



Port
Huron
Township

PORT HURON TOWNSHIP DOWNTOWN DEVELOPMENT AUTHORITY SIDEWALK MASTER PLAN



Prepared For:

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Port Huron Township Downtown Development Authority Sidewalk Master Plan

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1. Executive Summary

This Sidewalk Master Plan discusses the construction of 6700-ft of new sidewalk, as well as, repairs to three areas of existing sidewalk. When implemented, the projects will make the DDA Area of Port Huron Township more accessible for pedestrians. The improvements outlined in this report are not intended to be either limiting or all-inclusive within the DDA Area, nor are they meant to address every issue that the Township has with pedestrian accessibility. The Master Plan provides a starting point for planning for the DDA and the Township as areas of sidewalk extensions are being programmed, and will evolve as projects are completed and new development arises within the DDA Area. The following table summarizes the Total Project Costs of each of the identified sidewalk project locations. More complete descriptions of the referenced project locations are presented in follow-on sections of this report

Proposed Sidewalk Location	
New Sidewalk	Total Project Cost
24th Street - Section 1	\$ 91,800
24th Street - Section 2	\$ 76,000
24th Street - Section 3	\$ 118,500
24th Street - Section 4	\$ 84,200
Howard Street	\$ 340,200
26th Street	\$ 107,500
32nd Street	\$ 151,300
Chestnut Street	\$ 12,400
ARC to Kmart	\$ 15,100
Sidewalk Repairs	Total Project Cost
32nd Street	\$ 44,600
Howard Street	\$ 18,200
24th Street	\$ 84,700
TOTAL COST OF ALL PROJECTS	\$ 1,144,500

2. Introduction

Port Huron Township is working to improve conditions for pedestrians in the Downtown Development Authority (DDA) District of the Township. Development of private property over the years has left a patchwork arrangement of pedestrian routes between major destinations.

This Sidewalk Master Plan is an important step toward establishing safe and convenient routes throughout Port Huron Township's DDA District to enhance pedestrian travel and access to the many businesses, schools and other facilities located in the area. The primary focus of the Master Plan is to prioritize sidewalk installation and repair by identifying and inventorying gaps and deficiencies in the Township's existing pedestrian network within the DDA District. This Master Plan will focus on main pedestrian routes defined within the DDA District to provide connectivity between overall pedestrian destinations.

2.1 Purpose of Sidewalk Master Plan

This Sidewalk Master Plan will:

1. Define pedestrian routes within the DDA area;
2. Inventory existing sidewalks along pedestrian routes;
3. Identify deficiencies of existing sidewalks related to accessibility;
4. Identify sidewalk gaps in pedestrian routes;
5. Identify opportunities and constraints for future sidewalks;
6. Identify permit and easement requirements for sidewalk additions;
7. Provide construction cost estimates for proposed sidewalk additions and corrections to existing sidewalks; and,
8. Prioritize sidewalk additions, replacements and repairs.

3. Delineation of Study Area

The Port Huron Township DDA District is primarily the area south of Lapeer Avenue, east of 32nd Street, west of 24th Street and north of the Grand Trunk Railroad. This area is the center of the commercial activity in Port Huron Township. The DDA District is shown on the Master Plan Map in Appendix A.

Johnson and Anderson met with Township Supervisor Robert G. Lewandowski, Jr., and DDA Director Paul G. Maxwell to discuss the existing pedestrian network within the DDA District and the potential for sidewalk additions and repairs. The Township representatives pointed out what they consider to be the main pedestrian routes and the areas on which this study should focus based on their knowledge of pedestrian movement and the sidewalk network.

This study focuses on three main roads within the DDA District: 32nd Street; Howard Street; and, 24th Street. These routes are important to effective pedestrian travel in the district. Lapeer Avenue, which currently has walkway on the north side of the road traveling through the DDA District, is not being evaluated at this time. The walkway consists of asphalt shared use pathway west of 32nd Street and concrete sidewalk east of 32nd Street. It is included on the Master Plan map as it serves as a link in the pedestrian network; however, the length of the existing walkway and the nature of the development along Lapeer simply brought this section out of the current scope of the evaluations.

There are three additional areas that have been identified as enhancements to the pedestrian network included in this evaluation. These include: sidewalk placement on the end of Chestnut Street extended to the back of Sam's Club; 26th Street south of Howard, and a section of sidewalk located behind Kmart extending from the Saint Clair County ARC property to Kmart property. These are shown on the Master Plan map and further discussed below.

3.1 Pedestrian Routes Evaluated

32nd Street

The portion of 32nd Street from Lapeer Avenue, south to Business I-69 is evaluated in this study. There is existing sidewalk on the east side of 32nd from Lapeer Road to Howard Street, and no sidewalk from Howard to Business I-69.

Howard Street

Howard Street between 32nd Street and 24th Street is a well traveled pedestrian route with a significant gap in sidewalk. Currently there is existing sidewalk on the north side of Howard, extending east from 32nd Street approximately 400-ft. From the point of sidewalk end, pedestrians must either walk on the road, or the ground adjacent to the road. Howard Street has steady vehicular traffic with a 45 mph speed limit, and a bus stop across from 26th Street with no sidewalks connecting to it.

24th Street

The west side of 24th Street, south of Lapeer and north of Chestnut, is evaluated in this study. This section represents an area of significant commercial development in Port Huron Township. The existing sidewalks in this area are a result of the development or improvement to individual

private parcels, rather than a coherent plan, creating gaps in between the sections.

Chestnut Street

At the intersection of Chestnut and 27th Street, just west of 24th Street, there is a path leading approximately 100-ft through the woods to the back of the Sam's Club/K-Mart parking lot. This path is heavily worn from foot traffic. This has become a shortcut from 24th Street through to the businesses on 32nd Street.

26th Street

This section of 26th Street, south of Howard was identified as a potential for the addition of sidewalk. The St. Clair County ARC is located here, and there is pedestrian traffic to and from this facility originating at the bus stop located on Howard.

ARC to Kmart

The ARC property is also adjacent to the Kmart property. After talking to the management at Kmart, they noted daily pedestrian traffic coming from the ARC property onto the Kmart property. There is a potential to place a sidewalk at this location that would provide a connection to the proposed sidewalk on 26th up to Howard. Easements would be necessary for sidewalk at this location, which is discussed in further detail below under Easement Requirements.

4. Sidewalk Evaluation

The areas named above were evaluated for sidewalk availability, accessibility, safety and physical condition. These criteria are relevant to describing the “walkability” of a pedestrian network. The specific criteria for existing sidewalks are location and quality of sidewalks and crosswalks, condition of the sidewalk surface, transverse and longitudinal slope, and width.

The Americans with Disabilities Act has set standards for the accessibility of sidewalks located in public rights-of-way. These standards include maximum slopes, both longitudinal and transverse, gaps along the traveled way, minimum width and clearance from obstacles, and proper signing and markings at crosswalks. The existing sidewalks were evaluated for these standards.

The deficiencies of the existing sidewalks are listed below. The tabulation of slope measurements and defect for each section of existing sidewalk is found in Appendix C. The concrete is generally in good condition and there are very few instances of heaving, settling or excessive slopes.

4.1 Existing Sidewalks

32nd Street

The existing sidewalk on 32nd Street is located on the east side of the road, south of Lapeer Avenue and north of Howard Street. The sidewalk is 5-foot wide, and approximately 1720 ft in length. (See pictures 1 and 2) The deficiencies are as follows:

1. Weeds growing in the joints.
2. Grass growing onto the sidewalk 3 to 6 inches on both sides.
3. Uneven surface with large gaps in the traveled way at the railroad crossing.
4. Short, steep transitions at drive approaches.
5. Crosswalk at Lapeer Road crossing 32nd Street is overgrown with weeds and bushes. There are no markings on the road crossing at 32nd Street.
6. Portions of the sidewalk exceed the 2% cross slope maximum.

Picture 1: Sidewalk along 32nd showing grass and weeds growing in joints and along side.



Picture 2: Crosswalk ramp on 32nd Street at Lapeer Ave is in poor condition.



Howard Street

The existing sidewalk on Howard Street is located on the north side of the street, and it extends from 32nd street about 440 feet east. This sidewalk is 5-ft wide and is in fairly good condition. (See picture 3) The deficiencies are as follows:

1. Weeds growing in joints.
2. Grass growing into sidewalk 3 to 6 inches on both sides.
3. Short, steep transitions at drive approaches.
4. Crosswalk crossing Howard at 32nd Street is not marked and there is no sidewalk on the south side of Howard. Crosswalk is also not ADA compliant, with no landing above the transition.
5. Portions of the sidewalk exceed the 2% cross slope maximum.

Picture 3: Start of existing sidewalk on Howard, looking west.



24th Street

Two sections of existing sidewalk on the west side 24th Street are evaluated. These are both newer sections of sidewalk that were placed along with the more recent development of private commercial properties.

The first section starts approximately 575-ft south of Lapeer Avenue, south of the Taco Bell Property line. This section is approximately 375-ft in length. (See picture 4) The deficiencies are as follows:

1. Cross slope ranges from 2 to 3% towards the road, exceeding the 2% maximum.

Picture 4: Start of existing sidewalk on 24th Street, looking south.



The second section of existing walk is further south on 24th Street, beginning 650-ft south of Howard. This section is approximately 880-ft in length. The deficiencies are as follows.

