

**WALNUT CREEK WATERSHED
POLLUTION REDUCTION PLAN**

DRAFT

SUMMIT TOWNSHIP

1230 Townhall Road, West, Suite 100 • Erie, PA 16509

Ph: 814/868-9686 • FX: 814/864-0013

**September 16, 2017
AMENDED February 3, 2025**

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Section A: Public Participation

A copy of this pollutant reduction plan (PRP) was made available for public review and comment from January 3, 2025 to February 3, 2025. An advertisement published in the Erie Times News provided public notice of the PRP in addition to notices on the Township website and social media page, where it would be available for review and the length of time the Township would received comments. _____ comments were received as part of the public comment period. Appendix 1 contains proof of advertisement and comments received.

A public hearing was held immediately prior to the February 3, 2025 Board of Supervisors Meeting. At which time, the plan was reviewed and public comment was accepted. Appendix 1 contains the meeting minutes for the public hearing.

A copy of this pollutant reduction plan (PRP) was made available for public review and comment from August 2, 2017 to September 1, 2017. An advertisement published in the Erie Times News provided public notice of the PRP, where it would be available for review and the length of time the Township would received comments. No comments were received as part of the public comment period. Appendix 1 contains proof of advertisement.

A public hearing was held immediately prior to the September 5, 2017 Board of Supervisors Meeting. At which time, the plan was reviewed and public comment was accepted. Appendix 1 contains the meeting minutes for the public hearing.

Section B: Maps

Maps are provided in Appendix 2 delineating the storm sewer sheds that impact the impaired waterways. The storm sewer shed areas are provided including the amount of pervious (vegetated areas) and impervious cover (building and paved areas). In addition, the location of the existing and proposed Best Management Practices (BMPs) are shown on the maps.

Storm Sewer Shed 15 has been revised to include the Bianchi Honda South stormwater BMP that was constructed in 2021.

Section C: Pollutants of Concern

The Pollutants of concern for the Walnut Creek watershed is Siltation for Walnut Creek and two tributaries (Fossil Creek and McGahan's Run). In accordance with DEP requirements, runoff

from the MS4 area draining to the impaired waterways need a 10% reduction in sediment from the existing loading.

Section D: Existing Loading for Pollutants of Concern

There are 42 storm sewer sheds discharging into impaired waters of the Walnut Creek watershed. The storm sewer sheds were delineated based upon Township mapping of the storm sewer system. Lidar contour data from PASDA was utilized along with onsite visual observations to determine the storm sewer shed. The land cover was determined using aerial imagery and AutoCAD as shown in the mapping.

Once the land covers were determined, the "All Other Counties" loading rates were used to calculate the existing pollutant loading for the pervious and impervious land covers. The total sediment loading based on these calculation is **480,502 lbs/yr** sediment loading. Refer to Appendix 3 for the calculations.

The permit allows for parsing of certain areas in the calculations. Using aerial imagery, Erie County tax parcel information, and AutoCAD, the areas/sediment loadings within the PennDOT rights-of-way were parsed/deducted from the total sediment loading. The deduction from the parsing the PennDOT rights-of-way is 72,575 lbs/yr. Refer to Appendix 3 for the calculations.

The permit provides a deduction credit for existing BMPs within the storm sewer shed provided the BMP is maintained and in good working order. The Township requires periodic certified inspections of BMPs within the Township in accordance with the MS4 Permit, Minimum Control Measure 5, BMP #3.

There were 13 existing stormwater BMPs within the delineated storm sewer sheds in 2017.

These BMPs are mostly rate control type BMPs and using the BMP Effectiveness Values table have a 10% removal rate in sediment. The stormwater report for each BMP was used to determine the area draining to each BMP as well as the pervious and impervious land covers for each BMP. Using the "All Other Counties" loading rates then applying the 10% removal, the reduction of sediment for the existing stormwater BMPs totals 18,230 lbs/yr. Refer to Appendix 3 for the calculations.

The final loading for the watershed was then calculated by taking the total loading of 459,084 lbs/yr, deducting the loading of 72,575 lbs/yr parsed from the PennDOT rights-of-way, and further reducing the total by 18,230 lbs/yr for the existing BMPs. The resulting total sediment loading to be addressed is **389,697 lbs/yr**. As stated earlier, the minimum required reduction

(MRR) in the pollutant loading is 10% of the existing loading, which is **38,670 lbs/yr**. Refer to Appendix 3 for the calculations.

Section E: BMPs to Achieve the Minimum Required Reductions in Pollutant Loading

To achieve the minimum reduction required, Summit Township is proposing to utilize two BMPs constructed since 2017, three BMPs currently in the construction phase, and to retrofit the existing dry detention basin at the Erie Marketplace between Target and Hershey Road.

The two basins constructed since 2017 are the Bianchi Honda South Wet Pond and the Hawkeye Hotel Extended Dry detention basin. Both BMPs were constructed in 2021. They both provide for extended detention to settle the sediment and reduce the flow for the higher frequency storms thereby reducing streambank erosion. These BMPs will provide a 60% reduction in sediment for the areas treated.

The three BMPs under construction are an extended dry detention basin at Calamar, a wet pond at Rustic Ridge, and a rain garden at Rustic Ridge. The detention basin and wet pond will provide a 60% reduction in sediment and the rain garden will provide a 55% reduction in sediment.

The Township is considering two options for the retrofit of the Erie Marketplace detention basin. The first option is a conversion to an extended dry detention basin. This option will entail the reconstruction of the outlet structure to hold the stormwater for a longer period of time allowing for sediment to settle out of the stormwater and will release the stormwater at a slower rate during the normal storm events thereby reducing stream bank erosion as well. This option will result in a 50% reduction in sediment for the area treated.

The second option will be the installation of an infiltration injection well. This option will involve the drilling of a well within the basin to tap into an underground aquifer. Then the outlet structure will be modified to retain the required amount of volume that will be slowly directed into the well recharging the aquifer. This option will require exploratory drilling to locate and test the infiltration rate of the injection well to determine this option's viability.

The extended dry detention basin retrofit option with the previously constructed and under construction BMPs results in total reduction in sediment of 41,915 lbs/yr. The infiltration injection well retrofit option with the previously constructed and under construction BMPs results in total reduction in sediment of 55,511 lbs/yr. Both options are greater than the minimum required reduction as stated prior of 38,670 lbs/yr.

~~To achieve the minimum required reduction, Summit Township is proposing to renovate and retrofit two existing detention basins (dry ponds) and convert them into extended dry detention basins. In converting the basins, the existing outlet structures will be modified or replaced and basins may be excavated/expanded achieve to additional volume required to convert the basins.~~

~~Where a standard detention basin is primarily a flood control device that limits the discharge from a site, the extended dry detention basin though looking similar, will hold the stormwater for a longer period of time allowing for sediment to settle out of the stormwater and will release the stormwater at a slower rate during the normal storm events thereby reducing stream bank erosion as well.~~

~~The first basin to be retrofitted is to the west of Peach Street, the basin for the Erie Marketplace Plaza between Target and Hershey Road. The other basin to be retrofitted is to the East of Peach Street, which is the basin for Peach Street Square and is located to the north of Advance Auto Parts.~~

~~The basins once retrofitted will provide a 50% reduction rate for sediment which will result in a total reduction in sediment of 43,993 lbs/yr which is greater than the minimum required reduction as stated prior of 36,828 lbs/yr. Therefore, the retrofitting of the two basins will be sufficient to meet the requirements of the pollution reduction plan for the Walnut Creek watershed.~~

Section F: Funding Mechanisms

The budgetary estimate for the design and construction of the proposed improvements is **\$100,750**. Refer to Appendix 4 for a budgetary estimate for the design and construction of the retrofits.

The Township will fund the required improvements through the Capital Improvements fund. The PRP improvements will be budgeted to be completed prior **to the MS4 permit renewal**. ~~within the five-year permit cycle. The project will likely be completed in two years. During the first year, survey and design of the BMP will be completed. The second year will be the construction of the BMP.~~ Construction of the BMP retrofit will commence once approval has been obtained by the PA DEP and agreements are executed with the property owner.

Section G: Operation and Maintenance of BMPs

~~DDR Corp.~~ **The property owner** and Summit Township will share responsibility for the ongoing operation and maintenance of the **retrofitted BMP** ~~extended dry detention basins~~. The operation and maintenance will be performed in accordance with the Pennsylvania Stormwater Best Management Practices Manual as listed below:

1. Basin structures expected to receive and/or trap debris and sediment shall be inspected for clogging and excessive debris and sediment accumulation at least four times per year, as well as after every storm greater than 1 inch.
2. Sediment removal shall be conducted when the basin is completely dry. Sediment shall be disposed of properly and once sediment is removed, disturbed areas need to be immediately stabilized and revegetated.
3. Mowing and/or trimming of vegetation shall be performed as necessary to sustain the system, but all detritus (waste or debris of any kind) shall be removed from the system.
4. Vegetated areas shall be inspected annually for erosion and unwanted growth of exotic/invasive species.
5. Vegetative cover shall be maintained at a minimum of 95 percent. If vegetative cover has been reduced by 10%, Vegetation should be reestablished.

APPENDIX 1 - PUBLIC PARTICIPATION ELEMENTS



Public Notices

Originally published at goerie.com on 01/02/2025

As required by the DEP MS-4 Program, the amended Pollution Reduction Plan for the impaired portions of the Walnut Creek watershed within Summit Township will be available for review and comment at the Summit Township Municipal Building, 1230 Townhall Road West, Suite 100, Erie, PA, and on the Summit Township Website www.summittownship.com, from Friday, January 3, 2025, to Monday, February 3, 2025. The Amended Plan proposes to renovate and retrofit an existing detention basin, on a property on Peach Street, to reduce the sediment discharge into the watershed. A public hearing will be held on Monday, February 3, 2025, to review the Amended Pollution Reduction Plan and to accept public comment. Action may be taken at the business meeting immediately following the hearing. Lisa A. Vallimont, Secretary
(1-10887896-NT-2)

PROOF OF PUBLICATION
In
THE ERIE TIMES-NEWS
COMBINATION EDITION

SUMMIT TOWNSHIP SUPERVISORS
1230 Townhall Road West Suite 100
ERIE PA 16509-5080

REFERENCE: 136262 274117
Advertisement As required by the DEP

STATE OF PENNSYLVANIA)
COUNTY OF ERIE) SS:

Brenda L. Learn, being duly sworn, deposes and says that: (1) he/she is a designated agent of the Times Publishing Company (TPC) to execute Proofs of Publication on behalf of the TPC; (2) the TPC, whose principal place of business is at 205 W. 12th Street, Erie, Pennsylvania, owns and publishes the Erie Times-News, established October 2, 2000, a daily newspaper of general circulation, and published at Erie, Erie County Pennsylvania; (3) the subject notice or advertisement, was published in the regular edition(s) of said newspaper on the date(s) referred to below. Affiant further deposes that he/she is duly authorized by the TPC, owner and publisher of the Erie Times-News, to verify the foregoing statement under oath, and affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statement as to time, place and character of publication are true.

PUBLISHED ON: 08/01/17

TOTAL COST: \$138.20 AD SPACE: 32 Lines

FILED ON: 08/01/17

RECEIVED
AUG 15 - 2017

Advertisement
As required by the DEP MS-4 Program, Pollution Reduction Plans for the impaired portions of the Leboeuf Creek and the Walnut Creek watersheds within Summit Township will be available for review and comment at the Summit Township Municipal Building, 1230 Townhall Road West, Suite 100, Erie, PA, and on the Summit Township Website www.summit-township.com, from Wednesday, August 2, 2017 to Friday, September 1, 2017. The Leboeuf Creek Plan proposes to construct a raingarden in Summit Township Community Park to reduce Phosphorous concentrations in the watershed. The Walnut Creek Plan proposes to renovate and retrofit two detention basins, on properties on Peach Street, to reduce the sediment discharge into the watershed. A public hearing will be held on Tuesday, September 5, 2017 to review the Pollution Reduction Plans and to accept public comment.
Christene Yeast
Summit Township Secretary
(8-274117-NT-1)

Sworn to and subscribed before me this 1st day of August 2017

Affiant: Brenda L. Learn

NOTARY: Barbara J. Moore

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Barbara J. Moore, Notary Public
City of Erie, Erie County
My Commission Expires March 23, 2020
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

SUMMIT TOWNSHIP SUPERVISORS

Public Hearing

Tuesday, September 5, 2017

AGENDA

Please note: Prior to every Supervisor vote, the opportunity for "discussion" includes any meeting attendee comments. Please do not hesitate to alert the Board that you wish to comment, even if they initially do not recognize you.

1. CALL TO ORDER

2. Purpose of hearing:

As required by the DEP MS-4 Program, Pollution Reduction Plans for the impaired portions of the LeBoeuf Creek and the Walnut Creek watersheds within Summit Township must be available for public review and public comment.

The LeBoeuf Creek Plan proposes to construct a raingarden in Summit Township Community Park to reduce Phosphorous concentrations in the watershed.

The Walnut Creek Plan proposes to renovate and retrofit two detention basins, on properties on Peach Street, to reduce the sediment discharge into the watershed.

3. Public Input

4. ADJOURNMENT

SUMMIT TOWNSHIP SUPERVISORS

**Public Hearing
September 5, 2017**

Vice-Chairperson Lee called a public hearing of the Board of Supervisors to order at 6:00 p.m. followed by the salute to the flag. Supervisor Welka was present, as were, Solicitor Sennett, Zoning Officer Miller, Engineer Jonas, Secretary Yeast, and two interested persons. Supervisor Agostine was absent.

CALL TO ORDER

Engineer Jonas explained that the purpose of the this public hearing is to provide an opportunity for the public to comment on the Summit Township MS-4 Program Pollution Reduction Plans for the (2) watersheds determined to be impaired by the Department of Environmental Protection (DEP).

PURPOSE OF HEARING:
MS-4 Pollution Reduction Plans

Engineer Jonas explained the plan for an unnamed tributary of LeBoeuf Creek to reduce Phosphorous concentrations consists of the construction of a raingarden in the Summit Township Community Park. Maps, calculations, supporting documentation, and budgetary costs were reviewed.

LEBOEUF CREEK
PRP

Jim Chojnacki, 9481 Old French Road, questioned where the phosphorous deposits are coming from. Engineer Jonas responded that formulas are provided based off scientific data collected in the Chesapeake Bay Water Shed.

PUBLIC INPUT

Mr. Chojnacki asked what would happen if the Township refused to spend the funds to correct these impaired watersheds. Engineer Jonas responded that penalties could be imposed, and State Funding could be lost. Engineer Jonas added that the raingarden design will provide a dual purpose by drying the baseball field, and catching run-off from Community Park.

The Walnut Creek Plan proposes to renovate and retrofit two detention basins, on properties on Peach Street, to reduce the sediment discharge into the watershed. Maps, calculations, supporting documentation, and budgetary costs were reviewed.

