

Duke Energy Ohio
Case No. 19-1471-EL-BLN
Staff sECOND Set of Data Requests
Date Received: October 25, 2019
STAFF-DR-02-008

REQUEST:

The application states a National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Storm Water will be submitted in August 2019 to the Ohio Environmental Protection Agency (OEPA) since the Project will have over an acre of ground disturbance. Please provide a copy of this permit.

RESPONSE:

The SWPPP document that will be submitted is attached. Duke Energy Ohio has not submitted due to not having a construction laydown area finalized - submission is anticipated to be within 2 weeks.

Please see STAFF-DR-02-008 Attachment 1.

PERSON RESPONSIBLE: Cori Jansing & Dustin Giesler



Storm Water Pollution Prevention Plan

F684 Road Improvement Project

Hamilton County, Ohio

Cardno Project J156720M92

June 4, 2019

Prepared for: **Duke Energy**
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Storm Water Pollution Prevention Plan

F684 Road Improvement Project
Hamilton County, Ohio

June 4, 2019

Document Information

Project Site Owner	Duke Energy
Duke Energy Contact	Dustin Geisler/Kate Keck
Project(s) Name	F684 Road Improvement Project
Number	Cardno J156702M92
Cardno Contact	Cori Jansing

This plan was prepared in accordance with the Rainwater and Land Development: Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection published December 2006 by the Ohio Department of Natural Resources Division of Soil and Water Conservation and in compliance with ORC Chapter 1511, ORC Chapter 6111, and OAC Chapter 3745-38. In Ohio, responsibility for regulating storm water is held by both local and state authorities. Locally, municipalities, townships, and counties have the authority to regulate storm water. Ohio EPA administers the National Pollutant Discharge Elimination System (NPDES) program, which regulates wastewater discharges that are associated with construction and/or land disturbing activities by limiting the quantities of pollutants to be discharged and imposing monitoring requirements and other conditions.

Certification Requirements per Ohio EPA Permit No. OHC000005 Part V.G.

Corporate Certification (Duke Energy- Owner or Owner Representative)

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 manages 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 _____
Date _____

Contractor Certification (_____ Utility Line General Contractor)

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Name _____
Title _____
Date _____

Contractor Certification (_____ Erosion Control Subcontractor)

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Name _____
Title _____
Date _____

Contractor Certification (_____ Grading and Excavation Subcontractor)

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Name _____
Title _____
Date _____

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Appendices

Appendix A	Figures
Appendix B	Storm Water Pollution Prevention Plan Typical Details
Appendix C	Storm Water Evaluation Form for Construction
Appendix D	SWPPP Amendment Log
Appendix E	Notice of Termination (replace when filed)

Figures

Figure 1	Project Vicinity
Figure 2	Project Area Watersheds (14-Digit HUC)
Figure 3	Soils Classification
Figure 4	Environmental Access and Erosion Control Plan

Acronyms

SWPPP	Storm Water Pollution Prevention Plan
NOI	Notice of Intent
NOT	Notice of Termination
NWP	Nationwide Permit
OEPA	Ohio Environmental Protection Agency
USACE	United States Army Corps of Engineers

SECTION A – Basic Plan Elements

A1 Plan Index showing locations of required items

See Table of Contents

A2 11 X 17 inch plat showing building lot numbers/boundaries and road layout/names

Please refer to Appendix A, Figure 4, Environmental Access and Erosion Control Plan.

A3 Narrative describing project nature and purpose

The project involves the removal and replacement of approximately 1.15-mile of existing transmission line, encompassing a total study corridor of 14 acres. The F684 Road Improvement Project begins at Duke Energy Ohio's Structure P15-559 (HL 103) located near 14 Spruce Street, south of the Elmwood Place Substation, east of Elmwood Avenue, west of Hasler Lane (39.189204, -84.482595) and terminates at Structure P13-497 (HL 138) located north and west of Interstate (I) 75 and east of Vine Street (39.174174, -84.491023). A field investigation of the corridor was conducted on April 12, 2019.

The proposed Duke Energy F684 Road Improvement Project is necessary in order to facilitate the Ohio Department of Transportation's Interstate 75 Mill Creek Expressway Project (HAM-75-7.85, PID 77889) as well as to maintain the integrity of existing Duke Energy structures to supply adequate power to current and future utility customers in the area. The Project is also needed to ensure safety within the existing easements and remain in compliance with current transmission line standards. The transmission line routes consist of new and existing transmission line corridor and Duke Energy easement.

Construction will be accomplished largely through the use of bucket trucks with truck-mounted augers for structure installation and other construction vehicles transporting cable spools to install the transmission cable along the route. Excavation will be restricted to the locations where the installation of new structures will occur. Earth moving activities are anticipated to be minimal, if any. The extent of access disturbance can vary widely dependent upon many factors, including density and type of surface, vegetative cover, weather conditions, and the type of vehicles moving over the area. The existing vegetation will be preserved to the maximum extent practicable.

Project construction is expected to begin in Fall 2019.

A4 Vicinity map showing project location

Please refer to Appendix A, Figure 1, Project Vicinity map, which provides a simplified layout of Project activities and adjacent land features and information.

A5 Legal description of the project site

The Project crosses the following section:

Cincinnati East, Ohio Quad

Village of Elmwood Place, Hamilton County, Ohio

A6 Location of all lots and proposed site improvements

The proposed project is linear in scope and will take place within established transmission line ROW. Only approved areas beyond the ROW will be used for equipment storage, temporary access routing, and laydown areas. Where feasible, construction activities at structure locations will be performed from roadways to minimize soil disturbance. Maps of the project site including structure locations, parcel boundaries, and water resources can be found in Appendix A, Figure 4, Environmental Access and Erosion Control Plan.

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A7 Hydrologic Unit Code (HUC)

The project lies within the boundaries of the following 14-Digit USGS Hydrologic Unit Code watershed(s):

Mill Creek below West Fork Mill Creek to Mitchell Ave (HUC 05090203010040)

A8 Notation of any State or Federal water quality permits

There are no proposed impacts to regulated waters that would require a permit from either the U.S. Army Corps of Engineers (USACE) or the Ohio Environmental Protection Agency (OEPA). The Notice of Intent (NOI) for storm water discharges will be submitted contingent on the local reviewing agency approval(s).

A9 Specific points where storm water discharge will leave the site

All discharges are planned to consist solely of storm water runoff through sheet flow leading to existing water courses. There are no planned non-storm water discharges associated with the proposed project.

A10 Location and names of all wetlands, lakes, and watercourses on and adjacent to the site

No wetlands, watercourses, and other waters are within or adjacent to the proposed Project.

A11 Identification of all receiving waters

The storm water runoff from the project will ultimately discharge into the Ohio River via Mill Creek.

A12 Identification of potential discharges to groundwater

The proposed site does not contain any known sinkholes, active or abandoned wells, or any other direct groundwater recharge points. Any recharging of the groundwater supply by water from the proposed site will be by natural means of infiltration through the soil.

A13 100 year floodplains, floodways, and floodway fringes

None of the structures associated with the F684 Road Improvement Project were within the FEMA-defined floodplain boundaries. See Appendix A, Figures 4.01 to 4.06, for the location of floodplains. No floodplain permit is required.

A14 Pre-construction and post-construction estimate of peak discharge

Based on the nature of this project, there will be no impounded storm water. There is no anticipated significant change in peak discharge from this project site between pre-construction and post-construction site conditions or new or impervious surfaces.

A15 Adjacent land use, including upstream watershed

Adjacent land use consists of a mix between urban turf/impervious surfaces, scrub-shrub, and secondary growth forest.

A16 Locations and approximate boundaries of all disturbed areas

The majority of ground disturbance will occur within the structure installation locations. The expected disturbance for this project is conservatively estimated at 3 acres.

A17 Identification of existing vegetative cover

The existing vegetative cover is mixture of urban turf/impervious surfaces, scrub/shrub, and secondary growth forest within the existing transmission line ROW.

A18 Soils map including descriptions and limitations

According to the NRCS Soil Survey Geodatabase data collected for Hamilton County, three (3) mapped soil units are present within the Study Area and are listed as non-hydric. See Appendix A, Figure 3, Soils Classifications for soil types and hydric classification by line segment.

A19 Locations, size, and dimensions of proposed storm water systems

There is no proposed construction of any permanent storm water systems.

A20 Plan for any off-site construction activities associated with this project

No off-site construction activities are planned for this project.

Any temporary staging and laydown areas for both new and used structures and other equipment will be identified near the time of construction. Typically, Duke Energy substations are utilized for storage, and used structures are taken off-site. Storm water protection will be integrated as necessary at laydown areas and amended into the plan and routine inspections by the Construction Supervisor.

A21 Locations of proposed soil stockpiles, borrow and/or disposal areas

It is anticipated that no soil fill will be brought in. However, gravel backfill will be used at structure locations. Where wetland or stream impacts may occur, spoils management protocol will be followed during structure installation. Where appropriate, any excavated soil, gravel backfill, or other construction material will be stored on construction matting within a wetland area and erosion control measures will be implemented. Excess soil from boring or auguring operations will be permanently relocated to an upland location away from surface drainage ways and wetland areas adjacent to structure replacement locations.

A22 Existing site topography at an interval appropriate to show detailed drainage patterns

The existing drainage patterns are best depicted and evaluated with 1 foot contours shown in Appendix A, Figure 4, Environmental Access and Erosion Control Plan.

A23 Proposed final topography at an interval appropriate to show detailed drainage patterns

Final post-construction contours will match pre-construction condition to the extent practicable. The construction scope is limited to the replacement of utility structures and overhead facilities.

SECTION B – Active Construction Component

B1 Description of potential pollutant sources associated with the construction activities

The anticipated pollutants to be generated by this type of construction include the following:

- Sediment carried off-site by storm water runoff
- Vegetation debris generated during onsite vegetation removal
- Concrete washout and dewatering operations for projects with foundations
- Domestic garbage from construction workers
- Potential for petroleum spills from heavy equipment operation and refueling

Clearing and/or maintenance trimming will involve mowing and limb cutting with standard forestry equipment and hand cutting where required. In instances where tree or large limbs are removed entirely for access or maintenance they will be cut into appropriate lengths for use by the landowner, or otherwise chipped within the ROW. Digging, grubbing, and any other disturbance will be restricted to locations where the installation of new structures will occur. All excavated materials will be distributed in approved upland locations away from surface drainage ways. Wood chippings and other low-height vegetation will be distributed within the ROW to the maximum extent possible to assist in soil stabilization and sediment runoff control.

Any and all domestic garbage generated onsite such as disposable food and drink containers and other items shall be either carried off-site and properly disposed or deposited into a construction dumpster provided onsite. The project site shall be monitored on a daily basis for the proper disposal of such waste.

The erosion of exposed soils by storm water runoff shall be controlled through the installation of best management practices (BMPs) such as silt fence, fiber rolls, or similar barriers, followed by seeding and mulching. All such practices shall be installed and maintained in accordance with Appendix B, Storm Water Pollution Prevention Plan Typical Details.

Equipment cleaning will be limited to water washing in sediment and erosion controlled areas as required to insure reliable equipment operations while preventing the tracking of excessive dirt and mud from the project site. Soil materials that may need to be removed from the Project ROW will be taken to an upland area or other designated disposal area.

Concrete washout will be completed on projects with foundations at designated concrete washout stations for containment of this waste in accordance with Appendix B, Storm Water Pollution Prevention Plan Typical Details. Any dewatering associated with the excavation for the placement foundations will be conducted through an approved dewatering bag or other upland means of filtering dewatering point discharges.

B2 Sequence describing storm water quality measure implementation relative to land disturbing activities

Due to the nature of the Project, multiple construction stages may take place simultaneously within the Study Area. Below is the general sequence of construction activities and storm water quality measures implementation:

The general sequence of construction activities includes the following:

- 1) Installation of temporary construction entrances
- 2) Installation of temporary erosion and sediment control measures
- 3) Construction equipment access
- 4) Removal of existing poles and conductors
- 5) Installation of new poles and conductors

- 6) Final restoration (final grading, seeding, and stabilization)
- 7) Removal of temporary erosion and sediment control measures
- 8) Removal of temporary construction entrances

The storm water pollution prevention measures described within this SWPPP will be installed and inspected before soil disturbing activities commence. Structural erosion controls may also need to be installed along equipment access routes dependent upon site condition. These needs will be assessed as the project progresses. Any erosion controls that need to be moved for equipment transfers will be restored, to the extent practical, before significant rainfalls occur. All storm water quality control measures shall be inspected regularly. At the completion of the project all disturbed areas will be stabilized with vegetation and straw mulch. All measures will be in accordance with guidelines provided in the *Rainwater and Land Development* and this Plan.

As conditions may vary from pre-project condition during construction, sediment control measures may be altered and additional locations for such measures may be needed depending upon changing field conditions. Additional measures may be required and implemented as they become warranted and should be documented in Appendix D, SWPPP Amendment Log. SWPPP revisions or alterations require review and/or approval by a trained individual experienced in the principles of storm water, erosion and sediment control, treatment, and monitoring for Duke Energy Projects.

Recognizing the increased potential for erosion, special care will be taken to seed and mulch construction travel ways in highly erodible or steep slope areas. Additional measures such as water bars, erosion matting, or other appropriate measures may be employed, as necessary, to protect the land surface from erosion until termination of the permit is verified and the Notice of Termination (NOT) is filed with OEPA (Blank copy of NOT is provided in Appendix E).

Stabilized construction entrances or other means of limiting the tracking of sediment and debris off-site will be used at roadway intersections whenever possible. All debris or sediment tracked onto road ways will be removed at the end of the day to the maximum extent possible. Large equipment movement to each structure associated with, but not limited to, disassembly, framing, and clipping-in of line will be limited to the maximum extent possible to further reduce ground disturbance.

Temporary or permanent seeding stabilization will adhere to specifications in Subsections B11 and B12. Vegetated areas with a density of less than seventy percent (70%) shall be re-stabilized using appropriate methods to minimize the erosion potential. No structural erosion controls will be removed until construction has permanently stopped and reseeding and mulching has occurred. After the entire project is complete and vegetated coverage is at least 70% any accumulated sediment, fiber rolls, silt fence, or other specified erosion and sediment control measures will be removed.

Wherever equipment crossing drainage ways in steeply sloping areas will result in soil disturbances, a combination of temporary timber matting bridges and water bars to divert runoff to the installed sediment controls or vegetative filter areas will help reduce impacts from concentrated flows to receiving streams.

B3 Stable construction entrance locations and specifications

Stabilized construction entrances will be installed when warranted based on project duration or varying site conditions impacted by wet weather patterns. Special consideration shall be given for installation of a stable construction entrance in the event of wet weather or high ingress and egress traffic. Stable construction entrances and other means of limiting the tracking of sediment and debris off-site will be used. Additional construction entrances, other than the ones indicated in the Plans, may be required and implemented as they become warranted based on variable site conditions. All debris or sediment tracked onto roadways will be removed at the end of the day to the maximum extent possible. The existing construction entrances will be evaluated and modified to be in accordance with *Rainwater and Land Development* and this Plan as deemed necessary.

B4 Sediment control measures for sheet flow areas

Runoff and sediment control practices will include a combination of fiber roll (or other plant fiber-based barrier) and/or silt fencing. These sedimentation and erosion control measures will be located at specific locations along the construction route to prevent sediment runoff into streams, wetlands, and other open waters. The placement and use of erosion control structures indicated in Appendix A, Figure 4, Environmental Access and Erosion Control Plan will be installed in accordance with Appendix B, SWPPP Typical Details and be in compliance with the *Rainwater and Land Development* manual. If required, additional appropriate structural controls will be implemented as the Project progresses. Plan changes require approval of Duke Energy.

B5 Sediment control measures for concentrated flow areas

No areas of concentrated flow are expected for this project. If conditions dictate fiber roll or rock check dams will be used, as appropriate, within the ephemeral drainages along the route to limit sedimentation within the drainage and off-site. At locations where equipment crosses drainage ways in steeply-sloping areas, which could result in soil disturbance, a combination of temporary timber matting bridges and water bars to divert runoff to sediment controls or vegetative filter areas can help reduce impacts from concentrated flows to receiving streams.

B6 Storm sewer inlet protection measure locations and specifications

Where applicable, BMPs (compost filter sock or other catch basin protection) will be installed to prevent erosion from storm water runoff from areas of construction to enter directly into the storm sewer.

B7 Runoff control measures

Water bars can be used to prevent runoff flows from occurring in wheel rutting on steep slopes which will impact receiving streams.

B8 Storm water outlet protection specifications

Not applicable for this project.

B9 Grade stabilization structure locations and specifications

Not applicable for this project.

B10 Location, dimensions, specifications and construction details of each storm water quality measure

The locations of the sediment control structures are indicated in Appendix A, Figure 4, Environmental Access and Erosion Control Plan. The general specifications for each practice are located in Appendix B, SWPPP Typical Details. As construction progresses, Duke Energy will consider modification to or addition of erosion control structures depending on changing site conditions with respect to slope and proximity to adjacent water bodies.

B11 Temporary surface stabilization methods appropriate for each season

In the event temporary stabilization is required (when construction activity has ceased but will resume in fourteen (14) days or more), either seeding or mulch application or other stabilization measure will be implemented within seven (7) days of the most recent disturbance. Areas within 50 feet of a stream (including intermittent streams) will be stabilized within 2 days of the most recent disturbance. Mulch alone is acceptable temporary cover and may be use in lieu of temporary seeding, provided that it is appropriately anchored. A high potential for fertilizer, seed, and mulch to wash exists on steep banks, cuts, and in channels and areas of concentrated flow.

Table 1. Temporary Seed Mixture

Species	Application Rate
Annual Ryegrass	40 lbs./acre
Oats	128 lbs./acre
Tall Fescue	40 lbs./acre

Straw mulch should be used at a rate of 2 tons/acre or 90 lbs./1,000 sq. ft. for seed protection and additional erosion control. It should be spread by hand or machine and be crimped or anchored, as appropriate. If slopes necessitate the use of a mulch cover, then erosion control blanketing shall be substituted. No hay should be used as it may introduce invasive non-native species to adjacent undisturbed habitats (such as hardwood forests or wetland areas).

B12 Permanent surface stabilization specifications

Areas within fifty (50) feet of a stream will require permanent surface stabilization within two (2) days of the last disturbance. Stream bank and riparian floodplain areas shall be mulched and seeded with the Stream Bank and Riparian Areas Restoration Seed Mix as recommended by Ohio DNR staff as follows.

