F show the alignment concept developed for Alternative 2. Because of the variations in the south right-of-way, it was necessary to select control points for the alignment. Controls at the east limit of Rose City Ford and at Swiss Chalet take advantage of the earlier widening in this area to accommodate a 36 m right-of-way. Between Lauzon Parkway and Lauzon Road, the general south limit controlled the centreline. Maintaining the concept at the Jefferson intersection involves a considerable shift to the north and a reverse curve system opposite Rose City Ford to connect the alignments. East of Lauzon Road, the control points are set according to the south right-of-way tangents. Alternative 2 requires a set of reverse curves at both ends to match to existing pavements.

### **Alternative 3**

Figures 4.4 A-F show Alternative 3 developed similar to Alternative 2 based on a set of control points using the north right-of-way limits. The alignment is a best fit on the control points and like Alternative 2, reverse curves are required at each end to match existing pavements.

#### **4.2.3.3 Evaluation of Alternative Alignments**

The following tables show the evaluation on a section by section basis.

Review of the evaluation tables shows that, generally, the differences between alternatives are small. However, a recommended alternative for certain section was reasonably clear and following those selections compatibility with the already preferred sections in some cases, became a deciding factor.

#### **Section 1**

In a previous section of the report, Alternative 3 was identified as the preferred alternative for Jefferson Blvd. at Tecumseh Rd. E. That concept involves maintaining the east property line of Jefferson Blvd. and widening to the west. As shown in Table 4.2A, in Section 1, concentration of property impacts along with those resulting from Jefferson Blvd. and compatibility with the existing alignment to the west were deemed important factors.

Although Alternative 2 has greater concentration of property impacts in the northwest quadrant, it also severely impacts the northwest quadrant resulting in concerns for business viability. **Alternative 1** concentrates property impacts, matches the existing roadway alignment to the west, and was identified as the **recommended alternative**.

#### **Section 3**

Before reviewing Section 2, Section 3 was examined. Table 4.2B shows that **Alternative 2** causes less overall property impact and therefore was identified as the **recommended alternative**.

**TABLE 4.2A**  
**TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT**  
 JEFFERSON BLVD. TO BANWELL ROAD  
**ALIGNMENT EVALUATION - TECUMSEH ROAD EAST**

<b>SECTION 1</b>				
<b>EVALUATION CRITERIA</b>		<b>ALTERNATIVE 1</b>	<b>ALTERNATIVE 2</b>	<b>ALTERNATIVE 3</b>
NUMBER OF PROPERTIES AFFECTED	CHANGE EXPECTED	--- (1)	---	---
	NO CHANGE	13	8	5
AREA OF PROPERTY REQUIRED	CHANGE EXPECTED	---	---	---
	NO CHANGE	3054	3111	3071
ESTIMATED PROPERTY COST (2)	CHANGE EXPECTED	---	---	---
	NO CHANGE	HIGH	HIGH	HIGH
ESTIMATED BUY-OUTS	CHANGE EXPECTED	---	---	---
	NO CHANGE	3	5	4
NUMBER OF BUSINESSES AFFECTED	CHANGE EXPECTED	---	---	---
	NO CHANGE	30	22	8
BUSINESS OPERATION IMPACTS	CHANGE EXPECTED	---	---	---
	NO CHANGE	6	10	2
ALIGNMENT COMPATIBILITY WITH EXISTING PAVEMENT		- good, matches existing	- poor, requires 6m. shift to south	- poor, requires 6m shift to north
COMPATIBILITY WITH JEFFERSON BLVD.		- preferred Jefferson Blvd. alignment impacts heavily in the northwest quadrant - this alternative consolidates impacts in northwest quadrant and adds impacts in the north-east quadrant	- preferred Jefferson Blvd. alignment impacts heavily in the northwest quadrant - this alternative also impacts heavily on the northeast quadrant thereby spreading out impacts and creating viability concerns	- preferred Jefferson Blvd. alignment impacts heavily in the northwest quadrant - this alternative also impacts heavily on the south side and also spreads out impacts
SUMMARY		- aggregates property impacts - good match to existing alignment to west	- more buy-outs and viability impacts - short taper to reduce impacts west of Balfour may have negative affect on traffic operation	- more buy-outs - have major impact in north-west quadrant from Jefferson regardless - short taper to reduce impacts west of Balfour may have negative affect on traffic operation
		<b>RECOMMENDED</b>		

(1) No change in land use expected on either side.

(2) \$152,700 \$325,000 - land acquisition cost and additional buyout or viability costs respectively

**TABLE 4.2B**  
**TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT**  
 JEFFERSON BLVD. TO BANWELL ROAD  
**ALIGNMENT EVALUATION - TECUMSEH ROAD EAST**

<b>SECTION 3</b>				
<b>EVALUATION CRITERIA</b>		<b>ALTERNATIVE 1</b>	<b>ALTERNATIVE 2</b>	<b>ALTERNATIVE 3</b>
<b>NUMBER OF PROPERTIES AFFECTED</b>	<b>CHANGE EXPECTED</b>	-- (1)	--	--
	<b>NO CHANGE</b>	14	4	10
<b>AREA OF PROPERTY REQUIRED</b>	<b>CHANGE EXPECTED</b>	--	--	--
	<b>NO CHANGE</b>	1188	1154	1189
<b>ESTIMATED PROPERTY COST</b>	<b>CHANGE EXPECTED</b>	--	--	--
	<b>NO CHANGE</b>	LOW	LOW	LOW
<b>ESTIMATED BUY-OUTS</b>	<b>CHANGE EXPECTED</b>	--	--	--
	<b>NO CHANGE</b>	0	0	0
<b>NUMBER OF BUSINESSES AFFECTED</b>	<b>CHANGE EXPECTED</b>	--	--	--
	<b>NO CHANGE</b>	15	4	11
<b>BUSINESS OPERATION IMPACTS</b>	<b>CHANGE EXPECTED</b>	--	--	--
	<b>NO CHANGE</b>	0	0	0
<b>SUMMARY</b>			- least overall property impact and those impacts on outer fringe of large parking area <b>RECOMMENDED</b>	

(1) No change in land use expected on either side.

**TABLE 4.2C**  
**TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT**  
 JEFFERSON BLVD. TO BANWELL ROAD  
**ALIGNMENT EVALUATION - TECUMSEH ROAD EAST**

<b>SECTION 2</b>				
<b>EVALUATION CRITERIA</b>		<b>ALTERNATIVE 1</b>	<b>ALTERNATIVE 2</b>	<b>ALTERNATIVE 3</b>
<b>NUMBER OF PROPERTIES AFFECTED</b>	<b>CHANGE EXPECTED</b>	16 (1)	16	0
	<b>NO CHANGE</b>	3	3	7 (2)
<b>AREA OF PROPERTY REQUIRED</b>	<b>CHANGE EXPECTED</b>	2076	2671	0
	<b>NO CHANGE</b>	866	525	3550
<b>ESTIMATED PROPERTY COST</b>	<b>CHANGE EXPECTED</b>	MODERATE	MODERATE	LOW
	<b>NO CHANGE</b>	LOW	LOW	MODERATE
<b>ESTIMATED BUY-OUTS</b>	<b>CHANGE EXPECTED</b>	0	0	0
	<b>NO CHANGE</b>	0	0	0
<b>NUMBER OF BUSINESSES AFFECTED</b>	<b>CHANGE EXPECTED</b>	6	6	0
	<b>NO CHANGE</b>	3	3	8 (3)
<b>BUSINESS OPERATION IMPACTS</b>	<b>CHANGE EXPECTED</b>	0	1	0
	<b>NO CHANGE</b>	0	0	0
<b>SUMMARY</b>		- more impact in stable area - 2m shift to north required to match Alt 2 in Section 3	- least impact in stable area - best match with Alt 2 in Section 3 - best match with Alt 1 in Section 1	- highest impact in stable area - worst match with Alt 2 in Section 3
			<b>RECOMMENDED</b>	



**TABLE 4.2D**  
**TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT**  
 JEFFERSON BLVD. TO BANWELL ROAD  
**ALIGNMENT EVALUATION - TECUMSEH ROAD EAST**

**SECTION 4**

EVALUATION CRITERIA		ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
NUMBER OF PROPERTIES AFFECTED	CHANGE EXPECTED	9 (1)	0	9
	NO CHANGE	13	13	0
AREA OF PROPERTY REQUIRED	CHANGE EXPECTED	1677	0	3946
	NO CHANGE	2417	3755	0
ESTIMATED PROPERTY COST	CHANGE EXPECTED	LOW	\$0	LOW
	NO CHANGE	LOW	LOW	\$0
ESTIMATED BUY-OUTS	CHANGE EXPECTED	0	0	0
	NO CHANGE	0	1	0
NUMBER OF BUSINESSES AFFECTED	CHANGE EXPECTED	0	0	3
	NO CHANGE	8	5	0
BUSINESS OPERATION IMPACTS	CHANGE EXPECTED	0	0	0
	NO CHANGE	0	0	0
SUMMARY		<ul style="list-style-type: none"> <li>- less impact in stable area</li> <li>- affects lagoon on north side but less than Alt 2</li> <li>- requires widening of bridge on both sides</li> </ul>	<ul style="list-style-type: none"> <li>- most impact in stable area</li> <li>- would require construction in area of lagoon</li> <li>- requires widening of bridge on both sides</li> </ul>	<ul style="list-style-type: none"> <li>- least impact in stable area</li> <li>- avoids lagoon on north side</li> <li>- good alignment for bridge, widen only on south side</li> </ul>
				<b>RECOMMENDED</b>

**TABLE 4.2E**  
**TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT**  
 JEFFERSON BLVD. TO BANWELL ROAD  
**ALIGNMENT EVALUATION - TECUMSEH ROAD EAST**

**SECTION 5**

EVALUATION CRITERIA		ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
NUMBER OF PROPERTIES AFFECTED	CHANGE EXPECTED	21	21	0
	NO CHANGE	45	0	89
AREA OF PROPERTY REQUIRED	CHANGE EXPECTED	3349	5224	0
	NO CHANGE	1320	0	5007
ESTIMATED PROPERTY COST	CHANGE EXPECTED	LOW	LOW	\$0
	NO CHANGE	LOW	\$0	MODERATE
ESTIMATED BUY-OUTS	CHANGE EXPECTED	0	1	0
	NO CHANGE	0	0	0
NUMBER OF BUSINESSES AFFECTED	CHANGE EXPECTED	13	13	0
	NO CHANGE	4	0	5
BUSINESS OPERATION IMPACTS	CHANGE EXPECTED	0	0	0
	NO CHANGE	0	0	0
<b>SUMMARY</b>		- some impacts to stable area - pavement closer to Forest Glade residences	- least impact to stable area - pavement furthest away from residences in Forest Glade <b>RECOMMENDED</b>	- most impacts in stable area - pavement closest to Forest Glade residences

**TABLE 4.2F**  
**TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT**  
 JEFFERSON BLVD. TO BANWELL ROAD  
**ALIGNMENT EVALUATION - TECUMSEH ROAD EAST**

**SECTION 6**

EVALUATION CRITERIA		ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
NUMBER OF PROPERTIES AFFECTED	CHANGE EXPECTED	28	16	12
	NO CHANGE	-- (1)	---	---
AREA OF PROPERTY REQUIRED	CHANGE EXPECTED	3085	3088	2879
	NO CHANGE	---	---	---
ESTIMATED PROPERTY COST	CHANGE EXPECTED	LOW	MODERATE	LOW
	NO CHANGE	---	---	---
ESTIMATED BUY-OUTS	CHANGE EXPECTED	0	1	0
	NO CHANGE	---	---	---
NUMBER OF BUSINESSES AFFECTED	CHANGE EXPECTED	16	12	4
	NO CHANGE	---	---	---
BUSINESS OPERATION IMPACTS	CHANGE EXPECTED	0	1	0
	NO CHANGE	---	---	---
ALIGNMENT COMPATIBILITY WITH EXISTING PAVEMENT		- matches existing	- requires 3m. shift to south to match existing	- requires 3m. shift north to match existing
SUMMARY		- highest property impact	- more property impacts	- least overall impacts
		- partially overlaps 6m easement on south side	- 6m easement in addition to right-of-way	- overlaps easement on south side - longer transition required
				<b>RECOMMENDED</b>

## Section 2

Section 2 was examined with respect to identification of compatibilities with Alternative 1 in Section 1 and Alternative 2 in Section 3 (see Table 4.2c). Alternative 2 had marginally less impact in the stable area and matches the adjacent preferred alternatives best. **Alternative 2** was identified as **recommended**.

## Section 4

In Section 4, the area of stable development switches to the north side. East and west of Little River on the south side, re-development is expected.

Table 4.2D indicates **Alternative 3** as the **recommended alternative** because of its lower property impacts in the stable development area and compatibility with the alignment for the Little River bridge widening. The ultimate transition with Alternative 2 in Section 3 will further reduce impacts in the southeast quadrant of the Tecumseh Rd. E. - Lauzon Rd. Intersection.

## Section 5

In Section 5, impacts to the established Forest Glade community were deemed negative. Because **Alternative 2** has the lowest property impacts in the stable area and its pavement would be furthest from the outdoor living area of existing Forest Glade residences backing onto Tecumseh Rd. E., it was **recommended**. (See Table 4.2E).

## Section 6

In Section 6, redevelopment is expected on both sides of the Improvement Corridor. Table 4.2F indicates overall property impacts to be less for **Alternative 3** and it was identified as the **recommended alignment**.

### 4.2.4 Lauzon Road

The future traffic volumes for the Lauzon Road intersection at Tecumseh Road E. require a basic intersection for a 4 lane roadway - 4 lanes through and a left turn storage lane on both north and south legs. Although there is an existing separate right turn lane for

south bound turns, because the Lauzon Parkway extension is assumed to be in place, right turning traffic is reduced and therefore a separate lane is not required.

Similar to Jefferson Blvd. the right-of-way width varies - on the north it is 26.2 m while on the south it is 20 m. The additional width on the north side occurs mainly on the east side.

A detailed analysis of alignment options was not carried out for Lauzon Road. With the property control on the west and the acute angle intersection in the southeast quadrant, it was agreed that the alignment should be based on the existing parking arrangement in the southeast quadrant.

The typical cross-section for Lauzon Rd. calls for a 26 m right-of-way width (wider at intersections). This generally fits on the existing right-of-way north of Tecumseh Rd. E. however, additional property on the east side south of Tecumseh Road E. Will be required.

#### **4.2.5 Other North/South Intersecting Roads**

The existing alignments for the remaining north/south roads intersecting Tecumseh Rd. E. such as Roseville Garden Drive, East Park Centre, Lauzon Parkway, Annie Street/Tecumseh Mall, Forest Glade Drive, Robinet Lane and Banwell Road, were generally maintained. Widening on the existing alignments was deemed appropriate.

#### **4.3 Alternative Crossings of Little River**

As noted previously, a 6 m easement paralleling the east side of Little River has been allocated for the future extension of the Ganatchio Trail (primary recreationway). However, because an at grade crossing of Tecumseh Road East at Little River would represent a serious conflict between pedestrians and vehicles, the currently planned extension of the Ganatchio Trail parallels the south side of the CNR easterly and then southerly to the Forest Glade Drive intersection. At the outset of the study, it was deemed appropriate to consider the incorporation of future recreationway plans in any improvements to be carried out for Tecumseh Road East.

The existing roadway bridge over Little River is located in Section 4 as defined for the evaluation of Tecumseh Road East alignments. The preferred roadway alignment in

Section 4 was identified as Alternative 3 - widen to the south. That alignment is consistent with a bridge alignment based on widening only on the south side. This is the preferred bridge alignment because the widening would be added to the newest section of the existing bridge and traffic disruption would be required only on one side. Also most of the utility crossings are located on the north side. Therefore, widening of the existing bridge on both sides was not evaluated.

The north section of the existing bridge is about 46 years old and the south section is about 30 years old. The latest structural adequacy review of the bridge indicates a high rating (structure is in good condition) and nothing but minor maintenance is scheduled for the near future.

Three alternatives for the roadway crossing of Little River and the recreationway crossing of Tecumseh Road East were considered:

Alternative 1 - Widen the existing bridge on the south side to accommodate 6 lanes on Tecumseh Road East and construct recreationway overpass.

Alternative 2 - Reconstruct the existing bridge about 1 m higher and 1 m. longer to accommodate 6 lanes and a recreationway underneath.

Alternative 3 - Widen the existing bridge as in Alternative 1 and provide a separate tunnel to take the recreationway under Tecumseh Road East just east of Little River.

Figure 4.5A shows Alternative 1 which includes the minimum requirements to widen the existing structure to provide for 6 lanes together with an overpass to accommodate the future recreationway extension. About 8.5m of new bridge would be required on the south side of the existing roadway bridge. The key structure component is the box girder supports for the riding surface which allows quicker construction and less work in the water. This bridge widening accommodates the 1:100 year storm elevation (177.5m) as defined in ERCA's 1985 flood line mapping of Little River. Standard provision was included in the estimated cost for minimizing sedimentation of Little River.

The overpass structure consists of a double "I" beam providing a clear span over the future roadway and concrete approach ramps at appropriate grades for wheelchair users.

Alternative 2, as shown on Figure 4.5B, involves the complete replacement of the existing bridge according to a raised roadway profile which accommodates the recreationway under the structure. The structure substantially exceeds the flood requirements. The recreationway elevation under the bridge was assumed at a level of 400 mm above the highest lake level or 176.5 m and clearance of 2.5m to the underside of the structure was assumed. The 1 m thick structure requires a raising of the roadway profile grade about 1 m above the existing road profile.

Alternative 3, shown on Figure 4.5C, includes the widening of the existing bridge similar to Alternative 1, plus the construction of a concrete box culvert to accommodate the extension of the recreationway along Little River. The approach ramp slopes accommodate wheelchair use. Estimated costs include provision for illumination and water level sensors to signal the backup of storm flows in Little River and consequently to the box culvert.

Late in this study, the planners for the East Riverside Planning District concurred with the concept of a roadway link on the extreme east side of the district. The traffic analysis for this study also assumed that an easterly link would be required. This has led to the need to investigate a 4th alternative which would be for the Ganatchio Trail to follow the east link (also known as Scarsdale Road), to a crossing of Tecumseh Road at a signalized intersection. This alternative will be evaluated further.

The alternatives were compared according to the following factors:

#### Natural Environment

- Work in Channel Area - The extent of excavation work required in the invert area or on the side slopes of the channel will have the potential to increase sedimentation. A measure of this impact is indicated subjectively in the evaluation table.

#### Social Environment

- Property impacts - A measure of impacts to adjacent properties was provided in the form of a subjective description.

- Personal safety - Safety is an issue onto itself, but also any alternative perceived to be unsafe will discourage use, thereby reducing the pedestrian and recreational benefits. These advantages or disadvantages were identified.

Construction Flexibility - The flexibility to advance the construction of the recreationway grade separation, in the event that special recreationway funding becomes available, was considered an advantage.

Construction Cost - The cost of alternatives was estimated. Higher cost without higher benefits is undesirable.

Utility Impacts - While general utility relocation will be required for the overall project, any additional utility relocation was considered a disadvantage.

Compatibility with Roadway - Features of bridge alternatives which generate spin-off effects on the adjacent roadway were identified.

Structure Life - A subjective indication of long term consequences of widening rather than replacing the existing road bridge was provided.

Table 4.3 shows the measurements of the comparison criteria for the three alternatives. Alternative 3 was abandoned for safety reasons. Alternative 2 requires the demolition of a structure which currently has a very good rating. **Alternative 1** is the safest, has good construction flexibility and was identified as the **recommended alternative**.

#### 4.4 Recommended Alignments

In the preceding sections, the recommended alignments were identified as follows:

Jefferson Blvd.	-	Alternative 3
Tecumseh Rd. E.		
Section 1	-	Alternative 1
Section 2	-	Alternative 2
Section 3	-	Alternative 2
Section 4	-	Alternative 3
Section 5	-	Alternative 2
Section 6	-	Alternative 3



The evaluation leading to selection of preferred alignments in some cases also identified offset distances between respective alternative alignments. As required, transition alignments have been added to the composite alignment where the recommended alignments are offset between evaluation sections eg. Section 3 (Alignment 2) and Section 4 (Alignment 3). Most of the transitions occur at deflections in the existing right-of-way and the appearance of a parallel jog in the alignment will not be evident.

The recommended centreline alignments for all roadways based on the preceding selections is shown on Figures 4.6A-K, along with the preliminary property requirements.

#### **4.5 Development of Recommended Design**

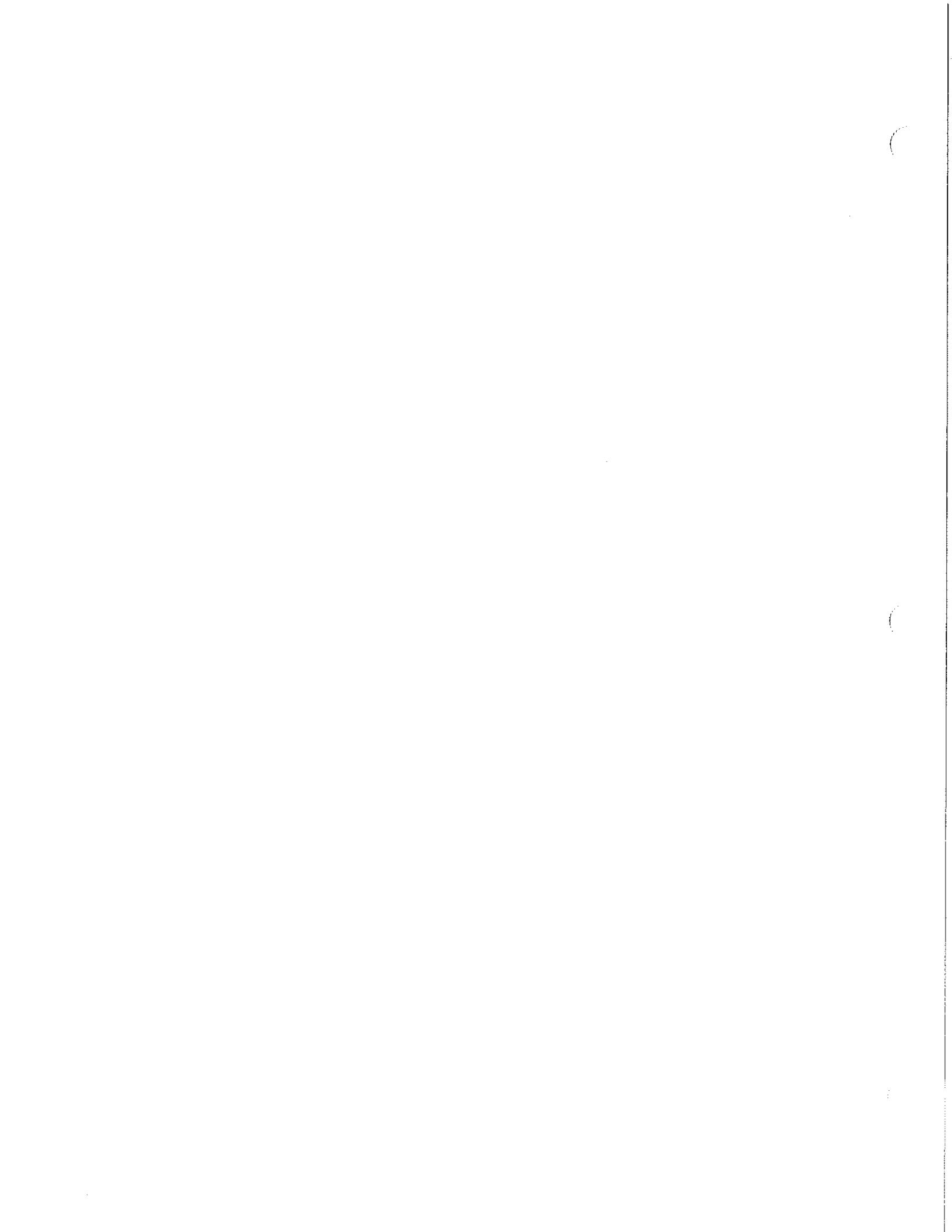
##### **4.5.1 Basic Lane Requirements**

To solve the capacity problem, Tecumseh Rd. E. requires 3 through lanes in each direction while both Jefferson Blvd. and Lauzon Rd. require 2 through lanes in the north/south direction. Although the northerly extension of Lauzon Parkway is not part of this study, a stub which matches the lane configuration on the south side has been included. The remaining north/south roads intersecting with Tecumseh Rd. E. require only one through lane in each direction.

##### **4.5.2 Auxiliary Lanes**

Auxiliary traffic lanes have been added to improve traffic flow. Figure 4.7 shows the schematic arrangement of the auxiliary traffic lanes provided at each intersection together with the through lanes.