WALNUT CREEK
PRP

Jim Chojnacki, 9481 Old French Road, noted that the detention basins referenced in the plan are on private property. Engineer Jonas responded that the Township will have to negotiate and make agreement with the property owners. Mr. Chojnacki also asked if all municipalities are required to comply with these requirements. Engineer Jonas responded that it is only in municipalities in urbanized areas that is based on a specific population density.

PUBLIC INPUT

With no further input from the public, motion by Welka, seconded by Lee, to close the hearing at 6:24 p.m.
Vote: 3/0

HEARING CLOSED

Respectfully submitted,

Christene S. Yeast
Recording Secretary
9/7/2017

**SUMMIT TOWNSHIP BOARD OF SUPERVISORS
PUBLIC HEARING AND REGULAR BUSINESS MEETING**

September 5, 2017

6:00 p.m.

	Name	Address	City	State	Zip	Phone #
1	LARRY JONES	2540 LARVIE DR.	WATERFORD	PA	16844	866-6285
2	Jim CHODASKI	9481 OLD BRIDGE RD	WATERFORD	PA	16844	866-9381
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APPENDIX 2 - MAPS



WALNUT CREEK WATERSHED POLLUTANT REDUCTION PLAN OVERALL PLAN

JOB NO.

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DRAWN BY

MEJ

CHECKED BY

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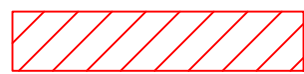



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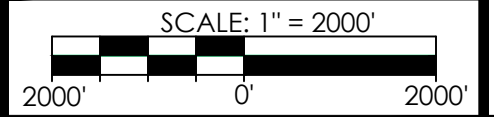
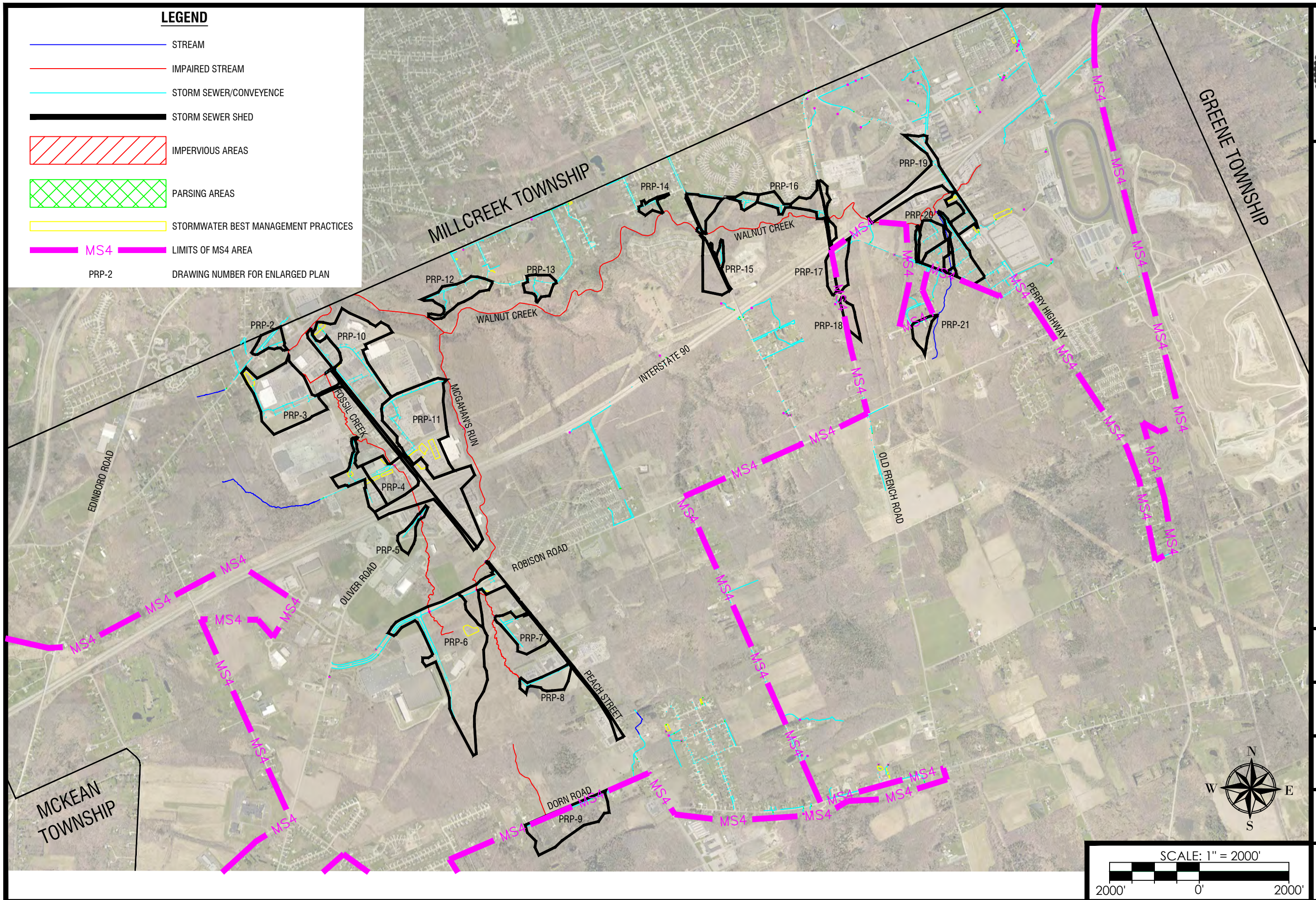
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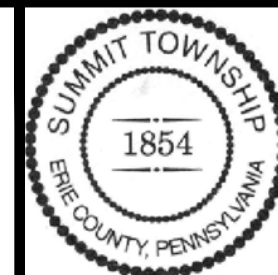
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PRP-1

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
- PRP-2 DRAWING NUMBER FOR ENLARGED PLAN





WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHED 1

JOB NO.
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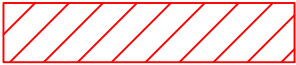




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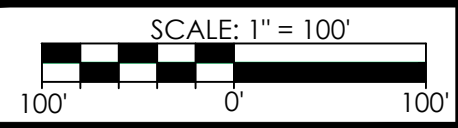
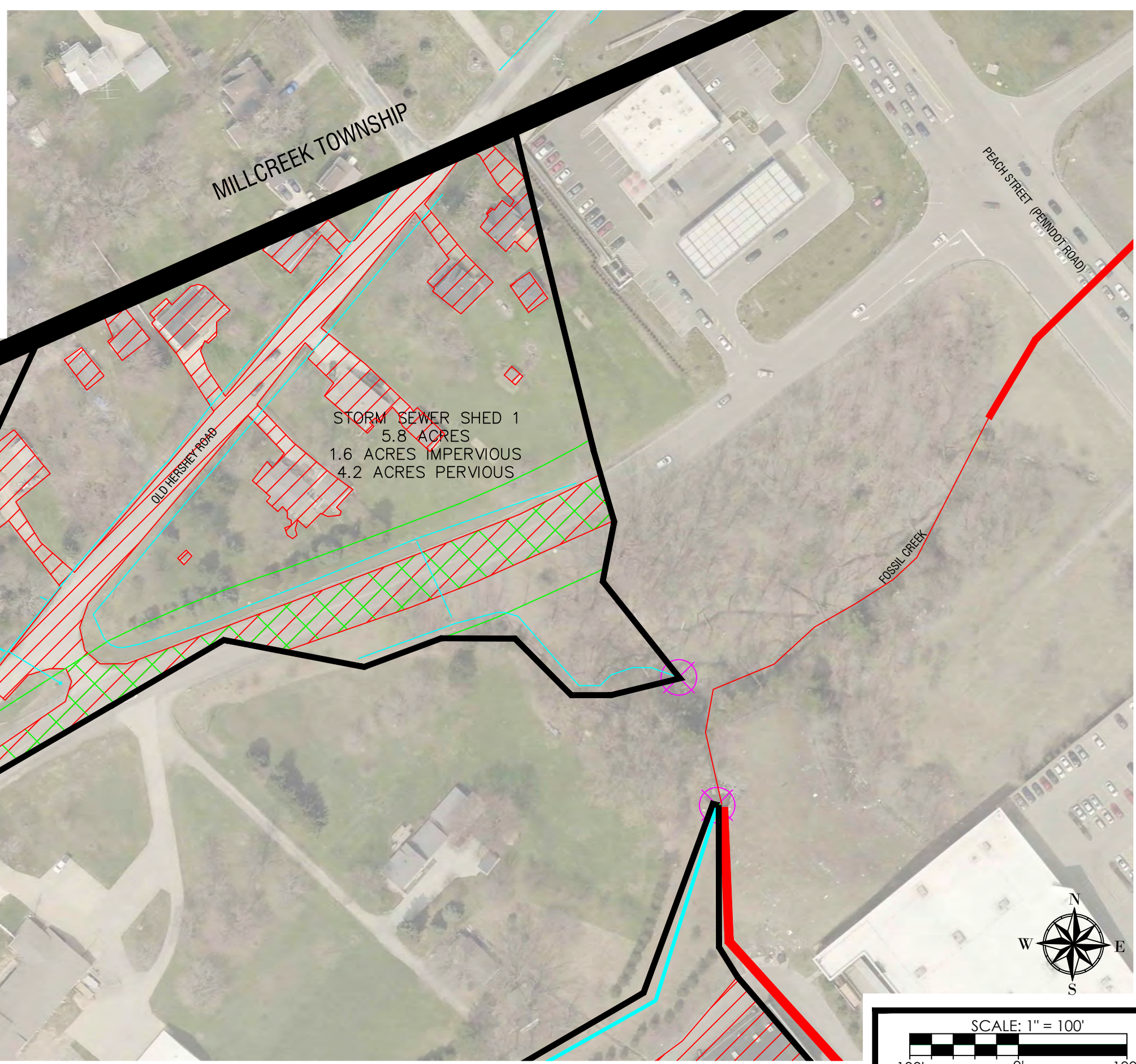
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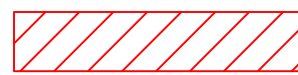
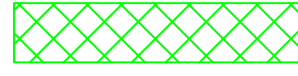




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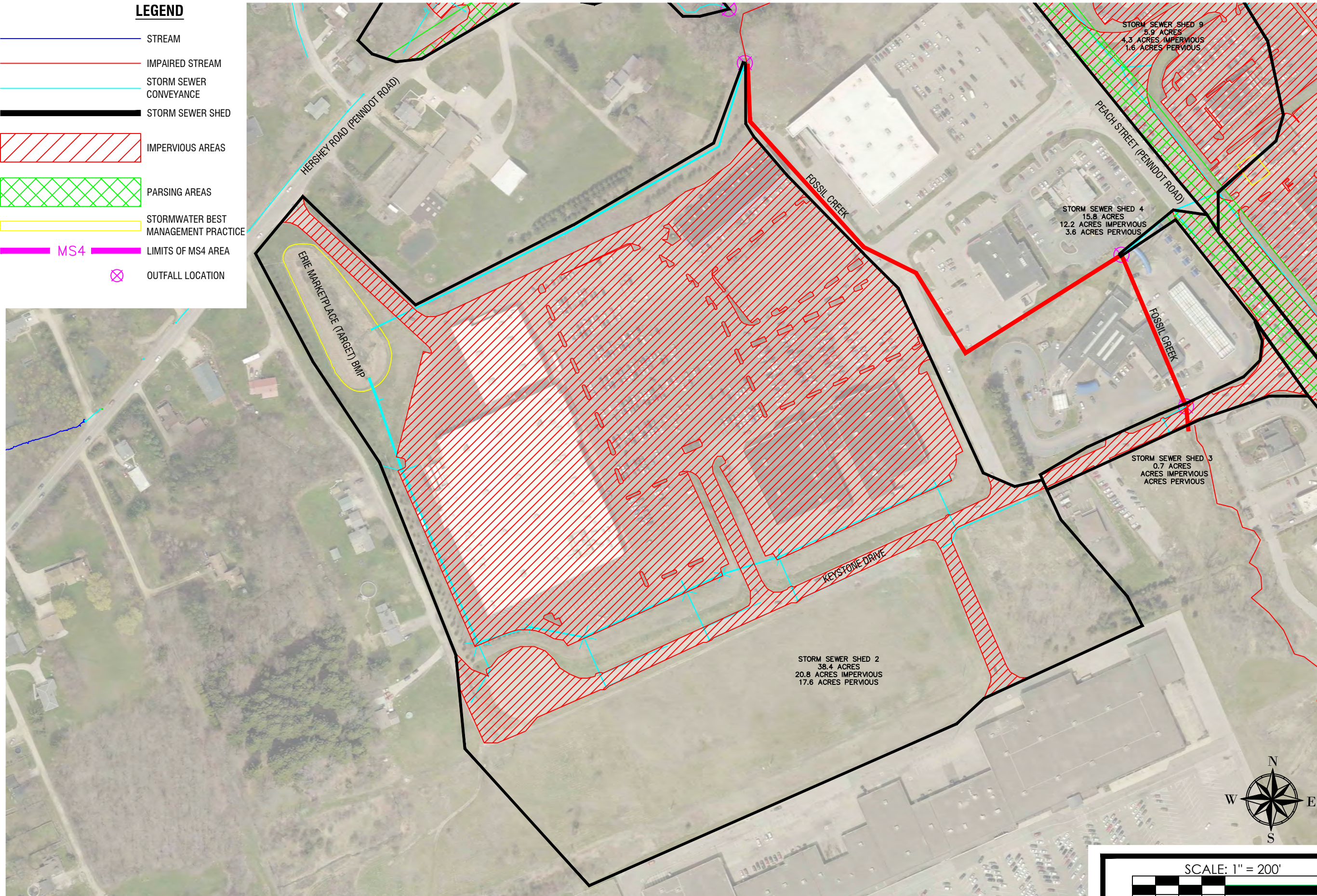
LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION



LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER CONVEYANCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICE
-  MS4
-  LIMITS OF MS4 AREA
-  OUTFALL LOCATION



**WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHEDS 2, 3, & 4**

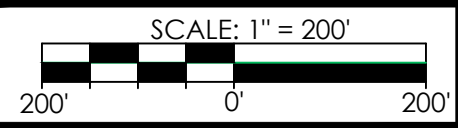
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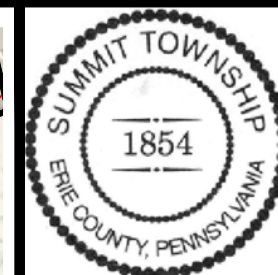
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7/31/2017

