Illinois Urban Manual

Jim Nelson: Association of Illinois Soil and Water Conservation Districts (AISWCD)

Funding for this project provided, in part, by the Grand Victoria Foundation of Elgin IL, the Governor of Illinois, and the Illinois Environmental Protection Agency through section 319 of the Clean Water Act.

Introduction

- IUM Defined
- Where to Find it and How to Use it
- Overview of Various New Standards
- SE/SC The Good the Bad and the Ugly.

The IUM is:

- a BMP manual;
- an aid for planning;
- a public use document.

Goals of the IUM

- Plan development/construction activities
- Reduce disturbance
- Reduce erosion
- Control sediment

How to Use the IUM

http://aiswcd.org/IUM

Illinois Urban Manual

Recent Updates to the Illinois Urban Manual:

Section 4 Practice Standards: Dewatering 813 (new standard 6/2010), Erosion Control Blanket 830 (revised 6/2009), Mulching for Seeding and Soil Stabilization 875 (revised 6/2010), and Temporary Concrete Washout Facility 954 (new standard 6/2009).
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2010 Urban Manual Table of Contents

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2010 Urban Manual Table of Contents

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Section 2
Non-point Source Pollution Control Processes and Planning Principles

	HTML Format	PDF File
Section 2	Not Available	urbse_2.pdf
Introduction	HTML	
A. Overview of Non-point Pollution Sources and Impacts.	HTML	
1. Erosion from Construction Sites	HTML	
2. Urban Runoff	HTML	
3. Hydrologic/Habitat Modification	HTML	

TABLE 2.1 PRACTICE SELECTION GUIDE

NAME	CODE	BRIEF DEFINITION	PROBLEMS					
			Sheet & Rill Erosion	Rill & Gully Erosion	Streambank Erosion	Stream Channel Erosion	Toxics & Salt Reducion	Flooding
Bioretention	800	Constructed wetland to improve stormwater quality				3	3	3
Construction Road Stabilization	806	Stabilize temporary roads to reduce erosion		3				
Culvert Inlet Protection	808	Temporary sediment filter at culvert inlets						
Dewatering	813	Removal of water from construction sites						
Diversion	815	Channel and ridge constructed to collect and divert runoff	2	2	1		1	1
Diversion Dike	820	Perimeter dike to manage and divert runoff	2	2	1		1	1
Dust Control	825	Controlling dust on construction sites and roads	1				1	
Erosion Control Blanket	830		2		1	1		
Filter Strip	835	Vegetated filter zone to remove pollutants			2		1	
Grass-Lined Channels	840	Natural or constructed channel vegetated to convey water		2		2		1
Infiltration Trench	847	Pits or trenches designed to hold water to increase infiltration	1	1				1
Inlet Protection-Excavated Drain	855	Excavated area to trap sediment at storm drain inlet						
Inlet Protection-Fabric Drop	860	Temporary practice to control sediment at storm drain inlet						
Inlet Protection - Paved Areas	861	Temporary sediment control barrier at storm drain inlet						
Inlet Protection-Sod Filter	862	Sediment filter using sod around a storm drain drop inlet						
Inlet Protection - Unpaved Areas	863	Temporary practice to control sediment at storm drain inlet						
Land Grading	865	Smoothing surface to planned grade to improve site	2	2				1
Level Spreader	870	Structure to spread water flow uniformly	1	1	1			
Mulching	875	Placing materials to protect soil surface	2	2	1			
Permanent Vegetation	880	Establishing permanent vegetative cover	3	3	2		2	2
Permeable Pavement	890	Pavement having interspersed sod, gravel, or sand areas	1	1				1
Portable Sediment Tank	895	Container for trapping sediment from runoff water						
Right-of-way Diversion	900	Structure to control roadway erosion		1				1
Rock Check Dam	905	Structure to control erosion in ditch or grass swale		3				
Rock Outlet Protection	910	Rocked area at outlets to reduce flow erosion		2		2		
Silt Fence	920	Temporary sediment barrier of filter fabric	2	2				
Sodding	925	Laying blanket of established turf to protect area	3	3	2		1	2
Stabilized Construction Entrance	930	Rock pad at entrance or exit to control tracking of mud to streets						
Structural Streambank Stabilization	940	Structure to control streambank erosion			3			
Subsurface Drain	945	An underground water collection and transport tube	1	1	2		2	1
Sump Pit	950	Temporary pit to trap and filter water						
Surface Roughening	953	Grooving, stair stepping, or tracking across a slope	1	1				
Temporary Concrete Washout Fac.	954	Management of solid and liquid wastes from concrete					3	

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Section 4 - Practice Standards

	HTML Format	PDF File
Section 4	Not Available	urbse_4.pdf
Introduction	HTML	
List of Urban Standards (Alphabetical) To print the standards use the PDF link found on this web page.	HTML	urbstls1.pdf This PDF link is for printing this list
List of Urban Standards (Problem Addressed) To print the standards use the PDF link found on the web page.	HTML	urbstls2.pdf This PDF link is for printing this list

