Stormwater Management Report

Ohio Department of Transportation
Pre-70 WB Truck Parking
I-70 WB, Preble County, Ohio

8/8/2025

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AMERICAN STRUCTUREPOINT INC.

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Appendices

1.0 Project Information

Pre-70 WB Truck Parking is located in Preble County, Ohio. The project consists of the construction of a truck parking stop along westbound Interstate 70 just east of the Ohio-Indiana border.

As a result of the changes in stormwater runoff due to the proposed development, a stormwater management system has been designed to control the site's stormwater flows. The proposed stormwater management system for this development will consist of vegetated filter strips with associated storm sewers. The system will meet the appropriate local and state requirements and will outlet to an existing ODOT MS4, which is ultimately tributary to Elkhorn Creek.

A project location map, soils map and FEMA flood insurance rate map can be found in **Appendix A** of this report.

2.0 Pre-Developed Drainage Conditions

The existing site consists of an abandoned rest stop, which includes a large amount of concrete pavement and grass coverage. The site is bounded by Interstate 70 on the south, and ditches along the west, north, and east side of the proposed development.

3.0 Post-Developed Drainage Conditions

The site will be modified as described above. As part of the development, a storm sewer system will collect on-site stormwater runoff and outlet into an existing culvert that runs under Interstate 70. Per correspondence with ODOT, vegetated filter strips have been proposed along both ramps of the truck stop, and along Interstate 70 to overtreat water quality for the sites proposed runoff.

3.1 Stormwater Quality Control

The proposed development will disturb an area larger than that listed in ODOT L&D Vol. 2, and is therefore requiring a BMP for the development. Following the requirements listed in the ODOT manual, the following treatment calculations will be provided:

Required WQv

T% = [(Aix * 20)+(Ain * 100)] / (Aix+Ain)

T% = [(16.47 * 20)+(0 * 100)] / (16.47+0) = 20.00% = 16.47 ac * 20% = 3.29 ac

Where:

T% = Treatment Percentage

Aix = Project EDA that is inside the existing ODOT R/W

Ain = New Impervious Area in New Permanent R/W

Provided WQv

BMP Name	BMP Type	Contributing Drainage Area (acres)	Contributing Drainage Area in ODOT R/W (acres)
VFS1	Vegetated Filter Strip	1.47	1.47
VFS2	Vegetated Filter Strip	0.67	0.67
VFS3	Vegetated Filter Strip	0.71	0.71
VFS4	Vegetated Filter Strip	0.45	0.45
		Total Treatment =	**3.30**

Water quality drawdown per ODOT L&D Vol. 2 manual is provided for the 16.47 acre area impacted by the development. Calculations for Water Quality treatment can be found per the ODOT BMP Spreadsheet found in Appendix B.

3.2 Storm Sewer

A storm sewer system designed for the 10-year design storm and 25 -year HGL check storm, per the ODOT L&D manual, will be installed to convey runoff for the development to the proposed stormwater management system. Additionally, flood routing for storm events up to the 100-year event has been provided overland to the stormwater management system Storm sewer system design calculations can be found in **Appendix C**, of this report.