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PRP-3





WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHEDS 4, 5, & 6

JOB NO. -










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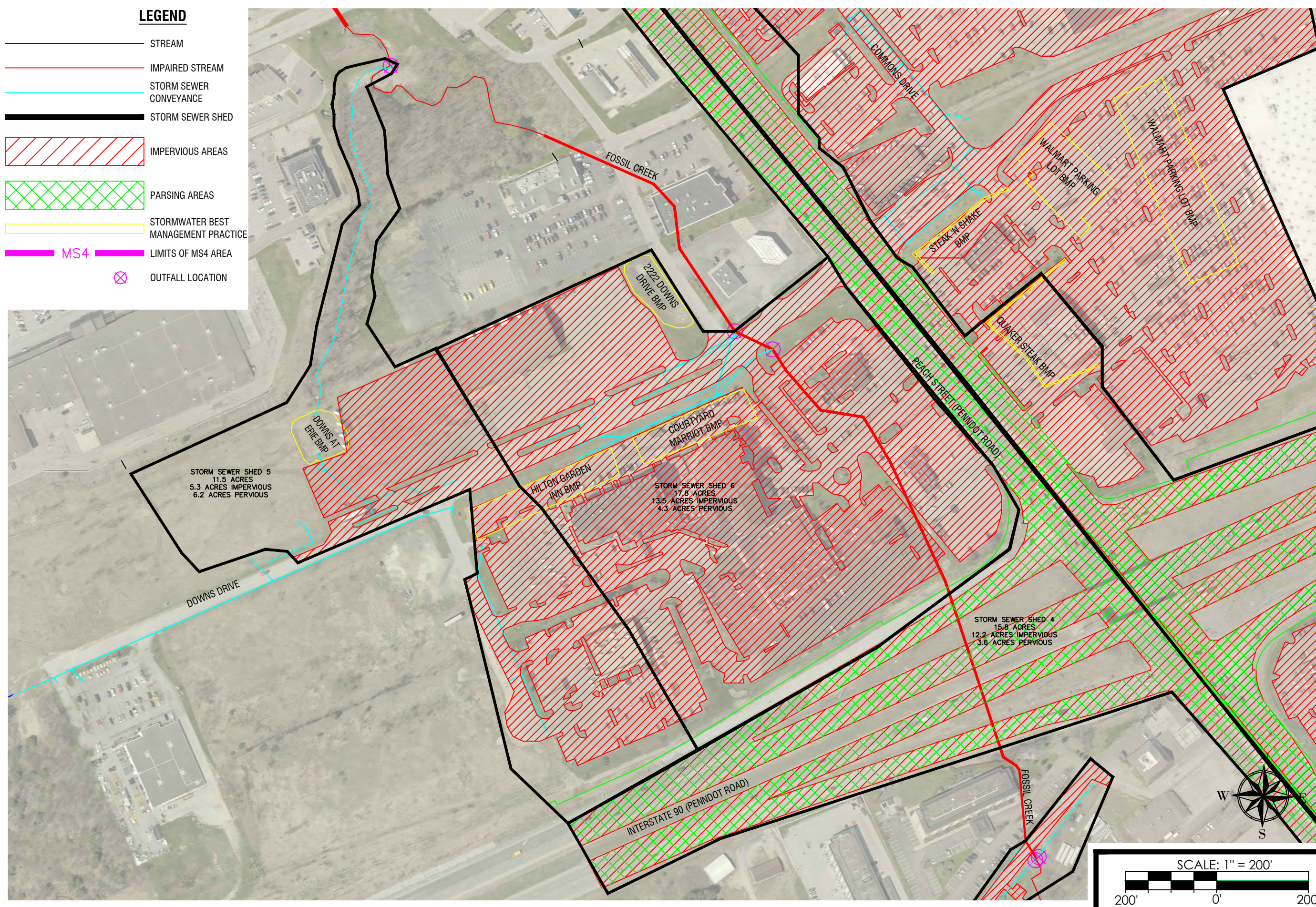
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PRP-4

LEGEND

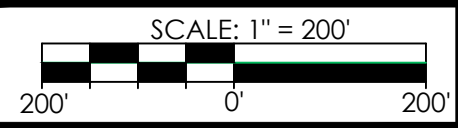
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-  IMPAIRED STREAM
-  STORM SEWER CONVEYANCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICE
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION



STORM SEWER SHED 5
 11.5 ACRES
 5.3 ACRES IMPERVIOUS
 6.2 ACRES PERVIOUS

STORM SEWER SHED 6
 17.8 ACRES
 13.5 ACRES IMPERVIOUS
 4.3 ACRES PERVIOUS

STORM SEWER SHED 4
 15.8 ACRES
 12.2 ACRES IMPERVIOUS
 3.6 ACRES PERVIOUS





WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHEDS 4 & 7

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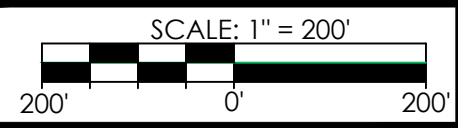
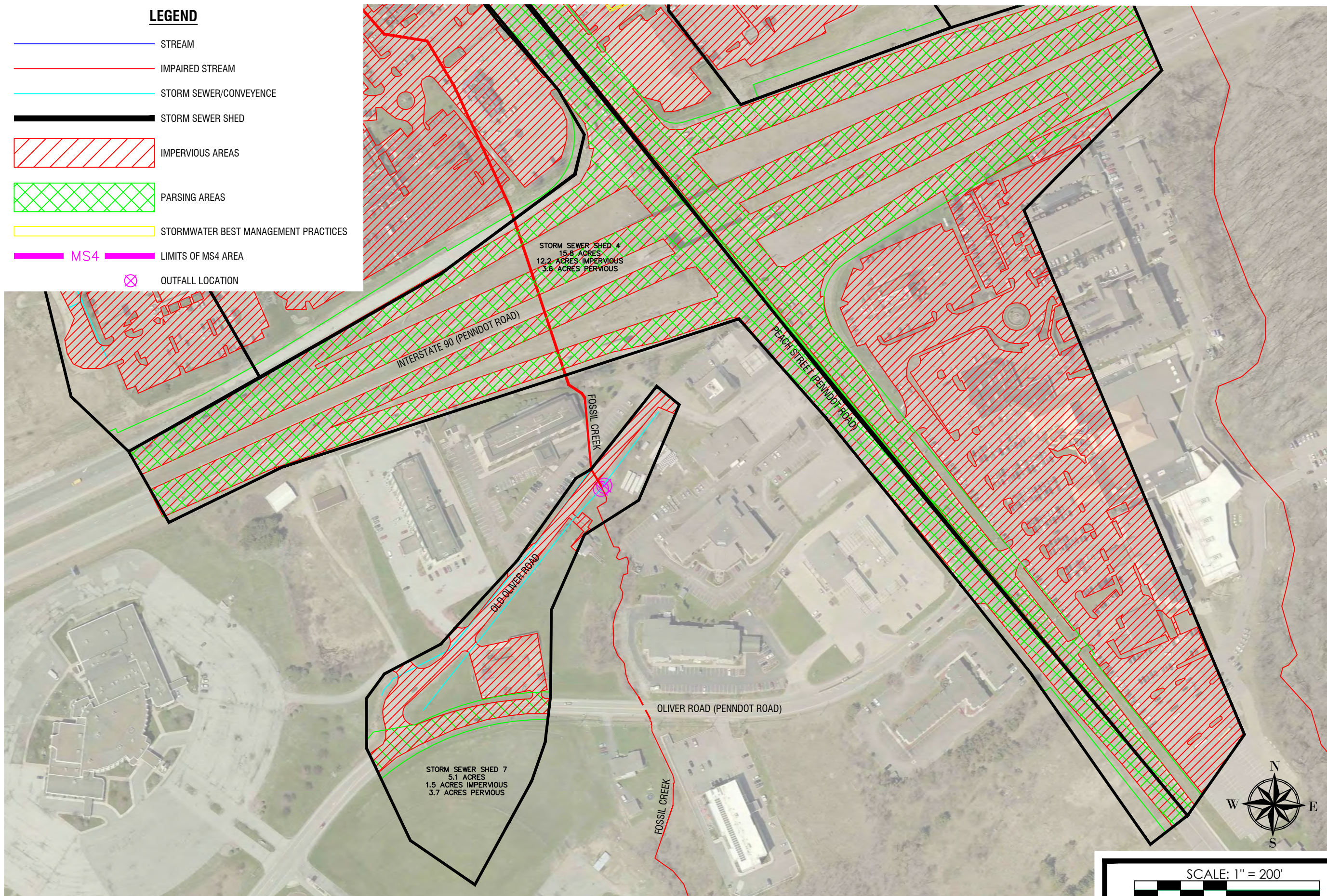
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PRP-5

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION





WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHEDS 8 & 12

JOB NO.

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MEJ

CHECKED BY

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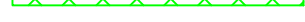

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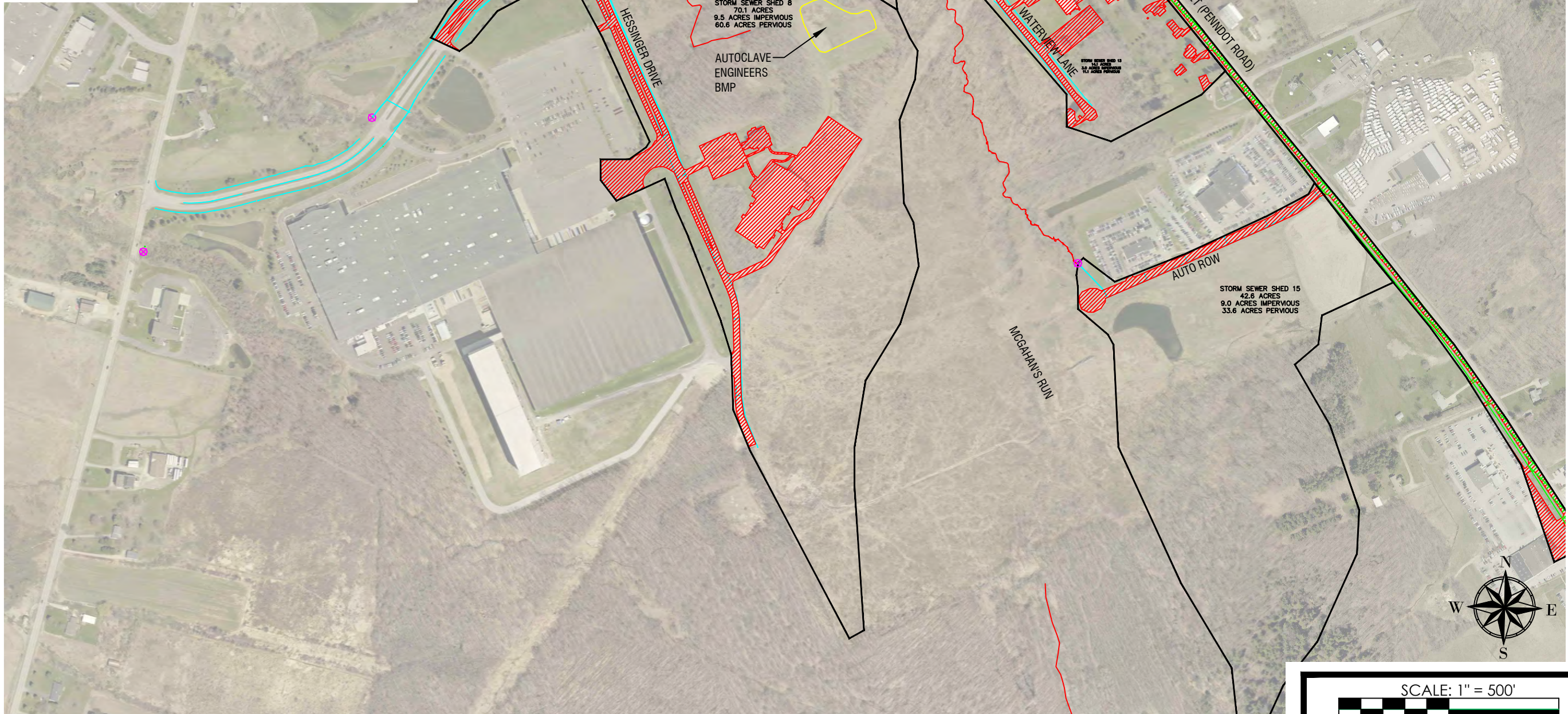
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PRP-6

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION

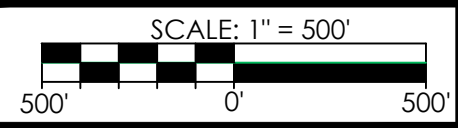


STORM SEWER SHED 8
 70.1 ACRES
 9.5 ACRES IMPERVIOUS
 60.6 ACRES PERVIOUS

AUTOCLAVE
 ENGINEERS
 BMP

STORM SEWER SHED 12
 4.0 ACRES IMPERVIOUS
 8.7 ACRES PERVIOUS

STORM SEWER SHED 15
 42.6 ACRES
 9.0 ACRES IMPERVIOUS
 33.6 ACRES PERVIOUS





WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHEDS 13 & 14

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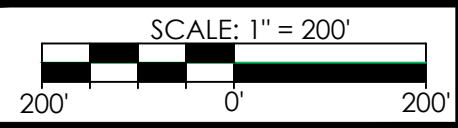
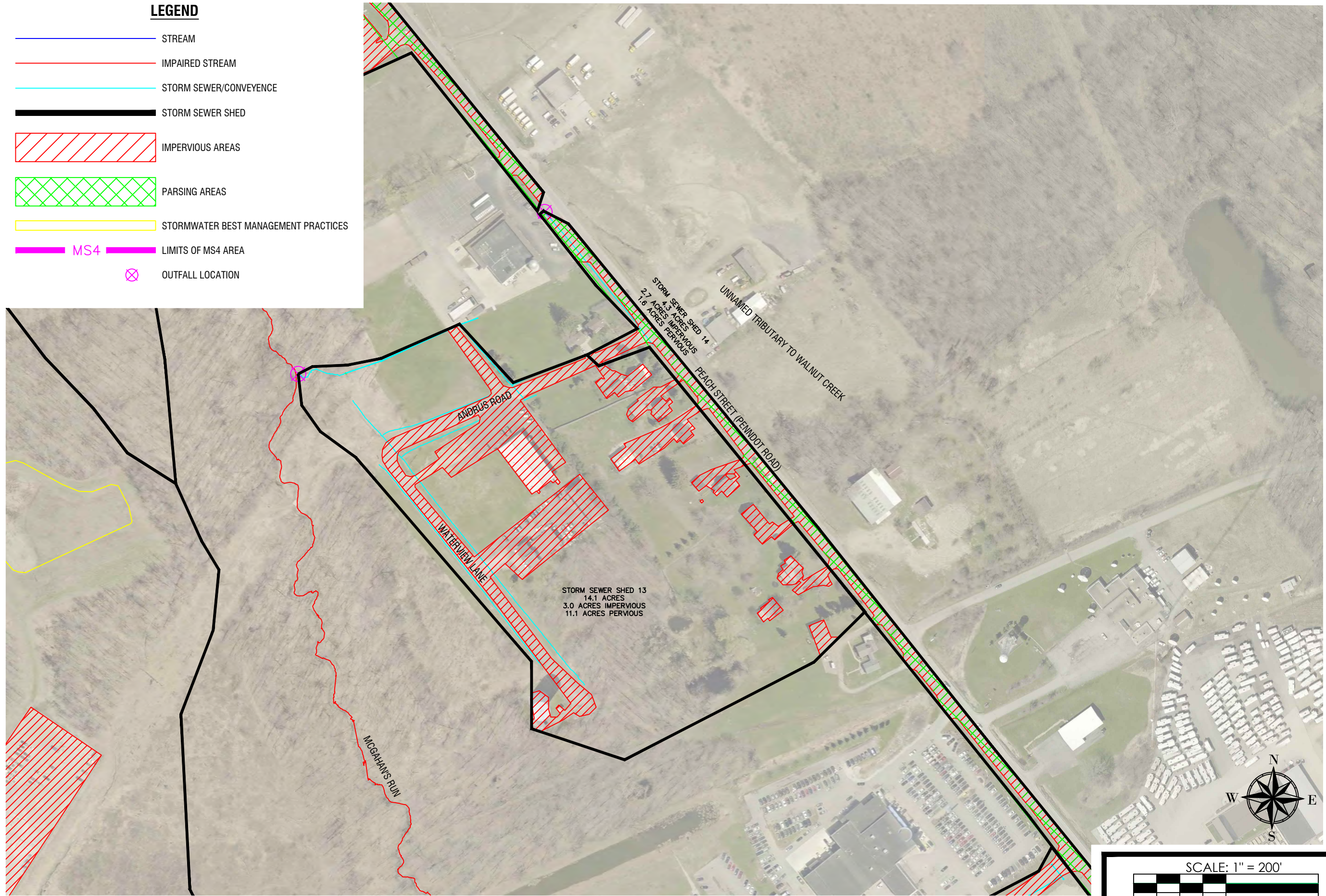
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PRP-7

LEGEND

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-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION





WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHED 15

JOB NO.

