Legal Department

American Electric Power
1 Riverside Plaza
Columbus, OH 43215-2373
AEP.com

August 23, 2023

Ms. Tanowa Troupe, Secretary
Ohio Power Siting Board
180 East Broad Street
Columbus, Ohio 43215-3793

Hector Garcia
Senior Counsel –
Regulatory Services
(614) 716-3410 (P)
hgarcia1@aep.com

RE: Proof of Compliance with Condition
Case No. 23-0492-EL-BTA
Second Amendment to the Pine Ridge-Heppner 138 kV Transmission Line Project

Dear Ms. Troupe:

In satisfaction of Condition (1) of the Staff Report for the Second Amendment filing (OPSB Case No. 23-0492-EL-BTA) and Conditions (14) and (21) of the Staff Report for the original filing (OPSB Case No. 18-0031-EL-BTX), AEP Ohio Transmission Company, Inc. submits this notice and attachment to inform you that the Ohio Environmental Protection Agency National Pollutant Discharge Elimination System-Construction Site Stormwater General Permit has been approved for the above-referenced Project.

If you have any questions regarding this information, please do not hesitate to contact me.

Respectfully submitted,

/s/ *Hector Garcia*
Hector Garcia (0084517), Counsel of Record
Counsel for AEP Ohio Transmission Company, Inc.

cc: John Jones, Counsel OPSB Staff
Jon Pawley, OPSB Staff

Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
Anne M. Vogel, Director

July 18, 2023

Ohio Transmission Company, Inc. AEP
Jennifer Walker
8500 Smith Mill Road
New Albany OH 43054

Re: Approval Under Ohio EPA National Pollutant Discharge Elimination System (NPDES) – Construction Site Stormwater General Permit – OHC000006

Dear Applicant,

Your NPDES Notice of Intent (NOI) application is approved for the following facility/site. Please use your Ohio EPA Facility Permit Number in all future correspondence.

Facility Name:	Pine Ridge-Heppner 138kV Rebuild
Facility Location:	East & West of US 35
City:	Jackson
County:	Jackson
Township:	Liberty
Ohio EPA Facility Permit Number:	0GC04274*AG
Permit Effective Date:	July 18, 2023
Permit Expiration Date:	April 22, 2028

Please read and review the permit carefully. The permit contains requirements and prohibitions with which you must comply. A copy of the general permit may be viewed or downloaded from here. Coverage under this permit will remain in effect until a renewal of the permit is issued by the Ohio EPA.

If more than one operator (defined in the permit) will be engaged at the site, each operator shall seek coverage under the general permit. Additional operator(s) shall submit a Co-Permittee NOI to be covered under this permit. There is no fee associated with the Co-Permittee NOI form.

Please be aware that this letter only authorizes discharges in accordance with the above referenced General Permit. The placement to fill into regulated waters of the state may require a 401 Water Quality Certification and/or Isolated Wetlands Permit from Ohio EPA. Failure to obtain the required permits in advance is a violation of Ohio Revised Code 6111 and potentially subjects you to enforcement and civil penalties.

If you need assistance or have questions, please call (614) 644-2001 and ask for Construction Site Stormwater General Permit support or visit our website at epa.ohio.gov.

Sincerely,

Anne M Vogel

Anne M. Vogel
Director

Division of Surface Water - Notice of Intent (NOI) For Coverage Under Ohio *Environmental Protection Agency General NPDES Permit*

(Read accompanying instructions carefully before completing this form.)

Submission of this NOI constitutes notice that the party identified in Section I of this form intends to be authorized to discharge into state surface waters under Ohio EPA's NPDES general permit program. Becoming a permittee obligates a discharger to comply with the terms and conditions of the permit. Complete all required information as indicated by the instructions. Do not use correction fluid on this form. Forms transmitted by fax will not be accepted. A check for the proper amount must accompany this form and be made payable to "Treasurer, State of Ohio." (See the fee table in Attachment C of the NOI instructions for the appropriate processing fee.)

I. Applicant Information/Mailing Address

Company (Applicant) Name: Ohio Transmission Company, Inc. AEP

Mailing (Applicant) Address: 8500 Smith Mill Road

City: New Albany	**State :** OH	**Zip Code:** 43054

Country: USA

Contact Person: Jennifer Walker	**Phone:** (614) 477-5410	**Fax:**

Contact E-mail Address: jlwalker2@aep.com

II. Facility/Site Location Information

Facility/Site Name: Pine Ridge-Heppner 138kV Rebuild

Facility Address: Oakland Road-west of US 35

City: Jackson	**State:** OH	**Zip Code:** 45640

County: Jackson	**Township:** Liberty

Facility Contact Person: Kathy Fickert	**Phone:** (740) 935-3563	**Fax:**

Facility Contact E-mail Address: kfickert@aep.com

Latitude: 39.083222	**Longitude:** -82.637936	**Facility/Map Attachment** Location Map Pine Ridge to Heppner.pdf

Receiving Stream or MS4: Salt Lick Creek and unnamed trib

III. General Permit Information

General Permit Number: OHC000006	**Coverage Type:** New
Type of Activity: Construction Site Stormwater General Permit	**SIC Code(s):**
Existing NPDES Facility Permit Number: 0GC04274*AG	**ODNR Coal Mining Application Number:**
If Household Sewage Treatment System, is system for:	**New Home Construction:** / **Replacement of failed existing system:**

Outfall	Design Flow (MGD):	Associated Permit Effluent Table:	Receiving Water :	Latitude	Longitude

Are These Permits Required?	**PTI:** NO	**Individual 401 Water Quality Certification:** NO
Individual NPDES: NO	**Isolated Wetland:** NO	**U.S. Army Corp Nationwide Permit:** PENDING
Proposed Project Start Date(if applicable): October 02, 2023		**Estimated Completion Date(if applicable):** November 29, 2024
Total Land Disturbance (Acres): 28		**MS4 Drainage Area (Sq. Miles):**

SWP3 Attachment(s): <None>

IV. Payment Information

Check #:	**For Ohio EPA Use Only**
Check Amount:	**Check ID(OFA):**_____ **ORG #:**_____
Date of Check:	**Rev ID:**_____ **DOC #:**_____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant Name: Jennifer Walker	**Title:** Environmental Manager
Signature: Electronically submitted by 78793785	**Date:** Electronically submitted on 07/14/2023

ADDITIONAL INFORMATION

Please add any additional comments or attachments below.

AEP Pine Ridge – Heppner 138kV Transmission Line Rebuild SWP3

Table of Revisions, Addendums, Amendments, and Associated LOD Acreages

Revision Number	Addendum Number	Amendment Number	Date Submitted to AEP	Actual Total LOD Acreage	Rounded Total LOD Acreage	Brief Description of Revisions	OEPA Status
N/A	N/A	N/A	5/24/2023	27.6	28	Forestry Road AR-0F3 and TCE-03 were added; increased LOD by 1.4 acres.	
1	N/A	N/A	6/30/2023	27.6	28	Project specific note #2 was added regarding access road/work pad cover types. Temporary Air Bridge labels were added to all existing culvert crossings. Note was added regarding the running buffalo clover population. Due to steep slopes, a portion of AR-181 was changed from timber mats to gravel. Also due to steep slopes, work pads for proposed Structures 181 and 182 were also changed from timber mats to gravel, as well as work pads for Existing Structures 53 and 52. The OBF line was made slightly thicker so that it stands out better. LOD remained unchanged. Lastly, the work order number was added to the cover sheet of the SWP3.	
2	N/A	N/A	7/13/2023	27.6	28	Additional cultural areas and notes for the rock shelters were added to Sheet 8.	

Note:

1. A **revision** is the result of project changes that occur prior to the start of construction, but after the SWPPP has been filed with the OEPA, and do not cause an increase in the permitted LOD acreage.

2. An **addendum** is the result of project changes that occur after construction has begun and do not cause an increase in the permitted LOD acreage.

3. An **amendment** is the result of project changes that occur after construction has begun and do cause an increase in the permitted LOD acreage.

ARMY CORPS OF ENGINEERS PERMIT PENDING
NO WORK IN WETLANDS/STREAMS PERMITTED
AS OF 7.20.2023

PINE RIDGE – HEPPNER 138kV TRANSMISSION LINE REBUILD PROJECT

LAT/LONG: 39.099187, -82.658778

WORK ORDER #: T10282340002

STORM WATER POLLUTION PREVENTION PLAN (SWP3)

Prepared for:

AEP Ohio Transmission Company, Inc.
8500 Smith's Mill Road
New Albany, OH 43054

Prepared by:

GAI Consultants, Inc.
385 East Waterfront Drive
Homestead, PA 15120

Site Contact: Kathy Fickert
Phone: (740)-935-3563
E-mail: kfickert@aep.com

June 2023

Project Start Date: October 2023
Project End Date: November 2024

PINE RIDGE – HEPPNER 138kV TRANSMISSION LINE REBUILD PROJECT

CERTIFICATION

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Name: Jennifer Walker

Title: Environmental Manager

Signature: Jennifer Walker

Date: 7-14-2023

PINE RIDGE – HEPPNER 138kV TRANSMISSION LINE REBUILD PROJECT

CERTIFICATION

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Name: _____

Title: _____

Signature: _____

Date: _____

TABLE OF CONTENTS

APPENDIX 1 – Project Location Map, Erosion and Sediment Control Plan, USDA Soils Map, Watershed (HUC 12) Map.

APPENDIX 2 – ODNR Rainwater and Land Development Manual Details

APPENDIX 3 – SWP3 Inspection Form and SWP3 Amendments, Grading, and Stabilization Log

APPENDIX 4 – Duty to Inform Contractors and Subcontractors Signature Form

I. Site Description

A. Description of Construction Activity

The Pine Ridge – Heppner 138kV Transmission Line Rebuild Project (Project) involves the rebuild of approximately 3.5 miles of existing 69kV transmission line between the Pine Ridge Switch (just southwest of Pine Ridge Station) and the Heppner Station. The existing right of-way (ROW) is 50 feet wide and the proposed ROW is 100 feet wide. The 208-acre Project is located in Liberty, Coal, and Lick Townships, Jackson County, Ohio. Construction of the Project will involve the removal of 27 existing structures and the installation of 25 structures. All of the proposed structures will have concrete foundations. The Project will also involve the construction of approximately 5.2 miles of proposed temporary access roads to facilitate construction activities. See the Pine Ridge Switch 138kV Rebuild Project SWP3 for details, including storm water calculations and site plans of the construction of the proposed permanent gravel pad and access road for the Pine Ridge Switch. The total Project area is estimated at 208 acres and the maximum area of disturbed soil is approximately 28 acres.

B. Disturbed Area

Total Area of the Site – 208 acres

Total Disturbed Area – 28 acres

Table 1: Disturbed Area

County	Township/Village/City	Disturbance Acreage
Jackson	Liberty Township	12
	Coal Township	15
	Lick Township	1

C. Impervious Area

The proposed project is a linear project that will replace the existing transmission line poles with fewer structures. Therefore, there will be no increase in impervious surface as a result of the proposed project.

D. Storm Water Calculations

Because this is a linear Project with temporary access roads and work pads, there will be no post-construction increase in runoff. The pre-construction and post-construction runoff coefficient is approximately 0.21.

E. Existing Soil Data

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey was used to determine soil types within the Project area. A copy of the web-based soil map is included in Appendix 1. Soils in the Project area are shown in Table 2.

Table 2: Soil Types

Map Unit Symbol	Map Unit Description	Drainage Class	Hydric Soil?
AkB	Allegheny loam, 3 to 8 percent slopes	Well drained	No
AkD	Allegheny loam, 15 to 25 percent slopes	Well drained	No
ChD	Clymer loam, 15 to 25 percent slopes	Well drained	No
CkC	Clymer silt loam, 8 to 15 percent slopes	Well drained	No
FaD	Fairpoint silty clay loam, 8 to 25 percent slopes	Well drained	No
LhW1D2	Latham-Wharton silt loams, 15 to 25 percent slopes, eroded	Moderately well drained	No
Omu1C1	Omulga silt loam, 6 to 12 percent slopes	Moderately well drained	No
Or	Orrville silt loam, 0 to 3 percent slopes, frequently flooded	Somewhat poorly drained	No[1]
Pv	Pope sandy loam, 0 to 3 percent slopes, frequently flooded	Well drained	No
Px	Pope silt loam, 0 to 3 percent slopes, frequently flooded	Well drained	No[1]
RgD	Rigley sandy loam, 15 to 25 percent slopes	Well drained	No
RgLXD1	Rigley-Latham complex, 15 to 25 percent slopes	Well drained	No
RgLZE1	Rigley-Latham association, steep	Well drained	No
RmE	Rigley-Clymer association, steep	Well drained	No
RrG	Rigley-Rock outcrop association, very steep	Well drained	No
RrW1C2	Rarden-Wharton silt loams, 8 to 15 percent slopes, eroded	Moderately well drained	No
ShLZE1	Shelocta-Latham association, steep	Well drained	No
St	Stendal silt loam, occasionally flooded	Somewhat poorly drained	No[1]
TeB	Tilsit silt loam, 3 to 8 percent slopes	Moderately well drained	No
WhC	Wharton silt loam, 8 to 15 percent slopes	Moderately well drained	No
WhD	Wharton silt loam, 15 to 25 percent slopes	Moderately well drained	No

[1] Contains hydric inclusions.

F. Prior Land Uses

The Project corridor contains the Pine Ridge – Heppner 69kV transmission line ROW, which consists of residential areas, agricultural lands, grasslands, and areas of undeveloped woody vegetation.

G. On-site Streams and Receiving Streams and Surface Waters

1. On-Site Waterbodies

Table 3: Delineated Streams

Stream ID	Stream Name	Flow Regime	Ohio EPA 401 Permitting Eligibility	Stream Stability
S001	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S002	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S003	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S004	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S005	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S006	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S007	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S008	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S009	UNT to Salt Lick Creek	Perennial	Possibly Eligible	Unstable
S010	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S011	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S012	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S013	Salt Lick Creek	Perennial	Possibly Eligible	Unstable
S014	UNT to Salt Lick Creek	Perennial	Possibly Eligible	Unstable
S015	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S016	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S017	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S018	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S019	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Unstable
S020	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S021	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S022	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S023	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S024	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S025	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S026	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Unstable
S027	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S028	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S029	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S030	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S031	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable

Stream ID	Stream Name	Flow Regime	Ohio EPA 401 Permitting Eligibility	Stream Stability
S032	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S033	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S034	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S035	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S036	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S037	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S038	UNT to Salt Lick Creek	Perennial	Possibly Eligible	Unstable
S039	UNT to Salt Lick Creek	Perennial	Possibly Eligible	Unstable
S040	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S041	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S042	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S043	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S044	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S045	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S046	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S047	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S048	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Stable
S049	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S050	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S051	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S052	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S053	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S054	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S055	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S049	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S050	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S051	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S052	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S053	UNT to Salt Lick Creek	Ephemeral	Possibly Eligible	Stable
S054	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S055	UNT to Salt Lick Creek	Intermittent	Possibly Eligible	Unstable
S056	Salt Lick Creek	Perennial	Possibly Eligible	Unstable

Table 4: Delineated Wetlands and Ponds

Wetland ID	Cowardin Classification	ORAM Category
W001-PEM-CAT1	PEM	1
W002-PEM-CATMOD2	PEM	Modified 2
W003-PEM-CAT2	PEM	2
W004-PEM-CAT1	PEM	1

Wetland ID	Cowardin Classification	ORAM Category
W005-PEM-CAT2	PEM	2
W006-PSS-CAT2	PSS	2
W007-PEM-CATMOD2	PEM	Modified 2
W008-PEM-CAT2	PEM	2
W009-PUB-CATMOD2	PUB	Modified 2
W010-PEM-CATMOD2	PEM	Modified 2
W011-PEM-CAT1	PEM	1
W012-PUB-CAT2	PUB	2
W013-PEM-CAT1	PEM	1
W014-PEM-CAT1	PEM	1
W015-PSS-CATMOD2	PSS	Modified 2
W016-PEM-CAT1	PEM	1
W016-PEM-CATMOD2	PEM	Modified 2

2. Receiving Waters

The Project is located in the Sour Run-Salt Lick Creek Watershed (HUC: 050600020805) and the Horse Creek-Salt Lick Creek Watershed (HUC: 050600020803), which ultimately drain to the Ohio River. The receiving streams may include Salt Lick Creek.

H. Implementation Schedule

A construction log will be kept at the Project site to record major dates of grading and stabilization. The general order of construction is provided in Table 5 below and will begin in October 2023 and is estimated to end in November 2024.

Table 5: Implementation Schedule

Task	Date
Identify environmental avoidance areas in the field (i.e., wetlands, 50-foot stream buffers, other environmental commitments)	October 2023
Mobilize construction equipment	October 2023
Forestry clearing/grubbing to begin	October 2023
Install filter sock, timber matting, and temporary construction entrances, as needed	October 2023
Excavate foundations for new poles, install new poles	October 2023 – November 2024
Install temporary seed and mulch, as needed, during Project activities	October 2023 – Spring 2025
Grade pole locations to pre-existing conditions	October 2023 – November 2024
Install permanent seed and mulch	October 2023 – Spring 2025
Remove matting and temporary BMPs	October 2023 – Spring 2025
Repair/restore all remaining disturbed areas	October 2023 – Spring 2025

Task	Date
Seed and mulch all remaining disturbed areas	October 2023 – Spring 2025
Construction demobilization	November 2024
Inspection with AEP and SWP3 contractor	November 2024 – Spring 2025

I. Subdivided Development Drawing

Not applicable.

J. Dedicated Asphalt and Concrete Plant Discharges

Not applicable.

K. Log of Grading and Stabilization Activities

A log for documenting grading and stabilization activities and amendments to the SWP3 is included in Appendix 3.

L. Site Map

A vicinity of the Project area is included in Appendix 1, along with the Erosion and Sediment Control Plan. The Erosion and Sediment Control Plan shows the Project boundaries and contours, the limits of construction, and the locations of the erosion and sediment control features. The Ohio Department of Natural Resources (ODNR) Rainwater and Land Development Manual Details are included in Appendix 2.

M. Permit Requirements

The permit requirements can be reviewed in the Ohio EPA General Permit No. OHC000006.

II. Storm Water Pollution Prevention Plan

The SWP3 was developed to meet the objectives in Part II. Non-numeric Effluent Limitations and Part III. Storm Water Pollution Prevention Plan (SWP3) of Ohio EPA General Permit No. OHC000006.

A. SWP3 Availability

This Plan, a copy of the Notice of Intent (NOI), and the Ohio EPA authorization shall be made available on-site immediately upon request of the director or an authorized representative during working hours. Per Ohio EPA, an electronic copy is an acceptable format for on-site availability and review.

B. Amendments

The SWP3 is a living document that will be updated as needed. The SWP3 shall be amended whenever there is a change in design, construction, operation or maintenance, or if the SWP3 proves to be ineffective in controlling pollutants in storm water discharges associated with construction activity. A log for documenting amendments is included in Appendix 3.

AEP Environmental Services shall be notified prior to any significant modifications to the SWP3, such as changes to the access roads, disturbance acreage, culvert installations, etc., to ensure the Project remains in compliance with Ohio EPA General Permit No. OHC000006.

C. Duty to Inform Contractors

All contractors and subcontractors who will be involved in implementation of the SWP3 shall review and understand the conditions and responsibilities of the SWP3 and document their acknowledgement by signing the form included in Appendix 4.

D. Controls

Timing: Temporary erosion and sediment control measures shall be installed prior to earth-disturbing activity. Temporary control measures will not be removed until final site stabilization, in the form of permanent gravel cover or perennial vegetative cover with a density of at least 70%, is achieved.

The locations of the control methods are shown on the Erosion and Sediment Control Plans in Appendix 1. Maintenance and inspections requirements for these controls can be found in Section II.D.6 of this SWP3. The control measures for this Project include the following:

1. Preservation Methods

   Existing natural conditions shall be preserved as much as feasible. Such practices may include: preserving existing vegetation, vegetative buffer strips, and existing soil profile and topsoil; minimizing soil compaction; minimizing disturbance of steep slopes; phasing of construction operations to minimize the amount of disturbed land at any one time; and protective clearing or grubbing practices. For all construction activity adjacent to surface waters of the state, a 50-foot undisturbed natural buffer will be maintained as measured from the ordinary high water mark (OHWM).

2. Erosion, Sediment, and Runoff Controls

   a. *Stabilization and Seeding*

      Disturbed areas will be stabilized as specified in Tables 6 and 7 below per the Erosion and Sediment Control Plan and Best Management Practices (BMP) detail sheets in Appendices 1 and 2, respectively. Mulch shall be applied to all exposed soil that has been seeded in an effort to facilitate seed germination and development.

Table 6: Permanent Stabilization

Area Requiring Permanent Stabilization	Time Frame to Apply Erosion Controls
Any areas that will lie dormant for one year or more.	Within seven calendar days of the most recent disturbance.
Any areas within 50 feet of a surface water of the state and at final grade.	Within two calendar days of reaching final grade.
Other areas at final grade.	Within seven calendar days of reaching final grade within that area.

Table 7: Temporary Stabilization

Area Requiring Temporary Stabilization	Time Frame to Apply Erosion Controls
Any disturbed areas within 50 feet of a surface water of the state and not at final grade.	Within two calendar days of the most recent disturbance if the area will remain idle for more than 14 calendar days.
Any disturbed areas that will be dormant for more than 14 calendar days but less than one year, and not within 50 feet of a surface water of the state.	Within seven calendar days of the most recent disturbance within the area. For residential subdivisions, disturbed areas must be stabilized at least seven days prior to transfer of permit coverage for the individual lot(s).
Disturbed areas that will be idle over winter.	Prior to the onset of winter weather.

b. *Sediment Barriers and Diversions*

Filter sock will be installed to encompass the entire site at all appropriate locations to filter sediment from site runoff. Orange barrier fencing will be used as needed and to protect wetland areas and 50-foot natural stream buffers. After Project completion, the posts, fencing, and ties shall be removed from the Project site and transported to an appropriate off-site disposal facility.

c. *Wetland and Stream Crossings*

Stream and wetland crossings shall be avoided where possible by accessing pole locations from either side of the surface waters. Temporary wetland crossings for this Project are limited to wetlands as shown on the Plans in Appendix 1 and shall consist of geotextile fabric and prefabricated wood matting lined with filter sock and orange barrier fence. Timber mat or span bridge stream crossings are limited to streams shown on the Plans in Appendix 1 and shall not be placed below the OHWM. Timber matting/span bridges shall span the stream(s) from bank to bank. No fording of the stream is permitted.

After construction is completed, the wood mats and geotextile fabric shall be removed and the area seeded with a wetland seed mix (see enclosed seed mix in Appendix 2).

d. *Temporary Construction Entrances*

Construction entrances consisting of a stabilized pad of aggregate will be installed where construction vehicles leave active construction areas and enter public roadways to reduce the amount of sediment tracked offsite. Temporary construction entrance locations and details are provided in Appendices 1 and 2, respectively.

3. Surface Water Protection

   No direct discharge to surface waters is proposed for this Project. Surface waters will be protected through the erosion and sediment controls outlined in the sections above.

4. Other Controls

   a. *Non-sediment Pollutant Controls*

      Waste disposal containers shall be provided for proper collection of all waste material including sanitary garbage, petroleum products and any materials to be used onsite (excluding inert waste/materials such as construction debris that would not be expected to contribute pollution to storm water). Containers shall be covered and not leaking. No construction waste materials shall be buried on-site. All waste materials shall be disposed of in the manner specified by local or state regulations or by the manufacturer. No solid or liquid wastes will be discharged in storm water runoff.

   b. *Off-site Traffic and Dust Control*

      Any paved roads adjacent to the site entrance shall be swept to remove any excess mud, dirt, or rock tracked from the site, as necessary. Dump trucks hauling materials to or from the site shall be covered with a tarpaulin. Dust control shall be observed both on and off the site for the duration of the Project. Dust and sedimentation will be minimized by limiting earth-moving activities, site traffic, and soil and vegetation disturbances throughout the site. Chemical stabilizers and adhesives will not be used unless written permission is received from AEP Environmental Representative. Dust control details can be found in Appendix 2.

   c. *Concrete Washouts*

      Concrete washouts will be located in upland areas outside of wetlands or flood zones. Under no circumstances will concrete trucks wash out into a drainage channel, storm sewer or surface water.

   d. *Wash Water*

      Water from vehicle washing, wheel washing, and other wash waters will be treated appropriately prior to discharge to minimize pollutants. Spills and leaks will be prevented and responded to as necessary.

   e. *Compliance with Other Requirements*

      This SWP3 is consistent with state and/or local waste disposal, sanitary sewer or septic system regulations including provisions prohibiting waste disposal by open burning. Spill response, disposal of suspect contaminated soils and clean-up activities are initiated by calling the AEP Regional Environmental Coordinator (REC).

   f. *Trench and Groundwater Control and Dewatering*

      Trench dewatering and groundwater control is not likely since this is an overhead line and any necessary trenching will be relatively shallow and short in duration. Dewatering may be needed if surface or subsurface water creates conditions where pole or foundation placement is being prevented or hindered and removing the water has the potential to contribute sediment to surface waters. If dewatering is needed, water shall be pumped directly into a dewatering device such as a tube or bag that has been sized according to the flow rate of the dewatering pump and the predominant sediment size (woven for sand, non-woven for silt and clay). Upon construction completion, accumulated sediment shall be removed from the dewatering device and

either placed in an upland part of the site where it shall then be seeded and mulched or shall be removed to an appropriate off-site disposal facility.

g. *Contaminated Sediment*

Contaminated soils are not expected to be encountered on this Project. However, if they should exist within the limits of construction, they will be disposed of properly per direction of the AEP Regional Environmental Coordinator (REC).

5. Post-Construction Storm Water Management Requirements

There will be no increase in impervious surfaces as a result of the rebuild work on the 69kV transmission line. Therefore, there will be no change from pre- to post-construction runoff, and post-construction storm water management is not required per Part III.G.2.e of Ohio EPA General Permit No. OHC000006.

6. Maintenance and Inspections Requirements

*All temporary and permanent control practices shall be maintained and repaired as needed to ensure continued performance of their intended function. All erosion and sediment control measures shall be inspected:

- Once every seven calendar days; and,
- After any storm event greater than one-half inch of rain per 24-hour period by the end of the next calendar day, excluding weekends and holidays unless work is scheduled.

An inspection report shall be made after each inspection. The SWP3 Inspection Form is included in Appendix 3.

