

# **THE CITY OF WEST PEORIA**

## **TABLE OF CONTENTS**

### **TITLE 6: EROSION CONTROL**

#### **CHAPTER 1 - EROSION, SEDIMENT AND STORM WATER CONTROL REGULATIONS**

##### **PERMIT**

##### **APPENDIX A.**

##### **APPENDIX B.**

## TITLE 6: EROSION CONTROL

### CHAPTER 1 EROSION, SEDIMENT AND STORM WATER CONTROL REGULATIONS

- 6-1-1 Definitions
- 6-1-2 Applicability
- 6-1-3 Standards for Design and Maintenance of Control Measures
- 6-1-4 Maintenance of Control Measures
- 6-1-5 Erosion, Sediment and Storm Water Control Permits
- 6-1-6 Maintenance of Permanent Storm Water Control Measures
- 6-1-7 Enforcement and Stop Work Order Fee
- 6-1-8 Penalty
- 6-1-9 Appeals
- 6-1-10 Appendices

#### SECTION 6-1-1 DEFINITIONS

For the purposes of these regulations, the following words, terms and phrases shall have the meanings respectively ascribed to them in this section, unless the context clearly indicates otherwise.

**Adjacent lands:** At a minimum is an area within fifty (50) feet of the project area, and includes all surrounding land that may either impact a site, or be impacted by potential soil erosion, sediment and/or storm water run-off as a result of land disturbing activities conducted on a site.

**Areas of concentrated flow or bodies of water:** Any area where water may accumulate or flow, whether continual or as a result of a storm event, including but not limited to lakes, rivers, streams, creeks, ponds, ditches, swales, gullies, ravines, street gutters and other similar features.

**City:** The City of West Peoria

**City Council:** The West Peoria City Council

**Control measure:** Any proposed temporary or permanent measures to be installed to control erosion, sediment and storm water run-off from a project area.

**County:** The County of Peoria, Illinois.

**Development:** The division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure; any mining, excavation, landfill or land disturbance; and any use or extension of the use of land.

**Disturbed area:** From any point where water leaves the site; it is the land over which water flows toward the point.

**Erosion Control Administrator:** The person appointed by the West Peoria City Council to administer this ordinance.

**Flood Insurance Rate Maps (FIRM):** Maps prepared by the Federal Emergency Management Agency (FEMA) that depict the special flood hazard areas (SFHA) within a community. These maps include insurance rate zones and flood plains and may or may not depict floodways.

**Five-year frequency storm event:** The storm event rainfall depth during a 24-hour period which is exceeded, on the average, once every five (5) years.

**Institutional use:** A religious, or public use, such as a church, library, public or private school, hospital, or government owned or operated building, structure, or land used for public purpose.

**Land disturbing activity:** Any change in land, which may result in soil erosion from water or wind and the movement of sediments into State or County waters or on to lands in the City, or a change in the amount and/or intensity of storm water run-off, including but not limited to, the covering with an impervious surface, stockpiling, clearing, grading, excavating, rehabilitating, transporting, depositing or filling of land.

**Normal agricultural practices:** Activities associated with the preparation and tilling of land for the purposes of growing crops, or raising livestock.

**Perimeter control:** Any control measure installed between the down slope side of disturbed area and the property line and/or between the down slope side of the disturbed area and any area of concentrated flow.

**Pre-project condition:** A condition that impacts erosion, sediment, or storm water run-off characteristics of a site prior to start of construction activity. The pre-project condition shall be based on the predominant land use for the past five (5) years. For example, if a site has been cropland for four (4) of the past five (5) years and in grass just prior to development, the land use would be cropland for the pre-project condition.

**Project:** Any development involving modification to land which involves a land disturbing activity.

**Regional storm water management system:** A system which is designed, constructed and maintained to provide storm water control for multiple land owners.

**Road:** Any right-of-way that has been improved for the purposes of providing a surface for vehicular traffic, including any Federal, State, County, Township, and City controlled facilities.

**Single family dwelling:** A building designed for or occupied by one family.

**Site:** The lot or parcel on which the project is to be developed.

**Standards:** The Illinois Environmental Protection Agency's Illinois Urban Manual, A

Technical Manual Designed for Urban Ecosystem Protection and Enhancement published in 1955 and Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control published in 1988 by the Urban Committee of the Association of Illinois Soil and Water Conservation Districts now in effect, or as hereafter amended which is incorporated by reference herein, the City of West Peoria standards for Storm Water Design Analyses, found at Appendix "A" of this article, and the erosion and sediment control criteria and specifications found in Appendix "B" of this section.

**Substantial completion:** The point at which all exterior work is completed and the site can be used for the use intended.

**Twenty-five year frequency storm event:** The storm event rainfall depth during a twenty-four hour period which is exceeded, on the average, once every twenty-five (25) years.

**Two family dwelling:** A building designed for or occupied by two families.

**Two-year frequency storm event:** The storm event rainfall depth during a 24-hour period which is exceeded, on the average, once every two (2) years.

**Utility service line:** The means by which utility service is provided to service users, such as electric, telephone, television cable; gas, water and sewer pipes.

**Working day:** Shall not include Saturday, Sunday or any holiday when the West Peoria City Hall is closed.

## SECTION 6-1-2            APPLICABILITY

These regulations shall apply to:

- A. All projects within the boundaries and jurisdiction of the City. No land surface shall be disturbed unless an erosion and sediment control permit, or an erosion, sediment and storm water control permit has first been issued for that project. This article shall not apply to the following:
  - 1. Land disturbing activities that disturb less than once acre of area and are also not part of a larger common plan of development or sale. ;
  - 2. Normal agricultural practices; or
  - 3. Routine maintenance of roads, access ways and utility service lines.The Erosion Control Administrator reserves the right to require any non-agricultural, construction development activity, regardless of disturbed area or type of activity, to comply with this article if it is determined to be the cause of or a contributor to an existing or potential erosion, sediment, or storm water impact.
- B. Any land within the boundaries and jurisdiction of the City on which there is located a permanent storm water control measure, which was installed pursuant to this section.

## SECTION 6-1-3            STANDARDS FOR DESIGN AND MAINTENANCE OF CONTROL MEASURES

- A. Erosion and Sediment Control Measures

All control measures required under this section shall conform to the design criteria, standards, and specifications provided in the applicable standards now in effect or as hereafter amended. Appendix “B” provides a list of common measures that can be used to control erosion and sediment. All control measures installed shall be sufficient to prevent sediment from leaving the permit site during a five (5) year frequency storm event. Measures shall be taken to prevent sediment from leaving the site. When sediment does leave the site, the owner, developer or contractor shall remove the sediment and return it to the site within four hours or by no later than the end of the workday. For example, installing a rock construction drive, or cleaning tires could be used to minimize tracking of sediment onto public roads.
- B. Permanent Storm Water Control Measures

All storm water controls shall be designed so that the peak discharge rate from the permitted area resulting from the two-year and twenty-five year frequency storm events for the post-project condition do not exceed the corresponding storm event peak discharges for the pre-project condition. Evaluation of submitted plans shall be based on the Storm Water Design Analysis Standards in Appendix “A” at the end of this section.
- C. Regional Storm Water Control Systems

To allow for the beneficial development and maintenance of the regional storm water management systems, where they are available and they are appropriate, an applicant may submit a design dependent on such a system. The applicant shall submit documentation of the approval for the use of the regional storm water management facility from the governmental agency having jurisdiction over it. The applicant shall submit evidence showing that there will be no adverse flooding impact to any receiving stream between the point of discharge and the regional storm water facility. If the applicant is approved to use the regional storm water management system, the applicant may request exemption from the requirements in this section for permanent on site storm water controls from the Erosion Control Administrator. Such exemption shall not apply to any temporary storm water control measures required by this section.

## SECTION 6-1-4            MAINTENANCE OF CONTROL MEASURES

- A. Erosion, Sediment and Temporary Storm Water Control Measures

On-site sediment control measures shall be constructed and functional prior to initiating clearing, grading, stripping, excavating, or fill activities on the site.

Sediment control measures and temporary storm water control measures are to be maintained so they are operating effectively until permanent ground surface protection and permanent storm water control measures are established in a manner specified in the applicable permit issued pursuant to this section.