Table 2. Stream Bank and Riparian Areas Restoration Seed Mix

Grass and Sedge Species	Application Rate
<i>Andropogon gerardii</i> (Big Bluestem)	24 oz./acre
<i>Bouteloua curtipendula</i> (Sideoats Grama)	1 oz./acre
<i>Carex bicknellii</i> (Prairie Oval Sedge)	2 oz./acre
<i>Elymus canadensis</i> (Canada Wild Rye)	2 oz./acre
<i>Dactylis glomerata</i> (Orchard grass)	24 oz./acre
<i>Panicum virgatum</i> , Switchgrass)	4 oz./acre
<i>Schizachyrium scoparium</i> (Little Bluestem)	3 oz./acre
<i>Sorghastrum nutans</i> (Indian Grass)	0.5 oz./acre
Cover Crop Species	Application Rate
<i>Avena sativa</i> (Seed Oats)	800 oz./acre
<i>Lolium multiflorum</i> (Annual Ryegrass)	160 oz./acre

All other areas of soil disturbance will be seeded and mulched for permanent surface stabilization within seven (7) days in areas where construction has ceased and the site is at final grade or will lay dormant for more than one (1) year. Any permanent seeding should consist of a seed mixture appropriate for the area that has been disturbed and conducted during the season appropriate for its installation.

Non-agricultural areas including access and other vegetated ROW areas shall be permanently mulched and seeded with a general use permanent seed mix consisting of the following:

Table 3. General Use Permanent Seed Mixture

Species	Application Rate
Kentucky Bluegrass	20-40 lb/acre
Perennial Ryegrass	10-20 lb/acre
Creeping Red Fescue	20-40 lb/acre

Site Preparations for installing both seed mixes are as follows:

Site Preparation: Use appropriate equipment to level disturbed areas and return to original grades focusing on reinforcing positive drainage. Avoid compaction during construction by placing equipment on mats to access wet or saturated areas. Soil amendments are acceptable in non-native seeding areas.

Seed Preparation: Thoroughly mix the seed prior to planting as many of the heavier seeds may have settled during shipping. The seed mix will contain a temporary cover of Common Spring Oat and Annual Ryegrass to accelerate re-vegetation.

Planting: Seed will be worked into the soil no greater than a ¼ inch in depth. For smaller areas a hand broadcaster and rake can be used. For larger areas the seed can be installed mechanically with a seed box no-till drill (Truax™ Trillion Broadcast Seeder or equivalent). Areas that are too wet for mechanical seeding will be installed via the hand broadcasting method.

Mulching: Straw mulch should be used at a rate of 2 tons/acre for all natural areas, non-maintained areas, for seed protection and additional erosion control. Swales and other areas of concentrated flow should be stabilized with erosion control blanketing.

B13 Material handling and spill prevention plan

Unlikely incidents involving spills or releases of other non-sediment pollutants are expected to be limited to small quantities of petroleum products from construction vehicles, including but not limited to motor oil, transmission fluids, and hydraulic oils. Spill clean-up kits and personnel trained in their use will be at each construction location. No vehicle maintenance activities that could result in storm water contamination (oil changes or engine repairs) will be permitted outside of stabilized construction areas. Appropriate spill control measures (oil absorbent pads or booms) must be in place before maintenance activities occur.

Spills of any amount of petroleum product or polluting materials are to be prevented. The following list details general requirements necessary to avoid spills and minimize the impact of accidental spills:

- No bulk quantities of diesel fuel and gasoline will be stored on the site. No bulk quantities of hazardous materials including solvents and lubricants will be stored on the site.
- Vehicles and equipment are expected to be re-fueled off-site. Fuel carriers (if applicable) and transported equipment will be inspected on a daily basis for leaks prior to entering the site and will not be allowed on site until leaks are repaired.
- The equipment staging area will be located away from surface waters and any private and municipal water wells.
- All construction equipment will be inspected daily for leaks prior to start of work. Any leaking equipment will be repaired, as necessary.
- If any soil is contaminated with hydrocarbons or other objectionable material, it will be segregated and properly disposed of off-site.
- If concrete materials are used on-site, concrete washouts should be used. No washout of concrete materials should occur within wetland areas or other drainage ways.

Project related solid wastes will be collected regularly and transferred to a licensed solid waste disposal site. No construction waste materials will be buried onsite. Portable sanitary waste units will be utilized and available for the project. A licensed sanitary waste management contractor will collect sanitary waste from the portable units as necessary. It will be the responsibility of the Construction Supervisor to ensure that all construction personnel are instructed regarding the correct procedure for waste disposal and that these practices are followed.

Contractors shall provide all necessary labor, materials, equipment, and response capabilities to prevent oil releases. Contractors causing an oil release must take appropriate actions to minimize the environmental impacts of the release.

If a hazardous substance release or oil spill requiring attention shall occur during construction, the responsible party shall immediately contact the Duke Energy Construction Supervisor, who will then contact Duke Energy Health and Safety or Environmental Services to report the spill as necessary and ensure that the spill is cleaned up properly by the responsible party or an approved remediation contractor.

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In an emergency, immediately report all spills to the appropriate Duke Energy Coordinator. All spill notifications shall follow Duke Energy procedures.

Duke Energy Spill Hotline 1-800-527-3853

B14 Monitoring and maintenance guidelines for each proposed pollution prevention measure

To maintain the storm water management system in effective operating condition, erosion and sedimentation control structures will be inspected daily if construction personnel are actively working in the area. In addition, each installed erosion and sedimentation control structure, and areas contributing to storm water discharges at the locations of these structures, will also be regularly inspected at least weekly and again after each rainfall/precipitation event exceeding ½ inch in 24 hours by qualified personnel under the direction of Duke Energy.

Any damage or deficiency noted during routine or regular inspections will be recorded on a Storm Water Evaluation Form for Construction (Appendix C) and corrected as directed by the Construction Supervisor. The written inspection records will be kept on file and will include notes on any corrective actions taken. If requested, these records will be made available for review by the 'inspecting authority within 48 hours' per OAC Chapter 3745-38 (NPDES). Inspection records will be kept onsite with the SWPPP to the greatest extent possible.

Any deficiencies will be corrected by repair of damaged or deteriorated controls or by modifying structural or operational practices to achieve the desired results. If needed, the SWPPP shall be revised following such modifications.

Maintenance of stabilization and erosion control measures will include the following:

- "Qualified Inspection Personnel" under the direction and designation of the Construction Supervisor will be responsible for inspections of the erosion controls and completion of the Storm Water Evaluation Form for Construction.
- It is the responsibility of the Construction Supervisor that all personnel selected for maintenance responsibilities are trained in repairs as necessary to keep the erosion and sedimentation controls in good working order.
- Fiber rolls, silt fence, or other specified erosion control measure will be inspected for proper installation and function to include the following: proper anchoring of all controls, depth of sediment, separation from adjacent structures, and to see that stakes are firmly in the ground. Built up sediment will be removed when it has reached one-half (1/2) the height of the control and placed in previously stabilized and upland area.
- Seeded areas shall be checked regularly for bare spots, washouts, and healthy growth to assure that a good stand of grass is being maintained. Areas that fail to establish vegetation cover will be re-seeded as soon as such areas are identified.
- Sediment tracking from temporary construction entrances onto roadways should be minimized and will be the responsibility of the Construction Supervisor. When sediment is observed on roadways it shall be removed at the end of each workday.

B15 Erosion & sediment control specifications for individual building lots

Not applicable for this project.

SECTION C – Post Construction Component

C1 Description of pollutants and their sources associated with the proposed land use

The proposed project is an existing transmission line and Duke Energy Ohio transmission ROW. No post construction pollutants are expected.

C2 Sequence describing storm water quality measure implementation

Seeding and vegetation establishment are the only long-term storm water quality measures proposed for the Project. See Subsection B11 and B12 for a description of seeding implementation.

C3 Description of proposed post construction storm water quality measures

The site will be returned to its previous use and condition. Post-construction pollutant controls are addressed by establishment of permanent vegetative cover in all areas, except those that will be returned to agricultural crops. Cover crop, or nurse crop seed mix, may be used in agricultural areas that are not to be immediately cultivated.

C4 Location, dimensions, specifications and construction details of each storm water quality measure

See Subsection C3.

C5 Description of maintenance guidelines for proposed post construction water quality measures

Seeded areas will be inspected to ensure adequate vegetative establishment and coverage. Adequate coverage shall be defined as greater than or equal to 70% areal coverage by visual estimation. Reseeding, watering or fertilization shall be utilized to meet this goal. Fertilizer should not be used in areas requiring native seeding. The ROW will be maintained in accordance with easement guidelines and consist of vegetative mowing and/or woody removal. All temporary erosion and sediment control measures will be removed prior to the NOT being approved.

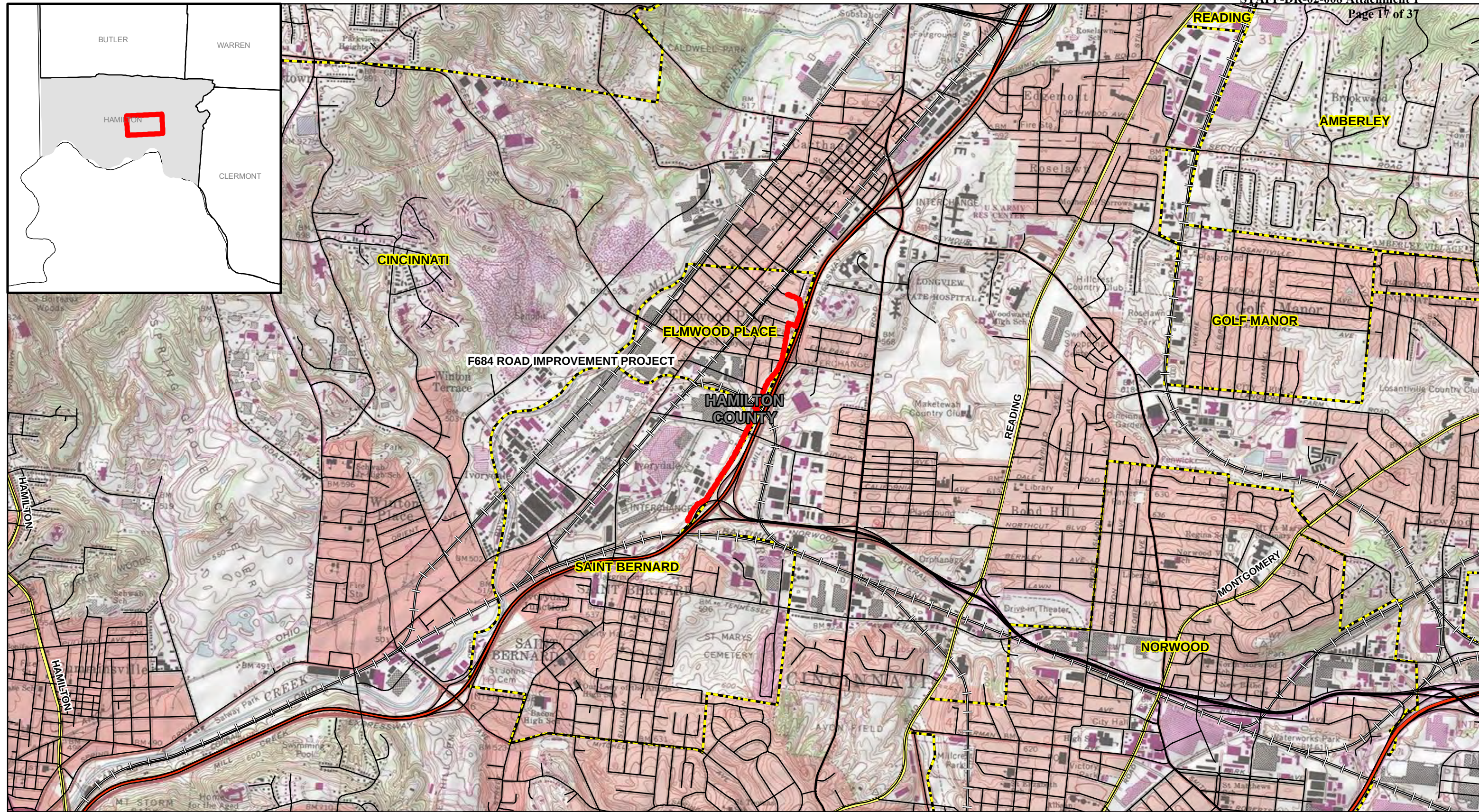
Routine inspections and monitoring of erosion control structures will end and structures removed, once the disturbed soil areas are permanently re-established with a vegetative cover of at least 70% or greater density (final stabilization). Final stabilization in agricultural areas is defined as returning the disturbed land to its pre-construction agricultural use.

When all construction and ground disturbance activities have ceased, final stabilization has been documented, and all temporary erosion measures are removed, if required the NOT shall be submitted to the OEPA within 45 days. The NOT shall be also submitted to any other Local agencies that required review of the Project.

**Storm Water Pollution Prevention Plan
F684 Road Improvement Project
Hamilton County, Ohio**

Appendix A

Figures



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: CINCINNATI EAST, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017.

0 1,000 2,000 4,000 Feet

N

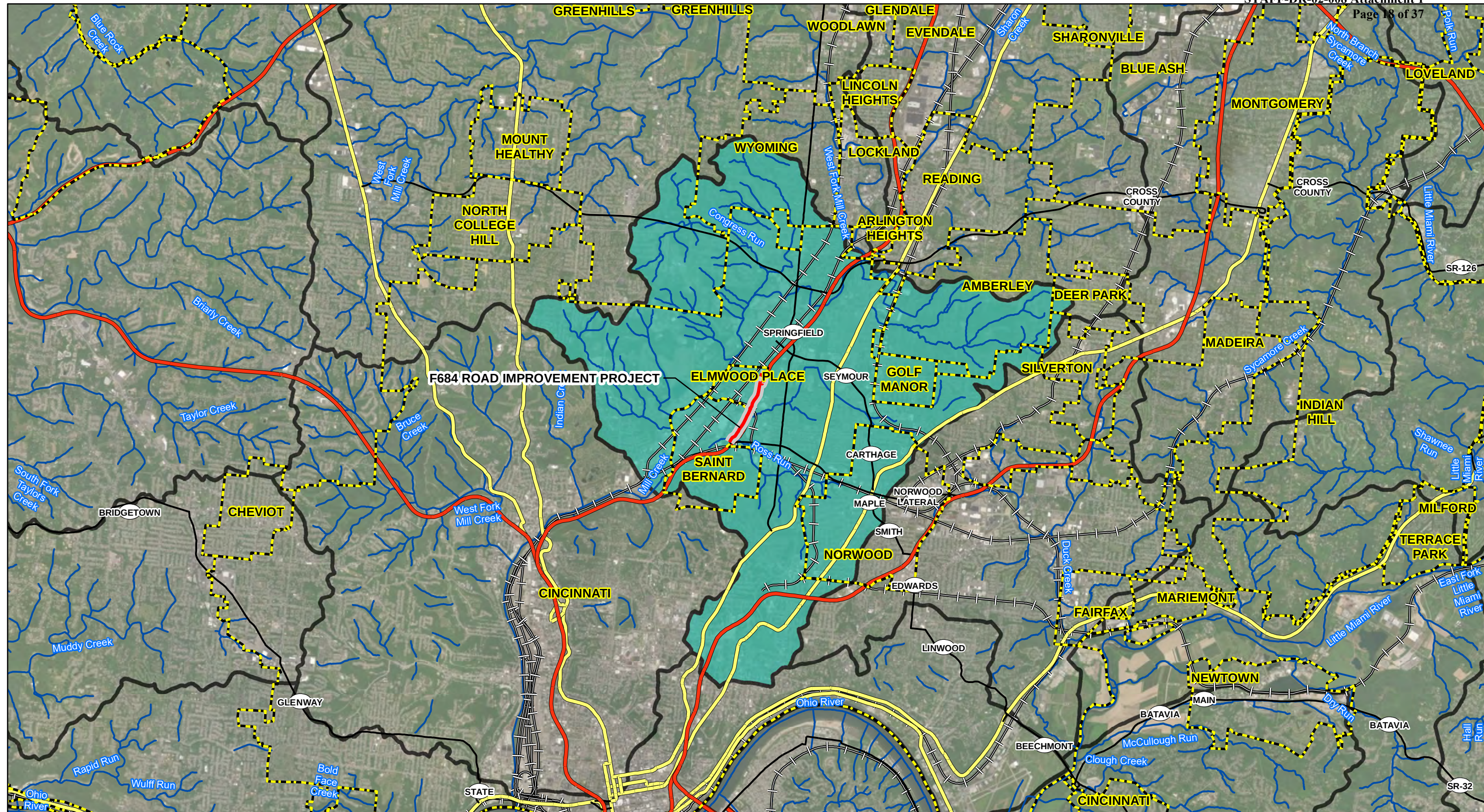
- | | | |
|--------------------|---------------|-----------------|
| Existing Facility | Interstate | US Highway |
| Project Centerline | State Highway | Railroad |
| 100ft Corridor | | County Boundary |
| Municipal Boundary | | |
| Local Roads | | |



FIGURE 1
STORMWATER POLLUTION PREVENTION PLAN
F684 ROAD IMPROVEMENT PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN
PROJECT VICINITY MAP

