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INDIANA MICHIGAN RIVER VALLEY TRAIL EXTENSION **PRELIMINARY DESIGN REVIEW**

Indiana Michigan River Valley Trail Extension - Report

Overview:

The Indiana – Michigan River Valley Trail (IMRVT) Extension is a proposed addition to the trail network beginning where IMRVT currently ends at Plym Park in the City of Niles. The proposed trail segment extends approximately 8 miles northwesterly, ending at Range Line Park in Berrien Township.

For planning purposes, we have separated the 8 mile IMRVT extension into the following three sections:

- 1) Section 1: Plym Park to Pucker Street.
- 2) Section 2: Pucker Street to Walton Road.
- 3) Section 3: Walton Road to Range Line Road.

The trail route location for Sections 1 and 3 is known and located along an old interurban railway. We have investigated four (4) alternative routes within Section 2. The alternative to be utilized for the trail location should be chosen based on ease of property acquisition, safety, and cost.

This report includes a brief description, preliminary cost estimate, assumptions, and a summary for each section of the proposed trail.

The cost per linear foot of trail has been calculated and is shown in Table 7 in the Appendix. In addition, the table shows the cost per linear foot of boardwalk, the cost per pedestrian crosswalk, and the unit prices for general items included in each trail section. The subtotal cost in Table 7 are used to simplify the individual cost estimates for each section. The estimates include a 15% contingency. The estimates are based on the information that we have available at this point in the project and are likely greater than actual cost due to unknowns. The engineering fee included in the estimates is the total cost of engineering services (\$305,540) multiplied by the percentage of length for the given segment (see Table 8 for segment percentages). Lastly, the estimates are also based in 2020 dollars, we understand that the construction will be in future years and we have included cost estimates accounting for inflation in the Appendix.

Crosswalks:

There are several crosswalk locations required within all three sections of the proposed Trail where the Trail route crosses a roadway. It is crucial the crosswalk locations provide adequate visibility to the vehicle driver to ensure the safety of the trail user. The crossing locations are the most dangerous areas on the trail for users, though, with appropriate signage and warning, the safety risk can be mitigated greatly. The crosswalk design will be based on the road speed, road traffic volume, neighborhood type, and approval from the road owner.

For simplicity, we have categorized the crosswalks as either 'simple' or 'advanced'. The estimated cost for each type of crosswalk is shown in the Appendix.

The 'simple' crosswalk would be appropriate on low volume roads, low speed roads, and where safety of the trail user is not at great risk. This crosswalk type includes crosswalk pavement markings, ADA detectable warning surfaces, and signage indicating to the driver that a crossing is present.

An 'advanced' crosswalk is appropriate to be utilized on high volume roads, higher speed limits, mid-block crossings, and as recommended by the road owner. This crosswalk type includes a combination of the following: Crosswalk pavement markings, ADA detectable warning surfaces, signage at the crossing, advanced signage, flashing LED advanced signage powered by solar, slightly raised path through intersection (also known as a speed table), or a signalized crossing allowing the trail user to push a button signaling vehicle traffic to stop.

A total of eight (8) to nine (9) crosswalks (depending on what route is selected) are necessary for the construction of this trail. It is assumed five (5) of the crossings shall provide sufficient safety using a simple crosswalk. An advanced crosswalk system using a combination of design features mentioned above are likely required when crossing M-139, M-140, and potentially Walton Road.

Consultation with Michigan Department of Transportation (MDOT) representatives will be required for crossings at M routes. It is recommended to start coordination as soon as the route location is finalized. MDOT may require more studies to determine type of crossing recommendation.

Section 1: Plym Park to Pucker Street:

Description:

Section 1 begins in Plym Park at the end of the existing IMRVT and is approximately 0.73 miles (9.3% of entire project). The proposed trail section follows the westerly property line of the Plym Park Golf Course, crosses the Dowagiac River, and follows the westerly property line of the Riverfront Park Campground to Pucker Street. The proposed trail follows the old and abandoned interurban railroad bed, currently owned by the City of Niles.

In addition to the trail construction, the old rail bridge crossing the Dowagiac River will be rehabilitated to facilitate the proposed trail. The foundation, abutments, and beams of the existing rail bridge are in good condition and can be utilized for the proposed crossing.

Cost Estimate Summary (see Table 10 for Preliminary Itemized Cost Estimate):

Table 1: Summary of Estimated Cost for Section 1

Summary of Cost:		
General Items		86,898.49
Trail		391,330.00
River Crossing (Structure Rehab)		86,000.00
Total Estimate Construction Cost		564,228.49
Construction Contingency	15%	84,700.00
Engineering Cost		28,510.16
TOTAL ESTIMATED PROJECT COST		\$ 678,000.00

Assumptions:

- The trail is made up of 6" aggregate base with 3" HMA surface, 1' gravel shoulders, and 14' clear width.
- Only deck and railing rehabilitation necessary for river crossing.

- Clearing assumed to be necessary the full length of trail south of the bridge at Dowagiac River (16' wide) and half of the length north of the bridge.
- Two crosswalks required (Marmont Street and Pucker Street).
- No boardwalk required within Section 1.
- No property acquisition required.

Summary:

Section 1 is currently owned by the City of Niles and follows an old railroad bed. Included in this section of the trail is the rehabilitation of an existing abandon railroad bridge. From a previous inspection, the bridge is structurally stable and in good condition. The bridge deck will be rehabilitated to facilitate the proposed trail. This segment requires clearing the full length from Plym Park to the Dowagiac River. Lastly, two (2) crosswalks are included at Marmont Street (Plym Park) and Pucker Street.

Section 2: Pucker Street to Walton Road:

Description:

There are four (4) alternatives explored for Section 2. Section 2 begins at Pucker Street and ends north of the Walton Road and Winn Road intersection and is approximately 2.37 miles (30.3% of entire project).

Assumptions (applies to all four alternatives):

- The trail is made up of 6" aggregate base with 3" HMA surface, 1' gravel shoulders, and 14' clear width.
- Boardwalk estimate assumes foundation posts every 10 feet.
- Clearing assumed to be necessary for at least 3,400 ft of the trail section (16' wide).
- 460 – 500 ft of boardwalk required within Section 2.
- Trail can be placed on the east side of M-139 (east of the power poles).
- Trail shall be located on the north side of Walton Road (Alt. 1).
- Trail shall be located on the north side of Ullery Road (Alt. 3).
- Necessary easements can be obtained (cost not included in estimates).
- Land owned by City of Niles, Niles Township, and Indiana Michigan Power can be utilized.
- The proposed trail can fit within the ROW along M-139 between Pucker Street and Winn Road.

Alternative 1:

Alternative 1 follows M-139 north to Walton Road then turns west on Walton Road for approximately 1,900 ft to the end of Section 2. Three crosswalks are required at M-140, Ullery Road, and M-139. Potentially no property acquisition required, although north of Winn Road, the right-of-way (ROW) along M-139 is reduced and there may be permanent easements required in this location (maximum of 6 easements).

Cost Estimate Summary (see Table 11 for Preliminary Itemized Cost Estimate):

Table 2: Summary of Estimated Cost for Section 2 - Alternative 1

Summary of Cost:

General Items		266,811.56
Trail		1,933,970.00
Total Estimate Construction Cost		2,200,781.56
Construction Contingency	15%	330,200.00
Engineering Cost		92,565.44
TOTAL ESTIMATED PROJECT COST		\$ 2,624,000.00

Advantages:

- Minimal clearing required.
- Potentially no property acquisition required.

Disadvantages:

- Longest trail length of all four alternatives.
- Largest portion of trail along M-139 (+/- 8,980 ft) is not as desirable from a trail use standpoint.
- Significant grade changes along M-139 north to Walton and on Walton to the end of Section 2. The grade changes can potentially be uncomfortable for the trail user.

Alternative 2:

Alternative 2 follows M-139 north to Winn Road then follows Winn Road northwesterly to the end of Section 2. Four crosswalks are required at M-140, Ullery Road, M-139, and Walton Road. Potentially no property acquisition required. Along Winn Road the ROW is 66 ft and there may be permanent easements required in this location (maximum of 3 easements).

Cost Estimate Summary (see Table 12 for Preliminary Itemized Cost Estimate):

Table 3: Summary of Estimated Cost for Section 2 - Alternative 2

Summary of Cost:

General Items		262,185.42
Trail		1,817,110.00
Total Estimate Construction Cost		2,079,295.42
Construction Contingency	15%	311,900.00
Engineering Cost		92,565.44
TOTAL ESTIMATED PROJECT COST		\$ 2,484,000.00

Advantages:

- Minimal clearing required.
- Potentially no property acquisition required.

Disadvantages:

- Large portion of trail along M-139 (+/- 6,600 ft) is not as desirable from a trail use standpoint.

Alternative 3:

Alternative 3 follows M-139 to Ullery Road then follows Ullery Road west until the dead end and heads northwest to Winn Road and to the end of Section 2. Four crosswalks are required at M-140, Ullery Road, M-139, and Walton Road. Property acquisition will be required after Ullery Road dead ends. It appears only one easement will be required.

Cost Estimate Summary (see Table 13 for Preliminary Itemized Cost Estimate):

Table 4: Summary of Estimated Cost for Section 2 - Alternative 3

Summary of Cost:		
General Items		242,773.49
Trail		1,885,500.00
Total Estimate Construction Cost		2,128,273.49
Construction Contingency	15%	319,300.00
Engineering Cost		92,565.44
TOTAL ESTIMATED PROJECT COST		\$ 2,541,000.00

Advantages:

- Smaller portion of trail located along M-139.
- Less traffic control required than Alternatives 1 & 2.

Disadvantages:

- Property acquisition required.

Alternative 4:

Alternative 4 follows M-139 to approximately 1,800 ft north of the M-139 and M-140 intersection. The trail then crosses M-139 and head northwest along the abandoned railroad bed. The route then connects at the dead of Ullery Road and continues northwest to Winn Road and to the end of Section 2. Four crosswalks are required at M-140, M-139, Pritchard Drive, and Walton Road. A minimum of three easements shall be required (maximum of 6).

Cost Estimate Summary (see Table 14 for Preliminary Itemized Cost Estimate):

Table 5: Summary of Estimated Cost for Section 2 - Alternative 4

Summary of Cost:

General Items		257,283.10
Trail		1,906,720.00
Total Estimate Construction Cost		2,164,003.10
Construction Contingency	15%	324,700.00
Engineering Cost		92,565.44
TOTAL ESTIMATED PROJECT COST		\$ 2,582,000.00

Advantages:

- Shortest alternative.
- Potential views of the river with a more 'natural' feel to the trail section.
- Least amount of trail located along M-139.
- Safest Alternative.
- Least amount of traffic control required.

Disadvantages:

- Most property acquisitions.
- Extensive clearing required.

Summary:

Portions of Section 2 follows M-139 and is proposed to be placed within MDOT ROW. It is assumed the proposed trail can fit within the ROW along M-139. Alternative 1 is the longest route of the four (4) alternatives with significant grade changes up to Walton Road and along Walton Road. Alternatives 2-4 are very similar in length (within +/- 200 ft of each other). Alternatives 3 & 4 are the safest routes with the least amount of trail on M-139. Though, these Alternatives will require land acquisition. Alternatives 1 & 2 may require minor land acquisition, but it is likely the trail can fit within the given ROWs. In contrast, the land acquisition required for Alternatives 3 & 4 will be more extensive. For the first three (3) Alternatives, it is assumed approximately 1.25 acres of clearing is required. Alternative 4 involves more clearing. Lastly, three (3) to four (4) crosswalks are included depending on the alternative. Two (2) of the crosswalks for each Alternative cross MDOT routes and shall be 'Advanced' crosswalks. The 'Advanced' crosswalks include additional LED warning signs. Approximately 460 to 500 feet of boardwalk will be necessary for each alternative.

Section 3: Walton Road to Range Line Road:

Description:

Section 3 of the proposed trail extension begins just north of the Winn Road and Walton Road intersection and is approximately 4.72 miles (60.4% of entire project). The location of the proposed trail section runs parallel to, and approximately 300-800 ft west of, M-139 along the old railroad alignment. The proposed trail follows the old and abandoned Interurban railroad bed, owned largely by Indiana Michigan Power Company.

There is approximately 8,940 ft (1.69 mi and 35.9% of Section 3) within Section 3 where the route travels through wetlands. Without further in-depth field observations, topographic survey, and consultation with the Michigan Department of Environment, Great Lakes, and Energy (EGLE), it is difficult to understand if the proposed trail can be constructed within the existing rail bed footprint and where boardwalk will be needed. One of the two (or a combination thereof) following scenarios will occur:

1. The trail can be constructed within the existing rail bed with little impacts to wetlands. Boardwalk and wetland mitigation are minimal (most cost effective).
2. The existing rail bed requires fill for trail construction that may severely impact the wetlands. Extensive lengths of boardwalk or wetland mitigation is required (very costly).

Based on available topography and aerial imagery, it is estimated that 2,805 ft (out of 8,940 ft) of wetland areas will require boardwalk. This estimated footage of boardwalk is included in the preliminary cost estimate below.

Cost Estimate Summary (see Table 15 for Preliminary Itemized Cost Estimate):

Table 6: Summary of Estimated Cost for Section 3

Summary of Cost:		
General Items		415,971.28
Trail		5,992,810.00
Total Estimate Construction Cost		6,408,781.28
Construction Contingency	15%	961,400.00
Engineering Cost		184,464.41
TOTAL ESTIMATED PROJECT COST		\$ 7,555,000.00

Assumptions:

- The trail is made up of 6" aggregate base with 3" HMA surface, 1' gravel shoulders, and 14' clear width.
- Boardwalk estimate assumes foundation posts every 10 feet.
- Clearing assumed to be necessary for 80% of Section 3 (16' wide).
- Three crosswalks required (Matthew Road, Long Lake Road, and Snyder Road).
- 2,805 ft of boardwalk required within Section 3.
- Necessary easements can be obtained.

Summary:

The Section 3 route has portions that are currently owned by Indiana Michigan Power Company with portions of the trail section with ownership under review. The proposed trail route follows the old Interurban railroad bed. Portions of the trail section go through wetlands. Some of these sections will require boardwalk to minimize environmental impacts. Other sections of trail through the wetlands may be able to be constructed on the existing abandon rail bed with minimal environmental impacts. This segment assumes clearing 80% of the full length from Walton Road to the Range Line Road. Lastly, three (3) crosswalks are included at Matthew Road, Long Lake Road and Snyder Road.

Trailheads:

Multiple locations along the route were examined for potential trailhead locations. The criteria for trailheads included distance from existing or planned trailheads; access; and land ownership. The IMRVT Extension is 7.8 miles in length. There is existing parking at Plym Park at the south end of the trail extension, and a trailhead is currently under design at Rangeline Park at the north end of the trail. While the urban areas of trails often have multiple access points and trailhead locations, as trails get more rural the access and trailheads often spread out. In ideal conditions we would recommend two mid-route trailhead locations for this section of trail.

The first location that seems suitable for a trailhead is the property just north of the M-139 and M-140 intersection on the west side of the road owned by the City of Niles. This is the location where Section 2 Alternate 4 would diverge from M-139 to follow the old Interurban alignment. This location is at the junction of two highways and is on public land. This location is approximately 1.4 miles from Plym Park.

The second location is at the intersection of Winn and Walton Roads. At this location between the I&M owned parcels and the road right of way there are areas with enough room to place a small parking area and trailhead. Walton Road also offers good regional connections to US-31 and Buchanan. This location is approximately 2.85 miles from Plym Park.

North of Walton Road there are no locations that have public land adjacent to the trail. This alignment tends to be off of the M-139 corridor, so it only intersects with smaller streets running east/west. With the rural nature of this area, the highway immediately west of the alignment, and the wetlands in certain areas there are only 3 street crossings in the 4.75 miles between Walton Road and Rangeline Road. Because this section is so rural and there are no major thoroughfares it is unlikely this stretch of trail will have a large influx of users traveling to the trail in need of parking, however the length of trail would benefit from a small parking area. Long Lake Road would be the closest cross street to the midpoint of Section 3.

Appendix:

Table 7: Cost Breakdown

<i>Trail Related Items:</i>					Unit Price	Total
1	Ft	Shared Use Path, Grading	@		20.00	20.00
0.183	Ton	Shared Use Path, HMA	@		150.00	27.50
0.185	Cyd	Subgrade Undercutting, Type II	@		20.00	3.70
0.333	Cyd	Excavation, Earth	@		20.00	6.67
1.333	Syd	Aggregate Base, 6 inch, 21AA (Crushed Concrete)	@		17.50	23.33
0.222	Syd	Shoulder, CI II, 6 inch	@		17.50	3.89
0.093	Cyd	Embankment, CIP	@		15.00	1.39
1.333	Syd	Restoration	@		5.00	6.67
0.250	Ft	Pavement Markings	@		0.50	0.13
<i>ESTIMATED COST PER FOOT OF TRAIL</i>						93.27
<i>SUBTOTAL ESTIMATED COST PER FOOT OF TRAIL (10% for ADDITIONAL EARTHWORK)</i>						\$ 102.60
<i>Timber Boardwalk:</i>						
0.1	Ea	Foundation Posts	@		1,500.00	150.00
1	Ft	Timber Boardwalk	@		1,150.00	1,150.00
<i>SUBTOTAL ESTIMATED COST PER FOOT OF BOARDWALK</i>						\$ 1,300.00
<i>Crosswalk Cost:</i>						
20	Ft	ADA Warning Surfaces	@		45.00	900.00
200	Sft	Sidewalk Ramp (10'x10')	@		8.00	1,600.00
60	Ft	Cross Walk Markings	@		3.50	210.00
1	L.S.	Signage	@		1,500.00	1,500.00
<i>SUBTOTAL ESTIMATED COST PER CROSSWALK</i>						\$ 4,210.00
<i>Advanced Crosswalk Cost:</i>						
20	Ft	ADA Warning Surfaces	@		45.00	900.00
200	Sft	Sidewalk Ramp (10'x10')	@		8.00	1,600.00
60	Ft	Cross Walk Markings	@		3.50	210.00
1	L.S.	Signage	@		26,500.00	26,500.00
<i>SUBTOTAL ESTIMATED COST PER CROSSWALK</i>						\$ 29,210.00
<i>Unit Prices for General Cost Items:</i>						
1	Ac	Clearing	@		12,500.00	12,500.00
1	Ft	Erosion Control, Silt Fence	@		2.50	2.50
1	Mi	Trail Amenities	@		7,500.00	7,500.00
1	Ea	Mile Markers	@		180.00	180.00

Table 8: Approximate Trail Breakdown

	Length (ft)	Length (mi)	% of Trail
Section 1:	3,850	0.73	9.3%
Section 2:	12,500	2.37	30.3%
Section 3:	24,910	4.72	60.4%
Total:	41,260	7.81	100%

Table 9: Estimated Future Cost

	Total Estimate Cost*		
	2020	2025	2030
Section 1	\$ 678,000.00	\$ 786,000.00	\$ 912,000.00
Section 2 - Alt 1	\$ 2,624,000.00	\$ 3,042,000.00	\$ 3,527,000.00
Section 2 - Alt 2	\$ 2,484,000.00	\$ 2,880,000.00	\$ 3,339,000.00
Section 2 - Alt 3	\$ 2,541,000.00	\$ 2,946,000.00	\$ 3,416,000.00
Section 2 - Alt 4	\$ 2,582,000.00	\$ 2,994,000.00	\$ 3,471,000.00
Section 3	\$ 7,555,000.00	\$ 8,759,000.00	\$ 10,155,000.00

*Future cost assuming 3.0% inflation, Engineering cost included.

Table 10: Section 1 Preliminary Itemized Cost Estimate

General Items:					
1	L.S.	Mobilization, Max 10%	@	50,000.00	50,000.00
1	L.S.	Traffic Maintenance and Control	@	2,500.00	2,500.00
0.79	Ac	Clearing	@	12,500.00	9,917.36
7,384	Ft	Erosion Control, Silt Fence	@	2.50	18,460.00
0.71	Mi	Trail Amenities	@	7,500.00	5,301.14
4	Ea	Mile Markers	@	180.00	720.00
SUBTOTAL FOR GENERAL ITEMS					86,898.49
Trail:					
2	Ea	Crosswalks	@	4,210.00	8,420.00
3,732	Ft	Trail	@	102.60	382,904.93
SUBTOTAL FOR TRAIL ITEMS					391,330.00
River Crossing (Bridge Rehab):					
1	L.S.	Approach Work	@	6,000.00	6,000.00
1	L.S.	Deck Rehab and Railings	@	80,000.00	80,000.00
SUBTOTAL FOR STRUCTURE ITEMS					86,000.00
TOTAL ESTIMATED CONSTRUCTION COST					\$ 564,228.49
Construction Contingency				15%	84,700.00
TOTAL ESTIMATED PROJECT COST					\$ 649,000.00

Table 11: Section 2 – Alternative 1 Preliminary Itemized Cost Estimate

General Items:					
1	L.S.	Mobilization, Max 10%	@	150,000.00	150,000.00
1	L.S.	Traffic Maintenance and Control	@	40,000.00	40,000.00
1.25	Ac	Clearing	@	12,500.00	15,610.65
16,340	Ft	Erosion Control, Silt Fence	@	2.50	40,850.00
2.55	Mi	Trail Amenities	@	7,500.00	19,090.91
7	Ea	Mile Markers	@	180.00	1,260.00
SUBTOTAL FOR GENERAL ITEMS					266,811.56
Trail:					
2	Ea	Advanced Crosswalks	@	26,500.00	53,000.00
1	Ea	Crosswalks	@	4,210.00	4,210.00
12,980	Ft	Trail	@	102.60	1,331,754.01
460	Ft	Timber Boardwalk	@	1,300.00	598,000.00
SUBTOTAL FOR TRAIL ITEMS					1,933,970.00
TOTAL ESTIMATED CONSTRUCTION COST					\$ 2,200,781.56
Construction Contingency				15%	330,200.00
TOTAL ESTIMATED PROJECT COST					\$ 2,531,000.00

Table 12: Section 2 – Alternative 2 Preliminary Itemized Cost Estimate

General Items:					
1	L.S.	Mobilization, Max 10%	@	150,000.00	150,000.00
1	L.S.	Traffic Maintenance and Control	@	40,000.00	40,000.00
1.25	Ac	Clearing	@	12,500.00	15,610.65
15,160	Ft	Erosion Control, Silt Fence	@	2.50	37,900.00
2.32	Mi	Trail Amenities	@	7,500.00	17,414.77
7	Ea	Mile Markers	@	180.00	1,260.00
SUBTOTAL FOR GENERAL ITEMS					262,185.42
Trail:					
2	Ea	Advanced Crosswalks	@	26,500.00	53,000.00
2	Ea	Crosswalks	@	4,210.00	8,420.00
11,800	Ft	Trail	@	102.60	1,210,685.46
460	Ft	Timber Boardwalk	@	1,300.00	598,000.00
SUBTOTAL FOR TRAIL ITEMS					1,817,110.00
TOTAL ESTIMATED CONSTRUCTION COST					\$ 2,079,295.42
Construction Contingency				15%	311,900.00
TOTAL ESTIMATED PROJECT COST					\$ 2,392,000.00

Table 13: Section 2 – Alternative 3 Preliminary Itemized Cost Estimate

General Items:					
1	L.S.	Mobilization, Max 10%	@	150,000.00	150,000.00
1	L.S.	Traffic Maintenance and Control	@	20,000.00	20,000.00
1.25	Ac	Clearing	@	12,500.00	15,610.65
15,310	Ft	Erosion Control, Silt Fence	@	2.50	38,275.00
2.35	Mi	Trail Amenities	@	7,500.00	17,627.84
7	Ea	Mile Markers	@	180.00	1,260.00
SUBTOTAL FOR GENERAL ITEMS					242,773.49
Trail:					
2	Ea	Advanced Crosswalks	@	26,500.00	53,000.00
2	Ea	Crosswalks	@	4,210.00	8,420.00
11,950	Ft	Trail	@	102.60	1,226,075.53
460	Ft	Timber Boardwalk	@	1,300.00	598,000.00
SUBTOTAL FOR TRAIL ITEMS					1,885,500.00
TOTAL ESTIMATED CONSTRUCTION COST					\$ 2,128,273.49
Construction Contingency				15%	319,300.00
TOTAL ESTIMATED PROJECT COST					\$ 2,448,000.00

Table 14: Section 2 – Alternative 4 Preliminary Itemized Cost Estimate

General Items:					
1	L.S.	Mobilization, Max 10%	@	150,000.00	150,000.00
1	L.S.	Traffic Maintenance and Control	@	10,000.00	10,000.00
2.57	Ac	Clearing	@	12,500.00	32,139.58
18,650	Ft	Erosion Control, Silt Fence	@	2.50	46,625.00
2.30	Mi	Trail Amenities	@	7,500.00	17,258.52
7	Ea	Mile Markers	@	180.00	1,260.00
SUBTOTAL FOR GENERAL ITEMS					257,283.10
Trail:					
2	Ea	Advanced Crosswalks	@	26,500.00	53,000.00
2	Ea	Crosswalks	@	4,210.00	8,420.00
11,650	Ft	Trail	@	102.60	1,195,295.39
500	Ft	Timber Boardwalk	@	1,300.00	650,000.00
SUBTOTAL FOR TRAIL ITEMS					1,906,720.00
TOTAL ESTIMATED CONSTRUCTION COST					\$ 2,164,003.10
Construction Contingency				15%	324,700.00
TOTAL ESTIMATED PROJECT COST					\$ 2,489,000.00

Table 15: Section 3 Preliminary Itemized Cost Estimate

General Items:						
1	L.S.	Mobilization, Max 10%	@	200,000.00	200,000.00	
1	L.S.	Traffic Maintenance and Control	@	10,000.00	10,000.00	
6.46	Ac	Clearing	@	12,500.00	80,752.98	
35,176	Ft	Erosion Control, Silt Fence	@	2.50	87,940.00	
4.71	Mi	Trail Amenities	@	7,500.00	35,298.30	
11	Ea	Mile Markers	@	180.00	1,980.00	
SUBTOTAL FOR GENERAL ITEMS						415,971.28
Trail:						
3	Ea	Crosswalks	@	4,210.00	12,630.00	
21,985	Ft	Trail	@	102.60	2,255,671.18	
2,865	Ft	Timber Boardwalk	@	1,300.00	3,724,500.00	
SUBTOTAL FOR TRAIL ITEMS						5,992,810.00
TOTAL ESTIMATED CONSTRUCTION COST						\$ 6,408,781.28
Construction Contingency					15%	961,400.00
TOTAL ESTIMATED PROJECT COST						\$ 7,371,000.00



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PROJECT NAME:

INDIANA-MICHIGAN
RIVER VALLEY
TRAIL - PHASE IIISW MICHIGAN
PLANNING
COMMISSION

376 W MAIN STREET, SUITE
130
BENTON HARBOR, MI 49022

REVISIONS

P:\BentonHarbor\2002\76 SWMPC - IMRVT Phase
3\B) Drawings\B50 AutoCAD\Bases\TRAIL
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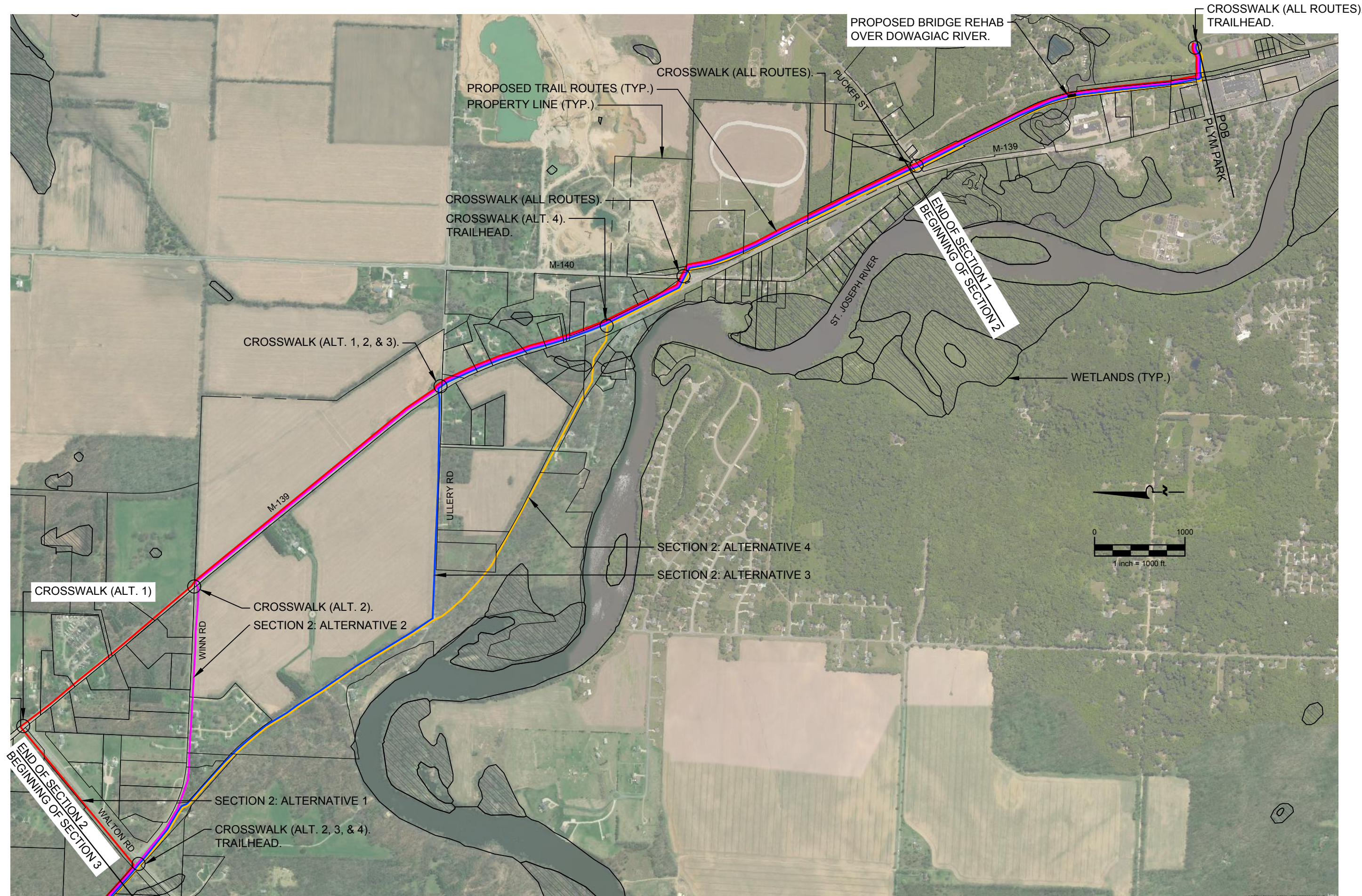
DATE: OCTOBER 2020

SCALE: 1" = 1000'

TRAIL MAP (1 OF 3)

JOB No.

C001





ROYAL OAK
248.791.1371

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PROJECT NAME:
**INDIANA-MICHIGAN
RIVER VALLEY
TRAIL - PHASE III**

**SW MICHIGAN
PLANNING
COMMISSION**
376 W MAIN STREET, SUITE
130
BENTON HARBOR, MI 49022

REVISIONS

P:\BentonHarbor\2002\76 SWMPC - IMRVT Phase
3(B) Drawings\B50 AutoCAD\Bases\TRAIL
MAPS_Updated.dwg C002 12/17/2020 9:35:44 AM

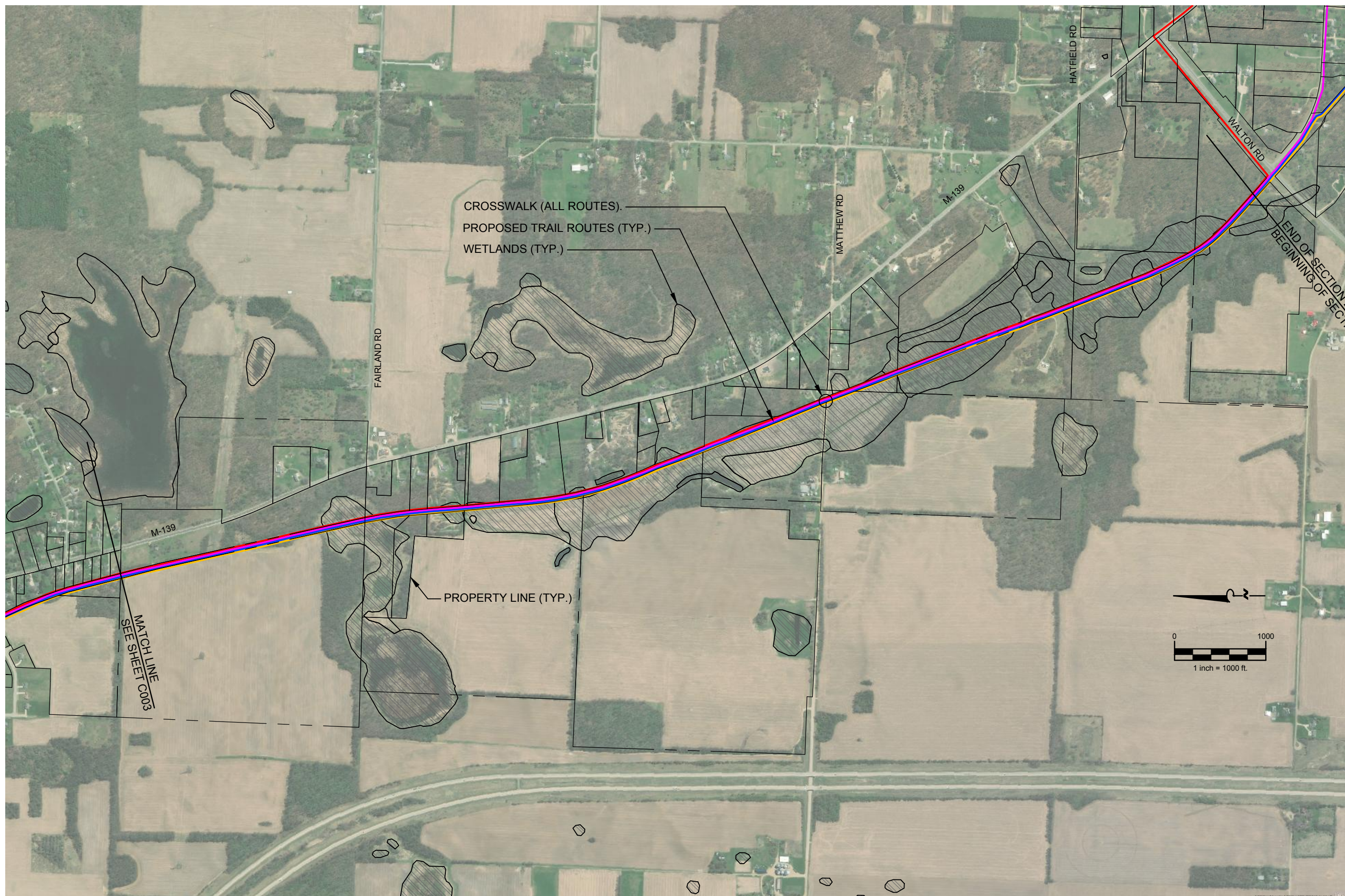
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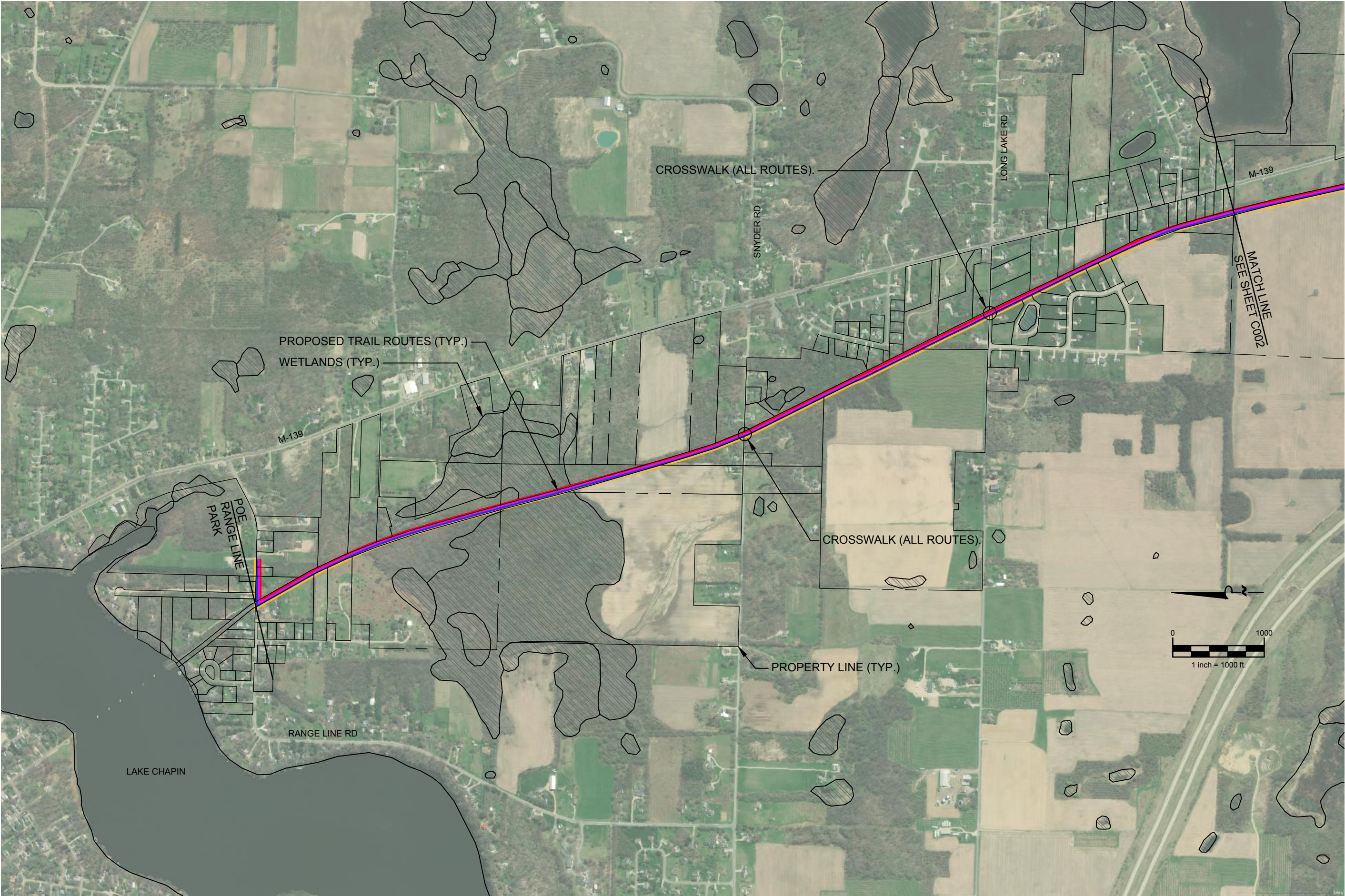
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TRAIL MAP (2 OF 3)

JOB No. C002





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269.927.0100

KALAMAZOO
269.327.3532

ALLEGAN
269.673.8465

ROYAL OAK
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**INDIANA-MICHIGAN
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TRAIL - PHASE III**

**SW MICHIGAN
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376 W MAIN STREET, SUITE
130
BENTON HARBOR, MI 49022

REVISIONS
1. Benton Harbor C00212 SW MICH. RIVER Valley Phase
III Drawings (B50 AutoCAD) Base Trail
MAPS_Updated.dwg C003 12/17/2020 9:38:53 AM

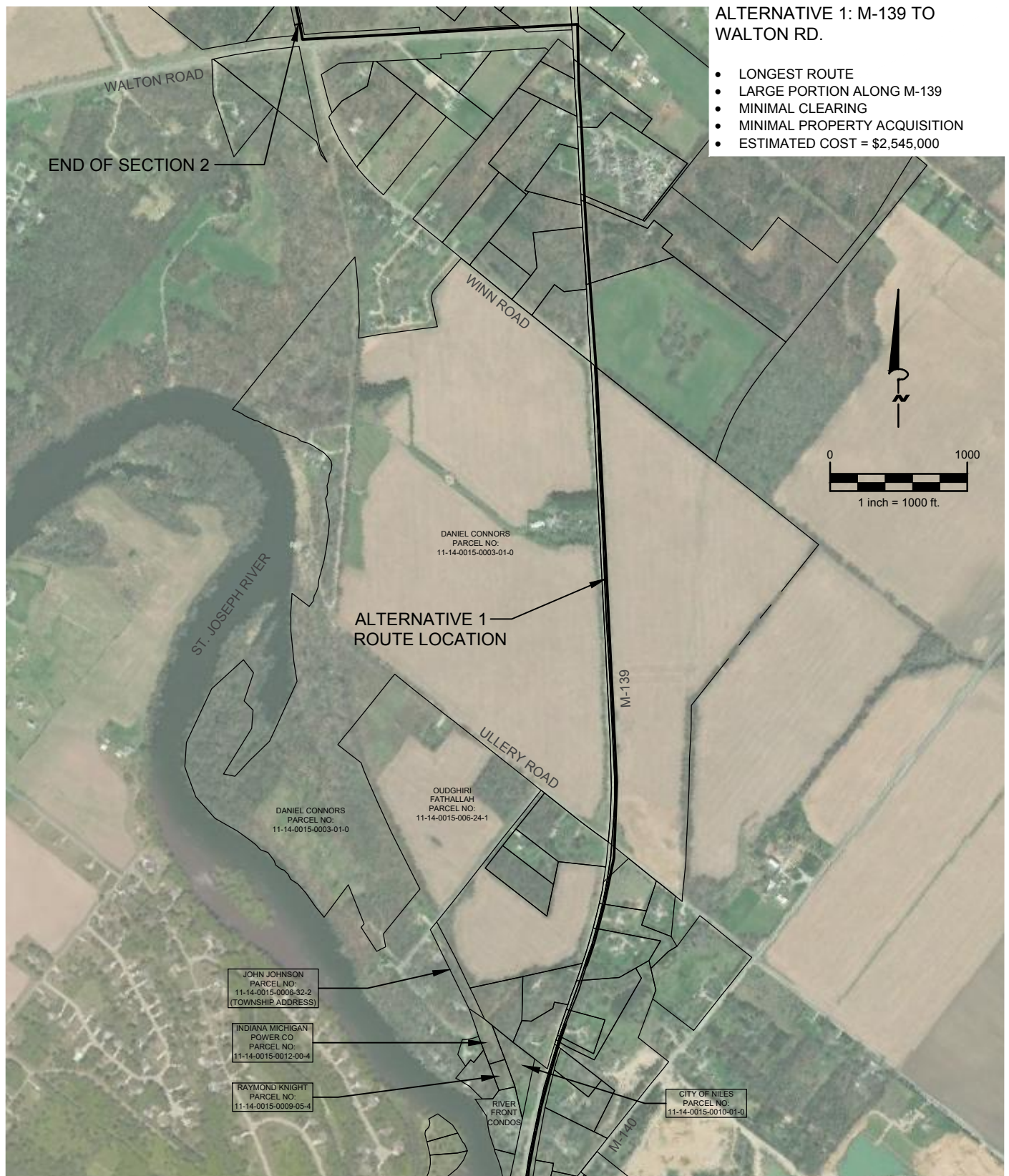
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TRAIL MAP (3 OF 3)

JOB No.
C003

ALTERNATIVE 1: M-139 TO WALTON RD.

- LONGEST ROUTE
- LARGE PORTION ALONG M-139
- MINIMAL CLEARING
- MINIMAL PROPERTY ACQUISITION
- ESTIMATED COST = \$2,545,000



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PROJECT: INDIANA-MICHIGAN RIVER VALLEY
TRAIL - PHASE III

JOB No:
DATE:
SCALE:

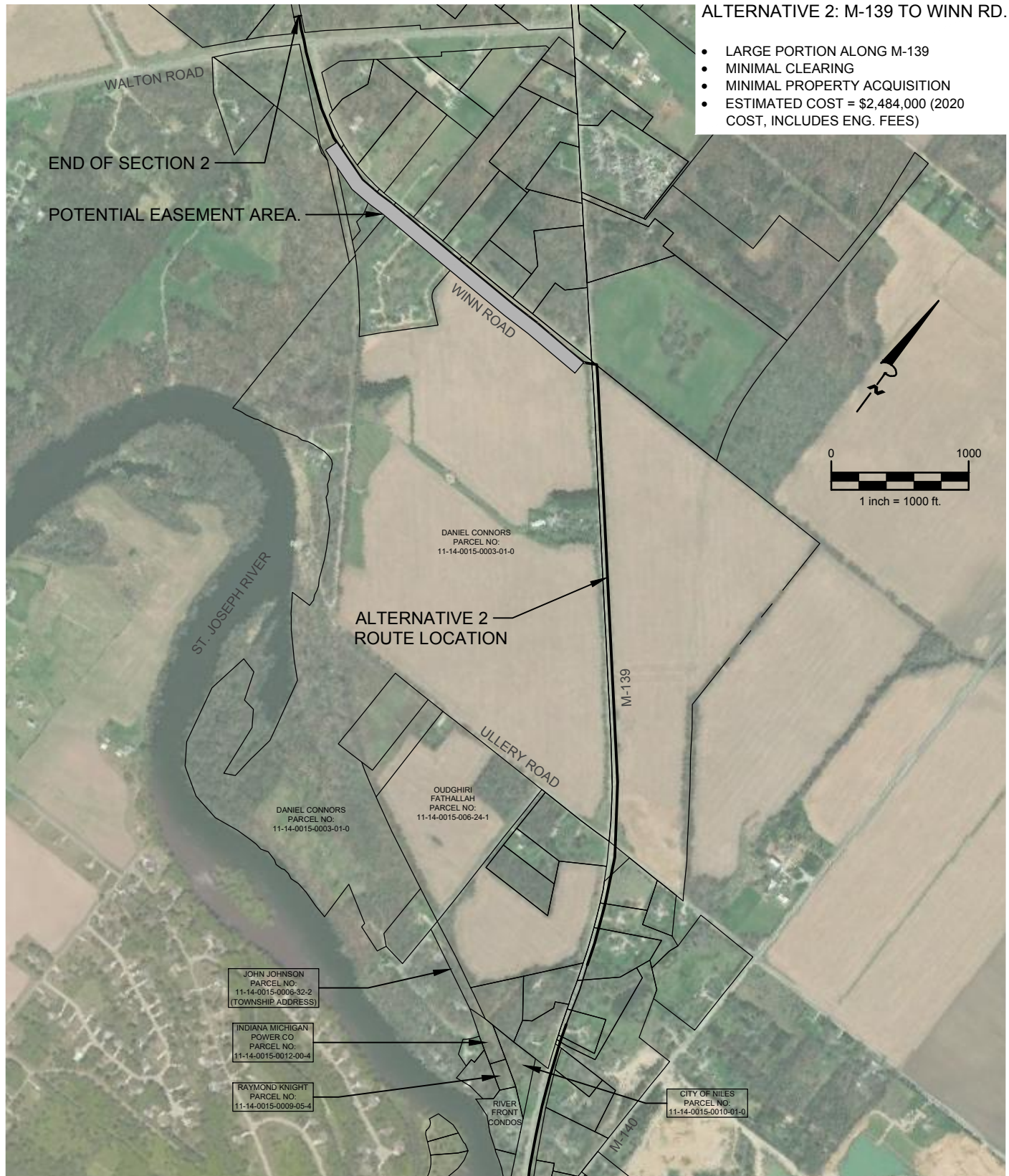
OCTOBER 2020

SECTION 2: ALTERNATIVE 1

P01

ALTERNATIVE 2: M-139 TO WINN RD.

- LARGE PORTION ALONG M-139
- MINIMAL CLEARING
- MINIMAL PROPERTY ACQUISITION
- ESTIMATED COST = \$2,484,000 (2020 COST, INCLUDES ENG. FEES)



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PROJECT: INDIANA-MICHIGAN RIVER VALLEY
TRAIL - PHASE III

JOB No:
DATE:
SCALE:

OCTOBER 2020

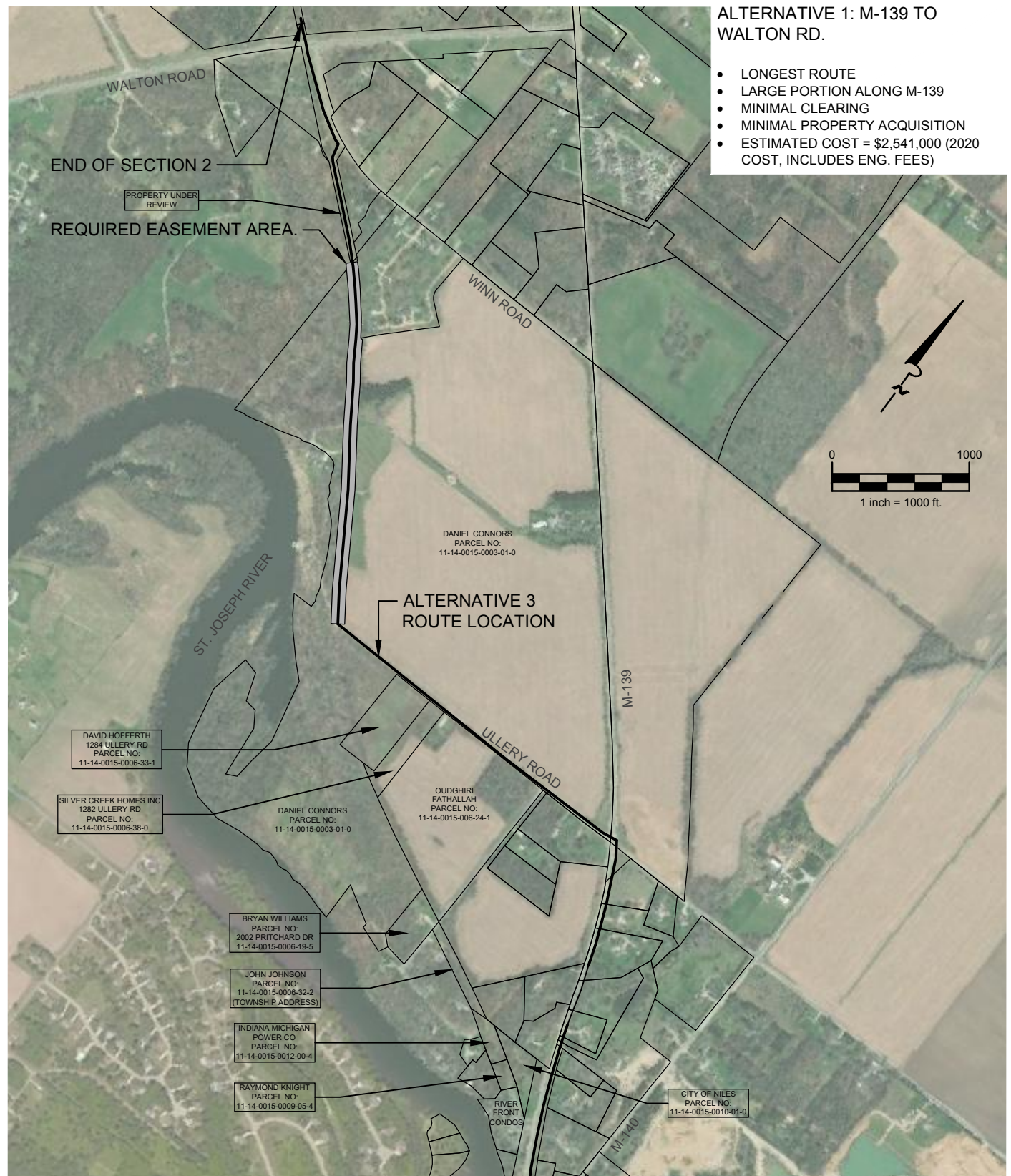
1" = 1000'

SECTION 2: ALTERNATIVE 2

P02

ALTERNATIVE 1: M-139 TO WALTON RD.

- LONGEST ROUTE
- LARGE PORTION ALONG M-139
- MINIMAL CLEARING
- MINIMAL PROPERTY ACQUISITION
- ESTIMATED COST = \$2,541,000 (2020 COST, INCLUDES ENG. FEES)



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TRAIL - PHASE III

JOB No:
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OCTOBER 2020

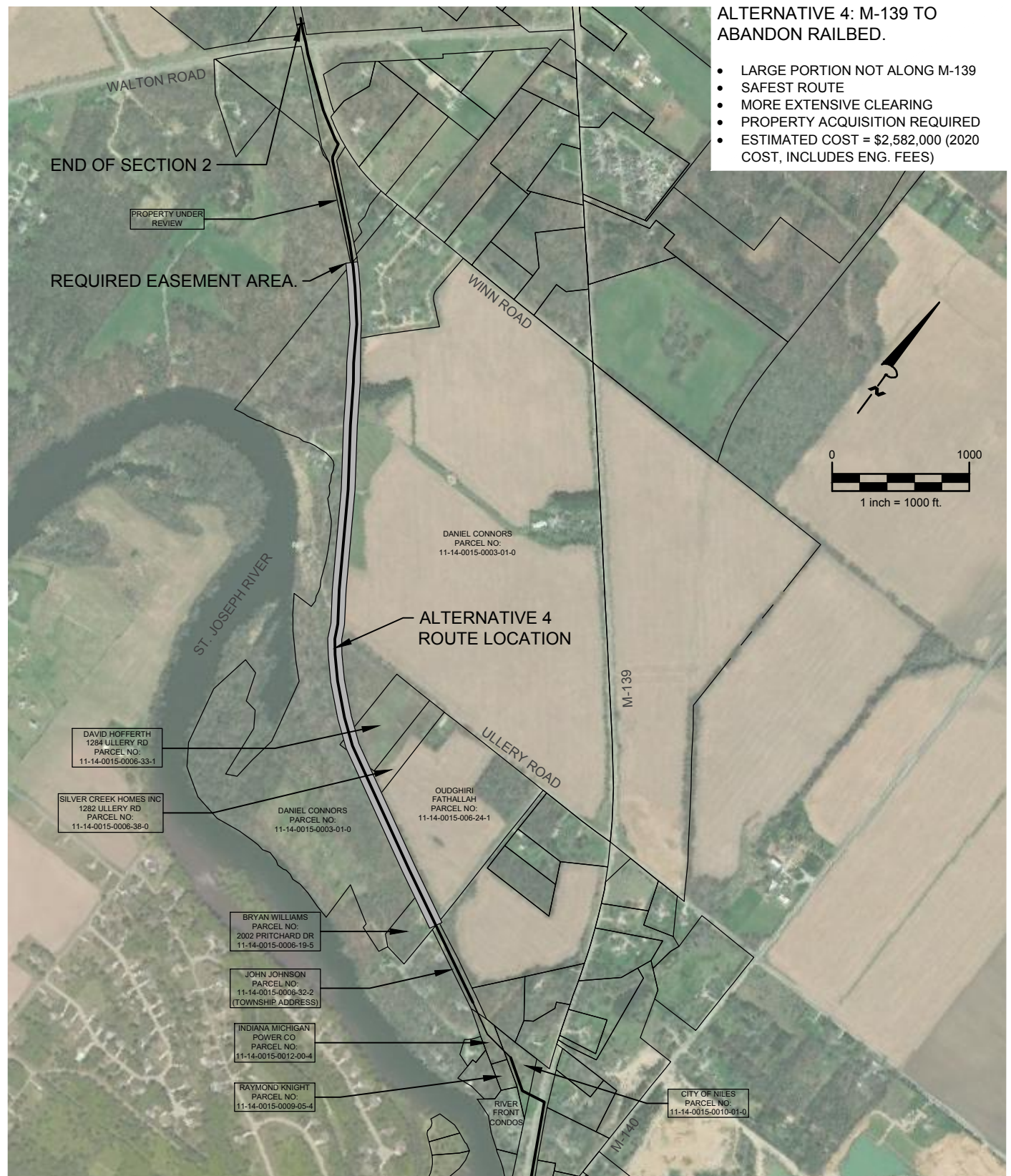
1" = 1000'

SECTION 2: ALTERNATIVE 3

P03

ALTERNATIVE 4: M-139 TO ABANDON RAILBED.

- LARGE PORTION NOT ALONG M-139
- SAFEST ROUTE
- MORE EXTENSIVE CLEARING
- PROPERTY ACQUISITION REQUIRED
- ESTIMATED COST = \$2,582,000 (2020 COST, INCLUDES ENG. FEES)



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TRAIL - PHASE III

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1" = 1000'

SECTION 2: ALTERNATIVE 4

P04