*The Contractor shall select at least two qualified individuals responsible for inspections, maintenance, and repair activities, and filling out the SWP3 Inspection Form and SWP3 Amendments, Grading, and Stabilization Log in Appendix 3. Personnel selected for these responsibilities shall be knowledgeable and experienced in all inspection and maintenance practices necessary for keeping the erosion and sediment controls in good working order.

*If an inspection reveals that a control is in need of repair or maintenance, with the exception of a sediment settling pond, it shall be repaired or maintained within three calendar days of the inspection. Sediment ponds will be repaired or maintained within 10 calendar days of the inspection. If an inspection reveals that a control fails to perform its intended function and that another, more appropriate control is required, the SWP3 shall be amended and the new control shall be installed within 10 calendar days of the inspection. If an inspection reveals a control has been installed inappropriately or incorrectly, the control will be replaced or modified for site conditions.

*When controls are modified, the erosion control drawings associated with the SWP3 will be updated to reflect the modifications, and the changes will be reflected using the SWP3 Amendments, Grading, and Stabilization Log in Appendix 3.

- Filter sock shall be inspected for depth of sediment, tears, and to ensure the anchor posts are firmly in the ground. Filter sock shall also be inspected to ensure they are maintained in the appropriate positions per the plans in Appendix 1. Built up sediment shall be removed from the filter sock when it has reached one-third the height of the sock.
- Orange barrier fence shall be inspected to ensure the fence is erect and functioning as intended per the plans in Appendix 1.

- Temporary and permanent seeding shall be inspected for bare spots, washouts, and healthy growth. If seed does not germinate in an area on which it was placed, the area will either be re-seeded or an alternate erosion control method will be employed.
- Locations where vehicles and equipment enter or exit the site shall be inspected for evidence of off-site tracking of sediment. Sediment being tracked onto off-site roadways shall be cleaned up promptly.
- Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean out the structure. Prefabricated systems should also utilize this criterion unless the manufacturer has alternative specifications.

*The permittee shall maintain the SWP3 Inspection Forms for three years following the submittal of a notice of termination (NOT) form. The Inspection Forms shall be signed in accordance with Part V.G of Ohio EPA General Permit OHC000006.

III. Approved State or Local Plans

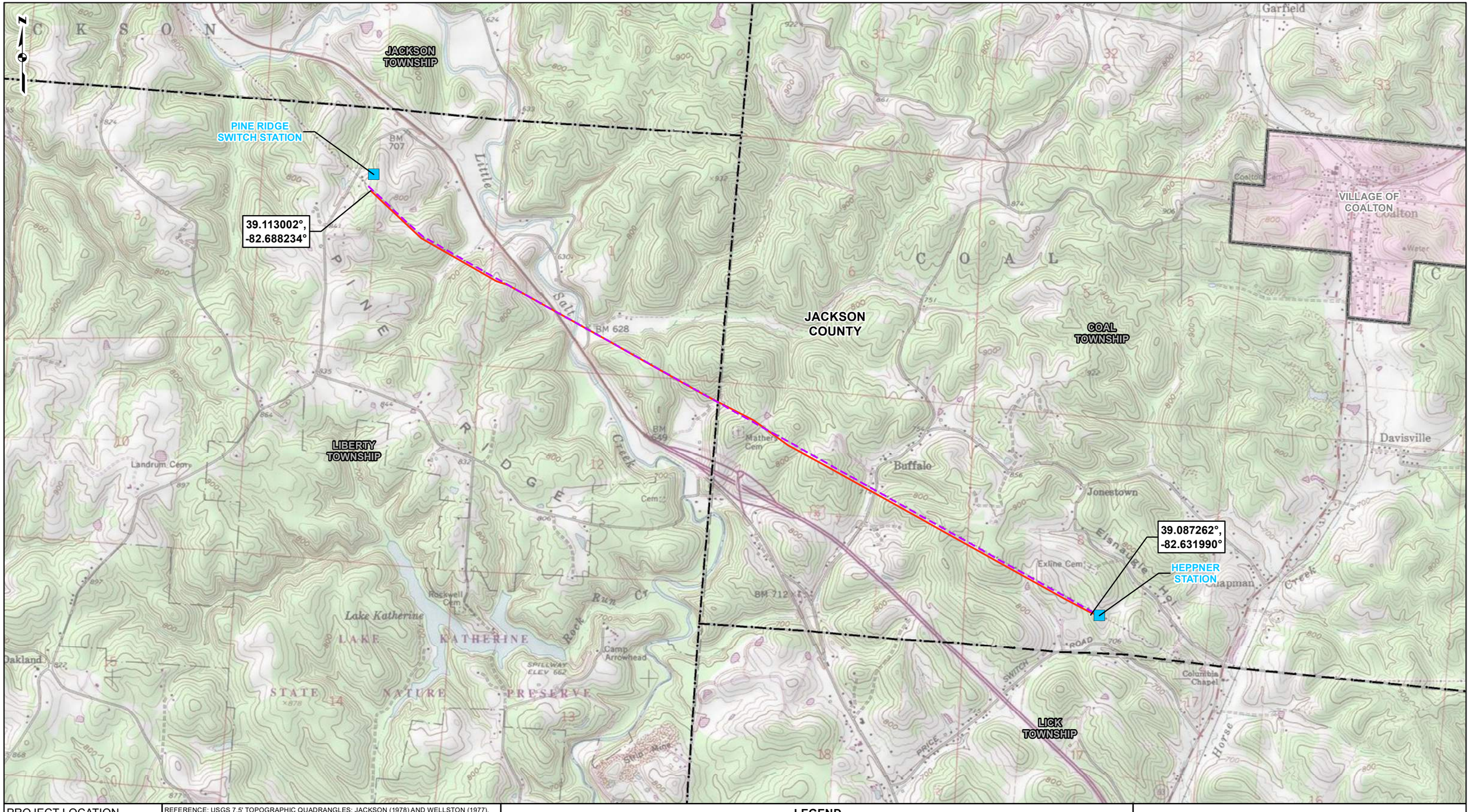
The erosion and sediment control plans were prepared in accordance with Ohio EPA Permit No. OHC000006.

IV. Exceptions

There are no exceptions to the erosion and sediment control practices contained in the Ohio EPA General Permit No. OHC000006.

APPENDIX 1

Project Location Map, Erosion and Sediment Control Plan, USDA Soils Map, Watershed (HUC 12) Map



PROJECT LOCATION

JACKSON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: JACKSON (1978) AND WELLSTON (1977), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 06/2023.

6/30/2023

TCR: Kathy Fickert
Phone: 740-935-3563
Email: kfickert@aep.com

LEGEND

- EXISTING STATION
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- MUNICIPAL BOUNDARY
- TOWNSHIP BOUNDARY

0 1,000 2,000 4,000 Feet

FIGURE 1
PROJECT LOCATION MAP

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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GENERAL NOTES:

TRANSMISSION CONSTRUCTION REPRESENTATIVE (TCR) IS KATHY FICKERT, 740-935-3563, KFICKERT@AEP.COM

ENVIRONMENTAL SPECIALIST IS AMY TOOHEY, 614-565-1480, AJTOOHEY@AEP.COM

ENVIRONMENTAL ADVISOR, SMG IS SAM SCHAU, 614-318-3757, SAMSCHAU@SAFETYMANAGEMENTGROUP.COM

REGIONAL ENVIRONMENTAL COORDINATOR (REC), LERS IS RAY WIRT, 330-324-9844, ERWIRT@AEP.COM

1. ANY GROUND DISTURBANCE NOT SHOWN ON THIS PLAN MUST BE APPROVED BY THE TCR AND ENVIRONMENTAL SPECIALIST PRIOR TO IMPLEMENTATION. GROUND DISTURBANCE INCLUDES BUT IS NOT LIMITED TO: LAYDOWN YARDS, STAGING AREAS, STOCKPILES, EQUIPMENT OR TIMBER STORAGE AREAS, ACCESS ROADS, WORK PADS, PULLING PADS, GUARD STRUCTURES, ETC.

2. ANY SUBS TITUTION OF BMPS OR DEVIATION FROM THE EROSION & SEDIMENT CONTROL PLAN MUST BE APPROVED BY THE TCR, ENVIRONMENTAL ADVISOR, AND ENVIRONMENTAL SPECIALIST PRIOR TO INSTALLATION.

3. ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

4. MATS TO BE USED IN THE PROJECT SHALL BE CLEAN AND FREE OF DEBRIS AND IN A CONDITION FOUND ACCEPTABLE TO THE TCR.

5. IF ANY HUMAN OR UNIDENTIFIED ARTIFACTS ARE UNEARTHED OR OTHERWISE DISCOVERED, CONSTRUCTION MUST CEASE AND THE TCR AND ENVIRONMENTAL SPECIALIST MUST BE NOTIFIED.

6. ACCESS THROUGH WETLANDS IS NOT ALLOWED UNLESS ON A PERMITTED TIMBER MAT ACCESS ROAD.

7. PARKING EQUIPMENT ON TIMBER MATS OVERNIGHT WITHIN A WETLAND OR FLOODPLAIN/FLOODWAY IS STRICTLY PROHIBITED.

8. IF ORANGE BARRIER FENCE (OBF) IS INSTALLED TO AVOID A WATER FEATURE, INSTALL WARNING SIGNS.

9. DO NOT INSTALL OR MODIFY CULVERTS THAT ARE NOT SHOWN ON FIGURE 2 WITHOUT APPROVAL FROM TCR AND ENVIRONMENTAL SPECIALIST.

10. CONTACT REC FOR PROPER MANAGEMENT OF MATERIAL (SUCH AS SOIL, WOOD POLE, ETC.) DISPOSAL OR GIVEAWAY.

11. SPILL KITS NEED TO BE ONSITE WHEN WORKING NEAR WATER FEATURES. SPILLS SHALL BE IMMEDIATELY REPORTED TO TCR AND REC.

12. LOCATION OF SANITARY FACILITIES, DUMPSTERS, & FUELING AREA WILL BE DETERMINED BY TCR.

13. ACCESS ROADS SHALL HAVE A MINIMUM TURNING RADIUS OR SWITCH BACK OF 60' (WIDTH).

14. ACCESS ROADS NOT SERVICING SWITCHES AND STATIONS SHALL BE 12' MINIMUM IN WIDTH. STANDARD DEPTH OF COVER MATERIAL FOR GRAVEL ACCESS ROADS AS REQUESTED BY TCR IS 6" OF ODOT #2 AND 4" OF ODOT #304.

15. FOR STATION AND SWITCH ACCESS ROADS, PLAN TO USE ODOT SPEC GRAVEL AND CONSTRUCT AS DESIGNED.

16. SWP3 INSPECTIONS SHALL BE SENT TO THE TCR, ENVIRONMENTAL SPECIALIST, THE ENVIRONMENTAL COORDINATOR, AND TO LOCAL ENTITY AS DIRECTED.

PROJECT-SPECIFIC NOTES:

1. WORK PAD AND PULLING PAD LOCATIONS CAN BE ADJUSTED AT THE DIRECTION OF THE TCR.

2. GRAVEL CAN BE UTILIZED INSTEAD OF TIMBER MATS FOR ACCESS ROADS AND WORK PADS ON STEEP SLOPES AT THE DIRECTION OF THE TCR.

PROJECT LOCATION

JACKSON COUNTY, OHIO

6/30/2023

EROSION AND SEDIMENT CONTROL PLAN
GENERAL NOTES

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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PINE RIDGE SWITCH STATION

39.113002°, -82.688234°

SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
SHEET 7
SHEET 8
SHEET 9
SHEET 10
SHEET 11
SHEET 12
SHEET 13
SHEET 14
SHEET 15
SHEET 16
SHEET 17
SHEET 18
SHEET 19
SHEET 20
SHEET 21
SHEET 22
SHEET 23
SHEET 24
SHEET 25

39.087262°, -82.631990°

HEPPNER STATION

OHIO Utilities Protection SERVICE
Click, Call or Tap Before You Dig

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT OHIO UTILITIES PROTECTION SERVICE AT 1-800-362-2764 AND THE OIL AND GAS PRODUCERS UNDERGROUND PROTECTION SERVICE AT 614-715-2984. GAI ASSUMES ANOTHER PARTY WILL BE RESPONSIBLE FOR OVERHEAD AND UNDERGROUND UTILITY LOCATING SERVICES.

PROJECT LOCATION

JACKSON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: JACKSON (1978) AND WELLSTON (1977), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 06/2023.

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED ACCESS ROAD
- SHEET INDEX

0 1,000 2,000 4,000 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET INDEX

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF DATE: 6/27/2023
CHECKED: WOLFESM APPROVED: JONESAR

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N

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

TCE-01 (39.113650, -82.689347)

PINE RIDGE SWITCH STATION

AVOID W001-PEM-CAT1

V-16'-G

EXISTING STRUCTURE REMOVED UNDER THE PINE RIDGE SWITCH 138kV REBUILD PROJECT SWP3.

EXISTING 40' X 40' PERMANENT GRAVEL PAD FOR THE PINE RIDGE SWITCH CONSTRUCTED UNDER THE PINE RIDGE SWITCH 138kV REBUILD PROJECT SWP3.

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

LIBERTY TOWNSHIP

JACKSON COUNTY

Oakland Road (County Road 21)

AVOID S001 (INT)

AVOID S002 (EPH)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

100' x 100' PULLING PAD

76

Pine Ridge Switch

100' x 100' WORK PAD

AR-162

75' x 75' WORK PAD

75

160

D-16'-G

100' x 100' WORK PAD

AVOID S003 (EPH)

SHEET 1

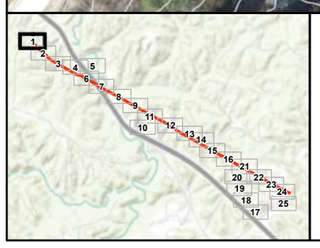
SHEET 2

REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010; NATIONAL FLOOD HAZARD LAYER: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 1 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

160 W

100' x 100' WORK PAD

SHEET 1
SHEET 2

LIBERTY TOWNSHIP

JACKSON COUNTY

AVOID S003 (EPH)

AVOID W002-PEM-CAT2

TCE-01/Oakland Road
Approx. 0.16-Mile Northwest

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

AVOID W003-PEM-CATMOD2

AVOID S004 (INT)

AVOID S006 (EPH)

AVOID S007 (EPH)

D-16'-G

75' x 75' WORK PAD

74

100' x 100' WORK PAD

161

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

S005 (INT)

AR-161

V-16'-G

TEMPORARY ACCESS BRIDGE

D-14'-T

V-16'-G

AR-162

AR-162

V-16'-G

75' x 75' WORK PAD

73

SHEET 2
SHEET 3

162

100' x 100' WORK PAD

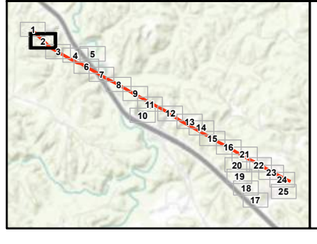
REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → Installed Material
Existing Material → V-14'-T

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
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- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
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- FEMA FLOODWAY
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  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
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  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 2 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

gai consultants

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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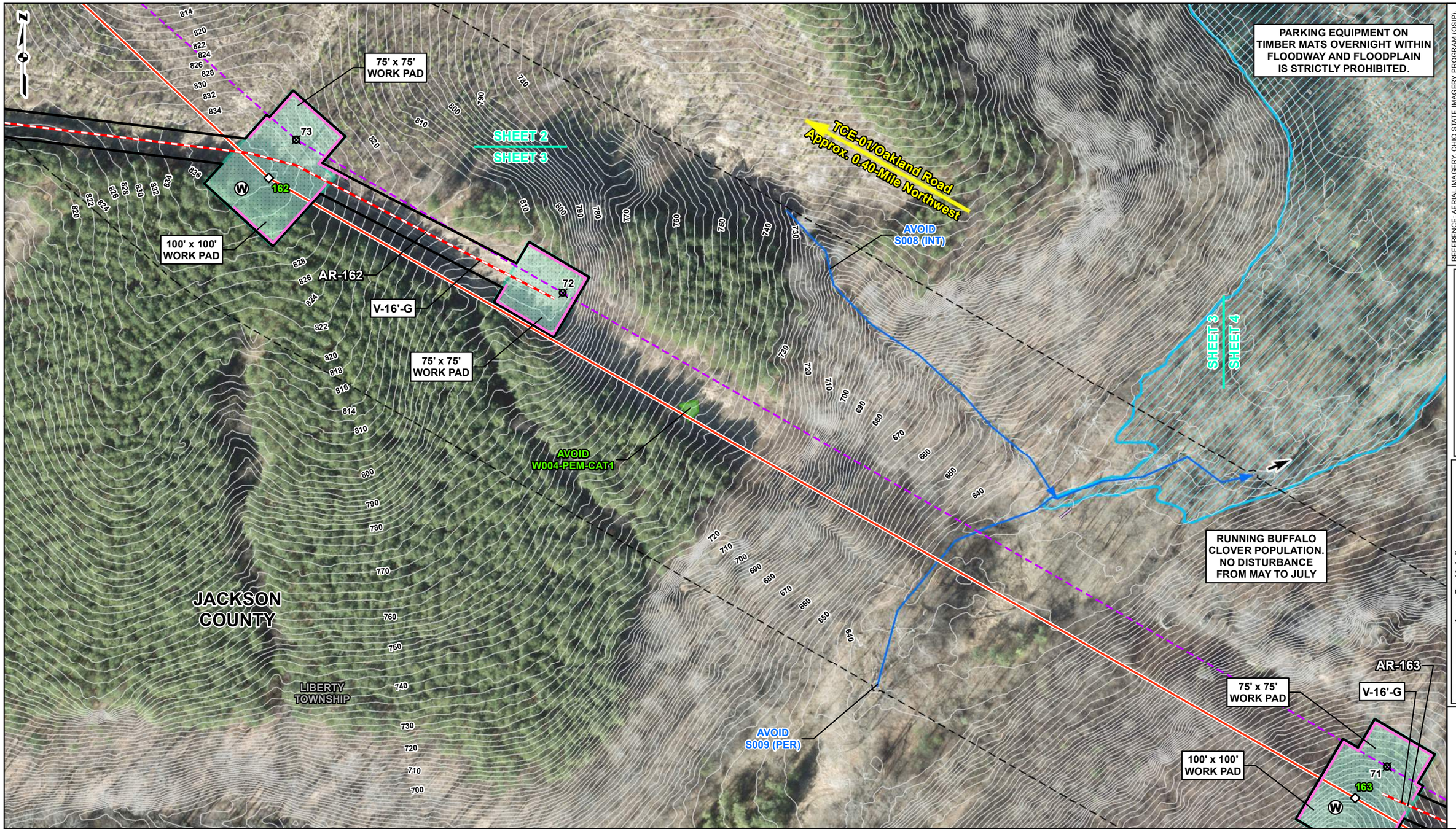
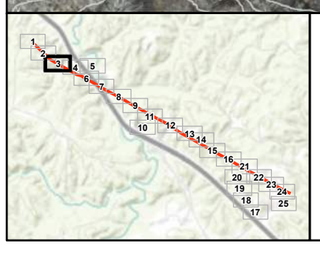


REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → Existing Material → V-14'-T ← Installed Material

6/30/2023



EXISTING STATION
PROPOSED CONCRETE FOUNDATION STRUCTURE
EXISTING STRUCTURE TO BE REMOVED
PROPOSED 138kV TRANSMISSION LINE
EXISTING 69kV TRANSMISSION LINE
PROPOSED LIMIT OF DISTURBANCE (LOD)

CONCRETE WASHOUT
CHANGE IN ACCESS ROAD CATEGORY
TEMPORARY CONSTRUCTION ENTRANCE (TCE)
FILTER SOCK (FS)
ORANGE BARRIER FENCING
EXISTING CULVERT
2-FT CONTOUR

LEGEND

UPLAND DRAINAGE FEATURE
FIELD-DELINEATED STREAM
WATER FEATURE CONTINUES OFFSITE
ENVIRONMENTAL STUDY AREA
TEMPORARY GRAVEL WORK PAD
TEMPORARY TIMBER MAT WORK PAD
EXISTING SWITCH PAD

0 50 100 200 Feet

FEMA 100-YEAR FLOODPLAIN
FEMA FLOODWAY
TOWNSHIP BOUNDARY
FIELD-DELINEATED WETLAND TYPE:
PEM
PSS
PUB

CULTURAL AREA
TEMPORARY ACCESS ROAD:
EXISTING ROUTE (LIKELY NO DISTURBANCE)
EXISTING ROUTE (MINIMAL DISTURBANCE)
NEW ACCESS (DISTURBANCE)
TIMBER MAT
EXISTING IMPERVIOUS ROAD
DIRT/UNIMPROVED

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 3 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

G:\C170352.12 - GIS\MXD\SWPPP\Fig_2_Erosion_Sediment_Control_Plan_2023_06_27.mxd

PARKING EQUIPMENT ON TIMBER MATS OVERNIGHT WITHIN FLOODWAY AND FLOODPLAIN IS STRICTLY PROHIBITED.

TCE-02 (39.109761, -82.678713)

EXISTING IMPERVIOUS ACCESS ROAD TO BE UTILIZED AS IS

Lloyd Bridges Road (County Road 71)

US Highway 35

SHEET 3

SHEET 4

AVOID S008 (INT)

AVOID S009 (PER)

D-16'-G

AR-163

RUNNING BUFFALO CLOVER POPULATION. NO DISTURBANCE FROM MAY TO JULY

75' x 75' WORK PAD

71

163

100' x 100' WORK PAD

V-16'-G

AR-165

SHEET 4

SHEET 6

75' x 75' WORK PAD

70

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

SHEET 4

SHEET 5

JACKSON COUNTY

LIBERTY TOWNSHIP

REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

D= Dirt
V= Vegetation

T= Timber Mat
G= Gravel

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
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  - PSS
  - PUB
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- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

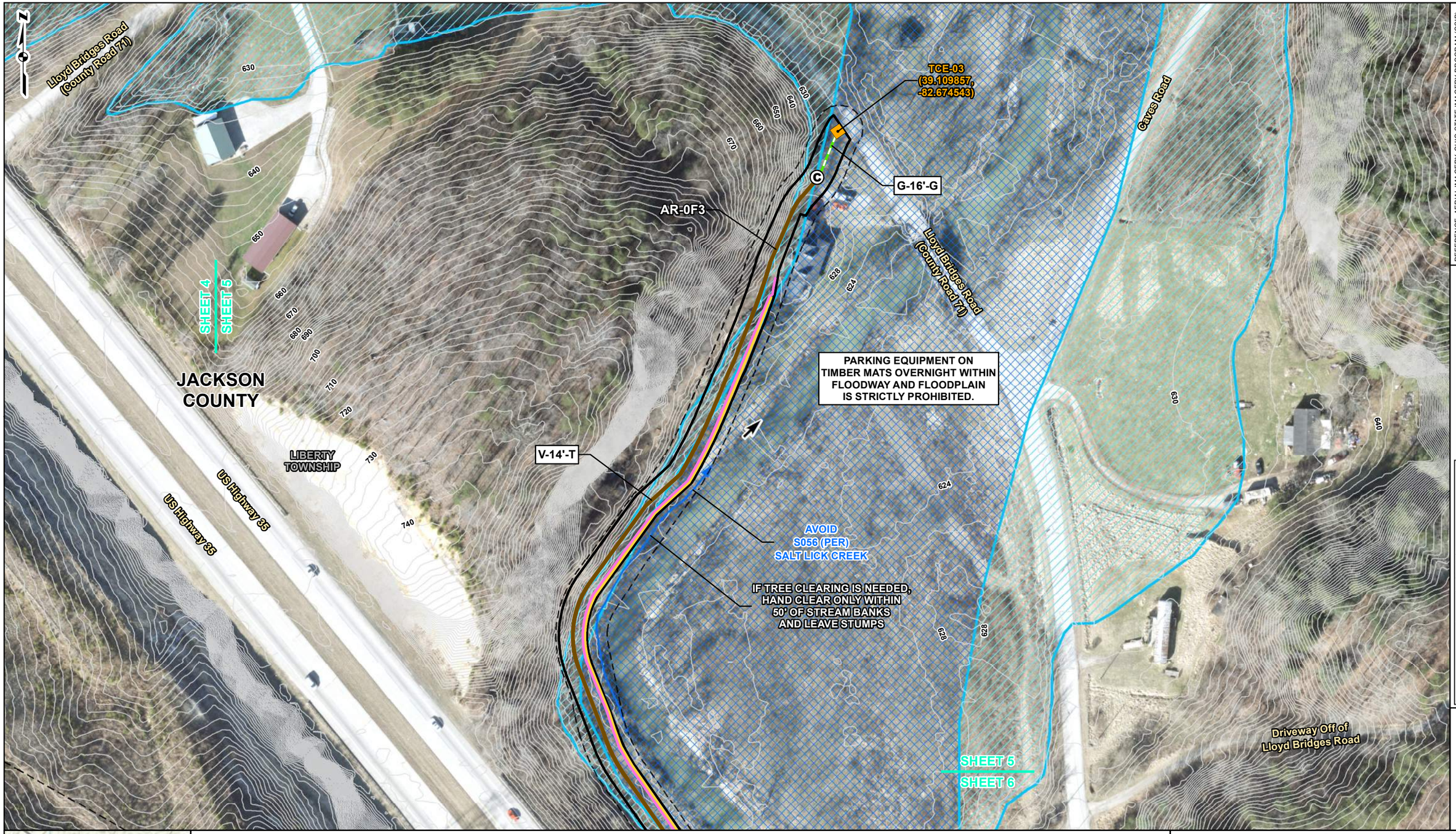
0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 4 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

G:\C170352.12 - GIS\MXD\SWPPP\Fig_2_Erosion_Sediment_Control_Plan_2023_06_27.mxd

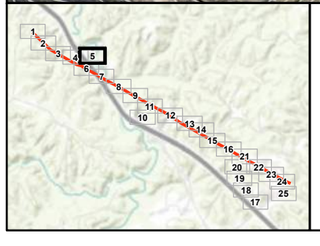


REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width
Existing Material → V-14'-T ← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 5 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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SHEET 4
SHEET 6

75' x 75'
WORK PAD

100' x 100'
WORK PAD

75' x 75'
WORK PAD

100' x 100'
WORK PAD

70
164
165
69

AR-165

V-16'-G

V-14'-T

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

TEMPORARY
ACCESS BRIDGE

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
WETLAND AND 50' OF WETLAND

DUE TO STEEP TOPOGRAPHY
ADDITIONAL FEATURES SUCH AS
ROADSIDE DITCHES AND DITCH
CHECKS MAY BE INSTALLED AT
THE DIRECTION OF THE TCR

S010 (INT)

Approx. 0.15-Mile Northwest

TCE-02/US-35

W005-PEM-CAT2
(0.14-ACRE TEMP IMPACT)

LIBERTY
TOWNSHIP

JACKSON
COUNTY

PARKING EQUIPMENT ON
TIMBER MATS OVERNIGHT WITHIN
FLOODWAY AND FLOODPLAIN
IS STRICTLY PROHIBITED.