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Permeable Pavement	890	1/1999	PDF
Portable Sediment Tank	895	3/1994	PDF
Right-of-way Diversion	900	2/1994	PDF
Rock Check Dam	905	1/1999	PDF
Rock Outlet Protection	910	8/1994	PDF
Silt Fence	920	10/2001	PDF
Sodding	925	12/1994	PDF
Stabilized Construction Entrance	930	8/1994	PDF
Structural Streambank Stabilization	940	8/1994	PDF
Subsurface Drain	945	8/1994	PDF
Sump Pit	950	8/1994	PDF
Surface Roughening	953	11/1999	PDF
Temporary Concrete Washout	954	6/2009	PDF
Temporary Diversion	955	8/1994	PDF
Temporary Sediment Trap	960	10/2001	PDF

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Temporary Diversion	955	8/1994	PDF
Temporary Sediment Trap	960	10/2001	PDF

ROCK CHECK DAM
(no.) CODE 905

(Source: USDA-Natural Resources Conservation Service - Illinois)

Some of the following links may lead to a document that requires Adobe Acrobat Reader PDF file - Download FREE Adobe Acrobat Reader

DEFINITION

A small rock dam constructed across a grassed swale or road ditch.

PURPOSE

The purposes of this practice are to reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch, trap sediment generated from adjacent areas or the ditch itself and to increase infiltration when suitable soils are present.

CONDITIONS WHERE PRACTICE APPLIES

This practice, utilizing a combination of rock sizes, is limited to use in small grassed swales or open channels that drain 10 acres or less. It shall not be used in a perennial stream where protection of the

DEFINITION

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CONDITIONS WHERE PRACTICE APPLIES

This practice, utilizing a combination of rock sizes, is limited to use in small grassed swales or open channels that drain 10 acres or less. It shall not be used in a perennial stream where protection of the flowing stream is the objective.

Some specific applications include:

1. Temporary ditches or swales that, because of their short time of service, cannot receive a non-erodible lining but still need protection to reduce erosion
2. Permanent ditches or swales that cannot receive a permanent non-erodible lining for an extended period of time
3. Either temporary or permanent ditches or swales that need protection during the establishment of grass linings
4. An aid in the sediment trapping strategy for an active construction site. This practice is not a substitute for major perimeter trapping measures such as practice standard TEMPORARY SEDIMENT TRAP 960.

CRITERIA

The drainage area of a ditch or swale being protected shall not exceed 2 acres when rock meeting IDOT CA-1, CA-2, CA-3 or CA-4 gradation is used alone and shall not exceed 10 acres when rock meeting IDOT RR-3 or RR-4 gradation and Quality Designation A is added on the downstream side

and to assure that the center of the dam is lower than the sides. Rock shall be placed according to construction specification 25 ROCKFILL using Method 1 placement and Class III compaction.

CONSIDERATIONS

For added stability, the base of the rock check dam should be keyed into the soil to a depth of 6 inches.

Filter fabric may be used under the rock to provide a stable foundation and to facilitate removal of the rock. The filter fabric shall meet or exceed the requirements of material specification 592 GEOTEXTILE Table 1 or 2, Class I, II or IV.

Rock check dams are effective in reducing flow velocity and thereby the potential for channel erosion. It is usually better to establish a protective vegetative lining before flow is confined or to install a structural channel lining than to install rock check dams. Field experience has shown rock check dams to perform much more effectively than silt fences or straw bales in the effort to stabilize "wet-weather" ditches.

Rock check dams installed in grass-lined channels may kill the vegetative lining if submergence after rains is too long and/or siltation is excessive.

If temporary rock check dams are used in grass-lined channels that will be mowed, care should be taken to remove all the rock when the rock check dam is removed. This should include any rocks that have washed downstream.

Field experience has shown that many rock check dams are not constructed with the center lower than the sides forming a weir. Stormwater flows are then forced to the rock-soil interface, thereby promoting scour at that point and subsequent failure of the structure to perform its intended function.

PLANS AND SPECIFICATIONS

Plans and specifications for installing rock check dams shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. At a minimum include the following:

1. Location where the practice will be installed
2. Dimensions, elevations, and spacing between the dams
3. Rock gradation and quality
4. Fabric specification if used

All plans shall include installation, inspection, and maintenance schedules with the responsible person identified.

Standard drawing ROCK CHECK DAM IL-605CA or IL-605R may be used as the plan sheet.

OPERATION AND MAINTENANCE

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A Sampling of IUM Standards

Table of Contents

Section 1
Section 2
Section 3
Section 4
Section 5
Section 6
Section 7
Section 8
Section 9
Section 10

Appendices
Appendix A
Appendix B
Appendix C
Appendix D
Appendix E
Appendix F
Appendix G

IUM Home

AISWCD Home

Illinois Urban Manual

List of Urban Standards (Problems Addressed)

Soil Erosion & Sediment Control	Stormwater	Special Area Protection
Soil Stabilization	Drainage Control	Streambanks and Shorelines
Runoff Control	Detention	Wetlands and Water Bodies
Sediment Control		Trees and Native Vegetation
Miscellaneous SE/SC		Steep Slopes
		Karst Areas

The following documents are available in html and Adobe Acrobat (PDF) formats.

