



Legal Department

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

October 14, 2021

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. 21-0591-EL-BNR
Waverly-Lick 138 kV Transmission Line Relocation and Lick Station
Expansion Project**

Dear Ms. Troupe:

In satisfaction of Condition (2) of the Staff Report for this Project, Ohio Power Company submits this notice and attachment to inform you that the Ohio Environmental Protection Agency National Pollutant Discharge Elimination System-Construction Site Stormwater General Permit and Nationwide Permit 57 have 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

File: LIC Station Rebuild/t-line project

From: Amy Toohey, WERS-TDT Environmental Specialist DATE: 9/28/2021

RE: NWP#57 applicability non-reporting

Based on the wetland/stream impact table the project is within the thresholds of the non-reporting NWP#57. The NWP#57 conditions are attached to the SWPPP and should be kept on site.

In the event project changes or field decisions result in additional impact additional permit review will occur.

AJT

Nationwide Permit 57
Electric Utility Line and Telecommunications Activities
Effective Date: March 15, 2021 / Expiration Date: March 15, 2026
Authorities: Sections 10 and 404

Activities required for the construction, maintenance, repair, and removal of electric utility lines, telecommunication lines, and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Electric utility lines and telecommunication lines: This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of electric utility lines and telecommunication lines. There must be no change in pre-construction contours of waters of the United States. An “electric utility line and telecommunication line” is defined as any cable, line, fiber optic line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the electric utility line or telecommunication line crossing of each waterbody.

Electric utility line and telecommunications substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with an electric utility line or telecommunication line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead electric utility line or telecommunication line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead electric utility line or telecommunication line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of electric utility lines or telecommunication lines, including overhead lines and substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize electric utility lines or telecommunication lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (see 33 CFR part 322). Electric utility lines or telecommunication lines constructed over section 10 waters and electric utility lines or telecommunication lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the electric utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) a section 10 permit is required; or (2)

the discharge will result in the loss of greater than 1/10-acre of waters of the United States. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: Where the electric utility line is constructed, installed, or maintained in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, a copy of the NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the electric utility line to protect navigation.

Note 2: For electric utility line or telecommunications activities crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Electric utility line and telecommunications activities must comply with 33 CFR 330.6(d).

Note 3: Electric utility lines or telecommunication lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

Note 4: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the electric utility line or telecommunication line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 5: This NWP authorizes electric utility line and telecommunication line maintenance and repair activities that do not qualify for the Clean Water Act section 404(f) exemption for maintenance of currently serviceable fills or fill structures.

Note 6: For overhead electric utility lines and telecommunication lines authorized by this NWP, a copy of the PCN and NWP verification will be provided by the Corps to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

Note 7: For activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b)(4) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

GENERAL CONDITIONS

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).
7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.
13. **Removal of Temporary Structures and Fills.** Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued.

Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. **Wild and Scenic Rivers.** (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. **Endangered Species.** (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR

402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWP.

(e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take”

provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. **Migratory Birds and Bald and Golden Eagles.** The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. **Historic Properties.** (a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR

330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106

consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. **Discovery of Previously Unknown Remains and Artifacts.** Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only

after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the

required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWP, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency

to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. **Water Quality.** (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank

stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. **Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. **Activities Affecting Structures or Works Built by the United States.** If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. **Pre-Construction Notification.** (a) *Timing.* Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee

cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee’s right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed activity;
- (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
- (4) (i) A description of the proposed activity; the activity’s purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.
- (ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible

inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the “study river” (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification:* The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) *Agency Coordination:* (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity’s compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity’s adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity’s compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies’ concerns were

considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource

functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is

required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a “water of the United States.” If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

REGIONAL CONDITIONS:

The following Regional Conditions have been approved by the Wilmington District for the Nationwide Permits (NWP) published in the January 13, 2021, *Federal Register* (86 FR 2744) announcing the reissuance of 12 existing (NWP) and four new NWP, as well as the reissuance of NWP general conditions and definitions with some modifications.

A. EXCLUDED WATERS AND/OR AREAS

The Corps has identified waters that will be excluded from the use of all NWP’s during certain timeframes. These waters are:

1. **Anadromous Fish Spawning Areas.** Work in waters of the U.S. designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina

Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are prohibited from February 15th through June 30th, without prior written approval from the Corps and the appropriate wildlife agencies (NCDMF, NCWRC and/or the National Marine Fisheries Service (NMFS)). Work in waters of the U.S. designated by NCWRC as primary nursery areas in inland waters are prohibited from February 15th through September 30th, without prior written approval from the Corps and the appropriate wildlife agencies. Work in waters of the U.S. designated by NCDMF as primary nursery areas shall be coordinated with NCDMF prior to being authorized by this NWP. Coordination with NCDMF may result in a required construction moratorium during periods of significant biological productivity or critical life stages.

2. **Trout Waters Moratorium.** Work in waters of the U.S. in the designated trout watersheds of North Carolina are prohibited from October 15th through April 15th without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section C.3. above for information on the designated trout watersheds).

3. **Sturgeon Spawning Areas.** No in-water work shall be conducted in waters of the U.S. designated by the National Marine Fisheries Service as Atlantic sturgeon critical habitat from February 1st through June 30th. No in-water work shall be conducted in waters of the U.S. in the Roanoke River designated as Atlantic sturgeon critical habitat from February 1st through June 30th, and August 1st through October 31st, without prior written approval from NMFS.

4. **Submerged Aquatic Vegetation.** Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, NWP 55 and NWP 56, unless Essential Fish Habitat (EFH) consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is verified.

B. REGIONAL CONDITIONS APPLICABLE TO ALL NWP's

1. **Critical Habitat in Western NC.** For proposed activities within waters of the U.S. that require a Pre-Construction Notification (PCN) and are located in the thirteen counties listed below, permittees must provide a copy of the PCN to the U.S. Fish and Wildlife Service (USFWS), 160 Zillicoa Street, Asheville, North Carolina 28801 and the Corps Asheville Regulatory Field Office. Please see General Condition 18 for specific PCN requirements related to the Endangered Species Act and the below website for information on the location of designated critical habitat.

Counties with tributaries that drain to designated critical habitat that require notification to the Asheville U.S. Fish and Wildlife Service: Avery, Cherokee, Graham, Haywood,

Henderson, Jackson, Macon, Mecklenburg, Mitchell, Swain, Transylvania, Union and Yancey.

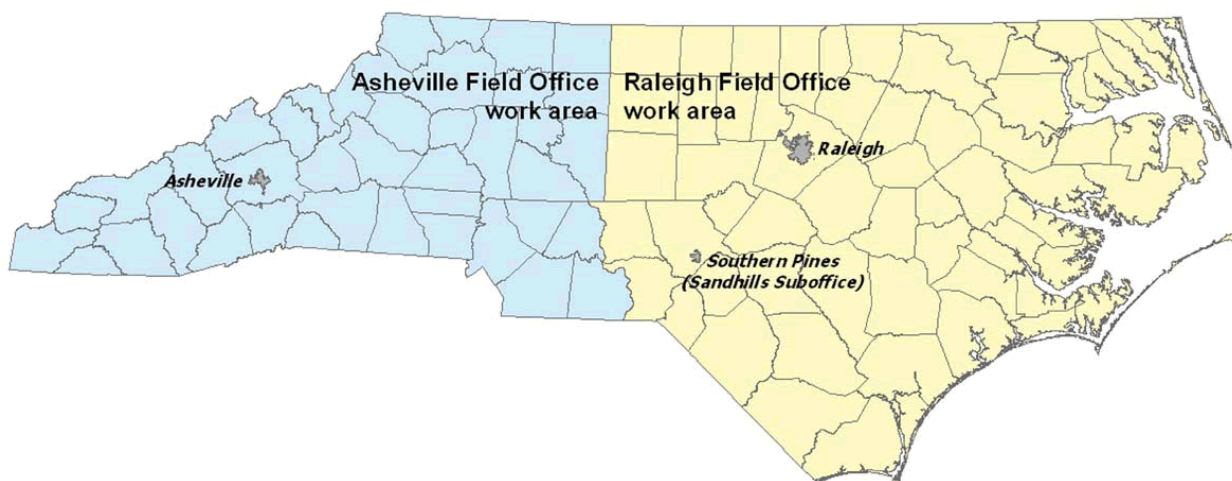
Website and office addresses for Endangered Species Act Information:

The Wilmington District has developed the following website for permittees which provides guidelines on how to review linked websites and maps in order to fulfill NWP General Condition 18 (Endangered Species) requirements:

<http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/AgencyCoordination/ESA.aspx>.

Permittees who do not have internet access may contact the appropriate U.S. Fish and Wildlife Service offices listed below or Corps at (910) 251-4850.

Below is a map of the USFWS Field Office Boundaries:



Asheville U.S. Fish and Wildlife Service Office counties: All counties west of and including Anson, Stanly, Davidson, Forsythe and Stokes Counties.

U.S. Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

Raleigh U.S. Fish and Wildlife Service Office counties: All counties east of and including Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, NC 27636-3726

Telephone: (919) 856-4520

2. **Special Designation Waters.** Prior to the use of any NWP that involves a discharge of dredged or fill material in any of the following identified waters and/or adjacent wetlands in North Carolina, permittees shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). The North Carolina waters and wetlands that require additional PCN requirements are:

“Primary Nursery Areas” (PNA), including inland PNA, as designated by the North Carolina Marine Fisheries Commission and/or the North Carolina Wildlife Resources Commission. The definition of and designated PNA waters can be found in the North Carolina State Administrative Code at Title 15A, Subchapters 3R and 10C (15A NCAC 03R .0103; 15A NCAC 10C .0502; and 15A NCAC 10C .0503) and at the following web pages:

- <http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2003%20-%20marine%20fisheries/subchapter%20r/15a%20ncac%2003r%20.0103.pdf>
- <http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2010%20-%20wildlife%20resources%20and%20water%20safety/subchapter%20c/15a%20ncac%2010c%20.0502.pdf>
- <http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2010%20-%20wildlife%20resources%20and%20water%20safety/subchapter%20c/15a%20ncac%2010c%20.0503.pdf>

3. **Trout Waters.** Prior to any discharge of dredge or fill material into streams, waterbodies or wetlands within the 294 designated trout watersheds of North Carolina, the permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity. The permittee shall also provide a copy of the PCN to the appropriate NCWRC office, or to the EBCI FWM Office (if the project is located on EBCI trust land), to facilitate the determination of any potential impacts to designated Trout Waters.

NCWRC and NC Trout Watersheds:

NCWRC Contact**	Counties that are entirely within Trout Watersheds*	Counties that are partially within Trout Watersheds*
<p>Mountain Coordinator 645 Fish Hatchery Rd., Building B Marion, NC 28752 828-803-6054</p> <p>For NCDOT Projects:</p> <p>NCDOT Coordinator 12275 Swift Rd. Oakboro, NC 28129 704-984-1070</p>	<p>Alleghany Jackson Ashe Macon Avery Swain Graham Transylvania Haywood Watauga</p>	<p>Burke McDowell Buncombe Mitchell Caldwell Polk Cherokee Rutherford Clay Surry Henderson Wilkes Madison Yancey</p>
EBCI Contact**	Counties that are within Trout Watersheds*	
<p>Office of Natural Resources P.O. Box 1747, Cherokee, NC 28719 (828) 359-6113</p>	<p>Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties.</p>	

*NOTE: To determine PCN requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps showing trout watersheds in each County at the following webpage:

<http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout/>.

****If a project is located on EBCI trust land, submit the PCN in accordance with Regional Condition C.16. Contact the Corps Asheville Regulatory Field Office at (828) 271-7980 with questions.**

4. Western NC Waters and Corridors. The permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity in waters of the U.S. if the activity will occur within any of the following identified waters in western North Carolina, within 0.5 mile on either side of these waters, or within 0.75 mile of the Little Tennessee River, as measured from the top of the bank of the respective water (i.e., river, stream, or creek):

Brasstown Creek
Burningtown Creek
Cane River
Caney Fork
Cartoogechaye Creek
Chattooga River
Cheoah River
Cowee Creek
Cullasaja River
Deep Creek
Ellijay Creek
French Broad River
Garden Creek
Hiwassee River
Hominy Creek
Iotla Creek
Little Tennessee River (within the river or within 0.75 mile on either side of this river)
Nantahala River
Nolichucky River
North Fork French Broad River
North Toe River
Nottley River
Oconaluftee River (portion not located on trust/EBCI land)
Peachtree Creek
Shooting Creek
Snowbird Creek
South Toe River
Stecoah Creek
Swannanoa River
Sweetwater Creek
Tuckasegee River (also spelled Tuckaseegee or Tuckaseigee)
Valley River
Watauga Creek
Watauga River
Wayah Creek

West Fork French Broad River

To determine PCN requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps for all corridors at the following webpage:

<http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Designated-Special-Waters.aspx>.

5. **Limitation of Loss of Stream Bed.** NWP's may not be used for activities that may result in the loss of more than 0.05 acres of stream bed, except for NWP 32.

6. **Pre-Construction Notification for Loss of Stream Bed Exceeding 0.02 acres.**

The permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32) prior to the use of any NWP for any activity that results in the loss of more than 0.02 acres of stream bed. This applies to NWP's that do not have PCN requirements as well as those NWP's that require a PCN.

7. **Mitigation for Loss of Stream Bed.** For any NWP that results in a loss of more than 0.02 acres of stream bed, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment, unless the District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal. For stream bed losses of 0.02 acres or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

8. **Riprap.** For all NWP's that allow for the use of riprap material for bank stabilization, the following conditions shall be applied:

a. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody. A waiver from the specifications in this Regional Condition must be requested in writing.

b. Riprap shall be placed only on the stream banks, or, if it is necessary to be placed in the stream bed, the finished top elevation of the riprap should not exceed that of the original stream bed.

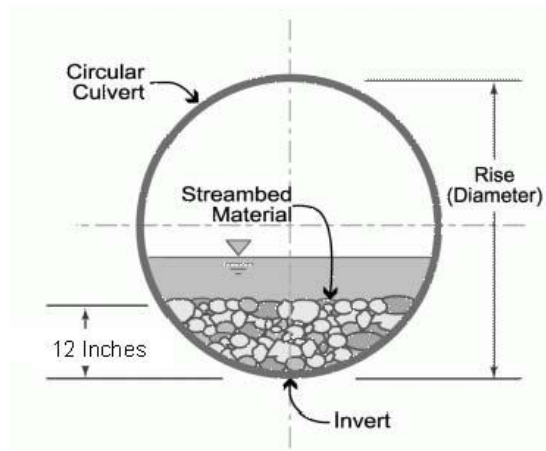
9. **Culvert Placement.** For all NWP's that allow for culvert placement, the following conditions shall be applied:

a. For all NWP's that involve the construction/installation of culverts, measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches. If the culvert outlet is submerged within a pool or scour hole and designed to provide for aquatic passage, then culvert burial into the streambed is not required.

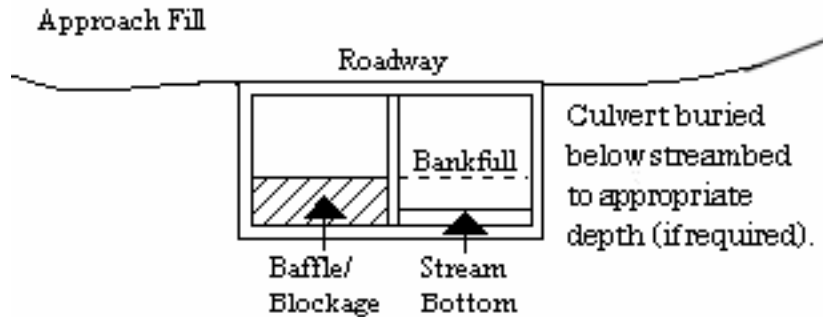
Culvert burial is not required for structures less than 72 inch diameter/width, where the slope of the culvert will be greater than 2.5%, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g., rock ladders, cross vanes, sills, baffles etc.). Culvert burial is not required when bedrock is present in culvert locations.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.



A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp. This waiver request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment. Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

b. Bank-full flows (or less) shall be accommodated through maintenance of the existing bank-full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



c. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. If the width of the culvert is wider than the stream channel, the culvert shall include multiple boxes/pipes, baffles, benches and/or sills to maintain the natural width of the stream channel. If multiple culverts/pipes/barrels are used, low flows shall be accommodated in one culvert/pipe and additional culverts/pipes shall be installed such that they receive only flows above bankfull.

10. **Utility Lines.** For all NWP's that allow for the construction and installation of utility lines, the following conditions shall be applied:

a. Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the U.S. (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

b. The work area authorized by this permit, including temporary and/or permanent fills, will be minimized to the greatest extent practicable. Justification for work corridors exceeding forty (40) feet in width is required and will be based on pipeline diameter and length, size of equipment required to construct the utility line, and other construction information deemed necessary to support the request. The permittee is required to provide this information to the Corps with the initial PCN package.

c. A plan to restore and re-vegetate wetland areas cleared for construction must be submitted with the required PCN. Cleared wetland areas shall be re-vegetated, as appropriate, with species of canopy, shrub, and herbaceous species. The permittee shall not use fescue grass or any other species identified as invasive or exotic species by the NC Native Plant Society (NCNPS): <https://ncwildflower.org/invasive-exotic-species-list/>.

d. Any permanently maintained corridor along the utility right of way within forested wetlands shall be considered a loss of aquatic function. A compensatory mitigation plan will be required for all such impacts associated with the requested activity if the activity requires a PCN and the cumulative total of permanent conversion of forested wetlands

exceeds 0.1 acres, unless the District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal.

Where permanently maintained corridor within forested wetlands is 0.1 acres or less, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment.

e. When directional boring or horizontal directional drilling (HDD) under waters of the U.S., including wetlands, permittees shall closely monitor the project for hydraulic fracturing or “fracking.” Any discharge from hydraulic fracturing or “fracking” into waters of the U.S., including wetlands, shall be reported to the appropriate Corps Regulatory Field Office within 48 hours. Restoration and/or compensatory mitigation may be required as a result of any unintended discharges.

11. **Temporary Access Fills.** The permittee shall submit a PCN to the District Engineer prior to commencing the activity if the activity will involve the discharge of dredged or fill material into more than 0.1 acres of wetlands or 0.02 acres of stream channel for the construction of temporary access fills and/or temporary road crossings. The PCN must include a restoration plan that thoroughly describes how all temporary fills will be removed, how pre-project conditions will be restored, and include a timetable for all restoration activities.

12. **Federal Navigation Channel Setbacks.** Authorized structures and fills located in or adjacent to Federally authorized waterways must be constructed in accordance with the latest setback criteria established by the Wilmington District Engineer. You may review the setback policy at <http://www.saw.usace.army.mil/Missions/Navigation/Setbacks.aspx>. This general permit does not authorize the construction of hardened or permanently fixed structures within the Federally Authorized Channel Setback, unless the activity is approved by the Corps. The permittee shall submit a PCN (see General Condition 32) to the District Engineer to obtain a written verification prior to the construction of any structures or fills within the Federally Authorized Channel Setback.

13. **Northern Long-eared Bat – Endangered Species Act Compliance**

The Wilmington District, U.S. Army Corps of Engineers has consulted with the United States Fish and Wildlife Service (USFWS) in regard to the threatened Northern long-eared bat (NLEB) (*Myotis septentrionalis*) and Standard Local Operating Procedures for Endangered Species (SLOPES) have been approved by the Corps and the USFWS. This condition concerns effects to the NLEB only and does not address effects to other federally listed species and/or federally designated critical habitat.

A. Procedures when the Corps is the lead federal* agency for a project:

The permittee must comply with (1) and (2) below when:

- the project is located in the western 41 counties of North Carolina, to include non-federal aid North Carolina Department of Transportation (NCDOT) projects, OR;
- the project is located in the 59 eastern counties of North Carolina and is a non-NCDOT project.

*Generally, if a project is located on private property or on non-federal land, and the project is not being funded by a federal entity, the Corps will be the lead federal agency due to the requirement to obtain Department of the Army authorization to impact waters of the U.S. If the project is located on federal land, contact the Corps to determine the lead federal agency.

(1) A permittee using an NWP must check to see if their project is located in the range of the NLEB by using the following website:
<http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>. If the project is within the range of the NLEB, or if the project includes percussive activities (e.g., blasting, pile driving, etc.), the permittee is then required to check the appropriate website in the paragraph below to discover if their project:

- is located in a 12-digit Hydrologic Unit Code area (“red HUC” - shown as red areas on the map), AND/OR;
- involves percussive activities within 0.25 mile of a red HUC.

Red HUC maps - for the western 41 counties in NC (covered by the Asheville Ecological Services Field Office), check the project location against the electronic maps found at: http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html. For the eastern 59 counties in NC (covered by the Raleigh Ecological Services Field Office), check the project location against the electronic maps found at: https://www.fws.gov/raleigh/NLEB_RFO.html.

(2) A permittee must submit a PCN to the District Engineer, and receive written verification from the District Engineer, prior to commencing the activity, if the activity will involve any of the following:

- tree clearing/removal and/or, construction/installation of wind turbines in a red HUC, AND/OR;
- bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, (applies anywhere in the range of the NLEB), AND/OR;
- percussive activities in a red HUC, or within 0.25 mile of a red HUC.

The permittee may proceed with the activity without submitting a PCN to either the Corps or the USFWS, provided the activity complies with all applicable NWP terms and general and regional conditions, if the permittee’s review under A.(1) and A.(2) above shows that the project is:

- located outside of a red HUC (and there are no percussive activities), and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
- located outside of a red HUC and there are percussive activities, but the percussive activities will not occur within 0.25-mile of a red HUC boundary, and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
- located in a red HUC, but the activity will NOT include tree clearing/removal; construction/installation of wind turbines; bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, and/or; any percussive activities.

B. Procedures when the USACE is not the lead federal agency:

For projects where another federal agency is the lead federal agency - if that other federal agency has completed project-specific ESA Section 7(a)(2) consultation for the NLEB, and has (1) determined that the project would not cause prohibited incidental take of the NLEB, and (2) completed coordination/consultation that is required by the USFWS (per the directions on the respective USFWS office's website), that project may proceed without PCN to either the USACE or the USFWS, provided all General and Regional Permit Conditions are met.

The NLEB SLOPES can be viewed on the USACE website at:

<http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/>. Permittees who do not have internet access may contact the USACE at (910) 251- 4633.

14. **West Indian Manatee Protection.** In order to protect the endangered West Indian manatee (*Trichechus manatus*) the Permittee shall implement the USFWS' Manatee Guidelines, and strictly adhere to all requirements therein. The guidelines can be found at <https://www.fws.gov/raleigh/pdfs/ManateeGuidelines2017.pdf>.

15. **ESA Programmatic Biological Opinions.** The Wilmington District, USFWS, NCDOT, and the FHWA have conducted programmatic Section 7(a)(2) consultation for a number of federally listed species and designated critical habitat (DCH), and programmatic consultation concerning other federally listed species and/or DCH may occur in the future. The result of completed programmatic consultation is a Programmatic Biological Opinion (PBO) issued by the USFWS. These PBOs contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" of whichever species or critical habitat is covered by a specific PBO. Authorization under NWP is conditional upon the permittee's compliance with all the mandatory terms and conditions associated with incidental take of the applicable PBO (or PBOs), which are incorporated by reference in the NWPs. Failure to comply with the terms and conditions associated with incidental take of an applicable PBO, where a take of the federally listed species occurs, would constitute an unauthorized take by the permittee, and would also constitute permittee

non-compliance with the authorization under the NWP. If the terms and conditions of a specific PBO (or PBOs) apply to a project, the Corps will include this/these requirements in any NWP verification that may be issued for a project. For an activity/project that does not require a PCN, the terms and conditions of the applicable PBO(s) also apply to that non-notifying activity/project. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO and the ESA. All PBOs can be found on our website at:

<https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/>.

16. Work on Eastern Band of Cherokee Land.

Notifying NWPs - All PCNs submitted for activities in waters of the U.S. on Eastern Band of Cherokee Indians (EBCI) trust land (i.e., Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties), must comply with the requirements of the latest MOU between the Wilmington District and the EBCI.

Non-notifying NWPs - Prior to the use of any non-notifying NWP for activities in waters of the U.S. on EBCI trust land (i.e., Qualla Boundary and non-contiguous tracts of trust land located in portions of Swain, Jackson, Haywood, Graham and Cherokee Counties), all prospective permittees must comply with the requirements of the latest MOU between the Wilmington District and the EBCI; this includes coordinating the proposed project with the EBCI Natural Resources Program and obtaining a Tribal Approval Letter from the Tribe.

The EBCI MOU can be found at the following URL: <http://saw-reg.usace.army.mil/FO/Final-MOU-EBCI-USACE.pdf>

17. Sedimentation and Erosion Control Structures and Measures

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the U.S. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

C. SECTION 401 WATER QUALITY CERTIFICATION (WQC) AND/OR COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION SUMMARY AND APPLICABLE CONDITIONS

The CZMA Consistency Determination and all Water Quality Certifications for the NWPs can be found at: <https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Permits/2017-Nationwide-Permits/>



Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

Sep 28, 2021

AEP, Ohio Transmission Company, Inc.
Aimee Toole
8600 Smith's Mill Road
New Albany, OH 43054

Re: Approval Under Ohio EPA National Pollutant Discharge Elimination System (NPDES) - Construction Site Stormwater General Permit - OHC000005

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:	Lick 138kV Substation Upgrade Project
Facility Location:	19 Industry Drive
City:	Jackson
County:	Jackson
Township:	Lick
Ohio EPA Facility Permit Number:	OGC03835*AG
Permit Effective Date:	Sep 28, 2021

Please read and review the permit carefully. The permit contains requirements and prohibitions with which you must comply. 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 NPDES CGP. 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. Also, a Permit-To-Install (PTI) is required for the construction of sanitary or industrial wastewater collection, conveyance, storage, treatment, or disposal facility; unless a specific exemption by rule exists. 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.

To view your electronic submissions and permits please Logon in to the Ohio EPA's eBusiness Center at <http://ebiz.epa.ohio.gov>.

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 <http://www.epa.ohio.gov>.

Sincerely,

Laurie A. Stevenson
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: AEP, Ohio Transmission Company, Inc.

Mailing (Applicant) Address: 8600 Smith's Mill Road

City: New Albany

State : OH

Zip Code: 43054

Country: USA

Contact Person: Aimee Toole

Phone: (614) 309-9582

Fax:

Contact E-mail Address: artoole@aep.com

II. Facility/Site Location Information

Facility/Site Name: Lick 138kV Substation Upgrade Project

Facility Address: 19 Industry Drive

City: Jackson

State: OH

Zip Code: 45640

County: Jackson

Township: Lick

Facility Contact Person: Tyrus Walke

Phone: (614) 569-9251

Fax:

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

Latitude: 39.043611

Longitude: -82.609167

Facility/Map Attachment Lick Station Map.pdf

Receiving Stream or MS4: unnamed trib of Salt Lick Creek

III. General Permit Information

General Permit Number: OHC000005

Initial Coverage: Y **Renewal Coverage:** N

Type of Activity: Construction Site Stormwater General Permit

SIC Code(s):

Existing NPDES Facility Permit Number:

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: NO

Proposed Project Start Date(if applicable): November 01, 2021

Estimated Completion Date(if applicable): May 20, 2022

Total Land Disturbance (Acres): 3

MS4 Drainage Area (Sq. Miles):

SWP3 Attachment(s): <None>

IV. Payment Information

Check #:

Check Amount:

Date of Check:

For Ohio EPA Use Only

Check ID(OFA):

ORG #:

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: Aimee Toole

Title: Transmission Project Environmental Support Manager

Signature: Electronically submitted by p000106	Date: Electronically submitted on 09/20/2021
--	--

Project Environmental Considerations

Project Name: Lick Station 138kV Project

WERS Permit Specialist: Amy Toohey

SMG WERS: Brad Newman

Regional Environmental Coordinator/LERS SMG: Ray Wirt

NOTE: Review of this form is not a substitute for reviewing, understanding, and maintaining full compliance with all applicable regulations, permits, plans and the Transmission Contractors Environmental Requirements Document (CERD). This form is intended only to highlight a few key requirements and is not an exhaustive list of all compliance obligations.

Project Environmental Permits:

- ☒ General Stormwater Construction Permit
- ☒ US Army Corps of Engineers Permit-NWP#57
- ☐ State/401 Permit
- ☐ Floodplain Permit
- ☐ Other: **{Insert other required permit(s)}**

Project Environmental Considerations:

- ☐ Threatened/Endangered Species
- ☐ Cultural

Stormwater Compliance:

General:

- ☒ Must comply with all aspects of the Stormwater Pollution Prevention Plan (SWPPP) until final stabilization is achieved, accepted by WERS, and Notice of Termination is filed/approved by agency. Read the SWPPP and plan for full compliance during each phase of the project.
- ☒ All forms included in SWPPP must be completed as required:
 - See swppp for forms required
- ☒ SWPPP is a living document and must be kept up-to-date. Adjustments and improvements to adequately control erosion & sediment are expected & required and must be documented on the SWPPP map. SWPPP maps must also include location of insert location of construction trailer/porta john/waste containers-should be in LOD established.
- ☒ Documented SWPPP Training for SWPPP contractors & construction crews is required. Identify responsible party.
- ☒ Access roads can be the largest contributor of sediment to stormwater. Careful planning and consideration must be given to management of run-on and run-off from access roads.
- ☒ Adequate stabilized construction entrances must be installed and maintained/enhanced as necessary to avoid soil tracking onto public roads. Roads must be kept clear of track-out (make a plan to immediately address road cleaning should it become necessary).
- ☐ Public notice signs must be posted ahead of construction n/a for Ohio.
- ☒ Concrete washouts must be used. Do not fill past 50% capacity . Any spilled concrete must be cleaned up immediately.

Installation of Controls:

- ☒ Downslope controls must be in-place ahead of upslope soil disturbance. If site conditions warrant significant changes/adjustments to the controls identified in the SWPPP, engage WERS. Update SWPPP accordingly.
- ☒ Controls must be properly installed in accordance with specifications in the SWPPP (e.g. silt fence trenched in, straw wattles must not substituted for compost sock/silt fence unless approved by WERS, Please make sure sit fence is anchored correctly along with filter sock being staked correctly).
- ☒ All inclined access roads must be accompanied by adequate water conveyance such as drainage ditches and water bars/culverts to divert water away from the roadbed. All ditches must permit positive drainage.
- ☒ Grade sediment basin as one of the first phases of earthwork so it can function as a control throughout the project.

Inspections & Maintenance:

- ☒ SWPPP inspections must be completed by qualified inspector.
- ☒ SWPPP inspections must be complete every 7 calendar days and after every storm event of 0.5 inch/24 hours. There are no exceptions to this frequency. Identify responsible party and backup for each phase of project.
- ☒ All required information must be documented on inspection reports and reports must reflect site conditions.
- ☒ Copies of reports must be provided to Nick Hornbeck and Brad Newman within 1 week.
- ☒ Maintenance/corrective actions for inspection items must be completed within 3 days of the inspection date. Identify plan & responsible party to complete maintenance/corrective actions in required timeframe for each phase of project.
- ☒ Inspection reports must be signed as required in the SWPPP Charles Barthoomew.

Temporary & Final Stabilization:

- ☒ Areas of soil disturbance (including stockpiles) where the soil will not be actively graded/disturbed for 7 days, must receive temporary stabilization (such as mulch & seed) within 7 days.
- ☒ Clean out/seed sediment basin upon project completion and prior to demobilization
- ☒ Final stabilization must be completed with 7 days of achieving final grade in an area.
- ☒ It is unacceptable and a violation to allow disturbed areas to remain unstabilized until final restoration phases of the project. Note, it may be necessary to reseed/straw disturbed areas following demobilization. Identify plan and responsible party for temporary & final stabilization.

Wetland/Stream Compliance:

- ☒ All wetlands/stream areas that are not permitted for impact, must be field marked with orange barrier construction fencing and signs. Wetlands/streams must also be protected with sediment controls (such as silt sock) in accordance with the SWPPP/permit.
- ☒ Wetland/streams must not be used as areas to store materials or for placement waste containers. Materials, waste containers, and vehicle parking areas should not be in or adjacent to wetlands/streams.
- ☒ Pertinent wetland/stream permits must be located on project-site.

NOTE: WERS must be notified ahead of any changes in Limits of Disturbances, unplanned tree clearing, adjustments in access plans, and of any agency inspections. All agency inspection reports or violation/enforcement must be communicated to WERS immediately.

COMMENTS:

Track out is important to control. Stabilization is required as soon as possible; be proactive to slips, cracks, or early signs of erosion.

Sign Off:

Facilitator: A. Toohey _____

Contractor/subcontractor firms present:

Date: _____

*****Please place this completed document in the PSSEP***

LICK 138KV SUBSTATION UPGRADE PROJECT

19 INDUSTRY DRIVE

JACKSON, OH 45640

LAT/LONG: 39.043611, -82.609167

STORM WATER POLLUTION PREVENTION PLAN (SWP3)



Prepared for:

AEP Ohio Transmission Company, Inc.
8600 Smith's Mill Road
New Albany, OH 43054

Prepared by:

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

Site Contact: Tyrus Walke
Phone: 614-569-9251
E-mail: twalke@aep.com

September 2021

Project Start Date: November 2021
Project End Date: May 2022

LICK 138KV SUBSTATION UPGRADE 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: Aimee Toole

Title: Mngr - Project Environmental Support

Signature: 

Date: 9/20/2021

TABLE OF CONTENTS

I.	Site Description	1
A.	Description of Construction Activity	1
B.	Disturbed Area	1
C.	Impervious Area	1
D.	Storm Water Calculations	1
E.	Existing Soil Data	1
F.	Prior Land Uses	2
G.	On-site Streams and Receiving Streams and Surface Waters	2
1.	On-Site Waterbodies	2
2.	Receiving Waters	2
H.	Implementation Schedule	3
I.	Subdivided Development Drawing	3
J.	Dedicated Asphalt and Concrete Plant Discharges	3
K.	Log of Grading and Stabilization Activities	3
L.	Site Map	3
M.	Permit Requirements	4
II.	Storm Water Pollution Prevention Plan	4
A.	SWP3 Availability	4
B.	Amendments	4
C.	Duty to Inform Contractors	4
D.	Controls	4
1.	Preservation Methods	4
2.	Erosion, Sediment, and Runoff Controls	5
a.	Stabilization and Seeding	5
b.	Sediment Barriers and Diversions	5
c.	Wetland and Stream Crossings	5
d.	Temporary Construction Entrances	6
3.	Surface Water Protection	6
4.	Other Controls	6
a.	Non-sediment Pollutant Controls	6
b.	Off-site Traffic and Dust Control	6
c.	Concrete Washouts	6
d.	Wash Water	6
e.	Compliance with Other Requirements	6
f.	Trench and Groundwater Control and Dewatering	7
g.	Contaminated Sediment	7
5.	Post-Construction Storm Water Management Requirements	7
6.	Maintenance and Inspections Requirements	7
III.	Approved State or Local Plans	8
IV.	Exceptions	8

- APPENDIX 1** – Ohio EPA General Permit No. OHC000005
- APPENDIX 2** – Project Location Map, BMP Detail Tables, Erosion and Sediment Control Plan, ODNR Rainwater and Land Development Manual Details, USDA Soils Map, and Watershed (HUC 12) Map
- APPENDIX 3** – SWP3 Inspection Forms and SWP3 Amendments, Grading, and Stabilization Log
- APPENDIX 4** – Duty to Inform Contractors and Subcontractors Signature Form
- APPENDIX 5** – Construction Plans
- APPENDIX 6** – Long-Term Maintenance Plan

I. Site Description

A. Description of Construction Activity

AEP Ohio Transmission Company, Inc. (AEP) is proposing to conduct construction activities for the Lick 138KV Substation Upgrade Project (Project) located in Lick Township, Jackson County, Ohio. The Project consists of station hardening and transmission line rebuild activities in and around the existing Lick Station. Construction activities for the station hardening will include grading, minor gravel expansion, replacement of a fence, construction of a permanent gravel access drive, construction of a ditch, and the installation of high-density polyethylene (HDPE) pipe. Construction activities will also include the removal of ten existing transmission structures, installation of nine concrete foundation transmission structures, and the installation of approximately 0.3-mile of proposed temporary access road to facilitate construction activities. Access to the Project is provided by the existing gravel driveways to the station off of Industry Drive. The total Project area is estimated at 11 acres and the maximum area of disturbed soil is approximately 3 acres.

B. Disturbed Area

Total Area of the Site – 11 acres

Total Disturbed Area – 3 acres

Table 1: Disturbed Area

County	Township/Village/City	Disturbance Acreage
Jackson	Lick Township	3

C. Impervious Area

The minor station expansion and new gravel access drive will result in 0.13-acre of additional impervious surface. See Section II.D.5 of this SWP3 for post-construction storm water management requirements and details regarding surface runoff collection for this site.

Table 2: Impervious Area

	Impervious Acreage	Percent Imperviousness
Existing	3.5	32
New	0.13	1.2
Total	3.6	33

D. Storm Water Calculations

Pre- and post-development runoff coefficients have been calculated based on the pre- and post-estimates for impervious surfaces within the Project area. The resulting increase in overall impermeability due to the expansion is 1.2 percent. Alternative best management practices (BMPs) consisting of a ditch are proposed to mitigate post-construction storm water.

Pre-development runoff coefficient – 0.65

Post-development runoff coefficient – 0.65

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 2. Soils in the Project area are shown in Table 3.

Table 3: Soil Types

Map Unit Symbol	Map Unit Description	Drainage Class	Hydric Soil?
ChD	Clymer loam, 15 to 25 percent slopes	Well Drained	No
Omu1B1	Omulga silt loam, 2 to 6 percent slopes	Moderately Well Drained	No
Omu1C1	Omulga silt loam, 6 to 12 percent slopes	Moderately Well Drained	No
St	Stendal silt loam, occasionally flooded	Somewhat Poorly Drained	No ¹

¹ Contains hydric inclusions.

F. Prior Land Uses

The Project is located in an undeveloped area east of the City of Jackson, Ohio, mainly within the existing Lick Station. Prior land use is existing station, grasslands, and forested areas just outside the station.

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

1. On-Site Waterbodies

Table 4: Delineated Streams

Stream ID	Stream Name	Flow Regime	Ohio EPA 401 Permitting Eligibility	Stream Stability
S001	UNT to Salt Lick Creek	Ephemeral	Eligible	Stable
S002	UNT to Salt Lick Creek	Perennial	Eligible	Stable
S003	UNT to Salt Lick Creek	Intermittent	Eligible	Stable
S004	UNT to Salt Lick Creek	Ephemeral	Eligible	Stable

Table 5: Delineated Wetlands and Ponds

Wetland ID	Cowardin Classification	ORAM Category
W001-PEM-CAT1	PEM	1
W002-PEM-CAT1	PEM	1

2. Receiving Waters

The Project is located in the Headwaters Salt Lick Creek Watershed (HUC-12: 050600020801), which ultimately drains to the Scioto River. The receiving stream 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 6 below and will begin in November 2021 and is estimated to end in May 2022.

Table 6: Implementation Schedule

Task	Date
Identify environmental avoidance areas in the field (i.e., wetlands, 50-foot stream buffers, other environmental commitments)	November 2021
Mobilize construction equipment	November 2021
Forestry clearing/grubbing to begin	November 2021
Install filter sock, timber matting, and temporary construction entrances, as needed	November 2021
Begin soil disturbing activity for station hardening and excavate foundations for new poles, install new poles	November 2021 – May 2022
Grading to promote positive drainage	November 2021 – December 2021
Install temporary seed and mulch, as needed, during Project activities	November 2021 – May 2022
Grade pole locations to pre-existing conditions	November 2021 – May 2022
Install permanent seed and mulch	November 2021 – Spring 2022
Remove matting and temporary BMPs	November 2021– Spring 2022
Repair/restore all remaining disturbed areas	November 2021 – Spring 2022
Seed and mulch all remaining disturbed areas	November 2021 – Spring 2022
Construction demobilization	May 2022
Inspection with AEP and SWP3 contractor	May 2022 – Spring 2022

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 2, along with the Erosion and Sediment Control Plan and details. 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.

M. Permit Requirements

The permit requirements can be reviewed in the Ohio EPA General Permit No. OHC000005 which has been included as Appendix 1.

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. OHC000005.

A. SWP3 Availability

This Plan, a copy of the NOI, and the Ohio EPA authorization shall be made available on-site immediately upon request of the director or 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. OHC000005.

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 2. 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 7 and 8 below per the Erosion and Sediment Control Plan and BMP detail sheets in Appendix 2. Mulch shall be applied to all exposed soil that has been seeded in an effort to facilitate seed germination and development.

Table 7: 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 8: 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 or silt fence 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 removed 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 2 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 2 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).

The installation of the new permanent gravel access drive will result in a permanent impact to a palustrine emergent (PEM) wetland, as depicted on Figure 2 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 Appendix 2.

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

If dewatering is necessary, water shall be pumped directly into a dewatering device such as a tube or bag sized 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 be seeded and mulched or 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

As defined in Part III.G.2.e of the Ohio EPA General Permit No. OHC000005, post construction storm water practices shall provide long term management runoff quality and quantity so that a receiving stream's physical, chemical, and biological characteristics are protected, and stream functions are maintained.

In accordance with the Construction Plans provided by AEP, the Project's minor station expansion area and gravel access drive will create an additional 0.13-acre of impervious area. Surface runoff from the Project Site will be collected in a proposed ditch, which ultimately drains off of the site. See Appendix 5 for additional information regarding the proposed ditch, as provided on the Construction Plans.

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.

- Silt fence and/or filter sock shall be inspected for depth of sediment, tears, and to ensure the anchor posts are firmly in the ground. Silt fence and/or filter sock shall also be inspected to ensure they are maintained in the appropriate positions per the plans in Appendix 2. Built up sediment shall be removed from the silt fence when it has reached one-half the height of the fence. 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 2.
- 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 OHC000005.

