Interstate 80, Section 17M

Water Resources Delineation Report
2018 Addendum - Expanded Study Area

Prepared for:
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January 2018

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I. Introduction

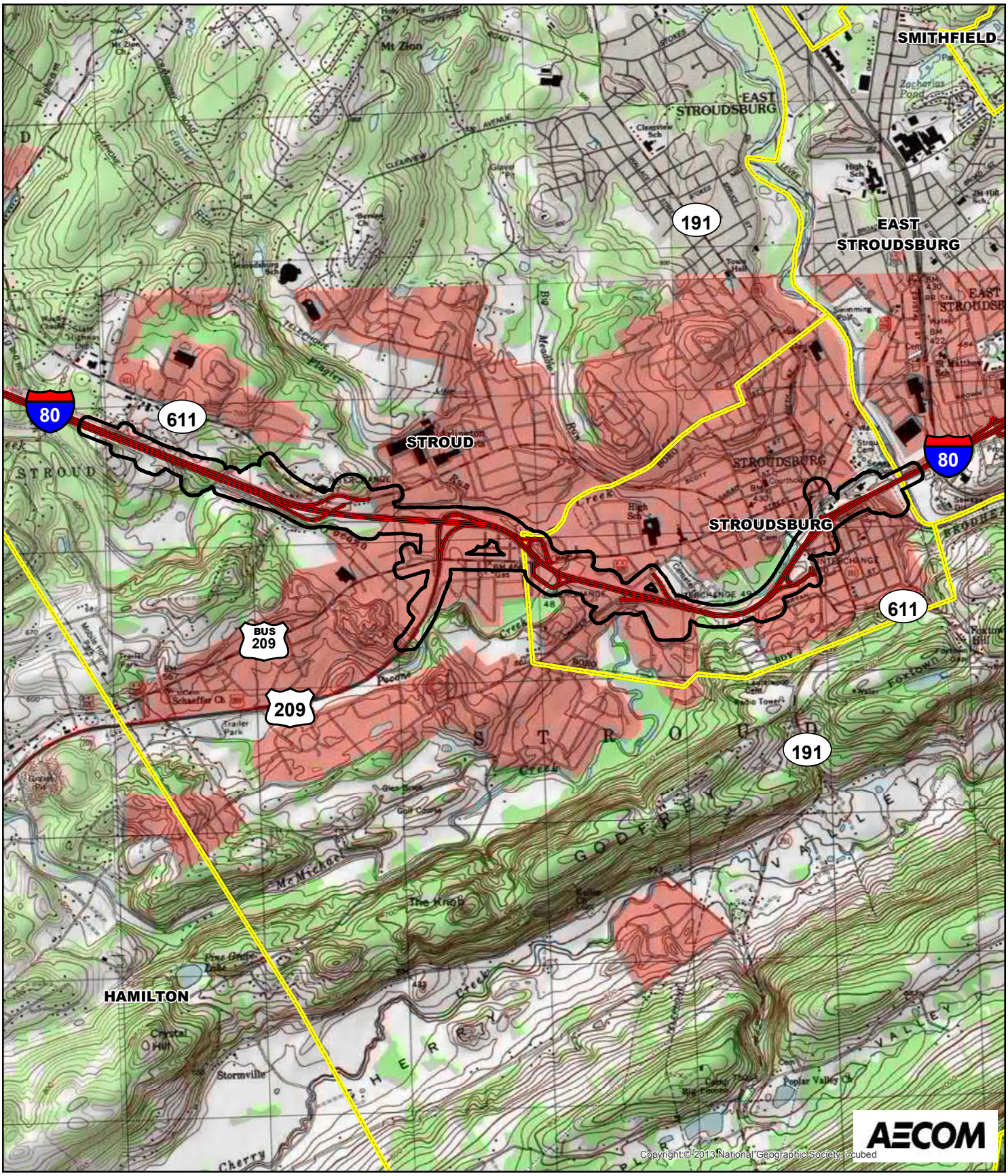
The SR 0080 Section 17M Reconstruction project is a 3.5 mile roadway reconstruction traversing parts of three (3) municipalities (Stroud Township, Stroudsburg Borough and East Stroudsburg Borough) in Monroe County, Pennsylvania. The project area can be found on the Stroudsburg, PA USGS Quadrangle and is centered at approximately 40° 59' 0.6" N and 75° 12' 54.4" W **(Figure 1)**. The project area is primarily suburban and urban landscape across a rolling topography, generally paralleling McMichael Creek and Pocono Creek, east to west. Higher density residential and commercial development is found east of the US 209 interchange (Exit 304) and continues east to Brodhead Creek. Suburban and commercial development extends from the same interchange to the west. Local topography consists of narrow, moderately deep stream valleys and rolling upland terrain.

This project is currently in the preliminary engineering and environmental clearance phase and environmental studies have been conducted to satisfy the requirements of the state and federal permitting. The U.S Army Corps of Engineers (USACE) has jurisdictional authority over Waters of the U.S., including wetlands, as mandated by Section 404 of the Clean Water Act. The Pennsylvania Department of Environmental Protection (PADEP) has jurisdictional authority under Title 25 of the Pa Code, Chapter 105, Dam Safety and Encroachments Act.

A Water Resources Delineation Report (Interstate 80, Section 17M Water Resources Delineation Report) that documented the presence and extent of regulated wetlands and waterways within the project area was submitted to USACE in November 2015. A USACE Jurisdictional Determination (JD) field view was conducted by Todd Schaible of USACE and Deborah Poppel of AECOM for the wetlands and watercourses identified in this report in October 2015. Due to proposed project expansions, additional study area was identified for the project and the approval of the JD was postponed until the expanded study area could be investigated. The expanded study area **(Figure 2)** was investigated for wetlands and watercourses on September 21-22, 2017 by AECOM biologists. This report is an addendum to the November 2015 Interstate 80, Section 17M Water Resources Delineation Report; it documents the results of the delineation effort performed for the 2017 expanded study area.

Within this report a description of each wetland area and waterway identified within the expanded study area is provided along with an evaluation of the wetland's functions and values. Wetland Delineation Forms for any newly identified resources are located in ***Appendix A***. Photographs of additional or extended project area watercourses and wetlands are located in ***Appendix B***. Function Value Evaluation Forms are located in ***Appendix C***.

Figure 1: USGS Project Location Map



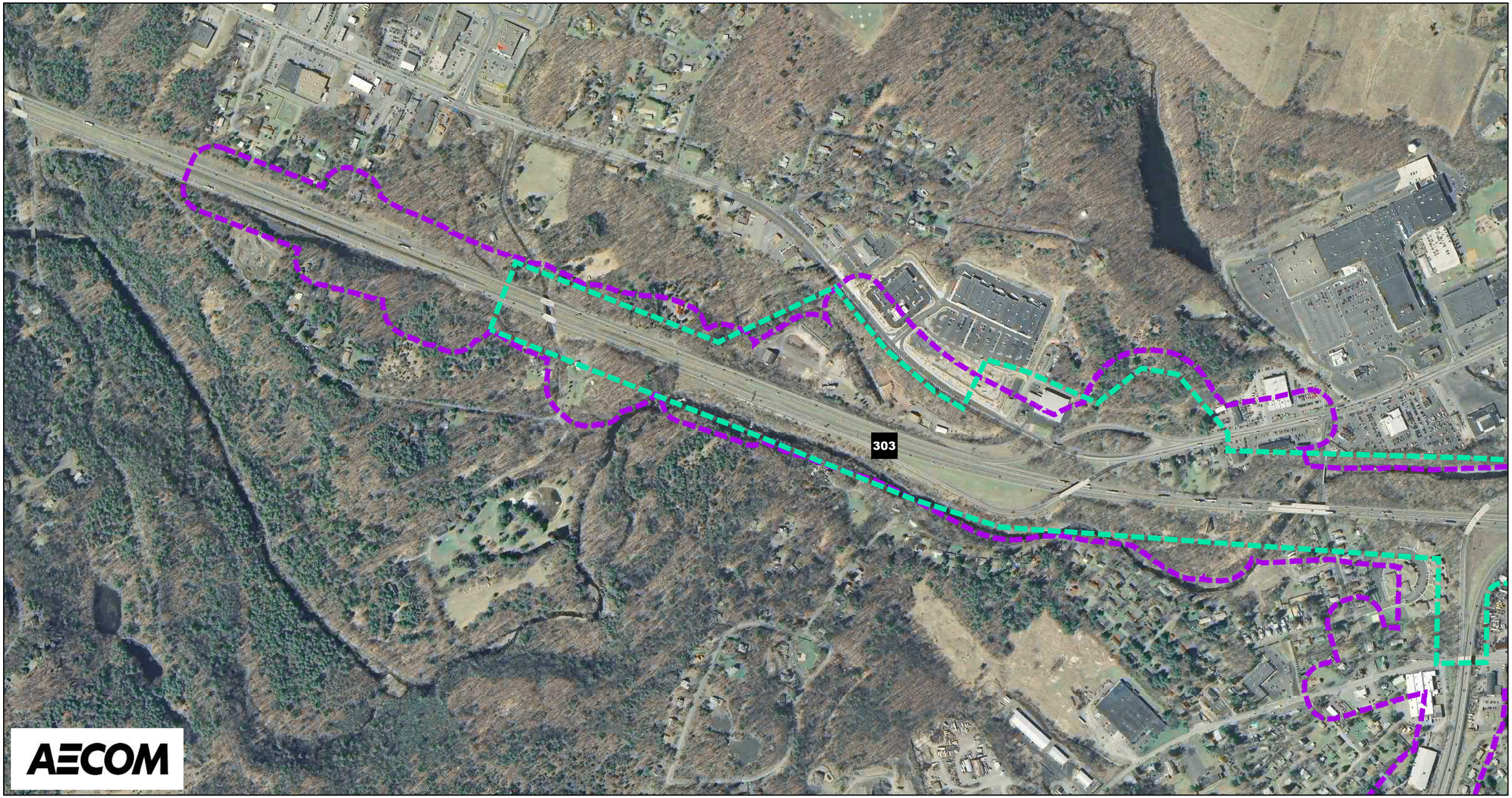
Interstate 80, Section 17M
2017 Expanded Wetland and Waterways Delineation
Figure 1: Project Study Area

Study Area
Municipalities

N

0 0.25 0.5 1
Miles

Figure 2: 2017 Expanded Study Area Map



N

0 200 400 800 1,200

Feet

2014 Wetlands Study Area

2017 Expanded Wetland and Waterways Study Area

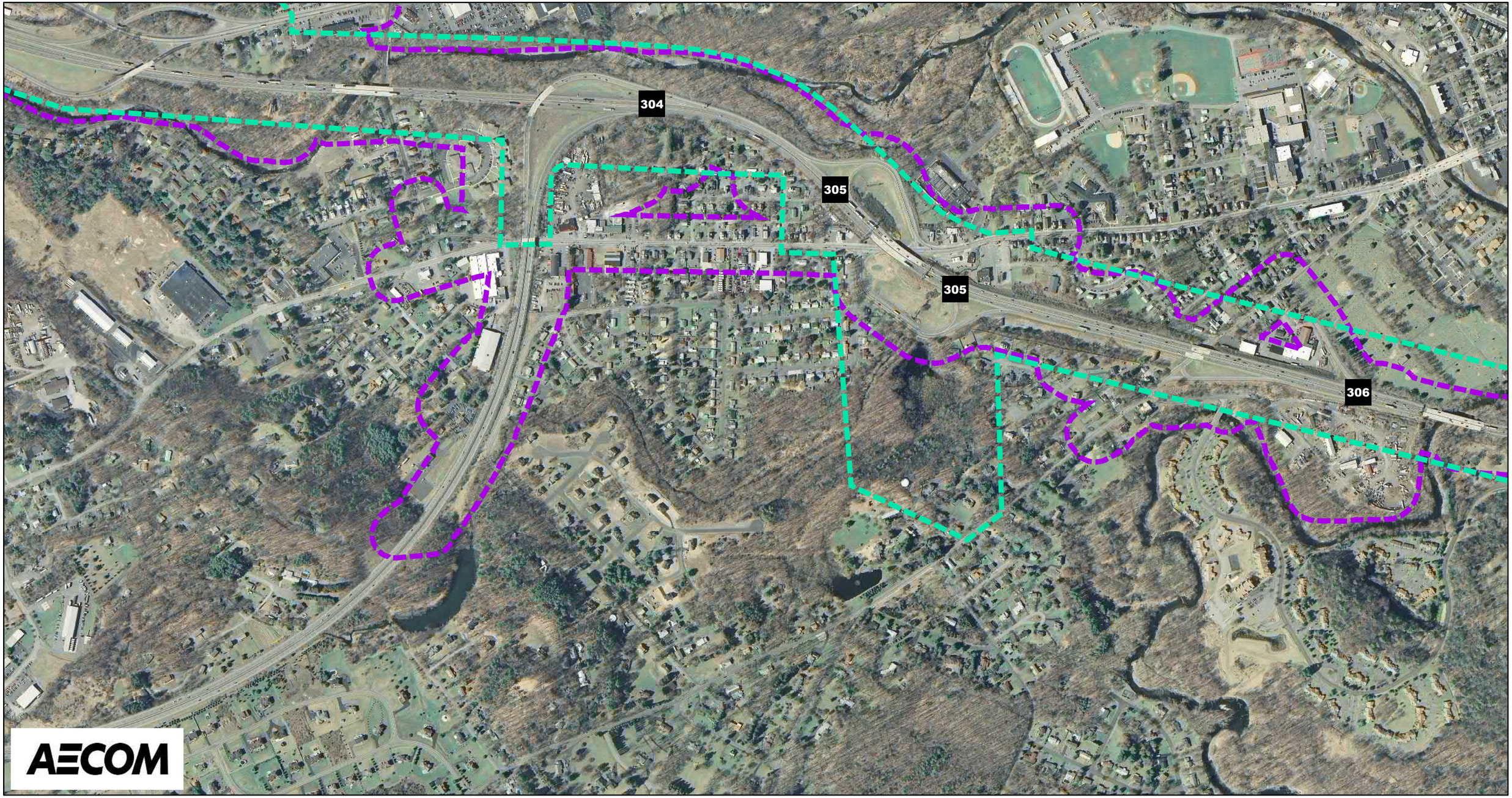
Interstate 80, Section 17M

FIGURE 2:

EXPANDED WETLAND AND WATERWAYS STUDY AREA MAP

Sheet 1 of 3

Source: PAMAP, 2008, USDA NRCS.



AECOM

N

0 200 400 800 1,200

Feet

2014 Wetlands Study Area

2017 Expanded Wetland and Waterways Study Area

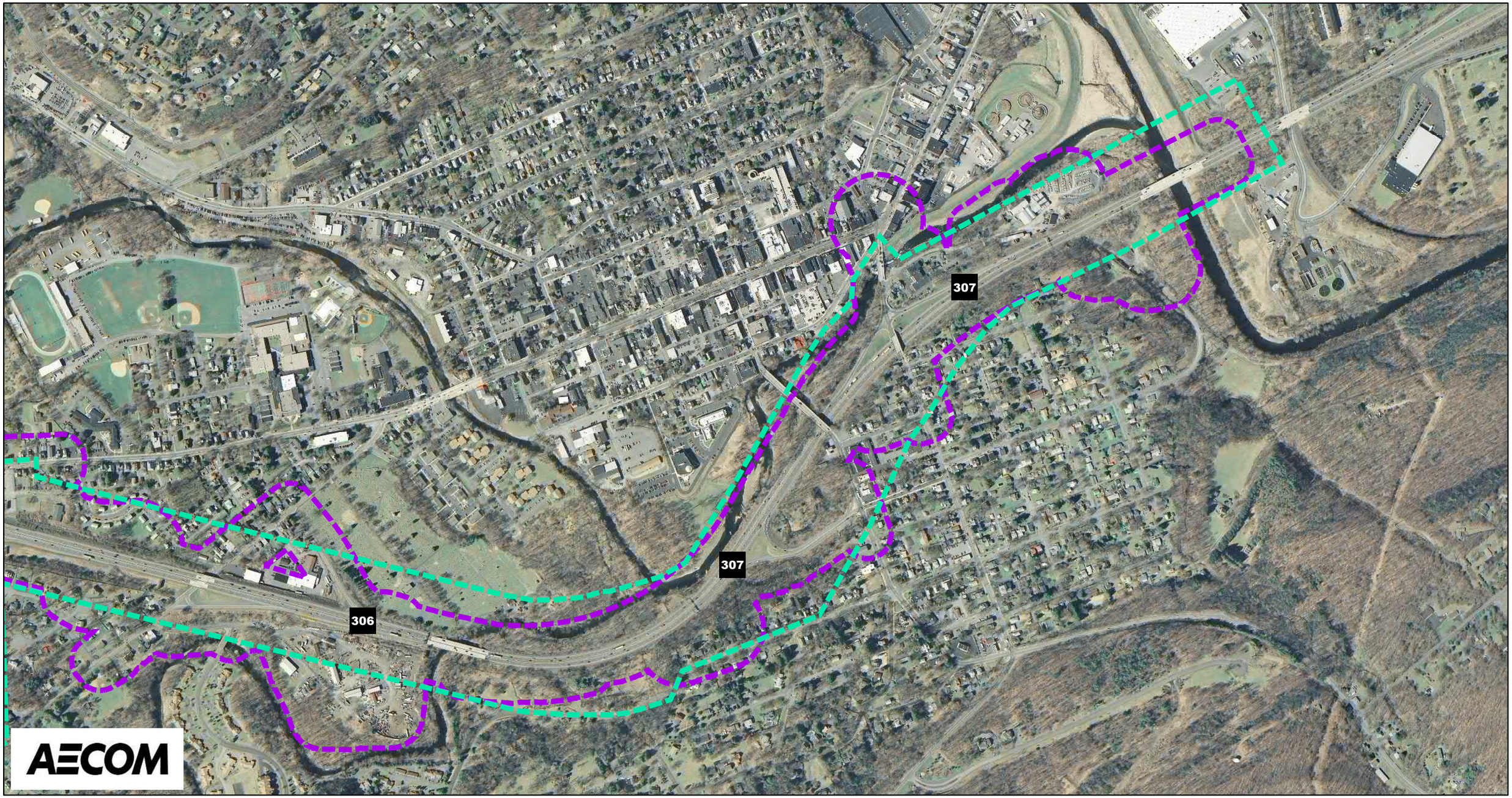
Interstate 80, Section 17M

FIGURE 2:

EXPANDED WETLAND AND WATERWAYS STUDY AREA MAP

Sheet 2 of 3

Source: PAMAP, 2008, USDA NRCS.



N

0 200 400 800 1,200

Feet

2014 Wetlands Study Area

2017 Expanded Wetland and Waterways Study Area

Interstate 80, Section 17M

FIGURE 2:

EXPANDED WETLAND AND WATERWAYS STUDY AREA MAP

Sheet 3 of 3

Source: PAMAP, 2008, USDA NRCS.

II. Methodology

A. Watercourses

Project area watercourses within the expanded study area were preliminarily identified using available mapping. Field investigations were conducted to confirm the presence/absence of watercourses. The jurisdictional limits of the field identified watercourses were delineated based on their observed Ordinary High Water Mark (OHWM). Stream order and classifications under Title 25, Chapter 93 and the Pennsylvania Fish and Boat Commission's (PAFBC's) regulation and the USACE Clean Water Act Jurisdiction Guidance (June 2007) were also identified. The OHWM on both banks was recorded for watercourses over ten feet in width, for resources less than ten feet in width the centerline of the watercourse was surveyed. Where applicable if the boundaries of watercourses that were previously identified extended into the expanded study area these resources were surveyed using the same methods. Watercourse locations were surveyed for mapping using civil survey and photographs were taken of each new resource.

B. Wetlands

Following a preliminary desktop review, field investigations were conducted for the 2017 expanded study area to determine if wetlands were present. Wetlands were delineated in accordance with the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2).* January, 2012. For each delineated wetland a USACE Regional Supplement Wetland Determination Data Form was completed at a selected wetland data point. Data on the composition of the vegetation community, soil profile characteristics, and hydrology were recorded on the data form. An upland data point and Wetland Determination Data Form was collected to verify the wetland boundary. Wetlands were classified following Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979). The delineated boundary of each wetland was recorded with a high-precision, mapping-grade Global Positioning System (GPS) unit and photographs were taken of each resource.

The wetlands were also assessed for their functional values based on the principles and techniques of the New England District, United States Army Corps of Engineers in *The Highway Methodology Workbook – Wetland Functions and Values, A Descriptive Approach*. NAEEP-360-1-30a, September 1999.

III. Results

A. Background Information

A review of secondary resources was completed in order to assess the potential for the existence of wetlands in the 2017 expanded study area. This inventory included review of topographic mapping, the Soil Survey of Monroe County, and NWI mapping.

Review of the NWI mapping did not identify any wetland systems located within the 2017 expanded project area **(Figure 3)**. However, seven riverine and open water systems were identified. These systems included a Freshwater Pond (PUBHx) and upper and lower perennial and unknown perennial streams (R5USC, and R2USA).

A review of the Stroudsburg, PA, USGS 7.5-Minute Quadrangle (***Figure 1***) indicated the presence of Brodhead Creek, McMichael Creek, Pocono Creek, Little Pocono Creek and Flagler Run within or adjacent to the 2017 expanded study area.

The Soil Survey identifies the existence of five (5) soil types that are considered hydric or are known to contain hydric soil components within the project area (***Figure 4***). ***Table 1*** provides a brief overview of the hydric soils. A description of all the project area soils is contained in ***Table 2***.

Table 1: Hydric Soils Properties

Soil Name	Slope	Composition	Depth to Restrictive Layer (in)	Depth to Water Table (in)	Drainage Class
Chippewa and Norwich extremely stony soils (CnB)	0-8%	Chippewa and similar soils: 47%; Norwich & similar soils: 47%	10 to 24 inches to fragipan	Seasonally at 0 inches	Poorly drained
Holly silt loam (Hy)	0-3%	Holly and similar soils: 100%	More than 80 inches	Seasonally at 3 inches	Poorly drained
Rexford gravelly silt loam (ReA)	0-3%	Rexford (somewhat poorly drained): 40%; Rexford (poorly drained): 35%	15 to 24 inches to fragipan	Seasonally at 4-6 inches	Somewhat poorly drained - poorly drained
Rexford gravelly silt loam (ReB)	3-8%	Rexford (somewhat poorly drained): 50%; Rexford (poorly drained): 35%	15 to 24 inches to fragipan	Seasonally at 4-6 inches	Somewhat poorly drained - poorly drained
Sheffield silt loam (Sh)	0-3%	Sheffield and similar soils: 100%	15 to 26 inches to fragipan	Seasonally at 0 inches	Poorly drained

Source: Natural Resources Conservation Service, Web Soil Survey, 2014.

