



Stantec Consulting Michigan Inc.
3754 Ranchero Drive, Ann Arbor MI 48108-2771

May 5, 2021
File: 207585015

Attention: Ms. Jessica West, Community Development Manager
Pittsfield Charter Township
6201 West Michigan Avenue
Ann Arbor, MI 48108

Dear Ms. West,

Reference: Proposal for Professional Engineering Services - CDBG Stormwater Improvements

Pursuant to your request, Stantec Consulting Michigan Inc. (Stantec) is pleased to present below a detailed proposal to provide engineering services related to the Pittsfield Charter Township's (Township) CDBG Stormwater Improvements.

BACKGROUND AND UNDERSTANDING

In early 2021, Stantec prepared concept plans for stormwater improvements at ten (10) locations in the northeast quarter of the Township. In March 2021, the Township applied for a Community Development Block Grant (CDBG) through the Washtenaw County Office of Economic Development (OCED) to construct these stormwater improvements in CDBG eligible portion of the Township. The proposed locations for improvements are (see attached concept plans):

1. One (1) infiltration garden and one (1) rain garden at the corner of Hogback Road and Clark Road within the road right-of-way.
2. One (1) rain garden system on the south side of Clark Road just west of Golfside Road within the road right-of-way.
3. One (1) rain garden system on the south side of Packard Road at Randolph Court Drive and Hawks Avenue within the road right-of-way.
4. One (1) bio-swale/infiltration trench on the north side of Ellsworth Road just west of Carpenter Road within the road right-of-way.
5. One (1) existing stormwater detention area retrofit on Washtenaw County property on Washtenaw Avenue just east of Hogback Road, along with two (2) rain gardens, (1) infiltration basin and sidewalk along Hogback Road north of Washtenaw Avenue.
6. Two (2) infiltration gardens at the corner of Washtenaw Avenue and Carpenter Road. One is located on Michigan Department of Transportation property, and the second is located on private property currently owned by Palm Palace.
7. One (1) infiltration garden at 4205 Washtenaw Avenue on St. Luke's Lutheran Church property.

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Ms. Jessica West, Community Development Manager

Page 2 of 5

Reference: Proposal for Professional Engineering Services - CDBG Stormwater Improvements

8. One (1) infiltration garden and one (1) bio-swale/infiltration trench at 4775 Washtenaw Avenue on private property currently owned by McDonald's.
9. One (1) infiltration garden at 4925 Packard Road on Catholic Social Services property.
10. One (1) infiltration garden and wetland edge enhancement within the International Transmission Company (ITC) corridor at Carpenter Road.

The Township received a \$229,680.00 CDBG grant to be used for design and Phase 1 construction.

It is Stantec's understanding that the Township desires to design all ten (10) locations within the year and construct the project in two (2) phases. Phase 1 construction is desired to begin in 2021.

PROPOSED SCOPE OF WORK

The following is the proposed scope of work included in the proposal:

1. Project Kick-off: Meet with key stakeholders and review the goals and requirements of the project:
 - Pittsfield Township
 - Washtenaw County Road Commission (WCRC)
 - Michigan Department of Transportation (MDOT)
 - Washtenaw County Water Resources Commission (WCWRC)
 - Washtenaw OCED
2. Prepare a phasing plan for the construction of the ten (10) locations based on stakeholder feedback and conceptual cost opinions. It is assumed this plan will be refined one (1) time.
3. Base Information: Obtain background information on existing conditions.
 - Survey including topography, right of way limit, utilities, pavement, curbs, and significant vegetation.
 - Geotechnical investigation: Infiltration testing to be completed at each location. Thirteen (13) test pits are assumed for the proposal.
 - Review of title work: It is assumed that the Township will order title work on the properties where easements are to be obtained.
4. Easements: Prepare easement sketches for six (6) permanent easements. Easement drawings shall include a sketch of the permanent easement and a legal description. Front end documentation is assumed to be completed by the Township. Coordination with public and private property owners is assumed to be done by the Township.

Reference: Proposal for Professional Engineering Services - CDBG Stormwater Improvements

5. Design: Create construction plans based on the previously prepared concept plans for stormwater improvements. Design shall be done using WCWRC rules as the basis for design. Infiltration and soils information will be obtained from the geotechnical testing. The plans shall include:
 - Two (2) coversheets. One for each phase. Coversheet shall include locations, drawing index, and contact information.
 - Two (2) sets of general notes sheets. One for each phase. Sheet shall include general construction notes, symbol and line type legend.
 - Two (2) to four (4) sheets for each location to include: existing conditions, drainage area for each improvement, proposed grading and layout plan, proposed storm utility plan, proposed planting plan, maintenance plan, storm details, location specific notes, and permitting agency notes.
6. Permitting and utility coordination: Submittals to permitting agencies and utilities for all ten (10) locations. It is assumed the following agencies will require submittals:
 - Washtenaw County Road Commission (WCRC) right-of-way permit;
 - Michigan Department of Transportation (MDOT) right-of-way permit;
 - Washtenaw County Water Resources Commission (WCWRC) plan review;
 - Washtenaw County Office of Economic Development (OCED) plan review;
 - International Transmission Company (ITC) consent agreement;
 - Utility coordination with AT&T, DTE-Electric, DTE-Gas, Comcast, and Pittsfield utilities.
7. Bid Assistance: Assistance with bid preparation for Phase 1 construction. Includes preparation of technical specifications, front end specifications, coordination with Washtenaw OCED for CDBG requirements, advertising, answering bidder questions, and preparing a bid recommendation for the Township Board of Trustees.

PROJECT ASSUMPTIONS

The following are major project assumptions associated with our project scope of work:

- The work included in this proposal includes design for all sites, and bidding assistance for Phase 1 of construction.
- No more than thirteen (13) infiltration tests will be required by WCWRC. Additional geotechnical services are not included.

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Ms. Jessica West, Community Development Manager

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Reference: Proposal for Professional Engineering Services - CDBG Stormwater Improvements

- Easements are required for six (6) of the ten (10) locations. Easement sketches will be prepared by Stantec. Coordination with property owners and front end documentation will be completed by the Township.
- Public outreach will be by the Township.
- Any fees related to securing regulatory permitting/approvals will be paid by the Township and are not included in the design fees.
- Deliverables to the Township will include the 30% (preliminary), 60% (permit), and bidding sets.
- Up to two (2) separate phases of bid set documents may be required.
- One (1) re-submittal to each permitting agency is included in the proposal.
- Construction engineering is not included in this proposal.
- Phase 2 bidding assistance is not included in this proposal.

PROJECT SCHEDULE

Stantec will complete the design and bidding of Phase 1 by Fall, 2021. The design of Phase 2 will be complete by December, 2021. Phase 2 bidding will be assumed to be a part of a separate proposal.

PROJECT BUDGET

We propose to complete the engineering services on a time and material basis for a not-to-exceed fee of **\$85,000.00**.

The not-to-exceed budget amount stated about includes all fees for the work described in this proposal, including reimbursable charges such as charges for sub-consultants and other specialized services described above.

Please note that this work would be conducted under the General Engineering Services Agreement that has been previously executed between the Township and Stantec Consulting Michigan Inc.

If the above proposal meets your approval, please sign this proposal letter and return a copy to our office.

We appreciate this opportunity to provide professional services to the Township. If you have any questions regarding the above information, please do not hesitate to contact us.

Reference: **Proposal for Professional Engineering Services - CDBG Stormwater Improvements**

Regards,

Stantec Consulting Michigan Inc.



Claire Martin PE
Project Manager
Phone: 734-214-2502
Claire.Martin@stantec.com



Mark D. Pascoe PE, LEED AP, ENV SP
Principal
Phone: 734-214-1865
Mark.Pascoe@stantec.com

Attachment: Project Concept Map

ACKNOWLEDGED AND ACCEPTED:

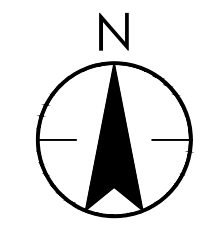
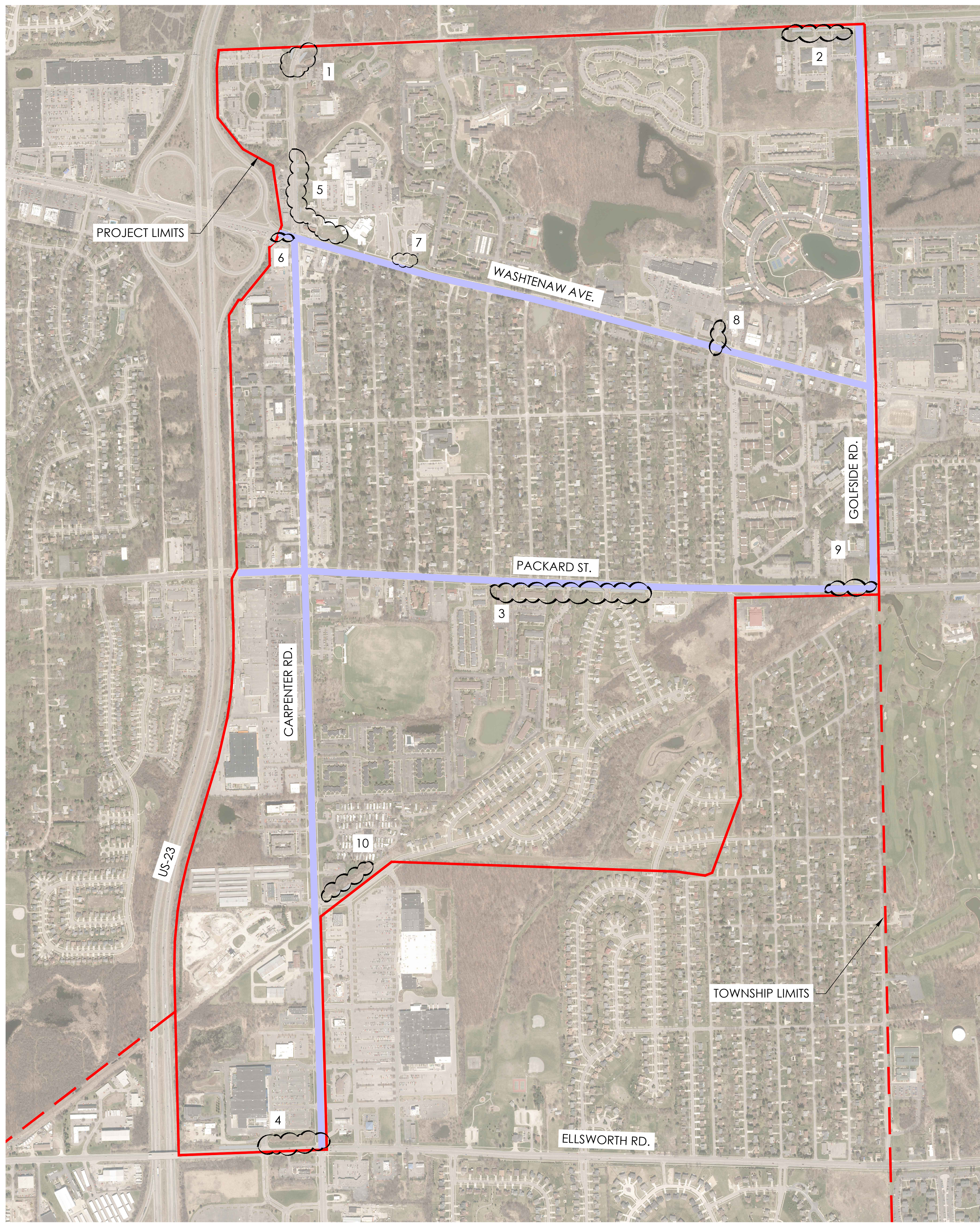
PITTSFIELD CHARTER TOWNSHIP