1. Cross slope in some sections exceeds the 2% maximum.
2. Cross slope at drive-way crossings exceeds 2% maximum.

4.2 Identified Gaps in Existing Sidewalk Network

The existing sidewalk network within the DDA District under evaluation has many gaps that force pedestrians to walk on the road surface or on uneven terrain on the side of the road. This is evident by the paths worn in these areas

without sidewalks, and by witnessing pedestrians walking the roads during the sidewalk evaluation.

24th Street

The portion of 24th Street included in this study has intermittent sections of sidewalk creating gaps in the overall network. Newer developments have included sidewalks in construction of the site, however the older commercial properties on this stretch never had sidewalks and did not plan for them, creating obstacles. Sidewalk easements will be necessary to resolve space and alignment issues in this section.

The first section with no sidewalk starts at the north end of 24th Street at Lapeer Avenue. There is a crosswalk at this location crossing 24th Street and connecting to existing sidewalk heading east in the City of Port Huron. On the east side of 24th Street is a Lapeer Road crosswalk connecting to the sidewalk running on the north side of Lapeer Road. There is no sidewalk on the west side of 24th Street from Lapeer Avenue approximately 575-feet to the south.

The second section on 24th Street with no sidewalk begins just south of Dunkin Donuts. This section runs south for approximately 440-ft, ending at the intersection of Howard Street. There is an isolated crosswalk ramp with striping across both 24th and Howard at this intersection with no sidewalk connecting to it. (See pictures 5 and 6)

Picture 5: End of Existing sidewalk on 24th Street, looking south on 24th.



Picture 6: Isolated crosswalk ramp at Howard Street and 24th Street, looking south.



The third section without sidewalk begins at Howard Street and extends south approximately 650-ft. There are multiple business signs located in the likely path of a new sidewalk, posing challenges for construction. This location is shown looking south in picture 5.

The fourth section on 24th Street without sidewalk begins just south of McDonald's and extends for approximately 520-ft to the intersection of Chestnut Street.

32nd Street

There is currently sidewalk from Lapeer Ave to Howard Street on the east side of 32nd Street; there is no sidewalk south of Howard. There is a crosswalk approach transitioning to Howard St bringing pedestrians onto the road, but there is no approach on the south side of Howard. A sidewalk addition along the east side of 32nd street, south of Howard, would allow for pedestrian access to the area and businesses located further south on 32nd Street. It is approximately 1025-ft from Howard Street to the first driveway into K-Mart where this proposed sidewalk would end. There are two residential drives along this stretch.

Howard Street

There is existing sidewalk on the west end of Howard Street, with no sidewalk the rest of the way to 24th Street, approximately 2100-ft. This area is well traveled by pedestrians who are forced to either use the road, or the side of the road. There is also a bus stop on Howard at 26th Street with no sidewalks connecting to it. A sidewalk addition along this section

of Howard Street would create a continuous route from one end to the other, and provide access to the bus stop.

26th Street

There is no sidewalk in the portion of 26th Street south of Howard. The St. Clair County ARC is located on 26th Street and there is pedestrian traffic to and from this facility. The ARC has recently constructed an asphalt parking lot. The addition of approximately 760-ft of sidewalk at this location would benefit the users of this facility. The other potential at this location, as mentioned previously, is a sidewalk through the ARC property to the Kmart Property. This sidewalk section would be approximately 100-ft in length.

Chestnut Street

At the end of Chestnut Street, west of 24th Street, there is a path used by pedestrians to the back of the Sam's Club property. Placement of a short section of sidewalk at this location would provide easy pedestrian access to and from these businesses. The length of this proposed section of sidewalk is approximately 100-ft. After receiving input from the property owners, there are potential problems associated with pedestrian traffic at this location.

5. Proposed Improvements

We recommend the following sidewalk additions as well as repairs or upgrades to the existing sidewalks. The sidewalk additions have been broken up into sections by location. These figures can be found in Appendix B.

5.1 Sidewalk Additions

24th Street

The proposed sidewalk along the west side of 24th Street is filling the gaps between existing sidewalks. There are four sections of proposed sidewalk.

24th Street Section 1 (Appendix B – Figure 1)

The proposed sidewalk starts at the intersection of 24th and Lapeer, and extends approximately 575-ft to the south, ending at the existing sidewalk at the Taco Bell northern property line. There is currently a crosswalk at 24th and Lapeer crossing 24th Street and connecting to existing sidewalk. There are 4 commercial driveways entering 24th Street along this section.

24th Street Section 2 (*Appendix B – Figure 2*)

This section of proposed sidewalk begins at Howard Street and extends approximately 440-ft to the north, ending at the existing sidewalk at the Dunkin Donuts southern property line. There are 5 commercial drives entering 24th Street in this section.

24th Street Section 3 (*Appendix B – Figure 3*)

The proposed sidewalk begins at the intersection of Howard and 24th, extending approximately 650-ft to the south ending at the existing sidewalk at the Wirtz Manufacturing northern property line. There are 10 commercial drives entering 24th Street in this section.

24th Street Section 4 (*Appendix B – Figure 4*)

This section of proposed sidewalk begins at Chestnut Street and extends approximately 520-ft to the north, ending at the existing sidewalk in front of Kroger. There are 4 commercial drives entering 24th Street in this section.

Howard Street

(*Appendix B – Figure 5*)

The proposed sidewalk on Howard Street is located on the north side of the road and runs from the crosswalk at 24th Street, west to the existing sidewalk, approximately 2100-ft. There are six commercial drives, four residential drives and a bus stop shelter located along this section.

32nd Street

(*Appendix B – Figure 6*)

The proposed sidewalk at 32nd Street is located on the east side of 32nd from Howard Street, south to the second driveway entering the Kmart property. The section of proposed sidewalk is approximately 1025-ft long with three residential drives and one commercial drive present along the stretch.

26th Street

(*Appendix B – Figure 7*)

The sidewalk addition proposed on 26th street is located south of Howard Street on the west side of 26th Street. The approximate length of this section is 760-ft. Also proposed at this location is a section of sidewalk

through the ARC property, onto the adjacent Kmart property to the west. This section of sidewalk would be approximately 125-ft in length.

Chestnut Street

(Appendix B – Figure 8)

The sidewalk addition proposed on Chestnut Street is approximately 100-ft in length. It would connect Chestnut Street to the back parking lot on the Sam's Club property. The land between Chestnut Street right-of-way and Sam's Club is currently owned by Port Huron Township.

5.2 Sidewalk Repairs

32nd Street

We recommend the following repairs to the existing sidewalk on 32nd Street.

1. Remove grass growing on edges of sidewalk and in sidewalk joints. Caulk sidewalk joints as necessary.
2. Make repairs to railroad crossing that conform to ADA Accessibility Guidelines.
3. Improve crosswalk conditions at the intersection of Lapeer and 32nd crossing 32nd. This includes updated ramp, striping and signaling across 32nd, and trimming vegetation growing into walkway.
4. Re-grade sidewalk and driveways at drive approaches and where the 2% cross slope is exceeded.

Howard Street

We recommend the following repairs for the existing sidewalk on Howard Street.

1. Remove grass growing on edges of sidewalk and in sidewalk joints. Caulk sidewalk joints as necessary.
2. Improve crosswalk conditions at intersection of Howard and 32nd Street to include updated ramp and striping across Howard.
3. Remove and replace sidewalk at drive approaches and where cross slope exceeds 2%.

24th Street

The existing sidewalk on 24th Street is all fairly new and in overall good condition. It appears that approximately half of the sidewalk has a 2-3% cross-slope. This exceeds the maximum 2% allowable, however, the good condition of the sidewalks makes the removal and replacement of these sections a lower priority.

5.3 Easement Requirements

The roads within the DDA area that are a part of this study are under the jurisdiction of The Road Commission for St. Clair County and have a 66-ft designated right-of-way (ROW). A preliminary investigation into the need to obtain easements, permanent and temporary, for sidewalk construction is part of this Master Plan. Using existing plat information, deeds and tax parcels from St. Clair County, assembled by Port Huron Township, along with GIS mapping, the anticipated easement requirements are as follows.

24th Street

24th Street is five lanes wide. With the ROW being only 66-ft, the roadway takes up most of the ROW. Easements will be necessary from 16 property owners to construct the proposed sidewalks. In addition to the right-of-way, there is a 20-ft wide sanitary sewer easement that is adjacent to the ROW line. This sanitary easement is held by the Township.

Howard Street

Howard Street is three lanes wide. With the ROW being 66-ft, there is room to place the proposed sidewalk within the ROW without a permanent easement. There will be a need for a temporary easement from 9 property owners for the duration of the construction. There is a row of utility poles that appear to be just outside of the ROW line, it is not known at this time whether an easement exists for these utilities.

32nd Street

32nd Street is three lanes wide. There is room to place a new sidewalk within the 66-ft right-of way. Temporary easement for construction may be needed from 6 property owners.

26th Street

There is a dedicated 66-ft right-of-way for 26th Street which ends at the ARC property line. It appears that due to the location of the ditches along 26th Street, the sidewalk will need to be located out of the right-of-way and an easement will be required from 1 adjacent property owner. The other section of sidewalk proposed within the ARC property to the back of Kmart would also require a permanent easement from the ARC for construction.

Chestnut Street

The proposed sidewalk at this location would be going through Township owned property. The east side of the sidewalk would be adjacent to the Chestnut Street right-of-way, and the west side would be adjacent to

private property (Sam's Club). Upon further investigation into the status of this Township property, it was found that this land is a mitigated wetland area by Michigan Department of Natural Resources permit number 92-14-0771 in which no development can take place.

