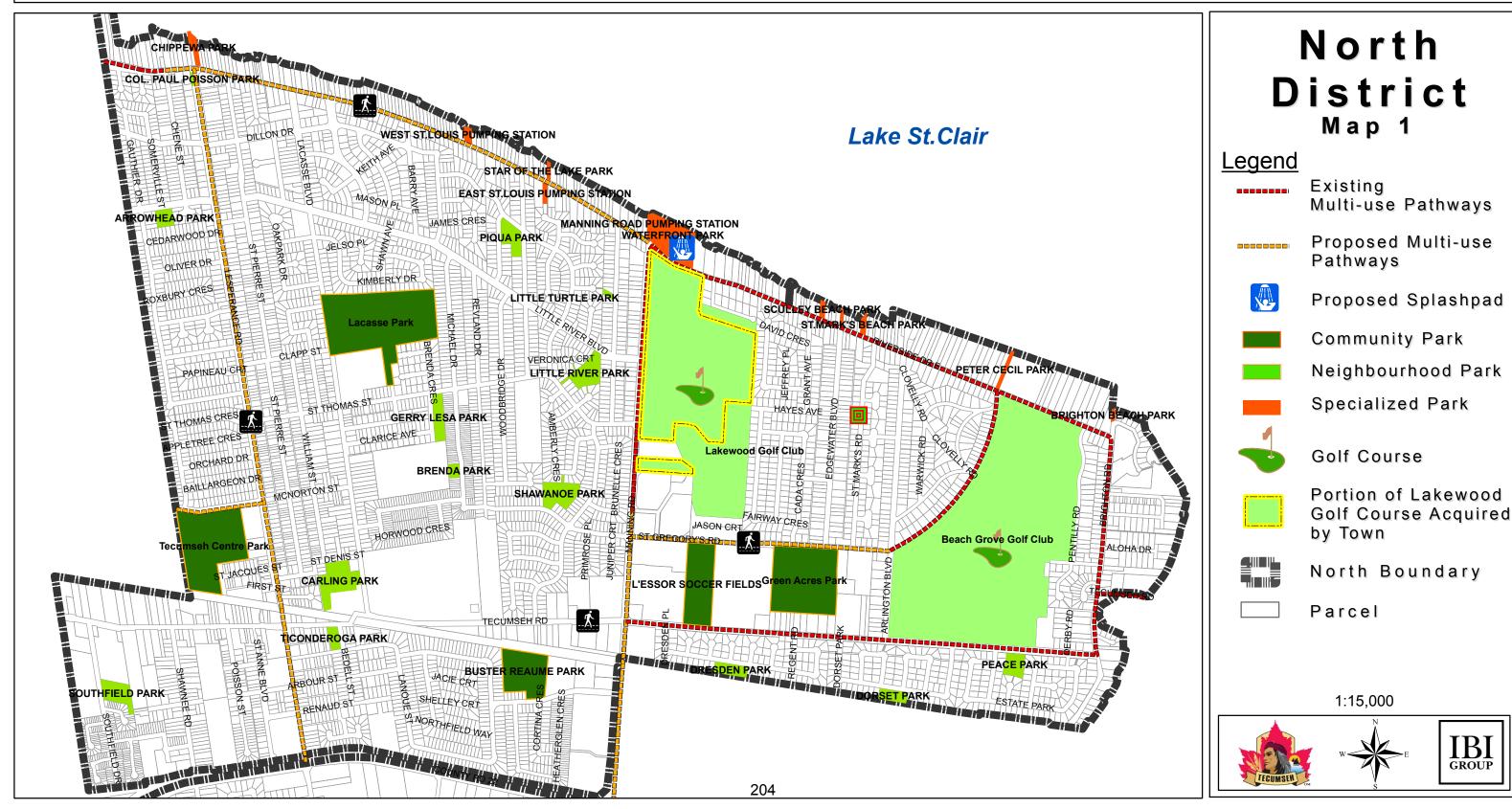
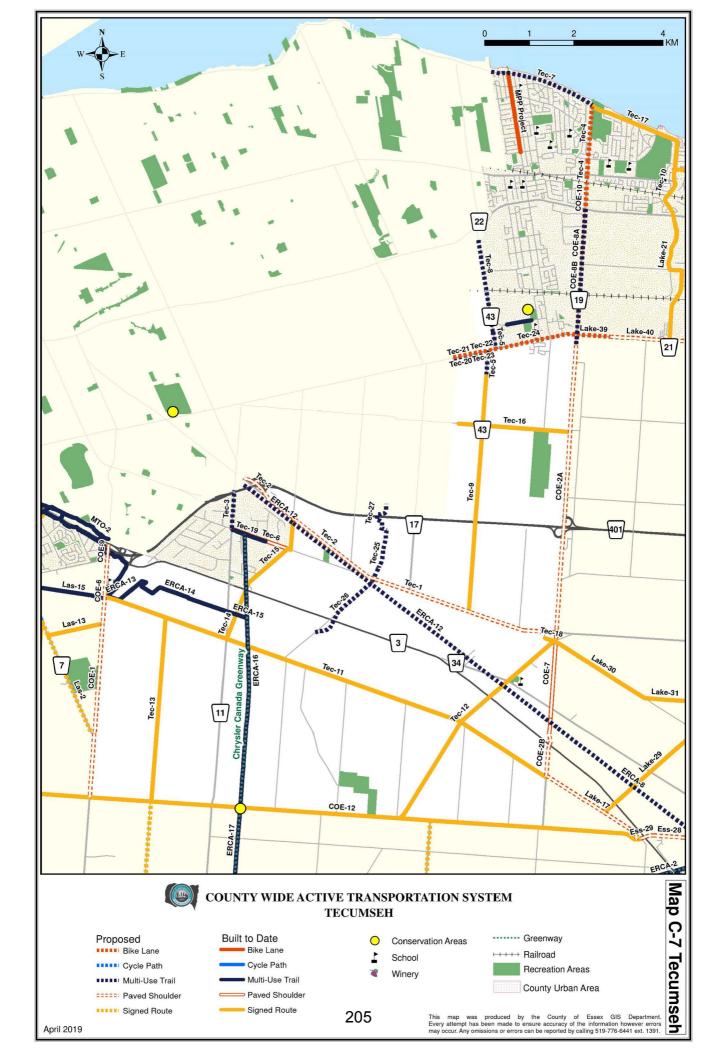
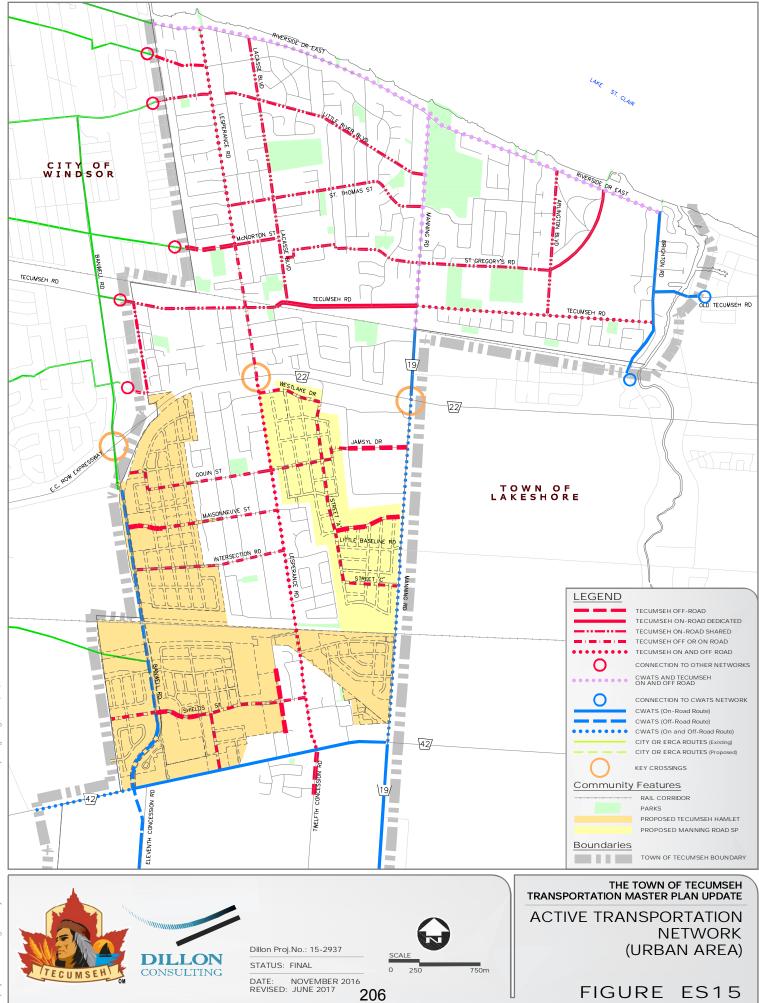


Town of Tecumseh Existing and Proposed Facilities & Multi-use Pathways

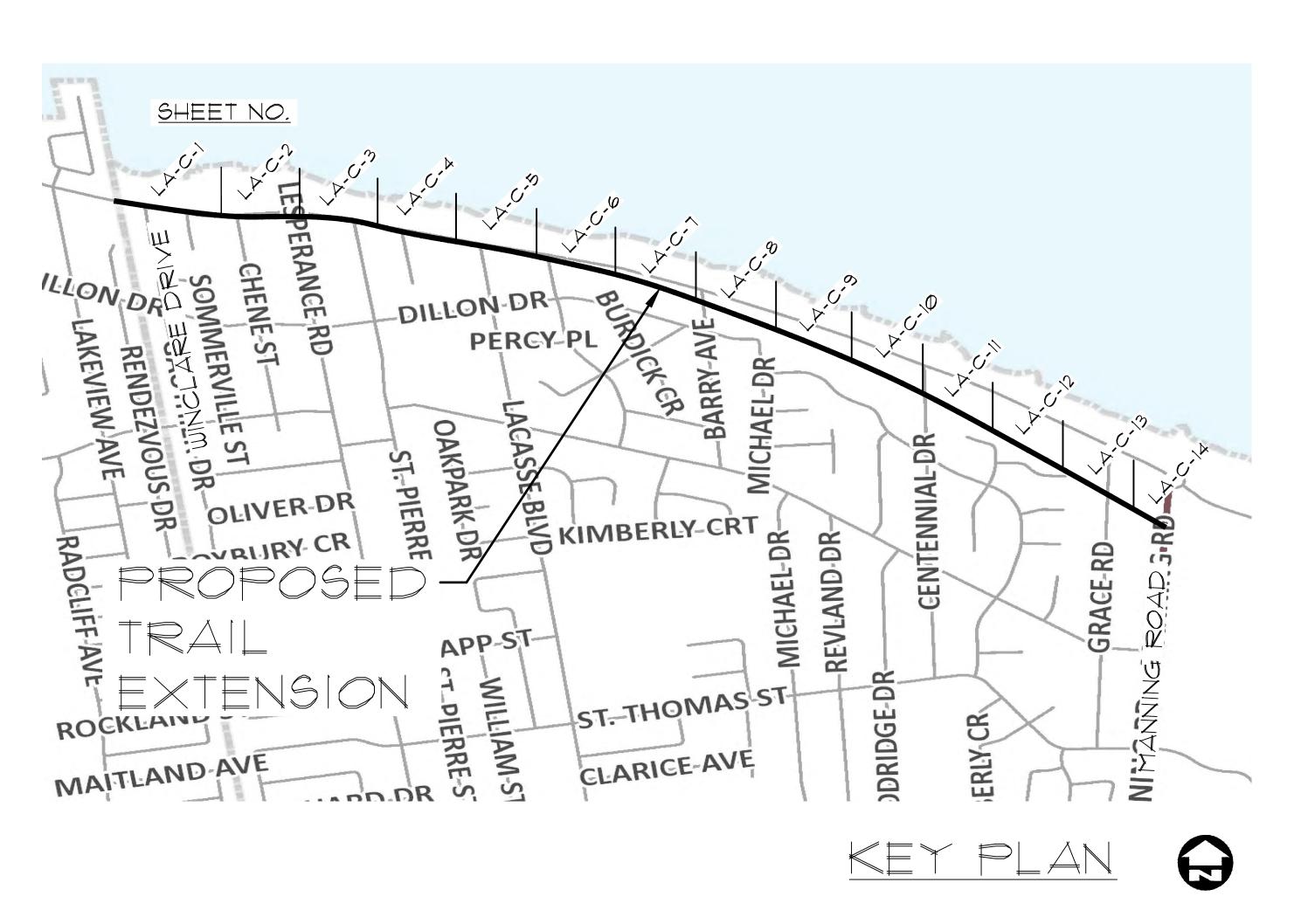






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GANATCHIO TRAIL EXTENSION TRAIL LOCATION CONCEPT FROM EXISTING EAST END (WEST OF WINCLARE DRIVE) EAST TO MANNING ROAD







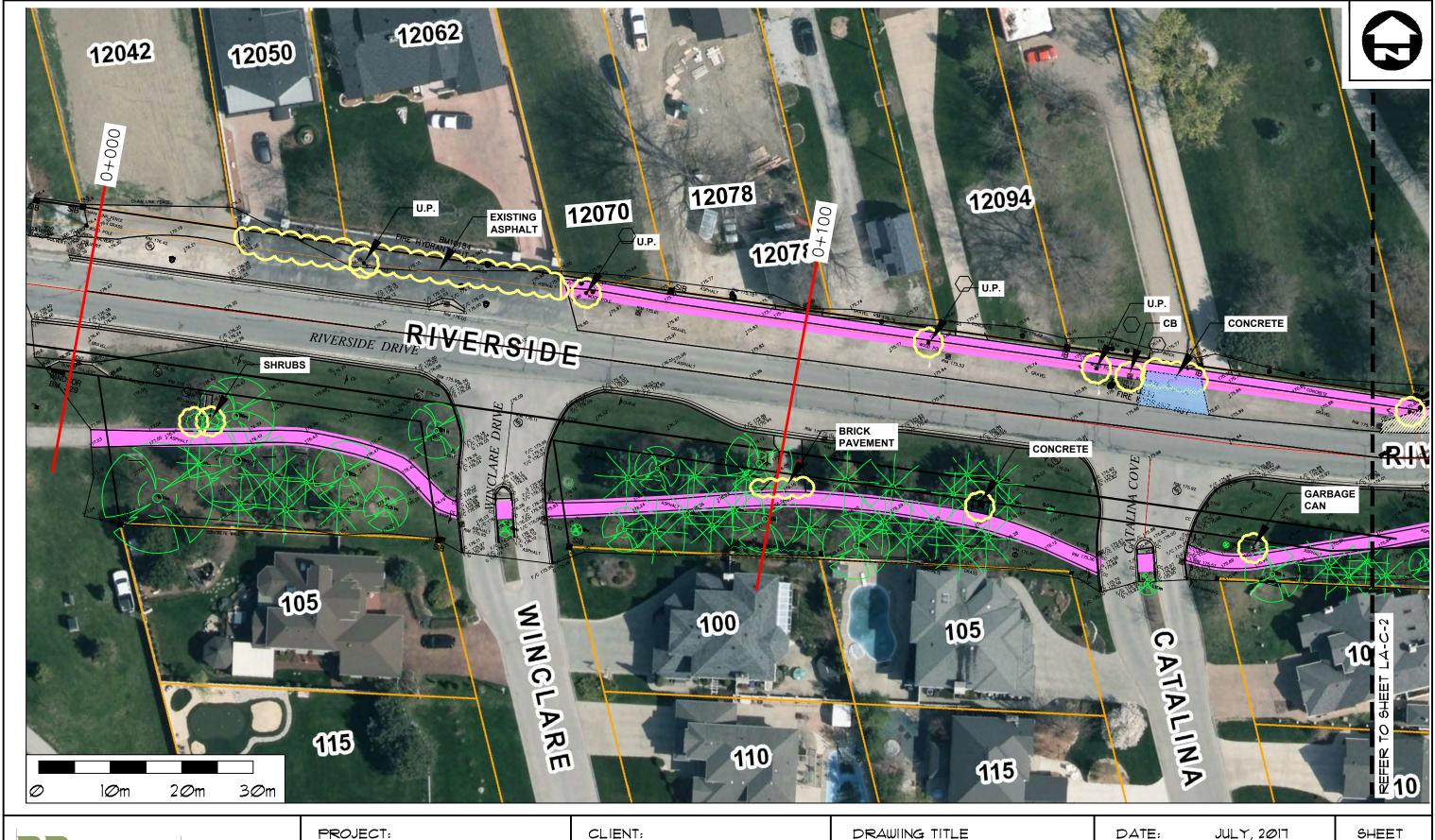
Bezaire Partners

Planners, Landscape Architects

3514 Walker Rd., Unit 1A
Windsor, ON N8W 3S4
p: 519 966 6844
f: 519 966 4088
gbezaire@bezaire.ca

DATE: JULY, 2017

PROJECT: 1267





Planners, Landscape Architects

3514 Walker Rd., Unit 1A **Bezaire Partners**

gbezaire@bezaire.ca

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT:

Tecumseh

DRAWING TITLE

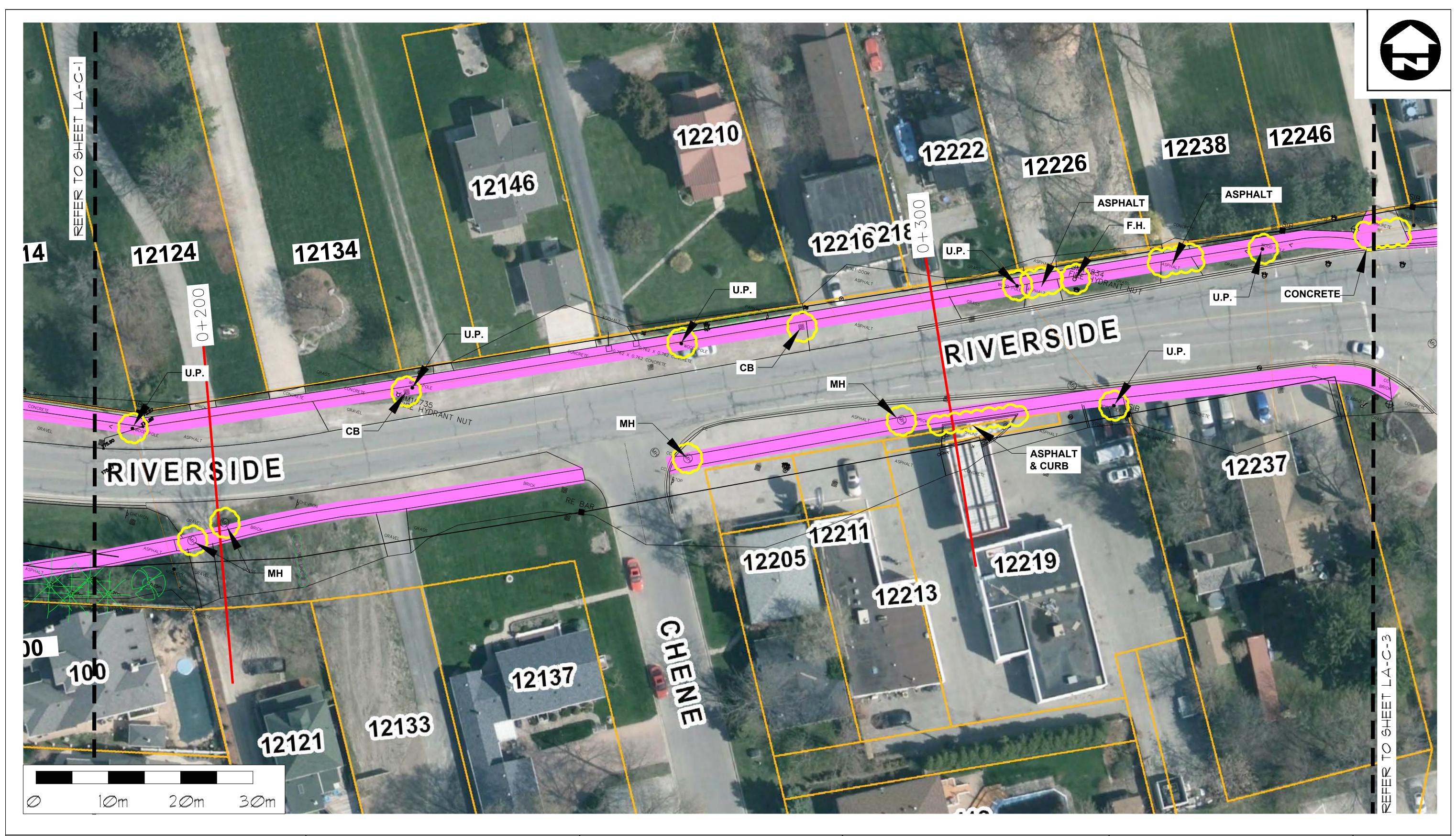
TRAIL LOCATON CONCEPT PLAN

DATE: JULY, 2017 1:500 @ 11 × 17 SCALE: 1:250 a 22 × 34

LA-C-1

1267 Concept R1

DRAWN BY: ML, GDB



3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT: Tecumseh DRAWING TITLE TRAIL LOCATON CONCEPT PLAN

