

# INDOT Designer Workshop Storm Water Management

Environmental Services Division  
**Storm Water Permits Section**  
Indiana Department of Transportation



# Agenda

- Regulatory Big Picture
- Mechanics of a Rule 5 Submittal
- New Regulations/MS4
- New Standard Specifications
- Questions/Wrap up



# Storm Water Management

- **Why All the Expense and Effort?**
  - It's the law
  - Laws and regulations are becoming more strictly enforced
  - More entities have jurisdiction over storm water creating more oversight of construction activities
  - On-time and on-budget
    - Erosion issues are expensive and time-consuming to repair
    - Erosion can lead to structure damage
    - Can lead to hazardous road conditions
    - Violations can be expensive



# Rule 5

Rule 5 is the “Law” or “Permit” that gives an entity “Permission” to disturb land creating a situation where there is potential to discharge sediment. This permit must have a calculated plan to minimize sediment discharged during construction activities on one acre or more of soil disturbance.

Within the Rule 5 permit the entity (INDOT) explains exactly how they will construct the project in accordance with the law minimizing the potential to pollute.



# 327 IAC 15-5-5

## 327 IAC 15-5-5 NOI requirements

Authority: IC 13-14-8; IC 13-15-1-2; IC 13-15-2; IC 13-18-3; IC 13-18-4

Affected: IC 13-12-3-1; IC 13-18-1

### Sec. 5. (a) A complete NOI letter must contain the following:

- (1) Name, mailing address, and location of the project site for which the notification is submitted.
- (2) The project site owner's name, address, telephone number, e-mail address (if available), ownership status as federal, state, public, private, or other entity.
- (3) Contact person (if different than project site owner), person's name, company name, address, e-mail address (if available), Indiana Administrative Code Page 15  
**NPDES GENERAL PERMIT RULE PROGRAM**  
and telephone number.
- (4) A brief description of the construction project, including a statement of the total acreage of the project site. Total acreage claimed in the NOI letter shall be consistent with the acreage covered in the construction plan.
- (5) Estimated dates for initiation and completion of construction activities. Within forty-eight (48) hours of the initiation of construction activity, the project site owner must notify the commissioner and the appropriate plan reviewing agency of the actual project start date.
- (6) The latitude and longitude of the approximate center of the project site to the nearest fifteen (15) seconds, and the nearest quarter section, township, range, and civil township in which the project site is located.
- (7) Total impervious surface area, in square feet, of the final project site including structures, roads, parking lots, and other similar improvements.
- (8) The number of acres to be involved in the construction activities.
- (9) Proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity is to commence, that states, "(Company name, address) is submitting an NOI letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-5 to discharge storm water from construction activities for the following project: (name of the construction project, address of the location of the



# Parts of the Rule 5

- Notice of Intent
- Storm Water Pollution Prevention Plan (SWPPP)
- Sediment and Erosion Control Plans
- Notice of Sufficiency
- **Storm Water Quality Control Plan** (from Contractor) including sequencing
- Notice of Termination



# Notice of Intent

In the State of Indiana, for any construction site that will disturb **1 acre** or more of land, the project site owner must notify IDEM of their intent to operate their proposed construction project in a manner consistent with the Rule (Law). This is called

## Notice of Intent



# NOI

**RULE 5 - NOTICE OF INTENT (NOI)**  
 State Form 47487 (RS / 10-05)  
 Indiana Department of Environmental Management  
 Office of Water Quality  
 Approved by State Board of Accounts, 2005

Type of Submittal (Check Appropriate Box):  
 Initial  Amendment  Renewal  
 Permit Number: \_\_\_\_\_  
 (Note: The initial submittal does not require a permit number; the Department will assign a number. A permit number is required when filing an amendment, applying for renewal, or correspondence related to this permit).

Note: Submission of this Notice of Intent letter constitutes notice that the project site owner is applying for coverage under the National Pollution Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity, 327 IAC 15-6 (Rule 9), required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-6 (Rule 9).

**Project Name and Location**  
 Project Name: **I-465/ I-65 Interchange Modification & Added Travel Lanes** County: **Marion**  
 Brief Description of Project Location:  
**The proposed project begin just east of Carson Avenue and ends just west of Emerson Avenue along I-465 with total project length of 1.395 miles. The Construction begins Just north of Southport Rd. Interchange and ends just south of Hanna Avenue along I-65 with total construction length of 2.75 miles. All in Marion County.**

**Project Location: Describe location in Latitude and Longitude (Degrees, Minutes, and Seconds or Decimal representation) and by legal description (Section, Township, and Range, Civil Township)**  
 Latitude: **N 39 Deg. 42 Min. 35 Sec** Longitude: **W 86 Deg. 06 Min. 29 Sec.**  
 Quarter: \_\_\_\_\_ Section: **32,33,9,5** Township: **T14N, T15N** Range: **4E** Civil Township: **Perry**

Does  all or  part of this project lie within the jurisdictional boundaries of a Municipal Separate Storm Sewer System (MS4) as defined in 327 IAC 15-13?  
 Yes  No If yes, name the MS4(s):  
**City of Indianapolis**

**Project Site Owner and Project Contact Information**  
 Company Name (If Applicable): **Indiana Department of Transportation**  
 Project Site Owner's Name: (An Individual) **Richard Phillabaum** Title/Position: **Stormwater Team Leader**  
 Address: **100 N. Senate Avenue, Room N642**  
 City: **Indianapolis** State: **IN** ZIP Code: **46204**  
 Phone: **(317) 233-5151** FAX: **(317) 233-4329** E-Mail Address: (If Available) **rphillabaum@indot.in.gov**  
 Ownership Status (check one):  
 Governmental Agency:  Federal  State  Local Non-Governmental:  Public  Private  Other: (Explain) \_\_\_\_\_  
 Contact Person: **Darrel J. Paul, P.E.** Company Name: (If Applicable) **VS Engineering, Inc.**  
 Affiliation to Project Site Owner:  
**Consultant**  
 Address: (if different from above)  
**4275 N. High School Road**  
 City: **Indianapolis** State: **IN** ZIP Code: **46254**  
 Phone: **(317) 293-3542** FAX: **(317) 293-4737** E-Mail Address: (If Available) **djpaul@vsengineering.com**

**Project Information**  
 Project Description:  
 Residential-Single Family  Residential-Multi-Family  Commercial  Industrial  Other: (Explain) **Roadway/Transportation**  
 Name of Receiving Water:  
**Little Buck Creek, Wetnight Ditch, McFarland Creek, UNT 3 to Lick Creek, UNT 4 and UNT 5 to Beech Creek**  
 (Note: If applicable, name of municipal operator of storm sewer and the ultimate receiving water. If a retention pond is present on the property, the name of the nearest possible receiving water receiving discharge must be provided.)  
 Project Acreage  
 Total Acreage: **183.75 Acres** Proposed Land Disturbance: (in acres) **60.25 Acres**  
 Total Impervious Surface Area: (in square feet, estimated for completed project) **3555480 SFT**

List all MS4s

Include Des. Number

List all receiving waters including UNTs

Project Site Owner

Proposed Land Disturbance



# Acres of Disturbance

## Acreage:

- What counts?
- How is it calculated?
- What if the project is .98 acres?



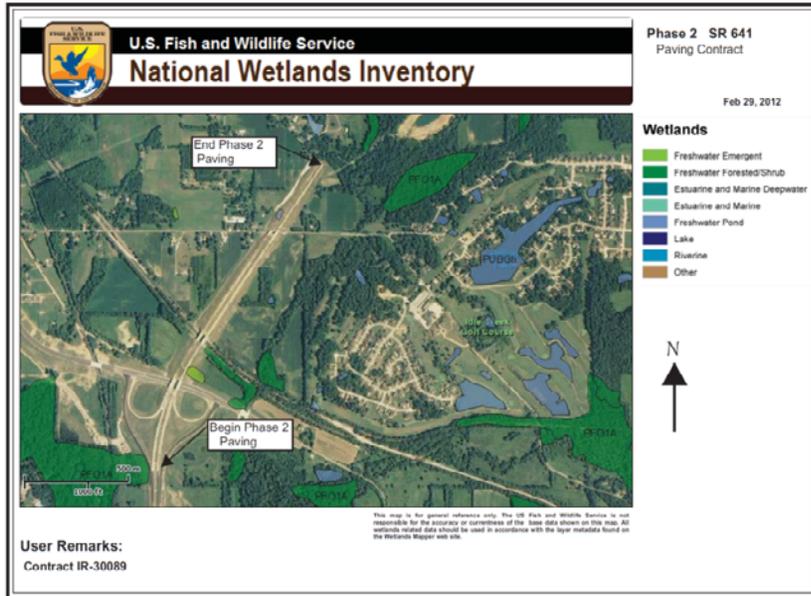
# SWPPP

The Storm Water Pollution Prevention Plan addresses three issues:

1. First, the plan outlines how to control storm water in order to limit erosion to minimize the discharge of sediment off-site or to a jurisdictional waterway.
2. Second the plan addresses other pollutants that may be associated with construction activity. This can include disposal of building materials, management of fueling operations, concrete washouts, emergency spill plan, etc.
3. Finally, the plan should also address pollutants that will be associated with the post-construction land use.



# SWPPP



## SR 641 GOLF LAKE DRAIN, WELLS COUNTY, INDIANA 19

There is no plan for any offsite construction activities related to this project within the construction limits.

The contractor is required to follow INDOT Standards and Specifications. The contractor is required to supply this information in accordance with said Specifications, Sections 203 and 205. The contractor will be responsible for obtaining all Rule 5 (32 IAC 15-5) requirements and receive approval prior to beginning work.

The existing graphical profile of the project is shown on the Plan and Profile sheets 7 and 8. In addition the Cross Sections, plan sheets 16 through 27, show the proposed information.

The proposed graphical profile of the project is shown on the Plan and Profile sheets 7 and 8. In addition, the Typical Cross Sections, plan sheets 16 through 27, show the proposed information.

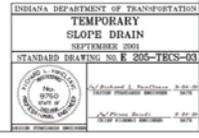
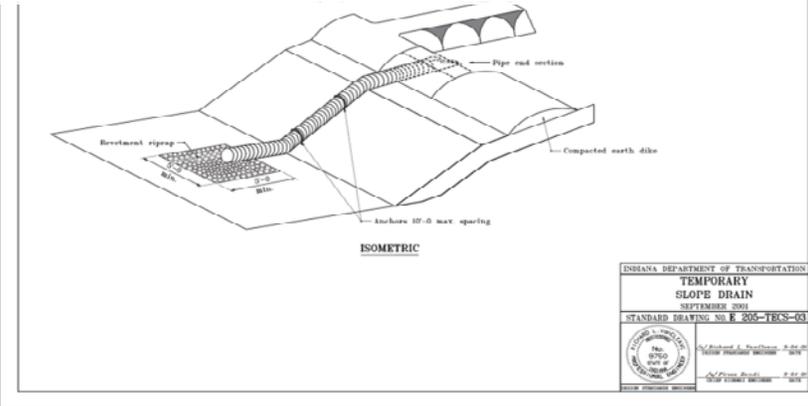


The contractor shall be responsible for identifying and controlling pollutants that can be expected to be generated during construction activities such as oil, gas, diesel, acids, and solvents used in maintenance products, concrete, form oil, etc. The contractor shall be responsible for preventing pollutants from construction and earth work.