Mandy Grewal
Township Supervisor

_____, 2021

Michelle L. Anzaldi
Township Clerk

_____, 2021



- #1 Hogback Road and Clark Road
 - Infiltration and rain gardens
 - Public ownership
 - Within Washtenaw County Road Commission road right of way
- #2 Clark Road west of Golfside Road
 - Rain garden
 - Public ownership
 - Within Washtenaw County Road Commission road right of way
- #3 Packard Road at Randolph Court Drive and Hawks Avenue (South side of road)
 - Rain garden
 - Public ownership
 - Within Washtenaw County Road Commission road right of way
- #4 Ellsworth Road east of Carpenter Road (near Lowes)
 - Bio-swale/infiltration Trench
 - Public ownership
 - Within Washtenaw County Road Commission road right of way
- #5 Washtenaw County Complex at Hogback Road and Washtenaw Avenue
 - Rain and infiltration gardens and Stormwater detention retrofit
 - Public ownership
 - Within Washtenaw County Complex location of Sheriff's office, County Jail, District Court, and other County services.
- #6 Washtenaw Avenue at US 23 and Carpenter Road (Palm Palace)
 - Infiltration garden
 - Public and private ownership
 - Public within Michigan Department of Transportation (MDOT) US-23 road right of way
 - Private within Restaurant Leasing Pittsfield LLC Palm Palace, 2370 Carpenter Road
- #7 4205 Washtenaw Avenue (St. Luke's Lutheran Church)
 - Infiltration garden
 - Private ownership, within St. Luke's Lutheran Church property
- #8 4775 Washtenaw Avenue (McDonalds)
 - Infiltration garden and Bio-swale/infiltration Trench
 - Private ownership, within McDonalds Corporation property
- #9 4925 Packard Road (Catholic Social Services)
 - Infiltration garden
 - Private ownership, within Catholic Social Services property
- #10 Carpenter Road (ITC Corridor)
 - Infiltration garden and Wetland Edge Enhancement
 - Private ownership, within International Transmission Corporation electrical transmission corridor



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Consultant

Legend

2 OPPORTUNITY

OPPORTUNITY AREA

A	PRELIMINARY PLAN	AMS	MDP	2021.01.26
Issued		By	Acqd	YYYY.MM.DD
File Name:	001316C-PR	BWA	AMS	MDP
		Dwn.	Dgri.	Chkd.
				YYYY.MM.DD

Permit/Seal



Client/Project
PITTSFIELD CHARTER TOWNSHIP

PITTSFIELD CHARTER TOWNSHIP 2021 CDBG
STORMWATER IMPROVEMENTS
Pittsfield Township, Michigan

Title
CONCEPTUAL OPPORTUNITIES
AND CONSTRAINTS
OVERALL MAP

Project No.
2075001316

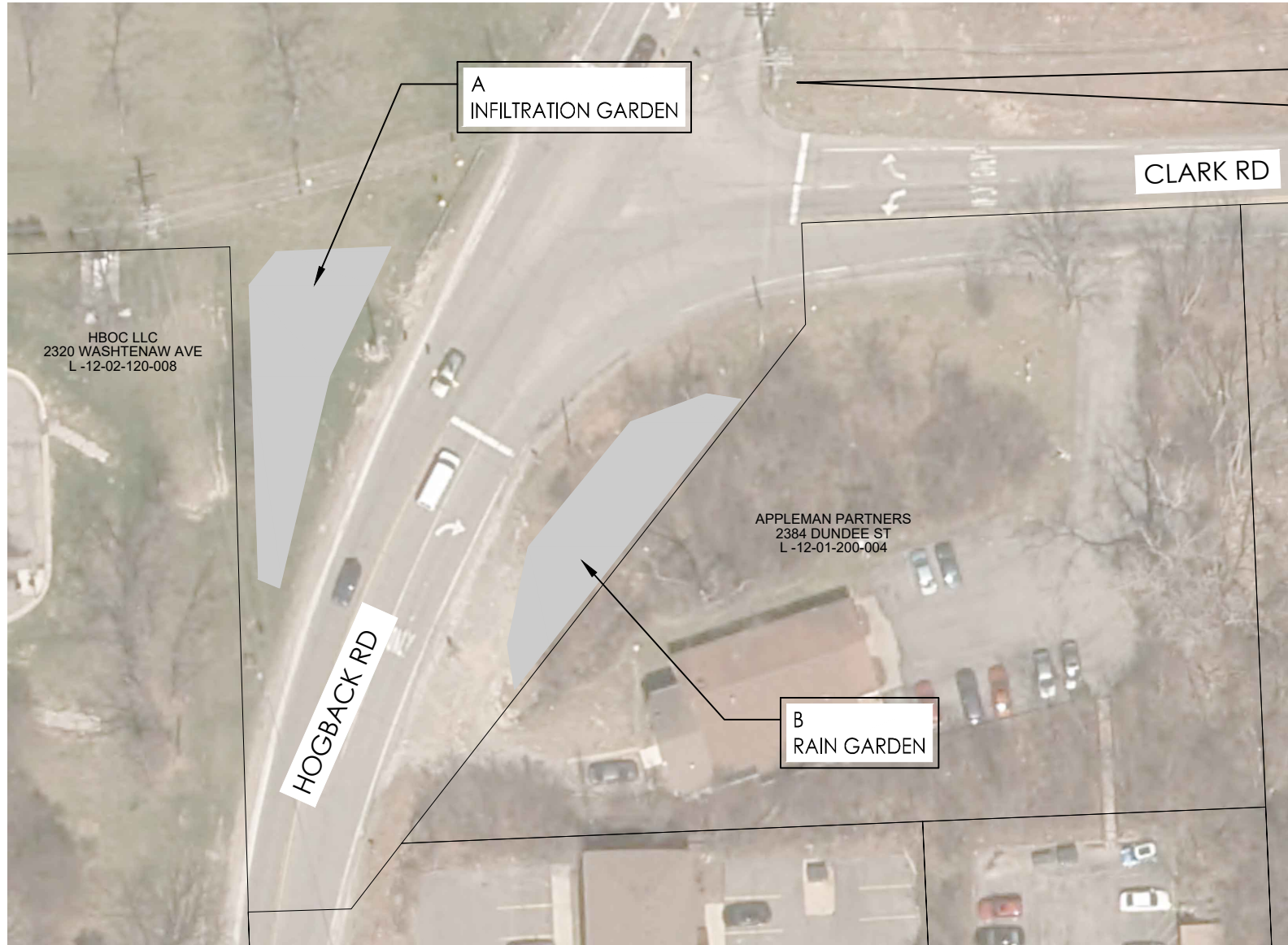
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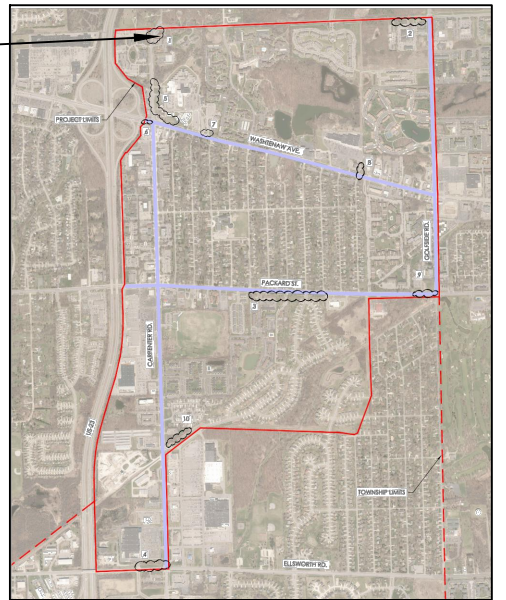
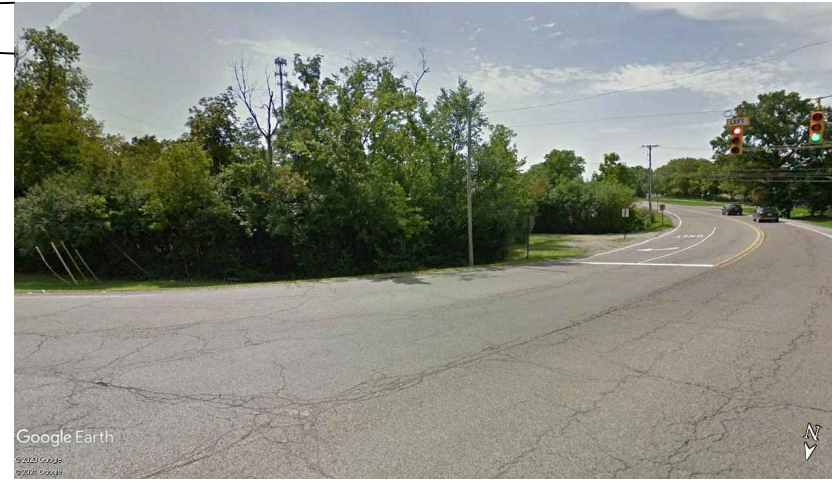
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PROJECT LOCATION



LOCATION MAP

#1 Hogback Road and Clark Road

A. Infiltration Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding uphill lawn, parking lot, office building and utility infrastructure. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent public roadway. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 80 feet (1,600 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

B. Rain Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the adjacent public roadway. The garden will capture sediment, retain this stormwater and provide water quality treatment. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce downstream flows. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration. The design may also include overflow structures and under drains.

Size: Approximately 20 by 100 feet (2,000 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- The area should be inspected annually for build-up of sediment. Removal of large deposits should be undertaken regularly.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

Areas A and B are within the public road right of way under the jurisdiction of the Washtenaw County Road Commission. A letter of understanding may be needed between the Township and Road Commission. Easements are not anticipated.