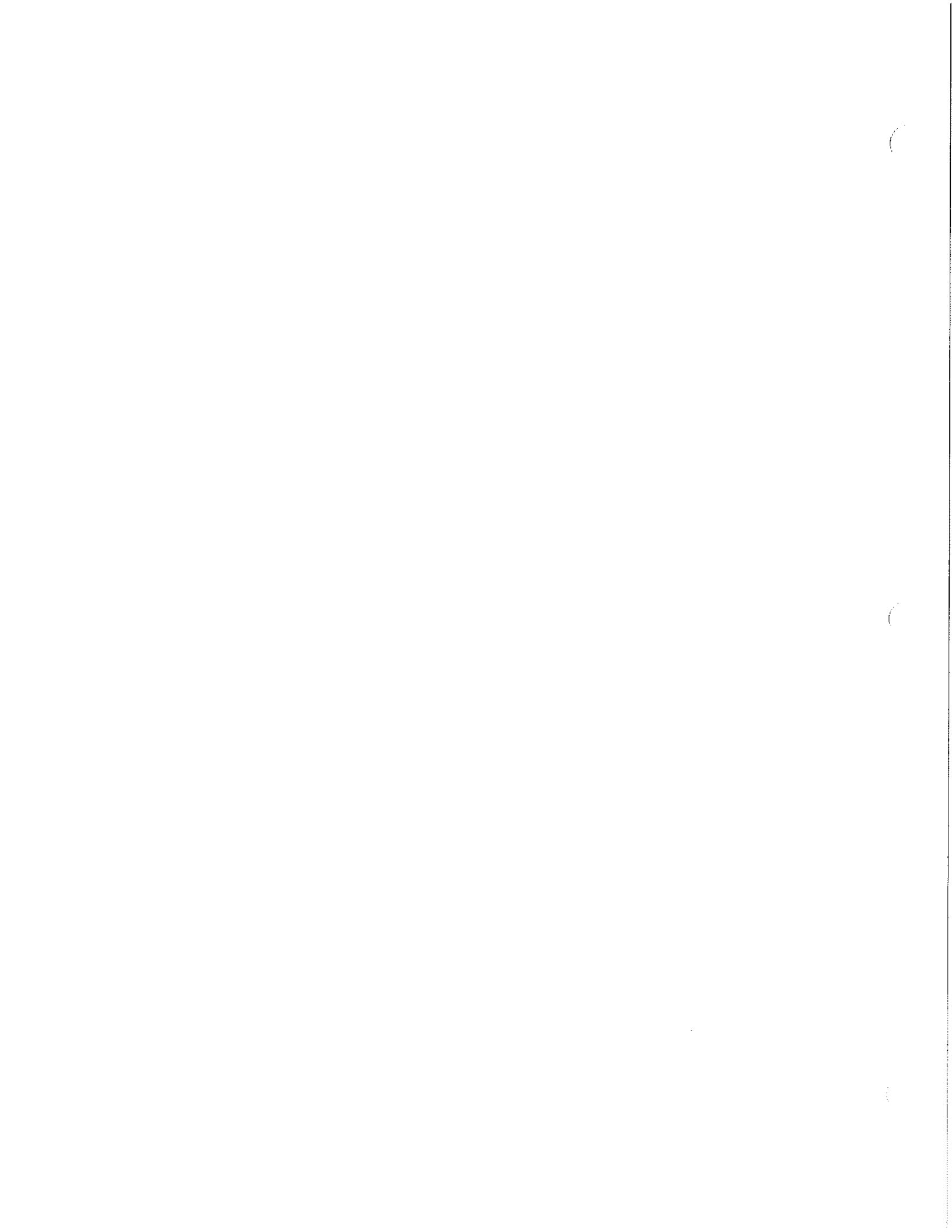
Storage lengths for left turn lanes were estimated in the Traffic Analysis and Planning Report as follows:



**TABLE 4.3**  
**EVALUATION OF LITTLE RIVER CROSSINGS**  
**TECUMSEH ROAD EAST CLASS ENVIROMENTAL ASSESSMENT**  
**JEFFERSON BLVD TO BANWELL ROAD**

COMPARISON CRITERIA	ALTERNATIVE 1 WIDEN EXISTING BRIDGE (8.6m) AND CONSTRUCT OVERPASS	ALTERNATIVE 2 RECONSTRUCT EXISTING BRIDGE ON RAISED PROFILE	ALTERNATIVE 3 WIDEN EXISTING BRIDGE (8.6m) AND CONSTRUCT TUNNEL	COMPARISON CRITERIA
<b>NATURAL ENVIRONMENT</b> - grading work in the channel area	- road bridge widening affects channel bottom and side slopes - minor localized excavation for structure	- most grading required in channel and along side slopes	- road bridge widening affects channel bottom and side slopes - substantial excavation for box culvert, approach ramps, and storm outlet	<b>NATURAL ENVIRONMENT</b> - grading work in the channel area
<b>SOCIAL ENVIRONMENT</b> - property impacts  - personal safety	- minor property impacts during construction - additional easement required on south side  - good, recreationway grade separation in full public view	- no impact  - poor, safety compromised because portion of recreationway out of public view	- property required from Top Hat and possibly some reduction of parking during construction - additional easement required on south side  - poor, 35m tunnel where recreationway users out of public view and in an enclosed area	<b>SOCIAL ENVIRONMENT</b> - property impacts  - personal safety
<b>CONSTRUCTION FLEXIBILITY</b>	- good, overpass could proceed before road bridge should funding become available	- poor, recreationway underpass provided with road bridge	- good, tunnel could proceed at any time that funding is available	<b>CONSTRUCTION FLEXIBILITY</b>
<b>COMPATIBILITY WITH ROADWAY</b>	- good	- fair, requires raising of adjacent roadway profile by about 1m with associated approach grade slopes	- good	<b>COMPATIBILITY WITH ROADWAY</b>
<b>UTILITY IMPACTS</b>	- minor relocation required for north abutment - aerial hydro needs relocation, probably put underground as part of relocation required for roadway	- all relocations part of roadway construction	- large diameter watermain, gas, bell would need to be lowered - 1520mm storm outlet needs relocation	<b>UTILITY IMPACTS</b>
<b>COST</b>	\$570,000	(1) \$871,000	(1) \$573,000	<b>COST</b>
<b>STRUCTURE LIFE</b>	- north side of bridge may need replacement in 20-50 years and work may be hampered by location of overpass north abutment	- combined solution for 80-100 years	- north side of bridge may need replacement in 20-50 years but should not affect tunnel	<b>STRUCTURE LIFE</b>
<b>SUMMARY</b>	- good construction flexibility - safest alternative  <b>RECOMMENDED</b>	- highest cost and highest environmental impacts on Little River - safety compromised	- good construction flexibility - least safe alternative	<b>SUMMARY</b>

NOTES: (1) Estimated cost includes illumination and water level warning system.



Intersection	Left Turn Storage Length			
	Northbound (m)	Southbound (m)	Eastbound (m)	Westbound (m)
Tecumseh Rd. E./Jefferson Blvd.	60	90	60	120
Tecumseh Rd. E./Roseville Garden Drive	45	35 <sup>14</sup>	35	45
Tecumseh Rd. E./East Park Centre Drive	68	35	45	50
Tecumseh Rd. E./Lauzon Parkway	75	60	120	135
Tecumseh Rd. E./Annie St./ Tecumseh Mall	35	35	68	35
Tecumseh Rd. E./Lauzon Rd.	45	68	60	75

Intersection	Left Turn Storage Length			
	Northbound (m)	Southbound (m)	Eastbound (m)	Westbound (m)
Tecumseh Rd. E./Proposed New Road	-	60	80 <sup>15</sup>	35
Tecumseh Rd. E./Forest Glade Dr.	150	-	35	35
Tecumseh Rd. E./Clover St.	-	35	80 <sup>15</sup>	-
Tecumseh Rd. E./Robinet Lane	35	-	35	35
Tecumseh Rd. E./Banwell Rd.	90	35	100	45
Jefferson Blvd/Rose Ave.	35	35	35	35
Lauzon Rd./Tecumseh- Eastown Mall	35	35	35	35

<sup>14</sup> 35 m. used as a minimum

<sup>15</sup> Third entrance (Clover St.) added for access to East Riverside Planning District. Turning traffic and storage length split equally between Clover St. and proposed new road (Scarsdale).

In cases where back-to-back storage lanes overlap, available storage length was allocated on a pro-rated basis.

#### **4.5.3 Recommended Roadway Design**

The evaluation of alternative alignments was based on the conclusion that the roadway elements necessary to solve the identified problems produced the same engineering impacts regardless of which alignment was used. Property impacts resulting from widening of the right-of-way to 36 m on Tecumseh Rd. E. varied according to alignment location and alternative alignments were evaluated only on the basis of property impacts. It follows directly that there is only one roadway design. It involves the development of the necessary roadway design elements such as through lanes, raised medians, turning lanes, sidewalks, etc., on the preferred alignment and is referred to hereafter as the recommended design. Figure 4.8A-J shows the recommended design.

#### **4.6 Future Access From/To Tecumseh Rd. E.**

It is important to understand the function of Tecumseh Rd. E. relative to continuing local development and the resulting increase in traffic flow. There is a continuum of roadway function which ranges from providing access to abutting property exclusively (eg. cul-de-sac street) to providing movement of traffic (eg. controlled access freeway)<sup>16</sup>.

Most roads perform a dual function of both access and traffic movement. Tecumseh Rd. E. is a major arterial which, except for the section between Roseville Garden Drive and Lauzon Parkway, provides full access to adjacent property but is also currently required to handle a substantial traffic flow. Unfortunately, a roadway cannot maximize access and traffic movement at the same time and therefore a compromise between the two functions is required.

The traffic analysis carried out for this study indicates the local and regional growth will result in a doubling of traffic on the roads in the Improvement Corridor. New commercial developments will attract additional traffic and new residential developments will produce

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<sup>16</sup> "One Suburban County's Policy for Selecting Median Treatments for Arterials. Bretherton, W. N., Womble, J. E., Parsonson, P.S., Black, G., ITE Compendium, Technical Papers."

developments will attract additional traffic and new residential developments will produce additional traffic both of which will need to be distributed to a large extent by Tecumseh Rd. E. and intersecting roads. Improvements must be made to handle this traffic safely, otherwise undesirable diversion of traffic to other roadways will occur, but probably not before an increase in severity and duration of traffic congestion in the Improvement Corridor. Figure 4.8 shows the recommended design to handle the traffic flow safely as the first priority but maintain access as high as possible.

The existing median between Roseville Garden Drive and Lauzon Parkway represents a case study for why a raised median is an essential design element in the solution of the identified problems. Along that stretch of roadway, access to 24 businesses is concentrated at 4 entrances, 2 of which currently allow only right-in and right-out turns. An important aspect of this arrangement is the intra-parcel access between the East Park Centre and Parkway Mall.

Figure 3.7B shows that 3 lanes can handle the future traffic flows effectively ( $V/C < 1.0$ ) and Figure 3.6 (a) and (b) show that accident rates are much lower because of the control of left turns at mid-block locations. This limited access concept should be used for future developments adjacent to Tecumseh Rd. E. and can be implemented effectively by maintaining the "divided" roadway classification (UAD - urban arterial divided).

A raised median will have at least a short term effect on access patterns used by customers of the mid-block businesses. The locations where full access was changed to right-in and right-out is shown in Figure 4.8.

All existing public roadways intersecting Tecumseh Rd. E. are provided with left turn storage areas and channelization as required.

#### **4.7 Residual Environmental Impacts and Mitigation Measures**

Typically, a recommended design will not be able to avoid all potential impacts. The residual impacts of the recommended design, which represent both advantages and disadvantages, are summarized in Table 4.4. Where an impact represents a disadvantage, measures have been identified which will mitigate the impact. In some cases, eg. erosion control, widely adopted construction measures to mitigate impacts have been developed

and will be reviewed with the appropriate agencies prior to construction. The impacts included in Table 4.4 have been numbered and are shown on Figure 4.8A-K to indicate typical locations where the impact occurs.

Where a median eliminates left turn access to businesses, alternative access is available within a short distance by making U-turns at signalized intersections. The traffic signal turning analysis indicates that basically all signals will need opposing advanced left turn arrows which provide a break in the through traffic to allow the U-turn opportunity. None of the prohibitions on U-turns in the Highway Traffic Act (Sec. 143) apply to the recommended design. The City's current Traffic ByLaw (Part IV, Article 7) would not prohibit U-turns at the median openings proposed.

To demonstrate future access patterns with the raised median in place, the following trips to various destinations have been routed and shown on Figure 4.8 (numbering sequence repeated on Figure 4.8.). Although several opportunities exist for provision of intra-parcel access only those that appear to exist now were used in this examination.

1. West bound motorist heading for Tim Hortons.
2. West bound motorist heading to Shell Gas Bar/Car Wash.
3. West bound motorist heading for McDonalds.
4. West bound motorist heading for State Farm Insurance.
5. East bound motorist heading for the Floor Store.
6. East bound motorist heading for the Serbian Centre.
7. East bound motorist heading for Windsor Honda.
8. East bound motorist heading for Anderson's Nursery.
9. East bound motorist heading for Canadian Carpet.
10. East bound motorist heading for the Cooperators.
11. Dontrans tractor trailers exiting site and heading east bound.

The geometrics for the above considered only automobiles and single-axle delivery trucks (see Figure 4.9). Larger semi-tractor trailers would not be able to make the 180 degree turnaround movements shown. However, it is anticipated that most of those trips would involve longer distances and an alternative route could be used.



**TABLE 4.4**  
**RESIDUAL IMPACTS**  
**TECUMSEH ROAD EAST CLASS EA**  
 JEFFERSON BLVD. TO BANWELL RD.

CATEGORY	IMPACT	MITIGATING MEASURE
<b>NATURAL</b>		
Vegetation Removal	1. removal of random individual trees required by widening	- relocate if feasible or replace
	2. landscape areas removed by widening	- landscaping redesigned and reconstructed
Erosion / Sedimentation	3. excavation and grading work in and around the Little River channel will increase sedimentation	- minimize area and time erodible soils are exposed
<b>SOCIAL</b>		
Property	4. property acquisition required from abutting land owners for widening of the right-of-way	- fair market value, based on market appraisals, paid for any land required
Business	5. some businesses cannot continue because impacted directly	- businesses purchased based on fair market value
	6. some businesses indirectly impacted, eg. loss of parking spaces	- payment made in addition to land purchase cost
Recreation	7. overpass linkage across Tecumseh Rd. E. provides for greater safety and useability of linear park system	
Land Use	8. setting of roadway access policy provides for future growth without need to address transportation problems at a stage where options may be limited	
<b>INFRASTRUCTURE</b>		
<b><u>ROADWAYS</u></b>		
Level Of Service	8. acceptable level of traffic service provided to the end of 20 yr. planning period	
New Development	9. suitable access to new development areas provided, consistent with roadway access policy	
Accidents	10. preferred design will result in significant reduction in accidents	
Pedestrians	11. sidewalks provided throughout project	
Transit	12. existing bus bays maintained and additional bays provided as requested Transit Windsor	
Access	13. in areas where raised median introduced, left turns in and out of abutting property removed	- u-turns possible at intersection openings because of 6 lane cross section on Tecumseh Rd. E. - also have possibility to provide alternative access from the rear of some of the affected properties
<b><u>UTILITIES</u></b>		
Water	14. may be isolated areas where roadway widening requires watermain relocation	- a new location and cost sharing agreement will be negotiated with WUC for any plant requiring relocation
Hydro	15. relocation of some hydro distribution lines and illumination systems will be required	- a new location and cost sharing agreement will be negotiated with WUC for any plant requiring relocation
Gas	16. may be some localized relocation of gas mains required	- a new location will be negotiated with Union Gas for any plant impacted by the preferred design
Bell	17. may be some localized relocation of telephone ducts required	- a new location will be negotiated with Bell Canada for any plant impacted by the preferred design
Cable	18. may be some relocation of TV cable systems	- a new location will be negotiated with Shaw Communications for any plant impacted by the preferred design
Sewers	19. storm sewer inlets and laterals will require reconstruction	- this will be done by public works with the roadway widening if schedules permit
	20. sanitary sewer construction in new development areas may be advanced	- any construction of new sanitary sewers or services will be done at the same time as the roadway widening, schedules permitting, to avoid traffic disruption and impacts on the roadway structure



#### **4.8 Public and Agency Review**

As shown on Figure 1.1, a second opportunity is afforded the public and external agencies to review the work carried out to develop and evaluate the alternative design concepts selected to implement the recommended solution.

A notice in the Windsor Star on May 25, 1996 announced the date, time and location of the second mandatory public input opportunity. The potentially affected public were notified of the Public Information Centre as follows:

Date: Thursday, June 13, 1996  
Time: 3:00 P.m. to 8:00 p.m.  
Location: Serbian Centre  
6770 Tecumseh Road East  
Windsor, Ontario

Copies of the notice and sample letters are included in Appendix "A".

##### **4.8.1 Agency Input**

A copy of the draft ESR was circulated to potentially affected or interested external agencies. The following table identifies those receiving draft reports and summarizes the responses. Those agencies providing comment which required clarification, received follow-up letters providing appropriate additional information.

TABLE 4.5

EXTERNAL INVOLVEMENT

AGENCY	CONTACT	REPLY	COMMENTS
1. Windsor Police Service	Barry Horrobin Director Planning and Physical Resources	Yes	- agree with recommended option - warrant for signals at east end should be monitored
2. Ministry of Natural Resources	Fred Johnson Acting Area Planner Chatham Area Office	No	
3. Ministry of Municipal Affairs	Dan Hammond	Yes	No Comment
4. Ministry of Transportation	Peter Ginn	No	
5. Essex Region Conservation Authority	Stan Taylor Water Management Supervisor	Yes	Need fill permit Erosion control needed
6. Windsor Separate School Board	James Molnar W. M. Lozinski Supt. of Education	No	
7. Windsor Board of Education Board	Stephen Payne Mr. A. Cook Plant Manager	No	
8. Transit Windsor	Bob Goody	Yes	
9. Windsor Architectural Conservation Advisory Committee	Sharon Amlin	No	
10. Ministry of the Environment and Energy	J. Drummond, P.Eng. Manager, Windsor District Office	No	
11. Ministry of the Environment and Energy Southwestern Regional Office Technical Support Section	Donna Watson	No	

	CONTACT	REPLY	COMMENTS
12. Windsor-Essex County Development Commission	Paul Bondy Commissioner	Yes	Comments relate to Lauzon Pkwy. extension
13. Little River Enhancement Group	Mr. I. Naisbitt	Yes	Protect quality in Little River Agree with Alt. No. 1 for pedestrian overpass at Little River
14. CN Rail Line Operations	Ms. Karen Fraser	No	
15. Town of Tecumseh	Mr. L. A. Lessard Administrator	No	
16. Windsor Bicycling Committee	Ms. Sharon Amlin Secretary	No	
17. Windsor Utilities Commission	Mr. Kent Edwards	No	
18. Union Gas	Ms. Karen Hockin	No	
19. Bell Canada	Mr. Keith Lumsden	No	
20. Shaw Cable	Mr. Esa Wilander	No	
21. Essex County Field Naturalists	Mr. T. Hurst	No	
22. Citizens Environmental Alliance	Mr. Rick Coronado	No	
23. Windsor Air Quality Committee	Ms. Kimberly Telega	No	
24. Township of Sandwich South	Mr. Gerald Sykes Clerk-Administrator	No	
25. Windsor Fire Department	Chief David Fields	Yes	Concerned about water supply Response times with raised median

#### 4.8.2 Public Input

Over 900 notices were mailed (or faxed) to abutting property owners and those expressing a direct interest. Forty-eight individuals are identified on the sign-in sheets as having attended the Public Information Centre. After recording their attendance, visitors were provided with a handout which provided a brief synopsis of the progress of the project to date. A comment sheet was attached to the handout (copies included in Appendix A).

In addition to draft copies of the ESR, the following textual and graphic information was provided on display boards:

- |   |  |         |
|---|--|---------|
| - | The Problem Definition   | Text    |
| - | Schematic of the Class EA Process  | Graphic |
| - | Why we carry out Class EA's  | Text    |
| - | Principles followed in a Class EA  | Text    |
| - | Schedules (levels of activity) Involved in a Class EA                              | Text    |
| - | Detailed flow chart of the Class EA process  | Graphic |
| - | The Study Area   | Graphic |
| - | Aerial photo of the Study Area   | Graphic |
| - | Plan of existing roadway showing existing and future and current accident analysis | Graphic |
| - | Schematic cross sections of alternative solutions                                  | Graphic |
| - | Chart showing evaluation of alternative solutions                                  | Text    |
| - | The Preferred Solution   | Text    |
| - | Alternative design concept sketches and evaluation charts                          | Text    |
| - | Typical roadway cross sections   | Graphic |
| - | The Preferred Design   | Graphic |

The following individuals representing the Project Team were available to provide information and receive public comment:

- Mr. Tedd Szalay, P.Eng. - City of Windsor, Public Works Department
- Mr. Glen Adams, P.Eng. - City of Windsor, Public Works Department
- Mr. Lorne Meloche, P.Eng. - City of Windsor, Public Works Department
- Mr. Vince Francescutti, P.Eng. - City of Windsor, Public Works Department

- Mr. Mark Winterton, P.Eng. - City of Windsor, Public Works Department, Development Division
- Mr. Mike Palanacki, P.Eng. - City of Windsor, Traffic Engineering Department
- Mr. Wes Hicks, P.Eng. - City of Windsor, Traffic Engineering Department
- Mr. Doug Caruso - City of Windsor, Planning Department
- Ms. Faye Langmaid, - City of Windsor, Parks and Recreation Department
- Mr. Mike Stamp - City of Windsor, Property Department
- Mr. Ted Fearnley, P.Eng. - E. Fearnley Ltd., Transportation Consultant
- Mr. Barry Sherwood, P.Eng. - LaFontaine Cowie Buratto and Associates Ltd.

Fourteen comment sheets were received relative to the second opportunity for public participation. In addition, there were several requests for information or clarification on the effects the recommended design would have on abutting properties. The individuals responding were as follows:

NAME	REPRESENTING	ADDRESS
<b>RESIDENTS</b>		
Mrs. Charles Stevenson	Resident	9664 Melville Drive
Sharon and Don Turner	Resident	10192 Shenandoah Cres.
Donald Fraysure	Scarsdale Residents Association	9565 Tecumseh Rd. E.
R. Dean	Resident	7040 Tecumseh Rd. E.
Audrey West	Resident	2085 Jefferson Blvd.
Bill Prestanski	Resident	Shenandoah Cres.
James Thrasher	Resident	2191 Jefferson Blvd.
<b>BUSINESS</b>		
Dino Dilaudo	Red Lobster	6575 Tecumseh Rd. E.
Pat Horwood Sr.	Commercial Lessor	6033-6045 Tecumseh Rd. E.
Mohammed Abdel-Nabi	Chrysler Canada	10940(+/-) Tecumseh Rd. E.
Chris Minielly	Wal-Mart	Easttown Mall

NAME	REPRESENTING	ADDRESS
Jim Mantua	Brewer's Retail	2451 Jefferson Blvd.
Joseph Iossifidis	Sofos Submarine	6082 Tecumseh Rd. E.
Keith Spence	Project Planning FCS representing Canadian Tire	8150 Tecumseh Rd. E.
Joseph Mikhail	Tecumseh Commercial Centre	7610 Tecumseh Rd. E.
Rocco Lucente	A. A. Boscariol and Associates representing Messrs. Shaloub and Malette	10574 Tecumseh Rd. E.
Rocco Lucente	A. A. Boscariol and Associates representing Mr. Docherty	11655 (+/-) Tecumseh Rd. E.
Robert K. Goody	Transit Windsor	3700 E. C. Row
John Bonvivere	TRANS-PLAN representing Shell Canada	7555 Tecumseh Rd. E. & Forest Glade Drive/Tecumseh Rd. E.
Peter Dragicevic	Used Car Dealership	6642 Tecumseh Rd. E.
Ed Drouillard	Mark's TV	11400 Tecumseh Rd. E.
Simeon Drakich	Top Hat East	9250 Tecumseh Rd. E.
Chris Woodall	Gus Revenberg	10150 Tecumseh Rd. E.
Norman Shewchuk	Anderson Nursery	9666 Tecumseh Rd. E.
John Jedlinski	Wilson, Walker, Hochberg, Slopen representing Big D Bingo Emporium East	9420 Tecumesh Rd. E.
Piero Venditti	Garden Homes representing Loeb	11729 Tecumseh Rd. E.
G. Gouin	Commercial Developer	10530 Tecumseh Rd. E.

Responses were reviewed in detail and specific comment categories identified. A summary of the public responses is included in Appendix A. Some responses included several comment categories.



Eleven of 35 comments were from residents fronting or backing onto Tecumseh Road E. These comments dealt mainly with direct property impacts during construction such as effect on driveways, fences and trees. These individuals were informed that reinstatements to properties will be made during construction such that the end result is equal to or better than the previous conditions. Where trees cannot be relocated, new trees will be planted in appropriate locations relative to the new roadway.

One resident expressed concern regarding the high existing traffic noise and increased noise resulting from future traffic. The MTO/MOEE protocol Agreement for noise evaluations was briefly explained and the estimated 3.7 dbA maximum future increase in noise was identified at the specific location. It was noted that a 5 dbA increase in noise is required before noise mitigation is deemed warranted in the Protocol Agreement.

The responses from businesses in the Corridor were mainly focused on the restriction of left turns to and from the properties abutting Tecumseh Road E. where a raised median is proposed. These concerns were acknowledged and the alternatives noted:

- turnarounds at signalized intersections and
- intra-parcel access arranged between private property owners.

At the extreme west limit of the project, concern was expressed regarding leasing of commercial properties, which have been identified for acquisition, in the short term. In that case, an interim construction stage was identified to eliminate the uncertainty for possible lessees.

The need for service roads was identified by some business operators. Service roads would essentially be the same as intra-parcel access. The individuals were informed that the City is interested in facilitating appropriate intra-parcel accesses, but because they would be located on private property, the City cannot force their implementation. Many of the business operators were amenable to that suggestion.

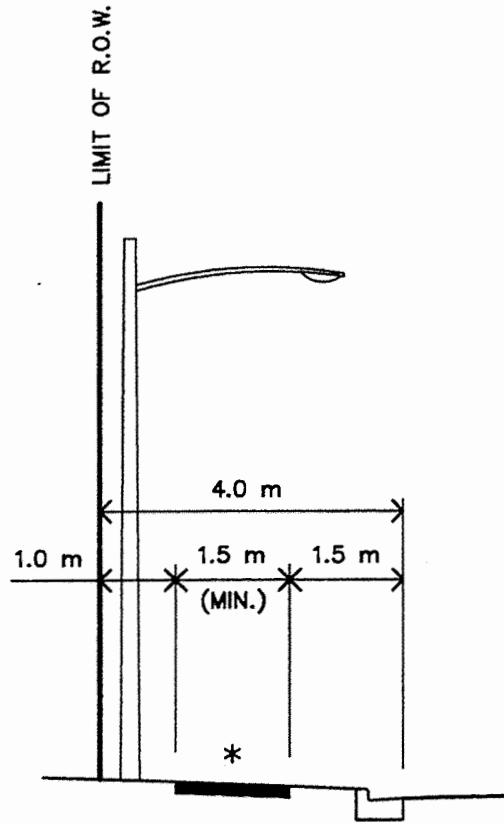
The comments regarding negative effects on business through loss of traffic were addressed. The Project Team's position that locations such as Red Lobster and the Top Hat East are planned destinations for most patrons was noted. Therefore, if safe alternative access is provided, customers will generally maintain their current purchasing levels but

using a different travel pattern. It was pointed out at the Public Information Centre and in letters of acknowledgement that a 6-lane roadway carrying the expected traffic without left turn control by a raised median may induce customers to shop elsewhere.

#### **4.9 Preferred Design**

The Tecumseh Road E. corridor requires a widening of the current 4 lanes to 6 lanes to accommodate anticipated daily traffic in the range of 21,000 to 30,000 vehicles. Given the current development pattern along Tecumseh Road E., a raised median is required to handle this traffic flow safely.