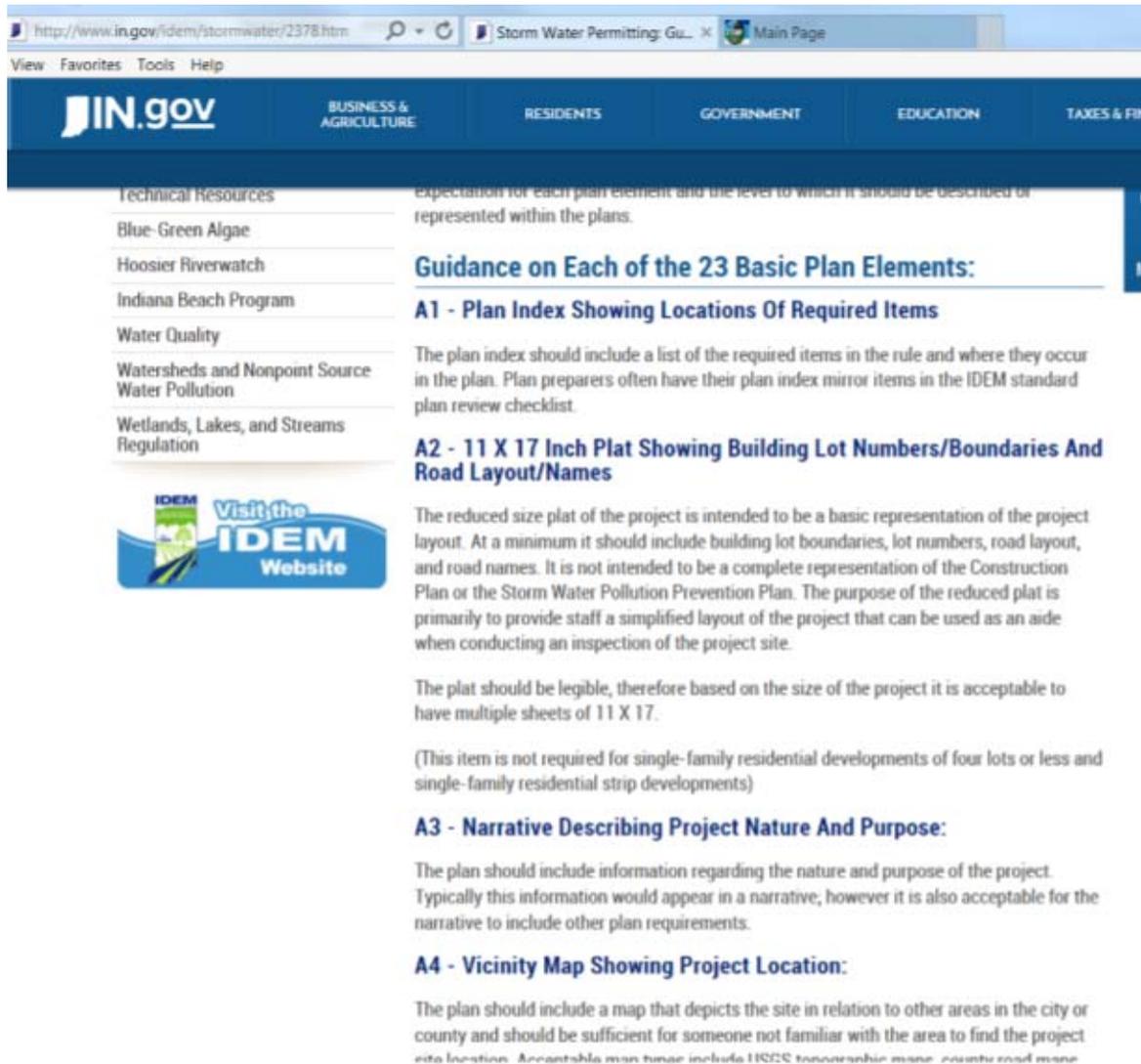
The contractor shall be responsible for identifying and controlling pollutants from fuel storage, soil stockpiles, material storage, equipment, and other sources. The contractor shall be responsible for identifying and controlling pollutants from these sources and shall supply this information in accordance with the specifications. The contractor will be responsible for complying with the specifications prior to beginning work.

The contractor shall follow the requirements of INDOT. This information shall be in accordance with the INDOT Standard Specifications, The INDOT Standards Drawings in Section 205, and the INDOT Special Provisions 108-C-192, 108-C-192d, and 205-C-230. During the construction, temporary erosion control measures will be constructed as designed and detailed on the Erosion Control Detail sheets, plan sheets 11 and 12. As construction progresses, each necessary erosion control measure shall be in place. The contractor shall maintain each measure as it is shown. Temporary seeding will also be required on bare earth that is undisturbed for more than 7 calendar days during construction. The contractor is encouraged to place temporary erosion control methods as soon as possible.

The contractor shall be responsible for identifying and controlling pollutants from the sequence of construction is to close the road. Once construction has been completed, permanent erosion control measures called for on the Plan and Profile sheets 7 and 8, and on the Construction Detail sheets, plan sheets 9 and 10, shall be in place. The contractor is expected to conform to the normal industry practice of placing the permanent erosion control measures as timely as possible. The contractor is required to follow all INDOT guidelines.



# IDEM Guidance on SWPPPs



The screenshot shows a web browser window with the URL <http://www.in.gov/idem/stormwater/2378.htm>. The page features a navigation menu with categories: BUSINESS & AGRICULTURE, RESIDENTS, GOVERNMENT, EDUCATION, and TAXES & FINA. A sidebar on the left lists technical resources: Technical Resources, Blue-Green Algae, Hoosier Riverwatch, Indiana Beach Program, Water Quality, Watersheds and Nonpoint Source Water Pollution, and Wetlands, Lakes, and Streams Regulation. The main content area is titled "Guidance on Each of the 23 Basic Plan Elements:" and includes sections for A1 - Plan Index Showing Locations Of Required Items, A2 - 11 X 17 Inch Plat Showing Building Lot Numbers/Boundaries And Road Layout/Names, A3 - Narrative Describing Project Nature And Purpose:, and A4 - Vicinity Map Showing Project Location:.

Expectation for each plan element and the level to which it should be described or represented within the plans.

### Guidance on Each of the 23 Basic Plan Elements:

#### A1 - Plan Index Showing Locations Of Required Items

The plan index should include a list of the required items in the rule and where they occur in the plan. Plan preparers often have their plan index mirror items in the IDEM standard plan review checklist.

#### A2 - 11 X 17 Inch Plat Showing Building Lot Numbers/Boundaries And Road Layout/Names

The reduced size plat of the project is intended to be a basic representation of the project layout. At a minimum it should include building lot boundaries, lot numbers, road layout, and road names. It is not intended to be a complete representation of the Construction Plan or the Storm Water Pollution Prevention Plan. The purpose of the reduced plat is primarily to provide staff a simplified layout of the project that can be used as an aide when conducting an inspection of the project site.

The plat should be legible, therefore based on the size of the project it is acceptable to have multiple sheets of 11 X 17.

(This item is not required for single-family residential developments of four lots or less and single-family residential strip developments)

#### A3 - Narrative Describing Project Nature And Purpose:

The plan should include information regarding the nature and purpose of the project. Typically this information would appear in a narrative, however it is also acceptable for the narrative to include other plan requirements.

#### A4 - Vicinity Map Showing Project Location:

The plan should include a map that depicts the site in relation to other areas in the city or county and should be sufficient for someone not familiar with the area to find the project site location. Acceptable map types include USGS topographic maps, county road maps,



# IDEM Guidance on SWPPPs

Guidance can also be found right in the Rule 5 Law...

327 IAC 15-5-6.5 Requirements for construction plans.

## NPDES GENERAL PERMIT RULE PROGRAM

### 327 IAC 15-5-6.5 Requirements for construction plans

Authority: IC 13-14-8; IC 13-15-1-2; IC 13-15-2; IC 13-18-3; IC 13-18-4

Affected: IC 13-12-3-1; IC 13-18-1

Sec. 6.5. (a) For project sites that do not meet the criteria in subsection (b), the project site owner shall develop a set of construction plans. Storm water quality measures included in the plan must achieve the minimum project site requirements specified in section 7 of this rule. The construction plans must include the following:

- (1) Project narrative and supporting documents, including the following information:
  - (A) An index indicating the location, in the construction plans, of all information required by this subsection.
  - (B) Description of the nature and purpose of the project.
  - (C) Legal description of the project site. The description should be to the nearest quarter section, township, and range, and include the civil township.
  - (D) Soil properties, characteristics, limitations, and hazards associated with the project site and the measures that will be integrated into the project to overcome or minimize adverse soil conditions.
  - (E) General construction sequence of how the project site will be built, including phases of construction.
  - (F) Hydrologic Unit Code (14 Digit) available from the United States Geological Survey (USGS).
  - (G) A reduced plat or project site map showing the lot numbers, lot boundaries, and road layout and names. The reduced map must be legible and submitted on a sheet or sheets no larger than eleven (11) inches by seventeen (17) inches for all phases or sections of the project site.
  - (H) Identification of any other state or federal water quality permits that are required for construction activities associated with the owner's project site.
- (2) Vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads, such as a USGS topographic quadrangle map or county or municipal road map.
- (3) An existing project site layout that must include the following information:
  - (A) Location and name of all wetlands, lakes, and water courses on or adjacent to the project site.
  - (B) Location of all existing structures on the project site.
  - (C) One hundred (100) year floodplains, floodway fringes, and floodways. Please note if none exists.
  - (D) Soil map of the predominant soil types, as determined by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey, or an equivalent publication, or as determined by a soil scientist. A soil legend must be included with the soil map.
  - (E) Identification and delineation of vegetative cover, such as grass, weeds, brush, and trees, on the project site.
  - (F) Land use of all adjacent properties.
  - (G) Existing topography at a contour interval appropriate to indicate drainage patterns.
- (4) Final project site layout, including the following information:
  - (A) Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas.
  - (B) One hundred (100) year floodplains, floodway fringes, and floodways. Please note if none exists.
  - (C) Proposed final topography at a contour interval appropriate to indicate drainage patterns.
- (5) A grading plan, including the following information:
  - (A) Delineation of all proposed land disturbing activities, including off-site activities that will provide services to the project site.
  - (B) Location of all soil stockpiles and borrow areas.
  - (C) Information regarding any off-site borrow, stockpile, or disposal areas that are associated with a project site and under the control of the project site owner.
  - (D) Existing and proposed topographic information.
- (6) A drainage plan, including the following information:
  - (A) An estimate of the peak discharge, based on the ten (10) year storm event, of the project site for both preconstruction and postconstruction conditions.
  - (B) Location, size, and dimensions of all storm water drainage systems, such as culverts, storm sewers, and conveyance