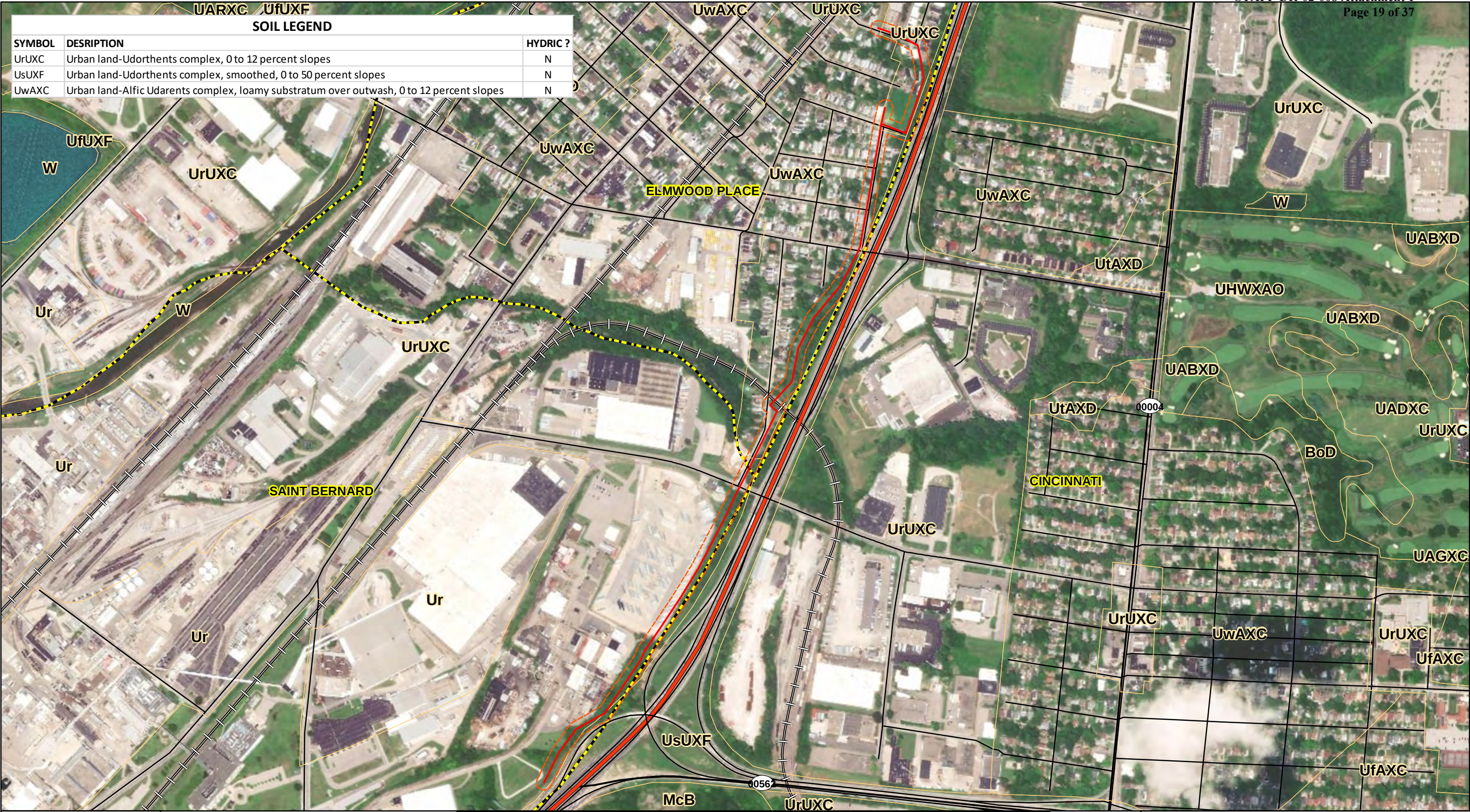
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CHECKED: CJ

DATE: 4/18/2019
APPROVED: JT



PROJECT LOCATION  HAMILTON COUNTY, OH	REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: CINCINNATI EAST, OHIO, OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017. N 0 4,000 8,000 16,000 Feet	<table border="0"><tr><td>■ Existing Facility</td><td>— State Highway</td></tr><tr><td>— Project Centerline</td><td>— US Highway</td></tr><tr><td>▭ Municipal Boundary</td><td>— Railroad</td></tr><tr><td>— Interstate</td><td>— NHD Flowline</td></tr><tr><td></td><td>▭ Adjacent Watersheds</td></tr><tr><td></td><td>▭ Mill Creek below W. Fk. Mill Cr. to Mitchell Ave.</td></tr></table>	■ Existing Facility	— State Highway	— Project Centerline	— US Highway	▭ Municipal Boundary	— Railroad	— Interstate	— NHD Flowline		▭ Adjacent Watersheds		▭ Mill Creek below W. Fk. Mill Cr. to Mitchell Ave.	  FIGURE:2 STORMWATER POLLUTION PREVENTION PLAN F684 ROAD IMPROVEMENT PROJECT DUKE ENERGY OHIO ENVIRONMENTAL ACCESS PLAN PROJECT AREA WATERSHEDS <table border="0"><tr><td>DRAWN BY: COD</td><td>DATE: 6/17/2019</td></tr><tr><td>CHECKED: CJ</td><td>APPROVED: JT</td></tr></table>	DRAWN BY: COD	DATE: 6/17/2019	CHECKED: CJ	APPROVED: JT
■ Existing Facility	— State Highway																		
— Project Centerline	— US Highway																		
▭ Municipal Boundary	— Railroad																		
— Interstate	— NHD Flowline																		
	▭ Adjacent Watersheds																		
	▭ Mill Creek below W. Fk. Mill Cr. to Mitchell Ave.																		
DRAWN BY: COD	DATE: 6/17/2019																		
CHECKED: CJ	APPROVED: JT																		

SOIL LEGEND		
SYMBOL	DESCRIPTION	HYDRIC ?
UrUXC	Urban land-Udorthents complex, 0 to 12 percent slopes	N
UsUXF	Urban land-Udorthents complex, smoothed, 0 to 50 percent slopes	N
UwAXC	Urban land-Alfic Udarents complex, loamy substratum over outwash, 0 to 12 percent slopes	N



PROJECT LOCATION



HAMILTON COUNTY, OH

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: CINCINNATI EAST, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017.



0 335 670 1,340 Feet

- | | | |
|--------------------|--------------------|------------|
| Existing Facility | Soil Unit | US Highway |
| Project Centerline | Soil Unit - Hydric | Railroad |
| 100ft Corridor | Interstate | |
| Municipal Boundary | State Highway | |



FIGURE:3
STORMWATER POLLUTION PREVENTION PLAN
F684 ROAD IMPROVEMENT PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN
SOIL CLASSIFICATIONS

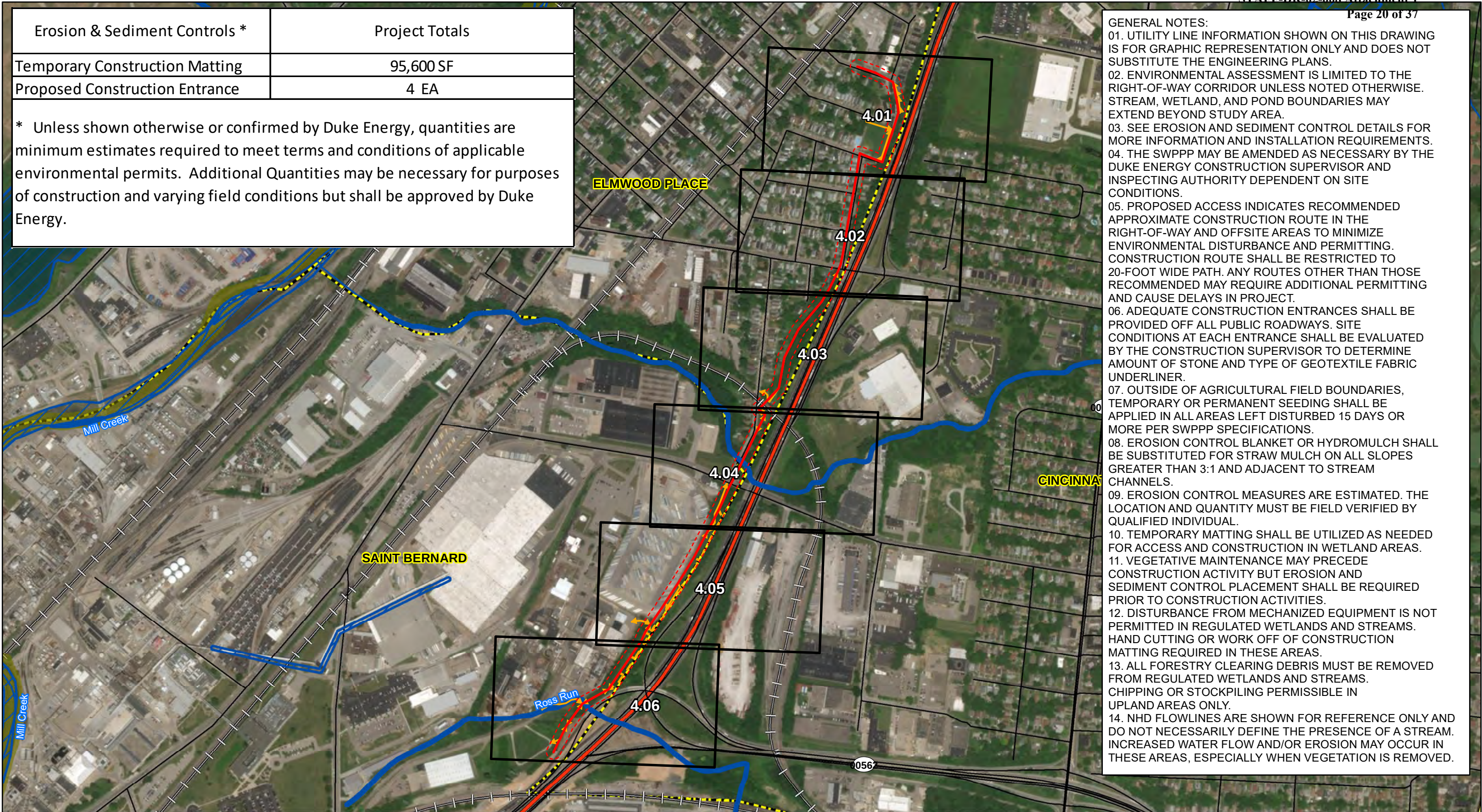
DRAWN BY: COD
CHECKED: CJ

DATE: 6/17/2019
APPROVED: JT

Erosion & Sediment Controls *	Project Totals
Temporary Construction Matting	95,600 SF
Proposed Construction Entrance	4 EA

* Unless shown otherwise or confirmed by Duke Energy, quantities are minimum estimates required to meet terms and conditions of applicable environmental permits. Additional Quantities may be necessary for purposes of construction and varying field conditions but shall be approved by Duke Energy.

- GENERAL NOTES:
01. UTILITY LINE INFORMATION SHOWN ON THIS DRAWING IS FOR GRAPHIC REPRESENTATION ONLY AND DOES NOT SUBSTITUTE THE ENGINEERING PLANS.
 02. ENVIRONMENTAL ASSESSMENT IS LIMITED TO THE RIGHT-OF-WAY CORRIDOR UNLESS NOTED OTHERWISE. STREAM, WETLAND, AND POND BOUNDARIES MAY EXTEND BEYOND STUDY AREA.
 03. SEE EROSION AND SEDIMENT CONTROL DETAILS FOR MORE INFORMATION AND INSTALLATION REQUIREMENTS.
 04. THE SWPPP MAY BE AMENDED AS NECESSARY BY THE DUKE ENERGY CONSTRUCTION SUPERVISOR AND INSPECTING AUTHORITY DEPENDENT ON SITE CONDITIONS.
 05. PROPOSED ACCESS INDICATES RECOMMENDED APPROXIMATE CONSTRUCTION ROUTE IN THE RIGHT-OF-WAY AND OFFSITE AREAS TO MINIMIZE ENVIRONMENTAL DISTURBANCE AND PERMITTING. CONSTRUCTION ROUTE SHALL BE RESTRICTED TO 20-FOOT WIDE PATH. ANY ROUTES OTHER THAN THOSE RECOMMENDED MAY REQUIRE ADDITIONAL PERMITTING AND CAUSE DELAYS IN PROJECT.
 06. ADEQUATE CONSTRUCTION ENTRANCES SHALL BE PROVIDED OFF ALL PUBLIC ROADWAYS. SITE CONDITIONS AT EACH ENTRANCE SHALL BE EVALUATED BY THE CONSTRUCTION SUPERVISOR TO DETERMINE AMOUNT OF STONE AND TYPE OF GEOTEXTILE FABRIC UNDERLINER.
 07. OUTSIDE OF AGRICULTURAL FIELD BOUNDARIES, TEMPORARY OR PERMANENT SEEDING SHALL BE APPLIED IN ALL AREAS LEFT DISTURBED 15 DAYS OR MORE PER SWPPP SPECIFICATIONS.
 08. EROSION CONTROL BLANKET OR HYDROMULCH SHALL BE SUBSTITUTED FOR STRAW MULCH ON ALL SLOPES GREATER THAN 3:1 AND ADJACENT TO STREAM CHANNELS.
 09. EROSION CONTROL MEASURES ARE ESTIMATED. THE LOCATION AND QUANTITY MUST BE FIELD VERIFIED BY QUALIFIED INDIVIDUAL.
 10. TEMPORARY MATTING SHALL BE UTILIZED AS NEEDED FOR ACCESS AND CONSTRUCTION IN WETLAND AREAS.
 11. VEGETATIVE MAINTENANCE MAY PRECEDE CONSTRUCTION ACTIVITY BUT EROSION AND SEDIMENT CONTROL PLACEMENT SHALL BE REQUIRED PRIOR TO CONSTRUCTION ACTIVITIES.
 12. DISTURBANCE FROM MECHANIZED EQUIPMENT IS NOT PERMITTED IN REGULATED WETLANDS AND STREAMS. HAND CUTTING OR WORK OFF OF CONSTRUCTION MATTING REQUIRED IN THESE AREAS.
 13. ALL FORESTRY CLEARING DEBRIS MUST BE REMOVED FROM REGULATED WETLANDS AND STREAMS. CHIPPING OR STOCKPILING PERMISSIBLE IN UPLAND AREAS ONLY.
 14. NHD FLOWLINES ARE SHOWN FOR REFERENCE ONLY AND DO NOT NECESSARILY DEFINE THE PRESENCE OF A STREAM. INCREASED WATER FLOW AND/OR EROSION MAY OCCUR IN THESE AREAS, ESPECIALLY WHEN VEGETATION IS REMOVED.



Project Location

REFERENCE:
ESRI WORLD IMAGERY, OBTAINED THROUGH ESRI WORLD
IMAGERY MICROSOFT CORPORATION, ACCESSED 01/2017

Sheet Index	Interstate	US Highway
100-ft Corridor	Potential Access	Railroad
Existing Facility	Alternate Access Route	County Boundary
Project Centerline	NHD Flowline	Municipal Boundary
100Yr Floodplain	State Highway	NWI Wetlands

FIGURE: 4
STORMWATER POLLUTION PREVENTION PLAN
F684 ROAD IMPROVEMENT PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN
INDEX SHEET

DRAWN BY: COD	DATE: 5/28/2019
CHECKED: CJ	APPROVED: JT



SHEET INDEX

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ESRI WORLD IMAGERY, OBTAINED
THROUGH ESRI WORLD IMAGERY
MICROSOFT CORPORATION,
ACCESSED 01/2017

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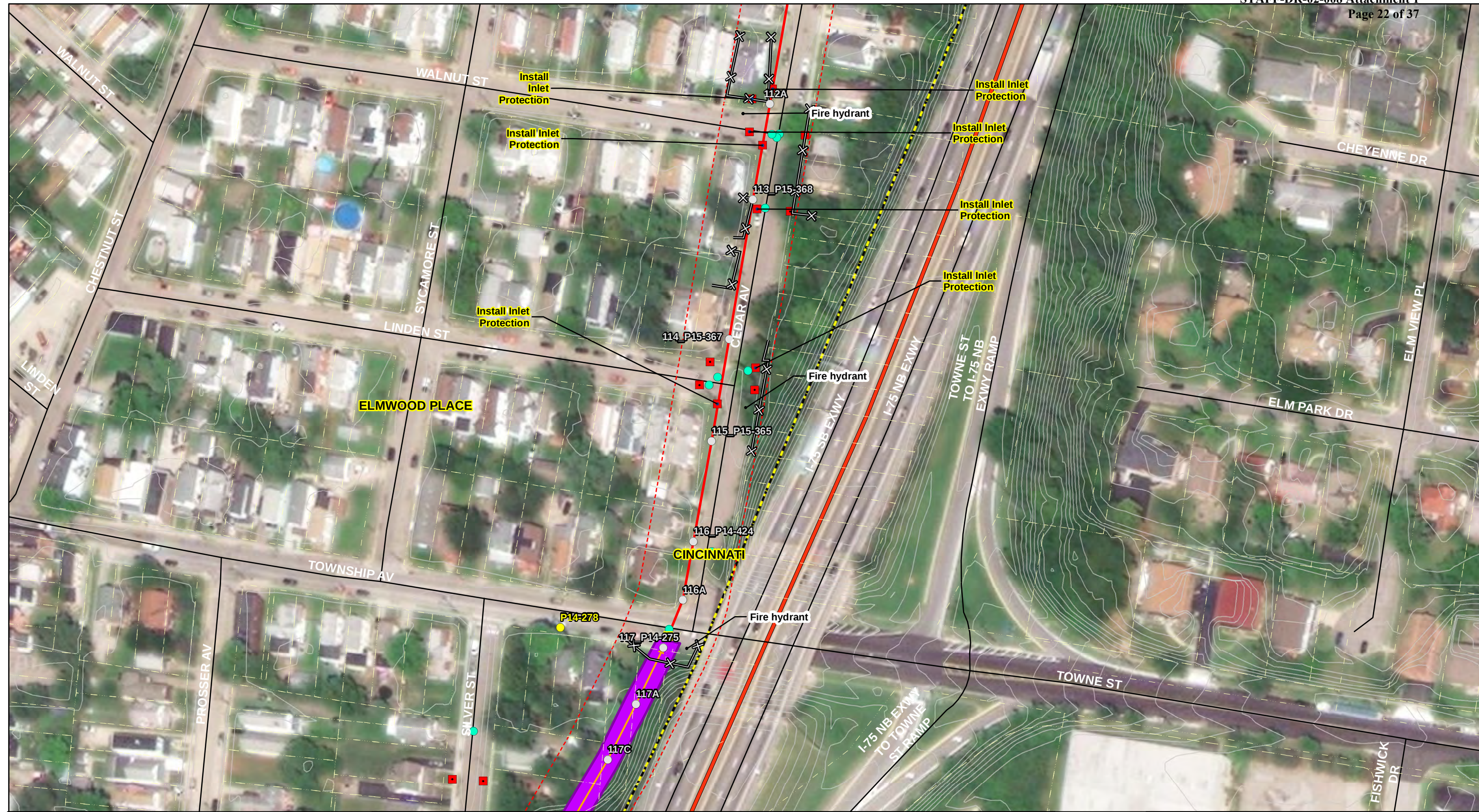
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Existing Facility	Fence Line	Alternate Access Route	NHD Flowline
Identified Features	Parcels	Construction Entrance	100Yr Floodplain
Interstate	100-ft Corridor	Construction Matting	Municipal Boundary
State Highway	Railroad	Manhole	1' Contour Line
US Highway	Laydown Yard	Storm Water Inlet	
Proposed Structure	Project Centerline	NWI Wetlands	
Existing Structure	Potential Access		