Table 2: Project Area Soil Descriptions

Soil Name	Soil Symbol	Slope	Parent Material Setting
Alluvial land	As	0 to 3%	Alluvium
Bath very stony silt loam	BbB, BbC	0 to 8%, 8 to 25%	Loamy till derived mainly from gray and brown siltstone, sandstone, and shale
Benson-Rock outcrop complex	BeC, BeF	8 to 25% 25-70%	Loamy till
Braceville gravelly loam	BrB	3 to 8%	Coarse-loamy outwash
Chenango gravelly loam	ChA, ChB	0 to 3%, 3 to 8%	Gravelly outwash
Chippewa and Norwich extremely stony soils*	CnB	0 to 8%	Fine-loamy till derived from sandstone and siltstone
Cut and fill land	Cy	0 to 25%	Man made and altered materials from mixed rock types
Pit, Shale, and Gravel	Gp	---	---
Holly silt loam*	Ho	0 to 3%	Alluvium derived from sandstone and shale
Lordstown channery silt loam	LsD	15 to 25%	Coarse-loamy till derived from sandstone and siltstone
Philo silt loam	Ph	0 to 3%	Coarse-loamy alluvium derived from sandstone and siltstone
Pope silt loam	Po, Pp	0 to 3%	Coarse-loamy alluvium derived from sandstone and siltstone
Rexford gravelly silt loam*	ReA, ReB	0 to 3%, 3 to 8%	Coarse-loamy outwash derived from sandstone and shale
Sheffield silt loam*	Sh	0 to 3%	Till
Volusia gravelly silt loam	VoB	3 to 8%	Fine-loamy basal till derived from sandstone and siltstone
Water	W	0%	Rivers streams ponds
Wyoming gravelly sandy loam	WyA, WyB, WyC WyD WyE	0 to 3%, 3 to 8%, 8 to 15% 15-25% 25-70%	Sandy and gravelly glaciofluvial deposits derived from sandstone and siltstone

Source: Natural Resources Conservation Service, Web Soil Survey, 2014.
*Hydric soil.

Figure 3: Project Area NWI Wetlands Map

AECOM

N

0 300 600

Feet

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Riverine

2017 Expanded Wetland and Waterways Study Area

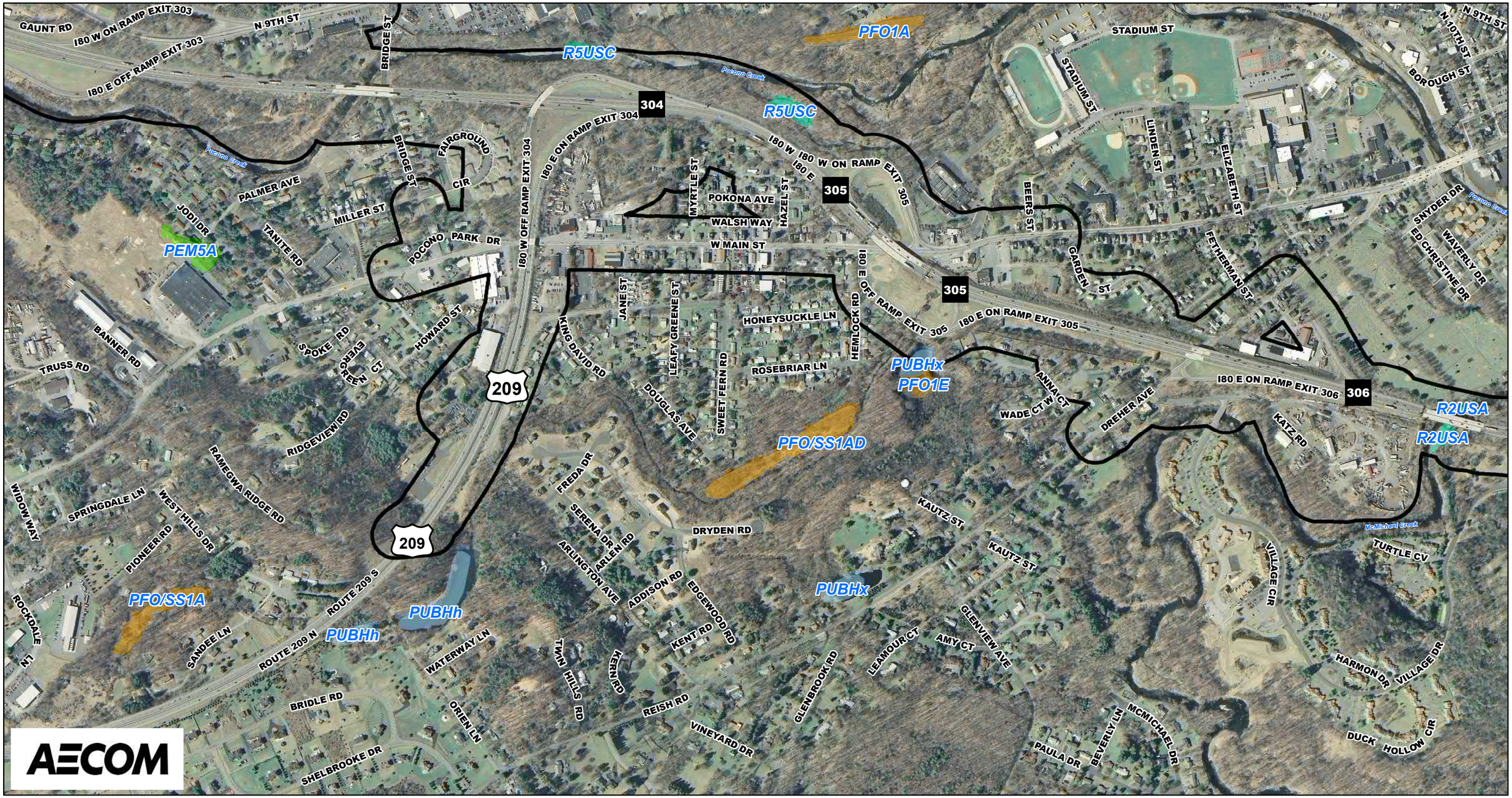
Interstate 80, Section 17M

FIGURE 3:

PROJECT AREA NWI WETLANDS MAP

Sheet 1 of 2

Source: PAMAP, 2008, NWI.



AECOM

N

0 300 600

Feet

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine
- 2017 Expanded Wetland and Waterways Study Area

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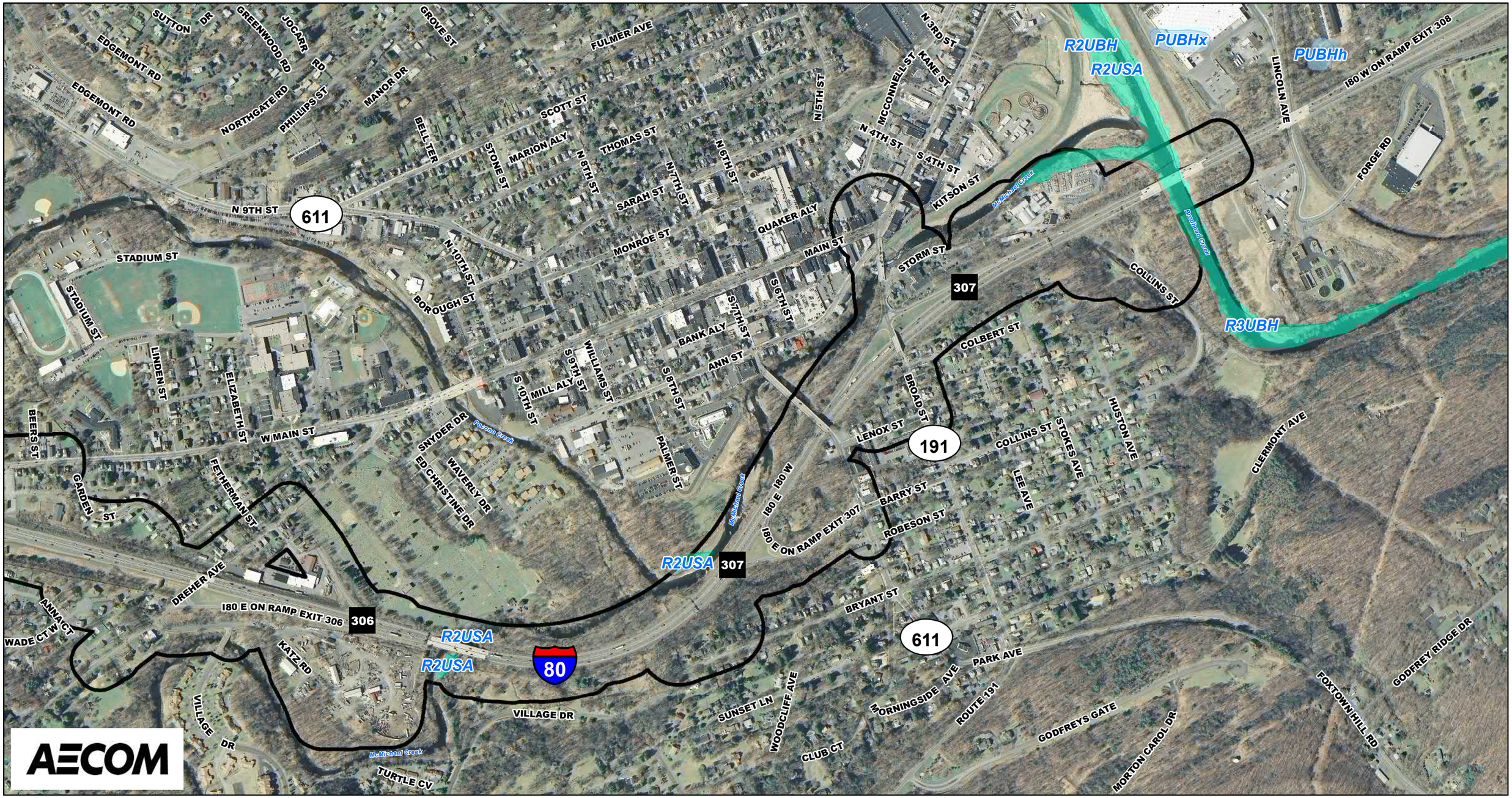
FIGURE 3:

PROJECT AREA NWI WETLANDS MAP

Sheet 2 of 2

Source: PAMAP, 2008, NWI.



N

0 300 600

Feet

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine
- 2017 Expanded Wetland and Waterways Study Area

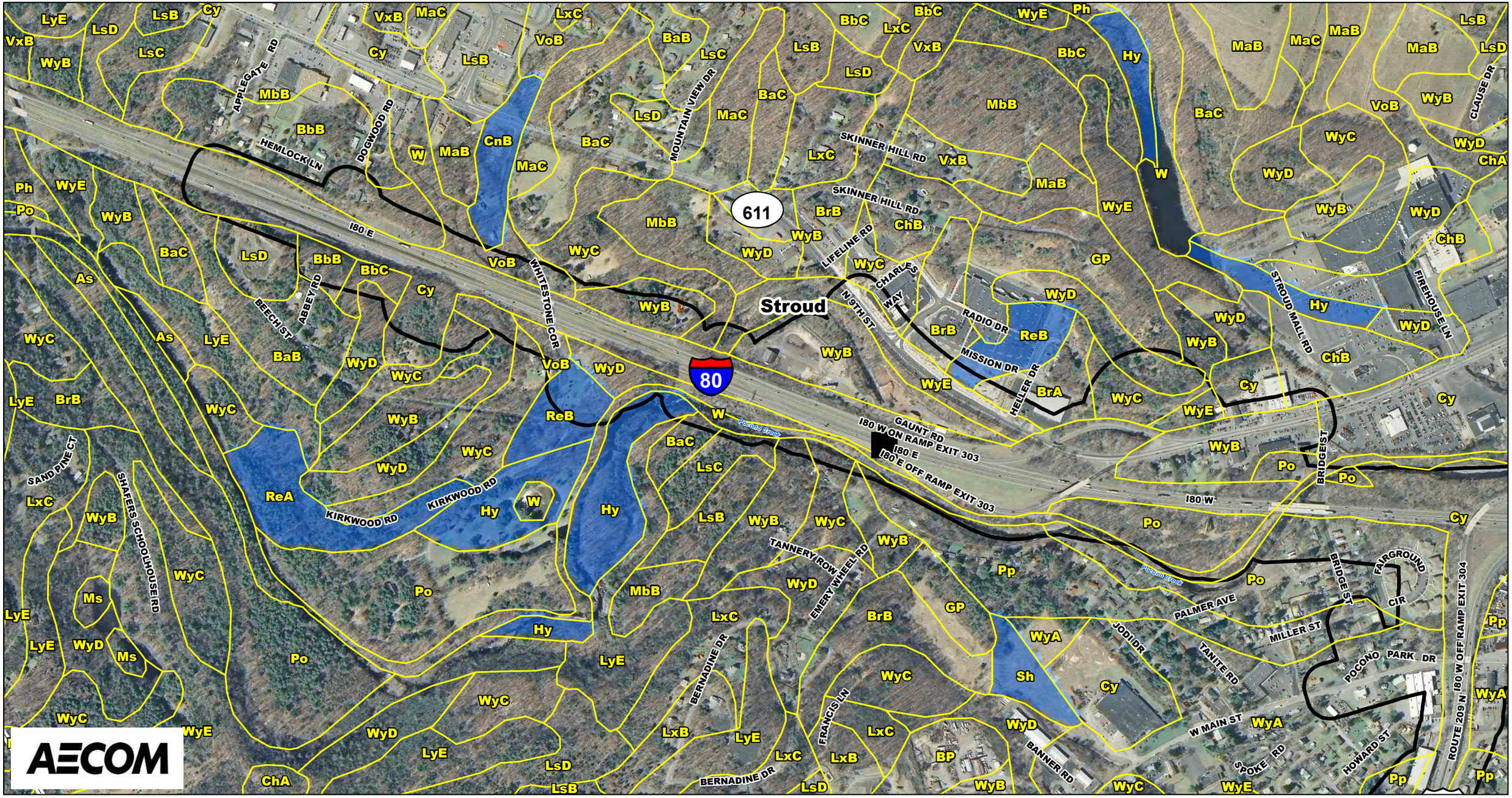
Interstate 80, Section 17M

FIGURE 3: PROJECT AREA NWI WETLANDS MAP

Sheet 3 of 2

Source: PAMAP, 2008, NWI.

Figure 4: Project Area Soils Map



AECOM

N

0 300 600

Feet

Soil Type

Hydric Soils

2017 Expanded Wetland and Waterways Study Area

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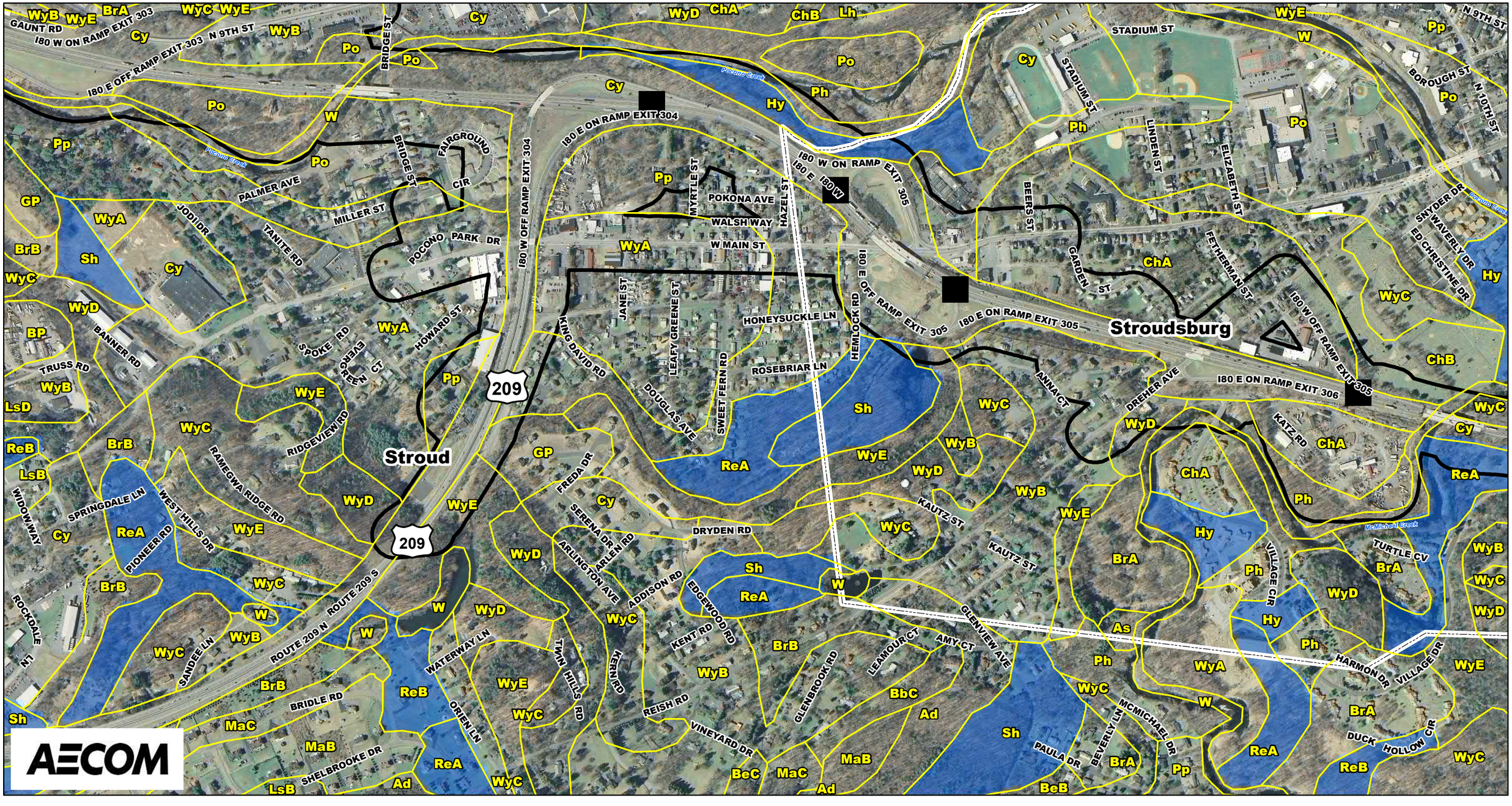
FIGURE 4:

PROJECT AREA SOILS MAP

Sheet 1 of 3

Source: PAMAP, 2008, USDA NRCS.



N

0 300 600

Feet

Soil Type

Hydric Soils

2017 Wetlands Study Area

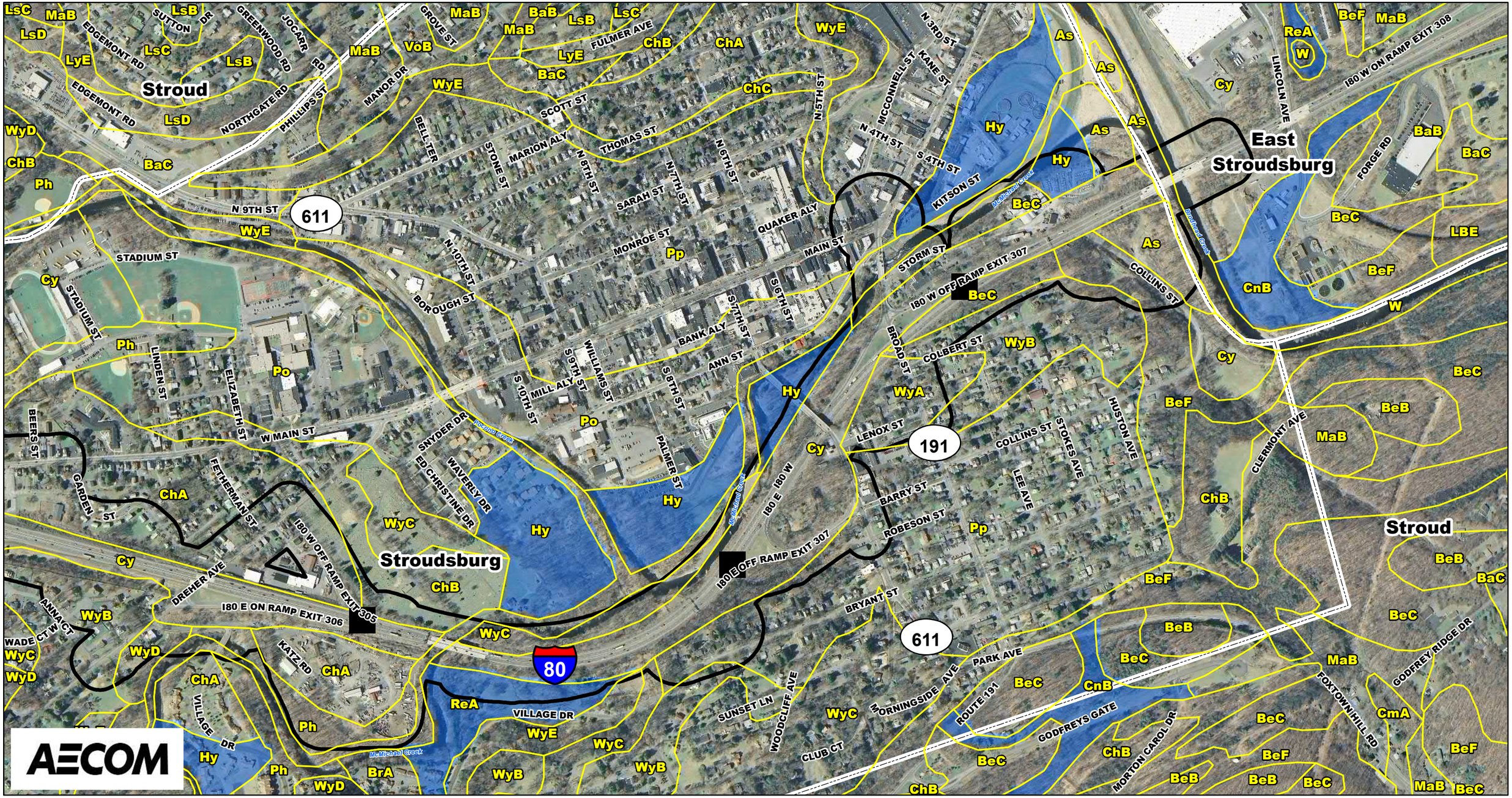
Interstate 80, Section 17M

FIGURE 4:

PROJECT AREA SOILS MAP

Sheet 2 of 3

Source: PAMAP, 2008, USDA NRCS.



N

0 300 600

Feet

Soil Type

Hydric Soils

2017 Wetlands Study Area

Interstate 80, Section 17M

FIGURE 4:

PROJECT AREA SOILS MAP

Sheet 3 of 3

Source: PAMAP, 2008, USDA NRCS.

B. Watercourses

Field investigations of the 2017 expanded project area conducted on September 21 and 22, 2017 identified the presence of no new watercourse (***Figure 5 Plan Sheets).*** However, the delineated extent of four previously surveyed watercourses were extended. ***Appendix B*** contains color photographs of the watercourses. Below is a brief description of the extended watercourses.

Watercourse WW-2-00 (McMichael Creek) (*Sheets 19-26*) – This watercourse is a previously delineated resource that extends into the 2017 expanded study area. Approximately 900 feet of delineated channel was added to the northeast extent of this resource, and approximately 480 feet was added to the south central portion of the channel. McMichael Creek is a perennial tributary and RPW to Brodhead Creek (WW-1-00) a Traditional Navigable Water (TNW). Within the eastern third of the project area, WW-2-00 flows parallel to the northern side of I-80 eventually flowing into Brodhead Creek near the eastern end of the project area. Along much of this length, the existing fill slopes of the highway are the floodplain limits of McMichael Creek. The stream beneath the I-80 bridge has an average width of approximately 55 feet, with downstream widths increasing to 80 feet. The streambed is relatively consistent in substrate composed of gravel and cobble.

Watercourse WW-3-00 (Pocono Creek) (*Sheets 3-5, 8-10, 13, 15*) – This watercourse is a previously delineated resource that extends into the 2017 expanded study area. Approximately 650 feet of delineated channel was added to the north central portion of this resource, and approximately 2700 feet of channel was added to the southwest extent of the resource. Pocono Creek is a perennial tributary (RPW) flowing to McMichael Creek (WW-2-00) a RPW and tributary to a TNW. Within the western quarter of the project area, WW-3-00 flows parallel to the southern side of I-80. Near the I-80 Bridge Street crossing it passes under the interstate and continues along the fillslope of the highway. As Pocono Creek approaches Exit 305 it diverges to the north and then back to the south, near Exit 307, before finally flowing into McMichael Creek. Along much of the length within the project area, the existing fill slopes of the highway are the floodplain limits of Pocono Creek. The stream beneath the I-80 bridge has an average width of approximately 70 feet, with downstream widths increasing to 90 feet. The streambed is relatively consistent in substrate composed of cobble sized rock, boulders and bedrock.

Watercourse WW-3-01 (Little Pocono Creek) (*Sheets 12, 16-17*) – This watercourse is a previously delineated resource that extends into the 2017 expanded study area. Approximately 140 feet of delineated channel was added to the northern extent of this resource, and approximately 700 feet was added to the southern portion of the channel. Little Pocono Creek is a perennial tributary (RPW) to Pocono Creek (Watercourse WW-3-00). It flows from south to the north passing under I-80 and through the Exit 305 eastbound ramps and gore area. The stream has an average width of approximately 18 feet as it passes under I-80 and a silt, gravel and cobble substrate.

Watercourse WW-3-13 (*Sheet 2-3*) – This watercourse is a previously delineated resource that extends into the 2017 expanded study area. Approximately 880 feet of delineated channel was added to the southern extent of this resource. WW-3-13 is an intermittent tributary (RPW) to Pocono Creek (Watercourse WW-3-00). This stream flows northwest to southeast into Pocono Creek south of the project area. The channel was dry at the time of field investigations. The stream has an average width of approximately 12 feet as it passes under I-80 with a gravel, cobble and boulder substrate.

Table 3: 2017 Expanded Study Area Watercourse Summary

Watercourse ID	Length (linear feet)	Watercourse Type	Cowardin Class.	Avg. Width	Plan Sheet (s)
WW-2-00 (McMichael Creek)	5733	RPW	perennial	55'	Sheets 19-26
WW-3-00 (Pocono Creek)	7068	RPW	perennial	70'	Sheets 3-5, 8-10, 13, 15
WW-3-01 (Little Pocono Creek)	1903	RPW	perennial	18'	Sheets 12, 16-17
WW-3-13 (UNT to Pocono Creek)	1753	RPW	intermittent	12'	Sheets 2-3

D. Wetlands

Field investigations of the 2017 expanded project area conducted on September 21 and, 2017, identified the presence of (4) wetland systems (***Figure 5 Plan Sheets***). Brief wetland descriptions are included below. ***Appendices A & B*** contain field data sheets from the investigations and color photographs of the wetlands. ***Appendix C*** contains the function value evaluation data sheets for the wetlands identified.

Wetland W-1-02 (*Sheets 27-28)* – is a floodplain associated wetland located south of I-80. The delineated and overall area of the wetland is 0.17 acre. The Cowardin Classification is palustrine emergent (PEM).

At the time of the investigation the dominant vegetation within the wetland consisted of barnyard grass (*Echinochloa crus-galli*, FAC), arrow leaf tearthumb (*Persicaria sagittata*, OBL), Japanese stiltgrass (*Microstegium vimineum*, FAC), and Japanese knotweed (*Fallopia japonica*, FACU). The soil within the wetland was sampled to a depth of 8 inches. The soil type present was Rexford gravelly silt loam (ReA) which is listed as hydric in Monroe County.

Soil Profile	Matrix	Redox	Texture
0-8 inch	10YR 2/1	7.5YR 5/6	sandy loam

Indicators of wetland hydrology included presence of surface water. This wetland has principal functions/values of sediment/toxicant retention.

Wetland W-3-14a (*Sheet 2)* – is a groundwater supported wetland located north of I-80. The wetland is also associated with headwater hydrology of a perennial UNT to Pocono Creek (WW3-13). The delineated and overall area of the wetland is 0.08 acre. The Cowardin Classification is palustrine forested (PFO).

At the time of the investigation the dominant vegetation within the wetland consisted of red maple (*Acer rubrum*, FAC), and multiflora rose (Rosa multiflora, FACU. The soil within the

wetland was sampled to a depth of 15 inches. The soil types present, Chippewa and Norwich soils are both listed as hydric in Monroe County.

Soil Profile	Matrix	Redox	Texture
0-15 inch	10YR 4/2	7.5YR 6/6	silt loam

Indicators of wetland hydrology included presence of surface water, saturation, high groundwater table and geomorphic position. This wetland has principal functions/values of groundwater recharge/discharge, and wildlife habitat.

Wetland W-3-15 (*Sheets 2-3)* – is a groundwater supported wetland located south of I-80. The wetland is also associated with the floodplain of a perennial UNT to Pocono Creek (WW3-13). The delineated and overall area of the wetland is 0.07 acre. The Cowardin Classification is palustrine emergent (PEM).

At the time of the investigation the dominant vegetation within the wetland consisted of jewelweed (*Impatiens capensis*, FACW), soft rush (*Juncus effusus*, OBL), common duckweed (*Lemna minor*, OBL), and cattail (*Typha latifolia*, OBL). The soil within the wetland was sampled to a depth of 10 inches. The soil types present, Rexford gravelly silt loam (ReA) and Sheffield silt loam (Sh) are both listed as hydric in Monroe County.

Soil Profile	Matrix	Redox	Texture
0-10 inch	5Y 2.5/1	7.5YR 5/6	silt loam

Indicators of wetland hydrology included presence of surface water, saturation. This wetland has principal functions/values of groundwater recharge/discharge, floodflow alteration, wildlife habitat, sediment/shoreline stabilization, and sediment/toxicant retention.

Wetland W-3-17 (*Sheet 1)* – is a groundwater supported wetland located along the maintained north shoulder of I-80. The delineated and overall area of the wetland is 0.02 acre. The Cowardin Classification is palustrine emergent (PEM).

At the time of the investigation the dominant vegetation within the wetland consisted of soft rush (*Juncus effusus*, OBL), fox sedge (*Carex vulpinoidea*, OBL), lurid sedge (*Carex lurida*, OBL), purple loosestrife (*Lythrum salicaria*, OBL), and cattail (*Typha latifolia*, OBL). The soil within the wetland was sampled to a depth of 8 inches. The soil type present was Bath channery silt loam, (BbB) which is not listed as hydric in Monroe County.

Soil Profile	Matrix	Redox	Texture
0-8 inch	10YR 3/1	7.5YR 5/6	silt loam

Indicators of wetland hydrology included presence of surface water, saturation, high ground water table, geomorphic position, and FAC-neutral test. This wetland has principal functions/values of groundwater recharge/discharge, and sediment/toxicant retention.

Wetland W-3-18 (*Sheets 2-1)* – is a groundwater supported wetland located south of I-80. The delineated and overall area of the wetland is 0.16 acre. The Cowardin Classification is palustrine emergent (PEM).

At the time of the investigation the dominant vegetation within the wetland consisted of jewelweed (*Impatiens capensis*, FACW), fox sedge (*Carex vulpinoidea*, OBL), lurid sedge (*Carex lurida*, OBL), purple loosestrife (*Lythrum salicaria*, OBL), and bittersweet nightshade (*Solanum dulcamara*, FACW). The soil within the wetland was sampled to a depth of 20 inches. The soil type present was Rexford gravelly silt loam (ReA) which is listed as hydric in Monroe County.

Soil Profile	Matrix	Redox	Texture
0-20 inch	10YR 3/1	7.5YR 5/6	silt loam

Indicators of wetland hydrology included presence of surface water, saturation, high ground water table, hydrogen sulfide odor, aquatic fauna, geomorphic position, and FAC-neutral test. This wetland has principal functions/values of groundwater recharge/discharge, wildlife habitat, and sediment/toxicant retention.

Table 4: 2017 Expanded Study Area Wetland Summary

Wetland ID	Wetland Size (acres)*	Wetland Type	Longitude	Latitude	Primary Function/ Value**
W-1-02	0.17	PEM	75° 11' 02.050" W	40° 59' 10.880" N	1, 6
W-3-14a	0.01	PFO	75° 14' 42.210" W	40° 59' 27.050" N	1, 6
W-3-15	0.21	PEM	75° 14' 34.500" W	40° 59' 14.810" N	1, 6,
W-3-17	0.02	PEM	75° 14' 49.730" W	40° 59' 26.920" N	1, 6
W-3-18	0.01	PEM	75° 14' 36.880" W	40° 59' 15.210" N	1, 4, 6

**Functional Class Key:

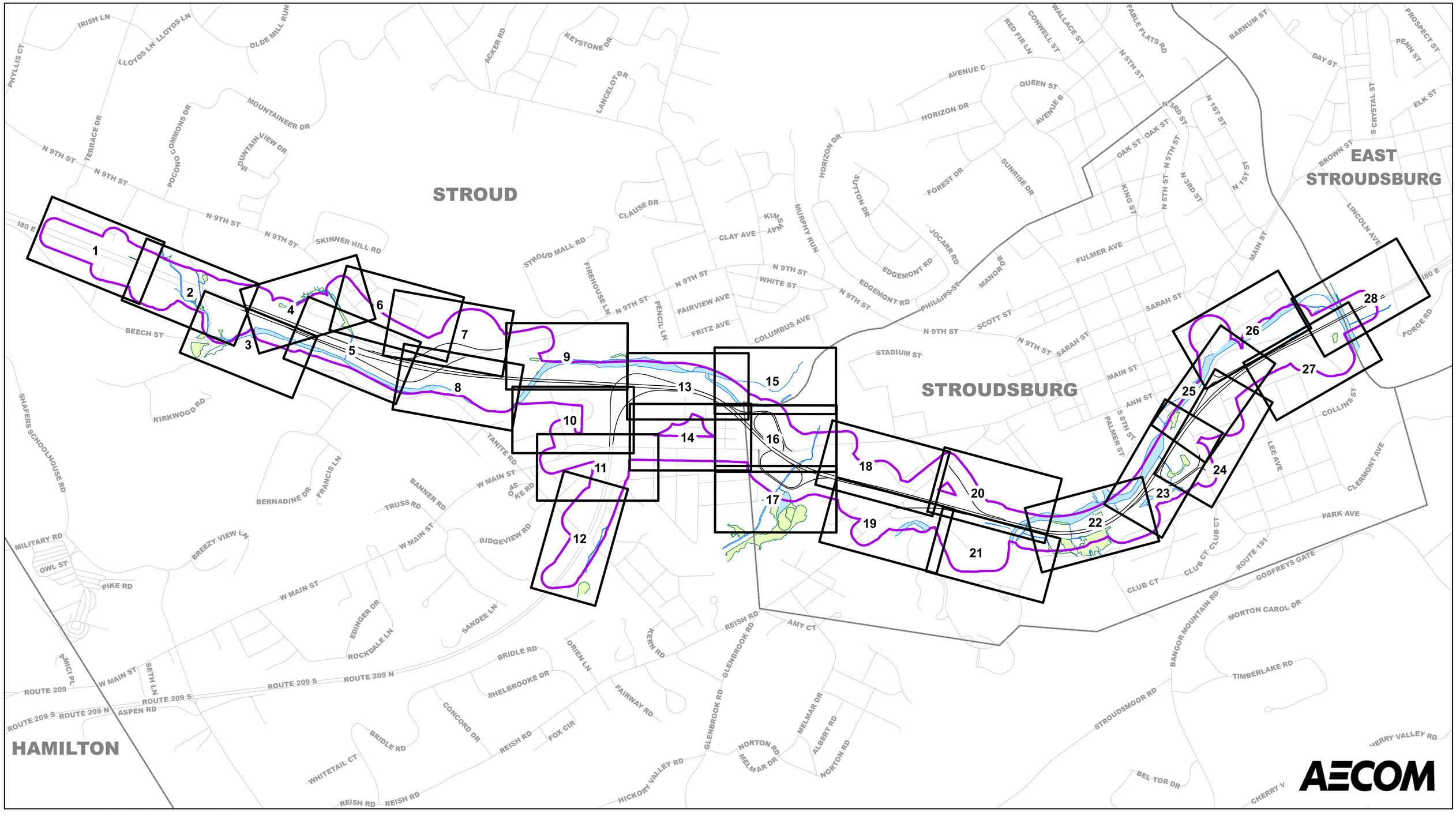
1 - Groundwater Recharge/Discharge
2 - Floodflow Alteration
3 - Fish/Shellfish Habitat
4 - Wildlife Habitat
5 - Sediment/Shoreline Stabilization
6 - Sediment/Toxicant Retention

For wetlands comprised of multiple components, one Functions and Values assessment was made for the overall system.

IV. Summary

During field investigations conducted on September 21 and 22 of 2017 of the I-80 Section 17M Reconstruction Project 2017 expanded study area, AECOM biologist extended the delineated limits of 4 previously surveyed watercourses. Four new PEM and one PFO wetlands were identified and delineated.

Figure 5: Plan Sheets



Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

Key Sheet

Print Date: 4/2/2018

Sheet

Ordinary High Water Mark

Limit of Wetland

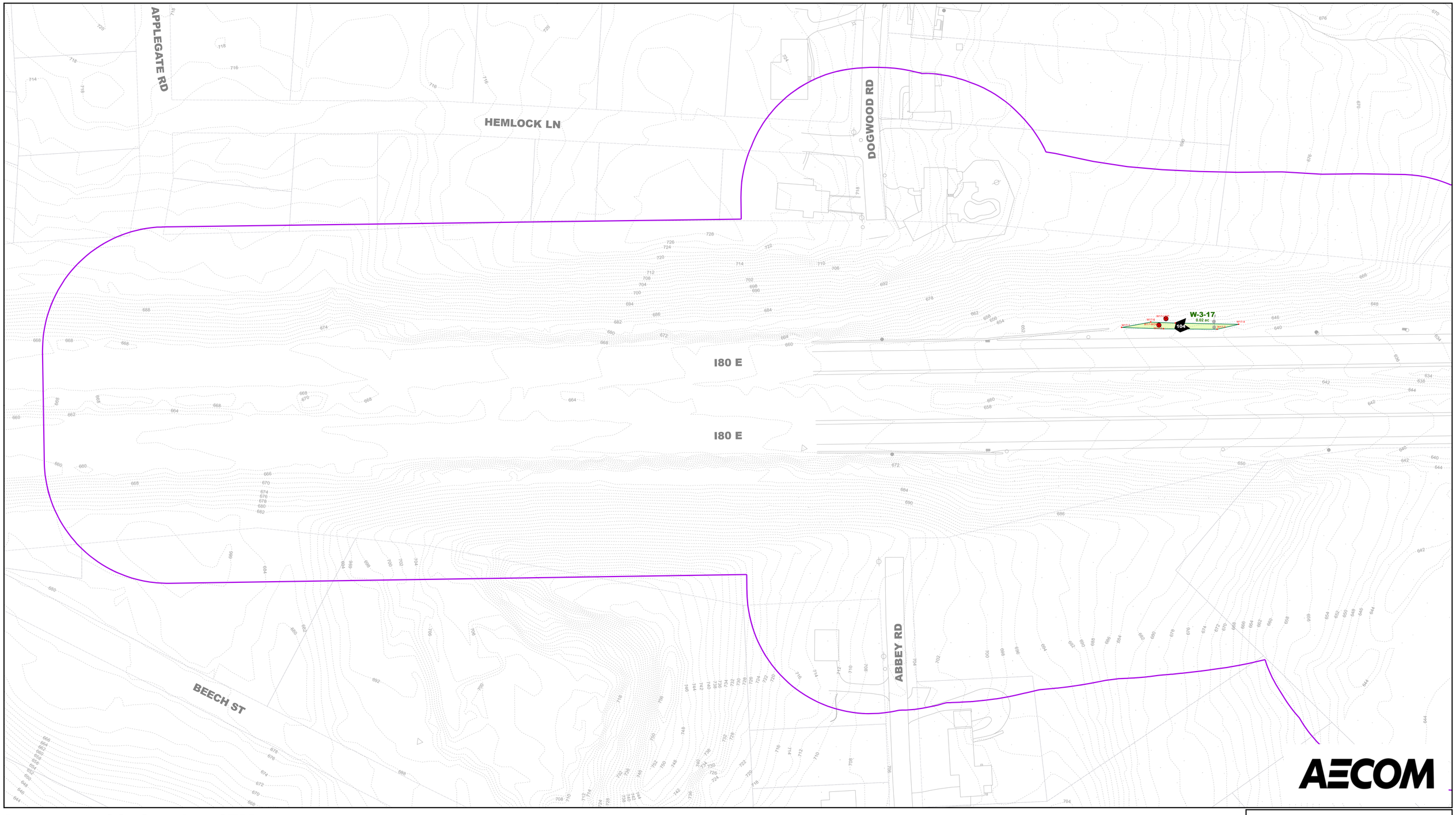
0 600 1,200 2,400

Feet

N

Revision Date: January, 2018

AECOM



Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

Sheet 1 of 28

Print Date: 4/2/2018

- Ordinary High Water Mark
- Limit of Wetland
- Project Study Area

- 2015 Sample Locations
- 2017 Sample Locations
- 2015 Survey Points
- 2017 Delineated Points
- Photo Locations

- FEMA 100 yr Floodplain
- FEMA Floodway
- Feature Continuing Beyond Study Area*

*Does not indicate flow direction.

Wetland and Waterway Boundaries Delineated by: AECOM; October 2013 to May 2014 & October 2017.
Surveyed by: Susquehanna Civil Inc.; October 2013 to May 2014 and February 2016.

0 50 100
Feet

N

Revision Date: January, 2018

"I CERTIFY THAT THE WATERS OF THE UNITED STATES AND THE WETLAND BOUNDARIES SHOWN ON THE PLAN ACCURATELY REFLECT THE FLAGGING ESTABLISHED IN THE FIELD BY OTHERS"

DATE

AECOM

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough &
East Stroudsburg Borough, Monroe County

Sheet 2 of 28

Print Date: 4/2/2018

Ordinary High Water Mark

Limit of Wetland

Project Study Area

2015 Sample Locations

2017 Sample Locations

2015 Survey Points

2017 Delineated Points

Photo Locations

FEMA 100 yr Floodplain

FEMA Floodway

Feature Continuing Beyond Study Area*
*Does not indicate flow direction.

Wetland and Waterway Boundaries Delineated by: AECOM; October 2013 to May 2014 & October 2017.
Surveyed by: Susquehanna Civil Inc.; October 2013 to May 2014 and February 2016.