PLAN VIEW
SCALE: 1" = 50'



Stantec Consulting Michigan Inc.
3754 Rancho Drive
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Tel: (734) 761-1010
www.stantec.com

A	PRELIMINARY REVIEW	AMS	MDP	2021.02.16
Issued		By	Appd	YYYY.MM.DD

811
Know what's below.
Call before you dig.

NOTE:
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Client
PITTSFIELD CHARTER TOWNSHIP

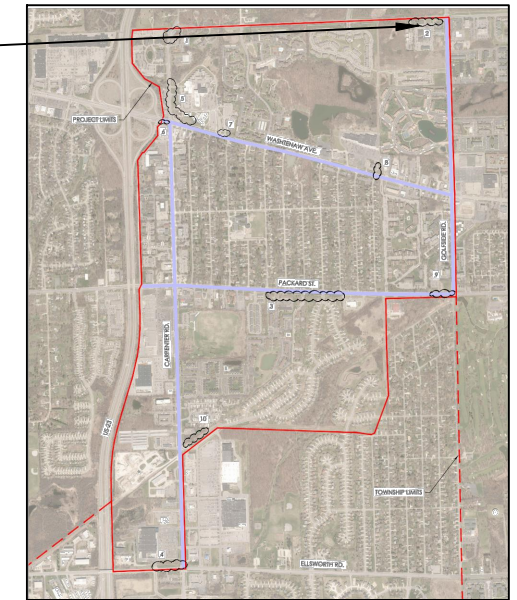
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**PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS**

Title
HOGBACK RD & CLARK RD.

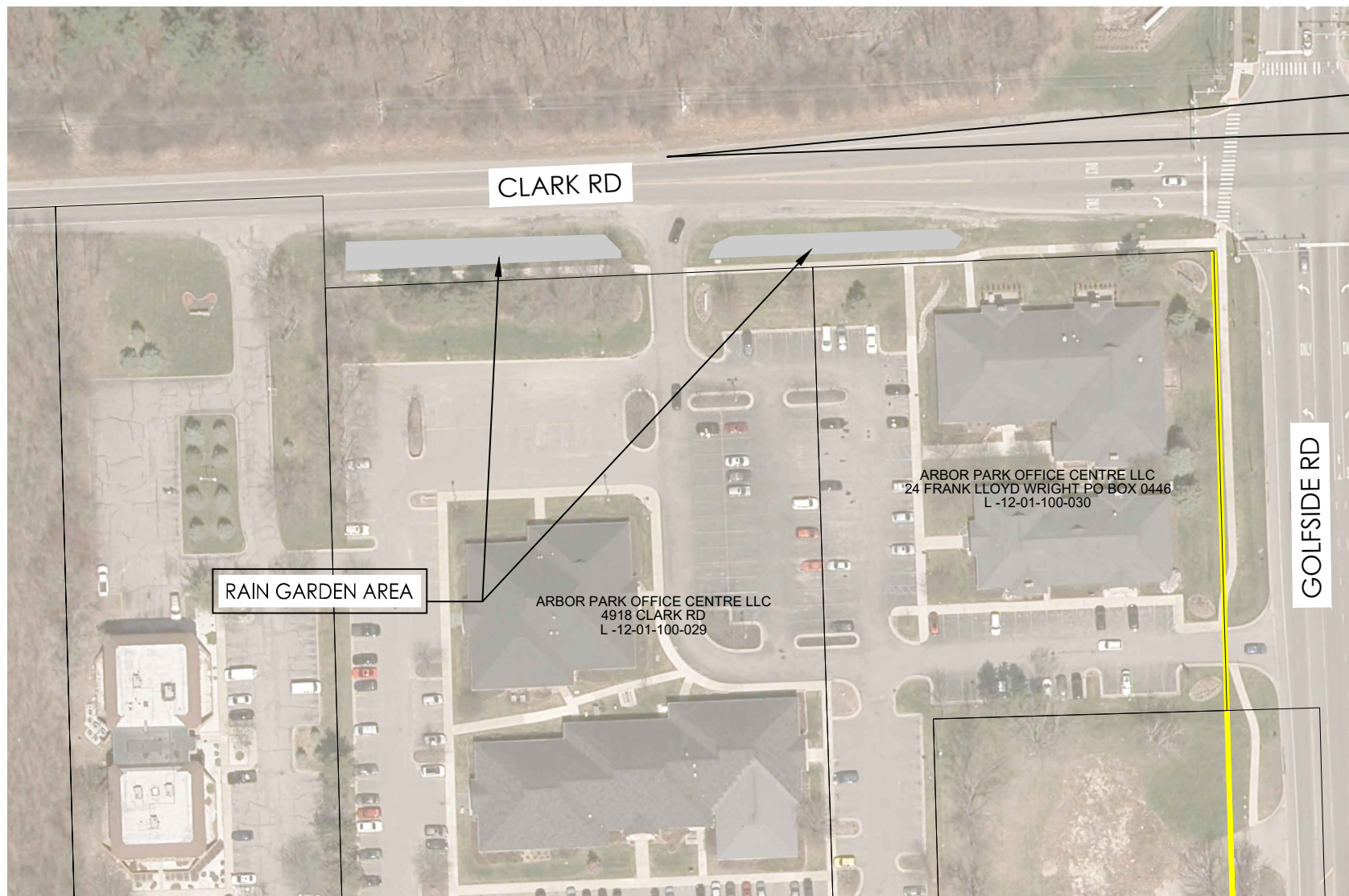
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Sheet 1 of 1



PROJECT LOCATION



LOCATION MAP



PLAN VIEW
SCALE: 1" = 100'



#2 Clark Road west of Golfside Road

Rain Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the adjacent public roadway and sidewalk. The garden will capture sediment, retain this stormwater and provide water quality treatment. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce downstream flows. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration. The design may also include roadside spillways and armored flow channels, overflow structures and under drains.

Size: Approximately 15 by 320 feet (4,800 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- The area should be inspected annually for build-up of sediment. Removal of large deposits should be undertaken regularly.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

Area is within the public road right of way under the jurisdiction of the Washtenaw County Road Commission. A letter of understanding may be needed between the Township and Road Commission. Easements are not anticipated.



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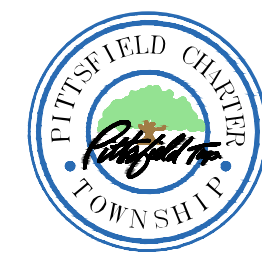


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Issued		By	Appd
			2021.02.16
			YYYY.MM.DD

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Client
PITTSFIELD CHARTER TOWNSHIP

Project
PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS

Title
GOLFSIDE RD & CLARK RD.

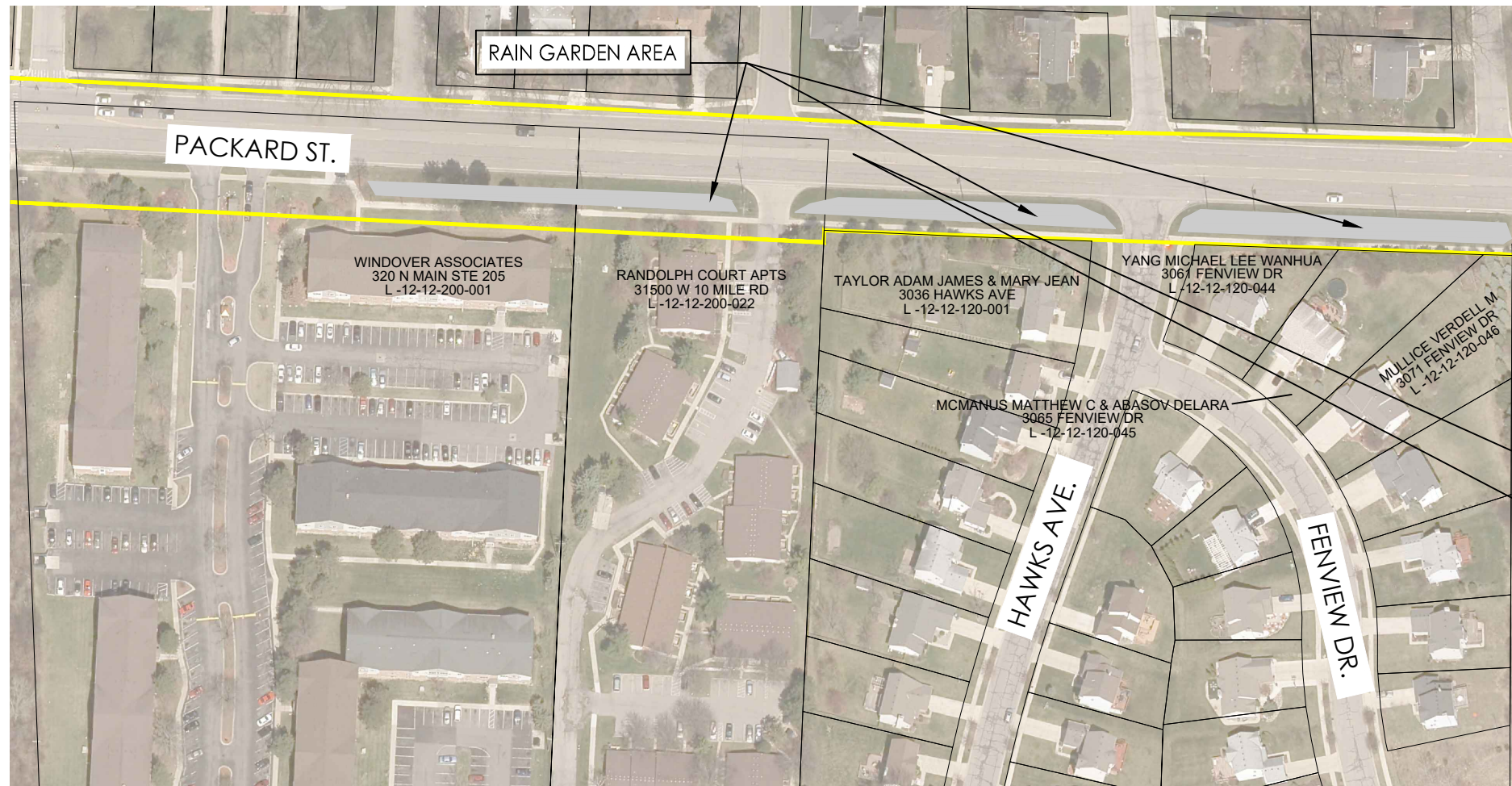
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1 of 1