FIGURE 4.01
STORMWATER POLLUTION PREVENTION PLAN
F684 ROAD IMPROVEMENT PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN
ENVIRONMENTAL ACCESS/ EROSION CONTROL PLAN

DRAWN BY: COD
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DATE: 6/17/2019
APPROVED: JT



SHEET INDEX

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ESRI WORLD IMAGERY, OBTAINED
THROUGH ESRI WORLD IMAGERY
MICROSOFT CORPORATION,
ACCESSED 01/2017

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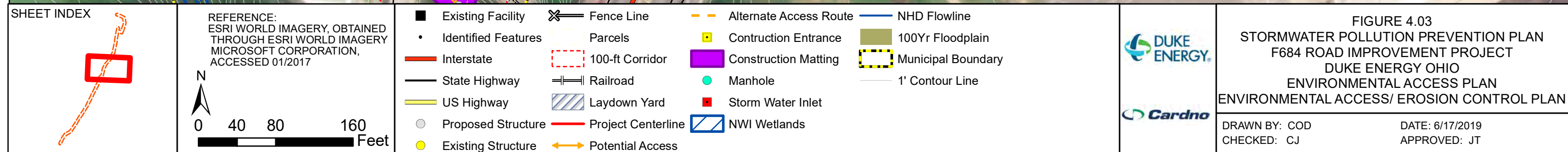
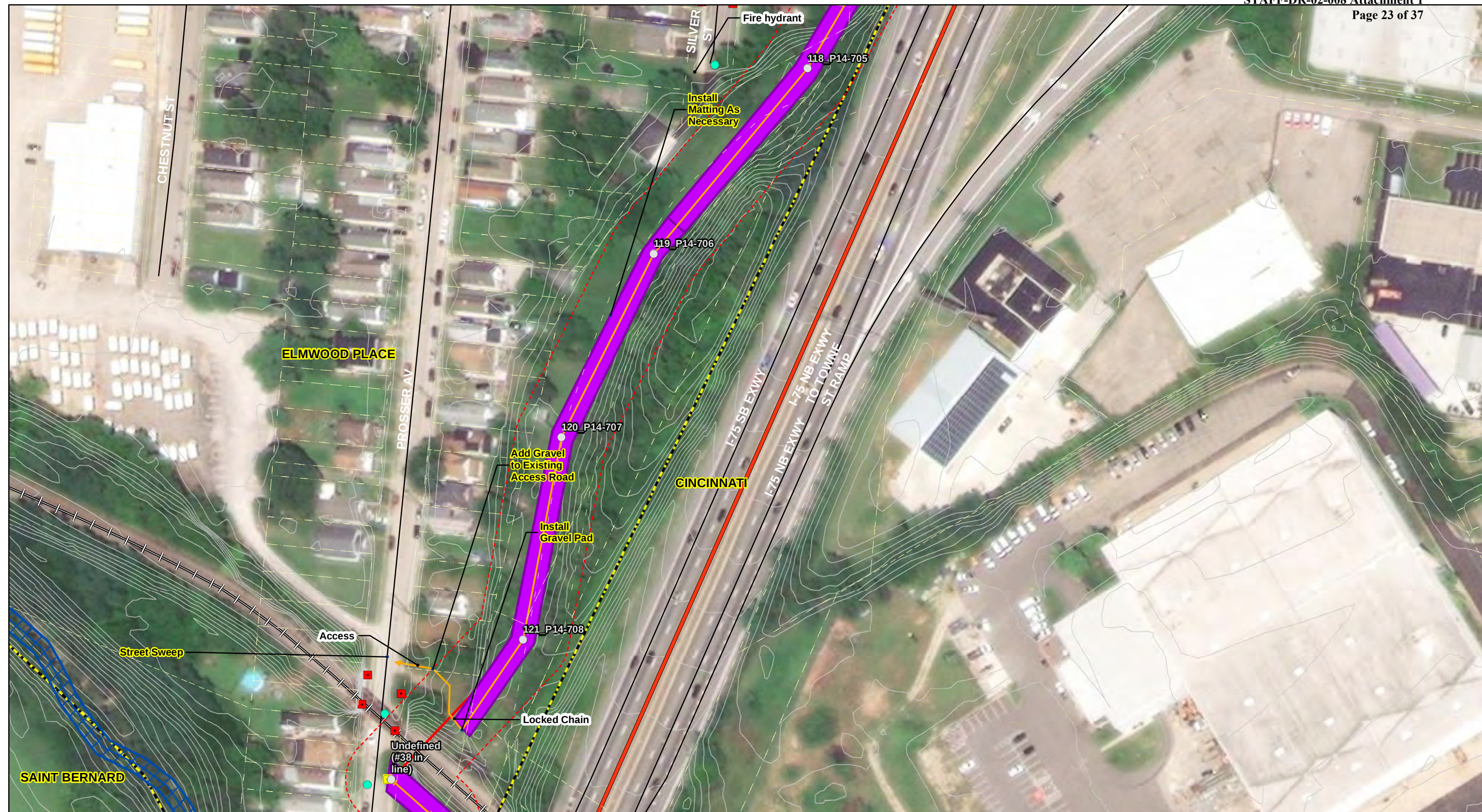
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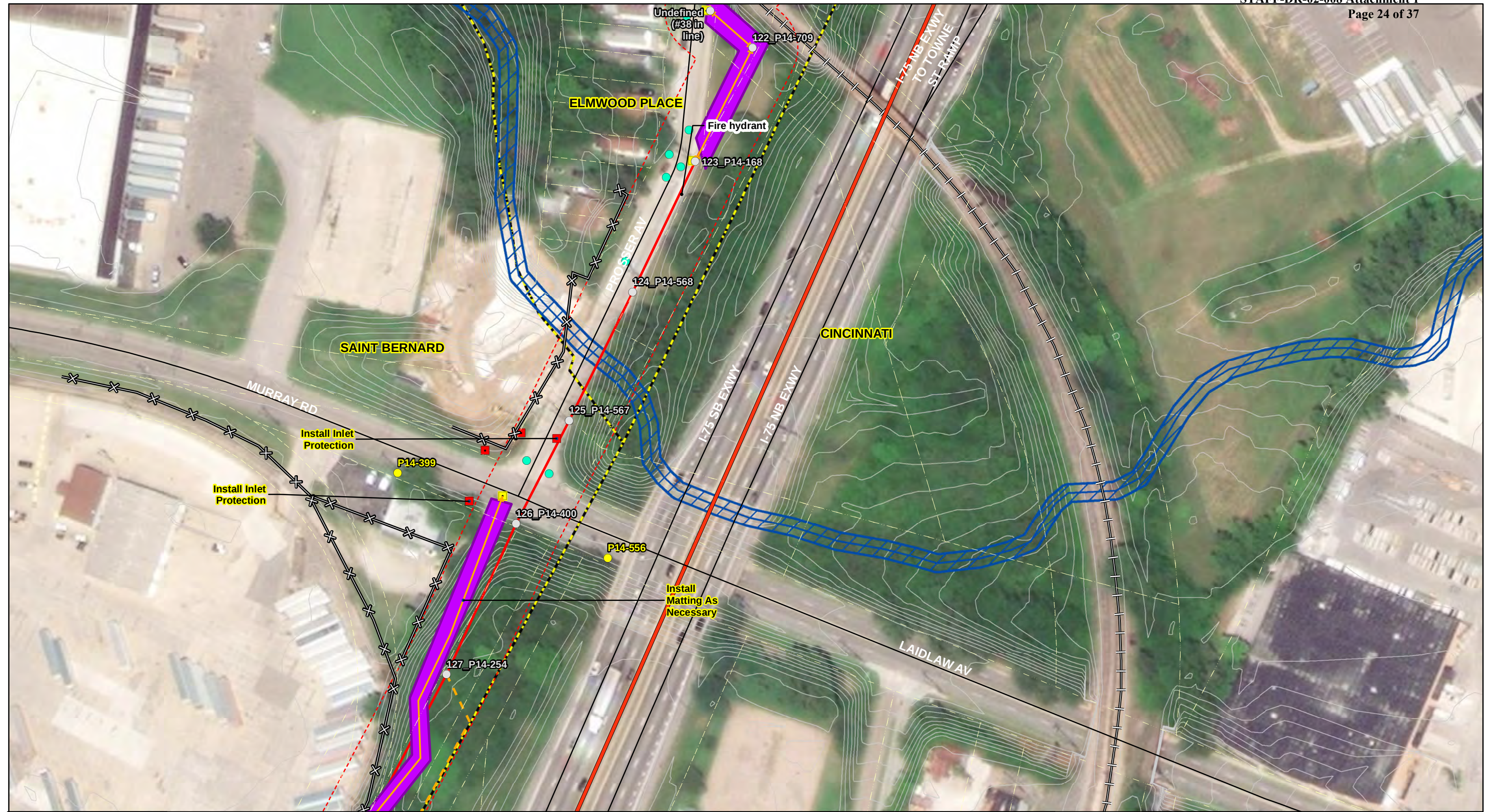
Existing Facility	Fence Line	Alternate Access Route	NHD Flowline
Identified Features	Parcels	Construction Entrance	100Yr Floodplain
Interstate	100-ft Corridor	Construction Matting	Municipal Boundary
State Highway	Railroad	Manhole	1' Contour Line
US Highway	Laydown Yard	Storm Water Inlet	
Proposed Structure	Project Centerline	NWI Wetlands	
Existing Structure	Potential Access		

FIGURE 4.02
STORMWATER POLLUTION PREVENTION PLAN
F684 ROAD IMPROVEMENT PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN
ENVIRONMENTAL ACCESS/ EROSION CONTROL PLAN

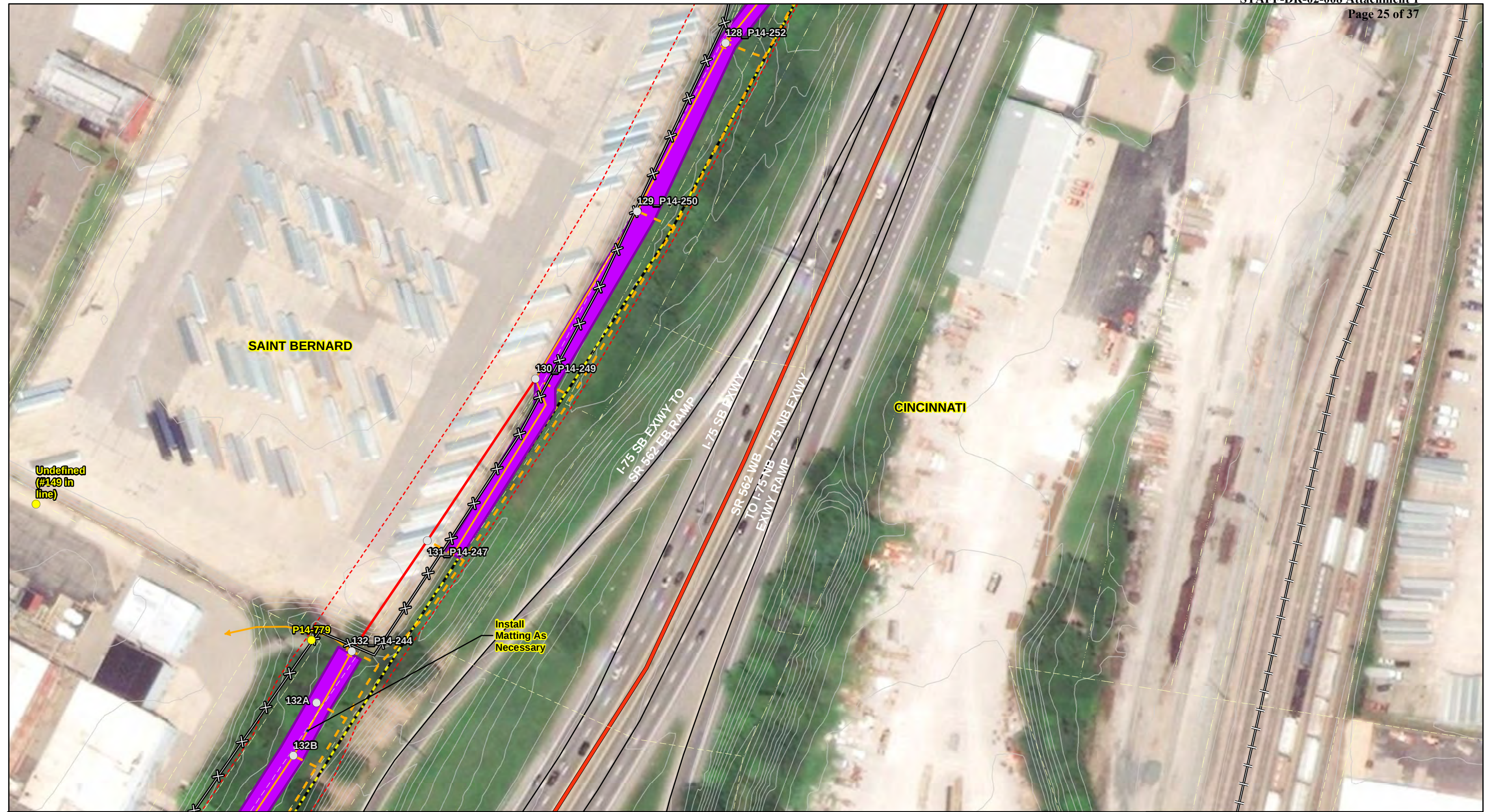
DRAWN BY: COD
CHECKED: CJ

DATE: 6/17/2019
APPROVED: JT





SHEET INDEX 	REFERENCE: ESRI WORLD IMAGERY, OBTAINED THROUGH ESRI WORLD IMAGERY MICROSOFT CORPORATION, ACCESSED 01/2017	<table border="0"><tr><td>Existing Facility</td><td>Fence Line</td><td>Alternate Access Route</td><td>NHD Flowline</td></tr><tr><td>Identified Features</td><td>Parcels</td><td>Construction Entrance</td><td>100Yr Floodplain</td></tr><tr><td>Interstate</td><td>100-ft Corridor</td><td>Construction Matting</td><td>Municipal Boundary</td></tr><tr><td>State Highway</td><td>Railroad</td><td>Manhole</td><td>1' Contour Line</td></tr><tr><td>US Highway</td><td>Laydown Yard</td><td>Storm Water Inlet</td><td></td></tr><tr><td>Proposed Structure</td><td>Project Centerline</td><td>NWI Wetlands</td><td></td></tr><tr><td>Existing Structure</td><td>Potential Access</td><td></td><td></td></tr></table>				Existing Facility	Fence Line	Alternate Access Route	NHD Flowline	Identified Features	Parcels	Construction Entrance	100Yr Floodplain	Interstate	100-ft Corridor	Construction Matting	Municipal Boundary	State Highway	Railroad	Manhole	1' Contour Line	US Highway	Laydown Yard	Storm Water Inlet		Proposed Structure	Project Centerline	NWI Wetlands		Existing Structure	Potential Access			 		FIGURE 4.04 STORMWATER POLLUTION PREVENTION PLAN F684 ROAD IMPROVEMENT PROJECT DUKE ENERGY OHIO ENVIRONMENTAL ACCESS PLAN ENVIRONMENTAL ACCESS/ EROSION CONTROL PLAN
		Existing Facility	Fence Line	Alternate Access Route	NHD Flowline																															
Identified Features	Parcels	Construction Entrance	100Yr Floodplain																																	
Interstate	100-ft Corridor	Construction Matting	Municipal Boundary																																	
State Highway	Railroad	Manhole	1' Contour Line																																	
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Proposed Structure	Project Centerline	NWI Wetlands																																		
Existing Structure	Potential Access																																			
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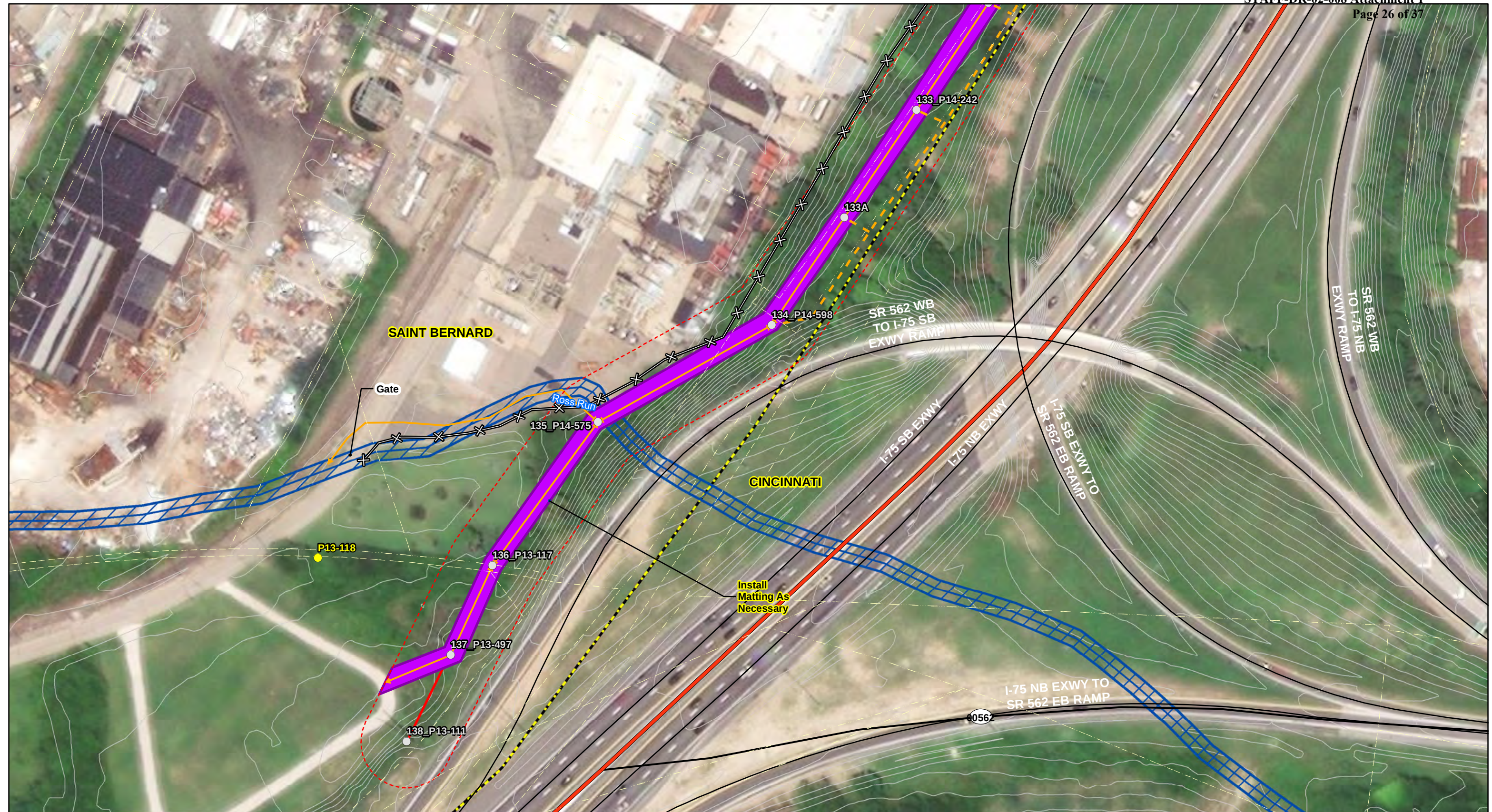
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Existing Facility	Fence Line	Alternate Access Route	NHD Flowline
Identified Features	Parcels	Construction Entrance	100Yr Floodplain
Interstate	100-ft Corridor	Construction Matting	Municipal Boundary
State Highway	Railroad	Manhole	1' Contour Line
US Highway	Laydown Yard	Storm Water Inlet	
Proposed Structure	Project Centerline	NWI Wetlands	
Existing Structure	Potential Access		