The range of roadway functions was discussed earlier and it was noted that as the need to handle higher traffic volumes arises, the ability to provide unrestricted access to adjacent properties diminishes. The recommended design will accommodate the anticipated traffic as safely as possible while maintaining reasonable access. However, there will be unmitigated access effects. Based on the number of responses, those are expected to be minimal compared to the need for safe handling of the traffic flow. Therefore, **the recommended design as shown on Figures 4.8(a)-(k) was selected as the Preferred Design.**

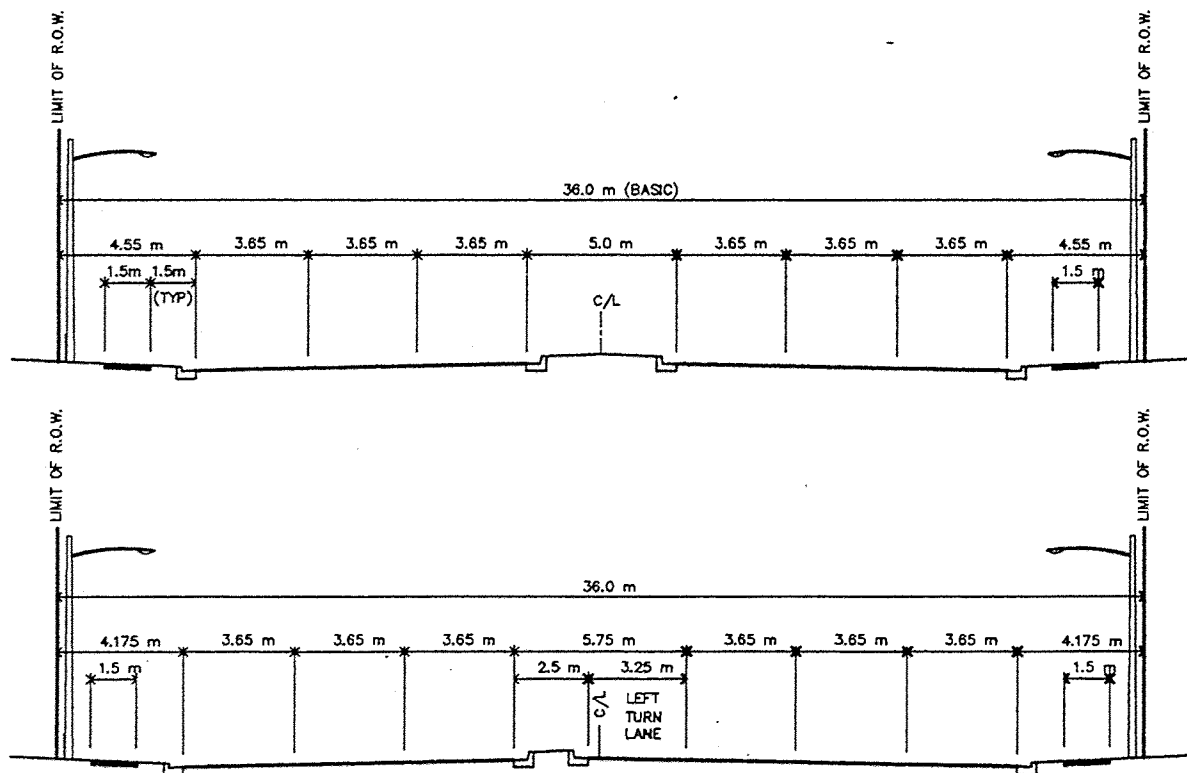


**TYPICAL BOULEVARD**

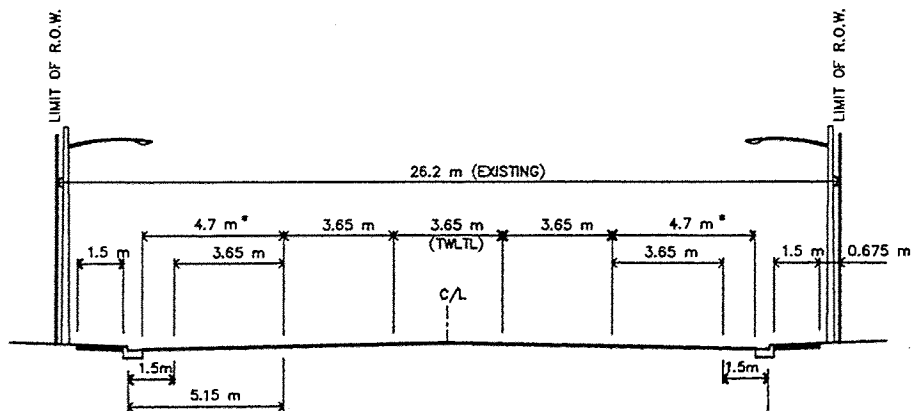
SCALE 1:100

\* - SIDEWALK MAY BE WIDER IN HEAVILY TRAVELLED PEDESTRIAN AREAS

**FIGURE 4.1**

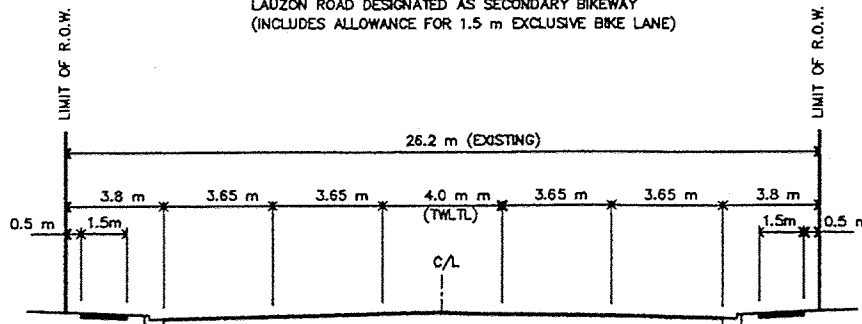


**TYPICAL 6-LANE DIVIDED CROSS-SECTION**  
 (TECUMSEH ROAD EAST - JEFFERSON BOULEVARD TO BANWELL ROAD )  
 SCALE 1:250



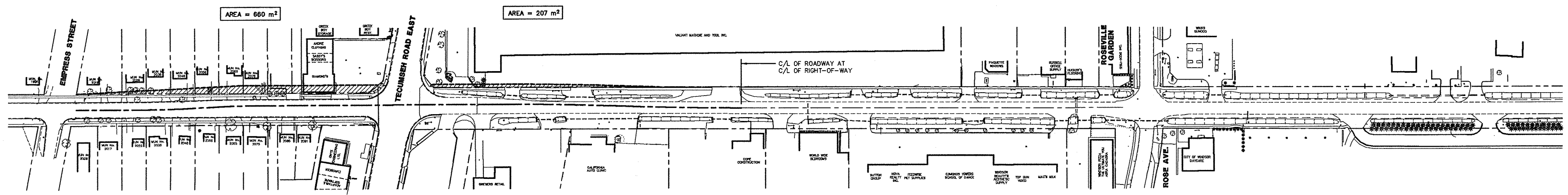
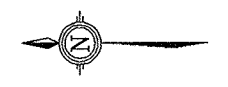
**TYPICAL 4-LANE WITH TWO-WAY LEFT TURN LANE**  
 (LAUZON RD. - TECUMSEH RD. E. TO C.N.R.)  
 SCALE 1:250

LAUZON ROAD DESIGNATED AS SECONDARY BIKEWAY  
 (INCLUDES ALLOWANCE FOR 1.5 m EXCLUSIVE BIKE LANE)



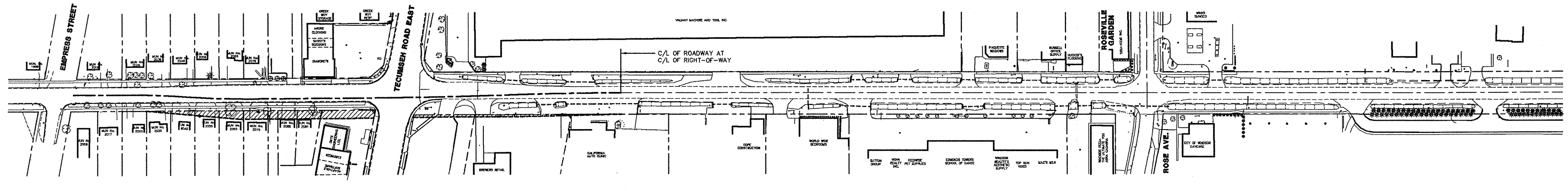
**TYPICAL 4-LANE WITH TWO-WAY LEFT TURN LANE**  
 (JEFFERSON BLVD. - TECUMSEH RD. E. TO ROSEVILLE GARDEN DRIVE )  
 SCALE 1:250

**JEFFERSON BOULEVARD**



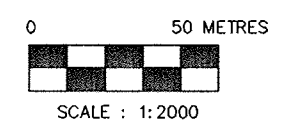
**ALIGNMENT NO. 2**

**JEFFERSON BOULEVARD**



**ALIGNMENT NO. 3**

**ALTERNATIVE ALIGNMENT  
JEFFERSON BOULEVARD**

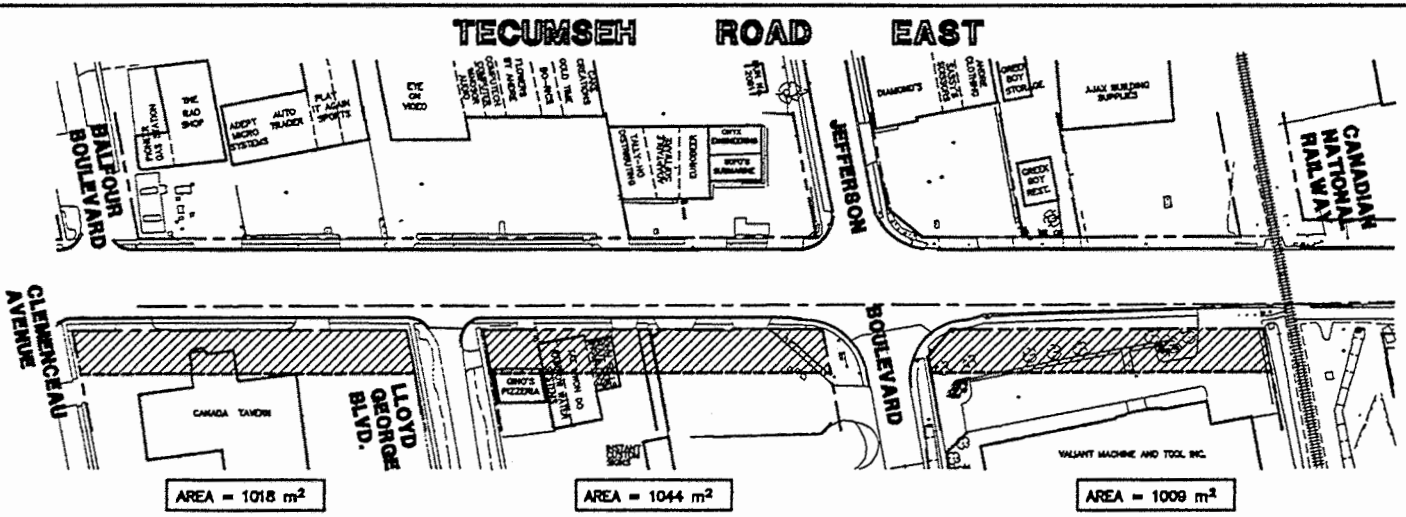
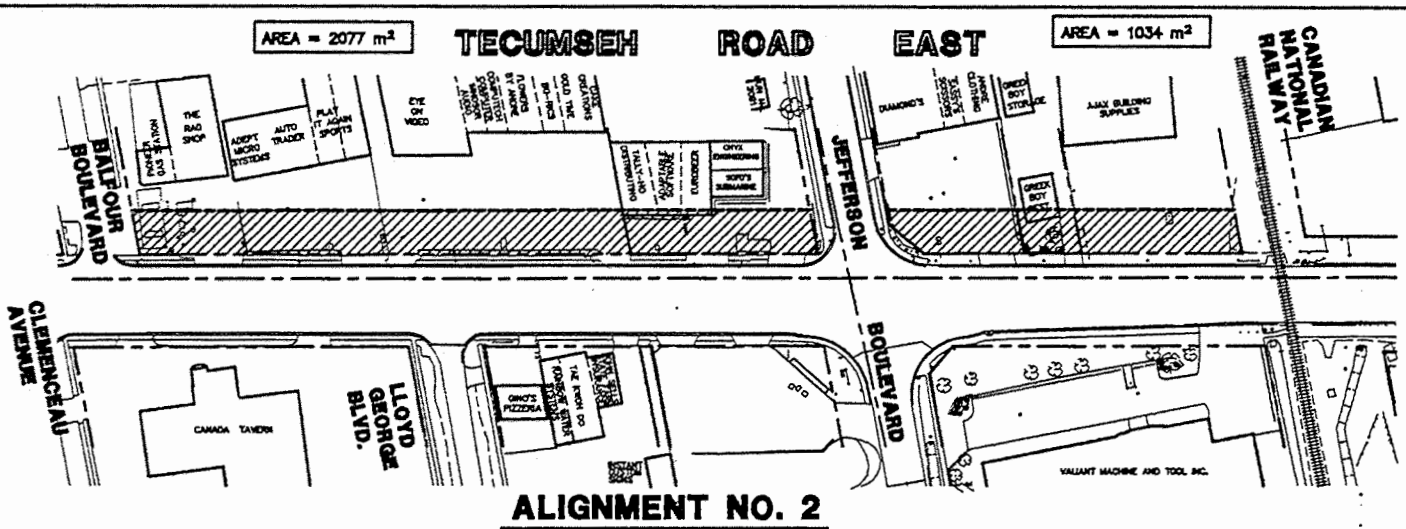
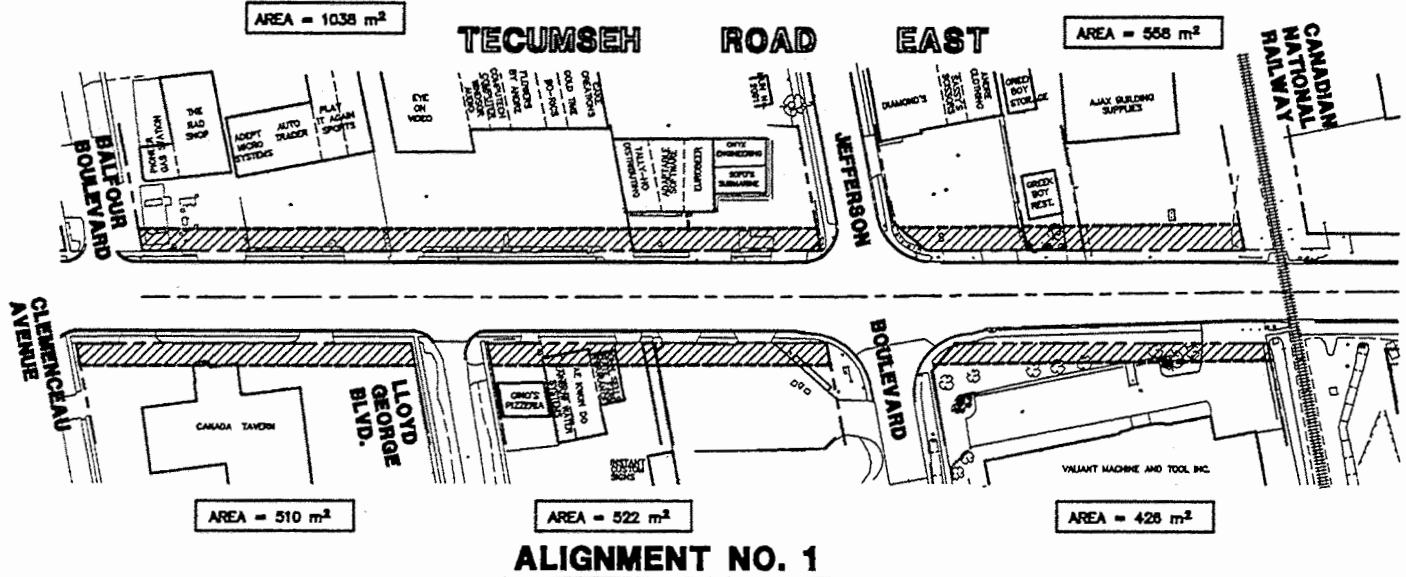


**FIGURE 4.3**

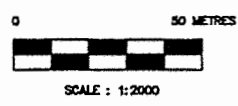
# TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT JEFFERSON BLVD. TO BANWELL RD.



## SECTION 1



- LEGEND**
- EXISTING RIGHT-OF-WAY
  - PROPOSED RIGHT-OF-WAY
  - PROPERTY TO BE ACQUIRED



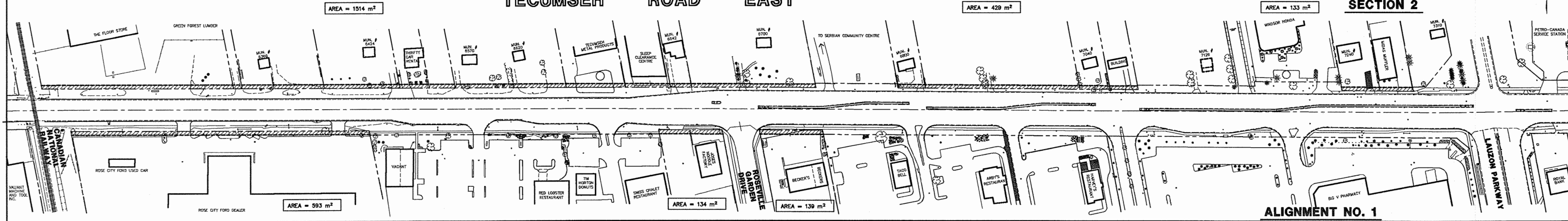
**ALTERNATIVE  
DESIGN CONCEPTS  
FIGURE 4.4(a)**

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



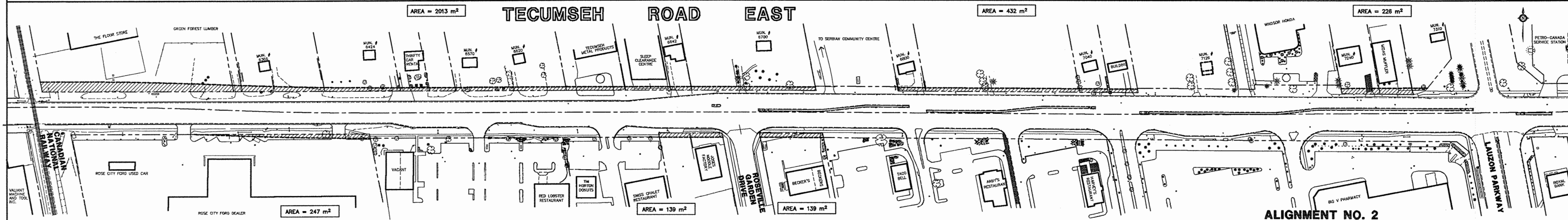
**TECUMSEH ROAD EAST**

**SECTION 2**



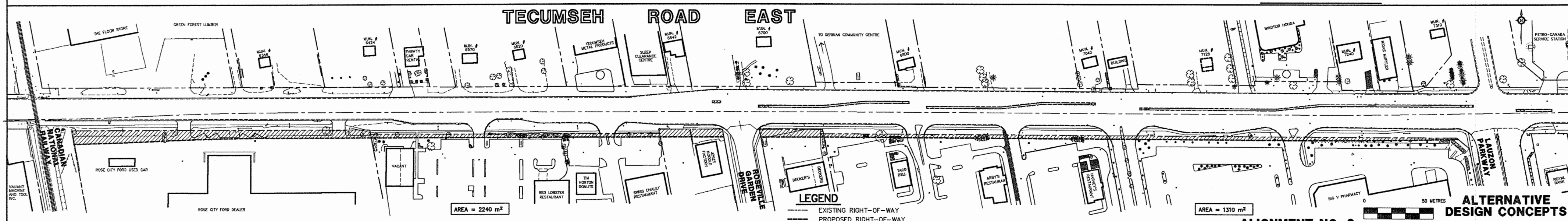
**ALIGNMENT NO. 1**

**TECUMSEH ROAD EAST**



**ALIGNMENT NO. 2**

**TECUMSEH ROAD EAST**



**ALIGNMENT NO. 3**

**ALTERNATIVE  
DESIGN CONCEPTS  
FIGURE 4.4(b)**

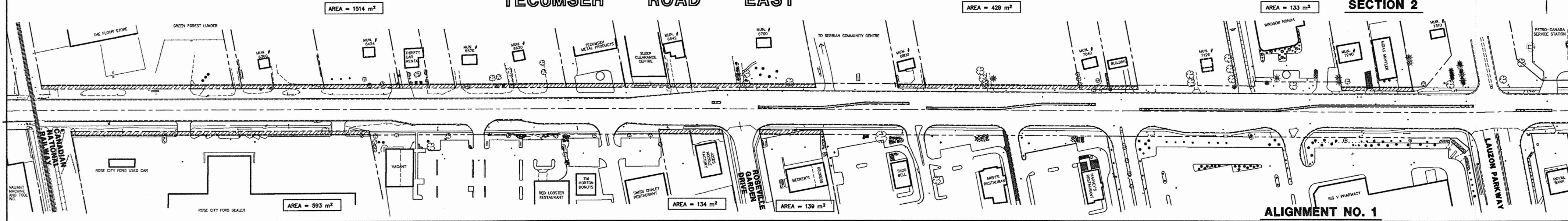


**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



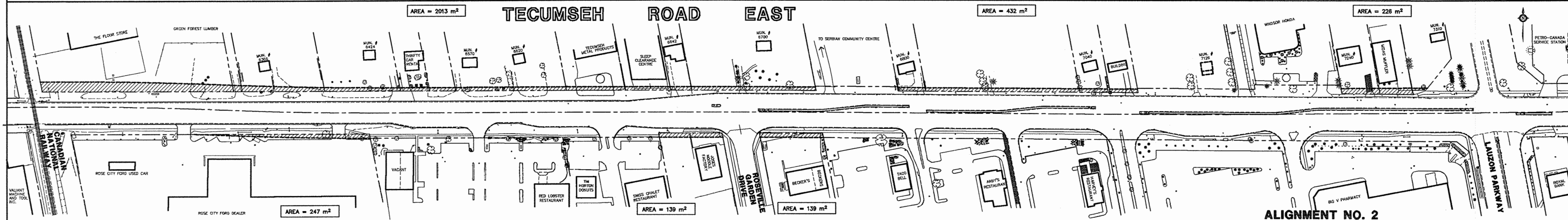
**TECUMSEH ROAD EAST**

**SECTION 2**



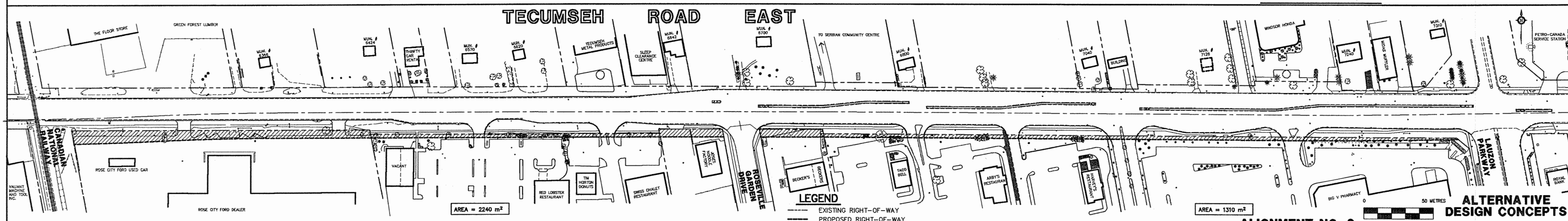
**ALIGNMENT NO. 1**

**TECUMSEH ROAD EAST**



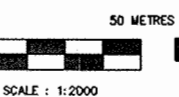
**ALIGNMENT NO. 2**

**TECUMSEH ROAD EAST**



**ALIGNMENT NO. 3**

- LEGEND**
- EXISTING RIGHT-OF-WAY
  - PROPOSED RIGHT-OF-WAY
  - ▨ PROPERTY TO BE ACQUIRED



**ALTERNATIVE  
DESIGN CONCEPTS  
FIGURE 4.4(b)**



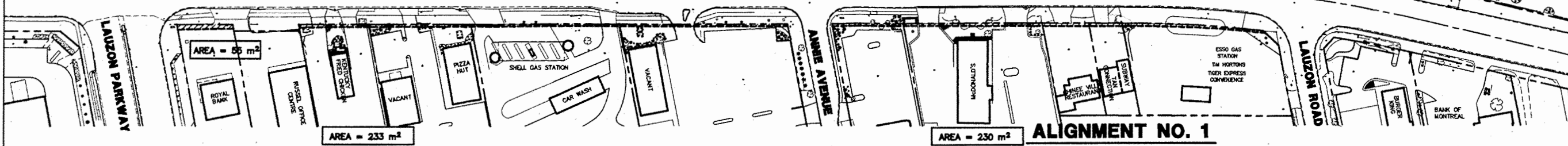
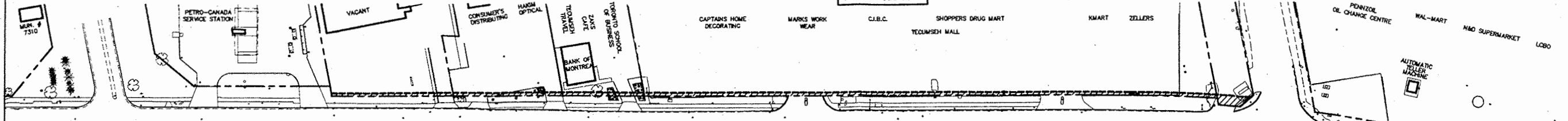
**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