# SWPPP

- **Items to not to forget in the narrative of the SWPPP**
  - Inlet Protection: Secondary Containment
  - Concrete Washout: Pollutant of Concern
  - Include RSP 108-c-192d
  - Current Standard Specifications and Drawings
  - Special Provisions
  - MOUs
  - Stream impacts
  - Sequencing

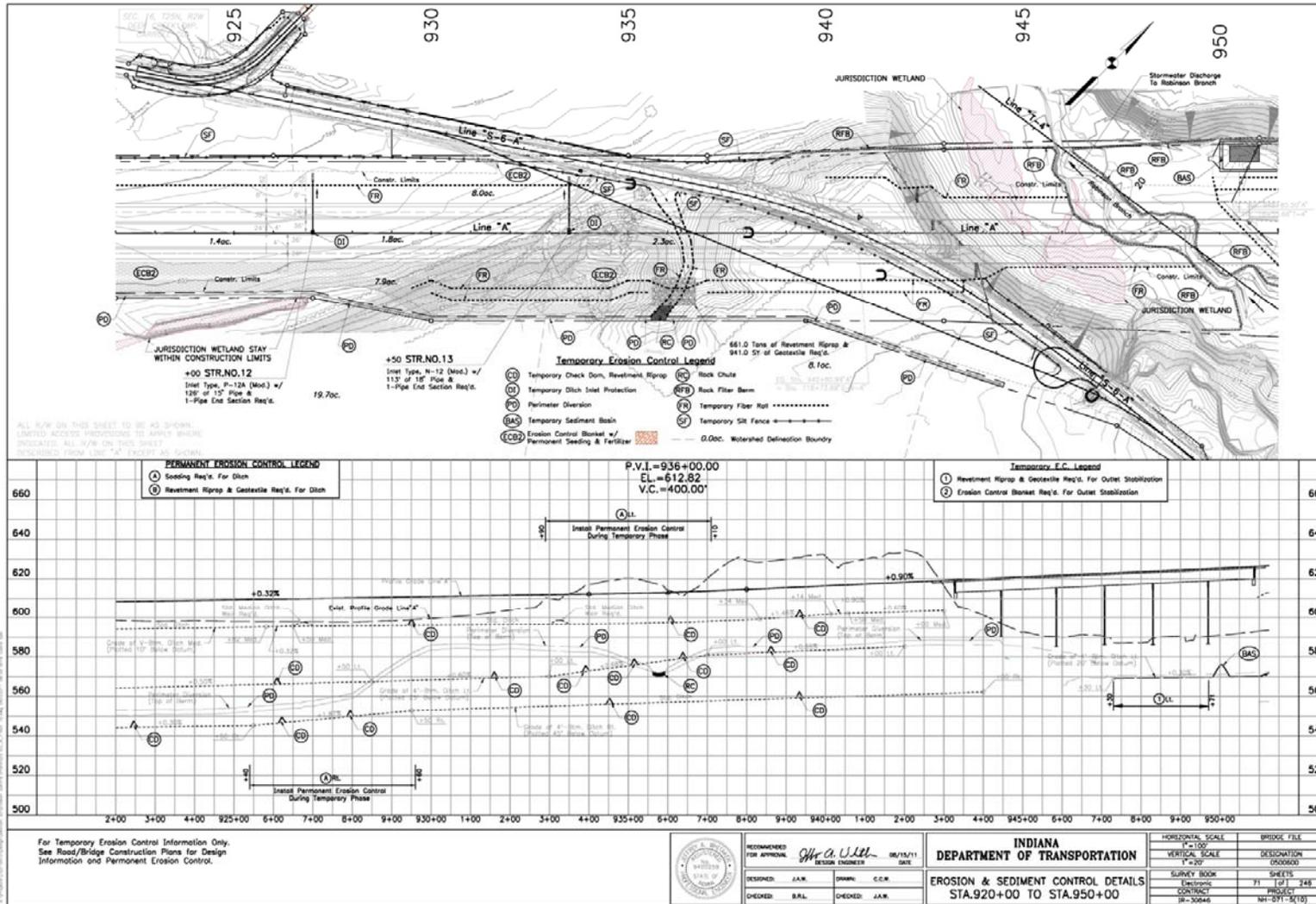


# Construction Plans

The construction plan or sediment and erosion control plan is also a requirement of the Rule 5. In this document, the applicant or site owner demonstrates on a plan set exactly how they plan on constructing their project in a way that minimizes erosion and controls the movement of sediment.



# Construction Plans



# Construction Plans

- **What's Required (327 IAC 15-5-6.5)**
  - Jurisdictional waterways are labeled
  - Wetlands are labeled
  - Topography
  - Direction of water/drainage flow
  - Erosion and sediment control measures at all phases of construction.
  - Quantities of Sediment and Erosion Control items
  - Stream impacts (pump around, crossings, etc.)





# 327 IAC 15-5-6.5

## ■ Sequencing: Why Is It Important?

(7) A storm water pollution prevention plan associated with construction activities. The plan must be designed to, at least, meet the requirements of sections 7 and 7.5 of this rule and must include the following:

(E) Construction sequence describing the relationship between implementation of storm water quality measures and stages of construction activities.



# Construction Plans

## ■ Common Omissions on Plans

- Adequate quantities of seed and mulch, or quantities of anything...
- Scour protection from bridge deck drains
- Haul roads to get equipment down under a bridge and associated sediment and erosion control
- Protection for pipes such as driveway culverts
- Protection at super-elevated curves
- Stream impacts



# Construction Plans

- **Common Omissions on Plans** (cont.)
  - Correct sizing of measures such as sediment traps, show data
  - Modified check dams
  - Check dams spaced correctly; toe to crest
  - Proper accounting for off-site drainage or watersheds
  - Correct shaping of rock chutes
  - Design for site conditions (consider stream's behavior)