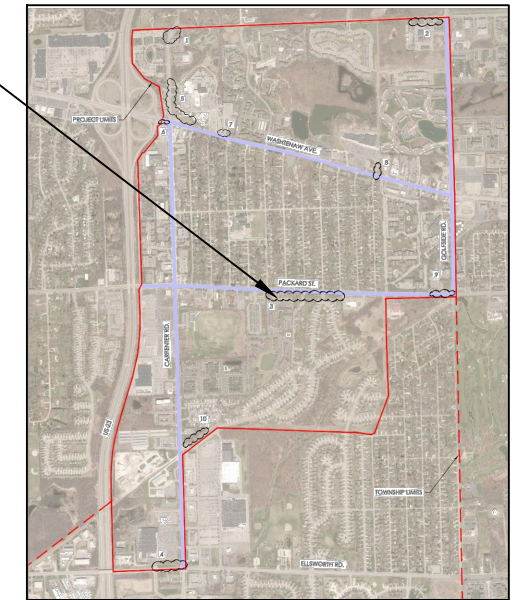
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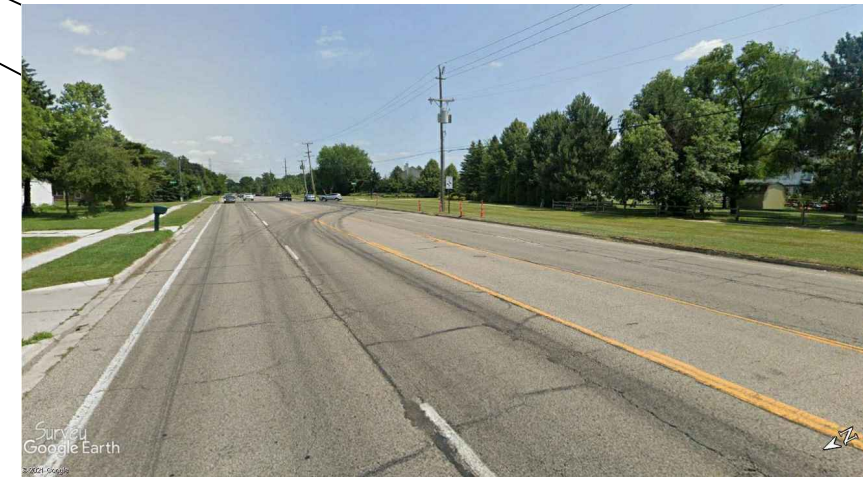
PLAN VIEW
SCALE: 1" = 150'



PROJECT LOCATION



LOCATION MAP



#3 Packard Road at Randolph Court Drive and Hawks Avenue (South side of road)

Rain Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the adjacent public roadway and sidewalk. The garden will capture sediment, retain this stormwater and provide water quality treatment. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce downstream flows. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration. The design may also include removal of curb segments and installing concrete spillways, overflow structures and under drains.

Size: Approximately 30 by 1,000 feet (30,000 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- The area should be inspected annually for build-up of sediment. Removal of large deposits should be undertaken regularly.
- Large bare areas may require additional plantings.
- Deadheading and detaching may be required annually in the spring.

Area is within the public road right of way under the jurisdiction of the Washtenaw County Road Commission. A letter of understanding may be needed between the Township and Road Commission. Easements are not anticipated.

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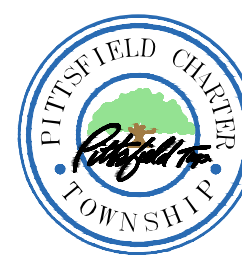
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Client
PITTSFIELD CHARTER TOWNSHIP
Project
PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS
Title
PACKARD ST.

Project No.
2075001316

Scale

Drawing No.
3

Sheet
1 of 1

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PLAN VIEW
SCALE: 1" = 150'



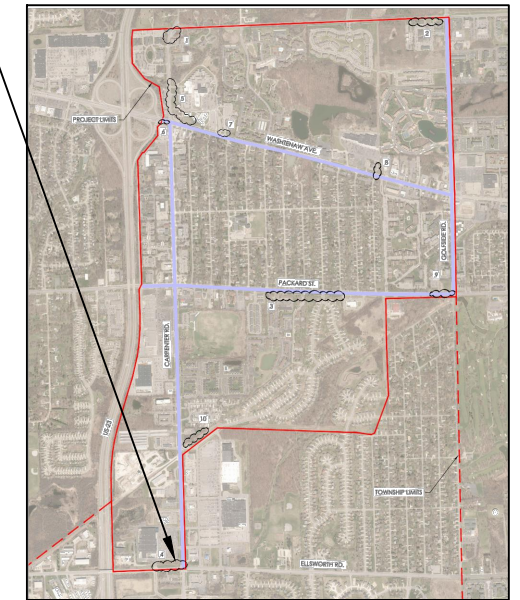
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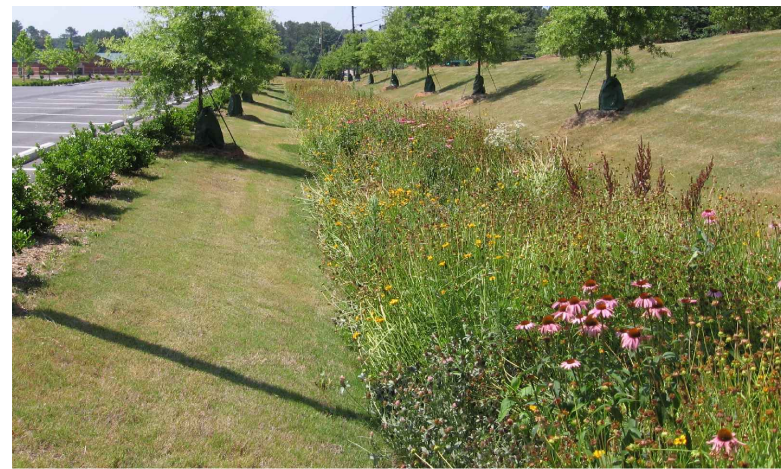
Carpenter Road and Ellsworth Road (Lowe's Looking East)



Carpenter Road and Ellsworth Road (Lowe's Looking West)



LOCATION MAP



#4 Ellsworth Road east of Carpenter Road (near Lowe's)

Bio-swale/infiltration Trench

Design Intent: The design intent of the bio-swale/infiltration trench is to encourage stormwater within the roadside ditch to infiltrate through the use of native plants and augmented topsoil and subsoils. The plantings will capture sediment and absorb rainwater while the subsoil treatment will encourage infiltration and provide water quality treatment. Non-native invasive species within the existing ditch will be removed and a mix of native grasses and sedges will absorb the water and reduce downstream flows will be seeded. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration. The design may also include stone check dams, overflow structures and under drains.

Size: Approximately 30 by 400 feet (12,000 square feet).

Maintenance: Maintenance should decrease as the seeding become established, under typical climate conditions the plantings should not need to be watered, mowed or fertilized.

- Mulching of the area will be necessary until the seedlings fill in the voids of the swale.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- The area should be inspected annually for build-up of sediment. Removal of large deposits should be undertaken regularly.
- Large bare areas may require additional seeding.
- Monitor for non-desirable species and remove and re-seed as needed.
- Dethatching may be required annually in the spring.

Area is within the public road right of way under the jurisdiction of the Washtenaw County Road Commission. A letter of understanding may be needed between the Township and Road Commission. Easements are not anticipated.

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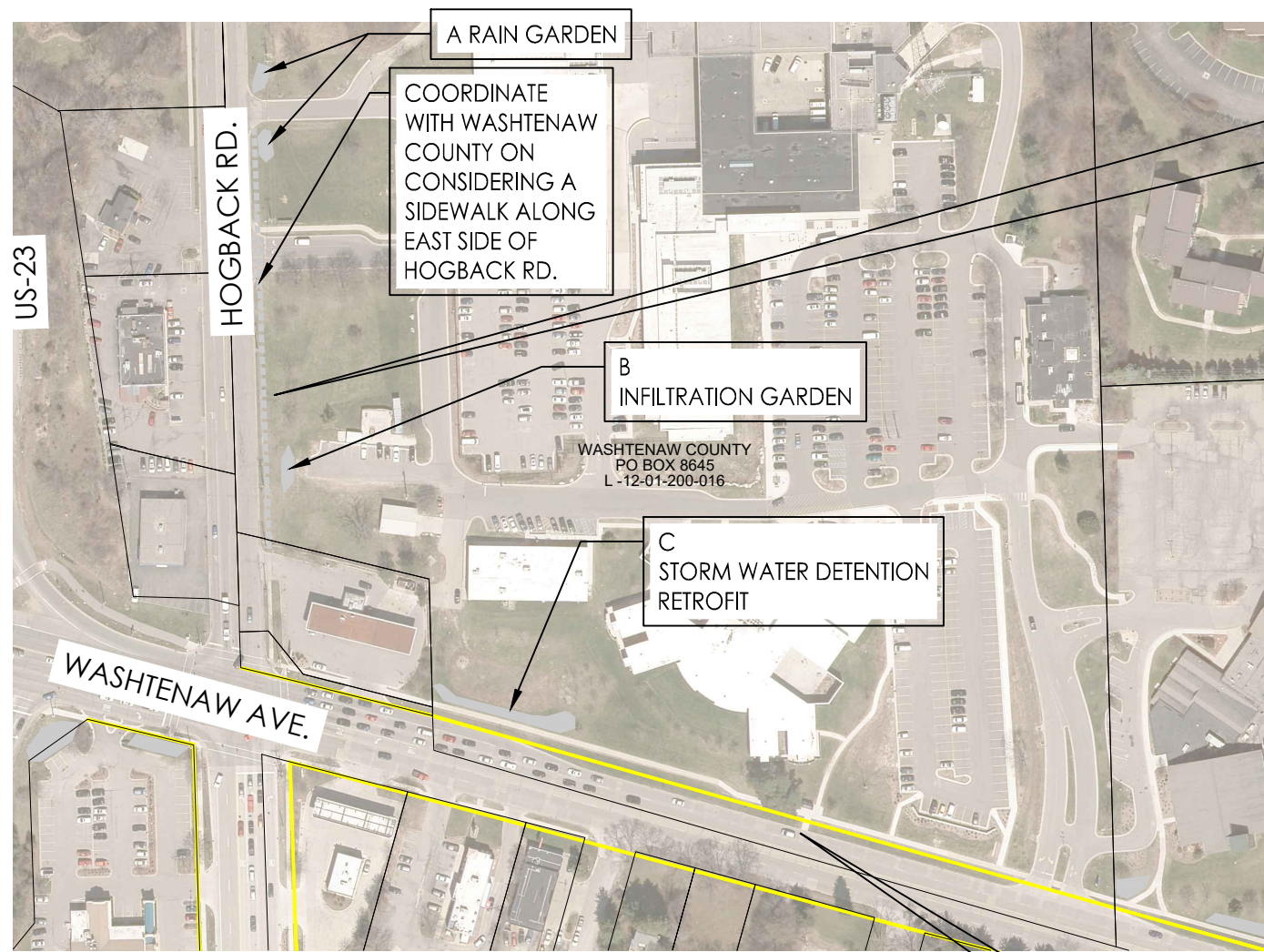


Client
PITTSFIELD CHARTER TOWNSHIP
Project
PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS
Title
ELLSWORTH ROAD