Problem Addressed

Table of Contents

Section 1
Section 2
Section 3
Section 4
Section 5
Section 6
Section 7
Section 8
Section 9
Section 10

Appendices
Appendix A
Appendix B
Appendix C
Appendix D
Appendix E
Appendix F
Appendix G

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Problem Addressed

Streambanks and Shorelines

Dewatering (813)	6/10	PDF
Structural Streambank Stabilization (940)	8/94	PDF
Vegetative Streambank Stabilization (995)	8/94	PDF

Wetlands and Water Bodies

Well Decommissioning (996)	11/99	PDF

Trees and Native Vegetation

Tree and Forest Ecosystem Preservation (984)	4/00	PDF
Tree and Shrub Planting (985)	8/94	PDF

NATURAL RESOURCES CONSERVATION SERVICE
ILLINOIS URBAN MANUAL
PRACTICE STANDARD

STRUCTURAL STREAMBANK STABILIZATION

(ft.)
CODE 940

(Source: McHenry County Soil and Water Conservation District)

DEFINITION

Stabilization of eroding streambanks by use of designed structural measures.

PURPOSE

The purpose of this practice is to protect streambanks from the erosive forces of flowing water.

CONDITIONS WHERE PRACTICE

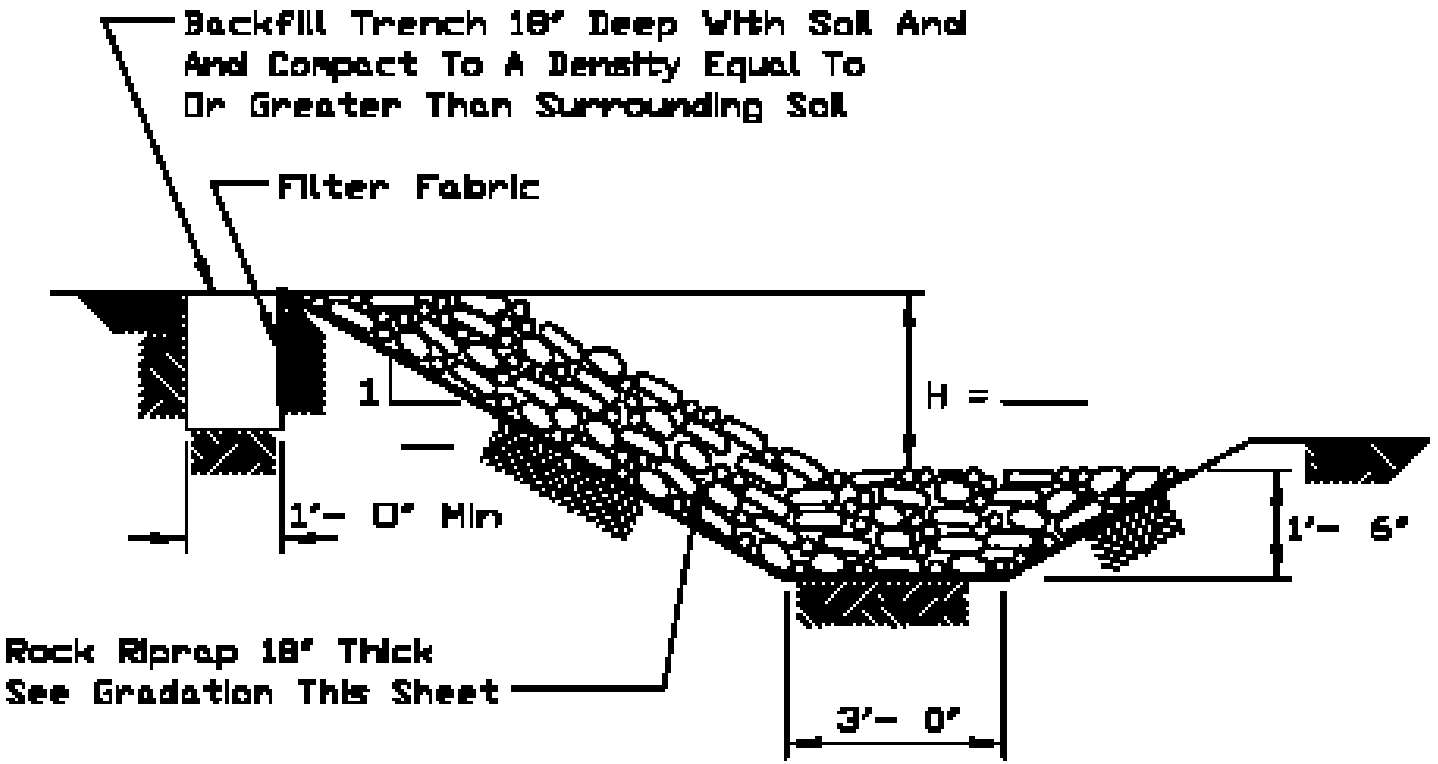
Develop designs according to the following principles:

1. Make protective measures compatible with other channel modifications planned or being carried out in other channel reaches.
2. Use the minimum design velocity of the peak discharge of the 10-year storm. Structural measures must be effective for this design flow and must be capable of withstanding

Structural SS

- Streams that exceed 5ft/sec
- Design velocity – peak discharge of 10 year storm event
- Design to not get blown out completely

STRUCTURAL STREAMBANK STABILIZATION - RIPRAP



SECTION

NATURAL RESOURCES CONSERVATION SERVICE
ILLINOIS URBAN MANUAL
PRACTICE STANDARD

VEGETATIVE STREAMBANK STABILIZATION

(ft.)
CODE 995

(Source: USDA – Natural Resources Conservation Service – Illinois)

DEFINITION

The stabilization and protection of eroding streambanks with selected vegetation.

PURPOSE

The purpose of this standard is to protect streambanks from the erosive forces of flowing water and provide a

CRITERIA

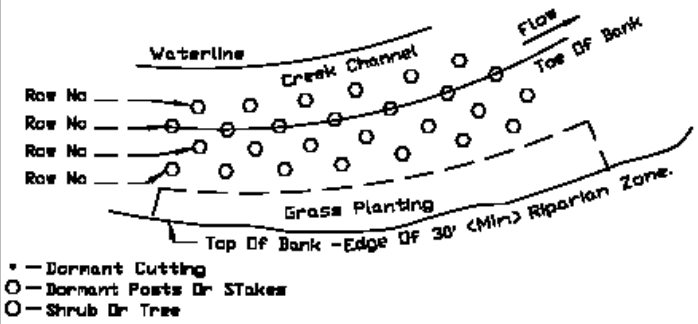
The U.S. Army Corps of Engineers, Illinois Department of Natural Resources-Office of Water Resources, Illinois Environmental Protection Agency, and any appropriate local unit of government shall be consulted for determining permits that may be required.

Vegetative SS

- May need to be in conjunction with hard armor
- For streams with 5cfs flow or less
- Use natives

VEGETATIVE STREAMBANK STABILIZATION

SAMPLE SITE PLAN



SITE PLAN

GRASSES					
Reach No.	Length	Area (Sq.Ft.)	Species To Be Seeded	Lbs. Of PLS Per 1000 Sq. Ft.	Total Lbs.

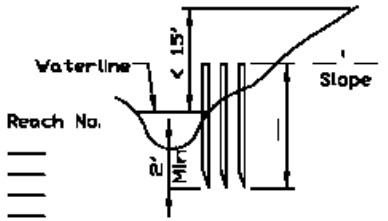
REFERENCE
Project
Designed Date
Checked Date
Approved Date

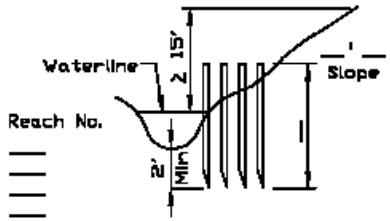
NRCS
Natural Resources Conservation Service

STANDARD DWG. NO.
IL-695
SHEET 1 OF 2
DATE 9-29-99

VEGETATIVE STREAMBANK STABILIZATION

SITE PLAN





WOODY PLANTS							
Reach No.	Length (Feet)	Row No.	Species To Plant	Between Row Spacing (Ft.)	In Row Spacing (Ft.)	Number Plants Per Row	Total Plants

REFERENCE
Project
Designed Date
Checked Date
Approved Date

NRCS
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STANDARD DWG. NO.
IL-695
SHEET 2 OF 2
DATE 9-29-99

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

SOIL BIOENGINEERING

(ft,)
CODE 926

DEFINITION

Treatment used to reinforce the soil and reduce erosion of slopes using live plant materials alone or in conjunction with simple structures.

PURPOSE

The purpose of this practice standard is to provide structural support and permanent vegetative cover for slope protection and erosion control using living plant materials alone or in combination with stakes or

CRITERIA

Soil Bioengineering Techniques:

Live Stakes – Live staking shall consist of the insertion and tamping of live, rootable vegetative cuttings into the ground, which will take root and grow. Live stakes shall be ½ to 1½ inches in diameter and 2 to 3 feet long. The top end of the live stake shall be cut square, and the basal (butt) end shall be cut at an angle. The live stakes shall be fresh, healthy and straight, with side branches removed. The live stakes shall be

Soil Bioengineering

- Draft IUM Standard
  - Live stakes
  - Live fascines
  - Branch Packing
  - Brush Layer
  - Live gully repair
  - Brush mattress
  - Root wads etc.

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

DEWATERING

(no.)
CODE 813

(Source: Illinois Urban Manual Technical Committee)

DEFINITION

The removal of water from construction sites.

PURPOSE

The purposes of this practice are as follows:

1. To facilitate construction in areas with surface water or a high water table.
2. To prevent erosion and sediment transport.

water, ground water, or other bodies of water.

CRITERIA

Dewatering shall consist of the removal of surface water and/or ground water by diverting and/or removing water from construction sites, within a watershed, as needed to perform the required construction in accordance with the specifications.

All outlets for dewatering discharges shall be stable and protected from erosion.

Dewatering

- Streams
- Standing water
- Ground water
- Stabilized outlet

Stabilized Outlet?

Dewatering cont.

- Sump Pit 950
- Diversions
- Temporary Sediment Trap 960
- PAM

Dewatering Cont.

- Filtration bags
  - Secondary Containment
  - Not located in aquatic areas
  - Manufacturer details on pump size. 4” maximum
  - Monitored often
  - Anchored to the ground
  - Changed out when ½ full

Dewatering Continued

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

TEMPORARY STREAM DIVERSION

(ft,)
CODE 976

Source: Aukland Regional Council – Stream Facts

DEFINITION

A temporary channel or conduit used to convey perennial stream flow around a construction site.

PURPOSE

The purpose of this practice is to

Erosion control devices, such as silt fence or other devices shall be in place prior to starting construction to prevent sediment from entering the diversion or the main stream and shall include temporary stabilization of the inlet and outlet of the temporary stream diversion

Discharges from dewatering of

Temporary Stream Diversion 976

- Provide dry work environment
- Divert stream flow
- Maintain water quality and velocity
- Small, low velocity streams

Temporary Stream Diversion Cont.

- Stabilized site, inlets, and outlets
- Capacity is sized to meet flow conditions

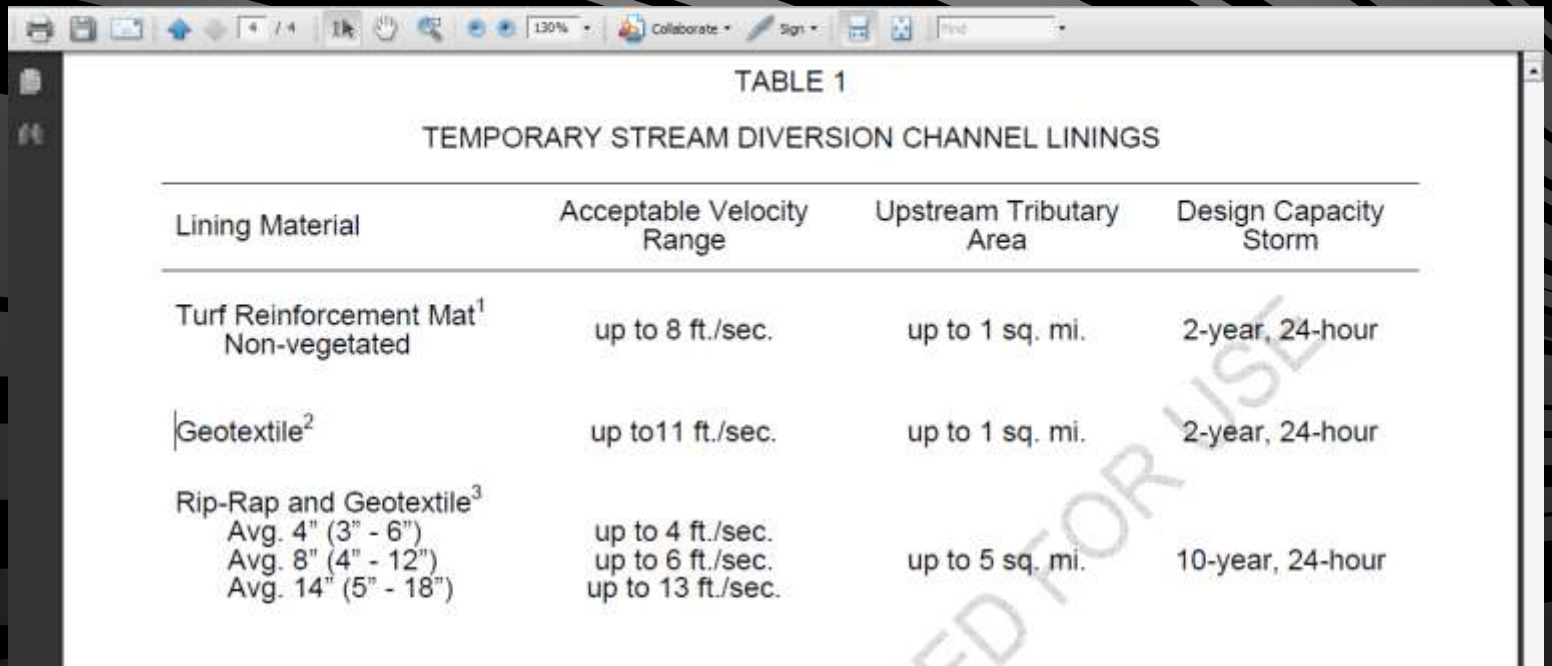


TABLE 1

TEMPORARY STREAM DIVERSION CHANNEL LININGS

Lining Material	Acceptable Velocity Range	Upstream Tributary Area	Design Capacity Storm
Turf Reinforcement Mat[1] Non-vegetated	up to 8 ft./sec.	up to 1 sq. mi.	2-year, 24-hour
Geotextile[2]	up to11 ft./sec.	up to 1 sq. mi.	2-year, 24-hour
Rip-Rap and Geotextile[3] Avg. 4" (3" - 6") Avg. 8" (4" - 12") Avg. 14" (5" - 18")	 up to 4 ft./sec. up to 6 ft./sec. up to 13 ft./sec.	up to 5 sq. mi.	10-year, 24-hour

Temporary Stream Diversion Cont.

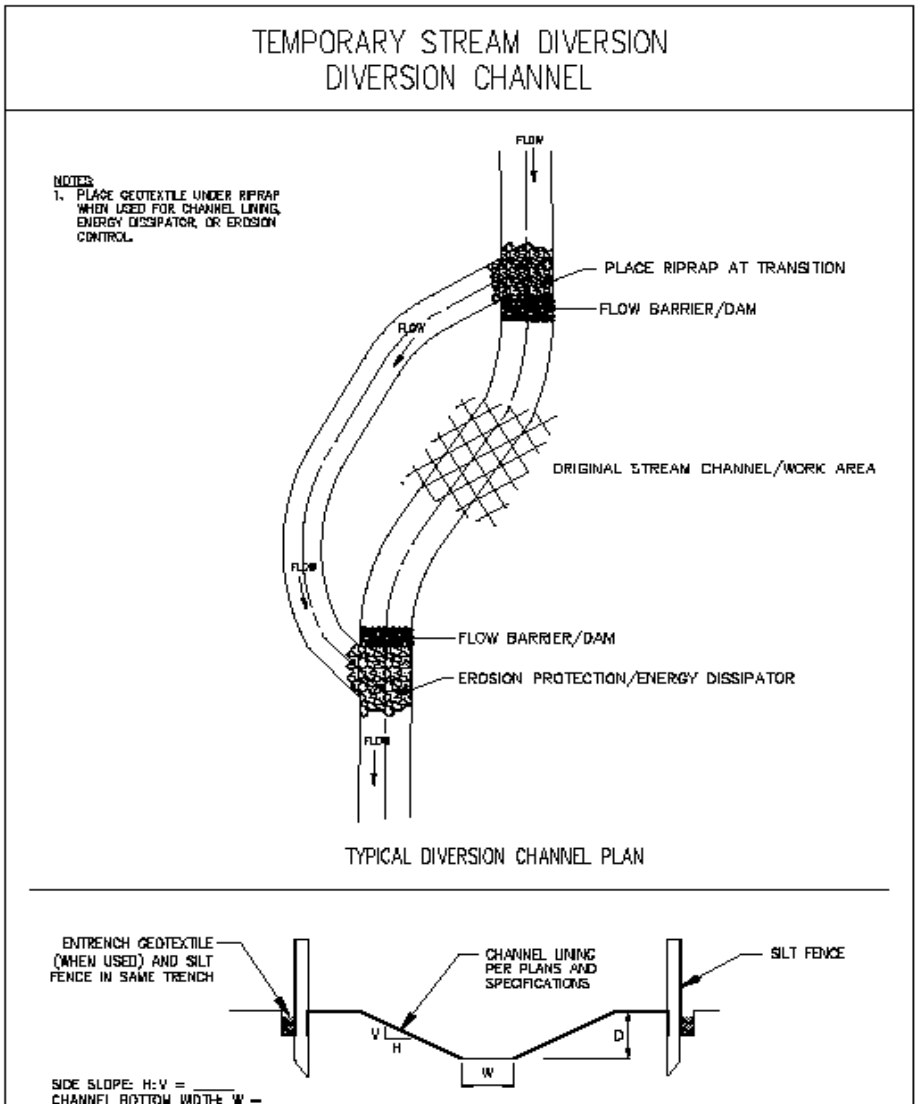
- Channels
- Conduit
- Pumps
- 2:1 side slopes or shallower
- Erosion protective lining within diversion
  - Liner
  - Rock
  - Erosion Control Blanket on intermittent and low flow
  - TRM on all else

Temporary Stream Diversion Cont.

- Plans and Specifications
  - ID site location
  - Grade, depth, width
  - Liner material
  - Conduit type
  - Dam material
  - SESC plans
  - Stockpile locations
  - Installation, removal, and stabilization sequence

Const. Spec. 760 Temp. Stream Div.

1. Construct Diversion (leave plugs in at each end)
2. Stabilize Diversion Channel (bank to bank)
3. Remove both plugs
4. Stabilize Inlets/Outlets
5. Install Upstream Flow Barrier, then downstream
6. Construct Downstream Flow Barrier
7. Dewater



ILLINOIS URBAN MANUAL
PRACTICE STANDARD

SILT CURTAIN - FLOATING

(sq. yd.)
CODE 836

*From EPA document, credited as follows: Floating Silt Curtain (Courtesy of Geofabrics Australasia)

DEFINITION

A temporary sediment control barrier formed in a body of water around a work site that is in or near the body of water.

PURPOSE

The purpose of this practice is to help prevent sediment from moving from a work site in or near a body of water into the larger body of water.

CONDITIONS WHERE PRACTICE

50 foot joints, 100 foot anchor spacing maximums.

10-12 feet depth maximum below surface.

Allow 10 – 20 % variance in straight line measurements.The maximum drainage area shall not exceed 1 acre per inlet.

Types of silt curtains

Type I – no current, sheltered from wind and waves

Silt Curtain (floating) 917

- For work in the wet
- For stream bank work
- Needs work: draft has a ways to go

SESC Related Standards

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

EROSION BLANKET

(sq. ft.)
CODE 830

(Source: USDA – Kane DuPage Soil and Water Conservation District)

DEFINITION

A temporary protective blanket of degradable materials; e.g: straw, wood, coconut, jute, or blend of these materials bound into a mat, usually with a plastic or degradable mesh or netting on one or both sides.

PURPOSE

The purposes of this practice are to protect the soil surface from raindrop impact and overland flow during the

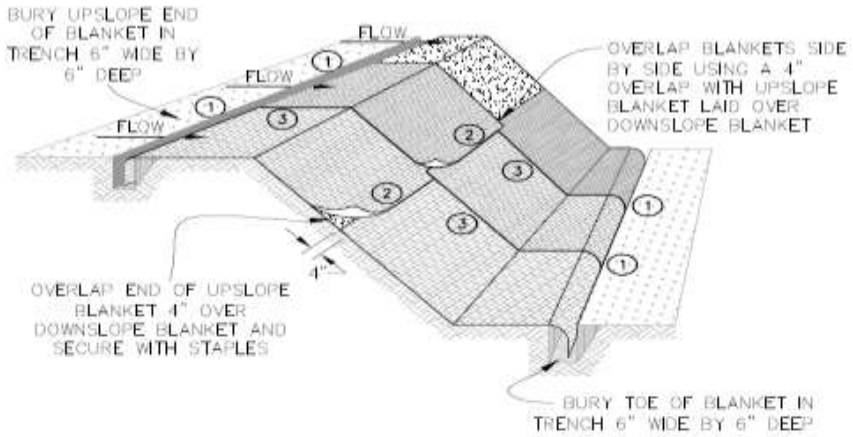
designer should determine blanket type.

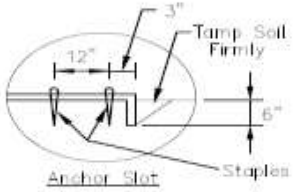
CRITERIA

Blanket type should be selected by slope steepness, shear stress, degradation of the blanket, and the duration of time that the blanket will be protecting the soil solely without vegetation. Erosion Control Blankets shall be installed after the seed bed preparation, fertilizing, or liming and seeding is completed. Refer to practice standards 965 TEMPORARY

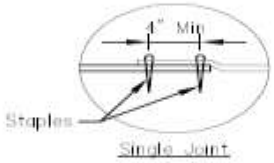
Erosion Control Blanket

- Staple length changes
- New material specification
- Taken out of concentrated flow areas





DETAIL 1



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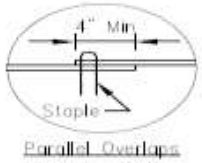

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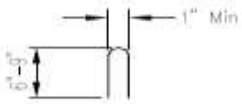
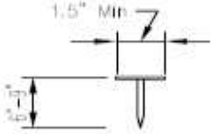


STAPLE DETAIL



PUSH PIN DETAIL

NOTES:

1. Staples shall be placed in a diamond pattern at 2 per s.y. for stiched blankets. Non-stiched shall use 4 staples per s.y. of material. This equates to 200 staples with stiched blanket and 400 stapels with non-stiched blanket per 100 s.y. of material.
2. Staple or push pin lengths shall be selected based on soil type and conditions. (minimum staple length is 6")
3. Erosion control material shall be placed in contact with the soil over a prepared seedbed.
4. All anchor slots shall be stapled at approximately 12" intervals.

EROSION CONTROL
BLANKET INSTALLATION DETAILS

Date
Designed
Drawn
Checked
Approved

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

TEMPORARY CONCRETE WASHOUT FACILITY

(no.)
CODE 954

(Source: Illinois Urban Manual Technical Committee)

DEFINITION

A device used to manage liquid and solid wastes from concrete usage on construction sites.

PURPOSE

The purpose of this practice is to control concrete wastes to prevent both on-site and off-site pollution.

CONDITIONS WHERE THIS PRACTICE APPLIES

2. Each facility shall have appropriate signage to inform concrete equipment operators of the proper washout locations.

3. Each facility shall be located in an area protected from possible damage from construction traffic and have a stabilized access to prevent tracking onto streets.

4. Washout facilities shall be located on level ground a minimum of 15 m (50 ft) from storm drain inlets and all open drainage facilities. For smaller sites

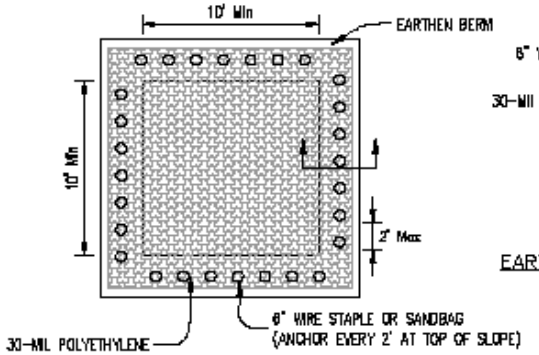
Temp Concrete Washout 954

- Signage criteria
- 15m (50 feet) from storm drain inlets or water resources
- Liquids to evaporate or vacuumed and brought back to batch plant
- Solidified concrete waste from washout facilities shall be considered Clean Construction or Demolition Debris (CCDD) per IL Environmental Protection Act (415 ILCS 5) and disposed of accordingly

Temp Concrete Washout Cont.

- 30mil liner
- Straw bale
- Earthen berm
- Excavated
- Portables are allowed if they meet the IUM minimum criteria. i.e. they are water tight, sized to the job, there are enough of them, have 30 mil liner, etc. etc.

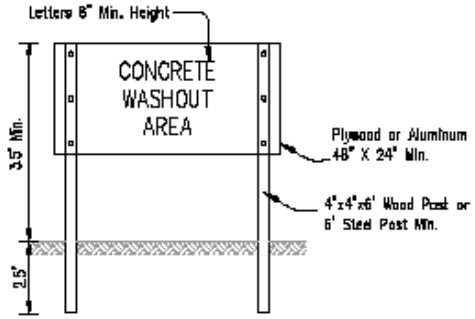
AUTOCAD2006



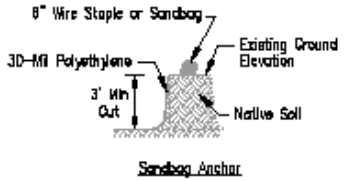
PLAN VIEW

Sandbag Anchor

EARTHEN BERM ANCHOR SECTIONS



SIGN DETAIL



Sandbag Anchor

SUBGRADE ANCHOR SECTIONS

NOTES:

1. Maintaining temporary concrete washout facilities shall include removing and disposing of hardend concrete and/or slurry and returning the facilities to a functional condition.
2. Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.

TEMPORARY CONCRETE
WASHOUT FACILITY – EARTHEN TYPE

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

MULCHING FOR SEEDING AND SOIL STABILIZATION

(no.)
CODE 875

(Source: Kane-DuPage Soil and Water Conservation District)

DEFINITION

The application of mulch materials over seeded areas or for soil stabilization.

PURPOSE

The purposes of this practice are as follows:

1. To prevent erosion and surface compaction or crusting by protecting the soil surface from raindrop impact and reducing the velocity of overland flow.

AND SHRUB PLANTING 985 for mulching in these areas.

This practice does not apply to areas where concentrated flows are present. Follow the requirements set forth in other practice standards, such as EROSION BLANKET: TURF REINFORCEMENT MAT (TRM) 831 or SODDING 925.

For slopes greater than 3:1 (H:V), follow the requirements of practice standard EROSION BLANKET 830, **EROSION BLANKET: TURF REINFORCEMENT**

Mulching 875

- Areas 3:1 or shallower
- Not for concentrated flow areas (it's sad this has to be stated)
- Straw
- Hydromulch
  - 1 ton/acre
  - Applied in direct stream from opposing directions (no rainbows)
- Compost

Polyacrylamide for Turbidity Reduction and Sediment Control

ILLINOIS URBAN MANUAL
PRACTICE STANDARD

Polyacrylamide (PAM) for Turbidity Reduction and Sediment Control

(no.)
CODE 894

(Source: Jonathan Koepke, CPESC)

New Standards

- Bioretention
- Bioswale
- Cofferdam
- Detention Dry
- Detention Extended
- Detention Wet Bottom
- Detention Wetland
- Dewatering
- Erosion Blanket: Turf Reinforcement
- Inlet Protection
- Polyacrylamide for Sediment
- Polyacrylamide for Soil Stabilization
- Silt Curtain (floating)

Construction BMPs

Problems and IUM Standards that can Help

Photos: Soil and Water Conservation Districts of Illinois and AISWCD

Mulching for Seeding and Soil Stabilization 875 = 2 tons/acre

Hydromulch application rates

Silt Fence 920

Recommend = Rock Outlet Protection 810

Culvert Inlet Protection 808 S. Fence in horseshoe and X-braced (3 mo and < 1 acre)

Before and After Photos

Erosion Control Blanket 830

Erosion Control Blanket 830

Erosion Control Blanket 830

ECB – Turf Reinforcement Mat 831

Stabilized Construction Entrance 930

Ditch Check (Manufactured)
814 [not developed]

Cofferdam 803

Silt Curtain?

Silt Curtain (Floating) 917

Sediment Bag in Creek

A sandbag? How much sediment do you expect to trap with that?

Rock Check Dam 905/Ditch Check (Manufactured)/ECB Turf Reinforcement Mat 831

Inlet Protection - Paved Areas 861/Inlet Protection Pervious Areas 864

Culvert Inlet Protection 808/Rock Check Dam 905/TRM 831

Land Grading 865, Temp Seeding 965, Silt Fence 920, Mulching… 875

Temporary Seeding 965/Erosion Control Blanket 830/Mulching… 875/Inlet Protection 861/ Silt Fence 920/Stabilized Construction Entrance 930

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QUESTIONS