SHEET 5
SHEET 6

AR-0F3

V-14'-T

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

Loyal Bridges Road
(County Road 71)

US Highway 35

US Highway 35

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
WETLAND AND 50' OF WETLAND

W016-PEM-CATMOD2
(0.06-ACRE TEMP IMPACT)

EXISTING 6-INCH
CULVERT CROSSING

AVOID
S011 (INT)

TEMPORARY
AIR BRIDGE

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

68A

V-16'-G

75' x 75'
WORK PAD

SHEET 6
SHEET 7

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

D= Dirt
V= Vegetation
T= Timber Mat
G= Gravel

Access Road Labeling
Constructed Width → Installed Material
Existing Material → V-14'-T

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 6 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

gai consultants

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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W005-PEM-CAT2
(0.14-ACRE TEMP IMPACT)

V-16'-G

AR-165

68A

75' x 75'
WORK PAD

SHEET 6

SHEET 7

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

DUE TO STEEP TOPOGRAPHY
ADDITIONAL FEATURES SUCH AS
ROADSIDE DITCHES AND DITCH
CHECKS MAY BE INSTALLED AT
THE DIRECTION OF THE TCR

AVOID
S011 (INT)

AR-0F3

V-14'-T

PARKING EQUIPMENT ON
TIMBER MATS OVERNIGHT WITHIN
FLOODWAY AND FLOODPLAIN
IS STRICTLY PROHIBITED.

AVOID
S012 (INT)

AVOID
S013 (PER)
SALT LICK CREEK

Lloyd Bridges Road (County Road 71)

AVOID
S014 (PER)

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

US Highway 35

US Highway 35

JACKSON
COUNTY

LIBERTY
TOWNSHIP

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

166

75' x 75'
WORK PAD

68

TCE-04
(39.104492,
-82.671280)

100' x 100'
WORK PAD

V-14'-T

AR-166

SHEET 7

SHEET 8

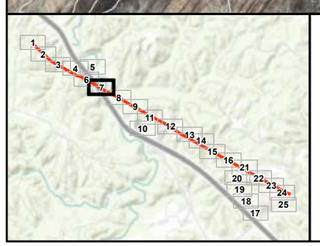
REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020, 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 7 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

gai consultants

AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM

DATE: 6/27/2023
APPROVED: JONESAR

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75' x 75' WORK PAD

68

TCE-04 (39.104492, -82.671280)

V-14'-T

AR-166

TCE-05 (39.104155, -82.671200)

G-16'-G

AR-0F1

V-16'-D

Lloyd Bridges Road (County Road 71)

SHEET 7

SHEET 8

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S014 (PER)

PARKING EQUIPMENT ON TIMBER MATS OVERNIGHT WITHIN FLOODWAY AND FLOODPLAIN IS STRICTLY PROHIBITED.

AVOID W006-PSS-CAT2

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S024 (EPH)

ROCK SHELTERS TO BE AVOIDED

100' x 100' WORK PAD. ADJUST PAD SIZE TO ACCOMMODATE SITE CONSTRAINTS.

67

167

100' x 100' WORK PAD

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

S016 (EPH)

ROCK SHELTERS TO BE AVOIDED

75' x 75' WORK PAD. ADJUST PAD SIZE TO ACCOMMODATE SITE CONSTRAINTS.

AR-167

V-16'-G

66

168

100' x 100' PULLING PAD

TEMPORARY ACCESS BRIDGE

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

US Highway 35

US Highway 35

LIBERTY TOWNSHIP

JACKSON COUNTY

SHEET 8

SHEET 9

V-14'-T

630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 782 784 786 788 790 792

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010; NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → Installed Material
Existing Material → V-14'-T

7/13/2023

LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 8 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 7/13/2023
APPROVED: JONESAR

G:\C170352.12 - GIS\MXD\SWPPP\Fig_2_Erosion_Sediment_Control_Plan_2023_07_13.mxd

100' x 100' PULLING PAD

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

S016 (EPH)

SHEET 8

SHEET 9

TEMPORARY ACCESS BRIDGE

V-16'-G

100' x 100' WORK PAD

V-14'-T

169 65

W

V-16'-G

AR-167

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S017 (EPH)

TCE-06/Lunsford Road Approx. 0.22-Mile Southeast

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

S019 (EPH)

780 770 760 750 740 730 720

V-14'-T

800 790 780 770

TEMPORARY ACCESS BRIDGES

AR-170

V-16'-G

JACKSON COUNTY

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

V-14'-T

TEMPORARY ACCESS BRIDGE

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

SHEET 10

LIBERTY TOWNSHIP

SHEET 9

SHEET 11

V-14'-T

64 170

W

S018 (INT)

AR-167

V-16'-G

100' x 100' WORK PAD

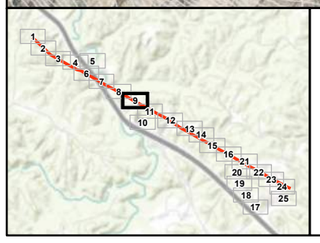
710

REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 9 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

AVOID
W007-PEM-CATMOD2

SHEET 11
SHEET 10

TEMPORARY
ACCESS BRIDGE

S021 (INT)

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

AR-167

V-14'-T

SHEET 9

Lumsford Road

AVOID
S022 (INT)

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
50' OF STREAM BANKS
AND LEAVE STUMPS

TCE-06
(39.098715,
-82.663128)

Township Highway 506

Clubhouse Road

US Highway 35

US Highway 35

Clubhouse Road

JACKSON
COUNTY

LIBERTY
TOWNSHIP

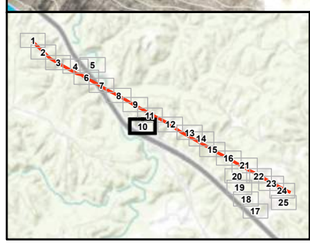
REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material → ← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 10 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

C

AR-170

V-16'-G

100' x 100' WORK PAD

V-14'-T

64

W

170

SHEET 9

SHEET 11

AVOID S020 (INT)

LIBERTY TOWNSHIP

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

JACKSON COUNTY

COAL TOWNSHIP

S019 (EPH)

TEMPORARY ACCESS BRIDGE

S018 (INT)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AR-167

V-16'-G

V-14'-T

100' x 100' WORK PAD

W

63

171

AVOID W008-PEM-CAT2

AVOID S015 (INT)

AVOID S023 (INT)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

V-16'-G

AR-171

V-14'-T

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S025 (EPH)

AVOID W007-PEM-CATMOD2

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN WETLAND AND 50' OF WETLAND

AR-167

V-14'-T

SHEET 11

SHEET 10

TEMPORARY ACCESS BRIDGE

TCE-06/Lunsford Road Approx. 0.08-Mile South

S021 (INT)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

SHEET 11

SHEET 12

AR-0F2

V-16'-D

REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010; NATIONAL FLOOD HAZARD LAYER: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

D= Dirt
V= Vegetation

T= Timber Mat
G= Gravel

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 11 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S025 (EPH)

AVOID W009-PUB-CATMOD2

TCE-07 (39.099137, -82.658778)

100' x 100' WORK PAD

AR-0F2

V-16'-D

SHEET 11

SHEET 12

AR-172

V-16'-G

75' x 75' WORK PAD. ADJUST PAD SIZE TO ACCOMMODATE SITE CONSTRAINTS.

APPROXIMATE LOCATION OF EXISTING CEMETERY

APPROXIMATE LOCATION OF SEPTIC/LEACH FIELD

Pierce-Mather Cemetery Road (Township Highway 746)

COAL TOWNSHIP

JACKSON COUNTY

AVOID S026 (EPH)

AVOID S027 (INT)

AVOID S028 (EPH)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S029 (EPH)

AVOID W010-PEM-CATMOD2

AR-173

V-16'-G

SHEET 12

SHEET 13

75' x 75' WORK PAD

100' x 100' WORK PAD

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

D= Dirt
V= Vegetation

T= Timber Mat
G= Gravel

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 12 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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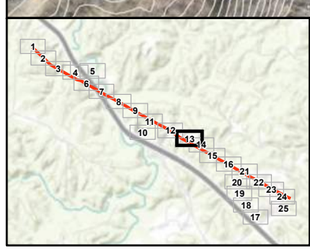
AR-172
V-16'-G
AVOID S029 (EPH)
AVOID S027 (INT)
SHEET 12
SHEET 13
AR-173
V-16'-G
IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS
61
75' x 75' WORK PAD
W 173
100' x 100' WORK PAD
AVOID S031 (EPH)
AVOID S030 (INT)
AVOID S033 (EPH)
AVOID S032 (INT)
AR-175
JACKSON COUNTY
COAL TOWNSHIP
TCE-08/Jackson Hill Road
Approx. 0.28-Mile Southeast
TEMPORARY ACCESS BRIDGE
V-14'-T
V-16'-G
AR-172
G-16'-G
D-16'-G
D-14'-T
S034 (EPH)
DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR
SHEET 13
SHEET 14
75' x 75' WORK PAD
60
V-16'-G
100' x 100' WORK PAD
75' x 75' WORK PAD
W 174
59

REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010; NATIONAL FLOOD HAZARD LAYER: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → Existing Material → V-14'-T ← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 13 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

gai consultants

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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D-16'-G

AR-172

G-16'-G

JACKSON COUNTY

COAL TOWNSHIP

75' x 75' WORK PAD

SHEET 13

SHEET 14

60

75' x 75' WORK PAD

59

174

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S035 (EPH)

AVOID S038 (PER)

Jackson Hill Road (County Road 39)

V-14'-T

100' x 100' WORK PAD

AR-175

V-16'-G

AVOID S036 (EPH)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

100' x 100' WORK PAD

175

TCE-08 (39.095884, -82.648906)

EXISTING 36-INCH CULVERT CROSSING

TEMPORARY AIR BRIDGE

AVOID S037 (INT)

AVOID S039 (PER)

V-16'-D

SHEET 14

SHEET 15

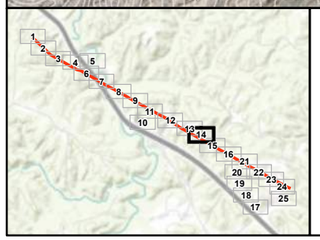
IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width
Existing Material → V-14'-T ← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
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  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 14 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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AVOID S039 (PER)

AVOID S037 (INT)

SHEET 14

SHEET 15

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

V-16'-G

100' x 100' WORK PAD

V-16'-D

AR-175

AVOID S040 (INT)

AVOID S042 (INT)

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S041 (EPH)

AVOID W011-PEM-CAT1

75' x 75' WORK PAD

TCE-08/Jackson Hill Road Approx. 0.58-Mile Northeast

Jackson Hill Road (County Road 39)

COAL TOWNSHIP

JACKSON COUNTY

100' x 100' WORK PAD

V-16'-G

AR-176

AVOID S043 (EPH)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

SHEET 15

SHEET 16

AVOID S044 (EPH)

REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 15 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

75' x 75' WORK PAD

58

176

100' x 100' WORK PAD

V-16'-G

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S043 (EPH)

SHEET 15

SHEET 16

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

75' x 75' WORK PAD

57

177

AR-176

100' x 100' WORK PAD

AVOID S044 (EPH)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S045 (EPH)

AVOID S046 (EPH)

TCE-09/Prices Switch Road
Approx. 0.80-Mile Southeast

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AR-180

75' x 75' WORK PAD

V-16'-G

D-16'-G

100' x 100' WORK PAD

56

178

AR-PP1

100' x 100' PULLING PAD

AVOID S048 (INT)

AVOID S047 (EPH)

SHEET 17

COAL TOWNSHIP

JACKSON COUNTY

SHEET 16

SHEET 21

AR-178

V-16'-G

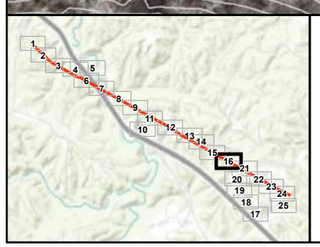
REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
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  - PUB
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- TEMPORARY ACCESS ROAD:
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  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 16 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

gai consultants

AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

SHEET 18

SHEET 17

EXISTING 24-INCH CULVERT CROSSING

AVOID S053 (INT)

D-16'-G

AR-178

D-14'-T

D-16'-G

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

TEMPORARY AIR BRIDGE

G-16'-G

US Highway 35

Prices Switch Road (Township Highway 253)

JACKSON COUNTY

LICK TOWNSHIP

SHEET 16

TCE-09 (39.083222, -82.637936)

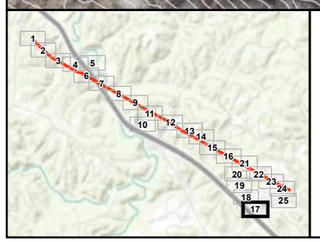
REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width
Existing Material → V-14'-T ← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
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- TEMPORARY TIMBER MAT WORK PAD
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  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 17 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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SHEET 19
SHEET 18

AVOID
S051 (EPH)

D-14'-T

TCE-09/Prices Switch Road
Approx. 0.18-Mile Southeast

D-16'-G

AR-178

JACKSON
COUNTY

COAL
TOWNSHIP

LICK
TOWNSHIP

US Highway 35

US Highway 35

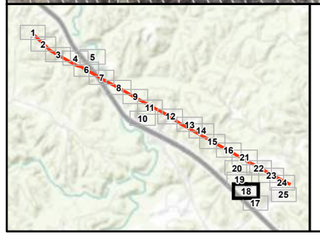
SHEET 18
SHEET 17

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width
Existing Material → V-14'-T ← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
- TIMBER MAT
- EXISTING IMPERVIOUS ROAD
- DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 18 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

SHEET 20
SHEET 19

JACKSON COUNTY

COAL TOWNSHIP

TCE-09/Prices Switch Road
Approx. 0.36-Mile Southeast

US Highway 35

US Highway 35

AR-178

D-16'-G

D-14'-T

TEMPORARY AIR BRIDGE

EXISTING 18-INCH CULVERT CROSSING

D-16'-G

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S051 (EPH)

SHEET 19
SHEET 18

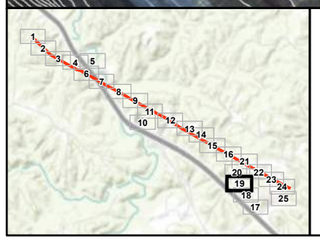
REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY

FIELD-DELINEATED WETLAND TYPE:
- PEM
- PSS
- PUB

- CULTURAL AREA

TEMPORARY ACCESS ROAD:
- EXISTING ROUTE (LIKELY NO DISTURBANCE)
- EXISTING ROUTE (MINIMAL DISTURBANCE)
- NEW ACCESS (DISTURBANCE)
- TIMBER MAT
- EXISTING IMPERVIOUS ROAD
- DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 19 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

gai consultants

AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM

DATE: 6/27/2023
APPROVED: JONESAR

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N

JACKSON COUNTY

COAL TOWNSHIP

TCE-09/Prices Switch Road
Approx. 0.51-Mile Southeast

SHEET 21
SHEET 20

SHEET 20
SHEET 19

AVOID
S050 (INT)

D-16'-G

AR-178

100' x 100'
WORK PAD

55
179
W

SHEET 20
SHEET 22

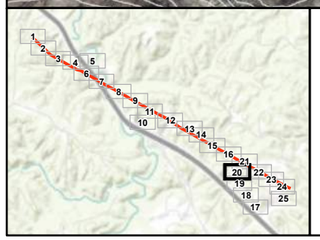
REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width
Existing Material
V-14'-T
← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 20 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

75' x 75' WORK PAD

V-16'-G

AR-176

100' x 100' WORK PAD

56

178

AR-PP1

100' x 100' PULLING PAD

V-16'-G

AR-178

SHEET 16

SHEET 21

D-16'-G

AVOID S048 (INT)

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN 50' OF STREAM BANKS AND LEAVE STUMPS

AVOID S049 (EPH)

AVOID S050 (INT)

TCE-09/Prices Switch Road Approx. 0.64-Mile Southeast

SHEET 21
SHEET 20

V-16'-G

AR-180

JACKSON COUNTY

COAL TOWNSHIP

V-16'-G

AR-179

75' x 75' WORK PAD

55

179

100' x 100' WORK PAD

V-16'-G

AR-180

SHEET 21
SHEET 22

75' x 75' WORK PAD

100' x 100' WORK PAD

54

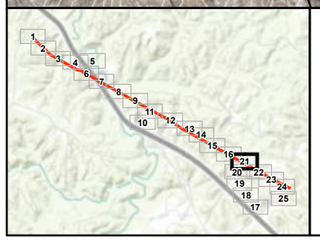
REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 21 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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N

55

179

V-16'-G

AR-179

AR-180

V-16'-G

SHEET 21

SHEET 22

100' x 100'
WORK PAD

75' x 75'
WORK PAD

54

180

100' x 100'
WORK PAD

JACKSON
COUNTY

COAL
TOWNSHIP

AVOID
S052 (EPH)

TCE-09/Prices Switch Road
Approx. 1.03-Mile Southeast

SHEET 20
SHEET 22

SHEET 22
SHEET 23

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
WETLAND AND 50' OF WETLAND

AVOID
W012-PUB-CAT2

100' x 100'
WORK PAD

AR-181

V-16'-G

181

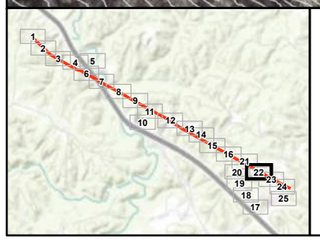
REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width
Existing Material → V-14'-T ← Installed Material

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 22 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM

DATE: 6/27/2023
APPROVED: JONESAR

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AVOID
S052 (EPH)

SHEET 22
SHEET 23

AVOID
W012-PUB-CAT2
IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
WETLAND AND 50' OF WETLAND

DUE TO STEEP TOPOGRAPHY ADDITIONAL FEATURES SUCH AS ROADSIDE DITCHES AND DITCH CHECKS MAY BE INSTALLED AT THE DIRECTION OF THE TCR

V-16'-G

AR-181

53

181

75' x 75'
WORK PAD

100' x 100'
WORK PAD

75' x 75'
WORK PAD

SHEET 23
SHEET 24

52

182

100' x 100'
WORK PAD

AVOID
S054 (INT)

V-14'-T

IF TREE CLEARING IS NEEDED,
HAND CLEAR ONLY WITHIN
WETLAND AND 50' OF WETLAND

D-14'-T

TCE-12/Prices Switch Road
Approx. 0.28-Mile Southeast

JACKSON
COUNTY

COAL
TOWNSHIP

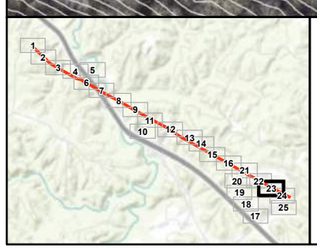
AVOID
W013-PEM-CAT1

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP, (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEIMA), OHIO, 2022.

T= Timber Mat
G= Gravel
D= Dirt
V= Vegetation

Access Road Labeling
Existing Material → Constructed Width ← Installed Material
V-14'-T

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 23 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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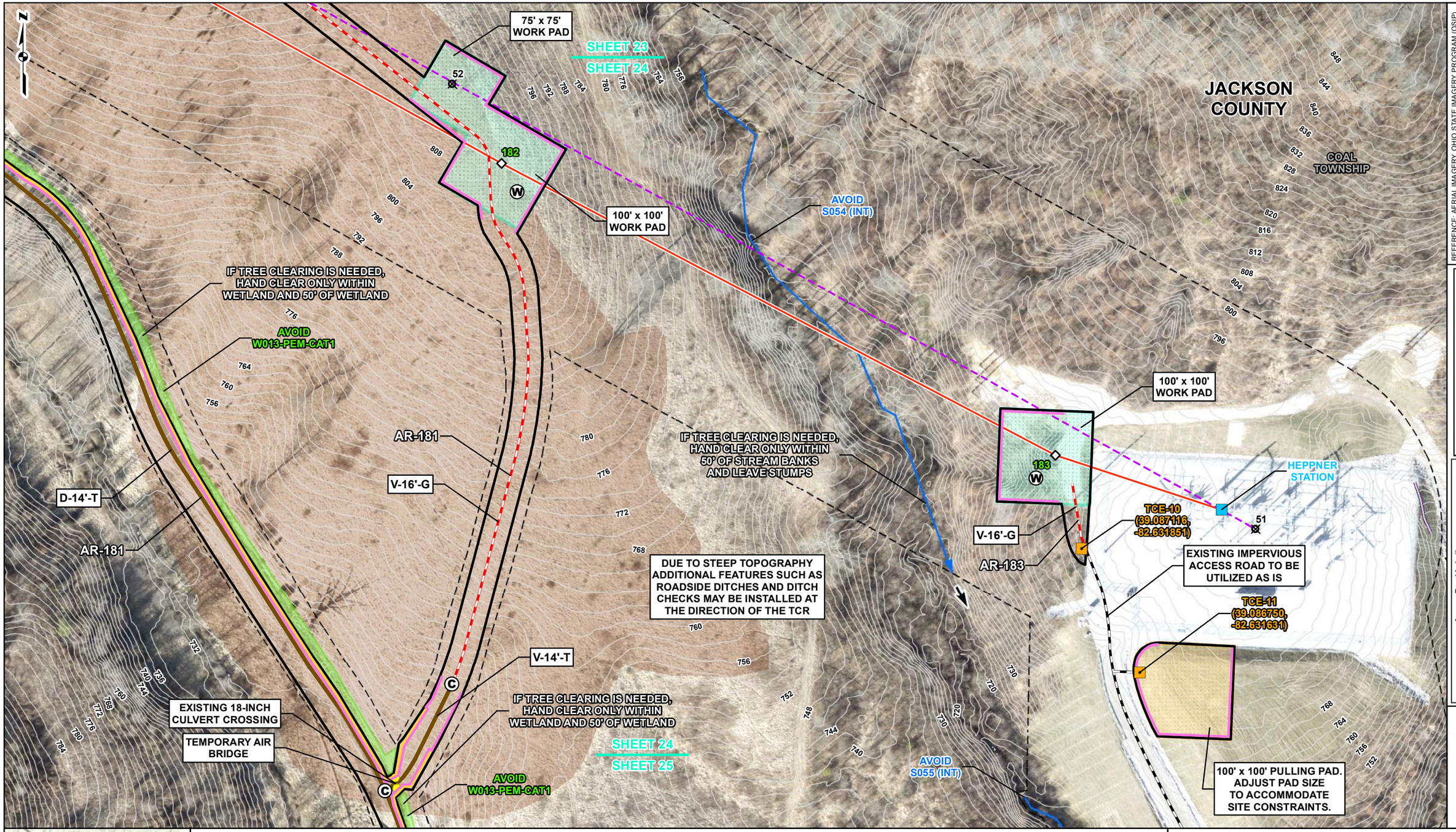


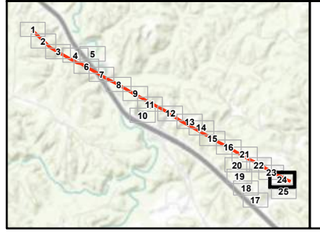
REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010; NATIONAL FLOOD HAZARD LAYER: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

D= Dirt
V= Vegetation

T= Timber Mat
G= Gravel

Access Road Labeling
Constructed Width ← Installed Material
Existing Material → V-14'-T

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
- ENVIRONMENTAL STUDY AREA
- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY
- FIELD-DELINEATED WETLAND TYPE:
  - PEM
  - PSS
  - PUB
- CULTURAL AREA
- TEMPORARY ACCESS ROAD:
  - EXISTING ROUTE (LIKELY NO DISTURBANCE)
  - EXISTING ROUTE (MINIMAL DISTURBANCE)
  - NEW ACCESS (DISTURBANCE)
  - TIMBER MAT
  - EXISTING IMPERVIOUS ROAD
  - DIRT/UNIMPROVED

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 24 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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AR-181

AR-181

AVOID
W013-PEM-CAT1

D-14'-T

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN WETLAND AND 50' OF WETLAND

D-14'-T

AR-181

G-16'-G

AR-181

V-14'-T

SHEET 24

SHEET 25

TEMPORARY AIR BRIDGE

EXISTING 18-INCH CULVERT CROSSING

AVOID
W013-PEM-CAT1

IF TREE CLEARING IS NEEDED, HAND CLEAR ONLY WITHIN WETLAND AND 50' OF WETLAND

TCE-12
(39.085067,
-82.634024)

Prices Switch Road
(Township Highway 253)

100' x 100' PULLING PAD. ADJUST PAD SIZE TO ACCOMMODATE SITE CONSTRAINTS.