# Super-Elevated Curve Protection



# Super-Elevated Curve Protection



# Super-Elevated Curve Protection



# Rock Chutes



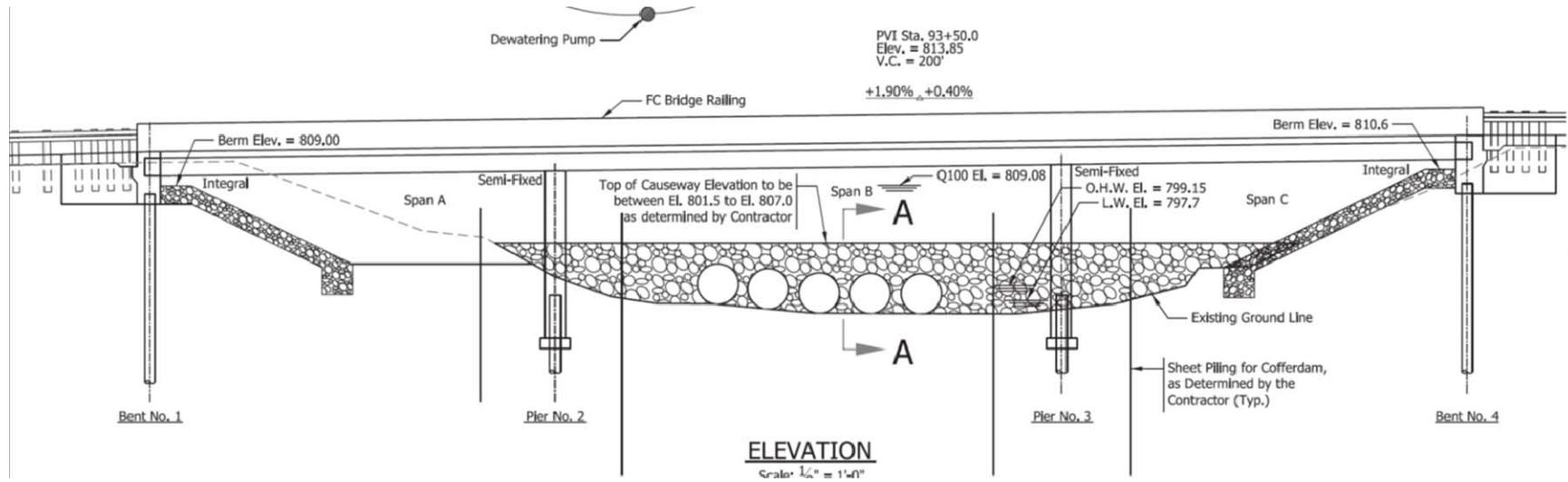
# Slope Protection



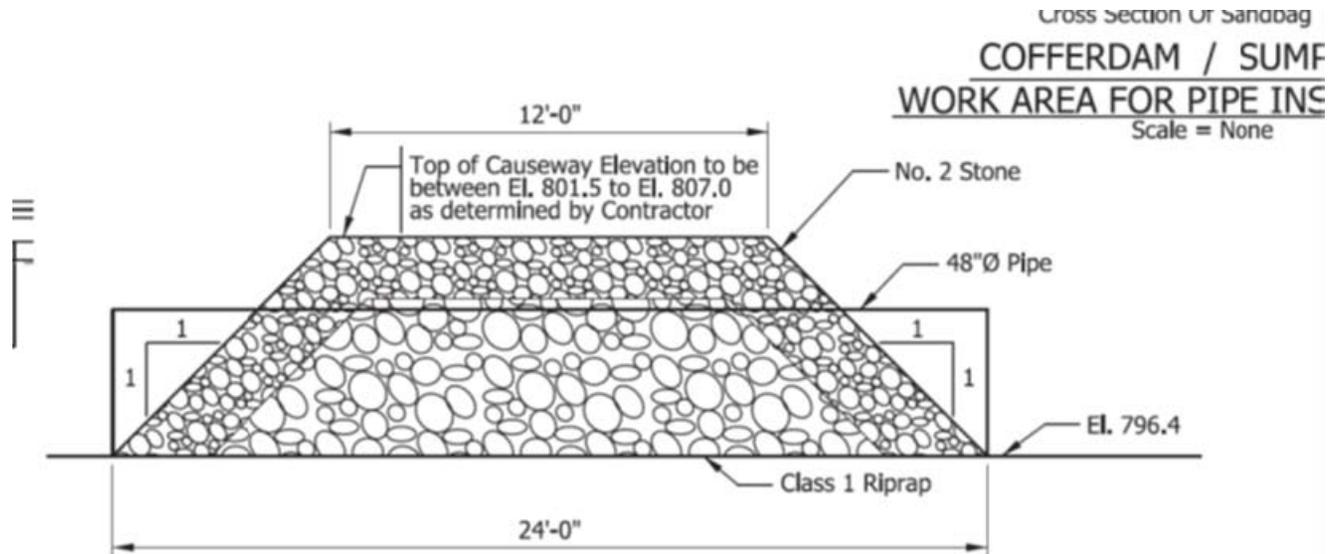
# Haul Roads



# Site/Stream Conditions



# Site/Stream Conditions



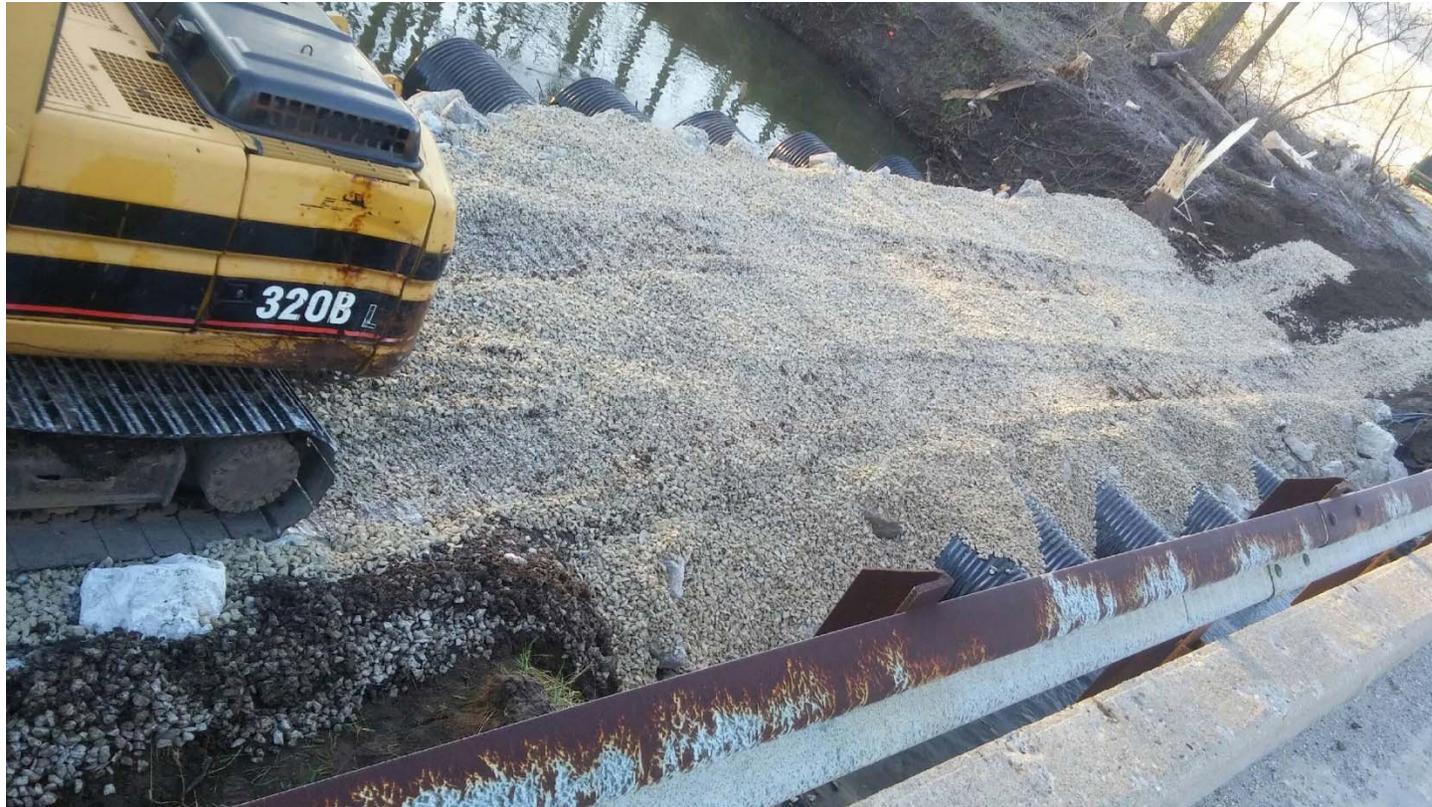
**SECTION A-A**

Scale:  $\frac{1}{4}" = 1'-0"$

TEMPORARY :			
STATION LINE "A"	DRAINAGE AREA	MIN. DEPTH STORAGE REQUIRED	STOP PROW
	Acre	Cu. Ft.	Cu.
92+90	0.80	1404	22



# Site/Stream Conditions



# Site/Stream Conditions



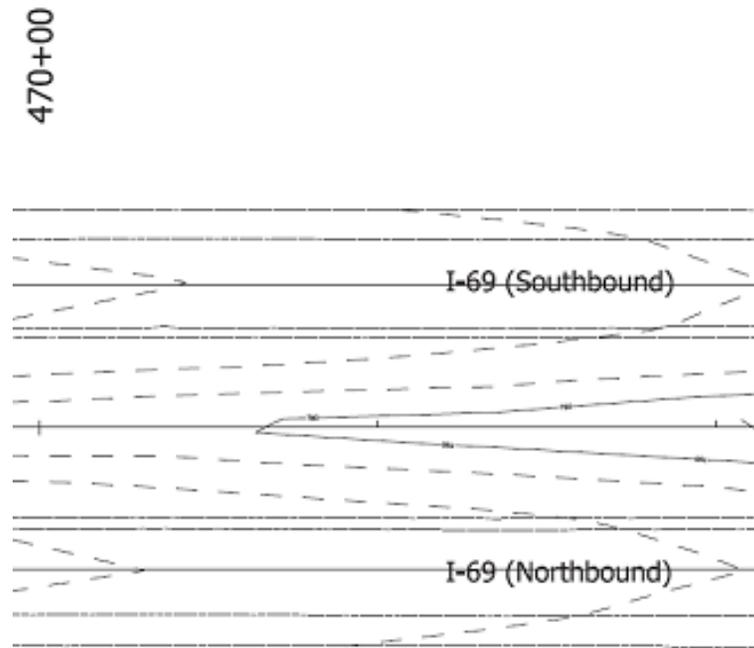
# Site/Stream Conditions



# Site/Stream Conditions



# Legible Plans



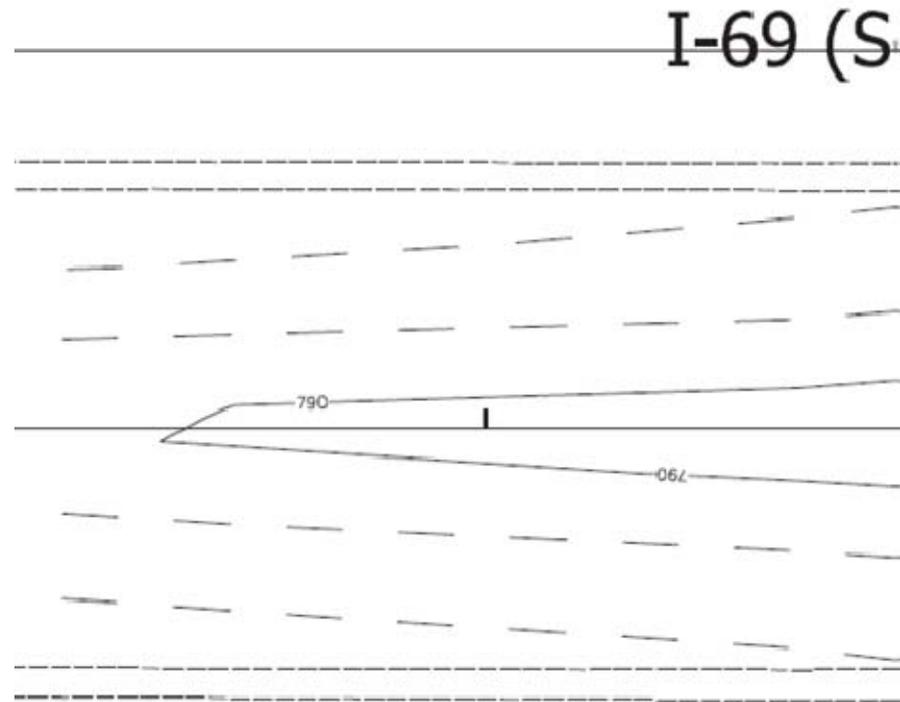
Appearance of  
Topographical lines on  
11 x 17 paper

Elements on the plan need to be drawn so that they are **legible** at a normal printed size per Rule 5 law. **11 x 17** is the largest size we are allowed to submit.

Over layering symbols and information can create a set of plans that are impossible to read.