5.4 Permit Requirements

St. Clair County Road Commission requires written approval on the initial concept for all projects located within the ROW. After concept approval is granted, plans must be submitted to SCCRC for approval and permit issue. When constructed, the sidewalks within the County ROW would be the responsibility of the Township to maintain.

The St. Clair County Health Department requires a soil erosion permit and the appropriate soil erosion and sedimentation control measures must be included in the engineering plans.

5.5 Construction Estimates

Our estimates for sidewalk construction are based off of recent sidewalk construction in the Township in 2012. Our estimates should be revised if construction occurs later than 2013. The estimates are broken up by the section of proposed sidewalk as listed above. The estimates for sidewalk repairs are also included below.

5.5.1 New Sidewalk

24th Street - Section 1	Unit	Unit Price	Quantity	Cost
Medium Excavation	LF	\$ 20	575	\$ 11,500
Sidewalk	LF	\$ 60	575	\$ 34,500
Restoration	LF	\$ 20	575	\$ 11,500
Commercial Drive	EA	\$ 2,000	4	\$ 8,000
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	1	\$ 500
Traffic Control	LS	\$ 1,000	1	\$ 1,000
Easements	LS		1	\$ -
Construction Total				\$ 67,000
Engineering		16%		\$ 10,720
Contingency		18%		\$ 13,990
TOTAL PROJECT COST				\$ 91,800

24th Street - Section 2	Unit	Unit Price	Quantity	Cost
Medium Excavation	LF	\$ 20	440	\$ 8,800
Sidewalk	LF	\$ 60	440	\$ 26,400
Restoration	LF	\$ 20	440	\$ 8,800
Commercial Drive	EA	\$ 2,000	5	\$ 10,000
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	1	\$ 500
Traffic Control	LS	\$ 1,000	1	\$ 1,000
Easements	LS		1	\$ -
Construction Total				\$ 55,500
Engineering		16%		\$ 8,880
Contingency		18%		\$ 11,588
TOTAL PROJECT COST				\$ 76,000

*Estimates generated January 2013

24th Street - Section 3	Unit	Unit Price	Quantity	Cost
Medium Excavation	LF	\$ 20	650	\$ 13,000
Sidewalk	LF	\$ 60	650	\$ 39,000
Restoration	LF	\$ 20	650	\$ 13,000
Commercial Drive	EA	\$ 2,000	10	\$ 20,000
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	1	\$ 500
Traffic Control	LS	\$ 1,000	1	\$ 1,000
Easements	LS		1	\$ -
Construction Total				\$ 86,500
Engineering		16%		\$ 13,840
Contingency		18%		\$ 18,061
TOTAL PROJECT COST				\$ 118,500

24th Street - Section 4	Unit	Unit Price	Quantity	Cost
Medium Excavation	LF	\$ 20	520	\$ 10,400
Sidewalk	LF	\$ 60	520	\$ 31,200
Restoration	LF	\$ 20	520	\$ 10,400
Commercial Drive	EA	\$ 2,000	4	\$ 8,000
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	1	\$ 500
Traffic Control	LS	\$ 1,000	1	\$ 1,000
Easements	LS		1	\$ -
Construction Total				\$ 61,500
Engineering		16%		\$ 9,840
Contingency		18%		\$ 12,841
TOTAL PROJECT COST				\$ 84,200

Howard Street	Unit	Unit Price	Quantity	Cost
Heavy Excavation	LF	\$ 30	2100	\$ 63,000
Sidewalk	LF	\$ 60	2100	\$ 126,000
Restoration	LF	\$ 20	2100	\$ 42,000
Residential Drive	EA	\$ 1,000	4	\$ 4,000
Commercial Drive	EA	\$ 2,000	6	\$ 12,000
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	1	\$ 500
Traffic Control	LS	\$ 1,000	1	\$ 1,000
Construction Total				\$ 248,500
Engineering		16%		\$ 39,760
Contingency		18%		\$ 51,887
TOTAL PROJECT COST				\$ 340,200

*Estimates generated January 2013

26th Street	Unit	Unit Price	Quantity	Cost
Medium Excavation	LF	\$ 20	760	\$ 15,200
Sidewalk	LF	\$ 60	760	\$ 45,600
Restoration	LF	\$ 20	760	\$ 15,200
Commercial Drive	EA	\$ 2,000	1	\$ 2,000
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	1	\$ 500
Easements	LS		1	\$ -
Construction Total				\$ 78,500
Engineering		16%		\$ 12,560
Contingency		18%		\$ 16,391
TOTAL PROJECT COST				\$ 107,500

32nd Street	Unit	Unit Price	Quantity	Cost
Medium Excavation	LF	\$ 20	1025	\$ 20,500
Sidewalk	LF	\$ 60	1025	\$ 61,500
Restoration	LF	\$ 20	1025	\$ 20,500
Residential Drive	EA	\$ 1,000	2	\$ 2,000
Commercial Drive	EA	\$ 2,000	2	\$ 4,000
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	2	\$ 1,000
Traffic Control	LS	\$ 1,000	1	\$ 1,000
Construction Total				\$ 110,500
Engineering		16%		\$ 17,680
Contingency		18%		\$ 23,072
TOTAL PROJECT COST				\$ 151,300

Chestnut Street	Unit	Unit Price	Quantity	Cost
Light Excavation	LF	\$ 15	100	\$ 1,500
Sidewalk	LF	\$ 60	100	\$ 6,000
Restoration	LF	\$ 5	100	\$ 500
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	2	\$ 1,000
Construction Total				\$ 9,000
Engineering		16%		\$ 1,440
Contingency		18%		\$ 1,879
TOTAL PROJECT COST				\$ 12,400

ARC to Kmart	Unit	Unit Price	Quantity	Cost
Light Excavation	LF	\$ 15	125	\$ 1,875
Sidewalk	LF	\$ 60	125	\$ 7,500
Restoration	LF	\$ 5	125	\$ 625
Crosswalk Ramp W/ Warning Surface	EA	\$ 500	2	\$ 1,000
Construction Total				\$ 11,000
Engineering		16%		\$ 1,760
Contingency		18%		\$ 2,297
TOTAL PROJECT COST				\$ 15,100

*Estimates generated January 2013

5.5.2 Sidewalk Repairs

32nd Street	Unit	Unit Price	Quantity	Cost
Clean and caulk Joints	LS	\$ 2,000	1	\$ 2,000
Clean vegetation from sidewalk edges	LS	\$ 800	1	\$ 800
Blended Transition at driveway approach	EA	\$ 2,000	7	\$ 14,000
Replace/regrade sidewalk	LF	\$ 45	300	\$ 13,500
Update Crosswalk	EA	\$ 1,000	1	\$ 1,000
Update RR crossing	LS	\$ 1,500	1	\$ 1,500
Construction Total				\$ 32,800
Engineering		15%		\$ 4,920
Contingency		18%		\$ 6,790
TOTAL PROJECT COST				\$ 44,600

Howard Street	Unit	Unit Price	Quantity	Cost
Clean and caulk Joints	LS	\$ 1,000	1	\$ 1,000
Clean vegetation from sidewalk edges	LS	\$ 400	1	\$ 400
Blended Transition at driveway approach	EA	\$ 2,000	3	\$ 6,000
Replace/regrade sidewalk	LF	\$ 45	110	\$ 4,950
Update Crosswalk	EA	\$ 1,000	1	\$ 1,000
Construction Total				\$ 13,350
Engineering		15%		\$ 2,003
Contingency		18%		\$ 2,763
TOTAL PROJECT COST				\$ 18,200

24th Street	Unit	Unit Price	Quantity	Cost
Blended Transition at driveway approach	EA	\$ 2,000	17	\$ 34,000
Replace/regrade sidewalk	LF	\$ 45	630	\$ 28,350
Construction Total				\$ 62,350
Engineering		15%		\$ 9,353
Contingency		18%		\$ 12,906
TOTAL PROJECT COST				\$ 84,700

*Estimates generated January 2013

6. Prioritization of Improvements

The prioritization of the improvements is based primarily on the positive impact that each improvement will have to the overall accessibility of the existing sidewalk network. With the cost of each improvement also being a major component to the priority because the costs will have to be spread out in a manner that will be consistent with the funds available for improvements. The goal of these improvements is to make it safer, easier, and more accessible for the residents that rely on a functioning pedestrian network, and also to encourage pedestrian travel within the area. After taking these factors into consideration, the suggested priority of improvements are listed below. This is not meant to be a schedule of improvements, more so than a guide to follow when deciding how allocate the money available to make improvements.

6.1 Sidewalk Additions

Howard Street

The proposed sidewalk on Howard Street, connecting 32nd to 24th, has been identified as a key pedestrian route and crucial to the overall connectivity of the pedestrian network. There are several factors that make this location one of the first recommended improvements.

1. Connects existing sidewalk on 32nd Street to 24th Street, two major routes within the DDA District.
2. Bus stop location mid-way along this route.
3. Pedestrians currently forced to walk on road, or side of road.
4. Minimal disruption to adjacent property owners.
5. Sidewalk located primarily within the designated right of way.

24th Street Section 1 and 2

These sections of proposed sidewalk are part of a loop connecting 24th Street to Howard Street, to Lapeer Avenue, back to 24th Street. The factors that went in to the ranking are as follows:

1. With the recommended construction of the sidewalk on Howard Street, the construction of sidewalk at these locations will create a continuous sidewalk loop within the DDA Area.
2. Sidewalk construction on Howard will involve work at the intersection of Howard and 24th, which is an endpoint for 24th Street Section 1.