4.0 Summary and Conclusions

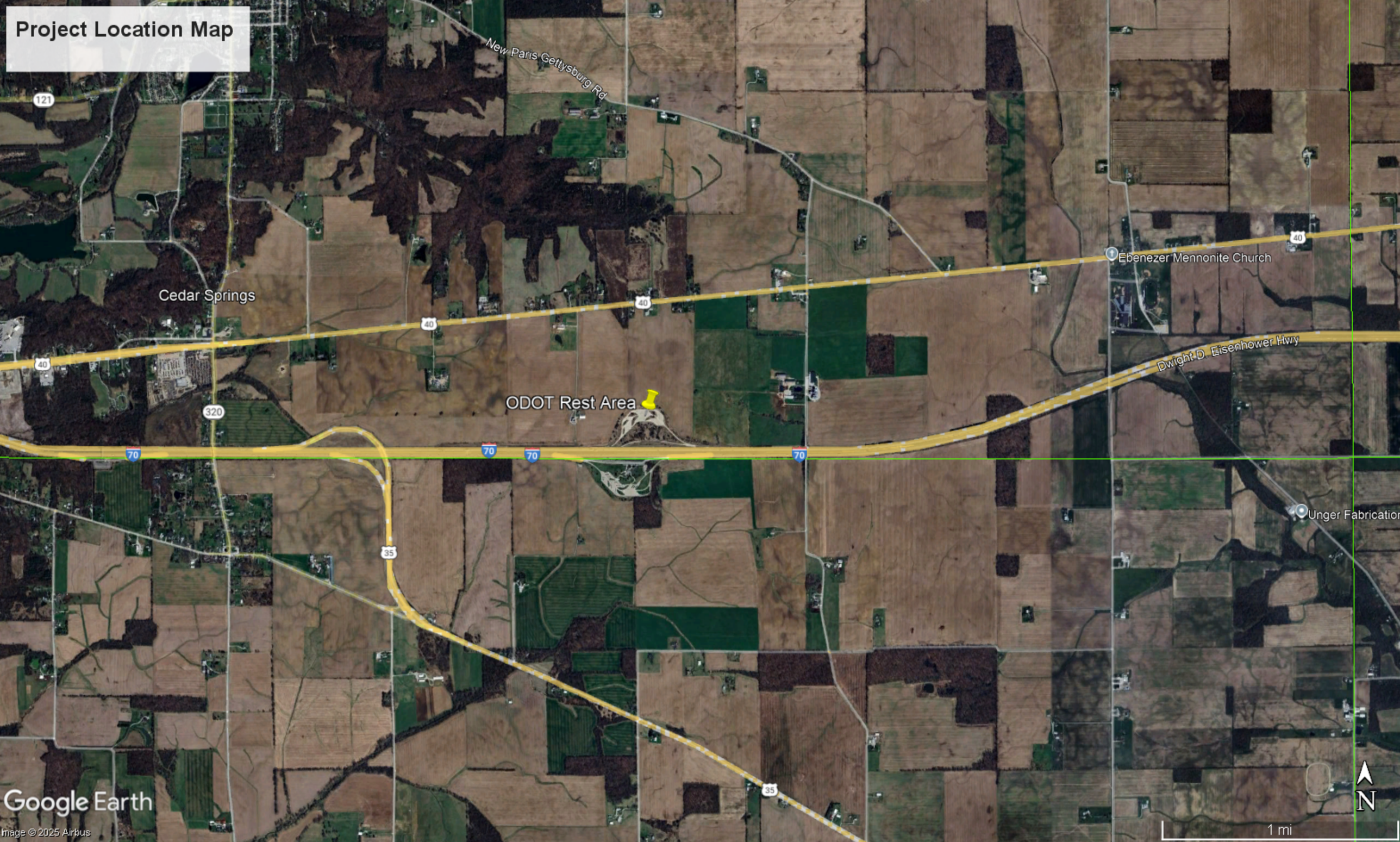
American Structurepoint has analyzed the pre-developed and post-developed conditions for the development, while taking into account water quality calculations. The stormwater management system (BMP) and storm sewer systems have been designed to meet or exceed the requirements set forth by ODOT and the Ohio EPA water quality requirements for large construction activities.