Fully functioning temporary sediment control measures (including, but not limited to perimeter sediment controls) shall remain in place until the ground is stabilized with permanent ground cover. The intent of this section is to keep the sites protected at all times until the ground is permanently stabilized. In cases where it is not practical to leave the temporary sediment control measures in place prior to establishing ground cover (for example, when control measures need to be removed in order to grade the area or install pavement or sod), an exception will be made only if one of the conditions listed below will be met. In no way does adhering to one of the conditions below relieve the owner of responsibility to clean-up or repair any damages caused from sediment or storm water run-off leaving the site

1. Permanent ground cover shall be established with pavement, aggregate or sod within three days of the removal of sediment barriers.
2. Permanent vegetation shall be established by seeding with anchored mulch within three days of removal of sediment barriers during the spring or fall seeding periods. Summer seeding is acceptable on project areas which shall be watered; it is not acceptable in concentrated flow areas.

**B. Additional Control Measures**

The Erosion Control Administrator may require additional control measures pursuant to the Standards if determined as necessary after site inspection and prior to issuing the permit.

**SECTION 6-1-5 EROSION, SEDIMENT, AND STORM WATER CONTROL PERMITS**

Before commencing any project that will disturb greater than or equal to one acre of land or a project with less than one acre that is part of a larger common plan of development, the owner of the land, or his representative, shall be required to file an application for an Erosion, Sediment, and Storm Water Control Permit.

**A. Application**

The applicant shall file the application with the City on forms provided by the City. The applicant shall supply the number of copies of application documents as provided in the application. Each application shall be accompanied by the following information:

1. Existing site conditions map. A map of existing site conditions on a scale, of at least one-inch equals one hundred (100) feet, showing the project area and immediately adjacent areas and the locations of the following site information;
  - a) Site boundaries and adjacent lands which accurately identify site location;
  - b) Lakes, streams, wetlands, channels, ditches, and other water courses on and immediately adjacent to the site;
  - c) Floodways and/or Zone A of the Floodplain as determined on the Flood Insurance Rate Map (FIRM), and indicating the map panel number;
  - d) All off-site drainage onto or through the project site;
  - e) Location and dimensions of storm water management components on or adjacent to site;
  - f) Locations and dimensions of structures, roads, highways, easements and paved areas; and

- g) Site topography: show contours at vertical intervals as follows:
    - (i) Slope of six percent (6%) or less, two-foot interval.
    - (ii) Slope of over six percent (6%) but less than fifteen percent (15%), five-foot interval.
    - (iii) Slope of over fifteen percent (15%) ten-or twenty-foot intervals.
- 2. Plan of final site conditions.  
A plan of final site conditions drawn to the same scale as the existing site map submitted pursuant to subsection (1)a, and which includes information to accurately depict post-construction appearance of site, e.g., paved areas, building, landscaping, and other changes to the site, along with other predominate site features, e.g., open areas, bodies of water.
- 3. Sediment and Erosion control practices.  
A site construction plan including:
  - a) Locations and dimensions of all proposed land disturbing activities;
  - b) Locations and dimensions of all temporary soil and aggregate stockpiles;
  - c) Location, dimension and construction details of all construction site management control measures necessary to meet the requirements of this article and including proposed re-vegetation of disturbed areas;
  - d) Statement regarding provisions for maintenance and maintenance requirements of the construction site management control measures during construction.
- 4. Storm water management plans and controls. Design calculations and information related to the permanent storm water management system for any project (except single-family residential developments) with a net increase of impervious area. The following information shall also be provided by the applicant:
  - a) A map showing the drainage area boundaries, including of-site drainage areas that drain into or onto the site;
  - b) Location and identification of soil types for all drainage areas;
  - c) Location and identification of vegetative cover for all drainage areas;
  - d) Run-off curve number calculations for both pre-and post- project conditions for each drainage area;
  - e) Time of concentration calculations for both pre-and post-project conditions for each drainage area, and include a map showing hydraulic flow lengths used;
  - f) Peak flow-rate calculations for 2 year and 25 year storms for both pre-and post-project conditions;
  - g) Design calculations for detention basin outlets for both 2 year and 25 year storms, include stage-storage table and discharge rating curve data or out-flow calculations (refer to optional form in Appendix A);
  - h) Location, dimensions, and construction details of proposed detention basins and outlets;
  - i) Detention volume calculations;
  - j) Summary of peak flow-rates for pre-, post- and proposed conditions with detention showing that the requirements of this section are met (refer to optional form in Appendix A);
  - k) An analysis of the stormwater detention outlet adequacy for a 50- year storm and 100-year storm and;
- 5. Schedule or sequence of development or installation of the elements of the site management control measures proposed above.
- 6. A detailed estimate of quantities and estimated costs, prepared by a registered professional engineer, of all control measures required under this section.
- 7. A plan of the continued management and maintenance of such permanent control measures.
- 8. Application fee. An application fee shall be submitted at the time of application. The fee shall be set by the City Council in its Fee Schedule resolution.

A fractional acre shall be rounded to the nearest whole acre. There shall be no refund of any fees paid and no application shall be accepted for filing unless the fee has been paid in full.

**B. Application Review**

Within five (5) working days of submittal of the application, the Erosion Control Administrator shall respond in writing to the sediment and erosion control practices portion. Within twenty (20) working days of submittal of the application, the Erosion Control Administrator shall respond to the storm water management plans and control portion of the application by either issuing a permit, issuing a request for additional information, or issuing a statement denying the permit with an explanation of cause. The application shall be deemed approved if no response is made within the time frames stipulated above.

**C. Financial Security Agreement**

Before any Erosion, Sediment and Storm Water Control Permit is issued, the applicant shall deliver to the Erosion Control Administrator a surety bond, irrevocable letter of credit or executed escrow agreement in the name of the City of West Peoria for one hundred percent (100%) of the applicant's engineer's estimated cost for all control measures required under this section. A signed contractor's bid that meets the specifications of the engineer's estimate for the work can be used to establish the amount of security required, if such estimate is accepted by the Erosion Control Administrator.

**D. Duration**

The Erosion, Sediment and storm Water Control Permit shall be issued for a period not exceeding two years.

**E. Permit Conditions**

The Erosion, Sediment and Storm Water Control Permit shall contain at a minimum the following general conditions:

1. That written approval shall be obtained from the Erosion Control Administrator prior to making any modification to the approved erosion and sediment control plan as set forth in the permit;
2. That all control measures required in the permit shall be installed unless otherwise directed by the Erosion Control Administrator;
3. That all control measures shall be maintained during construction;
4. Such other conditions as the Erosion Control Administrator deems appropriate.

**F. Permanent Ground Surface Cover**

Without exception, all disturbed areas must have permanent ground cover within six months of completion, or within six months of occupancy, whichever comes first.

**G. Final Inspection; Notice of Permanent Storm Water Control Measures**

Within fourteen (14) days after completion of construction, the applicant shall notify the Erosion Control Administrator that the permanent storm water control measures are ready for final inspection. If the inspection shows that the control measures and maintenance plan comply with the Standards in Appendix "A" of this section, the Erosion Control Administrator shall issue a Notice of Permanent Storm Water Control Measures. The owner shall record the Notice with the Peoria County Recorder of Deeds within fifteen (15) days after the Notice is issued.

**SECTION 6-1-6 MAINTENANCE OF PERMANENT STORM WATER CONTROL MEASURES**

Anyone owning property with a permanent storm water control measure existing thereon and installed pursuant to this section shall maintain the control measure so that it functions in compliance with these regulations.

#### SECTION 6-1-7                      ENFORCEMENT AND STOP WORK ORDER FEE

This section shall be administered and enforced by the Erosion Control Administrator, who shall make or cause to be made, periodic inspections of all work authorized by permits issued in accordance with this section to insure that said construction is in compliance with its provisions; he shall make or cause to be made, investigations of violations of this section and shall cause any violations to be corrected.

Any permit issued pursuant to this section shall be revoked by the Erosion Control Administrator when he finds from personal inspection or from competent evidence that the rules, regulations

or standards under which said permit was issued are being violated. To defray costs of administering stop work orders posted by field inspectors as a result of a violation of any terms of the ordinance, a fee of one hundred fifty dollars (\$150.00) plus ten dollars (\$10.00) per day that violation exists per stop work order will be charged.

#### SECTION 6-1-8                      PENALTY

The violation of any of the terms of this section shall constitute an offense punishable by a fine not to exceed seven hundred fifty dollars (\$750.00), - with each day the violation remains uncorrected constituting a separate offense. Such fine is in addition to any other remedy provided by law.

#### SECTION 6-1-9                      APPEALS

The City Council shall consider and decide upon appeals any decision, order, or requirement of the Erosion Control Administrator made pursuant to this section.