III. Approved State or Local Plans

The erosion and sediment control plans were prepared in accordance with Ohio EPA Permit No. OHC000005.

IV. Exceptions

There are no exceptions to the erosion and sediment control practices contained in the Ohio EPA General Permit No. OHC000005.

APPENDIX 1

Ohio EPA General Permit No. OHC000005

Issuance Date: April 23, 2018
Effective Date: April 23, 2018
Expiration Date: April 22, 2023

Ohio EPA APR 23 '18
Entered Directors Journal

OHIO ENVIRONMENTAL PROTECTION AGENCY

**GENERAL PERMIT AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED
WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT
DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the federal Water Pollution Control Act, as amended (33 U.S.C. Section 1251 et. seq. hereafter referred to as "the Act") and the Ohio Water Pollution Control Act [Ohio Revised Code ("ORC") Chapter 6111], dischargers of storm water from sites where construction activity is being conducted, as defined in Part I.B of this permit, are authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA," to discharge from the outfalls at the sites and to the receiving surface waters of the state identified in their Notice of Intent ("NOI") application form on file with Ohio EPA in accordance with the conditions specified in Parts I through VII of this permit.

It has been determined that a lowering of water quality of various waters of the state associated with granting coverage under this permit is necessary to accommodate important social and economic development in the state of Ohio. In accordance with OAC 3745-1-05, this decision was reached only after examining a series of technical alternatives, reviewing social and economic issues related to the degradation, and considering all public and intergovernmental comments received concerning the proposal.

This permit is conditioned upon payment of applicable fees, submittal of a complete NOI application form, development (and submittal, if applicable) of a complete Storm Water Pollution Prevention Plan (SWP3) and written approval of coverage from the director of Ohio EPA in accordance with Ohio Administrative Code ("OAC") Rule 3745-38-02.



Craig W. Butler
Director

Total Pages: 60

I certify this to be a true and accurate copy of the
official documents as filed in the records of the Ohio
Environmental Protection Agency.

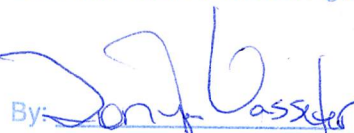
By:  Date: 4-23-18

TABLE OF CONTENTS

PART I. COVERAGE UNDER THIS PERMIT

- A. Permit Area
- B. Eligibility
- C. Requiring an individual NPDES permit or an alternative general NPDES permit
- D. Permit requirements when portions of a site are sold
- E. Authorization
- F. Notice of Intent Requirements

PART II. NON-NUMERIC EFFLUENT LIMITATIONS

- A. Erosion and Sediment Controls
- B. Soil Stabilization
- C. Dewatering
- D. Pollution Prevention Measures
- E. Prohibited Discharges
- F. Surface Outlets
- G. Post-Construction Storm Water Management Controls

PART III. STORM WATER POLLUTION PREVENTION PLAN (SWP3)

- A. Storm Water Pollution Prevention Plans
- B. Timing
- C. SWP3 Signature and Review
- D. Amendments
- E. Duty to inform contractors and subcontractors
- F. Total Maximum Daily Load (TMDL) allocations
- G. SWP3 Requirements

PART IV. NOTICE OF TERMINATION REQUIREMENTS

- A. Failure to notify
- B. When to submit an NOT
- C. How to submit an NOT

PART V. STANDARD PERMIT CONDITIONS

- A. Duty to comply
- B. Continuation of an expired general permit
- C. Need to halt or reduce activity not a defense
- D. Duty to mitigate
- E. Duty to provide information
- F. Other information
- G. Signatory requirements
- H. Certification
- I. Oil and hazardous substance liability
- J. Property rights
- K. Severability
- L. Transfers
- M. Environmental laws
- N. Proper operation and maintenance
- O. Inspection and entry
- P. Duty to Reapply
- Q. Permit Actions
- R. Bypass
- S. Upset
- U. Reporting Requirements

PART VI. REOPENER CLAUSE

PART VII. DEFINITIONS

APPENDICES

- A. Big Darby Creek Watershed
- B. Portions of the Olentangy Watershed
- C. Intensity for Calculation of Water Quality Flow (WQF)

PART I. COVERAGE UNDER THIS PERMIT

A. Permit Area.

This permit covers the entire State of Ohio. Appendices A and B of this permit contain additional watershed specific requirements for construction activities located partially or fully within the Big Darby Creek Watershed and portions of the Olentangy River Watershed. Projects within portions of the Olentangy River watershed shall seek coverage under this permit following the expiration of OHCO00002 (May 31, 2019).

B. Eligibility.

1. Construction activities covered. Except for storm water discharges identified under Part I.B.2, this permit may cover all new and existing discharges composed entirely of storm water discharges associated with construction activity that enter surface waters of the state or a storm drain leading to surface waters of the state.

For the purposes of this permit, construction activities include any clearing, grading, excavating, grubbing and/or filling activities that disturb one or more acres. Discharges from trench dewatering are also covered by this permit as long as the dewatering activity is carried out in accordance with the practices outlined in Part III.G.2.g.iv of this permit.

Construction activities disturbing one or more acres of total land, or will disturb less than one acre of land but are part of a larger common plan of development or sale that will ultimately disturb one or more acres of land are eligible for coverage under this permit. The threshold acreage includes the entire area disturbed in the larger common plan of development or sale.

This permit also authorizes storm water discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:

- a. The support activity is directly related to a construction site that is required to have NPDES permit coverage for discharges of storm water associated with construction activity;
 - b. The support activity is not a commercial operation serving multiple unrelated construction projects and does not operate beyond the completion of the construction activity at the site it supports;
 - c. Appropriate controls and measures are identified in a storm water pollution prevention plan (SWP3) covering the discharges from the support activity; and
 - d. The support activity is on or contiguous with the property defined in the NOI (offsite borrow pits and soil disposal areas, which serve only one project, do not have to be contiguous with the construction site).
2. Limitations on coverage. The following storm water discharges associated with construction activity are not covered by this permit:

- a. Storm water discharges that originate from the site after construction activities have ceased, including any temporary support activity, and the site has achieved final stabilization. Industrial post-construction storm water discharges may need to be covered by an NPDES permit;
 - b. Storm water discharges associated with construction activity that the director has shown to be or may reasonably expect to be contributing to a violation of a water quality standard; and
 - c. Storm water discharges authorized by an individual NPDES permit or another NPDES general permit;
3. Waivers. After March 10, 2003, sites whose larger common plan of development or sale have at least one, but less than five acres of land disturbance, which would otherwise require permit coverage for storm water discharges associated with construction activities, may request that the director waive their permit requirement. Entities wishing to request such a waiver must certify in writing that the construction activity meets one of the two waiver conditions:
- a. Rainfall Erosivity Waiver. For a construction site to qualify for the rainfall erosivity waiver, the cumulative rainfall erosivity over the project duration must be five or less and the site must be stabilized with a least a 70 percent vegetative cover or other permanent, non-erosive cover. The rainfall erosivity must be calculated according to the method in U.S. EPA Fact Sheet 3.1 Construction Rainfall Erosivity Waiver dated January 2001 and be found at: http://epa.ohio.gov/portals/35/permits/USEPAfact3-1_s.pdf. If it is determined that a construction activity will take place during a time period where the rainfall erosivity factor is less than five, a written waiver certification must be submitted to Ohio EPA at least 21 days before construction activity is scheduled to begin. If the construction activity will extend beyond the dates specified in the waiver certification, the operator must either: (a) recalculate the waiver using the original start date with the new ending date (if the R factor is still less than five, a new waiver certification must be submitted) or (b) submit an NOI application form and fee for coverage under this general permit at least seven days prior to the end of the waiver period; or
 - b. TMDL (Total Maximum Daily Load) Waiver. Storm water controls are not needed based on a TMDL approved or established by U.S. EPA that addresses the pollutant(s) of concern or, for non-impaired waters that do not require TMDLs, and equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. The pollutant(s) of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the director of Ohio EPA that the construction activity will take place, and storm water discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis. A written waiver certification must be submitted to Ohio EPA at least 21 days before the construction activity is scheduled to begin.

4. Prohibition on non-storm water discharges. All discharges covered by this permit must be composed entirely of storm water with the exception of the following: discharges from firefighting activities; fire hydrant flushings; potable water sources including waterline flushings; irrigation drainage; lawn watering; routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; uncontaminated ground water from trench or well point dewatering and foundation or footing drains where flows are not contaminated with process materials such as solvents. Dewatering activities must be done in compliance with Part II.C and Part III.G.2.g.iv of this permit. Discharges of material other than storm water or the authorized non-storm water discharges listed above must comply with an individual NPDES permit or an alternative NPDES general permit issued for the discharge.

Except for flows from firefighting activities, sources of non-storm water listed above that are combined with storm water discharges associated with construction activity must be identified in the SWP3. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

5. Spills and unintended releases (Releases in excess of Reportable Quantities). This permit does not relieve the permittee of the reporting requirements of Title 40 of the Code of Federal Regulations ("CFR") Part 117 and 40 CFR Part 302. In the event of a spill or other unintended release, the discharge of hazardous substances in the storm water discharge(s) from a construction site must be minimized in accordance with the applicable storm water pollution prevention plan for the construction activity and in no case, during any 24-hour period, may the discharge(s) contain a hazardous substance equal to or in excess of reportable quantities.

40 CFR Part 117 sets forth a determination of the reportable quantity for each substance designated as hazardous in 40 CFR Part 116. The regulation applies to quantities of designated substances equal to or greater than the reportable quantities, when discharged to surface waters of the state. 40 CFR Part 302 designates under section 102(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, those substances in the statutes referred to in section 101(14), identifies reportable quantities for these substances and sets forth the notification requirements for releases of these substances. This regulation also sets forth reportable quantities for hazardous substances designated under section 311(b)(2)(A) of the Clean Water Act (CWA).

C. Requiring an individual NPDES permit or an alternative NPDES general permit.

1. The director may require an alternative permit. The director may require any operator eligible for this permit to apply for and obtain either an individual NPDES permit or coverage under an alternative NPDES general permit in accordance with OAC Rule 3745-38-02. Any interested person may petition the director to take action under this paragraph.

The director will send written notification that an alternative NPDES permit is required. This notice shall include a brief statement of the reasons for this decision, an application form and a statement setting a deadline for the operator to file the application. If an operator fails to submit an application in a timely manner as required by the director under this paragraph, then coverage, if in effect, under this permit is automatically terminated at the end of the day specified for application submittal.

2. Operators may request an individual NPDES permit. Any owner or operator eligible for this permit may request to be excluded from the coverage of this permit by applying for an individual permit. The owner or operator shall submit an individual application with reasons supporting the request to the director in accordance with the requirements of 40 CFR 122.26. If the reasons adequately support the request, the director shall grant it by issuing an individual NPDES permit.
3. When an individual NPDES permit is issued to an owner or operator otherwise subject to this permit or the owner or operator is approved for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual permit or the date of approval for coverage under the alternative general permit, whichever the case may be.

D. Permit requirements when portions of a site are sold

If an operator obtains a permit for a development, and then the operator (permittee) sells off lots or parcels within that development, permit coverage must be continued on those lots until a Notice of Termination (NOT) in accordance with Part IV.B is submitted. For developments which require the use of centralized sediment and erosion controls (i.e., controls that address storm water runoff from one or more lots) for which the current permittee intends to terminate responsibilities under this permit for a lot after sale of the lot to a new owner and such termination will either prevent or impair the implementation of the controls and therefore jeopardize compliance with the terms and conditions of this permit, the permittee will be required to maintain responsibility for the implementation of those controls. For developments where this is not the case, it is the permittee's responsibility to temporarily stabilize all lots sold to individual lot owners unless an exception is approved in accordance with Part III.G.4. In cases where permit responsibilities for individual lot(s) will be terminated after sale of the lot, the permittee shall inform the individual lot owner of the obligations under this permit and ensure that the Individual Lot NOI application is submitted to Ohio EPA.

E. Authorization

1. Obtaining authorization to discharge. Operators that discharge storm water associated with construction activity must submit an NOI application form and Storm Water Pollution Prevention Plan (SWP3) if located within the Big Darby Creek watershed or portions of the Olentangy watershed in accordance with the requirements of Part I.F of this permit to obtain authorization to discharge under this general permit. As required under OAC Rule 3745-38-06(E), the director, in response to the NOI submission, will notify the applicant in writing that he/she has or has not been granted general permit coverage to discharge storm water associated with construction activity under the terms and conditions of this permit or that the applicant must apply for an individual NPDES permit or coverage under an alternate general NPDES permit as described in Part I.C.1.

2. No release from other requirements. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations. Other permit requirements commonly associated with construction activities include, but are not limited to, section 401 water quality certifications, isolated wetland permits, permits to install sanitary sewers or other devices that discharge or convey polluted water, permits to install drinking water lines, single lot sanitary system permits and disturbance of land which was used to operate a solid or hazardous waste facility (i.e., coverage under this NPDES general permit does not satisfy the requirements of OAC Rule 3745-27-13 or ORC Section 3734.02(H)). The issuance of this permit is subject to resolution of an antidegradation review. This permit does not relieve the permittee of other responsibilities associated with construction activities such as contacting the Ohio Department of Natural Resources, Division of Water, to ensure proper well installation and abandonment of wells.

F. Notice of Intent Requirements

1. Deadlines for notification.
 - a. Initial coverage: Operators who intend to obtain initial coverage for a storm water discharge associated with construction activity under this general permit must submit a complete and accurate NOI application form, a completed Storm Water Pollution Prevention Plan (SWP3) for projects within the Big Darby Creek and portions of the Olentangy river watersheds and appropriate fee at least 21 days (or 45 days in the Big Darby Creek watershed and portions of the Olentangy watershed) prior to the commencement of construction activity. If more than one operator, as defined in Part VII of this general permit, will be engaged at a site, each operator shall seek coverage under this general permit prior to engaging in construction activities. Coverage under this permit is not effective until an approval letter granting coverage from the director of Ohio EPA is received by the applicant. Where one operator has already submitted an NOI prior to other operator(s) being identified, the additional operator shall request modification of coverage to become a co-permittee. In such instances, the co-permittees shall be covered under the same facility permit number. No additional permit fee is required.
 - b. Individual lot transfer of coverage: Operators must each submit an individual lot notice of intent (Individual Lot NOI) application form (no fee required) to Ohio EPA at least seven days prior to the date that they intend to accept responsibility for permit requirements for their portion of the original permitted development from the previous permittee. Transfer of permit coverage is not granted until an approval letter from the director of Ohio EPA is received by the applicant.
2. Failure to notify. Operators who fail to notify the director of their intent to be covered and who discharge pollutants to surface waters of the state without an NPDES permit are in violation of ORC Chapter 6111. In such instances, Ohio EPA may bring an enforcement action for any discharges of storm water associated with construction activity.
3. How to submit an NOI. Operators seeking coverage under this permit must submit a complete and accurate Notice of Intent (NOI) application using Ohio EPA's electronic application form which is available through the Ohio EPA eBusiness Center at: <https://ebiz.epa.ohio.gov/>. Submission through the Ohio EPA eBusiness Center will

require establishing an Ohio EPA eBusiness Center account and obtaining a unique Personal Identification Number (PIN) for final submission of the NOI. Existing eBusiness Center account holders can access the NOI form through their existing account and submit using their existing PIN. Please see the following link for guidance:

<http://epa.ohio.gov/dsw/ebs.aspx#170669803-streams-guidance>. Alternatively, if you are unable to access the NOI form through the agency eBusiness Center due to a demonstrated hardship, the NOI may be submitted on a paper NOI form provided by Ohio EPA. NOI information shall be typed on the form. Please contact Ohio EPA, Division of Surface Water at (614) 644-2001 if you wish to receive a paper NOI form.

4. Additional notification. NOIs and SWP3s are considered public documents and shall be made available to the public in accordance with Part III.C.2. The permittee shall make NOIs and SWP3s available upon request of the director of Ohio EPA, local agencies approving sediment and erosion control plans, grading plans or storm water management plans, local governmental officials, or operators of municipal separate storm sewer systems (MS4s) receiving drainage from the permitted site. Each operator that discharges to an NPDES permitted MS4 shall provide a copy of its Ohio EPA NOI submission to the MS4 in accordance with the MS4's requirements, if applicable.
5. Re-notification. Existing permittees having coverage under the previous generations of this general permit shall have continuing coverage under OHC000005 with the submittal of a timely renewal application. Within 180 days from the effective date of this permit, existing permittees shall submit the completed renewal application expressing their intent for continued coverage. In accordance with Ohio Administrative Code (OAC) 3745-38-02(E)(2)(a)(i), a renewal application fee will only apply to existing permittees having general permit coverage for 5 or more years as of the effective date of this general permit. Permit coverage will be terminated if Ohio EPA does not receive the renewal application within this 180-day period.

Part II. NON-NUMERIC EFFLUENT LIMITATIONS

You shall comply with the following non-numeric effluent limitations for discharges from your site and/or from construction support activities. Part III of this permit contains the specific design criteria to meet the objectives of the following non-numeric effluent limitations. You shall develop and implement the SWP3 in accordance with Part III of this permit to satisfy these non-numeric effluent limitations.

- A. **Erosion and Sediment Controls.** You shall design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls shall be designed, installed and maintained to:
 1. Control storm water volume and velocity within the site to minimize soil and stream erosion;
 2. Control storm water discharges, including both peak flowrates and total storm water volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
 3. Minimize the amount of soil exposed during construction activity;

4. Minimize the disturbance of steep slopes;
 5. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls shall address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting storm water runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
 6. If feasible, provide and maintain a 50-foot undisturbed natural buffer around surface waters of the state, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration. If it is infeasible to provide and maintain an undisturbed 50-foot natural buffer, you shall comply with the stabilization requirements found in Part II.B for areas within 50 feet of a surface water; and
 7. Minimize soil compaction and, unless infeasible, preserve topsoil.
- B. Soil Stabilization.** Stabilization of disturbed areas shall, at a minimum, be initiated in accordance with the time frames specified in the following tables.

Table 1: 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 days of the most recent disturbance
Any areas within 50 feet of a surface water of the state and at final grade	Within two days of reaching final grade
Other areas at final grade	Within seven days of reaching final grade within that area

Table 2: 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 days of the most recent disturbance if the area will remain idle for more than 14 days
Any disturbed areas that will be dormant for more than 14 days but less than one year, and not within 50 feet of a surface water of the state	Within seven 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

Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. Permanent and temporary stabilization are defined in Part VII.

- C. Dewatering.** Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.
- D. Pollution Prevention Measures.** Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:
1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters shall be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
 2. Minimize the exposure of construction materials, products, and wastes; landscape materials, fertilizers, pesticides, and herbicides; detergents, sanitary waste and other materials present on the site to precipitation and to storm water; and
 3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
- E. Prohibited Discharges.** The following discharges are prohibited:
1. Wastewater from washout of concrete, unless managed by an appropriate control;
 2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
 3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
 4. Soaps or solvents used in vehicle and equipment washing or all other waste water streams which could be subject to an individual NPDES permit (Part III.G.2.g).
- F. Surface Outlets.** When discharging from sediment basins utilize outlet structures that withdraw water from the surface, unless infeasible. (Note: Ohio EPA believes that the circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include time periods with extended cold weather during winter months. If you have determined that it is infeasible to meet this requirement, you shall provide documentation in your SWP3 to support your determination.)
- G. Post-Construction Storm Water Management Controls.** So that receiving stream's physical, chemical and biological characteristics are protected, and stream functions are maintained, post-construction storm water practices shall provide long-term management of runoff quality and quantity.

PART III. STORM WATER POLLUTION PREVENTION PLAN (SWP3)

A. Storm Water Pollution Prevention Plans.

A SWP3 shall be developed for each site covered by this permit. For a multi-phase construction project, a separate NOI shall be submitted when a separate SWP3 will be prepared for

subsequent phases. SWP3s shall be prepared in accordance with sound engineering and/or conservation practices by a professional experienced in the design and implementation of standard erosion and sediment controls and storm water management practices addressing all phases of construction. The SWP3 shall clearly identify all activities which are required to be authorized under Section 401 and subject to an antidegradation review. The SWP3 shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with construction activities. The SWP3 shall be a comprehensive, stand-alone document, which is not complete unless it contains the information required by Part III.G of this permit. In addition, the SWP3 shall describe and ensure the implementation of best management practices (BMPs) that reduce the pollutants and impact of storm water discharges during construction and pollutants associated with the post-construction land use to ensure compliance with ORC Section 6111.04, OAC Chapter 3745-1 and the terms and conditions of this permit.

B. Timing

An acceptable SWP3 shall be completed and submitted to the applicable regulated MS4 entity (for projects constructed entirely within a regulated MS4 area) prior to the timely submittal of an NOI. Projects within the Big Darby Creek and portions of the Olentangy watersheds must submit a SWP3 with the NOI. The SWP3 shall be updated in accordance with Part III.D. Submission of a SWP3 does not constitute review and approval on the part of Ohio EPA. Upon request and good cause shown, the director may waive the requirement to have a SWP3 completed at the time of NOI submission. If a waiver has been granted, the SWP3 must be completed prior to the initiation of construction activities. The SWP3 must be implemented upon initiation of construction activities.

In order to continue coverage from the previous generations of this permit, the permittee shall review and update the SWP3 to ensure that this permit's requirements are addressed within 180 days after the effective date of this permit. If it is infeasible for you to comply with a specific requirement in this permit because (1) the provision was not part of the permit you were previously covered under, and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to the effective date of this permit, you shall include documentation within your SWP3 of the reasons why it is infeasible for you to meet the specific requirement.

Examples of OHC000005 permit conditions that would be infeasible for permittees renewing coverage to comply with include:

- OHC000005 post-construction requirements, for projects that obtained NPDES construction storm water coverage and started construction activities prior to the effective date of this permit;
- OHC000005 post-construction requirements, for multi-phase development projects with an existing regional post-construction BMP issued under previous NPDES post-construction requirements. This only applies to construction sites authorized under Ohio EPA's Construction Storm Water Permits issued after April 20, 2003;
- OHC000005 post-construction requirements, for renewing or initial coverage and you have a SWP3 approved locally and you will start construction within 180 days of the effective date of this permit;

- Sediment settling pond design requirements, if the general permit coverage was obtained prior to April 21, 2013 and the sediment settling pond has been installed; or
- Case-by-case situations approved by the Director.

C. SWP3 Signature and Review.

1. Plan Signature and Retention On-Site. The SWP3 shall include the certification in Part V.H, be signed in accordance with Part V.G., and be retained on site during working hours.
2. Plan Availability
 - a. On-site: The plan shall be made available immediately upon request of the director or his authorized representative and MS4 operators or their authorized representative during working hours. A copy of the NOI and letter granting permit coverage under this general permit also shall be made available at the site.
 - b. By written request: The permittee must provide the most recent copy of the SWP3 within 7 days upon written request by any of the following:
 - i. The director or the director's authorized representative;
 - ii. A local agency approving sediment and erosion plans, grading plans or storm water management plans; or
 - iii. In the case of a storm water discharge associated with construction activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the operator of the system.
 - c. To the public: All NOIs, general permit approval for coverage letters, and SWP3s are considered reports that shall be available to the public in accordance with the Ohio Public Records law. The permittee shall make documents available to the public upon request or provide a copy at public expense, at cost, in a timely manner. However, the permittee may claim to Ohio EPA any portion of an SWP3 as confidential in accordance with Ohio law.
3. Plan Revision. The director or authorized representative may notify the permittee at any time that the SWP3 does not meet one or more of the minimum requirements of this part. Within 10 days after such notification from the director or authorized representative (or as otherwise provided in the notification), the permittee shall make the required changes to the SWP3 and shall submit to Ohio EPA the revised SWP3 or a written certification that the requested changes have been made.

D. Amendments

The permittee shall amend the SWP3 whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the potential for the discharge of pollutants to surface waters of the state or if the SWP3 proves to be ineffective in achieving the

general objectives of controlling pollutants in storm water discharges associated with construction activity. Amendments to the SWP3 may be reviewed by Ohio EPA in the same manner as Part III.C.

E. Duty to inform contractors and subcontractors

The permittee shall inform all contractors and subcontractors not otherwise defined as “operators” in Part VII of this general permit who will be involved in the implementation of the SWP3 of the terms and conditions of this general permit. The permittee shall maintain a written document containing the signatures of all contractors and subcontractors involved in the implementation of the SWP3 as proof acknowledging that they reviewed and understand the conditions and responsibilities of the SWP3. The written document shall be created, and signatures shall be obtained prior to commencement of earth disturbing activity on the construction site.

F. Total Maximum Daily Load (TMDL) allocations

If a TMDL is approved for any waterbody into which the permittee’s site discharges and requires specific BMPs for construction sites, the director may require the permittee to revise his/her SWP3. Specific conditions have been provided in Appendix A (for the Big Darby Creek Watershed) and Appendix B (for portions of the Olentangy river watershed).

G. SWP3 Requirements

Operations that discharge storm water from construction activities are subject to the following requirements and the SWP3 shall include the following items:

1. Site description. Each SWP3 shall provide:
 - a. A description of the nature and type of the construction activity (e.g., low density residential, shopping mall, highway, etc.);
 - b. Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling or grading, including off-site borrow areas);
 - c. A measure of the impervious area and percent imperviousness created by the construction activity (existing, new and total impervious area after construction);
 - d. Storm water calculations, including the volumetric runoff coefficients for both the pre-construction and post- construction site conditions, and resulting water quality volume; design details for post-construction storm water facilities and pretreatment practices such as contributing drainage areas, capacities, elevations, outlet details and drain times shall be included in the SWP3; and if applicable, explanation of the use of existing post-construction facilities. Ohio EPA recommends the use of data sheets (see Ohio’s Rainwater and Land Development manual and Ohio EPA resources for examples);
 - e. Existing data describing the soil and, if available, the quality of any discharge from the site;

- f. A description of prior land uses at the site;
- g. A description of the condition of any on-site streams (e.g. prior channelization, bed instability or headcuts, channels on public maintenance, or natural channels);
- h. An implementation schedule which describes the sequence of major construction operations (i.e., designation of vegetative preservation areas, grubbing, excavating, grading, utilities, infrastructure installation and others) and the implementation of erosion, sediment and storm water management practices or facilities to be employed during each operation of the sequence;
- i. The name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water(s) and the areal extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed, or which will receive discharges from disturbed areas of the project. For discharges to an MS4, the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a stream or surface water of the state shall be indicated;
- j. For subdivided developments, a detail drawing of individual parcels with their erosion, sediment or storm water control practices and/or a typical individual lot showing standard individual lot erosion and sediment control practices.

A typical individual lot drawing does not remove the responsibility to designate specific erosion and sediment control practices in the SWP3 for critical areas such as steep slopes, stream banks, drainage ways and riparian zones;
- k. Location and description of any storm water discharges associated with dedicated asphalt and dedicated concrete plants covered by this permit and the best management practices to address pollutants in these storm water discharges;
- l. A cover page or title identifying the name and location of the site, the name and contact information of all construction site operators, the name and contact information for the person responsible for authorizing and amending the SWP3, preparation date, and the estimated dates that construction will start and be complete;
- m. A log documenting grading and stabilization activities as well as amendments to the SWP3, which occur after construction activities commence; and
- n. Site map showing:
 - i. Limits of earth-disturbing activity of the site including associated off-site borrow or spoil areas that are not addressed by a separate NOI and associated SWP3;
 - ii. Soils types for all areas of the site, including locations of unstable or highly erodible and/or known contaminated soils;

- iii. Existing and proposed contours. A delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed, in acres;
- iv. The location of any delineated boundary for required riparian setbacks;
- v. Conservation easements or areas designated as open space, preserved vegetation or otherwise protected from earth disturbing activities. A description of any associated temporary or permanent fencing or signage;
- vi. Surface water locations including springs, wetlands, streams, lakes, water wells, etc., on or within 200 feet of the site, including the boundaries of wetlands or stream channels and first subsequent named receiving water(s) the permittee intends to fill or relocate for which the permittee is seeking approval from the Army Corps of Engineers and/or Ohio EPA;
- vii. Existing and planned locations of buildings, roads, parking facilities and utilities;
- viii. The location of all erosion and sediment control practices, including the location of areas likely to require temporary stabilization during site development;
- ix. Sediment traps and basins noting their sediment storage and dewatering (detention) volume and contributing drainage area. Ohio EPA recommends the use of data sheets (see Ohio EPA's Rainwater and Land Development manual and website for examples) to provide data for all sediment traps and basins noting important inputs to design and resulting parameters such as their contributing drainage area, disturbed area, detention volume, sedimentation volume, practice surface area, dewatering time, outlet type and dimensions;
- x. The location of permanent storm water management practices (new and existing) including pretreatment practices to be used to control pollutants in storm water after construction operations have been completed along with the location of existing and planned drainage features including catch basins, culverts, ditches, swales, surface inlets and outlet structures;
- xi. Areas designated for the storage or disposal of solid, sanitary and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling;
- xii. The location of designated construction entrances where the vehicles will access the construction site; and
- xiii. The location of any areas of proposed floodplain fill, floodplain excavation, stream restoration or known temporary or permanent stream crossings.

2. Controls. In accordance with Part II.A, the SWP3 shall contain a description of the controls appropriate for each construction operation covered by this permit and the operator(s) shall implement such controls. The SWP3 shall clearly describe for each major construction activity identified in Part III.G.1.h: (a) appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented; and (b) which contractor is responsible for implementation (e.g., contractor A will clear land and install perimeter controls and contractor B will maintain perimeter controls until final stabilization). The SWP3 shall identify the subcontractors engaged in activities that could impact storm water runoff. The SWP3 shall contain signatures from all of the identified subcontractors indicating that they have been informed and understand their roles and responsibilities in complying with the SWP3. Ohio EPA recommends that the primary site operator review the SWP3 with the primary contractor prior to commencement of construction activities and keep a SWP3 training log to demonstrate that this review has occurred.

Ohio EPA recommends that the erosion, sediment, and storm water management practices used to satisfy the conditions of this permit should meet the standards and specifications in the most current edition of Ohio's Rainwater and Land Development (see definitions) manual or other standards acceptable to Ohio EPA. The controls shall include the following minimum components:

- a. Preservation Methods. The SWP3 shall make use of practices which preserve the existing natural condition as much as feasible. Such practices may include: preserving existing vegetation, vegetative buffer strips, and existing soil profile and topsoil; phasing of construction operations to minimize the amount of disturbed land at any one time; and designation of tree preservation areas or other protective clearing or grubbing practices. For all construction activities immediately adjacent to surface waters of the state, the permittee shall comply with the buffer non-numeric effluent limitation in Part II.A.6, as measured from the ordinary high water mark of the surface water.
- b. Erosion Control Practices. The SWP3 shall make use of erosion controls that provide cover over disturbed soils unless an exception is approved in accordance with Part III.G.4. A description of control practices designed to re-establish vegetation or suitable cover on disturbed areas after grading shall be included in the SWP3. The SWP3 shall provide specifications for stabilization of all disturbed areas of the site and provide guidance as to which method of stabilization will be employed for any time of the year. Such practices may include: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing of construction operations, use of construction entrances and the use of alternative ground cover.
- i. **Stabilization.** Disturbed areas shall be stabilized in accordance with Table 1 (Permanent Stabilization) and Table 2 (Temporary Stabilization) in Part II.B of this permit.
- ii. **Permanent stabilization of conveyance channels.** Operators shall undertake special measures to stabilize channels and outfalls and prevent erosive flows. Measures may include seeding, dormant seeding (as defined in the most current edition of the Rainwater and Land

Development manual), mulching, erosion control matting, sodding, riprap, natural channel design with bioengineering techniques or rock check dams.

- c. Runoff Control Practices. The SWP3 shall incorporate measures which control the flow of runoff from disturbed areas so as to prevent erosion from occurring. Such practices may include rock check dams, pipe slope drains, diversions to direct flow away from exposed soils and protective grading practices. These practices shall divert runoff away from disturbed areas and steep slopes where practicable. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.
- d. Sediment Control Practices. The plan shall include a description of structural practices that shall store runoff allowing sediments to settle and/or divert flows away from exposed soils or otherwise limit runoff from exposed areas. Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Such practices may include, among others: sediment settling ponds, sediment barriers, earth diversion dikes or channels which direct runoff to a sediment settling pond and storm drain inlet protection. All sediment control practices must be capable of ponding runoff in order to be considered functional. Earth diversion dikes or channels alone are not considered a sediment control practice unless those are used in conjunction with a sediment settling pond.

The SWP3 shall contain detail drawings for all structural practices.

- i. **Timing.** Sediment control structures shall be functional throughout the course of earth disturbing activity. Sediment basins and perimeter sediment barriers shall be implemented prior to grading and within seven days from the start of grubbing. They shall continue to function until the upslope development area is stabilized with permanent cover. As construction progresses and the topography is altered, appropriate controls shall be constructed, or existing controls altered to address the changing drainage patterns.
- ii. **Sediment settling ponds.** A sediment settling pond is required for any one of the following conditions:
- Concentrated or collected storm water runoff (e.g., storm sewer or ditch);
 - Runoff from drainage areas, which exceed the design capacity of silt fence or other sediment barriers; or
 - Runoff from drainage areas that exceed the design capacity of inlet protection;

The permittee may request approval from Ohio EPA to use alternative controls if the permittee can demonstrate the alternative controls are equivalent in effectiveness to a sediment settling pond.

In accordance with Part II.F, if feasible, sediment settling ponds shall be dewatered at the pond surface using a skimmer or equivalent device. The sediment settling pond volume consists of both a dewatering zone and a sediment storage zone. The volume of the dewatering zone shall be a minimum of 1800 cubic feet (ft³) per acre of drainage (67 yd³/acre) with a minimum 48-hour drain time. The volume of the sediment storage zone shall be calculated by one of the following methods:

Method 1: The volume of the sediment storage zone shall be 1000 ft³ per disturbed acre within the watershed of the basin. OR

Method 2: The volume of the sediment storage zone shall be the volume necessary to store the sediment as calculated with RUSLE or a similar generally accepted erosion prediction model.

Accumulated sediment shall be removed from the sediment storage zone once it exceeds 50 percent of the minimum required sediment storage design capacity and prior to the conversion to the post-construction practice unless suitable storage is demonstrated based upon over-design. When determining the total contributing drainage area, off-site areas and areas which remain undisturbed by construction activity shall be included unless runoff from these areas is diverted away from the sediment settling pond and is not co-mingled with sediment-laden runoff. The depth of the dewatering zone shall be less than or equal to five feet. The configuration between inlets and the outlet of the basin shall provide at least two units of length for each one unit of width ($\geq 2:1$ length:width ratio); however, a length to width ratio of 4:1 is recommended. When designing sediment settling ponds, the permittee shall consider public safety, especially as it relates to children, as a design factor for the sediment basin and alternative sediment controls shall be used where site limitations would preclude a safe design. Combining multiple sediment and erosion control measures in order to maximize pollutant removal is encouraged.

- iii. **Sediment Barriers and Diversions.** Sheet flow runoff from denuded areas shall be intercepted by sediment barriers or diversions to protect adjacent properties and water resources from sediment transported via sheet flow. Where intended to provide sediment control, silt fence shall be placed on a level contour downslope of the disturbed area. For most applications, standard silt fence may be substituted with a 12-inch diameter sediment barrier. The relationship between the maximum drainage area to sediment barrier for a particular slope range is shown in the following table:

Table 3 Sediment Barrier Maximum Drainage Area Based on Slope

Maximum drainage area (in acres) to 100 linear feet of sediment barrier	Range of slope for a particular drainage area (in percent)
0.5	< 2%
0.25	$\geq 2\%$ but < 20%
0.125	$\geq 20\%$ but < 50%

Placing sediment barriers in a parallel series does not extend the size of the drainage area. Storm water diversion practices shall be used to keep runoff away from disturbed areas and steep slopes where practicable. Diversion practices, which include swales, dikes or berms, may receive storm water runoff from areas up to 10 acres.

- iv. **Inlet Protection.** Other erosion and sediment control practices shall minimize sediment laden water entering active storm drain systems. All inlets receiving runoff from drainage areas of one or more acres will require a sediment settling pond.
- v. **Surface Waters of the State Protection.** If construction activities disturb areas adjacent to surface waters of the state, structural practices shall be designed and implemented on site to protect all adjacent surface waters of the state from the impacts of sediment runoff. No structural sediment controls (e.g., the installation of silt fence or a sediment settling pond) shall be used in a surface water of the state. For all construction activities immediately adjacent to surface waters of the state, the permittee shall comply with the buffer non-numeric effluent limitation in Part II.A.6, as measured from the ordinary high water mark of the surface water. Where impacts within this buffer area are unavoidable, due to the nature of the construction (e.g., stream crossings for roads or utilities), the project shall be designed such that the number of stream crossings and the width of the disturbance within the buffer area are minimized.
- vi. **Modifying Controls.** If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the permittee shall replace or modify the control for site conditions.
- e. Post-Construction Storm Water Management Requirements. So that receiving stream's physical, chemical and biological characteristics are protected, and stream functions are maintained, post-construction storm water practices shall provide long-term management of runoff quality and quantity. To meet the post-construction requirements of this permit, the SWP3 shall contain a description of the post-construction BMPs that will be installed during construction for the site and the rationale for their selection. The rationale shall address the anticipated impacts on the channel and floodplain morphology, hydrology, and water quality. Post-construction BMPs cannot be installed within a surface water of the state (e.g., wetland or stream) unless it is authorized by a CWA 401 water quality certification, CWA 404 permit, or Ohio EPA non-jurisdictional wetland/stream program approval. Note: local jurisdictions may have more stringent post-construction requirements.

Detail drawings and maintenance plans shall be provided for all post-construction BMPs in the SWP3. Maintenance plans shall be provided by the permittee to the post-construction operator of the site (including homeowner associations) upon completion of construction activities (prior to termination of permit coverage). Maintenance plans shall ensure that pollutants collected within structural post-construction practices are disposed of in accordance with local, state, and federal regulations. To ensure that storm water management systems function as

designed and constructed, the post-construction operation and maintenance plan shall be a stand-alone document which contains: (1) a designated entity for storm water inspection and maintenance responsibilities; (2) the routine and non-routine maintenance tasks to be undertaken; (3) a schedule for inspection and maintenance; (4) any necessary legally binding maintenance easements and agreements; (5) construction drawings or excerpts showing the plan view, profile and details of the outlet(s); and (6) a map showing all access and maintenance easements (7) for table 4a practices, provide relevant elevations and associated volumes that dictate when removal of accumulated sediments must occur. Permittees are responsible for assuring all post-construction practices meet plan specifications and intended post-construction conditions have been met (e.g., sediment removed from, and sediment storage restored to, permanent pools, sediment control outlets removed and replaced with permanent post-construction discharge structures, and all slopes and drainageways permanently stabilized), but are not responsible under this permit for operation and maintenance of post-construction practices once coverage under this permit is terminated.

Post-construction storm water BMPs that discharge pollutants from point sources once construction is completed, may in themselves, need authorization under a separate NPDES permit (one example is storm water discharges from regulated industrial sites).

Construction activities that do not include the installation of any impervious surface (e.g., park lands), abandoned mine land reclamation activities regulated by the Ohio Department of Natural Resources, stream and wetland restoration activities, and wetland mitigation activities are not required to comply with the conditions of Part III.G.2.e of this permit. Linear construction projects, (e.g., pipeline or utility line installation), which do not result in the installation of additional impervious surface, are not required to comply with the conditions of Part III.G.2.e of this permit. However, linear construction projects shall be designed to minimize the number of stream crossings and the width of disturbance and achieve final stabilization of the disturbed area as defined in Part VII.M.1.

For all construction activities that will disturb two or more acres of land, or will disturb less than two acres, that are a part of a larger common plan of development or sale which will disturb two or more acres of land, the post construction BMP(s) chosen shall be able to manage storm water runoff for protection of stream channels, stream stability, and water quality. The BMP(s) chosen must be compatible with site and soil conditions. Structural post-construction storm water treatment practices shall be incorporated into the permanent drainage system for the site. The BMP(s) chosen must be sized to treat the water quality volume (WQ_v) and ensure compliance with Ohio's Water Quality Standards in OAC Chapter 3745-1. The WQ_v shall be equivalent to the volume of runoff from a 0.90-inch rainfall and shall be determined using the following equations:

$$WQ_v = R_v * P * A / 12 \quad (\text{Equation 1})$$

where:

WQ_v = water quality volume in acre-feet

R_v = the volumetric runoff coefficient calculated using equation 2

P = 0.90 inch precipitation depth

A = area draining into the BMP in acres

$$R_v = 0.05 + 0.9i \quad (\text{Equation 2})$$

where i = fraction of post-construction impervious surface)

An additional volume equal to 20 percent of the WQ_v shall be incorporated into the BMP for sediment storage. Ohio EPA recommends BMPs be designed according to the methodology described in the most current edition of the Rainwater and Land Development manual or in another design manual acceptable for use by Ohio EPA.

The BMPs listed in Tables 4a and 4b below are considered standard BMPs approved for general use. However, communities with a regulated MS4 may limit the use of some of these BMPs. BMPs shall be designed such that the drain time is long enough to provide treatment, but short enough to provide storage for successive rainfall events and avoid the creation of nuisance conditions. The outlet structure for the post-construction BMP shall not discharge more than the first half of the WQ_v in less than one-third of the drain time. The WQ_v is the volume of storm water runoff that must be detained by a post-construction practice as specified by the most recent edition of the Rainwater and Land Development manual.

Post-construction practices shall be sized to treat 100% of the WQ_v associated with their contributing drainage area. If there is an existing post-construction BMP that treats runoff from the disturbed area, and the BMP meets the post-construction requirements of this permit, no additional post-construction BMP will be required. A regional storm water BMP may be used to meet the post-construction requirement if 1) the BMP meets the design requirements for treating the WQ_v , and 2) a legal agreement is established through which the regional BMP owner or operator agrees to provide this service in the long term. Design information for such facilities such as contributing drainage areas, capacities, elevations, outlet details and drain times shall be included in the SWP3.