0 50 100
Feet

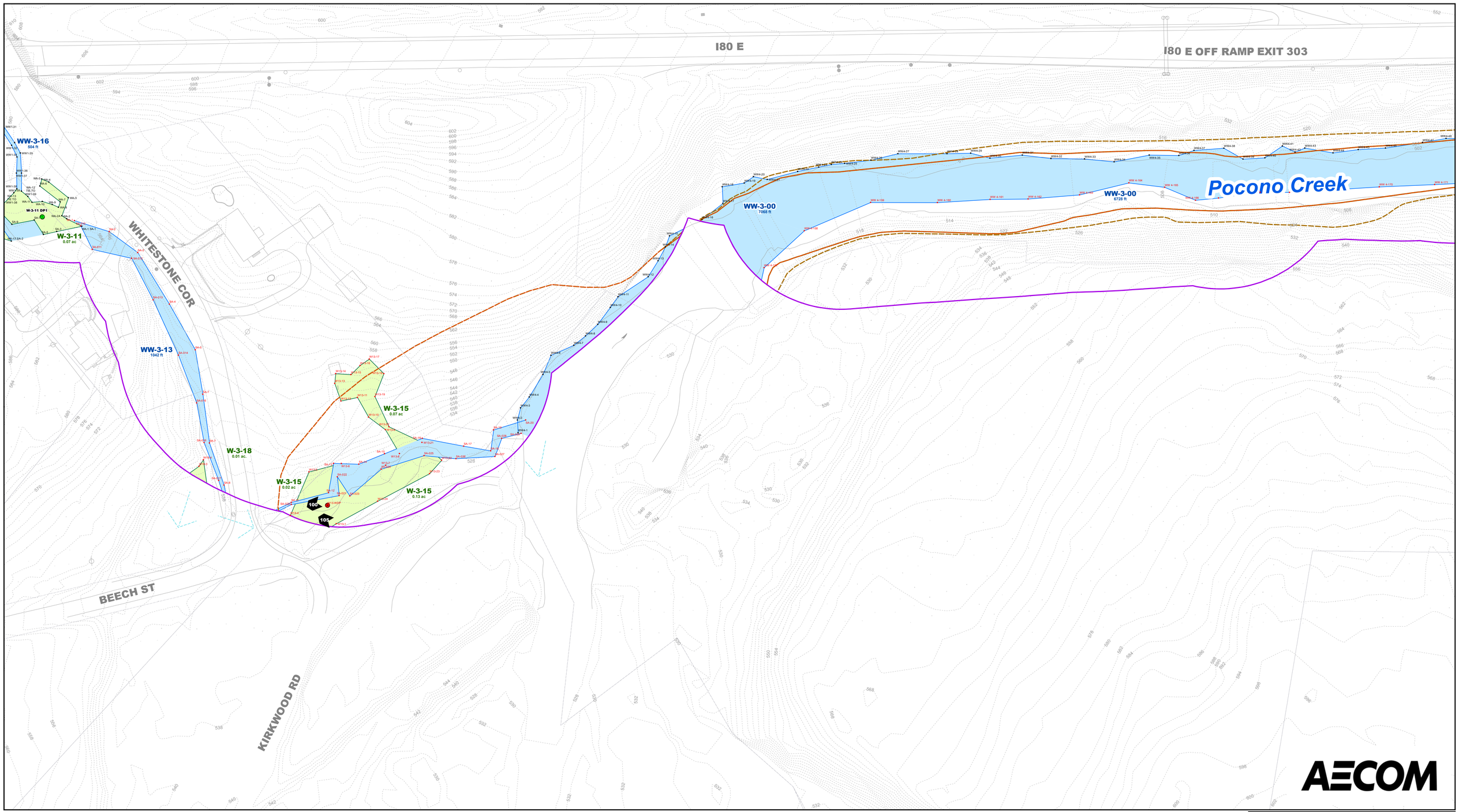
Revision Date: January, 2018

N

"I CERTIFY THAT THE WATERS OF THE UNITED STATES AND THE WETLAND BOUNDARIES SHOWN ON THE PLAN ACCURATELY REFLECT THE FLAGGING ESTABLISHED IN THE FIELD BY OTHERS"

DATE

AECOM



Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

Sheet 3 of 28

Print Date: 4/2/2018

- Ordinary High Water Mark
- Limit of Wetland
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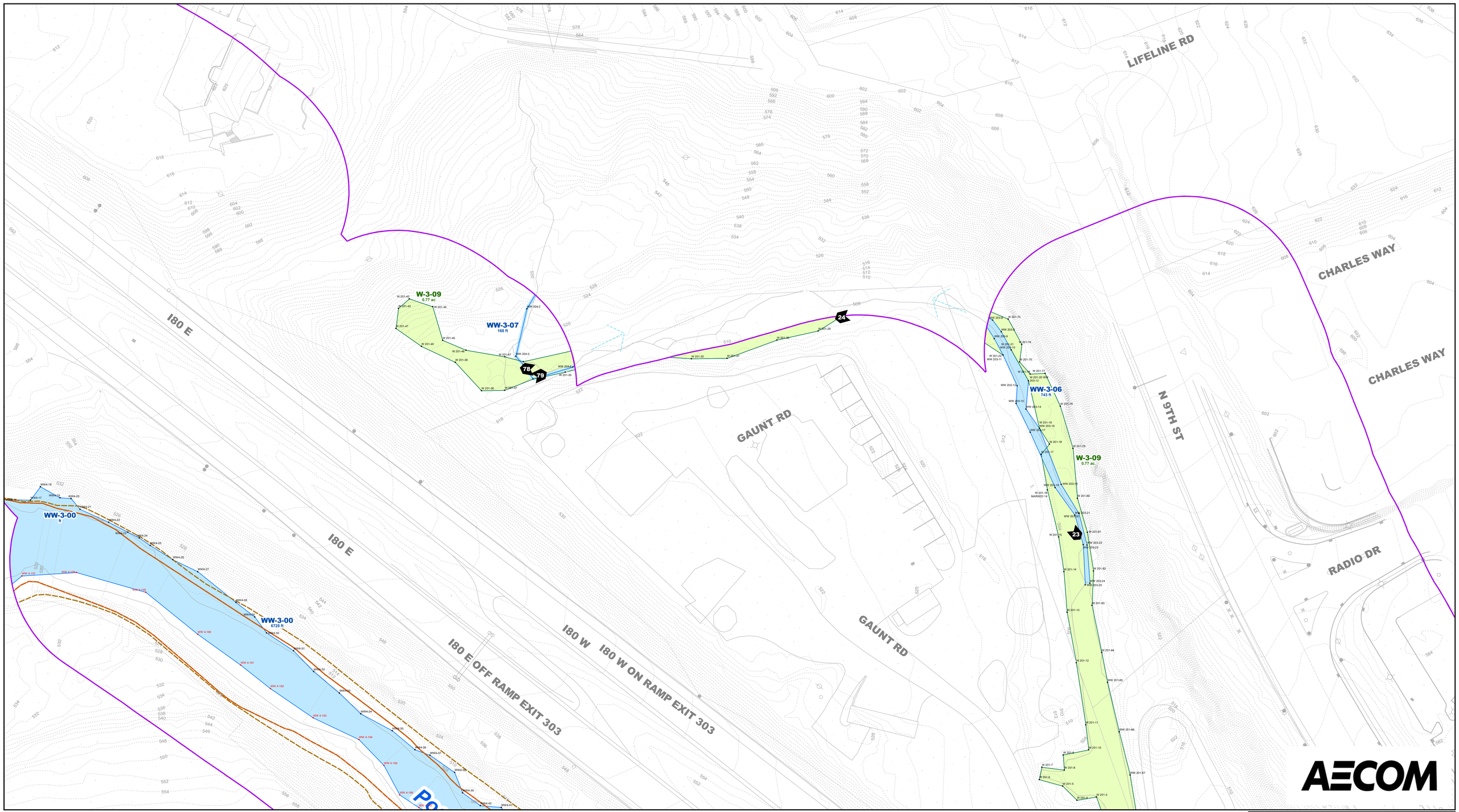

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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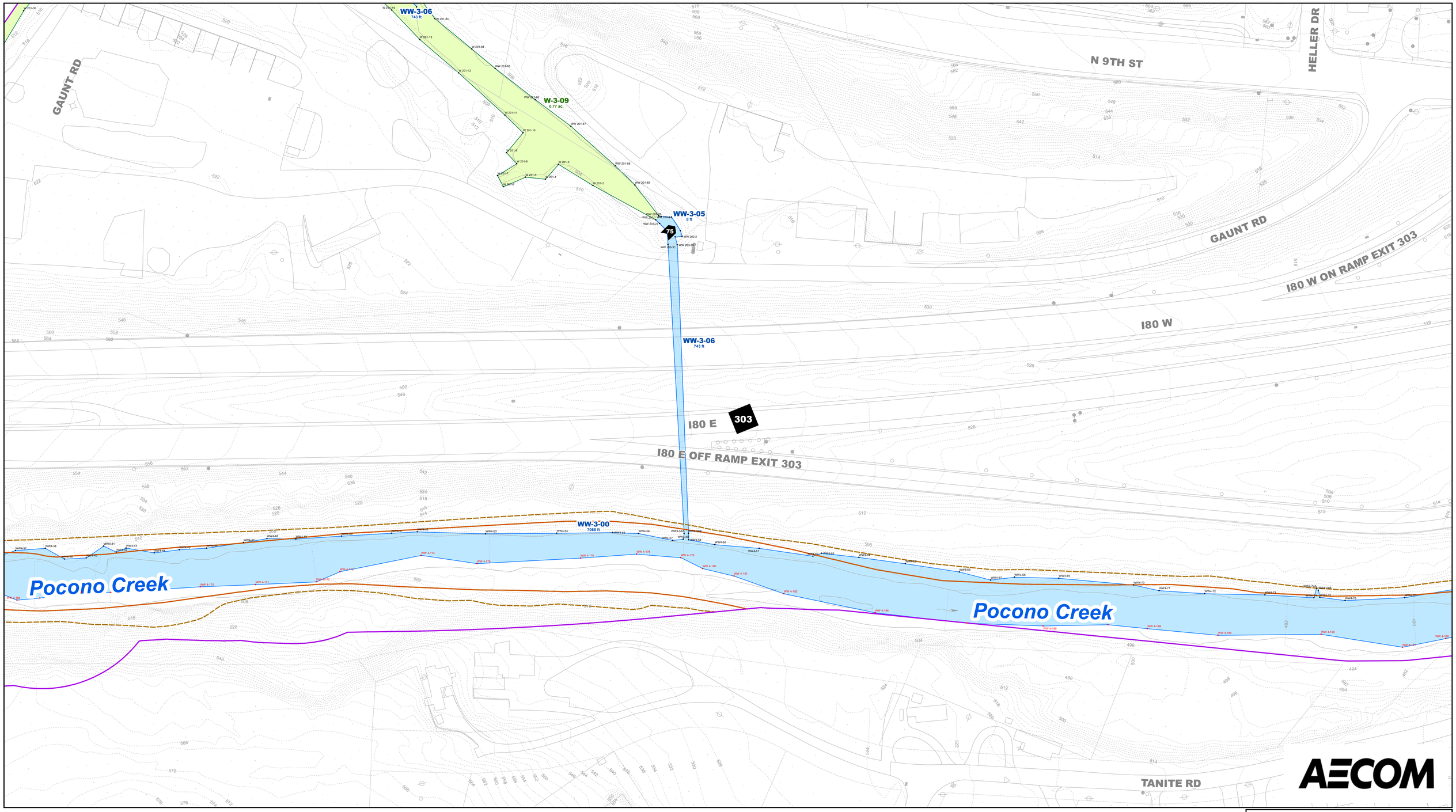

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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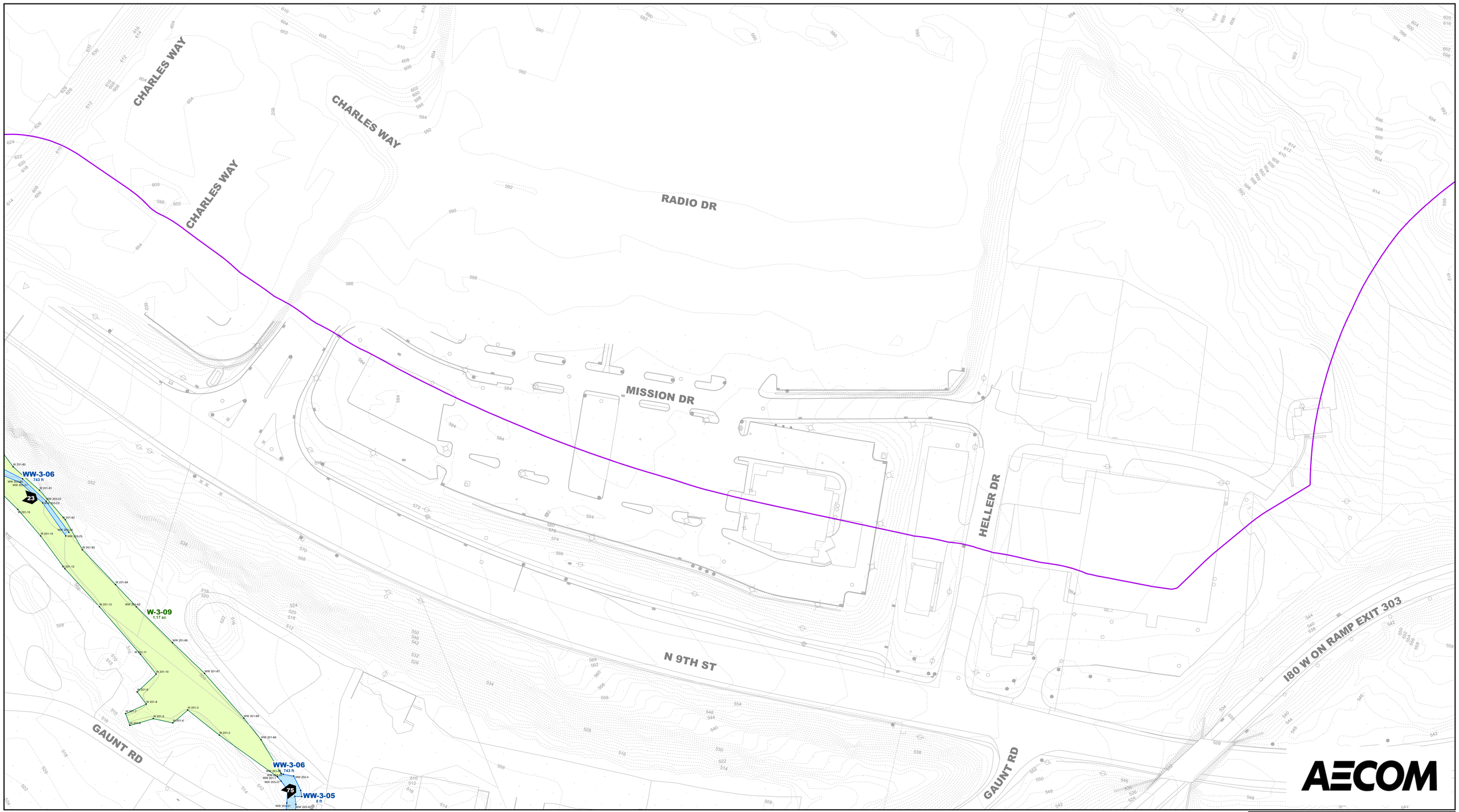

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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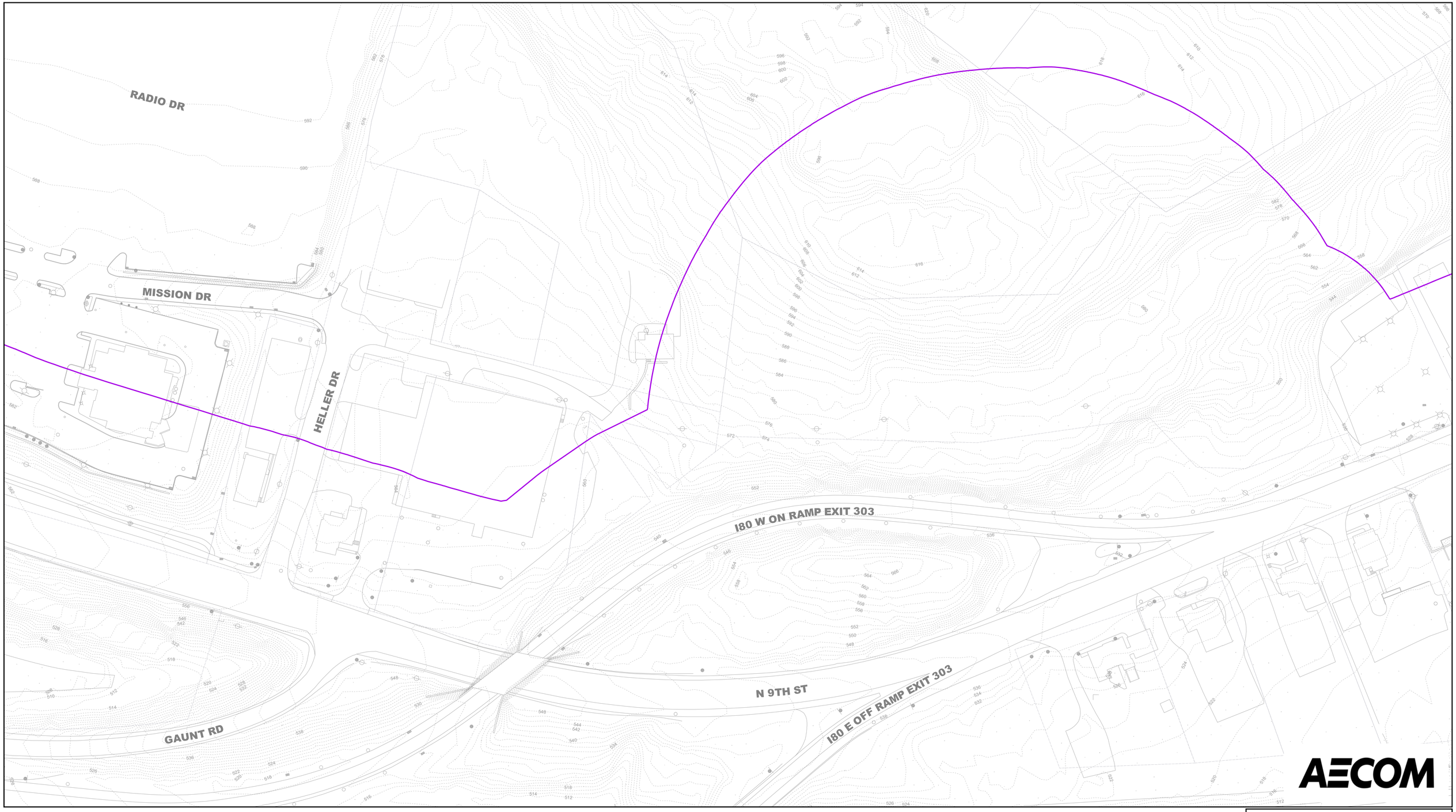

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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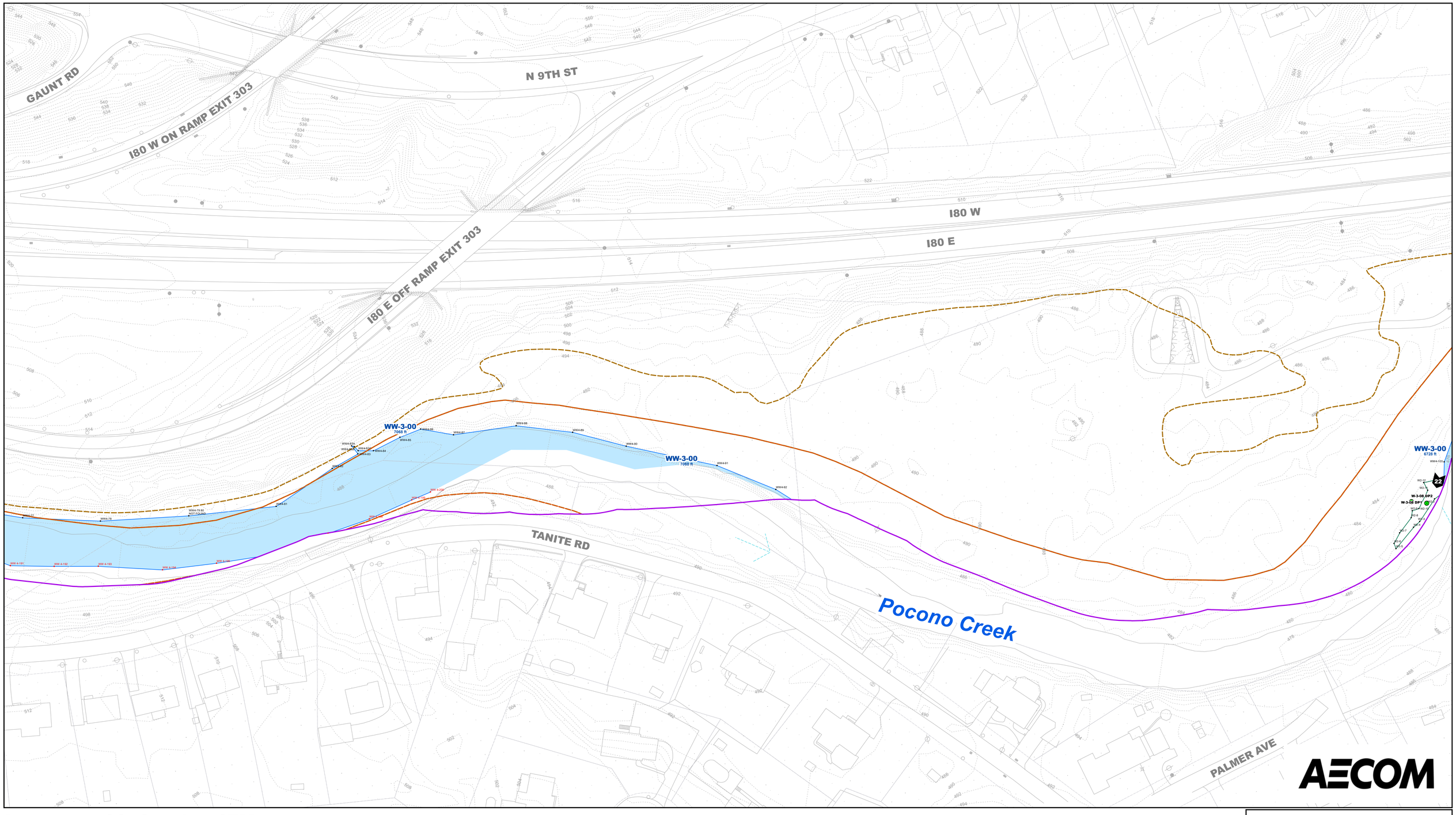