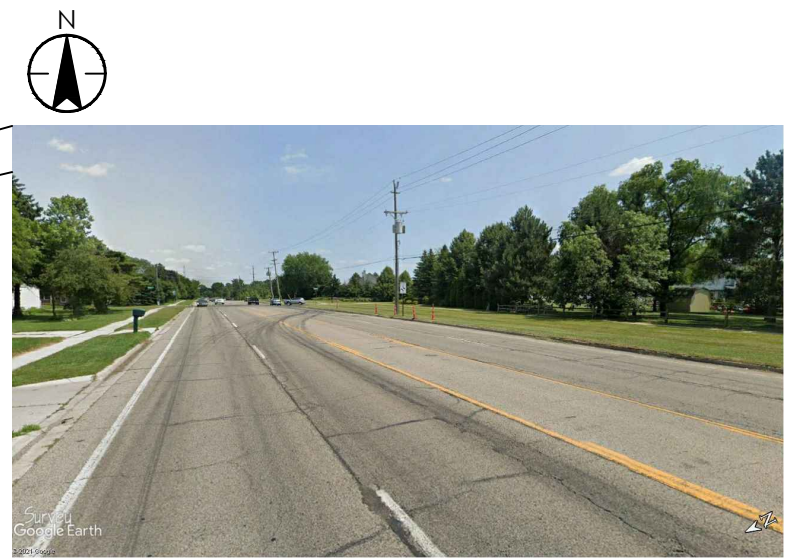
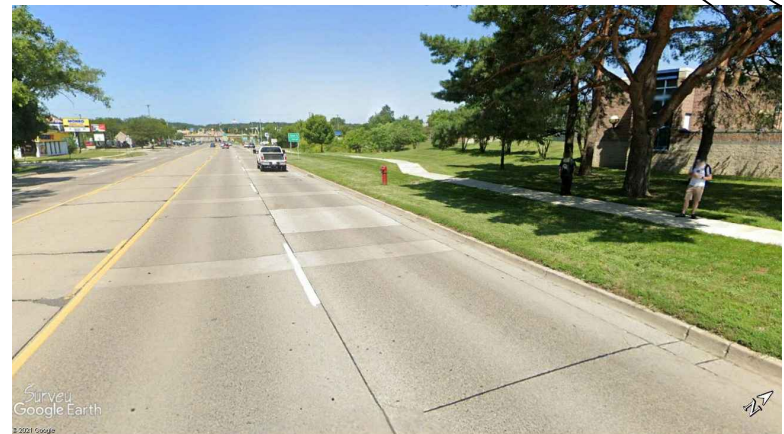
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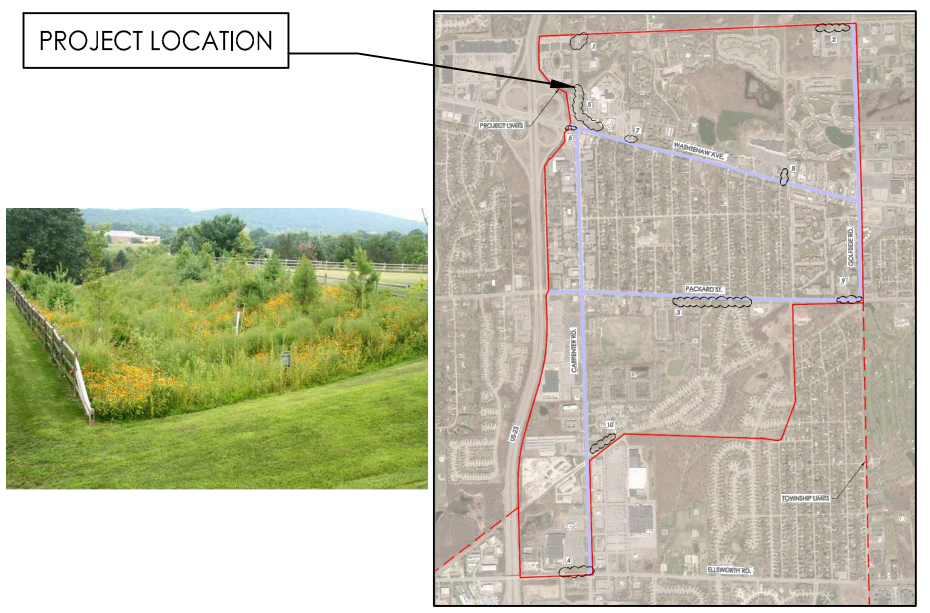
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PLAN VIEW
SCALE: 1" = 200'



#5 Washtenaw County Complex at Hogback Road and Washtenaw Avenue



LOCATION MAP

A. Rain Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the adjacent public roadway, interior driveways, sidewalk, and lawn areas. The garden will capture sediment, retain this stormwater and provide water quality treatment upstream of Swift Run. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce downstream contributions. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration. The design may also include spillways, armored flow channels, overflow structures and under drains.

Size: Approximately 30 by 100 feet (3,000 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- The area should be inspected annually for build-up of sediment. Removal of large deposits should be undertaken regularly.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

B. Infiltration Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding uphill lawn, parking lot, and county building. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent public roadway and the proposed rain gardens. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 50 feet (1,000 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

C. Stormwater Detention Retrofit

Design Intent: The design intent of the stormwater retrofit is to discourage non-native invasive species along the southern edge of the detention basin and encourage infiltration of stormwater from the adjacent sidewalk by utilization of an infiltration trench along the edge of the sidewalk. The trench will encourage infiltration through the use of native plants and augmented topsoil and subsoils. The plantings will capture sediment and absorb rainwater while the subsoil treatment will encourage infiltration and provide water quality treatment. Non-native invasive species within the existing ditch will be removed and a mix of forbs (perennials, grasses and sedges) will be seeded. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 200 feet (4,000 square feet).

Maintenance: Maintenance should decrease as the seeding become established, under typical climate conditions the plantings should not need to be watered, mowed or fertilized.

- Mulching of the area will be necessary until the seeding fills in.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Large bare areas may require additional seeding.
- Monitor for non-desirable species and remove and re-seed as needed.
- Deadheading and dethatching may be required annually in the spring.

These areas are on property belonging to Washtenaw County. Easements or a letter of understanding may be needed between the Township and the County.



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www.stantec.com

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Issued		By	Appd	YYYY.MM.DD

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Client
PITTSFIELD CHARTER TOWNSHIP

Project
**PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS**

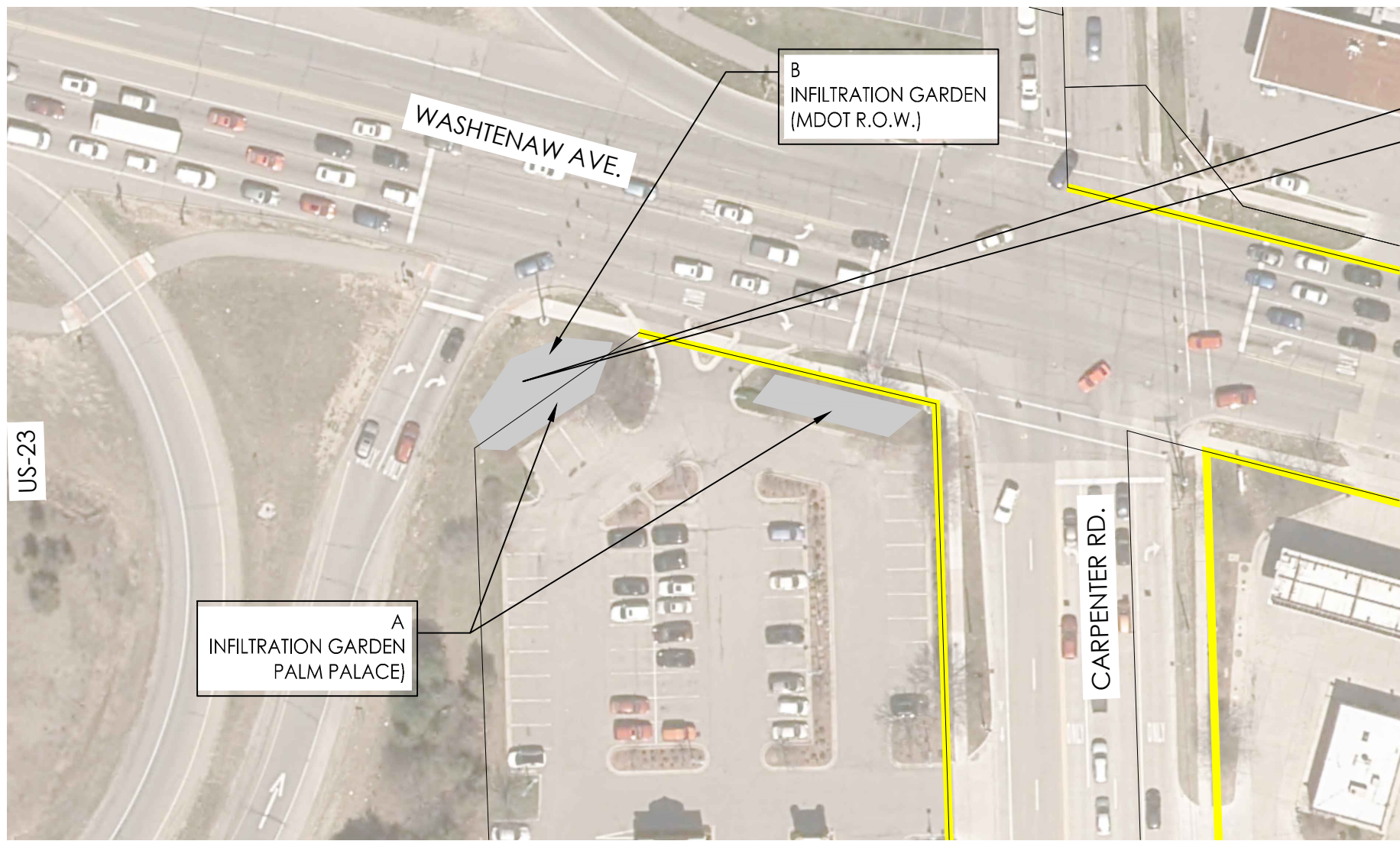
Title
WASHTENAW COUNTY COMPLEX

Project No.
2075001316

Scale

Drawing No.
5

Sheet
1 of 1



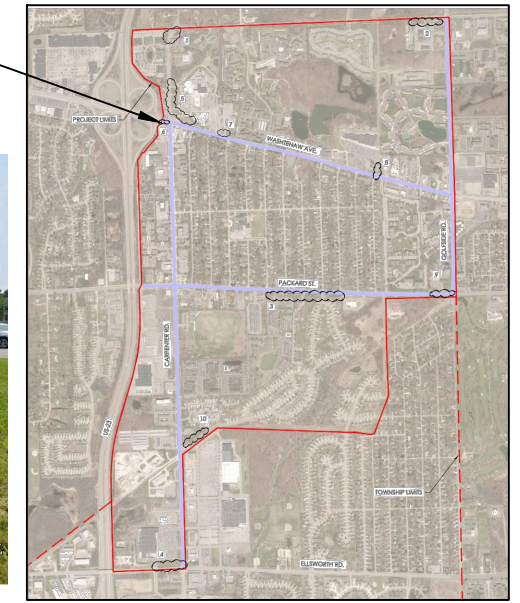
PLAN VIEW
SCALE: 1" = 60'



PROJECT LOCATION



#6 Washtenaw Avenue at US 23 and Carpenter Road (Palm Palace)



LOCATION MAP

A. Infiltration Garden (Palm Palace)

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding landscape area and parking lot. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent public roadway and highway offramp. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 130 feet (2,600 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

Easement: The land is privately owned by Restaurant Leasing Pittsfield LLC Palm Palace and an easement will be necessary.