FIGURE 4.05
STORMWATER POLLUTION PREVENTION PLAN
F684 ROAD IMPROVEMENT PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN
ENVIRONMENTAL ACCESS/ EROSION CONTROL PLAN

DRAWN BY: COD
CHECKED: CJ

DATE: 6/17/2019
APPROVED: JT



SHEET INDEX

REFERENCE:
ESRI WORLD IMAGERY, OBTAINED
THROUGH ESRI WORLD IMAGERY
MICROSOFT CORPORATION,
ACCESSED 01/2017

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0 40 80 160 Feet

Existing Facility	Fence Line	Alternate Access Route	NHD Flowline
Identified Features	Parcels	Construction Entrance	100Yr Floodplain
Interstate	100-ft Corridor	Construction Matting	Municipal Boundary
State Highway	Railroad	Manhole	1' Contour Line
US Highway	Laydown Yard	Storm Water Inlet	
Proposed Structure	Project Centerline	NWI Wetlands	
Existing Structure	Potential Access		

FIGURE 4.06
STORMWATER POLLUTION PREVENTION PLAN
F684 ROAD IMPROVEMENT PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN
ENVIRONMENTAL ACCESS/ EROSION CONTROL PLAN

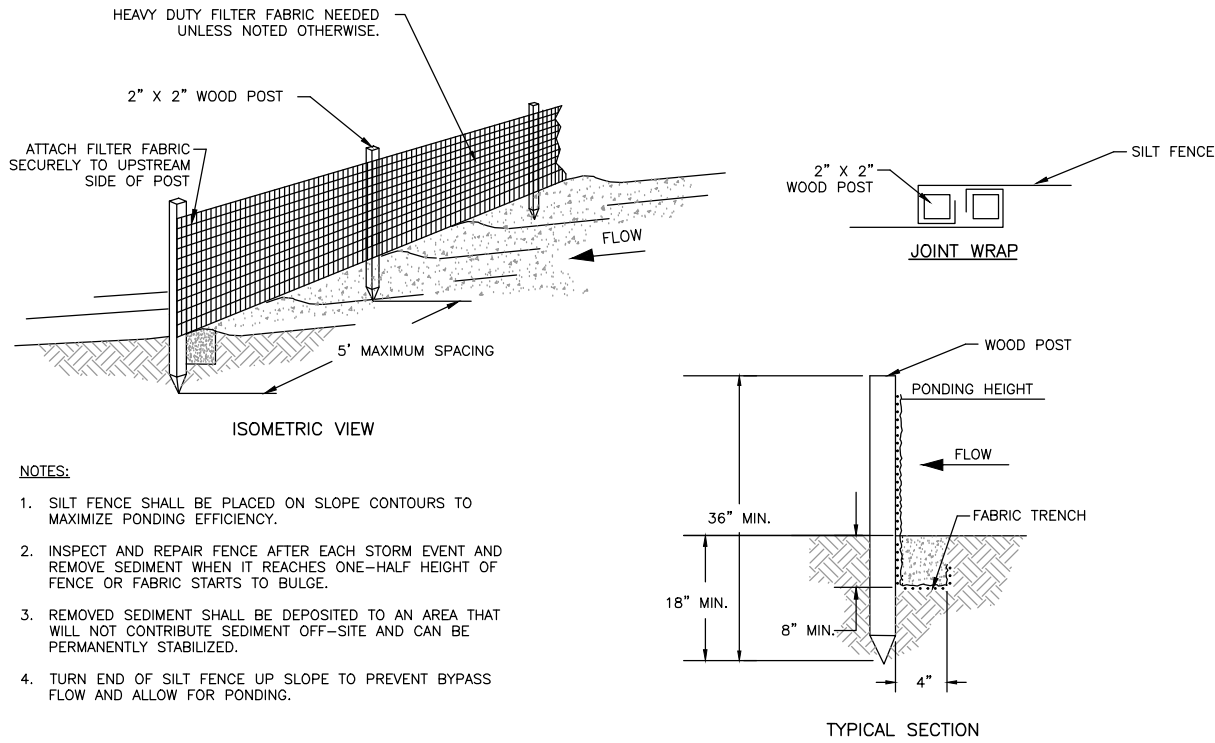
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DATE: 6/17/2019
APPROVED: JT

**Storm Water Pollution Prevention Plan
F684 Road Improvement Project
Hamilton County, Ohio**

Appendix B

Storm Water Pollution Prevention Plan Typical Details

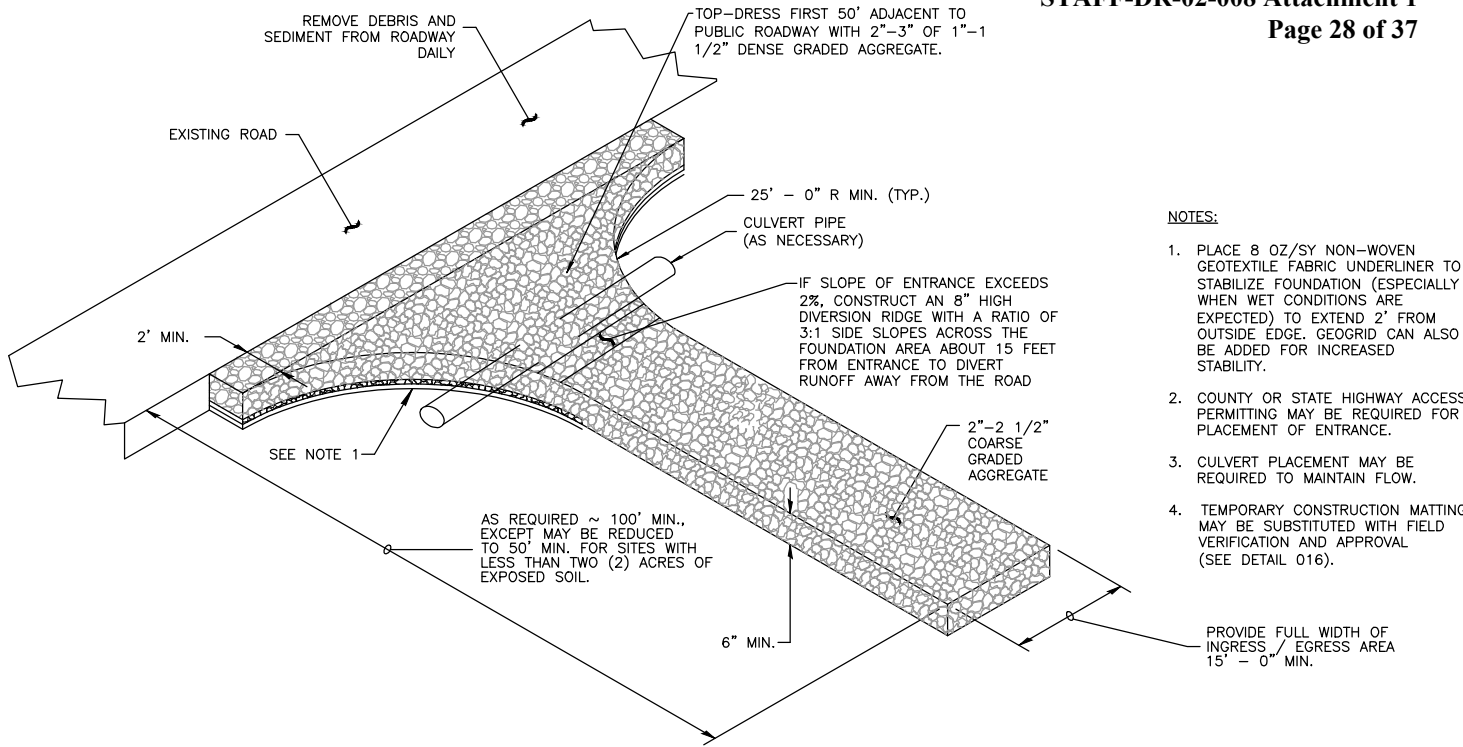


NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN IT REACHES ONE-HALF HEIGHT OF FENCE OR FABRIC STARTS TO BULGE.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. TURN END OF SILT FENCE UP SLOPE TO PREVENT BYPASS FLOW AND ALLOW FOR PONDING.

SILT FENCE

001

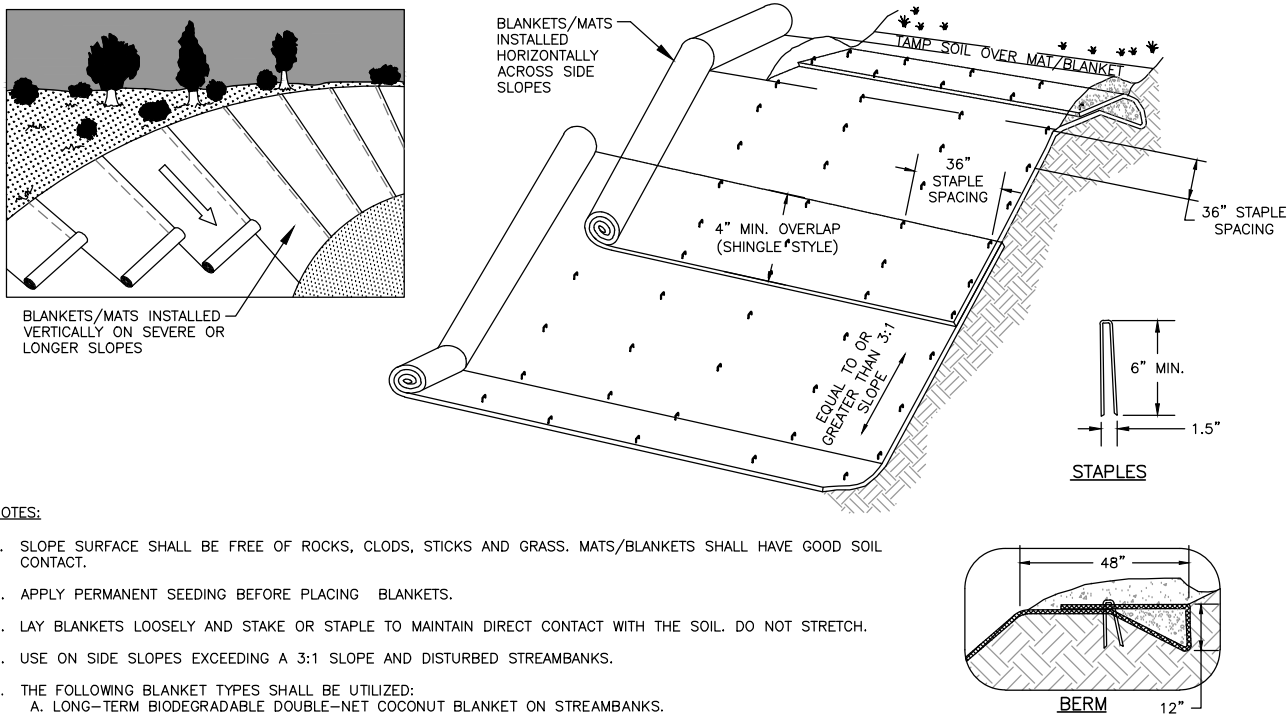


NOTES:

1. PLACE 8 OZ/SY NON-WOVEN GEOTEXTILE FABRIC UNDERLINER TO STABILIZE FOUNDATION (ESPECIALLY WHEN WET CONDITIONS ARE EXPECTED) TO EXTEND 2' FROM OUTSIDE EDGE. GEOGRID CAN ALSO BE ADDED FOR INCREASED STABILITY.
2. COUNTY OR STATE HIGHWAY ACCESS PERMITTING MAY BE REQUIRED FOR PLACEMENT OF ENTRANCE.
3. CULVERT PLACEMENT MAY BE REQUIRED TO MAINTAIN FLOW.
4. TEMPORARY CONSTRUCTION MATTING MAY BE SUBSTITUTED WITH FIELD VERIFICATION AND APPROVAL (SEE DETAIL 016).

TEMPORARY CONSTRUCTION ENTRANCE

002

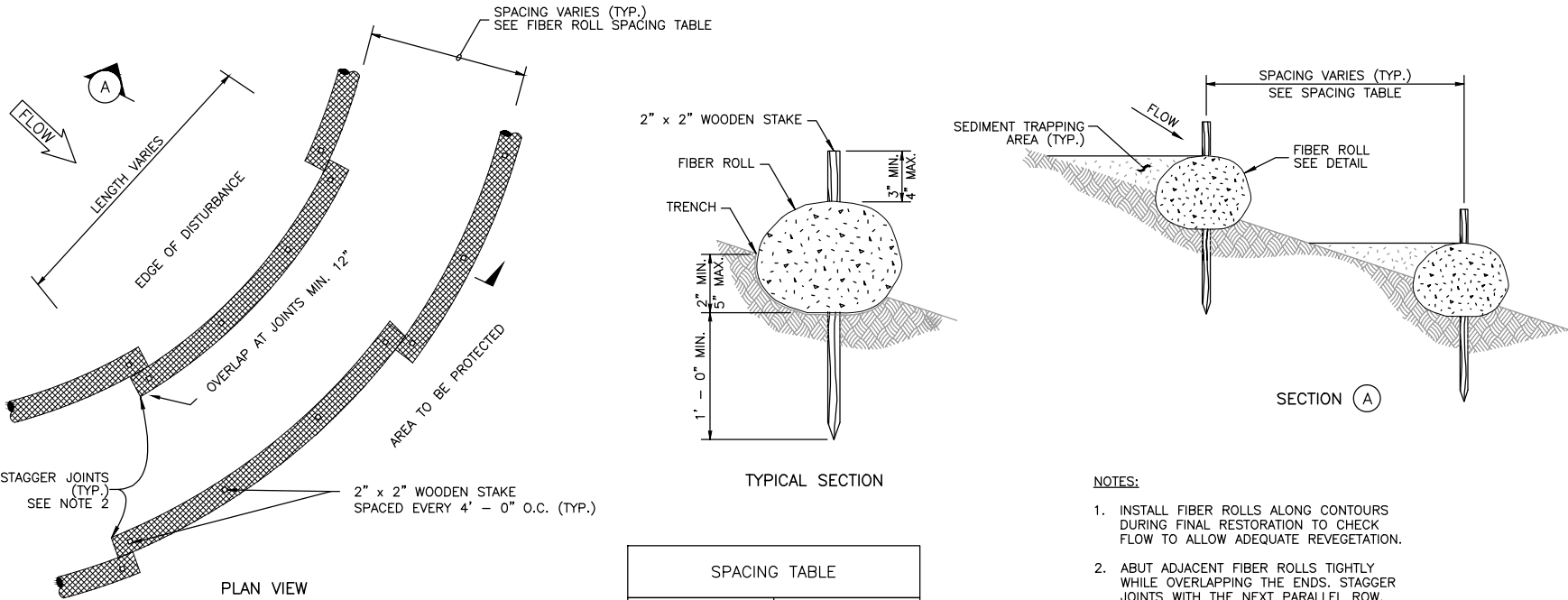


NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. USE ON SIDE SLOPES EXCEEDING A 3:1 SLOPE AND DISTURBED STREAMBANKS.
5. THE FOLLOWING BLANKET TYPES SHALL BE UTILIZED:
A. LONG-TERM BIODEGRADABLE DOUBLE-NET COCONUT BLANKET ON STREAMBANKS.
B. SHORT-TERM BIODEGRADABLE DOUBLE-NET STRAW BLANKET ON 3:1 SLOPES OR GREATER.
C. SHORT-TERM BIODEGRADABLE SINGLE-NET STRAW ON LESSER SLOPES, FLAT FLOODPLAIN, AND WORKSPACE AREAS.
6. FOR STREAMBANK STABILIZATION;
A. TUCK/UNDERLAP BASE OF BLANKET TO PREVENT HIGH WATER FROM REMOVING BLANKET AND SEED.
B. STAPLE SPACING MAY NEED TO BE DECREASED.
C. PREPARE SUBGRADE PRIOR TO INSTALLING BLANKET BY REMOVING DISPLACED ROCKS AND WOODY DEBRIS.

EROSION CONTROL BLANKET

003



TYPICAL SECTION

SPACING TABLE	
SLOPE	MAXIMUM SPACING
1:1	10' - 0"
2:1	20' - 0"
3:1	30' - 0"
4:1	40' - 0"

* INSTALL FIRST ROW AT TOP OF BANK.
INSTALL LAST ROW 10' FROM TOE OF SLOPE.

NOTES:

1. INSTALL FIBER ROLLS ALONG CONTOURS DURING FINAL RESTORATION TO CHECK FLOW TO ALLOW ADEQUATE REVEGETATION.
2. ABUT ADJACENT FIBER ROLLS TIGHTLY WHILE OVERLAPPING THE ENDS. STAGGER JOINTS WITH THE NEXT PARALLEL ROW.
3. PILOT HOLES MAY BE DRIVEN THROUGH THE FIBER ROLLS AND INTO THE SOIL WHEN SOIL CONDITIONS REQUIRE.
4. FIBER ROLLS SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RAINFALL PRODUCES RUNOFF, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.
5. A SINGLE ROW MAY BE INSTALLED ON FLAT SLOPES.