EXISTING IMPERVIOUS ACCESS ROAD TO BE UTILIZED AS IS

AVOID
S055 (INT)

AVOID
W014-PSS-CATMOD2

AVOID
W015-PEM-CAT1

COAL TOWNSHIP

LICK TOWNSHIP

JACKSON COUNTY

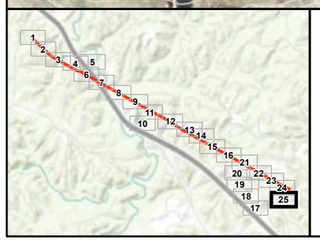
REFERENCE: AERIAL IMAGERY: OHIO STATE IMAGERY PROGRAM (OSIP), 2020; 2-FT CONTOURS DEVELOPED USING DEMs DOWNLOADED FROM OSIP (OHIO STATEWIDE IMAGERY PROGRAM), 2006-2010; NATIONAL FLOOD HAZARD LAYER: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

T= Timber Mat
G= Gravel

D= Dirt
V= Vegetation

Access Road Labeling
Constructed Width → V-14'-T ← Installed Material
Existing Material →

6/30/2023



LEGEND

- EXISTING STATION
- PROPOSED CONCRETE FOUNDATION STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- CONCRETE WASHOUT
- CHANGE IN ACCESS ROAD CATEGORY
- TEMPORARY CONSTRUCTION ENTRANCE (TCE)
- FILTER SOCK (FS)
- ORANGE BARRIER FENCING
- EXISTING CULVERT
- 2-FT CONTOUR
- UPLAND DRAINAGE FEATURE
- FIELD-DELINEATED STREAM
- WATER FEATURE CONTINUES OFFSITE
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- TEMPORARY GRAVEL WORK PAD
- TEMPORARY TIMBER MAT WORK PAD
- EXISTING SWITCH PAD
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- TOWNSHIP BOUNDARY

FIELD-DELINEATED WETLAND TYPE:
- PEM
- PSS
- PUB

- CULTURAL AREA

TEMPORARY ACCESS ROAD:
- EXISTING ROUTE (LIKELY NO DISTURBANCE)
- EXISTING ROUTE (MINIMAL DISTURBANCE)
- NEW ACCESS (DISTURBANCE)
- TIMBER MAT
- EXISTING IMPERVIOUS ROAD
- DIRT/UNIMPROVED

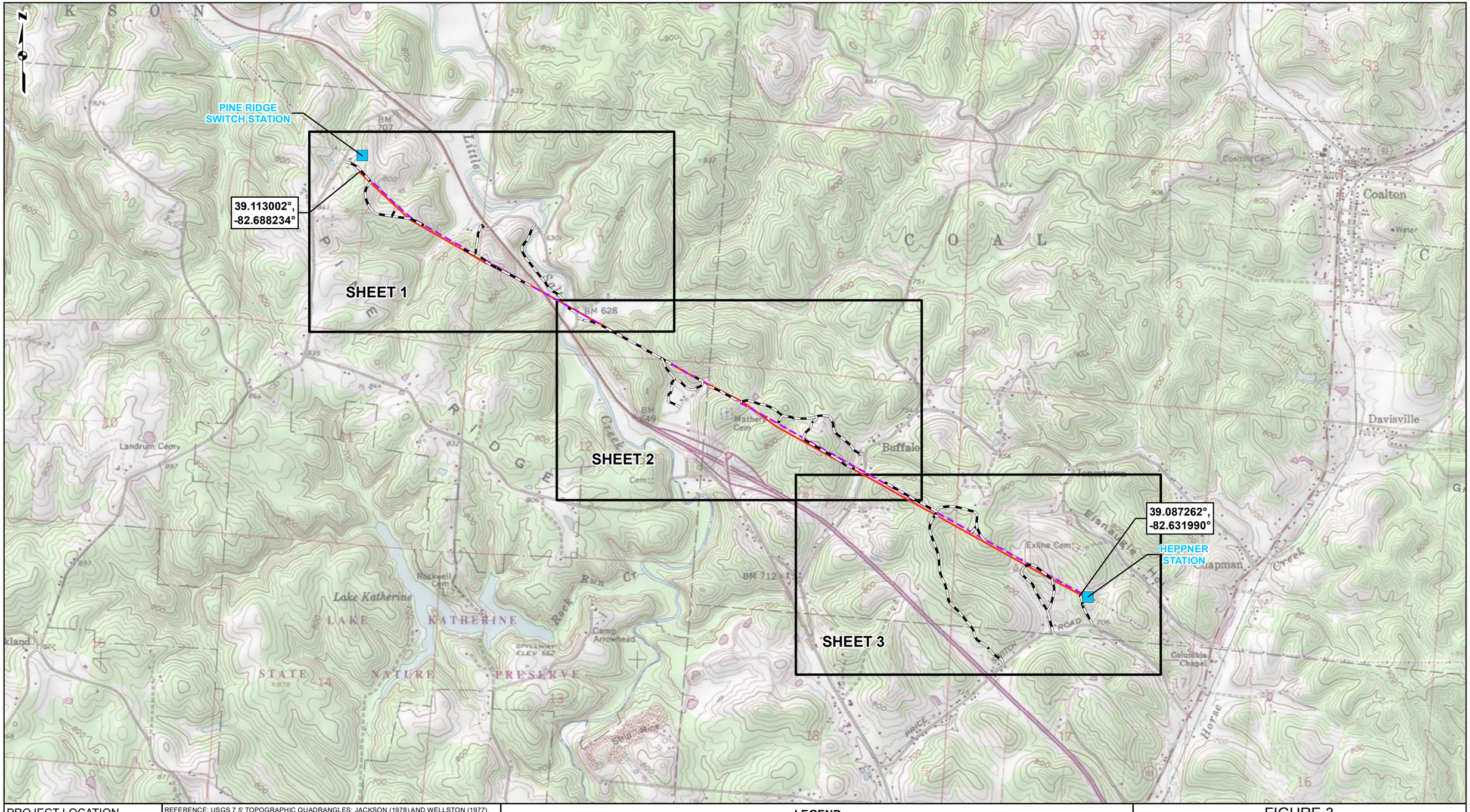
0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN
SHEET 25 OF 25

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

G:\C170352.12 - GIS\MXD\SWPPP\Fig_2_Erosion_Sediment_Control_Plan_2023_06_27.mxd



PROJECT LOCATION

JACKSON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: JACKSON (1978) AND WELLSTON (1977), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 06/2023.

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED ACCESS ROAD
- SHEET INDEX

0 1,000 2,000 4,000 Feet

FIGURE 3
USDA SOILS MAP
SHEET INDEX

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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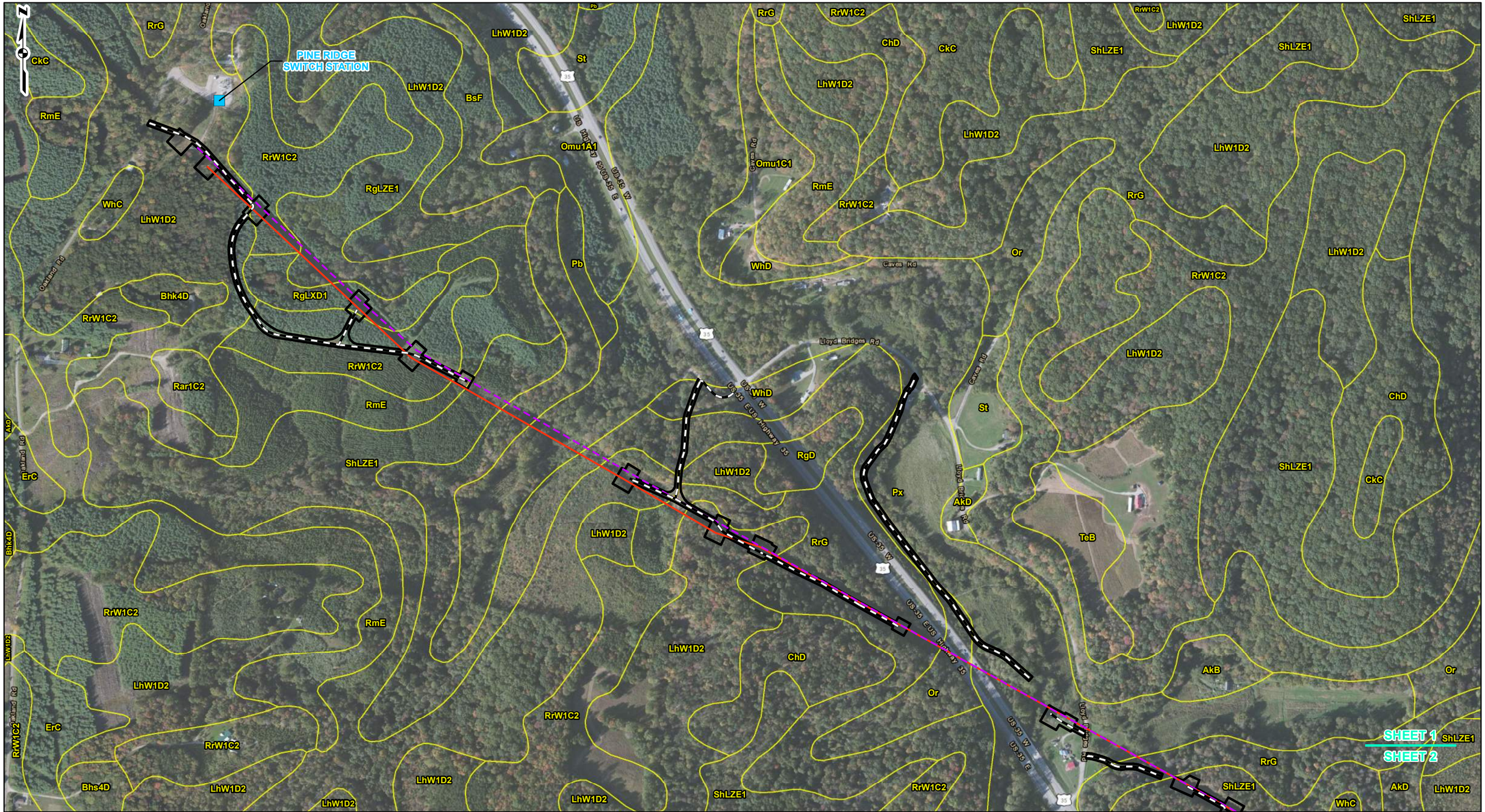

REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 06/2023. SOIL SURVEY GEOGRAPHIC (SSURGO), USDA/NRCS, 2023.

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED ACCESS ROAD
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- SOIL MAP UNIT BOUNDARY

0 250 500 1,000 Feet

FIGURE 3
USDA SOILS MAP
SHEET 1 OF 3

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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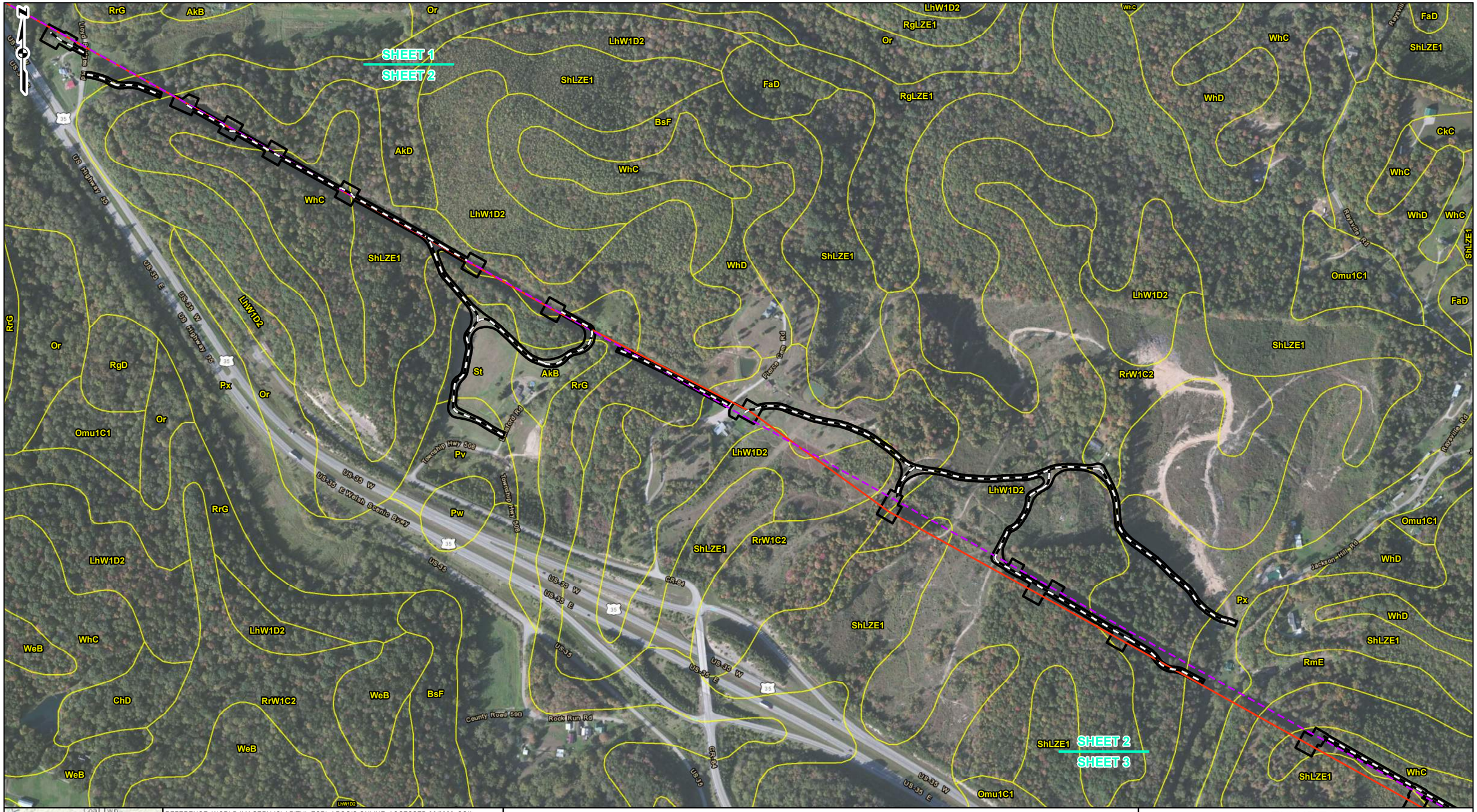

REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 06/2023. SOIL SURVEY GEOGRAPHIC (SSURGO), USDA/NRCS, 2023.

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED ACCESS ROAD
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- SOIL MAP UNIT BOUNDARY

0 250 500 1,000 Feet

FIGURE 3
USDA SOILS MAP
SHEET 2 OF 3

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF
CHECKED: WOLFESM
DATE: 6/27/2023
APPROVED: JONESAR

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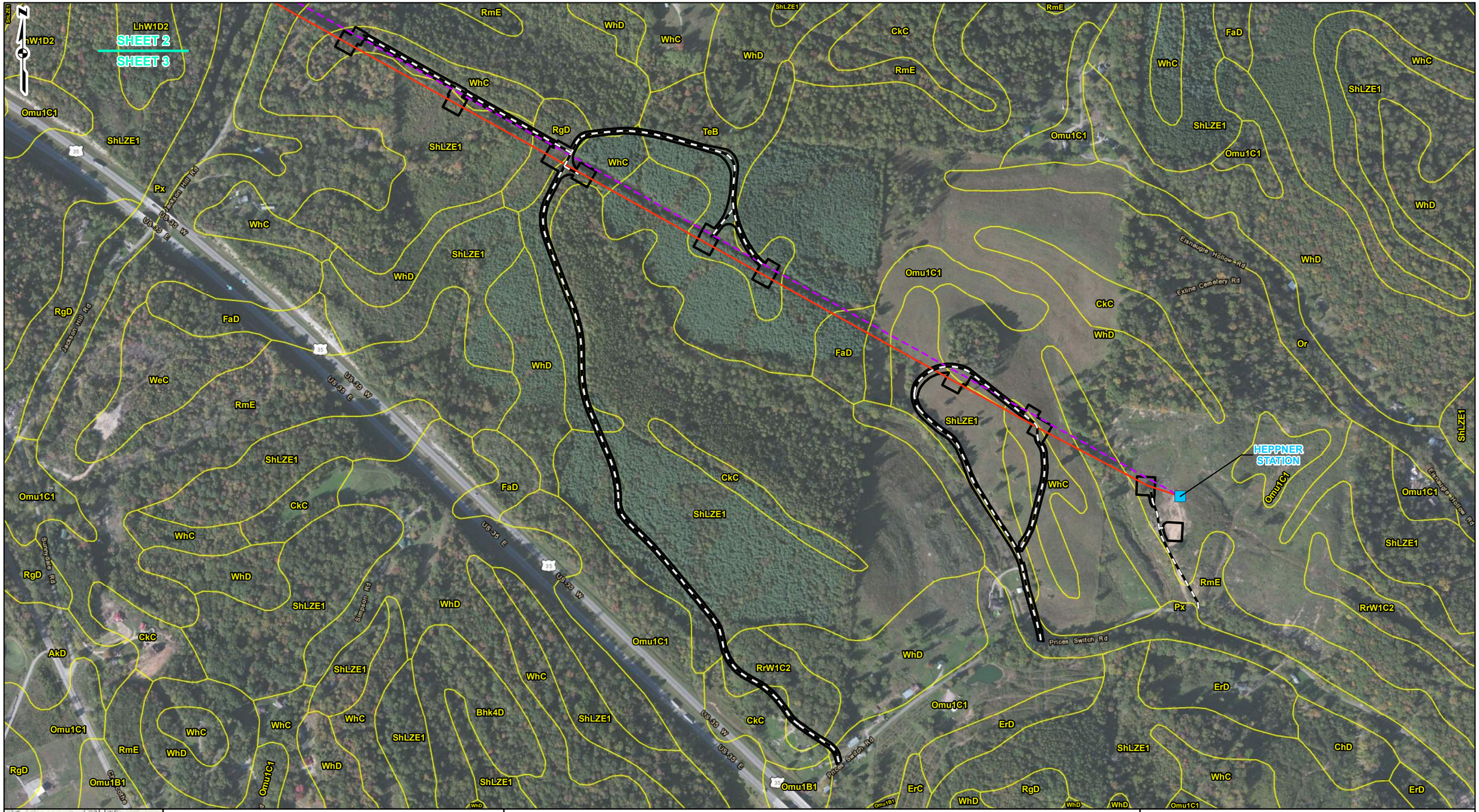

REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 06/2023. SOIL SURVEY GEOGRAPHIC (SSURGO), USDA/NRCS, 2023.

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED ACCESS ROAD
- PROPOSED LIMIT OF DISTURBANCE (LOD)
- SOIL MAP UNIT BOUNDARY

0 250 500 1,000 Feet

FIGURE 3
USDA SOILS MAP
SHEET 3 OF 3

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF DATE: 6/27/2023
CHECKED: WOLFESM APPROVED: JONESAR

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PINE RIDGE
SWITCH STATION

39.113002°,
-82.688234°

050600020805
Sour Run-Salt
Lick Creek

050600020701
Pigeon Creek

050600020804
Poplar
Run-Pigeon Creek

050600020803
Horse Creek-Salt
Lick Creek

050600020802
Buckeye Creek

39.087262°,
-82.631990°

HEPPNER
STATION

PROJECT LOCATION

JACKSON COUNTY, OHIO

REFERENCE: WORLD IMAGERY (MAXAR), ESRI, ARCGIS ONLINE, ACCESSED 06/2023. HUC 12 WATERSHED BOUNDARY, USGS, 2016. NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2022.

6/30/2023

LEGEND

- EXISTING STATION
- PROPOSED 138kV TRANSMISSION LINE
- EXISTING 69kV TRANSMISSION LINE
- PROPOSED ACCESS ROAD
- HUC 12 WATERSHED BOUNDARY
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY

0 1,000 2,000 4,000 Feet

FIGURE 4
WATERSHED (HUC 12) MAP

PINE RIDGE-HEPPNER 138kV
TRANSMISSION LINE REBUILD PROJECT
AMERICAN ELECTRIC POWER

DRAWN BY: JACKSEF DATE: 6/27/2023
CHECKED: WOLFESM APPROVED: JONESAR

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APPENDIX 2

ODNR Rainwater and Land Development Manual Details

BMP Detail Sheets

Temporary Seeding
Permanent Seeding
Mulching
Typical Wood Mat
Construction Entrance
Filter Sock
18” Equivalent Triple Stacked Filter Sock Detail
24” Equivalent Triple Stacked Filter Sock Detail
Storm Drain Inlet Protection
Dewatering Measures
Dust Control
Temporary Access Bridge
Temporary Rolled Erosion Control Products (Erosion Control Matting)
Concrete Washout

TEMPORARY AND PERMANENT AEP SEED MIXES

Slope Stability & Natural Corridors Seed Mix

Temporary Matrix		
oz/ac	Grasses	
512	*Avena sativa*	Seed Oats
160	*Lolium multiflorum*	Annual Ryegrass
Permanent Matrix		
oz/acre	Grasses	
16	*Andropogon gerardii*	Big Bluestem
16	*Bouteloua curtipendula*	Side-Oats Grama
48	*Elymus canadensis*	Canada Wild Rye
48	*Elymus virginicus*	Virginia Wild Rye
32	*Schizachyrium scoparium*	Little Bluestem
16	*Sorghastrum nutans*	Indian Grass
oz/acre	Forbs	
1	*Monarda fistulosa*	Bergamot
2	*Coreopsis lanceolata*	Lanceleaf coreopis
4	*Rudbecka hirta*	Black-eyed Susan
2	*Solidago nemoralis*	Grey Goldenrod
2	*Solidago speciosa*	Showy Goldenrod

Lawn Mix – Sun to partial shade

lbs/acre	Grasses	
20	*Lolium multiflorum*	Annual Ryegrass
100	*Poa pratensis*	Kentucky Bluegrass
100	*Lolium perenne*	Perennial Ryegrass

Lawn Mix –Shade

lbs/acre	Grasses	
20	*Lolium multiflorum*	Annual Ryegrass
100	*Poa pratensis*	Kentucky Bluegrass
100	*Festuca rubra*	Creeping Red Fescue

Swale and Retention Area Seed Mix

Temporary Matrix		
oz/ac	Grasses	
512	*Avena sativa*	Seed Oats
160	*Lolium multiflorum*	Annual Ryegrass
Permanent Matrix		
oz/acre	Grasses	
8	*Carex frankii*	Frank's Sedge
2	*Eleocharis obtusa*	BluntSpike Rush
8	*Carex vulpinoidea*	Fox Sedge
32	*Panicum virgatum*	Switchgrass
2	*Scirpus acutus*	Hard Stem Rush
oz/acre	Forbs	
2	Asclepias incarnata	Swamp milkweed
2	Aster novae-angliae	New England Aster
2	Eupatorium perfoliatum	Boneset
1	Helenium autumnale	Autumn Sneezeweed
2	Monarda fistulosa	Bergamot
2	Ratibida pinnata	Yellow Coneflower
2	Rudbeckia subtomentosa	Sweet Black-Eyed Susan

Farm Lane Area Seed Mix

Temporary Matrix		
oz/ac	Grasses	
512	*Avena sativa*	Seed Oats
160	*Lolium multiflorum*	Annual Ryegrass
Permanent Matrix		
oz/acre		
64	*Trifolium pratense*	Red Clover
32	*Trifolium repens*	White Clover

TEMPORARY SEEDING

DESCRIPTION

TEMPORARY SEEDINGS ESTABLISH TEMPORARY COVER ON DISTURBED AREAS BY PLANTING APPROPRIATE RAPIDLY GROWING ANNUAL GRASSES OR SMALL GRAINS. TEMPORARY SEEDING PROVIDES EROSION CONTROL ON AREAS IN BETWEEN CONSTRUCTION OPERATIONS. GRASSES, WHICH ARE QUICK GROWING, ARE SEEDED AND USUALLY MULCHED TO PROVIDE PROMPT, TEMPORARY SOIL STABILIZATION. IT EFFECTIVELY MINIMIZES THE AREA OF A CONSTRUCTION SITE PRONE TO EROSION AND SHOULD BE USED EVERYWHERE THE SEQUENCE OF CONSTRUCTION OPERATIONS ALLOWS VEGETATION TO BE ESTABLISHED.

SPECIFICATIONS FOR TEMPORARY SEEDING

SEE THE TEMPORARY AND PERMANENT AEP SEED MIX TABLES AFTER THE PERMANENT SEEDING DETAIL SHEETS FOR TEMPORARY SEED SPECIES AND APPLICATION RATES.

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.
2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING.
3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
4. SOIL AMENDMENTS TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
5. SEEDING METHOD SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING:

1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH, WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE, VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
2. MATERIALS:
   - 2.1. STRAW IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 LBS./1,000 SQ. FT. (2-3 BALES)
   - 2.2. HYDROSEEDERS IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2000 LBS./AC. OR 46 LB./1,000-SQ.-FT.
   - 2.3. OTHER OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TON/AC.

3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
   - 3.1. MECHANICAL A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT TO A LENGTH OF APPROXIMATELY 6 INCHES.
   - 3.2. MULCH NETTING NETTING SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.
   - 3.3. SYNTHETIC BINDERS SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TRACK OR EQUIVALENT MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
   - 3.4. WOOD-CELLULOSE FIBER WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WT. OF 750 LB./AC. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./100 GAL.

7.10 Permanent Seeding

Description

Perennial vegetation is established on areas that will not be re-disturbed for periods longer than 12 months. Permanent seeding includes site preparation, seedbed preparation, planting seed, mulching, irrigation and maintenance.

Permanent vegetation is used to stabilize soil, reduce erosion, prevent sediment pollution, reduce runoff by promoting infiltration, and provide stormwater quality benefits offered by dense grass cover.

Conditions Where Practice Applies

Permanent seeding should be applied to:

- Any disturbed areas or portions of construction sites at final grade. Permanent seeding should not be delayed on any one portion of the site at final grade while construction on another portion of the site is being completed. Permanent seeding shall be completed in phases, if necessary.
- Areas subject to grading activities but will remain dormant for a year or more.

Planning Considerations

Vegetation controls erosion by reducing the velocity and the volume of overland flow and protects bare soil surface from raindrop impact. A healthy, dense turf promotes infiltration and reduces the amount of runoff. The establishment of quality vegetation requires selection of the right plant materials for the site, adequate soil amendments, careful seedbed preparation, and maintenance.

Soil Compaction— Storm water quality and the amount of runoff both vary significantly with soil compaction. Non-compacted soils improve stormwater infiltration by promoting:

- dense vegetative growth;
- high soil infiltration & lower runoff rates;
- pollutant filtration, deposition & absorption; and
- beneficial biologic activity in the soil.

Construction activity creates highly compacted soils that restrict water infiltration and root growth. The best time for improving soil condition is during the establishment of permanent vegetation. It is highly recommended that subsoilers, plows, or other implements are specified as part of final seedbed preparation. Use discretion in slip-prone areas.

Minimum Soil Conditions— Vegetation cannot be expected to stabilize soil that is unstable due to its texture, structure, water movement or excessively steep slope. The following minimum soil conditions are needed for the establishment and maintenance of a long-lived vegetative cover. If these conditions cannot be met, see the standards and specifications for Topsoiling.

- Soils must include enough fine-grained material to hold at least a moderate amount of available moisture.
- The soil must be free from material that is toxic or otherwise harmful to plant growth.

Design Criteria

See specifications for permanent seeding below.

Maintenance

1. Expect emergence within 4 to 28 days after seeding, with legumes typically following grasses. Check permanent seedlings within 4 to 6 weeks after planting. Look for:
   - Vigorous seedlings;
   - Uniform ground surface coverage with at least 30% growth density;
   - Uniformity with legumes and grasses well intermixed;
   - Green, not yellow, leaves. Perennials should remain green throughout the summer, at least at the plant bases.