B. Infiltration Garden (Michigan Department of Transportation -MDOT)

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding landscape area. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent highway offramp. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 30 by 70 feet (2,100 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

Easement: The land is publicly owned by MDOT a letter of understanding between the State and Pittsfield Township may be needed.

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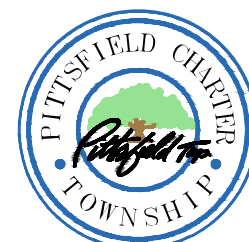


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Client
PITTSFIELD CHARTER TOWNSHIP

Project
**PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS**

Title
PALM PALACE

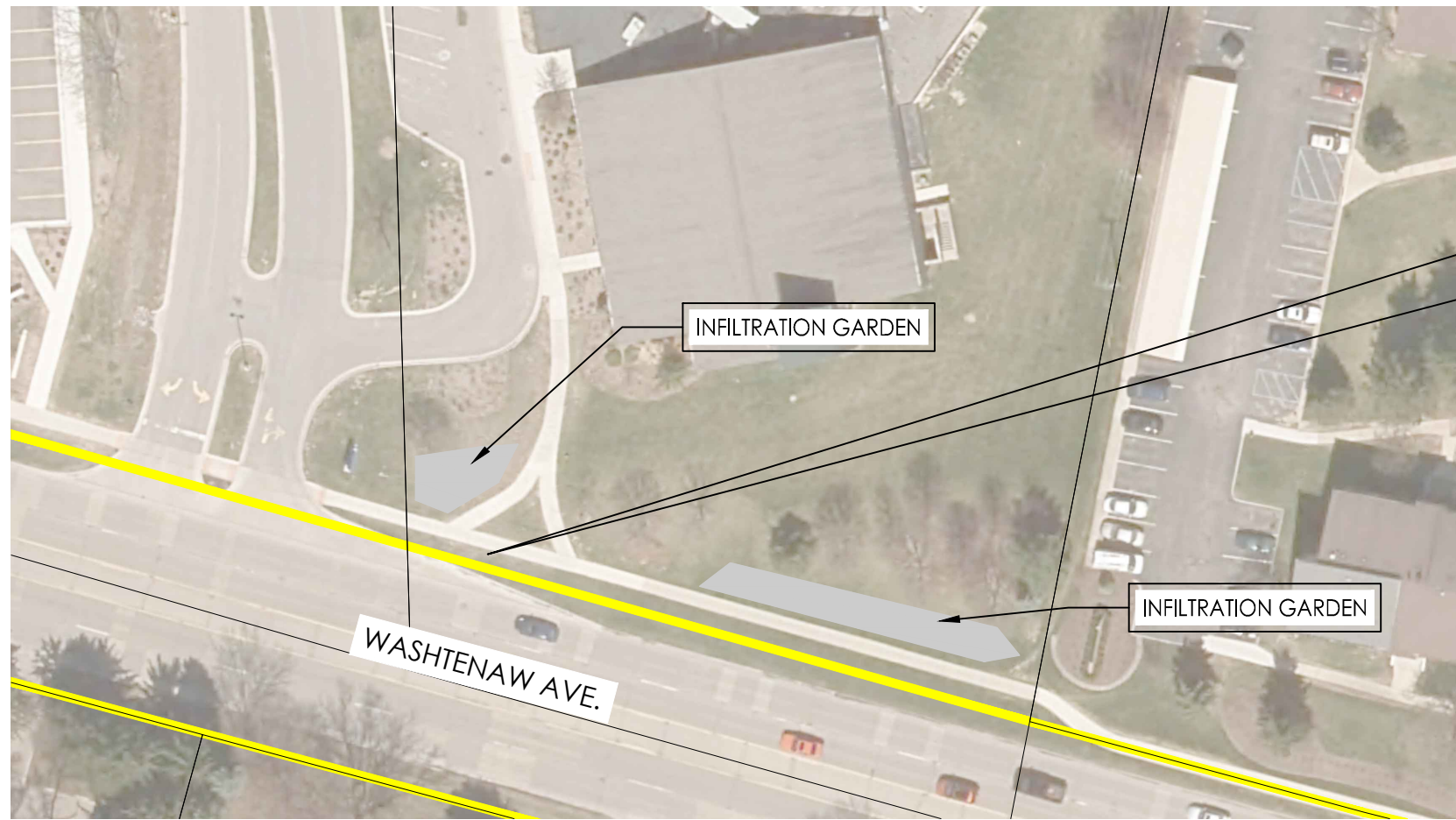
Project No.
2075001316

Scale

Drawing No.
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1 of 1

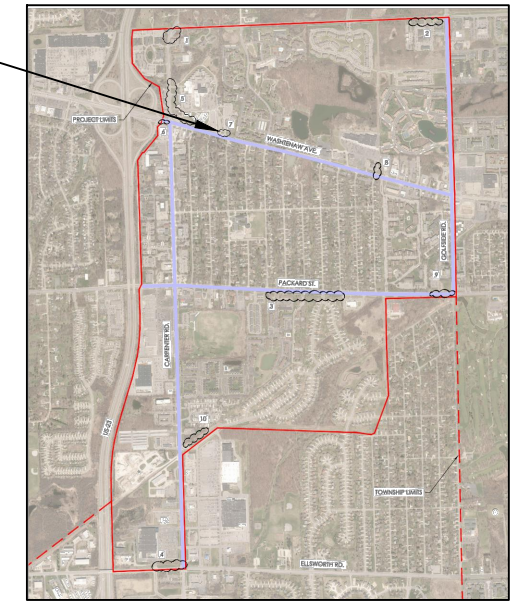
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PLAN VIEW
SCALE: 1" = 60'



PROJECT LOCATION



LOCATION MAP

#7 4205 Washtenaw Avenue (St. Luke's Lutheran Church)

Infiltration Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding landscape area and entry drive. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent sidewalk and public roadway. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 140 feet (2,800 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

Easement: The land is privately owned by St. Luke's Lutheran Church and an easement will be necessary.

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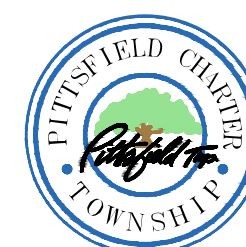


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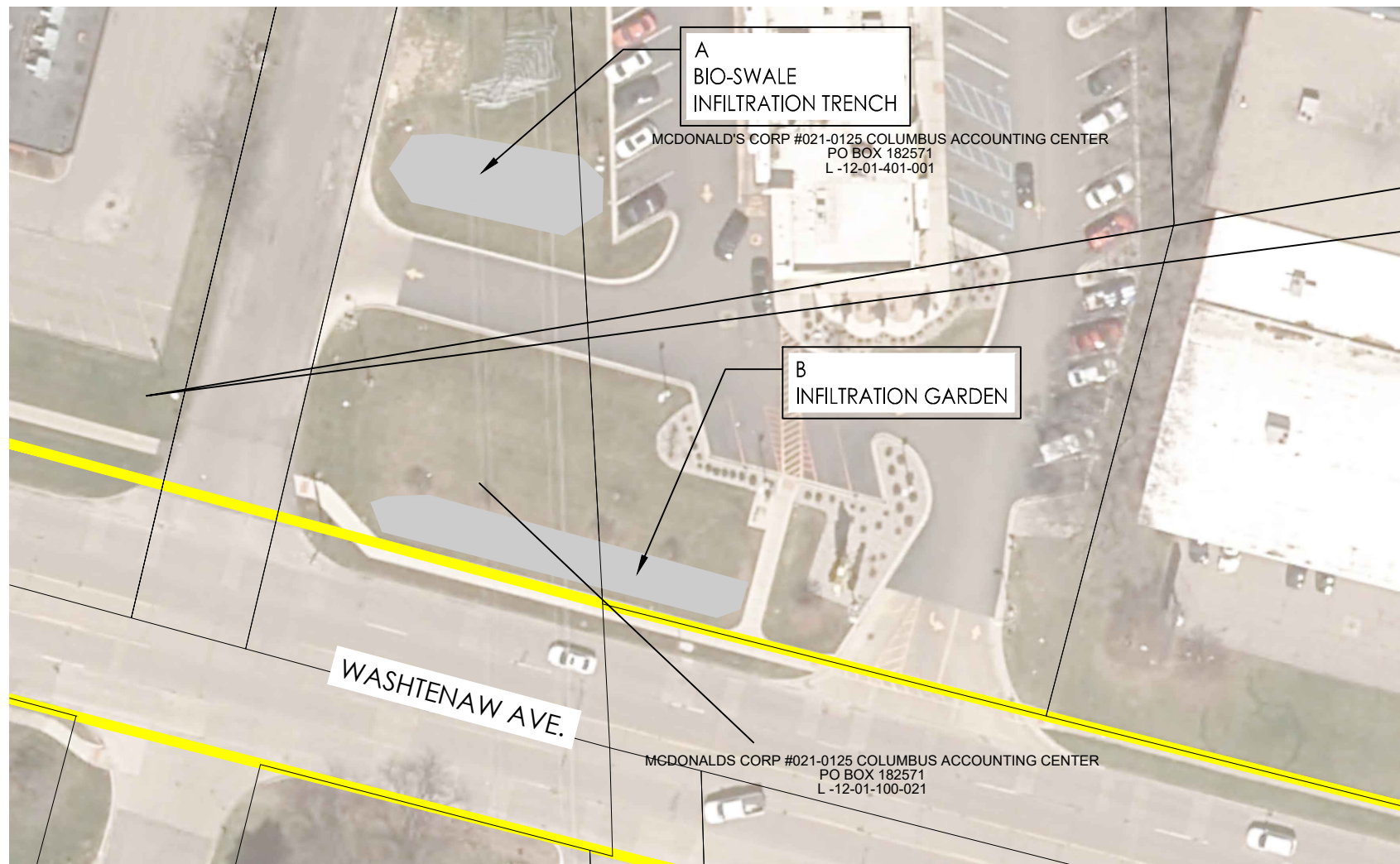


Client
PITTSFIELD CHARTER TOWNSHIP
Project
PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS
Title
ST. LUKE'S LUTHERAN CHURCH