FIBER ROLL

005

INTENTIONALLY LEFT BLANK

004

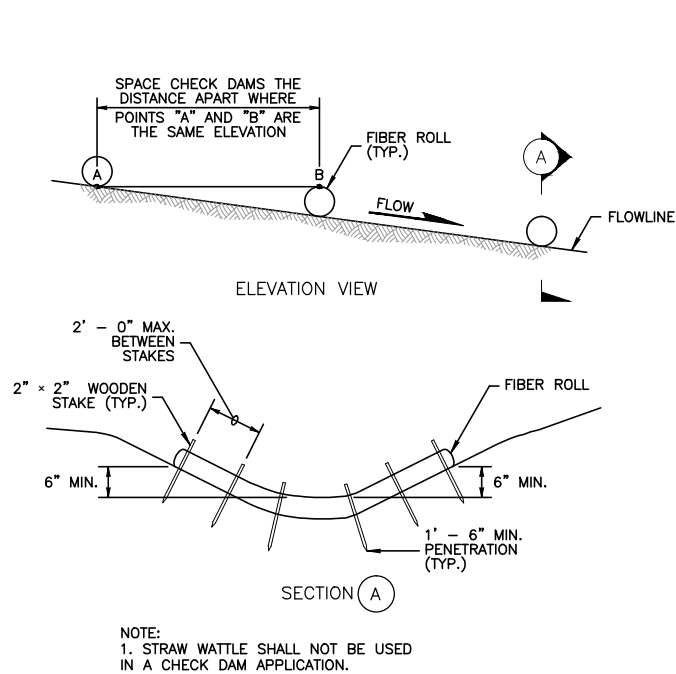
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DESIGN BY	DATE
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KTH	- -
CHECKED BY	APPROVED
MRW	CAM

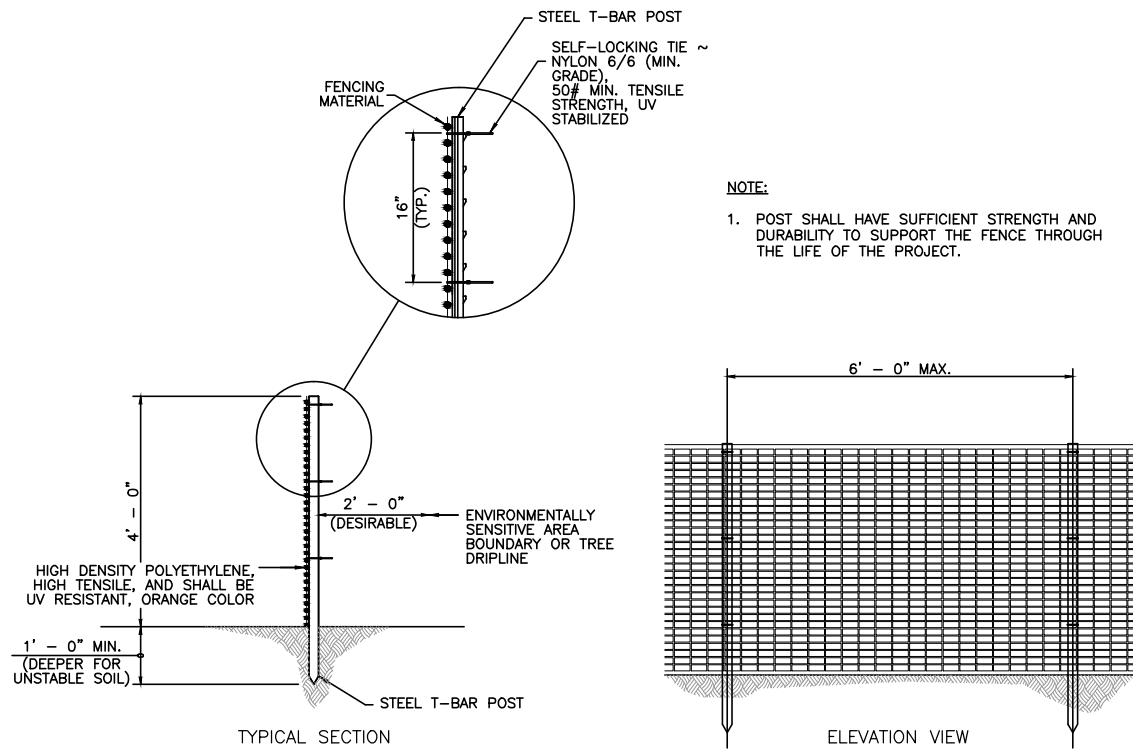


STORM WATER POLLUTION PREVENTION PLAN
TYPICAL DETAILS

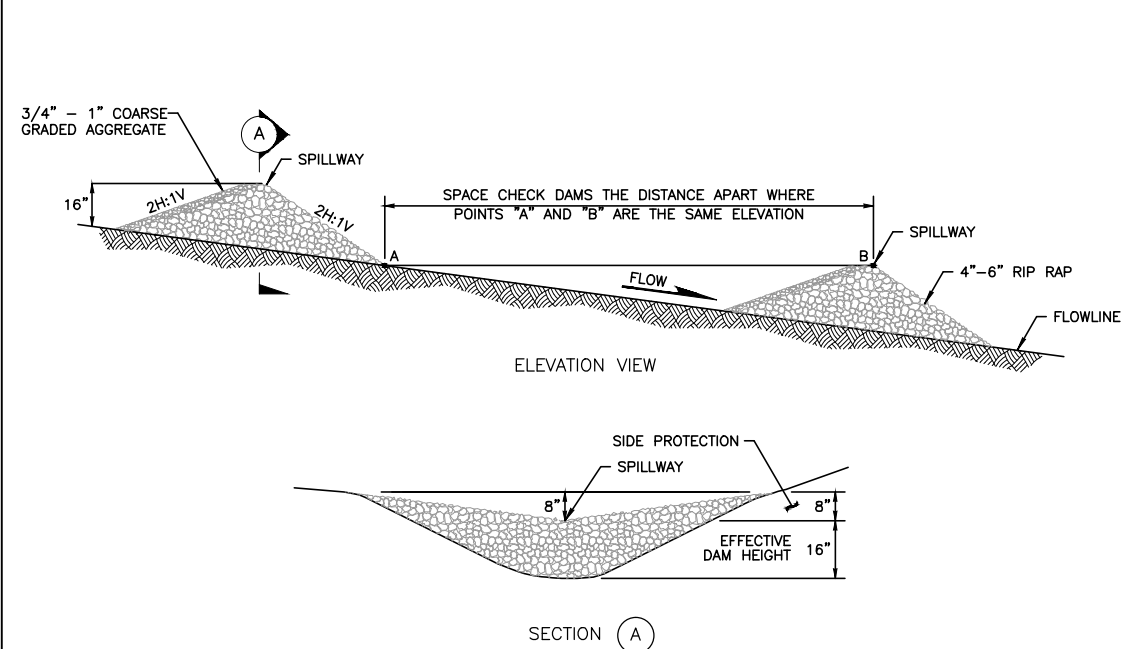
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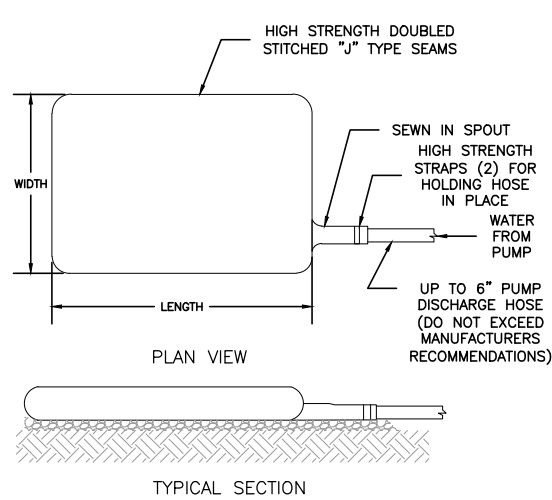
FIBER ROLL CHECK DAM 006



CONSTRUCTION BARRIER FENCING 007



ROCK CHECK DAM 008

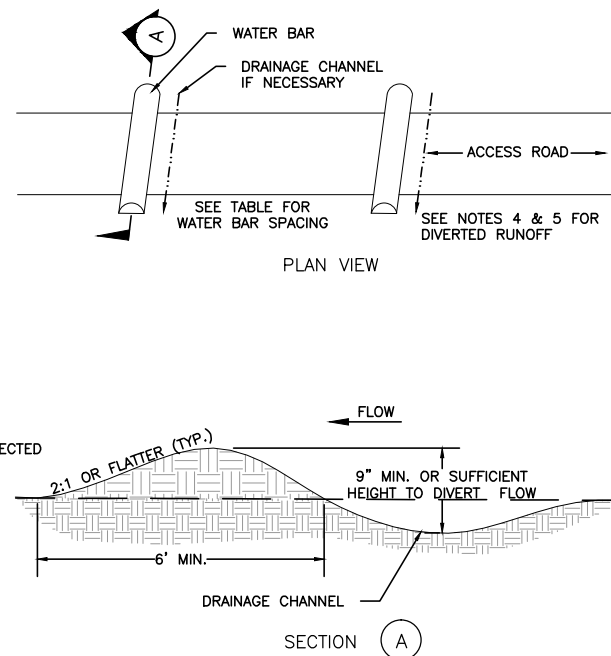


- NOTES:**
1. THE NECK OF THE FILTER BAG SHALL BE TIGHTLY STRAPPED (MINIMUM TWO STRAPS) TO THE DISCHARGE HOSE.
 2. THE FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR PASS WATER AT A REASONABLE RATE.
 3. FLOW RATES VARY DEPENDING ON THE SIZE OF THE DEWATERING DEVICE, AMOUNT OF SEDIMENT DISCHARGED INTO THE DEWATERING DEVICE, THE TYPE OF GROUND, ROCK, OR OTHER SUBSTANCE UNDER THE BAG AND THE DEGREE OF THE SLOPE ON WHICH THE BAG LIES. THE FILTER BAG SHOULD BE SIZED TO ACCOMMODATE THE ANTICIPATED FLOW RATES FROM THE TYPE OF PUMP USED. TYPICALLY FILTER BAGS CAN HANDLE FLOW RATES OF UP TO 1000 GALLONS PER MINUTE, BUT IN ALL CASES FOLLOW THE MANUFACTURERS RECOMMENDATIONS FOR FLOW RATES.
 4. USE OF EXCESSIVE FLOW RATES OR OVERFILLING THE DEWATERING DEVICE WITH SEDIMENT WILL CAUSE RUPTURES OF THE BAG OR FAILURE OF THE HOSE ATTACHMENT STRAPS.
 5. THE FILTER BAG SHALL BE REMOVED AND DISPOSED OF OFFSITE..
 6. EACH STANDARD DEWATERING DEVICE SHALL HAVE A FILL SPOUT LARGE ENOUGH TO ACCOMMODATE THE DISCHARGE HOSE. USE TWO STAINLESS STEEL STRAPS TO SECURE THE HOSE AND PREVENT PUMPED WATER FROM ESCAPING WITHOUT BEING FILTERED.
 7. THE DEWATERING DEVICE SHALL BE A NONWOVEN BAG, WHICH IS SEWN WITH A DOUBLE NEEDLE STITCHING USING A HIGH STRENGTH THREAD.
 8. THE DEWATERING DEVICE SEAMS SHALL HAVE AN AVERAGE WIDE WITH STRENGTH PER ASTM D 4884 OF 100 LB/IN.
 9. THE GEOTEXTILE FABRIC SHALL BE A NONWOVEN FABRIC WITH THE FOLLOWING PROPERTIES:

PROPERTIES	TEST METHOD	ENGLISH	METRIC
GRAB TENSILE	ASTM D - 4632	250 LBS.	113 KG
PUNCTURE	ASTM D - 4833	165 LBS.	75 KG
FLOW RATE	ASTM D - 4491	70 GAL/MIN/SQ FT	25 LITERS/MIN/SQ METER
PERMITIVITY	ASTM D - 4491	1.3 SEC. - 1	1.3 SEC. - 1
MULLEN BURST	ASTM D - 3786	550 LBS./SQ INCH	3.79 Mpa
UV RESISTANT	ASTM D - 4355	70%	70%
AOS % RETAINED	ASTM D - 4751	100%	100%

*ALL PROPERTIES ARE MINIMUM AVERAGE ROLL VALUE

DEWATERING BAG 009



- NOTES:**
1. SIDE SLOPES OF WATER BAR SHALL BE CONSTRUCTED SUFFICIENTLY FLAT TO ACCOMMODATE THE EXPECTED TRAFFIC.
 2. THE SPACING BETWEEN WATER BARS SHALL BE AS NOTED (SEE SPACING TABLE):

ROAD GRADE (%)	DISTANCE (FT.)
1	400
2	250
5	135
10	80
15	60
20	45

3. THE FIELD LOCATION SHALL BE ADJUSTED AS NEEDED TO PROVIDE A STABILIZED SAFE OUTLET.
4. DRAINAGE CHANNELS SHALL BE DIRECTED ONTO STABLE VEGETATIVE AREA OR A SEDIMENT TRAP OR A BASIN IF CONTRIBUTING AREA IS NOT STABLE.
5. DRAINAGE CHANNELS SHALL BE CONSTRUCTED WITH $\leq 2\%$ WITH POSITIVE OUTLET TO STABLE AREA.
6. DIVERSIONS/WATER BARS SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT DURING CONSTRUCTION.
7. THE WATER BARS SHALL BE ANGLED SLIGHTLY DOWNSLOPE ACROSS THE CENTERLINE OF THE TRAVEL LANE.

WATER BAR 010

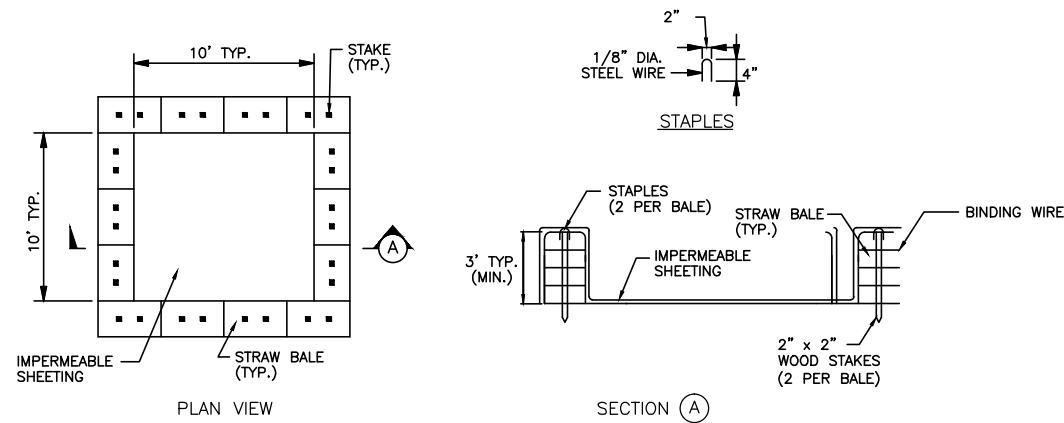
REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED BY

DESIGN BY	DATE
CAM/MRW	12/18/2015
DRAWN BY	JOB NO.
KTH	- -
CHECKED BY	APPROVED
MRW	CAM



STORM WATER POLLUTION PREVENTION PLAN
TYPICAL DETAILS

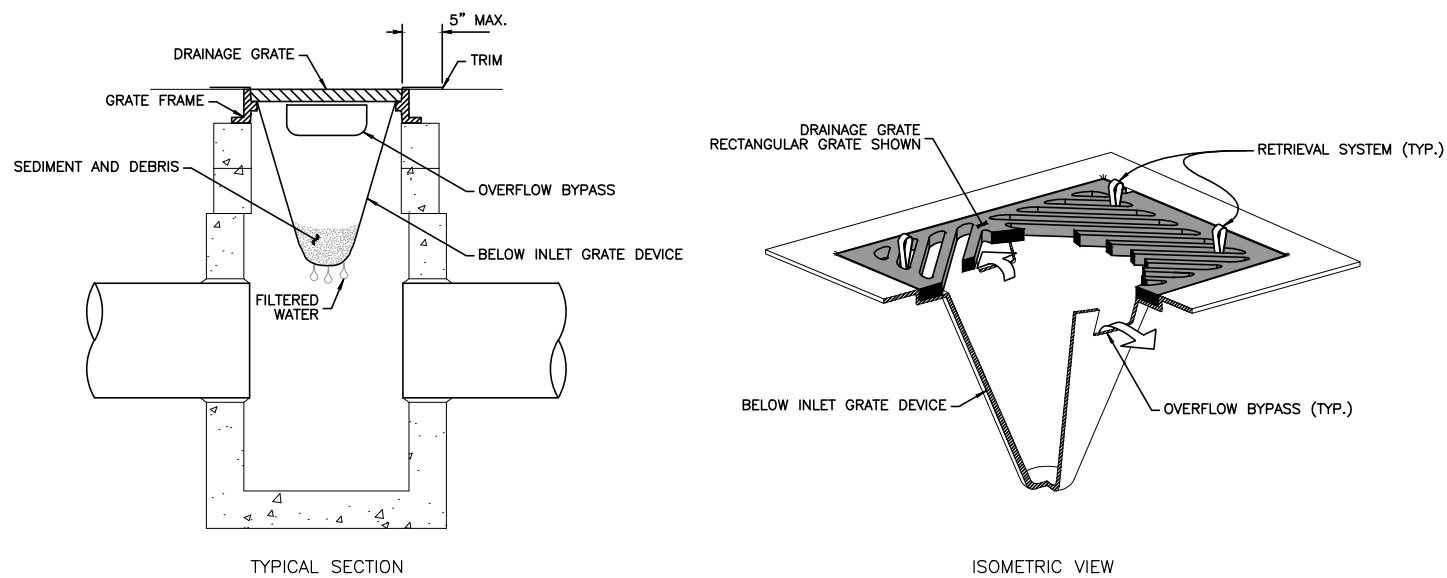
SCALE		N.T.S.
DRAWING NO.		
SHEET	OF	
2	5	



- NOTES:
1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
 2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
 3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
 4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
 5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.
 6. BALES CAN BE TWO STACKED OR PARTIALLY EXCAVATED TO REACH 3FT DEPTH (MIN.).
 7. PREFABRICATED UNITS MAY BE USED WITH APPROVAL.