2. Permanent seeding shall not be considered established for at least 1 full year from the time of planting. Inspect the seeding for soil erosion or plant loss during this first year. Repair bare and sparse areas. Fill gullies. Re-fertilize, re-seed, and re-mulch if required. Consider no-till planting. A minimum of 70% growth density, based on a visual inspection, must exist for an adequate permanent vegetative planting.

- If stand is inadequate or plant cover is patchy, identify the cause of failure and take corrective action: choice of plant materials, lime and fertilizer quantities, poor seedbed preparation, or weather. If vegetation fails to grow, have the soil tested to determine whether pH is in the correct range or nutrient deficiency is a problem.
- Depending on stand conditions, repair with complete seedbed preparation, then over-seed or re-seed.
- If it is the wrong time of year to plant desired species, over-seed with small grain cover crop to thicken the stand until timing is right to plant perennials or use temporary seeding. See Temporary Seeding standard.

Modified
Specifications
for

Permanent Seeding

Site Preparation

1. Subsoiler, plow, or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary for establishing vegetation.
2. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation and seeding.
3. Topsoil shall be applied where needed to establish vegetation.

Seedbed Preparation

1. Lime—Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lieu of a soil test, lime shall be applied at the rate of 100 pounds per 1,000-sq. ft. or 2 tons per acre.
2. Fertilizer—Fertilizer shall be applied as recommended by a soil test. In place of a soil test, fertilizer shall be applied at a rate of 25 pounds per 1,000-sq. ft. or 1000 pounds per acre of a 10-10-10 or 12-12-12 analyses.
3. The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tooth harrow, or other suitable field implement to a depth of 3 inches. On sloping land, the soil shall be worked on the contour.

Seeding Dates and Soil Conditions

Seeding should be done March 1 to May 31 or August 1 to September 30. If seeding occurs outside of the above-specified dates, additional mulch and irrigation may be required to ensure a minimum of 80% germination. Tillage for seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

Dormant Seedings

1. Seedings should not be made from October 1 through November 20. During this period, the seeds are likely to germinate but probably will not be able to survive the winter.
2. The following methods may be used for “Dormant Seeding”:

- From October 1 through November 20, prepare the seedbed, add the required amounts of lime and fertilizer, then mulch and anchor. After November 20, and before March 15, broadcast the selected seed mixture. Increase the seeding rates by 50% for this type of seeding.
- From November 20 through March 15, when soil conditions permit, prepare the seedbed, lime and fertilize, apply the selected seed mixture, mulch and anchor. Increase the seeding rates by 50% for this type of seeding.
- Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry may include seed and fertilizer) on a firm, moist seedbed.
- Where feasible, except when a cultipacker type seeder is used, the seedbed should be firmed following seeding operations with a cultipacker, roller, or light drag. On sloping land, seeding operations should be on the contour where feasible.

Mulching

1. Mulch material shall be applied immediately after seeding. Dormant seeding shall be mulched. 100% of the ground surface shall be covered with an approved material.
2. Materials

- Straw—If straw is used it shall be unrotted small-grain straw applied at the rate of 2 tons per acre or 90 pounds (two to three bales) per 1,000-sq. ft. The mulch shall be spread uniformly by hand or mechanically applied so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000-sq.-ft. sections and spread two 45-lb. bales of straw in each section.
- Hydroseeders—If wood cellulose fiber is used, it shall be applied at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
- Other—Other acceptable mulches include rolled erosion control mattings or blankets applied according to manufacturer’s recommendations or wood chips applied at 6 tons per acre.

3. Straw and Mulch Anchoring Methods

Straw mulch shall be anchored immediately to minimize loss by wind or water.

- Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 inches.
- Mulch Netting—Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
- Asphalt Emulsion—Asphalt shall be applied as recommended by the manufacture or at the rate of 160 gallons per acre.
- Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equivalent may be used at rates specified by the manufacturer.
- Wood Cellulose Fiber—Wood cellulose fiber shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water with the mixture containing a maximum of 50 pounds cellulose per 100 gallons of water.

Irrigation

Permanent seeding shall include irrigation to establish vegetation during dry weather or on adverse site conditions, which require adequate moisture for seed germination and plant growth.

Irrigation rates shall be monitored to prevent erosion and damage to seeded areas from excessive runoff.

7.9 Mulching

Description

A protective layer of mulch, usually of straw, applied to bare soil is used to abate erosion by shielding it from raindrop impact. Mulch also helps establish vegetation by conserving moisture and creating favorable conditions for seeds to germinate.

Conditions Where Practice Applies

Mulch should be used liberally throughout construction to limit the areas that are bare and susceptible to erosion. Mulch can be used in conjunction with seeding to establish vegetation or by itself to provide erosion control when the season does not allow grass to grow. Mulch and other vegetative practices must be applied on all disturbed portions of construction-sites that will not be re-disturbed for more than 21 days.

Design Criteria

See specifications for Mulching.

Maintenance

Additional mulching is necessary to cover exposed soil conditions when observed during routine maintenance inspections.

Common Problems / Concerns

The application of synthetic binders must be conducted in such a manner as to not be introduced into watercourses.

Weather considerations must be addressed to ensure the application of synthetic binders are not washed away and introduced into watercourses.

The use of a mulch cover is not recommended for areas, which will exhibit higher velocities than 3.5 feet/second. An erosion control matting is recommended for areas which will exhibit higher velocities.

Areas which have been mulched should be inspected and maintained if necessary every 7 days or within 24 hours of a rain event greater than or equal to 0.5 inches to ensure adequate protection.

Specifications
for

Mulching

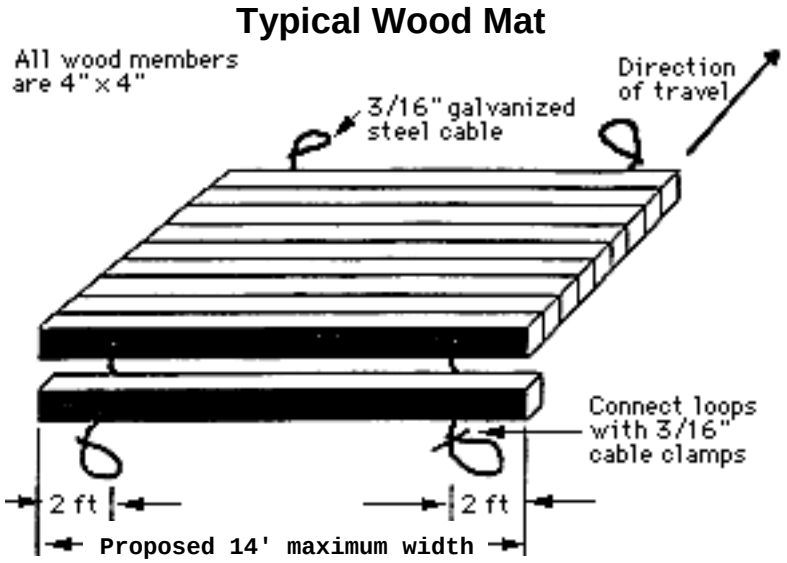
1. Mulch and other appropriate vegetative practices shall be applied to disturbed areas within 7 days of grading if the area is to remain dormant (undisturbed) for more than 21 days or on areas and portions of the site which can be brought to final grade.
2. Mulch shall consist of one of the following:

- Straw - Straw shall be unrotted small grain straw applied at the rate of 2 tons/ac. or 90 lb./1,000 sq. ft. (two to three bales). The straw mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 sq.ft. sections and place two 45-lb. bales of straw in each section.
- Hydroseeders - Wood cellulose fiber should be used at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
- Other - Acceptable mulches include mulch mattings and rolled erosion control products applied according to manufacturer's recommendations or wood mulch/chips applied at 10-20 tons/ac.

3. Mulch Anchoring - Mulch shall be anchored immediately to minimize loss by wind or runoff. The following are acceptable methods for anchoring mulch.

- Mechanical - Use a disk, crimper, or similar type tool set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but be left generally longer than 6 inches.
- Mulch Nettings - Use according to the manufacturer's recommendations, following all placement and anchoring requirements. Use in areas of water concentration and steep slopes to hold mulch in place.
- Synthetic Binders - For straw mulch, synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equal may be used at rates recommended by the manufacturer. All applications of Sythetic Binders must be conducted in such a manner where there is no contact with waters of the state.
- Wood Cellulose Fiber - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 lb./acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb./100 gal. of wood cellulose fiber.

Typical Wood Mat



University of Minnesota FS 07009

Source: PaDEP, E&S Pollution Control Manual, March 2012

TIMBER MAT

NOT TO SCALE

7.4 Construction Entrance

Description

A construction entrance is a stabilized pad of stone underlain with a geotextile and is used to reduce the amount of mud tracked off-site with construction traffic. Located at points of ingress/egress, the practice is used to reduce the amount of mud tracked off-site with construction traffic.

Conditions Where Practice Applies

A construction entrance is applicable where:

- Construction traffic leaves active construction areas and enters public roadways or areas unchecked by effective sediment controls;
- Areas where frequent vehicle and equipment access is expected and likely to contribute sediment to runoff, such as at the entrance to individual building lots.

Planning Considerations

Construction entrances address areas that contribute significant amounts of mud to runoff by providing a stable area for traffic. Although they allow some mud to be removed from construction vehicle tires before they enter a public roads, they should not be the only practice relied upon to manage off-site tracking. Since most mud is flung from tires as they reach higher speeds, restricting traffic to stabilized construction roads, entrances and away from muddy areas is necessary.

If a construction entrance is not sufficient to remove the majority of mud from wheels or there is an especially sensitive traffic situation on adjacent roads, wheel wash areas may be necessary. This requires an extended width pad to avoid conflicts with traffic, a supply of wash water and sufficient drainage to assure runoff is captured in a sediment pond or trap.

Proper installation of a construction entrance requires a geotextile and proper drainage to insure construction site runoff does not leave the site. The use of geotextile under the stone helps to prevent potholes from developing and will save the amount of stone needed during the life of the practice. Proper drainage may include culverts to direct water under the roadway or water bars to direct muddy water off the roadway toward sediment traps or ponds.

Design Criteria

The area of the entrance must be cleared of all vegetation, roots, and other objectionable material. Geotextile will then be placed the full width and length of the entrance.

Stone shall be placed to a depth of at least 6 inches. Roads subject to heavy duty loads should be increased to a minimum of 10 inches. Surface water shall be conveyed under the entrance, through culverts, or diverted via a water bars or mountable berms (minimum 5:1 slopes) so as to convey sediment laden runoff to sediment control practices or to allow clean water to pass by the entrance.

The stabilized construction entrance shall meet the specifications that follow.

Maintenance

The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.

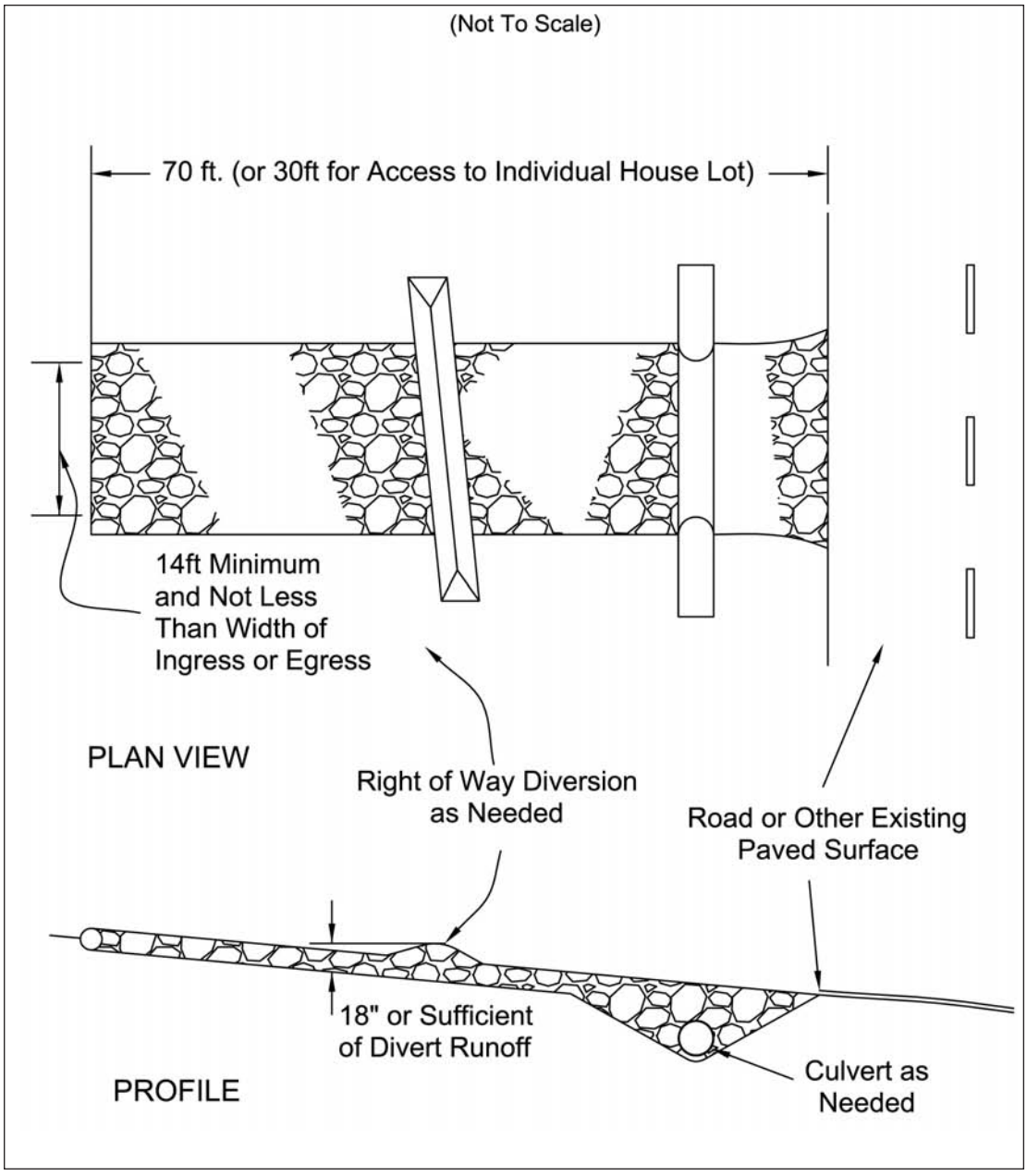
Common Problems / Concerns

Mud is allowed to accumulate and is tracked on to public right-of-ways. The entrance and associated construction roads may need dressing with additional stone.

Soft depression areas develop in entrance area. Stone may not have been underlain with geotextile or insufficient stone base has been provided.

Specifications
for

Construction Entrance



Specifications
for

Construction Entrance

1. Stone Size—ODOT # 2 (1.5-2.5 inch) stone shall be used, or recycled concrete equivalent.
2. Length—The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 70 ft. (exception: apply 30 ft. minimum to single residence lots).
3. Thickness -The stone layer shall be at least 6 inches thick for light duty entrances or at least 10 inches for heavy duty use.
4. Width -The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.
5. Geotextile -A geotextile shall be laid over the entire area prior to placing stone. It shall be composed of strong rot-proof polymeric fibers and meet the following specifications:

Figure 7.4.1

Geotextile Specification for Construction Entrance	
Minimum Tensile Strength	200 lbs.
Minimum Puncture Strength	80 psi.
Minimum Tear Strength	50 lbs.
Minimum Burst Strength	320 psi.
Minimum Elongation	20%
Equivalent Opening Size	EOS < 0.6 mm.
Permittivity	1×10-3 cm/sec.

6. Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.
7. Culvert -A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed out onto paved surfaces.
8. Water Bar -A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.
9. Maintenance -Top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.
10. Construction entrances shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.
11. Removal—the entrance shall remain in place until the disturbed area is stabilized or replaced with a permanent roadway or entrance.

6.6 Filter Sock

Description

Filter socks are sediment-trapping devices using compost inserted into a flexible, permeable tube with a pneumatic blower device or equivalent. Filter socks trap sediment by filtering water passing through the berm and allowing water to pond, creating a settling of solids.

Conditions where practice applies

Filter socks are appropriate for limited drainage areas, requiring sediment control where runoff is in the form of sheet flow or in areas that silt fence is normally considered acceptable. The use of filter socks is applicable to slopes up to 2:1 (H:V), around inlets, and in other disturbed areas of construction sites requiring sediment control. Filter socks also may be useful in areas, where migration of aquatic life such as turtles, salamanders and other aquatic life would be impeded by the use of silt fence.

Planning Considerations

Filter socks are sediment barriers, capturing sediment by ponding and filtering water through the device during rain events. They may be a preferred alternative where equipment may drive near or over sediment barriers, as they are not as prone to complete failure as silt fence if this occurs during construction. Driving over filter socks is not recommended; but if it should occur, the filter sock should be inspected immediately, repaired and moved back into place as soon as possible.

Design Criteria

Typically, filter socks can handle the same water flow or slightly more than silt fence. For most applications, standard silt fence is replaced with 12" diameter filter socks. However, proper installation is especially important for them to work effectively.

Materials – Compost/mulch used for filter socks shall be weed free and derived from a well-decomposed source of organic matter. The compost shall be produced using an aerobic composting process meeting CFR 503 regulations, including time and temperature data indicating effective weed seed, pathogen and insect larvae kill. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products are not acceptable.

Materials should meet the following requirements: pH between 5.0-8.0; 100% passing a 2" sieve and a minimum of 70% greater than the 3/8" sieve; moisture content is less than 60%; material shall be relatively free (<1% by dry weight) of inert or foreign man made materials.

Level Contour – Place filter socks on the level contour of the land so that flows are dissipated into uniform sheet flow. Flow coming to filter socks must not be concentrated and the filter sock should lie perpendicular to flows.

Flat Slopes – When possible, place filter socks at a 5' or greater distance away from the toe of the slopes in order for the water coming from the slopes to maximize space available for sediment deposit (see the illustration). When this is not possible due to construction limitations, additional filter socks may be required upslope of the initial filter sock (see the chart below for appropriate slope lengths and spacing).

Flow Around Ends – In order to prevent water flowing around the ends of filter socks, the ends of the filter socks must be constructed pointing upslope so the ends are at a higher elevation.

Vegetation – For permanent areas, seeding filter socks is recommended to establish vegetation directly in the sock and immediately in front and back of the sock at a distance of 5 feet. Vegetating on and around the filter socks will assist in slowing down water for filtration creating a more effective longer-term sediment control.

Drainage Area: Generally filter socks are limited to ¼ to ½ acre drainage area per 100 foot of the sediment barrier. Specific guidance is given in the chart below.

Table 6.6.1 Maximum Slope Length Above Filter Sock and Recommended Diameter

Slope	Ratio (H:V)	8"	12"	18"	24"
0% - 2%	10% - 20%	125	250	300	350
10% - 20%	50:1 - 10:1	100	125	200	250
2% - 10%	10:1 - 5:1	75	100	150	200
20% - 33%	5:1 - 2:1		50	75	100
>50%	>2:1		25	50	75

Note: For larger drainage areas, see standards for temporary diversions, sediment traps and sediment basins.

Dispersing flow – Sheet flow and runoff should not exceed berm height or capacity in most storm events. If overflow of the berm is a possibility, a larger filter sock should be installed or an alternative sediment control should be used.

Maintenance – Filter socks should be regularly inspected to make sure they hold their shape, are ponding, and allowing adequate flow through. If ponding becomes excessive, filter socks should be replaced. Used filter socks may be cut and the compost dispersed and seeded to prevent captured sediment from being resuspended.

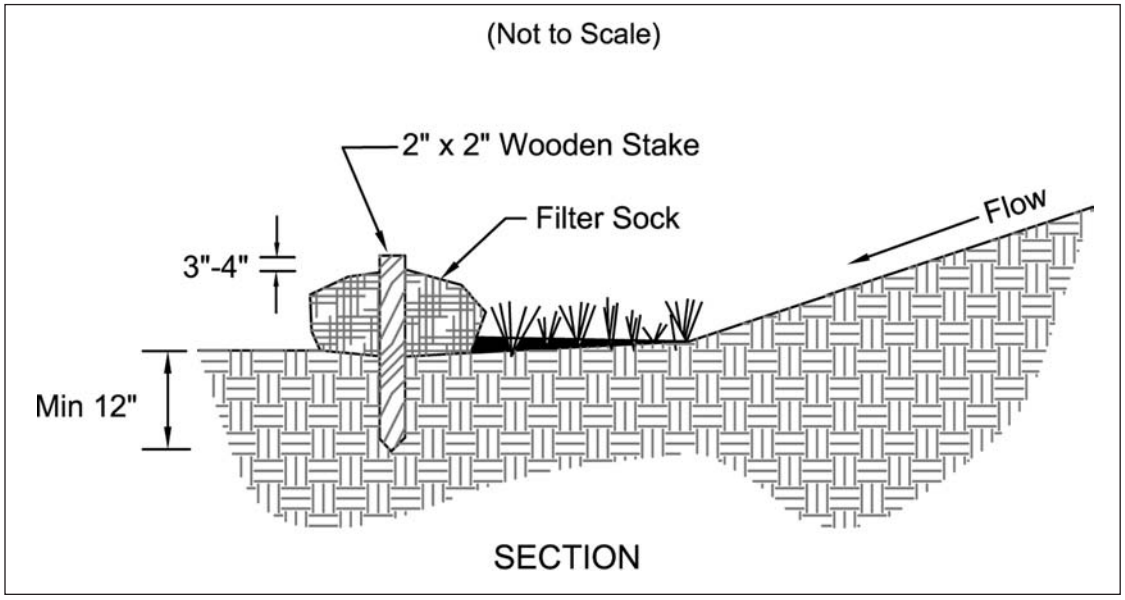
Removal – When construction is completed on site, the filter socks may be cut and dispersed with a loader, rake, bulldozer or other device to be incorporated into the soil or left on top of the soil for final seeding. The mesh netting material will be disposed of in normal trash container or removed by the contractor.

References

Standard Specification for Compost for Erosion/Sediment Control (Filter Berms) AASHTO Designation: MP-9 http://www.iaasla.org/NEWS/FILES/AASHTO-Filterberm6.doc

Specifications
for

Filter Sock



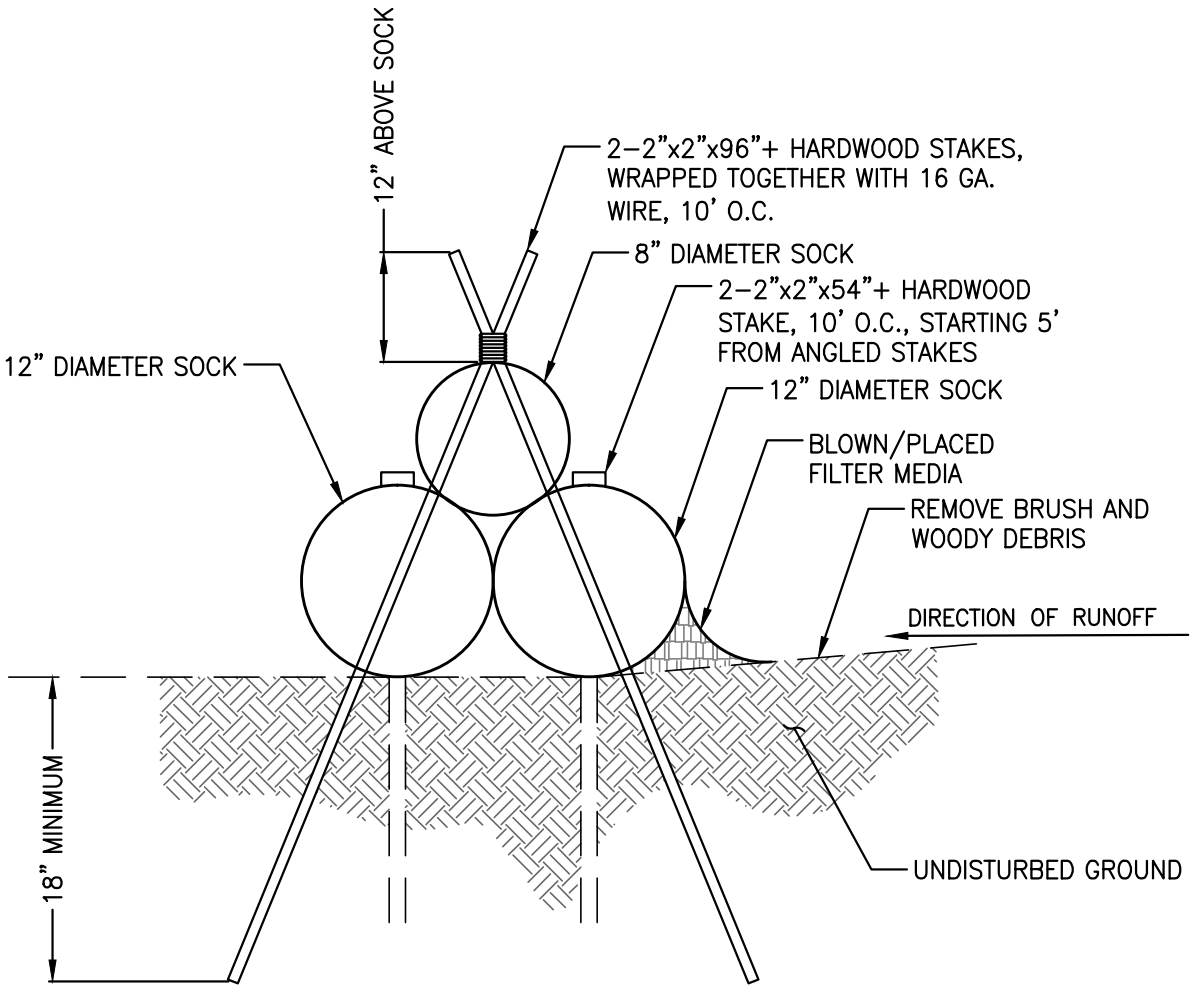
1. Materials – Compost used for filter socks shall be weed, pathogen and insect free and free of any refuse, contaminants or other materials toxic to plant growth. They shall be derived from a well-decomposed source of organic matter and consist of a particles ranging from 3/8" to 2".
2. Filter Socks shall be 3 or 5 mil continuous, tubular, HDPE 3/8" knitted mesh netting material, filled with compost passing the above specifications for compost products.

INSTALLATION:

3. Filter socks will be placed on a level line across slopes, generally parallel to the base of the slope or other affected area. On slopes approaching 2:1, additional socks shall be provided at the top and as needed mid-slope.
4. Filter socks intended to be left as a permanent filter or part of the natural landscape, shall be seeded at the time of installation for establishment of permanent vegetation.
5. Filter Socks are not to be used in concentrated flow situations or in runoff channels.