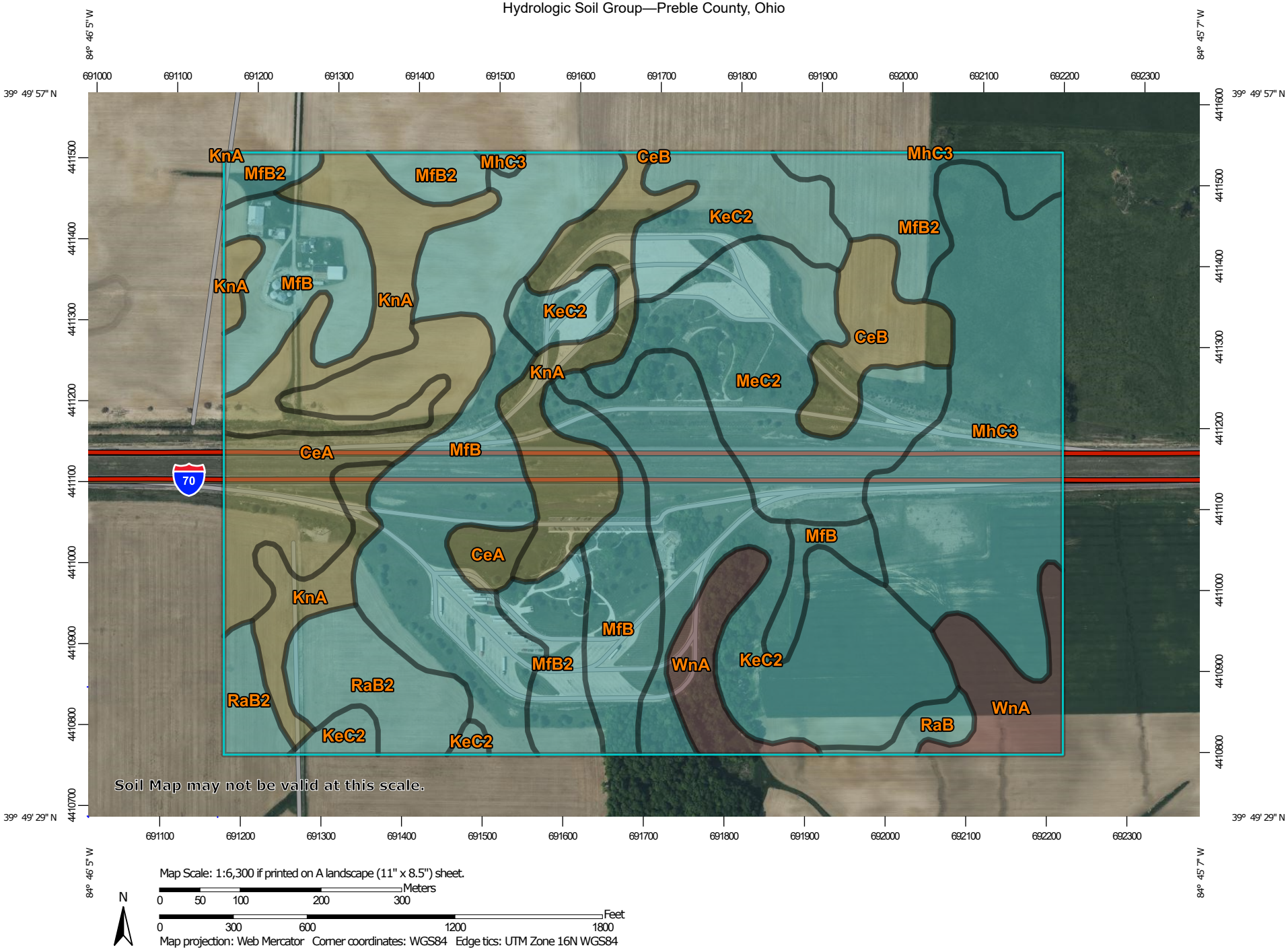
Accordingly, we believe the proposed improvements will not adversely affect this site, adjacent property owners, or Preble County, Ohio.

Appendix A

Project Site Data

Project Location Map





Map Scale: 1:6,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Preble County, Ohio
Survey Area Data: Version 23, Aug 28, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 18, 2023—Aug 4, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CeA	Celina silt loam, 0 to 2 percent slopes	C/D	13.8	7.2%
CeB	Celina silt loam, 2 to 6 percent slopes	C/D	5.6	2.9%
KeC2	Kendallville-Eldean silt loams, 6 to 12 percent slopes, eroded	C	34.0	17.7%
KnA	Kokomo silt loam, 0 to 1 percent slopes	C/D	23.8	12.4%
MeC2	Miamian silt loam, 6 to 12 percent slopes, eroded	C	17.5	9.1%
MfB	Miamian-Celina silt loams, 2 to 6 percent slopes	C	39.0	20.3%
MfB2	Miamian-Celina silt loams, 2 to 6 percent slopes, eroded	C	14.3	7.4%
MhC3	Miamian-Losantville clay loams, 6 to 12 percent slopes, severely eroded	C	24.7	12.8%
RaB	Rainsville silt loam, 2 to 6 percent slopes	C	1.4	0.8%
RaB2	Rainsville silt loam, 2 to 6 percent slopes, eroded	C	8.7	4.5%
WnA	Westland silt loam, 0 to 2 percent slopes	B/D	9.3	4.8%
Totals for Area of Interest			**192.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