Interstate 80, Section 17M
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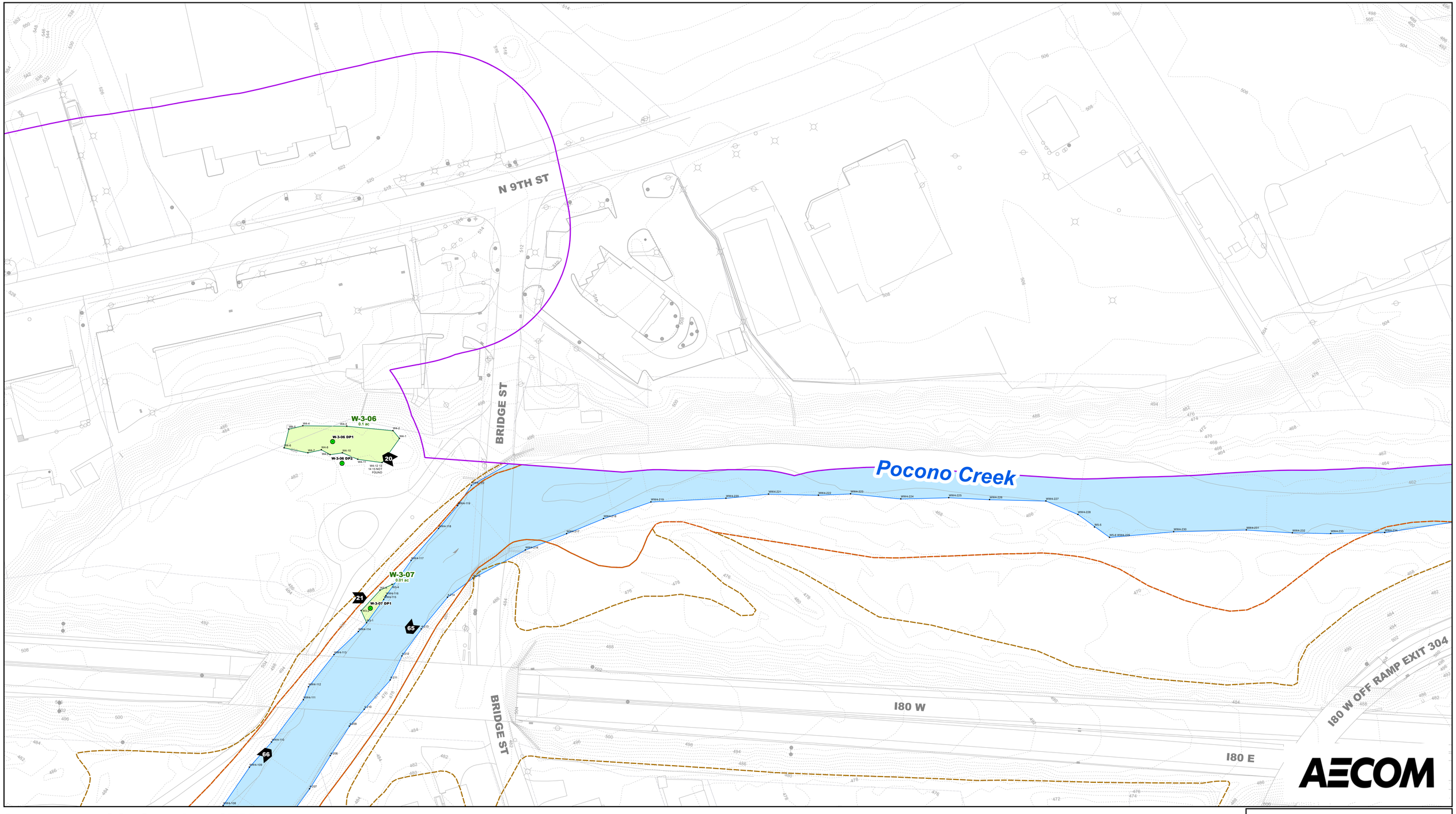

Interstate 80, Section 17M
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Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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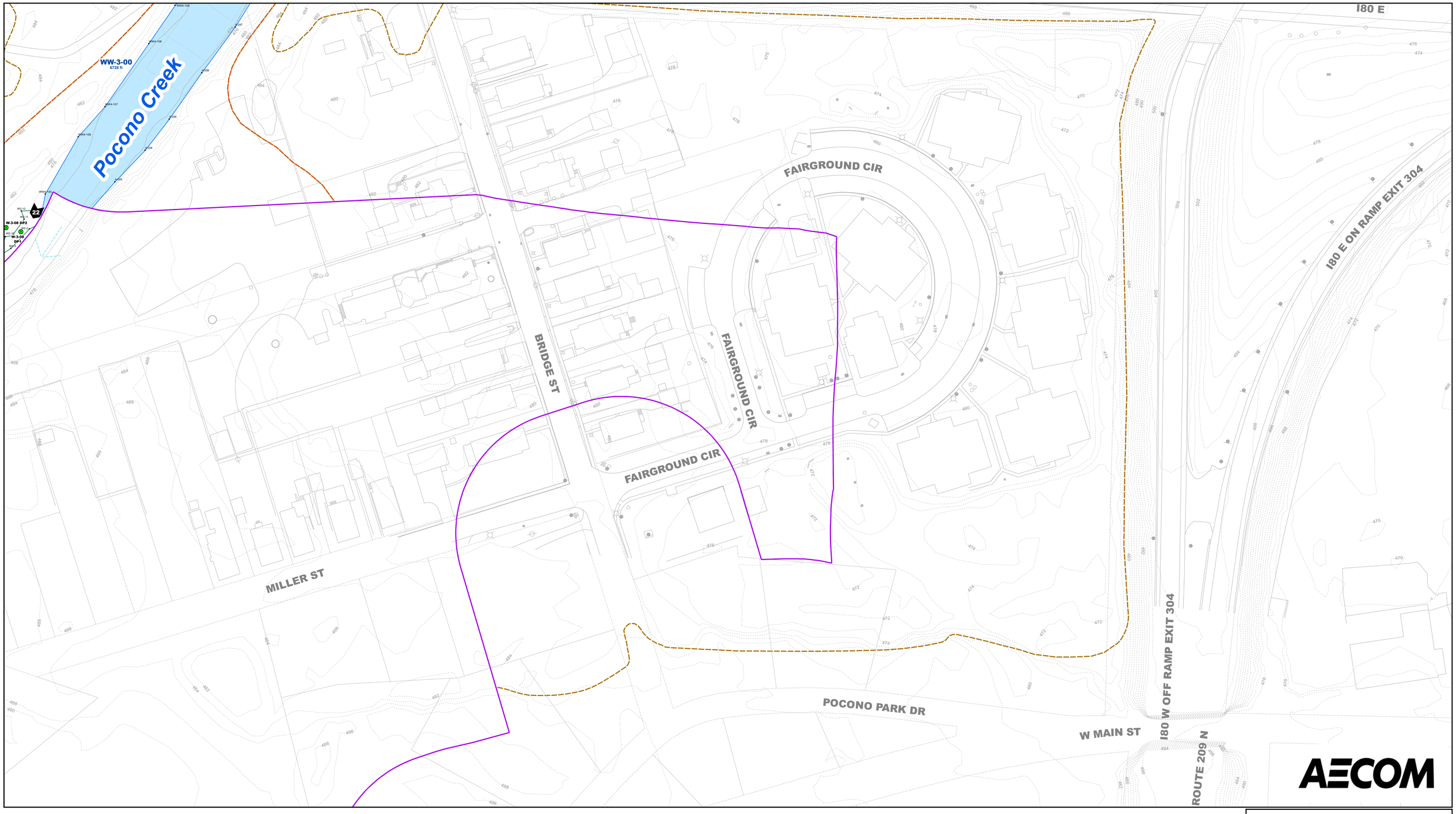

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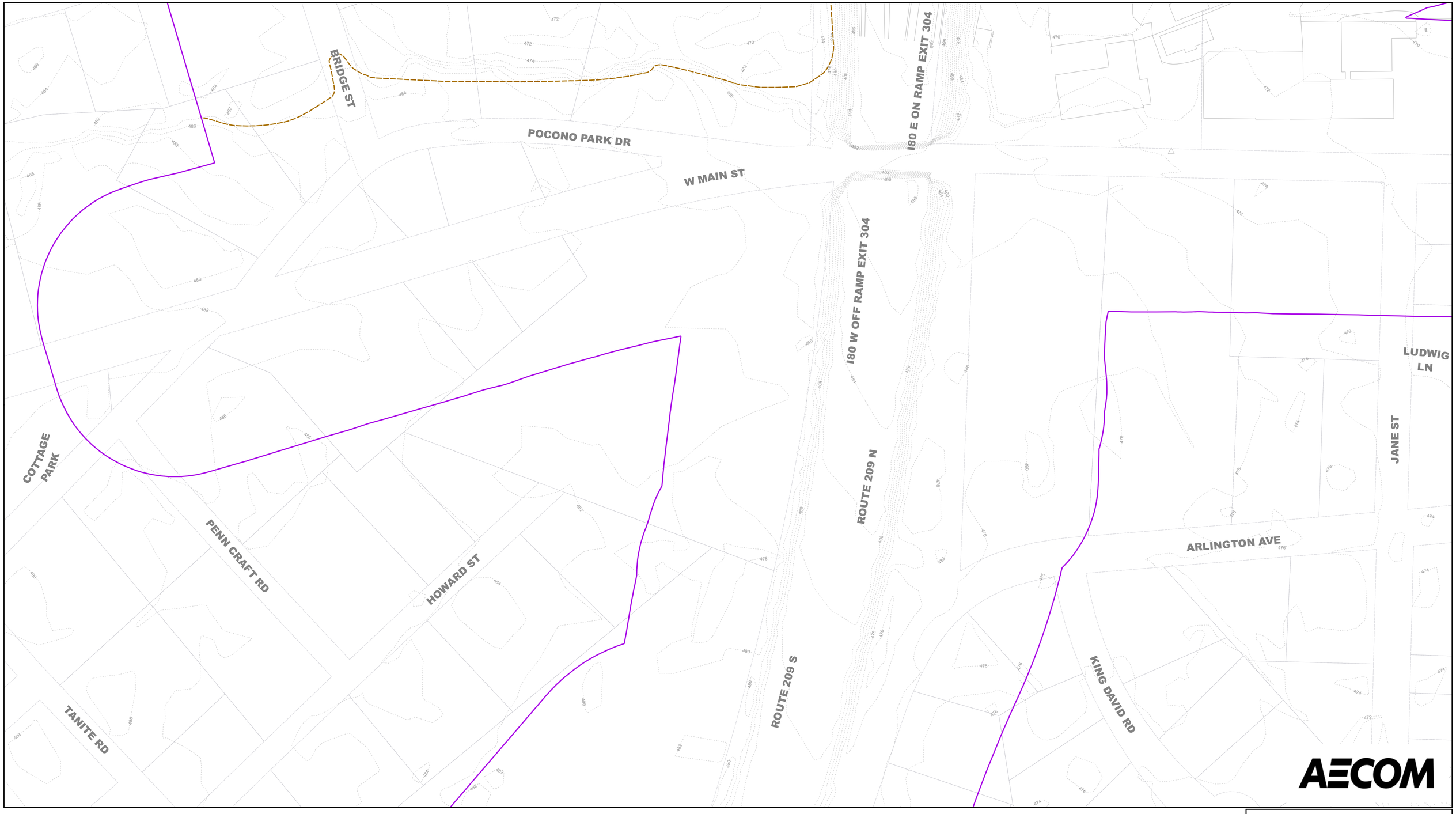

Interstate 80, Section 17M
WETLANDS & WATERWAYS

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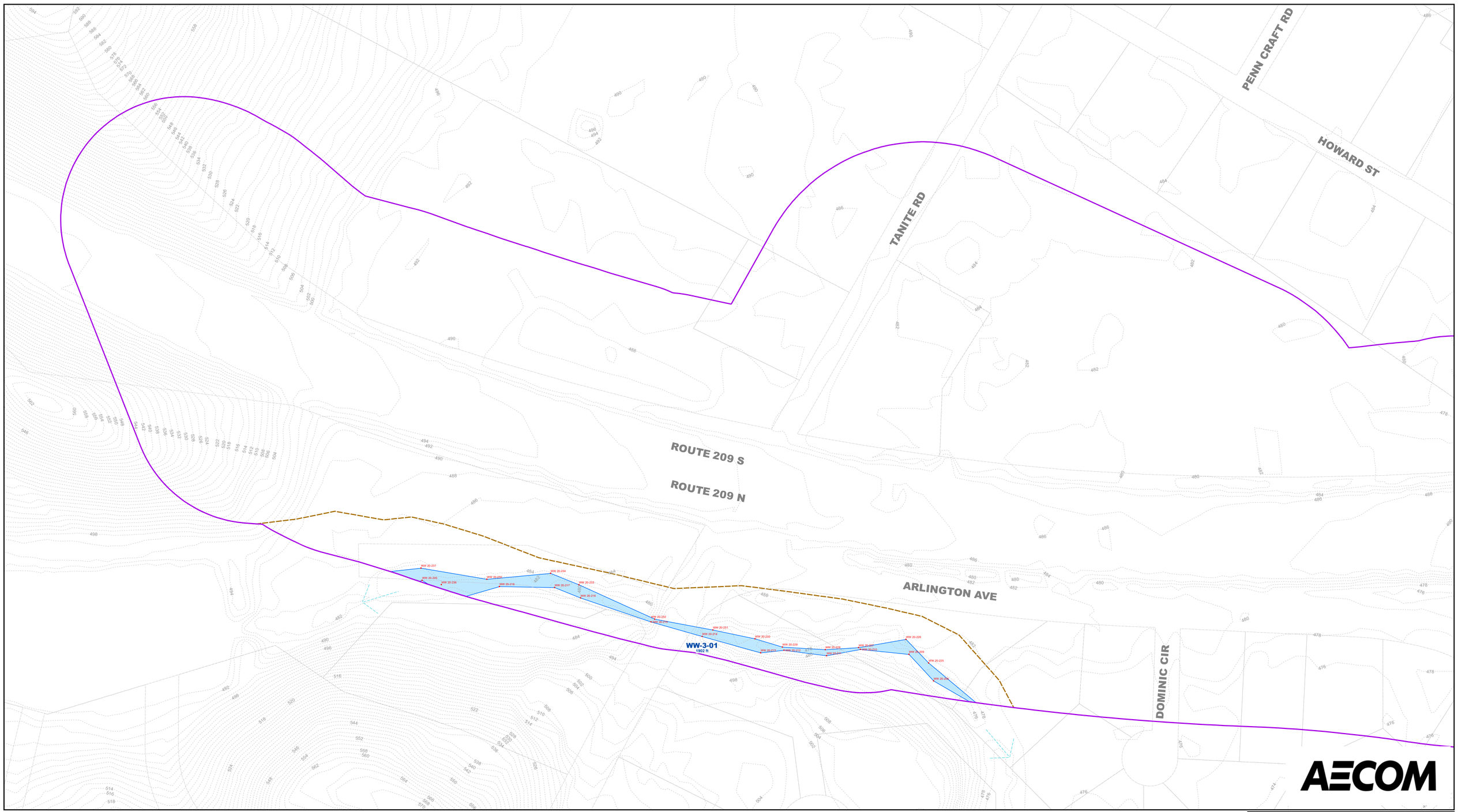

Interstate 80, Section 17M
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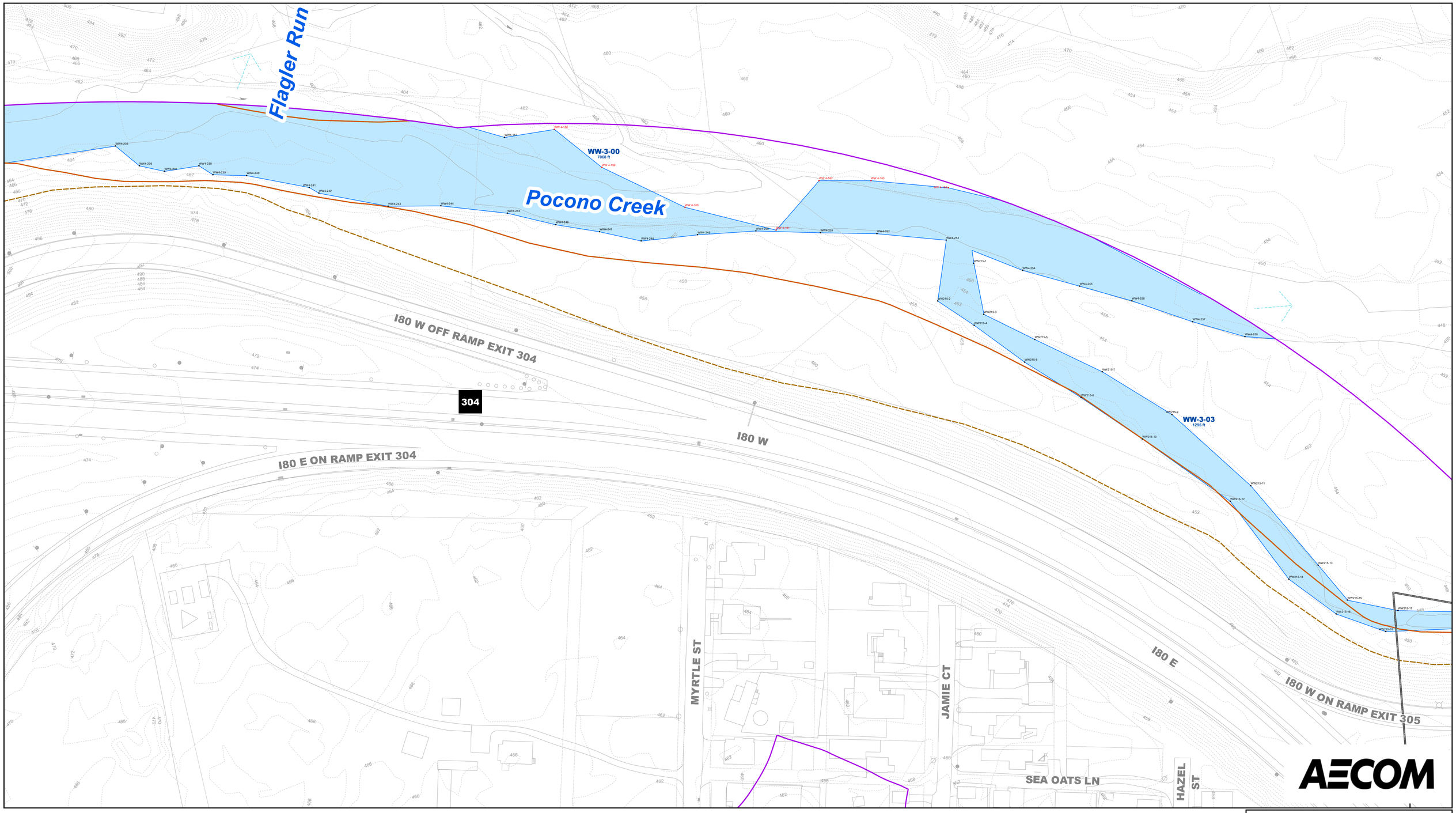

Interstate 80, Section 17M
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Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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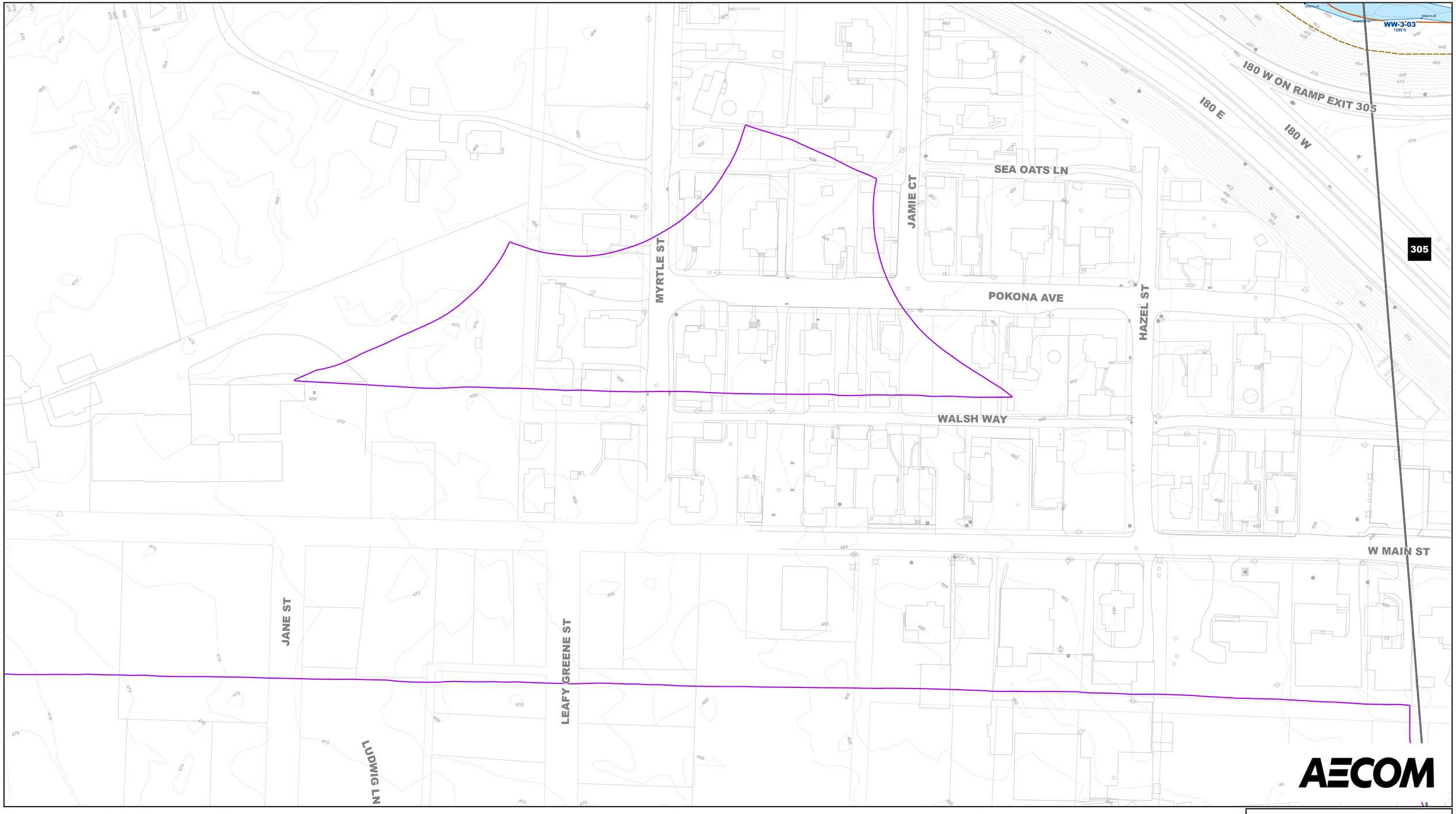