MAINTENANCE:

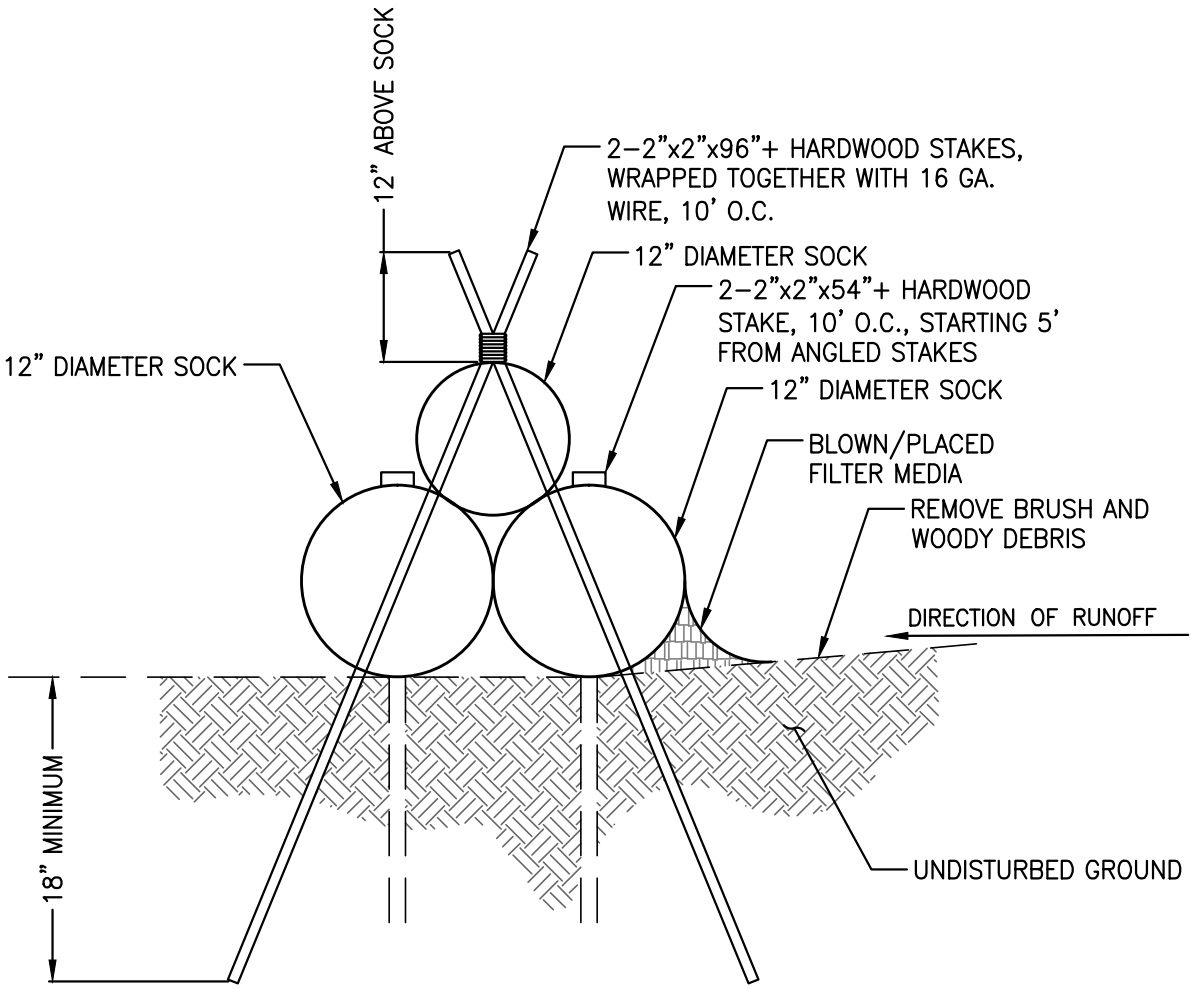
6. Routinely inspect filter socks after each significant rain, maintaining filter socks in a functional condition at all times.
7. Remove sediments collected at the base of the filter socks when they reach 1/3 of the exposed height of the practice.
8. Where the filter sock deteriorates or fails, it will be repaired or replaced with a more effective alternative.
9. Removal – Filter socks will be dispersed on site when no longer required in such as way as to facilitate and not obstruct seedings.



18" EQUIVALENT TRIPLE STACKED FILTER SOCK DETAIL

N.T.S.

(AS NEEDED)



24" EQUIVALENT TRIPLE STACKED FILTER SOCK DETAIL

N.T.S.

(AS NEEDED)

6.4 Storm Drain Inlet Protection (AS NEEDED)

Description

Storm drain inlet protection devices remove sediment from storm water before it enters storm sewers and downstream areas. Inlet protection devices are sediment barriers that may be constructed of washed gravel or crushed stone, geotextile fabrics and other materials that are supported around or across storm drain inlets.

Inlet protection is installed to capture some sediment and reduce the maintenance of storm sewers and other underground piping systems prior to the site being stabilized. Due to their poorer effectiveness, inlet protection is considered a secondary sediment control to be used in conjunction with other more effective controls.

Condition Where Practice Applies

Storm drain inlet protection is applicable anywhere construction site runoff may enter closed conveyance systems through storm sewer inlets. Generally inlet protection is limited to areas draining less than 1 acre.

This practice is generally not recommended as a primary means of sediment control. Storm drain inlet protection has limited capacity to control silts and clays, and is most effective in capturing larger sand-sized particles. It should only be a primary means if it is not possible to divert the storm drainage to a sediment trap or sediment basin, or if it is to be used only for a short period of time during the construction process.

Planning Considerations

Inlet protection in effect blocks storm drain inlets. Therefore consider the effect of ponding muddy water on streets and nearby areas and plan accordingly. Although ponding is beneficial in the sediment removal process, this may pose hazardous conditions for street travel. Additional ponding capacity with related increase in effectiveness can be provided for some drop inlets by excavating around the inlet.

Utilizing inlet protection on long sloping streets may cause runoff to bypass inlets on the slope and cause extra water to accumulate in low areas. In order for the inlet protection to work ponding must be maintained at the practice.

The recommended geotextiles are suitable for retaining/trapping large particle size materials, such as sand while maintaining some flow. Only specialized geotextile materials are suitable for retaining clay, silt and other fine soils. These materials, however, are subject to clogging.

Apply storm drain inlet protection as soon as the surface inlet is capable of receiving storm water. Geotextiles utilized in inlet protection are manufactured to control the rate of storm water flow, to retain certain sizes of soil particles. The controlled flow and ponding assists in sediment deposition. Geotextile fabrics come in a variety of materials with permeability, strength and durability ratings. In all cases, follow the manufacturer's recommendations for the specific product application, as well as installation and maintenance requirements.

All inlet protection practices require frequent maintenance and cleaning to maintain sufficient flow rates and to prevent accumulation of mud on streets and other areas.

The following types of storm drain inlet protection are listed according to type of flows and situations where they will perform best. Note that straw bales are not suitable as storm drain inlet protection, since they are often cease to allow flow through once saturated and often leak where bales join. Different types of storm drain inlet protection available are as follows:

A. Excavated Drop Inlet Sediment Trap. Where the storm sewer can be left below the final grade, a depression in the ground adjacent to the inlet can be an effective way of reducing sediment going to the storm sewer. Runoff is directed to the depression and a sediment barrier is maintained between the depression and the storm sewer.

B. Geotextile Inlet Protection. This method consists of placing filter fence around the perimeter of the drop inlet and backfilling. Apply this method where the inlet drains overload flow or sheet flow from gentle slopes and sheet or overland flow.

C. Geotextile-Stone Protection. These are used both on drop inlets and in street curbs and gutters where the ponding of water will not cause damage or inconvience. This filter is simply constructed of geotextile materials over the inlet, with stone on top. Note: this practices does not have an opening for overflow and should not be placed where clogging and subsequent flooding would cause safety concerns or property damage.

D. Geotextile-Stone Curb Inlet Protection. This method is used only on curb and gutter inlets and utilizes wire mesh, geotextile and stone over a wood frame. This practice should be used to prevent larger volumes of water from ponding in the street. If the overflow provided is insufficient, it may be modified according to this specification to accommodate greater flows.

E. Block and Gravel Drop Inlet Protection. This practice utilizes a wall of cement blocks overlain with wire mesh and gravel around the perimeter to slow runoff before entering a storm drain. It is not recommended anywhere vehicle traffic will be operating.

F. Manufactured Inlet Protection Devices. Any manufactured products utilized for inlet protection must be constructed of materials equally durable and effective as those provided in this practice. They must be able to be secured such that construction site runoff is intercepted, ponded and filtered prior to entering the storm drain except during extreme flows. Devices must allow the removal of captured material without falling into the catch basin.

Maintenance

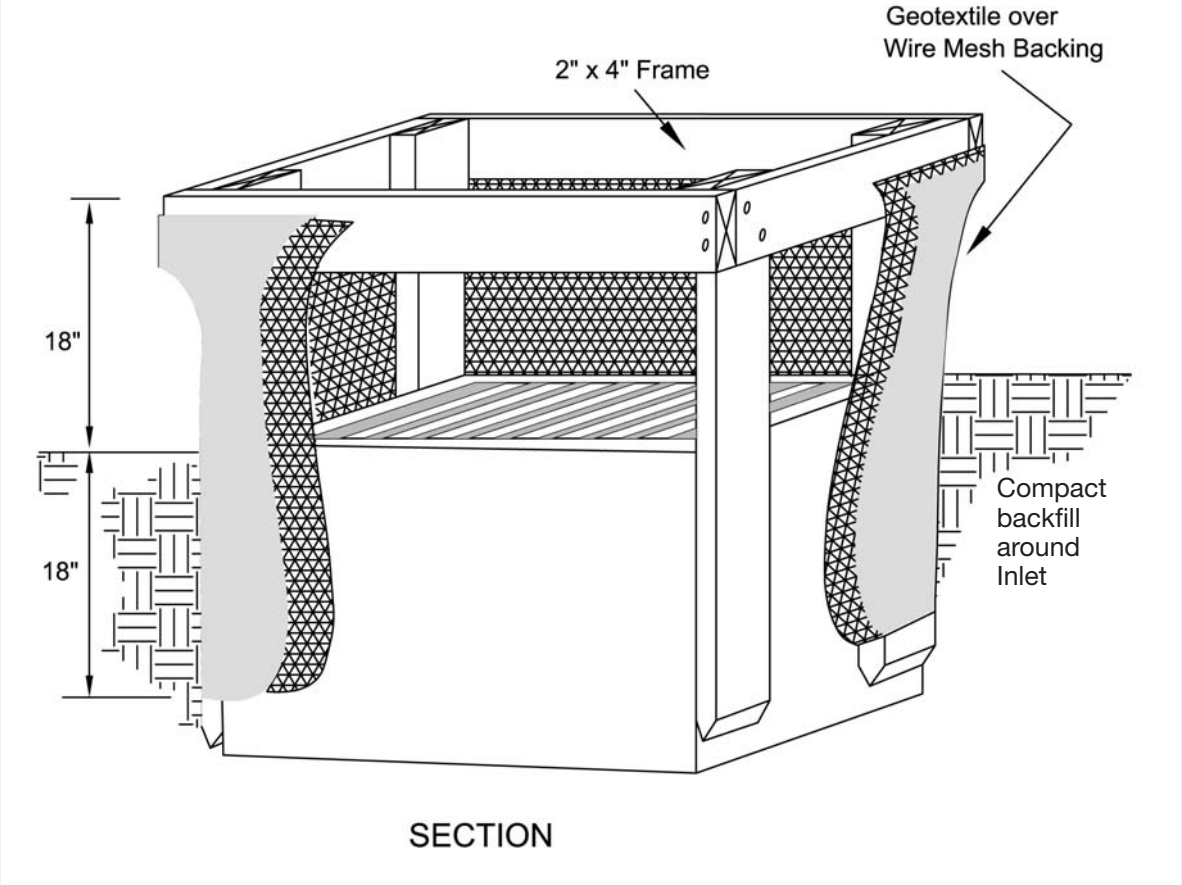
Effective storm drain inlet protection collects sediment and therefore must be cleaned regularly to prevent clogging and subsequent flooding conditions, piping, or overtopping of the control structures. Sediment barriers that sag, fall over, or are not properly secured, must be promptly repaired or replaced.

Inlet protection shall be inspected weekly and after each rainfall event. Areas where there is active traffic shall be inspected daily. Repairs shall be made as needed to assure the practice is performing as intended. Sediment shall be removed when accumulation is one-half the height of the trap. Sediment shall not be washed into the inlet. Sediment shall be removed and placed in a location where it is stable and not subject to erosion.

Once the contributing drainage area has been properly stabilized, all filter material and collected sediment shall be removed and properly disposed.

Specifications
for

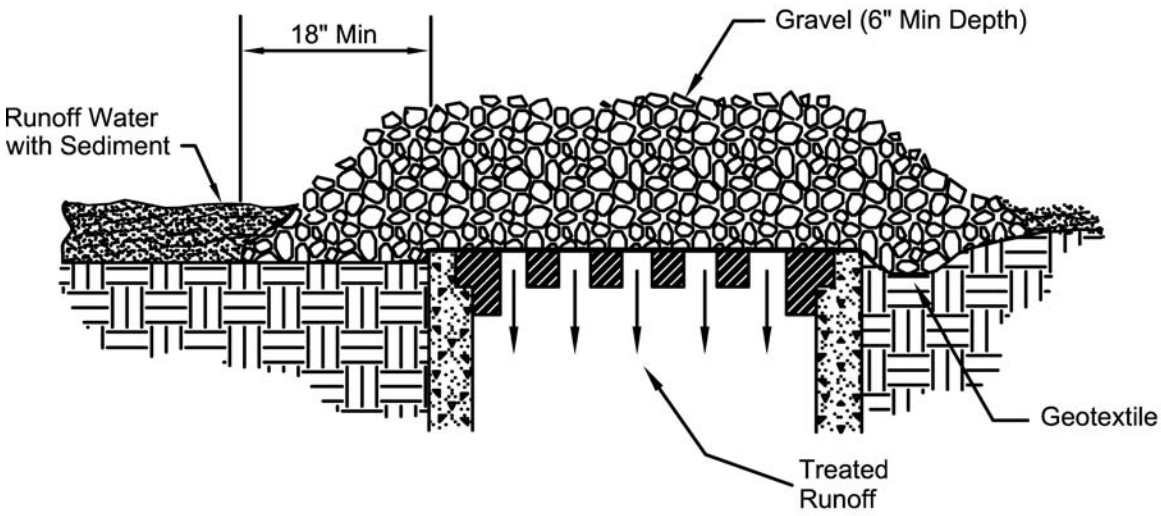
Geotextile Inlet Protection (AS NEEDED)



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. The earth around the inlet shall be excavated completely to a depth at least 18 inches.
3. The wooden frame shall be constructed of 2-inch by 4-inch construction grade lumber. The 2-inch by 4-inch posts shall be driven one (1) ft. into the ground at four corners of the inlet and the top portion of 2-inch by 4-inch frame assembled using the overlap joint shown. The top of the frame shall be at least 6 inches below adjacent roads if ponded water will pose a safety hazard to traffic.
4. Wire mesh shall be of sufficient strength to support fabric with water fully impounded against it. It shall be stretched tightly around the frame and fastened securely to the frame.
5. Geotextile material shall have an equivalent opening size of 20-40 sieve and be resistant to sunlight. It shall be stretched tightly around the frame and fastened securely. It shall extend from the top of the frame to 18 inches below the inlet notch elevation. The geotextile shall overlap across one side of the inlet so the ends of the cloth are not fastened to the same post.
6. Backfill shall be placed around the inlet in compacted 6-inch layers until the earth is even with notch elevation on ends and top elevation on sides.
7. A compacted earth dike or check dam shall be constructed in the ditch line below the inlet if the inlet is not in a depression. The top of the dike shall be at least 6 inches higher than the top of the frame.

Specifications
for

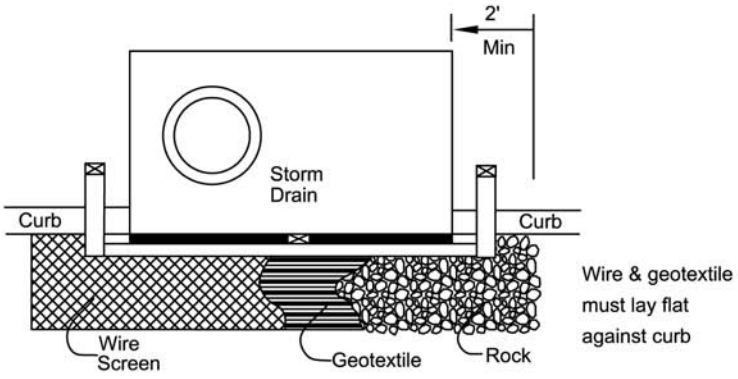
Geotextile-Stone Inlet Protection (AS NEEDED)



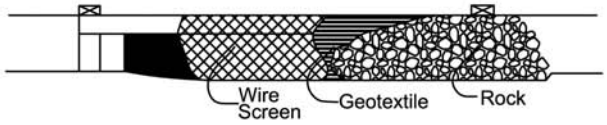
1. Inlet protecion shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. Geotextile and/or wire material shall be placed over the top of the storm sewer and approximately six (6) inches of 2-inch or smaller clean aggregate placed on top. Extra support for geotextile is provided by placing hardware cloth or wire mesh across the inlet cover. The wire should be no larger than ½" mesh and should extend an extra 12 inches across the top and sides of the inlet cover.
3. Maintenance must be performed regularly, especially after storm events. When clogging of the stone or geotextile occurs, the material must be removed and replaced.

Specifications
for

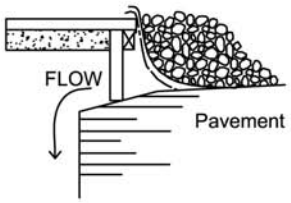
Geotextile - Stone Inlet Protection for Curb Inlets (AS NEEDED)



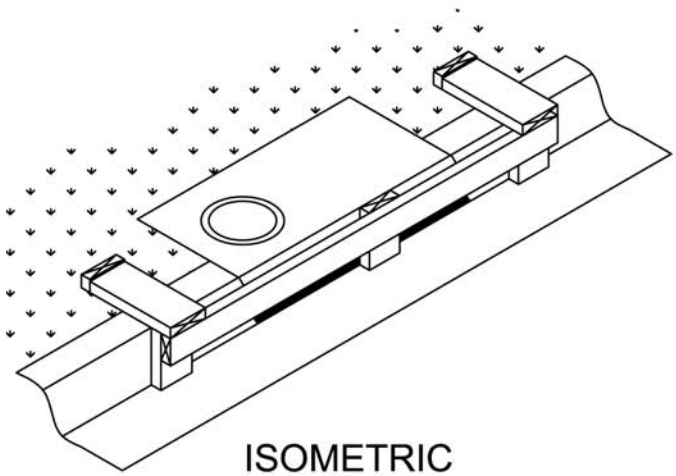
PLAN VIEW



ELEVATION



CROSS SECTION



ISOMETRIC

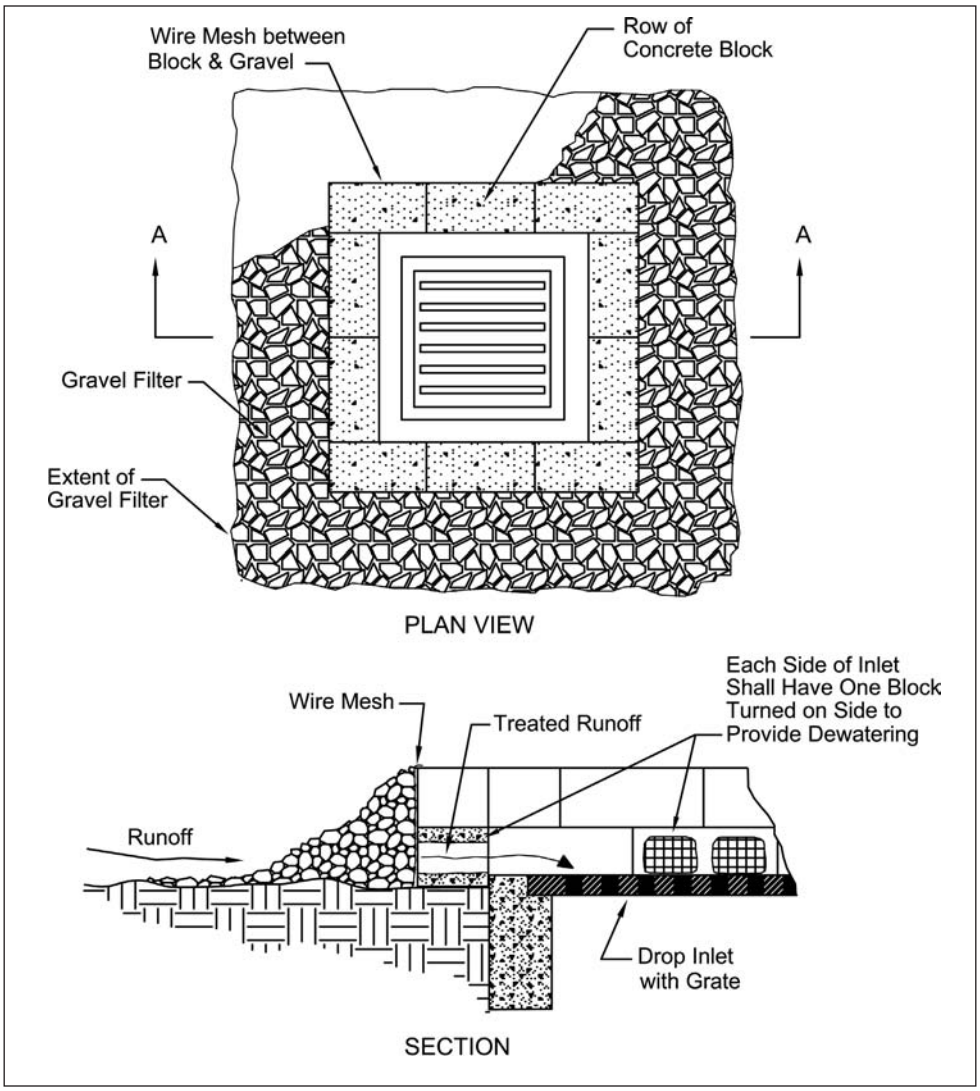
Specifications
for

Geotextile - Stone Inlet Protection for Curb Inlets (AS NEEDED)

1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. Construct a wooden frame of 2-by-4-in. construction-grade lumber. The end spacers shall be a minimum of 1 ft. beyond both ends of the throat opening. The anchors shall be nailed to 2-by-4-in. stakes driven on the opposite side of the curb.
3. The wire mesh shall be of sufficient strength to support fabric and stone. It shall be a continuous piece with a minimum width of 30 in. and 4 ft. longer than the throat length of the inlet, 2 ft. on each side.
4. Geotextile cloth shall have an equivalent opening size (EOS) of 20-40 sieve and be resistant to sunlight. It shall be at least the same size as the wire mesh.
5. The wire mesh and geotextile cloth shall be formed to the concrete gutter and against the face of the curb on both sides of the inlet and securely fastened to the 2-by-4-in. frame.
6. Two-inch stone shall be placed over the wire mesh and geotextile in such a manner as to prevent water from entering the inlet under or around the geotextile cloth.
7. This type of protection must be inspected frequently and the stone and/or geotextile replaced when clogged with sediment.

Specifications
for

Block and Gravel Drop Inlet Filter (AS NEEDED)



1. Place 4-inch by 8-inch by 12-inch concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending upon the design needs, by stacking combinations of the same size blocks. The barrier of blocks should be at least 12-inches high but no greater than 24-inches high.
2. Wire mesh should be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the block cores. Hardware cloth or comparable wire mesh with ½-inch openings should be used.
3. Two-inch stone should be piled against the wire to the top of the block barrier, as shown below.
4. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, pull stone away from the blocks, clean and/or replace.

5.7 Dewatering Measures (AS NEEDED)

Description

Dewatering measures provide a stable area for receiving and treating water pumped from excavation or work areas prior to being released off the site. These practices reduce sediment impacts to downstream water resources.

Conditions Where Practice Applies

De-watering measures are used whenever water, either surface or subsurface, prevents or hinders construction activities and has the potential of contributing sediment to streams. This practice is appropriate for any kind of pumping used in conjunction with construction activities.

Planning Considerations

Construction activities often require that water be pumped from an area to facilitate work. This water often has large amounts of suspended sediments. Rather than discharge this water directly to a stream, a means to settle or remove sediment must be provided.

A dewatering plan should be prepared utilizing ground water conditions and soils information to predict areas where de-watering will likely occur. Plans should include the length of time de-watering will occur, the method of de-watering (pumping, siphon...), the discharge point(s), methods to control sediment impacts and the contents of a written log to be kept on-site. These plans may need to be approved by local authorities prior to construction.

All dewatering discharges with suspended solids should pass through a practice to remove sediments While a vegetated filter areas may be sufficient for some situations (e.g. short duration low pumping rates) many will need additional measures, such as sediment traps,

filter bag or flocculation. All structures must have adequate outlet protection to prevent gully erosion. Please note that the Ohio Environmental Protection Agency will find turbid discharges to the stream resulting from any dewatering activity a violation of Ohio Revised Code 6111.04 independent of the methods employed. Therefore even if one method is selected, additional measures may be required to fully treat turbid water.

The particle size distribution, that is the relative proportion of sands, silts and clays, of a soil that is suspended will determine the difficulty of removing sediments. Soils with coarser particle size distributions (large proportion of sand) will be easier to settle out with filter strips and settling ponds. Finer particle size distributions (predominantly silt and clays) will be increasingly difficult and may need a series of measures.

Ground Water Lowering: Often dewatering wells are established to lower the ground water table for utility installation or construction. Generally, this water is free from suspended solids and may be discharged to waters of the state provided the water is not contaminated.

Measures should be taken to ensure the discharge from the de-watering wells does not flow over disturbed areas and suspend sediments, resulting in contaminated discharge. Waterways established to transport dewatering flow should be protected from erosion from the point of discharge all the way to waters of the state. Extending hoses to waters of the state will ensure the discharge remains free from suspended solids. This practice is recommended for discharges of short duration.

Water pumped from wells is about 55^{o} F, which may cause thermal impacts in some situations. High pumping rates near small streams in summer will have major changes in stream metabolism, i.e., throw off spawning. Where this potential occurs, groundwater should not be discharged directly to the stream but roughed through settling ponds or other shallow holding ponds.