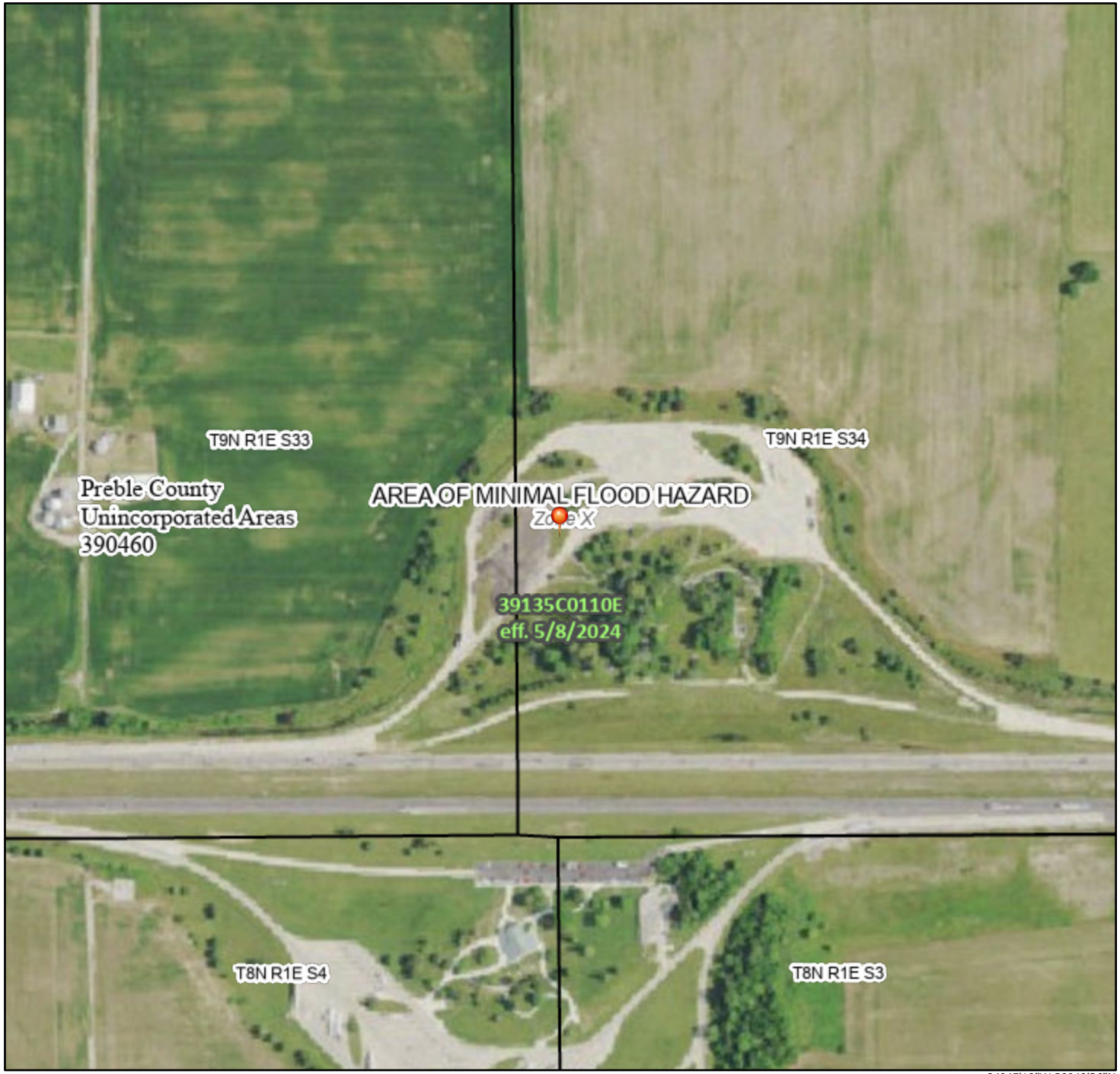
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

National Flood Hazard Layer FIRMette

FEMA

84°45'57"W 39°50'3"N



84°45'19"W 39°49'36"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/8/2025 at 6:11 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix B

ODOT BMP Calculations

Ohio Department of Transportation - Office of Hydraulic Engineering

Post-Construction BMP Calculation Spreadsheet

Post Construction - Project Summary

Project Data		Units
Project EDA	16.470	acres
Is the Project Routine Maintenance per L&D Vol. 2, Sec. 1112.2	No	
BMPs Required?	**BMPs Required**	
Ain (New Impervious Area in New Permanent R/W	0.00	acres
Does Entire Site Drain to Large River (>100 sq. miles)?	No	
Water Quality Treatment Required	**Yes**	
Water Quantity Treatment Required	**No**	
Treatment Percent and Treatment Requirement		
Aix (Project EDA that is inside the existing right-of-way)	16.47	acres
Ain (New Impervious Area in New Permanent R/W)	0	acres
T% (Treatment Percent)	**20.00**	**%**
Treatment Requirement	**3.29**	**acres**