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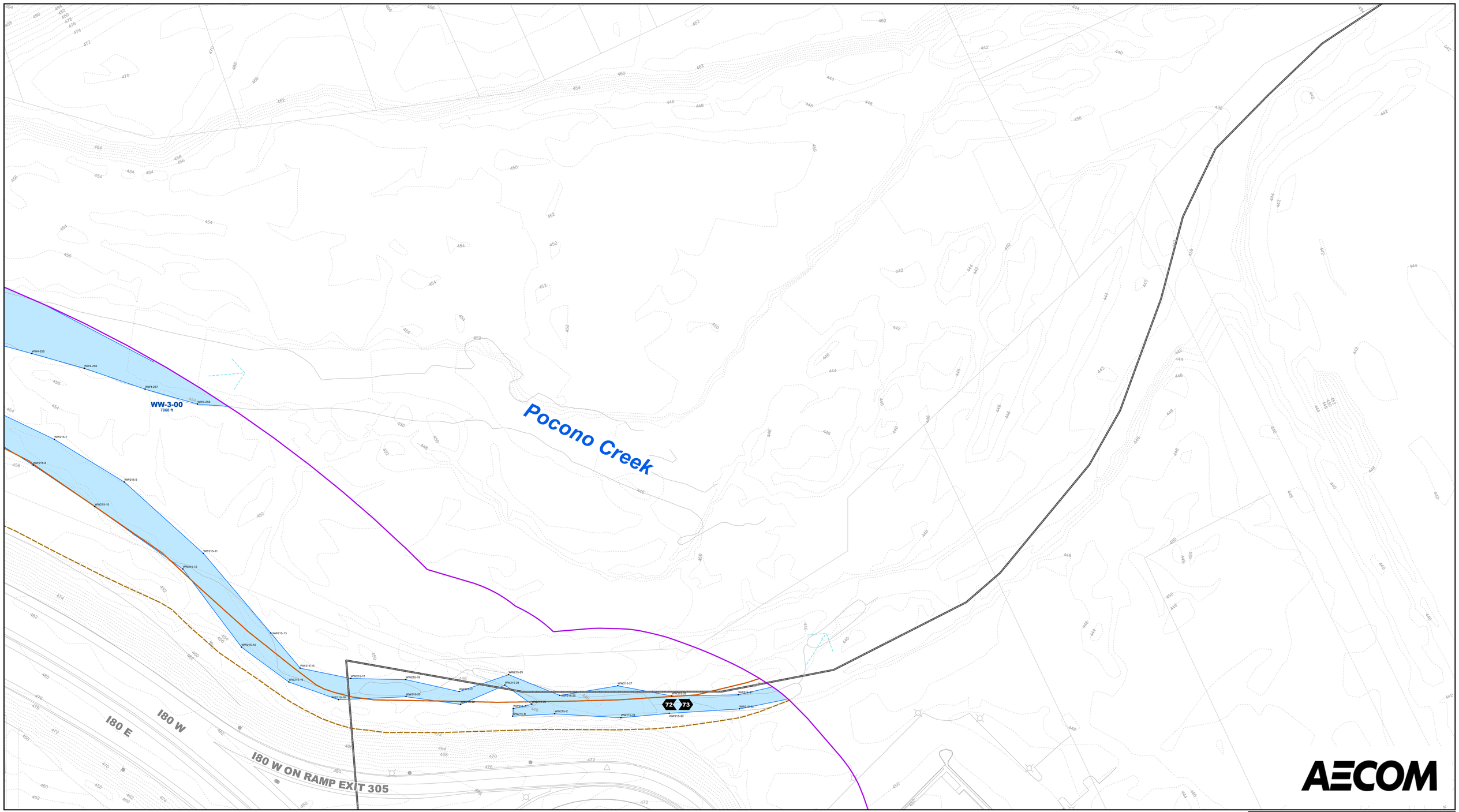

Interstate 80, Section 17M
WETLANDS & WATERWAYS

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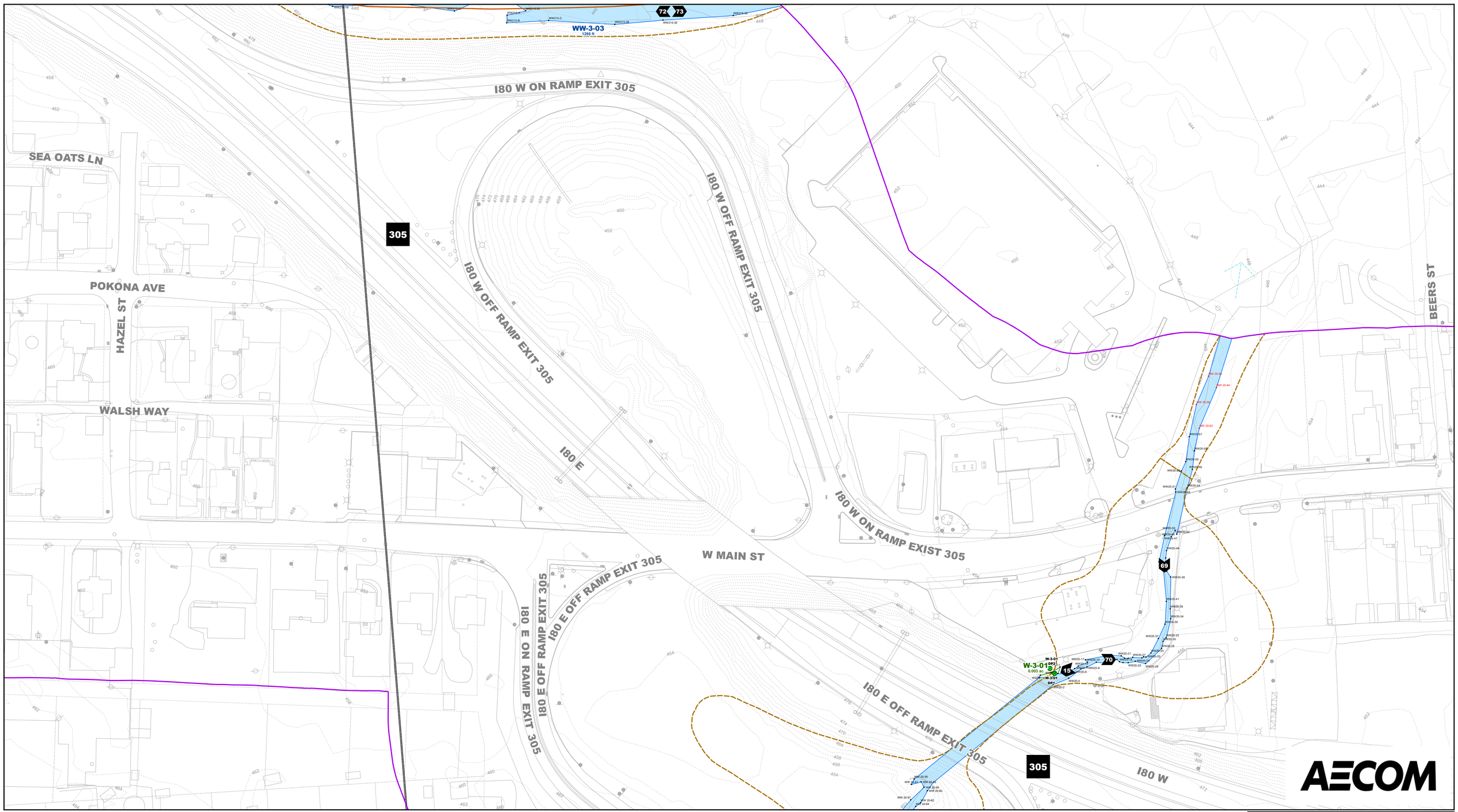

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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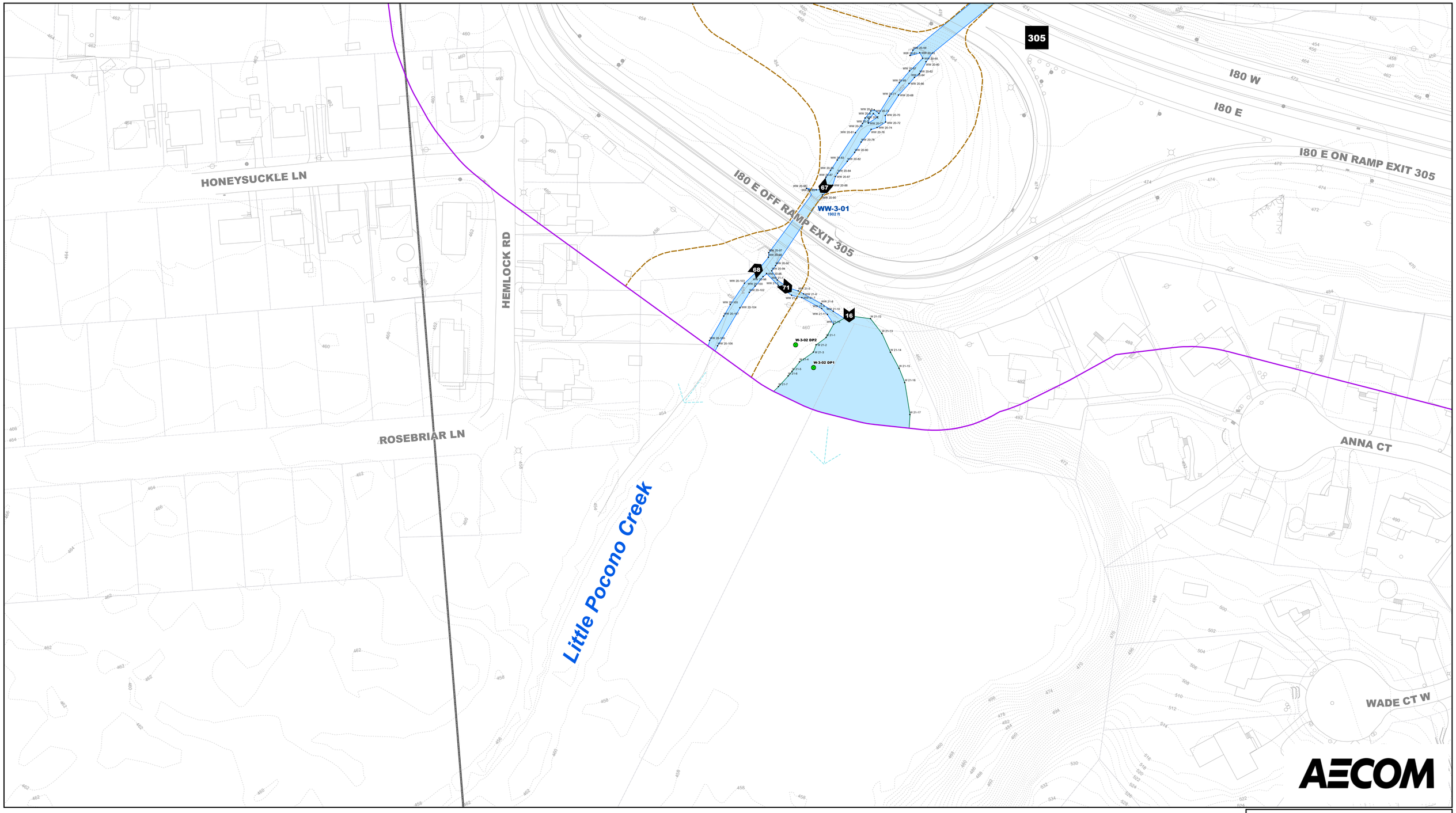

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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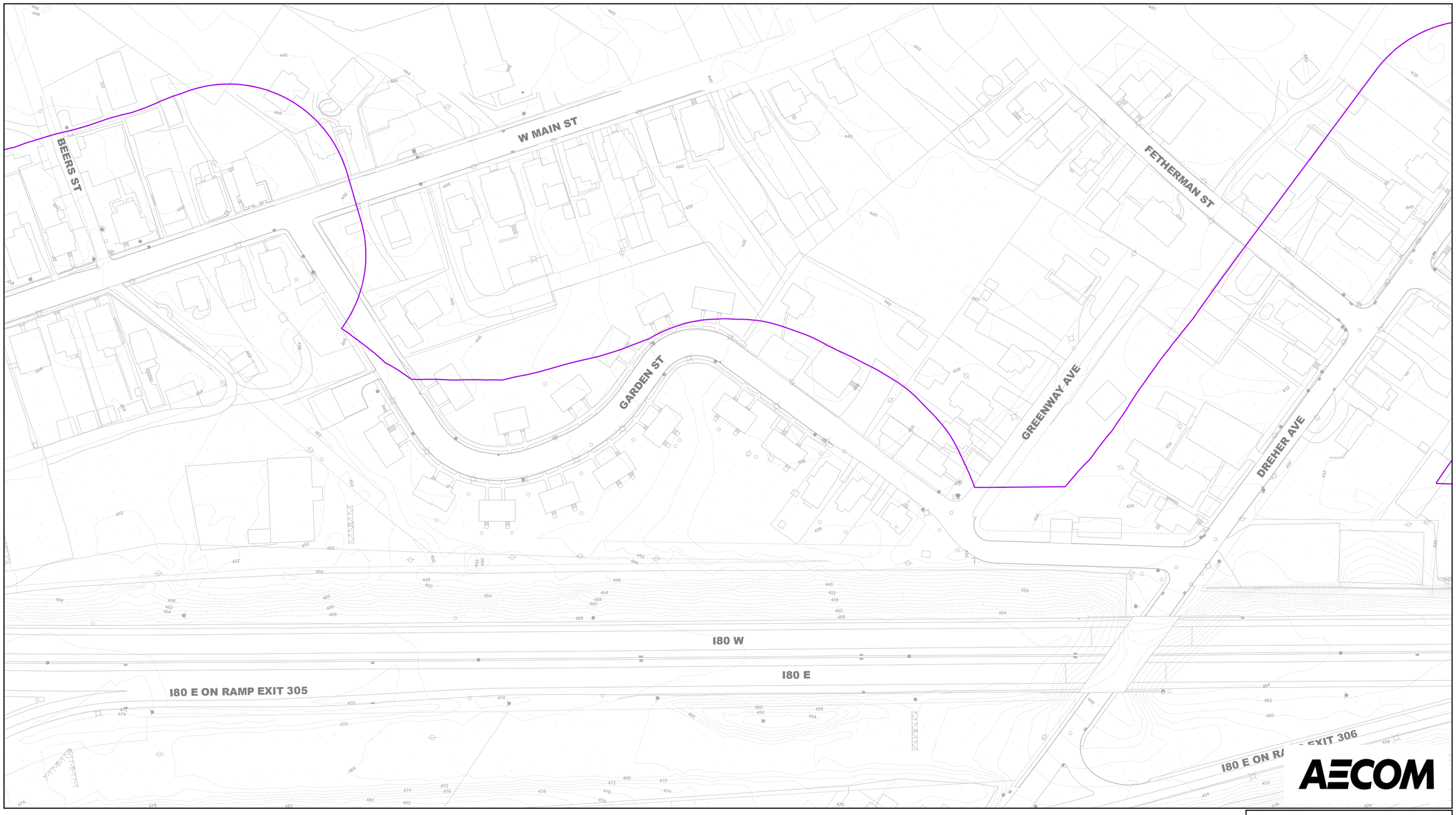

Interstate 80, Section 17M
WETLANDS & WATERWAYS

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AECOM

I80 E ON RAMP EXIT 305

I80 E

I80 E ON RAMP EXIT 306

KATZ RD

WADE CT E

WADE CT W

ANNA CT

DREHER AVE

VILLAGE DR

VILLAGE DR

WW-2-00
5733 ft

WW 100-208
WW 100-210
WW 100-185
WW 100-184
WW 100-211
WW 100-186
WW 100-183
WW 100-212
WW 100-187

Interstate 80, Section 17M
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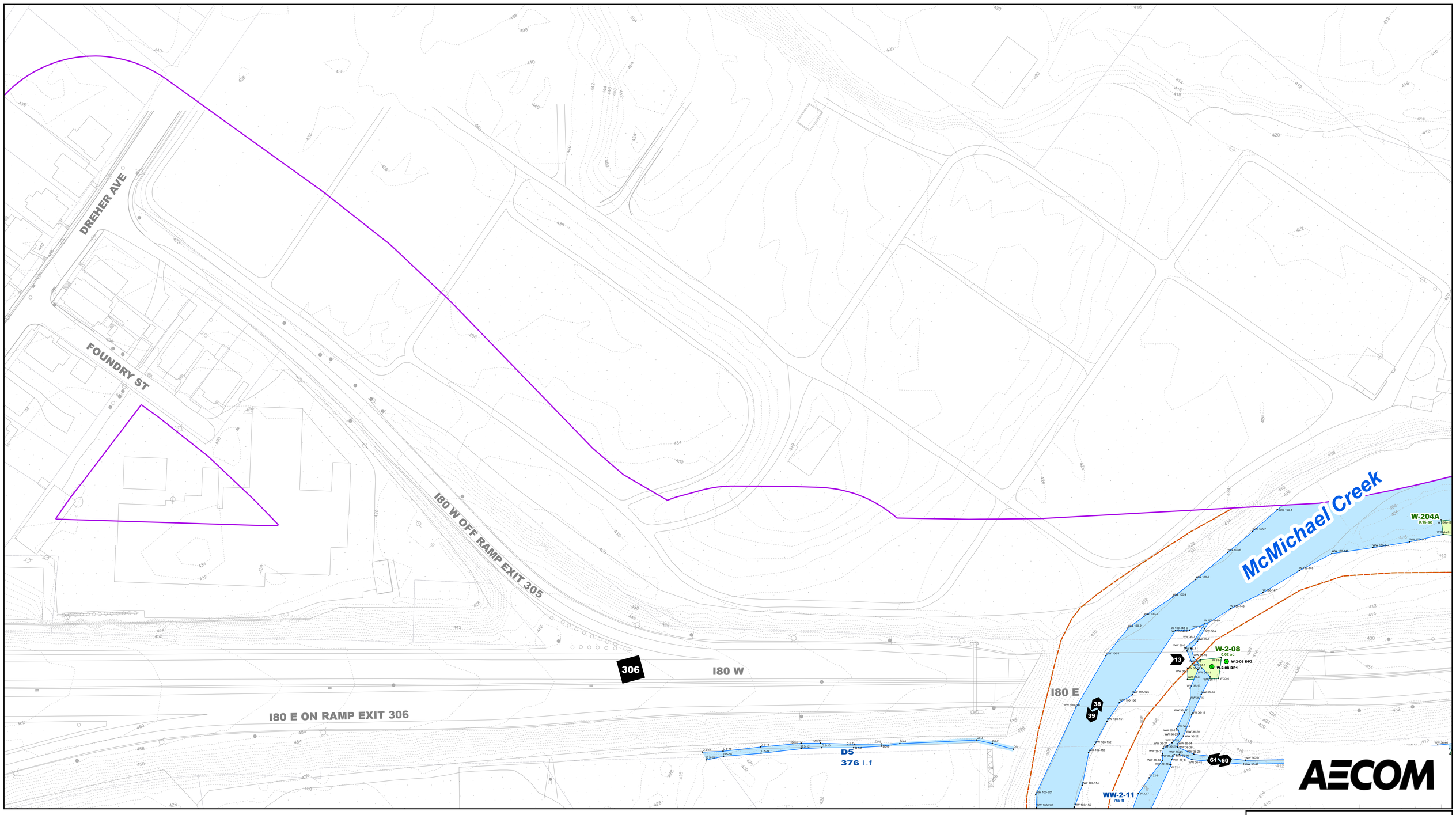

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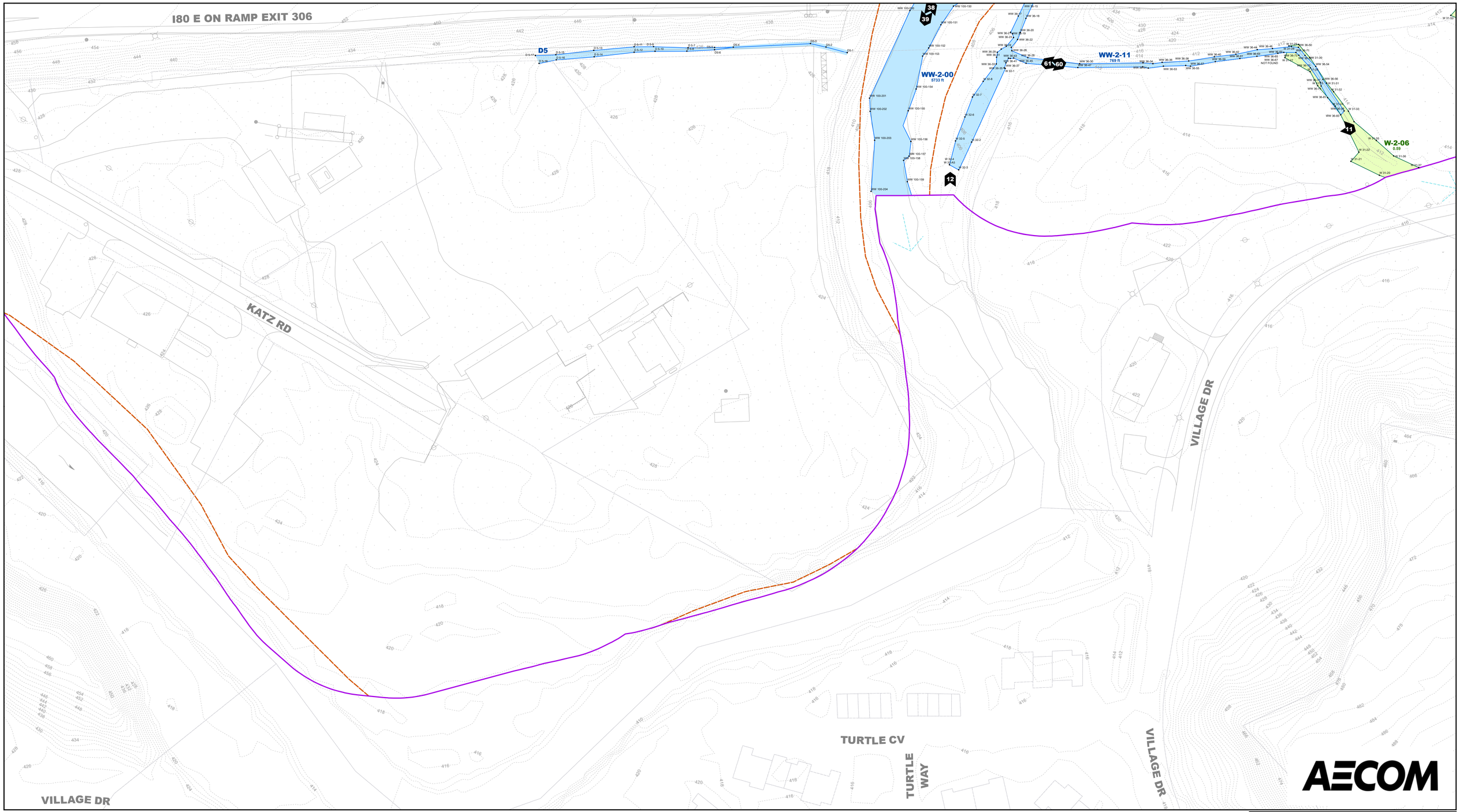

Interstate 80, Section 17M
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AECOM

McMichael Creek

Pocono Creek

I80 W

I80 E

I80 E OFF RAMP EXIT 307

BRYANT ST

VILLAGE DR

WW-2-14
26 ft

WW-2-00
5733 ft

WW-2-13
76 ft

WW-2-03
704 ft

WW-2-11
769 ft

WW-2-12
49 ft

WW-2-07
448 ft

WW-2-06
79 ft

WW-2-05
96 ft

W-204A
0.15 ac

W-2:04
0.38 ac

W-2-03
0.01 ac

W-2-05
1.2 ac

W-2-06
0.59 ac.