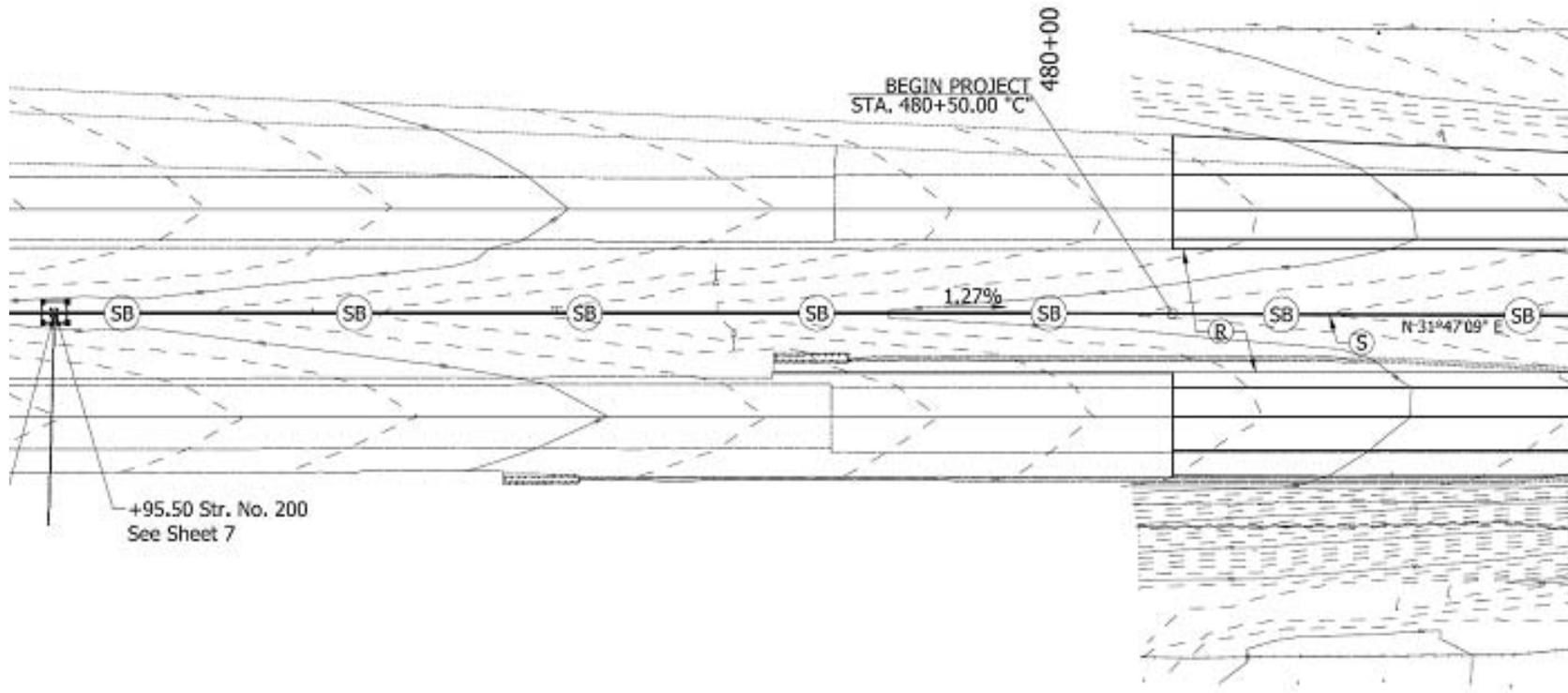
# Topographical Lines



Same page blown up 800%



# Construction Plans Legend



# Construction Plans Legend

## LEGEND:

-  Temporary Check Dam, Traversable For Clear Zone (See INDOT Standard Drawing No. E 205-TECD-02)
-  Temporary Ditch Inlet Protection, Geotextile Box (See INDOT Standard Drawing No. E 205-TECI-02)
-  Seed Mixture, R
-  Sodding

## NOTE:



# NOS: Notice of Sufficiency

After the Rule 5 application process is completed and approved by IDEM, IDEM issues a:

## Notice of Sufficiency

This document, like the NOI, must be posted at the job site.



# NOS



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

Michael R. Pence  
Governor

Thomas W. Easterly  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://www.idem.IN.gov)

April 3, 2013

65-42 WQS/RJB  
Richard Phillabaum  
INDOT  
100 N Senate Avenue Rm N-642  
Indianapolis, IN 46204

Dear Mr Phillabaum:

Re: **Notice of Sufficiency**  
INR10G256  
INDOT DES #0902297 I-465/I-65  
Interchange Modification & Added Travel  
Lanes  
Marion County

The Notice of Intent (NOI) letter submitted for the project referenced above has been reviewed by the Indiana Department of Environmental Management (IDEM) to determine compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit for storm water discharge associated with construction activity (327 IAC 15-5). The items contained in the NOI are sufficient. This letter is being issued for 327 IAC 15-5 and does not constitute approval to conduct activities that are related to other local, state, or federal permits.

An NPDES general permit identification number has been assigned to this project. This number and the above referenced project name should be included on any correspondence or amended NOI information submitted to IDEM pertaining to this project. The general permit number assigned to this project is: **INR10G256**.

It is important that all activities associated with your site are in compliance with the requirements of 327 IAC 15-5 (Rule 5) and any local storm water permits. In accordance with 327 IAC 15-5-10, you are required to implement your construction plan, implement and maintain all storm water quality measures, and monitor the effectiveness of the storm water quality measures until the project is complete.

All Notices of Intent submitted for Rule 5 NPDES general permit coverage are automatically limited to a maximum term length of 5 years (327 IAC 15-5-12). The General Permit issued for the project referenced above will expire on **3/22/2018**. If this project requires coverage beyond this date the applicant must reapply for a new permit 90 days prior to the expiration date.

Permit  
Number

Expiration  
Date

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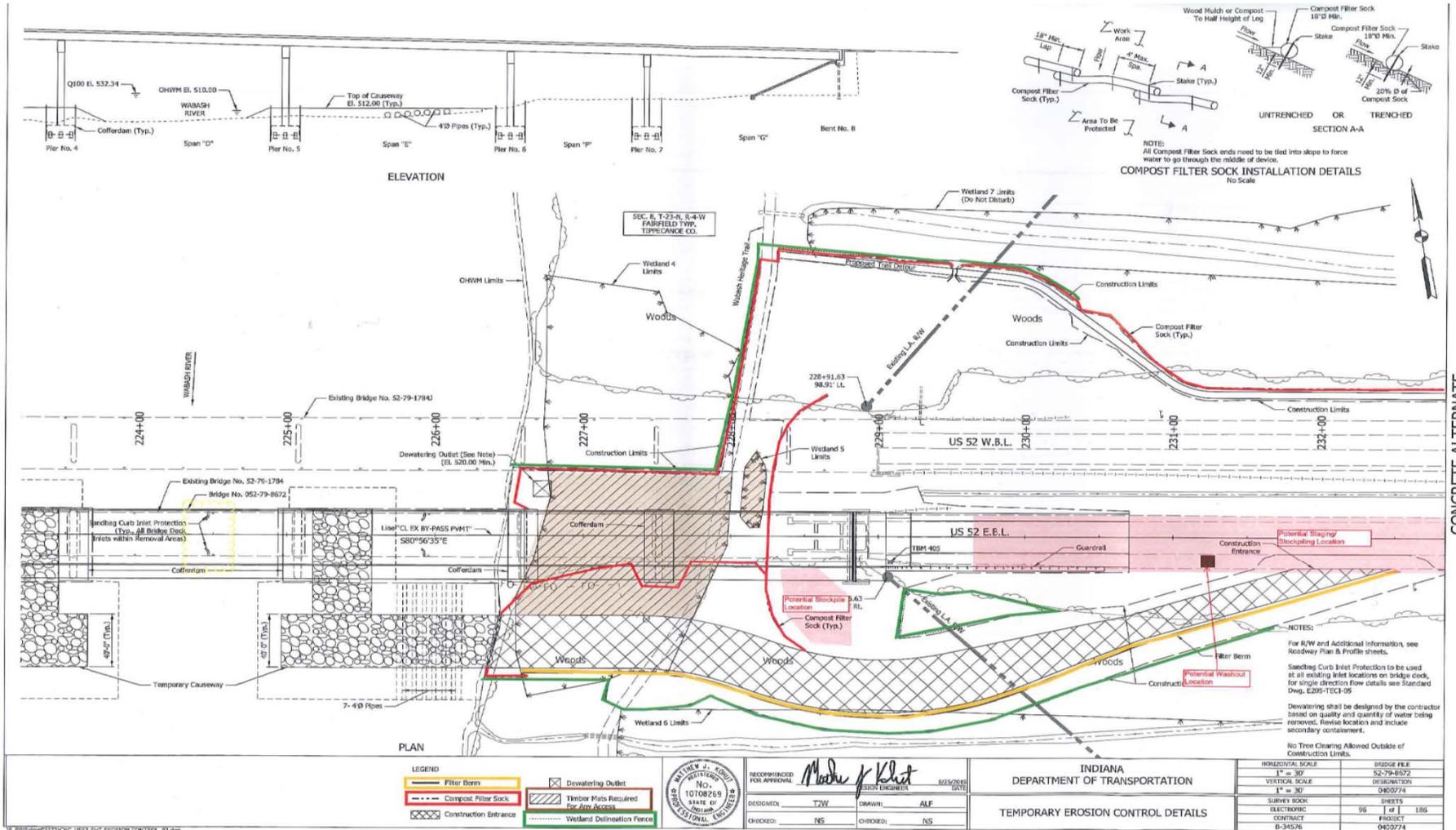
# 108.04 Amended Erosion Control Plan

- Amended SWPPP
- Contractor's Erosion Control Plan
- Storm Water Quality Control Plan
- Storm Water Management Plan



???????

# Storm Water Quality Control Plan



CONCRETE ALTERNATE



# Storm Water Quality Control Plan

- New Emphasis in the New RSP 205-R-636
- Developed by the contractor via a professional engineer called the SWQCP Developer (Designer)
- The contractor's SWQCP Designer required to have CPESC or CPESC in-training or approved equivalent
- The SWQCP Designer shall issue clarifications, correct errors and omissions, and revise the SWQCP as required
- **Cannot substitute lesser BMPs from original plan.**
- The Contractor's SWQCP shall be stamped by the SWQCP designer, as defined above



# Storm Water Quality Control Plan

- Address phasing and sequencing of installation, maintenance and removal of storm water management measures
- Must include haul roads, stockpiles sites, equipment storage sites, concrete washout sites, plant sites, disposal of hydro demo waste water, and borrow and disposal sites, etc....
- Must be submitted to the INDOT Engineer 14 days prior to operations, but can be submitted in phases.
- Until in mandatory usage, follow 2016 Standard Specs 108.04, 205



# Best Management Practices BMPs

- **Traversable Check Dams**

- Clear Zone, low velocity flows only

- **Modified Check Dams**

- One-quarter of check dams
- Modified check dam nearest to sediment trap/basin
- Need to be installed in areas where they can be maintained

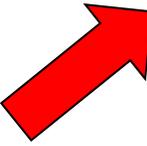
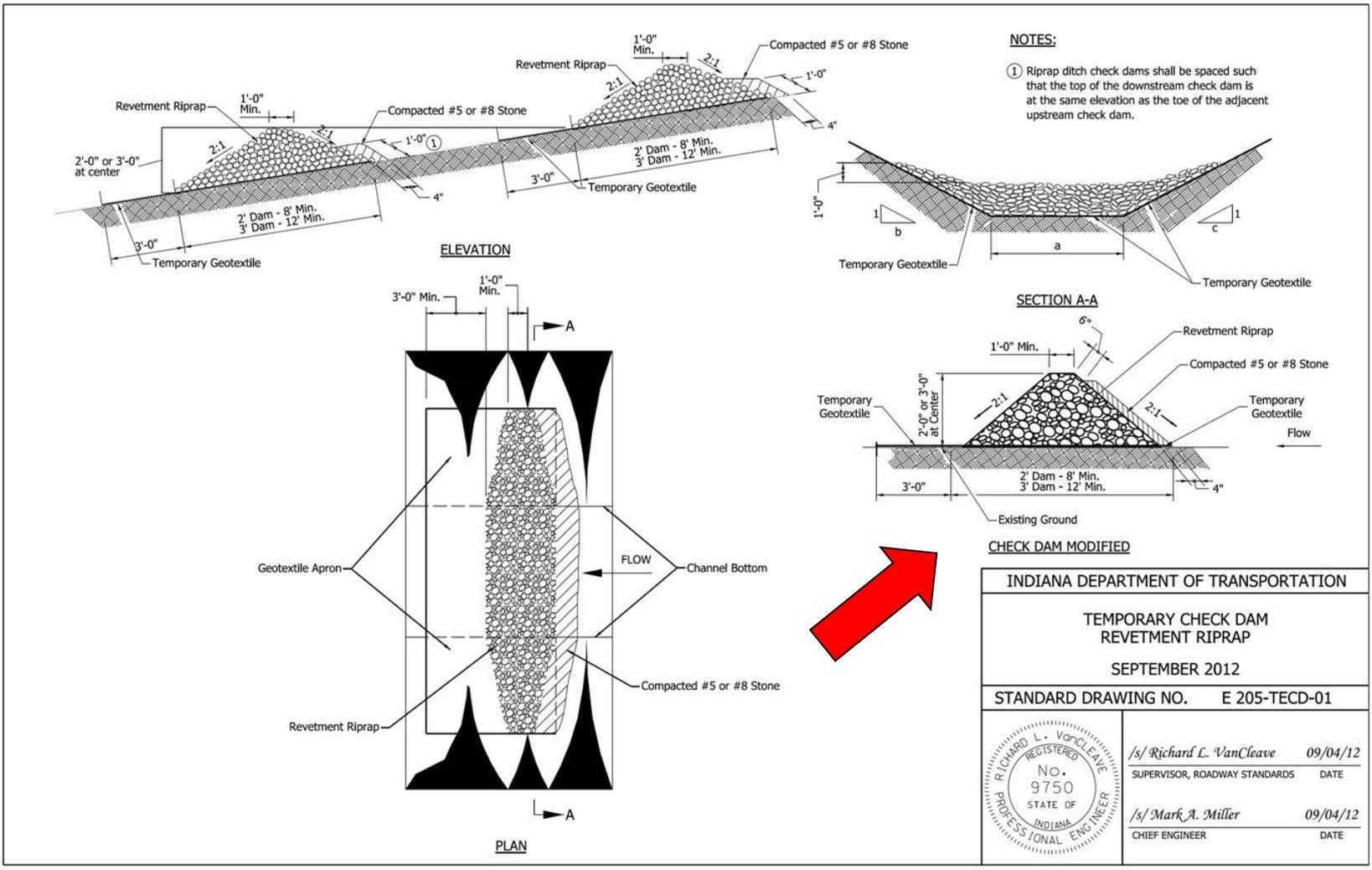
- **Slope Drains**

- **Erosion Control Blanket**

- Encouraged on Slopes 3:1 or greater, required on 2:1
- Around wing walls and other weak spots
- Stream banks

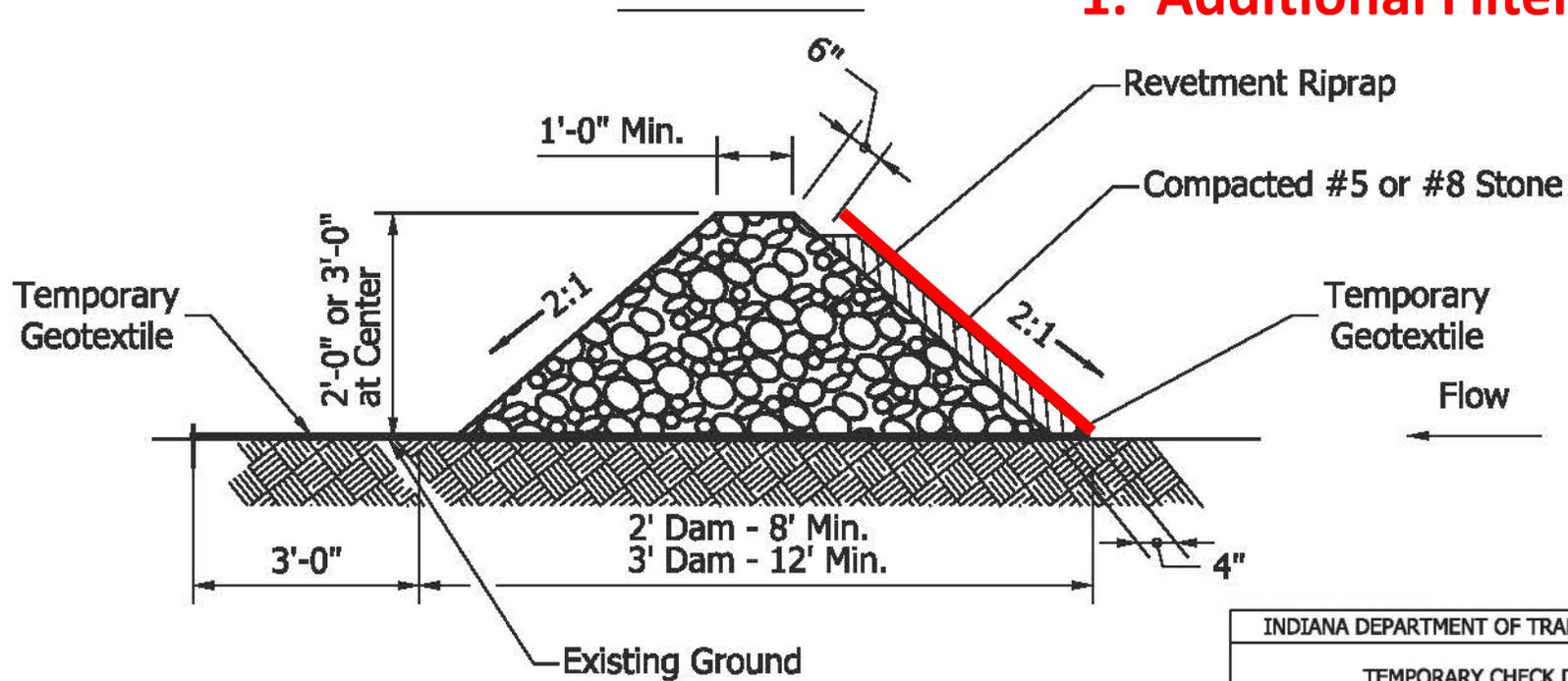


# Standard Drawing Check Dam



# Standard Drawings-Modified Check Dam

## 1. Additional Filter Stone



**CHECK DAM MODIFIED**

INDIANA DEPARTMENT OF TRANSPORTATION	
TEMPORARY CHECK DAM REVETMENT RIPRAP	
SEPTEMBER 2012	
STANDARD DRAWING NO.	E 205-TECD-01
	/s/ Richard L. VanCleave      09/04/12 SUPERVISOR, ROADWAY STANDARDS      DATE
	/s/ Mark A. Miller      09/04/12 CHIEF ENGINEER      DATE



# BMPs

- Pipe Protection



# BMPs



# BMPs

## ■ Sediment Traps

- Must show:
  - Storage required, storage provided
  - Drainage area
  - Spillway height
  - Spillway width
  - Remember a Sediment Trap is a perimeter protection- needs to be placed as close to receiving waters as possible with little to no unprotected area in between

## ■ Sediment Basins

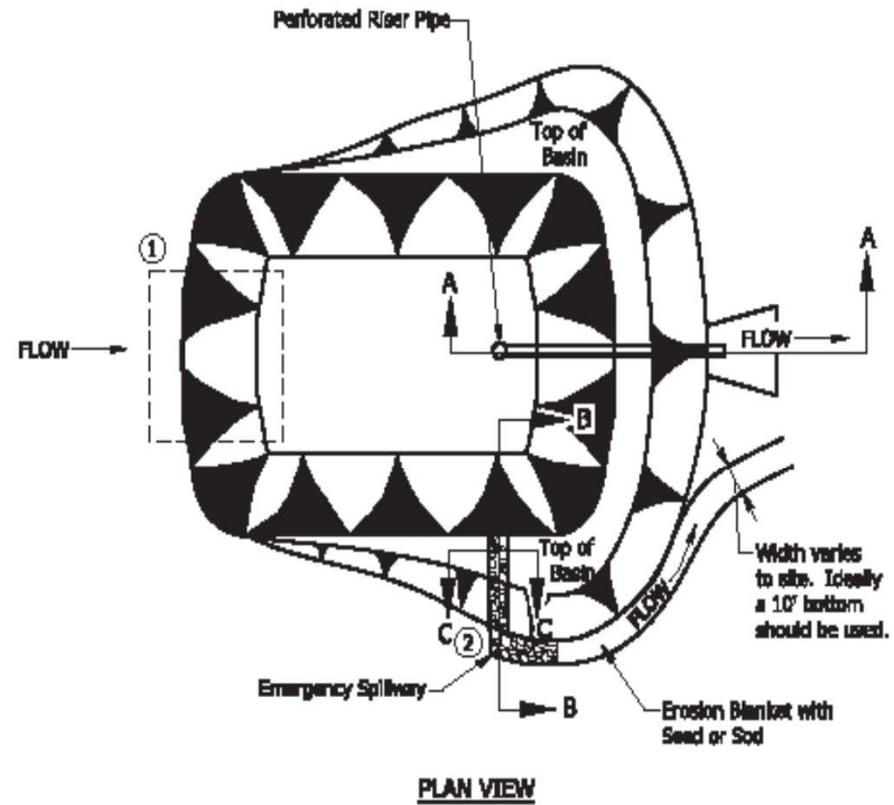
- Must show individual detail for each



# BMPs

In the INDOT Design Manual a sediment basin is depicted to show all required design elements.

However each individual sediment basin must be drawn to site specific watershed and conditions.



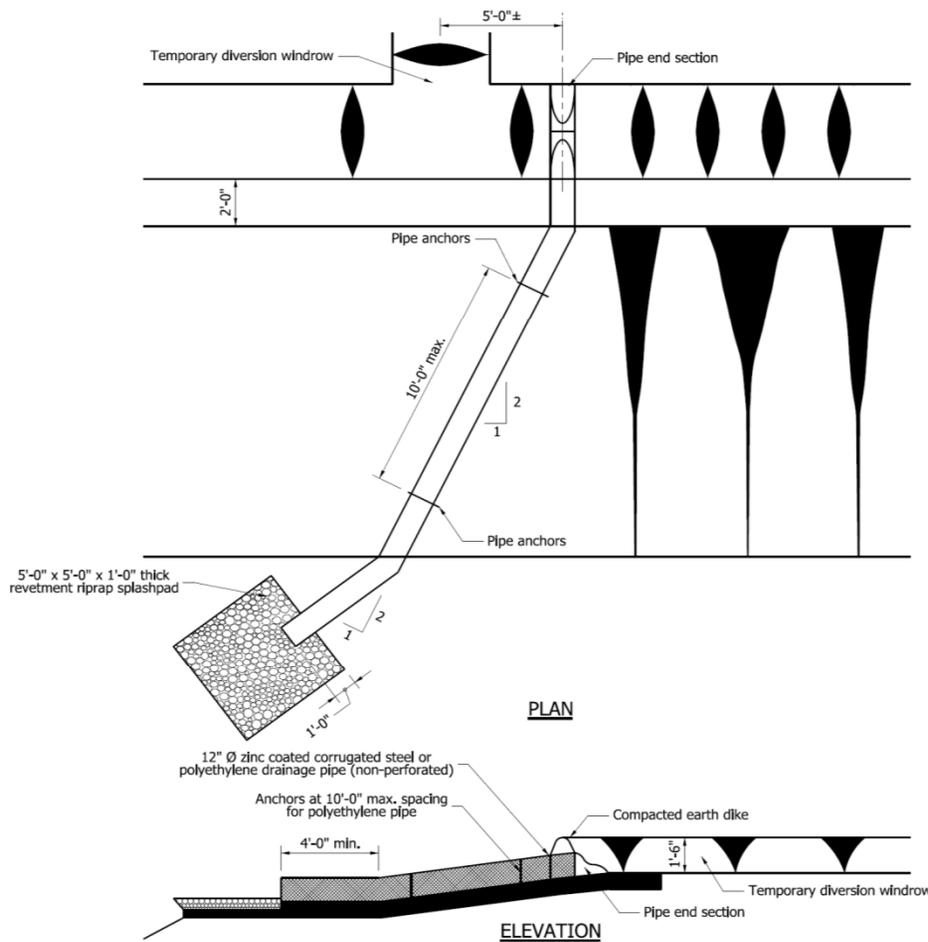
SEDIMENT BASIN

# BMPs

- **Slope Drains – Diverting Storm Water**



# BMPs



**NOTES:**

1. Length of slope drain shall be extended as required as fill slope is constructed.
2. The maximum drainage area for a 12" dia. pipe is 1 acre.
3. The required revetment riprap weight is 1.4 tons.

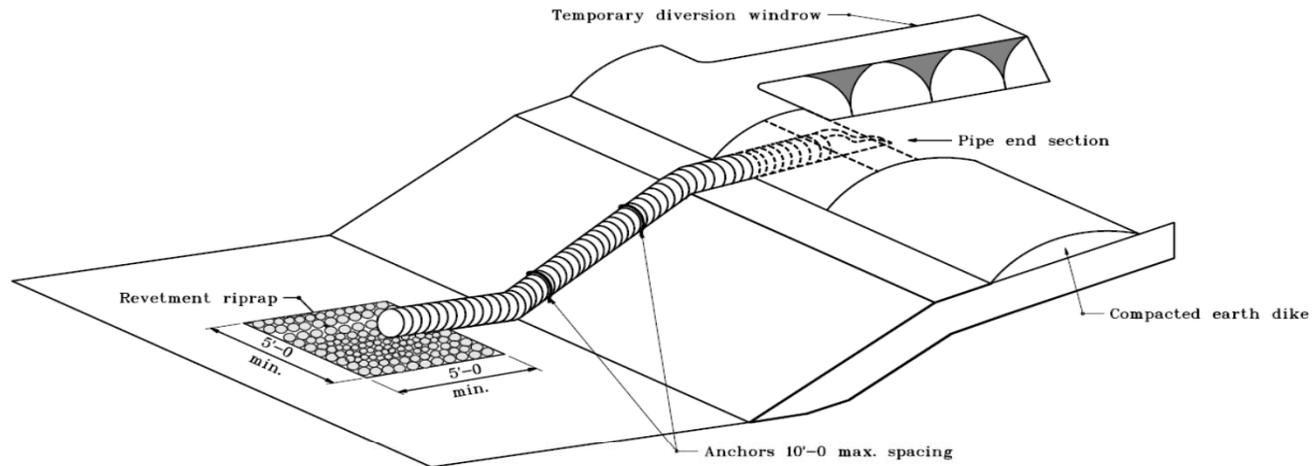
INDIANA DEPARTMENT OF TRANSPORTATION	
TEMPORARY SLOPE DRAIN	
SEPTEMBER 2010	
STANDARD DRAWING NO. E 205-TECS-02	
	/s/ Richard L. VanCleave 09/01/10 DESIGN STANDARDS ENGINEER DATE
	/s/ Mark A. Miller 09/01/10 CHIEF HIGHWAY ENGINEER DATE
DESIGN STANDARDS ENGINEER	



# BMPs

**NOTES:**

1. See Standard Drawing E 205-TECS-02 for Notes.



**ISOMETRIC**

INDIANA DEPARTMENT OF TRANSPORTATION	
<b>TEMPORARY SLOPE DRAIN</b>	
SEPTEMBER 2001	
STANDARD DRAWING NO. E 205-TECS-03	
	/s/ Richard L. VanCleave 9-04-01 DESIGN STANDARD ENGINEER DATE
	/s/ Ferooz Zandi 9-04-01 CHIEF HIGHWAY ENGINEER DATE



# BMPs

Slope drain not on plans for “subsurface drains” or underdrains. The velocity of the water causes rills which turn in to gullies. These almost always do not have designed protection



# BMPs

- **Diversion Interceptors – Diverting Storm Water**

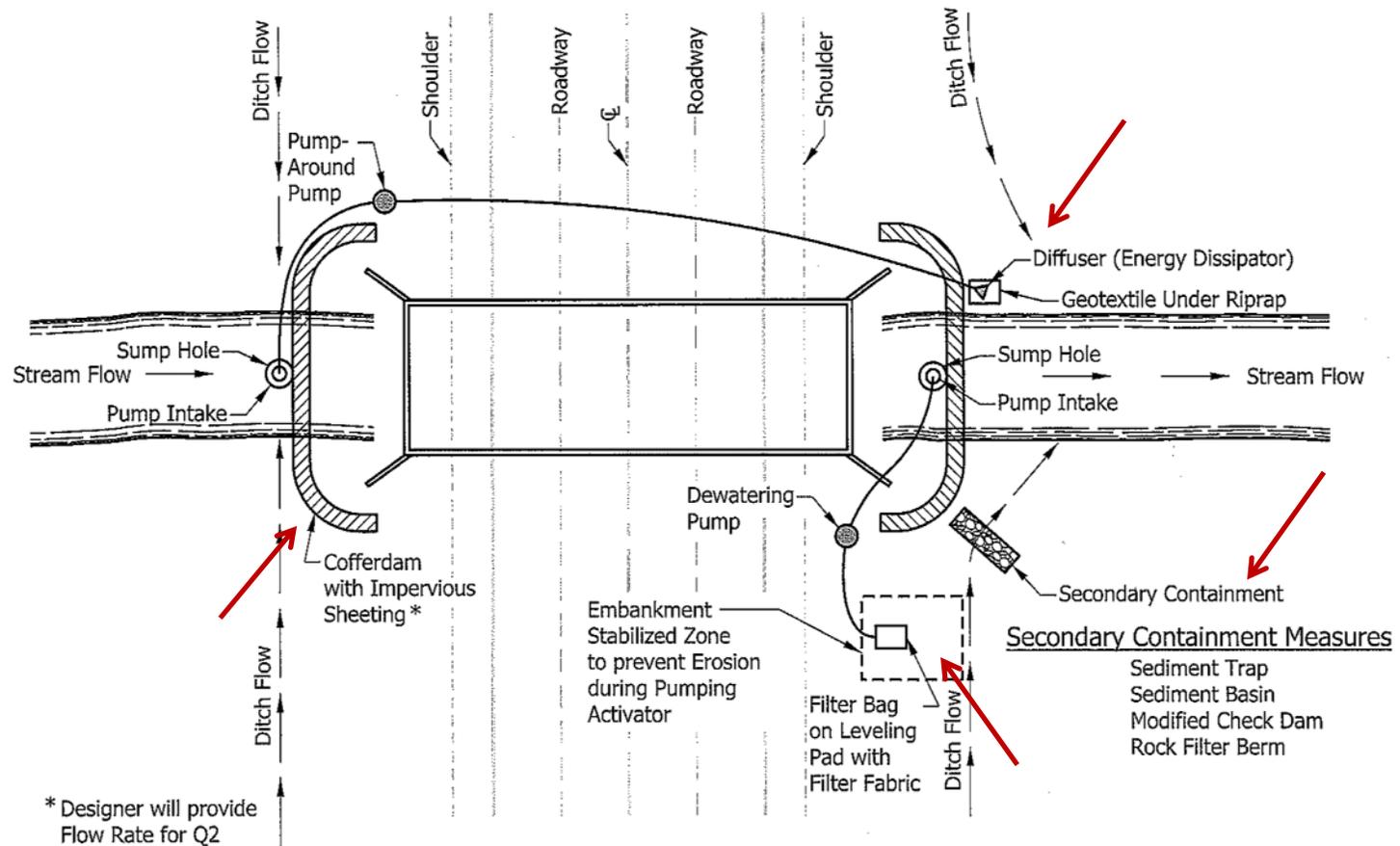


# Stream Impacts

- **All Stream Impacts must be in the Rule 5/SWPPP**
  - Stream Crossings
  - Causeways
  - Haul Roads leading down to stream impacts
  - Pump Arounds
  - Dewatering
  - Coffer Dams
  - Scour Protection around piers

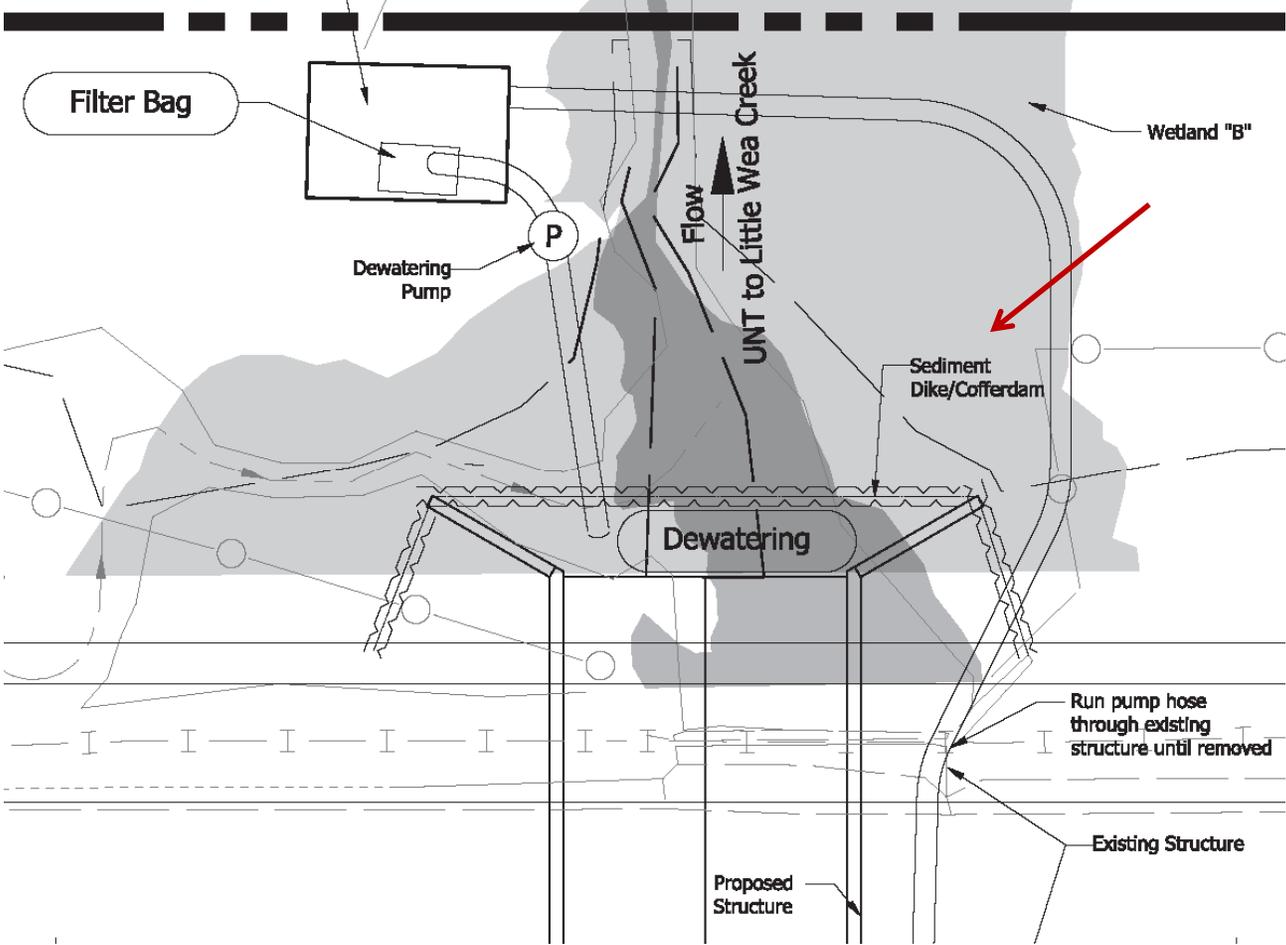


# Stream Impacts



PUMP AROUND AND DEWATERING DETAILS

# Stream Impacts



# Stream Impacts



# Stream Impacts



# Stream Impacts



# Stream Impacts

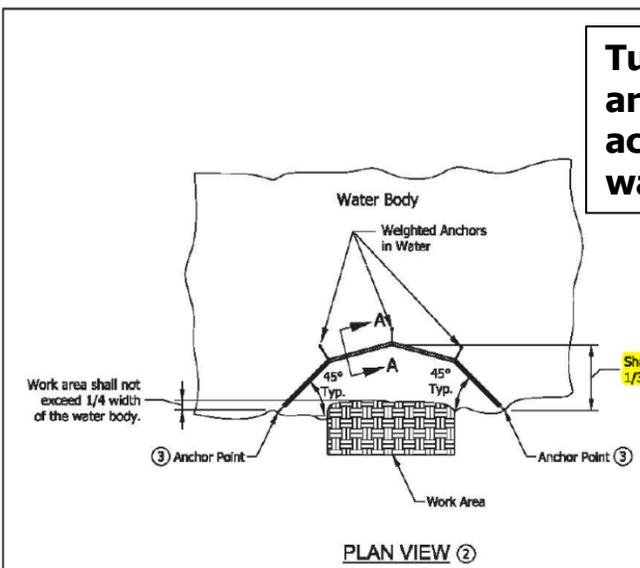
## ■ Turbidity Curtains

Per 205-C-231  
“Legible copies of  
all necessary  
current  
manufacturers’  
installation  
manuals shall be  
provided prior to  
installation.”



# Stream Impacts

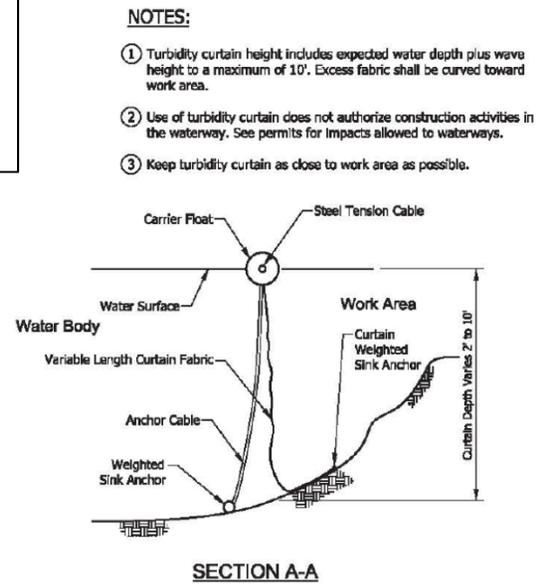
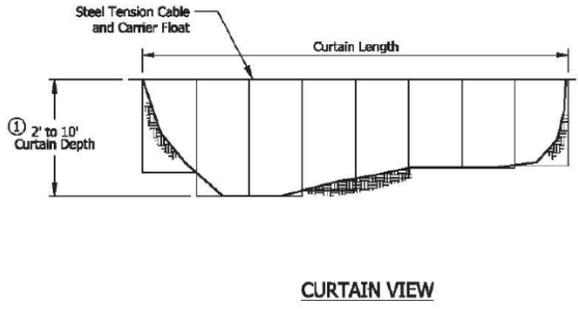
E 205-C-231d 1 of 1



**Turbidity Curtains are not to be used across flowing watercourses.**



Shall not exceed 1/3 of stream width



**For the SWQCP – Turbidity Curtains are not a substitute for pump arounds!!!**

INDIANA DEPARTMENT OF TRANSPORTATION  
 TEMPORARY EROSION CONTROL PERIMETER  
 TURBIDITY CURTAIN

07-01-13



# Storm Water Regulations

## **MS4=Municipal Separate Storm Sewer Systems**

Indiana currently has 153 communities that are permitted under the Rule 13 permit.

**Rule 13: A storm water permit that regulates MS4s.**

**INDOT is an MS4**



# MS4



## RULE 5 - NOTICE OF INTENT (NOI)

State Form 47487 (R5 / 10-05)  
 Indiana Department of Environmental Management  
 Office of Water Quality  
 Approved by State Board of Accounts, 2005

Type of Submittal (Check Appropriate Box): <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Amendment <input type="checkbox"/> Renewal
Permit Number:  <i>(Note: The initial submittal does not require a permit number; the Department will assign a number. A permit number is required when filing an amendment, applying for renewal, or correspondence related to this permit).</i>

*Note: Submission of this Notice of Intent letter constitutes notice that the project site owner is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity. Permitted project site owners are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).*



Project Name and Location	
Project Name: US 33 New Roadway Construction - Monroe St to SR 15	County: Elkhart
Brief Description of Project Location: US 33 from the intersection of US 33 and Monroe Street to intersection of Third St (SR15) and Pike St	
Project Location: Describe location in Latitude and Longitude (Degrees, Minutes, and Seconds or Decimal representation) <u>and</u> by legal description (Section, Township, and Range, Civil Township)	
Latitude: 41° 34' 50" N	Longitude: 85° 49' 17" W
Quarter: All      Section: 9,10,15      Township: 36 N      Range: 6E      Civil Township: Elkhart	
Does <input checked="" type="checkbox"/> all or <input type="checkbox"/> part of this project lie within the jurisdictional boundaries of a Municipal Separate Storm Sewer System (MS4) as defined in 327 IAC 15-13? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    If yes, name the MS4(s): Elkhart County, City of Elkhart, City of Goshen, Town of Bristol (INR040137 Co-Permittees), INDOT	
Project Site Owner and Project Contact Information	
Company Name (If Applicable): Indiana Department of Transportation	
Project Site Owner's Name: (An Individual)	Title/Position:

A list of up-to-date Indiana MS4 communities can be found at:

[www.in.gov/idem/stormwater/2404.htm](http://www.in.gov/idem/stormwater/2404.htm)



# Storm Water Quality Management Plan (SWQMP)



# INDOT'S SWQMP

## **INDOT is not a traditional MS4.**

INDOTs Storm Sewer Systems regularly cross into the boundaries of other MS4s in the state. This is where INDOT is regulated under the Rule 13 Permit. On INDOTs entire Storm Sewer System great strides are taking place to improve over all water quality.



# INDOT's SWQMP

INDOT has **88** out of 208 facilities located in Urbanized Area Boundaries (UABs)

**8,072** lane miles out of 28,868 are located in UABs

These facilities and conveyances are regulated under the Rule 13 permit.



# Rule 13 Impacts

- Red Flag: Early in the NEPA process
- Early Coordination Letters
- More oversight of INDOT projects in MS4 communities
- More widespread use of post-construction BMPs



# MS4 Oversight



# Changes to the INDOT Process

- RSP 205-R-636
- Design Memo 16-11
- Level I
- Level II
- Storm Water Quality Control Plan
- New Seed Specifications
- New Plant Growth Layer Specification



# Combining Small Projects

- Smaller projects are increasingly being combined under one contract
- Need one organized, cohesive permit submittal
- When multiple small projects (under 1 acre) are combined under one contract they are subject to Rule 5 due to being “...part of a larger common plan of development” (327 IAC 15-5-2 (3))
- Memorandum from Sandra Bowman dated: February 25, 2016 provides additional information on bundling and exceptions



# Questions/Resources

- **Questions.....**

- **Indiana Storm Water Quality Manual**

<http://www.in.gov/idem/stormwater/2363.htm>

- **INDOT Design Manual**

[http://www.in.gov/indot/design\\_manual/](http://www.in.gov/indot/design_manual/)

- **INDOT Storm Water Web Page**

<http://www.in.gov/indot/2892.htm>**NDOT**



# Contacts

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