The Ohio Department of Natural Resources, Division of Water requires a Water Withdraw Registration for the de-watering activities in the event the facility has the capacity of pumping in excess of 100, 000 gallons per day. This registration must be submitted to ODNR within 90 days following the completion of the project. A water withdraw registration can be obtained by contacting ODNR, Division of Water at 614-265-6735. Assistance regarding proper well installation and abandonment is also available.

Design Criteria

Vegetated Filter Areas: Densely vegetated areas may offer sufficient conditions to treat short duration discharges provided that: flow is not channelized directly to a water resource and the area encourages infiltration, slow overland flow and settling. A minimum of 100 feet is required to utilize a vegetated area. Dense grass or areas with natural depressions will provide the best conditions. Critical areas like wetlands (e.g. vernal pools) or areas with sensitive vegetation that will be damaged (smothering) by sedimentation should not be used.

Sediment trap or basin: In most cases, contaminated discharge should be directed to a sediment trap where the suspended solids can settle/filter out prior to the discharge to waters of the state. Sediment traps should have sufficient storage to receive all the discharged water from pumping and detain this water a minimum of 24 hours. The sediment storage volume is directly related to the pumping capacity and the amount of turbidity. The sediment pond should be designed to optimize the amount of travel time through the impoundment.

The sediment pond should not be more than 4 feet deep with the distance between the intake and outlet maximized to the extent practical.

Pump intakes should withdraw water from the surface of the trench or work area in order not to re-suspend or continually mix water. Continually drawing water from the floor of the area will draw the muddiest water and increase the amount of sediment that must be removed.

Geotextile Filter Bags are a increasingly common way to remove sediment from dewatering discharge. Commonly discharge is pumped into a filter bag chosen for the predominant sediment size. Filter bags are manufactured products made typically from woven monofilament polypropylene textile (coarse materials, e.g. sands) or non-woven geotextile (silts/clays). They are single use products that must be replaced when they become clogged or half full of sediment.

While they may be useful, they are generally high flow products, which have limited ability to treat fine-grained sediments. Gravity drained filter bags should apply the following:

- They should place outside of a vegetated filter area and not in close proximity to the stream or water resource.
- They must sit on a relatively flat grade so that water leaving the bag does cause additional erosion. Placing the bag on a flat bed of aggregate will maximize the flow and useful surface area of the bag.
- They should be used in conjunction with a large vegetative buffer or a secondary pond or barrier

Enhanced Treatment Through Multiple Practices. The need for further reduction in turbidity will likely require more than one treatment measure. The following are devices or measures that when used in sequence with others will reduce turbidity.

Filter bags (gravity flow) are highly variable depending on the pore size and flow rate. Typically filter bags are limited to removing large particles (small sands and large silts).

Sediment traps, weir tanks, filter boxes are effective for the removal of large particles such as sand. Their effective increases as detention times increase.

Sand Media Filters effective for removal of smaller particles such as sand and large silts. These often have the ability to backflush and thus maintain effectiveness and flow rate.

Some commercially available additives are available for further decreasing turbidity. Chitosan and chitin based additives have been shown to significantly increase the effectiveness of filtration and settling. Chitosan (Poly-D-glucosamine) is a low-toxicity product extracted from Chitin (Poly-N-acetyl-D-glucosamine), a by-product of the shellfish industry. Other products such as anionic polyacrylamide (anionic PAM) are commercially available to increase settling. Often these are utilized through wet or dry dosing mechanisms or as water runs over a gel block upstream of a settling or filtration practice. Each product should be utilized within the manufacturers specifications and tailored to the soil and site conditions.

Particulate filter units utilizing cartridges or enclosed filter bags can remove smaller particles depending on the filter size. This type of measure is usually necessary to treat clays. Filters may be need to be changed daily or more frequently.

An example of an enhanced treatment might include: dewatering a trench with a trash pump to a settling tank or pit then pumping from the settling practice to a sand media filter or to a particulate filter.

Common Problems/Concerns

Complete settling of solids within the Sediment Basin does not occur prior to discharge. The length to width ratio of the pond must be increased to lengthen travel time through the structure. In addition, flocculent may be necessary to promote settlement.

Water discharged from subsurface/ground water pumping maybe significantly lower in temperature than that of the receiving stream. The water will need pre-conditioned in order to minimize the biological affects on the stream.

References

Virginia Department of Conservation and Recreation, 2002. *Erosion & Sediment Control Technical Bulletin #2: Application of Anionic Polyacrylimide for soil stabilization and stormwater management*. http://www.dcr.state.va.us/sw/docs/anoinic.pdf

Specifications
for

De-Watering

1. A de-watering plan shall be developed prior to the commencement of any pumping activities.
2. The de-watering plan shall include all pumps and related equipment necessary for the dewatering activities and designate areas for placement of practices. Outlets for practices shall be protected from scour either by riprap protection, fabric liner, or other acceptable method of outlet protection.
3. Water that is not discharged into a settling/treatment basin but directly into waters of the state shall be monitored hourly. Discharged water shall be within +/- 5° F of the receiving waters.
4. Settling basins shall not be greater than four (4) feet in depth. The basin shall be constructed for sediment storage as outlined in Chapter 6, SEDIMENT BASIN OR SEDIMENT TRAP. The inlet and outlet for the basin shall be located at the furthest points of the storage. A floating outlet shall be used to ensure that settled solids do not re-suspend during the discharge process. The settling basin shall be cleaned out when the storage has been reduced by 50% of its original capacity.
5. All necessary National, State and Local permits shall be secured prior to discharging into waters of the state

7.5 Dust Control (AS NEEDED)

Description

Dust control involves preventing or reducing dust from exposed soils or other sources during land disturbing, demolition and construction activities to reduce the presence of airborne substances which may present health hazards, traffic safety problems or harm animal or plant life.

Conditions Where Practice Applies

In areas subject to surface and air movement of dust where on-site and off-site damage is likely to occur if preventive measures are not taken.

Planning Considerations

Construction activities inevitably result in the exposure and disturbance of soil. Fugitive dust results from both construction activities and as a result of wind erosion over the exposed earth surfaces. Large quantities of dust are typically generated in heavy construction activities, such as road construction and subdivision, commercial or industrial development, which involve disturbing significant areas of the soil surface. Research of construction sites has established an average dust emission rate of 1.2 tons/acre/month for active construction. Earth-moving activities comprise the major source of construction dust emissions, but traffic and general disturbance of the soil also generate significant dust emissions.

Planning for dust control involves limiting the amount of soil disturbance at any one time as a key objective. Therefore, phased clearing and grading operations (minimize disturbance-phasing) and the utilization of other stabilization practices can significantly reduce dust emissions. Undisturbed vegetative buffers (minimum 50-foot widths) left between graded areas and protected areas can also be very helpful in dust control by providing windbreaks and non-erosive areas.

Design Criteria

A number of measures can be utilized to limit dust either during or between construction stages or once construction is complete. Generally the same methods that are used to limit erosion by limiting exposure of soils to rainfall can be used to limit dust including: stabilizing exposed soils with mulch, vegetation or permanent cover. Additional methods particular to dust control include managing vehicles and construction traffic, road treatment and treatment of exposed soil with chemical stabilizers.

Vegetative Cover – The most effective way to prevent dust from exposed soil is to provide a dense cover of vegetation. In areas subject to little or no construction traffic, vegetative stabilization reduces dust drastically. Timely temporary and permanent seedings must be utilized to accomplish this. See TEMPORARY SEEDING & PERMANENT SEEDING.

Mulch - When properly applied, mulch offers a fast, effective means of controlling dust. Mulching is not recommended for areas within heavy traffic pathways. Binders or tackifiers should be used to tack organic mulches. See MULCHING.

Rough Graded Soils – Leaving the soil in a temporary state of rough grade, where clods rather than flattened soils predominate the surface can reduce the amount of dust generated from areas during periods of higher winds. This must be balanced by the need to reach a stage where the soil can be stabilized and may be only be necessary when high winds are predicted.

Watering - This is the most commonly used dust control practice. The site is sprinkled with water until the surface is wet before and during grading and is repeated as needed. It offers fast protection for haul roads and other heavy traffic routes. Watering should be done at a rate that prevents dust but does not cause soil erosion. Wetting agents are also available to increase the effectiveness of watering and must follow manufacturers instructions.

Chemical Stabilizers/Wetting Agents – Many products of this type are available and are usually most effective on typical mineral soils but may not be on predominantly organic soils such as muck. Users are advised to pay attention to the limitations and instructions regarding each product. The following table lists various adhesives and provides corresponding information on mixing and application:

Table 7.5.1 Adhesives for Dust Control

Adhesive	Water Dilution (Adhesive: Water)	Nozzle Type	Application Rate Gallon/Acre
Latex Emulsion	12.5:1	Fine	235
Resin in Water	4:1	Fine	300
Acrylic Emulsion (No-traffic)	7:1	Coarse	450
Acrylic Emulsion (Traffic)	3.5:1	Coarse	350

Stone - Stone can be used to stabilize roads or other areas during construction using crushed stone or coarse gravel. Research has shown the addition of bentonite to limestone roads (not igneous gravel) has shown benefits in reducing dust.

Windbreaks and Barriers – Where dust is a known problem, existing windbreak vegetation should be preserved. Maintaining existing rows of trees or constructing a wind fence, sediment fence, or similar barrier can help to control air currents and blowing soil. Place barriers perpendicular to prevailing air currents at intervals of about 15 times the barrier height.

Calcium Chloride - This chemical may be applied by mechanical spreader as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage. Liquid application of a 35% calcium chloride solution is common. Note: application rates should be strictly in accordance with suppliers' specified rates.

Street Cleaning - Paved areas that have accumulated sediment from construction sites should be cleaned daily, or as needed, utilizing a street sweeper or bucket -type loader or scraper.

Operation and Maintenance

Most dust control measures, such as applications of water or road treatments will require monitoring and repeat applications as needed to accomplish good control.

Common Problems / Concerns

Vegetation is removed from large areas of the construction site and left barren for long periods of time.

Continuous, scheduled monitoring of the construction site conditions is not made.

Specifications
for

Dust Control

1. Vegetative Cover and/mulch – Apply temporary or permanent seeding and mulch to areas that will remain idle for over 21 days. Saving existing trees and large shrubs will also reduce soil and air movement across disturbed areas. See Temporary Seeding; Permanent Seeding; Mulching Practices; and Tree and Natural Area Protection practices.
2. Watering – Spray site with water until the surface is wet before and during grading and repeat as needed, especially on haul roads and other heavy traffic routes. Watering shall be done at a rate that prevents dust but does not cause soil erosion. Wetting agents shall be utilized according to manufacturers instructions.
3. Spray-On Adhesives – Apply adhesive according to the following table or manufacturers' instructions.

Table 7.5.1 Adhesives for Dust Control

Adhesive	Water Dilution (Adhesive: Water)	Nozzle Type	Application Rate Gal./Ac.
Latex Emulsion	12.5:1	Fine	235
Resin in Water Acrylic Emulsion (No-traffic)	4:1	Fine	300
Acrylic Emulsion (No-traffic)	7:1	Coarse	450
Acrylic Emulsion (Traffic)	3.5:1	Coarse	350

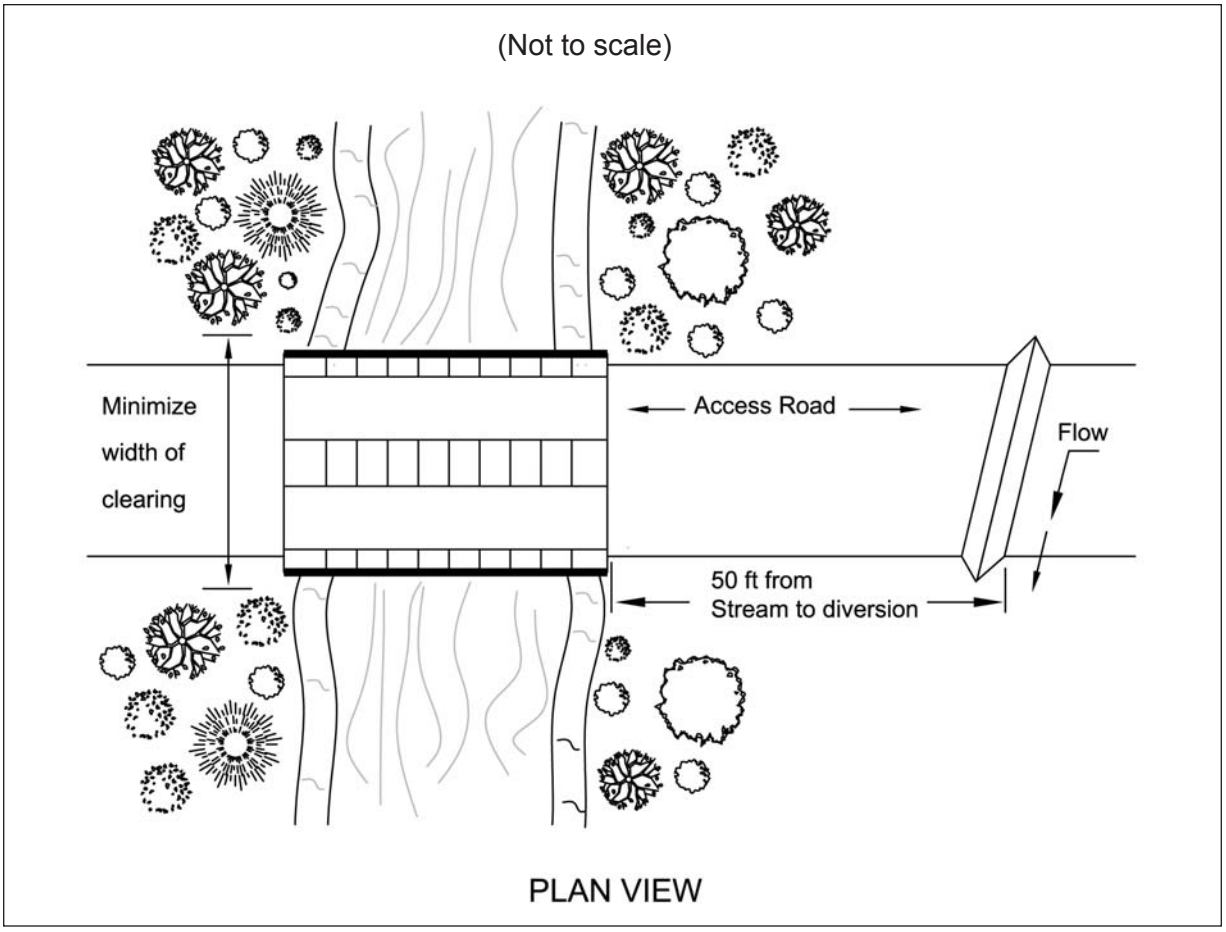
4. Stone – Graded roadways and other suitable areas will be stabilized using crushed stone or coarse gravel as soon as practicable after reaching an interim or final grade. Crushed stone or coarse gravel can be used as a permanent cover to provide control of soil emissions.
5. Barriers – Existing windbreak vegetation shall be marked and preserved. Snow fencing or other suitable barrier may be placed perpendicular to prevailing air currents at intervals of about 15 times the barrier height to control air currents and blowing soil.
6. Calcium Chloride - This chemical may be applied by mechanical spreader as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage. Application rates should be strictly in accordance with suppliers' specified rates.
7. Operation and Maintenance - When Temporary Dust Control measures are used; repetitive treatment should be applied as needed to accomplish
control.

   Street Cleaning - Paved areas that have accumulated sediment from construction should be cleaned daily, or as needed, utilizing a street sweeper or bucket -type endloader or scraper.

Specifications
for

Temporary Access Bridge

This specification does not define the strength of the temporary bridge. It shall be the designer's responsibility to select bridge construction materials with adequate strength for the anticipated construction traffic loads.



1. Stream Disturbance -Disturbance to the stream shall be kept to a minimum. Streambank vegetation shall be preserved to the maximum extent practical and the stream crossing shall be as narrow as practical.
2. Clearing shall be done by cutting NOT grubbing. The roots and stumps shall be left in place to help stabilize the banks and accelerate revegetation.
3. Water shall be prevented from flowing along the road directly to the stream. Diversions and swales shall direct runoff away from the access road to a sediment-control practice.
4. Bridges shall be constructed to span the entire channel. If the channel width exceeds 8 ft. as measured from the top-of-bank, then a footing, pier or bridge support may be constructed within the waterway. No more than one additional footing, pier or bridge support shall be permitted for each additional 8-ft. width of the channel. However, no footing, pier or bridge support will be permitted within the channel for waterways less than 8 ft. wide.
5. Some steep watersheds subject to flash flood events may require that the bridge be cabled ore secured to prevent downstream damage or hazard.
6. No fill other than clean stone free from soil shall be placed within the stream channel.

7.12 Temporary Rolled Erosion Control Products (Erosion Control Matting)

Description

A Temporary Rolled Erosion Control Product (TRECP) is a degradable manufactured material used to stabilize easily eroded areas while vegetation becomes established. Temporary Rolled Erosion Control Products are degradable products composed of biologically, photo chemically or otherwise degradable materials. Temporary RECPs consist of erosion control netting, open weave textiles, and erosion control blankets and mattings. These products reduce soil erosion and assist vegetative growth by providing temporary cover from the erosive action of rainfall and runoff while providing soil-seed contact.

Condition where practice applies:

Temporary rolled erosion control products (matting or blankets) should be used on:

- Areas where erosion potential is high or a failure to establish vegetation is costly such as slopes greater than 3:1, constructed channels or stream banks
- Areas where establishing vegetation is difficult such as southern exposures or areas prone to drying
- Areas of concentrated flow, especially where flows exceeds 3.5 feet per second (e.g near culverts)
- Problem areas with highly erosive soils
- Areas where mulch is difficult to hold in place due to wind or water

Planning Considerations:

Temporary RECPs can be applied to critical or problem areas to enhance the erosion control as vegetation is being established. Although these materials add cost, they insure more immediate stability following construction reducing grading repairs and a faster greening of projects. Permanent non-degradable rolled erosion control products (turf reinforcement mats) are beyond the scope of this practice, but may be useful where design discharges or runoff exert velocities and shear stresses exceeding the ability of mature vegetation to withstand.

Temporary RECPs provide stable and rapid greening for areas conveying stormwater runoff. Care must be taken to choose the type of RECP, which is most appropriate for the specific needs of a project. Designers must take into account the vegetated and unvegetated velocities and sheer stresses in channel applications. With the abundance of soil stabilization products available, it is impossible to cover all the advantages, disadvantages and specifications of all manufactured RECPs. Therefore, as with many erosion control-type products, there is no substitute for a thorough understanding of the manufacturer's instructions and recommendations and a site visit by a product's designer or plan reviewer to verify appropriateness.

Temporary RECPs should be used to help establish vegetation on previously disturbed slopes - especially slopes of 3:1 or greater. The materials that compose the RECP will deteriorate over time. If used in permanent conveyance channels, designers should consider the system's resistance to erosion as it relates to the type of vegetation planted and the existing soil characteristics. As much as possible during establishment of vegetation, soil stabilization blankets should not be subjected to concentrated flows moving at greater than 3.5 feet/second.

Design Criteria

Choose a product that will provide the appropriate time period of protection. Allowable velocity range during vegetation establishment should be 3.5 feet per second or less.

Erosion Control Blankets - shall consist of photodegradable plastic netting or biodegradable natural fiber netting that covers and is entwined in a natural organic or man-made mulching material. The mulching material shall consist of wood fibers, wood excelsior, straw, coconut fiber, or man-made fibers, or a combination of the same. The blanket shall be of consistent thickness with the mulching material/fibers evenly distributed over its entire length. Mulching material/fibers must interlock or entwine to form a dense layer, which not only resists raindrop impact, but also will allow vegetation to penetrate the blanket. The mulching material degradation rate must be consistent with the designers desired slope protection time. Temporary Rolled Erosion Control Products (or erosion control blankets) shall meet the specifications that follow.

Table 7.12.1

Material	Maximum Length Of Protection
Straw	10-12 Months
Straw/Coconut	24 Months
Coconut	36 Months
Excelsior	36 Months

Erosion Control Netting - shall consist of a woven natural fiber or extruded geosynthetic mesh used as a component in the manufacture of RECPs, or separately as a temporary RECP to anchor loose fiber mulches.

Open Weave Textile - shall consist of processed natural or polymer yarns woven into a matrix, used to provide erosion control and facilitate vegetation establishment.

Maintenance:

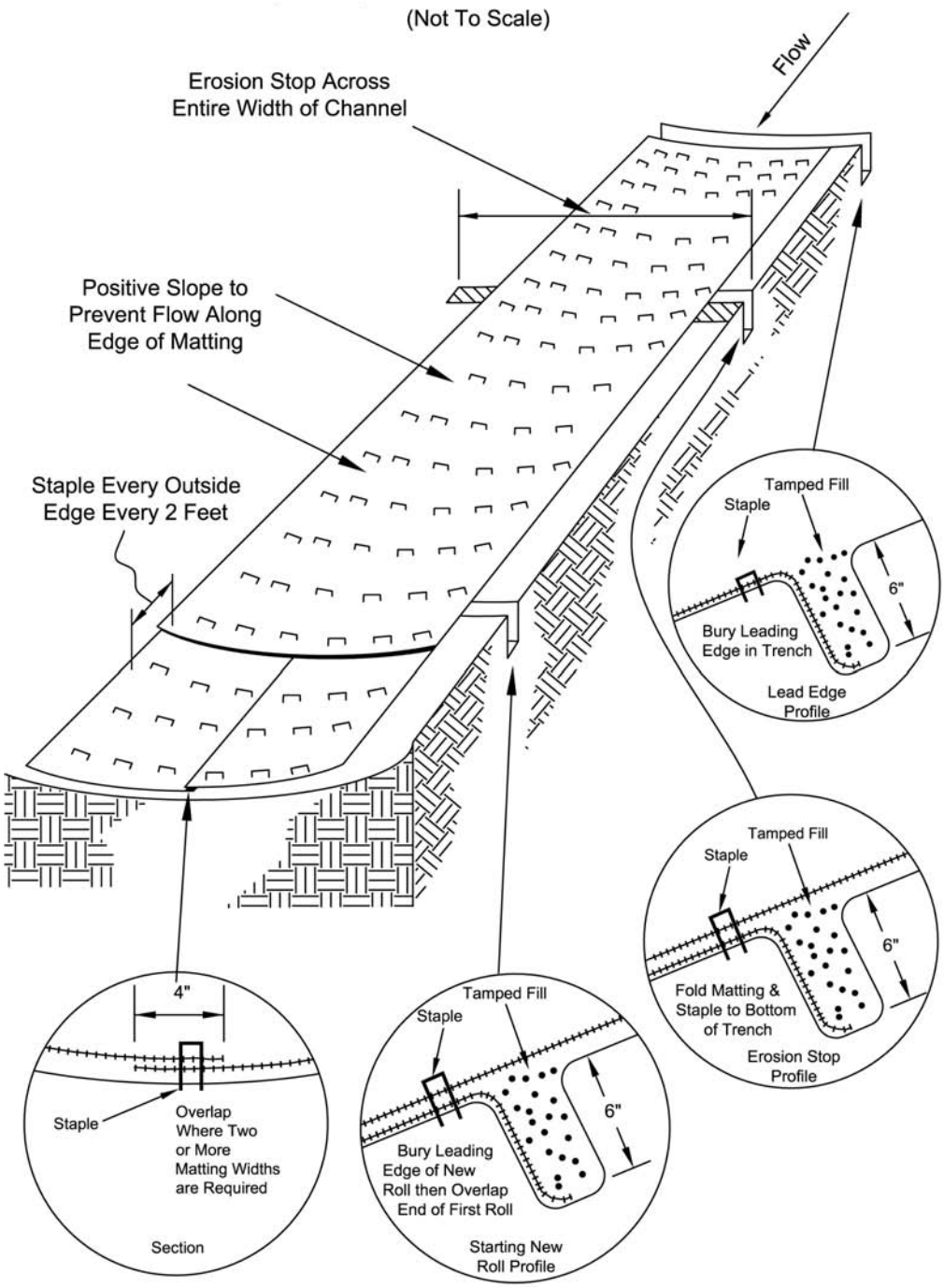
All RECPs should be inspected regularly after installation, especially after storms to check for erosion or undermining of the product. Make needed repairs immediately, addressing rills or gullies that have developed prior to replacing the RECP. In the case erosion repairs, assure that subsequent runoff across the area is dispersed or adequately spread.

Common Problems/Concerns:

- Manufacturer's selection and installation recommendations not followed. Results in failure of the RECP.
- Poor contact between soil and the RECP. Results in erosion below the RECP and lower seed germination rates, causing failure.
- Proper stapling guidelines not followed. Results in movement or displacement of RECP.
- Erosion check slots are not used. Results in erosion under the RECP, causing failure.
- Unstable slopes that result in RECP or slope failure. Determine cause of slope failure, correct, and reinstall RECP
- In channels, the width of RECP used is not sufficient, this causes water to flow along the sides of RECP causing erosion. Install RECP up side slopes of ditch line as well as the bottom.

Specifications
for

Temporary Rolled Erosion Control Product



Specifications
for

Temporary Rolled Erosion Control Product

1. Channel/Slope Soil Preparation Grade and compact area of installation, preparing seedbed by loosening 2”-3” of topsoil above final grade. Incorporate amendments such as lime and fertilizer into soil. Remove all rocks, clods, vegetation or other debris so that installed RECP will have direct contact with the soil surface.
2. Channel/Slope Seeding Apply seed to soil surface prior to installation. All check slots, anchor trenches, and other disturbed areas must be reseeded. Refer to the Permanent Seeding specification for seeding recommendations.

Slope Installation

3. Excavate top and bottom trenches (12”x6”). Intermittent erosion check slots (6”x6”) may be required based on slope length. Excavate top anchor trench 2’ x 3’ over crest of the slope.
4. If intermittent erosion check slots are required, install RECP in 6”x6” slot at a maximum of 30’ centers or the mid point of the slope. RECP should be stapled into trench on 12” centers.
5. Install RECP in top anchor trench, anchor on 12” spacings, backfill and compact soil.
6. Unroll RECP down slope with adjacent rolls overlapped a minimum of 3”. Anchor the seam every 18”. Lay the RECP loose to maintain direct soil contact, do not pull taught.
7. Overlap roll ends a minimum of 12” with upslope RECP on top for a shingle effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12”.
8. Install RECP in bottom anchor trench (12”x6”), anchor every 12”. Place all other staples throughout slope at 1 to 2.5 per square yard dependant on slope. Refer to manufacturer’s anchor guide.