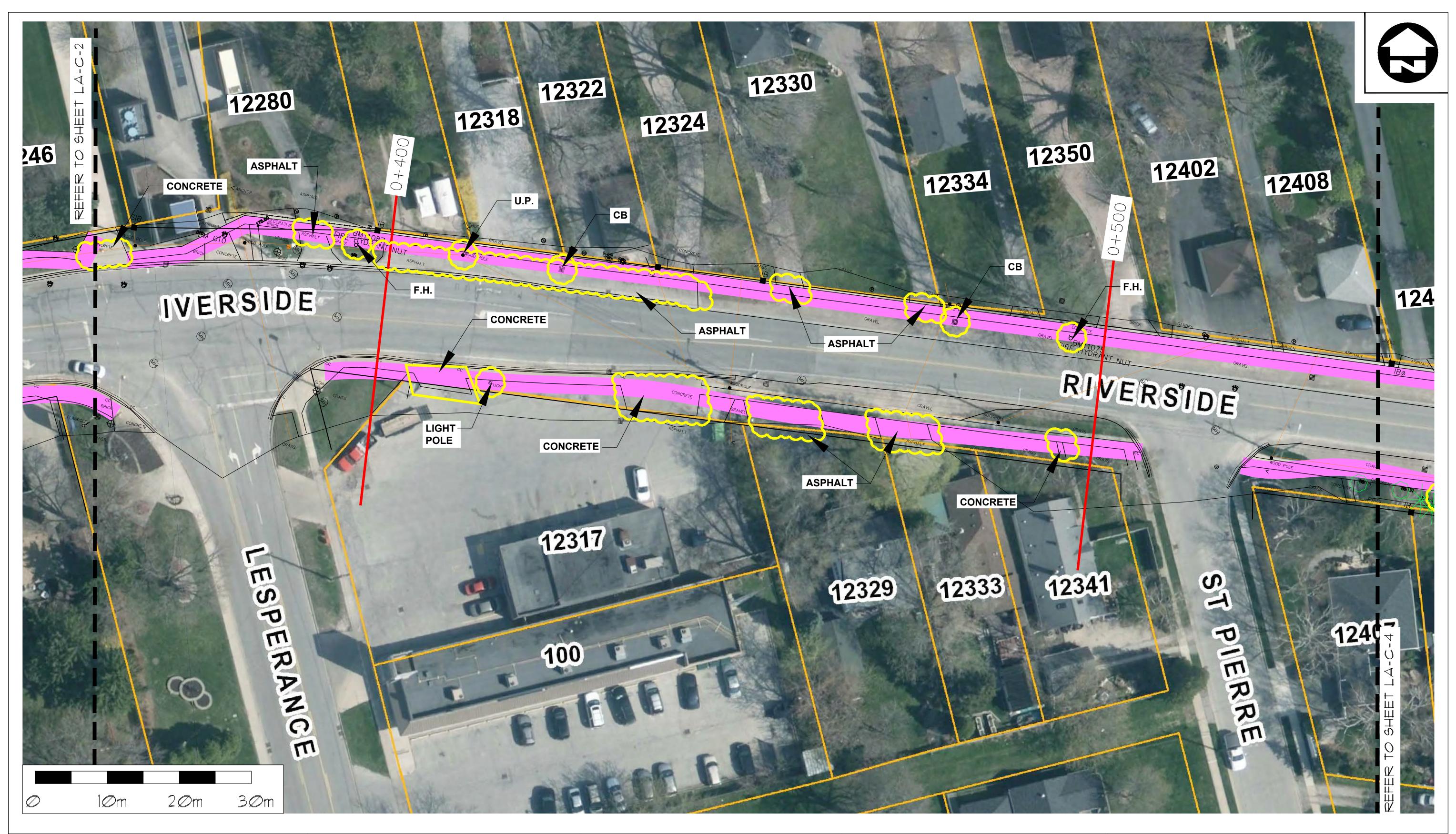
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1267 Concept R1

SHEET

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Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

3514 Walker Rd., Unit 1A

PROJECT:

GANATCHIO TRAIL EXTENSION



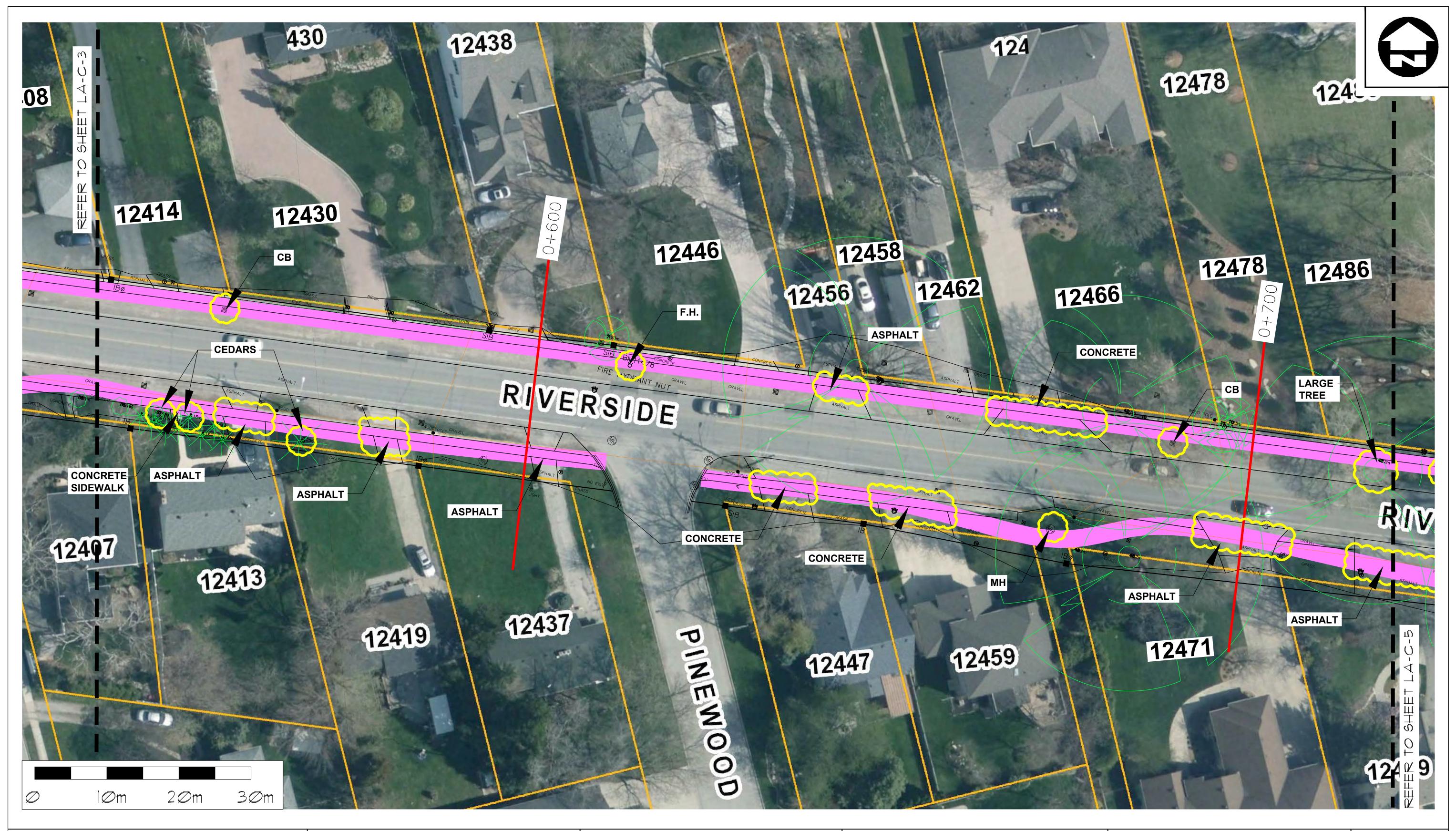
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1267 Concept R1

SHEET

LA-C-3



3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT: Tecumseh

DRAWING TITLE TRAIL LOCATON CONCEPT PLAN

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LA-C-4 1267 Concept R1

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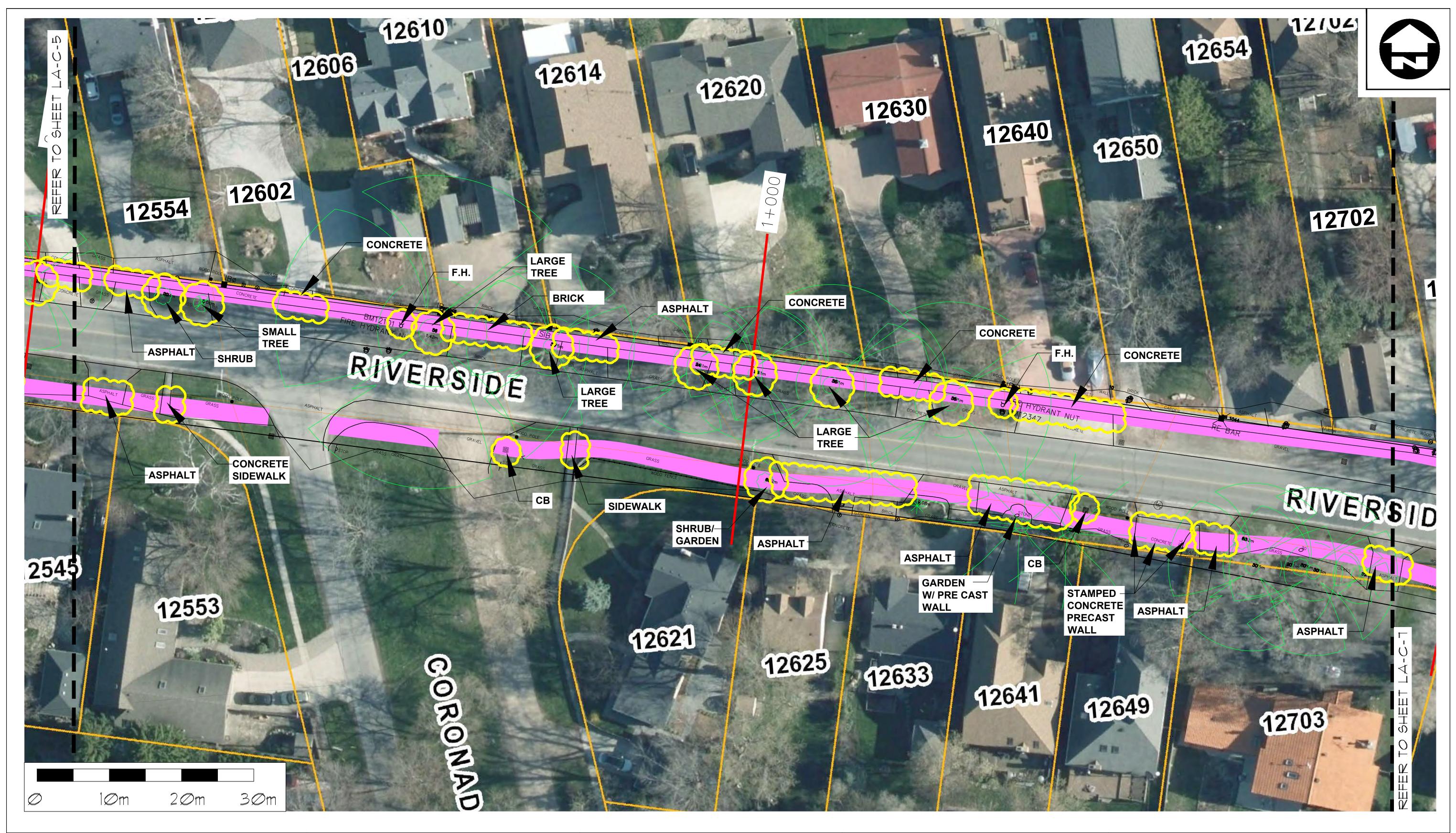
Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

3514 Walker Rd., Unit 1A

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT: Tecumseh DRAWING TITLE TRAIL LOCATON CONCEPT PLAN

SHEET DATE: JULY, 2017 1:500 a 11 × 17 LA-C-5 SCALE: 1:250 a 22 × 34 DRAWN BY: ML, GDB



3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT: Tecumseh DRAWING TITLE TRAIL LOCATON CONCEPT PLAN

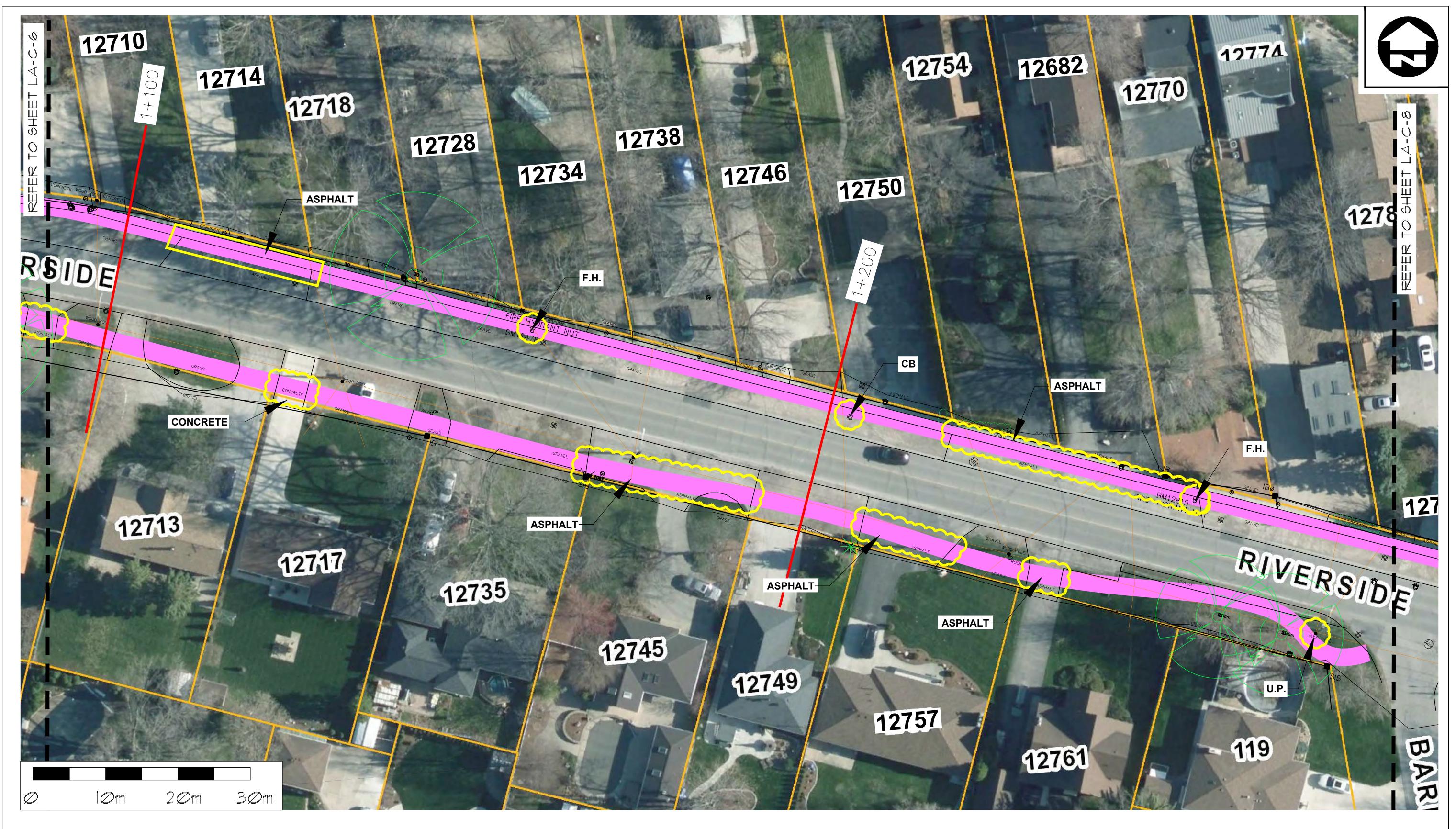
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1267 Concept R1

213

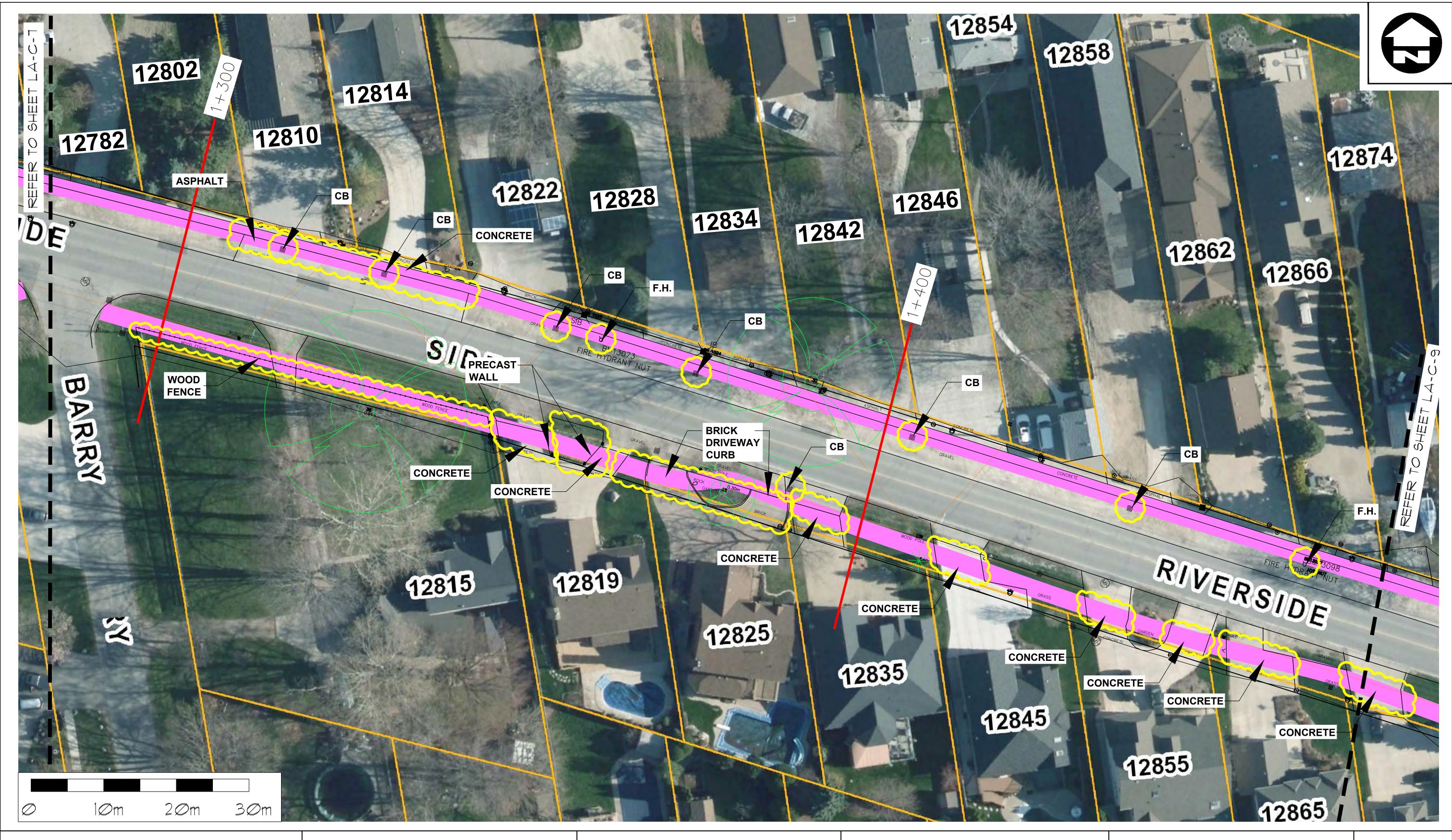


3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT: Tecumseh DRAWING TITLE TRAIL LOCATON CONCEPT PLAN