BMPs Provided

BMP Name	BMP Type	Contributing Drainage Area (acres)	Contributing Drainage Area in ODOT R/W (acres)
VFS1	Vegetated Filter Strip	1.47	1.47
VFS2	Vegetated Filter Strip	0.67	0.67
VFS3	Vegetated Filter Strip	0.71	0.71
VFS4	Vegetated Filter Strip	0.45	0.45

Treatment Provided

Total Area with ODOT R/W Treated (acres)	**3.30**
Treatment Requirements (acres)	**3.29**
Treatment Check	**Good**

BMP Submittal Requirements (Per L&D, Vol. 2, Sec. 1116.2)

1. Estimated Project Earth Disturbed Area	Yes	**Good**
2. Treatment Percent Calculation	Yes	**Good**
3. BMP Selected for use	Yes	**Good**
4. Drainage area mapping for post-construction BMPs that show the total contributing drainage area and the amount of contributing area within ODOT right-of-way	Yes	**Good**
5. Plan sheets showing locations of post-construction BMP	Yes	**Good**
6. Calculations for each BMP	Yes	**Good**
7. Explanation for any area that is not treated	Yes	**Good**

Ohio Department of Transportation - Office of Hydraulic Engineering

Post-Construction BMP Calculation Spreadsheet

Vegetated Filter Strip

Filter Strip	Route	Begin Station	End Station	Side	Pavement Width (FT)	Filter Strip Width (FT)	Filter Strip Slope (z:1)	Filter Strip Length (FT)	Drainage Area (acres)	Filter Strip Area (SF)	Item 659 Topsoil Volume (CY)	Item 670 Erosion Protection Area (SY)
Filter Strip #1	IR 70	146+00	160+00	RT	22	25	5	1,400	1.47	33,233	410.3	3,692.6
Filter Strip #2	IR 70	160+00	166+60	RT	22	20	4	660	0.67	13,914	171.8	1,546.0
Filter Strip #3	Ramp T	00+44	00+48	RT	22	25	4	4	0.71	8,064	99.6	896.0
Filter Strip #4	Ramp S	00+57	00+61	RT	19	25	4	4	0.45	10,851	134.0	1,205.7
								0			0.0	0.0
								0			0.0	0.0
								0			0.0	0.0
								0			0.0	0.0
								0			0.0	0.0
								0			0.0	0.0

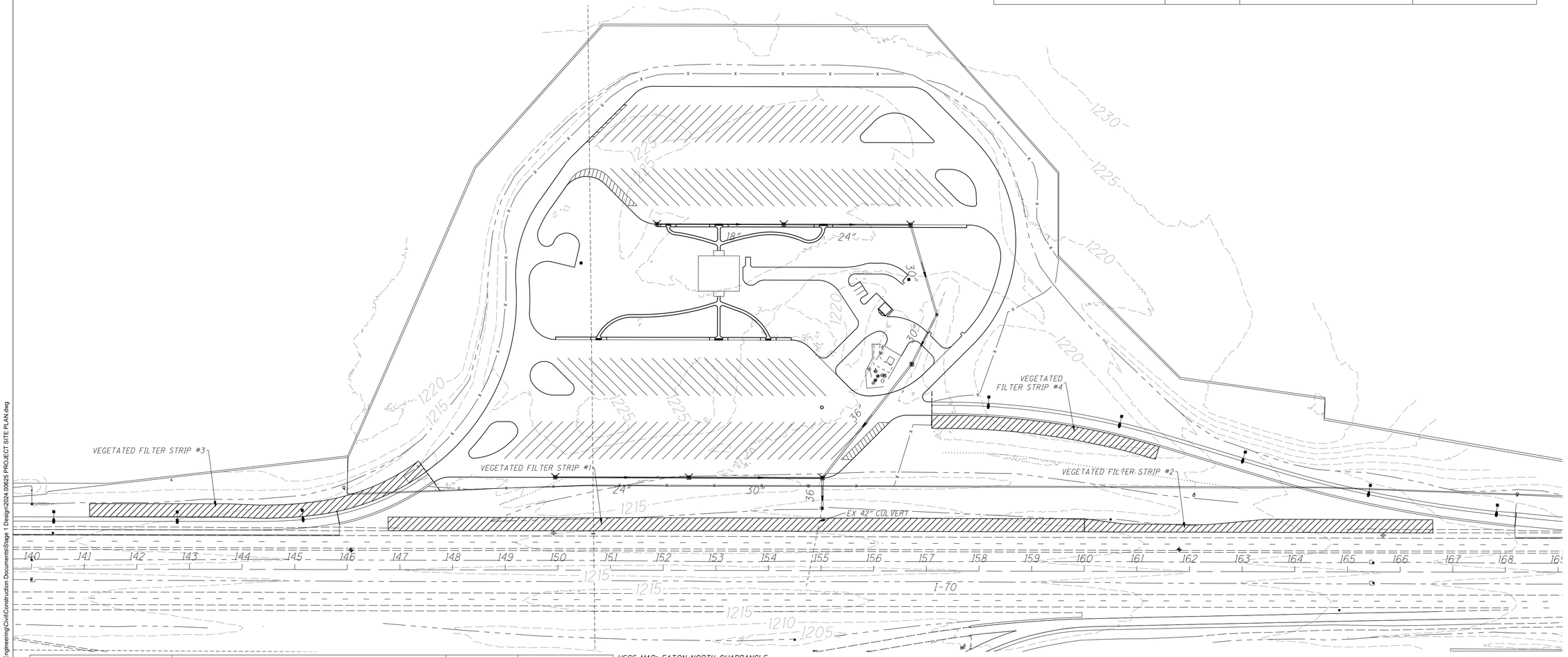
Total Treatment Credit Earned from Vegetated Filter Strips **3.30** **acres**