Any person directly aggrieved by any decision, order, requirement, or determination of the Erosion Control Administrator made pursuant to this section shall have the right to appeal such action to the City Council. Such appeal shall be made within thirty-five (35) days from the date of the action appealed from, shall be filed in writing, and shall include a short, concise statement of why the action is being appealed. The fee for such an appeal shall be set by the City Council in its Fee Schedule resolution and is due with the application. In addition, the person filing the appeal shall pay all required publication costs associated with the appeal.

Upon receipt of a notice of appeal, the City shall set a date for a public hearing before the City Council. Such public hearing shall commence not sooner than fifteen (15) days nor more than thirty (30) days after the date of the receipt of the notice of appeal. At least fifteen (15) days of notice of the time and place of such hearing shall be published in a newspaper of general circulation in the City. The City Council shall decide the appeal within twenty-one (21) days after the conclusion of the public hearing. The City Council may affirm, modify or reverse any appealed action.

Appeals from the City Council shall be made in conformity with the provisions of the Illinois Administrative Review Act, 735 ILCS 5/3-101 et.seq. Copies of any orders or proceedings ordered by the appellant shall be furnished to him at his own cost.

#### SECTION 6-1-10                      APPLICATION

The attached appendices are fully incorporated herein.



**CITY OF WEST PEORIA**

**EROSION, SEDIMENT AND STORM WATER CONTROL**  
**PERMIT APPLICATION**

Before commencing any project that will disturb greater than or equal to one acre of land or a project with less than one acre that is part of a larger common plan of development, the owner of the land or his representative, shall be required to file an application for an erosion, sediment, and storm water control permit.

A copy of the Illinois Environmental Protection Agency (IEPA) National Pollution Discharge Elimination System (NPDES) Permit shall be attached as well. Information on how to submit a Notice of Intent and Storm Water Pollution Prevention Plan can be found at [epa.illinois.gov](http://epa.illinois.gov).

1.     **Application Fee:**         Fee : \$ \_\_\_\_\_ .

The fee shall be set by ordinance of the City of West Peoria. See Title 11 - Fee Schedule of the City Code Book for the current fees. The full fee is due upon submission of this Application.

2.     **General Site Information:**

<b>Project Name:</b>	
<b>Project Location:</b>	Address: _____ Tax ID No.: _____
<b>Zoning Classification:</b>	
<b>Size of Property:</b>	(Acres or Square Feet) _____

<b>TO BE COMPLETED BY THE CITY OF WEST PEORIA ONLY:</b>	
<b>Date Permit Received:</b>	
<b>Date Permit Approved:</b>	
<b>Schedule Provided (Y/N):</b>	
<b>Financial Security (Y/N):</b>	
<b>Permit Approved By/Title:</b>	
<b>Date Permit Expires:</b>	

3. **Contact Information**

**Information for Owner of Property:**

Name/Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Phone No.: \_\_\_\_\_ Cell No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

**Information for Developer of Property (if different than owner):**

Name/Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Phone No.: \_\_\_\_\_ Cell No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

**Information for Contractor:**

Name/Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Phone No.: \_\_\_\_\_ Cell No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

**Information for Engineer:**

Name of Licensed Professional Engineer: \_\_\_\_\_

Name of Company: \_\_\_\_\_

Street Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ Cell No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

#### 4. Site Plan Information

A site plan must be submitted with this application as required by the ordinance. Additional required information must also be included as required for your project.

Two (2) complete copies of plans and documentation that provide the information required below. If item is not applicable, mark item with N/A.

Plan sheet (minimum scale of 1" = 100') with all dimensions and information including:

##### **Existing Conditions:**

- a) \_\_\_\_\_ Property Lines & Adjacent Lands
- b) \_\_\_\_\_ Lakes, Steams, wetlands, channels, ditches, other water courses on and immediately adjacent to site. Including off site drainage onto and through project site.
- c) \_\_\_\_\_ Floodways and/or Zone A of the floodplain as determined on the Flood Insurance Rate Map ("the "FIRM"), and indicating the Map Panel Number
- d) \_\_\_\_\_ Existing Buildings and Structures, Roads, Highways, Paved Areas including any existing storm water management components.
- e) \_\_\_\_\_ Existing contours:
  - \_\_\_\_\_ i. slope of six percent (6%) or less, two foot intervals
  - \_\_\_\_\_ ii slope greater than six percent (6%) , five foot intervals
  - \_\_\_\_\_ iii slope over fifteen percent (15%), twenty foot intervals
- f) \_\_\_\_\_ Abutting roadways and alleys
- g) \_\_\_\_\_ Right-of-Way lines
- h) \_\_\_\_\_ Utility easements
- i) \_\_\_\_\_ Temporary easements
- j) \_\_\_\_\_ Existing utilities (gas, water, electric, fiber optic, telephone, sanitary, storm, cable) locations and sizes
- k) \_\_\_\_\_ Zoning classifications (proposed site and adjacent sites)
- l) \_\_\_\_\_ North arrow
- m) \_\_\_\_\_ Scale – at least 1 inch = 100 Feet

**Final Site Conditions:**

- a) \_\_\_\_\_ Scale – same as existing conditions not less than 1 inch = 100 feet.
- b) \_\_\_\_\_ Proposed structures (size and location) and Building setbacks
- c) \_\_\_\_\_ Parking
  - \_\_\_\_\_ i. paved areas
  - \_\_\_\_\_ ii. pavement design
  - \_\_\_\_\_ iii. traffic circulation patterns
  - \_\_\_\_\_ iv. number of spaces required per ordinance
  - \_\_\_\_\_ v. number of spaces provided
  - \_\_\_\_\_ vi. parking lot layout and dimensions
  - \_\_\_\_\_ vii. handicap spots
- d) \_\_\_\_\_ Handicap accessible ramps
- e) \_\_\_\_\_ Driveway locations and dimensions
- f) \_\_\_\_\_ Landscaping
- g) \_\_\_\_\_ Exterior lighting
- h) \_\_\_\_\_ Proposed utilities (gas, electric, water, sanitary, storm, cable) location and size of hook-ups and transformer pad locations
- i) \_\_\_\_\_ Grading/drainage plan
  - \_\_\_\_\_ i. storm water calculations by a Registered Licensed Professional Engineer
  - \_\_\_\_\_ ii. storm water detention calculations
  - \_\_\_\_\_ iii. storm water detention location and size
  - \_\_\_\_\_ iv. contour lines, spot elevations, and slopes of proposed improvements
  - \_\_\_\_\_ v. finished floor elevations
  - \_\_\_\_\_ vi. drainage structures (type, size, rim elevations, invert elevation, location)
  - \_\_\_\_\_ vii. erosion and sediment control measures (permanent and temporary)

Additional information and plans should be included depending upon the size, configuration, and characteristics of the site and the proposed development indicating compliance with the requirements of the ordinance.

5. **Sediment and Erosion Control Practices - A site construction plan including:**

- \_\_\_\_\_ Locations and Dimensions of all proposed land disturbing activities.
- \_\_\_\_\_ Location, dimension, and construction details of all construction site management control measures necessary to meet requirements of the ordinance and including proposed re-vegetation of disturbed areas.
- \_\_\_\_\_ Location of temporary soil and aggregate piles.  
*Note: Soil storage piles should be placed behind a sediment fence, a 10' foot (minimum) wide vegetative strip, or should be covered with a tarp & be located more than 25' from any downslope road or drainage way.*
- \_\_\_\_\_ Location of temporary perimeter sediment control measures.  
*Note: Perimeter sediment controls such as silt fence, straw bales, 10' wide vegetative strips should be installed between disturbed areas and property lines or drainage ways to prevent eroded soil from leaving the site.*
- \_\_\_\_\_ Location of temporary Inlet & Pipe Protection.  
*Note: Storm sewer inlets and structures should be protected to prevent sediment from entering the system. Common methods of protection include staked straw bales, silt fence, and inlet filters.*
- \_\_\_\_\_ Location of temporary stabilized construction entrance.  
*Note: Access drive should have aggregate stone laid at least 14' Wide and 6" Thick. Drives should extend 70 feet from the existing roadway into the site.*
- \_\_\_\_\_ Location of temporary Channel Protection.  
*Note: Unstabilized drainage ways, ditches, and diversions should be temporarily protected from erosion through use of straw bales, rolled excelsior, urethane foam/geotextiles, georidge, and aggregate ditch checks until the area is permanently stabilized*
- \_\_\_\_\_ Location of temporary diversions.  
*Note: Surface runoff from adjacent areas should be diverted around disturbed areas to stable outlets to reduce erosion due to surface runoff.*
- \_\_\_\_\_ Location of temporary sedimentation basins.  
*Note: Sedimentation basins should be located at the outlets of disturbed areas and anywhere the sediment-laden runoff has the potential to enter streams, lakes, or drainage ways.*
- \_\_\_\_\_ Location of temporary seeding.  
*Note: Temporary seeding should be used to provide a quick cover to control erosion when permanent seeding is not desired or the time of year is inappropriate.*