DATE: SHEET JULY, 2017 1:500 a 11 × 17 $\bot \triangle - C - \top$ SCALE: 1:250 a 22 × 34 DRAWN BY: ML, GDB 1267 Concept R1



Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

3514 Walker Rd., Unit 1A

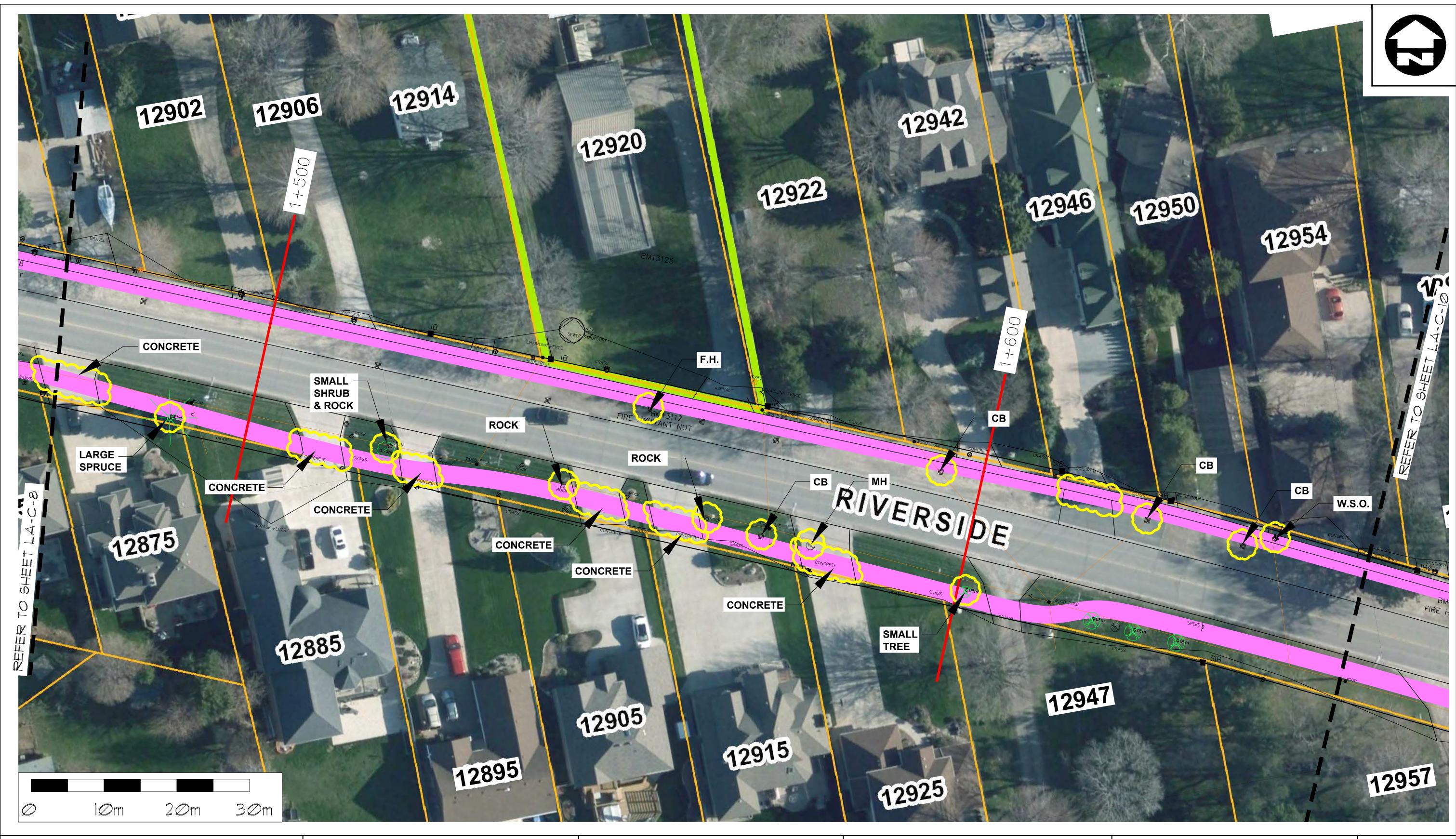
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GANATCHIO TRAIL EXTENSION



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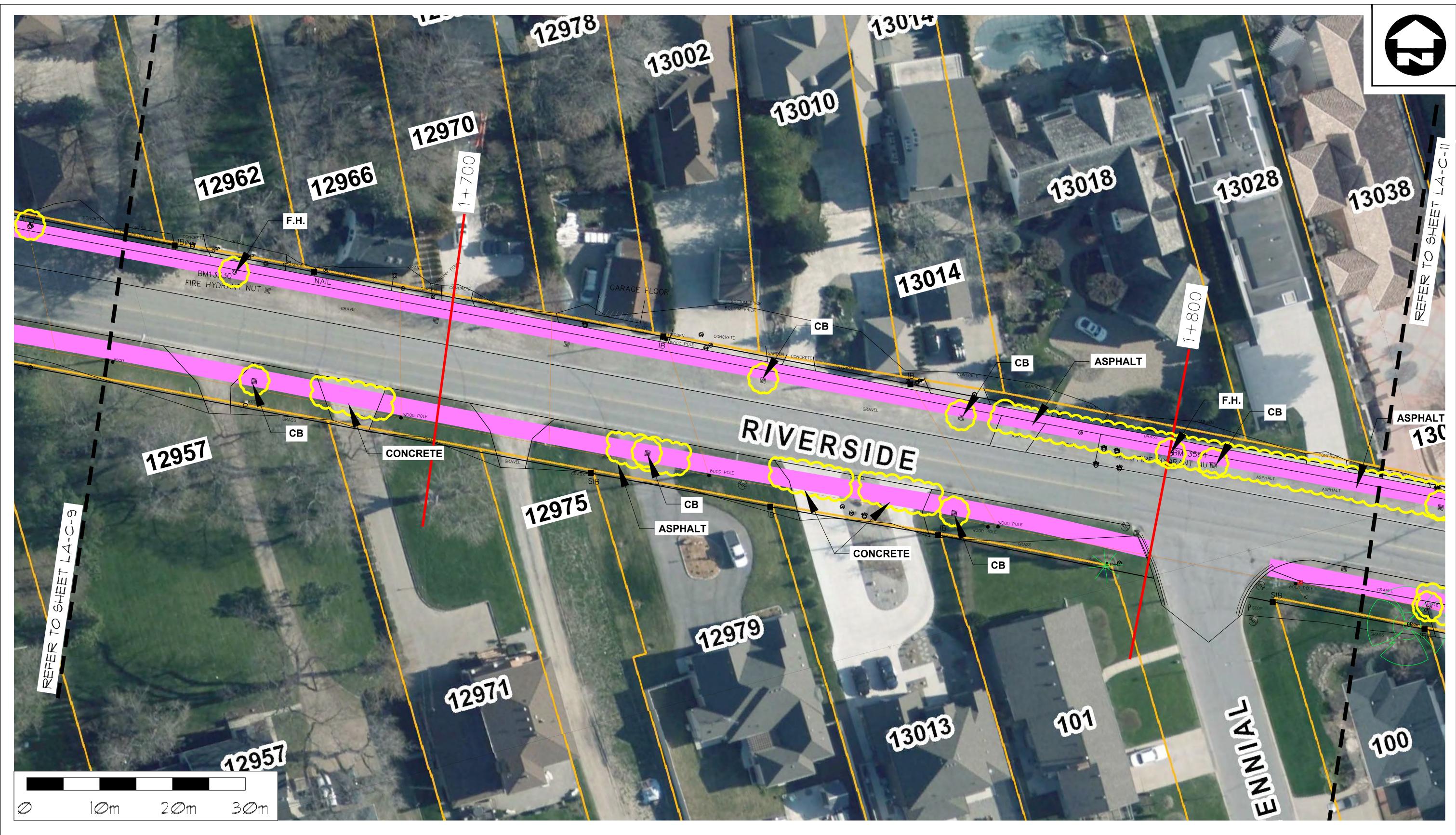
Planners, Landscape Architects

3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 gbezaire@bezaire.ca

PROJECT:

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Planners, Landscape Architects

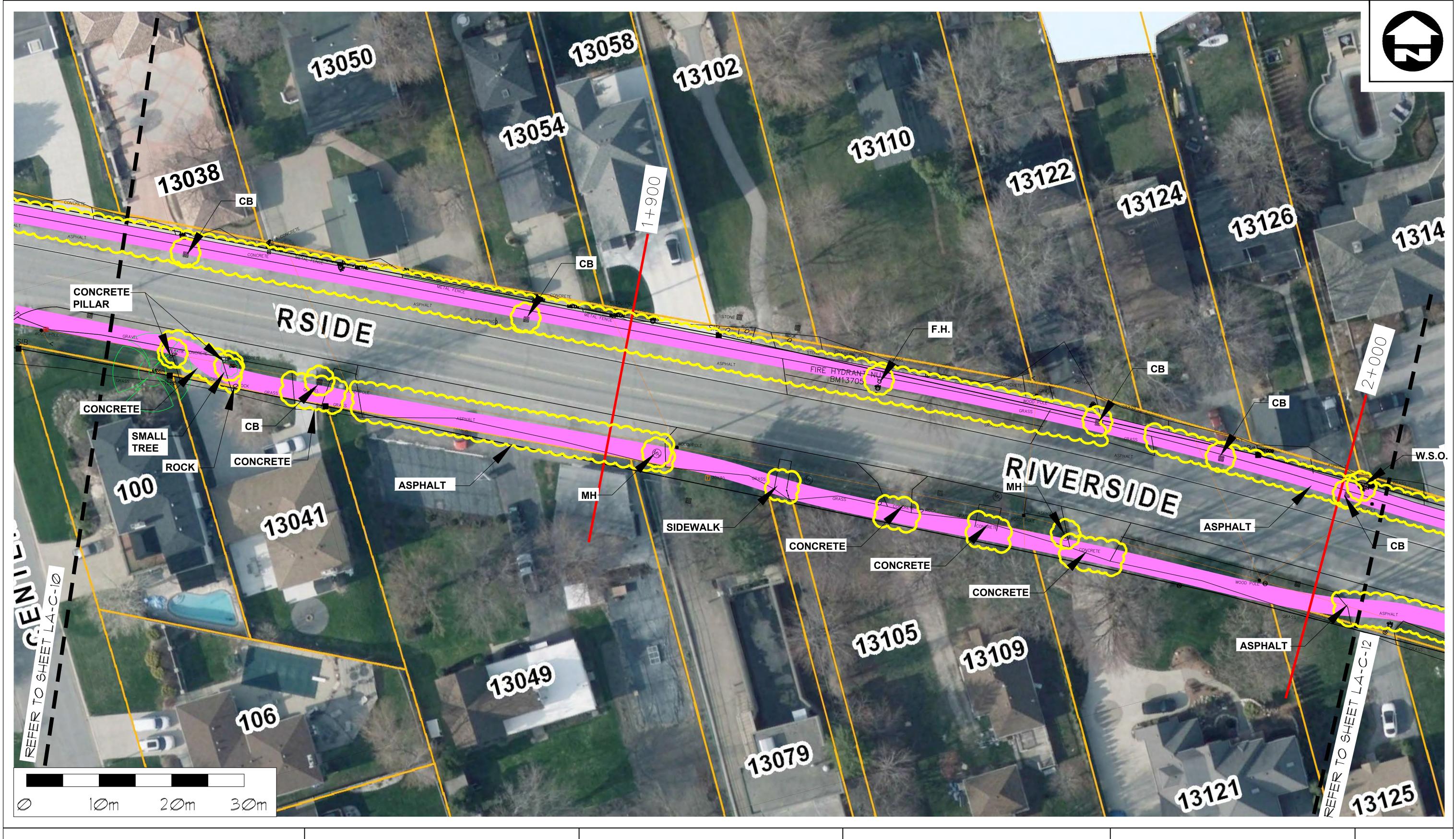
3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 gbezaire@bezaire.ca

PROJECT:

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SHEET

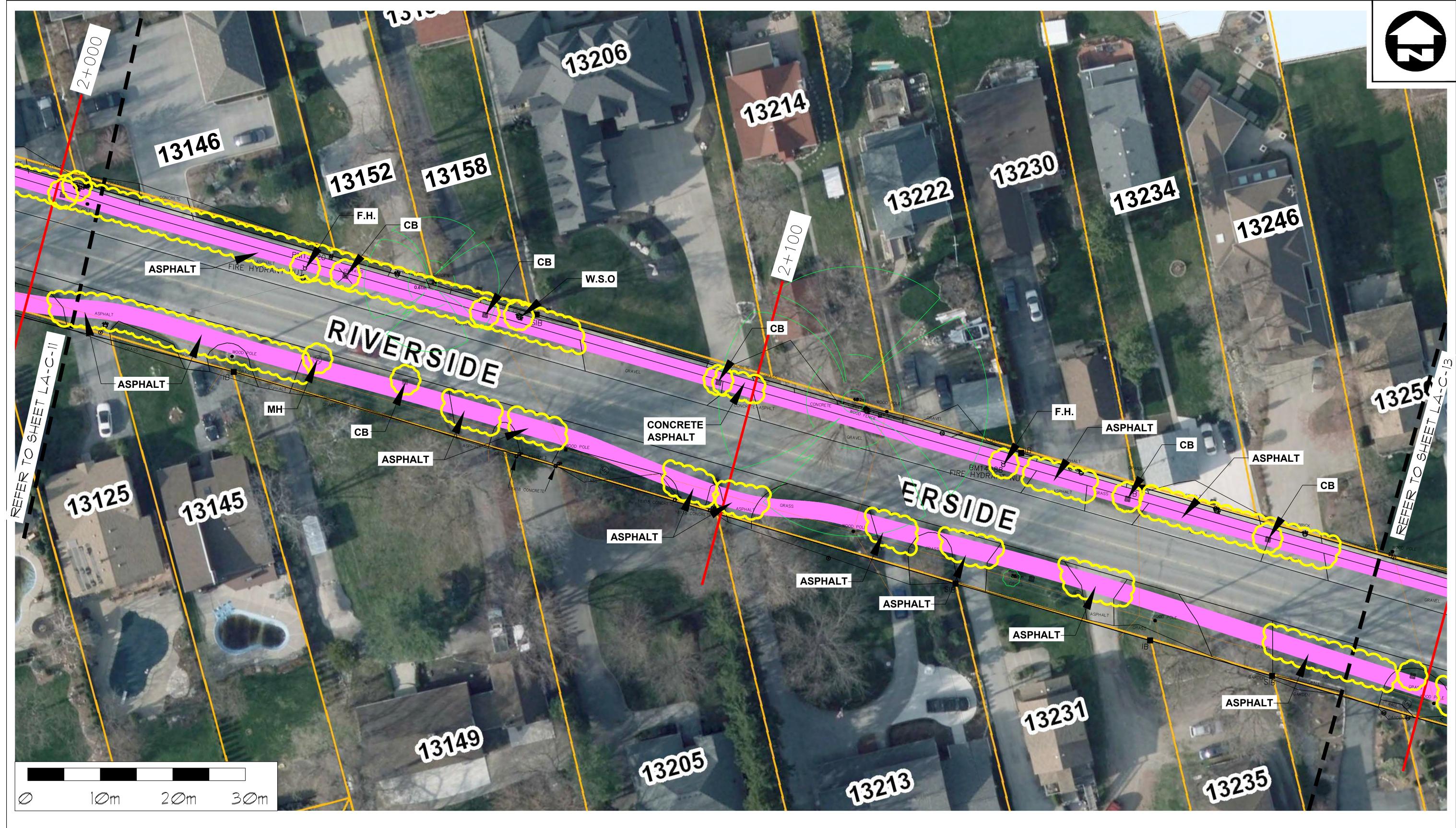


3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

PROJECT:

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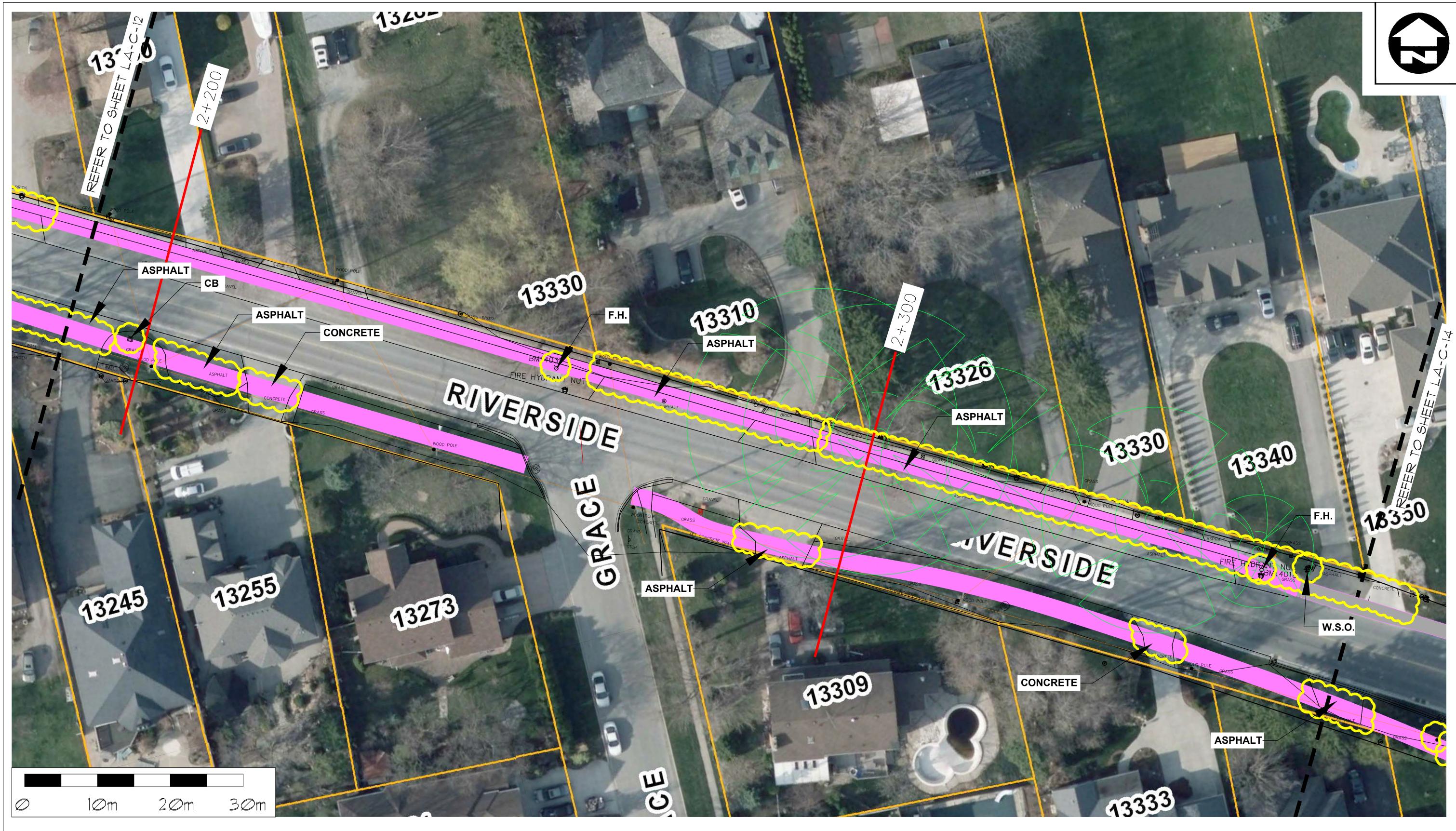