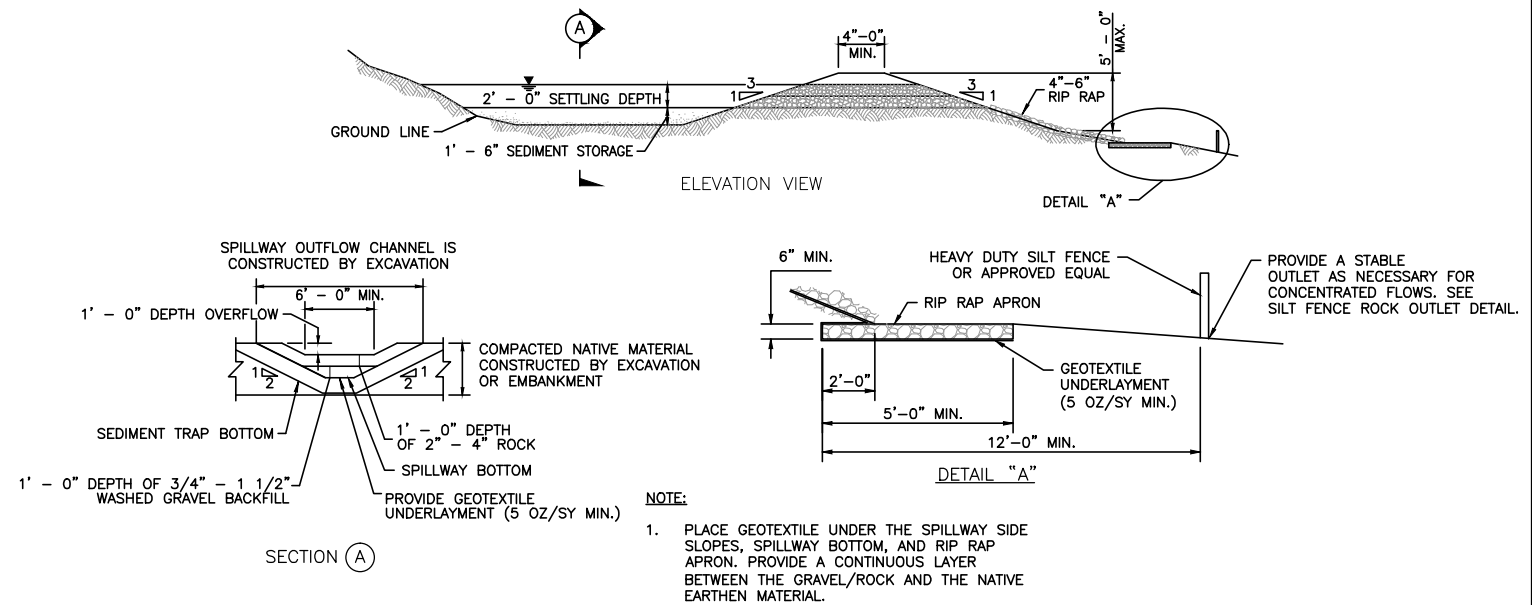
CONCRETE WASHOUT

011



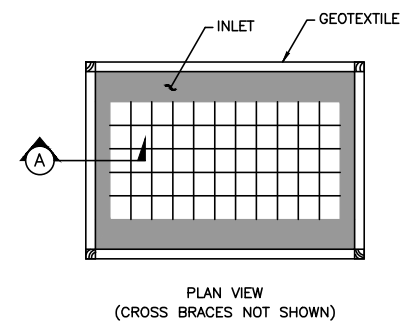
PAVED AREA INLET PROTECTION

013

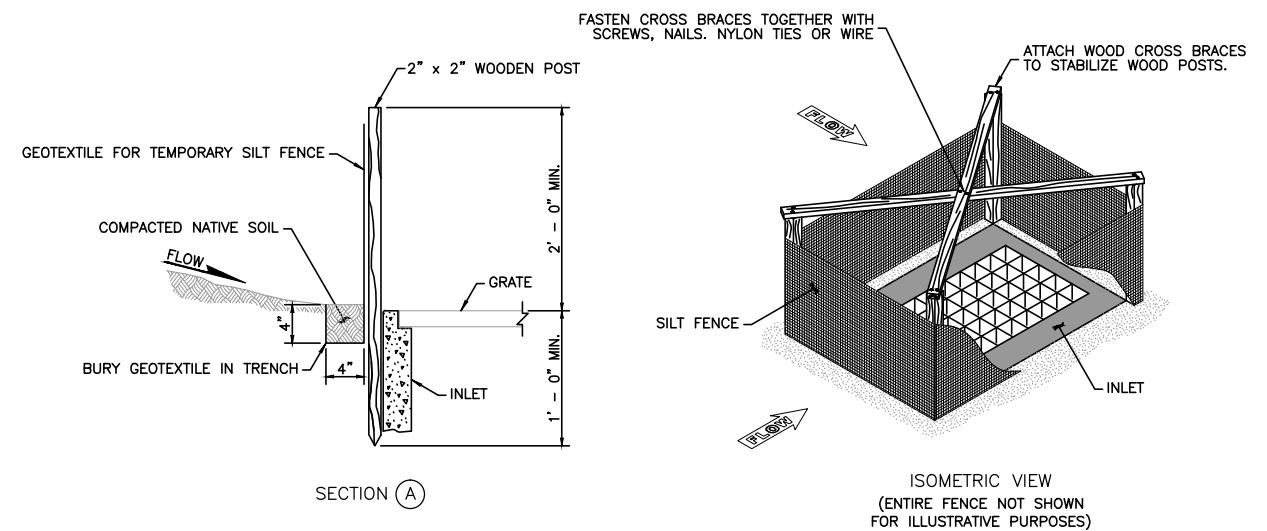


TEMPORARY SEDIMENT TRAP

012



- NOTES:
1. PREFABRICATED UNITS MAY BE USED WITH APPROVAL.
 2. STRUCTURE SHALL BE CONSTRUCTED SUCH THAT GEOTEXTILE MATERIAL SHALL BE FASTENED TO POSTS CREATING A SEAM-LESS JOINT.
 3. ENSURE THAT PONDING HEIGHT OF WATER DOES NOT CAUSE FLOODING ON ADJACENT ROADWAYS OR PRIVATE PROPERTY.



NON-PAVED AREA INLET PROTECTION

014

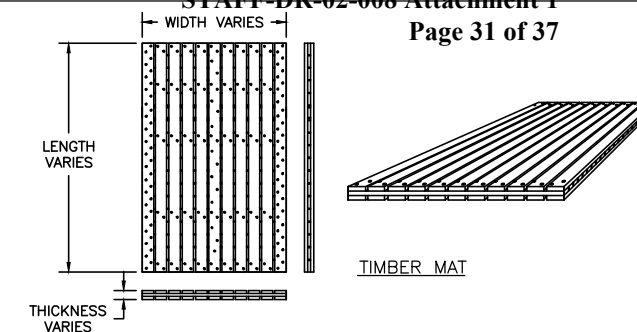
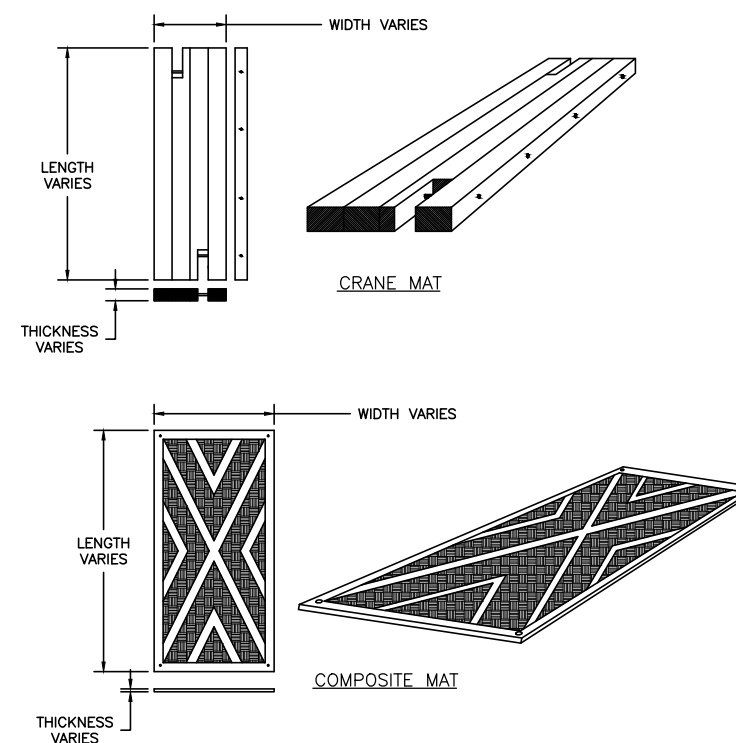
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NO.	DATE	DESCRIPTION	APPROVED BY	CAM/MRW	12/18/2015			N.T.S.	
				DRAWN BY	JOB NO.			DRAWING NO.	
				KTH	--				
				CHECKED BY	APPROVED			SHEET	OF
				MRW	CAM			3	5



1. VARYING FIELD CONDITIONS MAY WARRANT ALTERNATE AGGREGATE GRADATIONS.

TEMPORARY ACCESS DRIVE

015

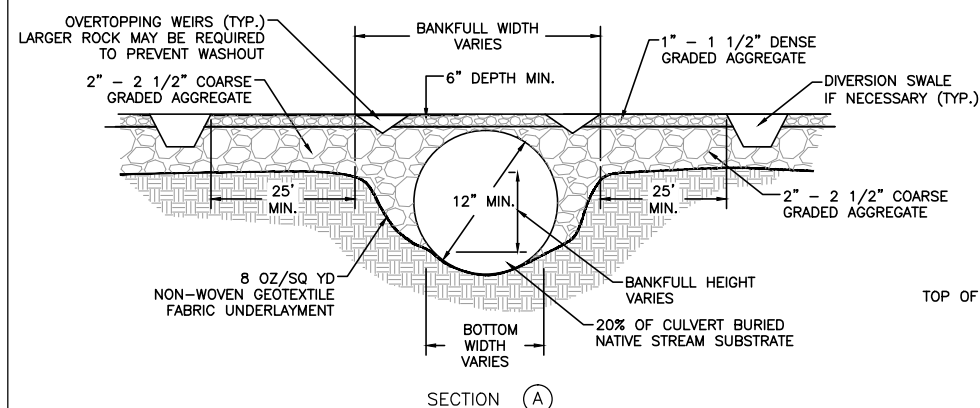


NOTES:

1. TEMPORARY CONSTRUCTION MATTING SHALL BE USED IN ALL SATURATED OR UNSTABLE WETLAND AREAS IF CROSSING IS NECESSARY.
2. FILL SHALL NOT BE PLACED OFF OF MATTING WHEN WORKING IN WETLAND AND STREAM AREAS.
3. SECTIONS TO BE ASSEMBLED TO REQUIRED SIZE SPECIFIC TO EQUIPMENT NEEDS.
4. NO GAPS SHALL BE PRESENT IN THE MATTING TO REDUCE "PUMPING" AND SEDIMENT FROM ENTERING STREAMS AND WETLANDS.
5. MATTING SHALL BE ANCHORED IN ALL NOTED FLOODWAYS AND ADJACENT TO OTHER STREAMS DETERMINED TO BE PRONE TO FLOODING.
6. MAINTAIN STREAM FLOWS AND UTILIZE EROSION CONTROLS IF MATTING IS TO BE USED FOR A STREAM CROSSING APPLICATION.
7. PLACE NON-WOVEN GEOTEXTILE UNDERLAYMENT (7 OZ/SY) BENEATH MATTING IN SATURATED OR DELINEATED WETLAND AREAS TO PREVENT PUMPING OF SATURATED SOILS.
8. INSTALL FIBER ROLL ALONG ENTIRE PERIMETER OF MATTING WITHIN DELINEATED WETLAND AREAS EXCEPT FOR THE INGRESS AND EGRESS LOCATIONS.

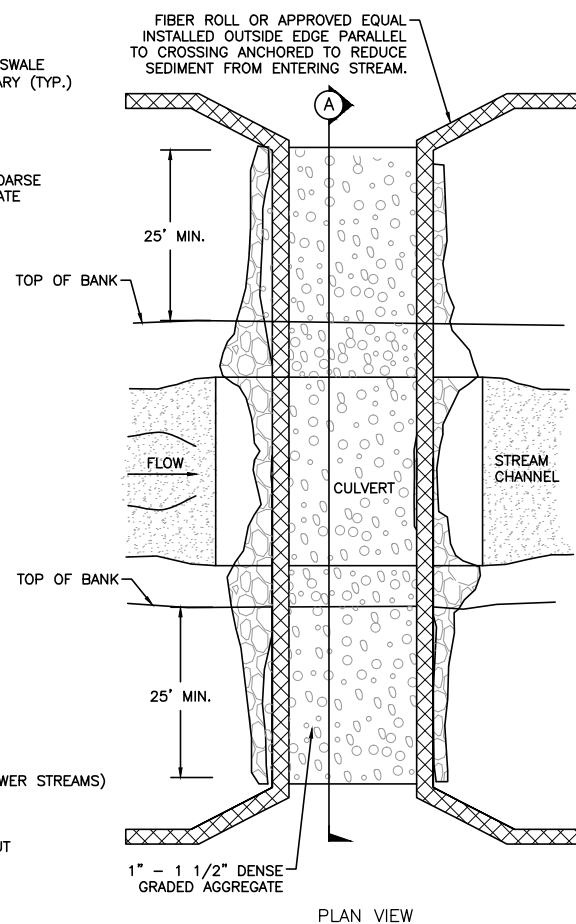
TEMPORARY CONSTRUCTION MATTING

016



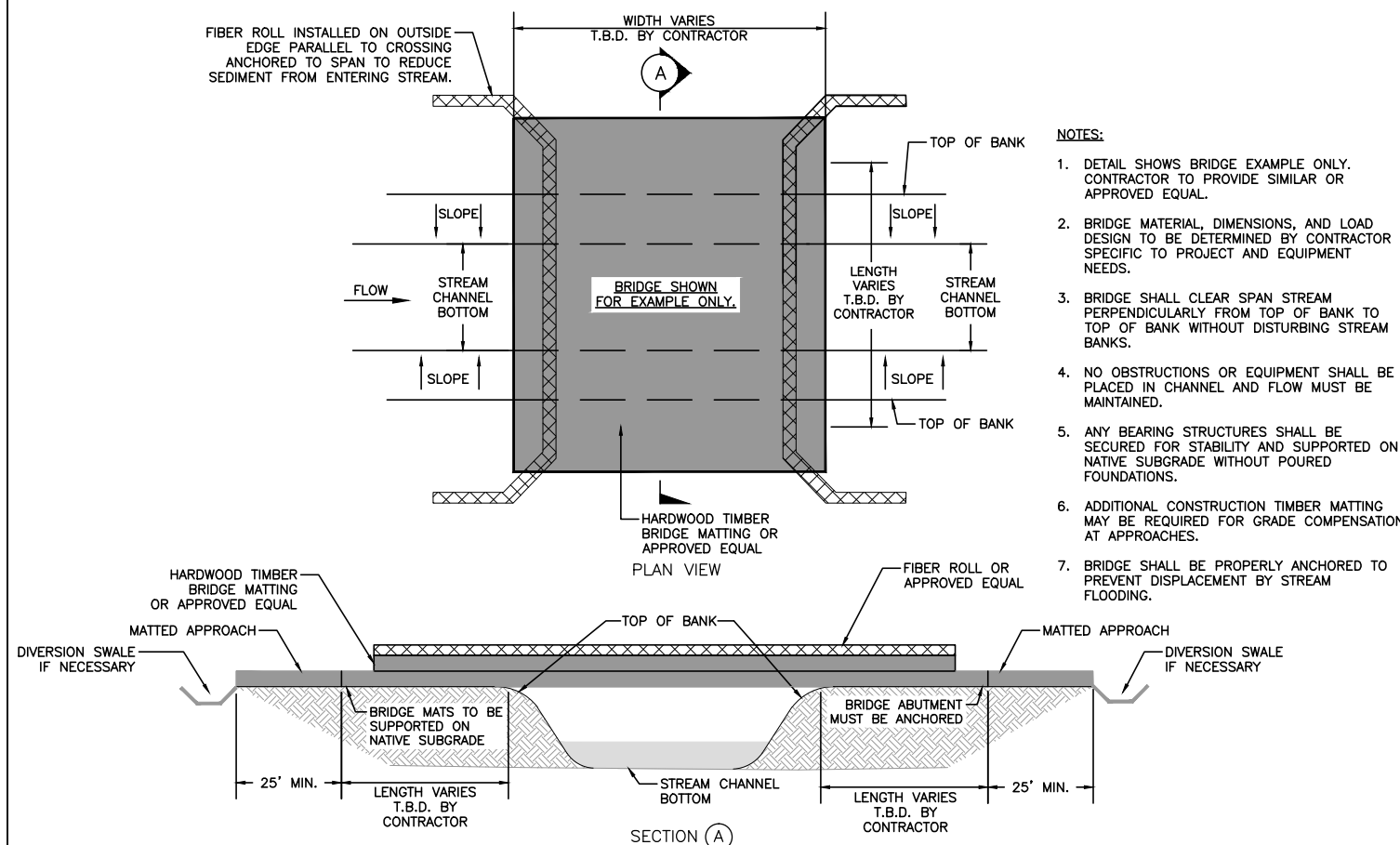
NOTES:

1. THE SLOPE OF THE BED WITHIN THE ENCAPSULATION MATCHES THE SLOPE OF THE BED BOTH IMMEDIATELY UPSTREAM AND DOWNSTREAM.
2. NO SOIL SHALL BE USED FOR CONSTRUCTION OF TEMPORARY CROSSING OR PLACED WITHIN STREAM CHANNEL
3. CULVERTED CROSSINGS MAY REQUIRE ADDITIONAL STATE AND/OR FEDERAL PERMITTING. NOTIFY ENVIRONMENTAL COORDINATOR PRIOR TO IMPLEMENTATION OR CONSIDERATION TO MAKING PERMANENT.
4. CULVERT DIAMETER SHALL BE AT LEAST 3X DEPTH OF NORMAL FLOW. (2X DEPTH IS ALLOWED IN DEEP, SLOWER STREAMS)
5. IF MULTIPLE CULVERTS ARE NEEDED TO CROSS STREAM LEAVE 12" SPACE BETWEEN CULVERTS.
6. FOR FINAL RESTORATION, REMOVE CULVERT AND ALL STONE FROM STREAM AS PRACTICALLY POSSIBLE WITHOUT ADDITIONAL DAMAGE.