- \_\_\_\_\_ Location of permanent Channel Protection.  
*Note: Permanent drainage ways and ditches with high flow velocities should be protected against erosion by utilizing, paved ditches, riprap, concrete revetment mat, or turf reinforcement mat.*
- \_\_\_\_\_ Location of permanent Outlet Pipe Protection.  
*Note: All storm and culvert outlets should be stabilized to prevent downstream areas from erosion. Culvert and pipe outlets should be designed at minimal slopes to reduce velocities out of the pipe thus preventing erosion. Culverts and storm sewer outlets should not be located at the top of a hill. The pipe should be extended down the hill and outlet to a flat area or the flowline of the downstream channel. Outlets with very high velocities may need energy dissipators such as a riprap energy dissipater.*
- \_\_\_\_\_ Location of permanent Vegetation and Erosion Control Blanket.  
*Note: All unpaved areas should be seeded or sodded within 3 days of final grading. All seeding should be in conjunction with mulch or erosion control blanket.*

#### 6. **Storm Water Management Plans and Controls: During and Post Construction.**

Required for any project (except single-family residential developments) with a net increase of impervious area. All calculations must be signed and sealed by a licensed professional engineer.

- \_\_\_\_\_ A map showing drainage area boundaries, including off-site drainage areas that drain into the site.
- \_\_\_\_\_ Location and identification of vegetative cover for all drainage areas.
- \_\_\_\_\_ Location and identification of soil types for all drainage areas.
- \_\_\_\_\_ Run-off curve number calculations for both pre and post project conditions for each drainage area.
- \_\_\_\_\_ Time of concentration calculations for both pre and post project conditions for each drainage area including map showing hydraulic flow lengths used.
- \_\_\_\_\_ Peak flow rate calculations for 2 year and 25 year storms for both pre and post project conditions.
- \_\_\_\_\_ Design calculations for detention basin outlets for both 2 year and 25 year storms, including stage-storage table and discharge rating curve data or out-flow calculations.
- \_\_\_\_\_ Location, dimensions, and construction details of proposed detention basins and outlets.
- \_\_\_\_\_ Detention volume calculations
- \_\_\_\_\_ Time of concentration calculations for both pre and post project conditions for each drainage area including a map showing the hydraulic flow lengths used.

7. **Management Strategies: During and Post Construction.**

\_\_\_\_\_ Provide a plan for continued management and maintenance of all permanent control measures.

\_\_\_\_\_ Permanent Ground Cover will be established within six months of project completion, or within six of occupancy, which ever occurs first.

\_\_\_\_\_ Indicate re-vegetation method: Seed \_\_\_\_ Sod \_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Expected date of permanent re-vegetation: \_\_\_\_\_

\_\_\_\_\_ Is temporary seeding or mulching planned if site is not seeded by Sept 15 or sodded by November 15? Yes \_\_\_\_ No \_\_\_\_

\_\_\_\_\_ Permanent ground cover is the responsibility of: Builder \_\_\_\_ Owner \_\_\_\_

**Required Maintenance Practices:**

\_\_\_\_\_ Written approval must be obtained from the Erosion Control Administrator prior to making any modifications to the erosion, sediment, and storm water control plan as set forth in this application.

\_\_\_\_\_ Sediment must be removed from behind sediment fences and barriers before it reaches a depth that is equal to half the barrier's height

\_\_\_\_\_ Breaks and gaps in sediment fences and barriers shall be repaired immediately.

\_\_\_\_\_ Decomposing straw bales and fabric fences will be replaced.

\_\_\_\_\_ All sediment that moves off-site due to construction activity will be cleaned up before the end of the same workday.

\_\_\_\_\_ All sediment that moves off-site due to storm events will be cleaned up before the end of the next workday.

\_\_\_\_\_ Gravel access drives will be maintained throughout construction.

\_\_\_\_\_ All installed erosion control practices will be installed and maintained until the areas they protect are stabilized.

9. **Schedule:**

Schedule or sequence of construction or installation of the proposed elements of the construction site management control measures proposed above.

10. **Estimates:**

A detailed estimate of quantities and estimated costs, prepared by a registered professional engineer, or all control measures required.

**11. Financial Security**

Before any Erosion, Sediment and Storm Water Control Permit is issued, the applicant shall deliver to the Erosion Control Administrator a surety bond, irrevocable letter of credit or executed escrow agreement in the name of the City of West Peoria for one hundred percent (100%) of the applicant's engineer's estimated cost for all control measures required. A signed contractor's bid that meets the specifications of the engineer's estimate for the work can be used to establish the amount of security required, if such estimate is accepted by the Erosion Control Administrator and City Engineer.

**12. Final Inspection**

Within fourteen (14) days after completion of construction, the applicant shall notify the Erosion Control Administrator that the permanent storm water control measures are ready for final inspection.

**13. Certification:**

I, \_\_\_\_\_, do hereby certify that the above stated information is true and correct; that I have carefully read the above application; and in consideration of the issuance of an erosion control permit I agree that all the requirements above will be met.

Signature of Owner or Owner's Representative Required:

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

**This application is subject to the approval of the City of West Peoria Erosion Control Administrator and City Engineer. The City reserves the right to accept or reject any changes to the plan of the approved Permit Application.**

**If the applicant desires changes to the plans set forth in an approved Permit Application, the party causing and/or desiring the changes shall be responsible to notify the City of West Peoria Erosion Control Administrator in writing, with a full explanation of the changes prior to commencing any additional work, or the original Permit will be null and void.**



## **SECTION 2-16 (APPENDIX A)**

### **CITY OF WEST PEORIA**

#### **STANDARDS FOR STORM WATER DESIGN ANALYSES**

The following are the minimum standard methods and procedures to be used to comply with the storm water design requirements of the City of West Peoria Erosion, Sediment, and Storm Water Control Ordinance. If an applicant determines that different methods are necessary based on site specific conditions, the applicant must request approval from the erosion control administrator to use other methods prior to submittal.

The design methods listed below are readily available in a number of computer programs, including the Soil Conservation Service's TR 20 (SCS) and HEC-1 (U.S. Army Corps of Engineers). Additionally, a simplified methodology which is based on the use of these methods is available in TR 55 (SCS, 1986). TR 55 can be applied using either manual computations or a computerized version.

##### Rainfall Depth and Intensity Data

Use data for Peoria County (Illinois State Water Survey, BUL-70/89, 1989) as presented in attached Table 1 (see below).

##### Storm Event Rainfall Runoff

Use the SCS Runoff Curve Number method to determine rainfall runoff depth. See Figure 2-1 and Tables 2-2a through 2-2c (attached) from TR 55. Soil type information is available from the SCS Peoria County Soil Survey, 1992.

##### Storm Distribution (Cumulative Rainfall Versus Time)

Use the SCS Type II storm distribution. See attached Table 3 and Figure 3.

##### Runoff Hydrograph

Use the SCS dimensionless hydrograph. See SCS (1974) for information regarding this procedure. As a substitute for detailed hydrograph analysis, TR 55 (SCS, 1986) can be used, either manually or computer program.