3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT: Tecumseh DRAWING TITLE TRAIL LOCATON CONCEPT PLAN

DATE: SHEET JULY, 2017 1:500 a 11 × 17 LA-C-12 SCALE: 1:250 a 22 × 34 DRAWN BY: ML, GDB



Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 Planners, Landscape Architects gbezaire@bezaire.ca

3514 Walker Rd., Unit 1A

PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT: Tecumseh DRAWING TITLE TRAIL LOCATON CONCEPT PLAN

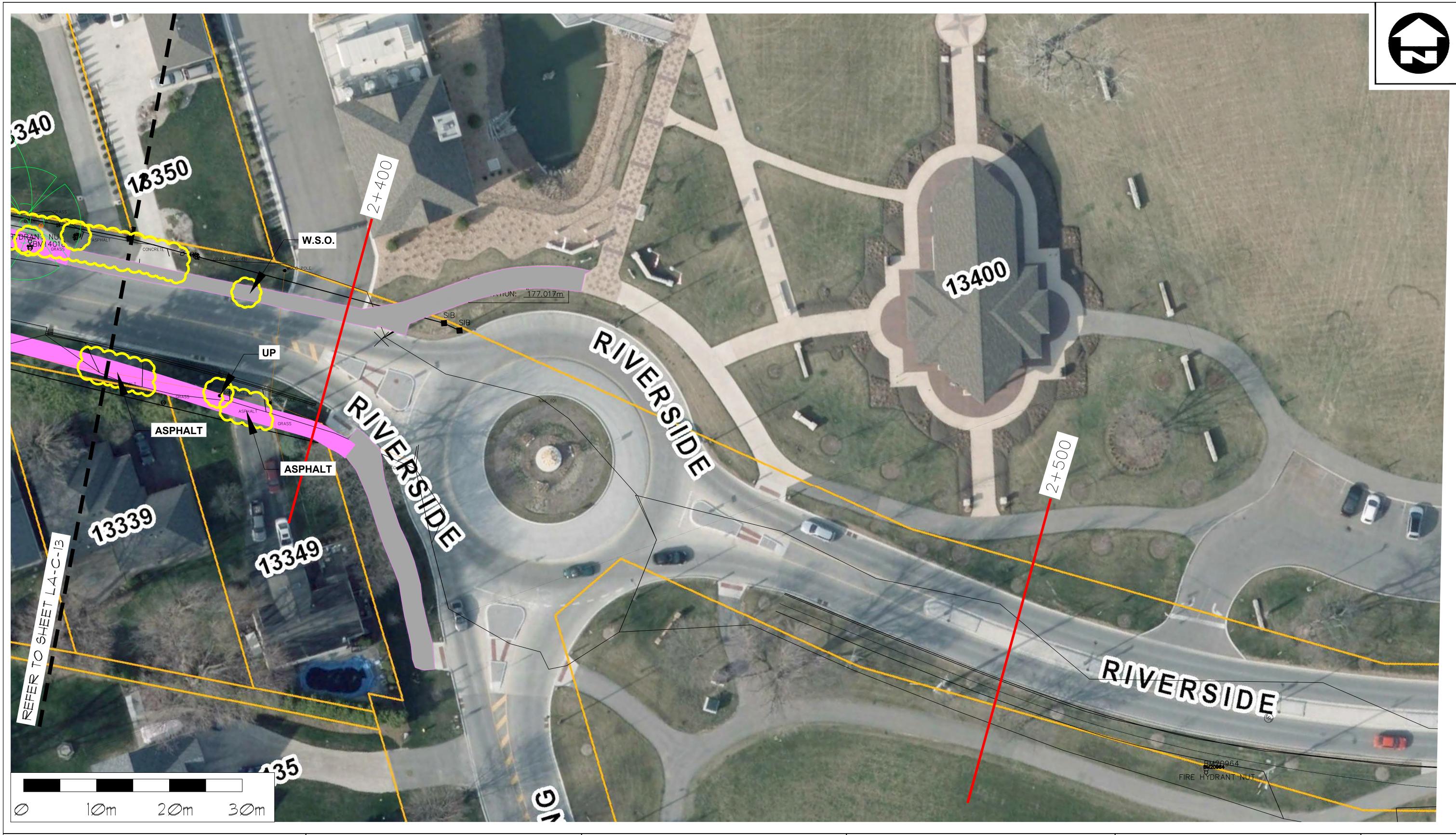
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1267 Concept R1

SHEET

LA-C-13



BP

Bezaire Partners

Planners, Landscape Architects

3514 Walker Rd., Unit 1A Windsor, ON N8W 3S4 p: 519 966 6844 f: 519 966 4088 gbezaire@bezaire.ca PROJECT:

GANATCHIO TRAIL EXTENSION CLIENT:

Tecumseh

DRAWING TITLE

TRAIL LOCATON
CONCEPT PLAN

DATE: JULY, 2017

SCALE: 1:500 a 11 × 17
1:250 a 22 × 34

DRAWN BY: ML, GDB

SHEET

LA-C-14

RESULTS OF PUBLIC CONSULTATION Mtg. 1

Description	Result
Attended and Signed-in to Open House	32
Submitted Written Comments during or after Open House	26
Overall In favour of trail	24
Overall Opposed to Trail	2
In Favour of Trail on North Side of Riverside Drive	8
In Favour of Trail on South Side of Riverside Drive	8

REPRESENTATIVE COMMENTS RESULTING FROM PULIC CONSULTATION

<u>Comment:</u> Thirty-two interested stakeholders attended and signed in to the public open house. Overall, a large majority of the attendees were in favour of the trail and would like to see it proceed. Attendees were evenly split on whether the trail should be located on the south or north side of Riverside Drive.

Some of the comments received are factual and some are not. See responses provided in table.

lable.	
Comment	Response
They would prefer fewer road crossings – prefer north side	Agreed - fewer road crossing are preferable but they have open site lines. They require the pedestrian or cyclist to stop before crossing
Concern about cars backing out of driveways on north side	Agreed - sight lines are much more difficult on the north side
Too many hydro poles on south side	Disagree - no hydro poles are to be re-located
There would be less disruption on the south side	Disagree – although there are more driveways on the north side, most of them and most of the landscaping stops at the property line. On the south side, many driveways and some of the landscaping extend to the road edge and will have to be cut and removed so the path can be installed. Consequently, we consider there to be more disruption to landscaping and driveways on the south side.
Loss of parking spaces	Agree - on both north and south sides, but these are in the right-of-way
Don't want to maintain grass between road and trail on south side	Noted – but this is subject to municipal policies
Would prefer bike lanes on roads instead of trail	Noted - but this is meant to be a multi-use trail
Difficult to cross Riverside Dr. at Manning	Disagree – roundabout is configured for pedestrian crossing. No matter what side the trail is on, people from the other side need to cross. However, if it's on the south side, people on the north side still have use of the sidewalk
South side trail would align with trails to east and west	Agreed
Doesn't want trees removed to make way for trail	Agreed - only 2 trees to be removed on south side and both are in poor condition

Comment	Response
Connectivity to neighbourhood to the South is	Agreed - best achieved by trail on south side
important	
Concern with drainage issues/flooding of trail	Agreed – this is a difficult problem on the north
on north side	side
Trail would provide for pedestrians on south	Agreed - and north side would still have
side - none now	sidewalk
Accessing trail will require crossing Riverside	Agreed - regardless if it is what side the trail is,
Drive	residents from the other side will have to cross -
	however, if trail is on the south side, people on
	the north side can walk along the sidewalk to a
	safe crossing point.
Cheaper to leave north side alone and build	Agree - less expensive on the south side
on south	3
North side sidewalk in poor repair - trail would	Agree
replace it	1.9.11
Where is the money coming from?	Noted - Subject to 2018 Capital Works Plan
Increased liability for property owners -	Noted- Perhaps risk is a better word - sight
difficult to see riders	lines much more restricted on north side -
	more risk.
Trail too close to the road	Noted - but trail placement is impacted by the
	amount of land available
Should be part of a total reconstruction of the	Noted
road	
Can't wait to use the trail!	
Please ensure good sight lines	Agreed - more open site lines on the south side
-	
Excellent idea hope it gets done	Noted
I am very excited about this trail	Noted

COST ESTIMATE COMPARISON

Comment: The "new work" cost of the trail is about the same whether it's installed on the north or south side of Riverside Drive. However, there is a significant difference in the cost of removals, adjustments or relocations of existing site items, and restoration. Overall, there is a savings of about \$175,000 if the trail is constructed on the south side of Riverside Drive.

Item	North Side	South Side	
Removals	131,235	94,564	
Adjust/Relocate Site Features	112,100	26,980	
New Work	441,999	444,518	
Restoration	144,404	110,987	
Construction Total	829,738	677,049	
Design Contingency (10%)	82,973	67,704	
Construction Contingency (10%)	82,973	67,704	
Mobilization and Traffic Control	30,000	30,000	
Project Total	1,025,686	842,458	

SUMMARY OF KEY ISSUES

We note that the following issues were found to be significant in formulating our recommendation:

- 1. There are fewer relocates, adjustments, and potential conflicts with trees on the south side. Significant issues include the large number of trees that will impact the width of the trail, reducing it from 2.5m wide to 1.2m wide at seven locations. There are also 18 fire hydrants to be moved and several more catch basins to be relocated on the north side. The cost of these is reflected in the reduced cost for the south side.
- 2. Drainage from adjacent residential properties will typically drain onto and across the trail. On the north side, the trail would be right at the property line and there would be little potential to intercept drainage. In order to drain any water that crosses the trail, the entire road shoulder would have to be re-graded to direct water to catch basins. On the south side, there is generally more space for drainage and less work required.
- The existing sidewalk on the north side already floods in areas because of water from the adjacent properties and road. A wider trail will increase the potential for flooding on the north side. There is much less chance of flooding on the south side.
- Locating the trail on the south side and thereby leaving the existing the sidewalk on the north side means that the area will benefit from having pedestrian traffic along both sides of the road.
- 5. There is a high risk of vehicular/pedestrian/bicycle conflict when vehicles are backing out of driveways. On the north side, the trail would be very near the property line and the sight lines would be restricted by existing landscaping, hedges, and fences. The site lines on the south side are more open.
- Locating the trail on the south side would cost approximately \$150,000 less than the cost incurred on the north side.
- 7. Locating the trail on the south side lines it up with existing trails to the east and west.
- 8. By locating the trail on the south side, it will be easily accessed not only by residents on the south side of the road, but by residents in neighbourhoods to the south. Residents on the north side will have the option of walking along the existing sidewalk and then crossing Riverside Drive at a safe location.
- 9. There is likely to be less disruption to neighbours if the trail is built on the north side since there are fewer driveways to be cut, less landscaping in the right-of-way, and we are generally perceived to be working in their "back yard". Residents on the south side will generally perceive us to be working in their "front yard". However, we believe that reasonable accommodation can be made for any disruption.
- 10. Locating the trail on the south side results in the need for several road crossings. While it would be better to avoid these, they generally have good sight lines, vehicles will be driving forward, and the intersections can be designed safely. While there are no road crossings on the north side, the sight lines at driveways on the north side are restricted and some cars are backing out of the driveways.

COMPARISON OF QUANTITIES OF WORK AND/OR POTENTIAL CONFLICTS

<u>Comment:</u> While the trail is slightly longer on the south side, there are more construction related issues on the north side. The relocation of fire hydrants and catch basins for example can be quite expensive. Since the Town prefers to not remove trees, there are seven locations on the north side where the width of the trail will be compromised (reducing from 2.5m wide to 1.2m) to preserve the trees. Even then, it is likely that the trees will begin to decline due to the impact of construction and eventually will have to be removed. In each case, the existing trees are presently in good condition.

While we will have to remove two trees on the south side, these trees are under existing overhead wires and the heads have been severely trimmed. They are in poor condition and should be removed.

There is approximately 25% more driveway crossings on the north side, but no road crossings.

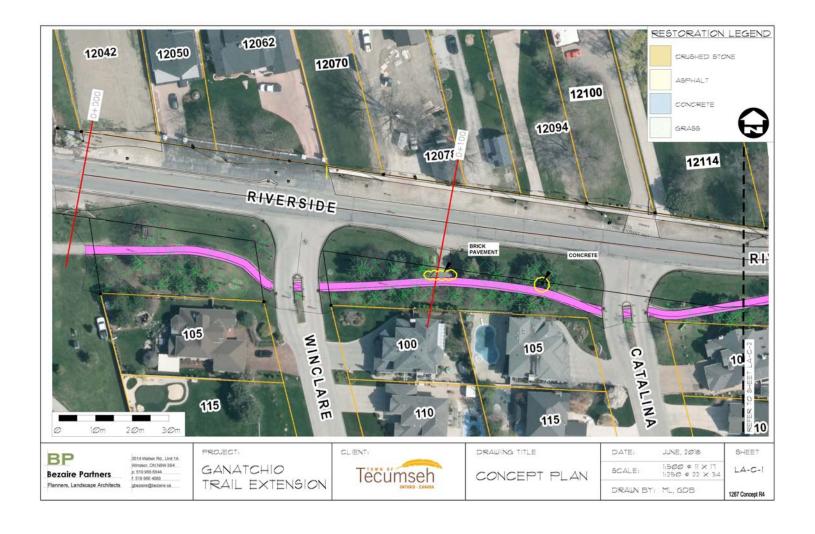
Item	North	South
Length of Path	2,050 (m)	2,180 (m)
Driveway Crossings	86	68
Road Crossings	0	12
Conflicts with trees	7	2
Fire Hydrants to be re-located	18	0
Utility/Light Poles to be re-located	0	0
Catch Basins to be relocated	24	8
Catch Basins to be adjusted	14	1
Manholes to be adjusted	5	5
Water Valves to be adjusted	4	1
Landscape Fence Conflicts	0	6

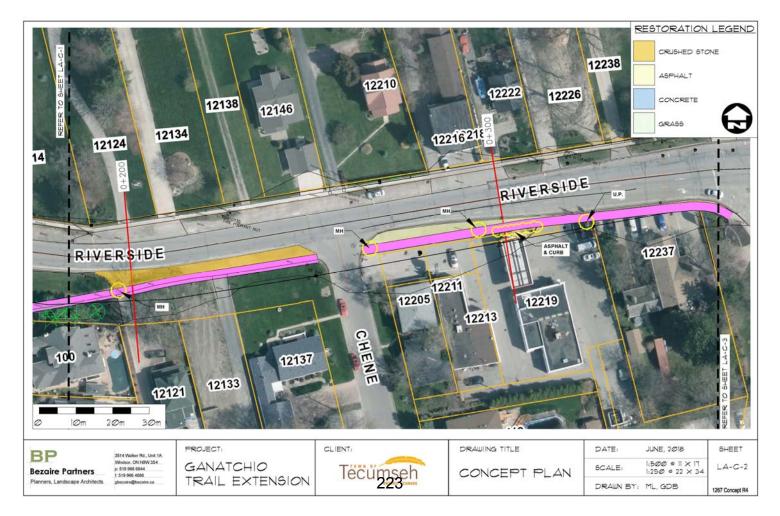
RECOMMENDATION

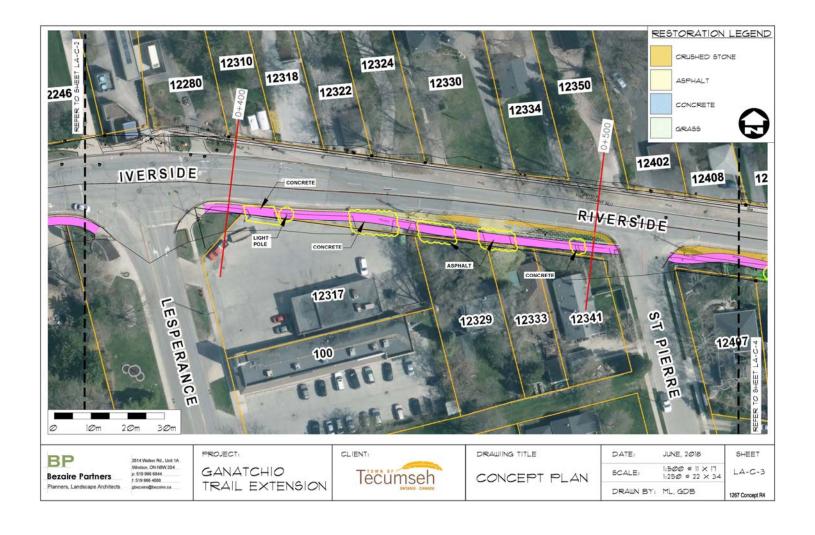
Based on our analysis of the design, the results of the public consultation, and the comparative costs and key issues, we recommend that the proposed multi-use trail be aligned along the south side of Riverside Drive easterly from the Tecumseh Windsor border to the west limit of Manning Rd.