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DATE








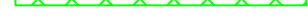


7/31/2017

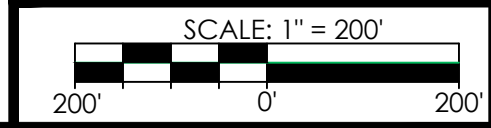
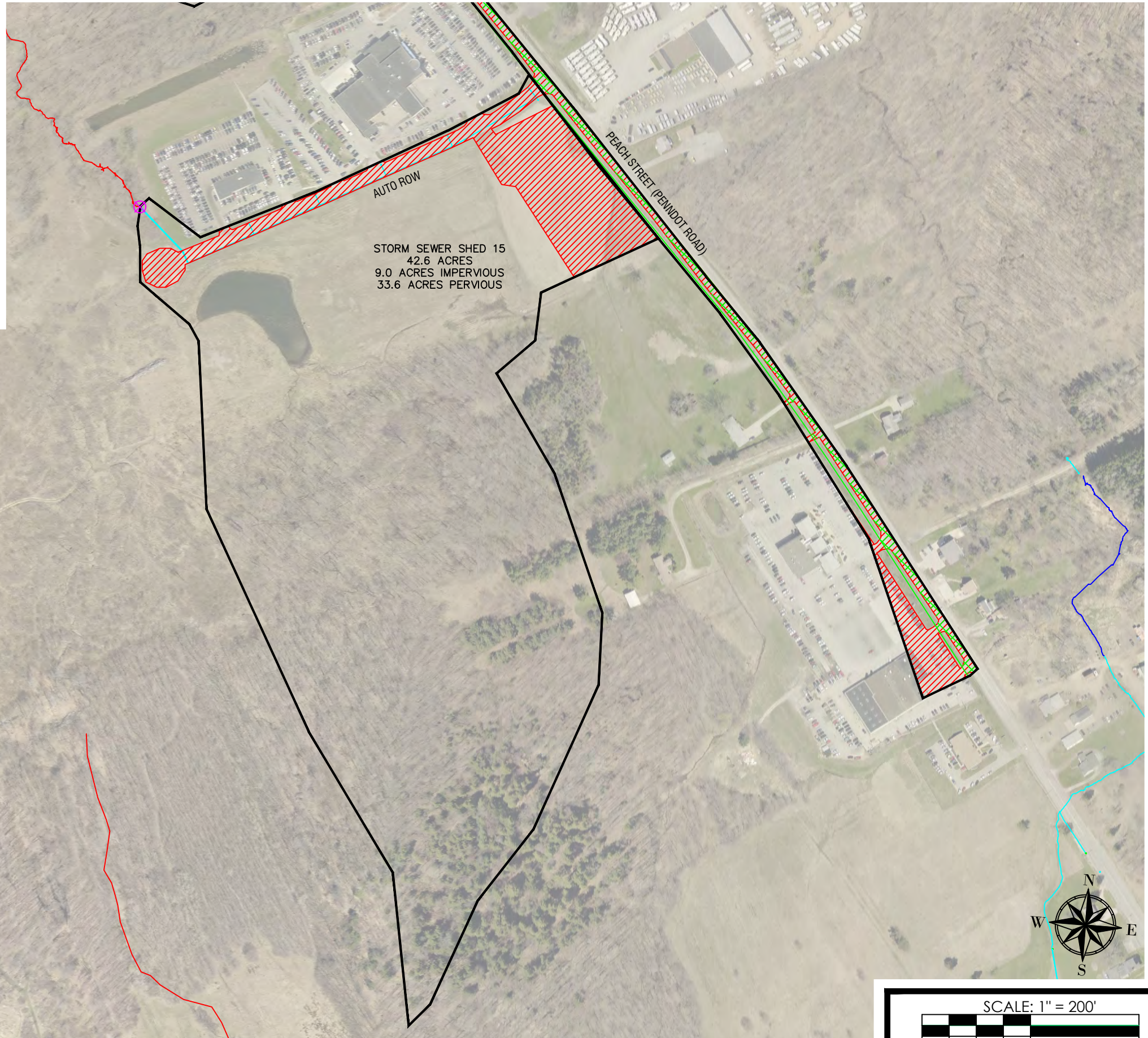
Rev. 12/4/2024

DRAWING NO.

PRP-8

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4
-  LIMITS OF MS4 AREA
-  OUTFALL LOCATION





WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHED 16

JOB NO.
-





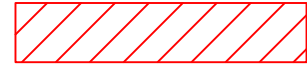




DRAWN BY
MEJ

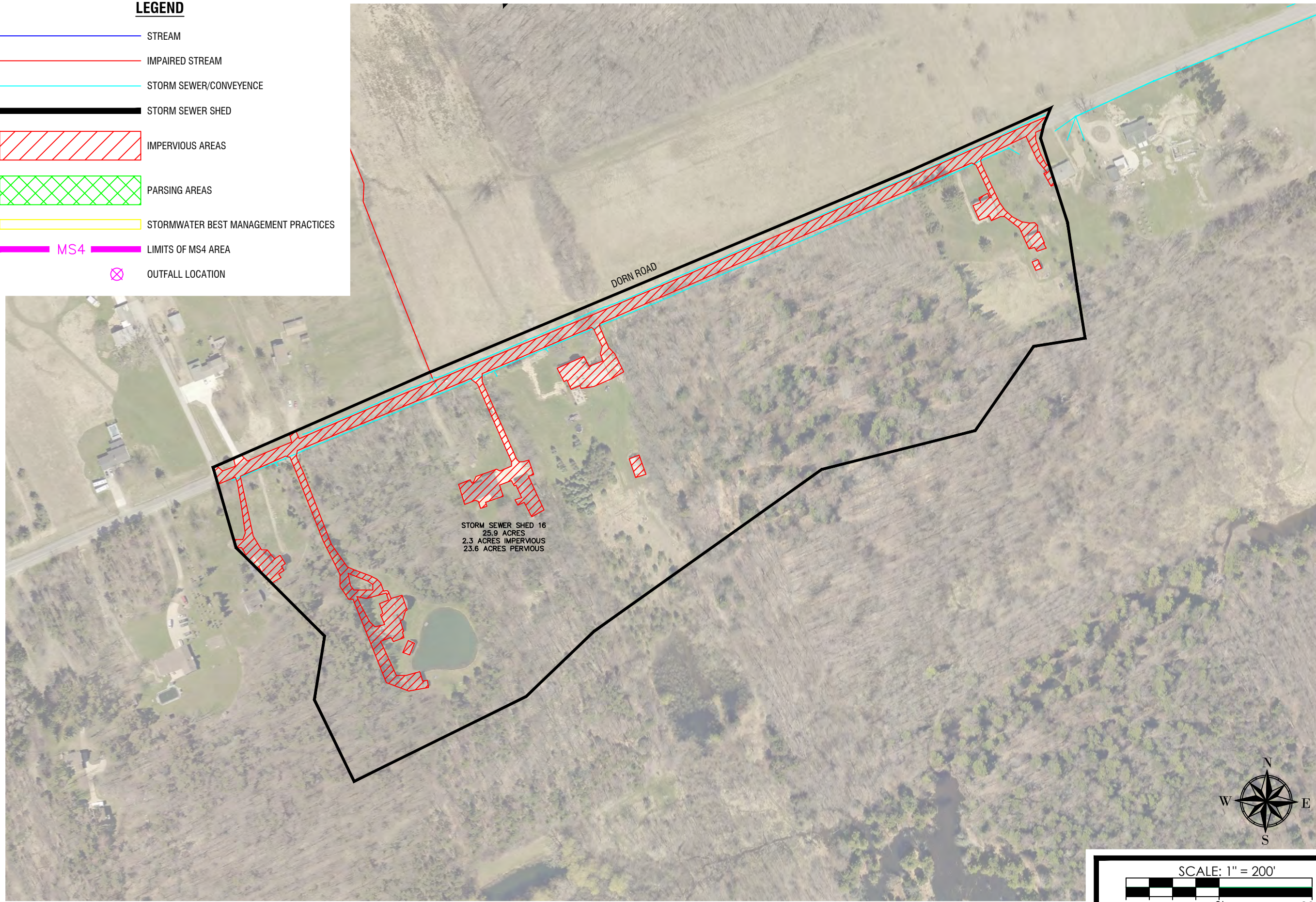
CHECKED BY
-

DATE
7/31/2017

DRAWING NO.
PRP-9

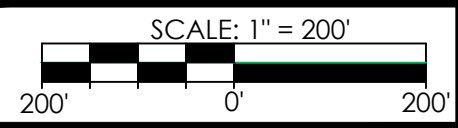
LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION








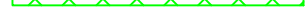



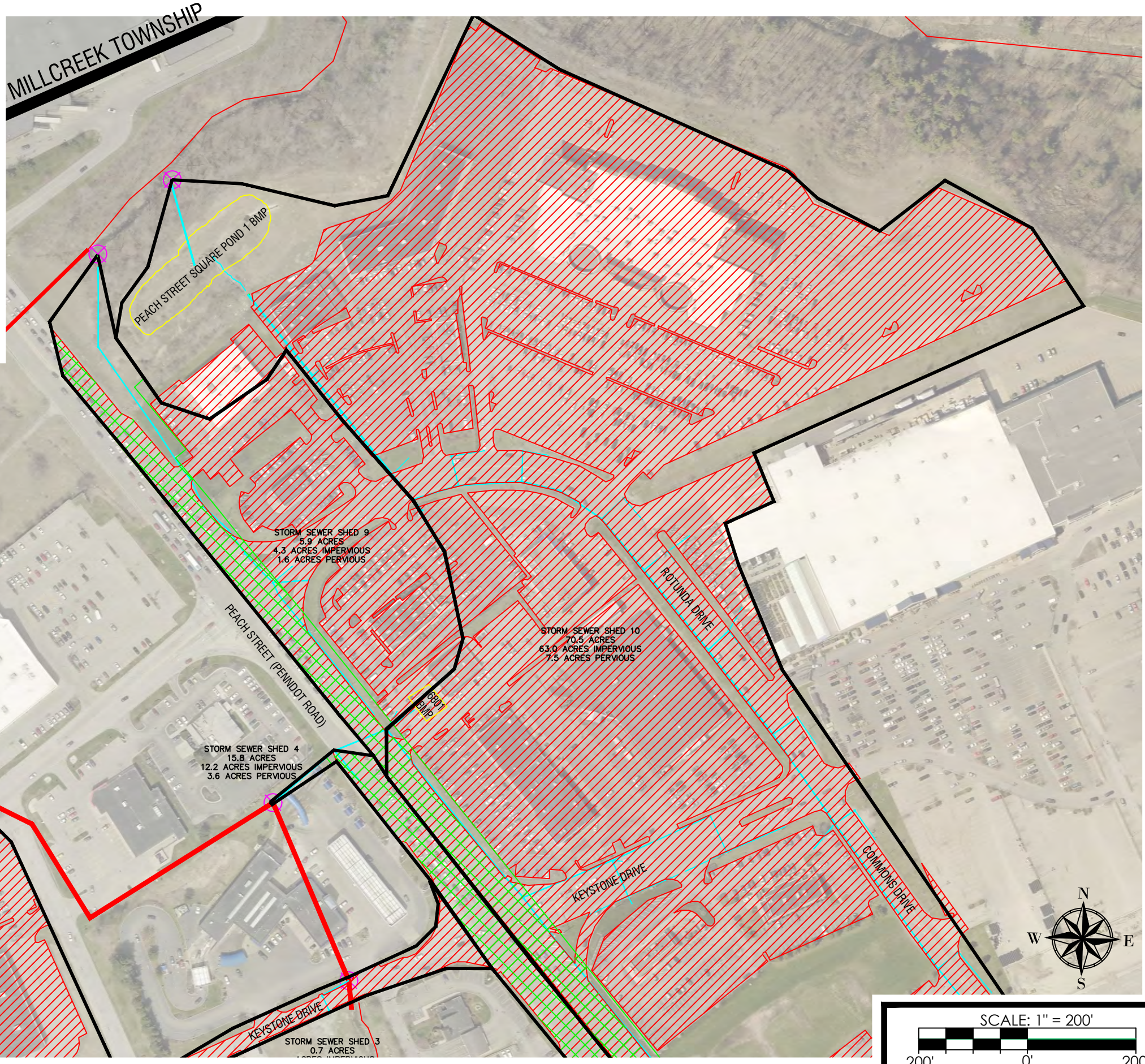
STORM SEWER SHED 16
25.9 ACRES
2.3 ACRES IMPERVIOUS
23.6 ACRES PERVIOUS

DORN ROAD



LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION



STORM SEWER SHED 1
5.8 ACRES
1.6 ACRES IMPERVIOUS
4.2 ACRES PERVIOUS

STORM SEWER SHED 9
9.9 ACRES
4.3 ACRES IMPERVIOUS
1.6 ACRES PERVIOUS

STORM SEWER SHED 10
70.5 ACRES
63.0 ACRES IMPERVIOUS
7.5 ACRES PERVIOUS

STORM SEWER SHED 4
15.8 ACRES
12.2 ACRES IMPERVIOUS
3.6 ACRES PERVIOUS








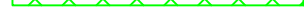

STORM SEWER SHED 3
0.7 ACRES

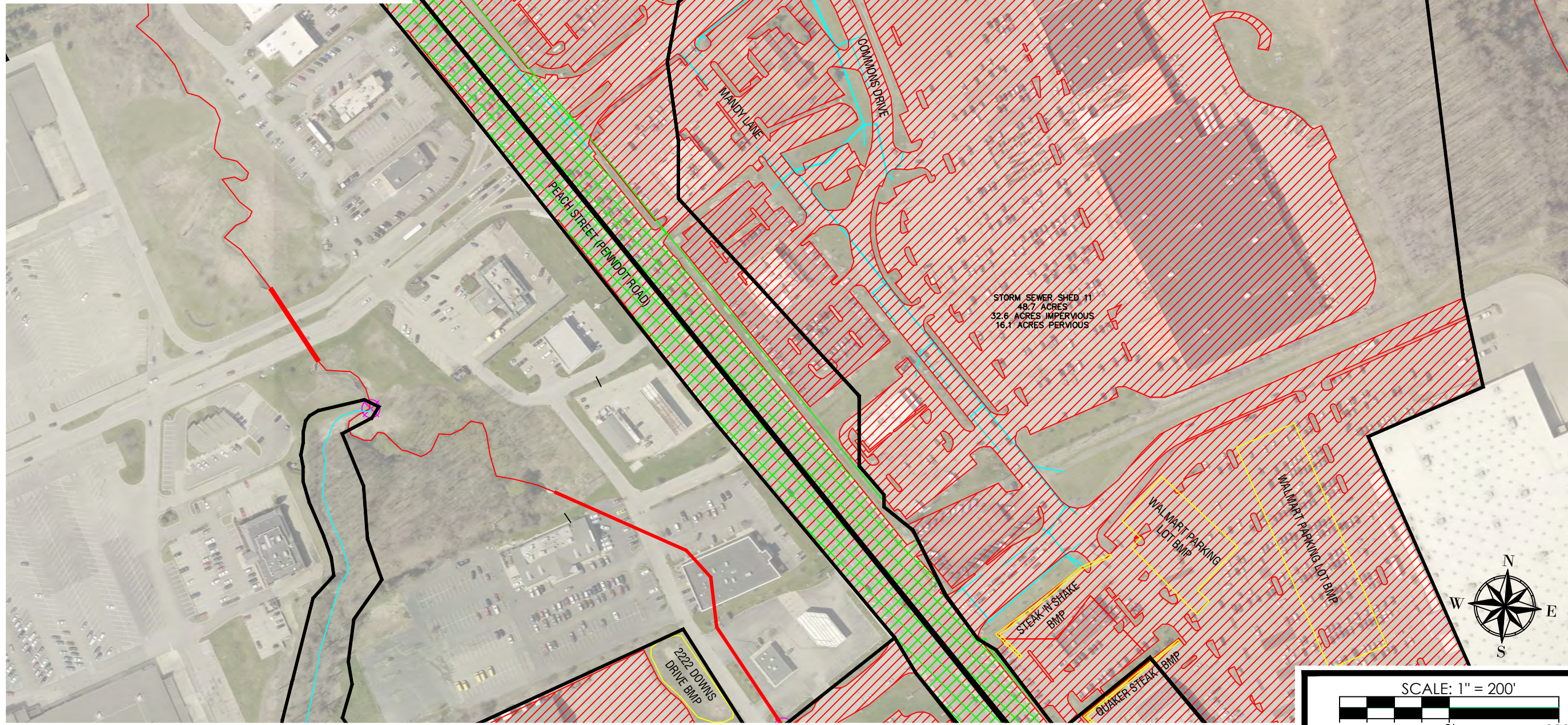


**WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHEDS 9 & 10**

JOB NO.	-
DRAWN BY	MEJ
CHECKED BY	-
DATE	7/31/2017
DRAWING NO.	PRP-10

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION












STORM SEWER SHED 11
 48.7 ACRES
 32.6 ACRES IMPERVIOUS
 16.1 ACRES PERVIOUS



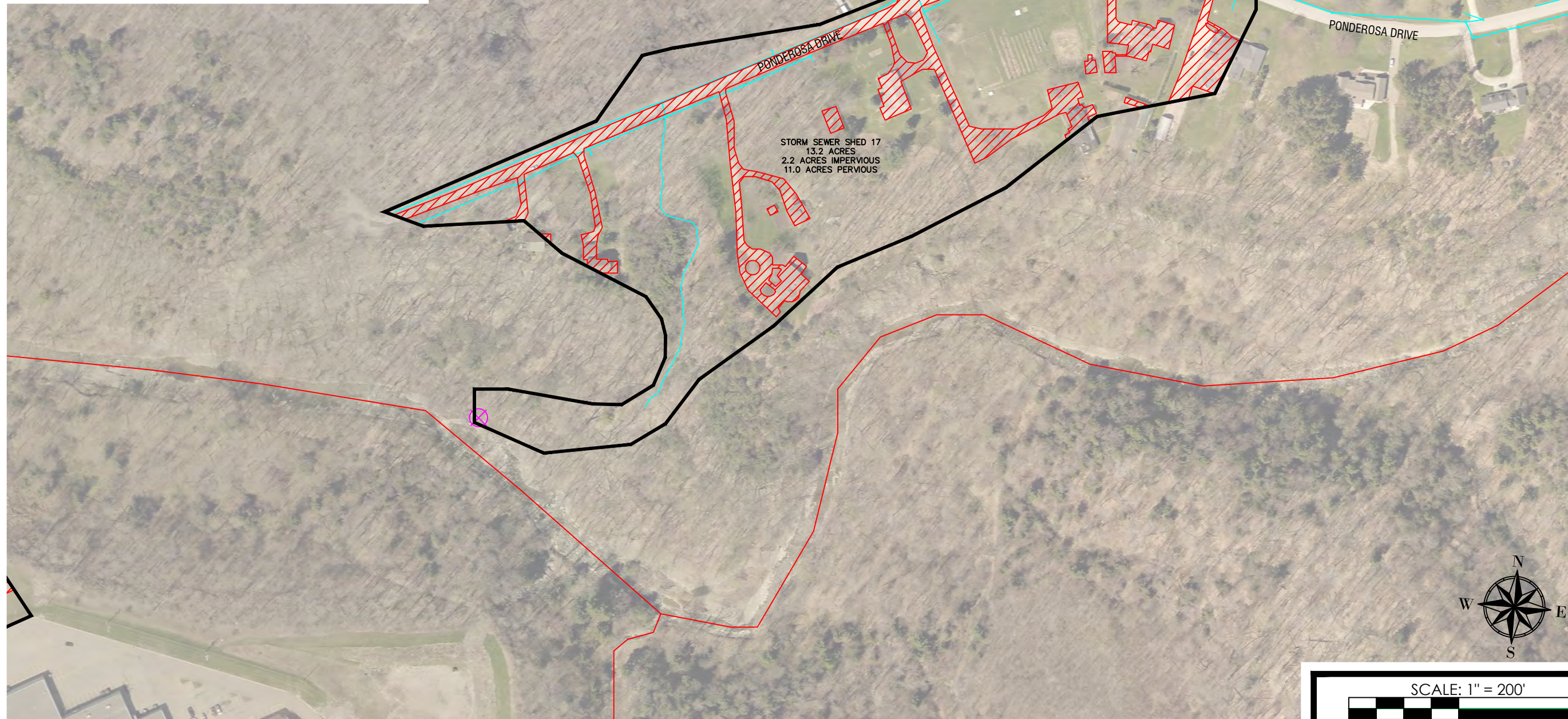
**WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHED 11**

JOB NO.	-
DRAWN BY	MEJ
CHECKED BY	-
DATE	7/31/2017
DRAWING NO.	PRP-11

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION

MILLCREEK TOWNSHIP



**WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHED 17**

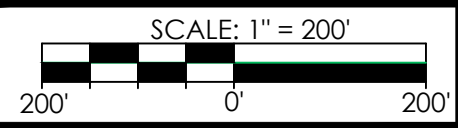
JOB NO.
-

DRAWN BY
MEJ

CHECKED BY
-

DATE
7/31/2017

DRAWING NO.
PRP-12





WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHED 18

JOB NO.
-










DRAWN BY
MEJ

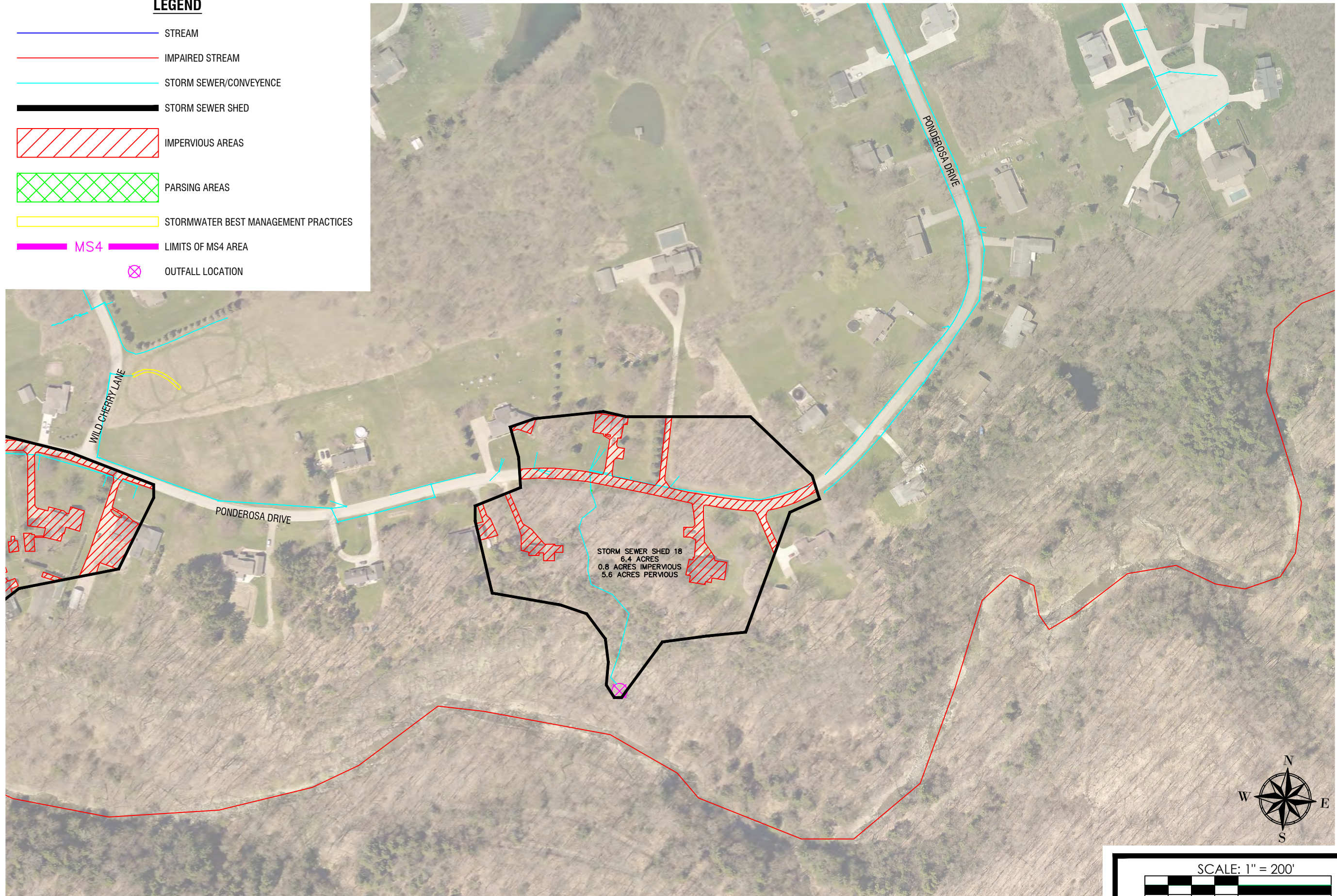
CHECKED BY
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DATE
7/31/2017

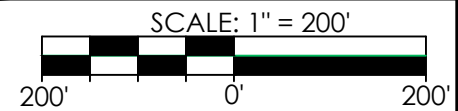
DRAWING NO.
PRP-13

LEGEND










-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION

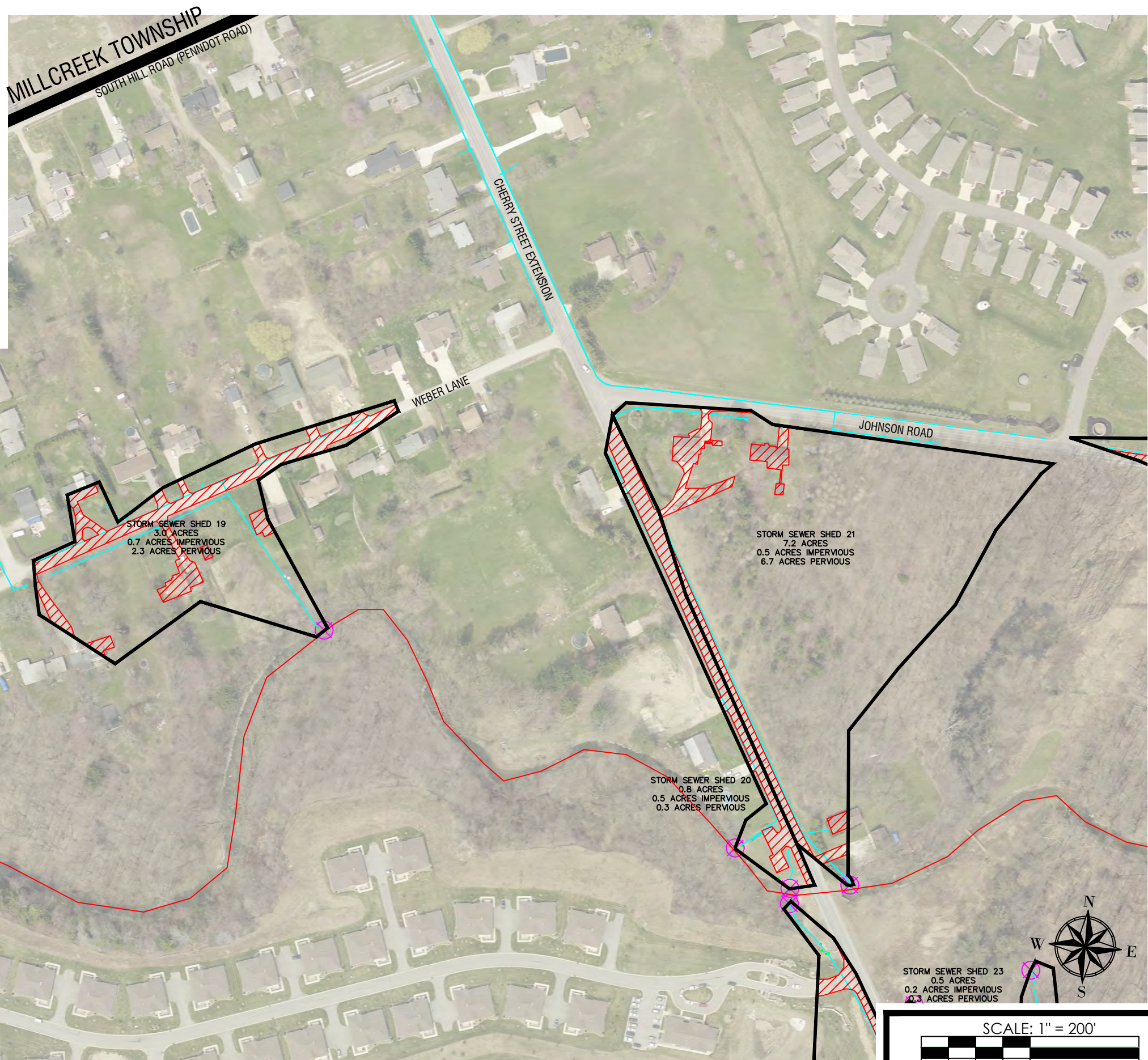


STORM SEWER SHED 18
6.4 ACRES
0.8 ACRES IMPERVIOUS
5.6 ACRES PERVIOUS



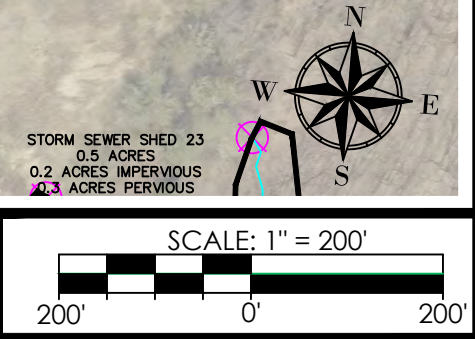
LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION



**WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHEDS 19, 20, & 21**

JOB NO.	-
DRAWN BY	MEJ
CHECKED BY	-
DATE	7/31/2017
DRAWING NO.	PRP-14





WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHEDS 22, 23, & 24

JOB NO.

-

DRAWN BY

MEJ

CHECKED BY

-






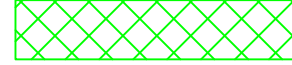



DATE

7/31/2017

DRAWING NO.

PRP-15

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION





WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHEDS 25, 26, 27 & 28

JOB NO. -





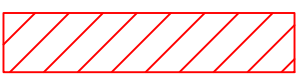
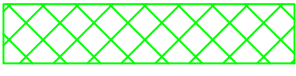



DRAWN BY
MEJ

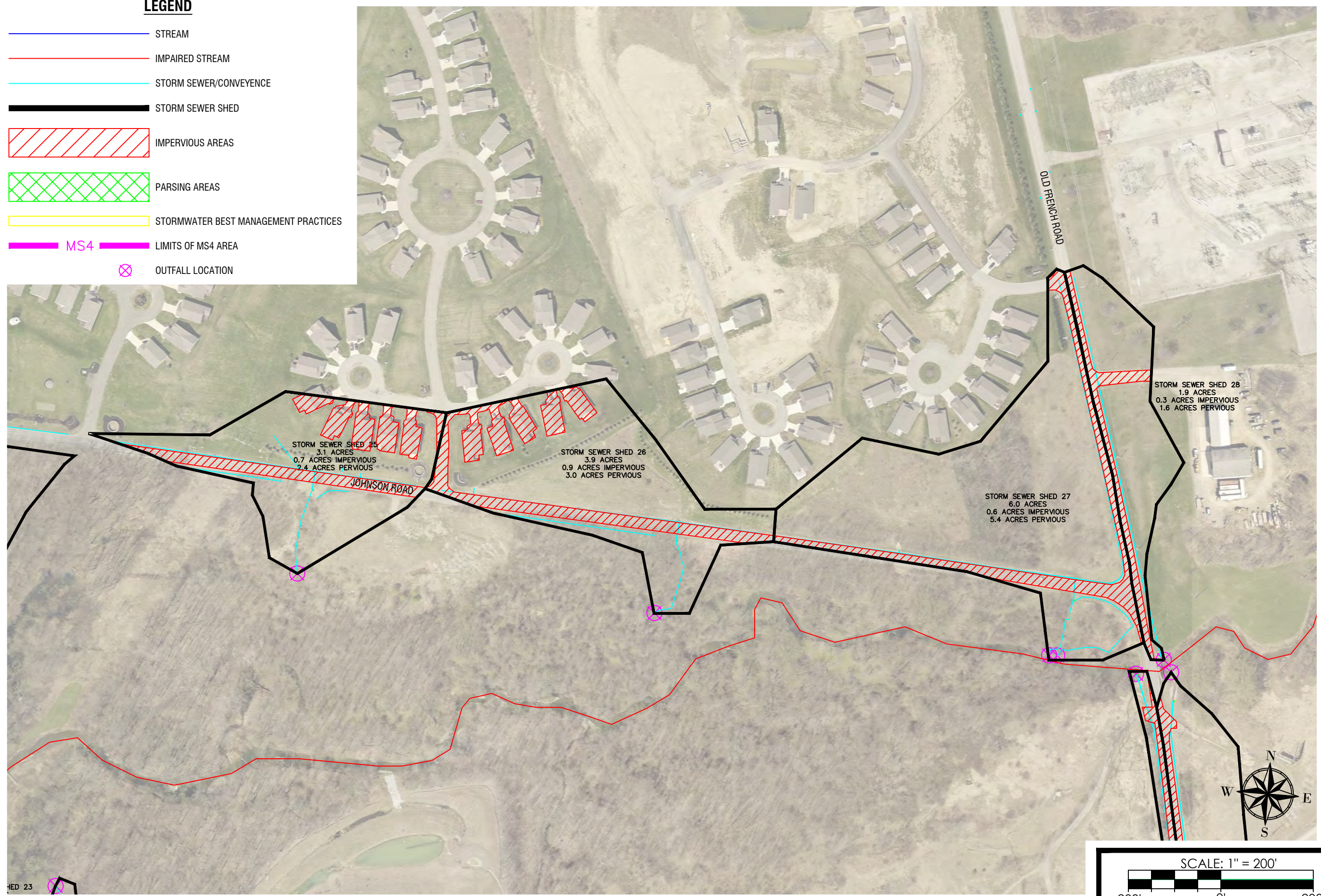
CHECKED BY -

DATE
7/31/2017

DRAWING NO.
PRP-16

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION





WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHEDS 29 & 30

JOB NO.

-

DRAWN BY

MEJ

CHECKED BY

-











DATE

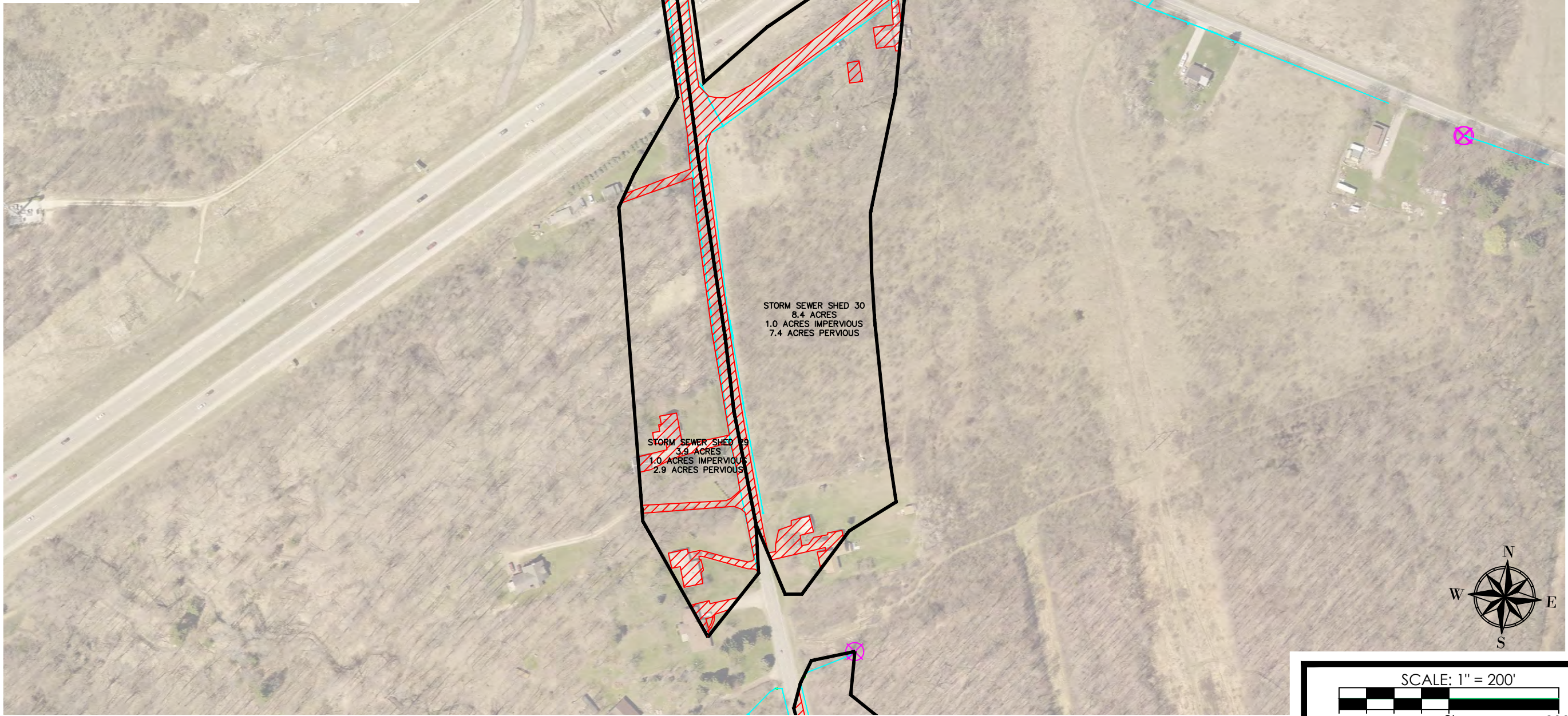
7/31/2017

DRAWING NO.








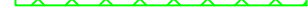


PRP-17

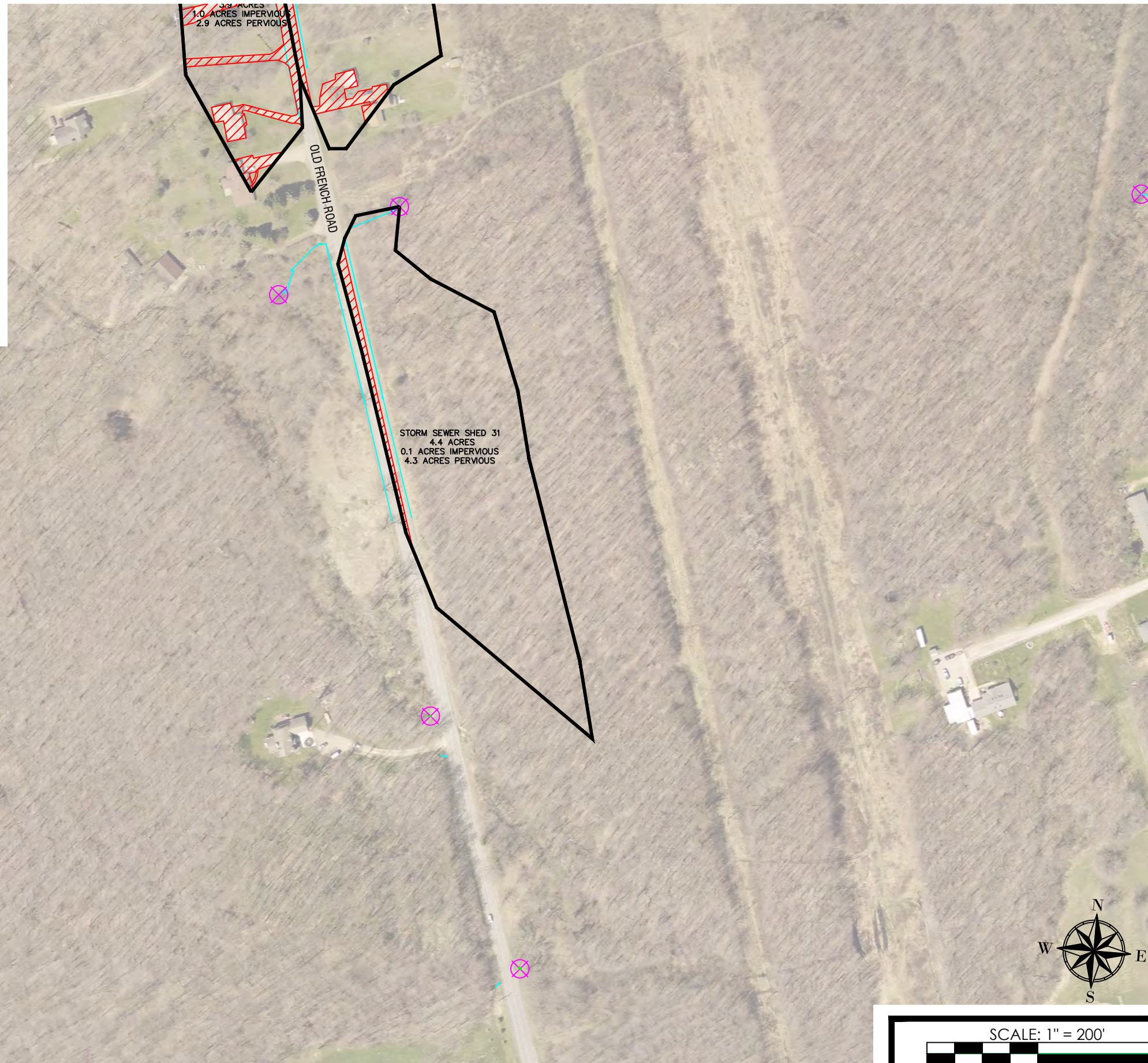
LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4
-  LIMITS OF MS4 AREA
-  OUTFALL LOCATION



LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4
-  LIMITS OF MS4 AREA
-  OUTFALL LOCATION



3.3 ACRES
1.0 ACRES IMPERVIOUS
2.9 ACRES PERVIOUS

STORM SEWER SHED 31
4.4 ACRES
0.1 ACRES IMPERVIOUS
4.3 ACRES PERVIOUS

OLD FRENCH ROAD



**WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHED 31**

JOB NO.	-
DRAWN BY	MEJ
CHECKED BY	-
DATE	7/31/2017
DRAWING NO.	PRP-18



WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHED 42

JOB NO.