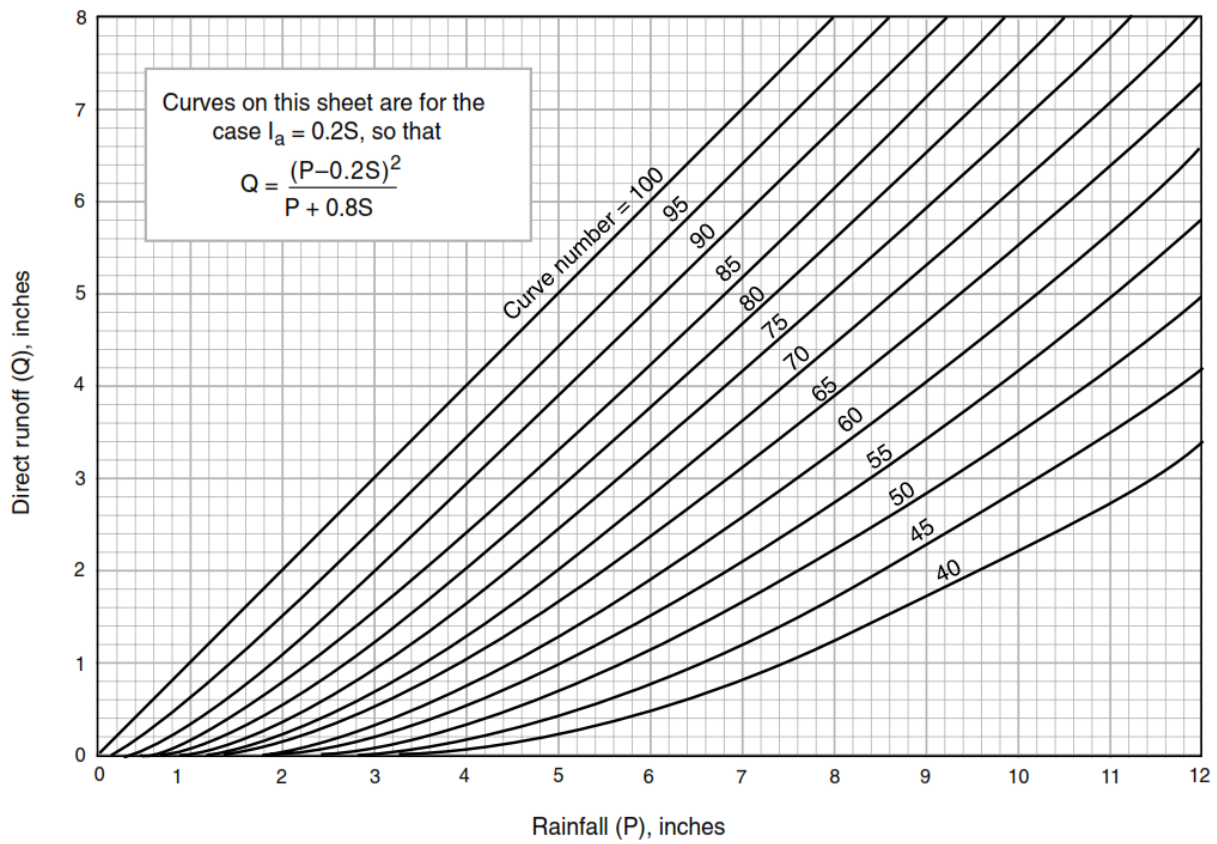
##### Storage Routing (Detention Pond Analysis)

Use the continuity equation, also known as the modified-Puls and storage indication methods. As a substitute for detailed storage routing of a hydrograph, TR 55 (SCS, 1986) can be used, either manually or computer program. If TR 55 is used and a detention basin with a two-stage outlet control structure including a rectangular weir and/or orifice outlet is included as a part of the control measures, use the attached detention basin outlet worksheet to determine and present the structure design information.

**Table 1. Rainfall Depth-Duration-Frequency Data for Peoria County**

	Rainfall Depth (inches) for Given Frequency					
Duration	2-yr.	5-yr.	10-yr.	25-yr.	50-yr.	100-yr
5-min.	0.36	0.45	0.53	0.64	0.73	0.83
10-min.	0.66	0.83	0.98	1.17	1.34	1.52
15-min	0.81	1.02	1.20	1.44	1.64	1.87
30-min.	1.12	1.39	1.64	1.97	2.25	2.56
1-hr.	1.42	1.77	2.09	2.50	2.86	3.25
2-hr.	1.78	2.22	2.62	3.14	3.59	4.08
3-hr.	1.93	2.41	2.85	3.41	3.89	4.43
6-hr.	2.26	2.82	3.33	3.99	4.56	5.19
12-hr.	2.62	3.27	3.87	4.63	5.29	6.02
18-hr.	2.75	3.46	4.09	4.90	5.59	6.37
24-hr.	3.02	3.76	4.45	5.32	6.08	6.92
48-hr.	3.38	4.19	4.86	5.78	6.62	7.51
72-hr.	3.70	4.55	5.26	6.15	7.25	8.16
5-day	4.17	5.11	5.84	6.96	7.98	9.21
10-day	5.12	6.27	7.10	8.19	9.10	10.18

Source: ISWS/BUL-70/89



**Figure 2-1. Solution of Runoff Equation**

Source: TR-55 SCS TR 55, 1986

**Table 2-2a. Runoff Curve Numbers for Urban Areas <sup>1</sup>**

Cover Description		Curve Numbers for Hydrologic Soil Group			
Cover Type and Hydrologic Condition	Average percent	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf course, cemeteries, etc.):					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town house)	65	77	85	90	92
1/4	38	61	75	83	87
1/3	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation)		77	86	91	94

<sup>1</sup> Average runoff condition and I<sub>2</sub>.

<sup>2</sup> The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using Figure 2-3 or 2-4 in TR 55.

Source: SCS TR 55, 1986

**Table 2-2b. Runoff Curve Numbers for Agricultural Lands <sup>1</sup>**

Cover Description			Curve Numbers for Hydrologic Soil Group				
Cover Type	Treatment <sup>2</sup>	Hydrologic	A	B	C	D	
Fallow	Bare Soil	—	77	86	91	94	
	Crop residue cover (CR)	Poor	76	85	90	93	
		Good	74	83	88	90	
Row Crops	Straight row (SR)	Poor	72	81	88	91	
		Good	67	78	85	89	
	SR + CR	Poor	71	80	87	90	
		Good	64	75	82	85	
	Contoured (C)	Poor	70	79	84	88	
		Good	65	75	82	86	
	C + CR	Poor	69	78	83	87	
		Good	64	74	81	85	
	Contoured & terraced	Poor	66	74	80	82	
		Good	62	71	78	81	
	C&T + CR	Poor	65	73	79	81	
		Good	61	70	77	80	
	Small Grain	SR	Poor	65	76	84	88
			Good	63	75	83	87
SR + CR		Poor	64	75	83	86	
		Good	60	72	80	84	
C		Poor	63	74	82	85	
		Good	61	73	81	84	
C + CR		Poor	62	73	81	84	
		Good	60	72	80	83	
C&T		Poor	61	72	79	82	
		Good	59	70	78	81	
C&T + CR		Poor	60	71	78	81	
		Good	58	69	77	80	
Close-seeded or broadcast legumes or		SR	Poor	66	77	85	89

		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

<sup>1</sup> Average runoff condition  $1_2 = 0.2S$ .

<sup>2</sup> Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

<sup>3</sup> Hydrologic condition is based on combination of factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes in rotations, (d) percent of residue cover on land surface (good  $\geq 20\%$ ), and (e) degree of surface roughness.

Good: Factors encourage average and better than average infiltration and tend to decrease runoff.

Source: SCS TR 55, 1986.

**Table 2-2c. Runoff Curve Numbers for other Agricultural Lands <sup>1</sup>**

Cover Description		Curve Numbers for Hydrologic Soil Group			
Cover Type	Hydrologic	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. <sup>3</sup>	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally	Poor	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element <sup>2</sup> ;	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 <sup>4</sup>	48	65	73
Woods—grass combination (orchard or tree farm). <sup>5</sup>	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. <sup>6</sup>	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 <sup>4</sup>	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	Poor	59	74	82	86

<sup>1</sup> Average runoff condition and  $I_2 = 0.2S$ .

<sup>2</sup> Poor: < 50% ground cover.

Fair: 50 to 75% ground cover.

Good: > 75% ground cover.

<sup>3</sup> Poor: < 50% ground cover or heavily grazed with no mulch.

Fair: 50 to 75% ground cover and not heavily grazed.

Good: > 75% ground cover and lightly or only occasionally grazed.

<sup>4</sup> Actual curve number is less than 30; use CN = 30 for runoff computations.

<sup>5</sup> CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

<sup>6</sup> Poor: Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

Fair: Woods are grazed but not burned, and some forest litter covers the soil.

Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Source: SCS TR 55, 1986

**Computation Sheet for 2-Stage Detention Basin Outlet Design (to be used with TR 55 worksheet 6a or computer printout for storage routing)**

Project Name: \_\_\_\_\_ Structure ID: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Attach TR 55 worksheet 6a or computer printout with basin routing information

**FIRST STAGE**

Maximum stage for 2-year storm ( $E_{2\text{-yr}}$ ) =	_____ ft.
First stage control elevation ( $E_1$ ) =	_____ ft.
Head on first stage structure ( $H_{2\text{-yr}} = E_{2\text{-yr}} - E_1$ )	_____ ft.
Allowable discharge for 2-yr storm ( $q_{2\text{-yr}}$ ) =	_____ ft.
<u>For rectangular weir outlet:</u> Required weir length $L_1 = q_{2\text{-yr}} / (3.2 * H_{2\text{-yr}}^{1.5})$ _____ $/(3.2 * \text{_____}^{1.5}) =$	_____ ft.
<u>For orifice outlet:</u> required orifice area $A_1 = q_{2\text{-yr}} / (4.98 * H_{2\text{-yr}}^{0.5})$ $+ \text{_____} / (4.98 * \text{_____}^{0.5}) =$	_____ sq. ft.

**SECOND STAGE**

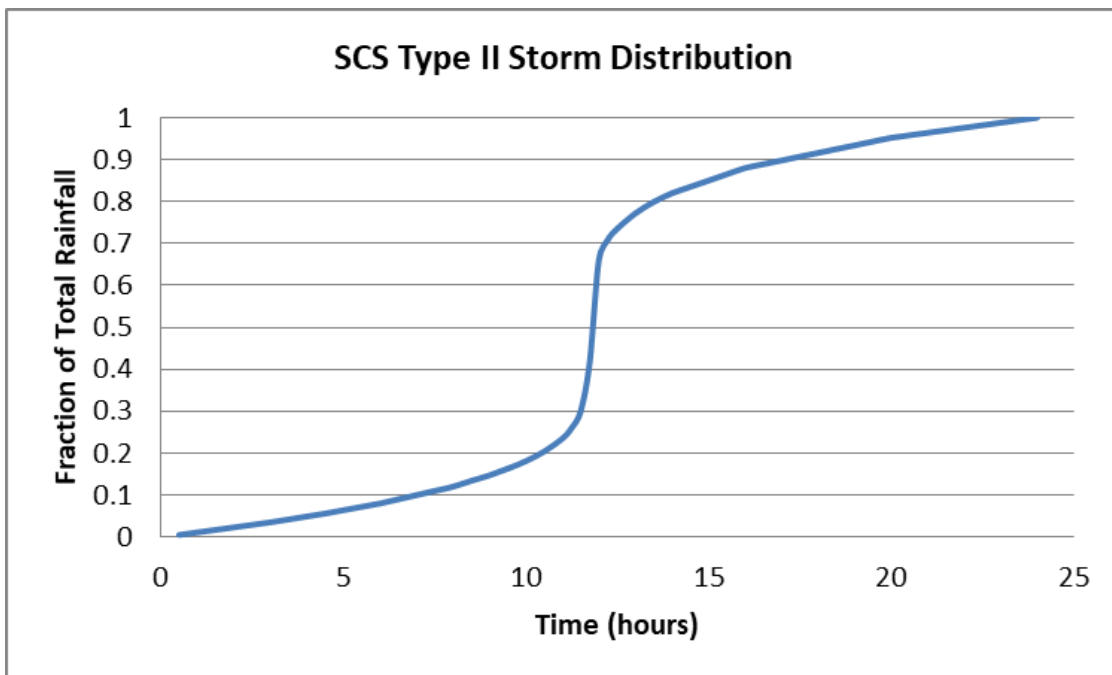
Maximum stage for 25-year storm ( $E_{25\text{-yr}}$ ) =	_____ ft.
Second stage control elevation ( $E_2$ ) =	_____ ft.
Head on second stage structure ( $H_{25\text{-yr}} = E_{25\text{-yr}} ; \text{minus}; E_2$ ) =	_____ ft.
Allowable discharge for 25-yr storm ( $q_{25\text{-yr}}$ ) =	_____ cfs.
<u>25-yr. Storm Discharge through first stage:</u>	
Weir: $q' = 3.2 * L_1 * (E_{25\text{-yr}} ; \text{minus}; E_1)^{1.5} = 3.2 * \text{_____} * (\text{_____} ; \text{minus}; \text{_____})^{1.5} =$	_____ cfs.
Orifice: $q' ; = 4.98 * A_1 * (E_{25\text{-yr}} ; \text{minus}; E_1)^{0.5} = 4.98 * \text{_____} * (\text{_____} ; \text{minus}; \text{_____})^{0.5} =$	_____ cfs.
Allowable discharge through second stage ( $q''$ ) = $q_{25\text{-yr}} ; \text{minus}; q' =$	_____ cfs.
<u>For rectangular weir outlet:</u>	
Required weir length $L_2 = q'' / (3.2 * H_{25\text{-yr}}^{1.5}) = \text{_____} / (3.2 * \text{_____}^{1.5}) =$	_____ ft.
<u>For orifice outlet:</u>	
Required orifice area $A_2 = q'' / (4.98 * H_{25\text{-yr}}^{0.5}) = \text{_____} / (4.98 * \text{_____}^{0.5}) =$	_____ sq. ft.



**Table 3. SCS Type II Rainfall Distribution**

Time		
Hour	Fraction of Total	Fraction of Total Rainfall
0.50	0.021	0.005
1.00	0.042	0.011
1.50	0.063	0.017
2.00	0.083	0.023
2.50	0.104	0.029
3.00	0.125	0.035
3.50	0.146	0.042
4.00	0.167	0.049
4.50	0.188	0.056
5.00	0.208	0.064
5.50	0.229	0.072
6.00	0.250	0.080
6.50	0.271	0.090
7.00	0.292	0.100
7.50	0.313	0.110
8.00	0.333	0.120
8.50	0.354	0.134
9.00	0.375	0.147
9.50	0.396	0.163
10.00	0.417	0.181
10.50	0.438	0.204
11.00	0.458	0.235
11.25	0.468	0.260
11.50	0.479	0.300
11.75	0.490	0.420
12.00	0.500	0.663
12.25	0.510	0.710
12.50	0.521	0.735
13.00	0.542	0.772
13.50	0.563	0.799
14.00	0.583	0.820
14.50	0.604	0.835

15.00	0.625	0.850
15.50	0.646	0.865
16.00	0.667	0.880
16.50	0.688	0.889
17.00	0.708	0.898
17.50	0.729	0.907
18.00	0.750	0.916
18.50	0.771	0.925
19.00	0.792	0.934
19.50	0.813	0.943
20.00	0.833	0.952
20.50	0.854	0.958
21.00	0.875	0.964
21.50	0.896	0.970
22.00	0.917	0.976
22.50	0.938	0.982
23.00	0.958	0.988
23.50	0.979	0.994
24.00	1.000	1.000



**Figure 3. SCS Type II Storm Distribution**

## SECTION 2-16 (APPENDIX B)

### EROSION AND SEDIMENT CONTROL CRITERIA AND SPECIFICATIONS

There are three ways to accomplish urban soil erosion and sedimentation control:

- Allow erosion to take place and then control sediment before it leaves a site.
- Stop erosion in the watershed (project area), by soil stabilization or runoff control measures.
- A combination of the two. (most desirable)

The following is a list of common measures that can be used to control erosion and sediment. It is by no means an exhaustive list. Some standard drawings are included in this appendix, and are referenced with the Appendix page numbers. Additional drawings, standards and specifications can be found in the current edition of the Illinois Urban Manual, An Erosion and Sediment Control Best Management Practice Manual, owned by the Association of Illinois Soil and Water Conservation Districts and the current edition of the Illinois Department of Transportation's Bureau of Design and Environment Manual Construction Site Storm Water Pollution Control chapter.

#### **SEDIMENT CONTROL**

- A. PERIMETER SEDIMENT CONTROL MEASURES: To be installed between disturbed areas (including stockpiles) and property lines or drainage ways in order to protect off-site areas. Control measures should be installed on the down-slope sides of the disturbed areas where runoff will leave the site.

Slope Range	Control Measure	Comments
Less than 2%	vegetative (grass) filter strips <b>(PG B4)</b> no minimum width requirement	
2% to <5%	vegetative (grass) filter strips <b>(PG B4)</b> 10' wide, minimum	size should be increased in proportion to the drainage area and slope
	silt fence <b>(PG B5)</b>	drainage area less than ½ ac per 100 ft.; see standard for spacing criteria
	straw bales	for use in small drainage areas; see standard for spacing criteria; maximum life is 3 months
	vegetative buffer area (other than grass), about 50' wide, minimum	minimizing disturbed areas is desirable; increase buffer size in proportion to drainage area and slope
5% to <10%	vegetative (grass) filter strips 20' wide, minimum <b>(PG B4)</b>	size should be increased in proportion to the drainage area and slope

	silt fence <b>(PG B5)</b>	drainage area less than ½ ac per 100 ft.; see standard for spacing criteria
	straw bales	for use in small drainage areas; see standard for spacing criteria; maximum life is 3 months
	vegetative buffer area (other than grass), about 100' wide, minimum	minimizing disturbed areas is desirable; increase buffer size in proportion to drainage area and slope
>10%	silt fence <b>(PG B5)</b>	drainage area less than ½ ac per 100 ft.; see standard for spacing criteria

- B. **INLET SEDIMENT CONTROL:** To be installed around storm sewer or other inlets to prevent sediment from entering the system. There are many different types depending on the type of inlet.