W-2-06

W-2:04 DP1

W-2-03 DP1

W-2-03 DP2

W-2-05 DP1

W-2-05 DP2

W-2-06 DP1

W-2-06 DP2

W 102 WET PLOT

W 101 WL PLOT

Interstate 80, Section 17M
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- Photo Locations

- FEMA 100 yr Floodplain
- FEMA Floodway
- Feature Continuing Beyond Study Area*
  *Does not indicate flow direction.

Wetland and Waterway Boundaries Delineated by: AECOM; October 2013 to May 2014 & October 2017.
Surveyed by: Susquehanna Civil Inc.; October 2013 to May 2014 and February 2016.

0 50 100
Feet

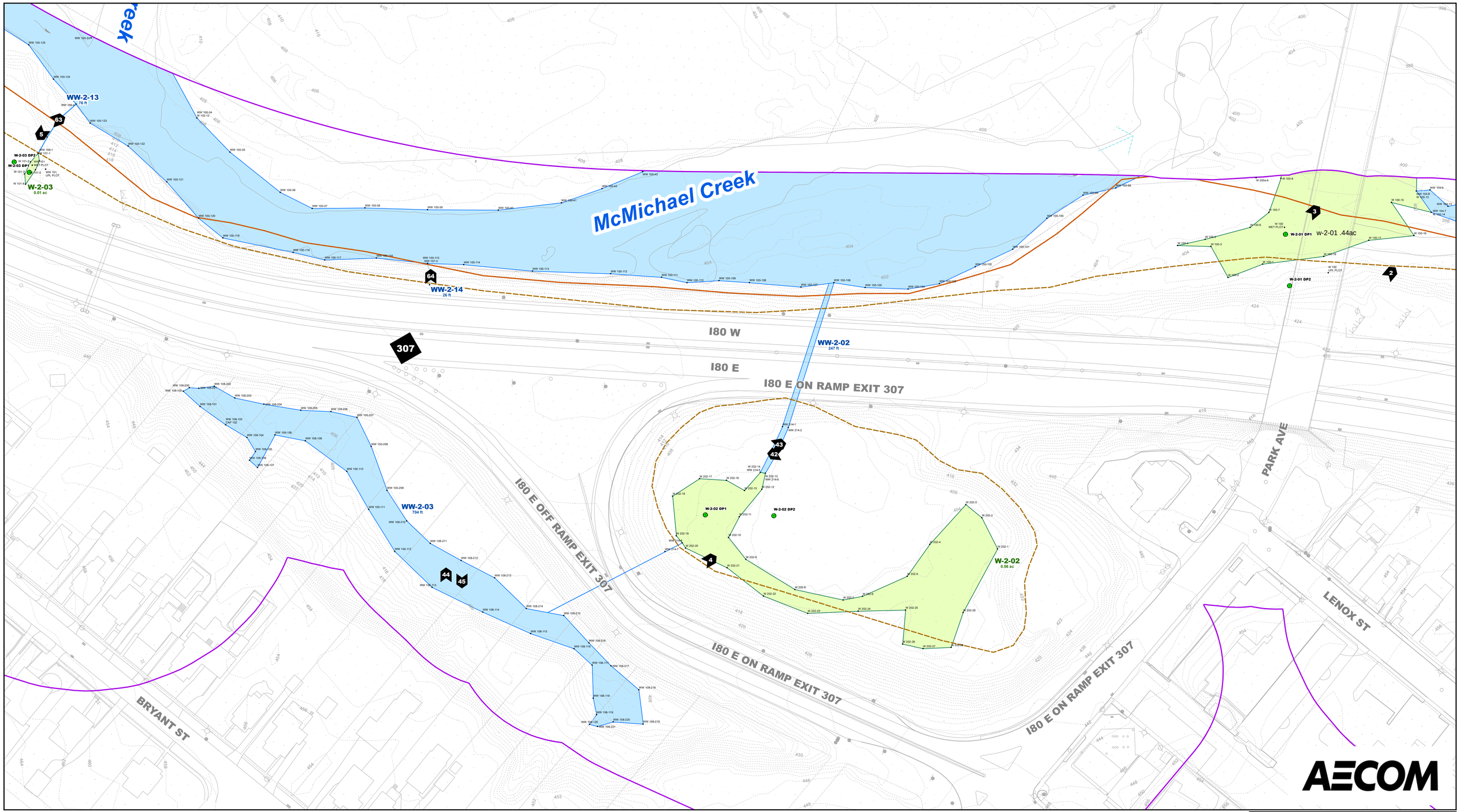
N

Revision Date: January, 2018

"I CERTIFY THAT THE WATERS OF THE UNITED STATES AND THE WETLAND BOUNDARIES SHOWN ON THE PLAN ACCURATELY REFLECT THE FLAGGING ESTABLISHED IN THE FIELD BY OTHERS"

DATE

AECOM



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WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

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- Ordinary High Water Mark
- Limit of Wetland
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- 2017 Sample Locations
- 2015 Survey Points
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0 50 100
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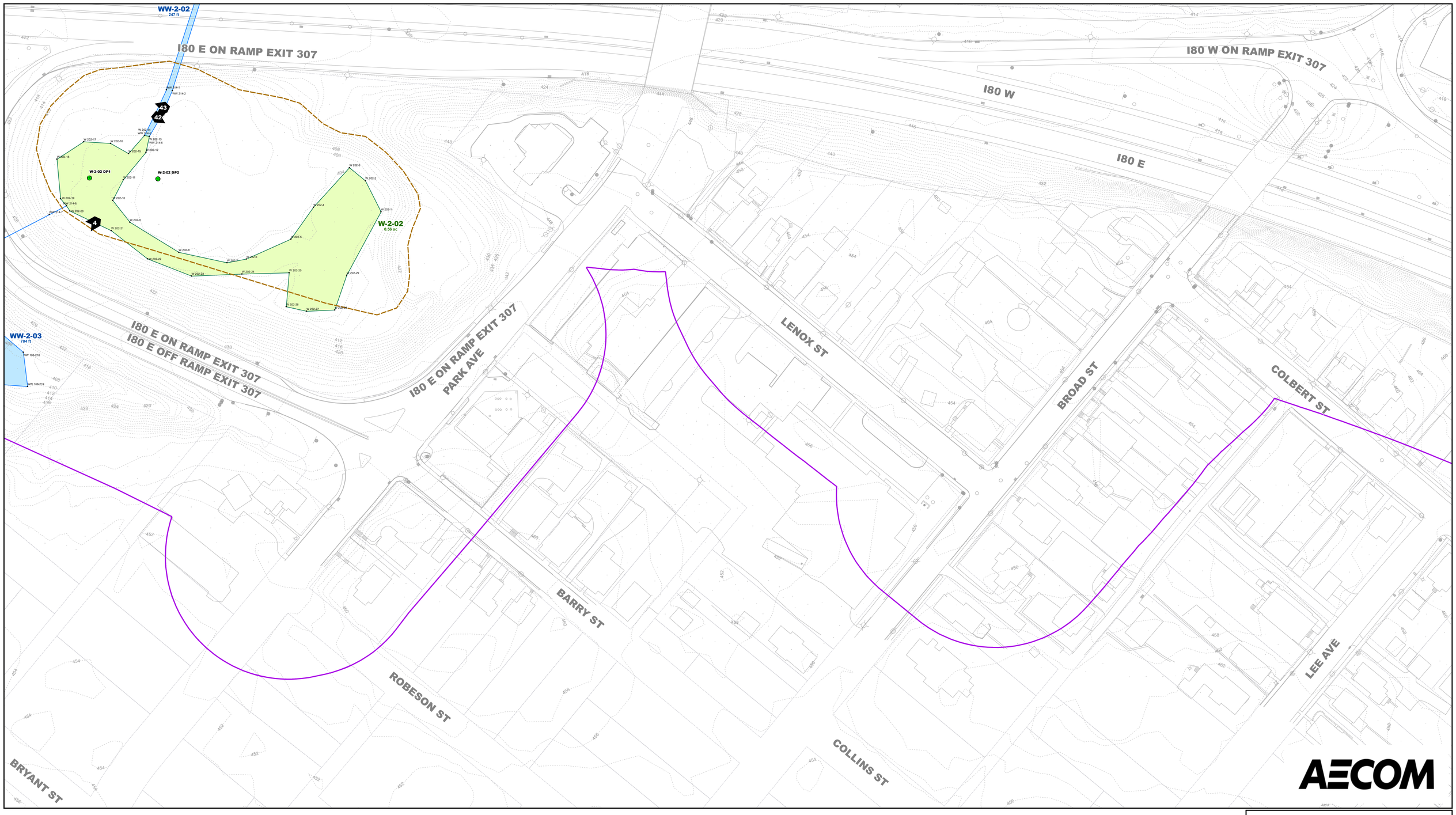

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

Sheet 24 of 28

Print Date: 4/2/2018

- Ordinary High Water Mark
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- 2015 Sample Locations
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0 50 100
Feet

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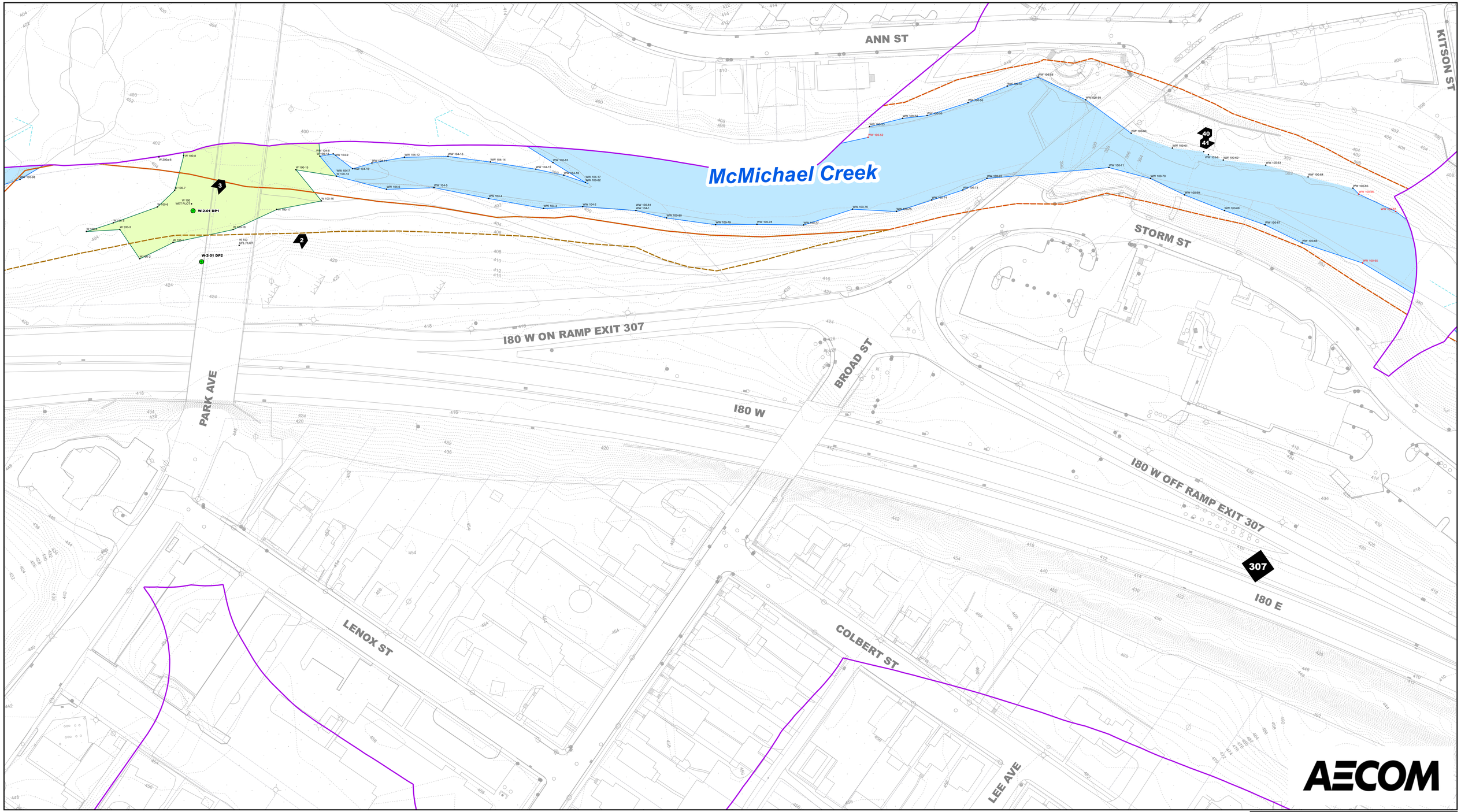

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

Sheet 25 of 28

Print Date: 4/2/2018

- Ordinary High Water Mark
- Limit of Wetland
- Project Study Area

- 2015 Sample Locations
- 2017 Sample Locations
- 2015 Survey Points
- 2017 Delineated Points
- Photo Locations

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0 50 100
Feet

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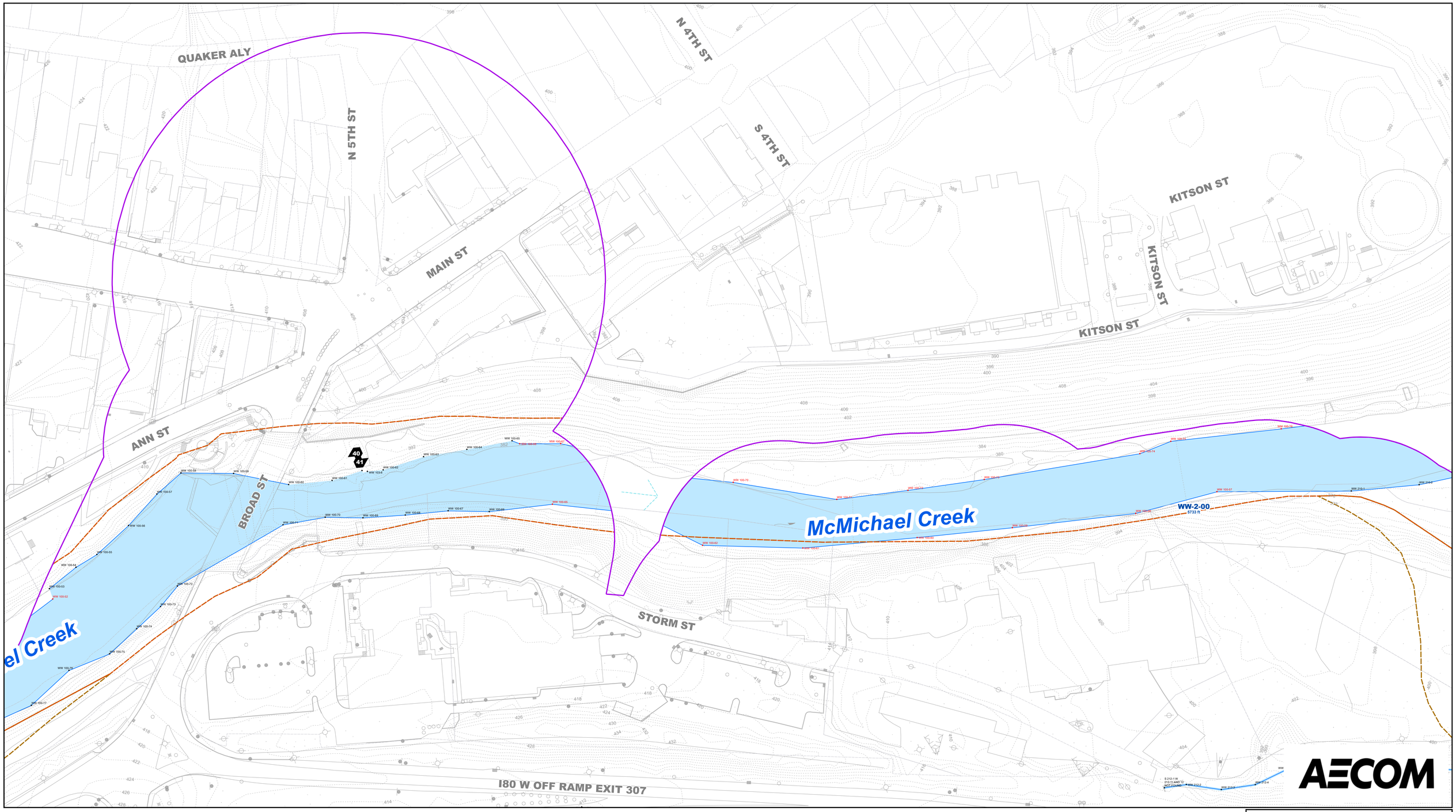

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

Sheet 26 of 28

Print Date: 4/2/2018

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- FEMA 100 yr Floodplain
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*Does not indicate flow direction.

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Feet

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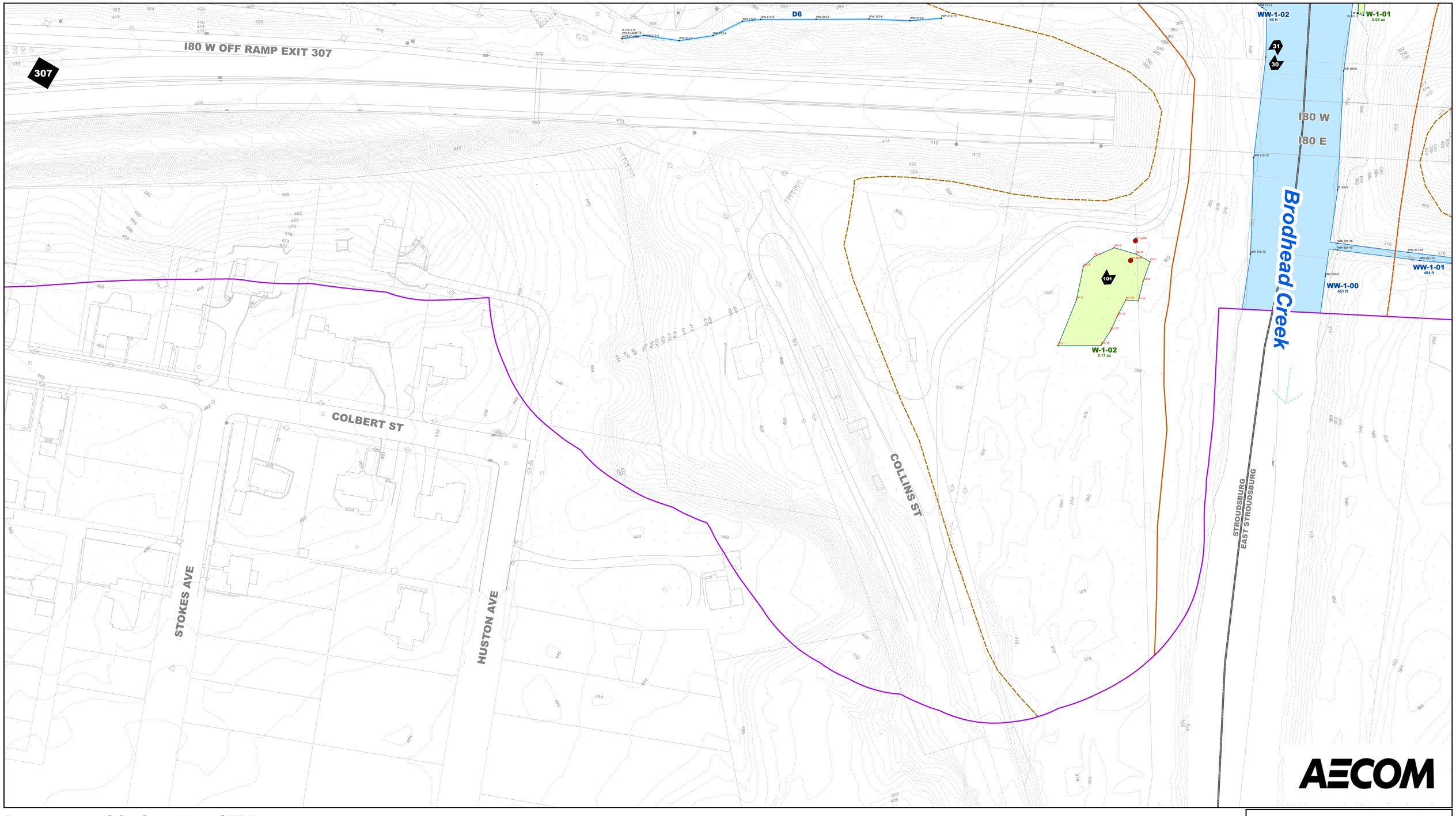

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WETLANDS & WATERWAYS

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*Does not indicate flow direction.