TEMPORARY CULVERT STREAM CROSSING

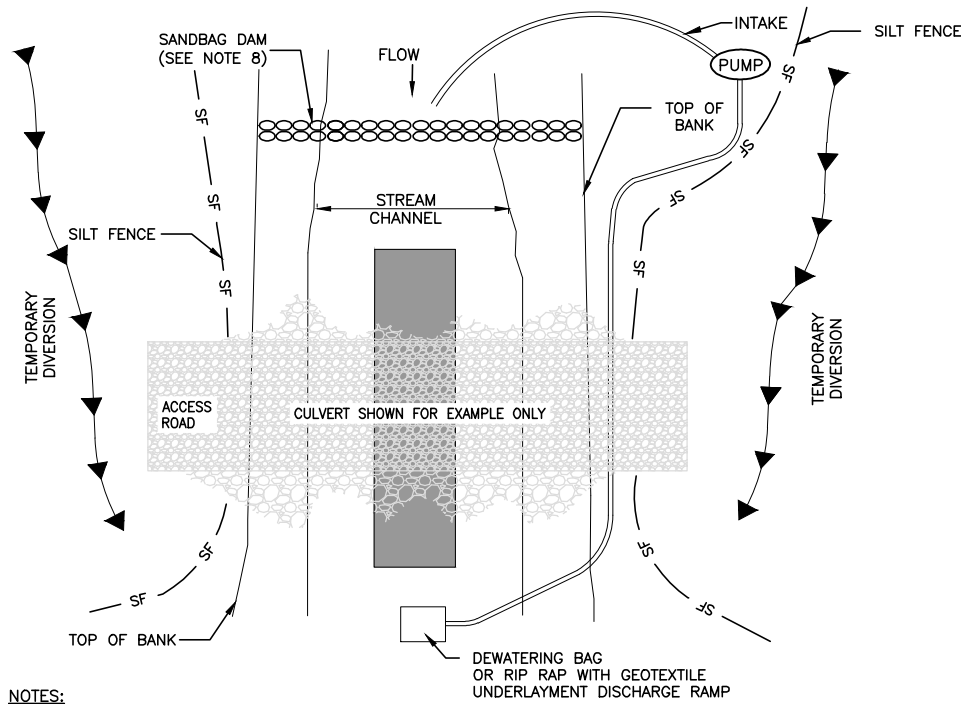
017



TEMPORARY CLEAR SPAN BRIDGE CROSSING

018

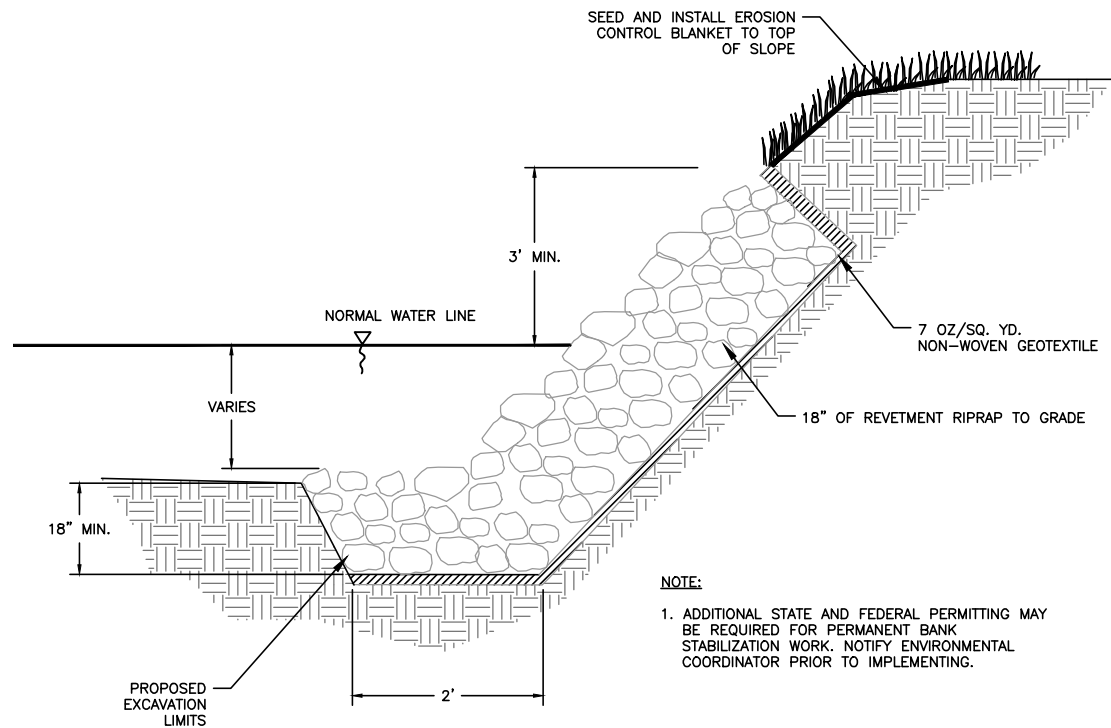
REVISIONS				DESIGN BY	DATE		STORM WATER POLLUTION PREVENTION PLAN TYPICAL DETAILS	SCALE	
NO.	DATE	DESCRIPTION	APPROVED BY	CAM/MRW	12/18/2015			N.T.S.	
				DRAWN BY	JOB NO.			DRAWING NO.	
				KTH	- -				
				CHECKED BY	APPROVED				
				MRW	CAM				
								SHEET	OF
								4	5



- NOTES:**
1. INSTALL SILT FENCE, PUMP, DEWATERING BAG, AND SANDBAG DAM BEFORE TRENCHING STREAM.
 2. PUMP MUST BE OF SUFFICIENT CAPACITY TO CONVEY NORMAL AND/OR EXISTING STREAM FLOW OVER SANDBAG DAM. A BACK-UP PUMP OF EQUAL CAPACITY MUST BE AVAILABLE ON-SITE DURING CONSTRUCTION OF THE CROSSING.
 3. ANY SOIL PILES TO BE PLACED A MINIMUM OF 10 FEET FROM TOP OF BANK.
 4. INSTALL DIVERSIONS AT APPROACHES TO STREAM CROSSING AND SILT FENCE (AS INDICATED ON PLAN SHEETS).
 5. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
 6. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
 7. RESTORE AREA TO APPROXIMATE ORIGINAL CONTOURS.
 8. ADJUST HEIGHT AS NEEDED BASED ON FLOW CONDITIONS AND PUMP INTAKE.

TEMPORARY STREAM CROSSING PUMP DIVERSION

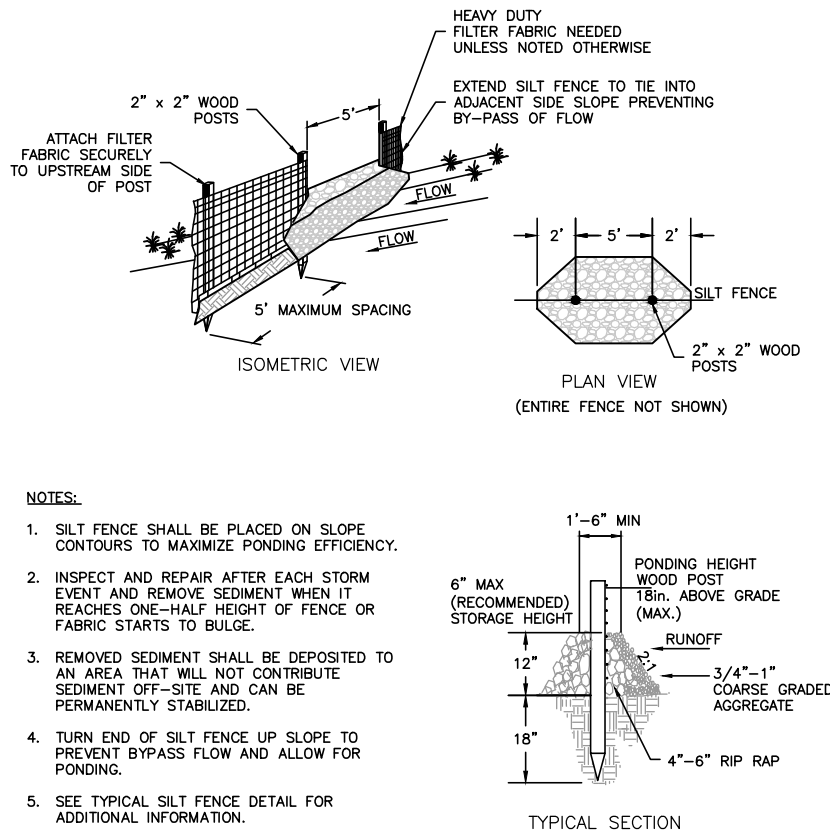
019



- NOTE:**
1. ADDITIONAL STATE AND FEDERAL PERMITTING MAY BE REQUIRED FOR PERMANENT BANK STABILIZATION WORK. NOTIFY ENVIRONMENTAL COORDINATOR PRIOR TO IMPLEMENTING.

HARD ARMAMENT BANK STABILIZATION

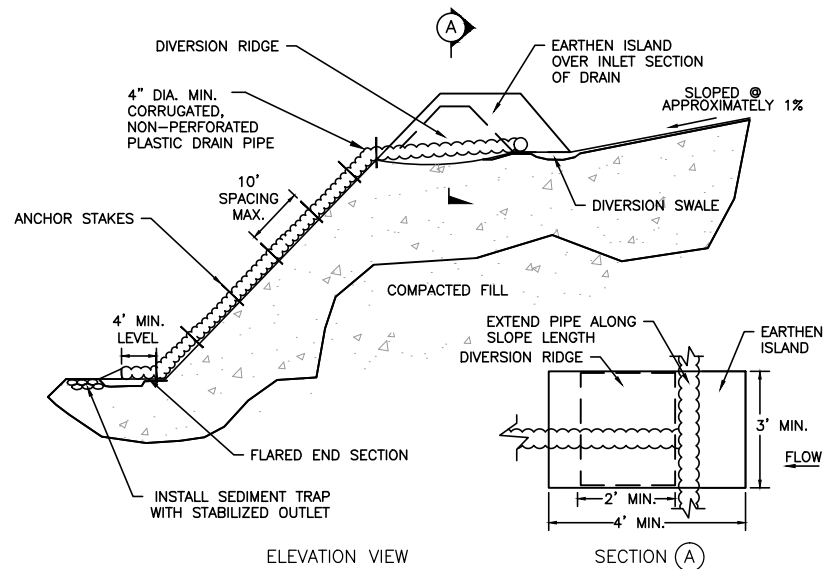
020



- NOTES:**
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
 2. INSPECT AND REPAIR AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN IT REACHES ONE-HALF HEIGHT OF FENCE OR FABRIC STARTS TO BULGE.
 3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
 4. TURN END OF SILT FENCE UP SLOPE TO PREVENT BYPASS FLOW AND ALLOW FOR PONDING.
 5. SEE TYPICAL SILT FENCE DETAIL FOR ADDITIONAL INFORMATION.

SILT FENCE ROCK OUTLET

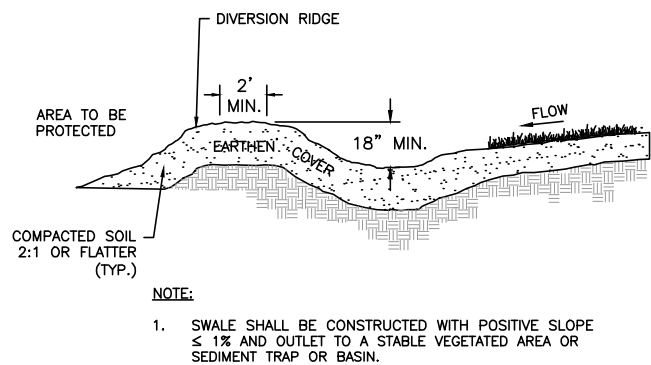
021



- NOTES:**
1. THE SLOPE DRAIN SHALL BE CONSTRUCTED/LENGTHENED WITH THE CONSTRUCTION OF THE FILL SLOPE, AS A RESULT, INLET ELEVATIONS WILL VARY ACCORDING TO GRADE ELEVATIONS AT THE TIME OF CONSTRUCTION.
 2. INSPECT SLOPE DRAIN AND SUPPORTING DIVERSIONS AFTER EVERY RAINFALL EVENT AND MAKE NECESSARY REPAIRS FOR PROPER OPERATION OF THE SYSTEM.
 3. UPON PROJECT COMPLETION, REMOVE THE SLOPE DRAIN AND PROPERLY STABILIZE ALL DISTURBED AREAS.

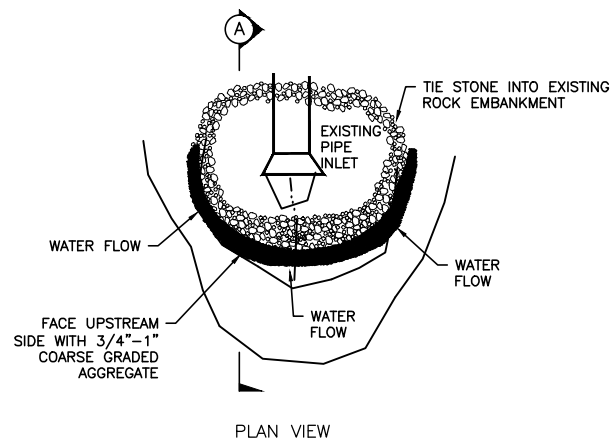
TEMPORARY SLOPE DRAIN

022



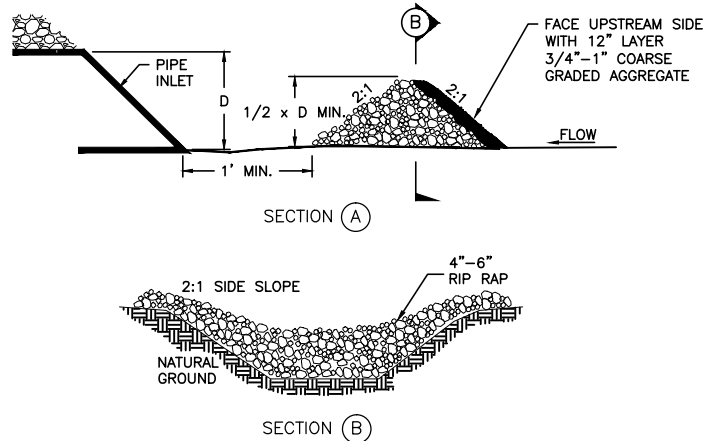
DIVERSION SWALE

023



ROCK PIPE INLET PROTECTION

024



REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED BY

DESIGN BY	DATE
CAM/MRW	12/18/2015
DRAWN BY	JOB NO.
KTH	—
CHECKED BY	APPROVED
MRW	CAM



STORM WATER POLLUTION PREVENTION PLAN
TYPICAL DETAILS

SCALE	
N.T.S.	
DRAWING NO.	
SHEET	OF
5	5

**Storm Water Pollution Prevention Plan
F684 Road Improvement Project
Hamilton County, Ohio**

Appendix C

Storm Water Evaluation Form for Construction

Storm Water Evaluation Form for Construction
 (Complete at least once per week and
 after each storm event of 0.5 inches or more.)

PUCO Case No. 19-1471-EL-BLN
 STAFF DR-02-008 Attachment 1
 Page 34 of 37



Project Name: F684 Road Improvement Project		Evaluation Date:
Construction Supervisor:		Evaluated By:
Reason for Evaluation: ☐ Routine ☐ Post Rain Event ☐ Non-Routine		
Location and Phase of Construction:		Conditions at time of evaluation? ☐ Dry ☐ Wet ☐ Frozen

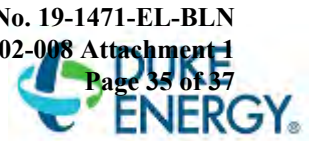
OBSERVATIONS	INSTALLED	CORRECTIVE ACTION NEEDED
Silt Fence	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Fiber Rolls/Filter Socks	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Check Dams	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Seeding/Mulching	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Erosion Control Blanket	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Construction Entrances	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Stream Crossings	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Wetland Crossings	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Concrete Washout Areas	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Is sediment or other pollutants leaving the site?	☐ Yes ☐ No If yes, corrective action is needed.	
Is sediment being tracked onto public roadways?	☐ Yes ☐ No If yes, corrective action is needed.	
Have any areas been left disturbed for 21 days or more?	☐ Yes ☐ No If yes, corrective action is needed.	

See Reverse Side for More Information and Additional Space for Comments

PUCO Case No. 19-1471-EL-BLN
STAFF DR-02-008 Attachment 1
Page 35 of 37

Storm Water Evaluation Form for Construction

(Complete at least once per week and
after each storm event of 0.5 inches or more.)



General Information:

- This storm water evaluation program is intended to comply with self-monitoring requirements and the project specific Storm Water Pollution Prevention Plan (SWPPP).
- A Storm Water Evaluation is required by a trained individual at a minimum of one (1) time per week and by the end of the next business day following each measurable storm event (total rainfall accumulation equal to one-half (0.5) inches or greater).
- Observed erosion and sediment control deficiencies shall be corrected within 7 days. Modifications to erosion and sediment control structures and/or locations shall be recorded in the SWPPP Amendment Log within 10 days.
- Areas that are scheduled to be inactive for 21 days or more must be temporarily or permanently stabilized with appropriate measures within 7 days of last disturbance.
- Erosion and sediment control structures shall be maintained until a vegetative cover of 70% or greater density in all disturbed, non-agricultural areas is achieved. At which time, all temporary erosion and sediment control structures shall be removed and Notice of Termination (NOT) will be filed with Ohio Environmental Protection Agency (OEPA).
- Completed Evaluation Forms to be submitted to Amanda Sheehe at 1000 East Main Street, Plainfield, IN 46168, (317) 838-2447, Jessica.Callaway@Duke-Energy.com
- Upon request, Evaluation Forms must be provided to inspecting authorities within 48 hours and must be retained for 3 years after project completion.

Additional Comments/Actions (attach photographs and additional pages as necessary):

**Storm Water Pollution Prevention Plan
F684 Road Improvement Project
Hamilton County, Ohio**

Appendix D

SWPPP Amendment Log

SWPPP Amendment Log

Project: F684 Road Improvement Project

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