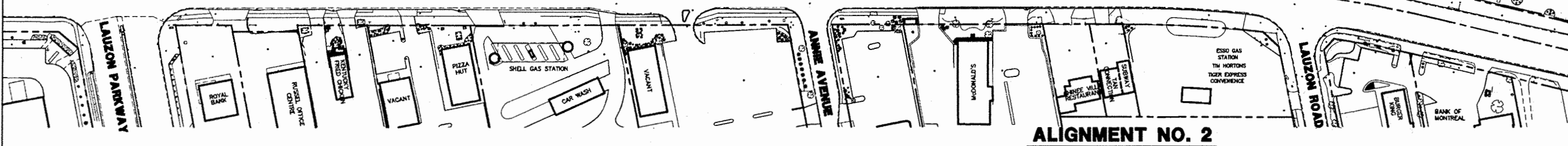
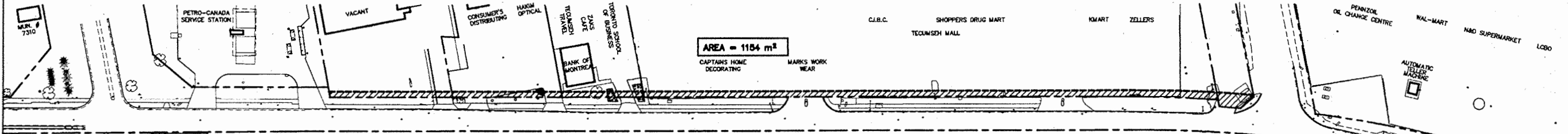
**TECUMSEH ROAD EAST**

**SECTION 3**

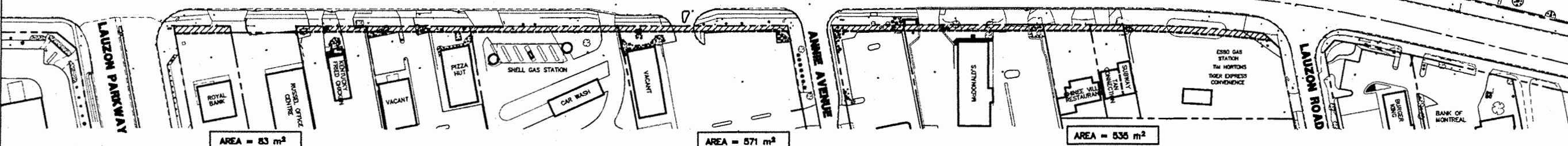
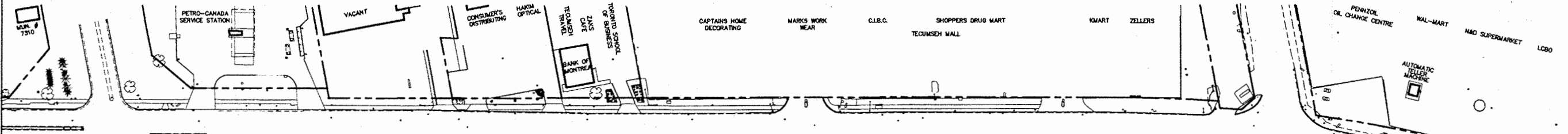
AREA = 650 m<sup>2</sup>



**TECUMSEH ROAD EAST**



**TECUMSEH ROAD EAST**



- LEGEND**
- EXISTING RIGHT-OF-WAY
  - - - PROPOSED RIGHT-OF-WAY
  - ▨ PROPERTY TO BE ACQUIRED

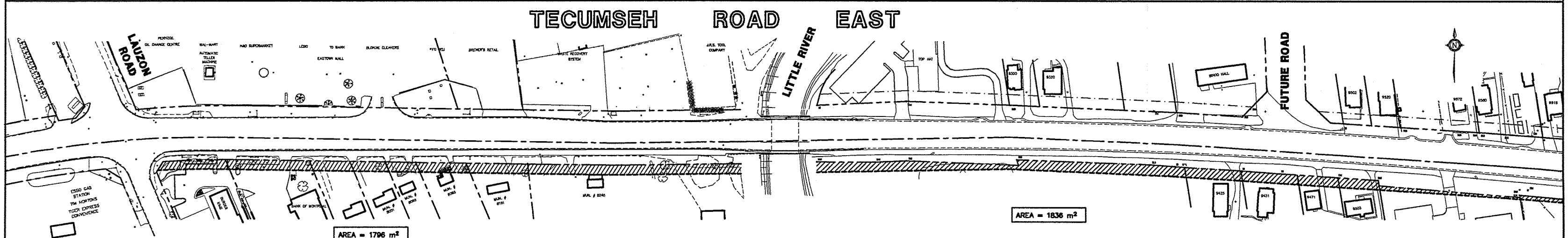
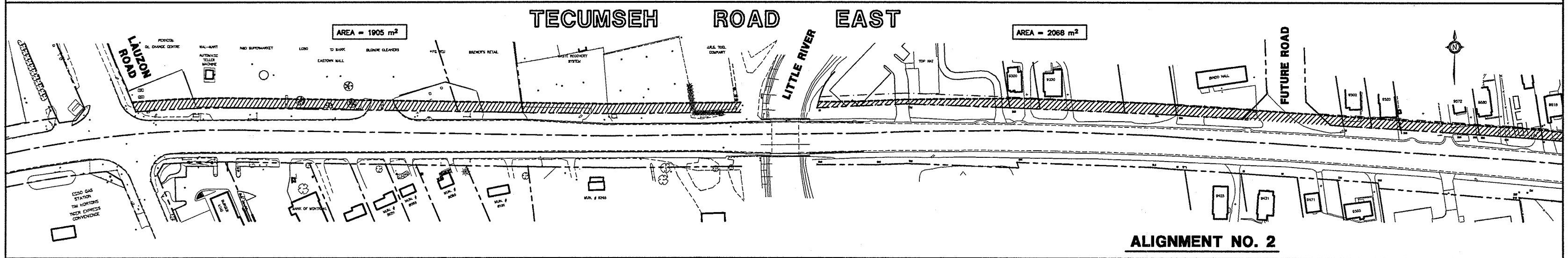
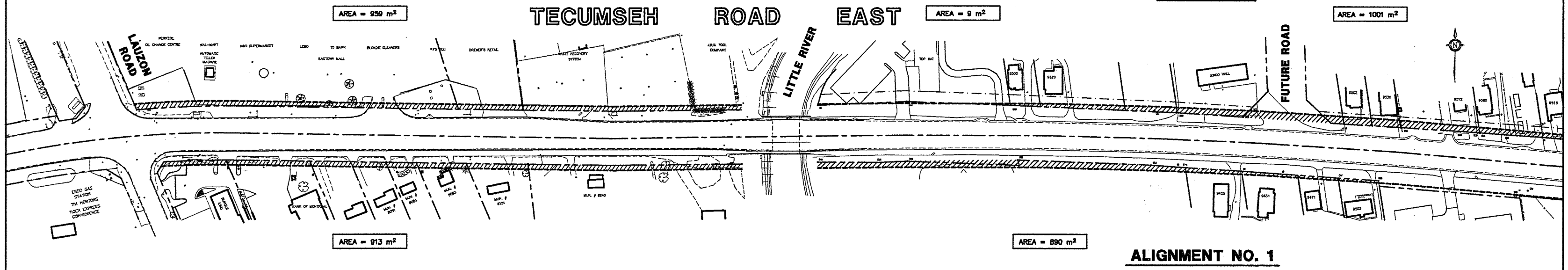


**ALTERNATIVE  
DESIGN CONCEPTS  
FIGURE 4.4(c)**

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



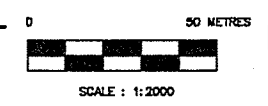
**SECTION 4**



**LEGEND** (REVISED DEC. 15/97)

- EXISTING RIGHT-OF-WAY
- - - PROPOSED RIGHT-OF-WAY
- ▨ PROPERTY TO BE ACQUIRED

**ALIGNMENT NO. 3**

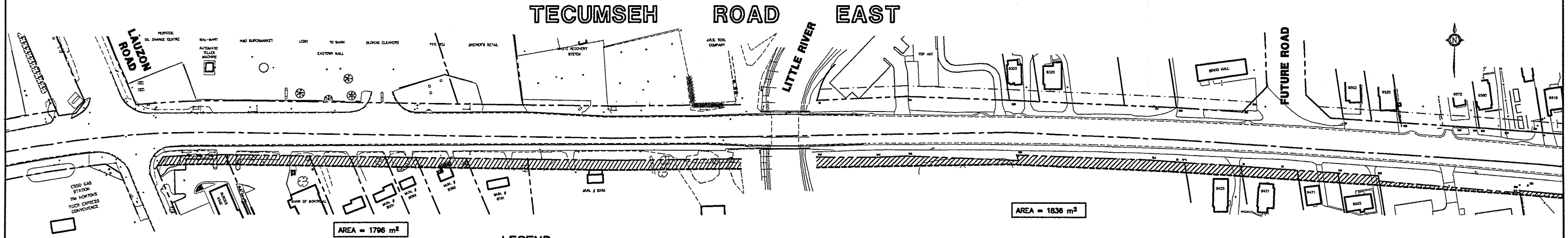
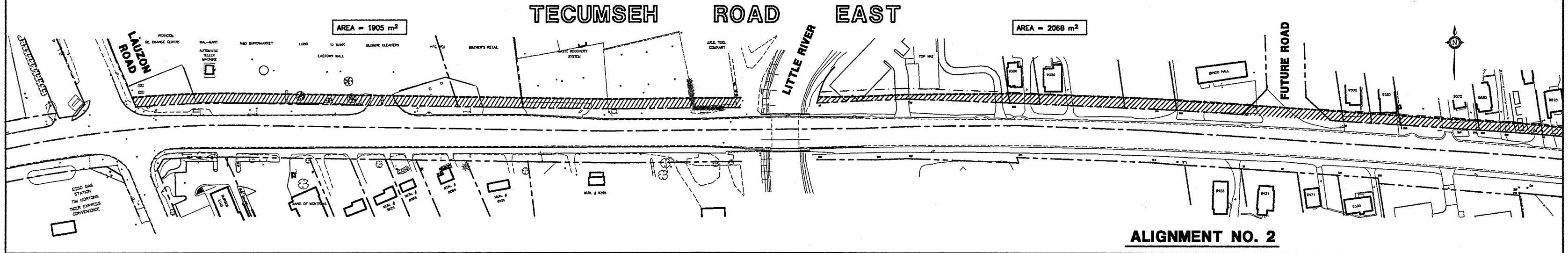
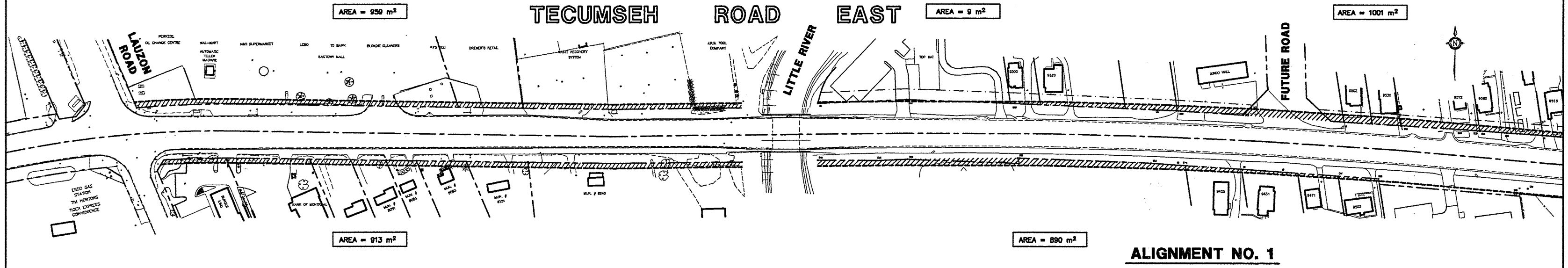


**ALTERNATIVE  
DESIGN CONCEPTS  
FIGURE 4.4(d)**

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



**SECTION 4**



**LEGEND** (REVISED DEC. 15/97)

- EXISTING RIGHT-OF-WAY
- - - PROPOSED RIGHT-OF-WAY
- ▨ PROPERTY TO BE ACQUIRED

SCALE: 1:2000

0 50 METRES

**ALTERNATIVE  
DESIGN CONCEPTS**

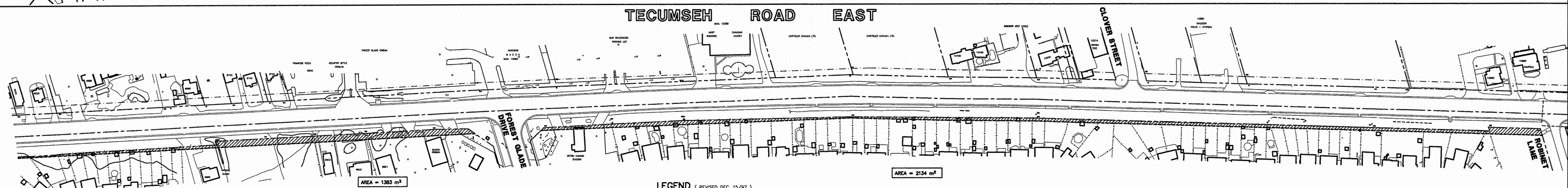
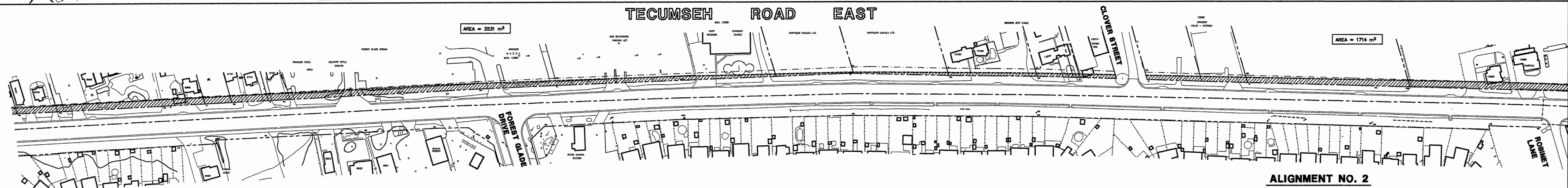
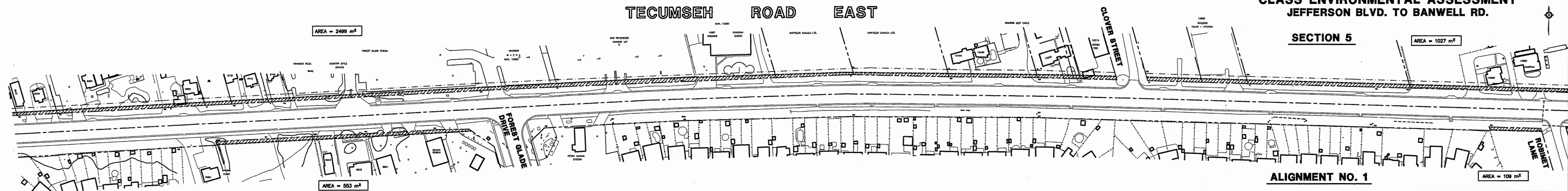
**FIGURE 4.4(d)**



**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**

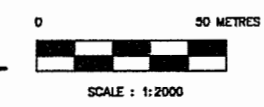


**SECTION 5**



**LEGEND** (REVISED DEC. 15/97)

- EXISTING RIGHT-OF-WAY
- - - PROPOSED RIGHT-OF-WAY
- ▨ PROPERTY TO BE ACQUIRED



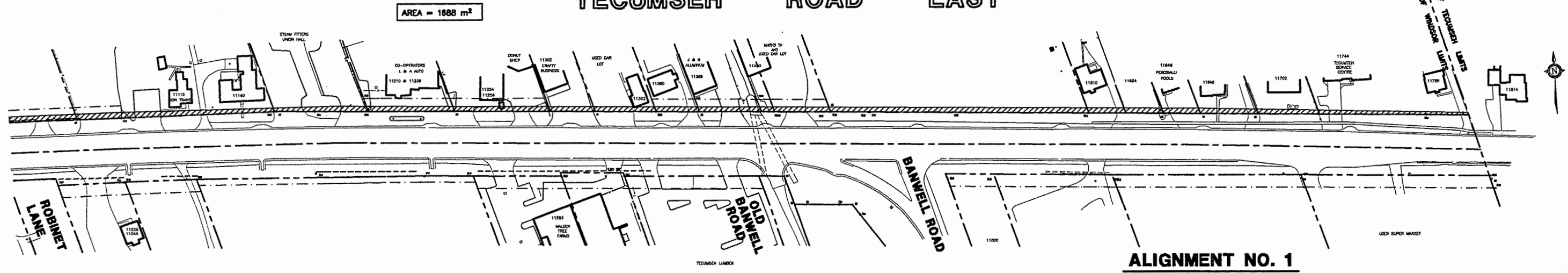
**ALTERNATIVE DESIGN CONCEPTS**  
**FIGURE 4.4(e)**