32nd Street

The proposed sidewalk on 32nd Street will provide pedestrian access that was not previously available to the businesses and establishments in that area. The factors that went into the ranking are as follows:

1. The crosswalk at Howard and 32nd has no receiving end, adding a sidewalk at this location will continue pedestrian access along 32nd, south of Howard.
2. Pedestrians would benefit from easier access to the businesses and the Post Office located along 32nd.
3. The location of the proposed sidewalk is mostly flat, open, and contained within the right-of-way, making construction less complicated with minimal disruption to adjacent property owners.

24th street Section 3

This section of proposed sidewalk is a continuation of the sidewalk running down the west side of 24th. The location will benefit a large number of pedestrians; however there are some challenges to construction at this location. The factors that went into the ranking are as follows:

1. Continuing sidewalk down 24th Street is a major benefit due to the large number of pedestrians and commercial activity along 24th Street.
2. There are challenges to a sidewalk at this specific location due to business signs located in the proposed path and the necessity for permanent easements.

24th Street Section 4

This section of sidewalk has similar benefits and constraints as 24th Street Section 3 above. It would benefit a large number of pedestrians, however the location of business signs, parking lots and the necessity for easements poses challenges that will increase the cost of construction. The factors that go into the ranking are the same as above with this section being the next choice in the logical progression of sidewalk down 24th Street.

26th Street

Proposed sidewalk at this location as stated previously in the report will largely benefit the users of the St. Clair County ARC facility located at the dead end of 26th Street. The factors that went into this ranking are as follows.

1. The ARC facility has recently improved and paved the parking lot making it a more favorable destination for a sidewalk.

2. The sidewalk will benefit a much smaller number of pedestrians due to this being a dead end road.

ARC to Kmart

Proposed sidewalk at this location will require discussion with the owners of the ARC facility as well as an easement to construct. As with the sidewalk on 26th Street, this will mainly benefit the users of the ARC facility who walk across to the Kmart property and beyond.

Chestnut Street

The proposed sidewalk at this location has been eliminated from consideration due to the factors discussed above.

6.2 Sidewalk Repairs

In general to existing sidewalks evaluated within the DDA District were found to be in good condition. There are some maintenance and activities repair that can be addressed by the Township. There are some issues with the sidewalks exceeding the ADA slope criteria that require more extensive repairs including replacement. Due to the good physical condition of the concrete and the slight exceedance of the slope criteria, these more expensive replacements can be addressed over time as the funds are available.

32nd Street

Of the existing sidewalks evaluated, this section was the longest and had the most issues. Below are the repairs ranked in order of priority.

1. Clean and caulk sidewalk joints
2. Clean vegetation from sidewalk edges
3. Update crosswalk at Lapeer Ave
4. Repair crosswalk at Howard Street
5. Repairs to sidewalk at railroad crossing
6. Replace and correct driveway transitions
7. Replace sidewalk sections that exceed maximum cross-slope

Howard Street

This section of sidewalk connects to 32nd Street and has most of the same issues with vegetation growing into the sidewalk and slope criteria exceedance along the sidewalk and at the driveway transitions. The driveway approaches along this section are not in use and connect to vacant land. The repair rankings are as follows.

1. Clean and caulk sidewalk joints
2. Clean vegetation from sidewalk edges

3. Replace and correct driveway transitions
4. Replace sidewalk sections that exceed the maximum cross slope

24th Street

The sections of existing sidewalk along 24th Street are new and in good physical condition, although some areas slightly exceed the maximum cross slope Criteria. It would be more feasible to address slope issues as the sidewalk approaches the end of its service life.

7. Additional Considerations and Opportunities

Port Huron Township DDA has expressed interest in substituting an asphalt shared use pathway for the concrete sidewalk along 32nd Street, which would cross Business I-69 and head west down Griswold. The reason for this alternative is a potential connection to the St. Clair County Trails – Wadhams to Avoca Trail. This trail starts about 1.5 miles west of 32nd Street along Griswold, at a former rail road crossing, and runs for approximately 12 miles to Avoca. This alternative presented by the PHT DDA is shown on the Master Plan Map in Appendix A.

There have been previous plans by St. Clair County to route a pathway through Port Huron Township into the City of Port Huron, connecting the Wadhams to Avoca trail to the Bridge to Bay Trail. There were several potential routes evaluated for this connection, one of the potential trail routes the Township has knowledge of is shown on the Master Plan map in Appendix A. The status of that trail project is unknown at the time of this report.

8. List of Appendices

Appendix A – DDA Sidewalks Map

Appendix B – Proposed Sidewalks

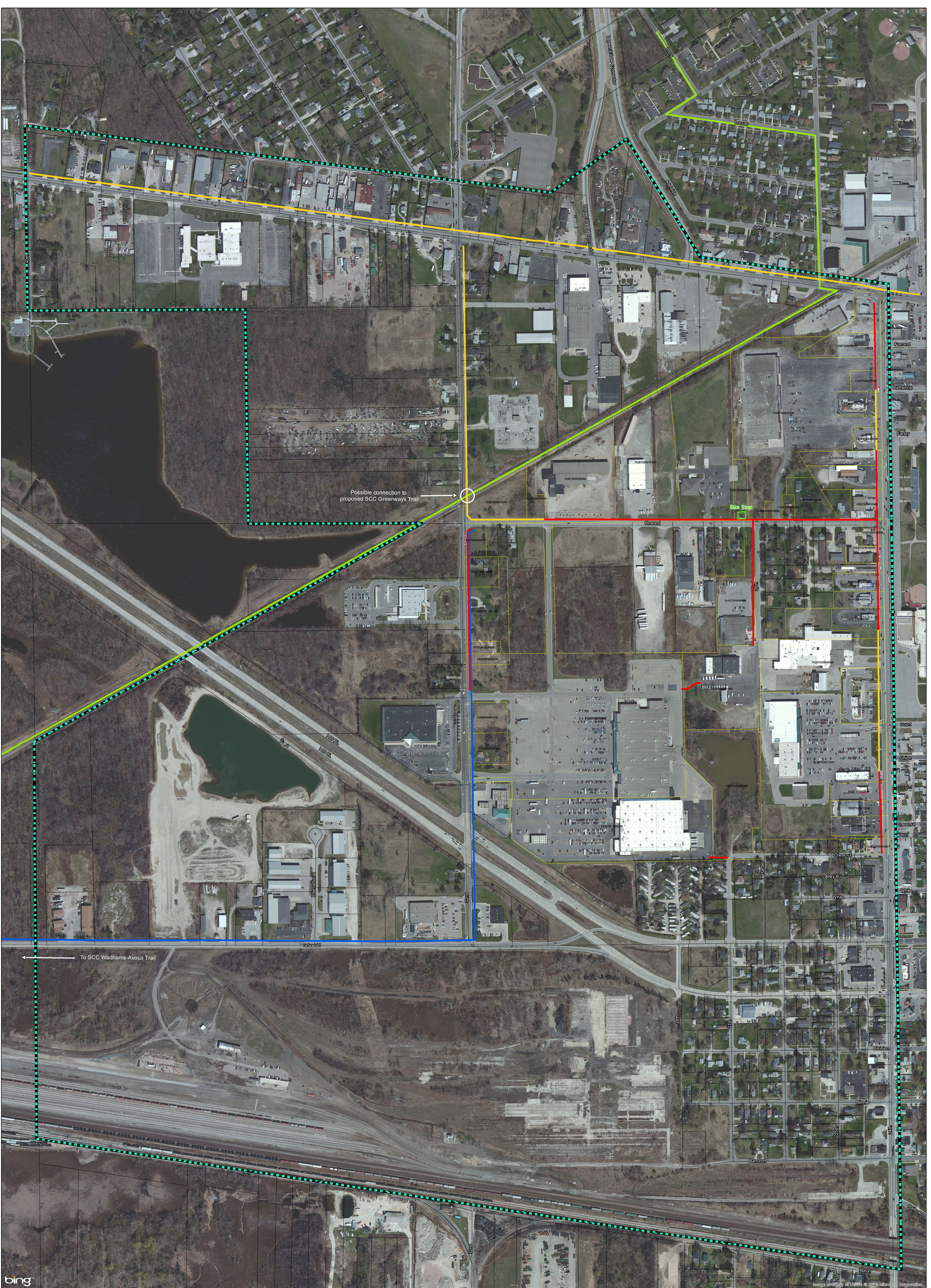
Appendix C – Existing Sidewalk Evaluations