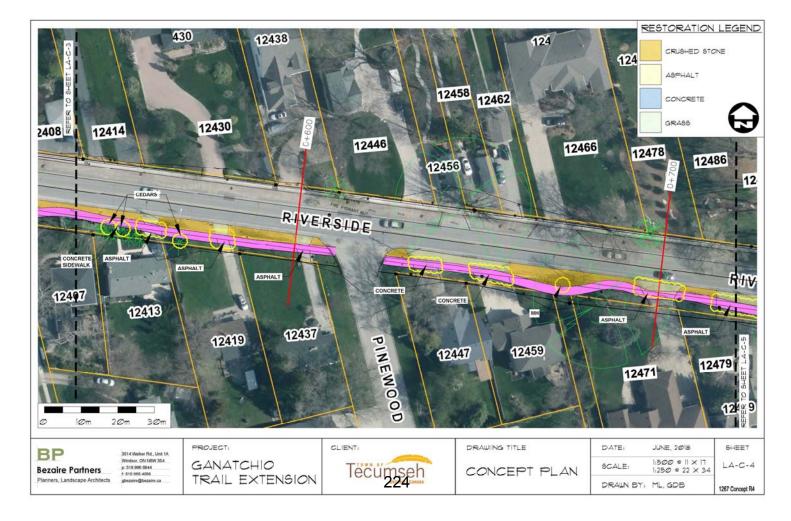




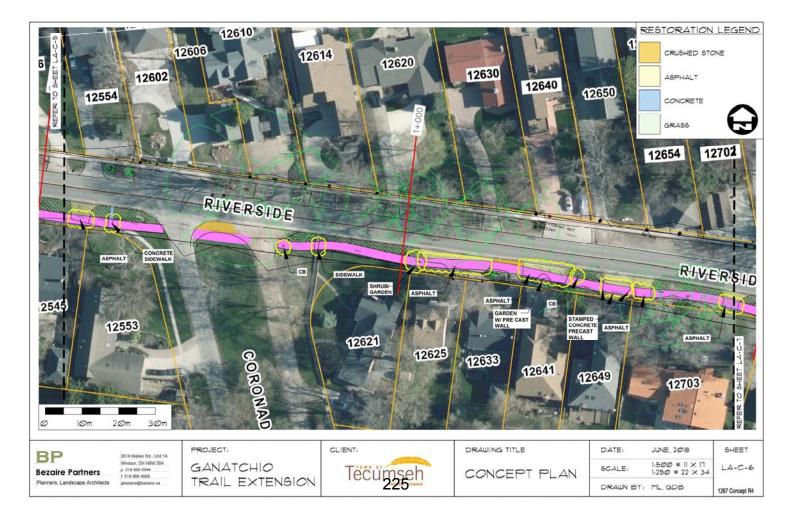


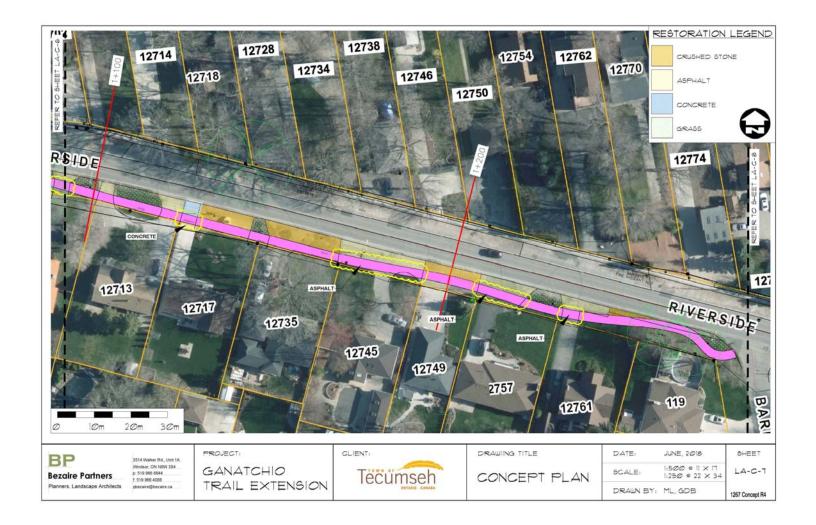


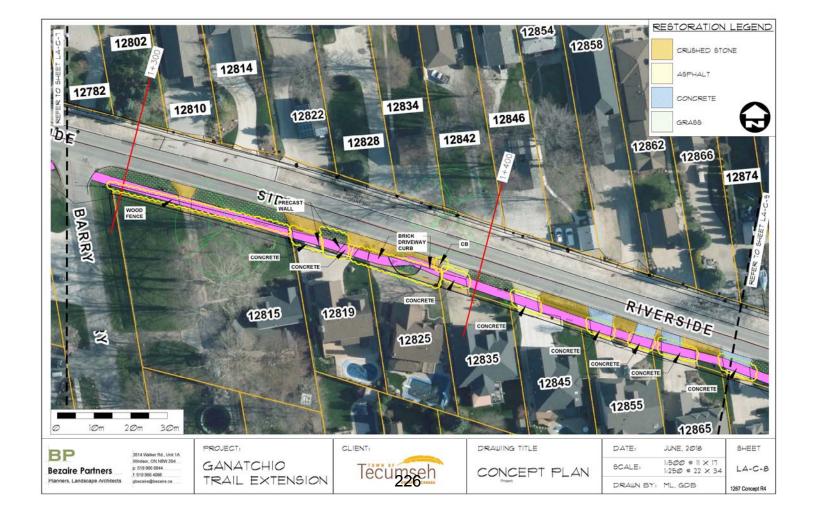


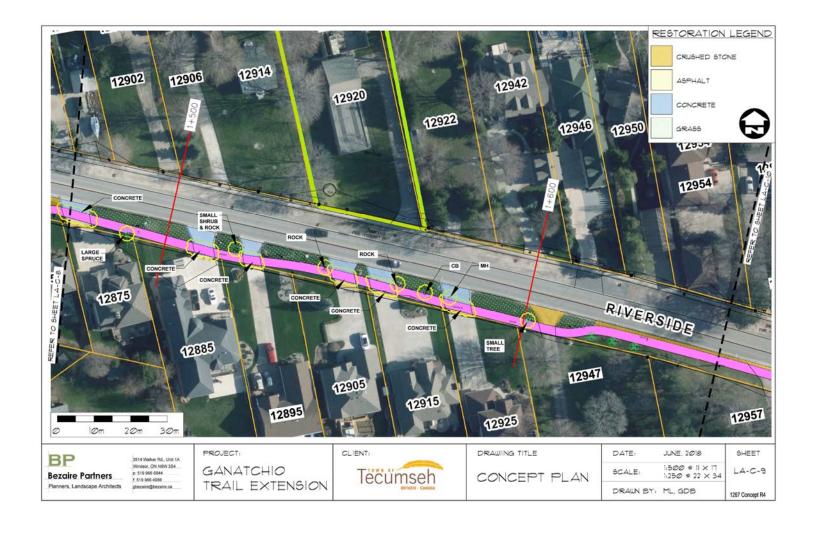


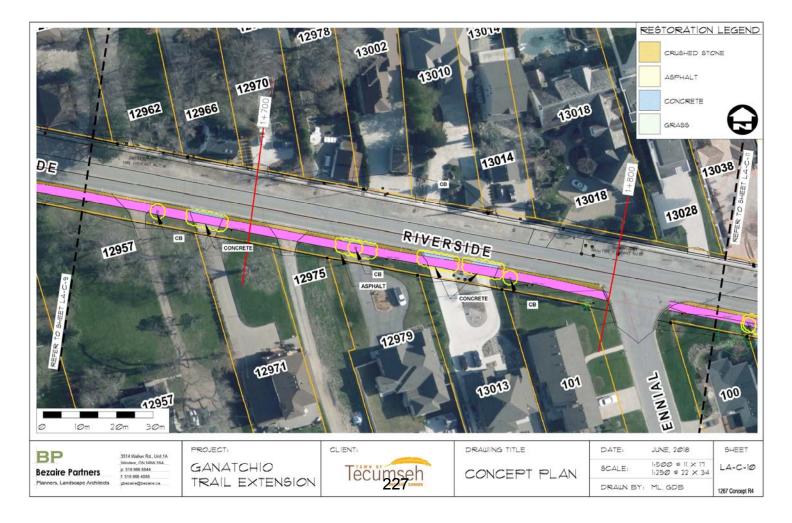


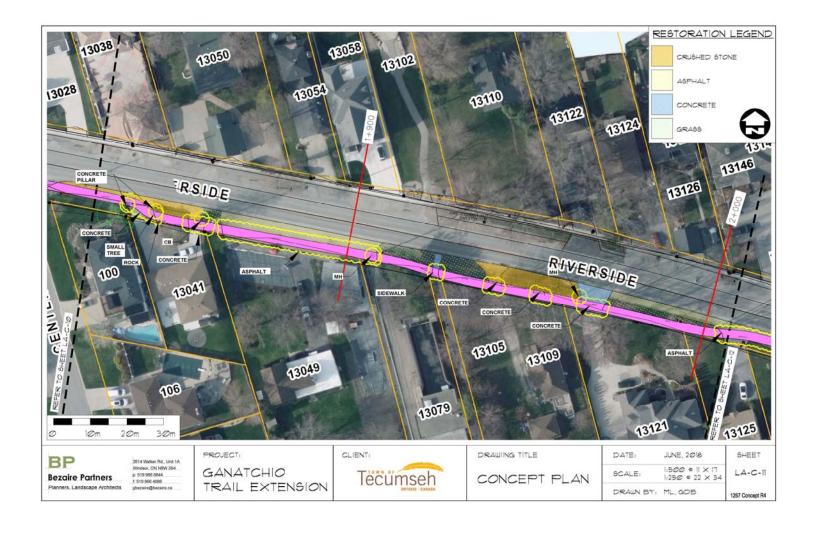


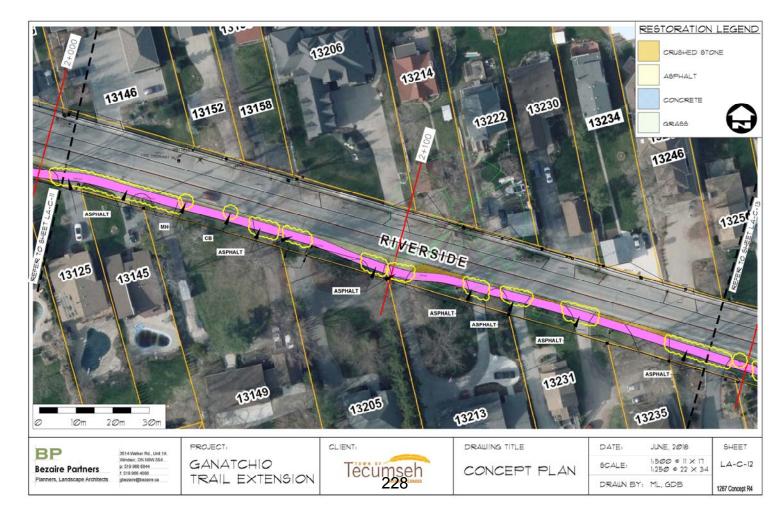


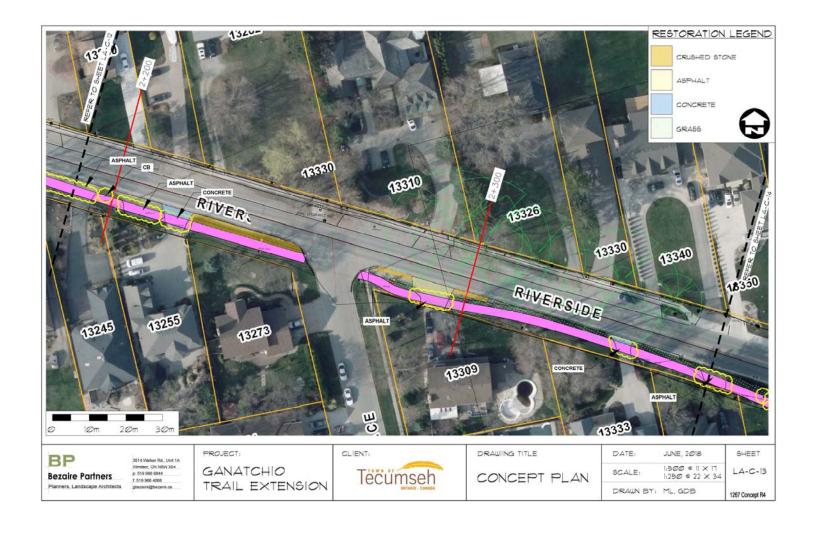


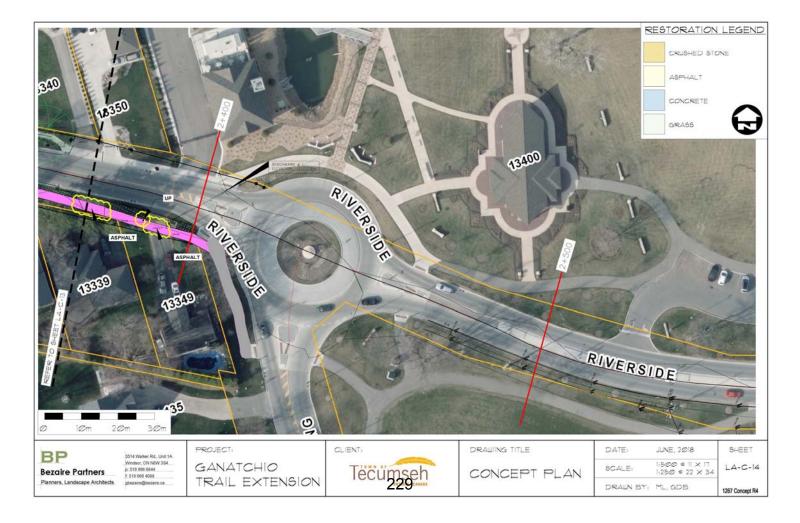


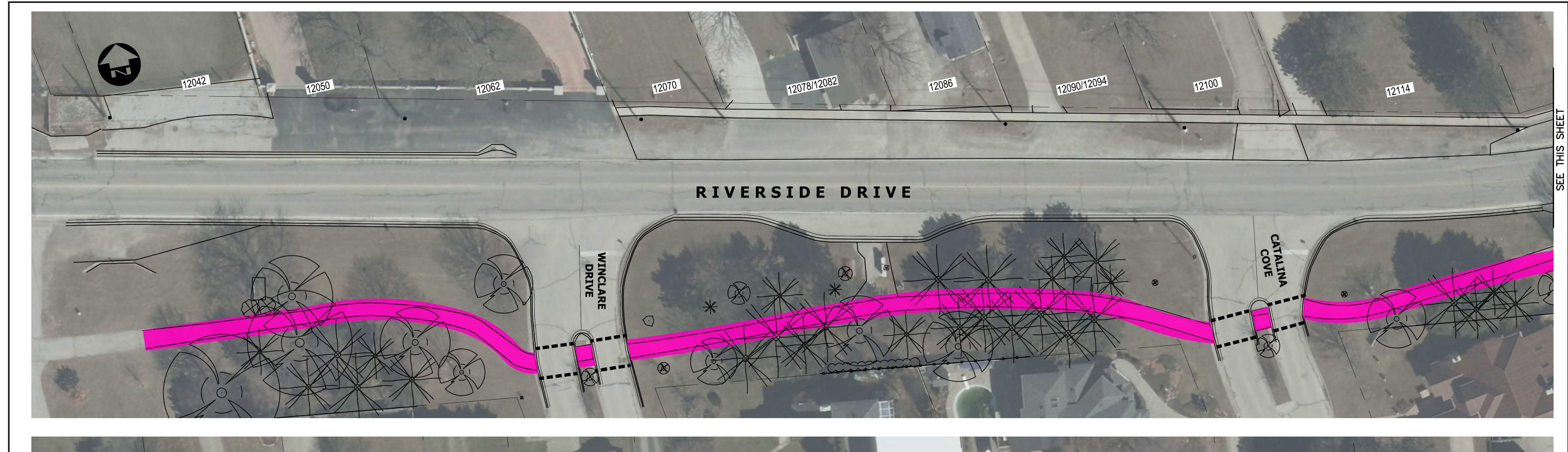


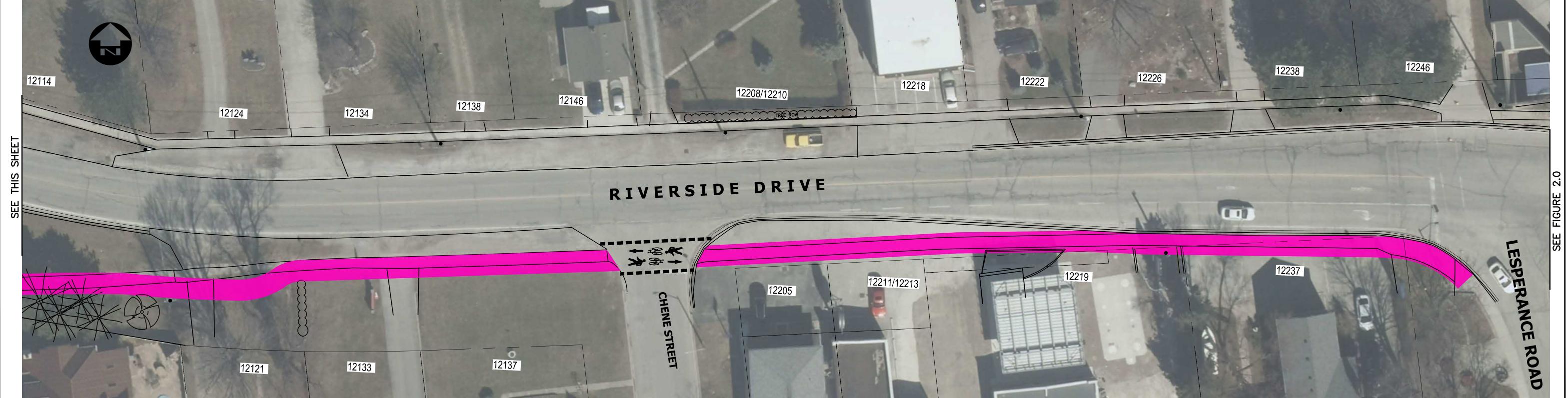












LEGEND PROPOSED 2.7m MULTI USE PATHWAY Town of
Tecumseh
Ontario, Canada

Riverside Drive Trail Extension

in the Town of Tecumseh

PRELIMINARY ALIGNMENT TOWN LIMITS TO LESPERANCE ROAD

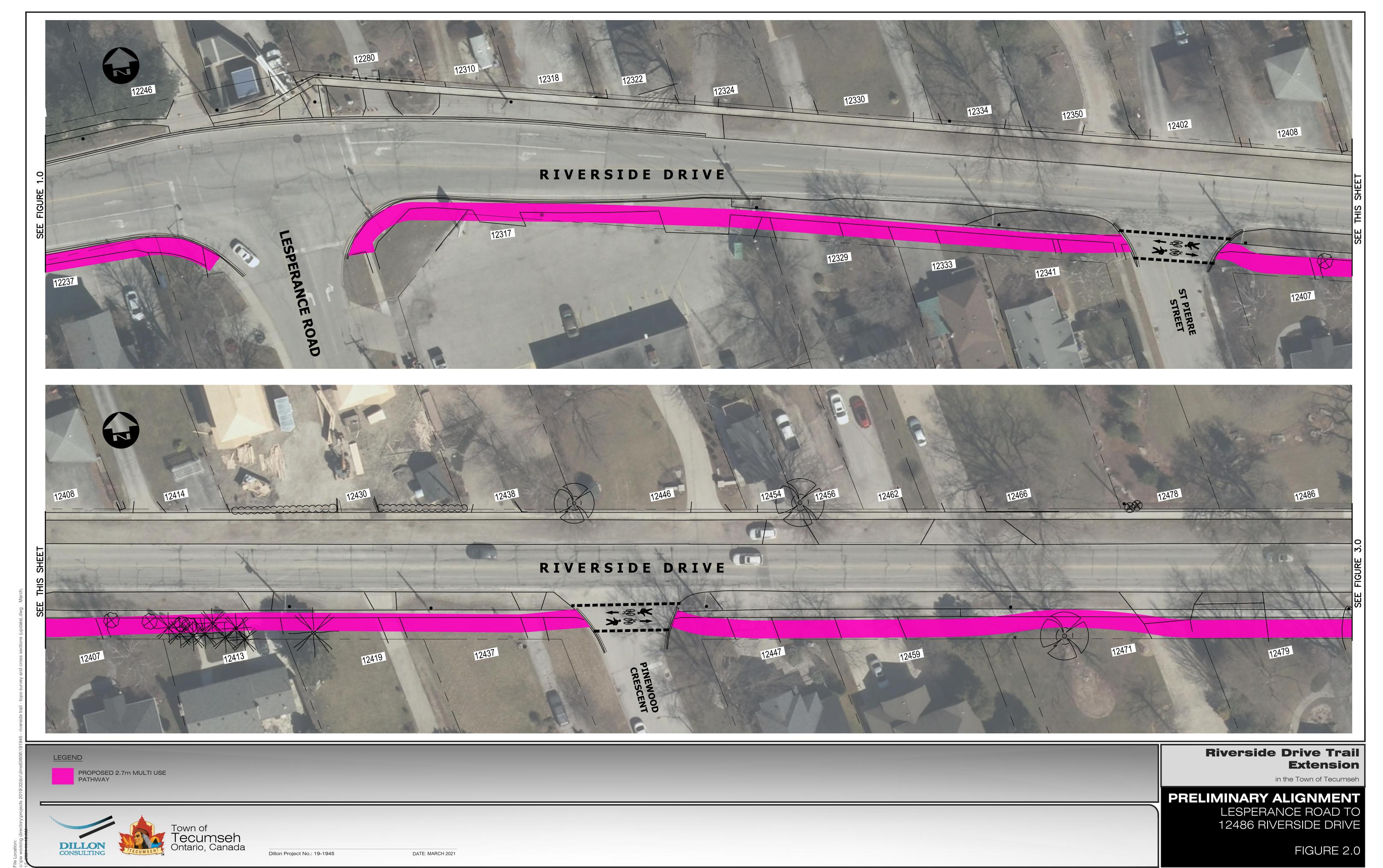
FIGURE 1.0

230

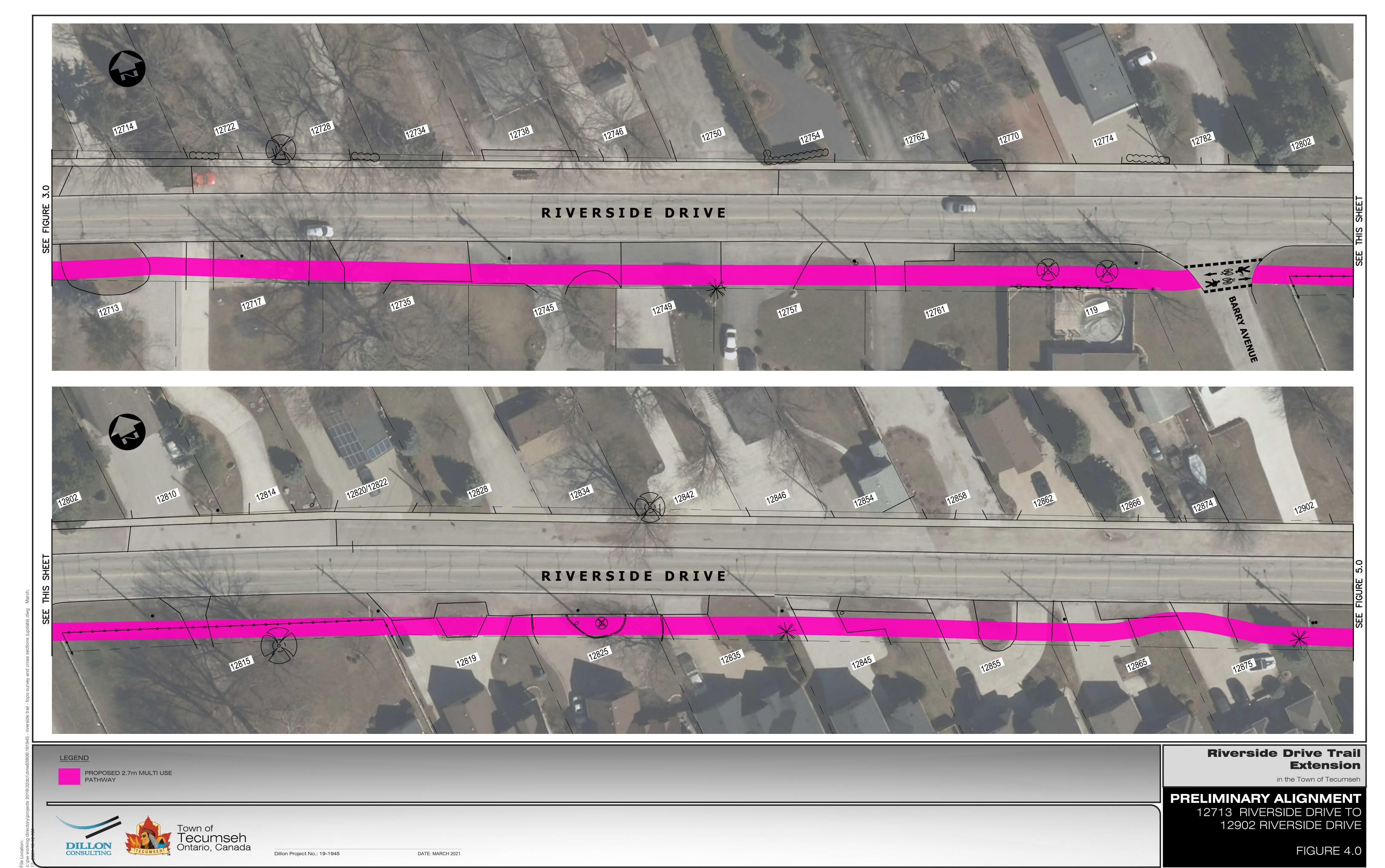


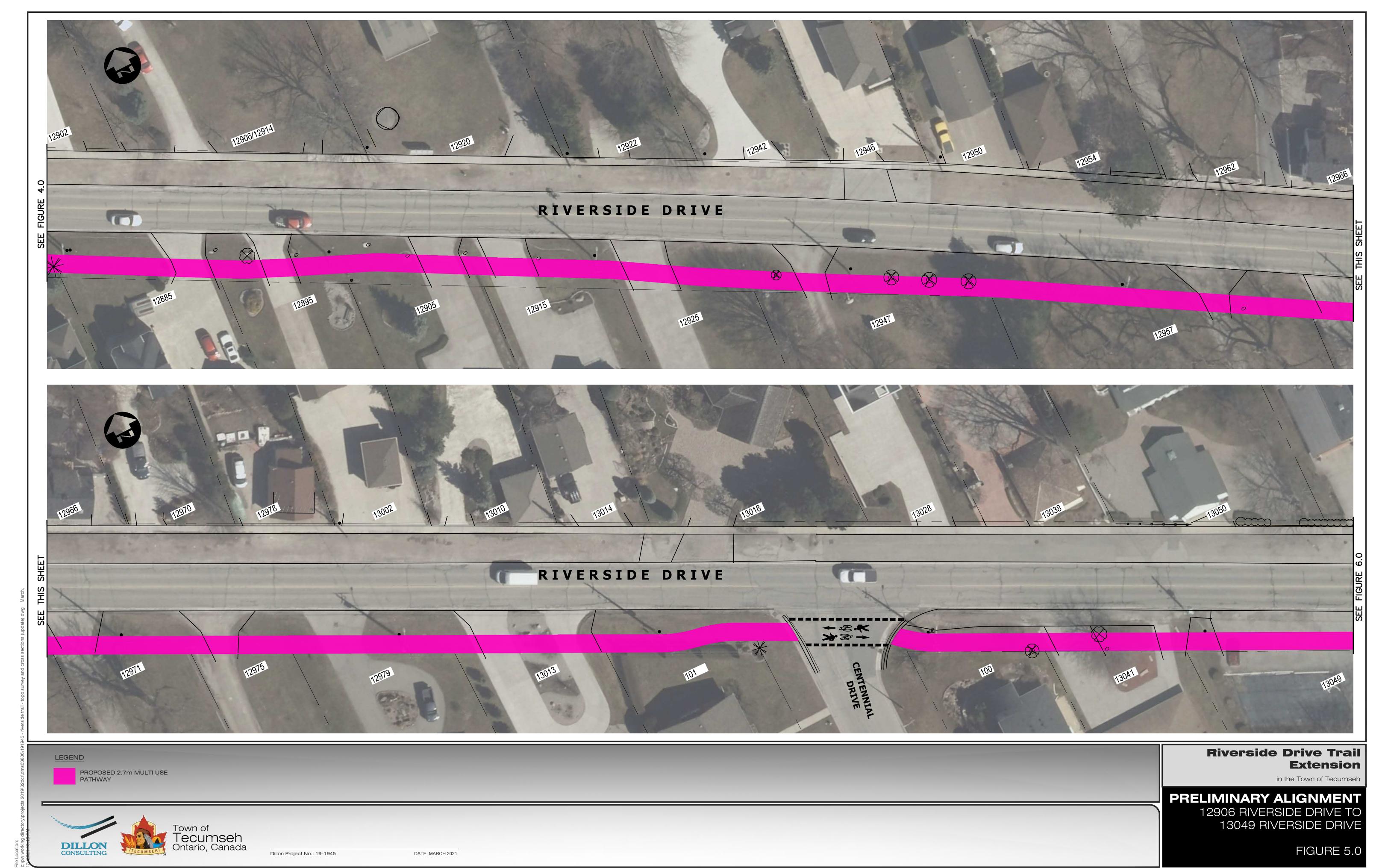
Dillon Project No.: 19-1945

DATE: MARCH 2021

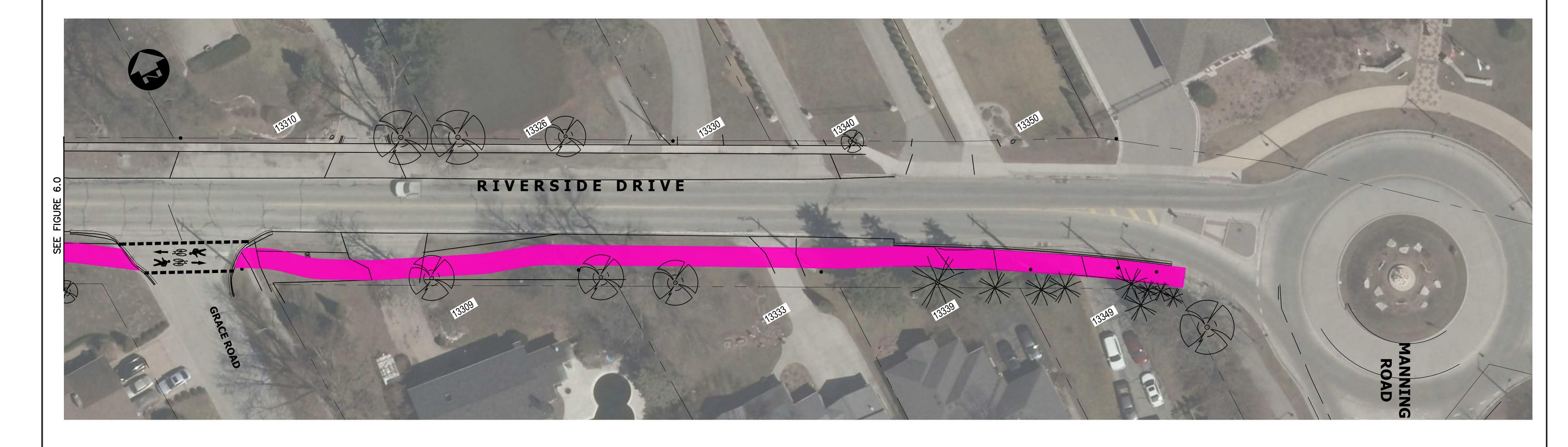














Riverside Drive Trail Extension

in the Town of Tecumseh

PRELIMINARY ALIGNMENT

GRACE ROAD TO

MANNING ROAD

FIGURE 7.0

Riverside Drive Trail

From City of Windsor to Manning Road



Riverside Drive Trail

From City of Windsor to Manning Road

Outline

1)	Pυ	rpose	3
2)	Re	view of the Proposal	4
3)	Re	sults of 1st Public Consultation	11
4)	Re	sults of 2 nd Public Consultation	14
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	iii.	Alternate Facility Types	36
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Public Concerns55		
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ii.	Accessibility	59
iii.	Environmental Impacts	60
Buc	dget Update	64
Со	nclusions	65
Cu	rrent Recommendation	69
Qu	estions	70
	i. ii. Buc Co Cu	Public Concerns i. Safety and Design ii. Accessibility iii. Environmental Impacts Budget Update Conclusions Current Recommendation Questions



Bezaire

Purpose

- To provide a safe and accessible active transportation facility for individuals and families (all ages and abilities).
- 2. To fill "**the gap**" and provide connection between existing multi-use off-road trails to the west and east.

Bezaire

Description

- 2.4m wide asphalt trail
- Along the south side of Riverside Drive from Windsor to Manning Rd.
- Off-road, multi-use trail.
- For use by families- All ages and abilities.

Planning History

- 2011 Parks and Recreation Masterplan
- 2012 County Wide Active Transportation Study
 Plan
- 2016 Tecumseh Endorsed the CWATS Project
- 2017 Tecumseh Transportation Masterplan.

The "Gap"



Comparison of Issues

Item	North	South
Length of Path	2,050 (m)	2180 (m)
Driveway Crossings	86	68
Road Crossings	0	12
Conflict with trees	7	2
Fire Hydrants to be relocated	18	0
Utility / Light Poles to be relocated	0	0
Catch Basins to be relocated	24	8
Catch Basins to be adjusted	14	1
Manholes to be adjusted	5	5
Water Valves to be adjusted	4	1
Landscape Fence Conflicts	0	6

Comparison of Issues

Better

Item	North	South
Length of Path	<mark>2,050 (m)</mark>	2180 (m)
Driveway Crossings	86	<mark>68</mark>
Road Crossings	<mark>0</mark>	12
Conflict with trees	7	<mark>2</mark>
Fire Hydrants to be relocated	18	<mark>0</mark>
Utility / Light Poles to be relocated	0	<mark>0</mark>
Catch Basins to be relocated	24	8
Catch Basins to be adjusted	14	<mark>1</mark>
Manholes to be adjusted	5	5
Water Valves to be adjusted	4	<mark>1</mark>
Landscape Fence Conflicts	<mark>0</mark>	6

Comparison of Costs

Comparative Costs	North	South
Removal	131,235	94,644
Adjust/Relocate Site Features	112,100	26,980
New Work	441,999	444,518
Restoration	<u>144,404</u>	<u>110,987</u>
Construction Total	829,738	677,049
Design Contingency	82,973	67,704
Construction Contingency	82,973	67,704
Mobilization and Traffic Control	30,000	<u>30,000</u>