(Treatment is for quality only, not quantity)

	BMP Design Considerations	Answer	Design Check
1	Is the min. filter strip width 15-25 ft wide depending on L&D Table 1117-3?	Yes	Good
2	Is the slope 3:1 or flatter for 34 ft or narrower pavement drainage width	Yes	Good
3	Is the slope 6:1 or flatter for 35 - 48 ft pavement drainage width	NA	Good
4	Is the only contributing drainage to the filter strip from the road and shoulder?	Yes	Good
5	Does any concentrated flow or any outlets discharge to the filter strip?	No	Good
6	Is 4" of Item 659, Topsoil, included for the filter strip?	Yes	Good
7	Is Item 670, Slope Erosion Protection, included for the filter strip?	Yes	Good

PRE-70 WB TRUCK PARKING

PROJECT DATA			
TOTAL AREA (ONSITE)	31.70 AC	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.58
PROJECT EARTH DISTURBED AREA	16.47 AC	RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.60
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	16.50 AC	POST CONSTRUCTION BMP	VEGETATED FILTER STRIPS (SEE THIS SHEET FOR LOCATIONS)
NOTICE OF INTENT EARTH DISTURBED AREA	PENDING		
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	6.85 AC	IMMEDIATE RECEIVING WATERS:	ADJACENT ODOT MS4
IMPERVIOUS (PAVED) AREA FOR POST CONSTRUCTION SITE	9.47 AC	SUBSEQUENT RECEIVING WATER	ELKHORN CREEK



BMP TYPE	NORTHING/EASTING				BMP WIDTH	EDA TREATMENT CREDIT
	BEGIN		END		FEET	ACRES
VEGETATED FILTER STRIP 1	575102.6346	132510.4260	575099.8705	133833.1947	25	1.47
VEGETATED FILTER STRIP 2	575099.8705	133833.1947	575097.9344	134494.8749	20	0.67
VEGETATED FILTER STRIP 3	575128.6779	131943.3461	575211.9352	132575.4186	25	0.71
VEGETATED FILTER STRIP 4	575294.8896	133542.3749	575237.4202	133971.5845	25	0.45

USGS MAP: EATON NORTH QUADRANGLE
OHIO - PREBLE COUNTY
LONGITUDE: -84.759680
LATITUDE: 39.830193

LONGITUDE AND LATITUDE TO APPROX CENTER OF PROJECT

TREATMENT PROVIDED	3.30 AC
TREATMENT REQUIRED*	3.29 AC

* CALCULATED PER L&D VOL. 2, SEC 1111.7

NOTE:
PROJECT TO FOLLOW THE GUIDELINES FOR EROSION AND SEDIMENT CONTROL PER ODOT SS832, AND DETAILS AS LISTED IN SCD DM-4.3 AND DM-4.4

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OF A TRUCK VEHICLE REST STOP, WITH ASSOCIATED DRIVES, UTILITIES, AND PAVEMENT IMPROVEMENTS. THE REST STOP WILL CONSIST OF AN ON AND OFF RAMP ALONG THE WESTBOUND I-70 HIGHWAY. THE SITE IS LOCATED APPROXIMATELY 15,200 FEET TO THE EAST OF THE OHIO-INDIANA BORDER ALONG I-70.