Table 4a Extended Detention Post-Construction Practices with Minimum Drain Times

Extended Detention Practices	Minimum Drain Time of WQ_v
Wet Extended Detention Basin ^{1,2}	24 hours
Constructed Extended Detention Wetland ^{1,2}	24 hours
Dry Extended Detention Basin ^{1,3}	48 hours
Permeable Pavement – Extended Detention ¹	24 hours
Underground Storage – Extended Detention ^{1,4}	24 hours
Sand & Other Media Filtration - Extended Detention ^{1,5}	24 hours

Notes:

1. The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the drain time.
2. Provide a permanent pool with a minimum volume equal to the WQv and an extended detention volume above the permanent pool equal to 1.0 x WQv.
3. Dry basins must include a forebay and a micropool each sized at a minimum of 0.1 x WQv and a protected outlet, or include acceptable pretreatment and a protected outlet.
4. Underground storage must have pretreatment for removal of suspended sediments included in the design and documented in the SWP3. This pretreatment shall concentrate sediment in a location where it can be readily removed. For non-infiltrating, underground extended detention systems, pretreatment shall be 50% effective at capturing total suspended solids according to the testing protocol established in the Alternative Post-Construction BMP Testing Protocol.
5. The WQv ponding area shall completely empty between 24 and 72 hours.

Table 4b Infiltration Post-Construction Practices with Maximum Drain Times

Infiltration Practices	Maximum Drain Time of WQv
Bioretention Area/Cell ^{1,2}	24 hours
Infiltration Basin	24 hours
Infiltration Trench ²	48 hours
Permeable Pavement – Infiltration ³	48 hours
Underground Storage – Infiltration ^{3,4}	48 hours

Notes:

1. Bioretention soil media shall have a permeability of approximately 1 – 4 in/hr. Meeting the soil media specifications in the Rainwater and Land Development manual is considered compliant with this requirement. Bioretention cells must have underdrains unless in-situ conditions allow for the WQv (surface ponding) plus the bioretention soil (to a depth of 24 inches) to drain completely within 48 hours.
2. Infiltrating practices with the WQv stored aboveground (bioretention, infiltration basin) shall fully drain the WQv within 24 hours to minimize nuisance effects of standing water and to promote vigorous communities of appropriate vegetation.
3. Subsurface practices designed to fully infiltrate the WQv (infiltration trench, permeable pavement with infiltration, underground storage with infiltration) shall empty within 48 hours to recover storage for subsequent storm events.
4. Underground storage systems with infiltration must have adequate pretreatment of suspended sediments included in the design and documented in the SWP3 in order to minimize clogging of the infiltrating surface. Pretreatment shall concentrate sediment in a location where it can be readily removed. Examples include media filters situated upstream of the storage or other suitable alternative approved by Ohio EPA. For infiltrating underground systems, pretreatment shall be 80% effective at capturing total suspended solids according to the testing protocol established in the Alternative Post-Construction BMP Testing Protocol.

Small Construction Activities. For all construction activities authorized under this permit which result in a disturbance less than 2 acres, a post-construction practice shall be used to treat storm water runoff for pollutants and to reduce adverse impacts on receiving waters. The applicant must provide a justification in the SWP3 why the use of table 4a and 4b practices are not feasible. The justification must address limiting factors which would prohibit the project going forward should table 4a and 4b practices be required. Please note that additional practices selected will require approval from the regulated MS4. The use of green infrastructure BMPs such as runoff reducing practices is also encouraged.

Transportation Projects. The construction of new roads and roadway improvement projects by public entities (i.e., the state, counties, townships, cities, or villages) may implement post-construction BMPs in compliance with the current version (as of the effective date of this permit) of the Ohio Department of Transportation's "Location and Design Manual, Volume Two Drainage Design" that has been accepted by Ohio EPA as an alternative to the conditions of this permit.

Offsite Mitigation of Post-Construction. Ohio EPA may authorize the offsite mitigation of the post-construction requirements of Part III.G.2.e of this permit on a case by case basis provided the permittee clearly demonstrates the BMPs listed in Tables 4a and 4b are not feasible and the following criteria are met: (1) a maintenance agreement or policy is established to ensure operations and treatment long-term; (2) the offsite location discharges to the same HUC-12 watershed unit; and (3) the mitigation ratio of the WQv is 1.5 to 1 or the WQv at the point of retrofit, whichever is greater. Requests for offsite mitigation must be received prior to receipt of the NOI application.

Previously Developed Areas - Ohio EPA encourages the redevelopment of previously graded, paved or built upon sites through a reduction of the WQv treatment requirement. For a previously developed area, one or a combination of the following two conditions shall be met:

- A 20 percent net reduction of the site's volumetric runoff coefficient through impervious area reduction with soil restoration or replacing impervious roof area with green roof area (for these purposes green roofs shall be considered pervious surface) or
- Treatment of 20 percent of the WQv for the previously developed area using a practice meeting Table 4a/5b criteria.

Where there is a combination of redeveloped areas and new development, a weighted approach shall be used with the following equation:

$$WQv = P * A * [(Rv*0.2) + (Rv2 - Rv1)] / 12 \quad (\text{Equation 3})$$

Where

P = 0.90 inches

A = Area draining into the BMP in acres

Rv1 = volumetric runoff coefficient for existing conditions (current site impervious area)

Rv2 = volumetric runoff coefficient for proposed conditions (post-construction site impervious area)

Post-construction practices shall be located to treat impervious areas most likely to generate the highest pollutant load, such as parking lots or roadways, rather than areas predicted to be cleaner such as rooftops.

Runoff Reduction Practices. The size of structural post-construction practices used to capture and treat the WQv can be reduced by incorporating runoff

reducing practices into the design of the site's drainage system. The approach to calculate and document runoff reduction is detailed in the Rainwater and Land Development Manual. BMP-specific runoff reduction volumes are set by specifications in the Rainwater and Land Development Manual for the following practices:

- Impervious surface disconnection
- Rainwater harvesting
- Bioretention
- Infiltration basin
- Infiltration trench
- Permeable pavement with infiltration
- Underground storage with infiltration
- Grass swale
- Sheet flow to filter strip
- Sheet flow to conservation area

A runoff reduction approach may be used to meet the groundwater recharge requirements in the Big Darby Creek Watershed; the runoff reduction practices used for groundwater recharge may be used to reduce the WQv requirement, see appendix A for details on groundwater recharge requirements.

In order to promote the implementation of green infrastructure, the Director may consider the use of runoff reducing practices to demonstrate compliance with Part III.G.2.e of this permit for areas of the site not draining into a common drainage system of the site, e.g., sheet flow from perimeter areas such as the rear yards of residential lots, low density development scenarios, or where the permittee can demonstrate that the intent of pollutant removal and stream protection, as required in Part III.G.2.e of this permit is being addressed through non-structural post-construction BMPs based upon review and approval by Ohio EPA.

Use of Alternative Post-Construction BMPs. This permit does not preclude the use of innovative or experimental post-construction storm water management technologies. Alternative post-construction BMPs shall previously have been tested to confirm storm water treatment efficacy equivalent to those BMPs listed in Tables 4a and 4b using the protocol described in this section. BMP testing may include laboratory testing, field testing, or both.

Permittees shall request approval from Ohio EPA to use alternative post-construction BMPs on a case-by-case basis. To use an alternative post-construction BMP, the permittee must demonstrate that a BMP listed in Tables 4a and 4b is not feasible and the proposed alternative post-construction BMP meets the minimum treatment criteria as described in this section. The permittee shall submit an application to Ohio EPA for any proposed alternative post-construction BMP. Where the development project is located within a regulated municipal separate storm sewer system (MS4) community, the use of an alternative practice requires pre-approval by the MS4 before submittal of the Ohio EPA permit application. Ohio EPA requires that approvals for alternative

post-construction BMPs are finalized before permittees submit an NOI for permit coverage.

In addition to meeting sediment removal criteria, the discharge rate from the proposed alternative practice shall be reduced to prevent stream bed erosion and protect the physical and biological stream integrity unless there will be negligible hydrological impact to the receiving surface water of the state. Discharge rate is considered to have a negligible impact if the permittee can demonstrate that one of the following three conditions exist:

- i. The entire WQv is recharged to groundwater;
- ii. The larger common plan of development or sale will create less than one acre of impervious surface;
- iii. The storm water drainage system of the development discharges directly into a large river with drainage area equal to 100 square miles or larger upstream of the development site or to a lake where the development area is less than 5 percent of the watershed area, unless a TMDL has identified water quality problems into the receiving surface waters of the state.

If the conditions above that minimize the potential for hydrological impact to the receiving surface water of the state do not exist, then the alternative post-construction BMP must prevent stream erosion by reducing the flow rate from the WQ_v. In such cases, discharge of the WQ_v must be controlled. A second storm water BMP that provides extended detention of the WQ_v may be needed to meet the post-construction criteria.

Alternative Post-Construction BMP Testing Protocol. For laboratory testing, the alternative BMP shall be tested using sediment with a specific gravity of 2.65, a particle size distribution closely matching the distribution shown in Table 5, and total suspended sediment (TSS) concentrations within 10% of 200 mg/L (180 mg/L – 220 mg/L TSS). For an alternative BMP to be acceptable, the test results must demonstrate that the minimum treatment rate is 80% TSS removal at the design flow rate for the tested BMP.

Table 5 Particle Size Distribution for Testing Alternative Post-Construction BMPs

Particle Size (microns)	Percent Finer (%)
1,000	100
500	95
250	90
150	75
100	60
75	50
50	45
20	35
8	20
5	10
2	5

- For field testing, the alternative BMP shall be tested using storm water runoff from the field, not altered by adding aggregate, or subjecting to unusually high

sediment loads such as those from unstabilized construction disturbance. The storm water runoff used for field testing shall be representative of runoff from the proposed installation site for the alternative BMP after all construction activities have ceased and the ground has been stabilized. The influent and effluent TSS concentrations of storm water runoff must be collected in the field. For an alternative BMP to be acceptable, the test results must demonstrate the minimum treatment rate is 80% TSS removal for influent concentrations equal to or greater than 100 mg/L TSS. If the influent concentration to the proposed alternative BMP is less than 100 mg/L TSS in the field, then the BMP must achieve an average effluent concentration less than or equal to 20 mg/L TSS.

- Testing of alternative post-construction BMPs shall be performed or overseen by a qualified independent, third-party testing organization.
- Testing shall demonstrate the maximum flow rate at which the alternative post-construction BMP can achieve the necessary treatment efficacy, including consideration for the potential of sediment resuspension.
- Testing shall demonstrate the maximum volume of sediment and floatables that can be collected in the alternative post-construction BMP before pollutants must be removed to maintain 80% treatment efficacy.
- Testing shall indicate the recommended maintenance frequency and maintenance protocol to ensure ongoing performance of the alternative post-construction BMP.

The alternative post-construction BMP testing protocol described in this section is similar to testing requirements specified by the New Jersey Department of Environmental Protection (NJDEP) for storm water Manufactured Treatment Devices (MTD) and therefore testing results certified by NJDEP shall be accepted by Ohio EPA. For examples of BMPs that have been tested using New Jersey Department of Environmental Protection's procedures, see the website: www.njstormwater.org.

Another nationally recognized storm water product testing procedure is the Technology Assessment Protocol – Ecology (TAPE) administered by the State of Washington, Department of Ecology. The TAPE testing procedure describes testing to achieve 80% TSS removal using a sediment mix with a particle size distribution with approximately 75% of the mass of the aggregate with particle diameters less than 45 microns. Overall, this particle size distribution is finer than the distribution in Table 6. Therefore, if TAPE testing results are available for a proposed alternative post-construction BMP, those results shall be accepted by Ohio EPA. The State of Washington, Department of Ecology website is www.ecy.wa.gov.

Alternative BMPs that utilize treatment processes such as filtering or centrifugal separation, rather than a detention and settling volume, must be designed to ensure treatment of 90 percent of the average annual runoff volume. For the design of these BMPs, the water quality flow rate (WQF)

considered equivalent to the Water Quality Volume (WQv) shall be determined utilizing the Rational Method (Equation 4) with an intensity (i) appropriate for the water quality precipitation event. This intensity shall be calculated using the table given in Appendix C.

$$WQF = C * i * A \quad \text{(Equation 4)}$$

Where

WQF = Water Quality Flow Rate in cubic feet per second (cfs)
C = Rational Method Coefficient of Runoff
i = Intensity (in/hr)
A = Area draining to the BMP (acres)

Alternative post-construction BMPs may include, but are not limited to: vegetated swales, vegetated filter strips, hydrodynamic separators, high-flow media filters, cartridge filters, membrane filters, subsurface flow wetlands, multi-chamber treatment trains, road shoulder media filter drains, wetland channels, rain barrels, green roofs, and rain gardens. The Director may also consider non-structural post-construction approaches.

- f. Surface Water Protection. If the project site contains any streams, rivers, lakes, wetlands or other surface waters, certain construction activities at the site may be regulated under the CWA and/or state isolated wetland permit requirements. Sections 404 and 401 of the Act regulate the discharge of dredged or fill material into surface waters and the impacts of such activities on water quality, respectively. Construction activities in surface waters which may be subject to CWA regulation and/or state isolated wetland permit requirements include, but are not limited to: sewer line crossings, grading, backfilling or culverting streams, filling wetlands, road and utility line construction, bridge installation and installation of flow control structures. If the project contains streams, rivers, lakes or wetlands or possible wetlands, the permittee shall contact the appropriate U.S. Army Corps of Engineers District Office. (CAUTION: Any area of seasonally wet hydric soil is a potential wetland - please consult the Soil Survey and list of hydric soils for your County, available at your county's Soil and Water Conservation District. If you have any questions about Section 401 water quality certification, please contact the Ohio Environmental Protection Agency, Section 401 Coordinator.)

U.S. Army Corps of Engineers (Section 404 regulation):

- Huntington, WV District (304) 399-5210 (Muskingum River, Hocking River, Scioto River, Little Miami River, and Great Miami River Basins)
- Buffalo, NY District (716) 879-4330 (Lake Erie Basin)
- Pittsburgh, PA District (412) 395-7155 (Mahoning River Basin)
- Louisville, KY District (502) 315-6686 (Ohio River)

Ohio EPA 401/404 and non-jurisdictional stream/wetland coordinator can be contacted at (614) 644-2001 (all of Ohio)

Concentrated storm water runoff from BMPs to natural wetlands shall be converted to diffuse flow before the runoff enters the wetlands. The flow should be released such that no erosion occurs downslope. Level spreaders may need to be placed in series, particularly on steep sloped sites, to ensure non-erosive velocities. Other structural BMPs may be used between storm water features and natural wetlands, in order to protect the natural hydrology, hydroperiod, and wetland flora. If the applicant proposes to discharge to natural wetlands, a hydrologic analysis shall be performed. The applicant shall attempt to match the pre-development hydroperiods and hydrodynamics that support the wetland. The applicant shall assess whether their construction activity will adversely impact the hydrologic flora and fauna of the wetland. Practices such as vegetative buffers, infiltration basins, conservation of forest cover, and the preservation of intermittent streams, depressions, and drainage corridors may be used to maintain wetland hydrology.

g. Other controls.

- i. **Non-Sediment Pollutant Controls.** In accordance with Part II.E, no solid (other than sediment) or liquid waste, including building materials, shall be discharged in storm water runoff. The permittee must implement all necessary BMPs to prevent the discharge of non-sediment pollutants to the drainage system of the site or surface waters of the state or an MS4. Under no circumstance shall wastewater from the washout of concrete trucks, stucco, paint, form release oils, curing compounds, and other construction materials be discharged directly into a drainage channel, storm sewer or surface waters of the state. Also, no pollutants from vehicle fuel, oils, or other vehicle fluids can be discharged to surface waters of the state. No exposure of storm water to waste materials is recommended. The SWP3 must include methods to minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, and sanitary waste to precipitation, storm water runoff, and snow melt. In accordance with Part II.D.3, the SWP3 shall include measures to prevent and respond to chemical spills and leaks. You may also reference the existence of other plans (i.e., Spill Prevention Control and Countermeasure (SPCC) plans, spill control programs, Safety Response Plans, etc.) provided that such plan addresses conditions of this permit condition and a copy of such plan is maintained on site.
- ii. **Off-site traffic.** Off-site vehicle tracking of sediments and dust generation shall be minimized. In accordance with Part II.D.1, the SWP3 shall include methods to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. No detergents may be used to wash vehicles. Wash waters shall be treated in a sediment basin or alternative control that provides equivalent treatment prior to discharge.
- iii. **Compliance with other requirements.** The SWP3 shall be consistent with applicable State and/or local waste disposal, sanitary sewer or septic system regulations, including provisions prohibiting waste disposal by

open burning and shall provide for the proper disposal of contaminated soils to the extent these are located within the permitted area.

- iv. **Trench and ground water control.** In accordance with Part II.C, there shall be no turbid discharges to surface waters of the state resulting from dewatering activities. If trench or ground water contains sediment, it shall pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the construction site. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice. Ground water which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.
- v. **Contaminated Sediment.** Where construction activities are to occur on sites with contamination from previous activities, operators shall be aware that concentrations of materials that meet other criteria (is not considered a Hazardous Waste, meeting VAP standards, etc.) may still result in storm water discharges in excess of Ohio Water Quality Standards. Such discharges are not authorized by this permit. Appropriate BMPs include, but are not limited to:
- The use of berms, trenches, and pits to collect contaminated runoff and prevent discharges;
 - Pumping runoff into a sanitary sewer (with prior approval of the sanitary sewer operator) or into a container for transport to an appropriate treatment/disposal facility; and
 - Covering areas of contamination with tarps or other methods that prevent storm water from coming into contact with the material.

Operators should consult with Ohio EPA Division of Surface Water prior to seeking permit coverage.

- h. Maintenance. All temporary and permanent control practices shall be maintained and repaired as needed to ensure continued performance of their intended function. All sediment control practices must be maintained in a functional condition until all up-slope areas they control are permanently stabilized. The SWP3 shall be designed to minimize maintenance requirements. The applicant shall provide a description of maintenance procedures needed to ensure the continued performance of control practices.
- i. Inspections. The permittee shall assign "qualified inspection personnel" to conduct inspections to ensure that the control practices are functional and to evaluate whether the SWP3 is adequate and properly implemented in accordance with the schedule proposed in Part III.G.1.g of this permit or whether additional control measures are required. At a minimum, procedures in a SWP3 shall provide that all controls on the site are inspected:

- 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; and
- once every seven calendar days.

The inspection frequency may be reduced to at least once every month for dormant sites if:

- the entire site is temporarily stabilized or
- runoff is unlikely due to weather conditions for extended periods of time (e.g., site is covered with snow, ice, or the ground is frozen).

The beginning and ending dates of any reduced inspection frequency shall be documented in the SWP3.

Once a definable area has achieved final stabilization, the area may be marked on the SWP3 and no further inspection requirements shall apply to that portion of the site.

Following each inspection, a checklist must be completed and signed by the qualified inspection personnel representative. At a minimum, the inspection report shall include:

- i. the inspection date;
- ii. names, titles, and qualifications of personnel making the inspection;
- iii. weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
- iv. weather information and a description of any discharges occurring at the time of the inspection;
- v. location(s) of discharges of sediment or other pollutants from the site;
- vi. location(s) of BMPs that need to be maintained;
- vii. location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
- viii. location(s) where additional BMPs are needed that did not exist at the time of inspection; and
- ix. corrective action required including any changes to the SWP3 necessary and implementation dates.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of or the potential for pollutants entering the drainage system. Erosion and sediment control measures identified in the SWP3 shall be observed to ensure that those are operating correctly. Discharge locations shall be inspected to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to the receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.

The permittee shall maintain for three years following the submittal of a notice of termination form, a record summarizing the results of the inspection, names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWP3 and a certification as to whether the facility is in compliance with the SWP3 and the permit and identify any incidents of non-compliance. The record and certification shall be signed in accordance with Part V.G. of this permit.

- i. **When practices require repair or maintenance.** If the inspection reveals that a control practice is in need of repair or maintenance, with the exception of a sediment settling pond, it shall be repaired or maintained within 3 days of the inspection. Sediment settling ponds shall be repaired or maintained within 10 days of the inspection.
 - ii. **When practices fail to provide their intended function.** If the inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the SWP3 shall be amended and the new control practice shall be installed within 10 days of the inspection.
 - iii. **When practices depicted on the SWP3 are not installed.** If the inspection reveals that a control practice has not been implemented in accordance with the schedule contained in Part III.G.1.h of this permit, the control practice shall be implemented within 10 days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record shall contain a statement of explanation as to why the control practice is not needed.
3. Approved State or local plans. All dischargers regulated under this general permit must comply, except those exempted under state law, with the lawful requirements of municipalities, counties and other local agencies regarding discharges of storm water from construction activities. All erosion and sediment control plans and storm water management plans approved by local officials shall be retained with the SWP3 prepared in accordance with this permit. Applicable requirements for erosion and sediment control and storm water management approved by local officials are, upon submittal of a NOI form, incorporated by reference and enforceable under this permit even if they are not specifically included in an SWP3 required under this permit. When the project is located within the jurisdiction of a regulated municipal separate storm sewer system (MS4), the permittee shall certify that the SWP3 complies with the requirements of the storm water management program of the MS4 operator.
4. Exceptions. If specific site conditions prohibit the implementation of any of the erosion and sediment control practices contained in this permit or site-specific conditions are such that implementation of any erosion and sediment control practices contained in this permit will result in no environmental benefit, then the permittee shall provide justification for rejecting each practice based on site conditions. Exceptions from implementing the erosion and sediment control standards contained in this permit will be approved or denied on a case-by-case basis.

The permittee may request approval from Ohio EPA to use alternative methods to satisfy conditions in this permit if the permittee can demonstrate that the alternative methods are sufficient to protect the overall integrity of receiving streams and the watershed. Alternative methods will be approved or denied on a case-by-case basis.

PART IV. NOTICE OF TERMINATION REQUIREMENTS

A. Failure to notify.

The terms and conditions of this permit shall remain in effect until a signed Notice of Termination (NOT) form is submitted. Failure to submit an NOT constitutes a violation of this permit and may affect the ability of the permittee to obtain general permit coverage in the future.

B. When to submit an NOT.

1. Permittees wishing to terminate coverage under this permit shall submit an NOT form in accordance with Part V.G. of this permit. Compliance with this permit is required until an NOT form is submitted. The permittee's authorization to discharge under this permit terminates at midnight of the day the NOT form is submitted. Prior to submitting the NOT form, the permittee shall conduct a site inspection in accordance with Part III.G.2.i of this permit and have a maintenance plan in place to ensure all post-construction BMPs will be maintained in perpetuity.
2. All permittees shall submit an NOT form within 45 days of completing all permit requirements. Enforcement actions may be taken if a permittee submits an NOT form without meeting one or more of the following conditions:
 - a. Final stabilization (see definition in Part VII) has been achieved on all portions of the site for which the permittee is responsible (including, if applicable, returning agricultural land to its pre-construction agricultural use);
 - b. Another operator(s) has assumed control over all areas of the site that have not been finally stabilized;
 - c. A maintenance plan is in place to ensure all post construction BMPs are adequately maintained in the long-term;
 - d. For non-residential developments, all elements of the storm water pollution prevention plan have been completed, the disturbed soil at the identified facility have been stabilized and temporary erosion and sediment control measures have been removed at the appropriate time, or all storm water discharges associated with construction activity from the identified facility that are authorized by the above referenced NPDES general permit have otherwise been eliminated. (i) For residential developments only, temporary stabilization has been completed and the lot, which includes a home, has been transferred to the homeowner; (ii) final stabilization has been completed and the lot, which does not include a home, has been transferred to the property owner; (iii) no stabilization has been implemented on a lot, which includes a home, and the lot has been transferred to the homeowner; or

- e. An exception has been granted under Part III.G.4.

C. How to submit an NOT.

To terminate permit coverage, the permittee shall submit a complete and accurate Notice of Termination (NOT) form using Ohio EPA's electronic application form which is available through the Ohio EPA eBusiness Center at: <https://ebiz.epa.ohio.gov/>. Submission through the Ohio EPA eBusiness Center will require establishing an Ohio EPA eBusiness Center account and obtaining a unique Personal Identification Number (PIN) for final submission of the NOT. Existing eBusiness Center account holders can access the NOT form through their existing account and submit using their existing PIN. Please see the following link for guidance: <http://epa.ohio.gov/dsw/ebs.aspx#170669803-streams-guidance>. Alternatively, if you are unable to access the NOT form through the agency eBusiness Center due to a demonstrated hardship, the NOT may be submitted on paper NOT forms provided by Ohio EPA. NOT information shall be typed on the form. Please contact Ohio EPA, Division of Surface Water at (614) 644-2001 if you wish to receive a paper NOT form.

PART V. STANDARD PERMIT CONDITIONS.

A. Duty to comply.

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of ORC Chapter 6111 and is grounds for enforcement action.

Ohio law imposes penalties and fines for persons who knowingly make false statements or knowingly swear or affirm the truth of a false statement previously made.

B. Continuation of an expired general permit.

An expired general permit continues in force and effect until a new general permit is issued.

C. Need to halt or reduce activity not a defense.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to mitigate.

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Duty to provide information.

The permittee shall furnish to the director, within 10 days of written request, any information which the director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee

shall also furnish to the director upon request copies of records required to be kept by this permit.

F. Other information.

When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the NOI, SWP3, NOT or in any other report to the director, he or she shall promptly submit such facts or information.

G. Signatory requirements.

All NOIs, NOTs, SWP3s, reports, certifications or information either submitted to the director or that this permit requires to be maintained by the permittee, shall be signed.

1. These items shall be signed as follows:
 - a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - i. A president, secretary, treasurer or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation; or
 - ii. The manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
 - b. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
 - c. For a municipality, State, Federal or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).
2. All reports required by the permits and other information requested by the director shall be signed by a person described in Part V.G.1 of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

- a. The authorization is made in writing by a person described in Part V.G.1 of this permit and submitted to the director;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator of a well or well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - c. The written authorization is submitted to the director.
3. Changes to authorization. If an authorization under Part V.G.2 of this permit is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part V.G.2 of this permit must be submitted to the director prior to or together with any reports, information or applications to be signed by an authorized representative.

H. Certification.

Any person signing documents under this section shall make the following 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."

I. Oil and hazardous substance liability.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the CWA or 40 CFR Part 112. 40 CFR Part 112 establishes procedures, methods and equipment and other requirements for equipment to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable surface waters of the state or adjoining shorelines.

J. Property rights.

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

K. Severability.

The provisions of this permit are severable and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

L. Transfers.

Ohio NPDES general permit coverage is transferable. Ohio EPA must be notified in writing sixty days prior to any proposed transfer of coverage under an Ohio NPDES general permit. The transferee must inform Ohio EPA it will assume the responsibilities of the original permittee transferor.

M. Environmental laws.

No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

N. Proper operation and maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of SWP3s. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

O. Inspection and entry.

The permittee shall allow the director or an authorized representative of Ohio EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment); and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

P. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

Q. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

R. Bypass

The provisions of 40 CFR Section 122.41(m), relating to "Bypass," are specifically incorporated herein by reference in their entirety. For definition of "Bypass," see Part VII.C.

S. Upset

The provisions of 40 CFR Section 122.41(n), relating to "Upset," are specifically incorporated herein by reference in their entirety. For definition of "Upset," see Part VII.GG.

T. Monitoring and Records

The provisions of 40 CFR Section 122.41(j), relating to "Monitoring and Records," are specifically incorporated herein by reference in their entirety.

U. Reporting Requirements

The provisions of 40 CFR Section 122.41(l), relating to "Reporting Requirements," are specifically incorporated herein by reference in their entirety.

PART VI. REOPENER CLAUSE

If there is evidence indicating potential or realized impacts on water quality due to any storm water discharge associated with construction activity covered by this permit, the permittee of such discharge may be required to obtain coverage under an individual permit or an alternative general permit in accordance with Part I.C of this permit or the permit may be modified to include different limitations and/or requirements.

Permit modification or revocation will be conducted according to ORC Chapter 6111.

PART VII. DEFINITIONS

- A. "Act" means Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117 and Pub. L. 100-4, 33 U.S.C. 1251 et. seq.
- B. "Bankfull channel" means a channel flowing at channel capacity and conveying the bankfull discharge. Delineated by the highest water level that has been maintained for a sufficient period of time to leave evidence on the landscape, such as the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial or

the point at which the clearly scoured substrate of the stream ends and terrestrial vegetation begins.

- C. "Bankfull discharge" means the streamflow that fills the main channel and just begins to spill onto the floodplain; it is the discharge most effective at moving sediment and forming the channel.
- D. "Best management practices (BMPs)" means schedules of activities, prohibitions of practices, maintenance procedures and other management practices (both structural and non-structural) to prevent or reduce the pollution of surface waters of the state. BMP's also include treatment requirements, operating procedures and practices to control plant and/or construction site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage.
- E. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- F. "Channelized stream" means the definition set forth in Section 6111.01 (M) of the ORC.
- G. "Commencement of construction" means the initial disturbance of soils associated with clearing, grubbing, grading, placement of fill, or excavating activities or other construction activities.
- H. "Concentrated storm water runoff" means any storm water runoff which flows through a drainage pipe, ditch, diversion or other discrete conveyance channel.
- I. "Director" means the director of the Ohio Environmental Protection Agency.
- J. "Discharge" means the addition of any pollutant to the surface waters of the state from a point source.
- K. "Disturbance" means any clearing, grading, excavating, filling, or other alteration of land surface where natural or man-made cover is destroyed in a manner that exposes the underlying soils.
- L. "Drainage watershed" means for purposes of this permit the total contributing drainage area to a BMP, i.e., the "watershed" directed to the practice. This would also include any off-site drainage.
- M. "Final stabilization" means that either:
 - 1. All soil disturbing activities at the site are complete and a uniform perennial vegetative cover (e.g., evenly distributed, without large bare areas) with a density of at least 70 percent cover for the area has been established on all unpaved areas and areas not covered by permanent structures or equivalent stabilization measures (such as the use of mulches, rip-rap, gabions or geotextiles) have been employed. In addition, all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment is permanently stabilized to prevent further erosion; or

2. For individual lots in residential construction by either:
 - a. The homebuilder completing final stabilization as specified above or
 - b. The homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or
 3. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its pre-construction agricultural use. Areas disturbed that were previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters of the state and which are not being returned to their pre-construction agricultural use, must meet the final stabilization criteria in (1) or (2) above.
- N. "General contractor" – for the purposes of this permit, the primary individual or company solely accountable to perform a contract. The general contractor typically supervises activities, coordinates the use of subcontractors, and is authorized to direct workers at a site to carry out activities required by the permit.
- O. "Individual Lot NOI" means a Notice of Intent for an individual lot to be covered by this permit (see Part I of this permit).
- P. "Larger common plan of development or sale"- means a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.
- Q. "MS4" means municipal separate storm sewer system which means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) that are:
1. Owned or operated by the federal government, state, municipality, township, county, district(s) or other public body (created by or pursuant to state or federal law) including special district under state law such as a sewer district, flood control district or drainage districts or similar entity or a designated and approved management agency under section 208 of the act that discharges into surface waters of the state; and
 2. Designed or used for collecting or conveying solely storm water,
 3. Which is not a combined sewer and
 4. Which is not a part of a publicly owned treatment works.
- R. "National Pollutant Discharge Elimination System (NPDES)" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and enforcing pretreatment requirements, under sections 307, 402, 318 and 405 of the CWA. The term includes an "approved program."

- S. “Natural channel design” means an engineering technique that uses knowledge of the natural process of a stream to create a stable stream that will maintain its form and function over time.
- T. “NOI” means notice of intent to be covered by this permit.
- U. “NOT” means notice of termination.
- V. “Operator” means any party associated with a construction project that meets either of the following two criteria:
1. The party has day-to-day operational control all activities at a project which are necessary to ensure compliance with a SWP3 for the site and all permit conditions including the ability to authorize modifications to the SWP3, construction plans and site specification to ensure compliance with the General Permit, or
 2. Property owner meets the definition of operator should the party which has day to day operational control require additional authorization from the owner for modifications to the SWP3, construction plans, and/or site specification to ensure compliance with the permit or refuses to accept all responsibilities as listed above (Part VII.V.1).
- Subcontractors generally are not considered operators for the purposes of this permit. As set forth in Part I.F.1, there can be more than one operator at a site and under these circumstances, the operators shall be co-permittees.
- W. “Ordinary high water mark” means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.
- X. “Owner or operator” means the owner or operator of any “facility or activity” subject to regulation under the NPDES program.
- Y. “Permanent stabilization” means the establishment of permanent vegetation, decorative landscape mulching, matting, sod, rip rap and landscaping techniques to provide permanent erosion control on areas where construction operations are complete or where no further disturbance is expected for at least one year.
- Z. “Percent imperviousness” means the impervious area created divided by the total area of the project site.
- AA. “Point source” means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or the floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

- BB. "Qualified inspection personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls, who possesses the skills to assess all conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.
- CC. "Rainwater and Land Development" is a manual describing construction and post-construction best management practices and associated specifications. A copy of the manual may be obtained by contacting the Ohio Department of Natural Resources, Division of Soil & Water Conservation.
- DD. "Riparian area" means the transition area between flowing water and terrestrial (land) ecosystems composed of trees, shrubs and surrounding vegetation which serve to stabilize erodible soil, improve both surface and ground water quality, increase stream shading and enhance wildlife habitat.
- EE. "Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.
- FF. "Sediment settling pond" means a sediment trap, sediment basin or permanent basin that has been temporarily modified for sediment control, as described in the latest edition of the Rainwater and Land Development manual.
- GG. "State isolated wetland permit requirements" means the requirements set forth in Sections 6111.02 through 6111.029 of the ORC.
- HH. "Storm water" means storm water runoff, snow melt and surface runoff and drainage.
- II. "Steep slopes" means slopes that are 15 percent or greater in grade. Where a local government or industry technical manual has defined what is to be considered a "steep slope," this permit's definition automatically adopts that definition.
- JJ. "Stream edge" means the ordinary high water mark.
- KK. "Subcontractor" – for the purposes of this permit, an individual or company that takes a portion of a contract from the general contractor or from another subcontractor.
- LL. "Surface waters of the state" or "water bodies" means all streams, lakes, reservoirs, ponds, marshes, wetlands or other waterways which are situated wholly or partially within the boundaries of the state, except those private waters which do not combine or effect a junction with natural surface or underground waters. Waters defined as sewerage systems, treatment works or disposal systems in Section 6111.01 of the ORC are not included.
- MM. "SWP3" means storm water pollution prevention plan.
- NN. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment

facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- OO. “Temporary stabilization” means the establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation and other techniques capable of quickly establishing cover over disturbed areas to provide erosion control between construction operations.
- PP. “Water Quality Volume (WQ_v)” means the volume of storm water runoff which must be captured and treated prior to discharge from the developed site after construction is complete.

Appendix A
Big Darby Creek Watershed

CONTENTS OF THIS APPENDIX

- A.1 Permit Area
- A.2 TMDL Conditions
- A.3 Sediment Settling Ponds and Sampling
- A.4 Riparian Setback Requirements
- A.5 Riparian Setback Mitigation
- A.6 Groundwater Recharge Requirements
- A.7 Groundwater Recharge mitigation

Attachment A-A: Big Darby Creek Watershed Map

Attachment A-B: Stream Assessment and Restoration

- A.1** Permit Area. This appendix to Permit OHC00005 applies to the entire Big Darby Creek Watershed located within the State of Ohio. Please see Attachment A for permit area boundaries.
- A.2** This general permit requires control measures/BMPs for construction sites that reflect recommendations set forth in the U.S. EPA approved Big Darby Creek TMDL.
- A.3** Sediment settling ponds additional conditions. The sediment settling pond shall be sized to provide a minimum sediment storage volume of 134 cubic yards of effective sediment storage per acre of drainage and maintain a target discharge performance standard of 45 mg/l Total Suspended Solids (TSS) up to a 0.75-inch rainfall event within a 24-hour period. Unless infeasible, sediment settling ponds must be dewatered at the pond surface using a skimmer or equivalent device. The depth of the sediment settling pond must be less than or equal to five feet. Sediment must be removed from the sediment settling pond when the design capacity has been reduced by 40 percent (This is typically reached when sediment occupies one-half of the basin depth).

Silt Fence and Diversions. For sites five or more acres in size, the use of sediment barriers as a primary sediment control is prohibited. Centralized sediment basins shall be used for sites 5 or more acres in size. Diversions shall direct all storm water runoff from the disturbed areas to the impoundment intended for sediment control. The sediment basins and associated diversions shall be implemented prior to the major earth disturbing activity.

The permittee shall sample in accordance with sampling procedures outlined in 40 CFR 136. Sampling shall occur as follows:

- i. Occur at the outfall of each sediment settling pond associated with the site. Each associated outfall shall be identified by a three-digit number (001, 002, etc.);
- ii. The applicable rainfall event for sampling to occur shall be a rainfall event of 0.25-inch to a 0.75-inch rainfall event to occur within a 24-hour period. Grab sampling shall be initiated at a site within 14 days, or the first applicable rainfall event

thereafter, once upslope disturbance of each sampling location is initiated and shall continue on a quarterly basis. Quarterly periods shall be represented as January - March, April - June, July - September and October - December. Sampling results shall be retained on site and available for inspection.

If any sample is greater than the performance standard of 45 mg/l TSS, the permittee shall modify the SWP3 and install/implement new control practice(s) within 10 days to ensure the TSS performance standard is maintained. Within 3 days of improvement(s), or the first applicable rainfall event thereafter, the permittee shall resample to ensure SWP3 modifications maintain the TSS performance standard target.

For each sample taken, the permittee shall record the following information:

- the outfall and date of sampling;
- the person(s) who performed the sampling;
- the date the analyses were performed on those samples;
- the person(s) who performed the analyses;
- the analytical techniques or methods used; and
- the results of all analyses.

Both quarterly and sampling results following a discharge target exceedance shall be retained on site and available for inspection.

A.4 Riparian Setback Requirements.

The SWP3 shall clearly delineate the boundary of required stream setback distances. No construction activity shall occur, without appropriate mitigation, within the delineated setback boundary except activities associated with restoration or recovery of natural floodplain and channel form characteristics as described in Attachment B, storm water conveyances from permanent treatment practices and approvable utility crossings. Such conveyances must be designed to minimize the width of disturbance. If intrusion within the delineated setback boundary is necessary to accomplish the purposes of a project, then mitigation shall be required in accordance with Appendix A.5 of this permit. Streams requiring protection under this section are defined as perennial, intermittent or ephemeral streams with a defined bed, bank or channel. National Resources Conservation Service (NRCS) soil survey maps should be used as one reference and the presence of a stream requiring protection should also be confirmed in the field. Any required setback distances shall be clearly displayed in the field prior to any construction related activity.

Riparian setbacks distance shall be delineated based upon one of the following two methods:

- i. The setback distance shall be sized as the greater of the following:
 1. The regulatory 100-year floodplain based on FEMA mapping;
 2. A minimum of 100 feet from the top of the streambank on each side; or

3. A distance calculated using the following equation:

$$W = 133DA^{0.43} \quad (\text{Equation 1, Appendix A})$$

where:

DA = drainage area (mi²)

W = total width of riparian setback (ft)

W shall be centered over the meander pattern of the stream such that a line representing the setback width would evenly intersect equal elevation lines on either side of the stream.

If the DA remains relatively constant throughout the stretch of interest, then the DA of the downstream edge of the stretch should be used. Where there is a significant increase in the DA from the upstream edge to The downstream edge of the area of interest, the setback width shall increase accordingly.

- ii. **Stream Restoration with 100 feet (each side) Riparian Setback.** Each stream segment within the proposed site boundaries can be assessed in accordance with Attachment B, Part 1. In the event the stream segment is classified as a "Previously Modified Low Gradient Headwater Stream", the permittee has the option to restore the stream segment in accordance with Attachment B and include a 100-foot water quality setback distance from the top of the streambank on each side. In the event the stream segment exceeds the minimum criteria in Attachment B to be classified as a "Previously Modified Low Gradient Headwater Stream," this Part III.G.2.b.ii may be considered on a case-by-case basis.

No structural sediment controls (e.g., the installation of sediment barriers or a sediment settling pond) or structural post-construction controls shall be used in a surface water of the State or the delineated setback corridor.

Previously developed projects (as defined in Part III.G.2.e.) located within the delineated setback boundary are exempt from Riparian Setback Mitigation (A.5) provided the proposed project does not further intrude into the delineated setback boundary.

Linear transportation projects which are caused solely by correcting safety related issues, mandates of modern design requirements and/or resulting from other mitigation activities are exempt from Riparian Setback Mitigation (Part III.G.2.c. A.5) if less than one acre of total new right-of-way is associated with the project.

A.5 Riparian Setback Mitigation.

The mitigation required for intrusion into the riparian setback shall be determined by the horizontal distance the intrusion is from the stream. Up to three zones will be used in determining the required mitigation. Zone 1 extends from 0 to 25 feet from the stream edge. Zone 2 extends from 25 to 100 feet from the stream edge, and Zone 3 extends from 100 feet to the outer edge of the setback corridor. Intrusion into these zones will require the following mitigation within the same Watershed Assessment Unit (12-digit HUC scale):

- i. Four times the total area disturbed in the stream and within Zone 1 of the site being developed shall be mitigated within Zone 1 of the mitigation location.
- ii. Three times the area disturbed within Zone 2 of the site being developed shall be mitigated within Zones 1 and/or 2 of the mitigation location.
- iii. Two times the area disturbed within Zone 3 of the site being developed shall be mitigated within any zone of the mitigation location.