Project Total	1,025,866	842,458
Difference	2017 Estimate	\$183,408

Comparison of Cos	Better	
Comparative Costs	North	South
Removal	131,235	94,644
Adjust/Relocate Site Features	112,100	26,980
New Work	441,999	444,518
Restoration	<u>144,404</u>	110,987
Construction Total	829,738	677,049
Design Contingency	82,973	67,704
Construction Contingency	82,973	67,704
Mobilization and Traffic Control	<u>30,000</u>	30,000
Project Total	1,025,866*	<mark>842,458</mark> *
*Actual costs to vary because of trail width, soil testing/disposal. Inflation & market pressures.		
Difference	2017 Estimate	\$183,408

Results of 1st Public Open House

- 32 interested stakeholders attended
- Large majority in favour of the trail
- Evenly split whether trail would be on north or south side of Riverside Drive

Results of 1st Public Open House

Key Issues

North or south side?

- Fewer conflicts, adjustments and relocations
- Fewer drainage issues easier to manage
- Benefit of having walkway on both sides of the roadway
- Less conflict with driveways/more with local roads
- Less costly on south side
- o Filling in the gap between east and west
- Distance from homes to trail is a concern

Recommendation to 2nd PIC

Based on our analysis of the design, the results of the public consultation, and the comparative costs and key issues, we recommend that the proposed multi-use trail be aligned along **the south side of Riverside Drive**, easterly from the Tecumseh Windsor border to the west limit of Manning Rd.

Results of 2nd Public Open House

In General

The 2nd open house was well attended and residents living on the south side of the road expressed considerable concern over the recommendation.

What we heard

- Trail too close to houses
- Alternative Options are available route and configuration
- Drainage and Flooding
- Pedestrian and Vehicular Safety
- Loss of Parking along road
- Financial Issues

Results of 2nd Public Open House

In General

The 2nd open house was well attended and residents living on the south side of the road expressed considerable concern over the recommendation.

23 comments in favour of trail project including location on south side of the Road.

What we heard

- Trail too close to houses
- Alternative Options are available route and configuration
- Drainage and Flooding
- Pedestrian and Vehicular Safety
- Loss of Parking along road
- Financial Issues

Support for Trail on South Side

... Additional Study and Review
Bezaire

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Additional Study and Review

Questions for Further Study

- 1. Are there other trails designed this way?
- 2. Is there a **better route**?
- 3. Is there a better configuration?
- 4. Are there **problem areas** that can't be resolved?
- 5. Does the trail **match** up with trails to the east and west.

Are there other trails that have been designed in this way?

Criteria for Comparative Projects

- Multiple Driveway Crossings 68 (31/km)
- Multiple Road Crossings 12
- Width of Trail 2.4m
- Distance From Road 0 to 14m
- Distance From Homes 4 to 34m
- Average Daily Traffic 12,098





St. Clair Rd. Lakeshore ON

Type: Separated Multi-use Trail

Surface: Asphalt

Length: 5.1km (3.2 miles)

Width: 2.9m (9.5 ft.)

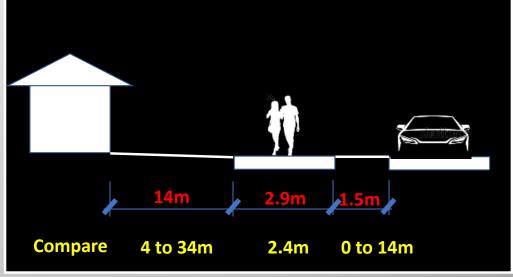
Minimum Separation - Road: 0-1.5m (0-5 ft.) Minimum Separation - Houses: 14m (45 ft.)

Driveway Crossings: 112 (22/km)

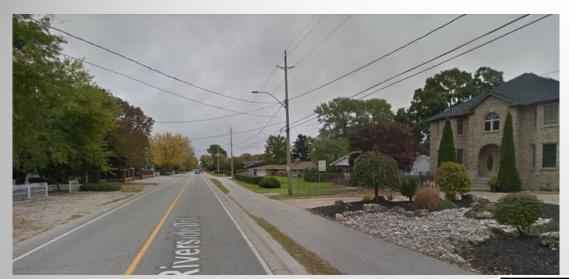
Road Crossings: 7

AADT:









Riverside Dr. East, Tecumseh

Type: Separated Multi-use Trail

Surface: Asphalt

Length: 902m (2,959 ft.) Width: 2.6m (8.5 ft.)

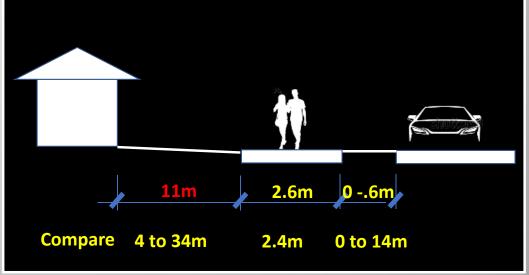
Minimum Separation - Road: 0 - .6m (0-2ft.) Minimum Separation - Houses: 11m (36 ft.)