-

DRAWN BY

MEJ

CHECKED BY

-










DATE

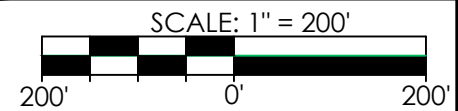
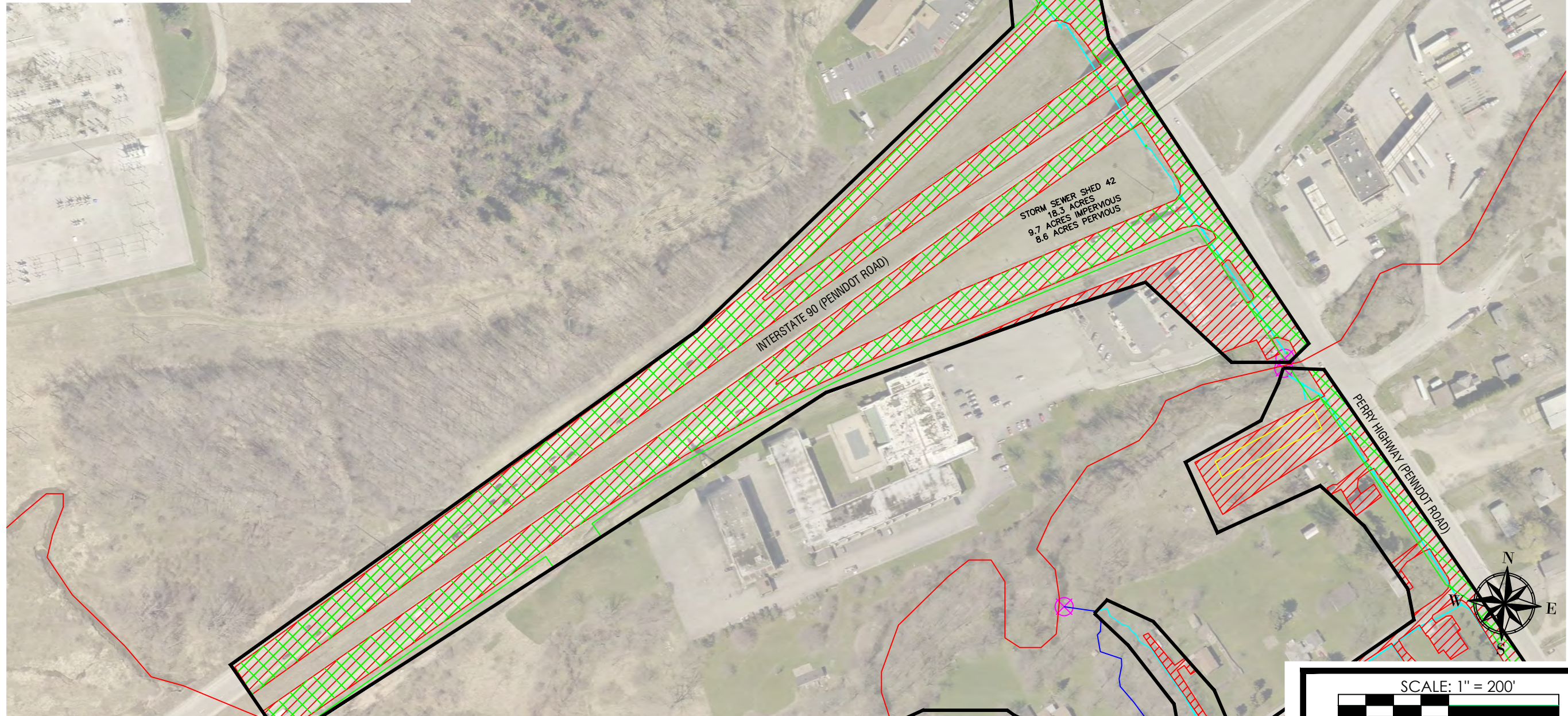
7/31/2017

DRAWING NO.

PRP-19

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION





WALNUT CREEK WATERSHED
 POLLUTANT REDUCTION PLAN
 STORM SEWER SHEDS 32, 33, 34,
 35, 36, 37, 38, 39, & 41

JOB NO.

-

DRAWN BY

MEJ

CHECKED BY

-





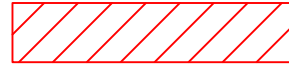
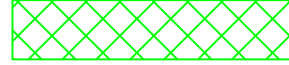



DATE

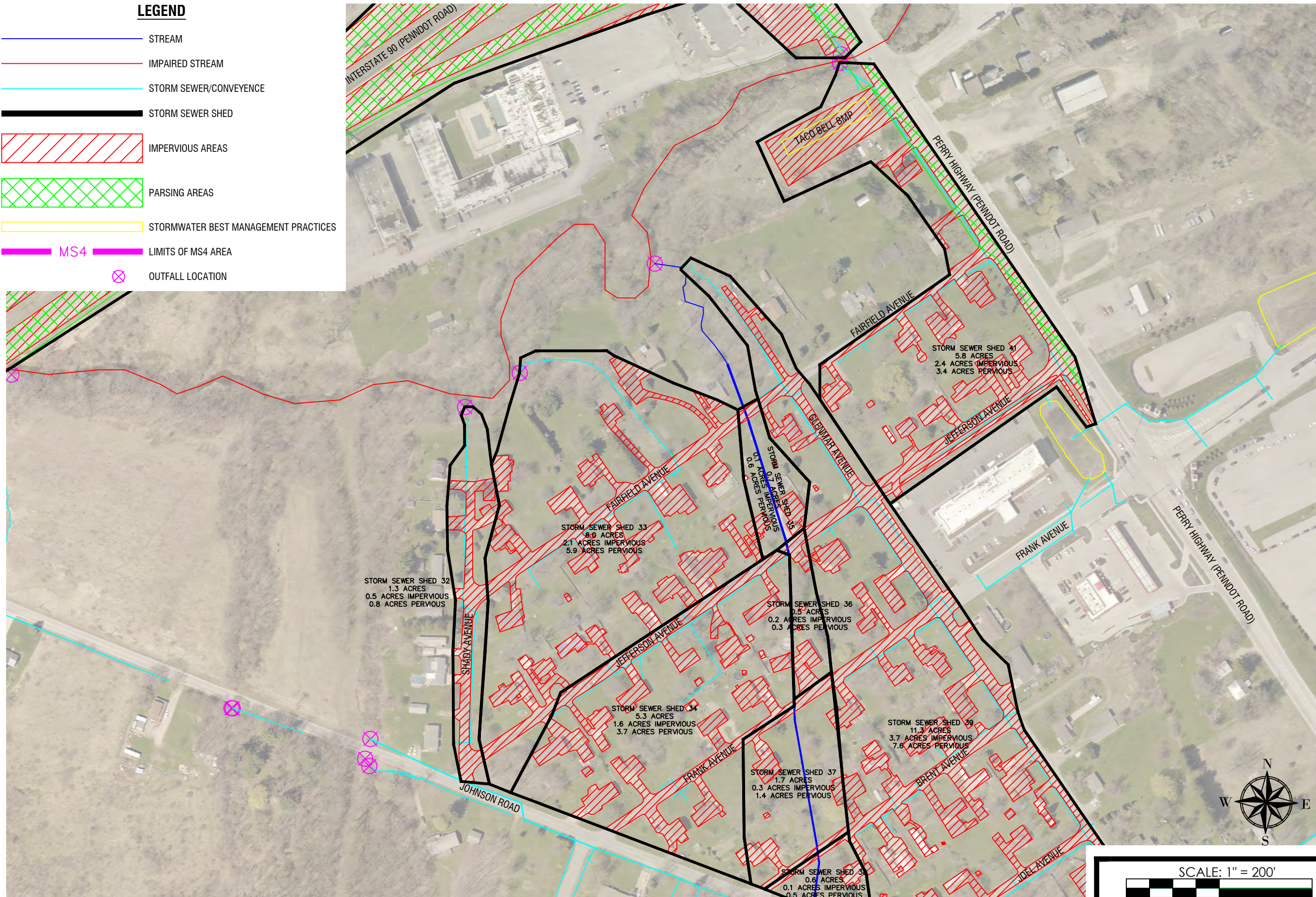
7/31/2017

DRAWING NO.

PRP-20

LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION



INTERSTATE 90 (PENNDOT ROAD)

TACO BELL BMP

STORM SEWER SHED 41
 5.8 ACRES
 2.4 ACRES IMPERVIOUS
 3.4 ACRES PERVIOUS

STORM SEWER SHED 33
 8.0 ACRES
 2.1 ACRES IMPERVIOUS
 5.9 ACRES PERVIOUS

STORM SEWER SHED 32
 1.3 ACRES
 0.5 ACRES IMPERVIOUS
 0.8 ACRES PERVIOUS

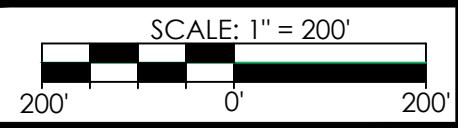
STORM SEWER SHED 36
 0.5 ACRES
 0.2 ACRES IMPERVIOUS
 0.3 ACRES PERVIOUS

STORM SEWER SHED 34
 5.3 ACRES
 1.6 ACRES IMPERVIOUS
 3.7 ACRES PERVIOUS










STORM SEWER SHED 39
 11.3 ACRES
 3.7 ACRES IMPERVIOUS
 7.6 ACRES PERVIOUS

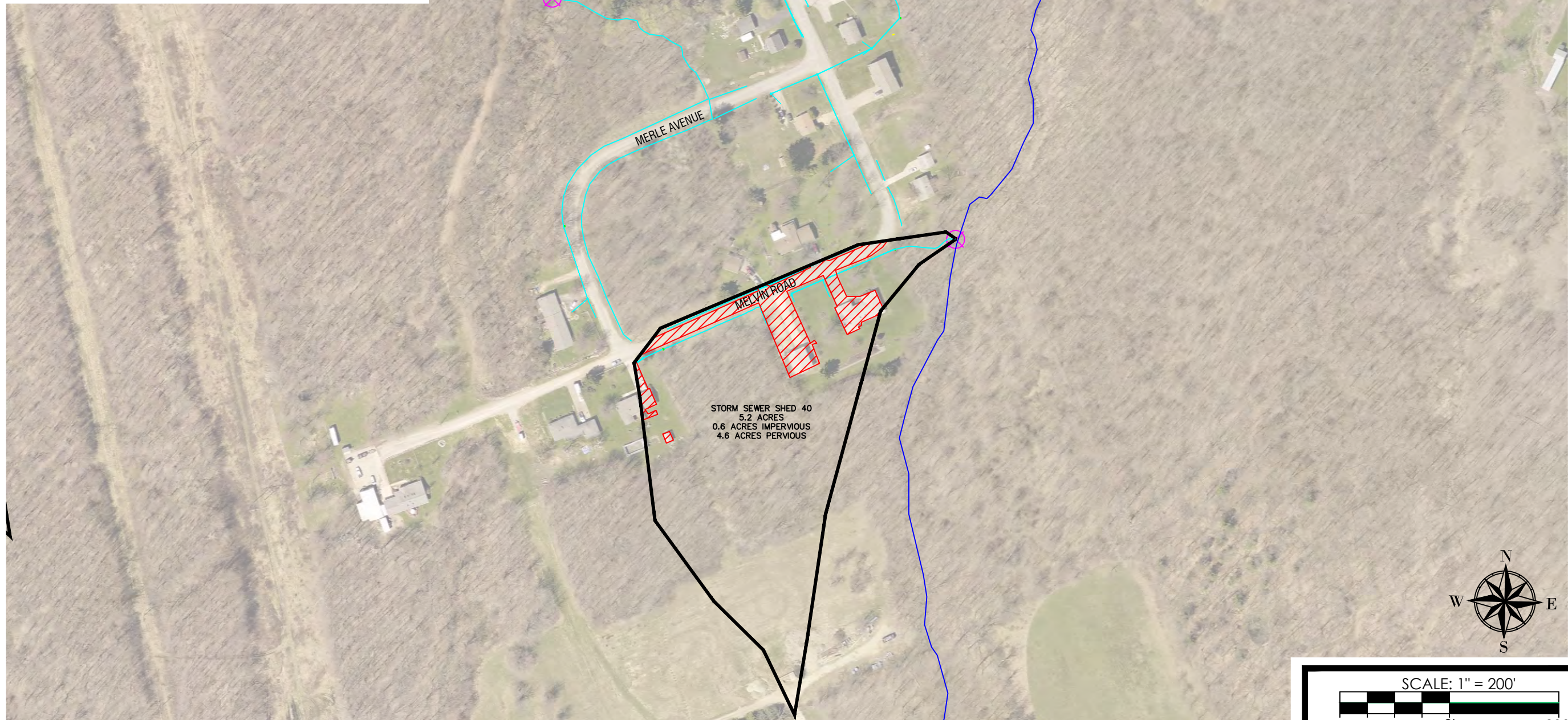
STORM SEWER SHED 37
 1.7 ACRES
 0.3 ACRES IMPERVIOUS
 1.4 ACRES PERVIOUS

STORM SEWER SHED 35
 0.6 ACRES
 0.1 ACRES IMPERVIOUS
 0.5 ACRES PERVIOUS



LEGEND

-  STREAM
-  IMPAIRED STREAM
-  STORM SEWER/CONVEYENCE
-  STORM SEWER SHED
-  IMPERVIOUS AREAS
-  PARSING AREAS
-  STORMWATER BEST MANAGEMENT PRACTICES
-  MS4 LIMITS OF MS4 AREA
-  OUTFALL LOCATION



**WALNUT CREEK WATERSHED
POLLUTANT REDUCTION PLAN
STORM SEWER SHED 40**

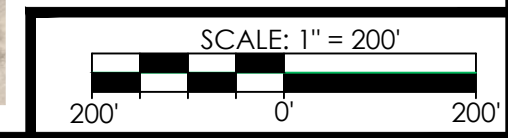
JOB NO.
-

DRAWN BY
MEJ

CHECKED BY
-

DATE
7/31/2017

DRAWING NO.
PRP-21



APPENDIX 3 - POLLUTANT LOADING AND REDUCTION CALCULATIONS

Walnut Creek Watershed
Pollutant Reduction Plan

Pollutant of Concern:

10% Reduction in Sediment

Use "All Other Counties" for pollutant loading.