In lieu of mitigation ratios found within in this section, linear transportation projects which result in total new right-of-way greater than one acre and less than two acres, which are caused solely by correcting safety related issues, mandates of modern design requirements and/or resulting from other mitigation activities, shall provide Riparian Setback Mitigation at a ratio of 1.5 to 1.

All mitigation shall, at a minimum, include conserved or restored setback zone and should be designed to maximize the ecological function of the mitigation. Including mitigation at the stream edge along with associated setback areas is one way to maximize ecological function. Mitigation shall be protected in perpetuity by binding conservation easements or environmental covenants which must be recorded within 6 months of receiving permit authorization. Granting of binding conservation easements or environmental covenants protected in perpetuity for land outside of disturbed area but within a required riparian setback counts towards required mitigation.

Mitigation may also be satisfied by approved pooled mitigation areas and in-lieu fee sponsored mitigation areas. Mitigation resulting from State or Federal environmental regulations may be adjusted in recognition of these requirements.

A.6 Groundwater Recharge Requirements.

The SWP3 shall ensure that the overall site post-development groundwater recharge equals or exceeds the pre-development groundwater recharge. The SWP3 shall describe the conservation development strategies, BMPs and other practices deemed necessary by the permittee to maintain or improve pre-development rates of groundwater recharge. Pre-development and post-development groundwater recharge shall be calculated using the following equation:

i. $Vre_x = A_x * Dre_x / 12$ (Equation 2, Appendix A)

where:

- X = Represents a land use and hydrologic soil group pair
 Vre_x = Volume of total annual recharge from land use-soil group X (in acre-ft)
 Dre_x = Depth of total annual recharge associated with land use-soil group X from Tables 1 or 2 (in inches)
 A_x = Area of land use-soil group X (in acres)

Table 1 values should be used for land where the underlying geology indicates a potential for downward migration of groundwater. Table 1 values represent the combined total groundwater recharge potential including groundwater contribution to stream baseflow and to the underlying bedrock aquifer. The potential for downward migration can be determined from a comparison of the potentiometric maps for the glacial and bedrock aquifers. Use Table 2 when this potential is unlikely to exist. Detailed potentiometric maps for the Franklin county portion of the Darby watershed, and coarse potentiometric maps for the Darby watershed outside of Franklin County and hydrologic soil group data are available at:

http://www.epa.state.oh.us/dsw/permits/GP_ConstructionSiteStormWater_Darby.aspx.

Table A-1 (Appendix A) Annual Average Expected Total Groundwater Recharge³

Land Use	Density (DU ¹ /acre)	% Impervious	Recharge (inches) by Hydrologic Soil Group ²			
			A	B	C	D
Woods / Forest	-	-	17.0	16.6	15.6	14.6
Brush	-	-	17.0	16.6	15.6	14.6
Meadow	-	-	17.0	16.5	15.4	14.4
Managed Wood	-	-	16.9	16.0	14.7	13.4
Pasture	-	-	16.5	15.9	14.4	13.0
Row Crop	-	-	15.8	14.2	11.9	8.1
Urban Grasses	-	-	15.7	15.7	14.2	12.7
Low Density Residential	0.5	12%	15.7	15.7	14.2	12.7
Low Density Residential	1	20%	14.8	14.8	13.7	12.2
Medium Density Residential	2	25%	11.5	11.5	11.5	11.5
Medium Density Residential	3	30%	11.2	11.2	11.2	11.2
Medium Density Residential	4	38%	9.6	9.6	9.6	9.6
High Density Residential	≥5	65%	7.3	7.3	7.3	7.3
Commercial & Road Right-of-Way ⁴	-	90%	4.3	4.3	4.3	4.3

¹ DU = Dwelling Units

² Hydrologic soil group designations of A/D, B/D, and C/D should be considered as D soils for this application

³ These values apply when recharge of the aquifer is expected; recharge to the bedrock aquifer can be expected when the potentiometric head of the glacial aquifer is greater than the bedrock aquifer.

⁴ The 4.3 infiltration value may only be used for an area as a whole (includes impervious and pervious areas) which includes a minimum of 10 percent pervious area. If all land uses (pervious and impervious) are tabulated separately, then impervious areas have 0 inches of recharge.

Table A-2 (Appendix A) Annual Average Expected Baseflow Recharge³

Land Use	Density (DU ¹ /acre)	% Impervious	Recharge (inches) by Hydrologic Soil Group ²			
			A	B	C	D
Woods / Forest	-	-	11.8	11.4	10.7	9.9
Brush	-	-	11.7	11.4	10.7	9.9
Meadow	-	-	11.8	11.3	10.6	9.8
Managed Wood	-	-	11.7	11.0	10.0	9.1
Pasture	-	-	11.3	11.0	9.9	8.9
Row Crop	-	-	11.1	10.1	9.0	6.2
Urban Grasses	-	-	11.2	11.2	10.3	9.3
Low Density Residential	0.5	12%	11.2	11.2	10.3	9.3
Low Density Residential	1	20%	9.5	9.5	9.0	8.6
Medium Density Residential	2	25%	7.8	7.8	7.8	7.8
Medium Density Residential	3	30%	7.6	7.6	7.6	7.6
Medium Density Residential	4	38%	6.5	6.5	6.5	6.5
High Density Residential	≥5	65%	5.0	5.0	5.0	5.0
Commercial & Road Right-of-Way ⁴	-	90%	2.9	2.9	2.9	2.9

¹ DU = Dwelling Units

² Hydrologic soil group designations of A/D, B/D, and C/D should be considered as D soils for this application

³ These values apply when no recharge of the aquifer is expected.

⁴ The 2.9 infiltration value may only be used for an area as a whole (includes impervious and pervious areas) which includes a minimum of 10 percent pervious area. If all land uses (pervious and impervious) are tabulated separately, then impervious areas have 0 inches of recharge.

Table A-3 (Appendix A) Land Use Definitions

Land Use	Definition
Woods / Forest	Areas dominated by trees. Woods are protected from grazing and litter and brush adequately cover the soil.
Brush	Brush, weeds, grass mixture where brush is the major element and more than 75% of the ground is covered.
Meadow	Continuous grass, protected from grazing, generally mowed for hay.
Managed Wood	Orchards, tree farms, and other areas planted or maintained for the production of fruits, nuts, berries, or ornamentals.
Pasture	Pasture, grassland, or range where at least 50% of the ground is covered and the area is not heavily grazed.
Row Crop	Areas used to produce crops, such as corn, soybeans, vegetables, tobacco, and cotton.
Urban Grasses	Vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Examples include parks, lawns, golf courses, airport grasses, and industrial site grasses.
Residential	Areas with a mixture of constructed materials and vegetation; the average % imperviousness and number of dwelling units per acre to determine the appropriate density is specified.
Commercial	Includes infrastructure (e.g. roads, railroads, etc.) and all highly developed areas not classified as High Intensity Residential.

- ii. The pre-development ground water recharge volume shall be calculated by determining the area of each land use-soil type pairing on the site of interest. The recharge associated with each such pairing multiplied by the area will give the pre-development volume of total groundwater

recharge. The same shall be done for the post-development land use-soil type pairings.

Any activity that is expected to produce storm water runoff with elevated concentrations of carcinogens, hydrocarbons, metals, or toxics is prohibited from infiltrating untreated storm water from the area affected by the activity. The groundwater recharge mitigation requirement for areas affected by such activities must be met by methods which do not present a risk of groundwater contamination. The following land uses and activities are typically deemed storm water hotspots:

Vehicle salvage yards and recycling facilities

- vehicle service and maintenance facilities (i.e. truck stops, gas stations)
- fleet storage areas (i.e. bus, truck)
- industrial sites subject to industrial storm water permitting requirements
- bulk terminals
- marinas
- facilities that generate or store hazardous materials
- other land uses and activities as designated by individual review

The following land uses and activities are not normally considered hotspots:

- residential streets and rural highways
- residential development
- institutional development
- commercial and office developments
- non-industrial rooftops
- pervious areas, except golf courses and nurseries

The applicant may use structural BMPs within drinking water source protection areas for community public water systems only to the extent that the structural BMP(s) does not cause contaminants in the recharge waters to impact the ground water quality at levels that would cause an exceedance of the drinking water Maximum Contaminant Levels (OAC Section 3745-81 and 3745-82). To obtain a map of drinking water source protection areas for community public water systems contact Ohio EPA's Division of Drinking and Ground Waters at (614) 644-2752.

Linear transportation projects which are caused solely by correcting safety related issues, mandates of modern design requirements and/or resulting from other mitigation activities are exempt from Groundwater Recharge Mitigation (Part III.G.2.e) if less than one acre of total new right-of-way is associated with the project.

Protection of open space (infiltration areas) shall be by binding conservation easements that identify a third-party management agency, such as a homeowners' association/condominium association, political jurisdiction or third-party land trust.

A.7 Groundwater Recharge Mitigation.

If the post-development recharge volume is less than the pre-development recharge volume, then mitigation will be required. Two options are available for most applications:

- i. The preferred method is to convert additional land to land use with higher recharge potential. The difference in groundwater recharge between the existing and converted land use recharge is the amount which can be used as recharge credit. Off-site Groundwater Recharge Mitigation shall occur within the same Watershed Assessment Unit (12-digit HUC scale) as the permitted site and preferably up-gradient and within a 2-mile radius.

Mitigation shall be protected in perpetuity by binding conservation easements or environmental covenants which must be recorded within 6 months of receiving permit authorization. Granting of binding conservation easements or environmental covenants protected in perpetuity for land outside of the disturbed area, but within a required riparian setback counts towards required mitigation.

Mitigation may also be satisfied by approved pooled mitigation areas and in-lieu fee sponsored mitigation areas.

- ii. On-site structural and non-structural practices may also be used to achieve groundwater mitigation requirements by retaining and infiltrating on-site a minimum volume of storm water runoff based on the area and hydrologic soil grouping of disturbed soils. If these infiltrating practices are incorporated upstream of the water quality volume treatment practice, the volume of groundwater being infiltrated may be subtracted from the water quality volume for purpose of meeting post-construction requirements. The on-site retention requirement is determined by the following formula:

$$V_{\text{retention}} = A_{\text{HSG-A}} * 0.90 \text{ in} + A_{\text{HSG-B}} * 0.75 \text{ in} + A_{\text{HSG-C}} * 0.50 \text{ in} + A_{\text{HSG-D}} * 0.25 \text{ in}$$

(Equation 3, Appendix A)

Where,

$V_{\text{retention}}$ = Volume of runoff retained onsite using an approved infiltration practice

$A_{\text{HSG-x}}$ = area of each hydrologic soil group within the disturbed area

Table A-4: Hydrologic Soil Groups and On-site Retention Depth per Acre

Hydrologic Soil Group	HSG A	HSG B	HSG C & D	HSG D
Retention Depth (inches)	0.90	0.75	0.50	0.25

Retention volume ($V_{\text{retention}}$) provided by selected practices shall be determined using the runoff reduction method criteria as outlined in Part III.G.2.e, Ohio EPA's Runoff Reduction spreadsheet and supporting documentation in the Rainwater and Land Development manual. Hydrologic soil group (HSG) areas are to be determined by using the current version of SURRGO or Web Soil Survey soils information.

Appendix A Attachment A: Big Darby Creek Watershed



A more detailed map can be viewed at:

http://www.epa.state.oh.us/dsw/permits/GP_ConstructionSiteStormWater_Darby.aspx

Appendix A Attachment B

Part 1 Stream Assessment

This assessment will determine if a stream is considered a previously channelized, low-gradient headwater stream (a drainage ditch) which would be applicable for stream restoration in lieu of protecting a setback as per Appendix A. A.4.i and ii.

In the event the assessment of the stream, meets all the criteria listed below, restoration (provided 401/404 permits are authorized) as depicted in Part 2 of this attachment, may be a means of reducing the setback distance required by A.4.i. (Appendix A).

Previously Channelized Low-Gradient Headwater Streams (drainage ditches) shall for the purposes of this permit be defined as having all of the following characteristics:

- Less than 10 square miles of drainage area
- Low gradient and low stream power such that despite their straightened and entrenched condition incision (down-cutting) is not evident
- Entrenched, entrenchment ratio < 2.2
- Straight, sinuosity of the bankfull channel < 1.02

Part 2 Restoration

Restoration shall be accomplished by any natural channel design approach that will lead to a self-maintaining reach able to provide both local habitat and watershed services (e.g. self-purification and valley floodwater storage).

- a. Construction of a floodplain, channel and habitat via natural channel design
- b. Floodplain excavation necessary to promote interaction between stream and floodplain
- c. Include a water quality setback of 100 feet from top of the streambank on each side.

The primary target regardless of design approach shall be the frequently flooded width, which shall be maximized, at 10 times the channel's self-forming width. Five times the self-forming channel width may still be acceptable particularly on portions of the site if greater widths are achieved elsewhere.

Appendix B Olentangy River Watershed

CONTENTS OF THIS APPENDIX

- B.1 Permit Area
- B.2 TMDL Conditions
- B.3 Riparian Setback Requirements
- B.4 Riparian Setback Mitigation

Attachment A: Area of Applicability for the Olentangy Watershed (Map)

Attachment B: Stream Assessment and Restoration

B.1 Permit Area.

This appendix to Permit OHC00005 applies to specific portions of the Olentangy River Watershed located within the State of Ohio. The permit area includes the following 12-digit Hydrologic Unit Codes (HUC-12) within the Olentangy River Watershed:

12-Digit Hydrologic Unit Codes

12-Digit Hydrologic Unit Codes (HUC)	Narrative Description of Sub-Watershed
05060001 09 01	Shaw Creek
05060001 09 02	Headwaters Whetstone Creek
05060001 09 03	Claypool Run-Whetstone Creek
05060001 10 07	Delaware Run-Olentangy River
05060001 11 01	Deep Run-Olentangy River
05060001 11 02 (Only portion as depicted in Attachment A)	Rush Run-Olentangy River

Please see Attachment A (Appendix B) for permit area boundaries. An electronic version of Attachment A can be viewed at

http://epa.ohio.gov/dsw/permits/GP_ConstructionSiteStormWater_Olentangy.aspx

- B.2** This general permit requires control measures/BMPs for construction sites that reflect recommendations set forth in the U.S. EPA approved Olentangy TMDL.

B.3 Riparian Setback Requirements.

The permittee shall comply with the riparian setback requirements of this permit or alternative riparian setback requirements established by a regulated MS4 and approved by Ohio EPA. The SWP3 shall clearly delineate the boundary of required stream setback distances. The stream setback shall consist of a streamside buffer and an outer buffer. No construction activity shall occur, without appropriate mitigation, within the streamside buffer except activities associated with storm water conveyances from permanent treatment practices, approvable utility crossings and restoration or recovery of floodplain and channel form characteristics as described in Attachment B. Storm water conveyances must be designed to minimize the width of disturbance. Construction activities requiring mitigation for intrusions within the outer buffer for the Olentangy River mainstem and perennial streams are described in Appendix B.4

If intrusion within the delineated setback boundary is necessary to accomplish the purposes of a project, then mitigation shall be required in accordance with Appendix B.3. of this permit. Streams requiring protection under this section have a defined bed and bank or channel and are defined as follows:

- The Olentangy River mainstem;
- Perennial streams have continuous flow on either the surface of the stream bed or under the surface of the stream bed;
- Intermittent streams flow for extended periods of time seasonally of a typical climate year; and
- Ephemeral streams are normally dry and only flow during and after precipitation runoff (episodic flow).

National Resources Conservation Service (NRCS) soil survey maps should be used as one reference and the presence of a stream requiring protection should also be confirmed in the field. Any required setback distances shall be clearly displayed in the field prior to any construction related activity.

Riparian setbacks shall be delineated based upon one of the following two methods:

- i. The required setback distances shall vary with stream type as follows:
 - a. The setback distances associated with the mainstem of the Olentangy River shall consist of:
 - (1) A streamside buffer width of 100 feet as measured horizontally from the ordinary high water mark per side; and
 - (2) An outer buffer width sized to the regulatory 100-year floodplain based on FEMA mapping. No impervious surfaces shall be constructed without appropriate mitigation and moderate to substantial fill activities with no impervious surface may require appropriate mitigation pending an individual approval by Ohio EPA.
 - b. The setback distance associated with perennial streams, other than the Olentangy mainstem, shall consist of:
 - (1) A streamside buffer width of 80 feet per side measured horizontally from the ordinary high water mark; and
 - (2) An outer buffer width sized to the regulatory 100-year floodplain based on FEMA mapping. In the event the regulatory 100-year floodplain is not established, the outer buffer width shall be calculated using the following equation and measured horizontally from the ordinary high water mark. No impervious surfaces, structure, fill, or activity that would impair the floodplain or stream stabilizing ability of the outer buffer shall occur without appropriate mitigation:

$$W = 143DA^{0.41}$$

(Equation 1 Appendix B)

where:

DA = drainage area (mi²)

W = total width of riparian setback (ft)

W shall be centered over the meander pattern of the stream such that a line representing the setback width would evenly intersect equal elevation lines on either side of the stream.

If the DA remains relatively constant throughout the stretch of interest, then the DA of the downstream edge of the stretch should be used. Where there is a significant increase in the DA from the upstream edge to the downstream edge of the area of interest, the setback width shall increase accordingly.

b. The setback distance associated with intermittent streams and ephemeral streams shall be a streamside buffer width of 30 feet per side measured horizontally from the centerline of the stream. No outer buffer is required for intermittent and ephemeral streams.

- ii. Stream Restoration with 100 feet (each side) Riparian Setback. Each stream segment within the proposed site boundaries can be assessed in accordance with Attachment B. In the event the stream segment is classified as a "Previously Modified Low Gradient Headwater Stream", the permittee has the option to restore the stream segment in accordance with Attachment B and include a 100 feet water quality setback distance from the top of the streambank on each side. In the event the stream segment exceeds the minimum criteria in Attachment B to be classified as a "Previously Modified Low Gradient Headwater Stream", this may be considered on a case-by-case basis.

No structural sediment controls (e.g., the installation of sediment barriers or a sediment settling pond) or structural post-construction controls shall be used in a stream or the streamside buffer. Activities and controls that would not impair the floodplain or stream stabilizing ability of the outer buffer can be considered.

Redevelopment projects (i.e., developments on previously developed property) located within the delineated setback boundary is exempt from Riparian Setback Mitigation (B.3) provided the proposed project does not further intrude the delineated setback boundary.

B.4 Riparian Setback Mitigation.

The mitigation required for intrusion into the riparian setback of the **Olentangy River mainstem or perennial streams** shall be determined by the horizontal distance the intrusion is from the stream. Up to three zones will be used in determining the required mitigation. Zone 1 extends from 0 to 30 feet from the stream edge. Zone 2 extends from 30 feet to the outer edge of the streamside buffer. Zone 3 extends from the outer edge of the streamside buffer to the outer edge of the outer buffer. Intrusion into these zones will require the following mitigation within the same Watershed Assessment Unit

(12-digit HUC scale). Alternative mitigation, within the permit area, may be considered on a case-by-case basis:

1. Four (4) times the total area disturbed in the stream within Zone 1 of the site being developed shall be mitigated; or, two (2) times the total area disturbed in the stream within Zone 1 shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected by binding conservation easements or environmental covenants.
2. Three (3) times the area disturbed within Zone 2 of the site being developed shall be mitigated within Zones 1 and/or 2 of the mitigation location; or, one and one-half (1.5) times the total area disturbed within Zone 2 shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.
3. Two (2) times the area to be mitigated within Zone 3 of the site being developed shall be mitigated within any Zone of the mitigation location; or, one (1) times the total area to be mitigated within any zone shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.

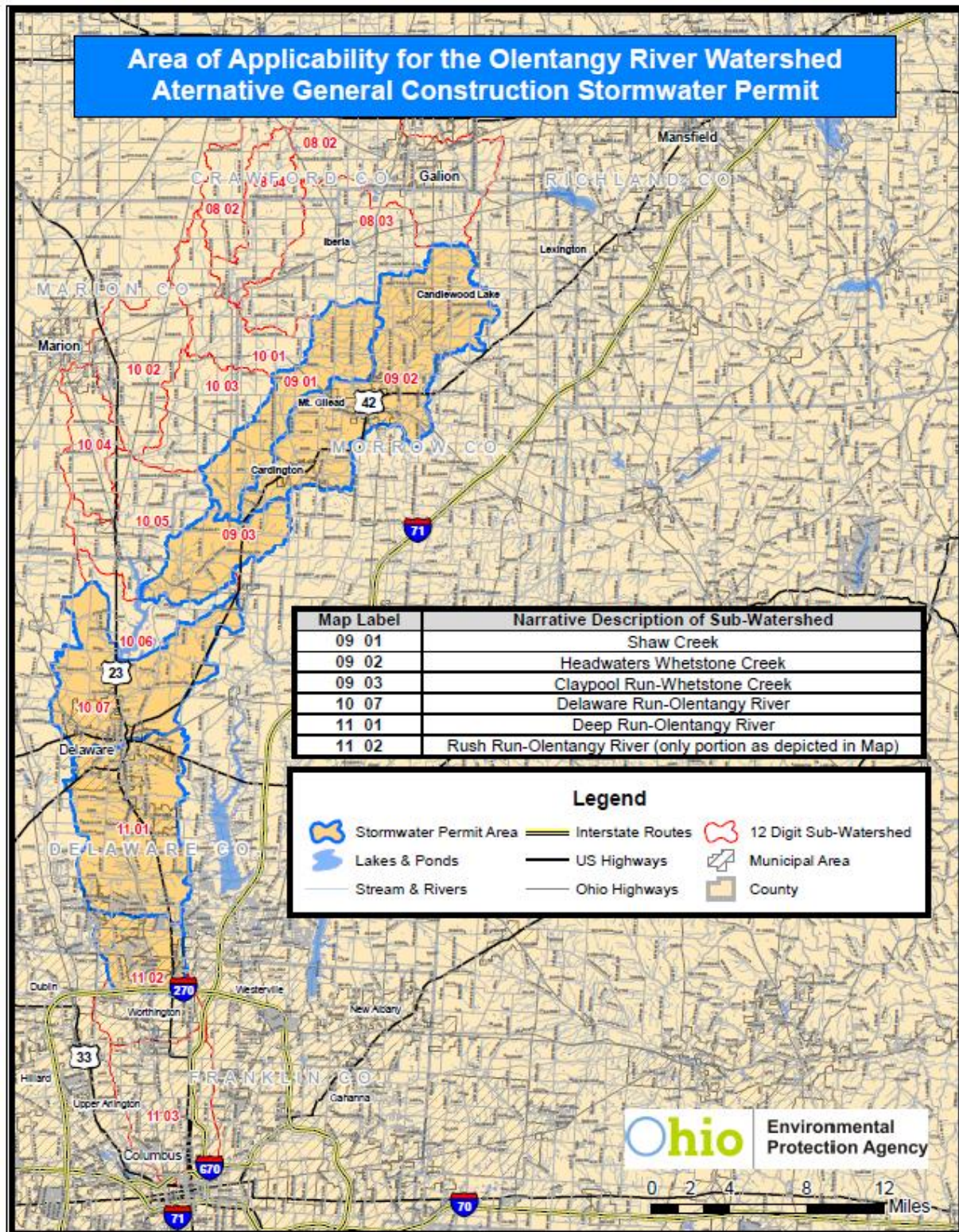
The mitigation required for intrusion into the riparian setback of an **intermittent stream** shall be four (4) times the total area disturbed within the riparian setback of the site being developed shall be mitigated; or two (2) times the total area disturbed within the riparian setback shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.

The mitigation required for intrusion into the streamside buffer of an **ephemeral stream** shall be two (2) times the total area disturbed within the riparian setback of the site being developed shall be mitigated; or one (1) times the total area disturbed within the riparian setback shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.

All mitigation shall, at a minimum, include conserved or restored setback zone, and should be designed to maximize the ecological function of the mitigation. Including mitigation at the stream edge along with associated setback areas is one way to maximize ecological function. Mitigation shall be protected in perpetuity by binding conservation easements or environmental covenants which must be recorded within 6 months of permit authorization. Granting of binding conservation easements or environmental covenants protected for land outside of disturbed area, but within a required riparian setback counts towards required mitigation.

Mitigation may also be satisfied by approved pooled mitigation areas and in-lieu fee sponsored mitigation areas. Mitigation resulting from State or Federal environmental regulations may be adjusted in recognition of these requirements.

Appendix B Attachment A Applicable Portions of the Olentangy Watershed



A more detailed map can be viewed at:
http://epa.ohio.gov/dsw/permits/GP_ConstructionSiteStormWater_Olentangy.aspx

Appendix B Attachment B

Part 1 Stream Assessment

This assessment will determine if a stream is considered a previously channelized, low-gradient headwater stream (a drainage ditch) which would be applicable for stream restoration in lieu of protecting an outer 'no build' setback as per Appendix B B.2i. and ii.

In the event the assessment of the stream meets all the criteria listed below, restoration as depicted in Part 2 of this attachment or natural channel design could be performed, provided 401/404 permits are authorized, and may be a means of reducing the setback distance required by B.2.i. (Appendix B).

Previously Modified, Low-Gradient Headwater Streams shall, for the purposes of this permit, be defined as having all of the following characteristics:

- Less than 10 square miles of drainage area;
- Low gradient and low stream power such that incision (down-cutting) is not evident;
- Entrenched such that the ratio of the frequently flooded width to the bankfull width is less than 2.2; and
- Straight with little or no sinuosity present such that the ratio of the bankfull channel length to the straight-line distance between two points is less than 1.02.

Part 2 Restoration

Restoration shall be accomplished by any natural channel design approach that will lead to a self-maintaining reach able to provide both local habitat and watershed services (e.g. self-purification and valley floodwater storage).

- a. Construction of a floodplain, channel and habitat via natural channel design
- b. Floodplain excavation necessary to promote interaction between stream and floodplain
- c. Include a water quality setback of 100 feet from top of the streambank on each side.

The primary target shall be a frequently flooded width of 10 times the channel's self-forming width. Five times the self-forming channel width may be acceptable if sufficient elements of natural channel design are included in the restoration project.

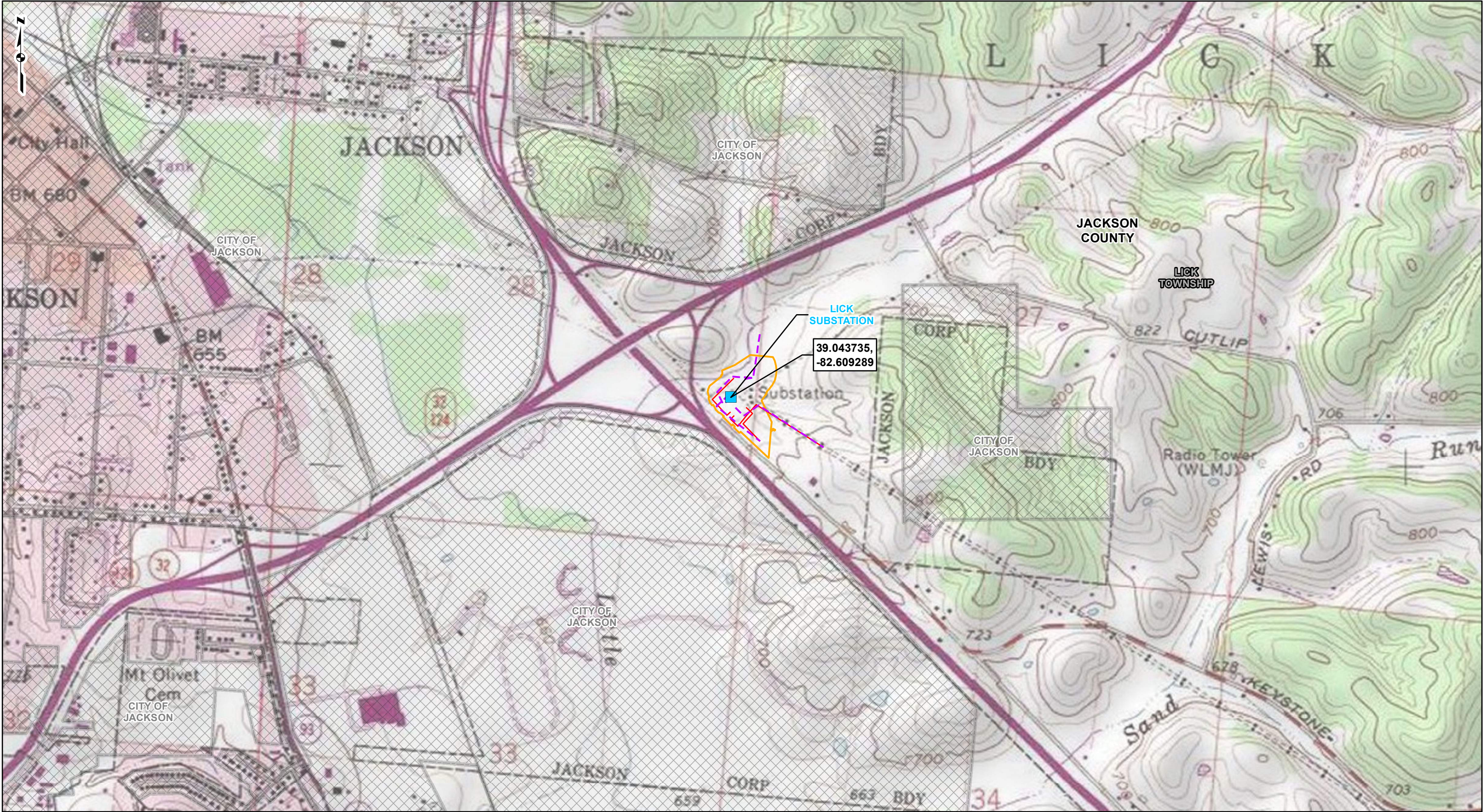
Appendix C Intensity for Calculation of Water Quality Flow (WQF)

DURATION t_c (minutes)	WATER QUALITY INTENSITY [i_{wq}] (inches/hour)	DURATION t_c (minutes)	WATER QUALITY INTENSITY [i_{wq}] (inches/hour)
5	2.37	33	0.95
6	2.26	34	0.93
7	2.15	35	0.92
8	2.04	36	0.90
9	1.94	37	0.88
10	1.85	38	0.86
11	1.76	39	0.85
12	1.68	40	0.83
13	1.62	41	0.82
14	1.56	42	0.80
15	1.51	43	0.78
16	1.46	44	0.77
17	1.41	45	0.76
18	1.37	46	0.75
19	1.33	47	0.74
20	1.29	48	0.73
21	1.26	49	0.72
22	1.22	50	0.71
23	1.19	51	0.69
24	1.16	52	0.68
25	1.13	53	0.67
26	1.10	54	0.66
27	1.07	55	0.66
28	1.05	56	0.65
29	1.03	57	0.64
30	1.01	58	0.64
31	0.99	59	0.63
32	0.97	60	0.62

Note: For $t_c < 5$ minutes, use $i = 2.37$ in/hr; for $t_c > 60$ minutes, use $i = 0.62$ in/hr. For all other t_c , use the appropriate value from this table.

APPENDIX 2

Project Location Map, BMP Detail Tables,
Erosion and Sediment Control Plan, ODNR
Rainwater and Land Development Manual Details,
USDA Soils Map, and 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 09/2021.

NO.:	DATE:	DWN:	CHKD:	APPD:	DESCRIPTION:

REVISIONS:

LEGEND

- EXISTING SUBSTATION
- PROPOSED TRANSMISSION LINE
- EXISTING TRANSMISSION LINE
- ENVIRONMENTAL STUDY AREA
- CITY BOUNDARY

0 500 1,000 2,000 Feet

FIGURE 1
PROJECT LOCATION MAP



LICK 138 kV SUBSTATION
UPGRADE PROJECT
AMERICAN ELECTRIC POWER



DRAWN BY: JACKSEF
CHECKED: ELLISJR

DATE: 9/16/2021
APPROVED: JONESAR

Lick 138kV Substation Upgrade Project
BMP Detail Tables

BMP Detail Table Provided by AEP:

ESTIMATED QUANTITIES	
TOTAL DISTURBED AREA075 AC
STRIPPING OF 12" TOPSOIL180 C.Y.
CUT560 C.Y.
FILL (30% ADDED FOR COMPACTION)234 C.Y.
5" AGGREGATE FOR STATION PAD (#57 COARSE LIMESTONE AGGREGATE) (BY OTHERS)	122 TONS
5" AGGREGATE BASE FOR ACCESS DRIVE (#57 COARSE LIMESTONE AGGREGATE)	61 TONS
4" AGGREGATE SURFACE COURSE FOR ACCESS DRIVE (NO. 304 COARSE AGGREGATE)	49 TONS
MIRAFI 600X GEOTEXTILE FABRIC (DRIVE)	250 SY
SEEDING AND MULCHING015 AC.
12" HDPE PIPE (INCLUDING FITTINGS)159 L.F.
SILT FENCE / FILTER SOCK1,500 L.F.
CHAIN LINK FENCE (INCL. POSTS)	1,333 L.F.
REMOVE EXISTING FENCE1,357 L.F.
24' DOUBLE SWING GATE2 EA.
CONSTRUCTION ENTRANCE	ONE

BMP Detail Tables Provided by GAI Consultants, Inc.:

FILTER SOCK (FS)/SILT FENCE†	
Sheet Number	Total Length (ft)
Sheet 1	2259
Total*	2,259

† This quantity is the total length of filter sock/silt fence for the Project as depicted on Figure 2, which has been revised from the silt fence provided by AEP.

Note: The contractor is responsible for confirming the placement of filter sock and for sizing the filter sock according to Table 6.6.1 in the ODNR Rainwater and Land Development Manual. However, 12-inch diameter filter sock should be the minimum size utilized for the Project.

TEMPORARY CONSTRUCTION ENTRANCE (TCE)													
TCE Label	Location	Minimum Length (ft)	Minimum Width (ft)	ODOT #1			ODOT #2			ODOT #304			Filter Cloth (ft ²)**
				Length (ft)	Depth (in)	Volume (yd ³)	Length (ft)	Depth (in)	Volume (yd ³)	Length (ft)	Depth (in)	Volume (yd ³)	
TCE-01	Industry Drive to Proposed Structure 3 through Existing Structure 153	70	14	50	10	22	20	6	6	20	4	4	1120
TCE-02	Industry Drive to Lick Substation	70	14	50	10	22	20	6	6	20	4	4	1120
TCE-03	Industry Drive to Proposed Structure 3 through Existing Structure 153	70	14	50	10	22	20	6	6	20	4	4	1120
Totals*	-	210	-	150	-	70	60	-	20	60	-	15	3,360

MATTING FOR PROPOSED TEMPORARY ACCESS ROADS AND WORKSPACES				
Location	Length (ft)	Mat Width (ft)	Area (ft ²)	Area of Geotextile Fabric (ft ²)***
Timber mat access roads	0	14	0	7,290
Timber mat structure work pads†	1,633		22,862	
Totals*	1,635	-	22,865	7,290

† Where sections of mat access roads cross mat structure work pads, the length of access road located within the proposed structure work pad is subtracted out of the mat structure work pad length and area quantities and accounted for in the mat access road length and area quantities instead.

Lick 138kV Substation Upgrade Project

BMP Detail Tables






BMP Detail Tables Provided by GAI Consultants, Inc.:

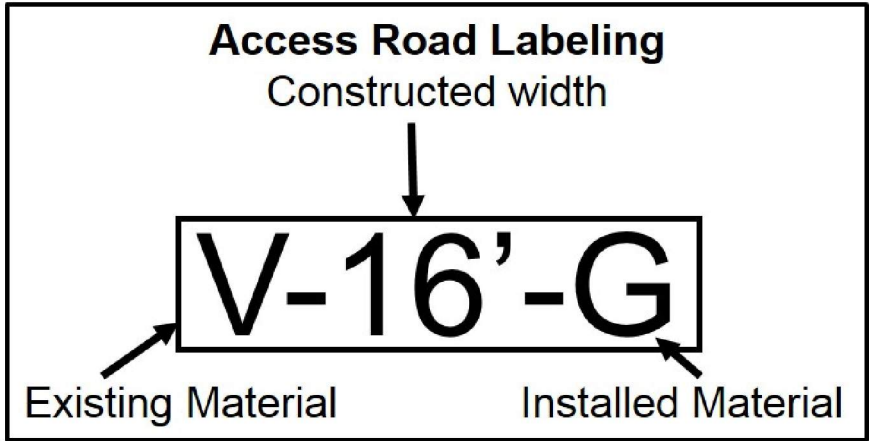
TEMPORARY ACCESS BRIDGES		
Location	Quantity	Length (ft)
Northwest of Structure 152 - Crossing S004	1	20
Totals	1	20

GRAVEL FOR PROPOSED AND EXISTING TEMPORARY ACCESS ROADS AND WORKSPACES							
Location	Length (ft)	Area (ft ²)	Area of Geotextile Fabric (ft ²)**	ODOT #2		ODOT #304	
				Depth (in)	Volume (yd ³)	Depth (in)	Volume (yd ³)
Proposed/Existing gravel access roads	1,450	23,200	26,100	6	430	4	287
Proposed gravel structure work pads	-	26,158	-	6	484	4	323
Totals*	1,450	49,360	26,100	-	915	-	610

CONSTRUCTION TOTALS	
Description	Total
Approximate Earth Disturbance Acreage	3
Approximate Overall Proposed ROW Acreage	4
Total Length of Proposed and Existing Temporary Gravel and Timber Mat Access Roads (mi)	0.3
Approximate Extent of Earthwork (yd ³) (Assuming only an 8" depth for top soil stripping for temporary gravel ARs and TCEs)*	660
Total Length of Orange Barrier Fencing (ft)*	1,800

- * Quantity totals are rounded up to the nearest 5 units.
- ** Filter cloth and geotextile fabric estimates have an additional two-foot width to account for TCE depth and temporary gravel access road depth.
- *** Geotextile fabric estimates have an additional two-foot width to account for mat height.

Type Of Access Road (AR)	Existing Roadway Material	Roadway Material to be Installed	Line Symbol
New Access Road	Vegetation	Gravel	
New Access Road	Vegetation	Timber Mat	
Existing Route To Be Improved	Dirt	Gravel	
Existing Route To Be Improved	Dirt	Timber Mat	
Existing Route	Gravel	Gravel	



© = Change in Access Road Category

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

Notes:

1. All new gravel access roads are depicted in red, existing dirt access roads to be gravelled in yellow, and existing gravel access roads in green. All timber mat access roads are depicted in brown.
2. The constructed width of each access road is site specific and indicated in the map sheet label corresponding to each access road. For example, V-16'-G, where V= the existing roadway material (Vegetation), 16'= the constructed width of the access road, and G= the roadway material to be installed (Gravel). See access road labeling to the right.
3. © denotes a change in access road category.
4. Structure work pads will be required as follows: 35' x 35' at all existing structures to be removed and 75' X 75' at all proposed concrete foundation structures. Cover material for the pads will be the same as required for the access roads in each location, unless otherwise indicated on the mapping.
5. In areas of access road turns greater than 90 degrees, a wider roadway might be needed at that point (approximately 60'-70' in width).
6. Standard depth of cover material as requested by TCR Supervisor: 6" of ODOT #2 and 4" of ODOT #304 for existing gravel access roads. The TCR Supervisor's request is included in the E&SC BMP Detail Tables.