Common measures include:

Inlet Protection—Paved Areas Drop-In Protection **(PG B6)**

Inlet Protection—Monofilament Fabric Barrier Fence **(PG B7)**

Inlet Protection – Log Type **(PG B8)**

Inlet Protection—Manufactured Above Grade **(PG B9)**

- C. **MUD AND DUST CONTROL:** To prevent mud and dust from leaving the site.

Common measures include:

Stabilized Construction Entrance **(PG B10)**

Dust control – Sap, Water, Prime

### **RUNOFF CONTROL**

- A. **CONCENTRATED FLOW AREAS:** Temporary erosion control measures should be installed to protect drainage ways such as road ditches and waterways until the area is permanently stabilized.

Common measures include:

Rock Checks for Waterways **(PG B11)**

Ditch Check – Rolled **(PG 12)**

Ditch Check – Urethane Foam Geotextiles **(PG B13)**

Erosion Blanket **(PG B14)**

Turf Reinforcement Mat **(PG B15)**

- B. **PIPE OUTLET PROTECTION:** All outlets should be stabilized to prevent downstream areas from erosion.

Common measures include:

Pipe Outlet to Channel (**PG B16**)

Pipe Outlet to Flat Area (**PG B17**)

- C. **SEDIMENTATION CONTROL:** Located where sediment laden water is discharged from a site or construction zone.

Common measures include:

Sediment Trap (**PG B18**)

Sediment Basin (**PG B19**)

- D. **DIVERSIONS:** Surface runoff from adjacent areas should be diverted around disturbed areas to stable outlets to reduce erosion due to surface runoff.

**SOIL STABILIZATION** (Recommended seeding dates for Central Illinois are shown in bold.)

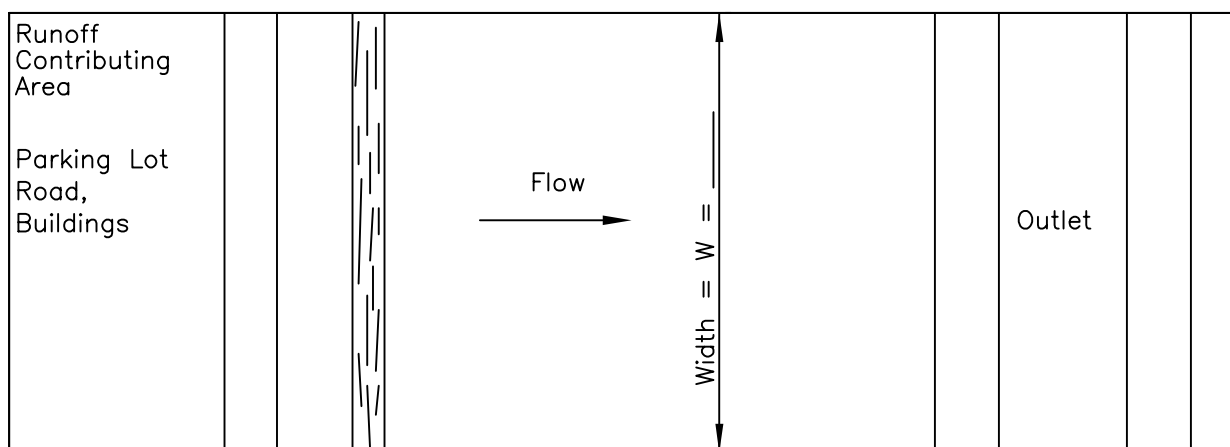
A. **VEGETATIVE SOIL COVER:**

1. Temporary Seeding: Provides a temporary quick cover to control erosion when permanent seeding is not desired or the time of year is inappropriate. [**Early Spring - September 30**]
2. Permanent Seeding: Provides permanent vegetative cover to control erosion, filters sediment from water. May be part of final landscaping plan. [**Spring seeding: Early Spring - May 15**], [**Fall seeding: August 1 - September 10**]
3. Dormant seeding: Same as permanent seeding except seeding is done during dormant season. Higher rates of seed application are required. If no mulch is applied, then perimeter controls should be maintained until the vegetation is established. [**November 15 - March 1**]
4. Sodding: Quick, permanent cover to control erosion. Quick way to establish vegetative filter strip. Can be used on steep slopes or in drainage ways where seeding may be difficult. [**Anytime, except when the ground is frozen**]
5. Ground Cover: Provides ground cover, shrubs and trees in addition to permanent vegetation. May be used as part of a final landscape plan along with shrubs and trees.

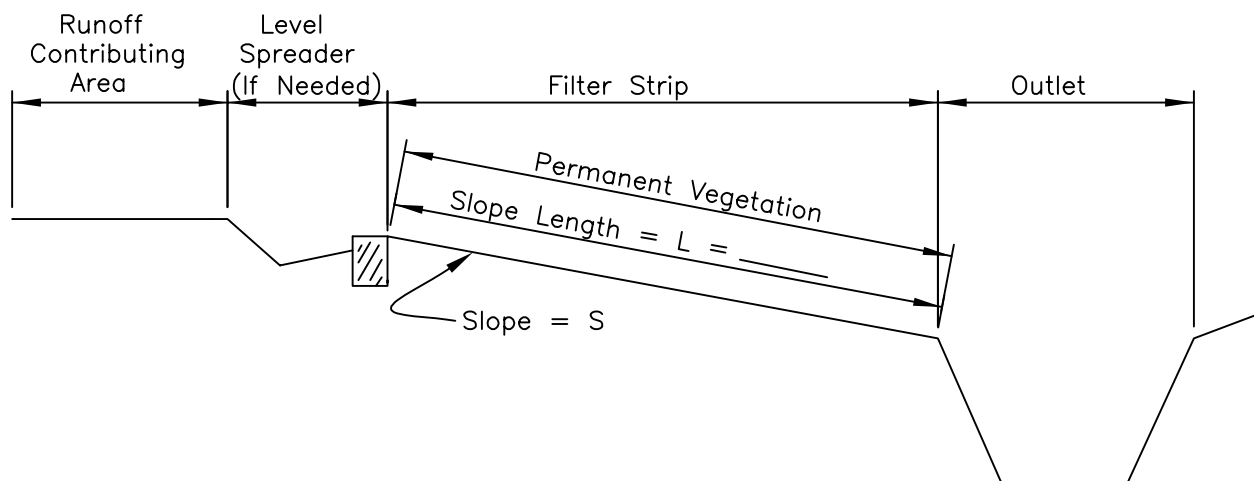
B. **NON-VEGETATIVE SOIL COVER:**

1. Mulching: Added insurance of a successful temporary or permanent seeding. Controls unwanted vegetation and preserves moisture. Provides cover where vegetation cannot be established.
2. Erosion Control Blanket & Turf Reinforcement Mat (**PG B14 & B15**) – provides cover and protects soil while vegetation is being established. Choose the material right for your slope and runoff and the need for the material to be temporary or permanent.
3. Aggregate cover: Provides soil cover on roads and parking lots and areas where vegetation cannot be established. Prevents mud from being picked up and transported off site.
4. Paving: Provides permanent cover on parking lots, roads or other areas where vegetation cannot be established.

# FILTER STRIP - GRASSED



PLAN VIEW



SECTION VIEW

Area To Be Seeded  $L \times W = \underline{\hspace{2cm}}$

See plans for permanent vegetation requirements.

See plans for S, L and W dimensions.

Slope shall not exceed 15% (0.15 foot of fall per foot of horizontal distance).

See sheet LEVEL SPREADER IL-570 for level spreader requirements.