Project No.
2075001316
Scale

Drawing No.
7
Sheet
1 of 1

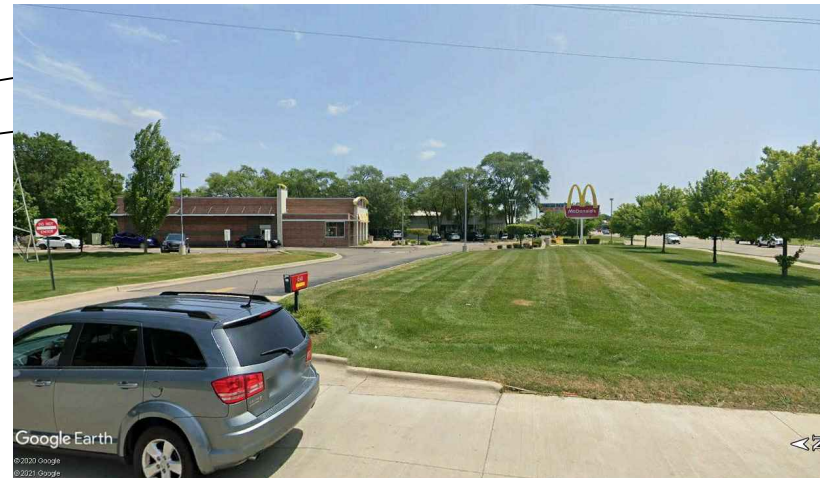
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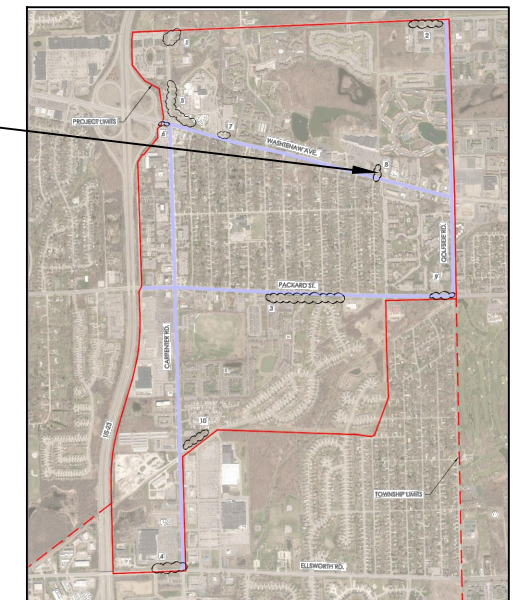
PLAN VIEW
SCALE: 1" = 50'



PROJECT LOCATION



#8 4775 Washtenaw Avenue (McDonalds)



LOCATION MAP

A. Bio-swale/infiltration Trench

Design Intent: The design intent of the bio-swale/infiltration trench is to encourage stormwater from the adjacent parking lot to infiltrate through the use of native plants and augmented topsoil and subsoils. The plantings will capture sediment and absorb stormwater while the subsoil treatment will encourage infiltration and provide water quality treatment. A mix of seeded grasses and sedges will absorb the water and reduce off-site flows. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration. The design may also include a concrete spillway stone check dams, overflow structure and under drains.

Size: Approximately 20 by 70 feet (1,400 square feet).

Maintenance: Maintenance should decrease as the seeding become established, under typical climate conditions the plantings should not need to be watered, mowed or fertilized.

- Mulching of the area will be necessary until the seedings fill in the voids of the swale.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- The area should be inspected annually for build-up of sediment. Removal of large deposits should be undertaken regularly.
- Large bare areas may require additional seeding.
- Deadheading and dethatching may be required annually in the spring.

B. Infiltration Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding landscape area. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent sidewalk and public roadway. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 120 feet (2,400 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

Easement: The land is privately owned by McDonalds Corporation and an easement will be necessary.



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Client
PITTSFIELD CHARTER TOWNSHIP

Project
**PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS**

Title
McDONALDS

Project No.
2075001316

Scale

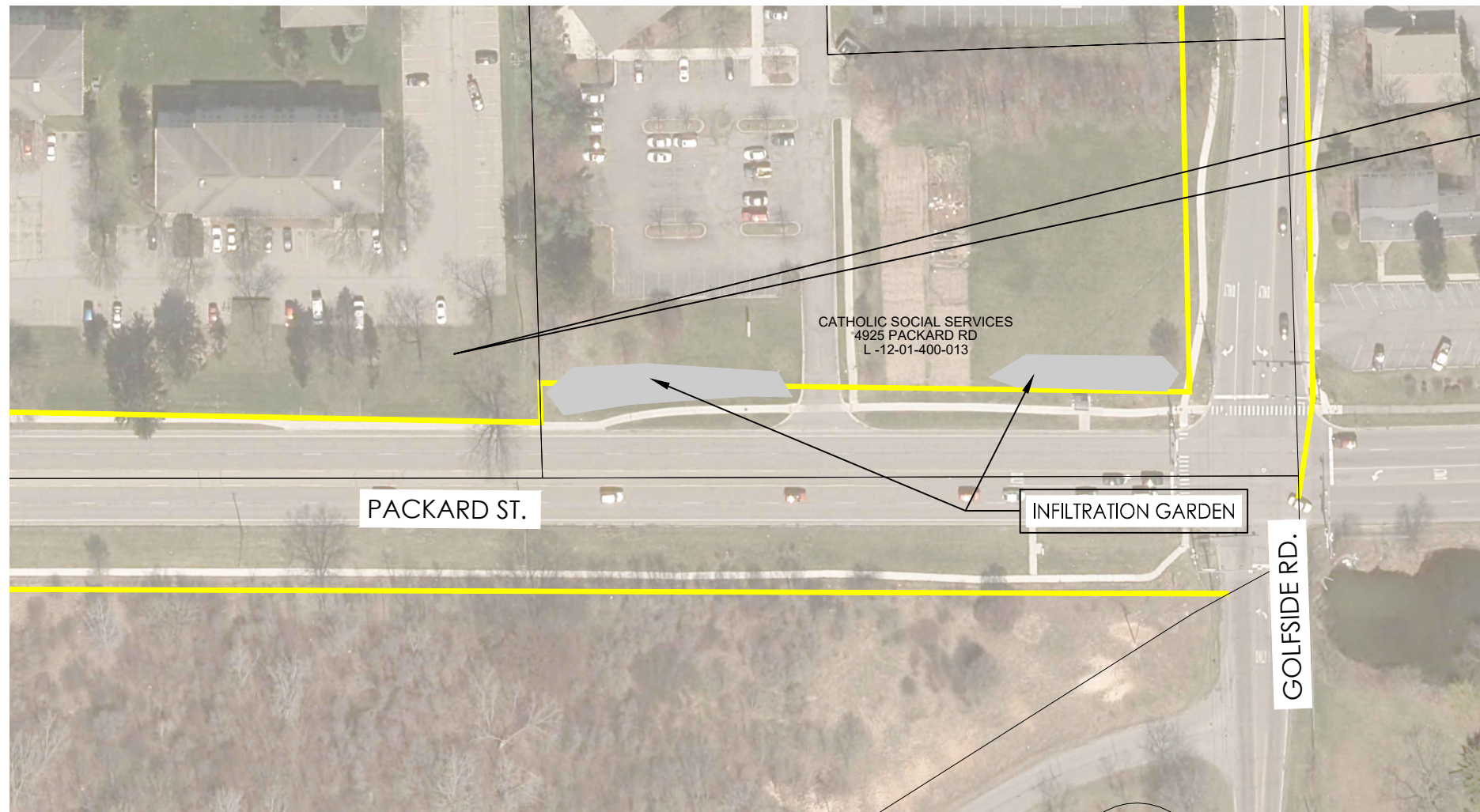
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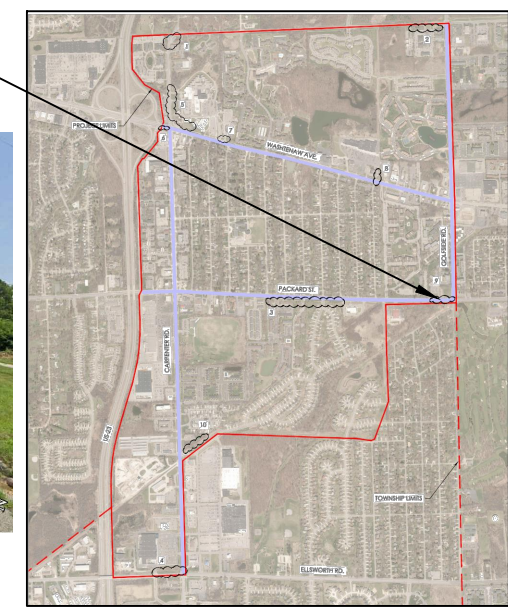
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PLAN VIEW
SCALE: 1" = 60'



PROJECT LOCATION



LOCATION MAP

#9 4925 Packard Road (Catholic Social Services)

Infiltration Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding lawn landscape area. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent sidewalk and public roadway. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 300 feet (6,000 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

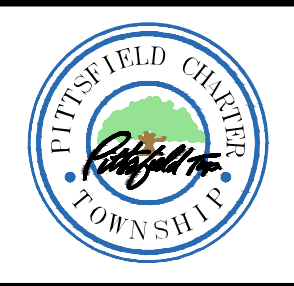
Easement: The land is privately owned by Catholic Social Services and an easement will be necessary.

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Client
PITTSFIELD CHARTER TOWNSHIP