PROJECT LOCATION



JACKSON COUNTY, OHIO

NO.:	DATE:	DWN:	CHKD:	APPD:	DESCRIPTION:
REVISIONS:					

ACCESS ROAD SYMBOLOGY



LICK 138 kV SUBSTATION
UPGRADE PROJECT
AMERICAN ELECTRIC POWER



DRAWN BY: JACKSEF
CHECKED: ELLISJR

DATE: 9/16/2021
APPROVED: JONESAR

GENERAL SWPPP NOTES:

1. THE DISTURBANCE WILL CONSIST OF STATION HARDENING AND TRANSMISSION LINE REBUILD ACTIVITIES IN AND AROUND THE EXISTING LICK STATION. CONSTRUCTION ACTIVITIES FOR THE STATION HARDENING WILL INCLUDE GRADING, MINOR GRAVEL EXPANSION, REPLACEMENT OF A FENCE, CONSTRUCTION OF A PERMANENT GRAVEL ACCESS DRIVE, CONSTRUCTION OF A DITCH, AND THE INSTALLATION OF A HIGH-DENSITY POLYETHYLENE (HDPE) PIPE. ADDITIONAL DISTURBANCE CAUSED BY THE TRANSMISSION LINE REBUILD WILL INCLUDE PROPOSED TEMPORARY ACCESS ROADS (AR) AND TEMPORARY STRUCTURE WORK PADS, HAVING THE FOLLOWING APPROXIMATE DIMENSIONS:
- 35-FOOT BY 35-FOOT FOR THE REMOVAL OF 10 EXISTING STRUCTURES, AND
 - 75-FOOT BY 75-FOOT FOR THE INSTALLATION OF 9 CONCRETE FOUNDATION STEEL MONOPOLE STRUCTURES.
- WHERE FEASIBLE, THE PLACEMENT OF STRUCTURE WORK PADS SHOULD FAVOR THE ORIENTATION THAT IS LEAST IMPACTFUL TO THE FIELD DELINEATED ENVIRONMENTAL RESOURCES DEPICTED ON THIS EROSION AND SEDIMENT CONTROL PLAN (E&SCP).
2. ESTABLISHMENT AND RESTORATION OF PROPOSED TEMPORARY ACCESS ROADS MUST BE IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). ROADS ARE TO BE RESTORED AS NEAR TO PRE-CONSTRUCTION CONDITIONS AS PRACTICABLE.
3. ALL STRUCTURE WORK PAD COVER MATERIAL SHALL BE THE SAME AS REQUIRED FOR THE ACCESS ROAD IN EACH LOCATION UNLESS OTHERWISE INDICATED ON THE MAPPING. THE DIMENSIONS OF THE PROPOSED WORKSPACES ARE OUTLINED IN GENERAL NOTE 1. MODIFICATIONS TO MATTING MAY BE REQUIRED AT THE CONTRACTOR'S DISCRETION DEPENDING ON THE CONSTRUCTION AND/OR TREE CLEARING TECHNIQUES UTILIZED AS WELL AS WEATHER CONDITIONS DURING THE PROPOSED CONSTRUCTION ACTIVITIES.
4. FILTER SOCK SHOWN CROSSING CONTOURS IS INTENDED ONLY TO SHOW GENERAL LOCATIONS WHERE FILTER SOCK IS TO BE INSTALLED AND NOT INTENDED TO SHOW A DETAILED INSTALLATION. FILTER SOCK IS TO BE INSTALLED PARALLEL WITH THE CONTOURS AND PER THE E&SC DETAIL.
5. FILTER SOCK IS NOT INTENDED TO BE INSTALLED ACROSS ACCESS ROADS OR STRUCTURE WORK PADS WHILE MATTING IS IN PLACE, BUT IS TO BE INSTALLED SUCH THAT THE ENDS OF THE FILTER SOCKS ARE ADJACENT TO THE ROADS AND EDGE OF MATTING IN ORDER TO PROTECT THE SURROUNDING ENVIRONMENTAL FEATURES DURING CONSTRUCTION. AFTER MATS AND ACCESS ROADS HAVE BEEN REMOVED, FILTER SOCK SHOULD BE INSTALLED ACROSS DISTURBED AREAS DURING SITE RESTORATION UNTIL PERMANENT STABILIZATION IS ACHIEVED.
6. PUBLICALLY AVAILABLE AERIAL IMAGERY MAY NOT REFLECT CURRENT LAND USE IN ALL AREAS.
7. THE CONTRACTOR SHALL CONSULT WITH AEP REGARDING PROJECT CLEARING AND GRADING REQUIREMENTS, WORK PAD DIMENSIONS, AND MATERIALS.
8. WHERE PROJECT AREA INTERSECTS PUBLIC ROADS AND NO TEMPORARY CONSTRUCTION ENTRANCE (TCE) IS SHOWN, THE CONTRACTOR MAY NOT DIRECTLY ACCESS THE PROJECT AREA FROM THAT ROAD WITHOUT RECEIVING PRIOR APPROVAL FROM AGENCIES, PROJECT OWNER, AND ROAD OWNER. THE EXCEPTION IS SMALL STRUCTURE WORK PAD AREAS WHICH WILL BE ACCESSED FOR A MINIMAL AMOUNT OF TIME. THE CONTRACTOR IS RESPONSIBLE FOR MINIMIZING AND MAINTAINING SEDIMENT TRACK OUT ONTO ALL PUBLIC ROADS IN ACCORDANCE WITH THE SWPPP.
9. EROSION CONTROL MATTING SHALL BE USED IN AREAS WHERE DISTURBED SLOPES ARE GREATER THAN 3V:1H.

ADDITIONAL NOTES/REMINDERS:

1. NO NEW LAY DOWN, MARSHALLING YARD, EQUIPMENT STORAGE AREA, TIMBER STORAGE AREA, OR ANY OTHER GROUND DISTURBANCE IS PERMITTED UNLESS SHOWN ON THIS PLAN.
2. PROVIDE ANY PROPOSED LAYDOWN, MARSHALLING YARD, OR OTHER GROUND DISTURBANCE TO THE TCR AND AEP ENVIRONMENTAL SPECIALIST (AMY TOOHEY, 614-565-1480), IF NOT SHOWN ON THIS PLAN.
3. PROVIDE ANY ACCESS ROAD MODIFICATION OR ADDITIONS TO THE TCR OR AEP ENVIRONMENTAL SPECIALIST (AMY TOOHEY, 614-565-1480), IF NOT SHOWN ON THIS PLAN.
4. WORK COMPLETED WITHIN 100-FEET OF CEMETERIES OR BURIALS SHOULD BE CONSIDERED SENSITIVE. CONTACT THE RESPONSIBLE AEP ENVIRONMENTAL SPECIALIST (AMY TOOHEY, 614-565-1480) BEFORE PROCEEDING WITH ANY WORK.
5. DISCOVERY DURING CONSTRUCTION OF ANY HUMAN OR UNIDENTIFIED ARTIFACTS OR OTHER UNKNOWN OBJECTS THAT ARE UNEARTHED OR OTHERWISE DISCOVERED REQUIRES CONSTRUCTION TO CEASE AND IMMEDIATE NOTIFICATION TO THE RESPONSIBLE AEP ENVIRONMENTAL SPECIALIST (AMY TOOHEY, 614-565-1480).
6. ANY MODIFICATIONS OR ADDITIONS MUST BE ADDED TO THIS PLAN, FIELD CHECKED, AND PERMITS UPDATED AS NEEDED PRIOR TO CONSTRUCTION.
7. ORANGE BARRIER FENCE (OBF) SHALL BE INSTALLED ALONG STREAMS AND WETLANDS TO PROVIDE A VISUAL BOUNDARY AND ASSIST THE CONTRACTOR IN AVOIDING IMPACTS. IF AN OBF IS BEING INSTALLED TO AVOID DISTURBANCE TO A STREAM/WETLAND, THEN A SIGN SHALL BE INSTALLED THAT STATES, "STOP, WETLAND AREA, DO NOT DISTURB OR CROSS WITH EQUIPMENT."
8. WHERE FEASIBLE, PROVIDE AND MAINTAIN A 50-FOOT UNDISTURBED NATURAL BUFFER AROUND STREAMS AND WETLANDS. IF THIS IS NOT FEASIBLE, STABILIZATION MEASURES SHALL BE EMPLOYED WITHIN TWO DAYS OF CONSTRUCTION COMPLETION OR WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS.
9. NO MECHANIZED CLEARING OR GRUBBING IS PERMITTED IN STREAM/WETLAND AREAS. IF CLEARING IS NEEDED THEN ONLY HAND CLEARING IS ALLOWED.
10. WHERE ACTIVE CATCH BASIN/STORM DRAINS ARE PRESENT, SILT FENCE/FILTER SOCK/DANDY BAG MUST BE PLACED AROUND THEM TO MINIMIZE SEDIMENT LADEN WATER FROM ENTERING.
11. THE STOCKPILING OF SOIL, MULCH, AGGREGATE OR OTHER SIMILAR MATERIALS SHALL BE COMPLETELY SURROUNDED BY SILT FENCE/FILTER SOCK AND, IF NEEDED, TEMPORARILY SEEDED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS INCLUDED IN THE PLAN. ANY STOCKPILED MATERIAL THAT IS NOT USED DURING THE PROJECT SHALL BE REMOVED FROM THE SITE, UNLESS OTHERWISE DIRECTED BY AEP.
12. SPILLS OF HAZARDOUS SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE OR OTHER OBJECTIONABLE HAZARDOUS SUBSTANCES THAT ARE OF A QUANTITY, TYPE, DURATION AND IN A LOCATED AS TO DAMAGE THE WATERS OF THE STATE, SHALL BE IMMEDIATELY REPORTED TO AEP.
13. THE CONTRACTOR IS RESPONSIBLE FOR ANY EXISTING CULVERTS THAT ARE DAMAGED BY THEIR ACTIVITIES, AND THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING WHETHER AN EXISTING CULVERT CROSSING WILL SUPPORT THE WEIGHT OF THEIR CONSTRUCTION EQUIPMENT. THE CONTRACTOR MAY MAT SUCH CROSSINGS TO PREVENT DAMAGING EXISTING CULVERTS. CULVERT INSTALLATION OR REPLACEMENT SHALL NOT BE IMPLEMENTED WITHOUT PRIOR APPROVAL FROM THE TCR AND AEP ENVIRONMENTAL SPECIALIST (AMY TOOHEY, 614-565-1480).
14. FOR REBUILDS AND RETIREMENT PROJECTS THAT INCLUDE THE REMOVAL OF WOOD POLES TREATED WITH CREOSOTE, ALL SUCH POLES MUST BE PHYSICALLY REMOVED FROM THE RIGHT-OF-WAY AND PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS UNLESS THE POLES WILL BE GIVEN TO THE LANDOWNER FOR REUSE. CUT OR OTHERWISE REMOVED CREOSOTE TREATED POLES CONTAIN HAZARDOUS CONSTITUENTS AND MAY NOT BE LEFT IN PLACE OR DISPOSED OF WITH OTHER CLEAN WOOD WASTE.
15. THE CONDITIONS AND RESTRICTIONS SHOWN ON THESE PLANS ARE A PART OF THE APPROVED PERMITS AND MUST BE STRICTLY FOLLOWED.

PROJECT LOCATION



JACKSON COUNTY, OHIO

NO.:	DATE:	DWN:	CHKD:	APPD:	DESCRIPTION:
REVISIONS:					

EROSION AND SEDIMENT CONTROL PLAN
ADDITIONAL NOTES/REMINDERS



LICK 138 kV SUBSTATION
UPGRADE PROJECT
AMERICAN ELECTRIC POWER



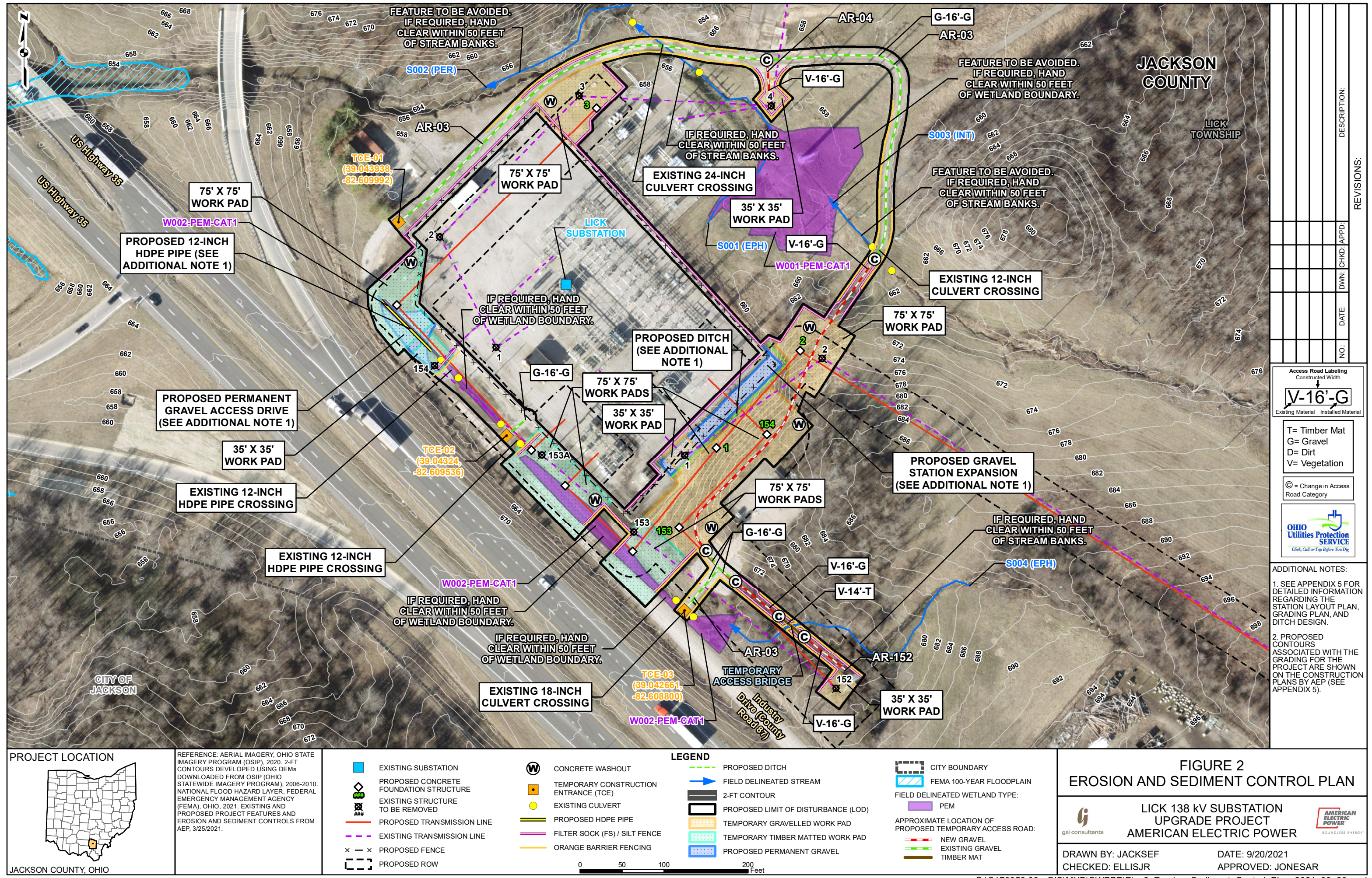
BOUNDLESS ENERGY

DRAWN BY: JACKSEF

DATE: 9/16/2021

CHECKED: ELLISJR

APPROVED: JONESAR



REVISIONS:				DESCRIPTION:
NO.	DATE	DWN: CHKD: APPD:		

Access Road Labeling
Constructed Width
Existing Material Installed Material
V-16'-G

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

© = Change in Access Road Category

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

ADDITIONAL NOTES:
1. SEE APPENDIX 5 FOR DETAILED INFORMATION REGARDING THE STATION LAYOUT PLAN, GRADING PLAN, AND DITCH DESIGN.
2. PROPOSED CONTOURS ASSOCIATED WITH THE GRADING FOR THE PROJECT ARE SHOWN ON THE CONSTRUCTION PLANS BY AEP (SEE APPENDIX 5).

PROJECT LOCATION

JACKSON COUNTY, OHIO

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, 2021. EXISTING AND PROPOSED PROJECT FEATURES AND EROSION AND SEDIMENT CONTROLS FROM AEP, 3/25/2021.

LEGEND

EXISTING SUBSTATION	CONCRETE WASHOUT	PROPOSED DITCH	CITY BOUNDARY
PROPOSED CONCRETE FOUNDATION STRUCTURE	TEMPORARY CONSTRUCTION ENTRANCE (TCE)	FIELD DELINEATED STREAM	FEMA 100-YEAR FLOODPLAIN
EXISTING STRUCTURE TO BE REMOVED	EXISTING CULVERT	2-FT CONTOUR	FIELD DELINEATED WETLAND TYPE:
PROPOSED TRANSMISSION LINE	PROPOSED HDPE PIPE	PROPOSED LIMIT OF DISTURBANCE (LOD)	PEM
EXISTING TRANSMISSION LINE	FILTER SOCK (FS) / SILT FENCE	TEMPORARY GRAVELLED WORK PAD	APPROXIMATE LOCATION OF PROPOSED TEMPORARY ACCESS ROAD:
PROPOSED FENCE	ORANGE BARRIER FENCING	TEMPORARY TIMBER MATTED WORK PAD	NEW GRAVEL
PROPOSED ROW		PROPOSED PERMANENT GRAVEL	EXISTING GRAVEL
			TIMBER MAT

0 50 100 200 Feet

FIGURE 2
EROSION AND SEDIMENT CONTROL PLAN

LICK 138 kV SUBSTATION UPGRADE PROJECT
AMERICAN ELECTRIC POWER

gai consultants

DRAWN BY: JACKSEF
CHECKED: ELLISJR

DATE: 9/20/2021
APPROVED: JONESAR

BMP Detail Sheets

Temporary Seeding
Permanent Seeding
Mulching
Typical Wood Mat
Construction Entrance
Silt Fence
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
Rock Lined Channel

Note: Additional Details located within Appendix 5.

TEMPORARY AND PERMANENT AEP SEED MIXES

Slope Stability & Natural Corridors Seed Mix

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

Lawn Mix – Sun to partial shade

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

Lawn Mix –Shade

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

Swale and Retention Area Seed Mix

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

Farm Lane Area Seed Mix

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

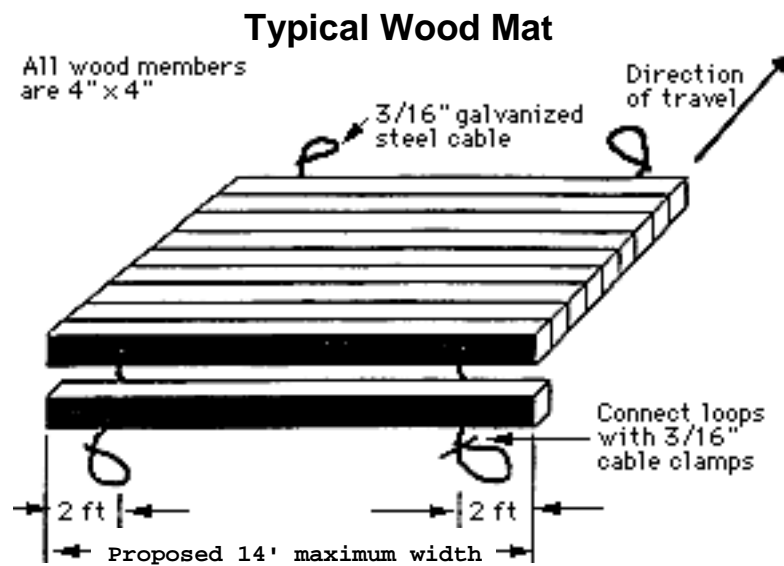
The use of a mulch cover is not recommended for areas, which will exhibit higher velocities than 3.5 feet/second. An erosion control matting is recommended for areas which will exhibit higher velocities.

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

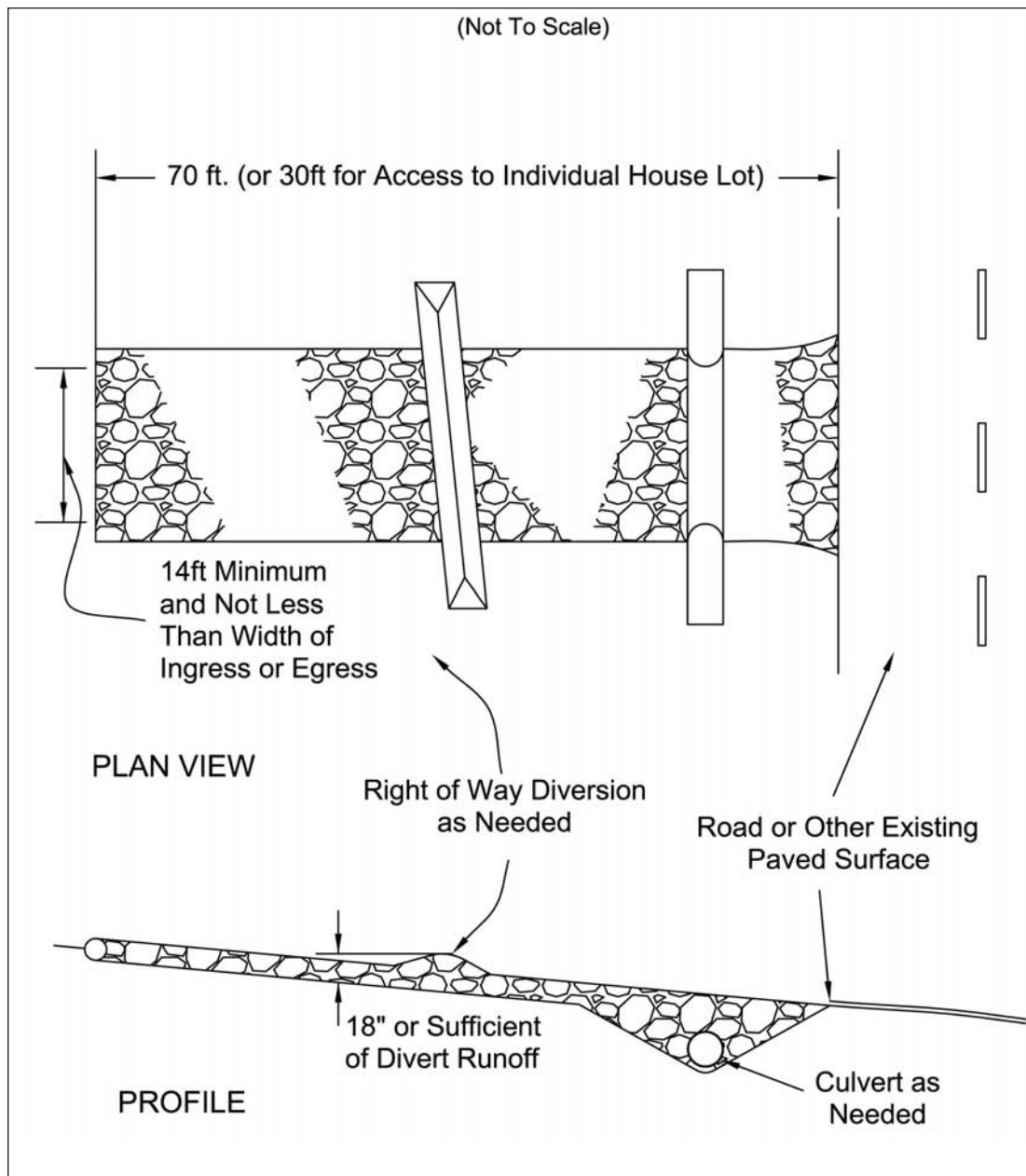
The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap 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:
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.

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.

6.3 Silt Fence



Description

Silt fence is a sediment-trapping practice utilizing a geotextile fence, topography and sometimes vegetation to cause sediment deposition. Silt fence reduces runoff's ability to transport sediment by ponding runoff and dissipating small rills of concentrated flow into uniform sheet flow. Silt fence is used to prevent sediment-laden sheet runoff from entering into downstream creeks and sewer systems.

Conditions Where Practice applies

Silt fence is used where runoff occurs as sheet flow or where flow through small rills can be converted to sheet flow. Major factors in its use are slope, slope length, and the amount of drainage area from which the fence will capture runoff. Silt fence cannot effectively treat flows in gullies, ditches or channels. For concentrated flow conditions see specifications for temporary diversions, sediment traps and sediment basins.

Planning Considerations

Alternatives: Silt Fence vs. Temporary Diversions and Settling Ponds. While silt fence requires less space and disturbs less area than other control measures there are significant disadvantages to its use. Silt fence is not as effective controlling sediment as routing runoff through a system of diversions and settling ponds. Settling ponds and earth diversions are more durable, easier to construct correctly and significantly more effective at removing sediments from runoff. Additionally earth diversions and settling ponds are less apt to fail during construction and typically require less repair and maintenance.

Proper installation is critical. Experience from ODNR and other field testing has shown that nearly 75 percent of silt fence does not function properly due to poor installation. Proper installation consists of it being installed: (1) on the contour; (2) with sufficient geotextile material buried; (3) with the fence pulled taut and supported on the downstream side by strong posts: (4) and with the fence backfilled and compacted.

Two general methods are used to install silt fence: (1) utilizing traditional method of digging the trench, installation of the fence materials, then backfilling and compaction; or (2) a method using an implement to static slice or narrow plow while installing the geotextile in the slot opening, followed by compaction and installation of posts. The latter methods generally installs silt fence more effectively and efficiently.

Silt fence is most applicable for relatively small areas with flat topography. Silt fence should be used below areas where erosion will occur in the form of sheet and rill erosion. For moderately steep areas, the area draining to the silt fence should be no larger that one quarter acre per 100 feet of fence length, the slope length no longer than 100 feet, and the maximum drainage gradient no steeper than 50 percent (2:1). This practice should be sited so that the entire fence ponds runoff and facilitates settling of suspended solids.

Design Criteria

Proper installation of silt fence requires utilizing the site topography. This is critical because the sediment removal process relies on ponding runoff behind the fence. As a ponding occurs behind the fence, coarser materials are allowed to settle out. Leaving a long, flat slope behind the silt fence maximizes areas for ponding (sediment deposition), and for water to disperse and flow over a much larger surface area of the silt fence. For silt fence to work effectively, runoff must be allowed to maintain sheet flow, to pond and to be released slowly. However, if silt fence is used without regard to a site's topography, it will typically concentrate runoff, increasing the likelihood of blocking and overtopping of the fence, thus reducing or eliminating its effectiveness.

Level Contour – For silt fence to promote deposition, it must be placed on the level contour of the land, so that flows are dissipated into uniform sheet flow that has less energy for transporting sediment. Silt fence should never concentrate runoff, which will result if it is placed up and down slopes rather than on the level contour.

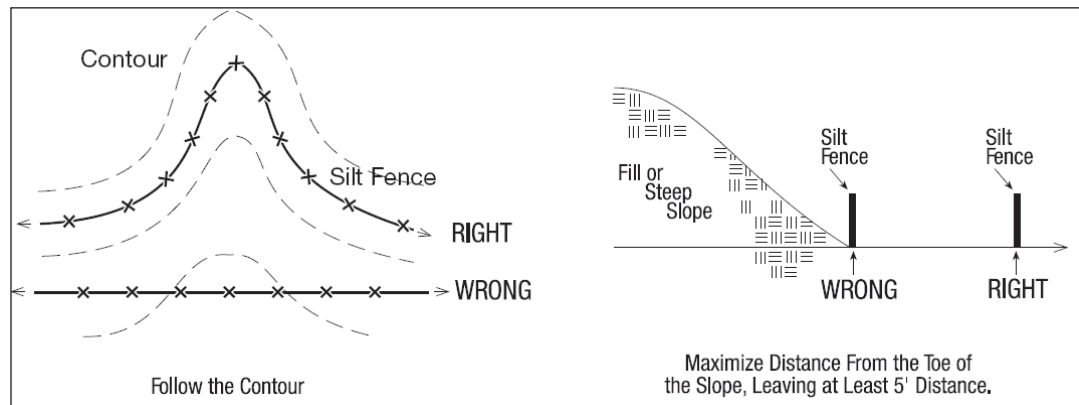


Figure 6.3.1 Silt fence layout

Flat Slopes – Slope has the greatest influence on runoff’s ability to transport sediment, therefore silt fence should be placed several feet away from the toe of a slope if at all possible, to encourage deposition. Silt fence generally should be placed on the flattest area available to increase the shallow ponding of runoff and maximize space available for deposited sediment.

Flow Around Ends – To prevent water ponded by the silt fence from flowing around the ends, each end must be constructed upslope so that the ends are at a higher elevation.

Vegetation – Dense vegetation also has the effect of dissipating flow energies and causing sediment deposition. Sediment-trapping efficiency will be enhanced where a dense stand of vegetation occurs for several feet both behind and in front of a silt fence.

Table 6.3.1 Maximum area contributing area using slope length

Maximum Slope Length Above Silt Fence		
Slope		Slope Length (ft.)
0% - 2%	Flatter than 50:1	250
2% - 10%	50:1 - 10:1	125
10% - 20%	10:1 - 5:1	100
20% - 33%	5:1 - 3:1	75
33% - 50%	3:1 - 2:1	50
> 50%	> 2:1	25

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

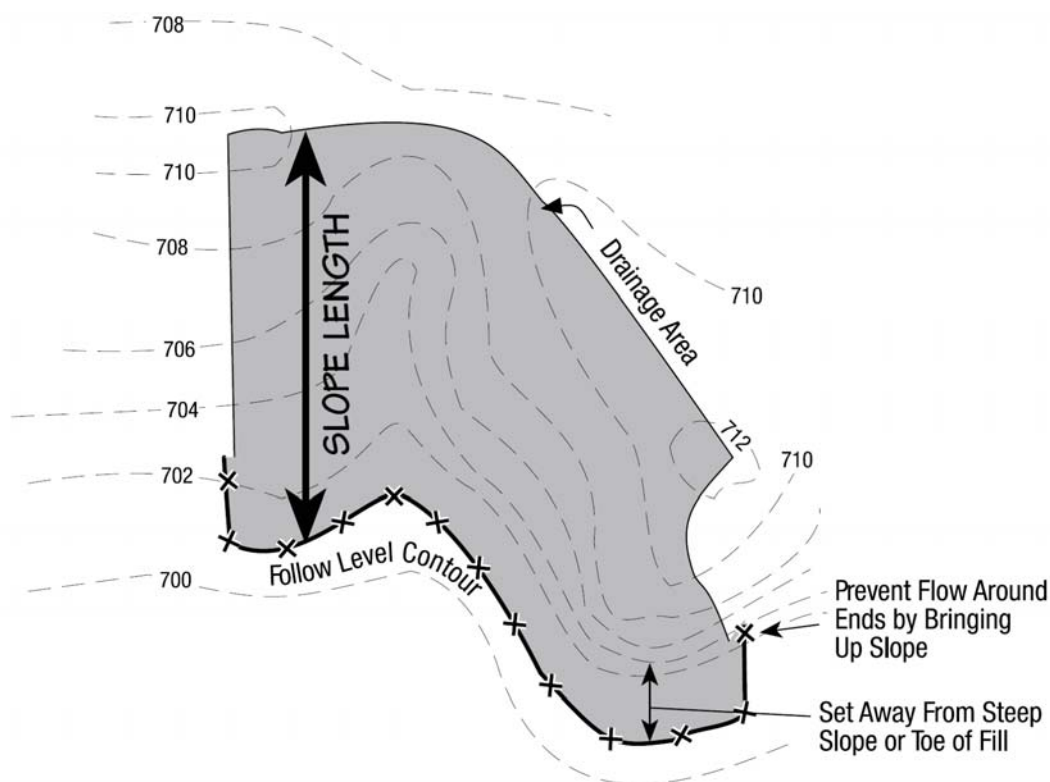


Figure 6.3.2 Silt fence and allowable drainage area

Dispersing Flow – Proper applications of silt fence allow all the intercepted runoff to pass as diffused flow through the geotextile. Runoff should never overtop silt fence, flow around the ends, or in any other way flow as concentrated flow from the practice. If any of these failures occurs, an alternative silt fence layout, or other practices are needed.

In cases where additional support of the fabric is needed, either wire or geogrid fencing may be used as a backing on the fabric. In these instances, the reinforcing material should be attached/erected first, then the fabric installed.

Materials

Fence posts shall be a minimum length of 32 inches long, composed of nominal dimensioned 2-by-2-inch hardwood of sound quality. They shall be free of knots, splits and other visible imperfections which would weaken the posts. Steel posts may be utilized in place of wood provide the geotextile can be adequately secured to the post.

Silt fence geotextile must meet the minimum criteria shown in the table below.

Table 6.3.2

Minimum criteria for Silt Fence Fabric (ODOT, 2002)		
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10 ⁻² sec. ⁻¹	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

Maintenance

Silt Fence requires regular inspection and maintenance to insure its effectiveness. Silt fences must be inspected after each rainfall and at least daily during prolonged rainfall. Silt fence found damaged or improperly installed shall be replaced or repaired immediately.

Sediment deposits shall be routinely removed when they reach approximately one-half the height of the silt fence.

Common Problems/Concerns

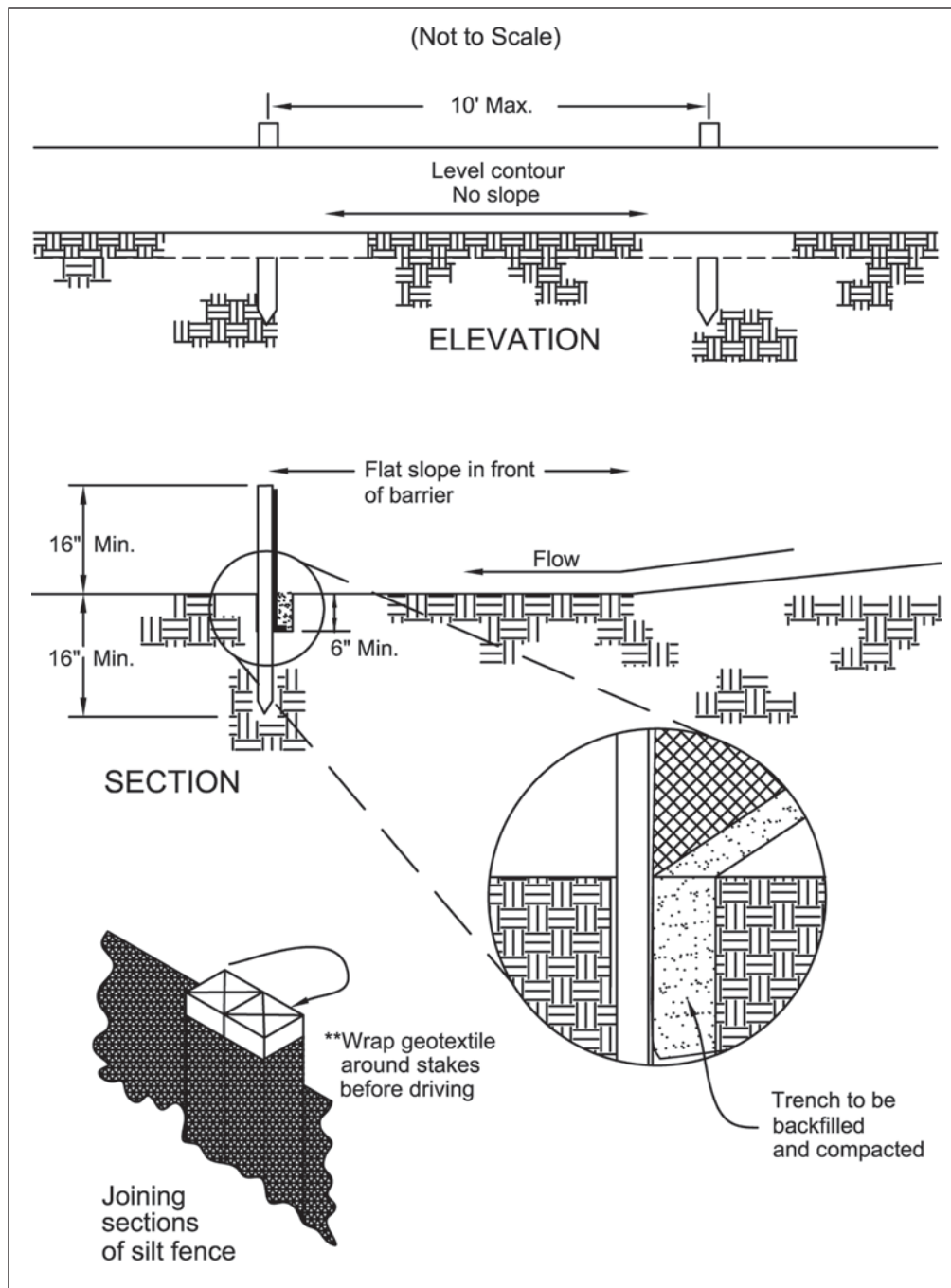
The predominant problems with silt fence regard inadequate installation or location that allows runoff to concentrate, overtop the fence, flow under the fabric or around the fence ends. If this occurs one of the following shall be performed, as appropriate:

- The location and layout of the silt fence shall be changed to conform to the level contour
- The silt fence shall be reinstalled with proper burial, backfill and compaction and support
- Accumulated sediment shall be removed
- Alternative practices shall be installed.

References

Construction and Material Specifications, January 1, 2002. State of Ohio Department of Transportation, P.O. Box 899, Columbus, Ohio 43216-0899, <http://www.dot.state.oh.us/construction/OCA/Specs/2002CMS/Specbook2002/Specbook2002.htm>

Specifications
for
Silt Fence



Specifications for **Silt Fence**

1. Silt fence shall be constructed before upslope land disturbance begins.
2. All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small concentrated flows to the silt fence are dissipated along its length.
3. Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
4. Silt fence shall be placed on the flattest area available.
5. Where possible, vegetation shall be preserved for 5 feet (or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.
6. The height of the silt fence shall be a minimum of 16 inches above the original ground surface.
7. The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench shall be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an adequately uniform trench depth.
8. The silt fence shall be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. Excess material shall lay on the bottom of the 6-inch deep trench. The trench shall be backfilled and compacted on both sides of the fabric.
9. Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground, (see details).
10. Maintenance—Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under the fabric or around the fence ends, or in any other way allows a concentrated flow discharge, one of the following shall be performed, as appropriate: 1) the layout of the silt fence shall be changed, 2) accumulated sediment shall be removed, or 3) other practices shall be installed.

Sediment deposits shall be routinely removed when the deposit reaches approximately one-half of the height of the silt fence.

Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.

Criteria for silt fence materials

1. Fence post – The length shall be a minimum of 32 inches. Wood posts will be 2-by-2-in. nominal dimensioned hardwood of sound quality. They shall be free of knots, splits and other visible imperfections, that will weaken the posts. The maximum spacing between posts shall be 10 ft. Posts shall be driven a minimum 16 inches into the ground, where possible. If not possible, the posts shall be adequately secured to prevent overturning of the fence due to sediment/water loading.
2. Silt fence fabric – See chart below.

Table 6.3.2 Minimum criteria for Silt Fence Fabric (ODOT, 2002)

FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10 ⁻² sec.-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

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.

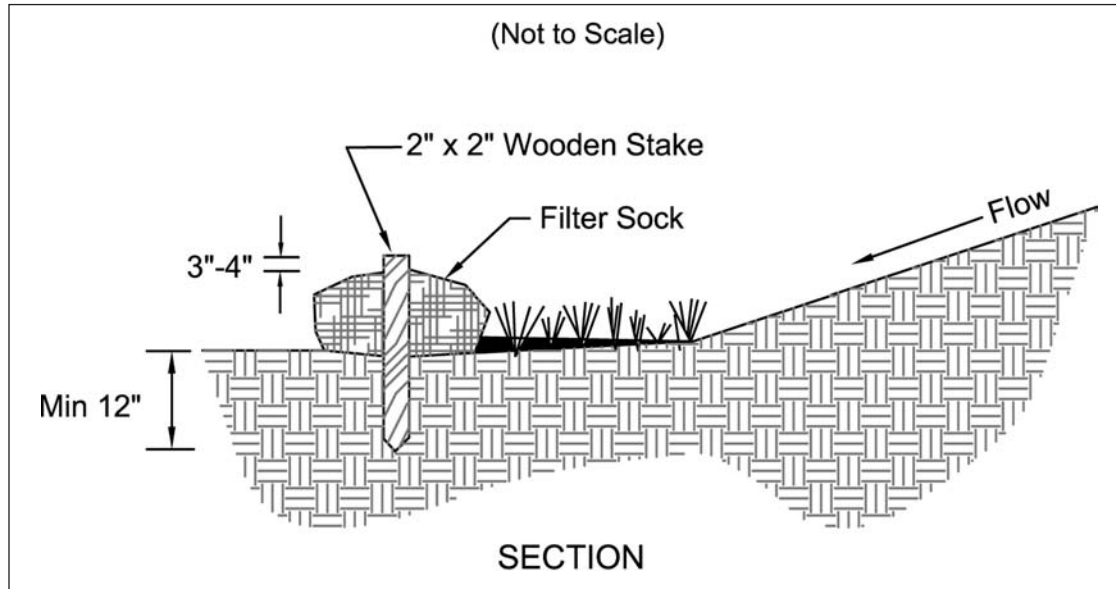
Maintenance – Filter socks should be regularly inspected to make sure they hold their shape, are ponding, and allowing adequate flow through. If ponding becomes excessive, filter socks should be replaced. Used filter socks may be cut and the compost dispersed and seeded to prevent captured sediment from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

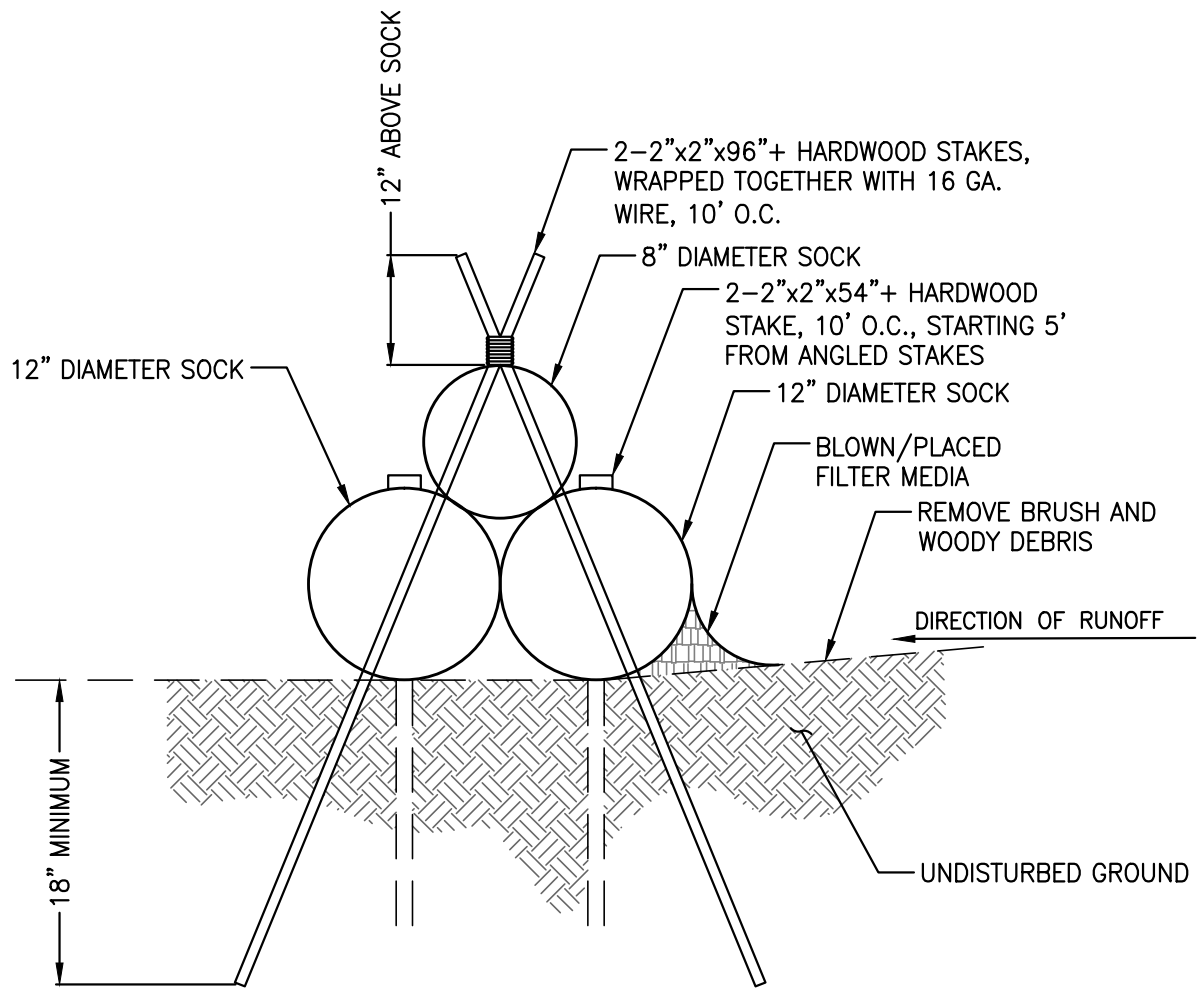
INSTALLATION:

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.