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**

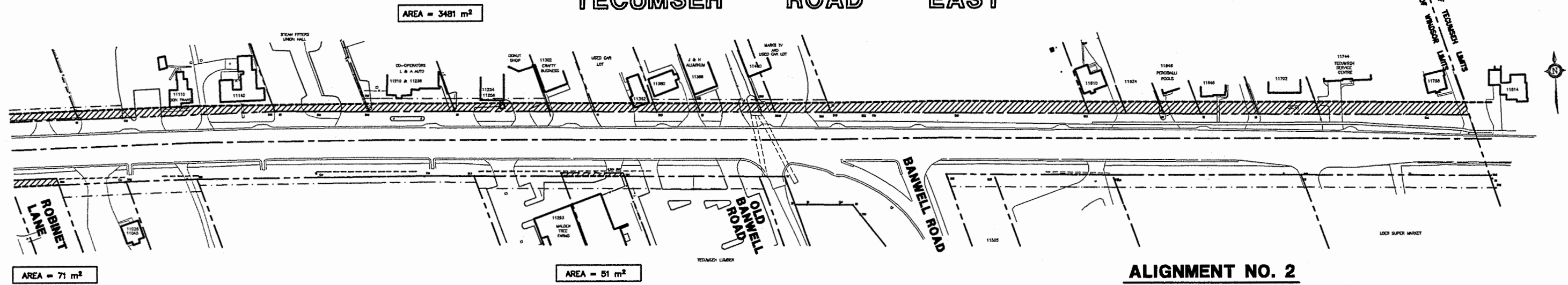


**SECTION 6**

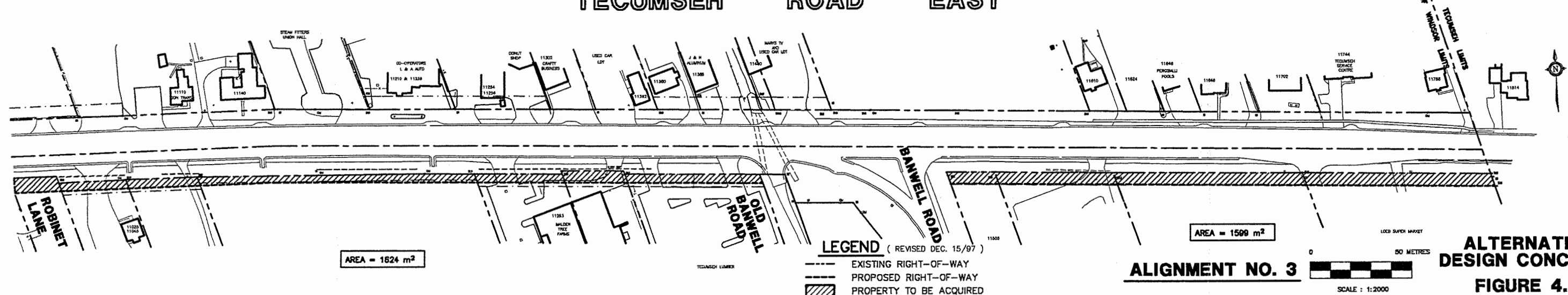
**TECUMSEH ROAD EAST**



**TECUMSEH ROAD EAST**



**TECUMSEH ROAD EAST**



**LEGEND** (REVISED DEC. 15/97)

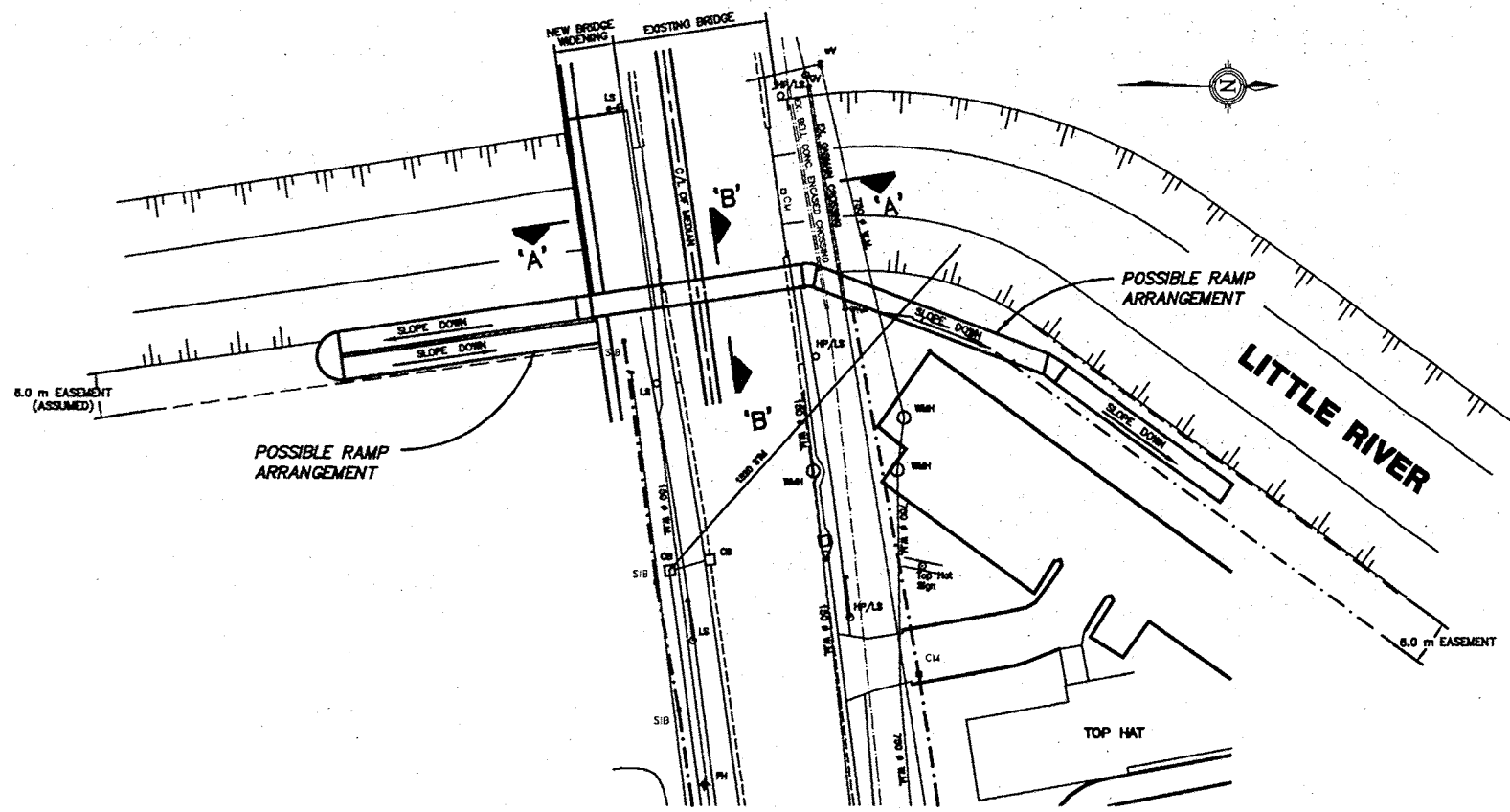
- EXISTING RIGHT-OF-WAY
- - - PROPOSED RIGHT-OF-WAY
- ▨ PROPERTY TO BE ACQUIRED



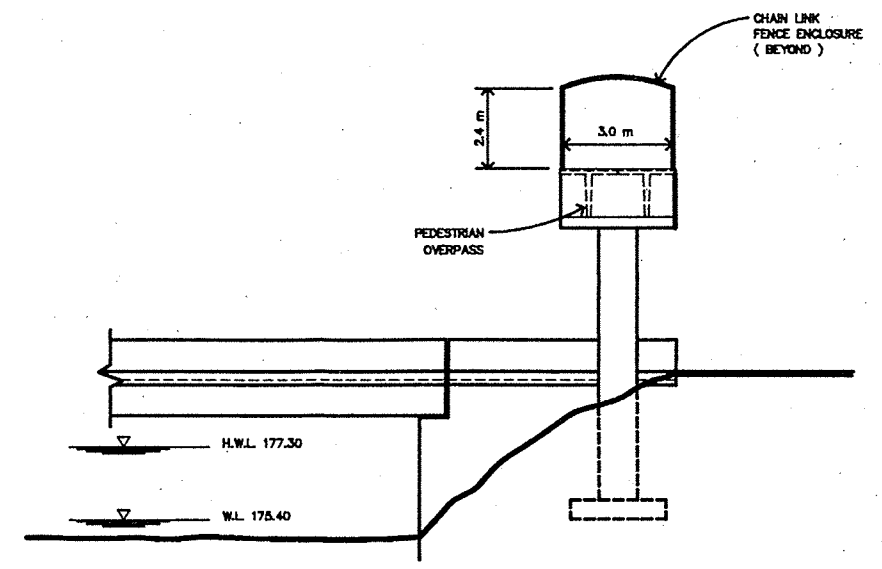
SCALE : 1:2000

**ALTERNATIVE  
DESIGN CONCEPTS  
FIGURE 4.4(f)**

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**

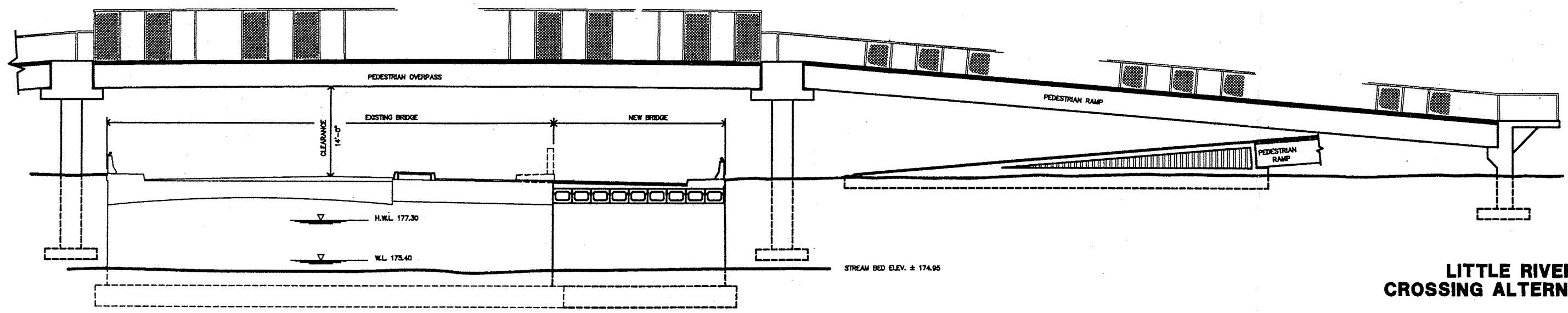


**SITE PLAN**  
SCALE 1:1000



**SECTION B-B**  
SCALE 1:200

**BRIDGE ELEVATION OF SECTION THRU PEDESTRIAN OVERPASS**



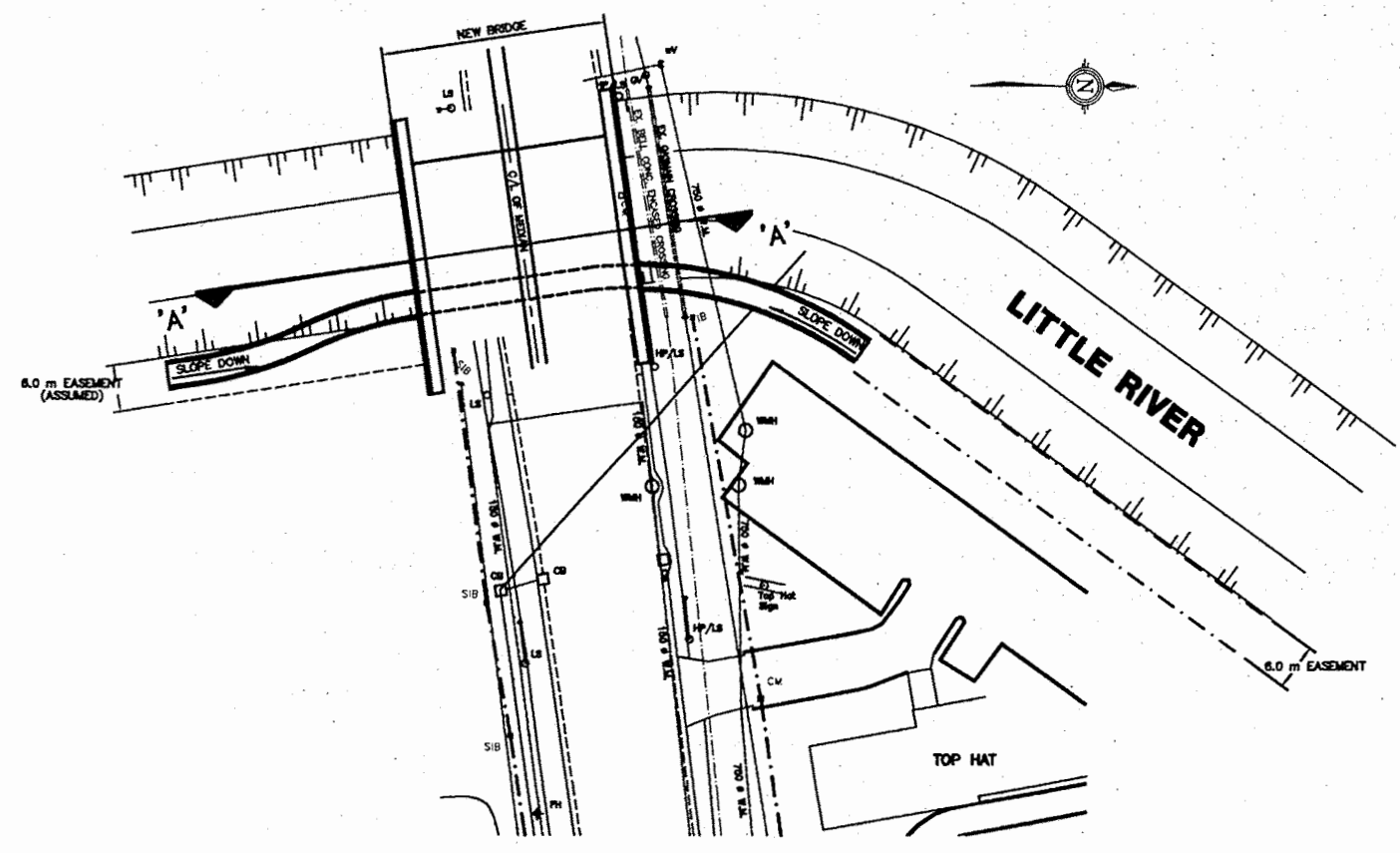
**SECTION A-A**  
SCALE 1:200

**LITTLE RIVER  
CROSSING ALTERNATIVES**

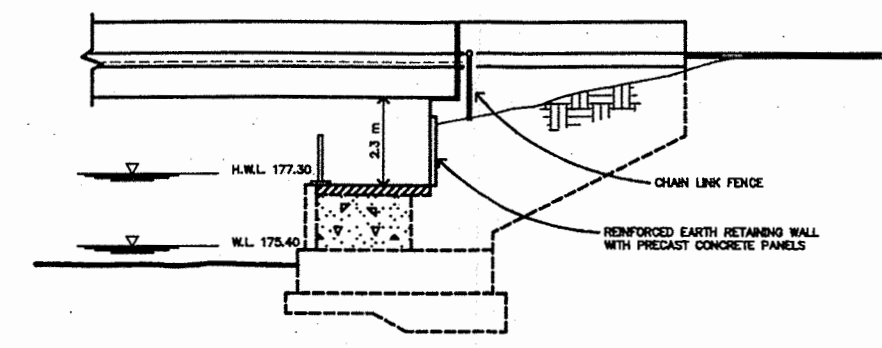
**ALTERNATIVE NO. 1  
WIDEN EXISTING BRIDGE AND  
CONSTRUCT PEDESTRIAN OVERPASS**

**FIGURE 4.5(a)**

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



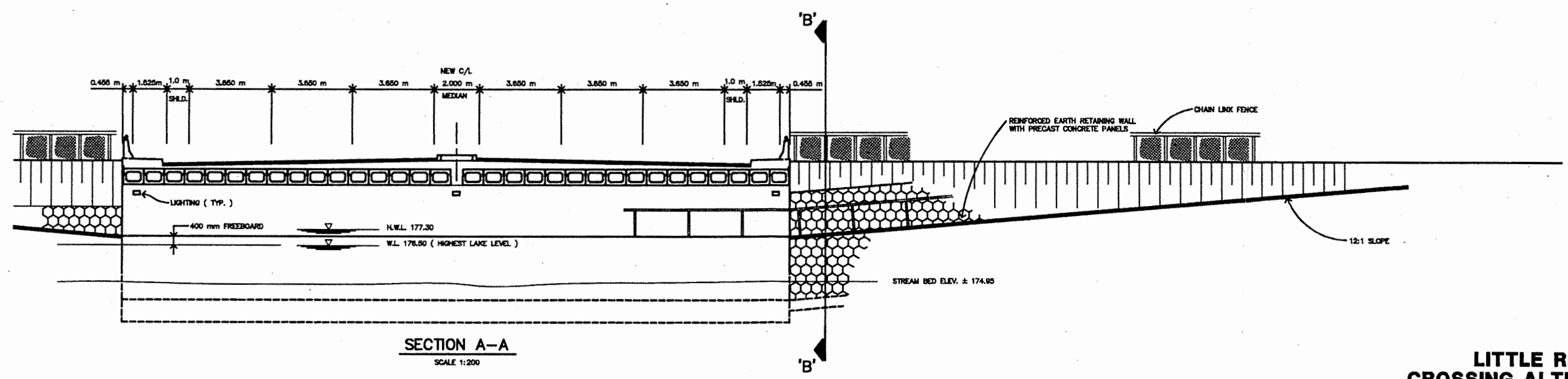
**SITE PLAN**  
SCALE 1:1000



NOTE: THE EAST ABUTMENT HAS BEEN OFFSET APPROX. 3m AWAY FROM THE RIVER TO ALLOW FOR THE PEDESTRIAN UNDERPASS & RAMPING.

**SECTION B-B**  
SCALE 1:200

**NEW RAISED BRIDGE ELEVATION WITH PEDESTRIAN UNDERPASS**



**SECTION A-A**  
SCALE 1:200

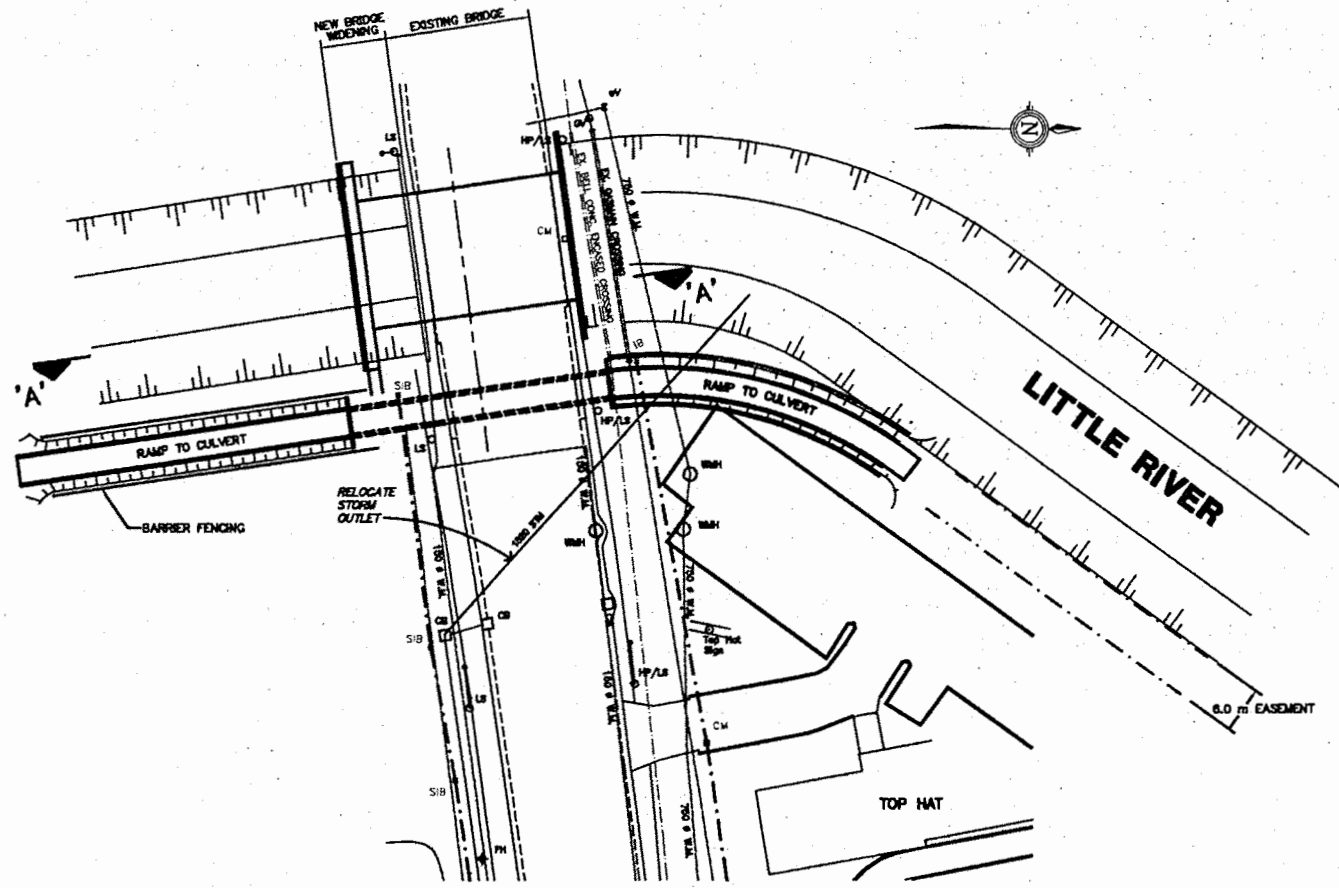
**LITTLE RIVER  
CROSSING ALTERNATIVES**

**ALTERNATIVE NO. 2  
NEW STRUCTURE RAISED TO  
ACCOMMODATE PEDESTRIAN UNDERPASS**

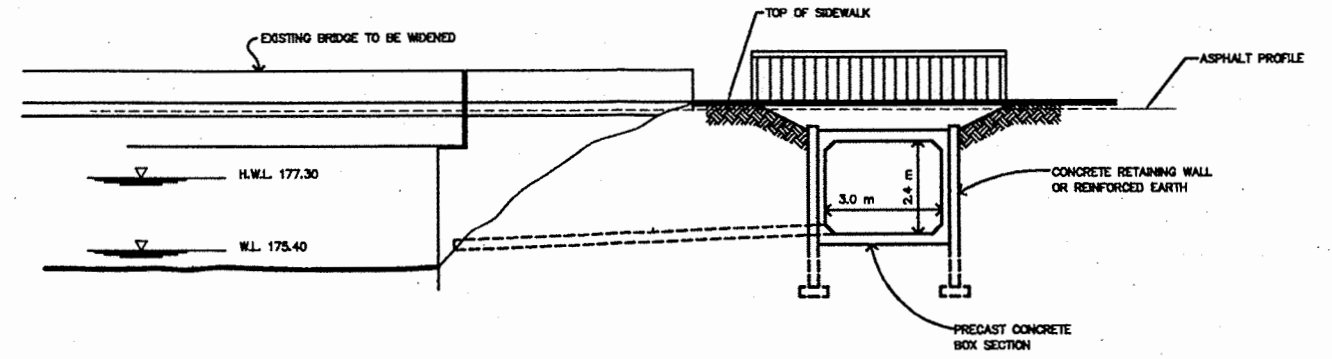
**FIGURE 4.5(b)**



**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**

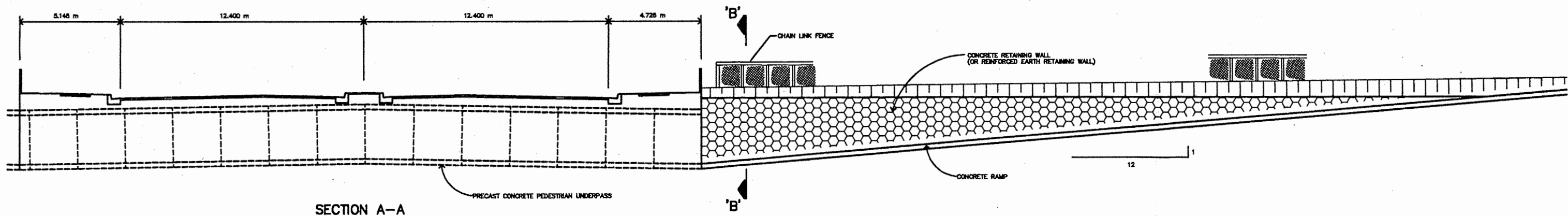


**SITE PLAN**  
SCALE 1:1000



**SECTION B-B**  
SCALE 1:200

**SOUTH OR NORTH ELEVATION**



**SECTION A-A**  
SCALE 1:200  
**SECTION THRU PRECAST CULVERT**

**LITTLE RIVER  
CROSSING ALTERNATIVES**

**ALTERNATIVE NO. 3  
WIDEN EXISTING BRIDGE AND  
CONSTRUCT TUNNEL PEDESTRIAN UNDERPASS**

**FIGURE 4.5(c)**



**TECUMSEH ROAD EAST**

AREA = 1122 m<sup>2</sup>

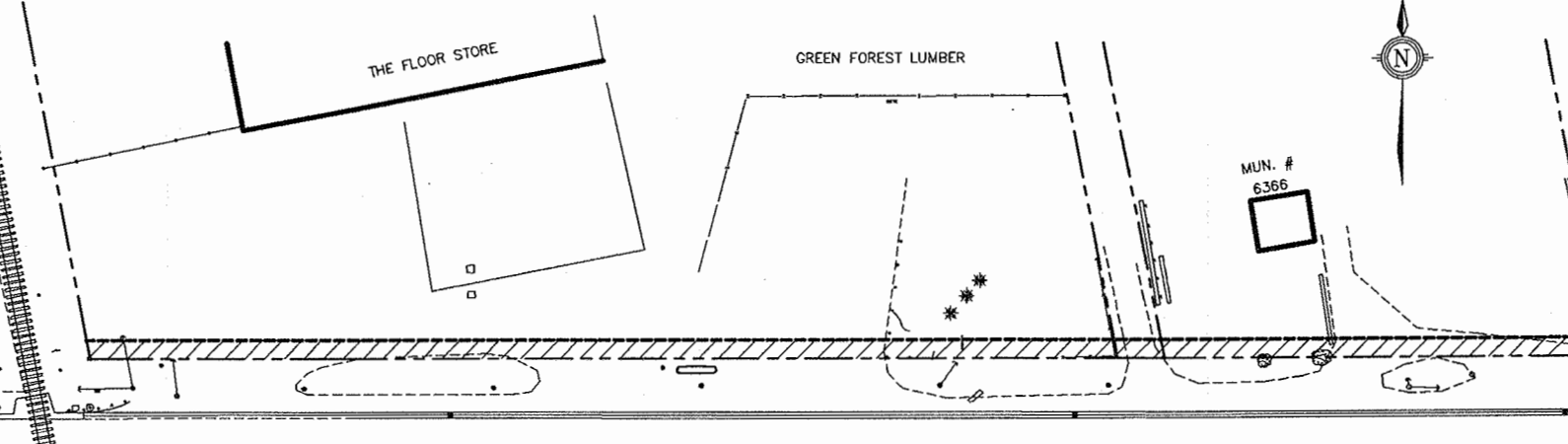
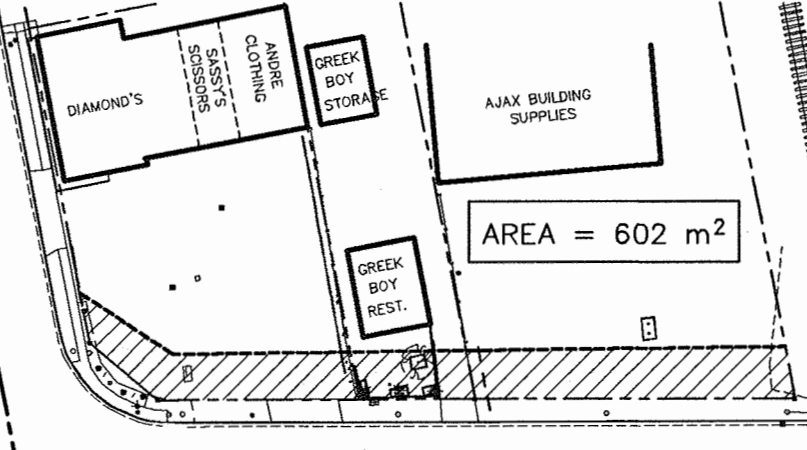
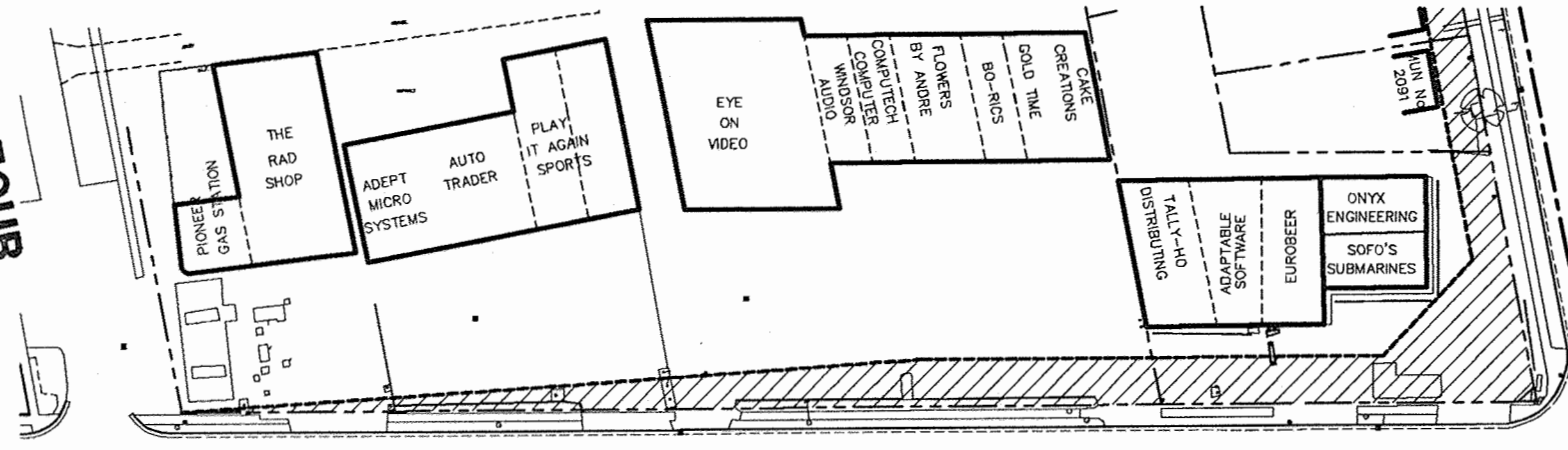
SECTION 1 - ALIGNMENT 1

AREA = 487 m<sup>2</sup>

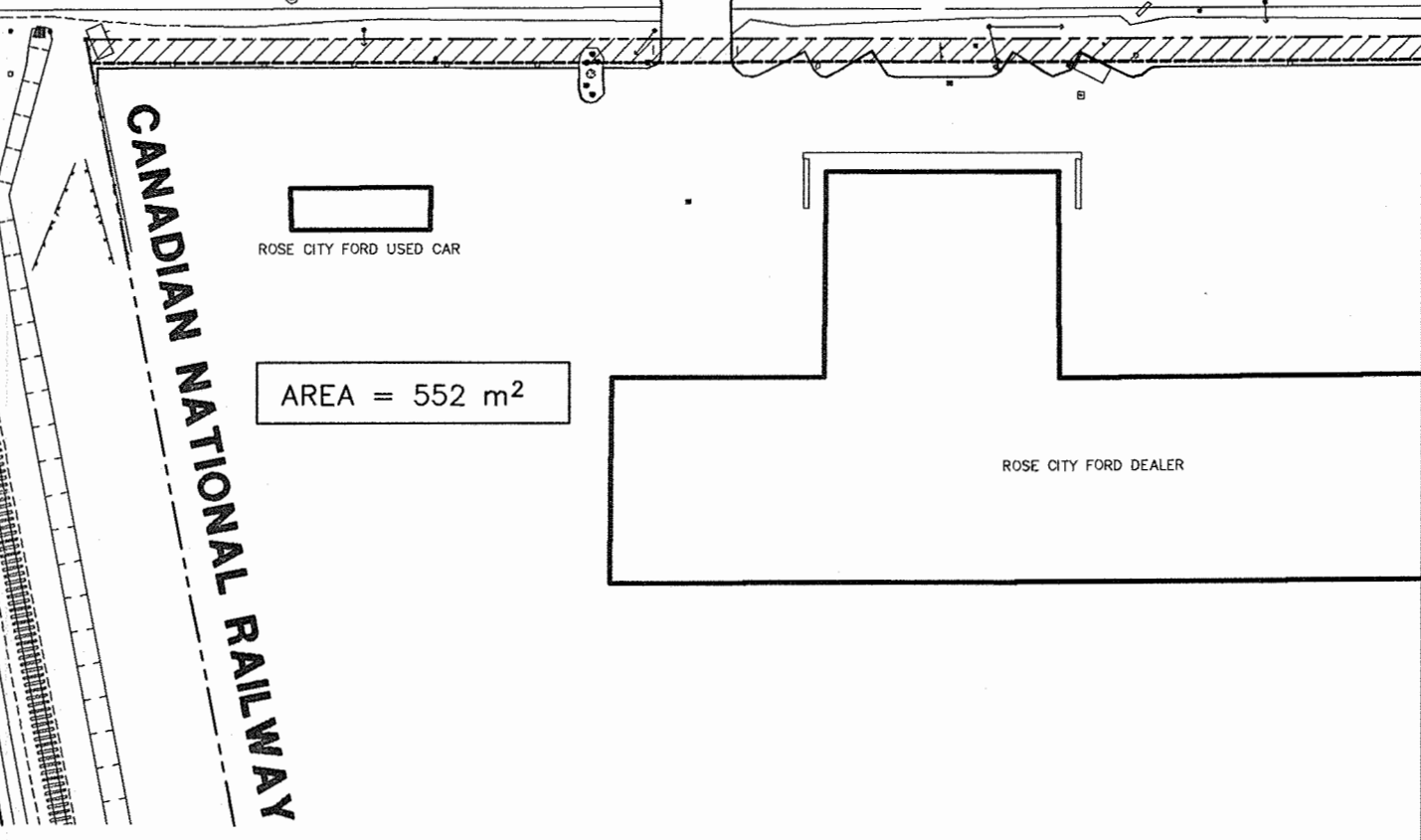
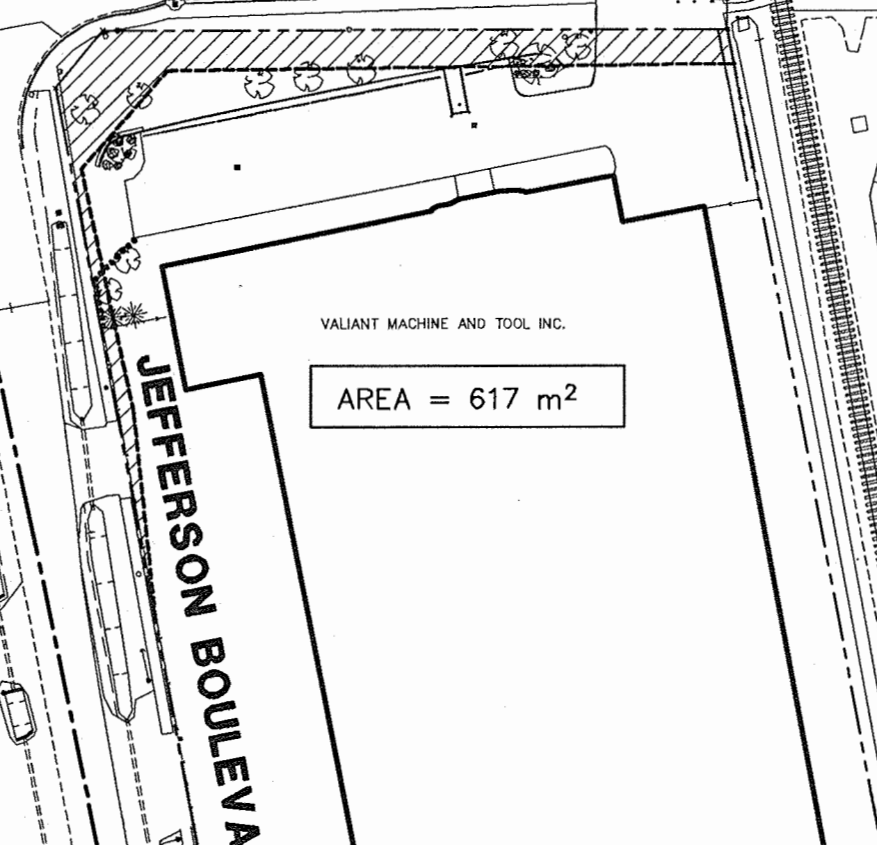
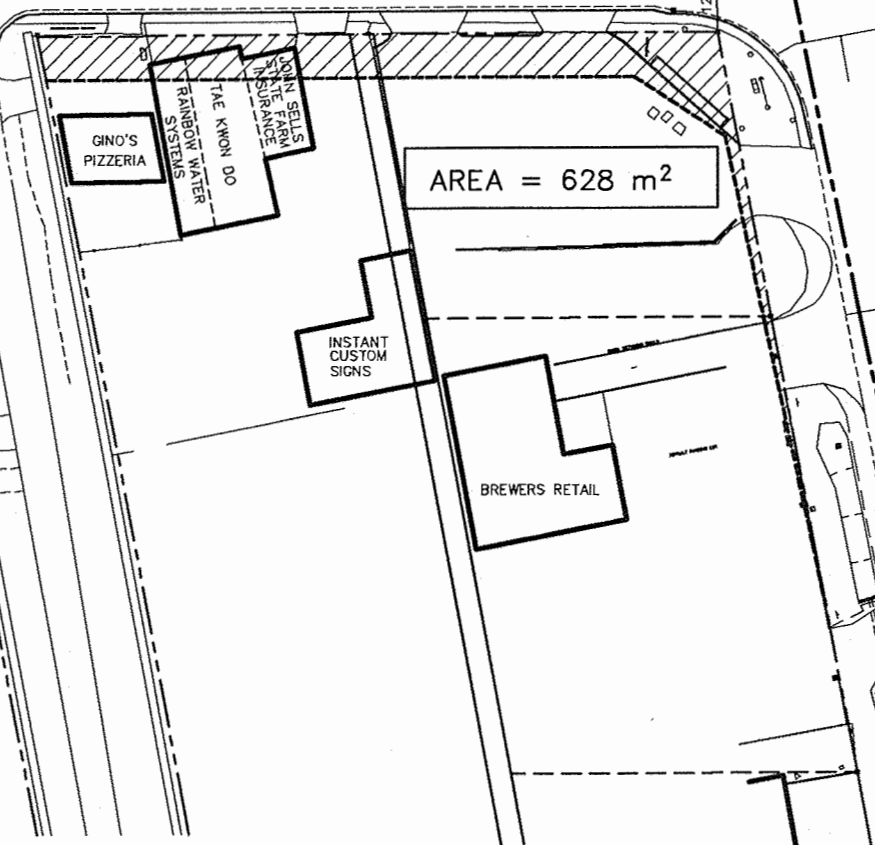
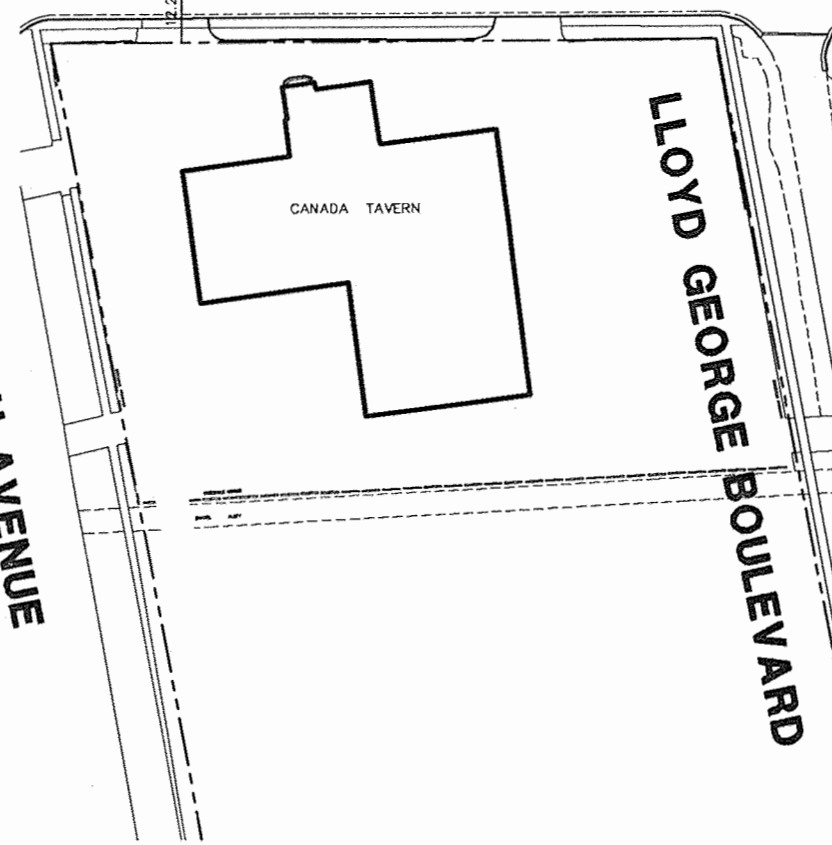
SECTION 2 - ALIGNMENT 2

TRANSITION BETWEEN ALIGNMENT NO. 1 & NO. 2

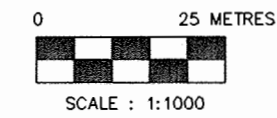
**BALFOUR BOULEVARD**



**CLEMENCEAU AVENUE**



**'PREFERRED ALIGNMENT'**

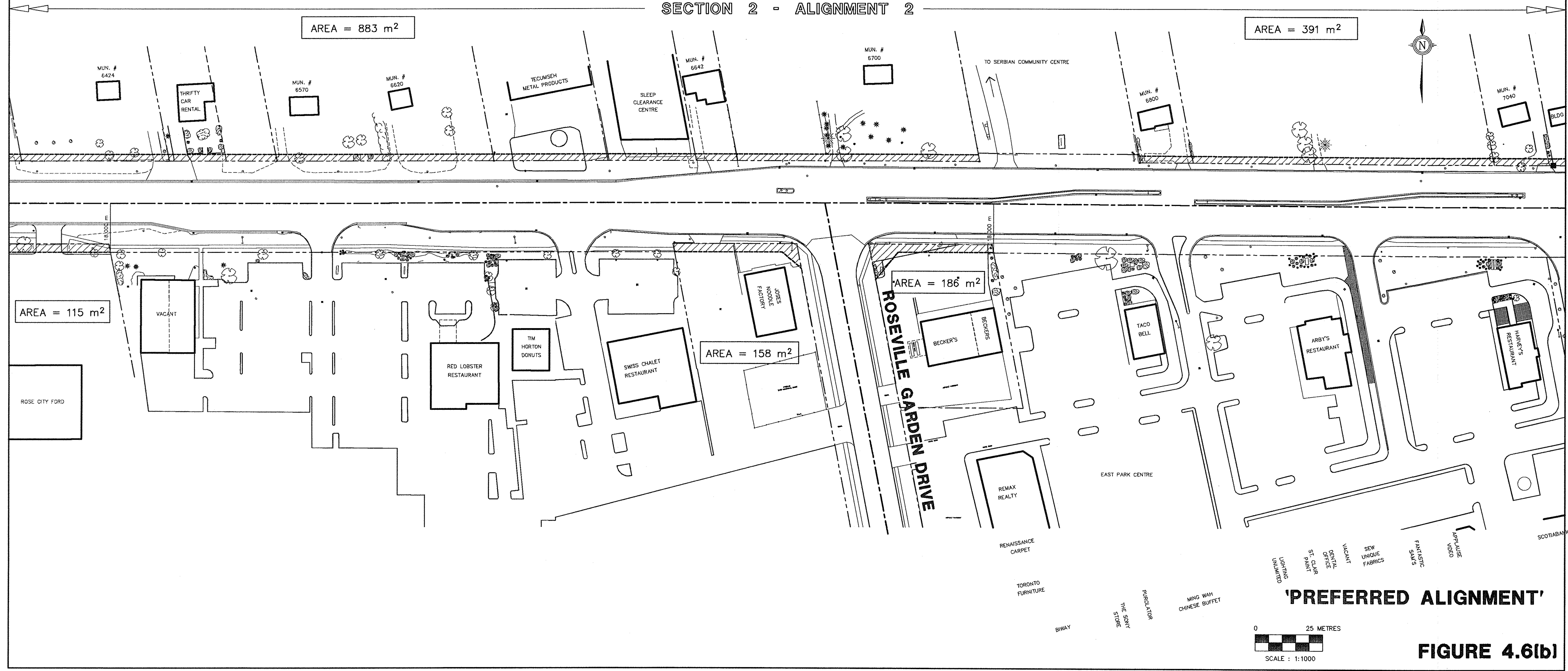


**FIGURE 4.6(a)**



**TECUMSEH ROAD EAST**

SECTION 2 - ALIGNMENT 2



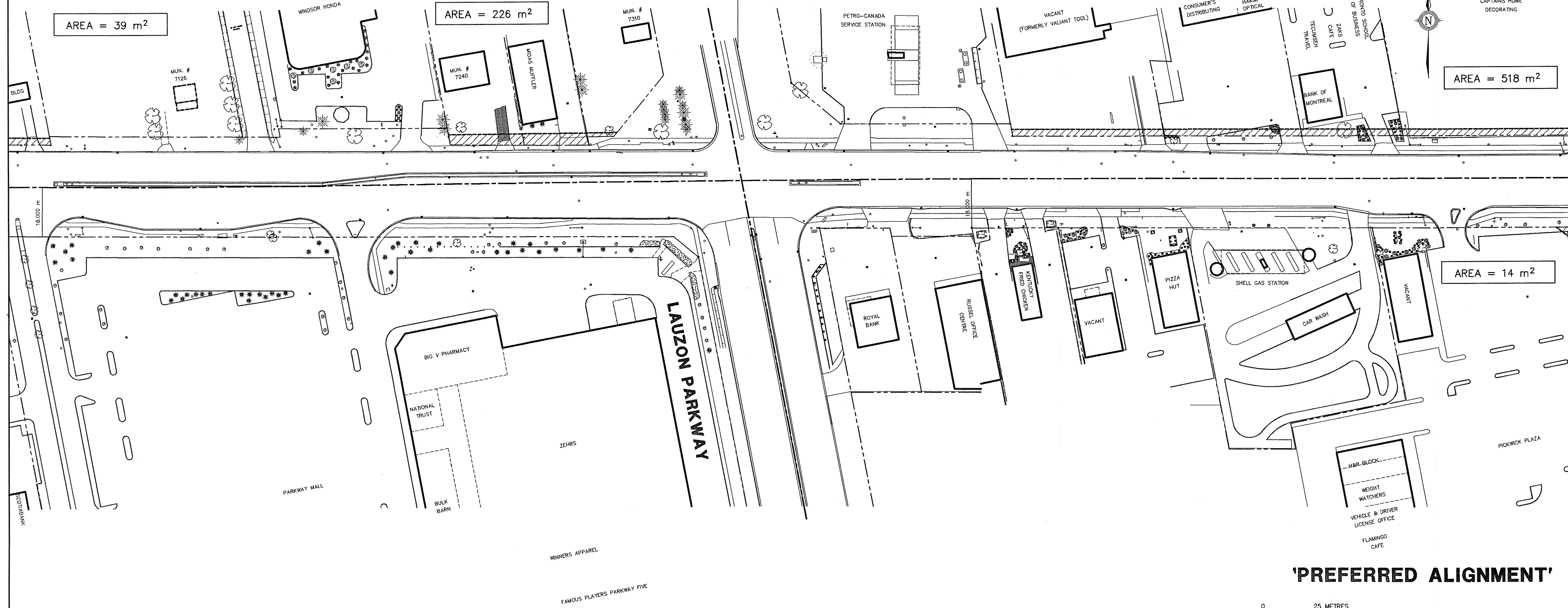
**'PREFERRED ALIGNMENT'**

**FIGURE 4.6(b)**

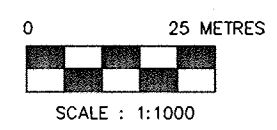
**TECUMSEH ROAD EAST**

**SECTION 2 - ALIGNMENT 2**

**SECTION 3 - ALIGNMENT 2**



**'PREFERRED ALIGNMENT'**



**FIGURE 4.6(c)**

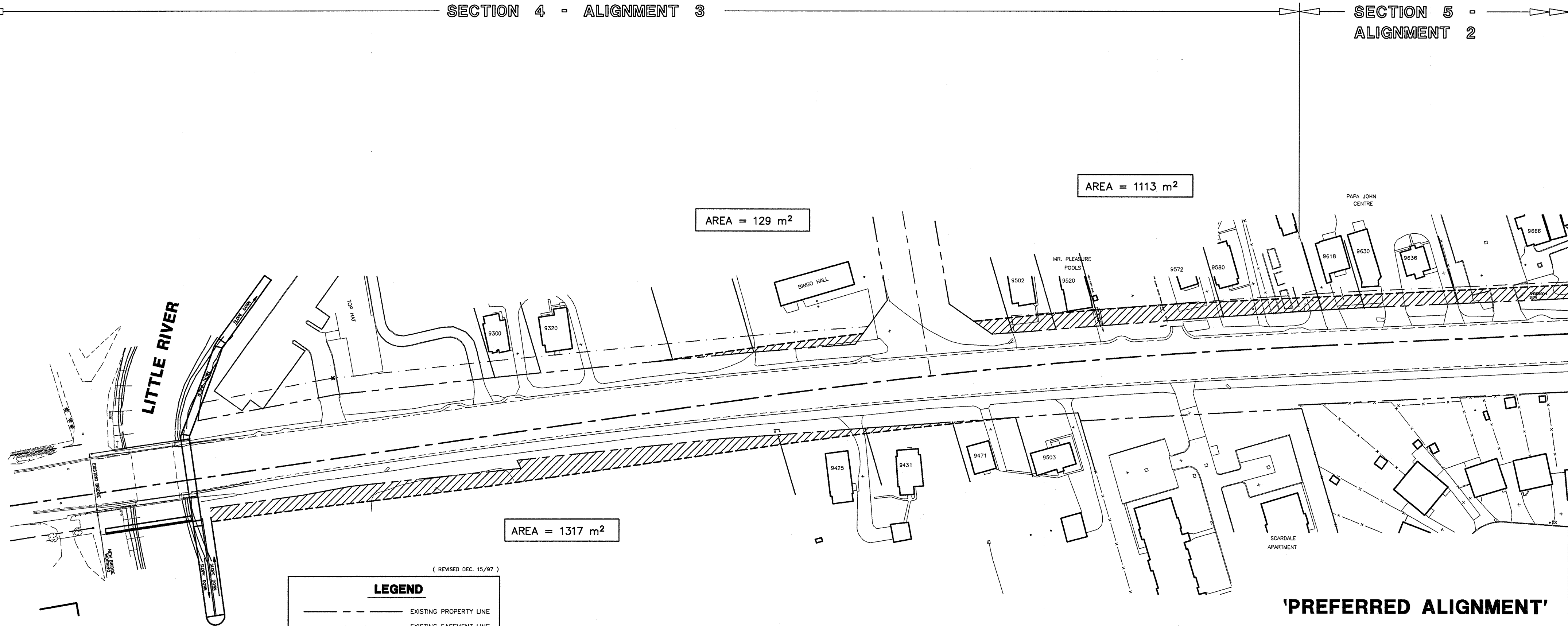




TECUMSEH ROAD EAST

SECTION 4 - ALIGNMENT 3

SECTION 5 - ALIGNMENT 2



AREA = 129 m<sup>2</sup>

AREA = 1113 m<sup>2</sup>

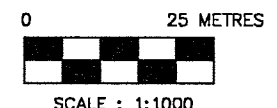
AREA = 1317 m<sup>2</sup>

( REVISED DEC. 15/97 )

**LEGEND**

- — — — — EXISTING PROPERTY LINE
- - - - - EXISTING EASEMENT LINE
- - - - - NEW PROPERTY LINE

**'PREFERRED ALIGNMENT'**

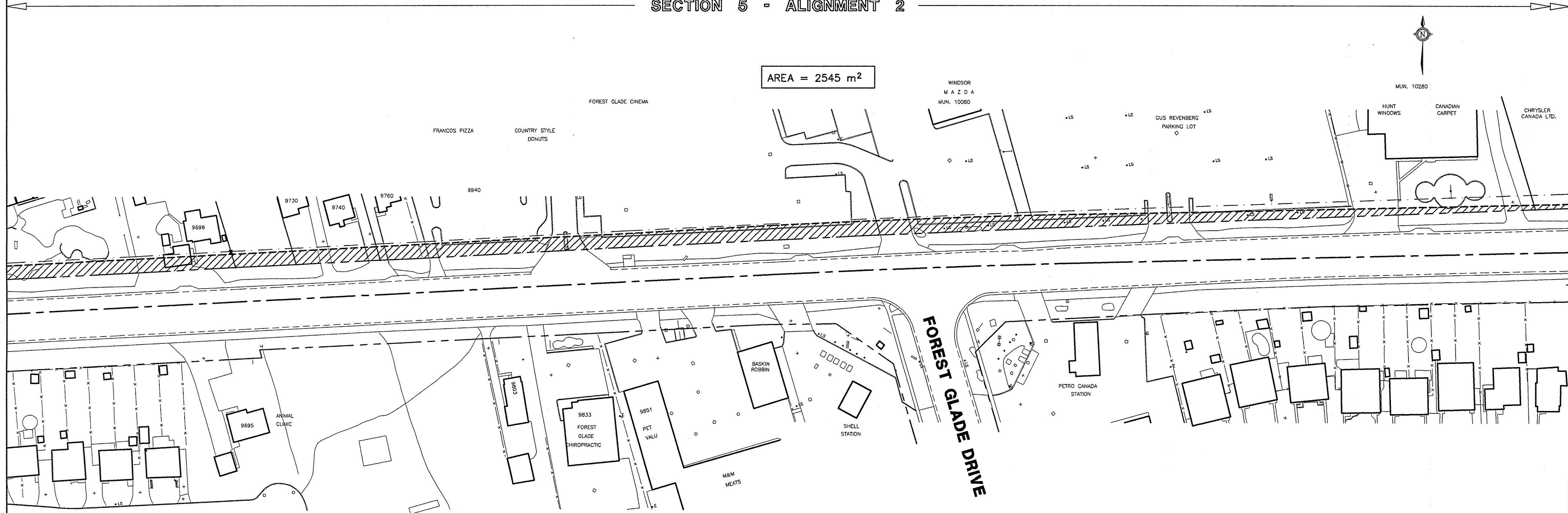


**FIGURE 4.6(e)**

**TECUMSEH ROAD EAST**

**SECTION 5 - ALIGNMENT 2**

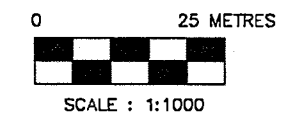
AREA = 2545 m<sup>2</sup>



( REVISED DEC. 15/97 )

LEGEND	
	EXISTING PROPERTY LINE
	EXISTING EASEMENT LINE
	NEW PROPERTY LINE

**'PREFERRED ALIGNMENT'**



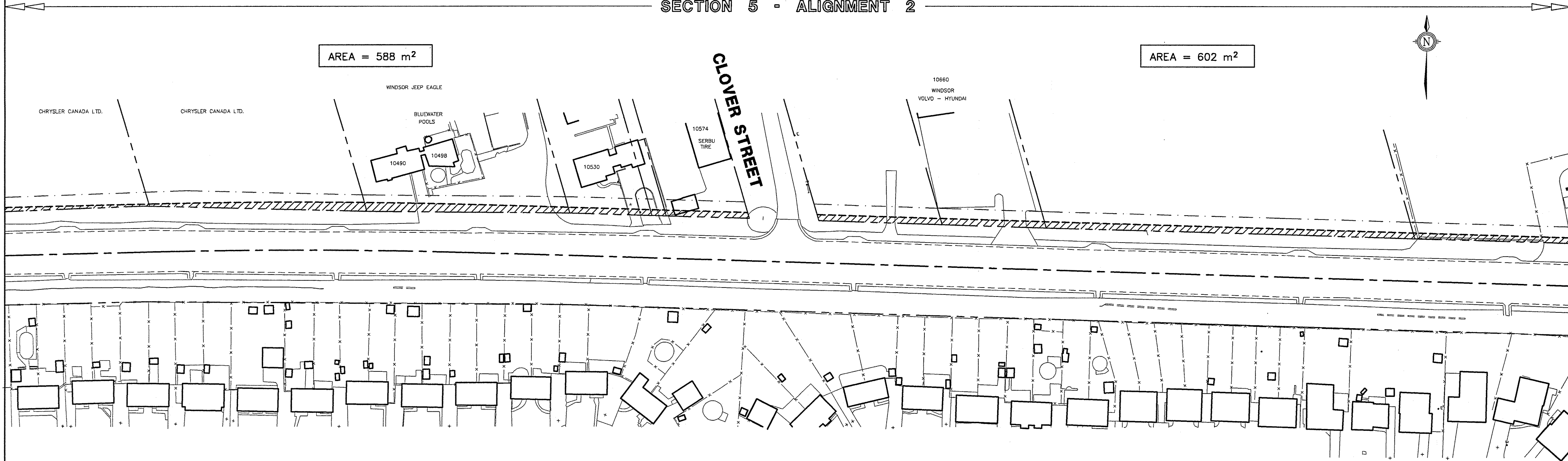
**FIGURE 4.6(f)**

**TECUMSEH ROAD EAST**

SECTION 5 - ALIGNMENT 2

AREA = 588 m<sup>2</sup>

AREA = 602 m<sup>2</sup>

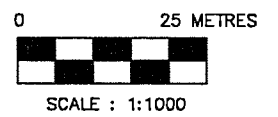


(REVISED DEC. 15/97)

**LEGEND**

- — — — — EXISTING PROPERTY LINE
- - - - - EXISTING EASEMENT LINE
- - - - - NEW PROPERTY LINE

**'PREFERRED ALIGNMENT'**



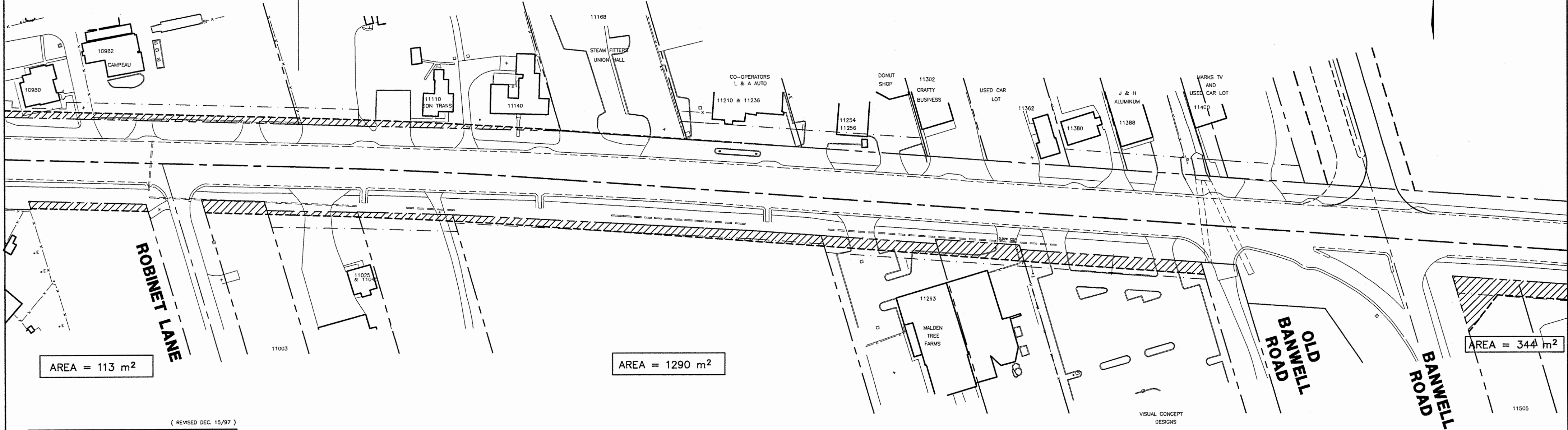
**FIGURE 4.6(g)**

**TECUMSEH ROAD EAST**

SECTION 5 -  
ALIGNMENT 2

SECTION 6 - ALIGNMENT 3

AREA = 429 m<sup>2</sup>



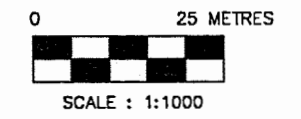
AREA = 113 m<sup>2</sup>

AREA = 1290 m<sup>2</sup>

AREA = 344 m<sup>2</sup>

( REVISED DEC. 15/97 )