LEGEND

- INLET/CATCH BASIN
- VEGETATED FILTER STRIP
- XX" - PROP STORM

HORIZONTAL SCALE IN FEET
0 50' 100' 200'

PROJECT SITE PLAN

DESIGN AGENCY
AMERICAN STRUCTUREPOINT INC.

DESIGNER MTR
REVIEWER JRP 08-08-25
PROJECT ID 122901
SHEET P.64 TOTAL 77

Appendix C

Storm Sewer Calculations

STORM SEWER DESIGN CALCULATIONS

Project: **ODOT**
Job #: **2024.00625**
Location: **I-70 WB**
Date **08/28/25**

AMERICAN STRUCTUREPOINT INC.

Calc By: MTR
Chk By: JRP

Rain Fall Data — ODOT Zone B — 10 Year Design Storm — Manning Coefficient 0.013

US Structure #	Station	DS Structure #	Drainage Area					Time of Conc. (Tc)		Design Flow		Storm Sewer										Storm Structures			
			Tributary *(acres)*	Cumul. Tributary *(acres)*	C	CA	Cumul. CA	Tc *(min)*	Tc Cumul. *(min)*	Intensity *(in/hr)*	Design Q *(cfs)*	Length *(ft)*	Pipe Size *(in)*	Slope *(%)*	Velocity *(ft/sec)*	Time in Pipe *(min)*	Σ Time	Pipe Capacity *(cfs)*	Status	Invert Up *(ft)*	Invert Down *(ft)*	Invert Drop *(ft)*	Rim Elev *(ft)*	Depth *(ft)*	US Cover (ft)	DS Cover *(ft)*
15		14	0.23	0.23	0.89	0.21	0.21	10.00	10.00	5.08	1.04	254	15	1.00	5.28	0.80	10.80	6.48	OK	1211.26	1208.72	0.00	1214.40	3.14	1.70	4.07
															OK										
14		11	0.78	1.01	0.82	0.64	0.85	10.00	10.80	4.92	4.17	156	15	0.70	4.42	0.59	11.39	5.42	OK	1208.72	1207.63	3.05	1214.23	5.51	4.07	2.04
															OK										
13		12	0.87	0.87	0.66	0.58	0.58	10.00	10.00	5.08	2.93	218	15	1.00	5.28	0.69	10.69	6.48	OK	1209.28	1207.10	0.75	1215.31	6.03	4.59	2.57
															OK										
12		11	1.58	2.45	0.88	1.39	1.96	10.00	10.69	4.94	9.70	254	24	0.50	5.11	0.83	11.52	16.04	OK	1206.35	1205.08	0.50	1211.11	4.76	2.51	3.78
															OK										
11		2	1.22	4.69	0.91	1.12	3.93	10.00	11.52	4.79	18.81	254	30	0.50	5.92	0.71	12.23	29.08	OK	1204.58	1203.31	0.50	1211.11	6.53	3.74	5.01
															OK										
10		5	0.35	0.35	0.95	0.33	0.33	10.00	10.00	5.08	1.70	106	15	0.50	3.73	0.47	10.47	4.58	OK	1213.87	1213.34	4.75	1219.43	5.56	4.12	2.23
															OK										
9		6	0.43	0.43	0.95	0.41	0.41	10.00	10.00	5.08	2.08	106	15	0.50	3.73	0.47	10.47	4.58	OK	1213.58	1213.05	2.05	1219.43	5.85	4.42	2.52
															OK										
8		7	0.36	0.36	0.95	0.34	0.34	10.00	10.00	5.08	1.74	106	15	0.50	3.73	0.47	10.47	4.58	OK	1214.08	1213.56	0.25	1219.43	5.35	3.91	2.01
															OK										
7		6	2.07	2.43	0.69	1.44	1.78	10.00	10.47	4.98	8.87	241	18	0.75	5.16	0.78	11.25	9.12	OK	1213.31	1211.50	0.50	1217.00	3.69	1.99	3.80
															OK										
6		5	1.22	4.08	0.93	1.13	3.32	10.00	11.25	4.84	16.07	241	24	1.00	7.22	0.56	11.81	22.68	OK	1211.00	1208.59	0.00	1217.01	6.01	3.76	6.17
															OK										
5		4	1.23	5.66	0.86	1.06	4.72	10.00	11.81	4.74	22.38	178	24	1.90	9.95	0.30	12.10	31.27	OK	1208.59	1205.21	0.50	1217.01	8.42	6.17	1.74
															OK										
4		3	2.22	7.88	0.50	1.11	5.83	10.00	12.10	4.69	27.33	105	30	0.50	5.92	0.30	12.40	29.08	OK	1204.71	1204.18	0.00	1209.20	4.49	1.70	4.09
															OK										
3		2	0.40	8.28	0.65	0.26	6.09	10.00	12.40	4.64	28.25	275	30	0.50	5.92	0.77	13.17	29.08	OK	1204.18	1202.81	0.00	1211.06	6.88	4.09	5.51
															OK										
2		1	0.85	13.81	0.95	0.80	10.81	10.00	13.17	4.52	48.87	58	36	0.53	6.92	0.14	13.31	48.89	OK	1202.81	1202.50		1211.11	8.30	4.97	HW
															OK										