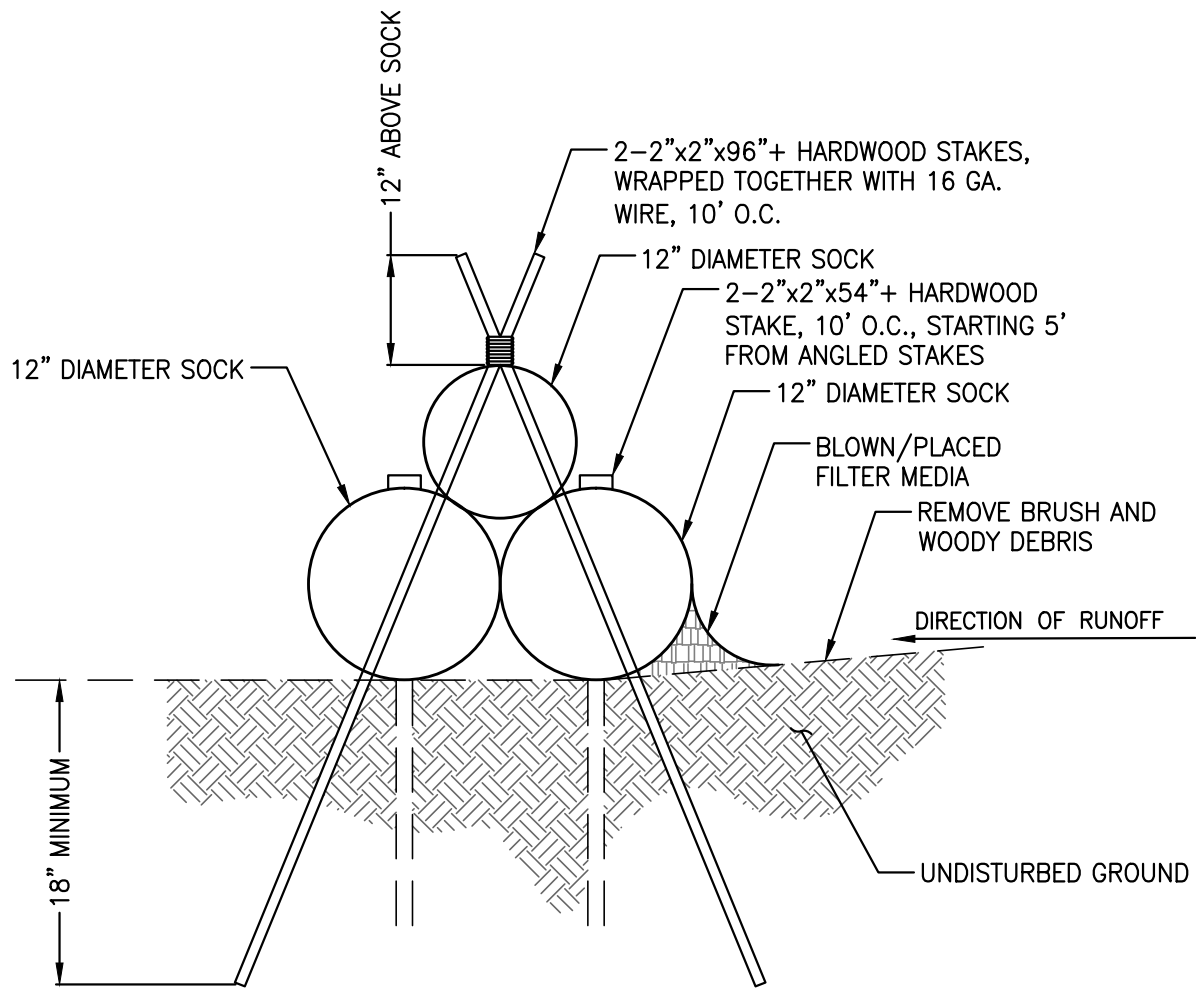
MAINTENANCE:

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 inconvenience. 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.

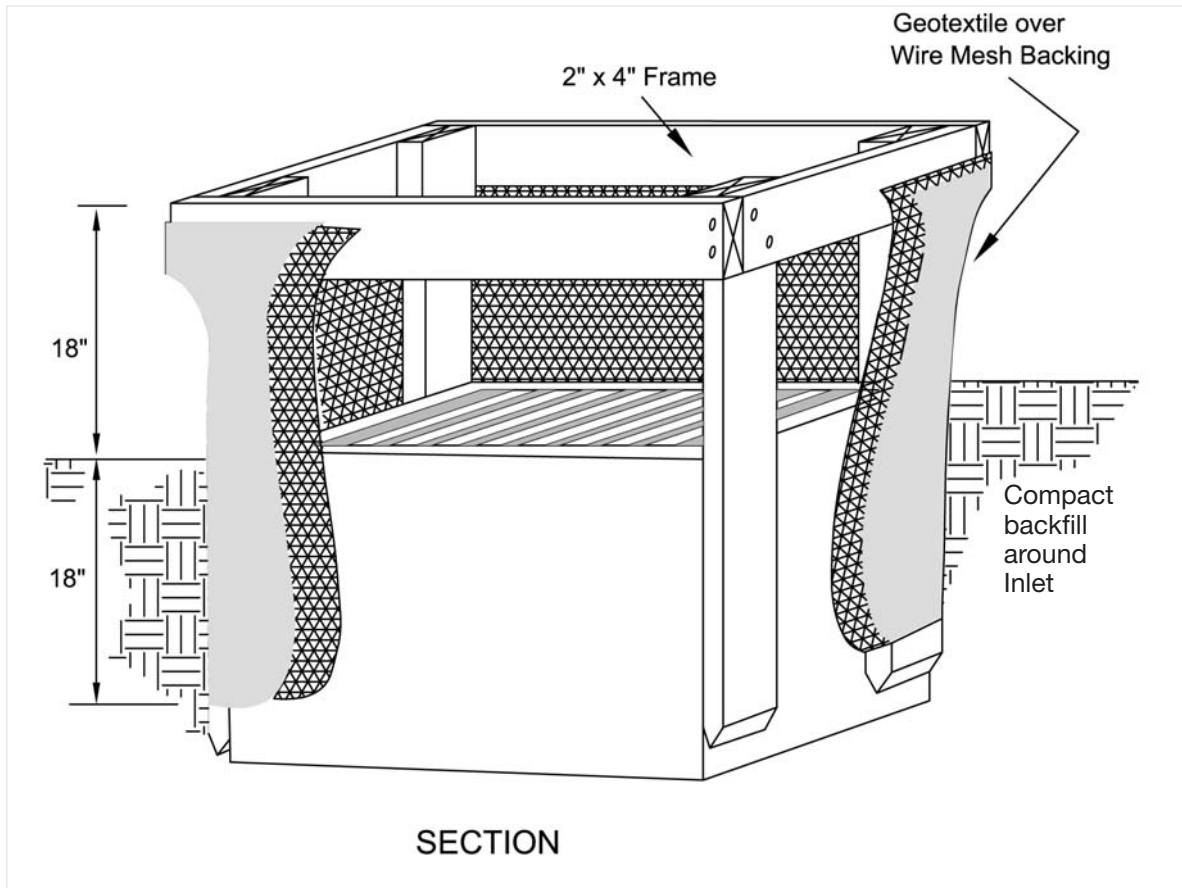
Maintenance

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.

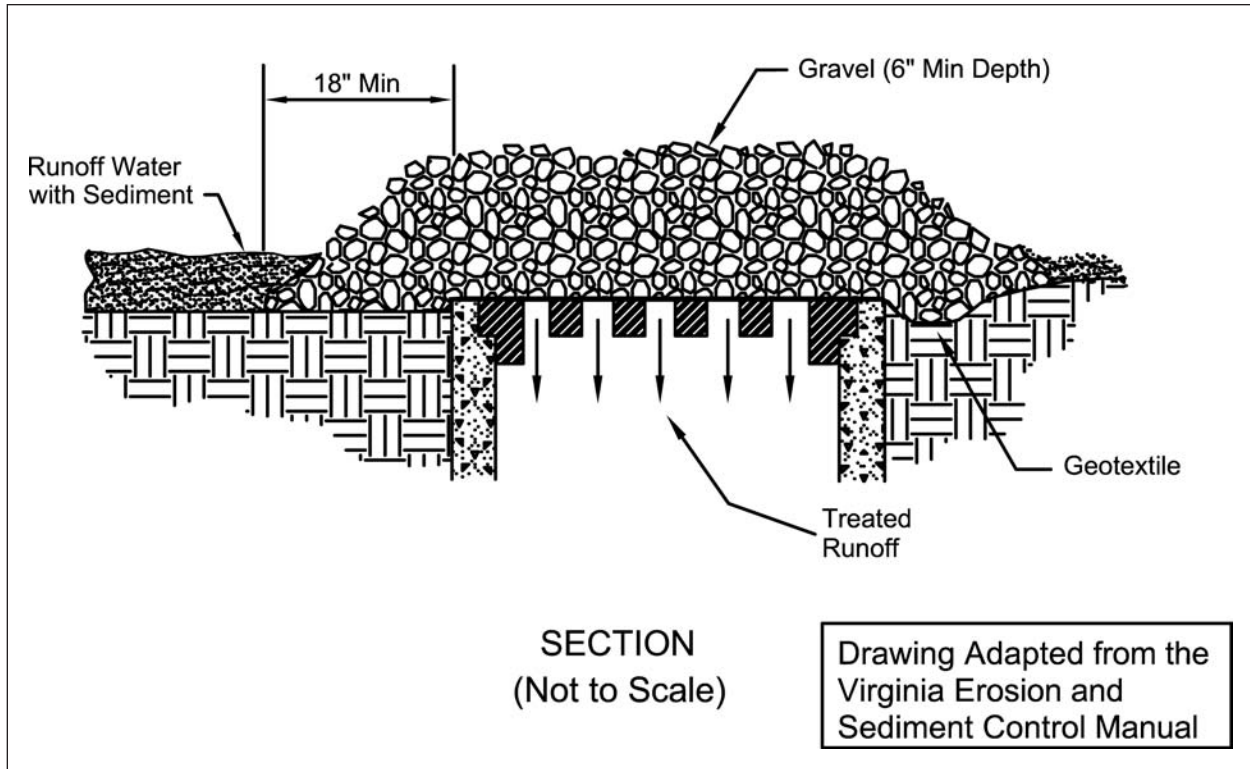
Specifications
for
Geotextile Inlet Protection (AS NEEDED)



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

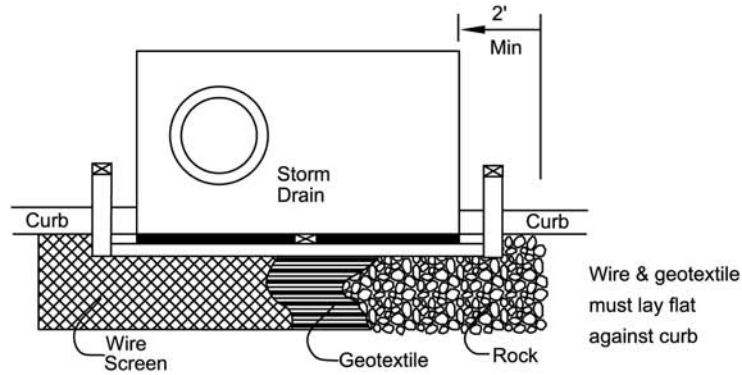
Geotextile-Stone Inlet Protection (AS NEEDED)



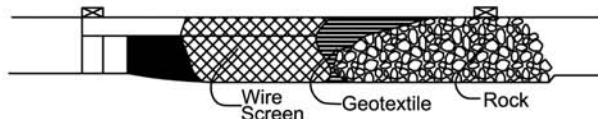
1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. Geotextile and/or wire material shall be placed over the top of the storm sewer and approximately six (6) inches of 2-inch or smaller clean aggregate placed on top. Extra support for geotextile is provided by placing hardware cloth or wire mesh across the inlet cover. The wire should be no larger than $\frac{1}{2}$ " 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

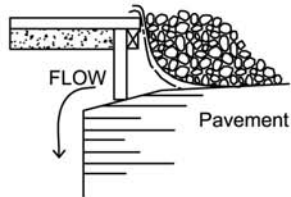
Geotextile - Stone Inlet Protection for Curb Inlets (AS NEEDED)



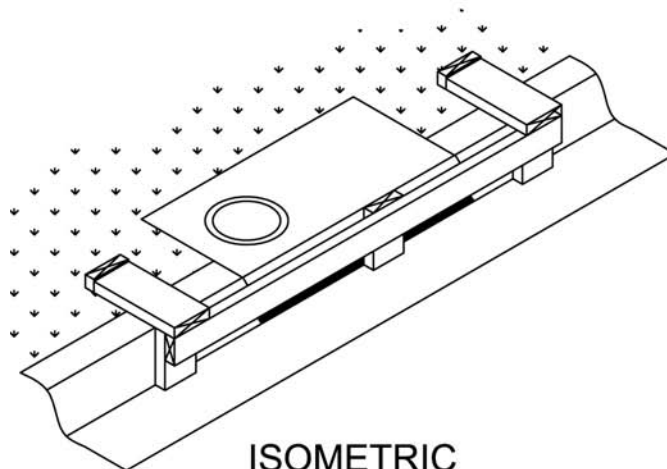
PLAN VIEW



ELEVATION



CROSS SECTION

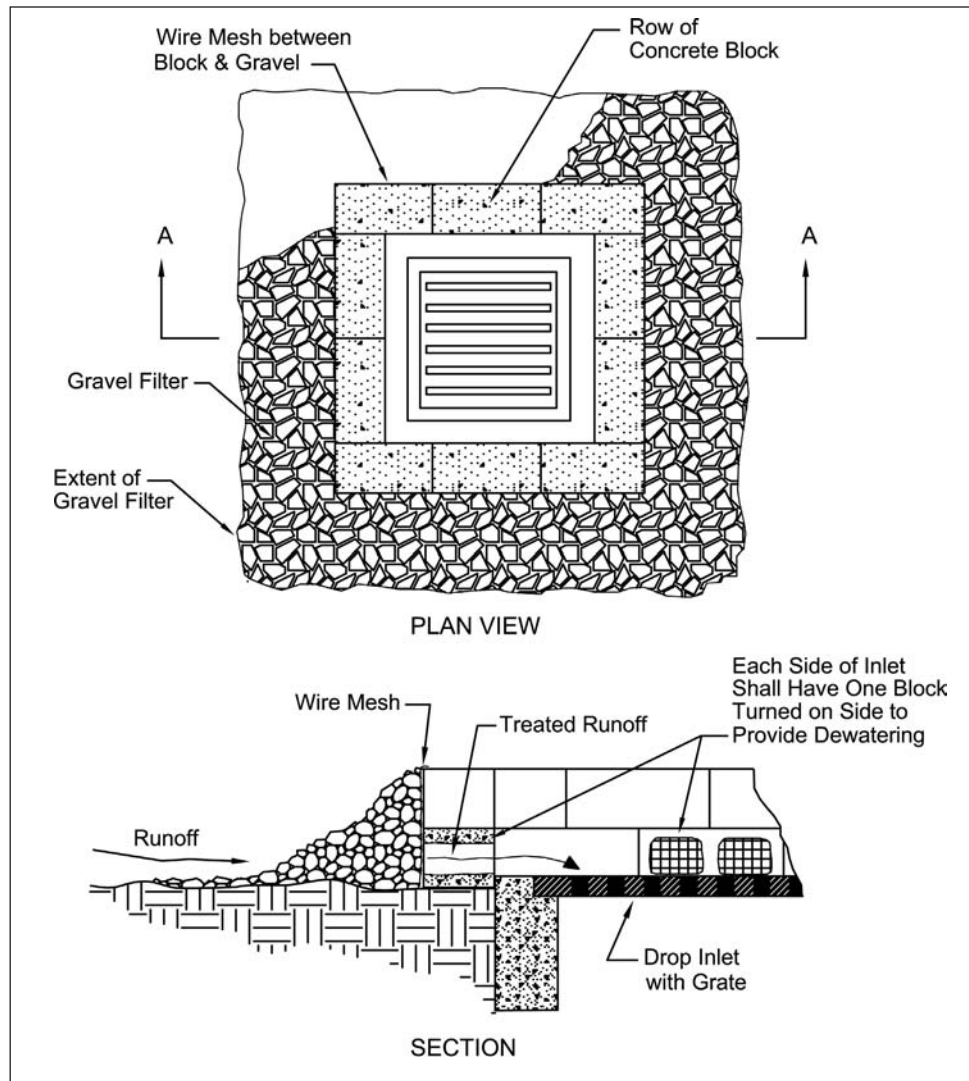


Specifications
for

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 $\frac{1}{2}$ -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° 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 an 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 be placed 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 not 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 effectiveness increases as detention times increase.

Sand Media Filters are 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 manufacturer's 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 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.
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.

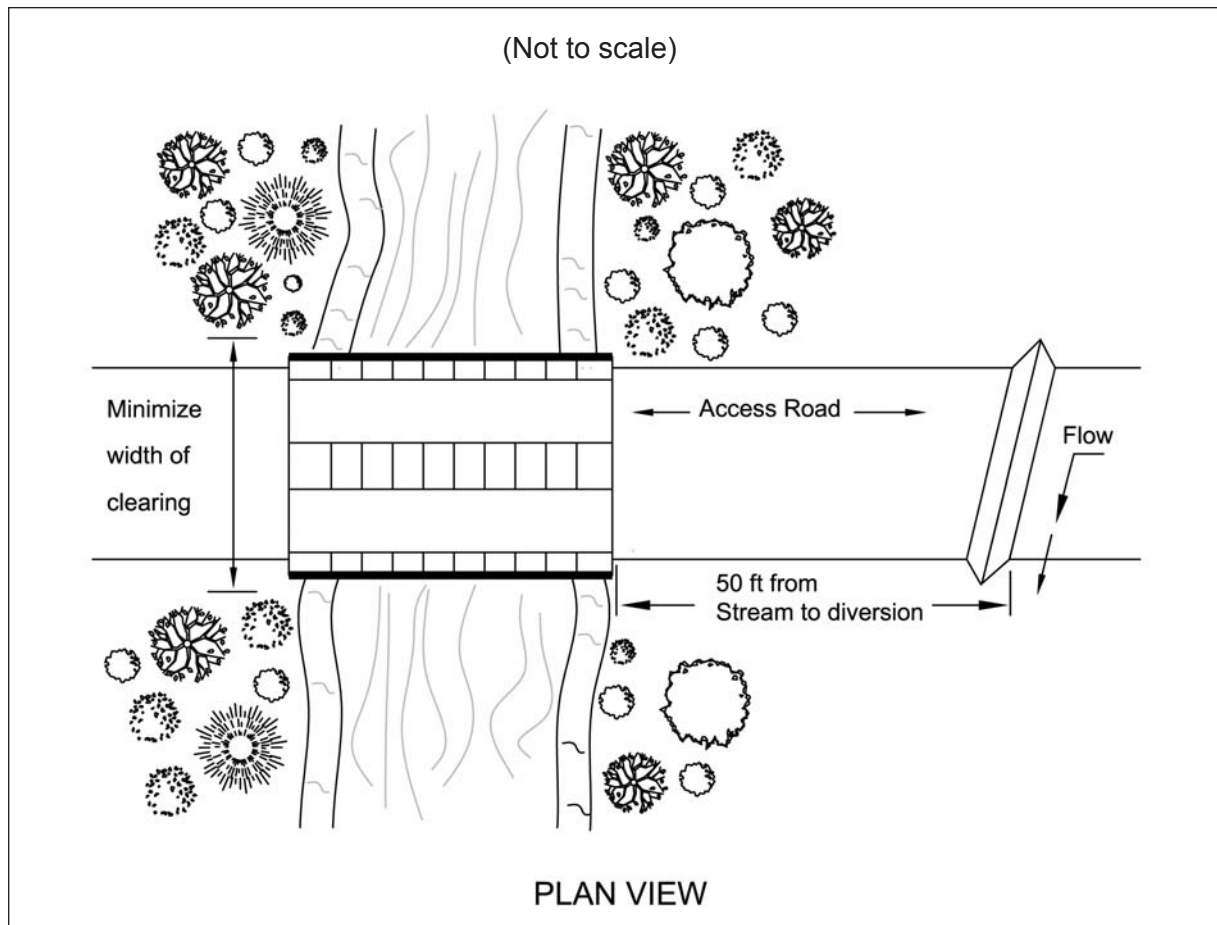
Table 7.5.1 Adhesives for Dust Control

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

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 (TRECPS) 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, photochemically 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:

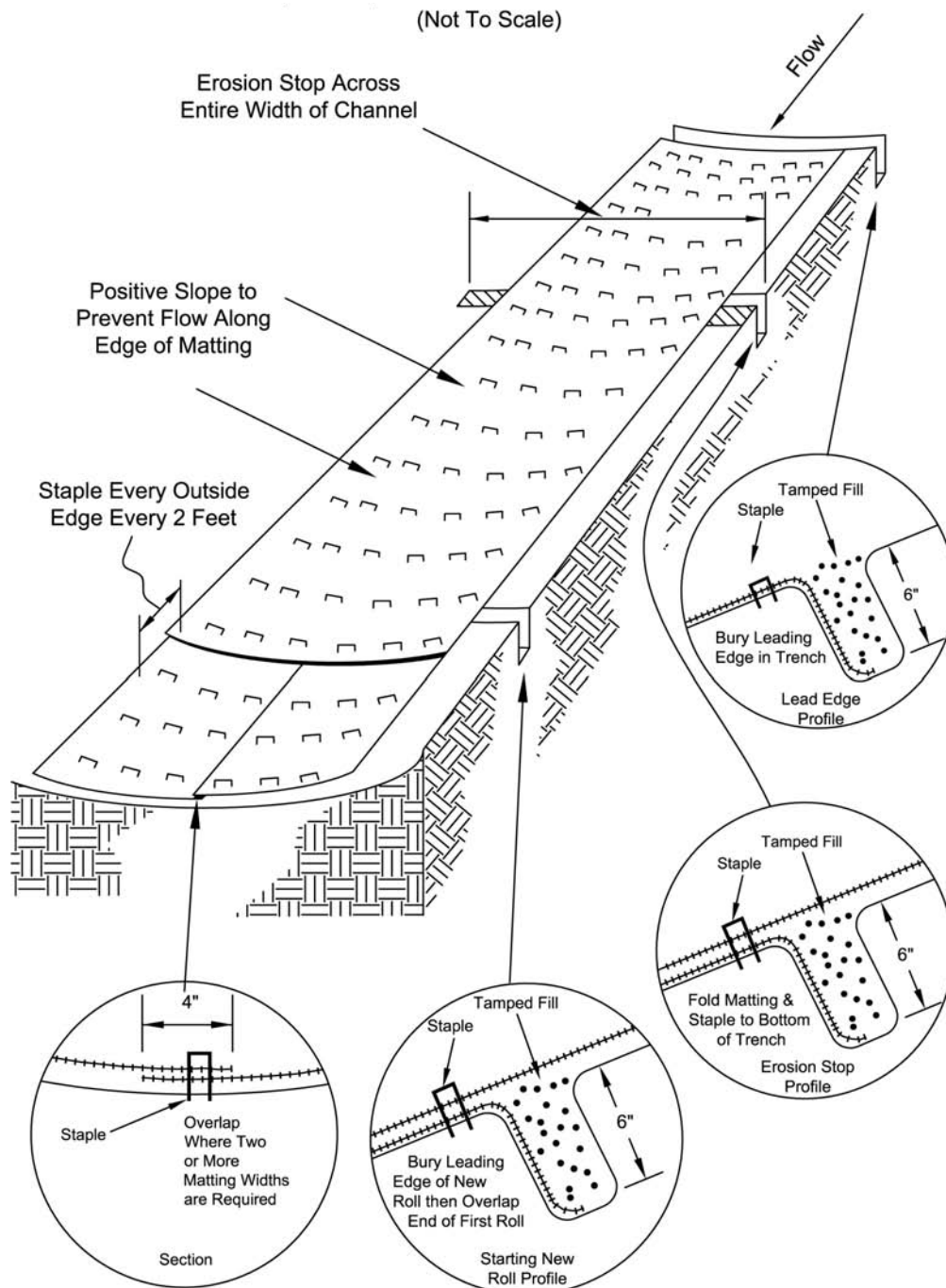
All RECPs should be inspected regularly after installation, especially after storms to check for erosion or undermining of the product. Make needed repairs immediately, addressing rills or gullies that have developed prior to replacing the RECP. In the case erosion repairs, assure that subsequent runoff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

SITE MANAGEMENT MEASURES

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.

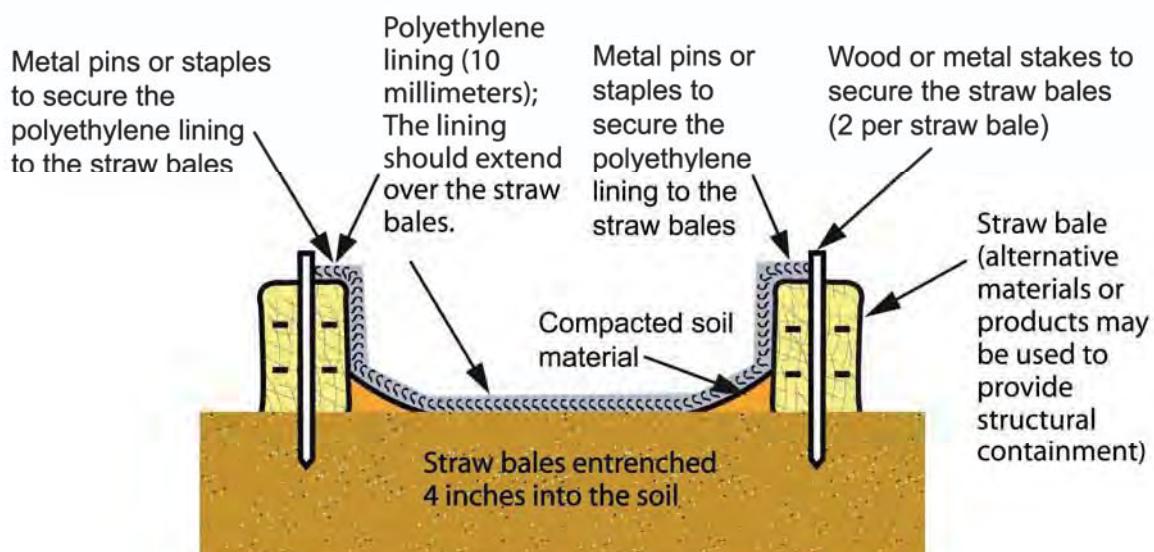
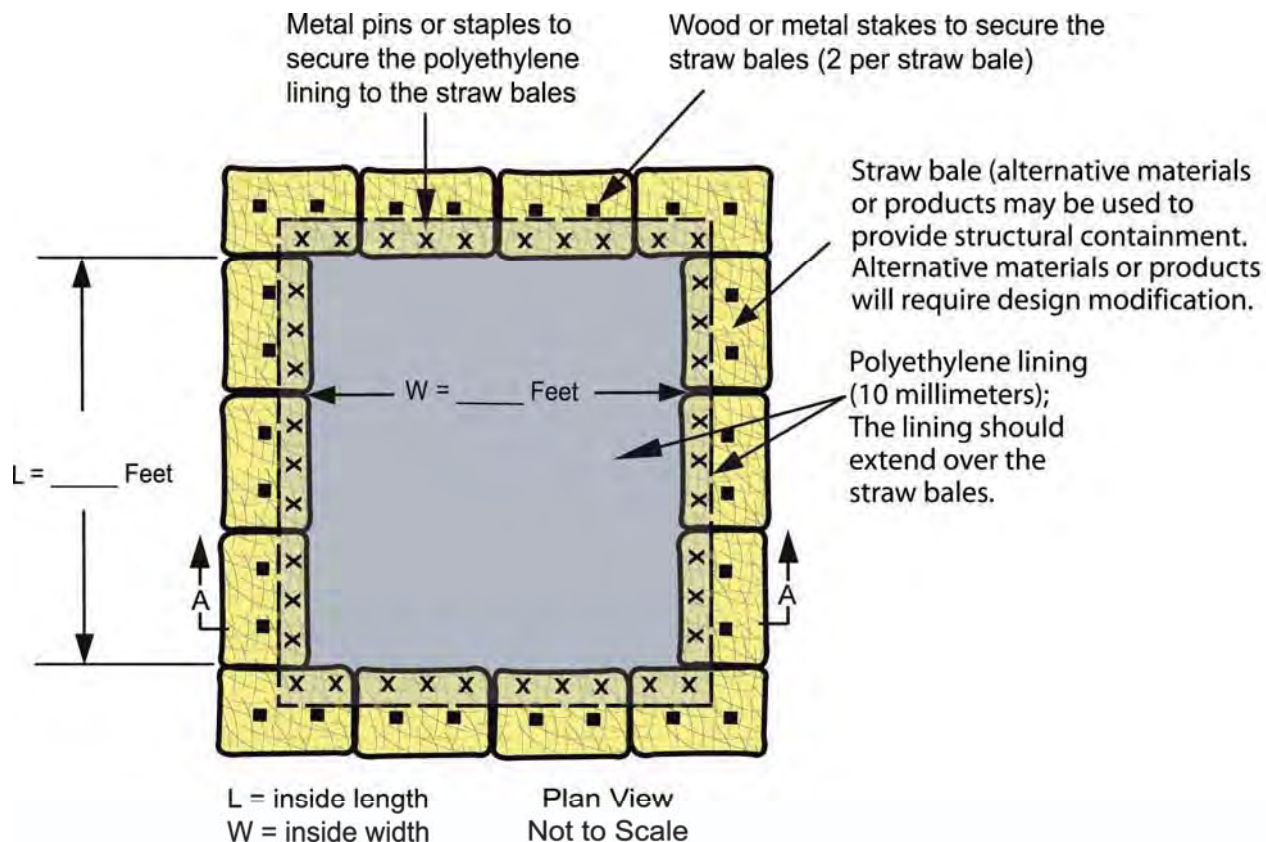
Maintenance

- 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.

CONCRETE WASHOUT

- 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.

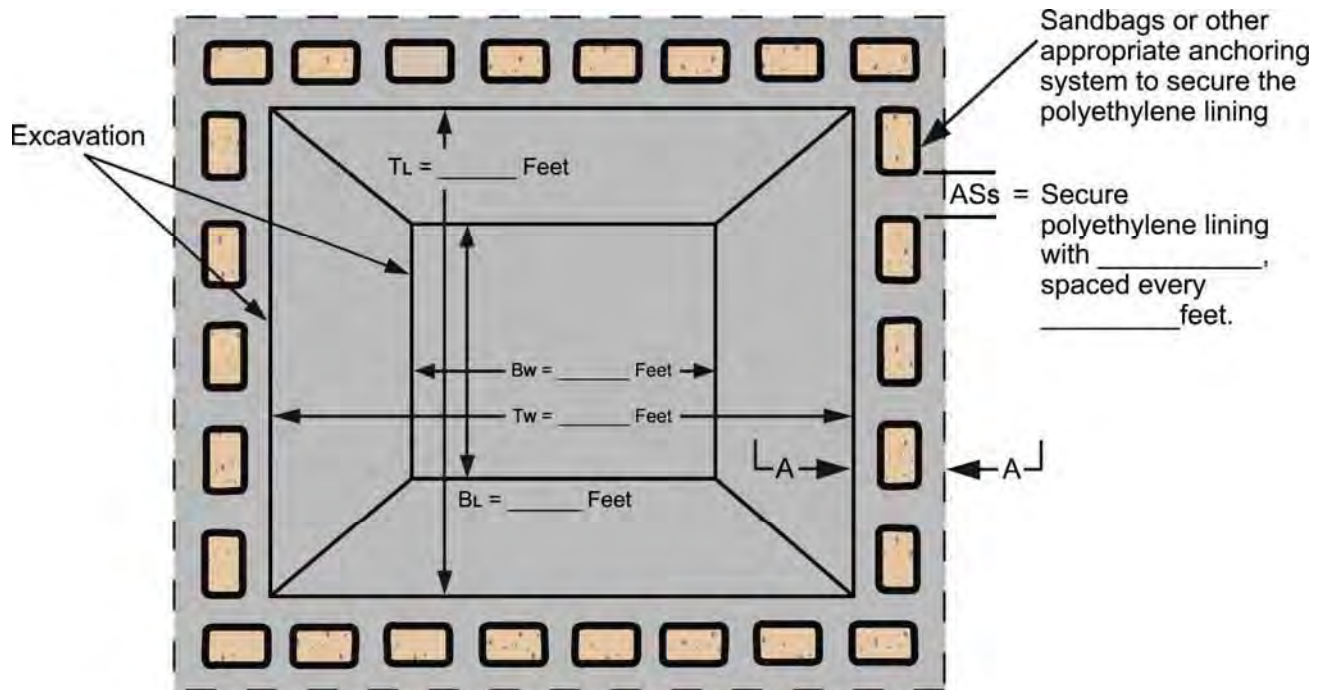
Concrete Washout (Above Grade System) Worksheet



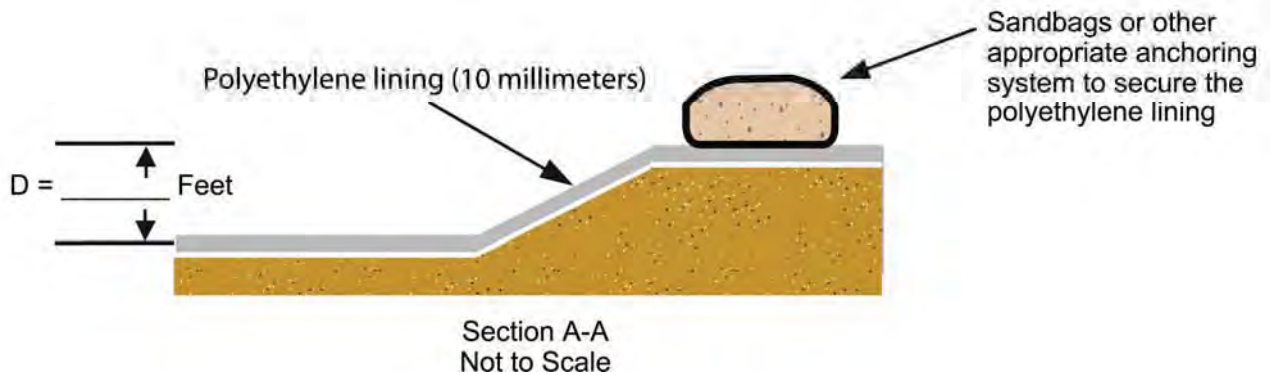
Section A-A
Not to scale

CONCRETE WASHOUT

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



4.3 Rock Lined Channel



Description

A channel that is shaped or graded and protected with an erosion resistant rock riprap underlain with filter or bedding material used to convey stormwater runoff without allowing channel erosion. Rock channel protection provides for the safe conveyance of runoff from areas of concentrated flow without damage from erosion or flooding, where vegetated waterway / conveyance channel / swales would be inadequate. Rock lined channel may also be necessary to control seepage, piping, and sloughing or slides. The riprap section extends up the side slopes to designed depth. The earth above the rock should be vegetated or otherwise protected.

Conditions Where Practice Applies

This practice applies where the following conditions exist:

- Concentrated runoff will cause erosion unless a liner is provided
- Steep grades, wetness, seepage, prolonged base flow, or piping would cause erosion
- Damage by vehicles or animals will make the establishment or maintenance of vegetation difficult
- Soils are highly erosive or other soil or climatic conditions preclude the use of vegetation
- Velocities are expected that will erode the channel or outlet without protection

Caution should be used when design flow greater than 100 cubic feet per second (cfs) from a 10-yr.-frequency storm is expected. Chapter __ - Stream Channel Restoration, should be referenced for planning and design of larger channels.

Planning Considerations

Permits

A construction permit may be required by the local government. Additionally, the U.S. Army Corps of Engineers and the Ohio Environmental Protection Agency, through Sections 404 and 401, respectively, of the Clean Water Act, may require a permit for rock lined channel / outlet that are located adjacent to a stream. It is best to contact your local Soil and Water Conservation District (SWCD) office to determine what both agencies' permit requirements are for your project.

Water Quality

Rock lined channels and outlet protection provide water quality benefits by providing channel stability, prevention of excessive erosion, and limiting subsequent downstream sedimentation.

Design Criteria

Runoff

Runoff computation will be based upon the most severe soil and cover conditions that will exist in the area draining into the channel during the planned life of the structure. Use the NRCS Technical Release 55 (TR 55) or other suitable method shall be used to determine peak rate of runoff.

Capacity

The design capacity of the rock lined channel shall be adequate to carry the peak rate of runoff from a 10-yr. frequency storm. Where high-hazard conditions exist, higher frequency storms should be chosen to provide protection compatible with conditions. The rock-lined channel must have design capacity as required if it to be used as an outlet for a grassed waterway, diversion, terrace, or other measure. Capacity shall be computed using Manning's Equation with a coefficient of roughness "n" listed in the "rock size" table below.

Rock-lined channels / outlets shall be designed by accepted engineering methods such as the Federal Highway Administration Circular No. 15 or Figure 2-1 (Maximum depth of Flow for Riprap Lined Channels) that can be used to determine rock size using flow depth and velocity obtained from Manning's equation. Procedures are also available in the NRCS Engineering Field Handbook.

Velocity

Table 4.3.1 Maximum Design Velocity

Design Flow Depth	Maximum Velocity
0 - 0.5 ft	25 fps
0.5 – 1.0 ft	15 fps
> 1.0 ft	10 fps

Cross Section Shape

The cross sectional shape of rock lined waterway / outlets shall be parabolic, trapezoidal, or triangular.

- *Parabolic channels* most closely approximate natural flow characteristics at low as well as high flows. Although generally preferred for esthetic reasons, design and construction procedures are more complex.
- *Trapezoidal channels* often are used where the quantity of water to be carried is large and velocities high. The steepest permissible side slopes, horizontal to vertical, shall be 2 to 1.
- *Triangular shaped channels* generally is used where the quantity of water to be handled is relatively small, such as roadside ditches. The steepest permissible side slopes, horizontal to vertical, shall be 2 to 1.

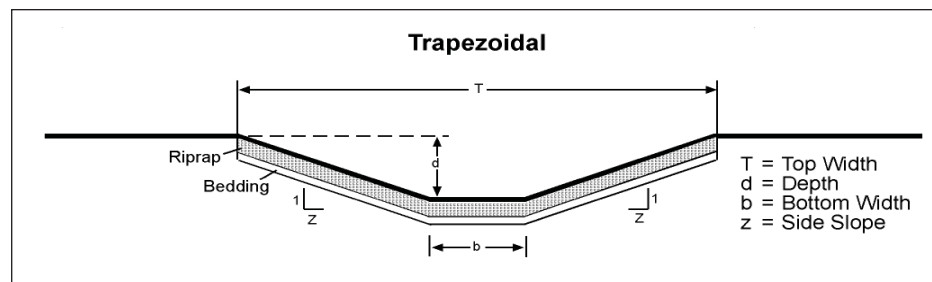


Figure 4.3.1

Rock Lining

The rock-lined channel shall consist of the rock riprap layer and an underlying filter or bedding. Minimum thickness of the rock riprap layer shall be the maximum stone size. Stone used for riprap shall be dense and hard enough to withstand exposure to air, water, freezing and thawing. Figure 4.3.2 gives the maximum depth of flow for riprap lined channels. Rock riprap must have a well-graded distribution and be placed in a to obtain a solid, compact layer of riprap. This may require some hand placing and tamping with construction equipment. Spreading gravel or soil over top of the placed riprap surface will fill the voids by interlocking the riprap together.

Filter or Granular Bedding

Filter or granular bedding must be placed beneath all riprap to prevent the underlying soil from eroding and undermining the riprap, and to collect seepage and base flow. Minimum bedding thickness shall be 4 inches. Use of large size riprap may necessitate the use of a thicker bedding layer or 2 differently sized bedding layers. Care should be taken to select a granular bedding that is suitable with the subgrade material.

Table 4.3.2 Rock Riprap Size

Type of Rock or Riprap (ODOT)	“n” value	Size of Rock	
		50% by weight	85% by weight
Type D	.036	> 6 in.	3 - 12 in.
Type C	.04	> 12 in.	6 - 18 in.
Type B	.043	> 18 in.	12 - 24 in.
Type A	.045	> 24 in.	18 - 30 in.

Adjustments to Naturalize Rock Lining

In order to more closely reflect the nature of the bed of a natural channel, smaller size graded stone may be used to fill the voids left in typical riprap applications.

Besides channel shape and pattern, typical rock lined channels depart from the flow behavior of natural channels by having too much pore space in the rock. Therefore regular flow is often entirely below the surface. This will be improved by extending the gradation of stone down to the gravel-sized material. This addition will increase velocity and reduce capacity slightly; therefore corresponding adjustments should be made.