LEGEND	
	EXISTING PROPERTY LINE
	EXISTING EASEMENT LINE
	NEW PROPERTY LINE



**'PREFERRED ALIGNMENT'**

**FIGURE 4.6(h)**

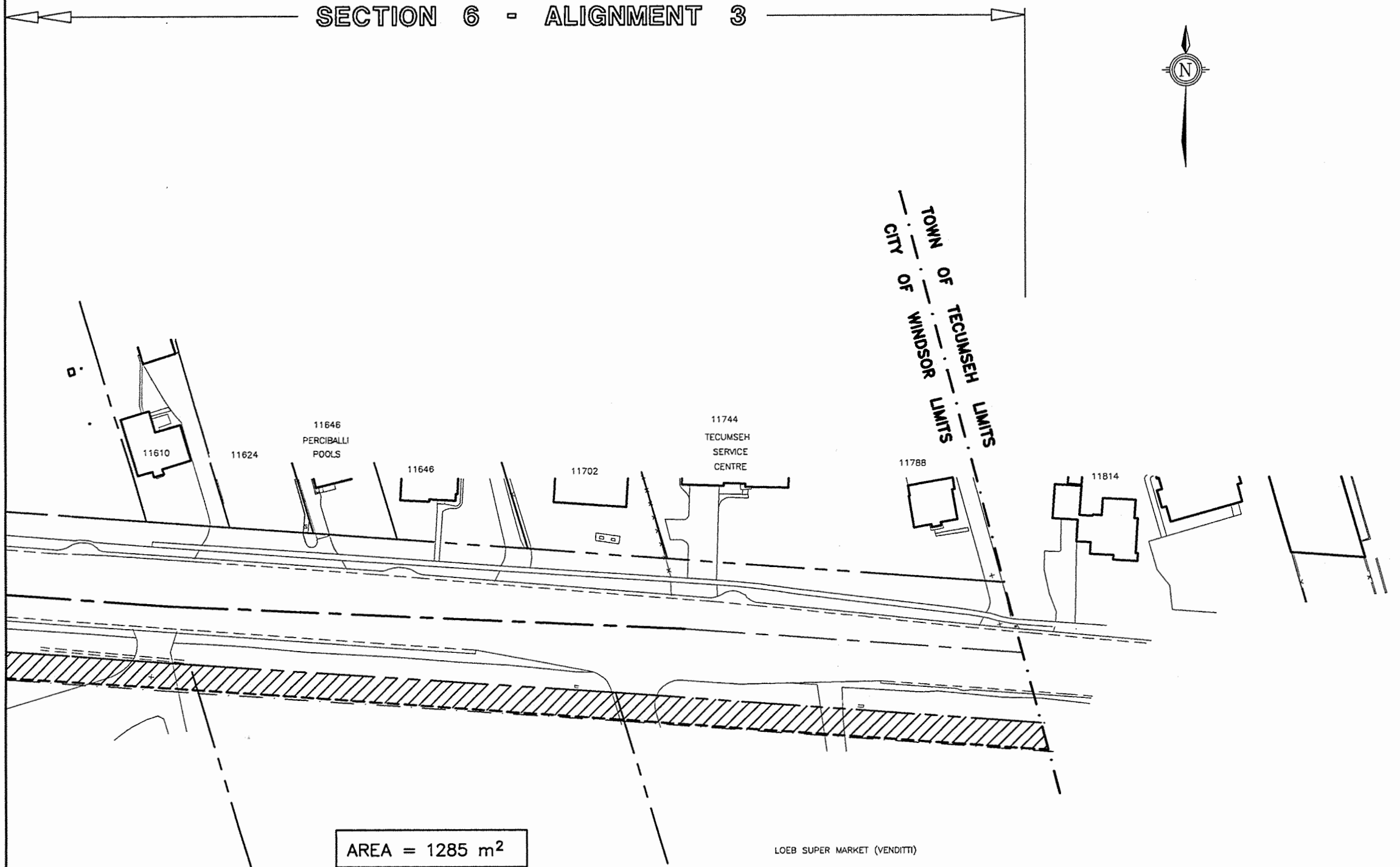


# TECUMSEH ROAD EAST

## TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT JEFFERSON BLVD. TO BANWELL RD.



SECTION 6 - ALIGNMENT 3



AREA = 1285 m<sup>2</sup>

( REVISED DEC. 15/97 )

**LEGEND**

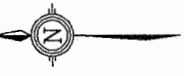
- — — — — EXISTING PROPERTY LINE
- · - · - · - EXISTING EASEMENT LINE
- - - - - NEW PROPERTY LINE

**'PREFERRED ALIGNMENT'**

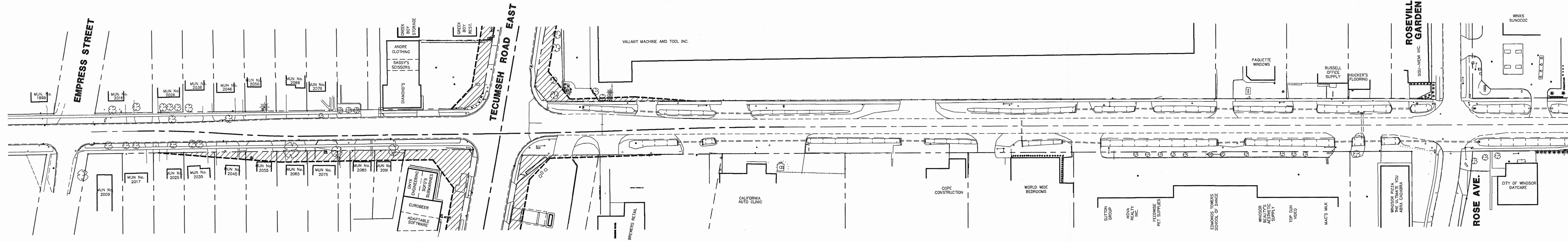
0 25 METRES

SCALE : 1:1000

**FIGURE 4.6(ii)**



JEFFERSON BOULEVARD



'PREFERRED ALIGNMENT'

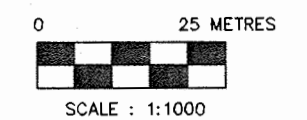
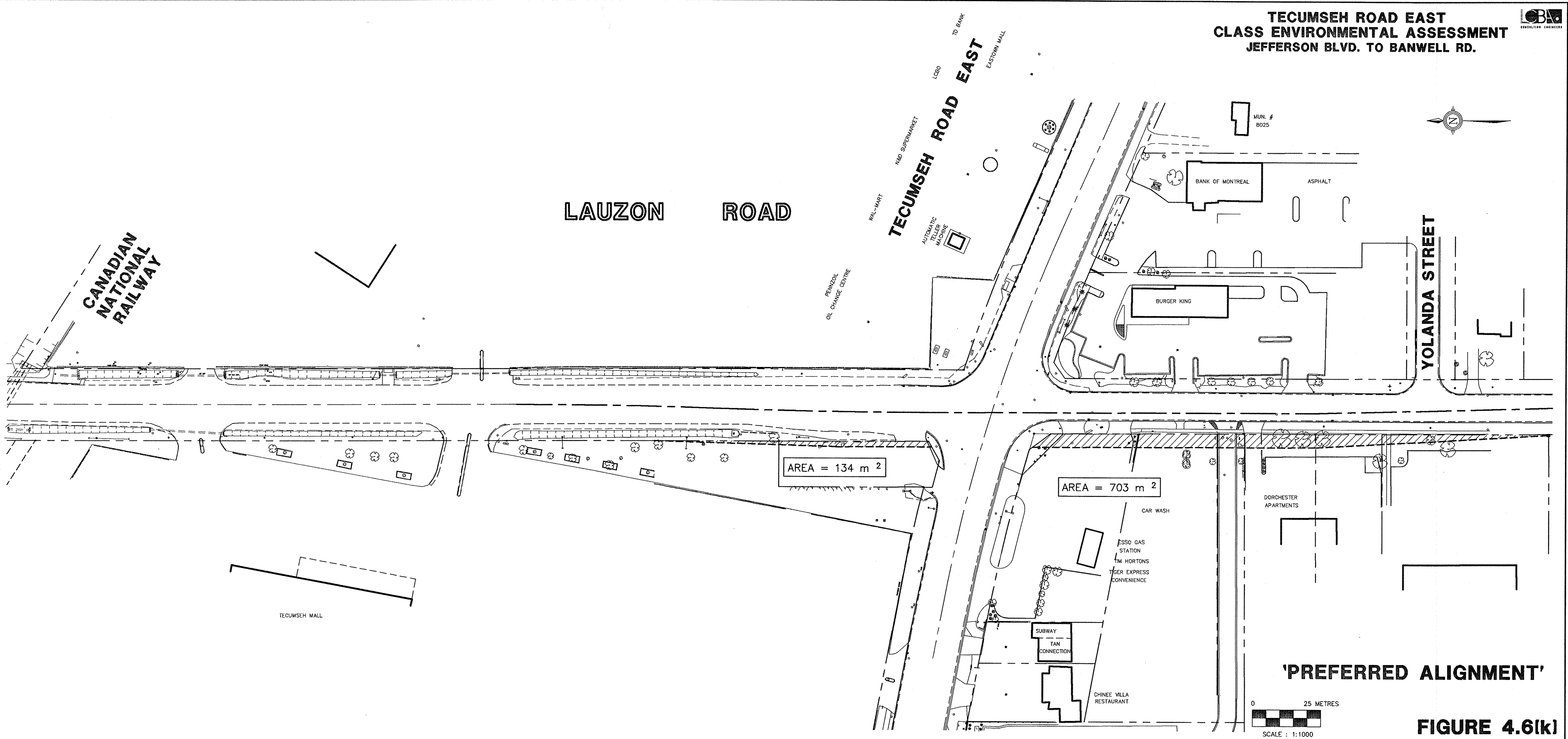
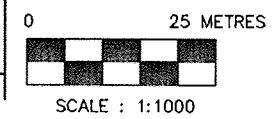


FIGURE 4.6(j)

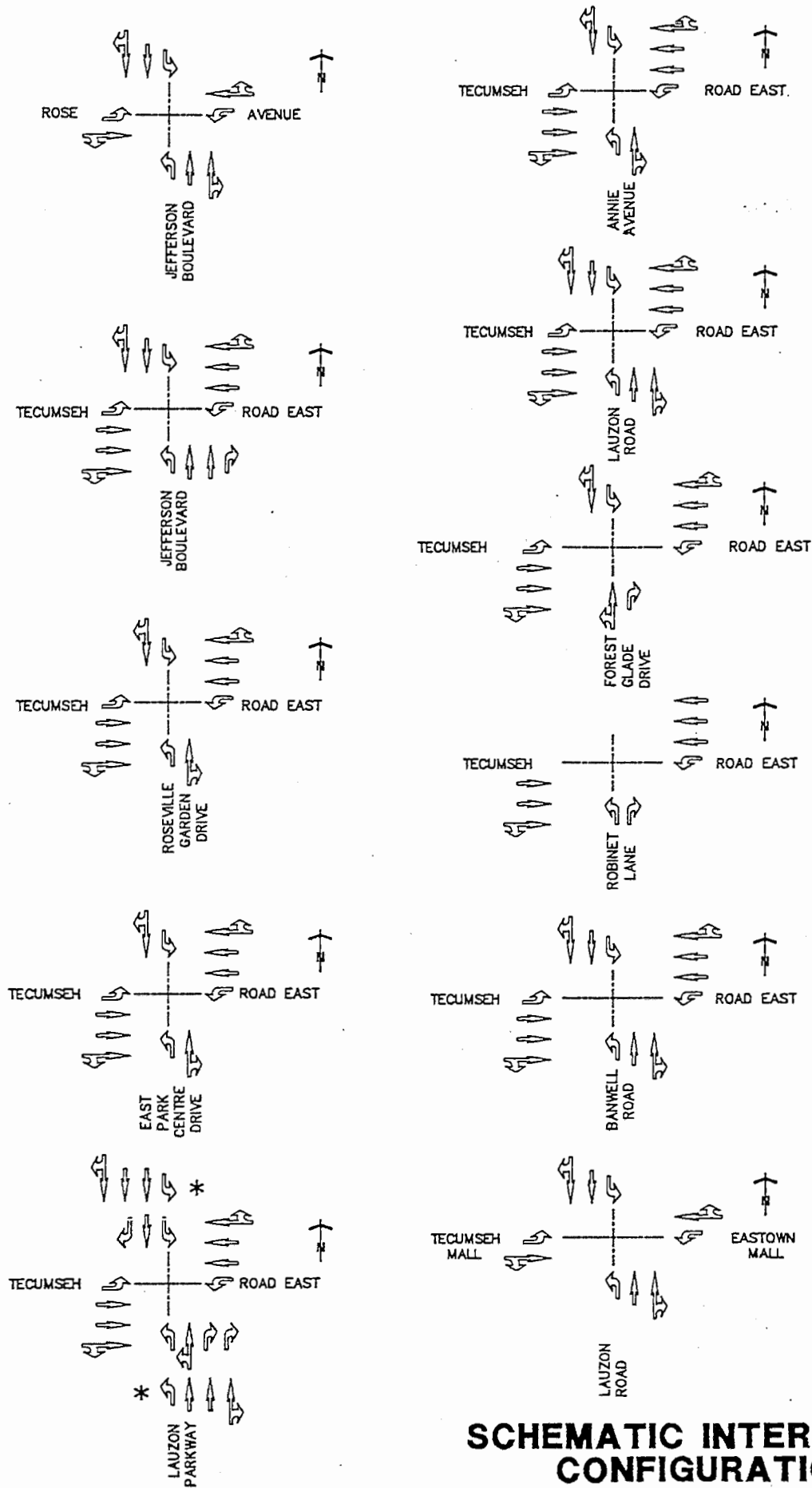
**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



**'PREFERRED ALIGNMENT'**



**FIGURE 4.6(k)**



**SCHEMATIC INTERSECTION CONFIGURATION**

**FIGURE 4.7**

\* ULTIMATE WHEN LAUZON PARKWAY IS EXTENDED

**TECUMSEH ROAD EAST**

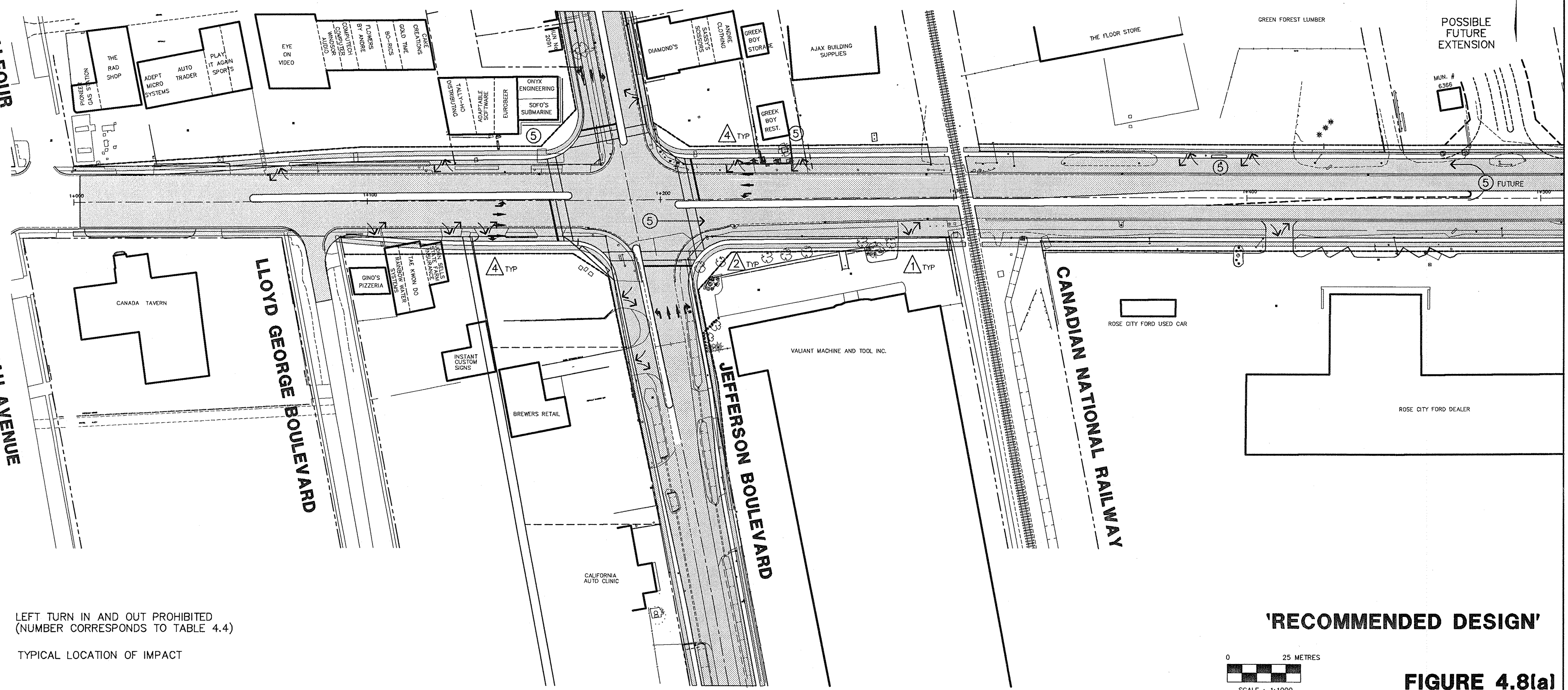
**BALEFOUR  
BOULEVARD**

**CLEMENCEAU AVENUE**

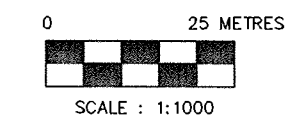
**LLOYD GEORGE BOULEVARD**

**JEFFERSON BOULEVARD**

**CANADIAN NATIONAL RAILWAY**



LEFT TURN IN AND OUT PROHIBITED  
(NUMBER CORRESPONDS TO TABLE 4.4)  
 TYPICAL LOCATION OF IMPACT

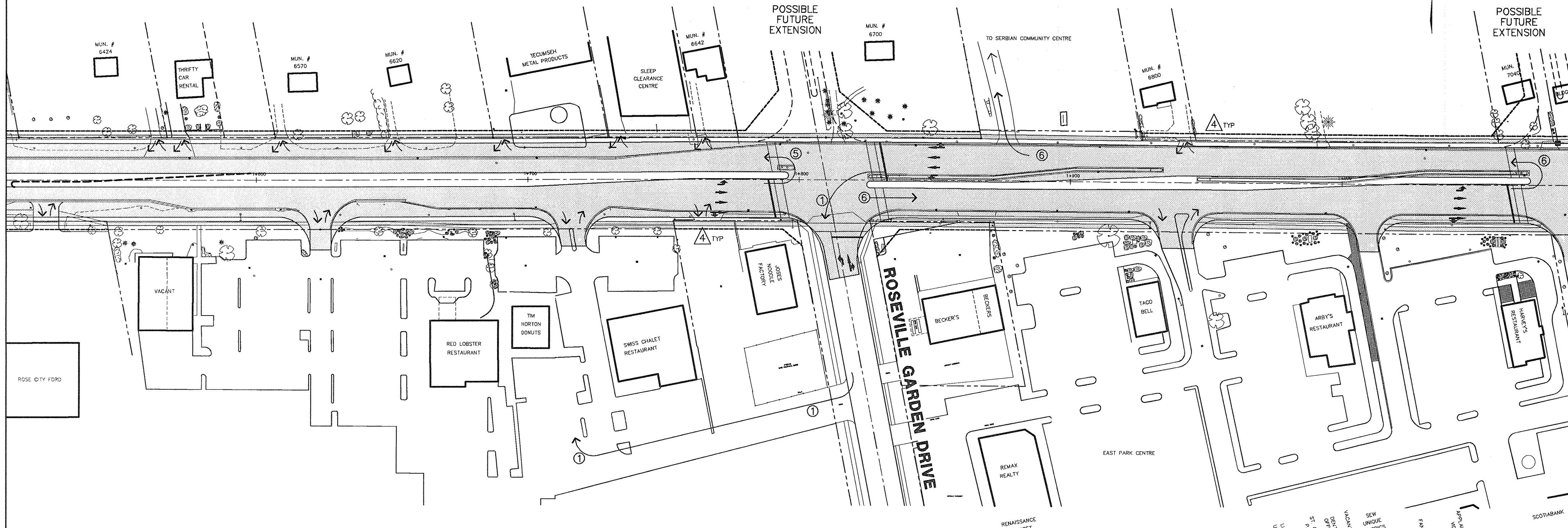


**'RECOMMENDED DESIGN'**

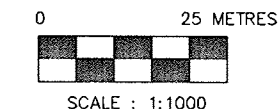
**FIGURE 4.8(a)**



**TECUMSEH ROAD EAST**



LEFT TURN IN AND OUT PROHIBITED  
(NUMBER CORRESPONDS TO TABLE 4.4)  
 TYPICAL LOCATION OF IMPACT



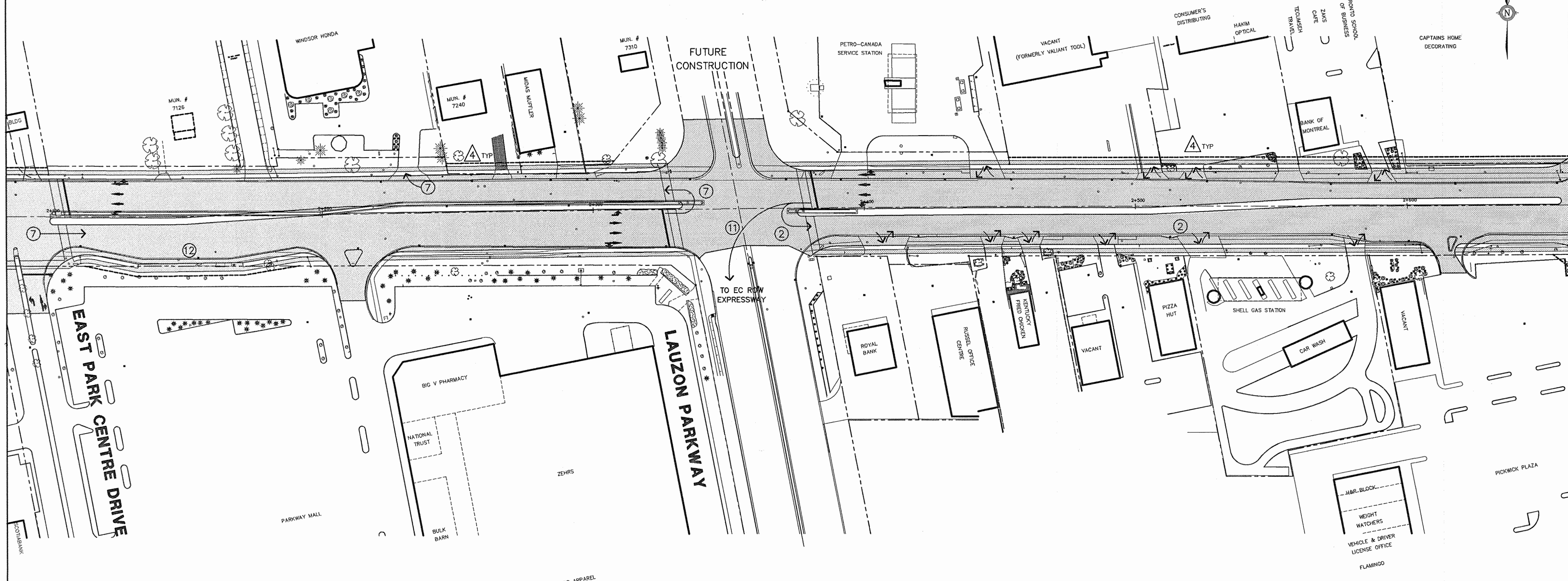
**'RECOMMENDED DESIGN'**

**FIGURE 4.8(b)**

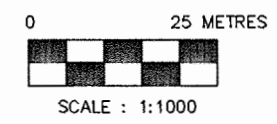
**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



**TECUMSEH ROAD EAST**



- ↙ ↘ 13 LEFT TURN IN AND OUT PROHIBITED (NUMBER CORRESPONDS TO TABLE 4.4)
- △ 4 TYP TYPICAL LOCATION OF IMPACT

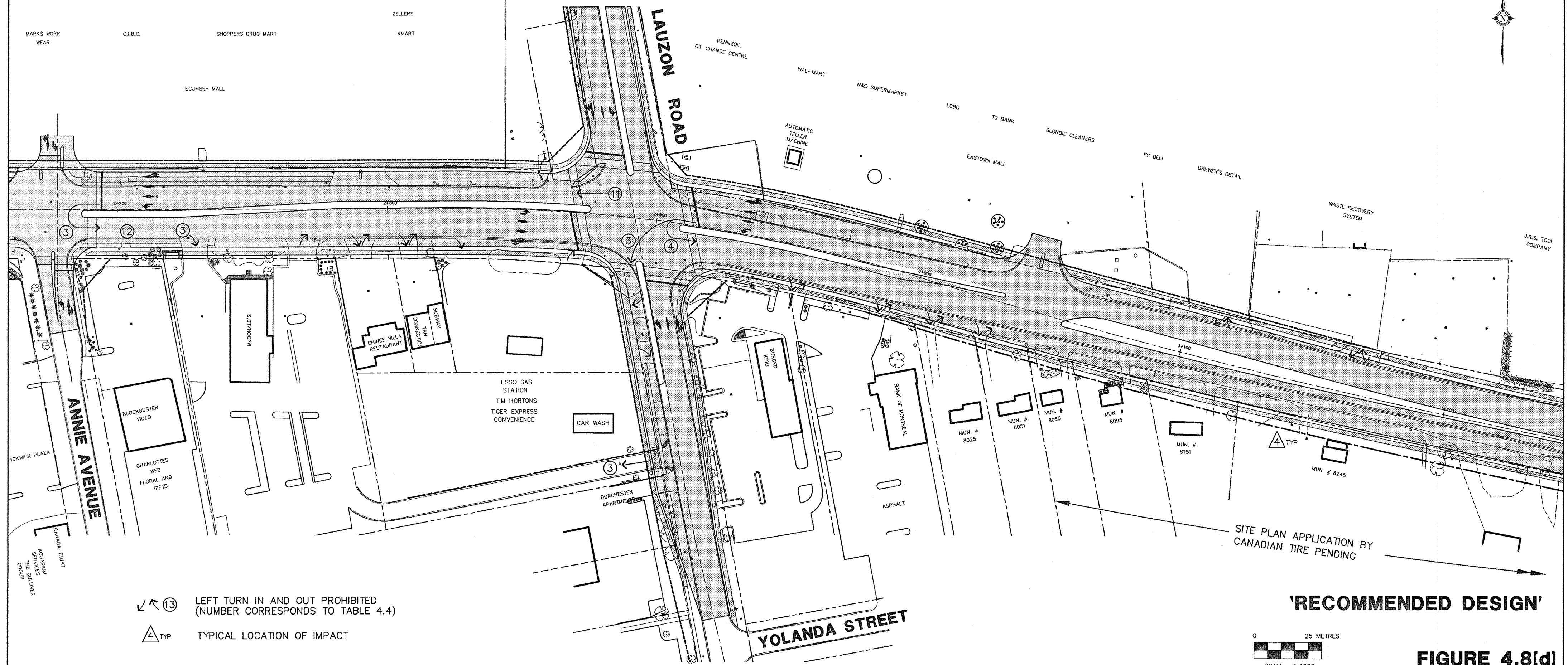


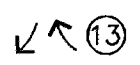

**'RECOMMENDED DESIGN'**

**FIGURE 4.8(c)**



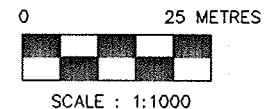
**TECUMSEH ROAD EAST**



-  LEFT TURN IN AND OUT PROHIBITED  
(NUMBER CORRESPONDS TO TABLE 4.4)
-  TYP TYPICAL LOCATION OF IMPACT

SITE PLAN APPLICATION BY  
CANADIAN TIRE PENDING

**'RECOMMENDED DESIGN'**



**FIGURE 4.8(d)**

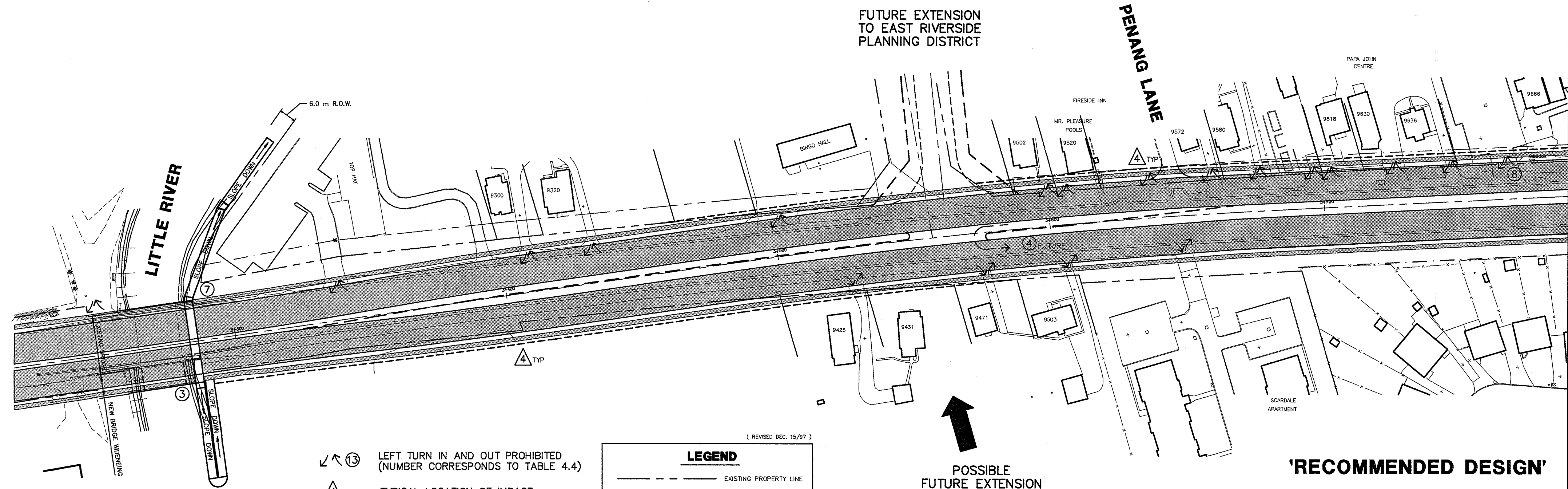


# TECUMSEH ROAD EAST



FUTURE EXTENSION  
TO EAST RIVERSIDE  
PLANNING DISTRICT

PENANG LANE



- ⤵ (13) LEFT TURN IN AND OUT PROHIBITED  
(NUMBER CORRESPONDS TO TABLE 4.4)
- ⚠ TYP TYPICAL LOCATION OF IMPACT

( REVISED DEC. 15/97 )