Channel Installation

9. Excavate initial anchor trench (12”x6”) across the lower end of the project area.
10. Excavate intermittent check slots (6”x6”) across the channel at 30’ intervals along the channel.
11. Excavate longitudinal channel anchor slots (4”x4”) along both sides of the channel to bury the edges. Whenever possible extend the RECP 2’-3’ above the crest of channel side slopes.
12. Install RECP in initial anchor trench (downstream) anchor every 12”, backfill and compact soil.
13. Roll out RECP beginning in the center of the channel toward the intermittent check slot. Do not pull taught. Unroll adjacent rolls upstream with a 3” minimum overlap (anchor every 18”) and up each channel side slope.
14. At top of channel side slopes install RECP in the longitudinal anchor slots, anchor every 18”.
15. Install RECP in intermittent check slots. Lay into trench and secure with anchors every 12”, backfill with soil and compact.
16. Overlap roll ends a minimum of 12” with upstream RECP on top for a shingling effect. Begin all new rolls in an intermittent check slot, double anchored every 12”.
17. Install upstream end in a terminal anchor trench (12”x6”); anchor every 12”, backfill and compact.
18. Complete anchoring throughout channel at 2.5 per square yard using suitable ground anchoring devices (U shaped wire staples, metal geotextile pins, plastic stakes, and triangular wooden stakes). Anchors should be of sufficient length to resist pullout. Longer anchors may be required in loose sandy or gravelly soils.

Concrete Washout

Concrete washout *areas are designated locations within a construction site that are either a prefabricated unit or a designed measure that is constructed to contain concrete washout. Concrete washout systems are typically used to contain washout water when chutes and hoppers are rinsed following delivery.*

Purpose

Concrete washout systems are implemented to reduce the discharge of pollutants that are associated with concrete washout waste through consolidation of solids and retention of liquids. Uncured concrete and associated liquids are highly alkaline which may leach into the soil and contaminate ground water or discharge to a waterbody or wetland which can elevate the pH and be harmful to aquatic life. Performing concrete washout in designated areas and into specifically designed systems reduces the impact concrete washout will have on the environment.

Specifications

Site Management

- Complete construction/installation of the system and have washout locations operational prior to concrete delivery.
- Do not wash out concrete trucks or equipment into storm drains, wetlands, streams, rivers, creeks, ditches, or streets.
- Never wash out into a storm sewer drainage system. These systems are typically connected to a natural conveyance system.
- Where necessary, provide stable ingress and egress (see **Temporary Construction Ingress/Egress Pad** on page 17).
- It is recommended that washout systems be restricted to washing concrete from mixer and pump trucks and not used to dispose of excess concrete or

residual loads due to potential to exceed the design capacity of the washout system. Small amounts of excess or residual concrete (not washout water) may be disposed of in areas that will not result in flow to an area that is to be protected.

- Install systems at strategic locations that are convenient and in close proximity to work areas and in sufficient number to accommodate the demand for disposal.
- Install signage identifying the location of concrete washout systems.

Location

- Locate concrete washout systems at least 50 feet from any creeks, wetlands, ditches, karst features, or storm drains/manmade conveyance systems.
- To the extent practical, locate concrete washout systems in relatively flat areas that have established vegetative cover and do not receive runoff from adjacent land areas.
- Locate in areas that provide easy access for concrete trucks and other construction equipment.
- Locate away from other construction traffic to reduce the potential for damage to the system.

General Design Considerations

- The structure or system shall be designed to contain the anticipated washout water associated with construction activities.
- The system shall be designed, to the extent practical, to eliminate runoff from entering the washout system.
- Runoff from a rainstorm or snowmelt should not carry wastes away from the washout location.
- Washout will not impact future land uses (i.e., open spaces, landscaped areas, home sites, parks).
- Washout systems/containment measures may also be utilized on smaller individual building sites. The design and size of the system can be adjusted to accommodate the expected capacity.

Prefabricated Washout Systems/Containers

- Self-contained sturdy containment systems that are delivered to a site and located at strategic locations for concrete disposal.

- These systems are manufactured to resist damage from construction equipment and protect against leaks or spills.
- Manufacturer or supplier provides the containers. The project site manager maintains the system or the supplier provides complete service that includes maintenance and disposal.
- Units are often available with or without ramps. Units with ramps lend themselves to accommodate pump trucks.
- Maintain according to the manufacturer's recommendations.

Designed and Installed Units

These units are designed and installed on site. They tend to be less reliable than prefabricated systems and are often prone to failure. Concrete washout systems can be constructed above or below grade. It is not uncommon to have a system that is partly below grade with an additional containment structure above grade.

- Washout systems shall utilize a pit or bermed area designed and maintained at a capacity to contain all liquid and concrete waste generated by washout operations.
- The volume of the system must also be designed to contain runoff that drains to the system and rainfall that enters the system for a two-year frequency, 24-hour storm event.

■ Below Grade System

- ♦ A washout system installed below grade should be a minimum of ten feet wide by ten feet long, but sized to contain all liquid and waste that is expected to be generated between scheduled cleanout periods. The size of the pit may be limited by the size of polyethylene available. The polyethylene lining should be of adequate size to extend over the entire excavation.
- ♦ Include a minimum 12-inch freeboard to reasonably ensure that the structure will not overtop during a rain event.
- ♦ Line the pit with ten millimeter polyethylene lining to control seepage.
- ♦ The bottom of excavated pit should be above the seasonal high water table.

■ Above Grade System

- ♦ A system designed and built above grade should be a minimum of ten feet wide by ten feet long, but sized to contain all liquid and waste that is expected to be generated between scheduled cleanout periods. The size of the containment system may be limited by the size of

polyethylene available. The polyethylene lining should be of adequate size to extend over the berm or containment system.

- The system design may utilize an earthen berm, straw bales, sandbags, or other acceptable barriers that will maintain its shape and integrity and support the polyethylene lining.
- Include a minimum four-inch freeboard as part of the design.

Washout Procedures

- Do not leave excess mud in the chutes or hopper after the pour. Every effort should be made to empty the chutes and hopper at the pour. The less material left in the chutes and hopper, the quicker and easier the cleanout. Small amounts of excess concrete (not washout water) may be disposed of in areas that will not result in flow to an area that is to be protected.
- At the washout location, scrape as much material from the chutes as possible before washing them. Use non-water cleaning methods to minimize the chance for waste to flow off site.
- Remove as much mud as possible when washing out.
- Stop washing out in an area if you observe water running off the designated area or if the containment system is leaking or overflowing and ineffective.
- Do not back flush equipment at the project site. Back flushing should be restricted to the plant as it generates large volumes of waste that more than likely will exceed the capacity of most washout systems. If an emergency arises, back flush should only be performed with the permission of an on-site manager for the project.
- Do not use additives with wash water. Do not use solvents or acids that may be used at the target plant.

Materials

- Minimum of ten millimeter polyethylene sheeting that is free of holes, tears, and other defects. The sheeting selected should be of an appropriate size to fit the washout system without seams or overlap of the lining **(designed and installed systems)**.
- Signage.
- Orange safety fencing or equivalent.
- Straw bales, sandbags (bags should be ultraviolet-stabilized geotextile fabric), soil material, or other appropriate materials that can be used to construct a containment system **(above grade systems)**.

- Metal pins or staples at a minimum of six inches in length, sandbags, or alternative fastener to secure polyethylene lining to the containment system.
- Non-collapsing and non-water holding cover for use during rain events (optional).

Installation

Prefabricated Washout Systems/Containers

- Install and locate according to the manufacturer's recommendations.

Designed and Installed Systems

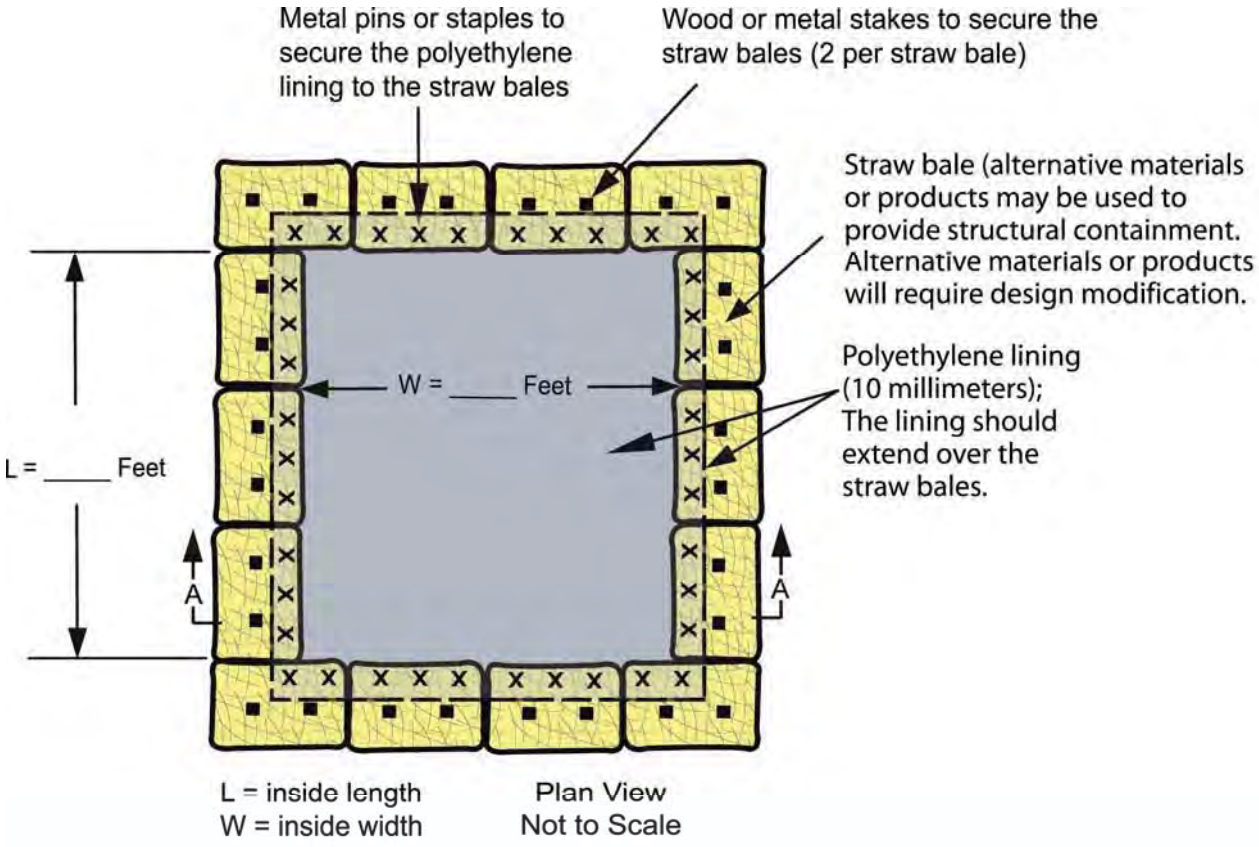
- Utilize and follow the design in the storm water pollution prevention plan to install the system.
- Dependent upon the type of system, either excavate the pit or install the containment system.
- A base shall be constructed and prepared that is free of rocks and other debris that may cause tears or punctures in the polyethylene lining.
- Install the polyethylene lining. For excavated systems, the lining should extend over the entire excavation. The lining for bermed systems should be installed over the pooling area with enough material to extend the lining over the berm or containment system. The lining should be secured with pins, staples, or other fasteners.
- Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.
- Place a non-collapsing, non-water holding cover over the washout facility prior to a predicted rainfall event to prevent accumulation of water and possible overflow of the system (optional).
- Install signage that identifies concrete washout areas.
- Post signs directing contractors and suppliers to designated locations.
- Where necessary, provide stable ingress and egress (see **Temporary Construction Ingress/Egress Pad** on page 17) or alternative approach pad for concrete washout systems.

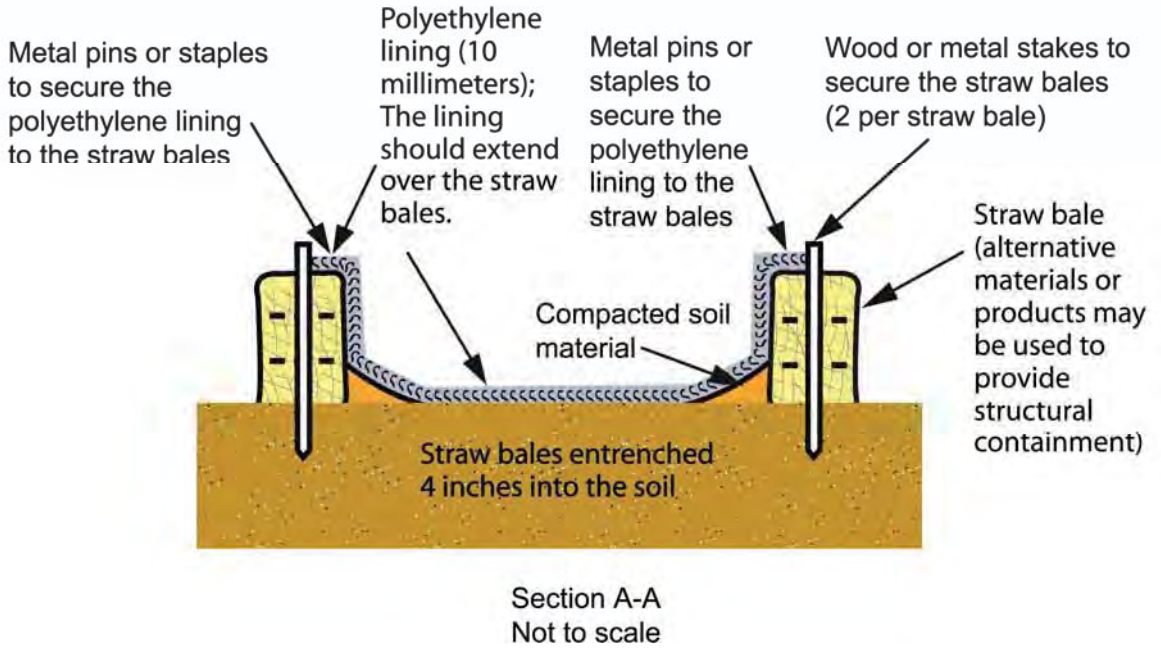
Maintenance

- Inspect daily and after each storm event.
- Inspect the integrity of the overall structure including, where applicable, the containment system.
- Inspect the system for leaks, spills, and tracking of soil by equipment.
- Inspect the polyethylene lining for failure, including tears and punctures.
- Once concrete wastes harden, remove and dispose of the material.
- Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this criterion, unless the manufacturer has alternate specifications.
- Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
- Dispose of all concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building. The availability for recycling should be checked locally.
- The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
- The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
- Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided their National Pollutant Discharge Elimination System permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.
- Prefabricated units are often pumped and the company supplying the unit provides this service.
- Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify the violators and take appropriate action.

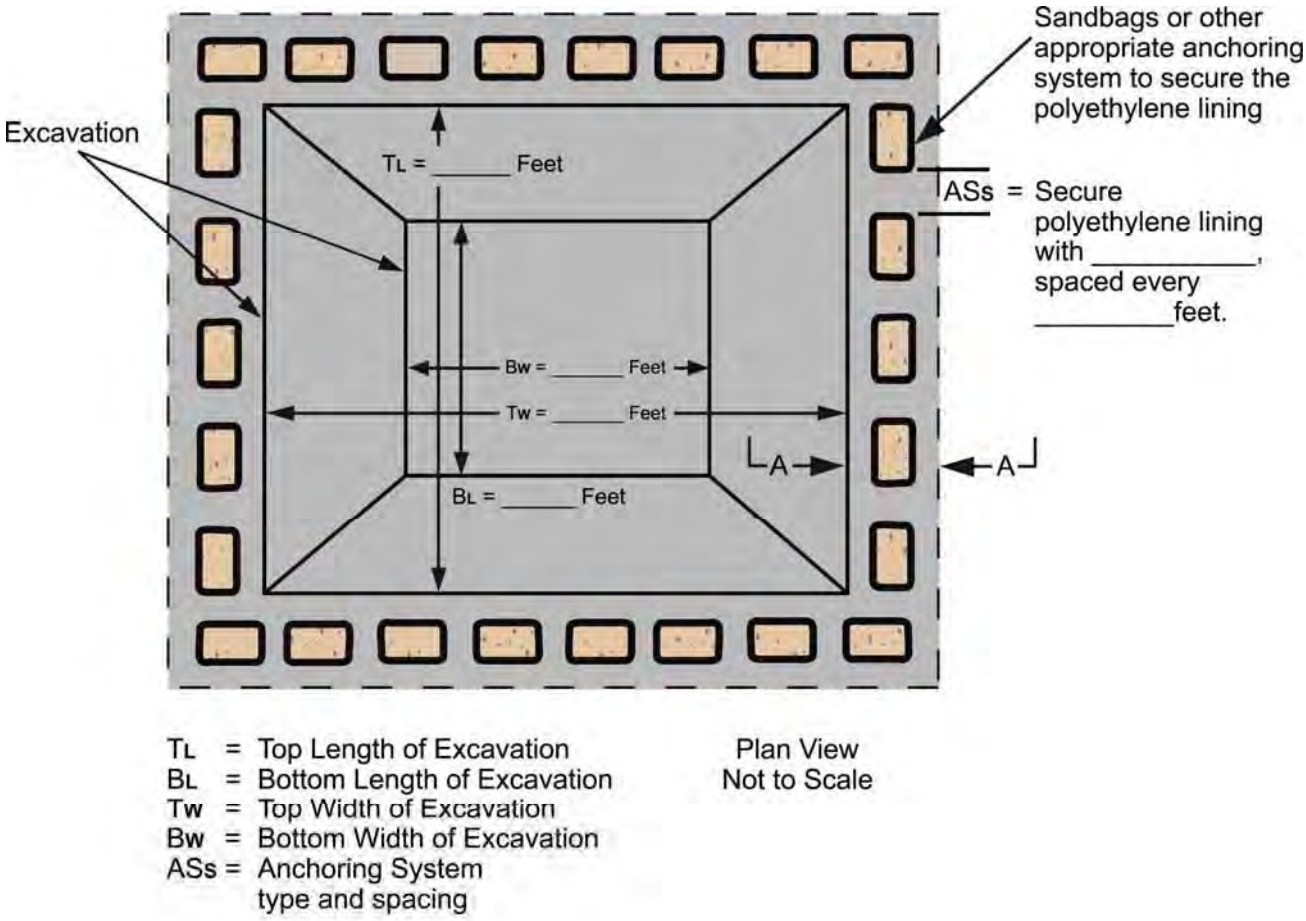
- When concrete washout systems are no longer required, the concrete washout systems shall be closed. Dispose of all hardened concrete and other materials used to construct the system.
- Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.

Concrete Washout (Above Grade System) Worksheet



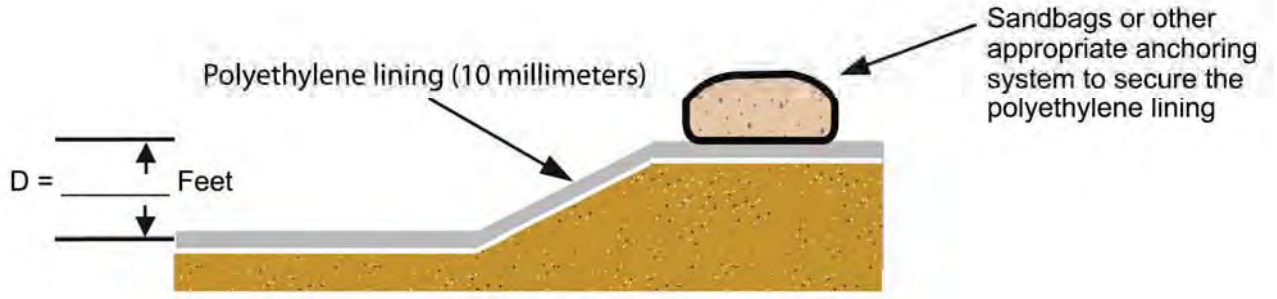


Concrete Washout (Below Grade System) Worksheet



TL = Top Length of Excavation
BL = Bottom Length of Excavation
Tw = Top Width of Excavation
Bw = Bottom Width of Excavation
ASs = Anchoring System type and spacing

Plan View
Not to Scale



Section A-A
Not to Scale

APPENDIX 3

SWP3 Inspection Forms and SWP3 Amendments, Grading, and Stabilization Log

AEP OHIO TRANSMISSION COMPANY, INC.
PINE RIDGE - HEPPNER 138kV TRANSMISSION LINE REBUILD PROJECT
STORM WATER POLLUTION PREVENTION PLAN (SWP3) INSPECTION FORM

Date: _____ Inspector's Name/Title: _____

Inspector's Company: _____

Inspector Qualified in accordance with Part VII.BB of Permit: ☐ Yes ☐ No (Document Qualifications in Appendix 3 of SWP3)

Inspection Type: ☐ Weekly (once every seven calendar days)

☐ Storm Event (0.5 inch or greater) Date: _____ Amount: _____ Duration: _____

Rain Event(s) Since Last Inspection:

Date: _____ Amount: _____ Duration: _____	Date: _____ Amount: _____ Duration: _____
Date: _____ Amount: _____ Duration: _____	Date: _____ Amount: _____ Duration: _____

Did any discharges occur during these events? ☐ No ☐ Yes, Location: _____

Current Weather: ☐ Clear ☐ Cloudy ☐ Fog ☐ Rain ☐ Snow ☐ Sleet ☐ High Winds ☐ Other: _____ Temp: _____

Current Discharges: ☐ No ☐ Yes, Location: _____

Evidence of Sediment/Pollutants Leaving the Site? ☐ No ☐ Yes, Location: _____

Has Seeding Taken Place? ☐ No ☐ Yes, Location/Seed tag photo included: _____

Erosion and Sediment Control Features / BMPs Inspected:

☐ **Silt Fence / Filter Sock (Mark which one applies)**

Location(s) (Structure # (STR#)): _____

Properly anchored/installed: ☐ Yes ☐ No Repairs Needed: ☐ Yes ☐ No

Sediment Removal Required (Sediment one-half height for fence & one-third height for sock): ☐ Yes ☐ No

Action Required/Taken/Location(s): _____

_____

☐ **Orange Barrier Fence**

Location(s) (Wetland / Access Road / STR#): _____

Properly anchored/installed: ☐ Yes ☐ No Repairs Needed: ☐ Yes ☐ No

Action Required/Taken/Location(s): _____

_____

☐ **Construction Entrance**

Location(s) (Reference intersection of road and nearest STR#): _____

Entrance Stabilized: ☐ Yes ☐ No Evidence of mud tracked on roadway: ☐ Yes ☐ No

Action Required/Taken/Location(s): _____

_____

☐ **Material Storage Areas (Including waste containers, fuel areas)**

Material Storage Areas located on site and shown on the SWP3: ☐ Yes ☐ No

Materials properly contained and labeled: ☐ Yes ☐ No Evidence of spills or releases: ☐ Yes ☐ No

Action Required/Taken/Location(s): _____

_____

☐ **Concrete Washouts**

Location(s) (Access Road / STR#): _____

Properly installed and located at least 50 feet from wetlands/streams/ditches/storm drains: ☐ Yes ☐ No

Replacement needed (concrete reaches 50 percent of the system): ☐ Yes ☐ No

Action Required/Taken/Location(s): _____

_____

Comments / Additional Control Measures Recommended: _____

_____

_____

If BMP modifications are made, you must update the SWP3 drawings and document changes on the SWP3 amendment log.

Inspector's Signature: _____ Date: _____

AEP OHIO TRANSMISSION COMPANY, INC.
PINE RIDGE - HEPPNER 138kV TRANSMISSION LINE REBUILD PROJECT

STORM WATER POLLUTION PREVENTION PLAN
AMENDMENTS, GRADING, AND STABILIZATION LOG

Date: _____ Inspector's Name/Title: _____

Location and Description of Grading and Stabilization Activities

_____

_____

_____

_____

Amendments to SWP3:

_____

_____

_____

Date: _____ Inspector's Name/Title: _____

Location and Description of Grading and Stabilization Activities

_____

_____

_____

_____

Amendments to SWP3:

_____

_____

_____

Date: _____ Inspector's Name/Title: _____

Location and Description of Grading and Stabilization Activities

_____

_____

_____

_____

Amendments to SWP3:

_____

_____

_____

AEP OHIO TRANSMISSION COMPANY, INC.

PINE RIDGE - HEPPNER 138kV TRANSMISSION LINE REBUILD PROJECT

SUMMARY SWP3 INSPECTION RECORDS – FOR TCRs

I have completed a review of the SWP3 inspections completed on the project for the period of _____ to _____.

The following major observations were made relating to the implementation of the SWP3 and review of the inspection log.

Inspector Qualifications:

☐ The inspections were performed by "qualified inspection personnel" knowledgeable in the principles of erosion and sediment control and skilled in assessing the effectiveness of control measures.

☐ The inspections were NOT performed by "qualified inspection personnel" knowledgeable in the principles of erosion and sediment control and skilled in assessing the effectiveness of control measures.

☐ Corrective Measures were taken on _____ to provide "qualified inspection personnel" at the site.

Permit Compliance Observations:

☐ The project was in compliance with the SWP3 and permit during the review period.

☐ The project was NOT in compliance with the SWP3 and permit during the review period as noted below:

☐ Non-compliance issues included:

_____

_____

_____

_____

_____

_____

_____

_____

☐ Corrective Measures were taken on _____ to correct the above non-compliance issues.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Title: _____

Signature: _____

Date: _____

APPENDIX 4

Duty to Inform Contractors and Subcontractors Signature Form

AEP OHIO TRANSMISSION COMPANY, INC.
PINE RIDGE - HEPPNER 138kV TRANSMISSION LINE REBUILD PROJECT

DUTY TO INFORM CONTRACTORS AND SUBCONTRACTORS SIGNATURE FORM

By signing below, I acknowledge that I have been informed of the terms and conditions of the Ohio Environmental Protection Agency's General NPDES Permit for Storm Water Associated with Construction Activity, and have reviewed and understand the conditions and responsibilities of the Storm Water Pollution Prevention Plan for the AEP Ohio Transmission Company, Inc. Pine Ridge - Heppner 138kV Transmission Line Rebuild Project. I understand that Inspectors shall meet the qualifications outlined in Part VII.BB. of Ohio EPA Permit No.: OHC000006.

Printed Name	Company	Signature	Date

Summary: Correspondence Proof of Compliance w/Condition electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc..