



SWPPP Plan Review

B Section

Indiana Department of Environmental Management
Office of Water Quality
Surface Water, Operations, and Enforcement Branch
Wetlands and Storm Water Section
Storm Water Program

SWPPP Plan Review (B Section)

- B Section is the heart and soul of the plan:
 - This section is where sediment and erosion gets controlled

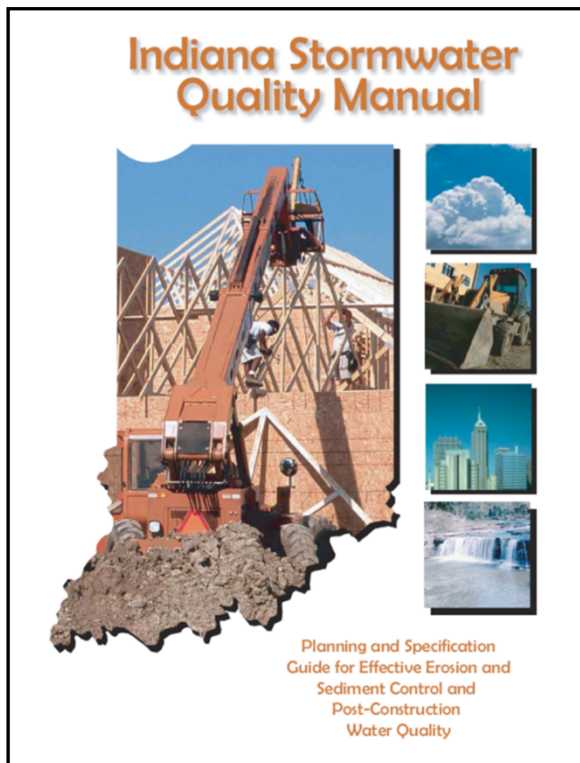




Indiana Stormwater Quality Manual

Planning Principles:

- Layout and Design
- Resource Inventory
- Plan Design Elements



Project Management:

- Monitoring
- Maintenance

Storm Water Quality Measures:

- Construction
- Post-construction

www.idem.IN.gov/stormwater/2363.htm



B1 – Potential Pollutants and Pollutant Sources:

- Identification of pollutants that are associated with construction and land-disturbing activities
- Potential pollutant sources include material and fuel storage areas, fueling locations, leaking vehicles and equipment, etc.
- Sediment is always a pollutant on construction sites (#1 pollutant by volume of Indiana waterways)



B2 - Stable construction entrance locations and specifications:

- All ingress and egress points must have adequate entrances
- Length of entrance/assess roads appropriate for the time of year, rainfall, and soil conditions
- Goal of entrances is to minimize the amount of tire soil contact
- Include staging area with this item
- The best entrances do not interfere with construction

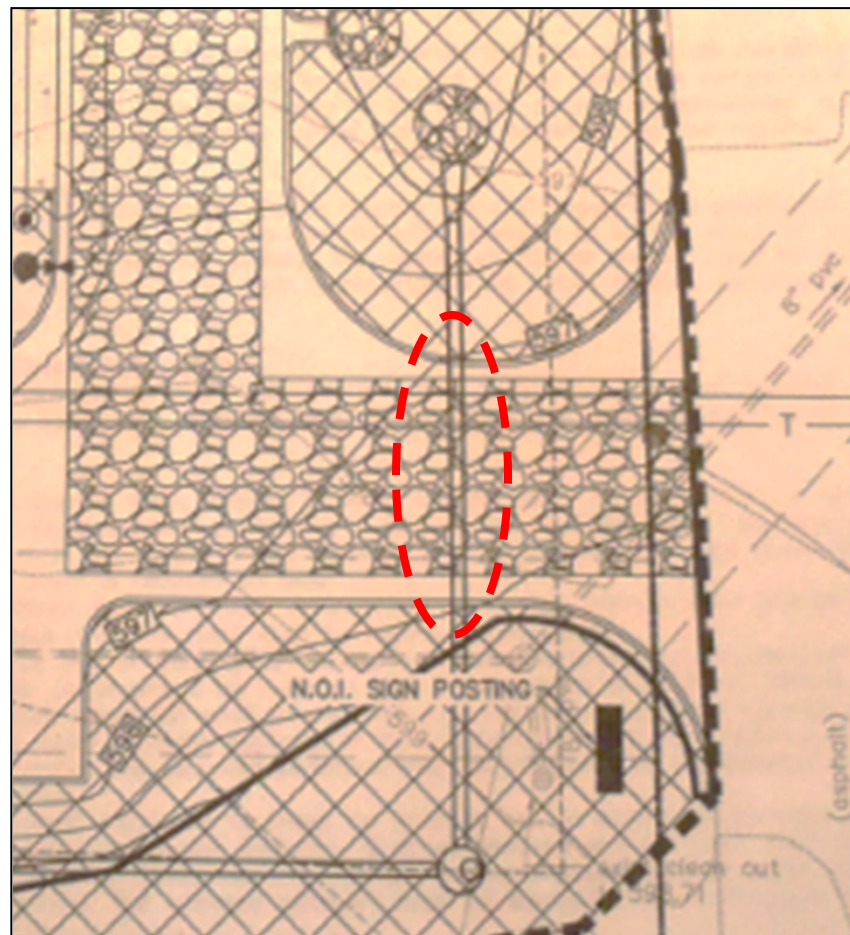


B2 - Stable construction entrance:

- The best entrances do not interfere with construction

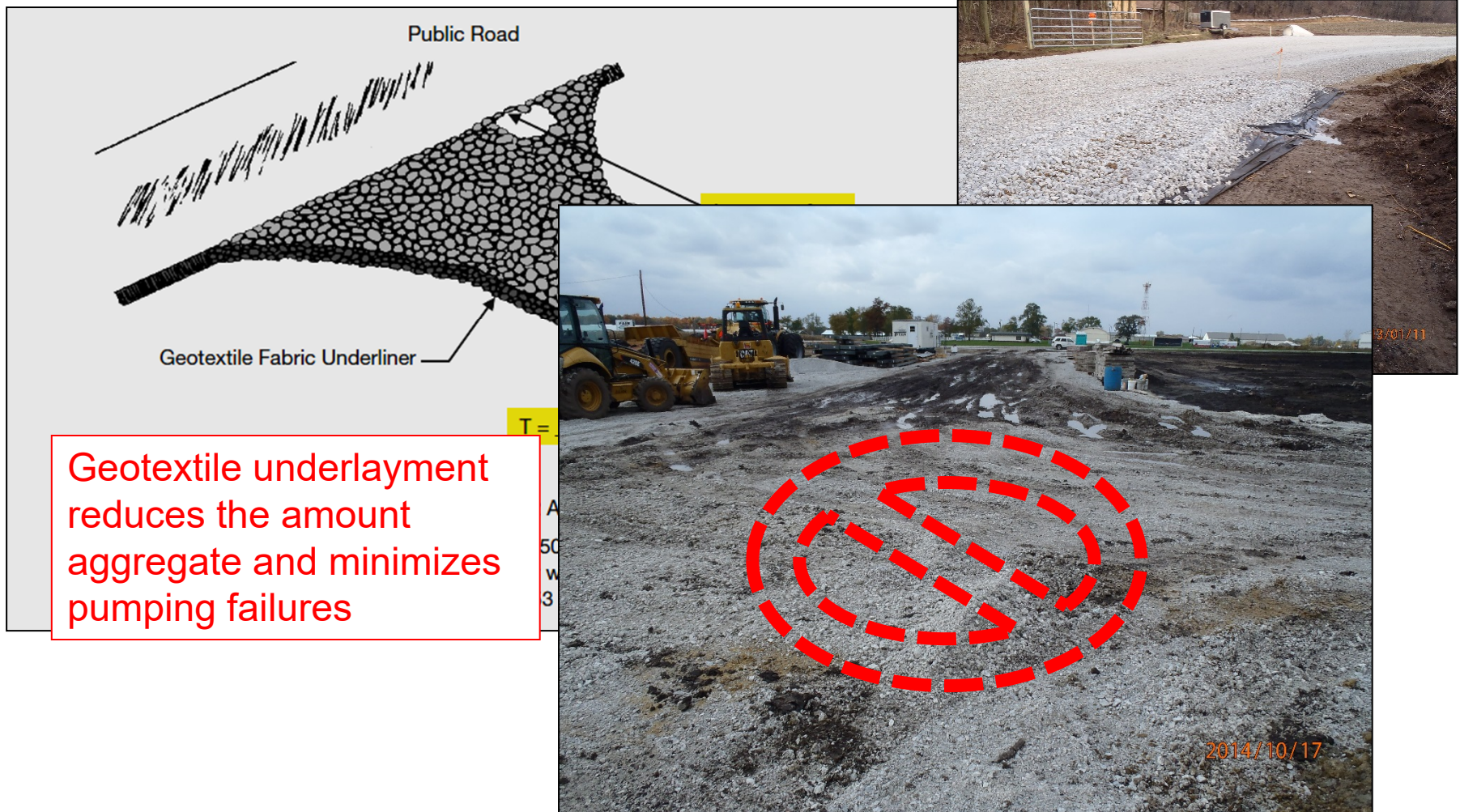
Planned storm sewer crosses gravel entrance resulting in a period where there is no project entrance

This concern should be addressed in construction sequence provisions



B2 - Stable construction entrance:

- Geotextile underlayment critical for soft soil conditions



B2 - Stable construction entrance:

- Typically, large rock that is kept roughened knock the most soil off to minimize track out

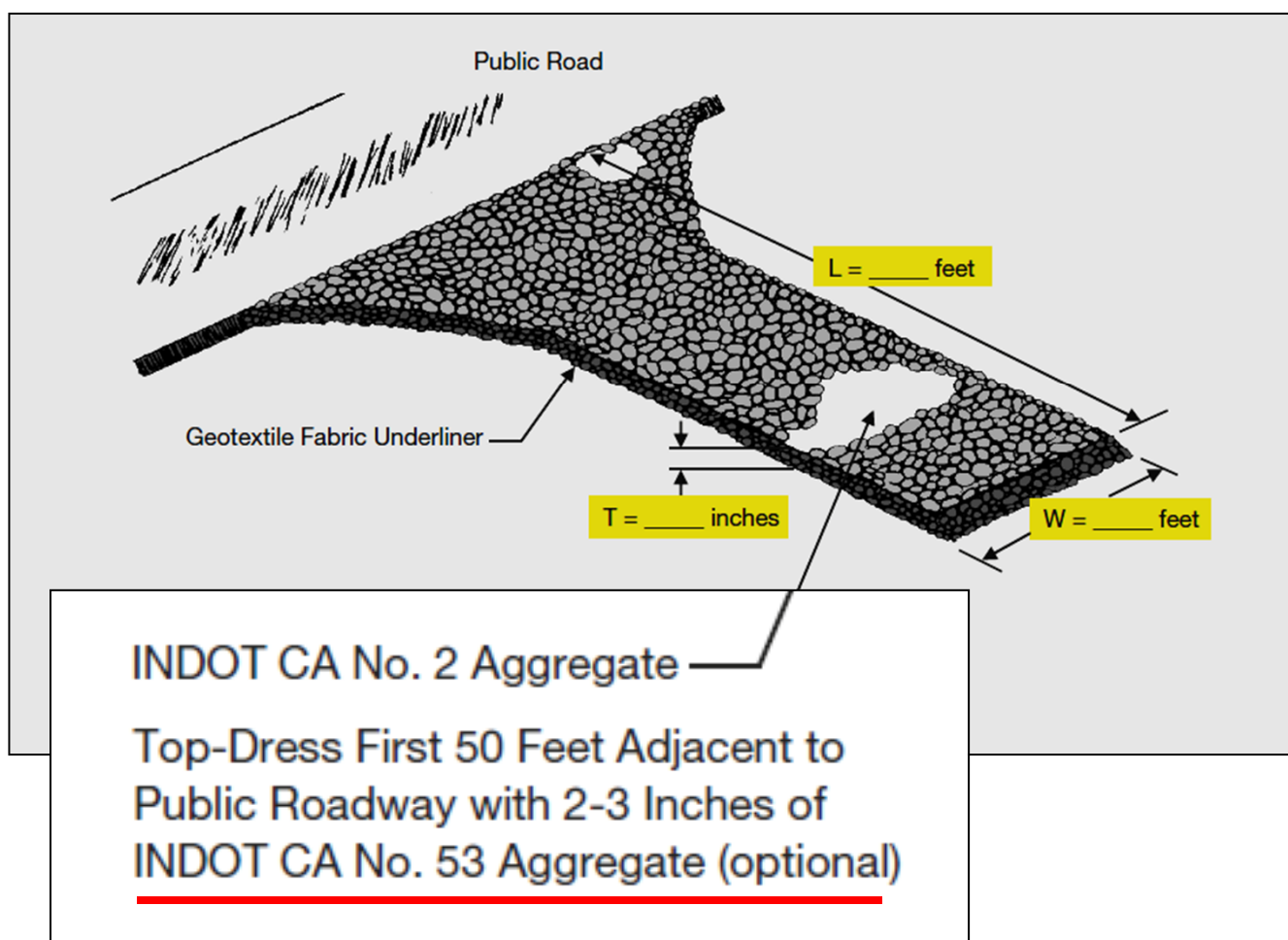
Riprap aggregate used for a rough tire beating entrance

Dragging hoe bucket teeth to help keep aggregate roughened



B2 - Stable construction entrance:

- Finer gravel cap can result in track out



B2 - Stable construction entrance:

- Alternative entrance materials



Metal rumble strips



Plastic grates

B2 - Stable construction entrance:

- Alternative entrance materials
 - ◆ Appropriate for site access requirements



Geotextile and wood strip mats



Wood mats

B3 Specifications for Temporary & Permanent Stabilization

- Temporary & Permanent Seeding Options
 - No matter the length of the project
- Seasonal Options
- Clearly identified in Construction Sequence
- Soil Testing
- Application Rates/Types
- Soil Amendments



B3 Specifications for Temporary & Permanent Stabilization

- Dormant Seeding
- Frost Seeding





B3 Specifications for Temporary & Permanent Stabilization

- Dormant Seeding
- Frost Seeding





B4 – Concentrated Flow Sediment Control Measures

- A key failure of many plans is attempting to control concentrated flows with sheet flow control measures:
 - Sheet flow control measures have very limited watersheds

Maximum watershed is ¼ acre per 100 feet of fence, installed on the contour

Spacing

Silt fence

Table 1. Slope Steepness Restrictions

Percent Slope		Maximum Distance
< 2%	< 50:1	100 feet
2% – 5%	50:1 to 20:1	75 feet
5% – 10% ¹	20:1 to 10:1	50 feet
10% – 20% ¹	10:1 to 5:1	25 feet
> 20% ¹	> 5:1	15 feet

¹ Consider other alternatives.

Note: Multiple rows of silt fence are not recommended on the same slope.

B4 – Concentrated Flow Sediment Control Measures

- Sheet flow control measures have very limited watersheds



B4 – Concentrated Flow Sediment Control Measures

- Typical concentrated flow sediment control measures:
 - Temporary sediment traps
 - Temporary sediment basins
 - Modified storm water basins
 - Rock filter berms





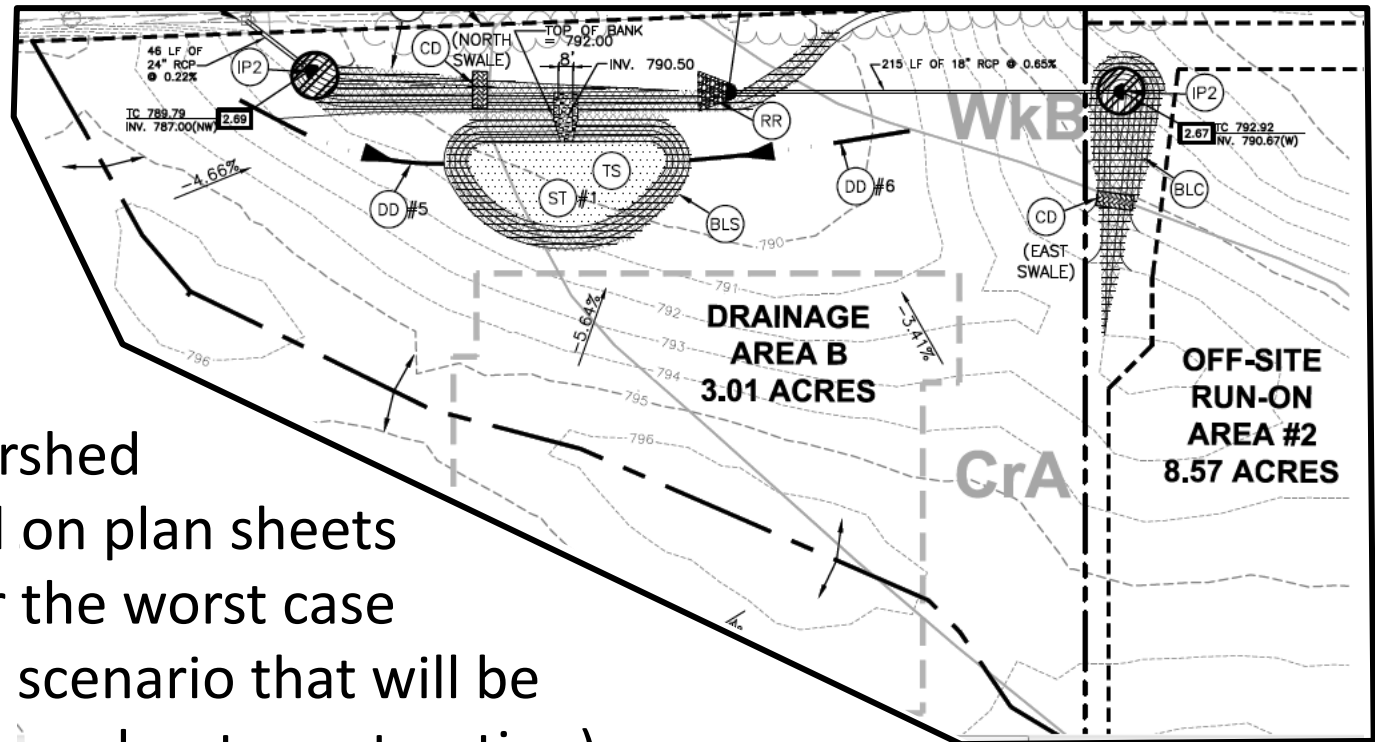
B4 – Concentrated Flow Sediment Control Measures

- Temporary sediment traps:
 - Underutilized sediment control measure
 - A key initial perimeter control measure
 - Five acres or less watersheds



B4 – Concentrated Flow Sediment Control Measures

- Temporary sediment trap required plan details:



- Total watershed delineated on plan sheets (design for the worst case watershed scenario that will be present throughout construction)



B4 – Concentrated Flow Sediment Control Measures

- Temporary sediment trap required plan details:
 - All construction details sufficient to construct the trap are frequently inadequate

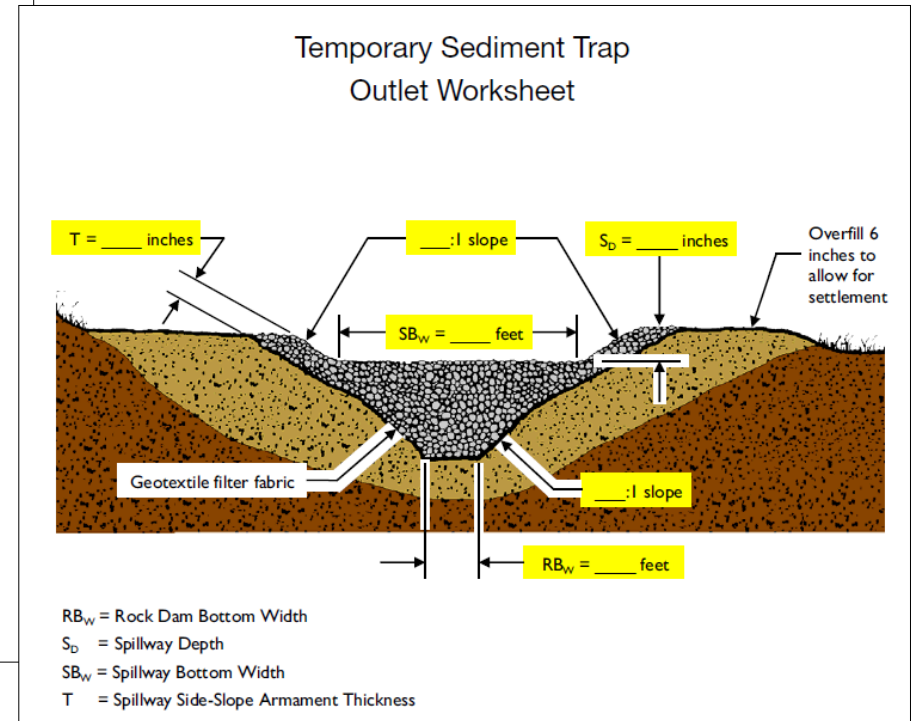
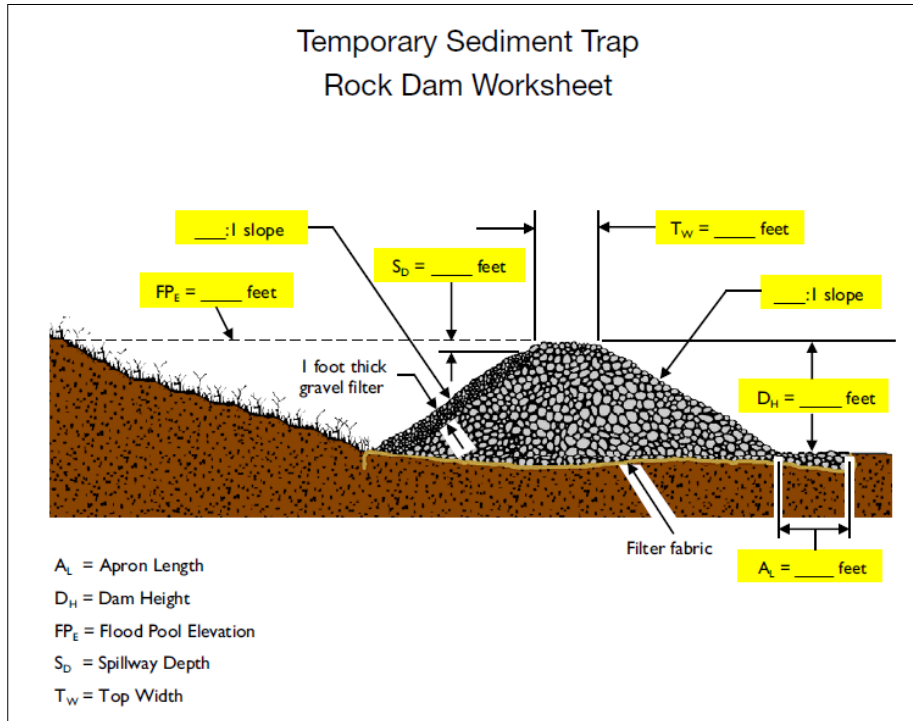
SEDIMENT TRAP DETAIL INFORMATION TABLE

	Drainage area (the <u>largest</u> possible outlined on the plans) (Acres)	Spillway Height (feet)	Spillway Weir Width (feet)	Embankment Height (feet)	Storage Required (for largest drainage area) (1800 Cubic feet/acre of <u>watershed</u>) (Cubic feet)	Storage Achieved (Cubic feet)	Outlet Apron Site specific plan 5 feet min. length Riprap outlet channel construction details (Length, width, depth & size of rock)
Trap 1							See specific detail
Trap 2							

Outline the watershed of the trap on the plans that indicate the “worst case scenario”

B5 – Concentrated Flow Sediment Control Measures

- Temporary sediment trap required plan details

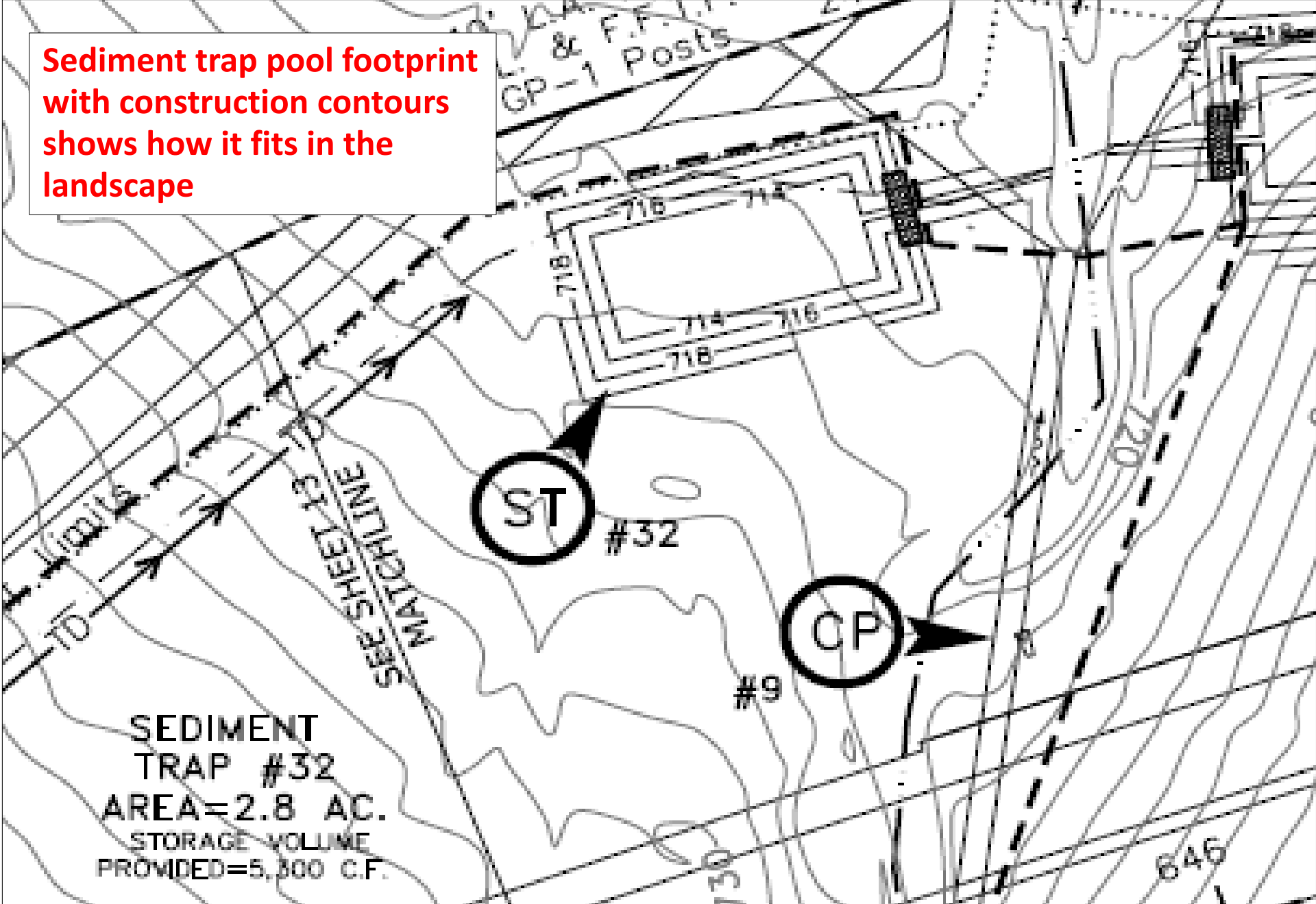




B4 – Concentrated Flow Sediment Control Measures

- Temporary sediment trap required plan details:
 - Pool footprint and contours must be shown on plans and not just a symbol
 - Display how the measure fits in the landscape
 - Stable outlet (may require individual outlet design to provide a stable outlet pathway to the receiving stream)

**Sediment trap pool footprint
with construction contours
shows how it fits in the
landscape**



B4 – Concentrated Flow Sediment Control Measures

- Temporary sediment trap required plan details:
 - Stable outlet to the receiving stream

Trap outlet pathway stabilized to receiving stream with all disturbed areas downstream of trap stabilized (seeded and mulched)

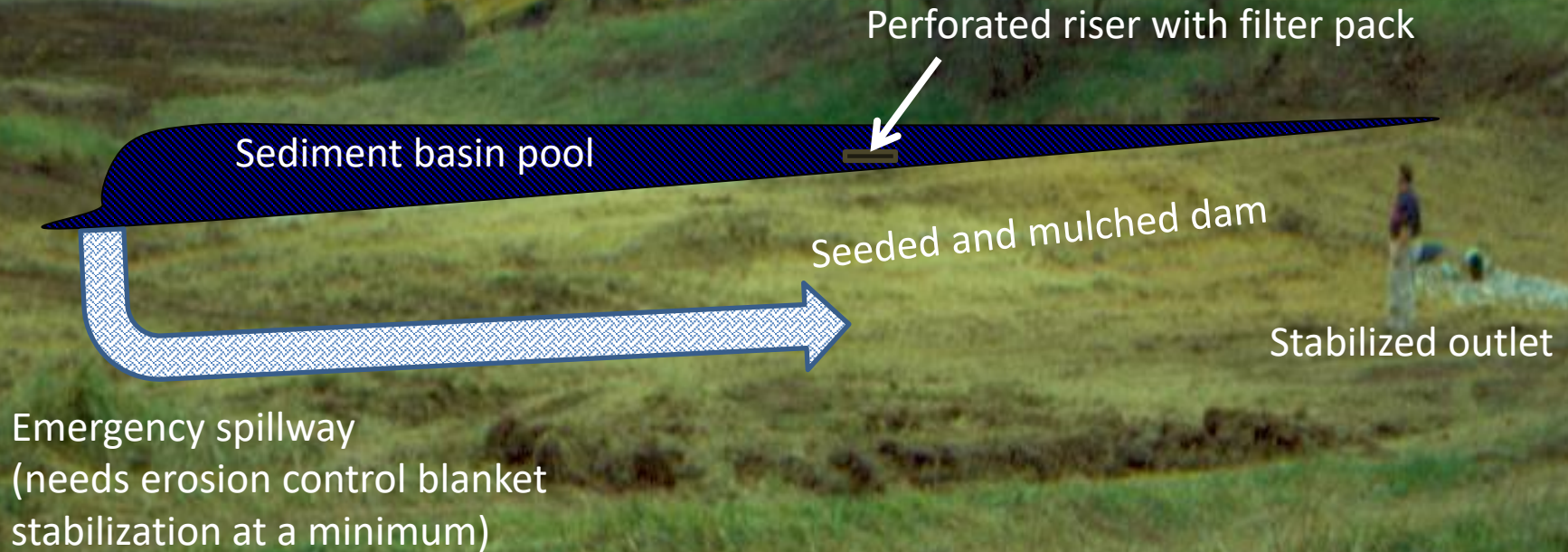


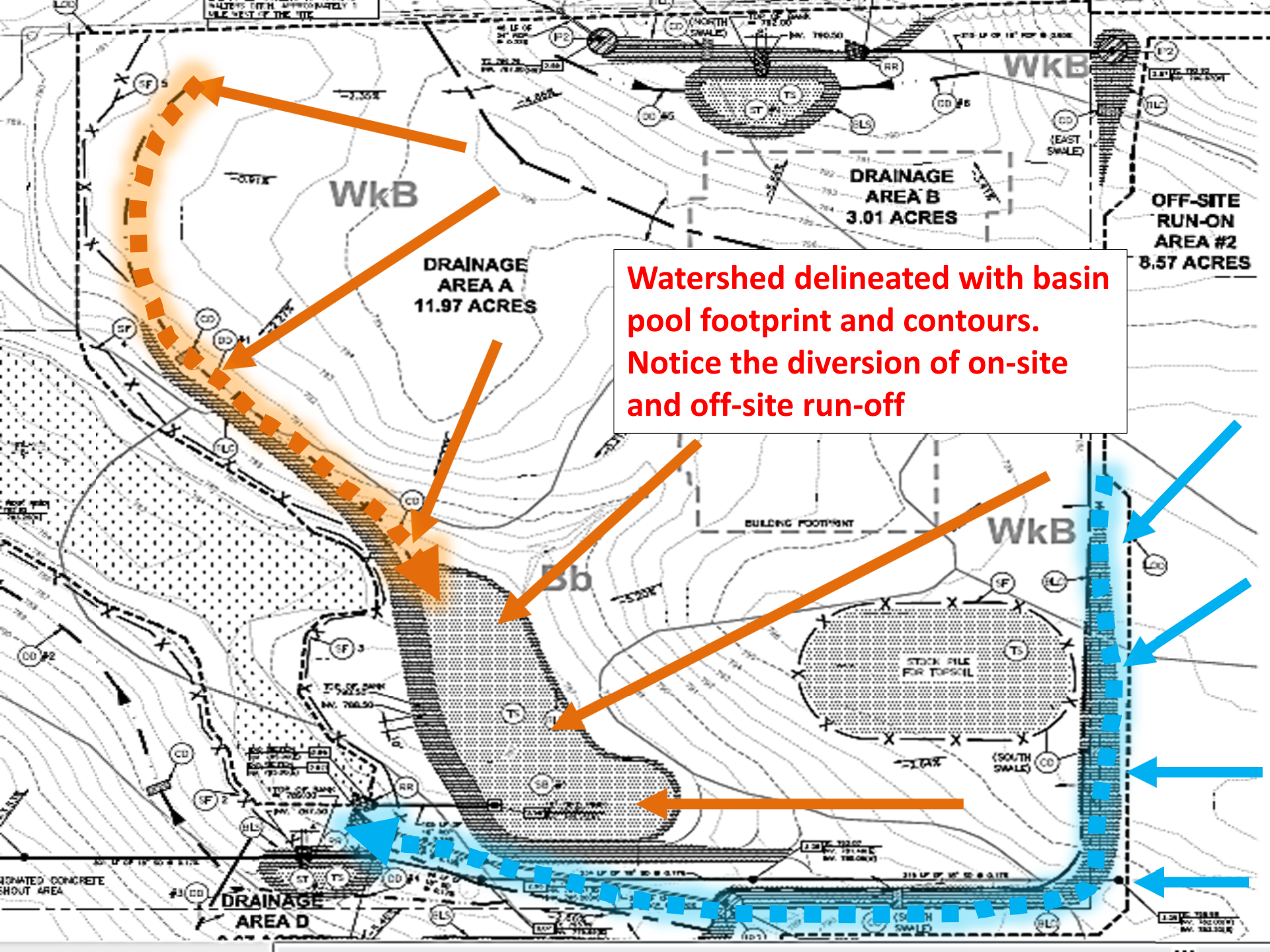
B4 – Concentrated Flow Sediment Control Measures

- Temporary sediment basins:
 - Sediment basins for watersheds greater than five acres
 - Can be a key initial perimeter control phase measure
 - In Indiana, many times where watersheds require a basin, a modified permanent storm water basin covers the need
 - Basins require much more design, and construction detail (construction sequence adequate to detail installation)
 - Withdraw from surface of water column, or alternatives allowed by CSGP (basin baffles, effective flow length in basin, etc.)



Sediment basin installed prior to upstream land disturbance





B4 – Concentrated Flow Sediment Control Measures

- Sediment basin required plan details

TEMPORARY DRY SEDIMENT BASIN

Design Data Sheet

Computed by: _____ Date: _____

Project Name: _____ Basin #: _____

Location: _____

Total watershed area draining to basin: _____ acres

Total disturbed area draining to basin: _____ acres

Basin Volume Design

Design volume (minimum required volume for 10-yr. freq. storm event): _____ cubic ft

Sediment storage volume (minimum required volume): _____ cubic feet

Volume of basin below emergency spillway crest: _____ cubic feet

Volume of basin at riser crest elevation (5-year frequency storm event): _____ cubic ft

Design Elevations

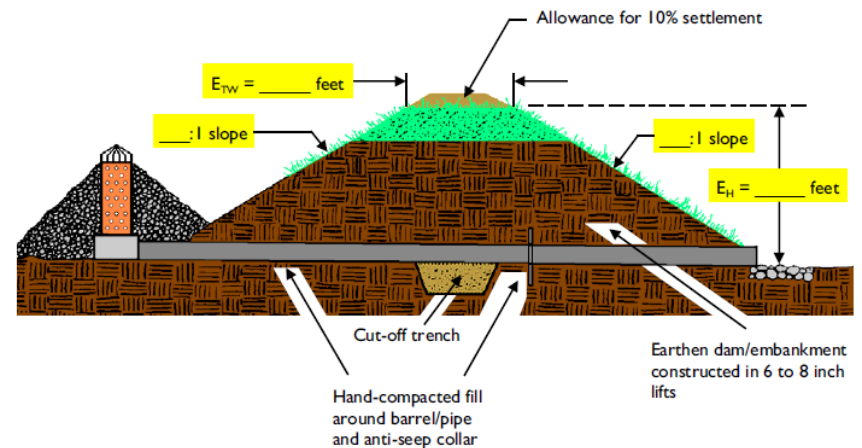
Emergency Spillway Crest: _____ feet

Riser Crest: _____ feet

Top of Dam (settled): _____ feet

Bottom of Basin: _____ feet

Temporary Dry Sediment Basin Earthen Dam/Embankment Worksheet



E_H = Earthen Dam/Embankment Height

E_{TW} = Earthen Dam/Embankment Top Width

B4 – Concentrated Flow Sediment Control Measures

- Modified storm water basins for sediment control:
 - Installation/function timing is critical
 - Modified outlets for sediment control

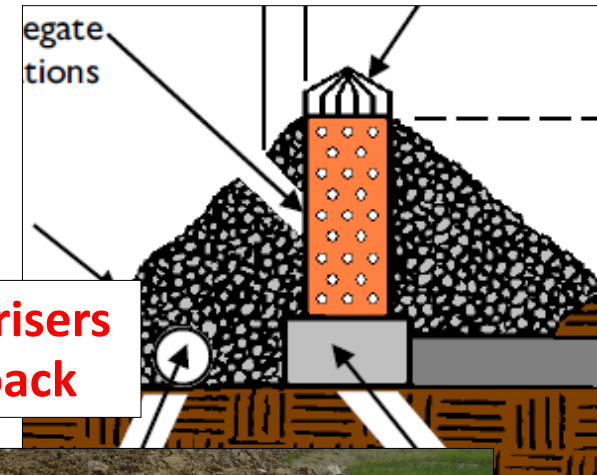


B4 – Concentrated Flow Sediment Control Measures

- Modified storm water basins for sediment control:
 - Modified outlets for sediment control



Skimmer outlets



Perforated risers with filter pack



Rock horseshoes

**Modified basins require
bank stabilization**



**Perforated riser on
outlet structure**

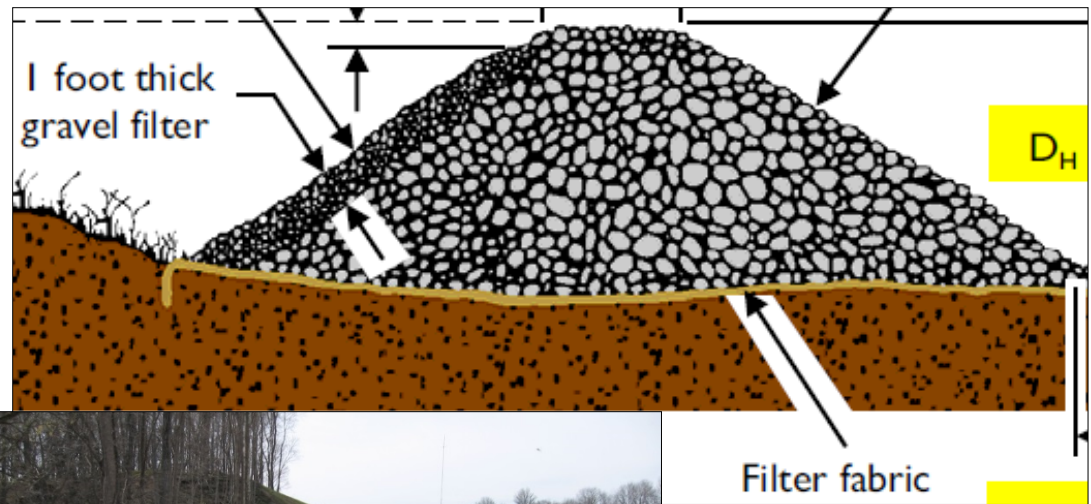
B4 – Concentrated Flow Sediment Control Measures

- Rock filter berms:
 - Quasi-linear/elongated sediment trap
 - Difficult locations where silt fence will fail and sediment trap does not fit (intermediate practice between silt fence and sediment trap)
 - Floodplain areas where silt fence will not function due to flooding



B4 – Concentrated Flow Sediment Control Measures

- Rock filter berms:
 - Riprap berms two to three feet high and faced with filter stone (INDOT CA #5 or #8)



B4 – Concentrated Flow Sediment Control Measures

- Rock filter berms:
 - Floodplain areas where silt fence will not function due to flooding



B5 – Sediment Control Measures for Sheet Flow:

- Trap sediment:
 - Small disturbed areas
 - Sheet flow
- Reduces velocity
- Ponds run-off
- Deposition (not by filtration)





B5 – Sediment Control Measures for Sheet Flow:

- Silt Fence
- Limited watershed:
 - $\frac{1}{4}$ acre per 100 feet of fence

Slope Steepness Restrictions

Maximum Distance

<u>Percent Slope</u>	<u>Above Silt Fence</u>
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< 2%	100 feet
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2% – 5%	75 feet
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5% – 10% ¹	50 feet
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10% – 20% ¹	25 feet
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20% Plus	15 feet
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¹ choose alternative measure



B5 – Sediment Control Measures for Sheet Flow:

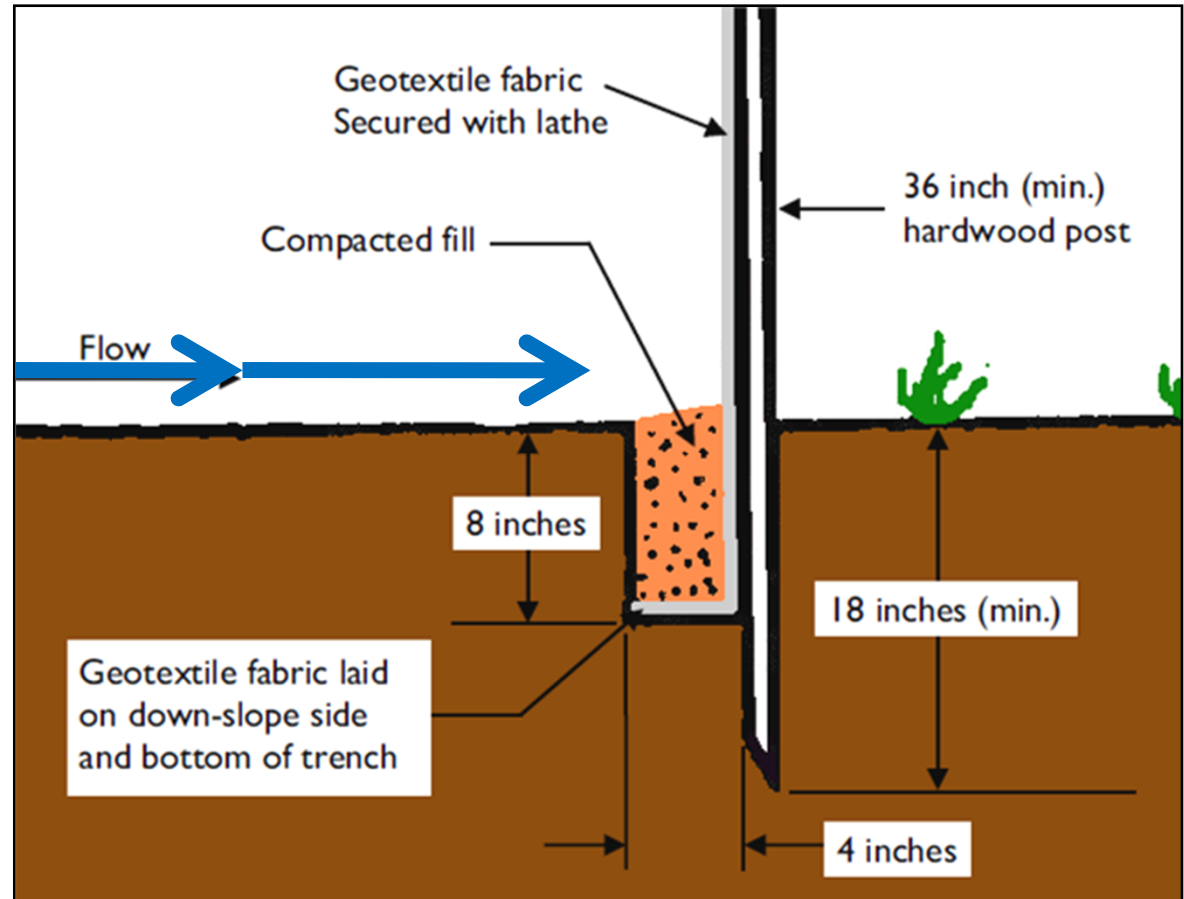
- Installation - not applicable:

- Up and down slopes
- Top of the slope
- As a diversion
- Across:
 - ◆ Concentrated flow
 - ◆ Channels
 - ◆ Streams



B5 – Sediment Control Measures for Sheet Flow:

- Installation:
 - Trench eight inches deep and four inches wide
 - Install with stakes on downstream



B5 – Sediment Control Measures for Sheet Flow:

- Installation:
 - Stretch fence as posts are driven
 - Backfill with soil material and tamp



B5 – Sediment Control Measures for Sheet Flow:

- Installation:
 - Locate at least 10 feet from toe of slope
- Installation deficiency
 - Not entrenched
 - Fence not pulled tight



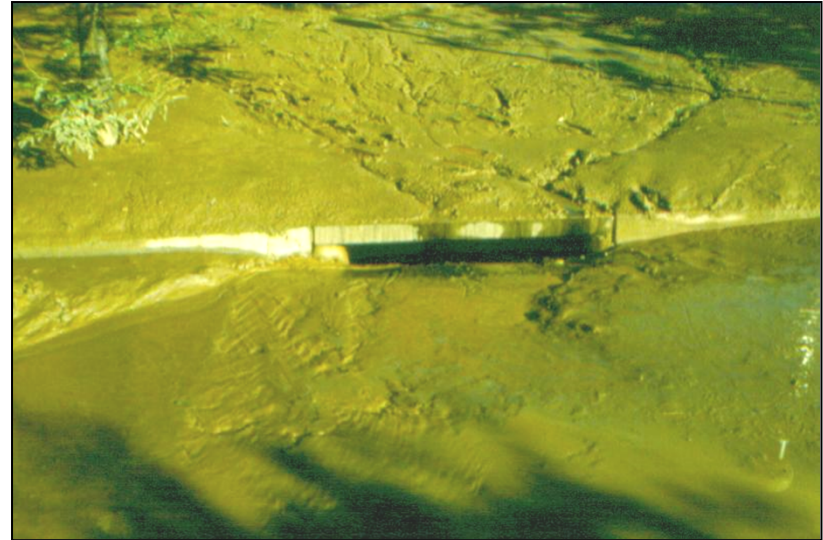
B5 – Sediment Control Measures for Sheet Flow:

- Inlet Protection (Two types):
 - Curb
 - Drop inlet
- Inefficient
- High maintenance
- Allow system intake



B5 - Sediment Control Measures for Sheet Flow:

- Curb inlet protection
 - ◆ Critical behind the curb control measures
 - ◆ Typically a very fragile control measure
 - ◆ Low efficiency
(may only result in 5% sediment capture)
 - ◆ Appropriate for the type of inlet
 - ◆ Critical for home construction areas



B5 - Sediment Control Measures for Sheet Flow:

- Inlet inserts (below pavement)
 - ◆ Not damaged by traffic
 - ◆ Out of site and out of mind (easy to forget to check and clean out)
 - ◆ Allowance for by-pass over flows for inlet function
 - ◆ Wide range of filter options



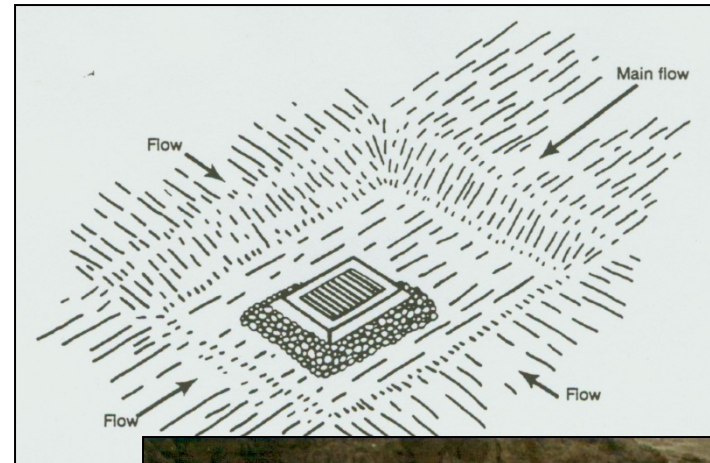
B5 - Sediment Control Measures for Sheet Flow:

- Caution: geotextile under the grate
 - ◆ Obstructs inlet function
 - ◆ Result in damaging by-pass flows



B5 - Sediment Control Measures for Sheet Flow:

- Drop inlets (many options)
 - ◆ Excavated
 - ◆ Barriers and baskets
 - ◆ inserts





B6 – Runoff Control Measures:

- Measures Used to Manage And Direct Run-off
 - ◆ Slope Drains
 - ◆ Rock Check Dams
 - ◆ Diversions



B6 – Runoff Control Measures:

- Diversions manage run-off
- Direct run-off to sediment control measures



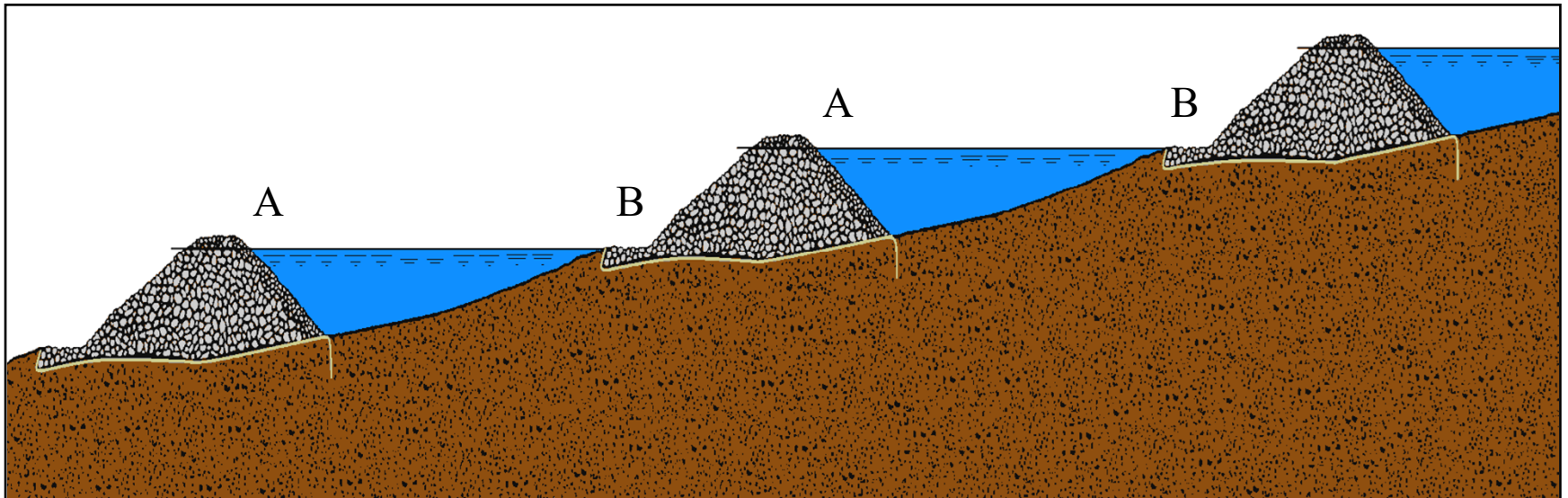
B6 – Runoff Control Measures:

- Rock Check Dams
- Stabilize channel grades:
 - Reduce erosion
 - Sediment removal minimal



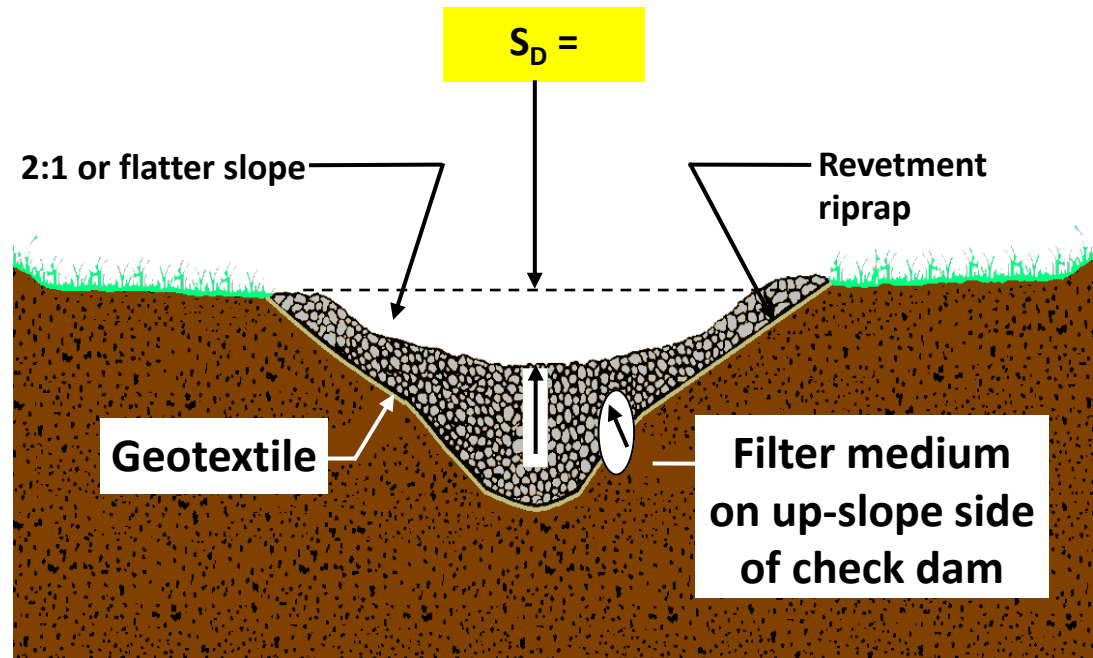
B6 – Runoff Control Measures:

- Series of dams:
 - Toe to crest



B6 – Runoff Control Measures:

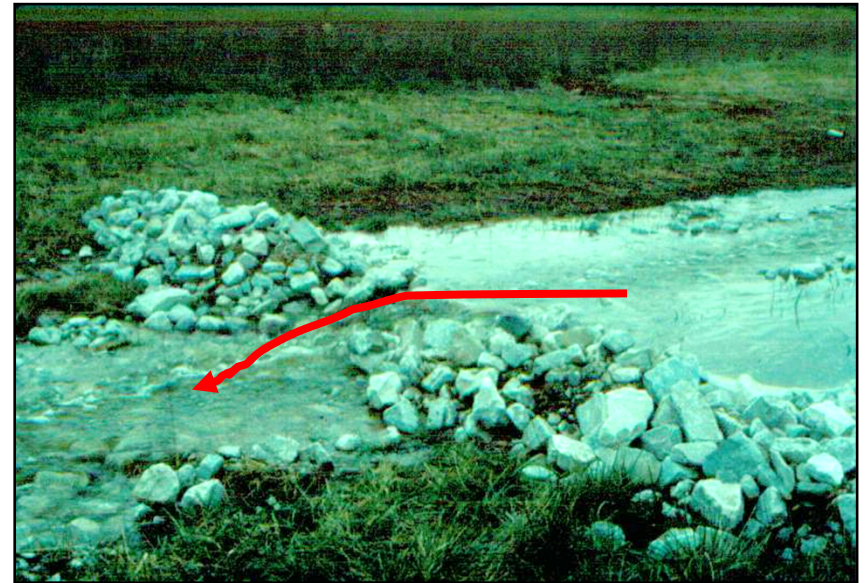
- Dam center: maximum of two (2) feet
- At least nine inches lower than the outer edges at ground elevation



S_D = Spillway Depth

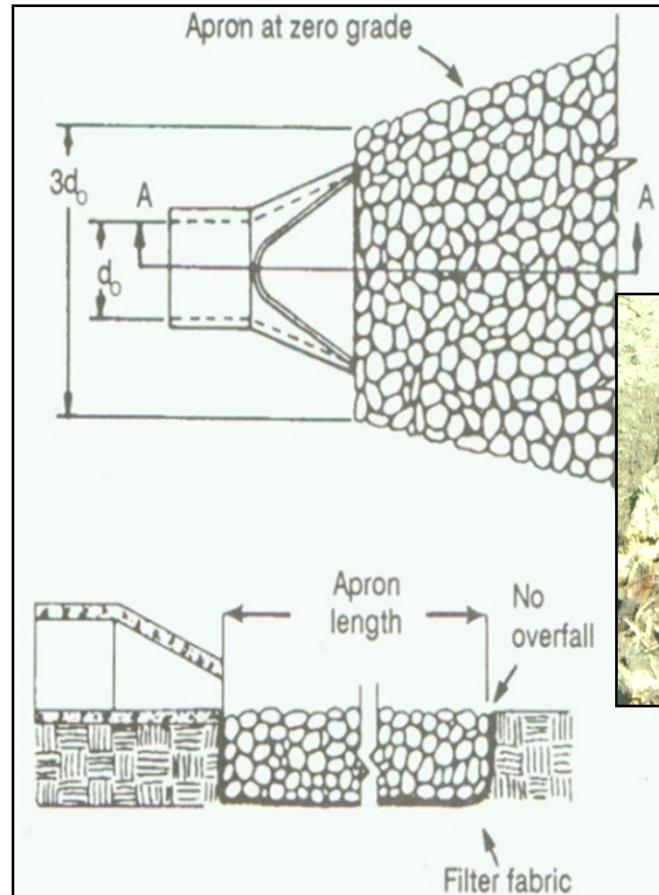
B6 – Runoff Control Measures:

- Common concerns:
 - Center of dam not lowest point
 - Flow directed around structure



B7 – Stormwater Outlet Protections and Specifications:

- **Pipe discharge:**
 - Rock blends with ground level (no overfall)
 - Specify apron:
 - ◆ Thickness
 - ◆ Length
 - ◆ Width



- **B7 - Storm water outlet protection specifications:**
 - Required construction details sufficient to install
 - ◆ Riprap size (d50)
 - ◆ Dimensions and depth/thickness of rock pad
 - ◆ Detail must fit the location of installation

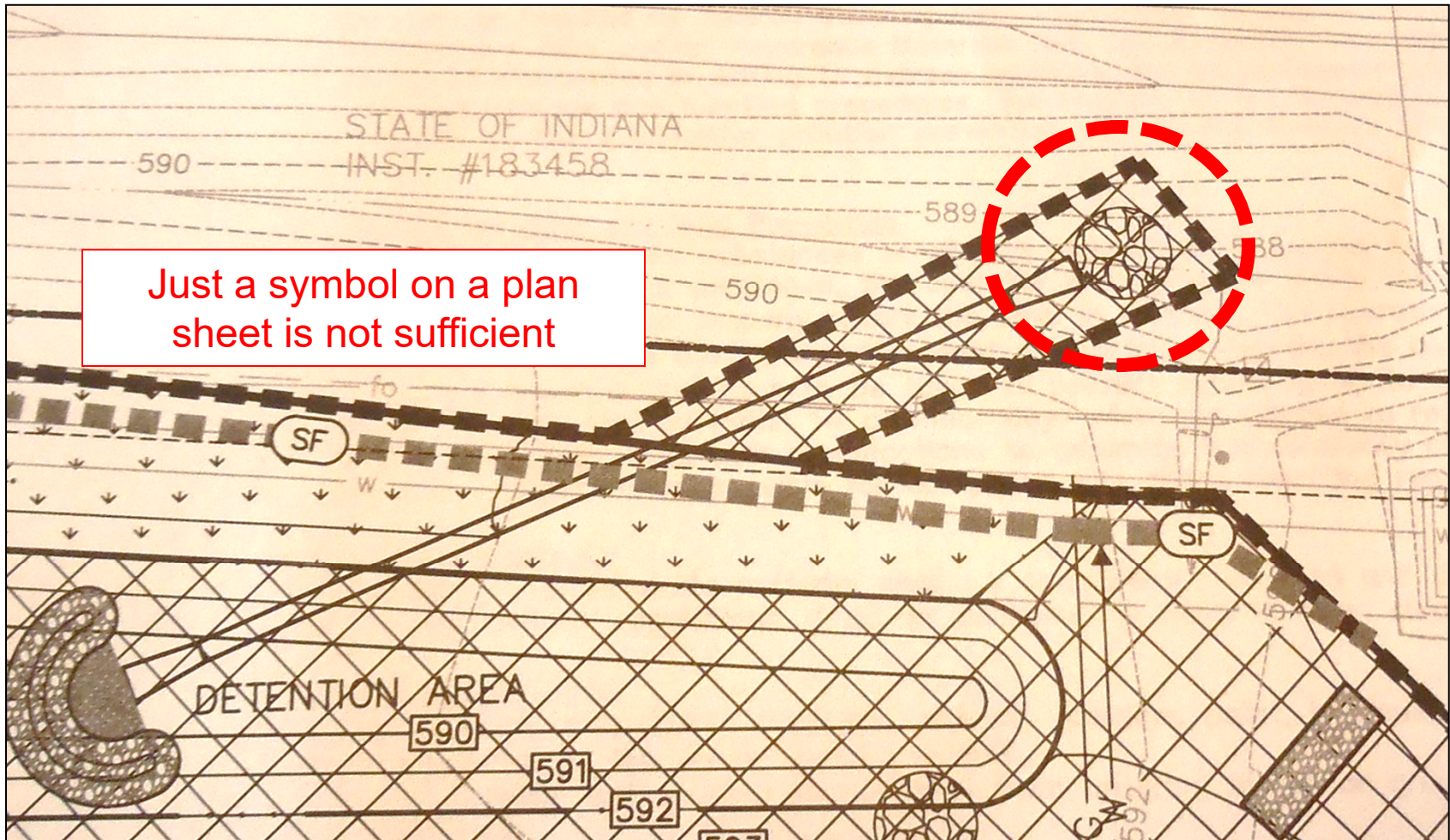


- **B7 - Storm water outlet protection:**

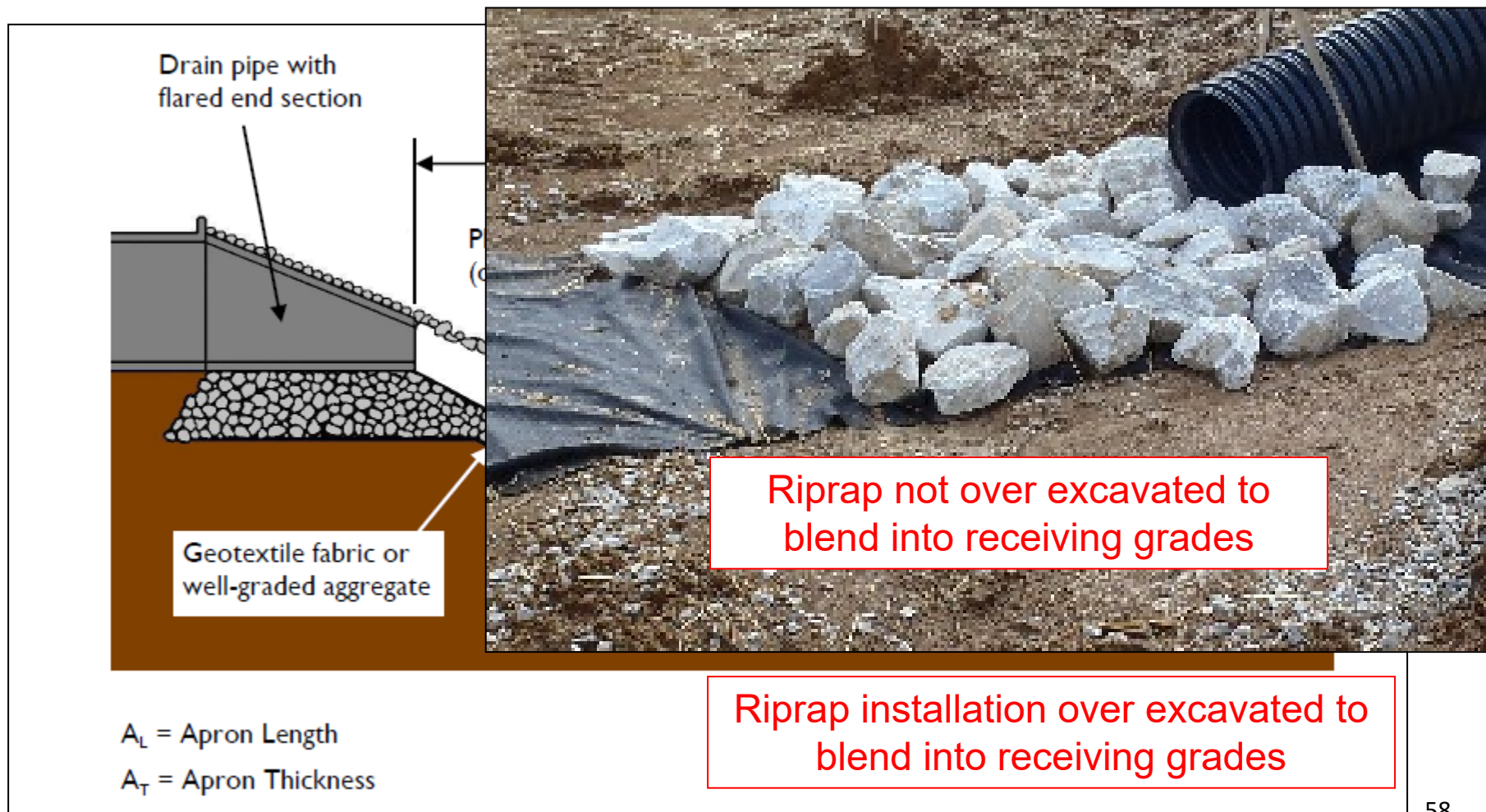
- Why so many failures?
 - ♦ Lack of design and construction details



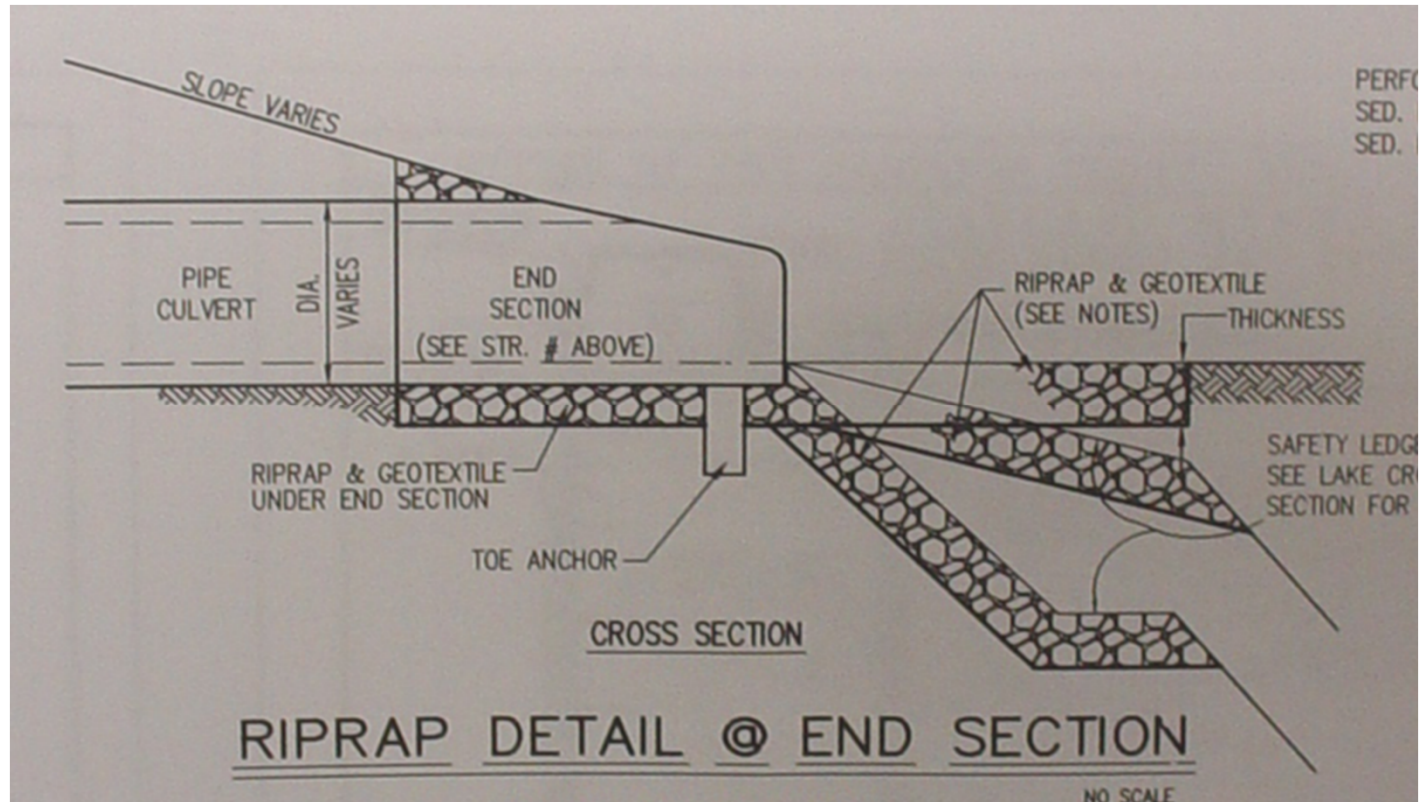
- **B7 - Storm water outlet protection specifications:**
 - Required construction details sufficient to install



- **B7 - Storm water outlet protection:**
 - Adequate construction details



- **B7 - Storm water outlet protection:**
 - Adequate construction details



Plan realizes that not all outlets are simple level discharge points

- **B7 - Storm water outlet protection:**
 - Alternative outlet protection



Vegetated turf reinforcement mats and grids

- **B8 - Grade stabilization structure locations and specifications:**

- Stable transition for abrupt channel grade changes

- ♦ Common agricultural control measure
- ♦ Often riprap rock lined chutes
- ♦ Alternative grassed with turf reinforcement mats



- A practice that is not well understood therefore typically not specified

- **B8 - Grade stabilization structures:**
 - Protected channel grade changes prevent head cutting gully action



After (rock chute stabilized grade transition)



Before (side ditch gully)

- **B8 - Grade stabilization structures:**

- Rock-lined chutes
 - ◆ Common agricultural control measure
 - ◆ Requires design to be stable



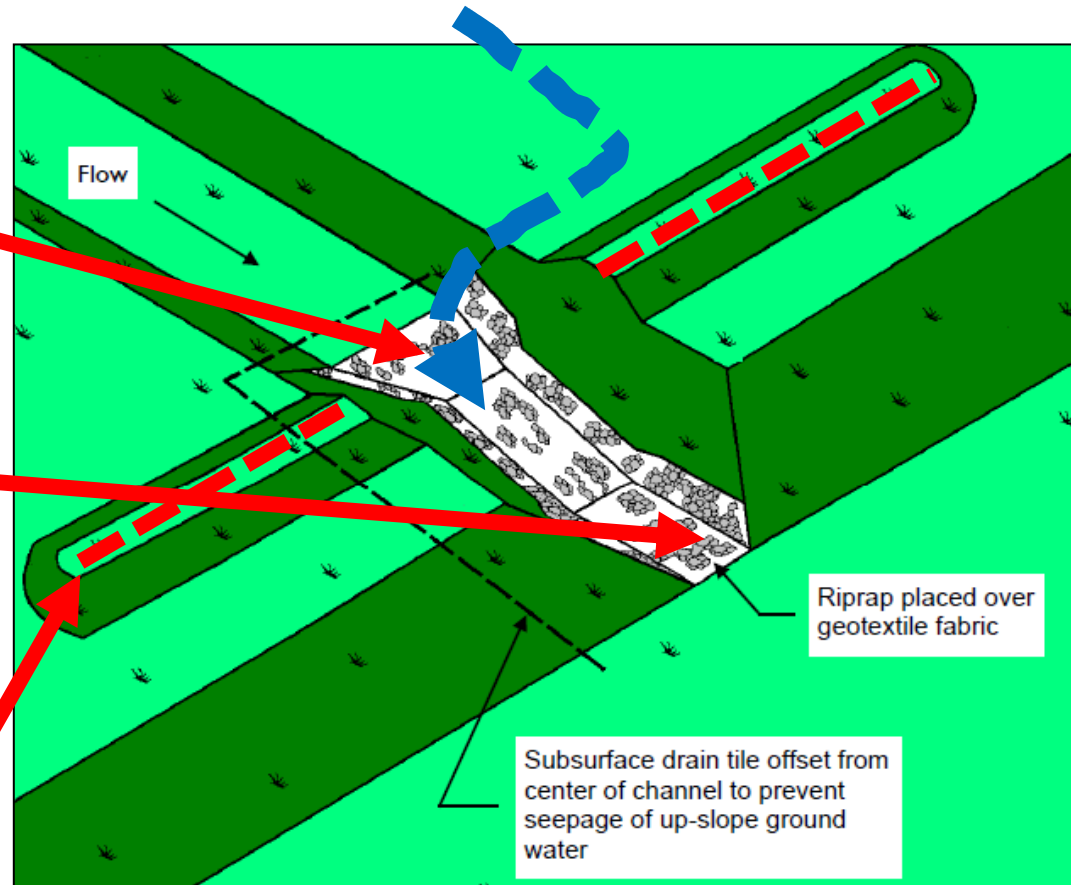
- **B8- Rock-lined chutes:**
 - Common failures
 - ◆ Not designed
 - ◆ Chute slope too steep
 - ◆ Rock too small
 - ◆ No geotextile underlayment
 - ◆ Chute channel not shaped to contain flow
 - ◆ Run-off not diverted into chute



- **B8 - Rock-lined chutes:**

- Critical components

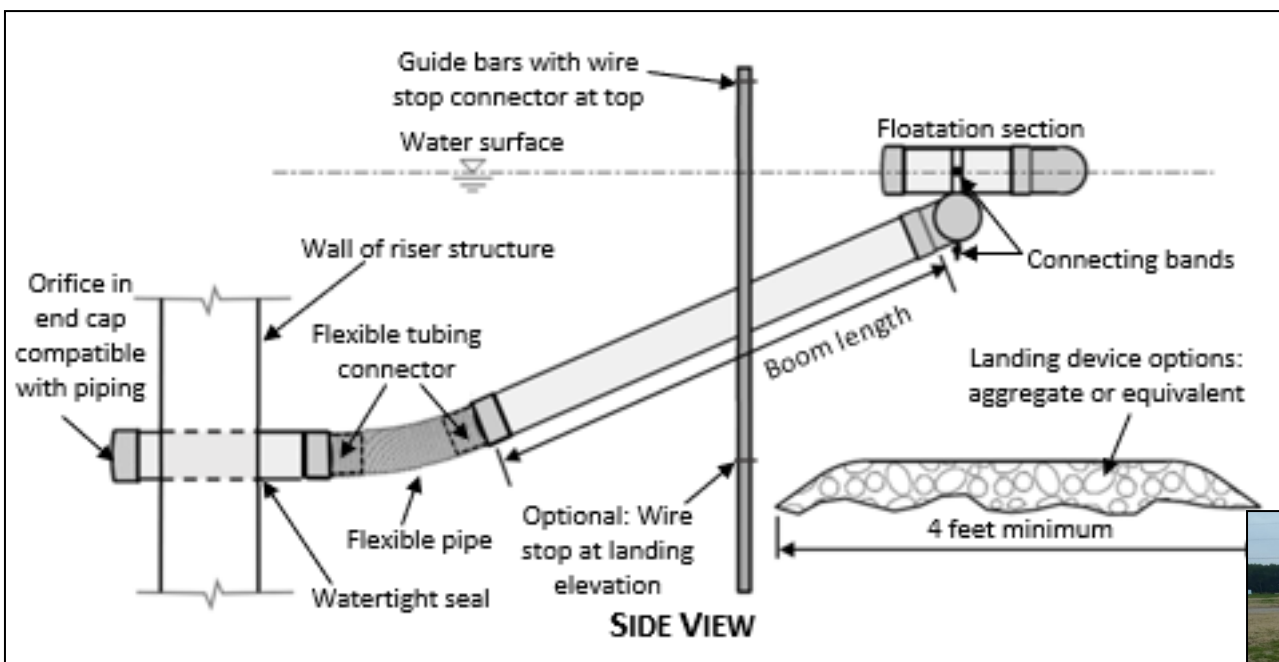
- ◆ Inlet apron
(protects chute entrance)
 - ◆ Outlet apron
(prevents outlet washout)
 - ◆ Diversion berm
(diverts all flows into the protected channel)



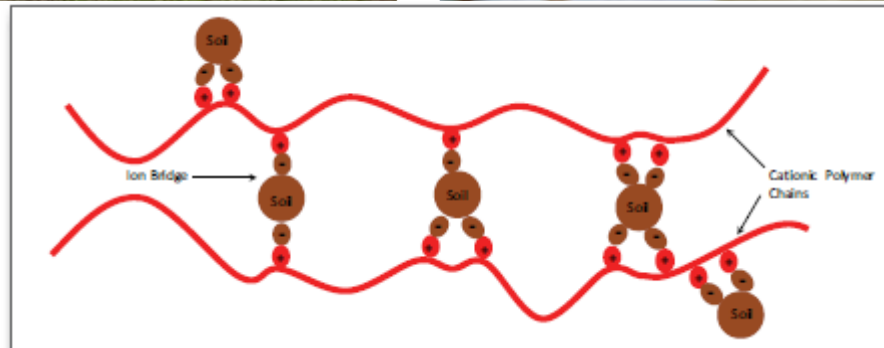
- **B9 – Dewatering Applications & Management Methods:**
 - Dewatering Bags
 - Discharge to a Selected Measure



- **B9 – Dewatering Applications & Management Methods:**
 - **Floating Skimmers**



- **B9 – Dewatering Applications & Management Methods:**
 - Polyacrylamides
 - Include Directions or Require On-Site Expert Assistance!



- **B10 – Measures Utilized for Work Within Waterbodies:**
 - Dewatering an active channel

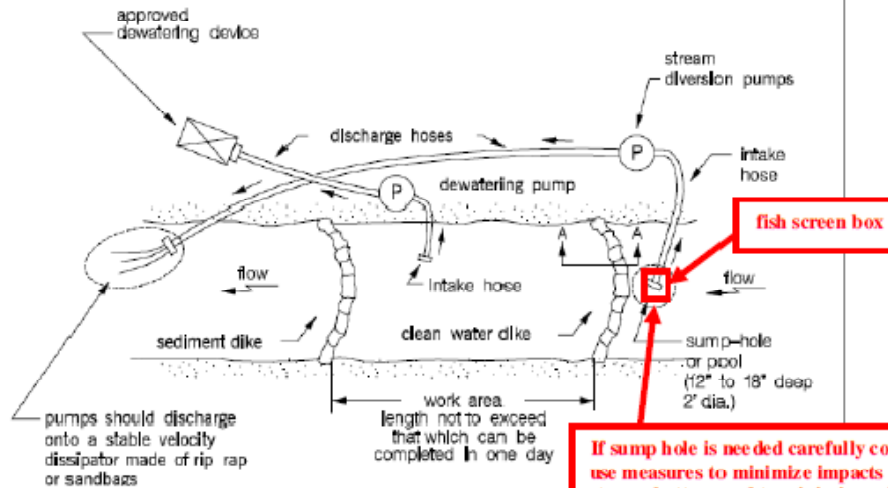


- **B10 – Measures Utilized for Work Within Waterbodies:**
 - Outlet location is critical



Maryland's Guidelines To Waterway Construction DETAIL 1.2: PUMP-AROUND PRACTICE

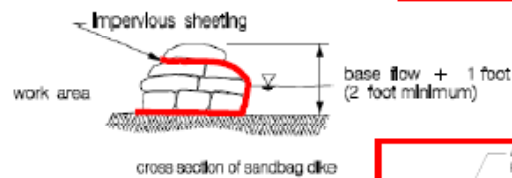
PLAN VIEW



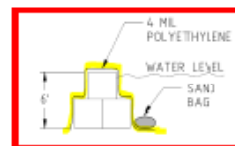
Note other potential options for energy dissipation linings appropriate for flow rates: such as plastic sheeting, geotextile...

If sump hole is needed carefully consider and use measures to minimize impacts to the stream bottom and to minimize sediment from being pumped from stream bottom. Use sump hole temporary linings or protect/line intake areas to prevent stream impacts and sediment uptake.

SECTION A-A



Alternate impervious sheeting placement





B11 – Maintenance guidelines for each storm water quality measure:

- All measures to be constructed required to have complete construction details
- Contractor shall not have to complete missing design elements
- All control measures shall have sufficient practice details to implement

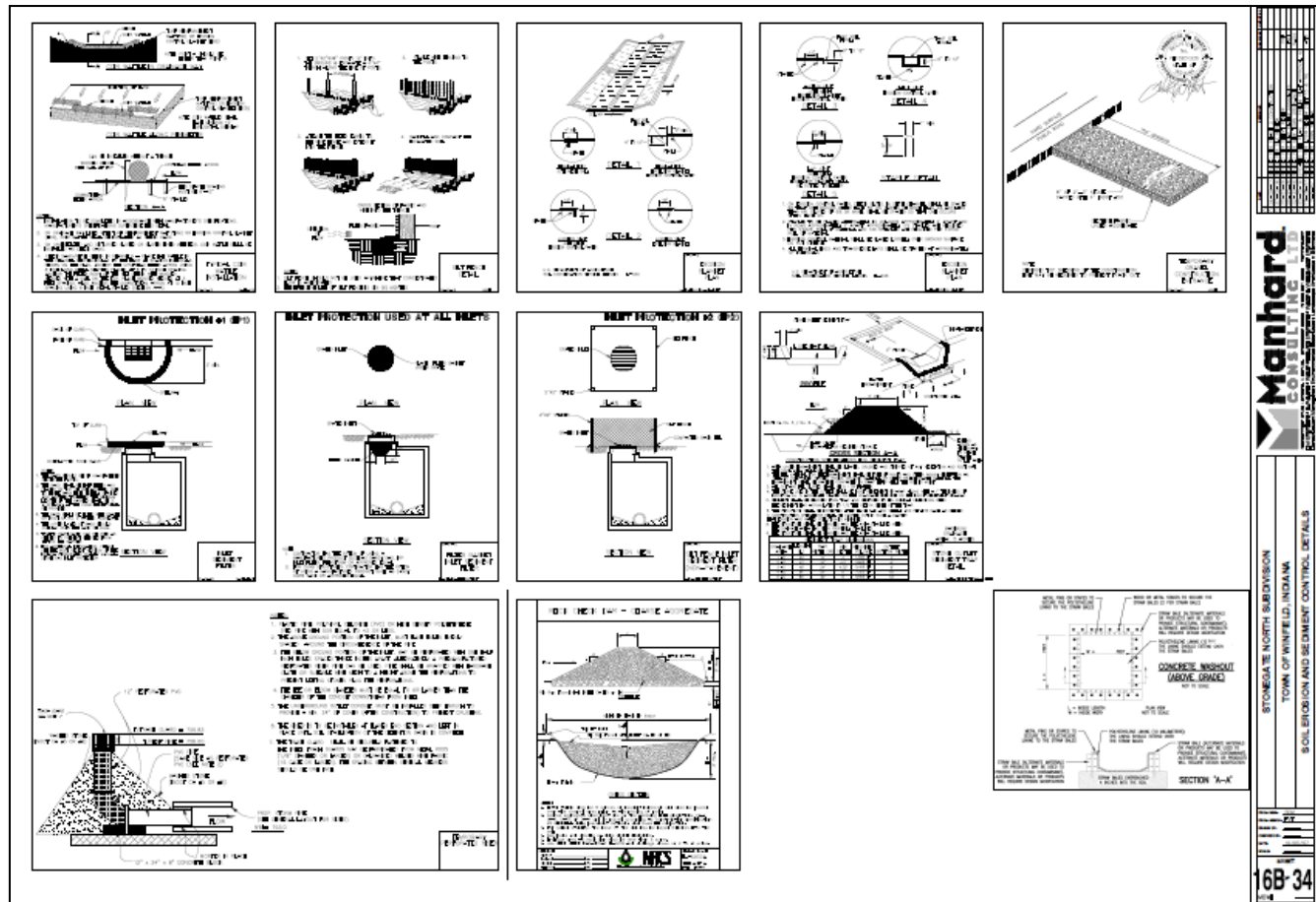


B11 – Maintenance guidelines for each storm water quality measure:

- Construction details frequently unsatisfactory:
 - ◆ Riprap outlet details (covered)
 - ◆ Delineation of incremental seeding or stabilization phasing (covered)
 - ◆ Sediment traps (covered)
 - ◆ Grade control structures (covered)
 - ◆ Riprap channels
 - ◆ Curb cut drains
 - ◆ Sediment basins
 - ◆ Storm water basin emergency spillways

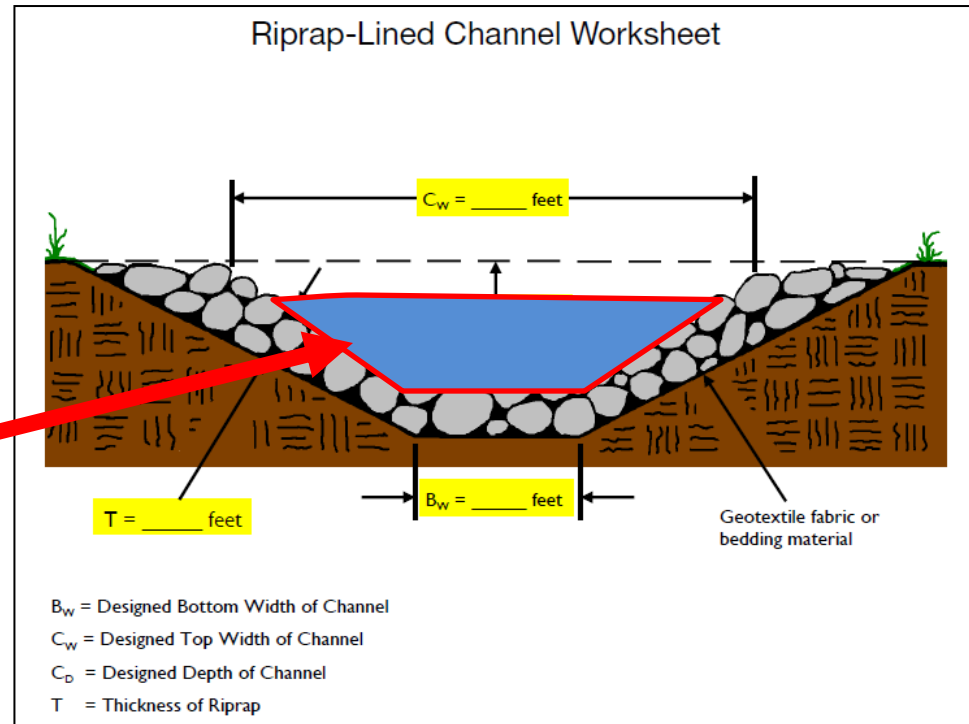


B11 – Maintenance guidelines for each storm water quality measure:



B11 – Maintenance guidelines for each storm water quality measure:

- Riprap channels and insufficient construction details:
 - ◆ Channel shape not specified (flat bottom most stable)
 - ◆ Channel flow line not shown fully protected



- **B11 – Maintenance guidelines for each storm water quality measure:**
- Riprap channels and insufficient construction details:
 - ◆ Channel shape not specified
 - ◆ Channel flow line not protected



Riprap not over excavated
with no channel shaping

B11 – Maintenance guidelines for each storm water quality measure:

- Curb cut drains and insufficient construction details:



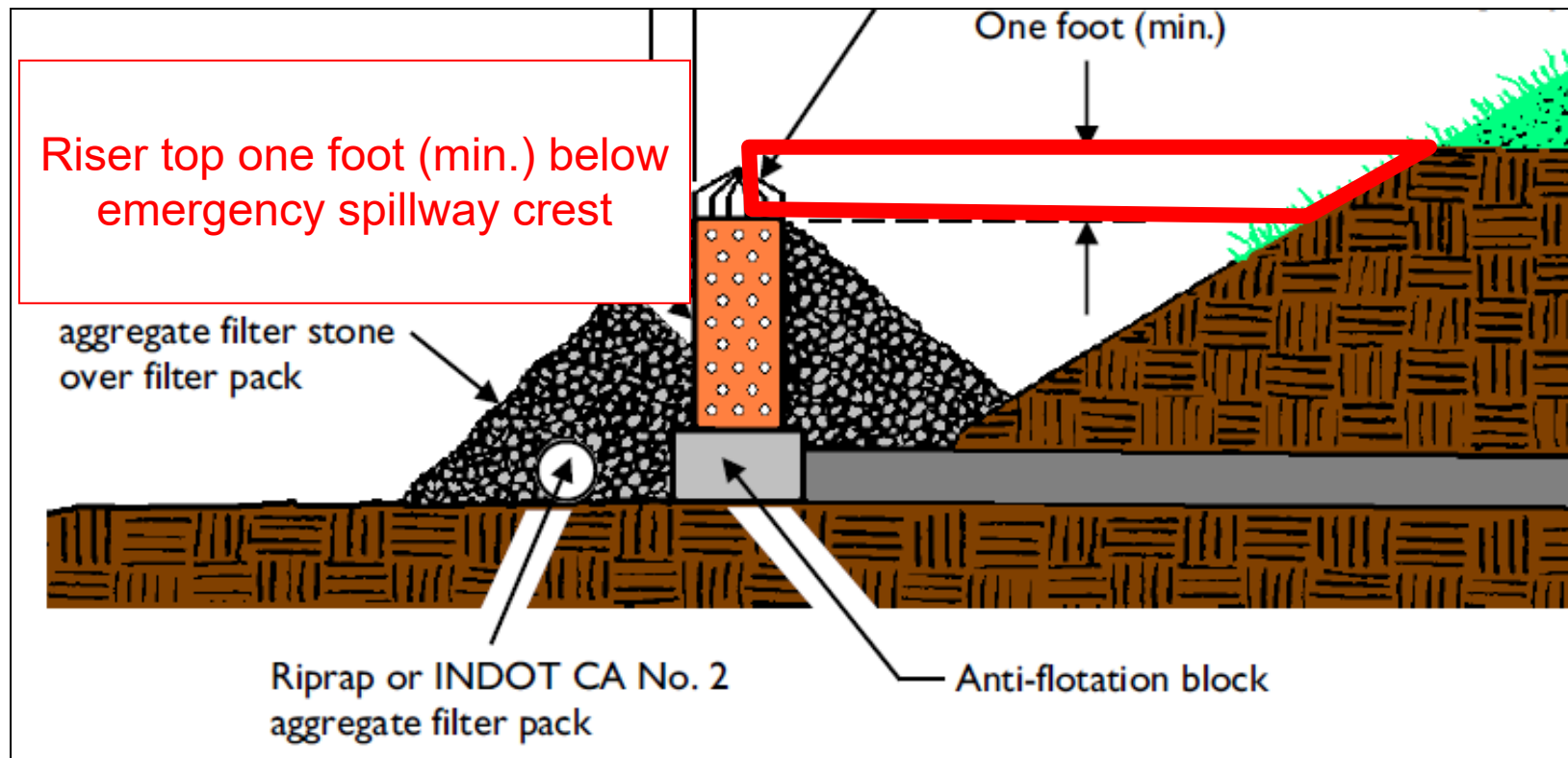
B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Riser details
 - ◆ Emergency spillway details



B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Riser details



B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Riser details

Riser top one foot (min.) below
emergency spillway crest



B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Riser details

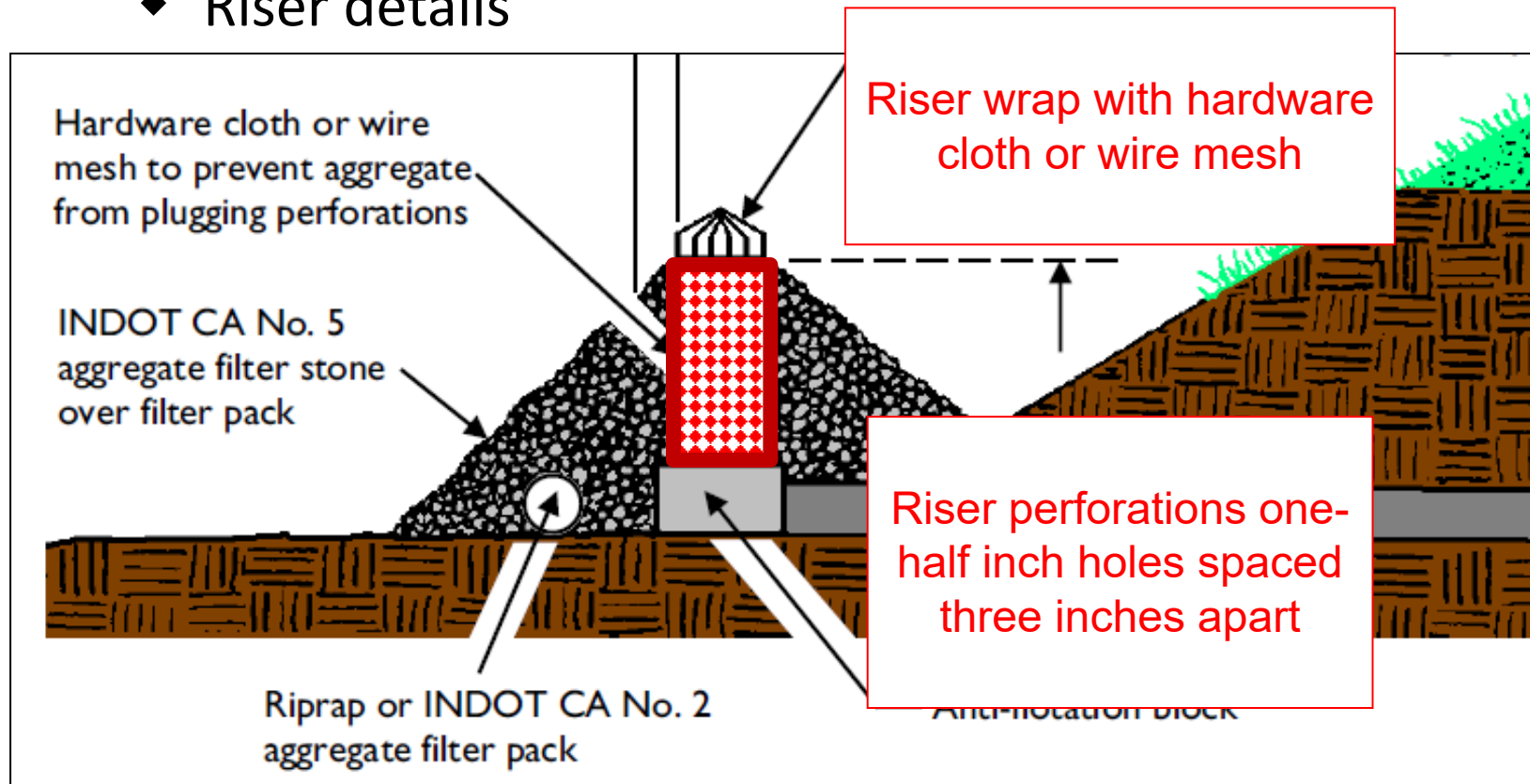
Dam washout when riser is too high and no emergency spillway

Note: no filter stone used on riser pack



B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Riser details



- **B11 – Maintenance guidelines for each storm water quality measure:**
- Sediment basins and insufficient construction details:
 - ◆ Riser details

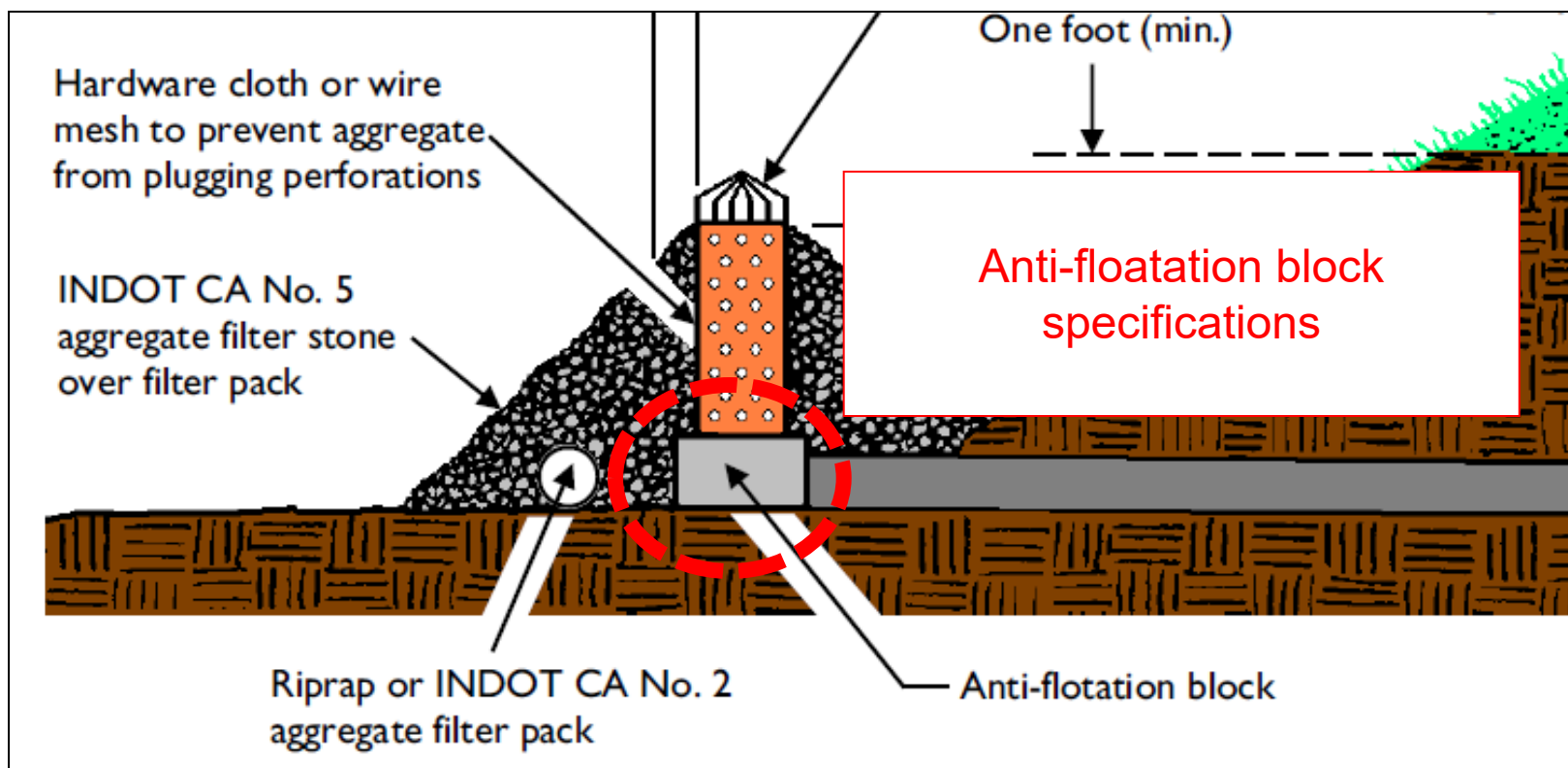
Hardware cloth wrap (wire mesh)
not geotextile filter fabric

Note: filter stone riser pack
becoming sediment clogged,
replacement required



B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Riser details



B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Riser details



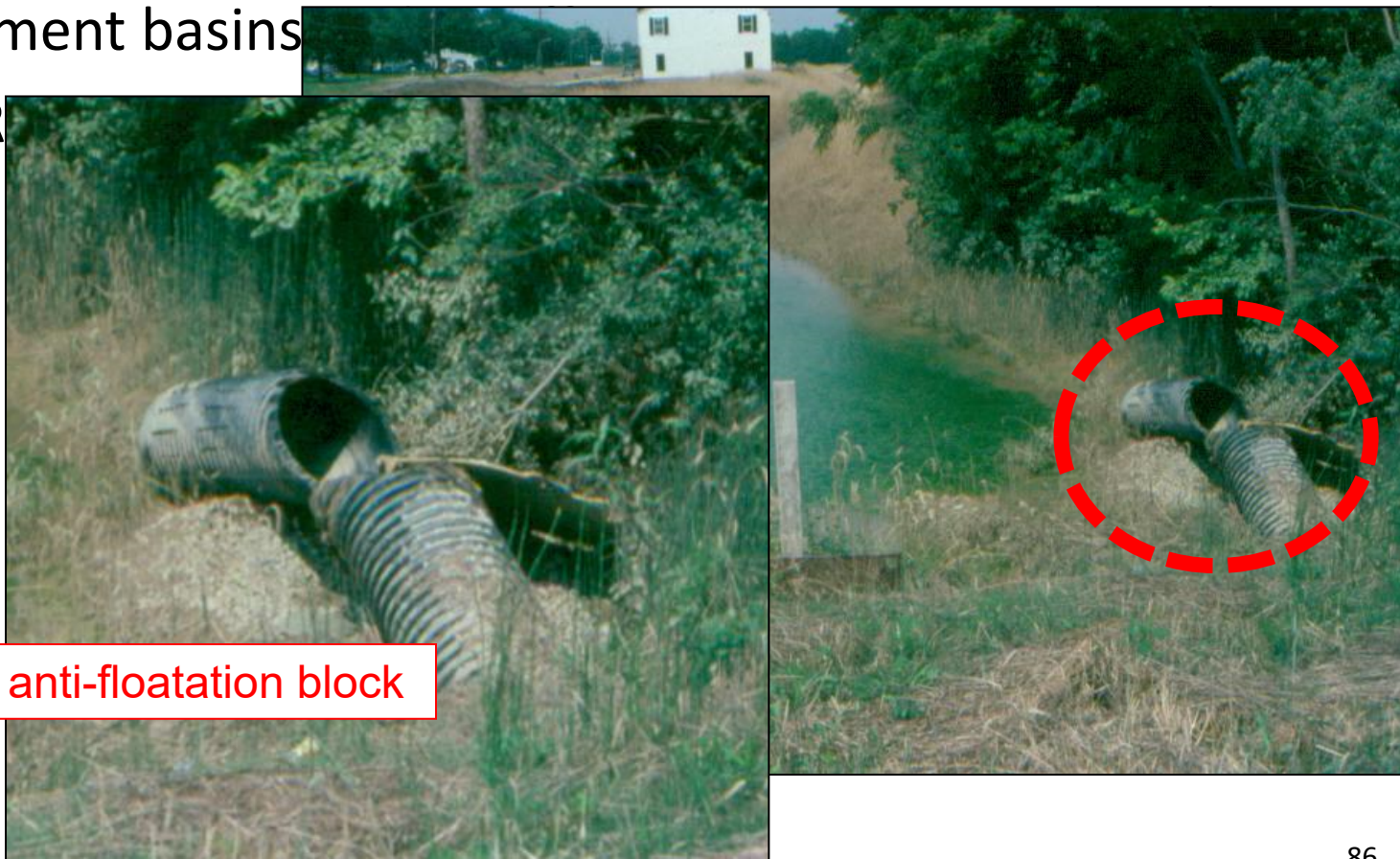
Concrete anti-floatation
block installation



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

- Sediment basins

- ♦ R



Riser failure no anti-floatation block

B11 – Maintenance guidelines for each storm water quality measure:

- Sediment basins and insufficient construction details:
 - ◆ Emergency spillway details

Emergency spillway
well located and
stabilized with riprap



B11 – Maintenance guidelines for each storm water quality measure:

- Storm water basins and insufficient construction details :
 - ◆ Location of emergency spillways

Emergency spillway well located not on the embankment filled areas



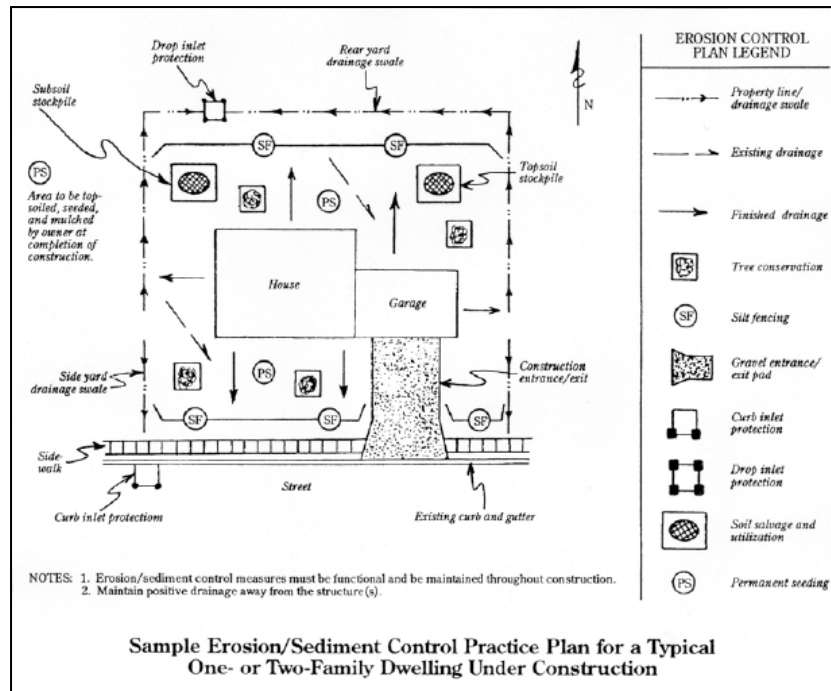


B12 - Sequence describing storm water quality measure implementation relative to land-disturbing activities:

- Must be project specific
- Beware of cookie cutter sequences
- Identifies when and how all measures are implemented relative to land-disturbing activities and construction activities
- Calendar dates of activities not required (often not relevant)


B13 - Erosion and sediment control specifications for individual building lots:

- DNR pamphlet (unavailable)
 - ◆ Basic (generic) home construction plan



DNR Division of Soil Conservation

Erosion & Sediment Control for Individual Building Sites



Soil erosion and resulting sedimentation are a leading cause of water quality problems in Indiana. Although erosion has long been associated with agricultural activities, it is also a major concern at construction sites, if the disturbed land is left unprotected. Every phase of a construction project has the potential of contributing significant quantities of sediment-laden runoff. Therefore, as a site is developed, all who are associated with a project must do their part to control erosion.

The developer is the primary entity having responsibility for controlling erosion, sedimentation, and stormwater runoff associated with the overall construction project. He or she is expected to install effective sediment control practices and implement an aggressive seeding program to address erosion and sedimentation. A seeding program can provide a financial benefit to the developer because studies have shown vegetated lots typically have a higher sale potential than un-vegetated lots. One of the main components during the initial phases of construction is the installation of the infrastructure (e.g., roads, utilities, and stormwater management systems). As the infrastructure is installed, it gradually transforms into a very efficient conveyor of stormwater runoff and the associated pollutants. In many communities, developers are expected to use appropriate stormwater management practices that will reduce the impact of increased runoff associated with the construction project.

This pamphlet addresses erosion and sediment control on an individual building lot, typically one acre or less in size.

The final phase of most projects is the construction that takes place on building sites. As individual lot construction progresses, residents and businesses begin to occupy buildings that have been completed. Sedimentation in roads, streets, and stormwater drainage systems may now become a nuisance and potential safety hazard to businesses and their clientele as well as residents of the development. The severity of these impacts is often directly related to the intensity of individual lot construction. Once independent construction activities commence on an individual residential or commercial building lot(s), the developer does not necessarily maintain the authority or responsibility to address erosion, sedimentation, and stormwater runoff. Often times these responsibilities are passed onto the individual lot owners and/or their respective contractors.

This pamphlet addresses erosion and sediment control on an individual building lot, typically one acre or less in size. First, it looks at some consequences of construction site erosion and presents four principles important for control. Next, it addresses the issue of proper lot drainage. Then it presents the seven steps within a construction sequence that should result in effective erosion control. Also included are installation instructions for several commonly used building site erosion and sediment control practices, as well as suggested reference materials and sources for further assistance.



- **B13 - Erosion and sediment control specifications for individual building lots:**
 - Many MS4s require individual home construction plans for building permits





- **B13 - Erosion and sediment control specifications for individual building lots:**
 - Prior to the start of home construction
 - ◆ Evaluate and identify existing trees and vegetation to be preserved
 - ◆ Protection of septic system areas from disturbance
 - Install perimeter protection prior to site work
 - ◆ Construction entrance
 - ◆ Perimeter sediment controls
 - ◆ Storm sewer inlet protection

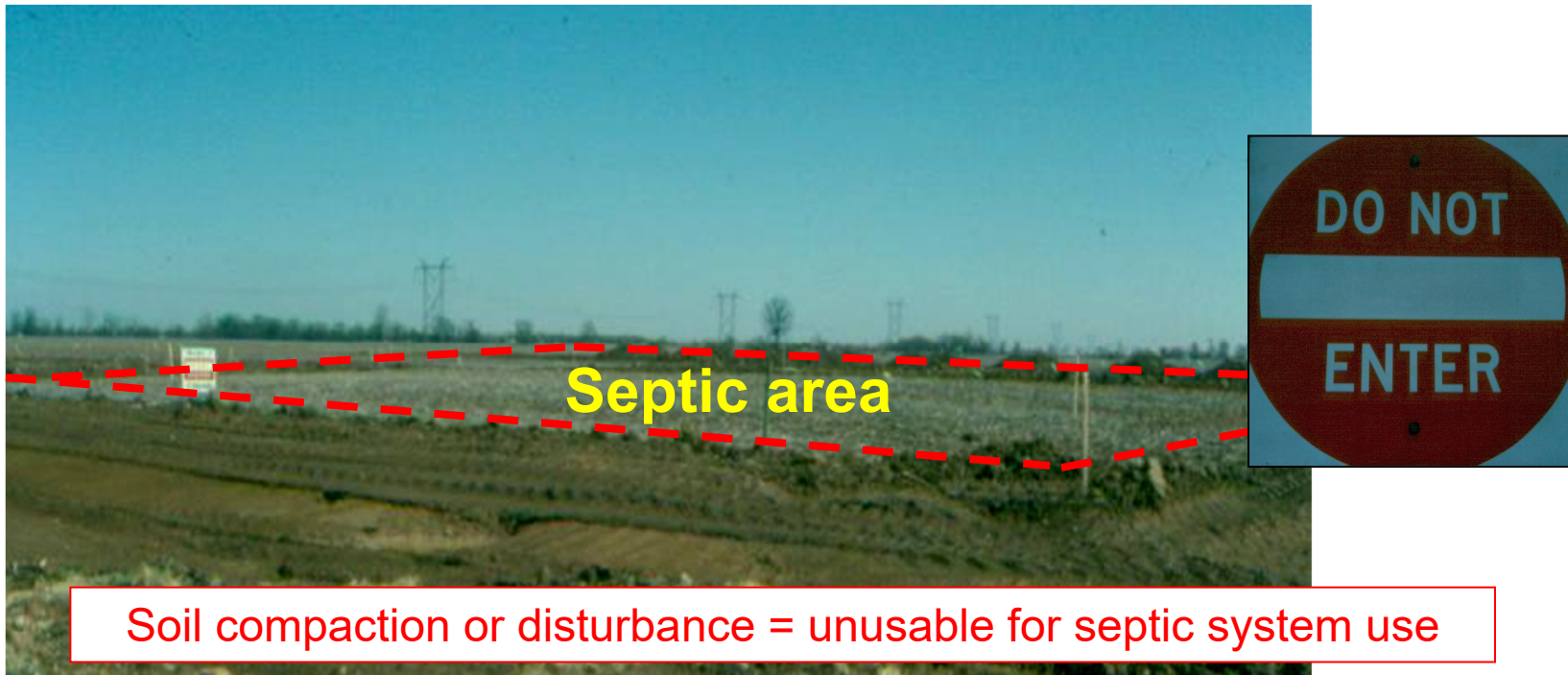


B13 - Erosion and sediment control specifications for individual building lots:

- Foundation excavation and spoils
 - ◆ Preservation of topsoil (if present)
 - ◆ Disposal of spoils
- Building material delivery
- Building waste management
 - ◆ Concrete washout
 - ◆ Trash, debris and waste building materials
- Control of run-off and roof drainage
- Button up – stabilization and removal of temporary controls

B13 - Prior to the start of home construction:

- Protection of septic system areas from disturbance
 - ◆ Fence septic tank absorption field areas



Soil compaction or disturbance = unusable for septic system use



B13 Install perimeter protection prior to site work:

- Storm sewer inlet protection:
 - Curb (street) inlet protection (many options)
 - ◆ Most fragile and inefficient (5% at best)
 - ◆ Also requires a behind the curb system of sediment prevention controls
 - ◆ Vigilant street sweeping program



B13 Install perimeter protection prior to site work:

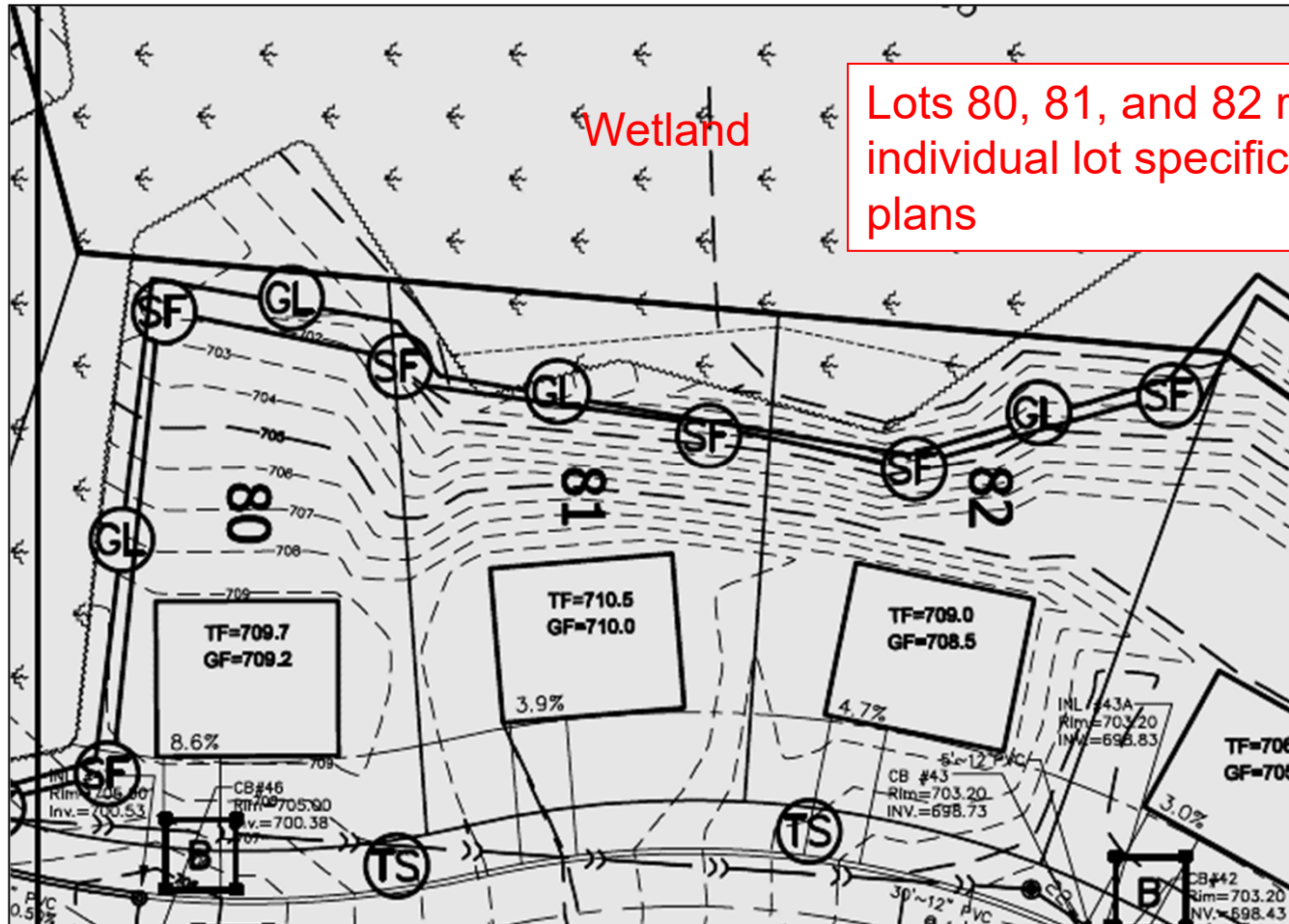
- Severely sloping lots require lot specific plans



Adjacent lot boat slip sediment impacted

B13 Install perimeter protection prior to site work:

- Severely sloping lots require lot specific plans





B13 Foundation excavation and spoils:

- Preservation of topsoil (if present)





B13 Foundation excavation and spoils:

- Disposal area for foundation excavation spoils

Surplus excavation spoils
being stockpiled on a
future phase that is not
with permitted project
limits without erosion and
sediment controls



B13 Building material delivery:

- Building material delivery
 - ◆ Concrete trucks



Effective concrete delivery
without tracking during wet
periods

B13 Building waste management:

- Building waste management
 - ◆ Concrete washout
 - ◆ Trash
 - ◆ Waste building materials
 - ◆ Wastewater





B13 Button up - stabilization:

- All disturbed areas stabilized
 - ◆ Seed and mulch
 - ◆ Sod



B14 – Spill Prevention and Maintenance:

- Can be as complex or as basic as the site demands
- Must include emergency contact numbers
 - IDEM
 - Local Emergency





B14 – Spill Prevention and Maintenance:

Potential pollutant sources including construction and waste materials that will be used or stored at the site are summarized in Section B1. Construction materials and chemicals used or stored on-site should be kept in small quantities whenever possible. Materials shall only be stored in non-sensitive areas and not in close proximity to watercourses, wetlands, or floodplains.

A spill prevention, control and countermeasure plan (SPCC) will be required if materials or tanks present on site contain more than, or have the ability to contain more than, 1,320 gallons of petroleum products. When not in use, petroleum products should be stored in sealed containers and out of contact with the elements to prevent direct contact with storm water.

Spill prevention and control measures shall be implemented on-site, including, but not limited to keeping waste storage areas clean, organized, and equipped with clean-up supplies; storing only enough product required for the job; use of containment structures, covers, or liners as appropriate; general education regarding spills and leaks; keeping site specific Material Safety Data Sheets (MSDS) available; and designation of responsible individuals to oversee and enforce control measures.

A spill bucket with absorbent material should be located near all equipment, chemical storage or handling locations. All spills should be cleaned up immediately. Spills of toxic materials will be reported to the appropriate state or local government agency, regardless of the quantity. The permittee is required to notify the U.S. EPA National Response Center (800-424-8802) in accordance with the requirements of 40 CFR 117 and 40 CFR 302 as soon as the discharge of any hazardous substance or oil in excess of the reportable quantity has been discovered.



B14 – Spill Prevention and Maintenance:

materials that may cause soil or groundwater contamination. As soon as possible, but not more than two (2) hours after discovery, the project personnel must communicate a reportable spill to the IDEM 24-hour toll free Spill Line at (888) 233-7745 or (317) 333-7745.

When a spill is reported to IDEM, an IDEM Emergency Responder will guide the project personnel through actions required to complete a cleanup of the spill in accordance with state and federal laws. IDEM staff can provide technical guidance to assist the project personnel with cleanup of spills of any size, including small spills that are not required to be reported. There is no penalty for contacting IDEM regarding a spill under the reportable quantity threshold.

Storage Handling Protocols:

- All products shall be kept in their original container, with original labels still attached, unless the container is not re-sealable.
- Hazardous materials shall be returned to the hazardous material storage area at the end of each day.
- An effort should be made to store only enough products to do the required job.
- The contractor shall provide tanks or barrels to collect liquid by-products that pose a pollution hazard.
- The pollutants shall be removed from the site on a weekly basis and disposed of in accordance with federal, state, and local requirements.



B14/15 – Material Handling and Spill Prevention:

B14 Monitoring and Maintenance Guidelines for Each Proposed Pollution Prevention Measure

Construction activities, support activities, and all best management controls will be inspected at least once every seven (7) days and within 24 hours of every rain event producing 0.5 inches or greater. Inspections shall be performed by personnel employed by the contractor who are knowledgeable in erosion and sediment control. Any noted deficiencies shall be remedied as soon as practical and prior to the next rain event. Table 7 summarizes each best management practice (BMP), typical signs of deficiency, and maintenance/ repair requirements.

Table 7 BMP Control Monitoring and Maintenance Guidelines

BMP	ITEMS TO CHECK/ SIGNS OF DEFICIENCY	MAINTENANCE/ REPAIRS
Stabilized Construction Entrance	<ul style="list-style-type: none">• Tracking of debris/ sediment off-site• Sediment build-up/ filled voids	<ul style="list-style-type: none">• Re-shape as needed for drainage and runoff control• Top dress with clean aggregate as needed• Remove and replace aggregate when voids are filled

B14/15 - Material handling and spill prevention plan:

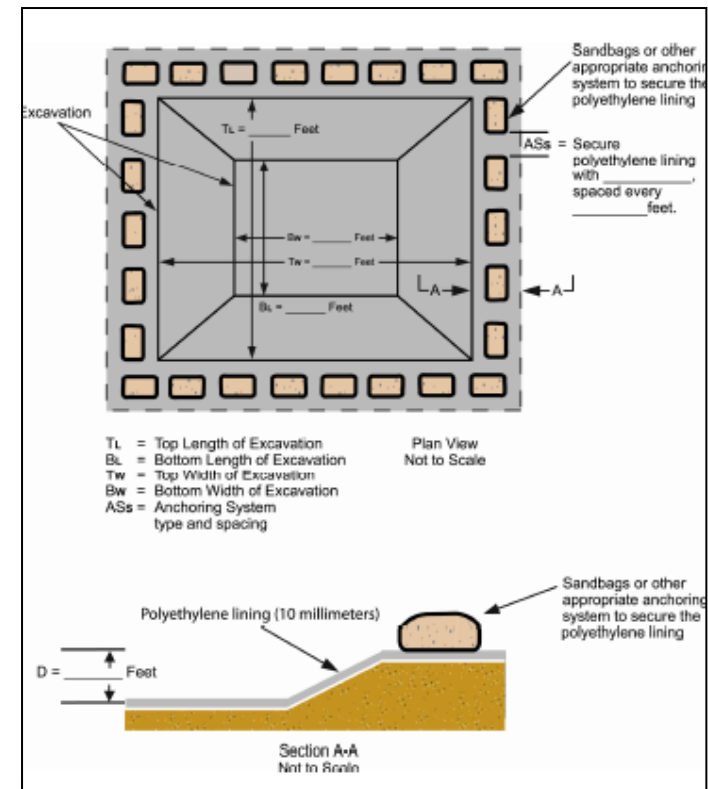
- Concrete washout provisions adequate for site planned construction activity:
 - ◆ Smaller project concrete use (standard ISWQM adequate)
 - ◆ Larger projects require adequate capacity for the anticipated concrete use
 - ◆ Masonry mortar mixing containment
 - ◆ Above grade containment facilities only, unless justification included with plans.



B14/15 - Material handling and spill prevention plan:

- Concrete washout provisions adequate for site planned construction activity:
 - ◆ Smaller project concrete use (standard ISWQM adequate)

Note manual typo: polyethylene lining
10 mil. (0.2540 mm) not 10 mm



B14/15 - Material handling and spill prevention plan:

- Concrete washout provisions adequate for site planned construction activity:
 - ◆ Larger projects require adequate capacity for the anticipated concrete use



B14/15 - Material handling and spill prevention plan:

- Concrete washout provisions adequate for site planned construction activity:
 - ◆ Masonry mortar mixing containment





Questions?