Driveway Crossings: 22 (24/km)

Road Crossings: 5

AADT: 6,356





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Bezaire



Malden Rd. LaSalle ON

Type: Multi-use Trail at Curb along curb

Surface: Asphalt

Length: 1.29km (.80 miles)

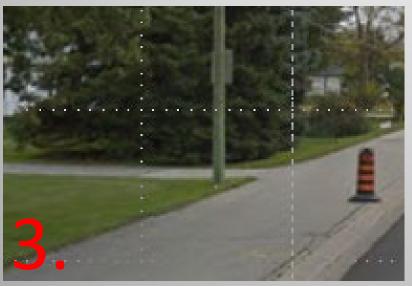
Width: 4m (12 ft.)

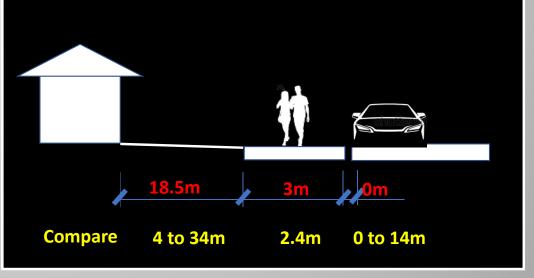
Minimum Separation- Road: 0m (0 ft.)

Minimum Separation – Houses: 18.5m (60.6 ft.)

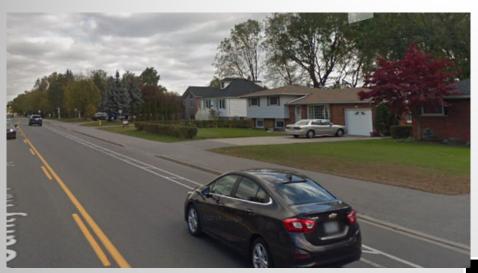
Driveway Crossings: 29 (22/km)

Road Crossings: 7 AADT: 12 to 19,000









Todd Lane LaSalle ON

Type: Bike Lanes + Multi-use Path along curb

Surface: Asphalt

Length: 2.7KM (1.69m)

Width: 4m (12 ft.)

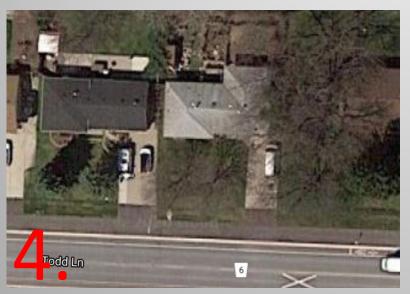
Minimum Separation-Road: 0m (0 ft.)

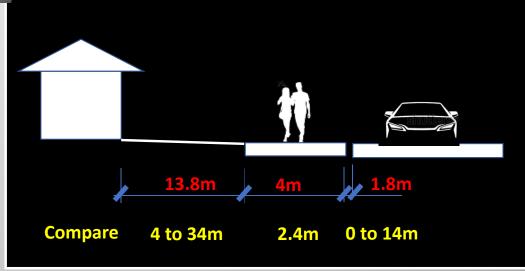
Minimum Separation – Houses: 13.8m (45.3 ft.)

Driveway Crossings: 56 (21/km)

Road Crossings: 5

AADT: 7,700





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Dougall Rd. WindsorON

Type: Multi-use Path along mountable curb

Surface: Asphalt

Length: 1.0KM (.62 miles)

Width: 2.6m (8.5 ft.)

Minimum Separation- Road: 0m (0 ft.)

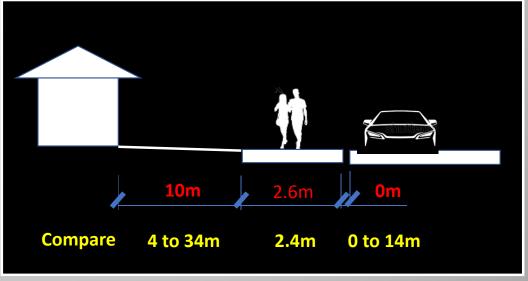
Minimum Separation – Houses: 10m (33.3 ft.)

Driveway Crossings: 34 (34/km)

Road Crossings: 4

AADT: 29,000





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Reaume Rd. LaSalle ON

Type: Multi-use Path separated from curb

Surface: Asphalt Length: 1.3KM (.8 mi) Width: 3.5m (11.5 ft.)

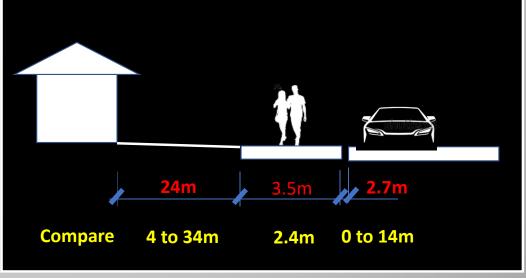
Minimum Separation - Road: 2.7m (8.8 ft.) Minimum Separation - Houses: 24m (78 ft.)

Driveway Crossings: 39 (30/km)

Road Crossings: 5

AADT: 2,900





Are there other trails that have been designed in this way?

Comparative Projects

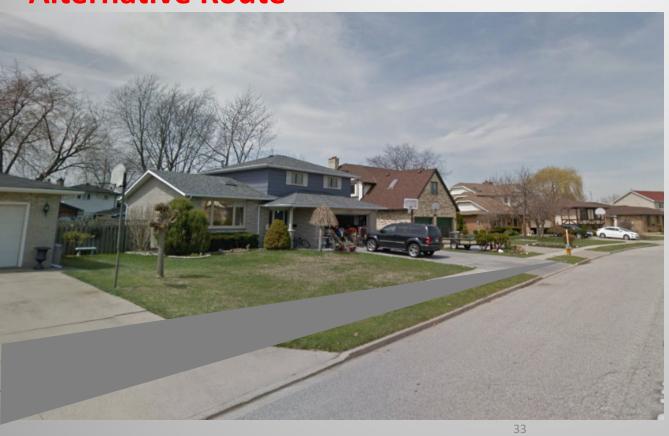
There are good examples of multi-use trails both separated and adjacent to the curb, that cross multiple roads and driveways, and are a similar distance from homes. We recommend increasing the trail width to an average of **2.7m or 9ft (2.4m minimum)** wherever possible, with **potential for 3m** is some areas especially if the trail is adjacent to the road edge.

Suggested Alternative Route

The alternate route suggested would use Lesperance Rd., Dillon Dr., Little River Blvd. and Manning Rd. for the segment east of Lesperance.



Alternative Route







Alternative Route

- Doesn't fill the gap
- Perceived inconvenience is the same
- Higher cost
- More driveway crossings

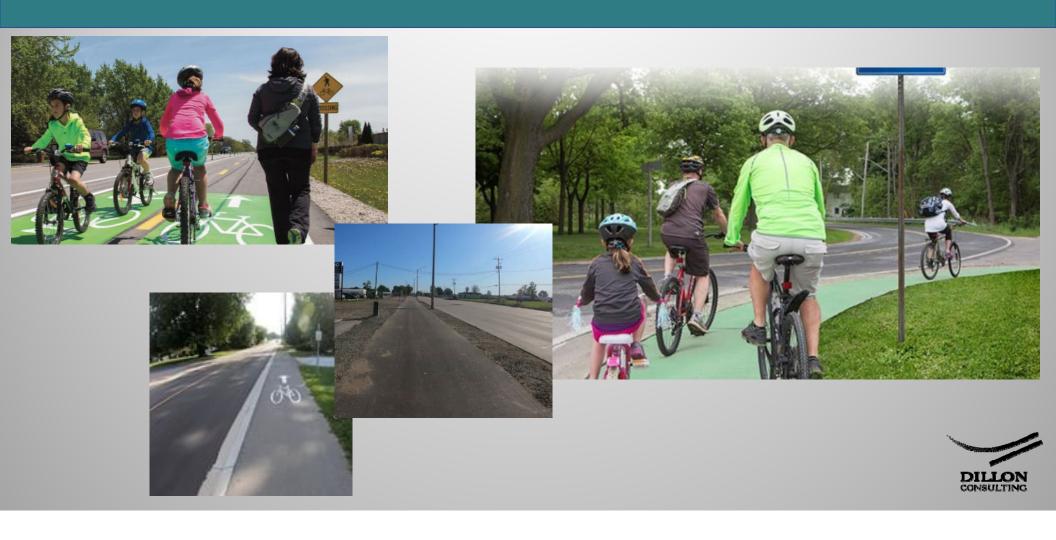
- +/- same number of road crossings
- Longer distance
- Doesn't provide access to Residents on Riverside Drive

Note ... the proposed alternate route consists of low volume residential roads. The road itself would be a viable alternative for recreational use rather than an off road trail.

Recommendation Update

Based on the evaluation of the alternative route (Dillon Drive) and comparable local projects, the multi-use trail along the South side of Riverside Drive remains the preferred option.

Is There a Better Configuration?



More Suitable Option?

Facility	Description
Physically Separated Bike Lane	Bike lane separated horizontally and vertically from vehicles through the use of bollards, curbs, or planters. Generally follows road alignment. Exclusively for cyclists.
Cycle Track	Horizontally and vertically separated from the roadway by a curb and buffer. One directional lane on each side of roadway (one-way) or a two-way facility on one or both sides of the roadway. Exclusively for cyclists.
Multi-Use Pathway	Two-way pathway horizontally separated from the roadway. Shared by cyclists and pedestrians. Alignment can be independent of roadway to avoid obstruction such as utility poles.
Bike Lanes	Portion of roadway designated for cyclists through the use of pavement markings (single line or buffer). Exclusively for cyclists. Follows road alignment.
Paved Shoulder	Portion of roadway used to accommodate stopped vehicles, emergency uses, pedestrians and cyclists, and lateral support of pavement structure. Not an alternative to bike lanes in an urban environment.
Shared Use Roadway	Vehicles and cyclist share operating space. Cycling is permitted on all roadways unless specifically restricted.



Figure 4.26 - Cast-in-place Concrete Curb Separating a One-way Separated Bicycle Lane,

Toronto

Multi-Use Path Separated by Grassy Boulevard, Waterloo



Cycle Track Separated by Mountable Curb, East Gwillimbury

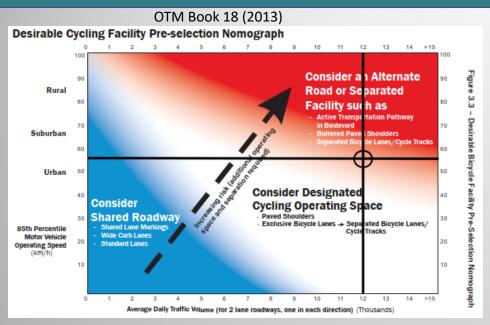


Figure 4.70 - Example of Rural Paved Shoulders, Ottawa

Source: Alta



Ontario Traffic Manual Book 18- Cycling Facilities



- Current standard cycling facility guidelines in Ontario
- Includes facility selection guidelines
- Guideline to promote consistency in facility selection and use.



- Updated to reflect current national and international best practices
- Recommends increasing separation of people cycling and motorists (low stress environment) compared to the 2013 version.
- Encourages cycling facilities to appeal to "all ages and abilities"
- Design for an "Interested but concerned" target user



Ontario Traffic Manual Book 18- Cycling Facilities

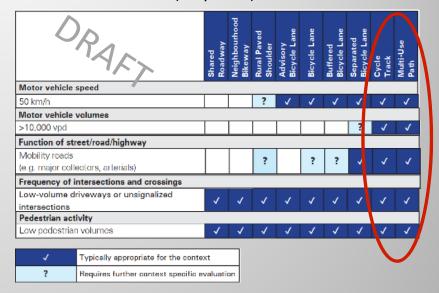
OTM Book 18 (2013) Selection Heuristics

Site Characteristic	Design Considerations
Traffic Volume	Physical Separation
Vehicle Speed	Exclusive operating space for both bicycles and vehicles
Road Class	Some form of bicycle facility
Driveway and intersection frequency	Bike lanes may be more appropriate

Findings:

- Physically separated facility
- Bike lanes considered

Draft OTM Book 18 (May 2020) Selection Heuristics



Findings:

- Multi-Use Pathway or Cycle Track
- Low volume driveways and intersections considered less of a barrier to in-boulevard facilities.

30

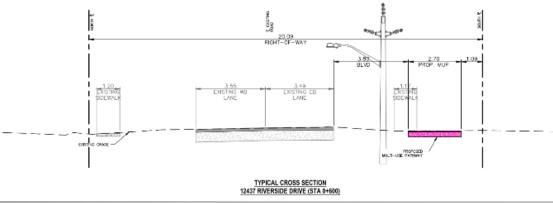
Alternative Facility Types



Option 1: Multi-Use Trail

Current Proposal





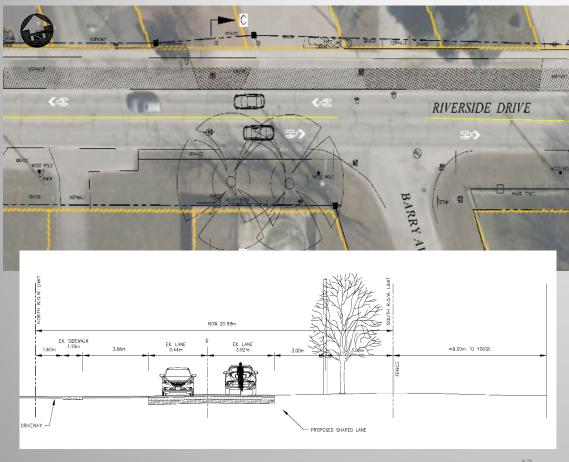
ADVANTAGES

- Accessible for persons of all ages and abilities
- Physical separation between motorists and pedestrians/cyclists
- Fills the "Gap" and provides consistency between adjacent active transportation facilities (Ganatchio Trail and Lakewood Park)
- Flexibility in alignment to minimize impacts to existing landscaping and utilities within right of way.
- o Provides cyclists on-road and off-road options.
- Does not limit the installation of bike lanes in the future

DISADVANTAGES

- Potential commercial parking impacts
- Relocation or removal of existing landscaping, hard surfaces, and utilities within the right-of-way
- Low volume driveway and street crossings.
- Requires **modifications to existing drainage** on the south side of the roadway.
- o Potential property impacts.

Option 2 – Shared Lanes



ADVANTAGES

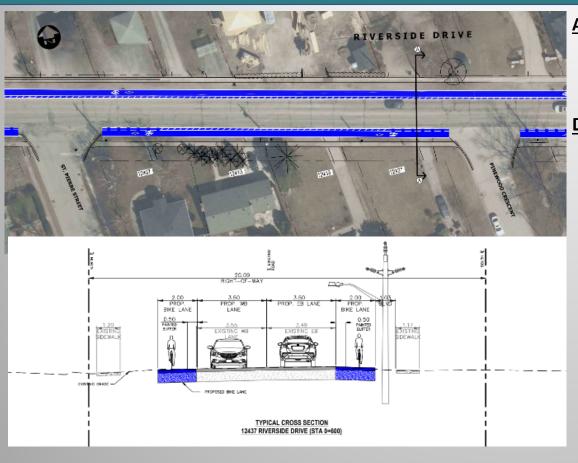
- Low cost
- Minimize disruption due to construction activities

DISADVANTAGES

- Does not fill the "Gap" or provide consistency between adjacent facilities
- Does not accommodate users of all ages and abilities
- Shared routes are not typically utilized by a variety of users including youth or families due to perceived safety issues
- Increased proximity and interaction with vehicles
- Does not improve the Town's active transportation network as cyclists are currently permitted to use the roadway.
- No pedestrian connection.



Option 3 – Dedicated Bike Lanes (Buffered)



ADVANTAGES

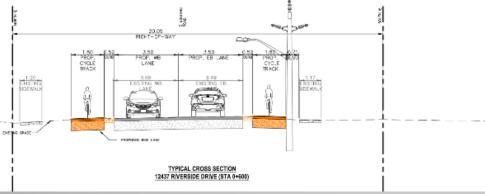
- Dedicated space for cyclists within the roadway
- Fewer utility relocations and landscaping impacts within right-of-way compared to Multi-Use Trail.

DISADVANTAGES

- Does not fill the "Gap" or provide equitable active transportation facilities (all ages and abilities).
- Increased hard surface area compared to other options.
- Significant reconfiguration and widening of the existing Lesperance Road signalized intersection.
- Potential commercial parking impacts
- No physical separation between cyclists and motorists
- o Requires drainage improvements on both sides of roadway
- No benefit to pedestrians
- Increased costs
- No connection to existing bike lanes at project limits
- No connection from north to existing Ganatchio Trail at west limits

Option 4 – Cycle Track





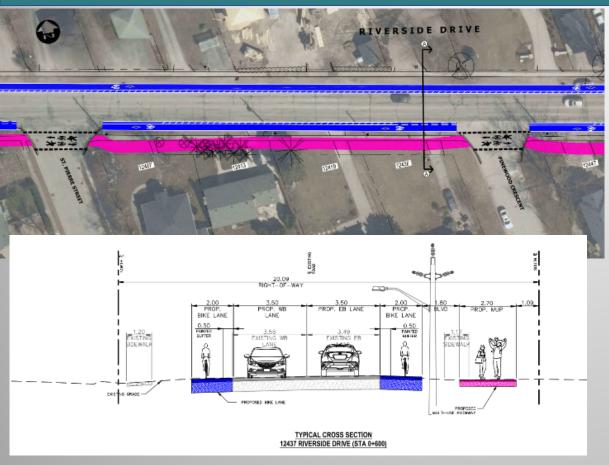
ADVANTAGES

- Dedicated physically separated space for cyclists
- Fewer utility relocations and landscaping impacts within right-of-way compared to Multi-Use Trail.

DISADVANTAGES

- Does not fill the "Gap" or provide equitable active transportation facilities (all ages and abilities).
- Increased hard surface area compared to other options.
- Significant reconfiguration and widening of the existing Lesperance Road signalized intersection including relocation of existing traffic signals.
- Potential commercial parking impacts
- Significant drainage improvements to both the roadway and boulevard (will require additional road reconstruction).
- No benefit to pedestrians
- Increased costs
- No connection to existing bike lanes at project limits
- No connection from north to existing Ganatchio Trail at west limits

Option 5 – Multi-Use Trail and Dedicated Bike Lanes (Buffered)



ADVANTAGES

- Dedicated space for cyclists within the roadway and inboulevard
- Accessible for persons of all ages and abilities
- Fills the "Gap" and provides consistency between adjacent active transportation facilities (Ganatchio Trail and Lakewood Park)
- o Provides cyclists on-road and off-road options.