STORM SEWER DESIGN HYDRAULIC GRADE LINE CALCULATIONS

Project: **ODOT**
Job #: **2024.00625**
Location: **I-70 WB**
Date 08/28/25

AMERICAN STRUCTUREPOINT INC.

Calc By: MTR
Chk By: JRP

25 Year Check Storm Manning Coefficient 0.013

Structure	Major Losses				Minor Losses							Total Losses	Storm Structures			Hydraulic Grade Line			
	Intensity *(in/hr)*	Design Q *(cfs)*	Slope *(%)*	Major Loss	Inlet Type	Inlet Loss	Transition Type	Transition Loss	Outfall Type	Outfall Loss	Minor Losses		Invert Up *(ft)*	Invert Down *(ft)*	Rim Elev *(ft)*	0.8*D + Losses *(A)(ft)*	HGL + Losses *(B)(ft)*	HGL *(>AorB) (ft)*	Status
15	5.78	1.19	0.034	0.09	Grate	0.25	Straight	0.1	Open	0.1	0.19	0.28	1211.26	1208.72	1214.40	1210.00	1210.01	1210.01	OK
14	5.61	4.75	0.538	0.84	Grate	0.25	90d	0.5	Open	0.1	0.26	1.10	1208.72	1207.63	1214.23	1209.73	1207.75	1209.73	OK
13	5.78	3.33	0.265	0.58	Grate	0.25	Straight	0.1	Open	0.1	0.19	0.77	1209.28	1207.10	1215.31	1208.87	1208.24	1208.87	OK
12	5.63	11.05	0.237	0.60	Grate	0.25	Straight	0.1	Open	0.1	0.18	0.78	1206.35	1205.08	1211.11	1207.46	1207.44	1207.46	OK
11	5.46	21.45	0.272	0.69	Grate	0.25	45d	0.3	Open	0.1	0.33	1.02	1204.58	1203.31	1211.11	1206.33	1206.66	1206.66	OK
10	5.78	1.93	0.089	0.09	Grate	0.25	45d	0.3	Open	0.1	0.13	0.22	1213.87	1213.34	1219.43	1214.56	1211.59	1214.56	OK
9	5.78	2.36	0.133	0.14	Grate	0.25	Straight	0.1	Open	0.1	0.10	0.24	1213.58	1213.05	1219.43	1214.29	1213.54	1214.29	OK
8	5.78	1.99	0.094	0.10	Grate	0.25	Straight	0.1	Open	0.1	0.10	0.20	1214.08	1213.56	1219.43	1214.75	1215.90	1215.90	OK
7	5.68	10.10	0.920	2.22	Grate	0.25	Straight	0.1	Open	0.1	0.19	2.40	1213.31	1211.50	1217.00	1215.10	1215.71	1215.71	OK
6	5.52	18.31	0.652	1.57	Grate	0.25	Straight	0.1	Open	0.1	0.36	1.93	1211.00	1208.59	1217.01	1212.12	1213.30	1213.30	OK
5	5.41	25.52	1.266	2.25	Grate	0.25	Straight	0.1	Open	0.1	0.69	2.94	1208.59	1205.21	1217.01	1209.75	1211.37	1211.37	OK
4	5.35	31.18	0.575	0.61	Grate	0.25	Straight	0.1	Open	0.1	0.25	0.85	1204.71	1204.18	1209.20	1207.03	1208.42	1208.42	OK
3	5.30	32.25	0.615	1.69	Grate	0.25	Straight	0.1	Open	0.1	0.25	1.93	1204.18	1202.81	1211.06	1206.74	1207.57	1207.57	OK
2	5.16	55.84	0.697	0.40	Grate	0.25	Straight	0.1	Open	0.1	0.33	0.74	1202.81	1202.50	1211.11	1205.64	0.74	1205.64	OK