APPENDIX A
DDA Master Plan Map

APPENDIX B
Proposed Sidewalks

APPENDIX C

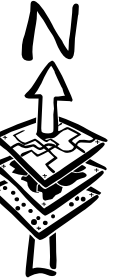
Existing Sidewalk Evaluations

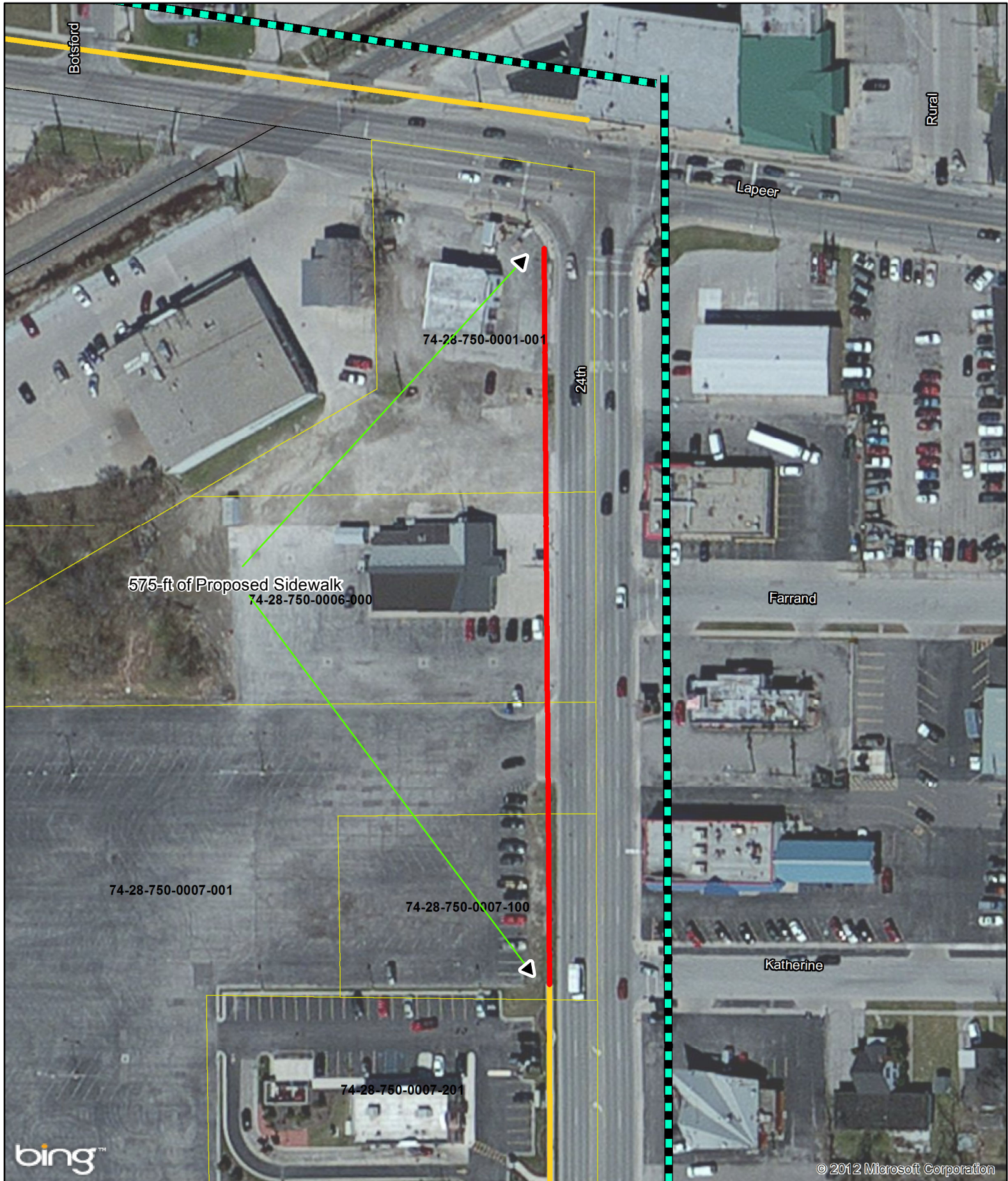


Legend





- - - DDA Area
- Existing Sidewalk
- Proposed Sidewalk
- Potential Shared Use Pathway
- - - Proposed SCC GreenWay Trail
- Adjacent Properties

Port Huron Township Downtown Development Authority Sidewalk Master Plan

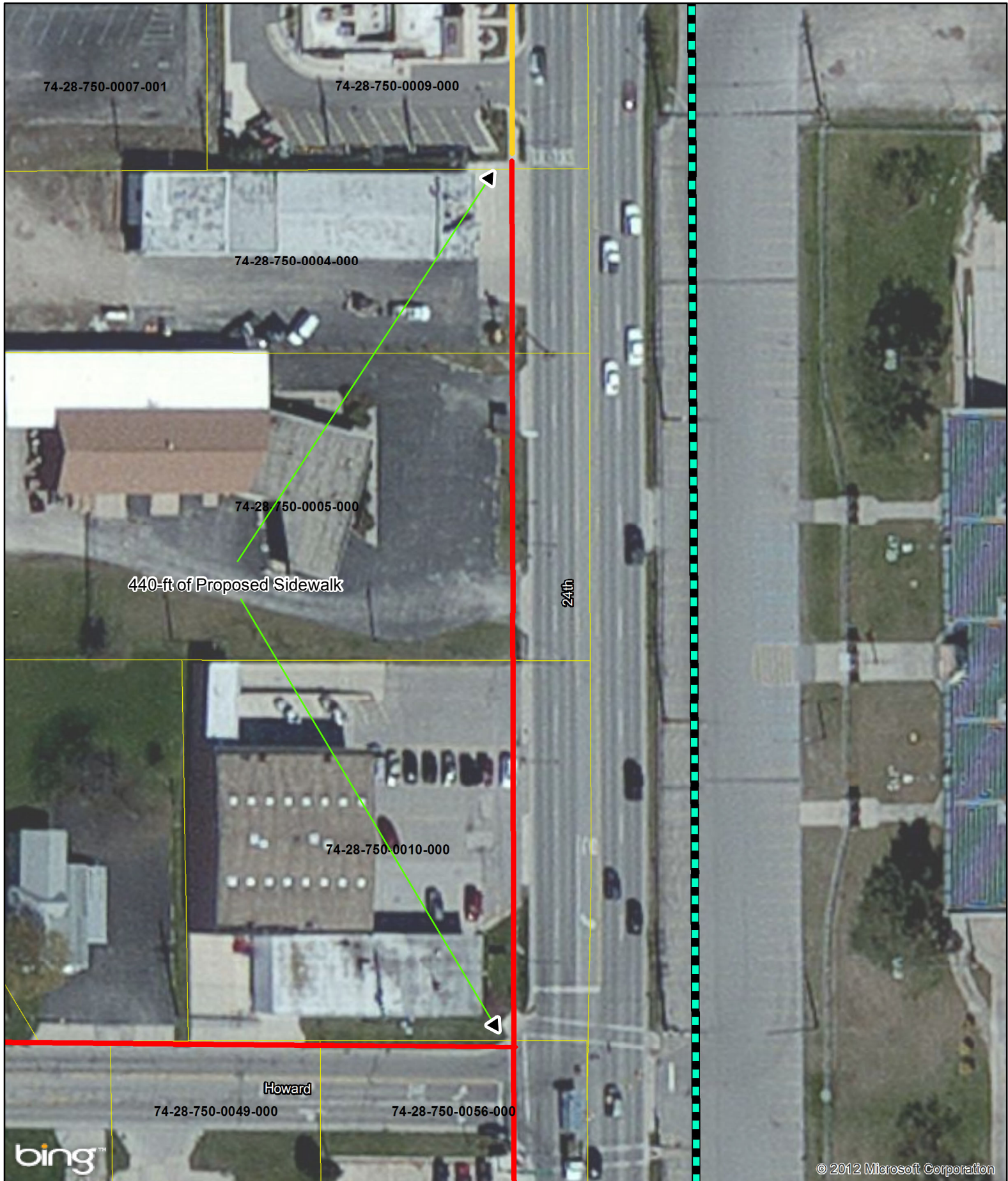




Port Huron Township DDA Sidewalk Plan
 24th Street Section 1 Proposed Sidewalk

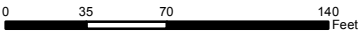
Legend	
	DDA Area
	Proposed Sidewalk
	Existing Sidewalk
	Adjacent Properties