Geotextile

Geotextile may be used as a filter to be placed beneath the riprap to prevent piping of the soil where wetness, seepage, or prolonged base flow is the reason for lining the channel with riprap. If design of the rock lined channel results in high velocities and steep grades, granular bedding should be used instead of geotextile. Care should be taken to properly anchor the geotextile to prevent unraveling under flowing water. Geotextile shall be woven or nonwoven monofilament yarn and shall meet Class I criteria in the attached table "Requirements for Geotextile".

Maintenance

A maintenance program shall be established to maintain capacity, vegetative cover above the riprap, and associated structural components such as inlets, outlets, and tile lines. Items to consider in the maintenance program include:

- Determine responsible party to inspect and maintain the channel after construction
- Protect the channel from damage by equipment, traffic, or livestock
- Fertilize the vegetated area annually to and maintain a vigorous stand of grass
- Mow the vegetated area to maintain a healthy and vigorous stand of grass.
- Repair damage to channels immediately. Missing riprap should be replaced as soon as possible. All broken subsurface drains should be repaired. Seed and mulch any bare areas that develop.
- Remove sediment and debris that have accumulated.
- Easements, or other means, should be obtained to ensure the channel is maintained as constructed

References

Additional guidance for evaluation, planning, and design of rock lined channels is given in:

- National Cooperative Highway Research Program Report 108 – Tentative Design Procedure for Riprap – Lined Channels
- NRCS Ohio Practice Standard 468, Lined Waterway Or Outlet
- NRCS Engineering Field Handbook, Chapter 6 - Structures
- NRCS Design Note 24, Guide for Use of Geotextiles

Table 4.3.3 Requirements for Geotextiles

Property	Test method	Woven - Class I	Nonwoven - Class I
Tensile strength (pounds) 1/	ASTM D 4632 grab test	200 minimum in any principal direction	180 minimum
Elongation at failure (percent) 1/	ASTM D 4632 grab test	<50	≥ 50
Puncture (pounds) 1/	ASTM D 4833	90 minimum	80 minimum
Ultraviolet light (% residual tensile strength)	ASTM D 4355 150-hr exposure	70 minimum	70 minimum
Apparent opening size (AOS)	ASTM D 4751	As specified, but no smaller than 0.212 mm (#70) 2/	As specified max. #40 2/
Percent open area (percent)	CWO-02215-86	4.0 minimum	-----
Permittivity sec-1	ASTM D 4491	0.10 minimum	0.70 minimum

1/ Minimum average roll value (weakest principal direction).

2/ U.S. standard sieve size.

Note: CWO is a USACE reference.

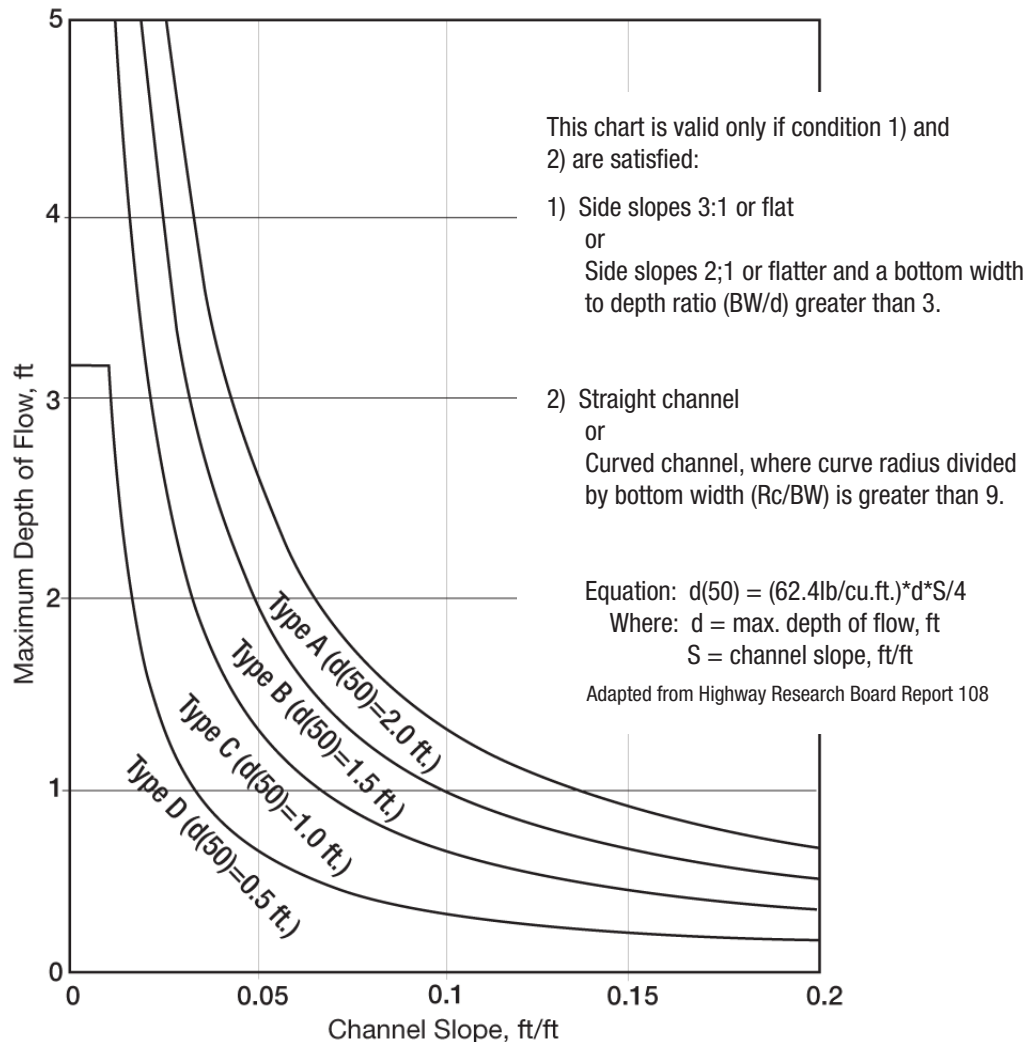
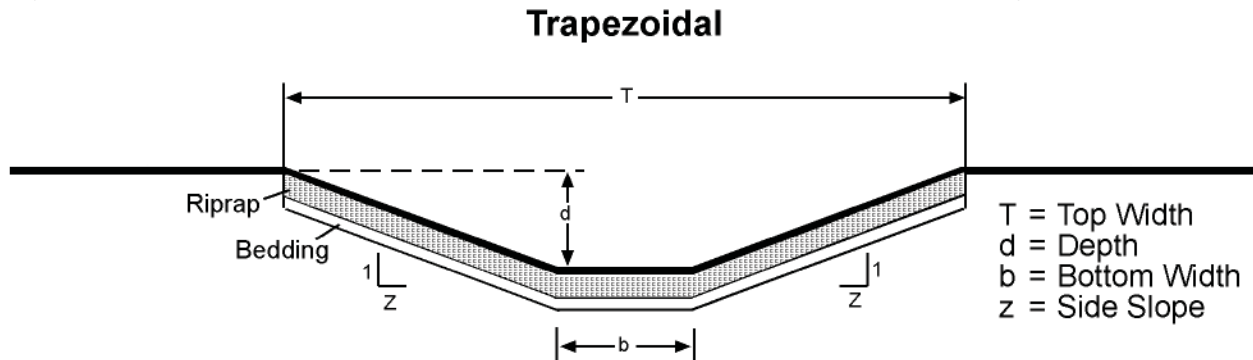
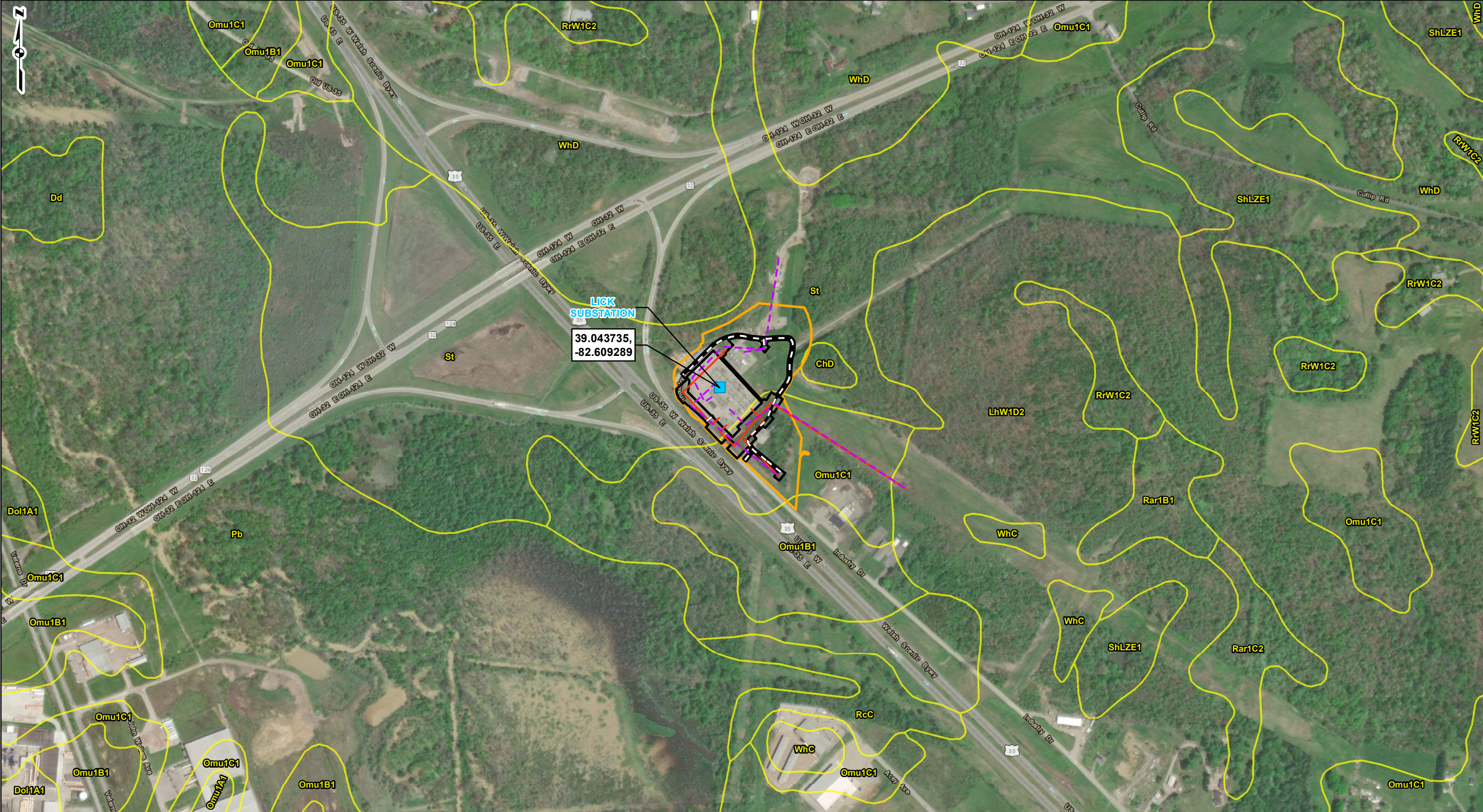


Figure 4.3.2 Maximum Depth of Flow for Riprap Lined Channels

Specifications
for
Rock Lined Channel



1. Subgrade for the filter and riprap shall be prepared to the required lines and grades as shown on the plan. The subgrade shall be cleared of all trees, stumps, roots, sod, loose rock, or other material.
2. Riprap shall conform to the grading limits as shown on the plan.
3. No abrupt deviations from the design grade or horizontal alignment shall be permitted.
4. Geotextile shall be securely anchored according to manufacturers recommendations.
5. Geotextile shall be laid with the long dimension parallel to the direction of flow and shall be laid loosely but without wrinkles and creases. Where joints are necessary, strips shall be placed to provide a 12-in. minimum overlap, with the upstream strip overlapping the downstream strip.
6. Gravel bedding shall be ODOT No. 67's or 57's unless shown differently on the drawings.
7. Riprap may be placed by equipment but shall be placed in a manner to prevent slippage or damage to the geotextile.
8. Riprap shall be placed by a method that does not cause segregation of sizes. Extensive pushing with a dozer causes segregation and shall be avoided by delivering riprap near its final location within the channel.
9. Construction shall be sequenced so that riprap channel protection is placed and functional without delays when the channel becomes operational.
10. All disturbed areas will be vegetated as soon as practical.



PROJECT LOCATION



JACKSON COUNTY, OHIO

REFERENCE: WORLD IMAGERY, ESRI, MAXAR, 2020, ARCGIS ONLINE, ACCESSED 09/2021. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE, USDA/NRCS, 2021.

NO.:	DATE:	DWN:	CHKD:	APPD:	DESCRIPTION:
REVISIONS:					

LEGEND

- EXISTING SUBSTATION

PROPOSED TRANSMISSION LINE

EXISTING TRANSMISSION LINE

PROPOSED ACCESS ROAD
- ENVIRONMENTAL STUDY AREA

PROPOSED LIMIT OF DISTURBANCE (LOD)

SOIL TYPE BOUNDARY

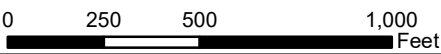


FIGURE 3
SOILS MAP



LICK 138 kV SUBSTATION
UPGRADE PROJECT
AMERICAN ELECTRIC POWER

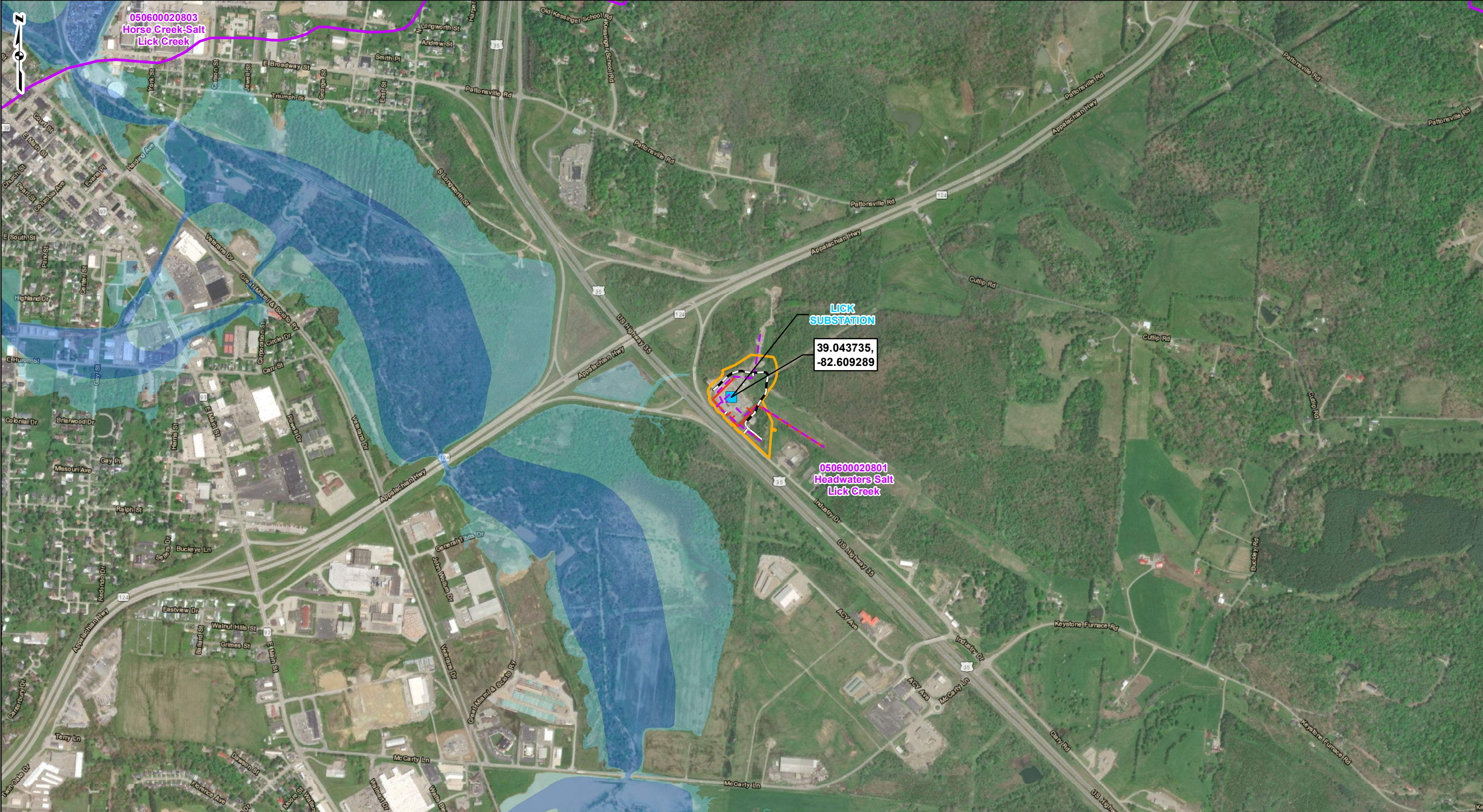


DRAWN BY: JACKSEF

CHECKED: ELLISJR

DATE: 9/16/2021

APPROVED: JONESAR



PROJECT LOCATION



JACKSON COUNTY, OHIO

REFERENCE: ESRI WORLD IMAGERY, MAXAR, 2020, ACCESSED 09/2021. HUC 12 WATERSHED BOUNDARY, USGS, 2020, NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2021.

NO.:	DATE:	DWN:	CHKD:	APPD:	DESCRIPTION:

REVISIONS:

LEGEND

- EXISTING SUBSTATION
- PROPOSED TRANSMISSION LINE
- EXISTING TRANSMISSION LINE
- PROPOSED ACCESS ROAD
- ENVIRONMENTAL STUDY AREA
- HUC 12 WATERSHED BOUNDARY
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODWAY

0 500 1,000 2,000 Feet

FIGURE 4
WATERSHED (HUC12) MAP



LICK 138 kV SUBSTATION
UPGRADE PROJECT
AMERICAN ELECTRIC POWER



DRAWN BY: JACKSEF
CHECKED: ELLISJR

DATE: 9/16/2021
APPROVED: JONESAR

APPENDIX 3

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

AEP OHIO TRANSMISSION COMPANY, INC.
LICK 138KV SUBSTATION UPGRADE 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: ☐ 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): _____

☐ **HDPE Pipe**

HDPE Pipe constructed on site: ☐ Yes ☐ No

Repairs Needed: ☐ Yes ☐ No

Sediment removal required: ☐ Yes ☐ No

Inlet and outlet functional: ☐ Yes ☐ No

Action Required/Taken/Location(s): _____

☐ **Ditch**

Ditch constructed on site: ☐ Yes ☐ No

Repairs Needed: ☐ Yes ☐ No

Sediment removal required: ☐ 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.
LICK 138KV SUBSTATION UPGRADE 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.
LICK 138KV SUBSTATION UPGRADE 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

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. Lick 138KV Substation Upgrade Project. I understand that Inspectors shall meet the qualifications outlined in Part VII.BB. of Ohio EPA Permit No.: OHC000005.

[illegible]

APPENDIX 5

Construction Plans

SITE / CIVIL GENERAL NOTES :

- 1.) ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF AMERICAN ELECTRIC POWER COMPANY DOCUMENT NO. SS-160102, "TECHNICAL SPECIFICATION FOR SUBSTATION AND SWITCHING STATION CONSTRUCTION", HEREIN AFTER KNOWN AS THE "SPECIFICATION" OR THIS SITE GRADING PACKAGE, WHICHEVER IS MOST STRINGENT.
- 2.) THE BOUNDARY AND TOPOGRAPHIC SURVEYS WERE PROVIDED BY SAM, INC., 929 EASTWIND DRIVE, SUITE 201, WESTERVILLE, OH 43081 FOR USE IN DESIGN OF THE AEP ELECTRICAL SUBSTATION IN ACCORDANCE WITH OVERALL SITE DEVELOPMENT RULES / REGULATIONS. THE ELECTRICAL SUBSTATION PROPERTY LINES HAVE BEEN SET W/ 3/4" DIA. IRON PINS AND THE COORDINATES HAVE BEEN VERIFIED THROUGH NAD-83 - OHIO SOUTH DATUM. THE VERTICAL ELEVATION HAVE ALSO BE VERIFIED THROUGH NAVD-88 DATUM.
- 3.) THE EARTHWORK QUANTITIES SHOWN ARE BASED ON STRIPPING TO A DEPTH OF 12" BELOW FINISHED GRADE FOR THE SUBSTATION PAD. STRIPPING QUANTITY MAY BE REDUCED BASED UPON ACTUAL SITE SOIL CONDITIONS. HOWEVER EARTHWORK STRIPPING SHALL BE A MINIMUM OF 6" BELOW FINISHED GRADE. ALL EXISTING GRAVEL, TOPSOIL AND ORGANIC SHALL BE THOROUGHLY STRIPPED AND REPLACED WITH SUITABLE FILL MATERIAL COMPACTED IN ACCORDANCE WITH ABOVE REFERENCED SPECIFICATION.
- 4.) CONTOURS, INSIDE OF THE STATION FENCE REPRESENT FINISHED GRADE (COMPACTED FILL, PLUS 5" OF STATION STONE).
- 5.) SIDE SLOPES SHALL BE A MINIMUM OF THREE (3) HORIZONTAL TO ONE (1) VERTICAL . UNLESS OTHERWISE NOTED, STEEPER SIDE SLOPES MAY BE OBTAINED THROUGH GEOTEXTILE MEMBRANE INSTALLATION.
- 6.) ALL DISTURBED AREAS THAT ARE NOT STONED SHALL BE RE SEEDDED IN ACCORDANCE WITH THE KYDOT CONSTRUCTION MANUAL , LATEST EDITION. THE APPLICATION RATES FOR SEEDING, MULCHING , FERTILIZER AND LIME SHALL BE IN ACCORDANCE WITH THIS SPECIFICATION.
- 7.) UNDER ALL ROADWAY AND PARKING AREAS, A GEOTEXTILE FABRIC (MIRAFI 600X, OR APPROVED EQUIVALENT) SHALL BE INSTALLED ON THE PREPARED SUBGRADE AND FASTENED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 8.) THE SUBSTATION PAD SHALL BE STONED WITH 5" OF WASHED, CRUSHED LIMESTONE AGGREGATE ASTM C33, SIZE NO. 57 A TOP COMPACTED SUBGRADE. FINAL 5" STONE IS NOT THE SITE GRADING CONTRACTOR'S RESPONSIBILITY. ELECTRICAL CONTRACTOR WILL PLACE FINAL STONE ONCE ABOVE AND BELOW GRADE OPERATIONS ARE COMPLETED.
- 9.) CONTRACTOR SHALL CONTACT O.U.P.S. (OR SIMILAR LOCATOR SERVICE) TO CONFIRM UTILITY LOCATIONS BEFORE BEGINNING CONSTRUCTION. CONTRACTOR SHALL VERIFY LOCATIONS AND / OR PRESENCE OF EXISTING UTILITIES.
- 10.) SPOIL MATERIAL IS TO BE RETAINED ON-SITE, UNLESS OTHERWISE DIRECTED BY AEP TCR.
- 11.) CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL TEMPORARY & PERMANENT DRAINAGE & EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE SWPPP.
- 12.) FUELS, OILS AND OTHER BULK MATERIAL SHALL NOT BE STORED AT THE SITE FOR LONGER THAN A 24 HOUR PERIOD.
- 13.) THE PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA.
- 14.) GROUND GRID EXTENDS 3' BEYOND EXISTING FENCE. UNDER NO CIRCUMSTANCES CAN THE GROUND GRID BE DISTURBED (CUT, MODIFIED, REMOVED, ETC.) DURING CONSTRUCTION EXERCISE EXTREME CAUTION WHEN WORKING WITHIN 5' OF EXISTING FENCE.

EARTHWORK / TRENCHING NOTES:

- 1.) SATISFACTORY SOIL MATERIALS: ASTM D 2487 "COHESIVE" SOIL CLASSIFICATION GROUPS HAVING A PLASTICITY INDEX BETWEEN 10 TO 23, FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION & OTHER DELETERIOUS MATTER.
- 2.) UNSATISFACTORY SOIL MATERIALS: ASTM D 2487 SOIL CLASSIFICATION GROUP: CH.
- 3.) ENGINEERED BACKFILL & STRUCTURAL FILL MATERIALS: SATISFACTORY SAND AND/OR GRAVEL MATERIALS CONFORMING TO THE REQUIREMENTS OF KDOT DENSE AGGREGATE BASE (DGA) SPECIFICATIONS, WELL-GRADED AND GENERALLY MEET UNIFIED SOIL CLASSIFICATION SYSTEM, DESIGNATION: GW, SW, GW-GM, OR SW-SM.
- 4.) SUBBASE & BASE MATERIAL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE CONFORMING TO ASTM D 2940, WITH AT LEAST 95 PERCENT PASSING AN 1 1/2" SIEVE & NOT MORE THAN 6 PERCENT PASSING A NO. 200 SIEVE.
- 5.) PROVIDE EROSION CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS & DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES.
- 6.) PREVENT SURFACE, SUBSURFACE OR GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES & FROM FLOODING PROJECT SITE & SURROUNDING AREA. PROTECT SUBGRADES & FOUNDATION SOILS FROM SOFTENING & DAMAGE BY RAIN OR WATER ACCUMULATION.
- 7.) EXCAVATE SWALES TO INDICATED SLOPES, LINES, DEPTHS & INVERT ELEVATIONS AS INDICATED ON THE GRADING PLAN.
- 8.) DRAINAGE SWALE BOTTOMS: EXCAVATE & SHAPE SWALE BOTTOMS TO PROVIDE UNIFORM BEARING & SUPPORT. SHAPE SUBGRADE TO PROVIDE CONTINUOUS UNIFORMITY. REMOVE STONES & DEBRIS TO ALLOW THE UNIFORM FLOW OF ANY OVERLAND DRAINAGE SURFACE WATER THAT MAY BE PRESENT.
- 9.) STOCKPILE EXCAVATED MATERIALS ACCEPTABLE FOR BACKFILL ALONG WITH FILL SOIL MATERIALS, INCLUDING ACCEPTABLE BORROW MATERIALS. STOCKPILE SOIL MATERIALS IN DESIGNATED AREA. PLACE, GRADE & SHAPE STOCKPILES TO DRAIN SURFACE WATER.
- 10.) PLACE AND COMPACT INITIAL BACKFILL OF SATISFACTORY SOIL MATERIAL OR SUBBASE MATERIAL TO FINAL GRADE AS INDICATED ON THE DRAWINGS. CAREFULLY COMPACT MATERIAL AT THE BOTTOM OF DRAINAGE SWALES AND BRING BACKFILL EVENLY UP ON BOTH SIDES AND ALONG THE FULL LENGTH OF DRAINAGE SWALE.
- 11.) PLACE AND COMPACT FINAL BACKFILL OF SATISFACTORY SOIL MATERIAL TO FINAL SUBGRADE.
- 12.) PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY APPROPRIATE COMPACTION EQUIPMENT AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
- 13.) PERFORM FIELD IN PLACE DENSITY TESTS ACCORDING TO ASTM D 1556 (SAND CONE METHOD), ASTM D 2167 (RUBBER BALLON METHOD), OR ASTM D 2937 (DRIVE CYLINDER METHOD), AS APPLICABLE.
- 14.) DRAINAGE SWALE BACKFILL: IN EACH COMPACTED INITIAL AND FINAL BACKFILL LAYER, PERFORM AT LEAST ONE FIELD IN PLACE DENSITY TEST FOR EACH 150 FEET OR LESS OF SWALE, BUT NO FEWER THAN TWO TESTS.
- 15.) DISPOSAL: REMOVE SURPLUS SATISFACTORY SOIL AND WASTE MATERIAL, INCLUDING UNSATISFACTORY SOIL, TRASH AND DEBRIS AND DISPOSE OF IT IN SOIL DISPOSAL AREA ON-SITE, UNLESS OTHERWISE AUTHORIZED BY TCR.

AMERICAN ELECTRIC POWER
FOR OHIO POWER COMPANY
LICK STATION
19 INDUSTRY DRIVE
JACKSON, OHIO 45640

STATION COORDINATES: LAT. N 39°02'37" LONG. W 82°36'33"



VICINITY MAP

N.T.S.

DRAWING INDEX

- E-1210 COVER SHEET
E-1211 STATION LAYOUT PLAN
E-1212 GRADING AND EROSION AND SEDIMENT CONTROL PLAN
E-1213 GRADING AND EROSION CONTROL DETAILS

ESTIMATED QUANTITIES

TOTAL DISTURBED AREA	0.75 AC
STRIPPING OF 12" TOPSOIL	180 C.Y.
CUT	560 C.Y.
FILL (30% ADDED FOR COMPACTION)	234 C.Y.
5" AGGREGATE FOR STATION PAD (#57 COARSE LIMESTONE AGGREGATE) (BY OTHERS)	122 TONS
5" AGGREGATE BASE FOR ACCESS DRIVE (#57 COARSE LIMESTONE AGGREGATE)	61 TONS
4" AGGREGATE SURFACE COURSE FOR ACCESS DRIVE (NO. 504 COARSE AGGREGATE)	49 TONS
MIRAFI 600X GEOTEXTILE FABRIC (DRIVE)	250 SY
SEEDING AND MULCHING	0.15 AC.
12" HDPE PIPE (INCLUDING FITTINGS)	159 L.F.
SILT FENCE / FILTER SOCK	1,500 L.F.
CHAIN LINK FENCE (INCL. POSTS)	1,333 L.F.
REMOVE EXISTING FENCE	1,357 L.F.
24" DOUBLE SWING GATE	2 EA.
CONSTRUCTION ENTRANCE	ONE

OWNER/APPLICANT:
AMERICAN ELECTRIC POWER
OHIO POWER COMPANY

SURVEY CONSULTANT:

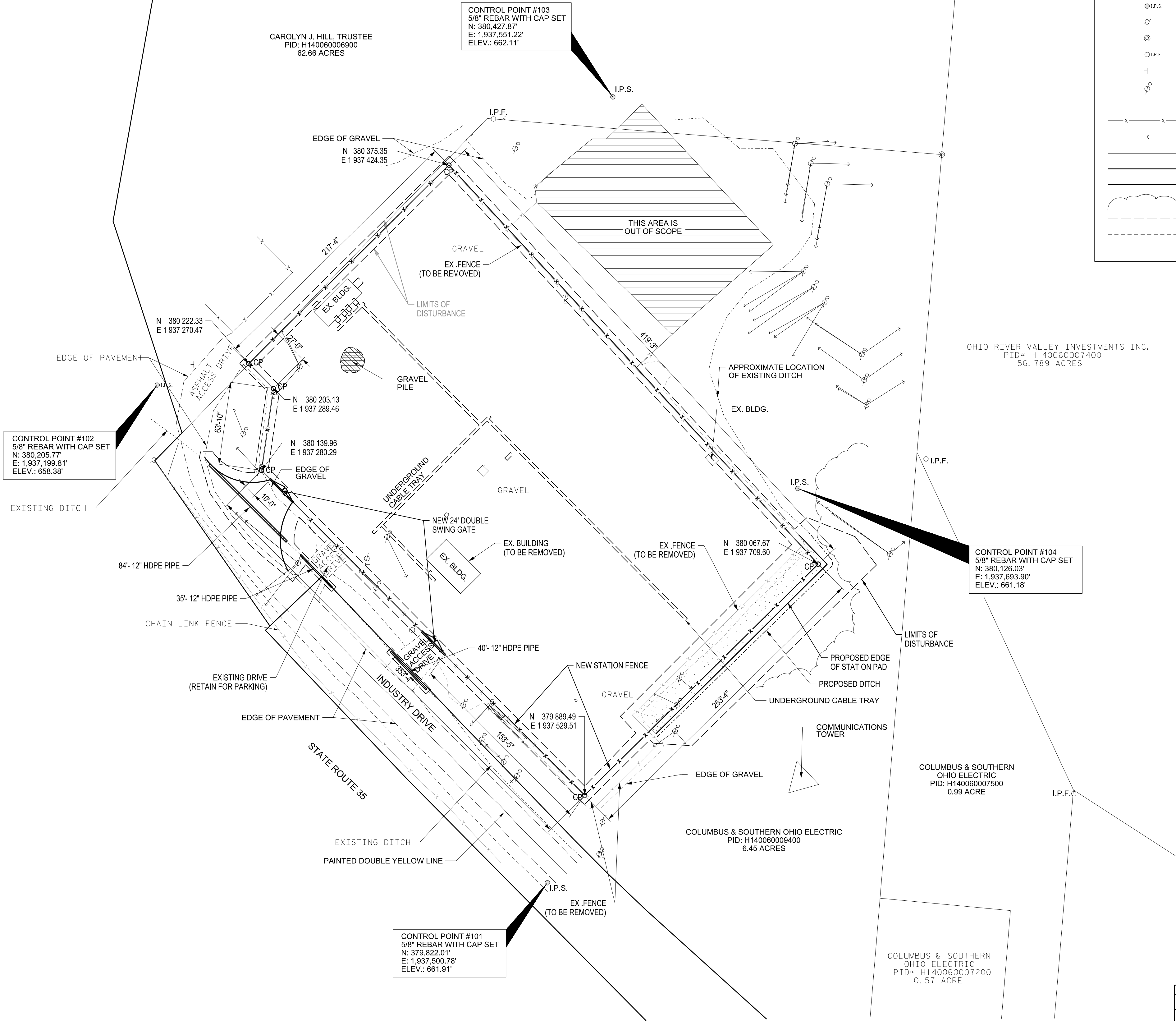
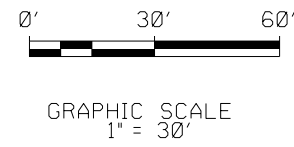
AEP CONTACTS:

ANDREA KING - CIVIL ENGINEER (614) 933-2048
EMAIL: ajking@aep.com
TCR: ROBERT REIBER (740) 331-2342
EMAIL: rreiber@aep.com

OLD DWG #:		STD DWG #:	
THIS DRAWING IS THE PROPERTY OF AMERICAN ELECTRIC POWER AND IS LOANED UPON CONSENT THAT IT IS NOT TO BE COPIED OR REPRODUCED IN WHOLE OR IN PART, OR USED FOR FURNISHING INFORMATION TO ANY PERSON WITHOUT THE WRITTEN CONSENT OF AMERICAN ELECTRIC POWER, OR FOR ANY PURPOSE DETERMINED TO BE IN THEIR INTEREST, AND IS TO BE RETURNED UPON REQUEST.			
OHIO POWER COMPANY LICK STATION			
JACKSON	138 KV		OHIO
COVER SHEET			
SCALE: NONE			
DR: LAM		ENG: AJK	CH: AJK
WORK: 42987362		APPD: BJB	DATE:
1 RIVERSIDE PLAZA COLUMBUS, OH 43216		DWG. NO: E-1210	REV: 0



NO	DATE	REVISION DESCRIPTION	APPR	DR	ENG	CK	ISSUED
----	------	----------------------	------	----	-----	----	--------






- ### LEGEND
- | | |
|----------------|--------------------------------------|
| ○ I.P.S. | IRON PIN SET (PRIMARY CONTROL) |
| ✕ | RAILROAD SPIKE FOUND |
| ◎ | CONCRETE MONUMENT FOUND |
| ○ I.P.F. | IRON PIN FOUND |
| + | SIGN |
| ⦶ | POWER POLE |
| | OVERHEAD ELECTRIC |
| — X — | FENCE |
| ◁ | GUY WIRE ANCHOR |
| — — — — — | GUARDRAIL |
| — — — — — | EXISTING LIMITED ACCESS RIGHT-OF-WAY |
| — — — — — | EXISTING RIGHT-OF-WAY |
| — — — — —
Y | BRUSH LINE |
| — — — — — | EDGE OF PAVEMENT |
| - - - - - | EDGE OF GRAVEL |

UNDERGROUND UTILITIES

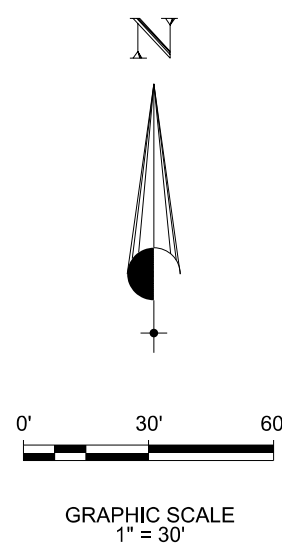
 **TWO WORKING DAYS
BEFORE YOU DIG** 
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

REFERENCE DRAWINGS

- | | |
|--------|---|
| E-1210 | COVER SHEET |
| E-1212 | GRADING AND EROSION AND SEDIMENT CONTROL PLAN |
| E-1213 | GRADING AND EROSION CONTROL DETAILS |

OLD DWG #: OLD DWG		STD DWG #: STD DWG	
<p>*THIS DRAWING IS THE PROPERTY OF AMERICAN ELECTRIC POWER AND IS LOANED UPON CONDITION THAT IT BE NOT TO BE COPIED OR REPRODUCED, IN WHOLE OR IN PART, OR USED FOR FURNISHING INFORMATION TO ANY PERSON WITHOUT THE WRITTEN CONSENT OF AMERICAN ELECTRIC POWER, FOR ANY PURPOSE, WITHOUT FIRST OBTAINING PERMISSION TO DO SO. IT IS TO BE RETURNED UPON REQUEST.</p>			
OHIO POWER COMPANY			
LICK STATION			
JACKSON	138 KW		OHIO
STATION LAYOUT PLAN			
SCALE: NONE	DR: LAM	ENGR: AJK	CHK:
WJOB: T11072420	DATE: 11/1/2020	DATE:	
 AMERICAN ELECTRIC POWER	1 RIVERSIDE PLAZA COLUMBUS, OH 43215	DWG. NO. E-1211	REVISION 0

NO	DATE	REVISION DESCRIPTION	APPR	DR	ENG	CK	ISSUE#
----	------	----------------------	------	----	-----	----	--------



LEGEND

- (PS) PERMANENT SEEDING
(MU) MULCH
(TS) TEMPORARY SEEDING
(TP) TOP SOIL
(CE) CONSTRUCTION ENTRANCE
(SF) SILT FENCE

CONTROL POINT #102
5/8" REBAR WITH CAP SET
N: 380,205.77
E: 1,937,199.81'
ELEV.: 658.38'

CONTROL POINT #103
5/8" REBAR WITH CAP SET
N: 380,427.87'
E: 1,937,551.22'
ELEV.: 662.11'

CONTROL POINT #104
5/8" REBAR WITH CAP SET
N: 380,126.03'
E: 1,937,693.90'
ELEV.: 661.18'

CONTROL POINT #101
5/8" REBAR WITH CAP SET
N: 379,822.01'
E: 1,937,500.78'
ELEV.: 661.91'