Impervious Areas = 1839 lbs/acre/yr
Previous Areas = 264.96 lbs/acre/yr

Overall Pollutant Loading

Storm Sewer Shed	Outfall Nos.	Stream	Drainage Area (acres)	Impervious	Pervious	TSS		Total TSS (lbs/yr)	
				Cover (acres)	Coverage (acres)	Impervious (lbs/yr)	TSS Pervious (lbs/yr)		
1	227	Fossil Creek	5.8	1.6	4.2	2942.4	1112.8	4055.2	
2	228	Fossil Creek	38.4	20.8	17.6	38251.2	4663.3	42914.5	
3	226	Fossil Creek	0.7	0.6	0.1	1103.4	26.5	1129.9	
4	234	Fossil Creek	15.8	12.2	3.6	22435.8	953.9	23389.7	
5	223	Fossil Creek	11.5	5.3	6.2	9746.7	1642.8	11389.5	
6	224 & 225	Fossil Creek	17.8	13.5	4.3	24826.5	1139.3	25965.8	
7	221 & 222	Fossil Creek	5.1	1.5	3.6	2758.5	953.9	3712.4	
8	408 & 413	Fossil Creek	70.1	9.5	60.6	17470.5	16056.6	33527.1	
9	230	Fossil Creek	5.9	4.3	1.6	7907.7	423.9	8331.6	
10	229	Fossil Creek	70.5	63	7.5	115857	1987.2	117844.2	
11	233	McGahan's Run	48.7	32.6	16.1	59951.4	4265.9	64217.3	
12	409 & 410	McGahan's Run	10.7	4	6.7	7356	1775.2	9131.2	
13	411	McGahan's Run	14.1	3	11.1	5517	2941.1	8458.1	
14	412	Unnamed Trib.	4.3	2.7	1.6	4965.3	423.9	5389.2	
15	414	McGahan's Run	42.6	9	33.6	16551	8902.7	25453.7	Revised for Bianchi Honda South BMP
16	415, 416 & 417	McGahan's Run	25.9	2.3	23.6	4229.7	6253.1	10482.8	
17	206	Walnut Creek	13.2	2.2	11	4045.8	2914.6	6960.4	
18	204	Walnut Creek	6.4	0.8	5.6	1471.2	1483.8	2955.0	
19	208	Walnut Creek	3	0.7	2.3	1287.3	609.4	1896.7	
20	210 & 211	Walnut Creek	0.8	0.5	0.3	919.5	79.5	999.0	
21	307	Walnut Creek	7.2	0.5	6.7	919.5	1775.2	2694.7	
22	209	Walnut Creek	9.5	0.6	8.9	1103.4	2358.1	3461.5	
23	305	Walnut Creek	0.5	0.2	0.3	367.8	79.5	447.3	
24	306	Walnut Creek	2	0.3	1.7	551.7	450.4	1002.1	
25	311	Walnut Creek	3.1	0.7	2.4	1287.3	635.9	1923.2	
26	310	Walnut Creek	3.9	0.9	3	1655.1	794.9	2450.0	
27	308 & 309	Walnut Creek	6	0.6	5.4	1103.4	1430.8	2534.2	
28	318	Walnut Creek	1.9	0.3	1.6	551.7	423.9	975.6	
29	313	Walnut Creek	3.9	1	2.9	1839	768.4	2607.4	
30	314	Walnut Creek	8.4	1	7.4	1839	1960.7	3799.7	
31	352	Unnamed Trib.	4.4	0.1	4.3	183.9	1139.3	1323.2	
32	342	Walnut Creek	1.3	0.5	0.8	919.5	212.0	1131.5	
33	341	Walnut Creek	8	2.1	5.9	3861.9	1563.3	5425.2	
34	340	Unnamed Trib.	5.3	1.6	3.7	2942.4	980.4	3922.8	
35	340	Unnamed Trib.	0.7	0.1	0.6	183.9	159.0	342.9	
36	340	Unnamed Trib.	0.5	0.2	0.3	367.8	79.5	447.3	
37	340	Unnamed Trib.	1.7	0.3	1.4	551.7	370.9	922.6	
38	340	Unnamed Trib.	0.6	0.1	0.5	183.9	132.5	316.4	
39	340	Walnut Creek	11.3	3.7	7.6	6804.3	2013.7	8818.0	
40	346	Unnamed Trib.	5.2	0.6	4.6	1103.4	1218.8	2322.2	
41	344	Walnut Creek	5.8	2.4	3.4	4413.6	900.9	5314.5	
42	319	Walnut Creek	18.3	9.7	8.6	17838.3	2278.7	20117.0	
Totals			520.8	217.6	303.2	400166.4	80335.9	480502.3	
							10% TSS	48050.2	

Parsing of PennDOT Right-of-Ways

Storm Sewer Shed	Outfall Nos.	Stream	ROW Area (acres)	Impervious Cover (acres)	Pervious Coverage (acres)	TSS		Total TSS (lbs/yr)
						Impervious (lbs/yr)	TSS Pervious (lbs/yr)	
1	227	Fossil Creek	1.2	0.5	0.7	919.5	185.5	1105.0
2	228	Fossil Creek	0	0	0	0	0.0	0.0
3	226	Fossil Creek	0	0	0	0	0.0	0.0
4	234	Fossil Creek	15.7	12.2	3.4	22435.8	900.9	23336.7
5	223	Fossil Creek	0.3	0	0.3	0	79.5	79.5
6	224 & 225	Fossil Creek	0.6	0	0.6	0	159.0	159.0
7	221 & 222	Fossil Creek	0.6	0.4	0.2	735.6	53.0	788.6
8	408 & 413	Fossil Creek	0	0	0	0	0.0	0.0
9	230	Fossil Creek	1.9	1.1	0.8	2022.9	212.0	2234.9
10	229	Fossil Creek	15.7	11.3	4.4	20780.7	1165.8	21946.5
11	233	McGahan Run	0.3	0	0.3	0	79.5	79.5
12	409 & 410	McGahan Run	1.1	0.8	0.3	1471.2	79.5	1550.7
13	411	McGahan Run	0	0	0	0	0.0	0.0
14	412	Unnamed Trib.	2.9	1.9	1	3494.1	265.0	3759.1
15	414	McGahan Run	0	0	0	0	0.0	0.0
16	415, 416 & 417	McGahan Run	0	0	0	0	0.0	0.0
17	206	Walnut Creek	0	0	0	0	0.0	0.0
18	204	Walnut Creek	0	0	0	0	0.0	0.0
19	208	Walnut Creek	0	0	0	0	0.0	0.0
20	210 & 211	Walnut Creek	0	0	0	0	0.0	0.0
21	307	Walnut Creek	0	0	0	0	0.0	0.0
22	209	Walnut Creek	0	0	0	0	0.0	0.0
23	305	Walnut Creek	0	0	0	0	0.0	0.0
24	306	Walnut Creek	0	0	0	0	0.0	0.0
25	311	Walnut Creek	0	0	0	0	0.0	0.0
26	310	Walnut Creek	0	0	0	0	0.0	0.0
27	308 & 309	Walnut Creek	0	0	0	0	0.0	0.0
28	318	Walnut Creek	0	0	0	0	0.0	0.0
29	313	Walnut Creek	0	0	0	0	0.0	0.0
30	314	Walnut Creek	0	0	0	0	0.0	0.0
31	352	Unnamed Trib.	0	0	0	0	0.0	0.0
32	342	Walnut Creek	0	0	0	0	0.0	0.0
33	341	Walnut Creek	0	0	0	0	0.0	0.0
34	340	Unnamed Trib.	0	0	0	0	0.0	0.0
35	340	Unnamed Trib.	0	0	0	0	0.0	0.0
36	340	Unnamed Trib.	0	0	0	0	0.0	0.0
37	340	Unnamed Trib.	0	0	0	0	0.0	0.0
38	340	Unnamed Trib.	0	0	0	0	0.0	0.0
39	340	Walnut Creek	0	0	0	0	0.0	0.0
40	346	Unnamed Trib.	0	0	0	0	0.0	0.0
41	344	Walnut Creek	0.6	0.5	0.1	919.5	26.5	946.0
42	319	Walnut Creek	13.9	8.2	5.7	15079.8	1510.3	16590.1
Totals			54.8	36.9	17.8	67859.1	4716.3	72575.4
						Total TSS After Parsing =		407926.9
						10% TSS		40792.7

Pollutant Reduction from Existing BMPs

Storm Sewer	Shed	Outfall Nos.	Stream	BMP Location	NPDES Permit	BMP Type	Treated Area (acres)	Impervious Cover (acres)	Pervious Coverage (acres)	TSS Impervious (lbs/yr)	TSS Pervious (lbs/yr)	Total TSS (lbs/yr)	Reduction Rate (%)	TSS Reduction (lbs/yr)
	6	224 & 225	Fossil Creek	2222 Downs Dr.	N/A	Dry Pond	2.25	1.4	0.85	2574.6	225.2	2800	10	280
	11	233	McGahan Run	Steak 'n Shake	PAG-2002506025	Underground	1.5	1.5	0	2758.5	0.0	2759	10	276
	6	224 & 225	Fossil Creek	Courtyard Marriot	PAR10K120	Underground	9.5	7.6	1.9	13976.4	503.4	14480	10	1448
	6	224 & 225	Fossil Creek	Hilton Garden Inn		Underground	5.6	4.5	1.1	8275.5	291.5	8567	10	857
	11	233	McGahan Run	Quaker Steak		Underground	3.56	3.01	0.55	5535.39	145.7	5681	10	568
	41	344	Walnut Creek	Taco Bell Perry Highway	N/A	Underground	0.99	0.56	0.43	1029.84	113.9	1144	10	114
	9	230	Fossil Creek	6801 Peach Street	N/A	Underground	0.65	0.65	0	1195.35	0.0	1195	10	120
	2	228	Fossil Creek	Erie Marketplace (Target)		Dry Pond	27.8	20	7.8	36780	2066.7	38847	10	3885
	8	408 & 413	Fossil Creek	Peach Street Square Pond	PAR10K086	Dry Pond	31	26	5	47814	1324.8	49139	10	4914
	11	233	McGahan Run	Walmart Parking Lot	PAG-2002507014	Underground	9.1	8.4	0.7	15447.6	185.5	15633	10	1563
	12	409 & 410	McGahan Run	Shell Station		Dry Pond	1.8	1.6	0.2	2942.4	53.0	2995	10	300
	8	408 & 413	Fossil Creek	Autoclave Engineers	PAR10K178	Dry Pond	29.3	4.6	24.7	8459.4	6544.5	15004	10	1500
	5	223	Fossil Creek	Downs at Erie		Dry Pond	19.5	12	7.5	22068	1987.2	24055	10	2406

Total Reduction = 18230
Total TSS After Existing BMPs Reductions = 38969.7
10% TSS 38969.7

Use "All Other Counties" for pollutant loading.

TP Impervious Areas = 2.28 lbs/acre/yr
 TP Pervious Areas = 0.84 lbs/acre/yr

BMPs to Achieve Minimum Pollutant Reductions

Original Plan

Storm Sewer	Shed	Outfall Nos.	Stream	BMP Location	Construction Type	BMP Type	Treated Area (acres)	Impervious Cover (acres)	Pervious Coverage (acres)	TSS Impervious (lbs/yr)	TSS Pervious (lbs/yr)	Total TSS (lbs/yr)	Reduction Rate (%)	TSS Reduction (lbs/yr)
	2	228	Fossil Creek	Erie Marketplace (Target)	Retrofit	Ext. Dry Pond	27.8	20	7.8	36780	2066.7	38847	50	19423
	10	229	Fossil Creek	Peach Street Square Pond	Retrofit	Ext. Dry Pond	31	26	5	47814	1324.8	49139	50	24569

Total Reduction = 43993
Remaining Pollutant Loading = -5023.0

AMENDED PLAN 12/3/2024 - Extended Dry Detention Basin Option

2	228	Fossil Creek	Erie Marketplace (Target)	Retrofit	Ext. Dry Pond		27.8	20	7.8	36780	2066.7	38847	50	19423	Proposed Retrofit
15	414	McGahan Run	Bianchi South	New	Wet Pond	N/A	39.5	7.8	31.7	14344.2	8399.2	22743	60	13646	Built 2021
5	223	Fossil Creek	Hawkeye Hotel	New	Ext. Dry Pond	N/A	2.51	2.19	0.32	4027.41	84.8	4112	60	2467	Built 2021
22	209	Walnut Creek	Rustic Ridge	New	Wet Pond	N/A	0.45	0.14	0.31	257.46	82.1	340	60	204	Under Construction
22	209	Walnut Creek	Rustic Ridge	New	Rain Garden	N/A	5.81	0.65	5.16	1195.35	1367.2	2563	55	1409	Under Construction
8	408 & 413	Fossil Creek	Calamar	New	Ext. Dry Pond	N/A	7.4	3.8	3.6	6988.2	953.9	7942	60	4765	Under Construction

Total Reduction = 41915
Remaining Pollutant Loading = -2945.4

AMENDED PLAN 12/3/2024 - Infiltration Injection Well Option

Storm Sewer	Shed	Outfall Nos.	Stream	BMP Location	Construction Type	BMP Type	Treated Area (acres)	Impervious Cover (acres)	Pervious Coverage (acres)	TSS Impervious (lbs/yr)	TSS Pervious (lbs/yr)	Total TSS (lbs/yr)	Reduction Rate (%)	TSS Reduction (lbs/yr)		
	2	228	Fossil Creek	Erie Marketplace (Target)	Retrofit	Infiltration Injection Well	27.8	20	7.8	36780	2066.7	38847	85	33020	Proposed Retrofit	
	15	414	McGahan Run	Bianchi South	New	Wet Pond	N/A	39.5	7.8	31.7	14344.2	8399.2	60	13646	Built 2021	
	5	223	Fossil Creek	Hawkeye Hotel	New	Ext. Dry Pond	N/A	2.51	2.19	0.32	4027.41	84.8	4112	60	2467	Built 2021
	22	209	Walnut Creek	Rustic Ridge	New	Wet Pond	N/A	0.45	0.14	0.31	257.46	82.1	340	60	204	Under Construction
	22	209	Walnut Creek	Rustic Ridge	New	Rain Garden	N/A	5.81	0.65	5.16	1195.35	1367.2	55	1409	Under Construction	
	8	408 & 413	Fossil Creek	Calamar	New	Ext. Dry Pond	N/A	7.4	3.8	3.6	6988.2	953.9	7942	60	4765	Under Construction

Total Reduction = 55511
Remaining Pollutant Loading = -16541.7

APPENDIX 4 - BUDGETARY COST ESTIMATE

Walnut Creek Water Shed
Pollutant Reduction Plan
Budgetary Cost Estimate for BMP Improvements
Prepared by: MEJ 12/4/2024

Item No.	Item Description	Unit	Quantity	Unit Price	Total
1	Engineering	EA	1	\$ 5,600.00	\$ 5,600.00
2	Mobilization	EA	1	\$ 10,000.00	\$ 10,000.00
3	Erosion and Sediment Controls	EA	1	\$ 5,000.00	\$ 5,000.00
4	Update Outlet Structure	EA	1	\$ 10,000.00	\$ 10,000.00
5	Excavation	EA	1	\$ 40,000.00	\$ 40,000.00
6	Restoration and Seeding	EA	1	\$ 10,000.00	\$ 10,000.00
				Subtotal	\$ 80,600.00
				25% Contingency	\$ 20,150.00
				Total	\$ 100,750.00