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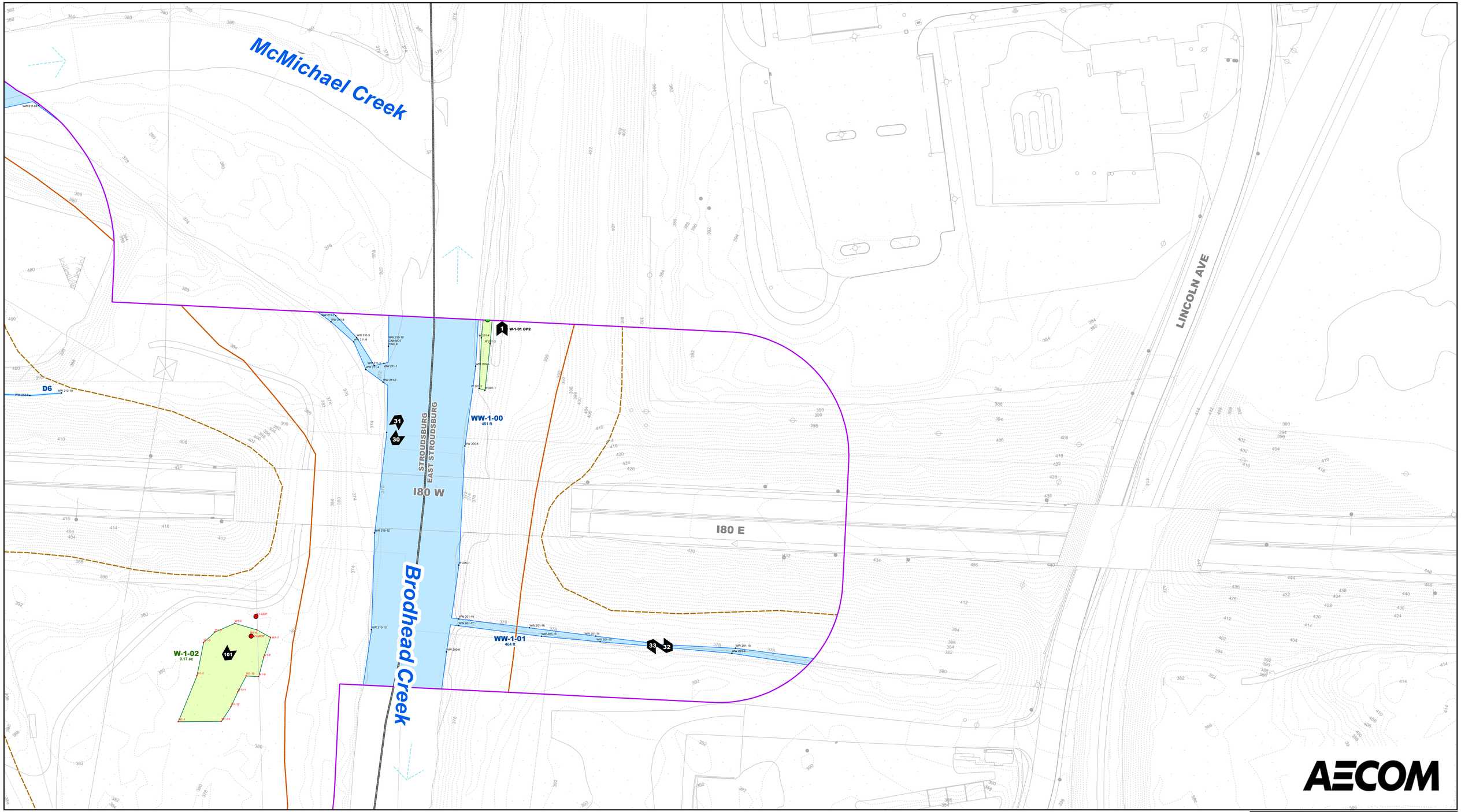

Interstate 80, Section 17M
WETLANDS & WATERWAYS

Stroud Township, Stroudsburg Borough & East Stroudsburg Borough, Monroe County

Sheet 28 of 28

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Surveyed by: Susquehanna Civil Inc.; October 2013 to May 2014 and February 2016.

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Feet

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DATE

V. Technical References

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Appendix A
Wetland Delineation Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 22-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** W-1-02

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroudsberg **R.**

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.986356° **Long.:** -75.183901° **Datum:** NAD 83

Soil Map Unit Name: As; Alluvial land **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

W-1-02 is a PEM wetland located within the floodplain Broadhead Creek. The wetland is located in a heavy disturbed area around a power transmission line and Right of Way and a gravel work yard/storage yard. The wetland boundary follows a vegetative break between *Echinochloa crus-galli* and *Fallopia japonica*.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	2
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The primary source of hydrology is surface water runoff from surrounding uplands.

VEGETATION - Use scientific names of plants

Sampling Point: W-1-02

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5 ft. Radius)			
1. *Echinochloa crus-galli*	85	☑	FAC
2. *Persicaria sagittata*	15	☐	OBL
3. *Microstegium vimineum*	10	☐	FAC
4. *Fallopia japonica*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	115	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	15	x 1 =	15	
FACW species	0	x 2 =	0	
FAC species	95	x 3 =	285	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	115	(A)	320	(B)

Prevalence Index = B/A = 2.783

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-1-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-8	10YR	2/1	90	7.5YR	5/6	10	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Shovel refusala at 8 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 22-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** **W-1-02 USP**

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroudsberg **R.**

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.986422° **Long.:** -75.183923° **Datum:** NAD 83

Soil Map Unit Name: As; Alluvial land **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland sample point associated with W-1-02. The upland sample point is located to the north and in a disturbed area surrounded by *Fallopia japonica*.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
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- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology was observed at this location.

VEGETATION - Use scientific names of plants

Sampling Point: W-1-02 USP

Tree Stratum (Plot size:)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5 ft. Radius)			
1. *Fallopia japonica*	100	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	100	x 4 =	400	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	400	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

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Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-1-02 USP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-16	10YR	5/3	100						Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 21-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** W-3-14 a

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroud **R.**

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 3.0 % / 1.7 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.990847° **Long.:** -75.245057° **Datum:** NAD 83

Soil Map Unit Name: CnB; Chippewa and Norwich soils, 0 to 8 percent slopes, extremely stony **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

PFO wetland located at the toe of slope of a slight hill and surrounded by an upland forest. The wetland is fed by multiple ground water seeps emerging from the base of the hill. There is some shrub vegetation within the wetland but the vegetation is predominately PFO with woody vegetation growing with in the wetland. The wetland boundary follows low chroma and mottled soils, and saturated soils.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	2	
Water Table Present?	Yes ◉ No ○	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The primary sources of hydrology are multiple ground water seeps.

VEGETATION - Use scientific names of plants

Sampling Point: W-3-14 a

Tree Stratum (Plot size: 30 ft. Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	100	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	100	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15 ft. Radius)			
1. *Rosa multiflora*	10	☑	FACU
2. *Acer rubrum*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	15	**= Total Cover**	
Herb Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	105	x 3 =	315
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	115 (A)		355 (B)

Prevalence Index = B/A = 3.087

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-3-14 a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-15	10YR	4/2	80	7.5YR	6/6	20	C	M	Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Rock refusal at 15 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 21-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** W-3-14 USP a

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroud **R.**

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 8.0 % / 4.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.990865° **Long.:** -75.245027° **Datum:** NAD 83

Soil Map Unit Name: CnB; Chippewa and Norwich soils, 0 to 8 percent slopes, extremely stony **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland sample point associated with W-3-14. The upland sample point is located to the north and upslope from the wetland and is in a wooded area with little to no understory.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology was observed at this location.

VEGETATION - Use scientific names of plants

Sampling Point: W-3-14 USP a

Tree Stratum (Plot size: 30 ft. Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya ovata*	30	☑	FACU
2. *Acer saccharinum*	20	☑	FACW
3. *Acer rubrum*	10	☐	FAC
4. *Tsuga canadensis*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15 ft. Radius)			
1. *Rosa multiflora*	5	☑	FACU
2. *Berberis thunbergii*	5	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	**= Total Cover**	
Herb Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	**= Total Cover**	
Woody Vine Stratum (Plot size: 15 ft. Radius)			
1. *Vitis acerifolia*	5	☑	UPL
2.	0	☐	
3.	0	☐	
4.	0	☐	
	5	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	10	x 3 =	30	
FACU species	45	x 4 =	180	
UPL species	5	x 5 =	25	
Column Totals:	80	(A)	275	(B)

Prevalence Index = B/A = 3.438

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-3-14 USP a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc²	Texture	Remarks
0-8	10YR 4/4	100					Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Rock refusal at 8 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 21-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** W-3-15

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroud **R.**

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.987440° **Long.:** -75.242914° **Datum:** NAD 83

Soil Map Unit Name: ReB; Rexford gravelly silt loam, 3 to 8 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: (Explain alternative procedures here or in a separate report.)

W-3-15 is a PEM wetland located along S-NWJ-002. The wetland is located at the toe of slope along a hill to the north and an old raised road to the south. The wetland is predominantly contained between the road and the hill but a small portion extends upslope to the north to a spring house at the top of the hill. The wetland boundary follows low chroma and mottled soils and a definitive vegetative break between the wetland and the surrounding upland forest. The wetland is dominated by a vegetative community of *Impatiens capensis.*

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The primary source of hydrology is surface water runoff from upslope uplands, multiple ground water seeps along the hill, and occasional flooding from S-NWJ-002.

VEGETATION - Use scientific names of plants

Sampling Point: W-3-15

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5 ft. Radius)			
1. *Impatiens capensis*	80	☑	FACW
2. *Juncus effusus*	20	☐	OBL
3. *Lemna minor*	5	☐	OBL
4. *Typha latifolia*	5	☐	OBL
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	30	x 1 =	30
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		190 (B)

Prevalence Index = B/A = 1.727

Hydrophytic Vegetation Indicators:

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-3-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-10	5Y	2.5/1	90	7.5YR	5/6	10	C	M		

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 21-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** W-3-15 USP

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroud **R.**

Landform (hillslope, terrace, etc.): Bench **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.987345° **Long.:** -75.242918° **Datum:** NAD 83

Soil Map Unit Name: ReB; Rexford gravelly silt loam, 3 to 8 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland sample point associated with W-3-15 and is located to the south of the wetland. The sample point is located on the edge of a raised road bed in an upland forest.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology was observed at this location.

VEGETATION - Use scientific names of plants

Sampling Point: W-3-15 USP

Tree Stratum (Plot size: 30 ft. Radius)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1. *Carya ovata*	30	☑	FACU
2. *Acer rubrum*	20	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	50	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15 ft. Radius)			
1. *Elaeagnus umbellata*	10	☑	UPL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	**= Total Cover**	
Herb Stratum (Plot size: 5 ft. Radius)			
1. *Polystichum acrostichoides*	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	10	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	40	x 4 =	160
UPL species	10	x 5 =	50
Column Totals:	70 (A)		270 (B)

Prevalence Index = B/A = 3.857

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-3-15 USP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-10	10YR	4/4	100						Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Rock refusal at 10 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 21-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** W-3-17

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroud **R.**

Landform (hillslope, terrace, etc.): Footslope **Local relief (concave, convex, none):** concave **Slope:** 4.0 % / 2.3 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.990807° **Long.:** -75.247145° **Datum:** NAD 83

Soil Map Unit Name: BbB; Bath channery silt loam, 0 to 8 percent slopes, extremely stony **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

PEM wetland located in a small depression at the toe of slope along the west bound lanes of Interstate 80. The wetland is contained entirely within the depression. The wetland is dominated by a vegetative community *juncus effusus.* The wetland boundary follows the depression and low chroma and mottled soils.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	1	
Water Table Present?	Yes ◉ No ○	Depth (inches):	6	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The primary source of hydrology is surface water runoff from uplsope uplands and Interstate 80.

VEGETATION - Use scientific names of plants

Sampling Point: W-3-17

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5 ft. Radius)			
1. *Juncus effusus*	40	☑	OBL
2. *Carex vulpinoidea*	20	☑	OBL
3. *Carex lurida*	15	☐	OBL
4. *Typha latifolia*	20	☑	OBL
5. *Lythrum salicaria*	5	☐	OBL
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-3-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-8	10YR	3/1	95	7.5YR	5/6	5	C	M	Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Rock refusal at 8 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 21-Sep-17

Applicant/Owner: Pennsylvania Department of Transpotation **State:** PA **Sampling Point:** W-3-17 USP

Investigator(s): N Jones, B. Thompson **Section, Township, Range: S.** **T.** Stroud **R.**

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** flat **Slope:** 12.0 % / 6.8 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.990817° **Long.:** -75.247106° **Datum:** NAD 83

Soil Map Unit Name: BbB; Bath channery silt loam, 0 to 8 percent slopes, extremely stony **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland sample point associated with W-3-17. The upland sample point is located to the north, upslope from the wetland and on the side of a hill.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology was observed at this location.

VEGETATION - Use scientific names of plants

Sampling Point: W-3-17 USP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5 ft. Radius)			
1. *Euthamia graminifolia*	50	☑	FAC
2. *Solidago canadensis*	20	☑	FACU
3. *Dipsacus fullonum*	15	☐	FACU
4. *Plantago major*	10	☐	FACU
5. *Prunella vulgaris*	5	☐	FAC
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	55	x 3 =	165	
FACU species	45	x 4 =	180	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	345	(B)

Prevalence Index = B/A = 3.450

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-3-17 USP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-12	10YR	4/4	100					Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Rock refusal at 12 inches.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: I-80 Reconstruction **City/County:** Monroe **Sampling Date:** 21-Sep-17

Applicant/Owner: Pennsylvania Department of Transportation **State:** PA **Sampling Point:** W-3-18

Investigator(s): N.Jones, B.Thompson **Section, Township, Range: S** **T** Stroud **R**

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR or MLRA): LRR R **Lat.:** 40.987555 **Long.:** -75.243516 **Datum:** NAD 83

Soil Map Unit Name: ReB; Rexford Graveky Silt Loam 3 to 8 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
W-3-18 is a small wetland located between a road fill slope and the toe of slope of an adjecent hill side. The wetland receives hydrology from toe of slope ground water seeps that continue to the floodplain of a small perennial watercourse. The wetland boundary follows the topography between the road fill slope and hillside and id defined by saturated mucky soil conditions with vegetation dominated by bittersweet nightshade (Solanum dulcamara) and watercress (Nasturtium officinale).

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☑ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches): 3	
Water Table Present?	Yes ◉	No ○	Depth (inches): 0	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The primary source of hydrology is persistent groundwater seeps.

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: W-3-18

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	0	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	0	= Total Cover		
Shrub Stratum (Plot size:)				
1. *Cornus amomum*	10	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	10	= Total Cover		
Herb Stratum (Plot size: 5 ft radius)				
1. *Impatiens capensis*	20	☑	25.0%	FACW
2. *Nasturtium officinale*	20	☑	25.0%	OBL
3. *Solanum dulcamara*	20	☑	25.0%	FAC
4. *Lythrum salicaria*	10	☐	12.5%	FACW
5. *Acorus calamus*	5	☐	6.3%	OBL
6. *Scirpus cyperinus*	5	☐	6.3%	FACW
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	80	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	25	x 1 =	25	
FACW species	45	x 2 =	90	
FAC species	20	x 3 =	60	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	90	(A)	175	(B)

Prevalence Index = B/A = 1.944

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-3-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-10	10YR	2/1	100						Loam	
10-21	10YR	4/2	90	7.5YR	5/6	10	C	M	Silty Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The majority of the wetland soil was too saturated to obtain good redoxomorphic features. Due to the conditions present the investigators applied best professional judgement in evaluating soil conditions.

Appendix B
Resource Photographs

Photograph:	Date:
39	09/18/13

Feature ID:

Watercourse WW-2-00

Direction:

West (Upstream)

Description:

View of watercourse McMichael Creek (WW-2-00) facing west upstream.

Photograph:	Date:
66	09/18/13

Feature ID:

Watercourse WW-3-00

Direction:

N/A

Description:

View of watercourse Pocono Creek (WW-3-00) facing west upstream.

Photograph:	Date:
70	09/17/13
Feature ID: Watercourse WW-3-01	
Direction: East (Downstream)	
Description: View of Little Pocono Creek (WW-3-01) facing downstream.	

Photograph:	Date:
100	09/21/17
Feature ID: WW-3-13	
Direction: West (Upstream)	
Description: View of UNT to Pocono Creek (WW-3-13) facing downstream.	

Photograph:	Date:
101	09/22/17
Feature ID: W-1-02	
Direction: South	
Description: View of wetland W-1-02 facing south from the wetland data point.	

Photograph:	Date:
102	09/21/17
Feature ID: W-3-14a	
Direction: North	
Description: View of wetland W-3-14a facing south from the wetland data point.	

Photograph:	Date:
103	09/21/17
Feature ID: Wetland W-3-15	
Direction: North	
Description: View of wetland W-3-15 facing north from the wetland data point.	

Photograph:	Date:
104	09/21/17
Feature ID: Wetland W-3-17	
Direction: Southwest	
Description: View of wetland W-3-17 facing southwest from the wetland data point.	

Photograph:	Date:
105	09/21/17

Feature ID:

Wetland W-3-18

Direction:

Northwest

Description:

View of wetland W-3-18 facing northwest from the wetland limits.

This wetland is PBTH.

70

Appendix C
Function Value Evaluation Forms

Wetland Function -Value Evaluation Form

Total area of wetland 0.17 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Waste Disposal, Distance to nearest roadway or other development 120 feet

Dominant wetland systems present
PEM

Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, does the wetland lie in the drainage basin? Floodplain

How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-1-02
Latitude 75° 11' 02.050"
Longitude 40° 59' 10.880"
Prepared by: BJT
Date 9-Jan-2018

Wetland Impact:
Type Unknown Area N/A
Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Yes

	Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Groundwater Recharge/Discharge		X			
	Floodflow Alteration		X			
	Fish and Shellfish Habitat		X			
	Sediment/Toxicant Retention	X		2	Y	Wetland is within a refuse disposal site.
	Nutrient Removal		X			
	Production Export		X			
	Sediment/Shoreline Stabilization		X			
	Wildlife Habitat		X			
	Recreation		X			
	Educational/Scientific Value		X			
	Uniqueness/Heritage		X			
	Visual Quality/Aesthetics		X			
ES	ES Endangered Species Habitat		X			
	Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function -Value Evaluation Form

Total area of wetland 0.078 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use residential, highway Distance to nearest roadway or other development 100 feet

Dominant wetland systems present
PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, does the wetland lie in the drainage basin? Floodplain

How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-3-14a
Latitude 75° 14' 42.210"
Longitude 40° 59' 27.050
Prepared by: BJT
Date 9-Jan-2018

Wetland Impact:
Type Unknown Area N/A
Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Yes

	Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Groundwater Recharge/Discharge	x				
	Floodflow Alteration		X			
	Fish and Shellfish Habitat		X			
	Sediment/Toxicant Retention	X		10, 14	Y	
	Nutrient Removal	X		14		
	Production Export		X			
	Sediment/Shoreline Stabilization		X			
	Wildlife Habitat		X			
	Recreation		X			
	Educational/Scientific Value		X			
	Uniqueness/Heritage		X			
	Visual Quality/Aesthetics		X			
ES	ES Endangered Species Habitat		X			
	Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function -Value Evaluation Form

Total area of wetland 0.279 | Human made? No | Is wetland part of a wildlife corridor? Yes | or a "habitat island"? No

Adjacent land use residential | Distance to nearest roadway or other development 20 feet

Dominant wetland systems present
PFO

Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No | If not, does the wetland lie in the drainage basin? Floodplain

How many tributaries contribute to the wetland? None | Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-3-15
Latitude 75° 14' 34.500
Longitude 40° 59' 14.810
Prepared by: BJT
Date 9-Jan-2018

Wetland Impact:
Type Unknown Area N/A
Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Yes

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X		13	Y	
Floodflow Alteration		X			
Fish and Shellfish Habitat		X			
Sediment/Toxicant Retention	X		10, 14	Y	
Nutrient Removal	X		13, 14	Y	
Production Export		X			
Sediment/Shoreline Stabilization		X			
Wildlife Habitat		X			
Recreation		X			
Educational/Scientific Value		X			
Uniqueness/Heritage		X			
Visual Quality/Aesthetics		X			
ES Endangered Species Habitat		X			
Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function -Value Evaluation Form

Total area of wetland 0.018 Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Highway Distance to nearest roadway or other development 10 feet

Dominant wetland systems present
PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-3-17
Latitude 75° 14' 49.730"
Longitude 40° 59' 26.920"
Prepared by: BJT
Date 9-Jan-2018

Wetland Impact:
Type Unknown Area N/A
Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Yes

	Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Groundwater Recharge/Discharge	X		13	Y	
	Floodflow Alteration		X			
	Fish and Shellfish Habitat		X			
	Sediment/Toxicant Retention	X		10, 14	Y	
	Nutrient Removal	X		13, 14	Y	
	Production Export		X			
	Sediment/Shoreline Stabilization		X			
	Wildlife Habitat		X			
	Recreation		X			
	Educational/Scientific Value		X			
	Uniqueness/Heritage		X			
	Visual Quality/Aesthetics		X			
ES	ES Endangered Species Habitat		X			
	Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function -Value Evaluation Form

Total area of wetland: 0.018 | Human made? No | Is wetland part of a wildlife corridor? Yes | or a "habitat island"? Yes

Adjacent land use: Highway | Distance to nearest roadway or other development: 10 feet

Dominant wetland systems present: PFO | Contiguous undeveloped buffer zone present: No

Is the wetland a separate hydraulic system? No | If not, does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? None | Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-3-18
Latitude 75° 14' 36.880"
Longitude 40° 59' 15.210"
Prepared by: BJT
Date 9-Jan-2018

Wetland Impact:
Type Unknown | Area N/A

Evaluation based on:
Office X | Field X

Corps manual wetland delineation completed? Yes

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X		13	Y	
Floodflow Alteration		X			
Fish and Shellfish Habitat		X			
Sediment/Toxicant Retention	X		10, 14	Y	
Nutrient Removal	X		13, 14	Y	
Production Export		X			
Sediment/Shoreline Stabilization		X			
Wildlife Habitat	X		16, 20		
Recreation		X			
Educational/Scientific Value		X			
Uniqueness/Heritage		X			
Visual Quality/Aesthetics		X			
ES Endangered Species Habitat		X			
Other					

Notes:

*Refer to backup list of numbered considerations.