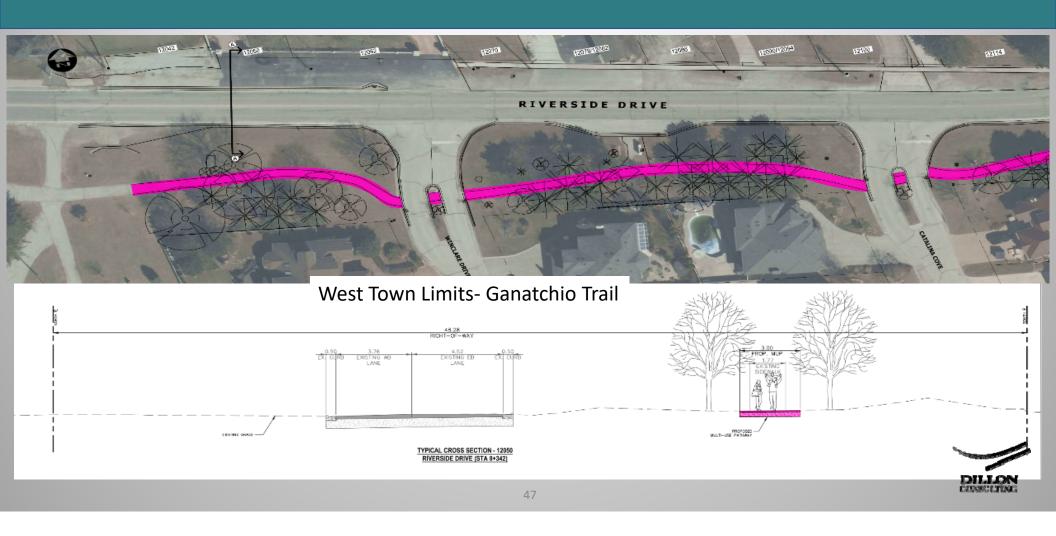
DISADVANTAGES

- o Increased hard surface area compared to other options.
- Significant reconfiguration and widening of the existing Lesperance Road signalized intersection including relocation of existing traffic signals.
- Potential commercial parking impacts
- Drainage improvements on both sides of roadway
- Significant cost increase
- No connection to existing bike lanes at project limits
- o Potential property impacts.

Consistency With Adjacent Facilities



Consistency With Adjacent Facilities



Is there a better configuration?

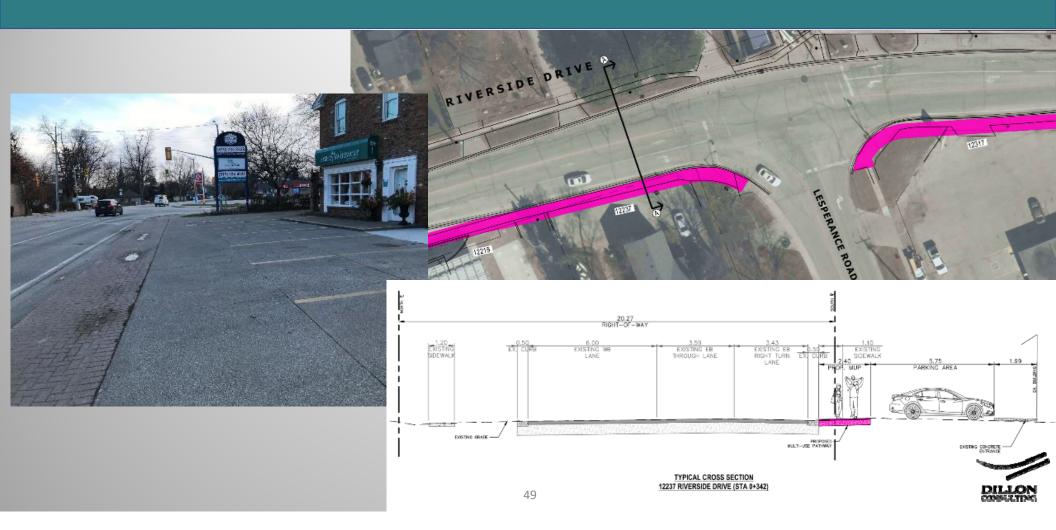
The Alternatives:

- Do not serve the target audience (all ages and abilities)
- Do not align with the current and proposed best practices.
- Require major road reconstruction and intersection improvements
- Require significant drainage improvements
- Increase hard surface area
- Increase costs
- Are inconsistent with adjacent facilities... i.e. doesn't fill the gap.

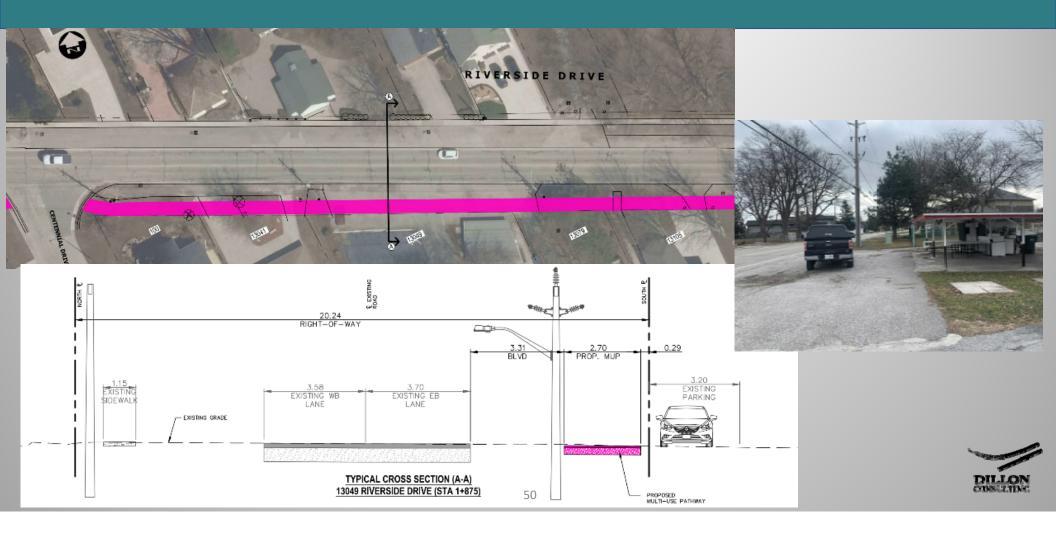
Current Recommendation: Multi-Use Trail



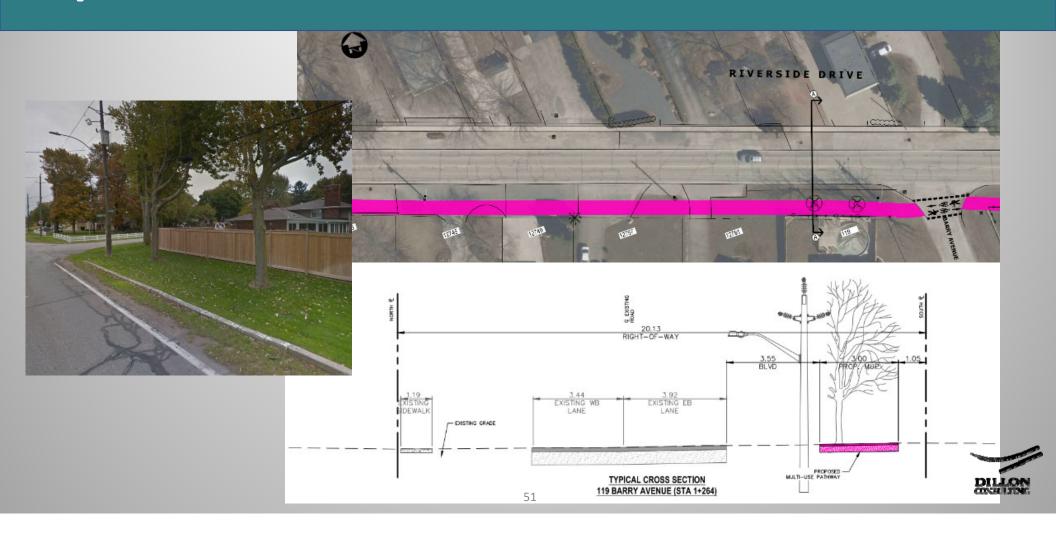
Special Consideration – Commercial Parking



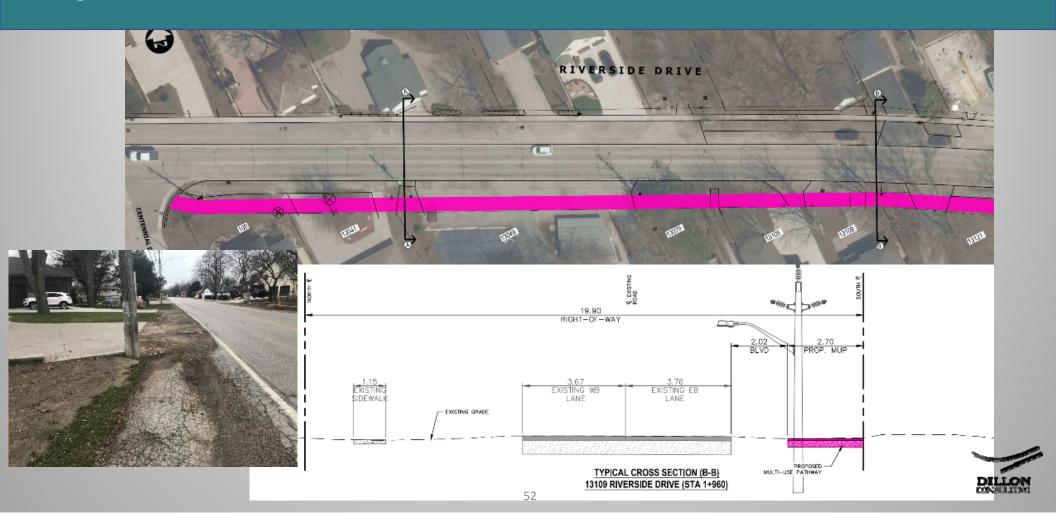
Special Consideration – Commercial Parking



Special Consideration – Trees



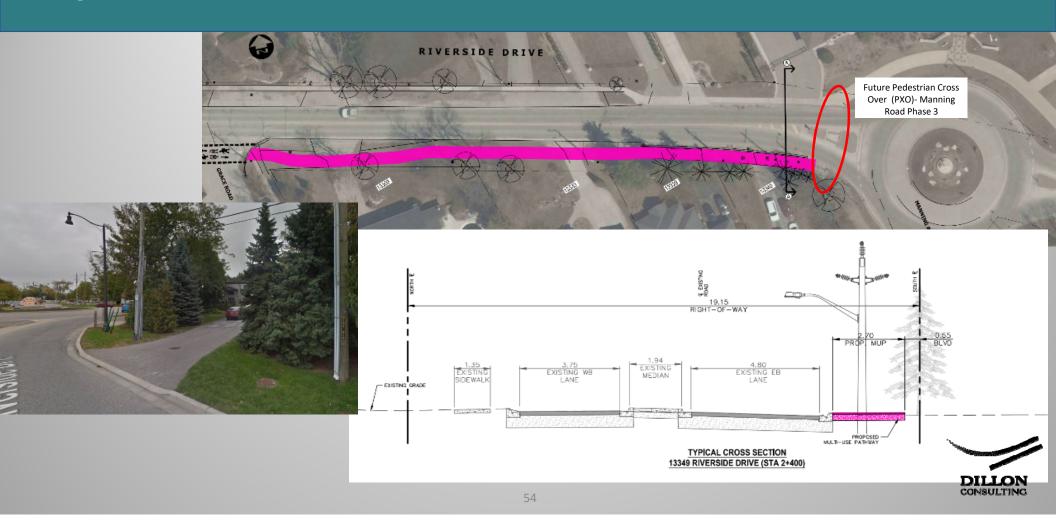
Special Consideration – Utilities



Special Consideration – Property



Special Consideration – Various



Safety

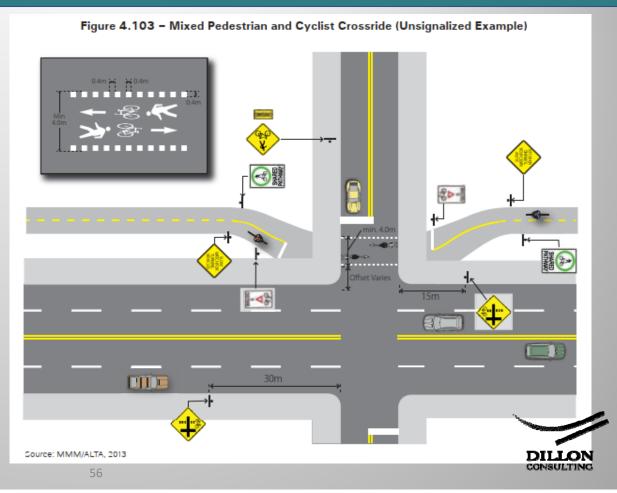
- Sightlines:
 - Road geometry allows for adequate sightlines
 - Large horizontal curve radius >320m
 - No perceptible vertical curves
 - May require relocation/removal of landscaping within right of way.
- Obstructions:
 - Separation of 0.3 to 0.5m to be provided between proposed trail and vertical obstructions (utility poles, fences, trees, etc.) per the Transportation Association of Canada Geometric (TAC) Geometric Design Guidelines for Canadian Roads (2017).
 - Landscaping features within the right of way may be removed or relocated to alleviate conflict with proposed trail.





Safety

- Road Crossings:
 - Crossrides to be installed at road crossings including pavement markings and signage.
 - Cyclists and Pedestrians have right-ofway at stop controlled intersections.
 - Cyclist permitted to ride through crossride (no dismount and walk)
- "Research shows that the most effective measure for improving overall cyclist safety within a road network is increasing the number of cyclists using the system." – OTM Book 18 2013



Heavy Traffic & High Speed

- The volume of vehicles (AADT of 8,000 to 12,000) along the route further show the need for a physically separated facility to improve the safety and accessibility for users of all ages and abilities per the Draft OTM Book 18 (2020).
- Traffic Speed classified as moderate per OTM Book 18 (2013) (50-69km/h)
 - Speed radar statistics (2017-2020)
 - Average speed: 48 to 55km/h
 - 85th percentile speed: 57 to 62km/h
- Proximity to Roadway:
 - Buffer between the roadway and proposed trail will be within the "Desired Width" of 1.5 to 2.5m per draft OTM Book 18 (2020).
 - A small portion (~130m) of the path is proposed to be adjacent to the curb (Lesperance Intersection and Manning Road).



Cycle Track Separated by Mountable Curb, East Gwillimbury

Source: WSP



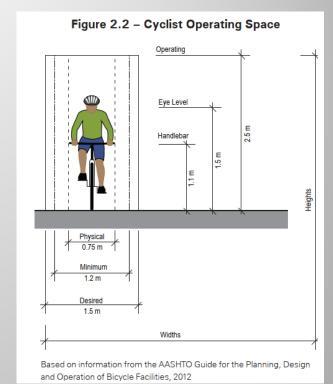
Multi-Use Path Separated by Grassy Boulevard, Waterloo

Source: Alta



Location and Design

- Multi-use path width:
 - Minimum recommended:
 - TAC- Bicycle Integrated Design (2017) 3.0m
 - Practical Lower Limit 2.7m
 - 1.2m (cyclist) and 1.5m (two pedestrians walking abreast)
 - OTM Book 18 Cycling Facilities (2013) 3.0m
 - May be reduced to 2.4m over very short distances to avoid utility poles or other infrastructure.
 - OTM Book 18 Cycling Facilities (Draft 2020) 3.0m
 - May be reduced to 2.4m over very short distances to avoid utility poles or other infrastructure.
- Existing multi-use trail east of Manning Road (2.4 2.8m)
 - No incidents between cyclists/pedestrians and vehicles have been noted.
- A multi-use trail width of 2.7m (practical lower limit) has been proposed.
 Opportunities to increase the width to 3.0m exist and can be considered during detailed design.





Accessibility Concerns

- Operating Space:
 - The proposed multi-use trail provides additional operating space when compared with a traditional sidewalk (2.7-3.0m vs 1.2-1.5m).
 - 2.7m trail width provides:
 - 1.5m width (typical sidewalk width)
 - 1.2m for an oncoming cyclist (1.2m) or pedestrian (0.75m)
 - Potential to increase to 3.0m through detailed design
- Sightlines:
 - The existing topography (flat) and road alignment (large radius) do not pose significant sightline concerns
 - Existing landscaping within the Town's right of way may need to be removed/relocated to address any in-boulevard sightline issues
 - Tactile surface indicators to be provided at all roadway crossings.
- Conflict with vehicles entering/exiting driveways:
 - Adequate sightlines from the road and trail will be maintained
 - Vehicle operators are responsible for ensuring the way is clear prior to entering/exiting the roadway. This is the same responsibility regardless of the adjacent facility (sidewalk, bike lane, cycle track, etc.)



Added Pollutants to Lake St. Clair & Area Watersheds

- Increased Hardscape and Stormwater Runoff:
 - Trail installation would result in a **negligible** net hard surface area increase in context of the overall stormwater drainage boundaries.
 - Construction of the multi-use trail would include the removal of existing hard surfaces within the right of way (paved shoulder, paved parking areas, etc.) and restoration with permeable surface material (grass, granular).
- Increased Salt and Chemicals:
 - The proposed trail would require snow clearing efforts however, application
 of de-icing materials would be limited (similar to existing sidewalks). The
 impacts of the limited de-icing procedures could be considered negligible in
 comparison to the existing de-icing efforts of the roadway.



Impact on Trees and Environment

- The alignment of a multi-use trail has flexibility to be adjusted to avoid trees where possible during detailed design.
- Existing trees have undergone significant trimming due to proximity to overhead power and telecommunications infrastructure.
- The Town has allocated approximately \$30,000 annually to plant new trees within the Town boundary.
- Construction of multi-use trails are considered to have minimal adverse environmental impacts (Schedule A/A+) and are preapproved under the Municipal Class Environmental Assessment.



Flooding Issues

- The Essex Region Conservation Authority (ERCA) Policies,
 Guidelines and Procedures note:
 - Open type public or private recreation areas may be permitted within the floodway of a watercourse.
- Sidewalks currently exist along the north and portions of the south side of Riverside Drive.
- The addition of hard surface will produce a negligible increase in stormwater runoff in the context of the stormwater drainage areas.
- No impacts to localized or lake flooding are anticipated.
- Existing hard surfaces (paved shoulders, parking areas, etc.) within the project area (south side) will be removed and replaced with permeable materials (grass/granular) to improve infiltration.



Summary

The proposed multi use trail provides a safe and accessible active transportation facility with minimal impact to the environment.





Budget Update (2021)

	Trail Construction	
A.	Previous Estimated Total Project Cost (2017)	\$842,458
В.	Updated Estimated Total Project Cost (2021)*	\$1,239,300

^{*}includes engineering, contract administration, excess soil testing, construction (2.7m wide trail), and contingency

The Proposed Multi-Use trail:

- 1. Fills the "Gap" providing continuity between the existing facilities to the east (Lakewood Park) and west (Ganatchio Trail).
- 2. Serves the **Target Population** and promotes **Equity** and Inclusiveness within the Towns active transportation network (All Ages and Abilities).
- 3. **Provides Separation** from motorists increasing safety and security for users.

- 4. Improves **Pedestrian Connectivity** along the south side of Riverside Drive.
- While there are road crossings, the trail is highly
 visible and appropriate crossing treatments will be
 implemented.
- 6. More room to handle drainage on south side.
- 7. Doesn't require relocating fire hydrants.
- We recommend constructing the trail a bit wider –
 2.4 to 2.7m (9 ft.).

- 9. Crosses fewer driveways than north and alt. route
- 10. Fewer catch basins to relocate or adjust.
- 11. Allows residents on south side to move along the road to get to a **safe crossing point**.
- 12. Doesn't require major road reconstruction.
- 13. Doesn't require **removal of existing sidewalk** infrastructure on north side.

- 14. There are good **comparative examples** of local trails designed in the same manner as this.
- 15. Alternate routes are longer and don't resolve issues.
- 16. Alternative facility types do not serve the intended purpose.
- 17. There are no situations along the route where the trail could not be accommodated.
- 18. The proposal is a **good match** to existing trails to the east and west.

Current Recommendation

Based on our further review and analysis including the results of public consultation, and the comparative costs and key issues, we recommend proceeding with the detailed design and construction of a 2.4-2.7m wide asphalt, off-road multi-use trail along the south side of Riverside Drive between Windsor and Manning Road.

A Safe active transportation facility which is Accessible for persons of All Ages and Abilities



Questions?