Project
PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS

Title
CATHOLIC SOCIAL SERVICES

Project No.
2075001316

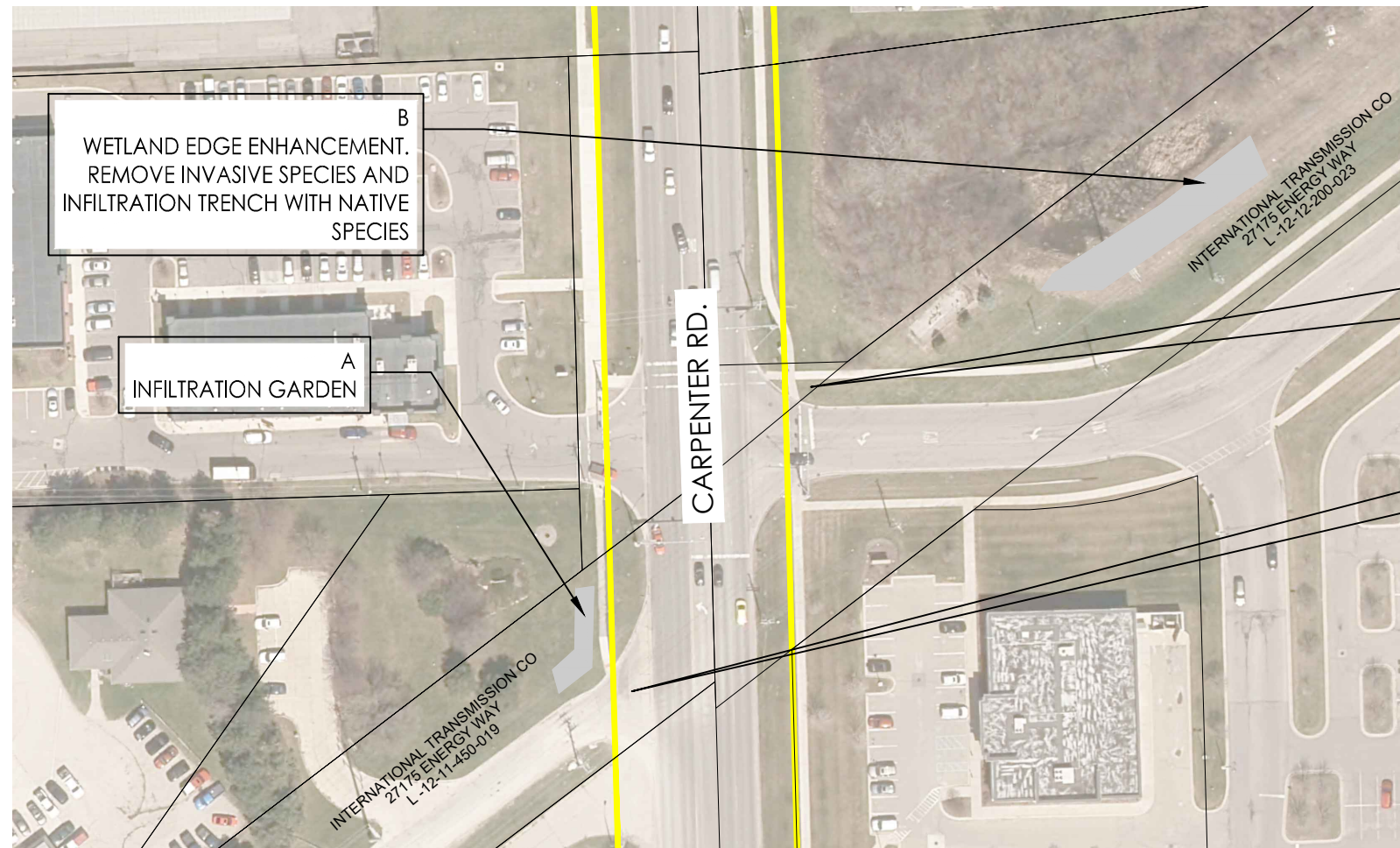
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Drawing No.
9

Sheet
1 of 1

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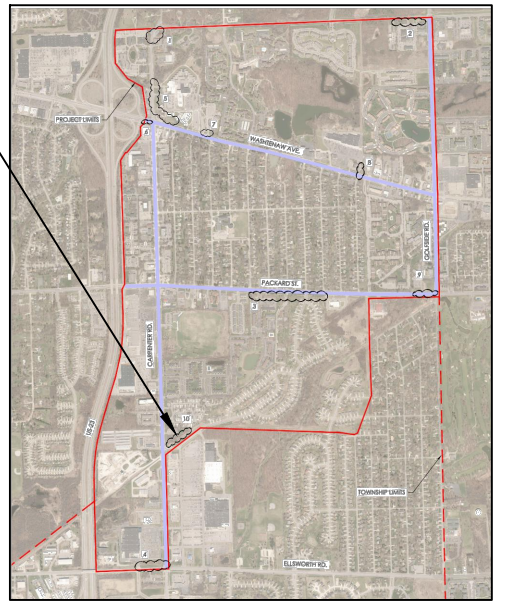


PLAN VIEW
SCALE: 1" = 100'

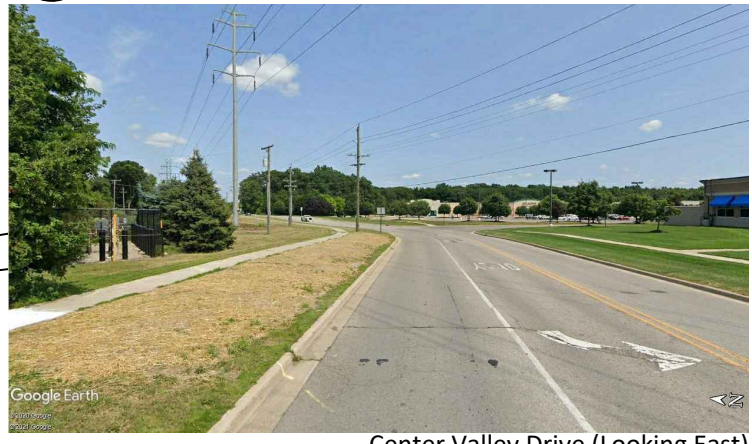
#10 Carpenter Road (ITC Corridor)



PROJECT LOCATION



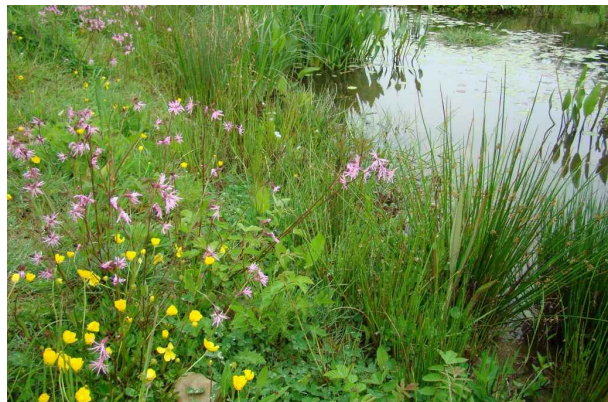
LOCATION MAP



Center Valley Drive (Looking East)



Carpenter Road (Looking West to Concrete Plant)



A. Infiltration Garden

Design Intent: The design intent of the infiltration garden is to capture stormwater from the surrounding lawn and landscape area. The garden will retain this stormwater. A mix of forbs (perennials, grasses and sedges) will absorb the water and reduce the overland flow to the adjacent sidewalk and public roadway. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration.

Size: Approximately 20 by 70 feet (1,400 square feet).

Maintenance: Maintenance should decrease as the garden becomes established, under typical climate conditions the garden should not need to be watered, mowed or fertilized.

- Mulching of the garden will be necessary until the plants fill in the voids of the garden.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Dead and damaged plants should be replaced as needed.
- Large bare areas may require additional plantings.
- Deadheading and dethatching may be required annually in the spring.

B. Wetland Edge Enhancement

Design Intent: The design intent of the Wetland Edge Enhancement is to discourage non-native invasive species along the southern edge of the adjacent wetland and improve water quality of the Upper Paint Creek watershed. Existing heavy topsoil and sub-soil will be replaced with a more permeable growing medium and granular subsoil to encourage water infiltration. Non-native invasive species along the wetland edge will be removed and a mix of forbs (perennials, grasses and sedges) will be seeded. The plantings will capture sediment and absorb rainwater while the subsoil treatment will encourage infiltration and provide water quality treatment.

Size: Approximately 30 by 200 feet (6,000 square feet).

Maintenance: Maintenance should decrease as the seeding become established, under typical climate conditions the plantings should not need to be watered, mowed or fertilized.

- Mulching of the area will be necessary until the seeding fills in.
- During the first year watering may be necessary during dry spells.
- Weeding is suggested at least twice a year: spring and summer.
- Large bare areas may require additional seeding.
- Monitor for non-desirable species and remove and re-seed as needed.
- Dethatching may be required annually in the spring.

Easement: The land is privately owned by the International Transmission Corporation and an easement will be necessary.

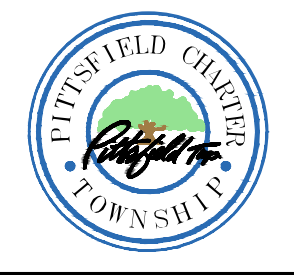


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Client
PITTSFIELD CHARTER TOWNSHIP

Project
**PITTSFIELD CHARTER TOWNSHIP
2021 CDBG STORMWATER
IMPROVEMENTS**

Title
ITC CORRIDOR

Project No. 2075001316
Scale
Drawing No. 10
Sheet 1 of 1

STANTEC CONSULTING MICHIGAN - ENGINEER'S OPINION OF CONSTRUCTION COST



**Pittsfield Charter Township
Washtenaw County
CBDG Stormwater Improvements**

Conceptual	X
Preliminary	
Final (As Bid)	

Project Number: 2075001316
 Prepared By: AMS
 Checked By: MDP
 Date: March 5, 2021

DESCRIPTION		QUANT.	UNIT	UNIT COST	TOTAL COST
CBDG Stormwater Improvements (Ten Locations)					
1	General Conditions/Mobilization/Permits (10% Max)	1	LS	\$50,000	\$50,000
2	Contractor Construction Layout & Staking	1	LS	\$15,000	\$15,000
3	Traffic Control & Maintenance	1	LS	\$15,000	\$15,000
4	Earthwork and Fine Grading (Includes Ditching & Topsoil)	73500	SF	\$1	\$73,500
5	Clearing, Grubbing, Demolition, and Removals (Includes Sawcutting for Spillways)	73500	SF	\$1	\$73,500
6	Soil Erosion Control	1	LS	\$15,000	\$15,000
7	Invasive Species Treatment	6000	SF	\$3	\$18,000
8	Re-plant with Native Species	6000	SF	\$3	\$18,000
9	Rain Garden Subsoil & Plantings	39800	SF	\$3	\$119,400
10	Infiltration Garden Subsoil & Plantings	19900	SF	\$3	\$59,700
11	Infiltration Trench/Bio-swale Subsoil & Seeding	13400	SF	\$3	\$40,200
12	Underdrains - Allowance	500	LF	\$15	\$7,500
13	Stormsewer Pipe & Culverts - Allowance	100	LF	\$50	\$5,000
14	Stormsewer End Sections - Allowance	10	EA	\$1,500	\$15,000
15	Stormwater Catchbasins - Allowance	10	EA	\$2,500	\$25,000
16	Concrete Spillways - Allowance	10	EA	\$500	\$5,000
17	Signage - Allowance	20	EA	\$500	\$10,000
18	Project Clean-Up	1	LS	\$20,000	\$20,000
19	Franchise Utility Coordination	1	EA	\$5,000	\$5,000
20	Audio-Video Project	1	LS	\$5,000	\$5,000
CONSTRUCTION SUBTOTAL					\$595,000
CONSTRUCTION CONTINGENCIES				10%	\$60,000
TOTAL OPINION OF PROBABLE CONSTRUCTION COST					\$655,000
ENGINEERING DESIGN & SURVEY (Stantec)				13.0%	\$85,000
PART-TIME CONSTRUCTION ENGINEERING & INSPECTION (Stantec)				6.0%	\$39,000
TOTAL ESTIMATED PROJECT COST					\$779,000

Excludes: Environmental & Easement Acquisition Services, and anything not listed above.

NOTE: The ENGINEER has no control over the cost of labor, materials, equipment, or services furnished by others, or over the CONTRACTOR's method of determining prices, or over competitive bidding or market conditions. Opinions of probable project costs and construction costs provided herein are made on the basis of the ENGINEER'S professional judgement and experience. The ENGINEER cannot and does not guarantee that proposals, bids or actual project or construction costs will not vary from the prepared opinion of probable cost.