**LEGEND**

- — — — — EXISTING PROPERTY LINE
- - - - - EXISTING EASEMENT LINE
- — — — — NEW PROPERTY LINE

↑  
POSSIBLE  
FUTURE EXTENSION  
OF SCARDALE ROAD

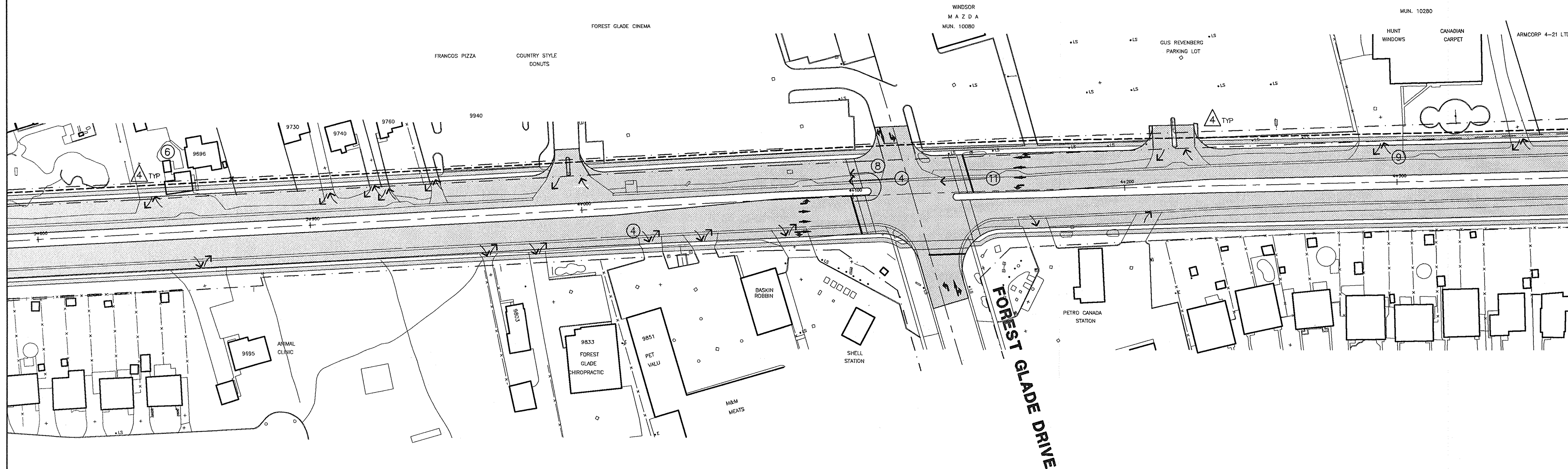
**'RECOMMENDED DESIGN'**

0 25 METRES  
SCALE : 1:1000

**FIGURE 4.8(e)**

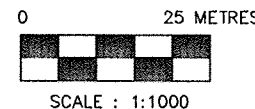
# TECUMSEH ROAD EAST

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



13 LEFT TURN IN AND OUT PROHIBITED  
 (NUMBER CORRESPONDS TO TABLE 4.4)  
 4 TYP TYPICAL LOCATION OF IMPACT

**'RECOMMENDED DESIGN'**

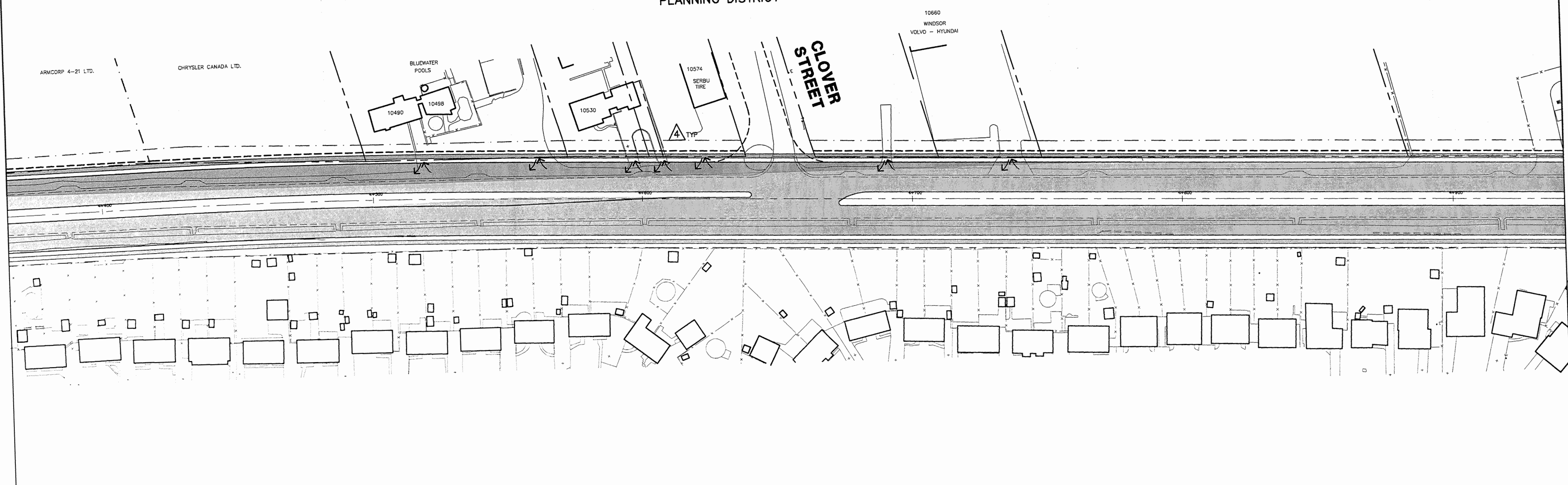


**FIGURE 4.8(f)**



# TECUMSEH ROAD EAST

FUTURE EXTENSION  
TO EAST RIVERSIDE  
PLANNING DISTRICT



- LEFT TURN IN AND OUT PROHIBITED  
(NUMBER CORRESPONDS TO TABLE 4.4)
- TYPICAL LOCATION OF IMPACT

( REVISED DEC. 15/97 )

LEGEND	
	EXISTING PROPERTY LINE
	EXISTING EASEMENT LINE
	NEW PROPERTY LINE

**'RECOMMENDED DESIGN'**

SCALE : 1:1000

FIGURE 4.8(g)



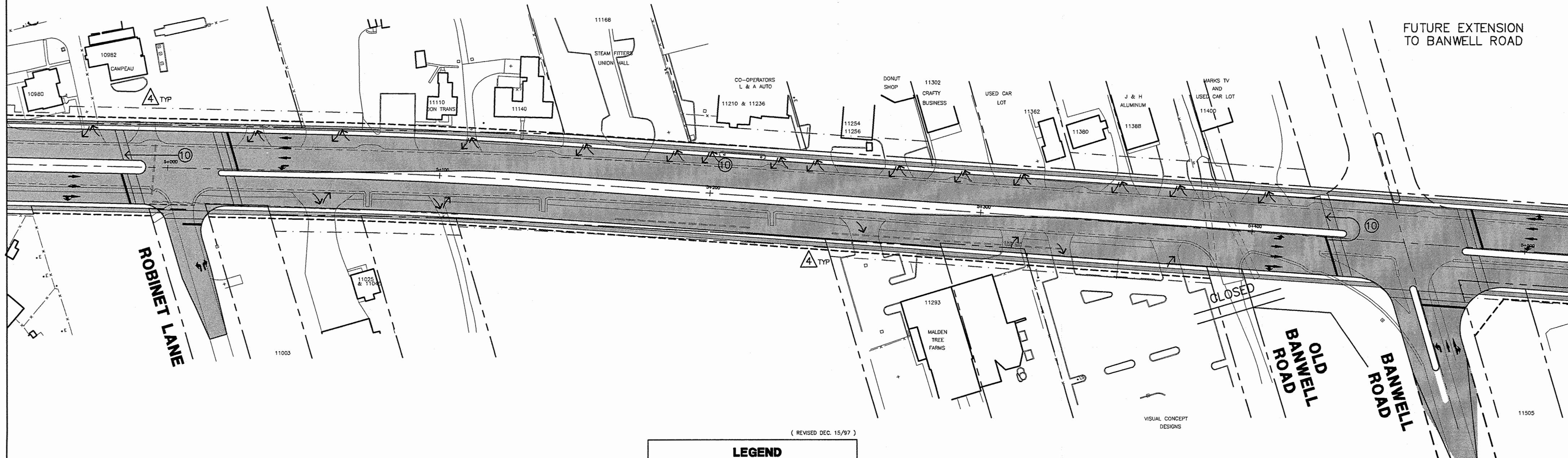
# TECUMSEH ROAD EAST

**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



POSSIBLE FUTURE ACCESS  
TO INDUSTRIAL AREA

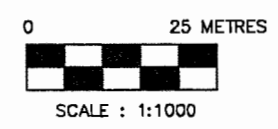
FUTURE EXTENSION  
TO BANWELL ROAD



( REVISED DEC. 15/97 )

- LEFT TURN IN AND OUT PROHIBITED  
(NUMBER CORRESPONDS TO TABLE 4.4)
- TYPICAL LOCATION OF IMPACT

LEGEND	
	EXISTING PROPERTY LINE
	EXISTING EASEMENT LINE
	NEW PROPERTY LINE

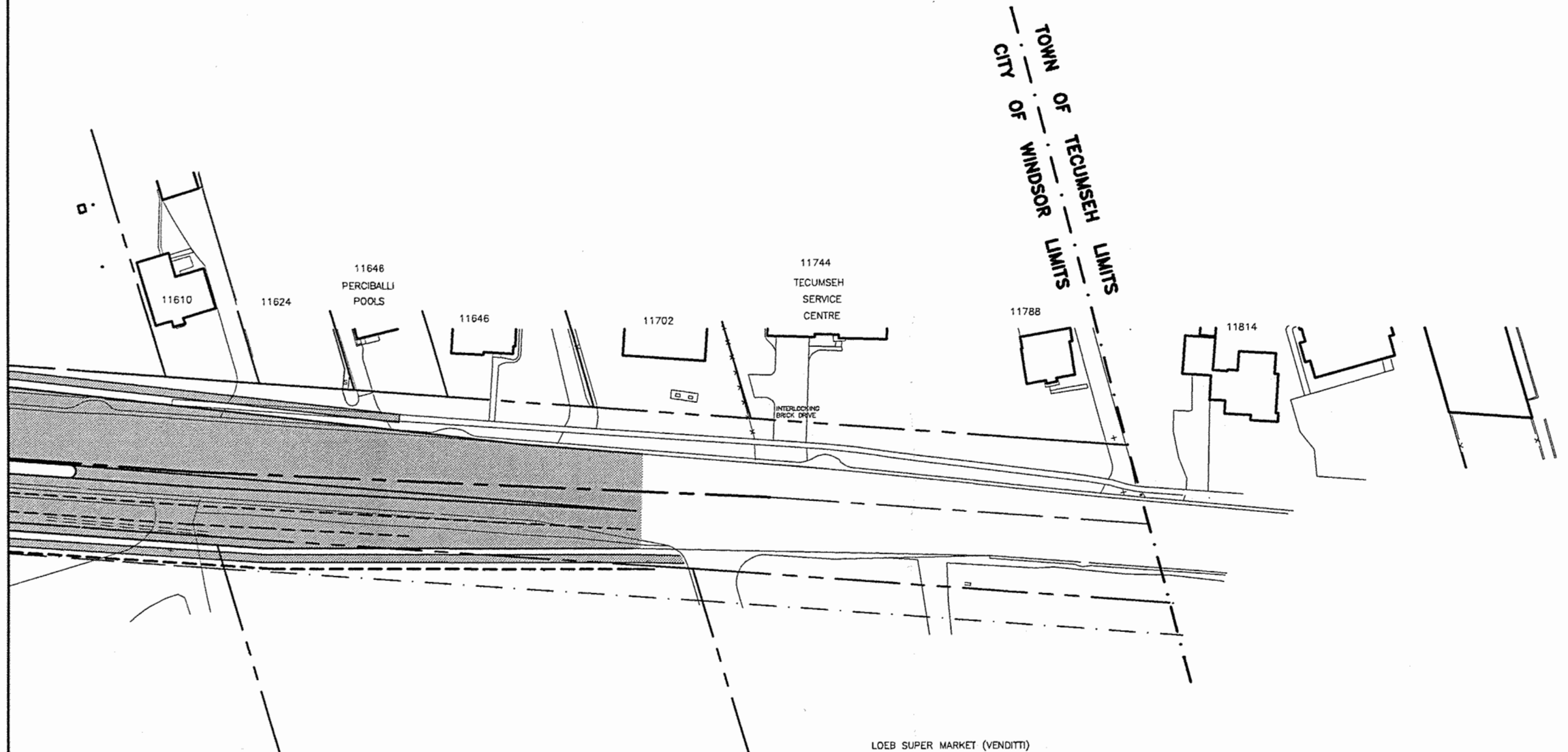


**'RECOMMENDED DESIGN'**

**FIGURE 4.8(h)**

# TECUMSEH ROAD EAST

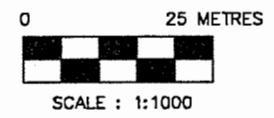
## TECUMSEH ROAD EAST CLASS ENVIRONMENTAL ASSESSMENT JEFFERSON BLVD. TO BANWELL RD.



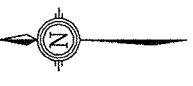
( REVISED DEC. 15/97 )

LEGEND	
	EXISTING PROPERTY LINE
	EXISTING EASEMENT LINE
	NEW PROPERTY LINE

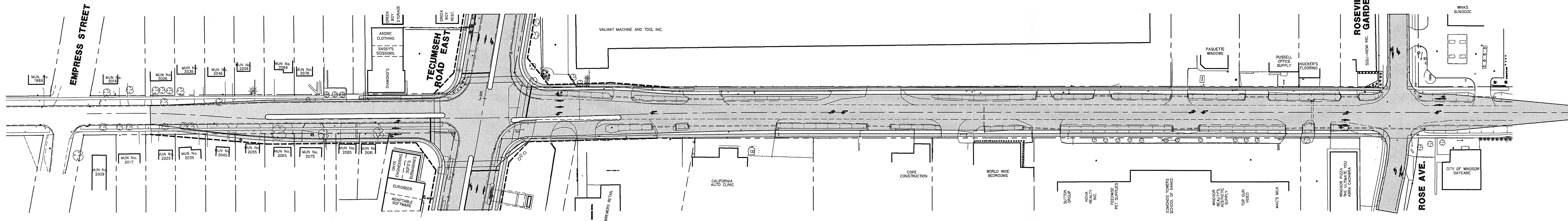
### 'RECOMMENDED DESIGN'



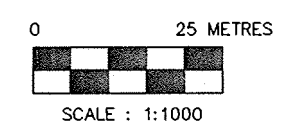
### FIGURE 4.8(ii)



**JEFFERSON BOULEVARD**



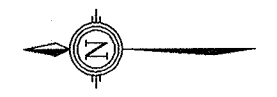
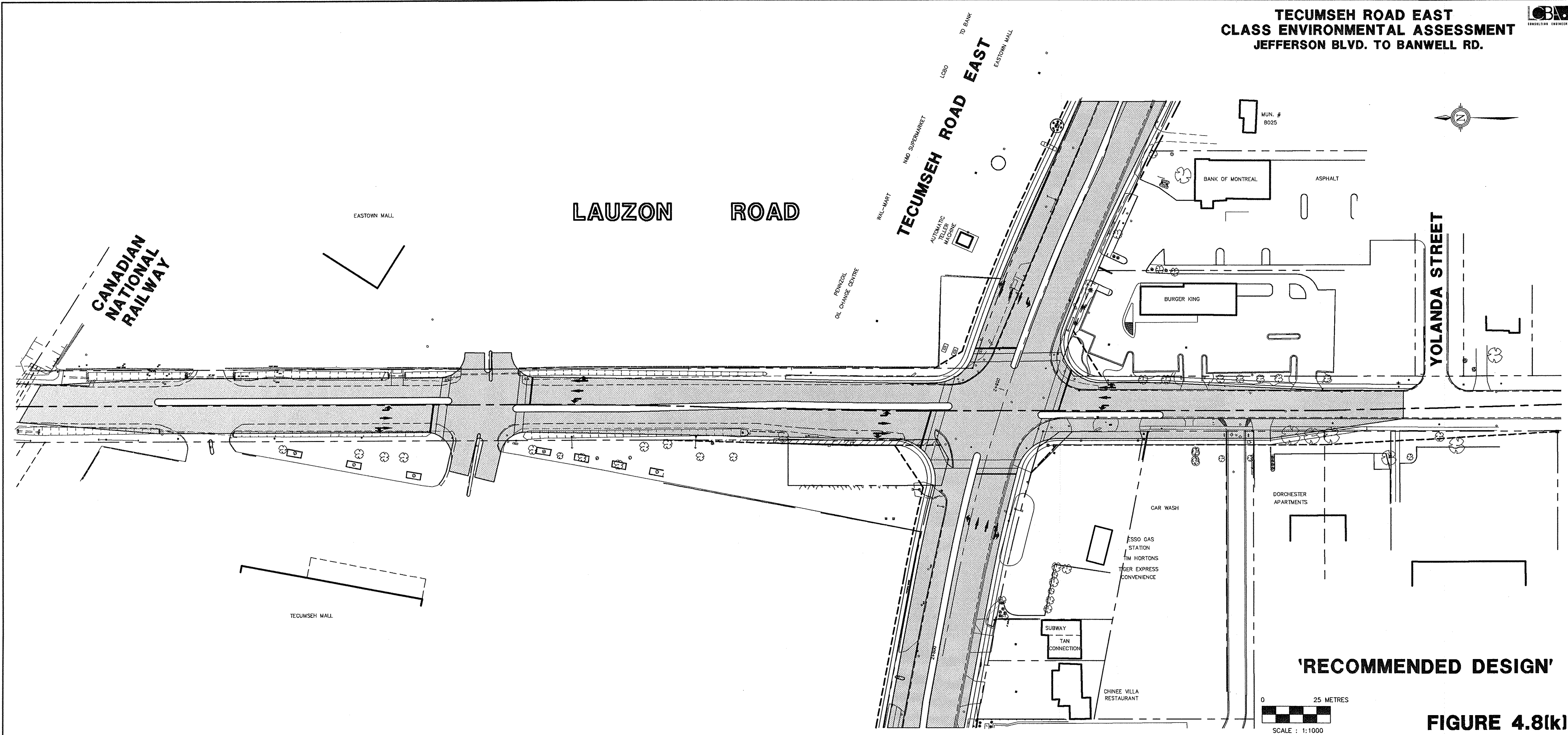
**'RECOMMENDED DESIGN'**



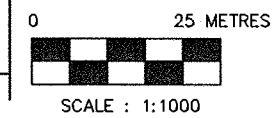
**FIGURE 4.8(j)**



**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**



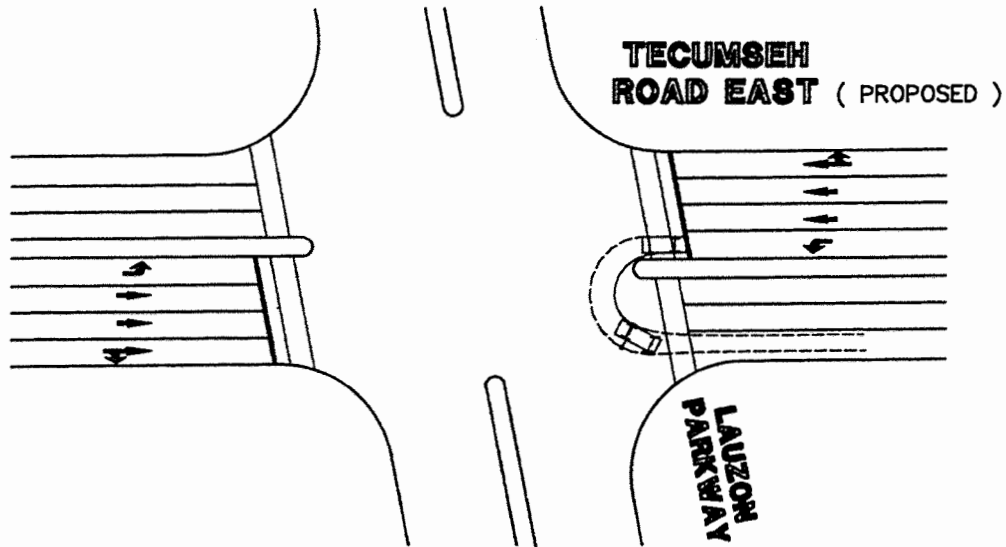
**'RECOMMENDED DESIGN'**



**FIGURE 4.8(k)**

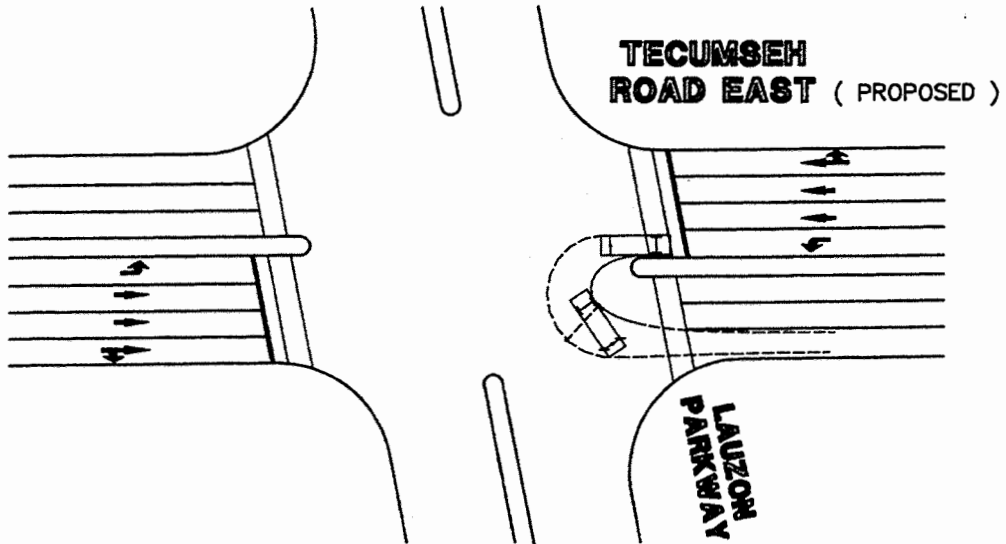
**TECUMSEH ROAD EAST  
CLASS ENVIRONMENTAL ASSESSMENT  
JEFFERSON BLVD. TO BANWELL RD.**

**TYPICAL TURNAROUND MOVEMENT FROM  
LEFT TURN STORAGE LANE**



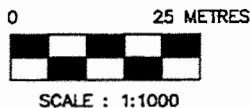
**PASSENGER CAR**

Leading Outside Tire Radius = 7.50 m\*



**SINGLE UNIT TRUCK**

Leading Outside Tire Radius = 7.50 m\*



\* MINIMUM RADIUS = 6.0 m

**FIGURE 4.9**