UNDERGROUND UTILITIES

TWO WORKING DAYS

BEFORE YOU DIG

CALL 1-800-362-2764 (TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS

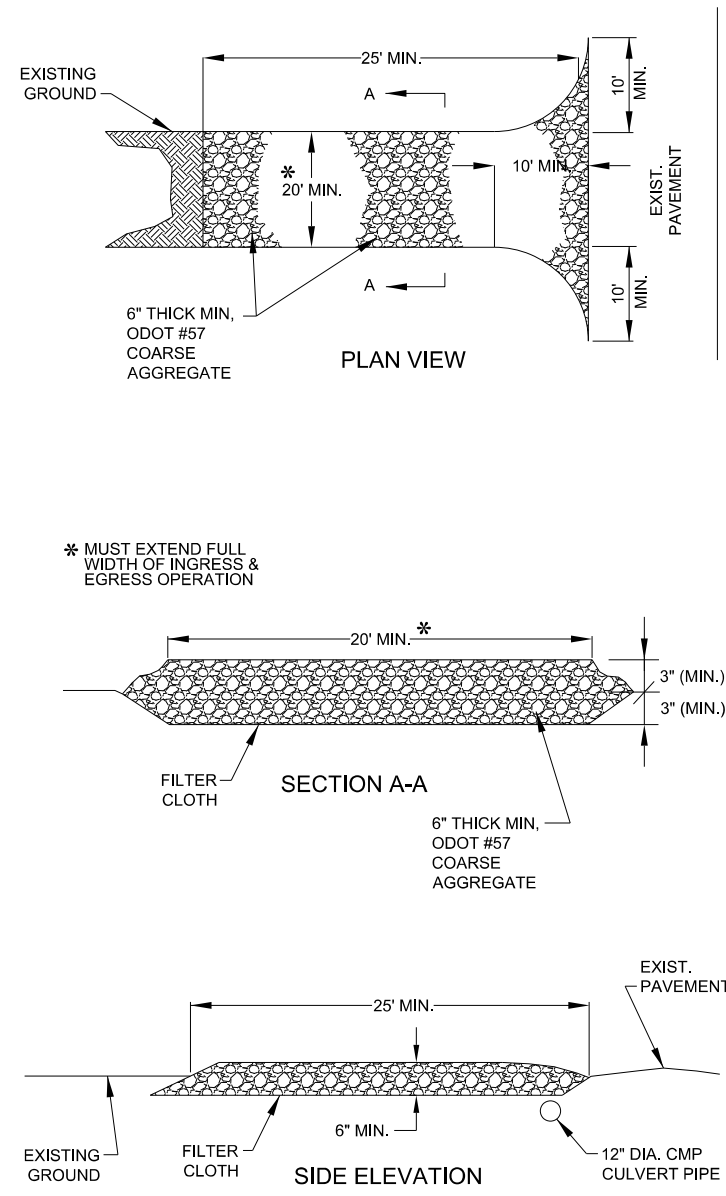
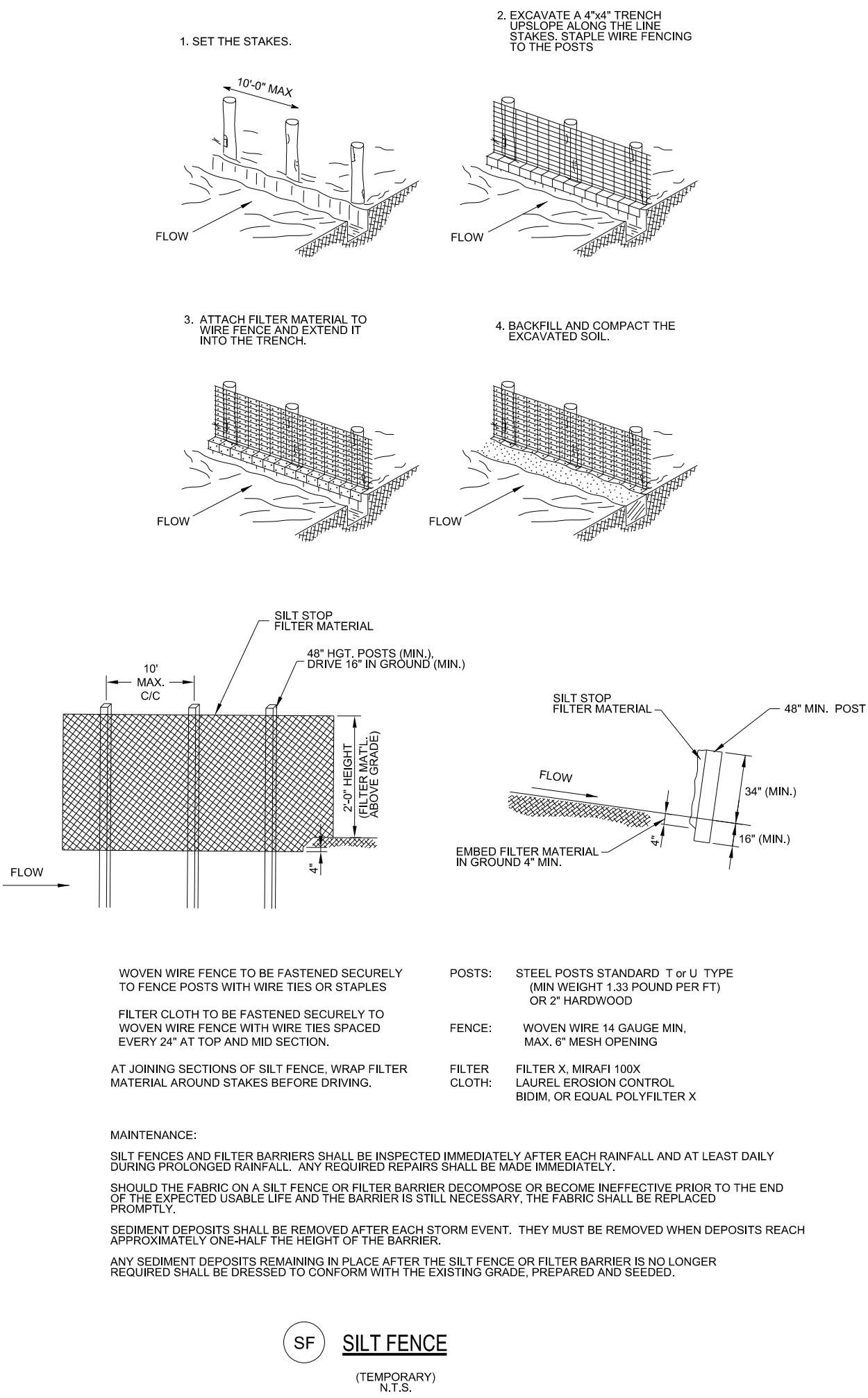
MUST BE CALLED DIRECTLY

REFERENCE DRAWINGS

- E-1210 COVER SHEET
E-1211 STATION LAYOUT PLAN
E-1213 GRADING AND EROSION CONTROL DETAILS

OLD DWG #: OLD DWG	STD DWG #: STD DWG
THE DRAWING IS THE PROPERTY OF AMERICAN ELECTRIC POWER AND IS LOANED TO YOU FOR CONSIDERATION THAT IT BE NOT TO BE COPIED, REPRODUCED, OR REPRODUCED IN WHOLE OR IN PART, OR USED FOR FURNISHING INFORMATION TO ANY PERSON WITHOUT THE WRITTEN CONSENT OF AMERICAN ELECTRIC POWER, OR FOR ANY PURPOSE OUTSIDE OF THE PROJECT FOR WHICH IT WAS PREPARED.	
OHIO POWER COMPANY	
LICK STATION	
JACKSON OHIO	
138 KV	
GRADING PLAN	
GRADING AND EROSION AND SEDIMENT CONTROL PLAN	
SCALE: 1" = 30'	DR: LAM
WOR: T10072420	APPD: INC.
1 RIVERSIDE PLAZA COLUMBUS, OH 43215	DWG: E-1212
DATE:	DATE:
REV	0

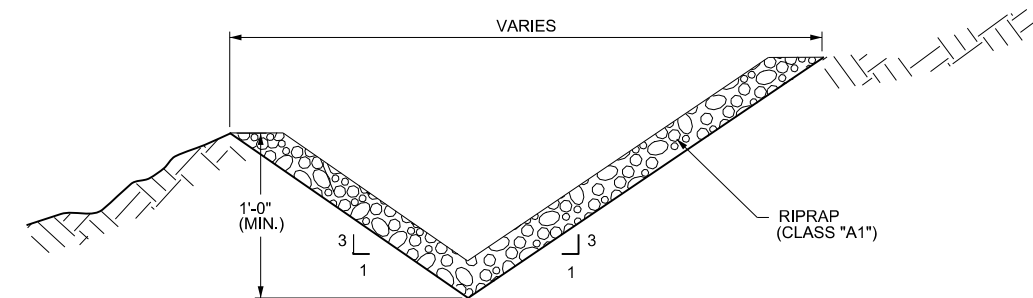
NO	DATE	REVISION DESCRIPTION	APPR	DR	ENG	CK	ISSUED
----	------	----------------------	------	----	-----	----	--------



1. STONE SIZE - USE ODOT NO. 57 COARSE AGGREGATE.
2. LENGTH - AS SHOWN ON PLANS.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER FABRIC - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED SO THAT TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC PLACEMENT OF ADDITIONAL STONE AS NEEDED, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAYS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

CE CONSTRUCTION ENTRANCE

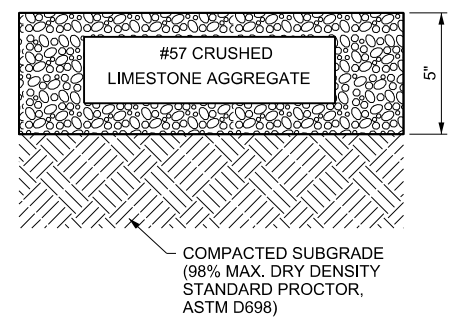
(TEMPORARY) N.T.S.



DIVERSION DITCH

TYPICAL SECTION

N.T.S.



TYPICAL STATION SURFACING DETAIL

(SEE DWG. E-XXXX) NO SCALE

SECTION "A-A"

SCALE: 1" = 30'-0" (HORIZ.)
1" = 1'-0" (VERT.)

SEEDING TABLE

VARIETY OF SEED	TABLE 652.5-SEED MIXTURES				
	TYPE B	TYPE C		TYPE D	TYPE L
		C-1	C-2		
MEDIANS, SHOULDERS (DITCH SLOPE) WATERWAYS, AND MOWABLE AREAS OF INTERCHANGE	COARSE LAWN GRASS FOR USE IN URBAN AND REST AREA LOCATIONS	FINE LAWN GRASS FOR USE WHERE A FINE LAWN IS DESIRED	CUT AND FILL SLOPES (INCLUDING BENCHES AND BIFURCATED MEDIAN)	ALL AREAS	
LB. PER ACRE (KG PER ha)	LB. PER ACRE (KG PER ha)	LB. PER ACRE (KG PER ha)	LB. PER ACRE (KG PER ha)	LB. PER ACRE (KG PER ha)	
KENTUCKY 31 FESCUE	65 (72.9)	45 (50.4)		20 (22.4)	
RED FESCUE (PENNLAWN)	20 (22.4)	20 (22.4)	20 (22.4)	20 (22.4)	41 (46.0)
KENTUCKY BLUEGRASS		25 (28.0)	40 (44.8)		
MERION BLUEGRASS			30 (33.6)		
CROWN VETCH				20 (22.4)	
HARD FESCUE MIXTURE***					63 (70.6)
WHITE DUTCH CLOVER	3 (3.4)				
ANNUAL RYEGRASS AUGUST 1 TO MAY 15 OR WEEPING LOVEGRASS MAY 15 TO AUGUST 1	7 (7.8)	7 (7.8)	7 (7.8)	7 (7.8)	12 (13.5)
	3 (3.4)	3 (3.4)		3 (3.4)	5 (5.6)

REFERENCE DRAWINGS

E-1210 COVER SHEET
E-1211 STATION LAYOUT PLAN
E-1212 GRADING AND EROSION AND SEDIMENT CONTROL PLAN

OLD DWG #:	OLD DWG	STD DWG #:	STD DWG
THIS DRAWING IS THE PROPERTY OF AMERICAN ELECTRIC POWER AND IS LOANED TO YOU FOR CONSTRUCTION. IT IS NOT TO BE COPIED, REPRODUCED, OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN CONSENT OF AMERICAN ELECTRIC POWER. IT IS TO BE RETURNED TO THE LENDOR UPON REQUEST.			
OHIO POWER COMPANY			
LICK STATION			
JACKSON OHIO			
GRADING DETAILS			
MISC. SITE/CIVIL AND EROSION CONTROL DETAILS			
SCALE: 1" = 30'	DR: LAM	ENG: AJK	CH:
WORK: 42987362	APPD:	DATE:	
1 RIVERSIDE PLAZA COLUMBUS, OH 43215	DWG. NO:	E-1213	R (P) 0

NO	DATE	REVISION DESCRIPTION	APPR	DR	ENG	CK	ISSUED
----	------	----------------------	------	----	-----	----	--------

APPENDIX 6

Long-Term Maintenance Plan

LONG-TERM MAINTENANCE PLAN

AEP OHIO TRANSMISSION COMPANY, INC. LICK 138kV SUBSTATION UPGRADE PROJECT

The Storm Water Pollution Prevention Plan (SWPPP) prepared for construction of the Lick 138kV Substation Upgrade Project includes Best Management Practices (BMPs) for storm water management. As a condition of Part III.G.2.e of the General Permit (OHC000005), a maintenance plan is required for all post-construction BMPs to ensure that permanent storm water management systems continue to function as designed and constructed. For this Project, BMPs that will remain in place following the Notice of Termination (NOT) to Ohio EPA include a ditch (See Appendices 2 and 5).

INSPECTION AND MAINTENANCE RESPONSIBILITIES

Following construction, the Lick 138kV Substation Upgrade Project will be operated and maintained by AEP. As part of routine and periodic maintenance activities, a representative from AEP's Transmission Field Services (TFS) will inspect the BMPs according to the schedule outlined below.

INSPECTION AND MAINTENANCE ACTIVITIES FOR BMPs	
ACTIVITY	SCHEDULE
Ditch: <ul style="list-style-type: none">• Visual inspection and removal of sediment and trash	Any time the visual inspection reveals sediment or trash or reduced system performance is noted

File: LIC Station Rebuild/t-line project

From: Amy Toohey, WERS-TDT Environmental Specialist DATE: 9/28/2021

RE: NWP#57 applicability non-reporting

Based on the wetland/stream impact table the project is within the thresholds of the non-reporting NWP#57. The NWP#57 conditions are attached to the SWPPP and should be kept on site.

In the event project changes or field decisions result in additional impact additional permit review will occur.

AJT

NATIONWIDE PERMITS FOR THE STATE OF OHIO

U.S. ARMY CORPS OF ENGINEERS (CORPS) REGULATORY PROGRAM REISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS WITH OHIO DEPARTMENT OF NATURAL RESOURCES CONSISTENCY DETERMINATION UNDER THE COASTAL ZONE MANAGEMENT ACT AND WAIVED OHIO EPA 401 WATER QUALITY CERTIFICATION

NWP 57

NWP 57. *Electric Utility Line and Telecommunications Activities.* Activities required for the construction, maintenance, repair, and removal of electric utility lines, telecommunication lines, and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Electric utility lines and telecommunication lines: This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of electric utility lines and telecommunication lines. There must be no change in preconstruction contours of waters of the United States. An “electric utility line and telecommunication line” is defined as any cable, line, fiber optic line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the electric utility line or telecommunication line crossing of each waterbody.

Electric utility line and telecommunications substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with an electric utility line or telecommunication line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead electric utility line or telecommunication line towers, poles, and anchors:

This NWP authorizes the construction or maintenance of foundations for overhead electric utility line or telecommunication line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of electric utility lines or telecommunication lines, including overhead lines and substations, in nontidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize electric utility lines or telecommunication lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (see 33 CFR part 322). Electric utility lines or telecommunication lines constructed over section 10 waters and electric utility lines or telecommunication lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the electric utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of

materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) A section 10 permit is required; or (2) the discharge will result in the loss of greater than 1/10-acre of waters of the United States. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: Where the electric utility line is constructed, installed, or maintained in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, a copy of the NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the electric utility line to protect navigation.

Note 2: For electric utility line or telecommunications activities crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Electric utility line and telecommunications activities must comply with 33 CFR 330.6(d).

Note 3: Electric utility lines or telecommunication lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

Note 4: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP.

Access roads used solely for construction of the electric utility line or telecommunication line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 5: This NWP authorizes electric utility line and telecommunication line maintenance and repair activities that do not qualify for the Clean Water Act section 404(f) exemption for maintenance of currently serviceable fills or fill structures.

Note 6: For overhead electric utility lines and telecommunication lines authorized by this NWP, a copy of the PCN and NWP verification will be provided by the Corps to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

Note 7: For activities that require preconstruction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be

used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require preconstruction notification (see paragraph (b)(4) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

Corps NWP 57 Specific Regional Conditions:

- PCN in accordance with NWP General Condition 32 and Regional General Condition 6 is required for all permanent conversion of scrub/shrub and forested wetlands of greater than 1/10 of an acre per each single and complete project. Use of conversion in this regional condition relates to the change of a scrub/shrub and forested wetlands to a herbaceous state, but it would not result in a loss of waters of the United States as the wetland would continue to exist in the landscape.
- This NWP does not authorize the placement of manholes in wetlands.

Ohio Department of Natural Resources CZMA Federal Consistency Determination Condition:

- For all activities located within or along the shore of Ohio's portion of Lake Erie, including Maumee Bay and Sandusky Bay, all applicable authorizations under the Ohio Coastal Management Program must be obtained.

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation.

- a. No activity may cause more than a minimal adverse effect on navigation.

- b. Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
- c. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below.

The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Structures and Fills. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers.

- a. No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.
- b. If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.
- c. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species.

- a. No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a
- b. species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”

- c. Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.
- d. Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- e. As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWP.
- f. Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a

Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

- g. If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP
- h. activity or whether additional ESA section 7 consultation is required.
- i. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties.

- a. No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register

- of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
- b. Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If preconstruction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.
 - c. Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the preconstruction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: No historic properties affected, no adverse effect, or adverse effect.
 - d. Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to

cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

- e. Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

- (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50,

51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWP's only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

- a. The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
- b. Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.
- c. Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require preconstruction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require preconstruction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.
- d. Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require preconstruction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require preconstruction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult to-replace resources (see 33 CFR 332.3(e)(3)).

- e. Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.
- f. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.
 - 1. The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the
 - 2. district engineer may approve the use of permittee-responsible mitigation.
 - 3. The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)
 - 4. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option
 - 5. considered for permittee-responsible mitigation.
 - 6. If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A

conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

7. If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).
 8. Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).
- g. Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.
- h. (h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

- i. Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality.

- a. Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.
- b. If the NWP activity requires preconstruction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.
- c. The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may

require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

- a. If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.
- b. If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- a. A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;
- b. A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
- c. The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a “USACE project”), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification.

- a. **Timing.** Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the

prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

1. He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
2. 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

b. Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

1. Name, address and telephone numbers of the prospective permittee;
2. Location of the proposed activity;
3. Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
4.
 - i. A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s)

- used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.
- ii. For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.
 - iii. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
 - iv. decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
5. The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
 6. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

7. For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;
 8. For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;
 9. For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the “study river” (see general condition 16); and
 10. For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.
- c. **Form of Pre-Construction Notification:** The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.
- d. **Agency Coordination:**
1. The district engineer will consider any comments from Federal and state agencies concerning the proposed activity’s compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity’s adverse environmental effects so that they are no more than minimal.
 2. Agency coordination is required for:

- i. All NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States;
 - ii. NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and
 - iii. NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.
3. When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the preconstruction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.
4. In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.
5. Applicants are encouraged to provide the Corps with either electronic files or multiple copies of preconstruction notifications to expedite agency coordination.

District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.
2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.
3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included

in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) That the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

Nationwide Permit Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural. Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the

use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Nontidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Preconstruction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where preconstruction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Reestablishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and

distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of

the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: (1) Held in trust by the United States for the benefit of any Indian tribe or individual; or (2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a “water of the United States.” If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

Nationwide Permits Regional General Conditions For the State of Ohio

1. NWPs shall not authorize any regulated activity which negatively impacts bogs and/or fens.
2. NWPs shall not authorize any regulated activity in Lake Erie which would result in diversion of water from the Great Lakes.

3. NWP's shall not authorize any regulated activity which has an adverse impact on littoral transport within Lake Erie.

4. In-Water Work Exclusion Dates: Any work associated with a regulated activity under a nationwide permit cannot take place during the restricted period of the following Ohio Department of Natural Resources (ODNR), Division of Wildlife (DOW) In-Water Work Restrictions, unless the applicant receives advanced written approval from the DOW, notifies the District Engineer in accordance with Nationwide Permit General Condition 32 and Regional General Condition 6, and receives written approval from the Corps:

Statewide In-Water Work Restriction Periods and Locations

1. Salmonid Locations Restriction Period: September 15 – June 30

Arcola Creek (entire reach)
Ashtabula Harbor
Ashtabula River (Hadlock Rd. to mouth)
Aurora Branch (Chagrin River (RM 0.38 to mouth))
Big Creek (Grand River (Girdled Road to mouth))
Black River (entire reach)
Chagrin River (Chagrin Falls to mouth)
Cold Creek (entire reach)
Conneaut Creek (entire reach)
Conneaut Harbor
Corporation Creek (Chagrin River (entire reach))
Cowles Creek (entire reach)
Ellison Creek (Grand River (entire reach))
Euclid Creek (entire reach)
Fairport Harbor
Grand River (Dam at Harpersfield Covered Bridge Park to mouth)
Gulley Brook (Chagrin River (entire reach))
Huron River (East Branch-West Branch confluence to mouth)
Indian Creek (entire reach)
Kellogg Creek (Grand River (entire reach))
Mill Creek (Grand River (entire reach))
Paine Creek (Grand River (Paine Falls to mouth))
Rocky River (East Branch-West Branch confluence to mouth)
Smokey Run (Conneaut Creek (entire reach))
Turkey Creek (entire reach)
Vermilion River (dam at Wakeman upstream of the US 20/SR 60 bridge to mouth)
Ward Creek (Chagrin River (entire reach))
Wheeler Creek (entire reach)
Whitman Creek (entire reach)

2. Other Locations Restriction Period: March 15 – June 30

All other perennial streams not listed above as salmonid.
Also includes Lake Erie and bays not listed above as salmonid.

Note: This condition does not apply to Ohio Department of Transportation projects that are covered under the “Memorandum of Agreement Between The Ohio Department of Transportation, The Ohio Department of Natural Resources, and The United States Fish and Wildlife Service For Interagency Coordination For Projects Which Require Consultation Under the Endangered Species Act, Impact State Listed Species, and/or Modify Jurisdictional Waters 2016 Agreement Number: 19394” or subsequent amendments to this Ohio Department of Transportation memorandum of agreement.

5. Waters of Special Concern: PCN in accordance with NWP General Condition 32 and Regional General Condition 6 is required for regulated activities in the following resources:

- a. **Threatened and Endangered Species:** Due to the potential presence of federally threatened or endangered species or their habitats, PCN in accordance with NWP General Conditions 18 and 32 and Regional General Condition 6 is required for any regulated activity under the NWPs in Ohio that includes:
 - i. The removal of trees \geq three (3) inches diameter at breast height. These trees may provide suitable roosting, foraging, or traveling habitat for the federally listed endangered Indiana bat and the federally-listed threatened northern long-eared bat; and/or
 - ii. Regulated activities that impact a sand, gravel, and/or cobble beach (landform between the low and high water marks affected by waves) and/or mud flat (areas affected by natural seiche effect) on the Lake Erie shoreline; and/or
 - iii. Regulated activities in the waterway or township of the corresponding counties listed in Appendix 1.

Note 1: Applicants must ensure they are referencing the latest version of Appendix 1 by contacting their nearest U.S. Army Corps of Engineers district office and visiting the online resources identified in General Condition 18(f) of these NWPs, since federally listed species are continuously listed, proposed for listing, and/or de-listed.

Note 2: As mentioned in General Condition 18, federal applicants should follow their own procedures for complying with the requirements of the Endangered Species Act (ESA). Federal applicants, including applicants that have received federal funding, must provide the District Engineer with the appropriate documentation to demonstrate compliance with ESA requirements.

- b. **Critical Resource Waters:**

- i. In Ohio, two (2) areas have been designated critical habitat for the piping plover (*Charadrius melodus*) and are defined as lands 0.62 mile inland from normal high water line. Unit OH-1 extends from the mouth of Sawmill Creek to the western property boundary of Sheldon Marsh State Natural Area, Erie County, encompassing approximately two (2) miles. Unit OH-2 extends from the eastern boundary line of Headland Dunes Nature Preserve to the western boundary of the Nature Preserve and Headland Dunes State Park, Lake County, encompassing approximately 0.5 mile.
 - ii. In Ohio three (3) areas have been designated critical habitat for the rabbitsfoot mussel (*Quadrula cylindrica cylindrica*). Unit RF26 includes 17.5 river kilometers (rkm) (10.9 river miles [rimi]) of the Walhonding River from the convergence of the Kokosing and Mohican Rivers downstream to Ohio Highway 60 near Warsaw, Coshocton County, Ohio. Unit RF27 includes 33.3 rkm (20.7 rmi) of Little Darby Creek from Ohio Highway 161 near Chuckery, Union County, Ohio, downstream to U.S. Highway 40 near West Jefferson, Madison County, Ohio. Unit RF29 includes 7.7 rkm (4.8 rmi) of Fish Creek from the Indiana and Ohio State line northwest of Edgerton, Ohio, downstream to its confluence with the St. Joseph's River north of Edgerton, Williams County, Ohio.
 - iii. Old Woman Creek National Estuarine Research Preserve.
 - c. **Oak Openings:** Wetland activities conducted in the Oak Openings Region of Northwest Ohio located in Lucas, Henry and Fulton Counties. For a map of the Oak Openings Region, visit <https://www.google.com/maps/d/viewer?mid=1JADupaZXJzO6AUDvnUaV18GVjG7yfBim&usp=sharing>
 - d. **Category 3 Wetlands:** As determined through use of the latest approved version of the Ohio Environmental Protection Agency's Ohio Rapid Assessment Method wetland evaluation form.
 - e. **Ohio Stream Designations:** Exceptional Warmwater Habitat, Cold Water Habitat, Seasonal Salmonid, or any equivalent designation; or water bodies with an antidegradation category of Superior High Quality Water, Outstanding National Resource Water, or Outstanding State Waters as determined by the Ohio Environmental Protection Agency except for NWP 1, 2, 3, 9, 10, 11, 27, 28, 32, and 35 or maintenance activities covered under NWPs 7 and 12. The current list of these rivers and tributaries can be found on the Ohio Environmental Protection Agency web-site at: http://www.epa.ohio.gov/dsw/rules/3745_1.aspx. These designations can be found under the aquatic life use of the rivers and tributaries within its basin and under the "Anti-deg Rule #05."
6. **PCN Submittals:** In addition to the information required under NWP General Condition 32, the following information must be provided with the PCN:

- a. **Threatened and Endangered Species:** Section 7(a)(2) of the Endangered Species Act (ESA) states that each federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Section 7 of the ESA, called "Interagency Cooperation," is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the continued existence of any federally or proposed federally listed species. Consistent with NWP General Condition 18, information for federally threatened and endangered species must be provided in the PCN to determine the proposed activity's compliance with NWP General Condition 18 and to facilitate project-specific coordination with the USFWS. All relevant information obtained from the USFWS must be submitted with the PCN.
- b. **Cultural Resources:** Under the National Historic Preservation Act (NHPA), the Corps must ensure no federal undertaking, including a Corps permit action, which may affect historic resources, is commenced before the impacts of such action are considered and the Advisory Council on Historic Preservation and the State Historic Preservation Office (SHPO) are provided an opportunity to comment as required by the NHPA, 36 CFR 800, and 33 CFR 325, Appendix C. Consistent with NWP General Condition 20, historic properties information must be provided in the PCN if the proposed undertaking might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. All relevant information obtained from the SHPO must be submitted with the PCN.
- c. **National Wild and Scenic Rivers:** The following waterways are components of the National Wild and Scenic River System and require PCN to the Corps:

Big and Little Darby Creeks

- Big Darby Creek from Champaign-Union County line downstream to the Conrail railroad trestle and from the confluence with the Little Darby Creek downstream to the Scioto River;
- Little Darby Creek from the Lafayette-Plain City Road bridge downstream to within 0.8 mile from the confluence with Big Darby Creek; and
- Total designation is approximately 82 miles.

Little Beaver Creek

- Little Beaver Creek main stem, from the confluence of West Fork with Middle Fork near Williamsport to mouth;
- North Fork from confluence of Brush Run and North Fork to confluence of North Fork with main stem at Fredericktown;

- Middle Fork from vicinity of Co. Rd. 901 (Elkton Road) bridge crossing to confluence of Middle Fork with West Fork near Williamsport;
- West Fork from vicinity of Co. Rd. 914 (Y-Camp Road) bridge crossing east to confluence of West Fork with Middle Fork near Williamsport; and
- Total designation is 33 miles.

Little Miami River

- Little Miami River - St. Rt. 72 at Clifton to the Ohio River;
- Caesar Creek - lower two (2) miles of Caesars Creek; and
- Total designation is 94 miles.

- d. **Temporary Fills or Structures:** When a PCN is required for temporary fills or structures, the PCN must specify how long the temporary fills or structures will remain and include a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-construction contours and elevations. Native, non-invasive vegetation must be used unless otherwise authorized by a Corps NWP verification.

7. **Invasive Species:** No area for which grading has been completed will be unseeded or unmulched for longer than 14 days. All disturbed areas will be seeded and/or revegetated with native species and approved seed mixes (where practicable) after completion of construction activities for stabilization and to help preclude the establishment of non-native invasive species.

APPENDIX 1 TO REGIONAL GENERAL CONDITION 5 (a)		
County	Waterway	Township
Adams	Ohio River, Scioto Brush Creek, South Fork Scioto Brush Creek	
Ashtabula	Grand River, Pymatuning Creek	Andover, Austinburg, Cherry Valley, Colebrook, Dorset, Hartsgrove, Harpersfield, Morgan, New Lyme, Orwell, Richmond, Rome, Trumbull, Wayne, Williamsfield, Windsor
Athens	Ohio River	
Brown	East Fork Little Miami River, Ohio River	
Butler	Great Miami River	Lemon, Liberty
Champaign		Mad River, Union, Urbana
Clark	Little Miami River	Bethel, Moorfield, Pleasant, Springfield
Clermont	East Fork Little Miami River, Little Miami River,	

APPENDIX 1 TO REGIONAL GENERAL CONDITION 5 (a)

County	Waterway	Township
	Ohio River	
Clinton		Chester, Richland, Wayne
Columbiana		Butler, Fairfield, Hanover, Knox, Unity
Coshocton	Killbuck Creek, Muskingum River, Walhonding River	
Crawford		Auburn, Bucyrus, Cranberry, Dallas, Holmes, Whetstone
Darke	Stillwater River	
Defiance	St. Joseph River	Milford
Delaware	Mill Creek, Olentangy River	
Erie		Margaretta
Fairfield		Walnut
Fayette		Concord, Green, Jasper, Union
Franklin	Big Darby Creek, Little Darby Creek, Scioto River	
Fulton	Swan Creek	
Gallia	Ohio River	
Greene	Little Miami River	Bath, Beaver Creek, Spring Valley, Sugar Creek
Hamilton	Great Miami River, Little Miami River, Ohio River	
Hancock	Blanchard River	
Hardin	Blanchard River	Blanchard, Dudley, Hale, Jackson, McDonald, Roundhead
Hocking		Benton, Laurel
Holmes		All townships
Huron		New Haven, Richmond
Lake	Grand River	Madison
Lawrence	Ohio River	
Licking		Licking, Union
Logan	Great Miami River	Perry, Richland, Stokes, Washington, Zane
Lucas	Swan Creek	All townships
Madison	Big Darby Creek, Little Darby Creek	
Mahoning		Beaver, Boardman, Canfield, Green, Poland, Springfield
Marion	Tymochtee Creek	Big Island, Bowling Green, Grand, Green Camp, Montgomery, Salt Rock

APPENDIX 1 TO REGIONAL GENERAL CONDITION 5 (a)

County	Waterway	Township
Meigs	Ohio River	
Miami	Great Miami River, Stillwater River	
Montgomery	Great Miami River, Stillwater River	Mad River, Wayne
Morgan	Muskingum River	
Muskingum	Muskingum River	
Ottawa		All townships
Perry		Thorn
Pickaway	Big Darby Creek, Scioto River	
Pike	Scioto River	
Portage		Aurora, Atwater, Charlestown, Deerfield, Edinburg, Franklin, Freedom, Mantua, Nelson, Palmyra, Paris, Randolph, Ravenna, Rootstown, Streetsboro
Preble		Dixon, Gasper, Israel, Jackson, Lanier, Monroe, Somers, Twin, Washington
Richland		Plymouth
Ross	Salt Creek, Scioto River	
Sandusky		All townships
Scioto	Ohio River, Scioto Brush Creek, Scioto River, South Fork Scioto Brush Creek	Nile, Rush, Union
Shelby	Great Miami River	
Stark		Lexington, Marlboro
Summit		Hudson, Tallmadge, Twinsburg
Trumbull	Pymatuning Creek	All townships
Union	Big Darby Creek, Little Darby Creek, Mill Creek, Treacle Creek	Allen, Darby, Washington
Warren	Great Miami River, Little Miami River	Clear Creek, Deerfield, Massie, Turtle Creek, Union, Washington, Wayne
Washington	Muskingum River, Ohio River	
Wayne		All townships
Williams	Fish Creek, St. Joseph River	Bridgewater, Center, Florence, Jefferson, Madison, Northwest, St. Joseph, Superior
Wyandot	Tymochtee Creek	Antrim, Marseilles, Mifflin, Pitt

HELPFUL INFORMATION FOR COMPLIANCE WITH THE NWP GENERAL CONDITIONS:

DISCLAIMER: The below information is intended to provide helpful contact information and other submittal recommendations. Contact the appropriate local, state, or federal agency for the most updated links to ensure compliance with the NWP General Conditions.

General Condition 1 (Navigation)

List of Section 10 Navigable Waters of the U.S.:

Buffalo District –

https://www.lrb.usace.army.mil/Portals/45/docs/regulatory/DistrictInfo/waterway_oh.pdf

Huntington District – <https://www.lrh.usace.army.mil/Missions/Regulatory/Section-10-Streams/>

Louisville District –

<https://www.lrl.usace.army.mil/Portals/64/docs/Regulatory/Public%20Notices/Limits%20of%20Jurisdiction%20Public%20Notice-revised.pdf?ver=2013-02-13-120705-203>

Pittsburgh District –

<https://www.lrp.usace.army.mil/Portals/72/docs/regulatory/RegulatoryBoundaries/PN12-2.pdf>

Navigation Charts:

Buffalo District – <https://www.lrb.usace.army.mil/Library/Maps-and-Charts/>

Huntington District – <https://www.lrh.usace.army.mil/Missions/Regulatory/Section-10-Streams/>

Louisville District –

<https://www.lrl.usace.army.mil/Portals/64/docs/Ops/Navigation/Charts/Ohio/OhioRiverCharts102-122.pdf>

Pittsburgh District – <https://www.lrp.usace.army.mil/Missions/Navigation/Navigation-Charts/>

Locks and Dams:

Buffalo District – <https://www.lrb.usace.army.mil/Library/Maps-and-Charts/>

Huntington District – <https://www.lrh.usace.army.mil/Missions/Civil-Works/Locks-and->

Dams/

Louisville District – <https://www.lrl.usae.army.mil/Missions/Civil-Works/Navigation/Locks-and-Dams/>

Pittsburgh District –
<https://www.lrp.usace.army.mil/Missions/Navigation/Locks-and-Dams/#:~:text=Locks%20and%20Dams%20%20%20Allegheny%20River%20,Locks%20%26%20Dam%20%205%20more%20rows%20>

Notice to Navigation Interests Request Sheets:

Huntington District –
<https://www.lrh.usace.army.mil/Portals/38/docs/navigation/Notice%20Info%20sheet.pdf>

Louisville –
<https://www.lrl.usace.army.mil/Portals/64/docs/Regulatory/Forms/Notice%20to%20Navigation%20Interests%20Data%20Form%202019.pdf?ver=2019-07-22-101251-297>

Pittsburgh District –
<https://www.lrp.usace.army.mil/Portals/72/docs/regulatory/NavNoticeRequestForm.pdf>

General Condition 5 (Shellfish Beds)

Shellfish beds in Ohio include concentrations of freshwater mussels. All native mussels are protected in the State of Ohio (Section 1533.324 of the Ohio Revised Code). In addition, 10 federally listed species occur in the state and are protected by the ESA (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). All rivers and tributaries that contain mussels or potential mussel habitat must be surveyed prior to any proposed streambed disturbance. Currently accepted protocol and supporting materials can be found on the Ohio Department of Natural Resources' website:

<https://ohiodnr.gov/wps/portal/gov/odnr/buy-and-apply/special-use-permits/collecting-research/ohio-mussel-surveyor>

General Condition 7 (Water Supply Intakes)

Locations of drinking water source protection areas associated with public water supply intakes, including the name of the public water supply, can be found at the following link:

<https://oepa.maps.arcgis.com/apps/webappviewer/index.html?id=3b39e11ba7fc43c3b41801e3580e6d21>

Contact information for public water suppliers can be obtained from Ohio EPA by contacting the Division of Drinking and Ground Waters at whp@epa.ohio.gov or 614-644-2752.

General Condition 10 (Fills Within 100-year Floodplains)

The following website provides a statewide listing of Floodplain Managers in Ohio:
<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/water-resources/floodplains/>

General Condition 16 (Wild and Scenic Rivers)

Prior to submitting a PCN for work in a National Wild and Scenic River System, it is recommended that the applicant contact the National Park Service Regional Wild and Scenic Rivers Specialist, at the Midwest Regional Office, 601 Riverfront Drive, Omaha, Nebraska 68102, for assistance in complying with NWP General Condition 16. Any determination provided by the National Park Service should be submitted with the PCN. The following website provides information on National Wild and Scenic Rivers within Ohio:

<https://www.rivers.gov/ohio.php>

General Condition 18 (Endangered Species)

To obtain the most up to date information on federally threatened and endangered species applicants are encouraged to utilize the USFWS's Information for Planning and Consultation System (IPaC) found at <https://ecos.fws.gov/ipac/>

Prior to the submittal of a PCN, applicants may also contact the USFWS, Ohio Ecological Services Field Office at:

Address: 4625 Morse Road, Suite 104
Columbus, Ohio 43230

Email: ohio@fws.gov

Phone: (614) 416-8993

The Ohio Mussel Survey Protocol may be found at the following link:

<https://ohiodnr.gov/wps/portal/gov/odnr/buy-and-apply/special-use-permits/collecting-research/ohio-mussel-surveyor>

General Condition 4 (Migratory Bird Breeding Areas) and General Condition 19 (Migratory Birds and Bald and Golden Eagles)

Prior to the submittal of a PCN, information to assist in complying with NWP General Conditions 4 and 19 may be obtained from the USFWS, Ohio Ecological Services Field Office at:

Address: 4625 Morse Road, Suite 104
Columbus, Ohio 43230

Email: ohio@fws.gov

Phone: (614) 416-8993

The Ohio Division of Natural Resources Division of Wildlife may be contacted at (800) 945-3543.

General Condition 20 (Historic Properties)

The Ohio National Register of Historic Places can be found at the following link:
<https://www.ohiohistory.org/preserve/state-historic-preservation-office/nationalregister>

When reviewing a PCN, the Corps will scope appropriate historic property identification efforts and, if applicable, work with the applicant to take into account the effect of the proposed activity on historic properties. In these instances, information and coordination may include:

- Requesting comments directly from the Ohio History Connection SHPO on the effect the proposed regulated activity may have on historic properties. The Ohio History Connection SHPO may be contacted at:

Address: Ohio History Center
800 E. 17th Ave., Columbus, Ohio 43211
Phone: (614) 297-2300
Email: info@ohiohistory.org

- To identify potential historic properties that may be affected by a proposed project, the following information may be reviewed and/or provided with the PCN when applicable:
 - A detailed description of the project site in its current condition (i.e. prior to construction activities) including information on the terrain and topography of the site, the acreage of the site, the proximity of the site to major waterways, and any known disturbances within the site.
 - A detailed description of past land uses in the project site.
 - Photographs and mapping showing the site conditions and all buildings or structures within the project site and on adjacent parcels are useful. Photographs and maps supporting past land uses should be provided as available.
 - Information regarding any past cultural resource studies or coordination pertinent to the project area, if available.
 - U.S. Geological Survey (USGS) 7.5' series topographic maps;
 - Ohio History Connection SHPO files including:

- Ohio Archaeological Inventory (OAI) files;
 - Ohio Historic Inventory files (OHI);
 - Ohio SHPO Cultural Resources Management (CRM)/contract archaeology files;
 - NRHP files including Historic Districts; and
 - County atlases, histories and historic USGS 15' series topographic map(s).
- When needed to evaluate effects to historic properties, the applicant is encouraged to consult with professionals meeting the Professional Qualification Standards as set forth in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716) during this data gathering process. These professionals can assist with compiling the project information discussed above and should provide recommendations as to whether the proposal has the potential to affect historic properties and if further effort is needed to identify or assess potential effects to historic properties. These professionals can also compile preliminary review information to submit to the District Engineer as part of the PCN.

General Condition 23 (Mitigation)

Information pertaining to mitigation can be found at the following link:
<https://www.lrh.usace.army.mil/Missions/Regulatory/Mitigation.aspx>

General Condition 25 (Water Quality)

The Ohio Environmental Protection Agency may be contacted at:

Address: Lazarus Government Center
 50 W Town St. Suite 700
 Columbus, Ohio 43215

Phone: (614) 644-2001

Information pertaining to the Ohio Environmental Protection Agency water quality certification (WQC) program, including the Section 401 Clean Water Act WQC application form, can be obtained at the following link:
<https://www.epa.state.oh.us/dsw/#113292723-programs>

General Condition 32 (Pre-Construction Notification)

The nationwide permit pre-construction notification form (Form ENG 6082) may be obtained at the following link:

https://www.publications.usace.army.mil/Portals/76/Eng_Form_6082_2019Oct.pdf?ver=2019-10-22-081550-710/

A checklist of information that must be provided in a pre-construction notification can be obtained at the following link:

<https://www.lrh.usace.army.mil/Missions/Regulatory/How-to-Apply-for-a-Permit/Nationwide-Permits/>

Electronic Submittal:

- PCNs should be saved as a PDF document, and then submitted as an attachment in an email to the appropriate Regulatory Office:

Buffalo District – LRB.Ohio.RegActions@usace.army.mil

Huntington District – LRH.permits@usace.army.mil

Louisville District – CELRL.Door.To.The.Corps@usace.army.mil

Pittsburgh District – Regulatory.Permits@usace.army.mil

- Electronic documents must have sufficient resolution to show project details. The PCN and supporting documents submitted electronically must not exceed 10 megabytes (10MB) per email. Multiple emails may be required to transmit documents to ensure the 10MB limit is not exceeded. Alternatively, use of the Department of Defense Secure Access File Exchange (DoD SAFE) service to transfer large files may be requested in your email.
- For tracking and processing purposes, the email should include the following:
 - **Email Subject Line:** include the name of the applicant, type of PCN request, and location (County and State). Example: RE: Doe, John, PCN and Section 401 WQC Request, Summit County, Ohio;
 - **Email Body:** 1) Brief description of the proposed project, 2) contact information (phone number, mailing address, and email address) for the applicant and/or their agent, and 3) the project location: Address and Latitude/Longitude in decimal degrees (e.g. 42.92788° N, 88.36257° W).
- If you do not have internet access, information may be submitted through the U.S. Postal Service to the appropriate Regulatory Office:

U.S. Army Corps of Engineers, Buffalo District
ATTN: Regulatory Branch
1776 Niagara Street
Buffalo, New York 14207
Phone: (716) 879-4330
Fax: (716) 879-4310

U.S. Army Corps of Engineers, Huntington District
ATTN: Regulatory Division
502 Eighth Street
Huntington, West Virginia 25701-2070
Phone: (304) 399-5210
Fax: (304) 399-5805

U.S. Army Corps of Engineers, Pittsburgh District
ATTN: Regulatory Division
William S. Moorhead Federal Building
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222-4186
Phone: (412) 395-7155
Fax: (412) 644-4211

U.S. Army Corps of Engineers, Louisville District
ATTN: CELRL-RD, Room 752
600 Dr. Martin Luther King Jr. Place
Louisville, Kentucky 40202-0059
Phone: (502) 315-6733
Fax: (502) 315-6677

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/14/2021 1:26:01 PM

in

Case No(s). 21-0591-EL-BNR

Summary: Notice Proof of Compliance electronically filed by Hector Garcia-Santana on behalf of Ohio Power Company