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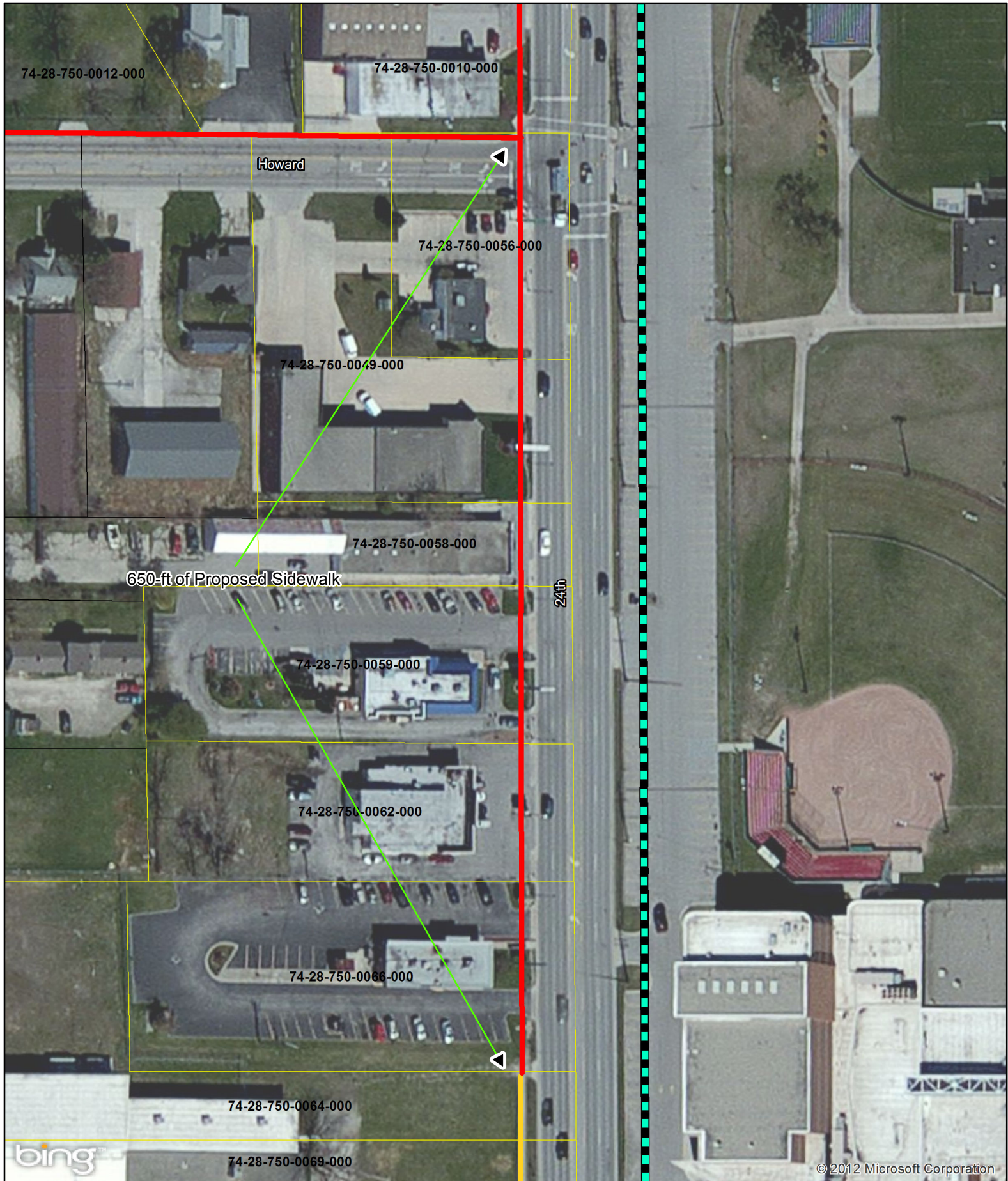
© 2012 Microsoft Corporation



Legend

- DDA Area
- Proposed Sidewalk
- Existing Sidewalk
- Adjacent Properties

Port Huron Township DDA Sidewalk Plan
 24th Street Section 2 Proposed Sidewalk



0 55 110 220 Feet

Port Huron Township DDA Sidewalk Plan

24th Street Section 3 Proposed Sidewalk

Legend

- - - DDA Area
- Proposed Sidewalk
- Existing Sidewalk
- Adjacent Properties





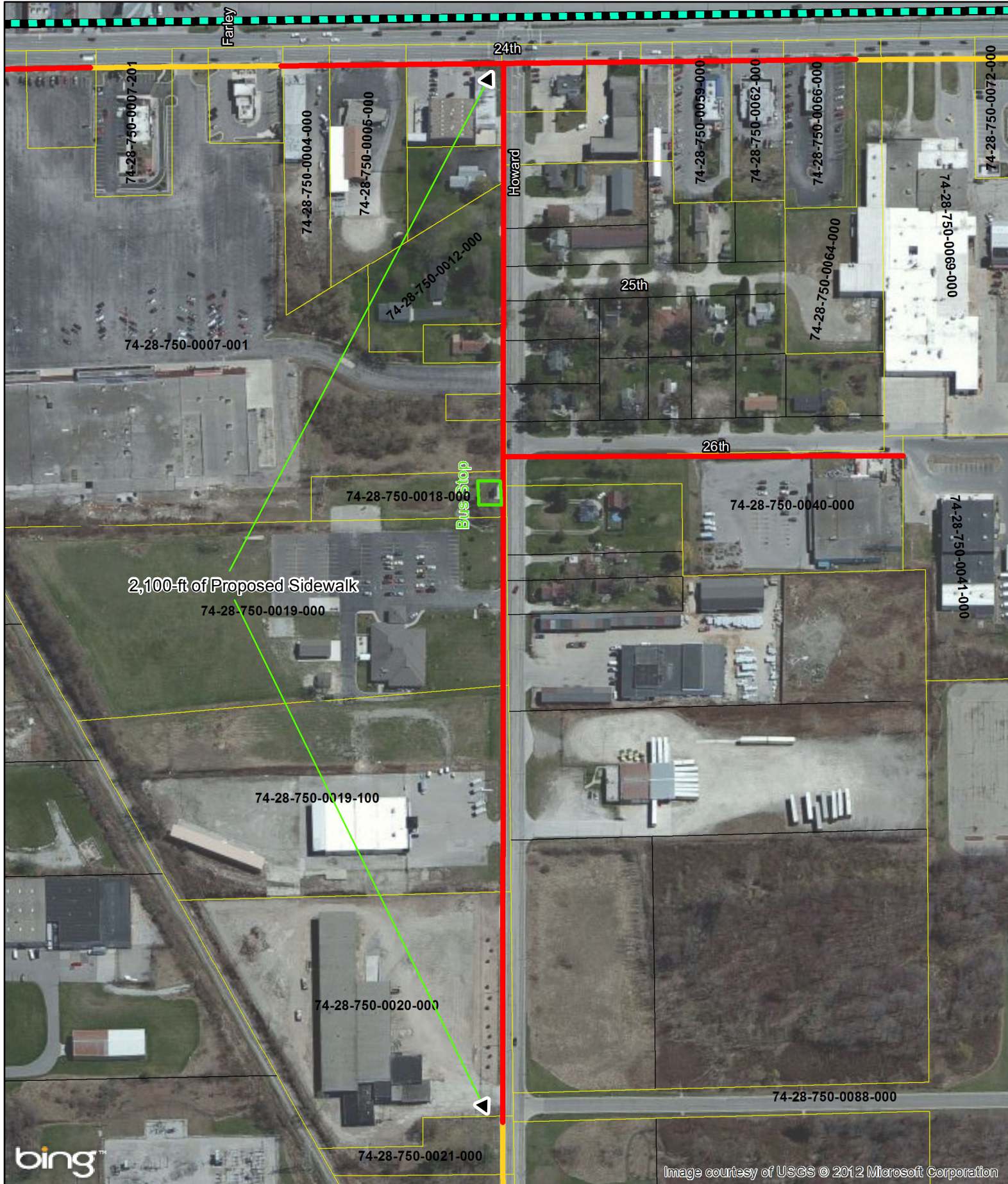
0 40 80 160 Feet

Legend

- DDA Area
- Proposed Sidewalk
- Existing Sidewalk
- Adjacent Properties

Port Huron Township DDA Sidewalk Plan
 24th Street Section 4 Proposed Sidewalk





0 145 290 580 Feet

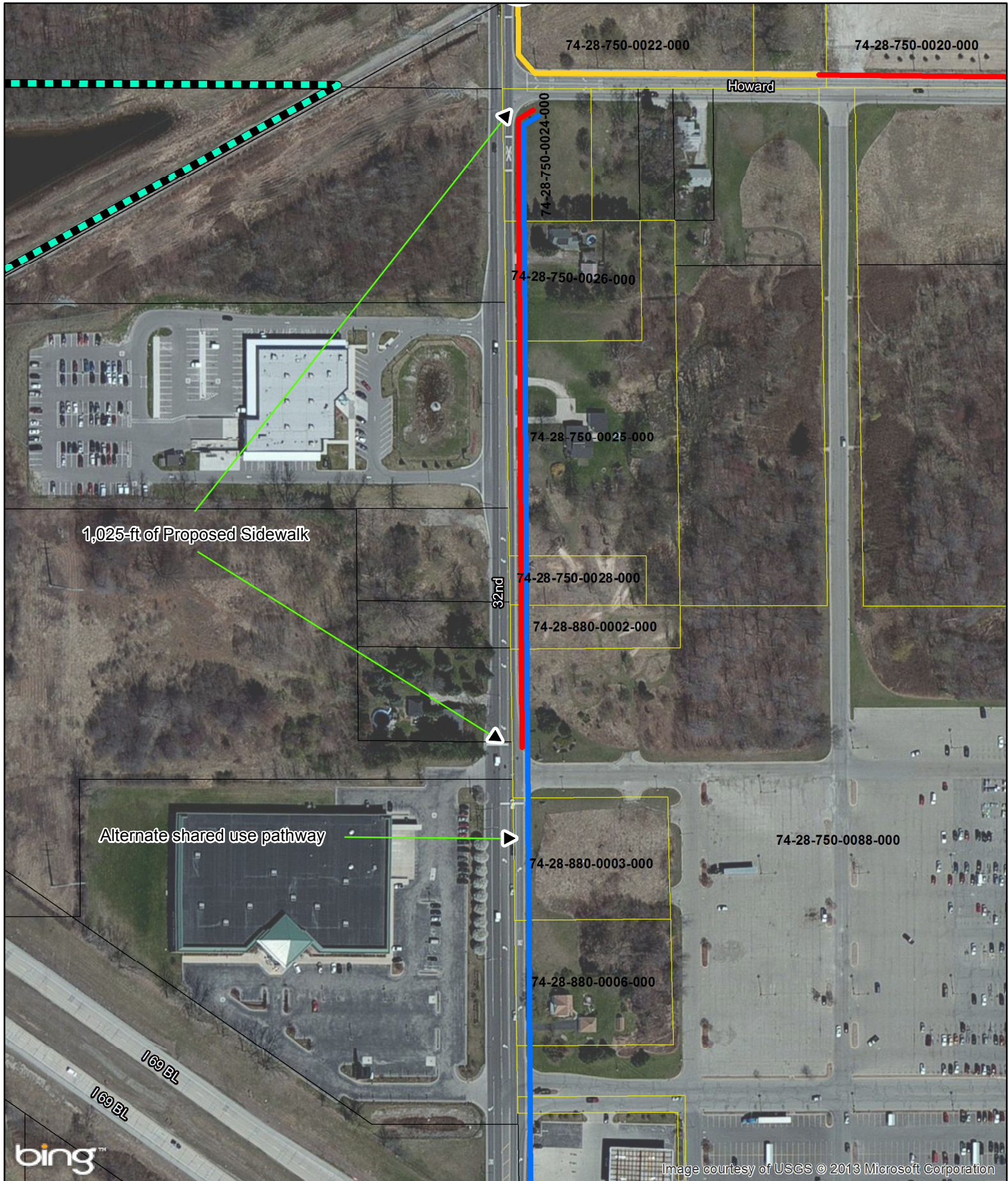
Port Huron Township DDA Sidewalk Plan






Howard Street Proposed Sidewalk

Legend

- DDA Area
- Proposed Sidewalk
- Existing Sidewalk
- Adjacent Properties

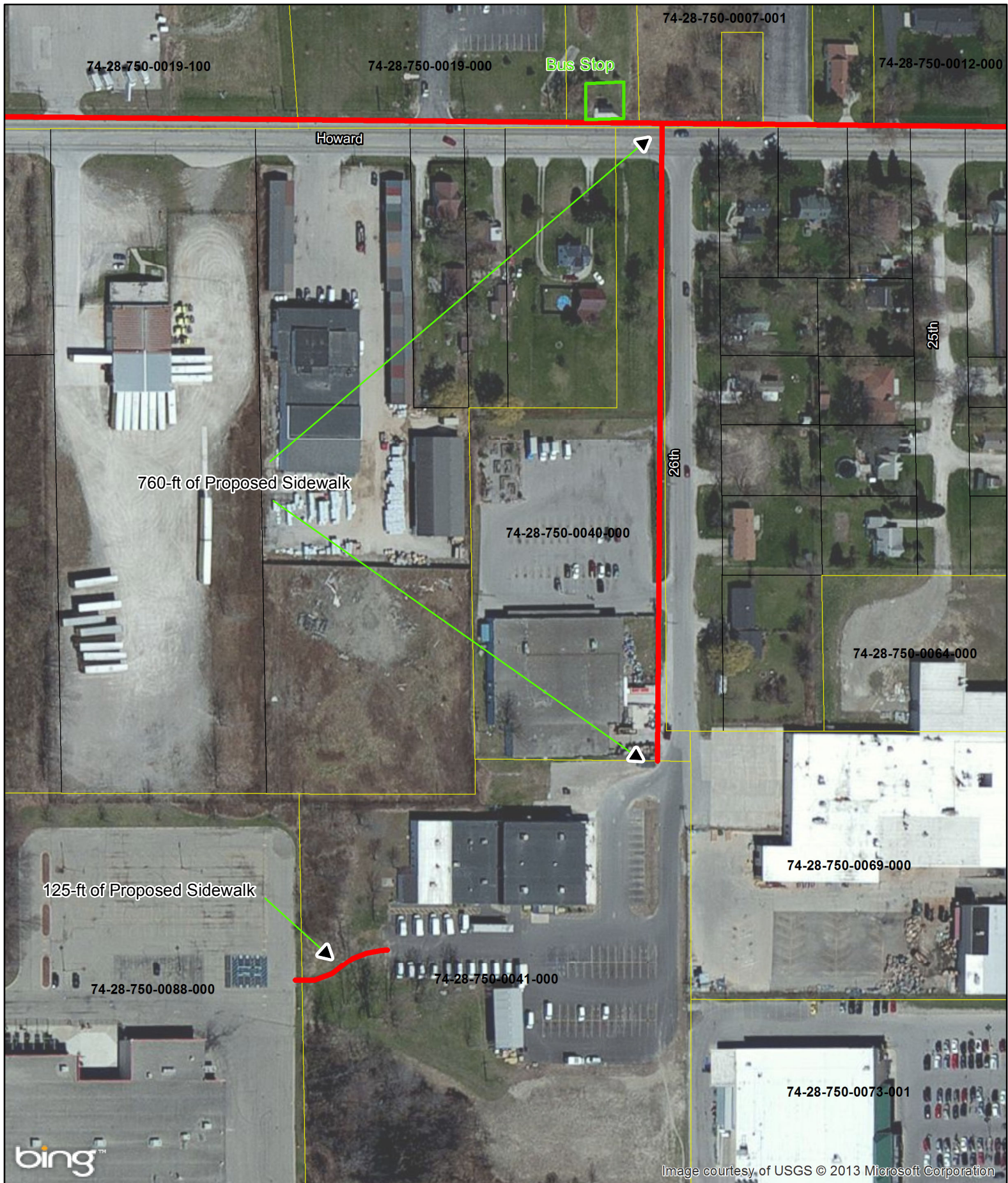




Legend	
	DDA Area
	Shared use path
	Proposed Sidewalk
	Existing Sidewalk
	Adjacent Properties

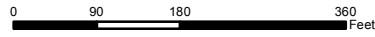
Port Huron Township DDA Sidewalk Plan
32nd Street Proposed Sidewalk





Legend

- DDA Area
- Shared use path
- Proposed Sidewalk
- Existing Sidewalk
- Adjacent Properties



Port Huron Township DDA Sidewalk Plan

26th Street and ARC Proposed Sidewalk



74-28-750-0088-000

74-28-750-0088-200

74-28-750-0088-100

74-28-750-0085-000

74-28-750-0073-001

74-28-360-0011-000

100-ft of Proposed Sidewalk

Chestnut

Harder

27th

bing™

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0 40 80 160 Feet

Legend

- DDA Area
- Proposed Sidewalk
- Existing Sidewalk
- Adjacent Properties

Port Huron Township DDA Sidewalk Plan

Chestnut Street Proposed Sidewalk



Sidewalk Section: Existing Walk West side of 24th Street, South of Lapeer, North of Howard.

Starting Location: Beginning at start of walk in front of Taco Bell

Station	Location Details	% Slope		Notes
		Long	Cross	
0+00		0.9	3.6	Begin 5-ft wide walk
0+10		0.3	2.1	
0+20		0.3	3	
0+30		0.9	2.8	
0+40		1.3	2	
0+50		0.1	3.2	
0+60		1.1	1.7	
0+70		0.8	2	
0+80		0.5	3.5	
0+90		0.9	2	
1+00		0.1	3	
1+10		0.5	2.3	
1+20		0.5	3	
1+30		0.6	3	
1+40		0.3	3.2	
1+50		1.3	3.9	
1+55	Begin Transition	0.8	3.5	
1+56	Transition	6	6	
1+62	Start Road	0.8	3.3	Entrance to parking lot
1+80	Center	0.5	3.1	
2+05	End Road	0.8	2.2	
2+10	Transition	4.8	2.1	
2+15	End Transition	0.2	3	
2+25		0.2	3.6	
2+39	Begin Transition	1.4	2.6	
2+42	Transition	3.1	5.1	
2+55	End Transition	0.8	3	
2+70	Road Center	0.3	2.5	
2+85	Begin Transition	0.7	4.7	
2+95	Transition	4.1	6.5	
3+02	End Transition	0.5	2.8	
3+10		0.3	2.9	
3+20	Transition	5.3	4.6	
3+43	CL Drive Thru	0.3	1.9	
3+60	Transition	4.1	3.8	
3+82	End Walk	0.5	0.8	
3+92			1.1	
4+00	Drive		1.8	
4+10			0.9	
End				

Sidewalk Section: Existing walk on N side of Howard, East of 32nd
Starting Location: Beginning at Drive approach appr. 450 ft east of 32nd

Station	Location Details	% Slope		Notes
		Long	Cross	
0+00		0.7	0.7	5-ft walk, grass growing over edges
0+38	drive approach	5	2.6	18 ft wide drive
0+56		3.9	2	
0+84	low spot	0.2	1.9	low spot, looks like water accumulates
1+05		1.4	2.2	walk heaving on N side 1/2 lip
1+15		1.5	2.6	walk heaving on N side
1+25		1.6	3.1	walk heaving on N side
1+35		0.8	3	walk heaving on N side
1+45		0.8	3	walk heaving on N side
1+50			2	
1+60		0.2	1.5	walk flattened out
1+75		0.6	1.3	weeds in crack
1+85		0.9	0.4	
1+95			2.2	walk heaving on South Side
2+00			2.8	
2+10			2.1	
2+15			2.5	
2+25			2.3	
2+30	drive approach	2.4	1.8	Begin approach to vacant lot 18-ft wide
2+40	middle of drive	1.2	1.7	
2+48	end of drive	4.1	2.7	
2+50			2.2	
2+60			2.8	
2+70			2	
2+80			2.3	
2+90			3.1	
3+00		1.6	3.3	
3+10			3.5	
3+20			2.6	
3+30			2.6	
3+40			1.9	
3+50			3.1	
3+60			2.3	
3+70			1.8	
3+80			1.5	
3+90			1.2	
4+00			1	
4+10			2.8	
4+20			2.8	
4+25			3.6	begin crosswalk transition down
4+30		1.1	6.2	up cross walk transition
4+40		2.9	2.7	

Sidewalk Section: Existing walk on E side of 32nd, North of Howard, South of Lapeer

Starting Location: Beginning at Howard Street Stop Sign Heading North along 32nd.

Station	Location Details	% Slope		Notes
		Long	Cross	
0		2.4	3.2	5-ft wide walk, grass growing into walk
10		2.5	1.6	4 to 6 inches on each side
20		2.1	0.3	
30		1.7	0.2	
40		1	0.3	
50		1.6	0.1	
60		0.2	0.5	
70		0.6	0.3	
80		0.4	0.7	
90		0.3	0	
95			0.2	begin jog around RR crossing sign
110		1.6	0.1	large gaps in RR crossing
120		1.6	0.6	
130				
140		0.7	0.4	
150		0.1	0.5	
160		1.1	0.2	
170		2.2	0.1	
180		0.7	1.8	
190		0.3	1.9	
200		0.1	2.1	beginning to slant toward low area(swamp)
205		1.8	2.4	
210		0.9	2.4	
220		0.1	2.3	
230		0	2.5	
240		0.1	2.9	
250		0.1	3	
260		0.1	2.7	
270		0.1	2.5	
280		0.2	2.7	
290		0.8	2.1	
300		0.1	1.7	
310		0.9	0.9	
320		0	1.3	
330		0	1.3	
340		0.4	1.9	
350		0.9	0.8	
360		0.5	0.1	
370		0.9	0.9	
380		0.9	0.8	
390		0.4	1.6	
400		0.7	0.8	

Station	Location Details	% Slope		Notes
		Long	Cross	
410		0.6	1	
420		0.1	0.9	
430		0	0.7	
440		1.5	0.3	
450		1.9	0.8	
460		0.4	1.4	
470		0.8	1.1	
480		0.8	1.2	
490		0.2	0.9	
500		0.3	0.8	
510		0.7	1	
520		0.7	1.2	
530		0.1	1.4	
540		1.4	1.8	
550		0.6	0.7	
560	begin drive	0.5	4.2	1/2" lip at joint to drive
580	center of drive	0.3	2.4	
603	end drive	0.3	1.4	
605		0.9	2.9	
615		0.4	1.2	
625		0.5	1	
635		0.6	1.2	
645		1.2	1	
650		1.3	0.1	
660		1.4	1.5	
670		1	0.8	
680		0.3	0	
690		0.3	0.3	
700		1.3	0.8	
710		1.2	1.2	
720		0.1	0.9	
730		0.2	0.4	
740		0.8	0.6	
750		1.1	1.8	
760	manhole	1.3	2.3	slanting away from manhole(dte)
770		0.3	1.6	1/2" lip on DTE manhole
780		0	1.5	
790		0.2	1.1	
800		0.1	0.3	
810		0.3	0.5	
820		1.3	0.9	
830		0.3	0.2	
840		0.5	1.2	
850		0.9	2	
860		1.8	2.1	

Appendix C

Station	Location Details	% Slope		Notes
		Long	Cross	
870				4.5 slanting away from road
878	drive			5.8 inside edge settling
890	drive	1.4	0	
900	drive	0.5	0.9	
903	end drive	21	3.7	short steep transition
910		0.1	3.6	
920		0.4	3.6	
930		1	2.8	
940		0.3	3.2	
945	begin drive	18	3	
953	center	0.3	0	
962	end drive	23	2.4	
970		0.8	1.3	
980		0.5	2.7	
990		0.6	2.4	
1000		0.7	2	
1010		1.2	0.4	
1020		1.9	4.4	slanted toward road matching drive
1025	begin drive	1.9	4.8	
1026	transition	26	11.6	short steep transition, steep cross slope
1035	center of drive	1.2	9.9	on drive, 3/4" gap at joint
1045	transition	28	9.4	
1046	end drive	0.6	6.3	
1050		1.6	6	
1060		0.6	4	
1070		1	3.1	
1080		0.9	3.5	
1090		0.2	1.9	
1100		1	0.9	
1110		0.6	1	
1120		0.4	0.4	
1130		0.2	0.6	
1140		0.2	0	DTE manhole, flush with concrete, 1/2"
1150		0	0.4	raised letters
1155	begin drive	1.8	1	
1156	transition	10.9	4.4	short steep transition, 1" gap at joint,
1164	center of drive	1.4	3.5	3/4" gap at center joint
1171	transition	16.4	4.3	
1173	end drive	1.8	0.6	
1180		0.8	1.2	
1190		1.1	1.5	
1200		1.2	1.8	
1210		1.4	2.2	
1220		0.2	2.6	
1230		0.8	2.5	

Appendix C

Station	Location Details	% Slope		Notes
		Long	Cross	
1240		1.1	3.1	
1250		0.9	2.1	
1260		0.1	2.5	
1270		1.2	1.3	
1280		1.5	1.3	
1290		1	1.8	
1300		0.6	1.6	
1310		0.3	0	
1320		1	0.8	
1327	begin drive	4.7	2.4	100-ft wide industrial drive,
1330	edge of road	0.7	1.4	1" lip at curb cut
1350	center of road	0.4	1 3/4"	lip at crack
1370	edge of road	0.3	0.7	
1375	transition, end drive			
1380		1.6	0.6	
1390		0.2	3.9	
1400		0.7	2.3	
1406	begin drive	0.4	2.9	24-ft wide drive, weeds in joint, 3/4" lip,
1407	transition	20.3	2.1	steep transitions, 1" gap in joint
1414	center of drive	0.1	0.6	
1422	transition	7.6	1.3	
1423	end drive	0.8	3.3	
1430		0.1	3.7	
1440		0.9	2.5	
1450		0.2	2.2	
1460		0.6	0.3	
1470		0.3	0.4	weeds in joints
1480		0.7	1	
1490		1.5	0.9	
1500		0.9	0.4	
1510		1	0.8	
1520		1.5	1.1	
1523	begin drive	0.7	1.2	
1524	transition	14.2	4.4	
1537	center of drive	0.6	3	
1550	transition	14.3	3.6	
1552	end drive	0.2	0.8	
1560		0.1	0.1	
1570		0.4	0.2	
1580		0.7	1.3	
1590		0.1	1.1	
1600		0.4	1.9	
1610		0.7	2	
1620		0.5	0.6	
1630		0.7	1.5	

Station	Location Details	% Slope		Notes
		Long	Cross	
1640		0.3	1.2	
1650		0.3	1.4	
1660		0.2	1.5	
1670		0.6	2.7	Tree heaving walk
1680		0	2.7	
1690		1.3	3.9	
1700		1.3	2.9	
1710		3.6	1.2	Lapeer Rd. - Curb cut to west for crosswalk
1720	End			over 32nd. No crosswalk markings, poor conditions.

Sidewalk Section: Existing walk on W side of 24th, Mcdonalds area

Starting Location: Beginning at north property line of Wirtz Manufacturing heading south

Station	Location Details	% Slope		Notes
		Long	Cross	
0	5-ft wide	1.7	1	
10		1	1.3	
20		1.6	1.7	
30		0.2	1.1	
40		0.6	0.7	
50		0.4	1	
60		0.3	1.6	
70		1	1.8	
80		1	1.9	
90		1.4	2	
100		1.2	2.1	
101		2.1	2.7	
105		0.7	3.2	
109		2.4	2.1	
110		0.6	2.1	
120		0.8	2.3	
130		0.9	2	
140		0.7	1.9	
150		2.3	3.1	
155		1.1	3.3	
160		2.7	2.8	
170		0.7	2.1	
180		1.2	2	
190		2.9	3.2	
208		3.1	3.1	
226		3.3	3	
230		3.1	1.9	
240		2	1.7	
250		1.1	1.1	

Station	Location Details	% Slope		Notes
		Long	Cross	
260		0.8	0.7	
270		0.5	0.5	
280		0.9	0.9	
290		0.1	1.1	
300		0.9	1.2	
310		1.1	0.7	
320		2.3	1.6	
326		2.6		
344		1.1	1.5	
362		4.4	1.6	
370		2.2	1.9	
380		1.9	2.1	
390		2.1	2	
400		2	2.2	
410		1.7	1.9	
420		1.8	1.8	
430		1.9	1.8	
440		1.2	1.9	
450		0.7	1.8	
460		0.7	1.7	
470		1.2	1.6	
480		0.8	1.5	
490		0.8	1.6	
500		0.5	1.7	
510		0.4	1.2	
520		0.6	1.3	
530		0.9	1.7	
540		1.1	1.9	
550		1	2.1	
552				
560		1.6	2	
570		2.1	1.9	
572		1.7	2.1	
580		0.7	2.2	
598		0.6	2	
616		0.7	2.3	
624		1.1	2.1	
630		2.4	2.3	
640		1.9	2	
650		0.7	1.7	
660		0.9	1	
670		0.9	0.7	
680		1.1	0.6	
690		1	0.5	
700		0.8	0.8	

Station	Location Details	% Slope		Notes
		Long	Cross	
710		0.5	0.7	
720		0.3	0.7	
730		0.2	0.9	
740		0.2	1.1	
750		0.4	1.2	
760		0.5	1.5	
770		0.7	1.3	
780		0.6	1.4	
790		0.8	1.5	
800		0.8	1.1	
810		0.5	1.2	
820		0.4	1.1	
830		0.9	1	
840		1.1	1.6	
850		1.7	1.9	
860		2	2	
870	END			