## REFERENCE

Project	_____
Designed	_____ Date _____
Checked	_____ Date _____
Approved	_____ Date _____



Natural Resources Conservation Service

# NRCS

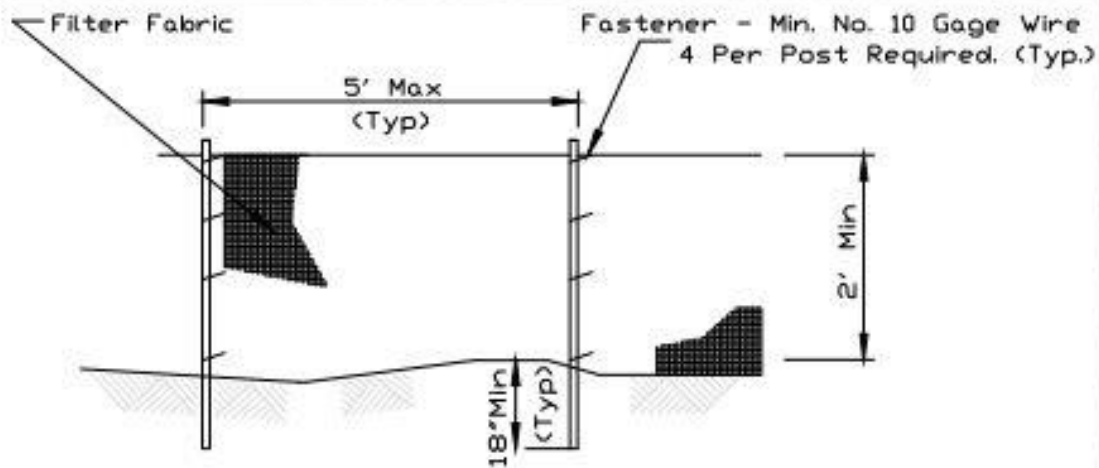
STANDARD DWG. NO.

IL-535

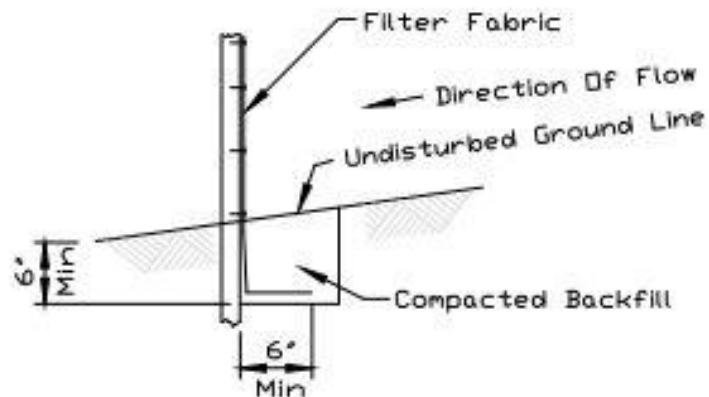
SHEET 1 OF 1

DATE 1-29-99

## SILT FENCE PLAN



ELEVATION



FABRIC ANCHOR DETAIL

### NOTES:

1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile based upon performance needed.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 2' x 2' nominal size.

### REFERENCE

Project	_____
Designed	_____ Date _____
Checked	_____ Date _____
Approved	_____ Date _____



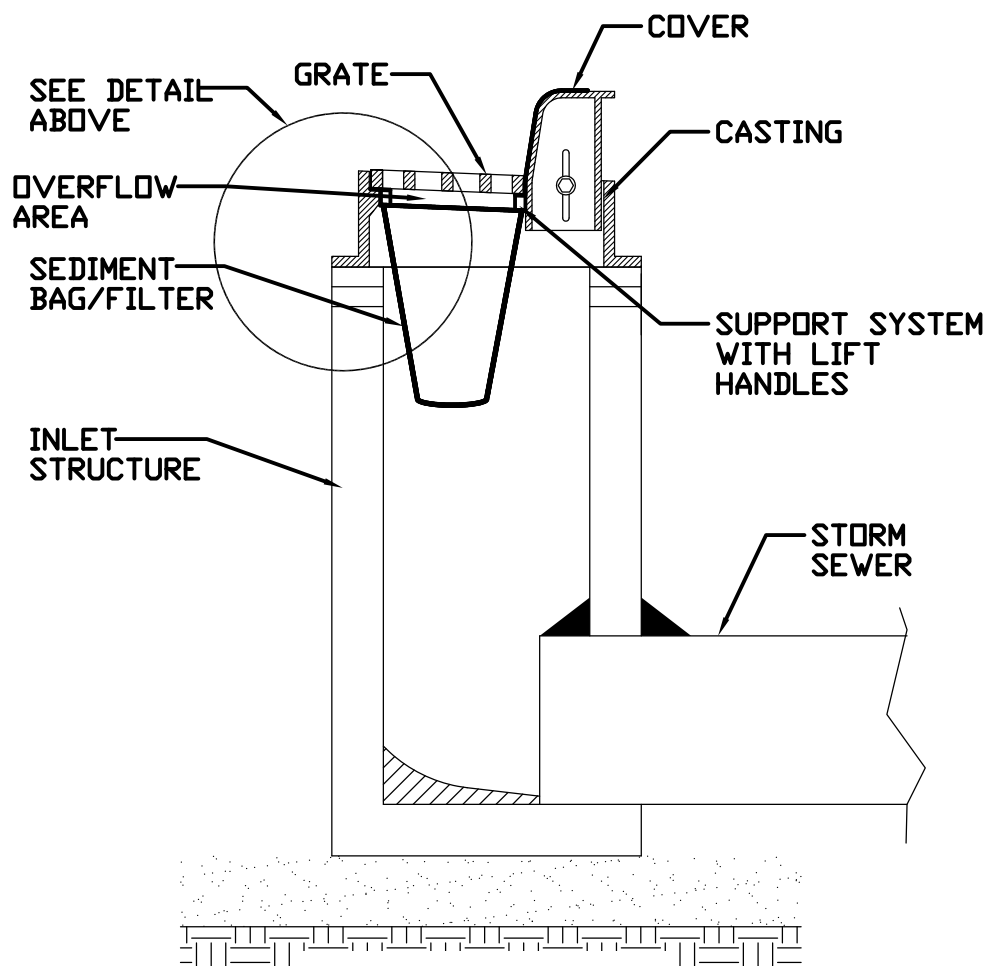
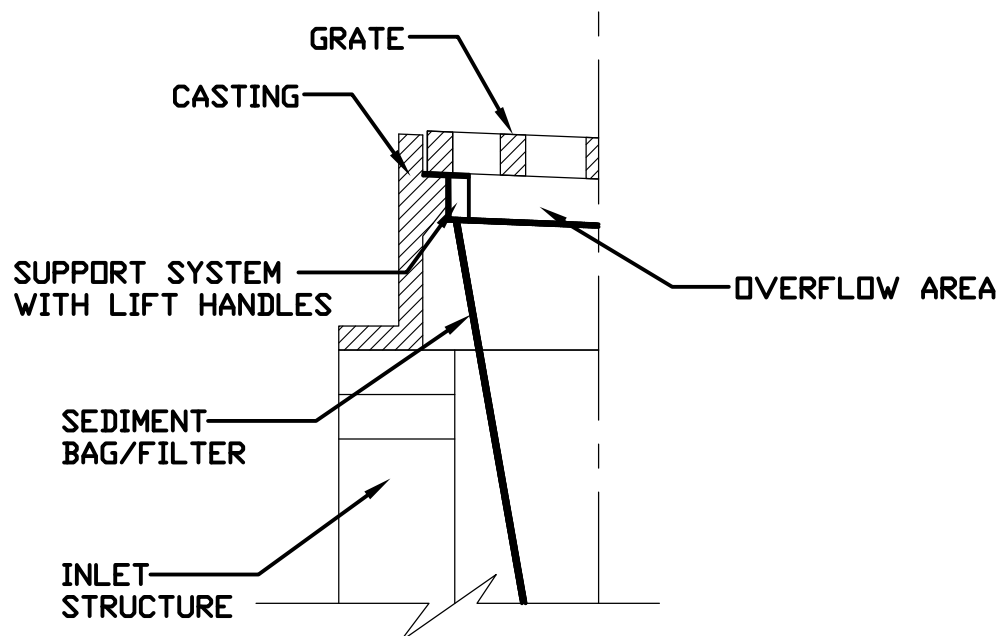
### STANDARD DWG. NO.

IUM-620

SHEET 1 OF 2

DATE 3-16-12

# INLET PROTECTION - PAVED AREAS DROP-IN PROTECTION



## REFERENCE

Project	_____	Date	_____
Designed	_____	Date	_____
Checked	_____	Date	_____
Approved	_____	Date	_____



STANDARD DWG. NO.

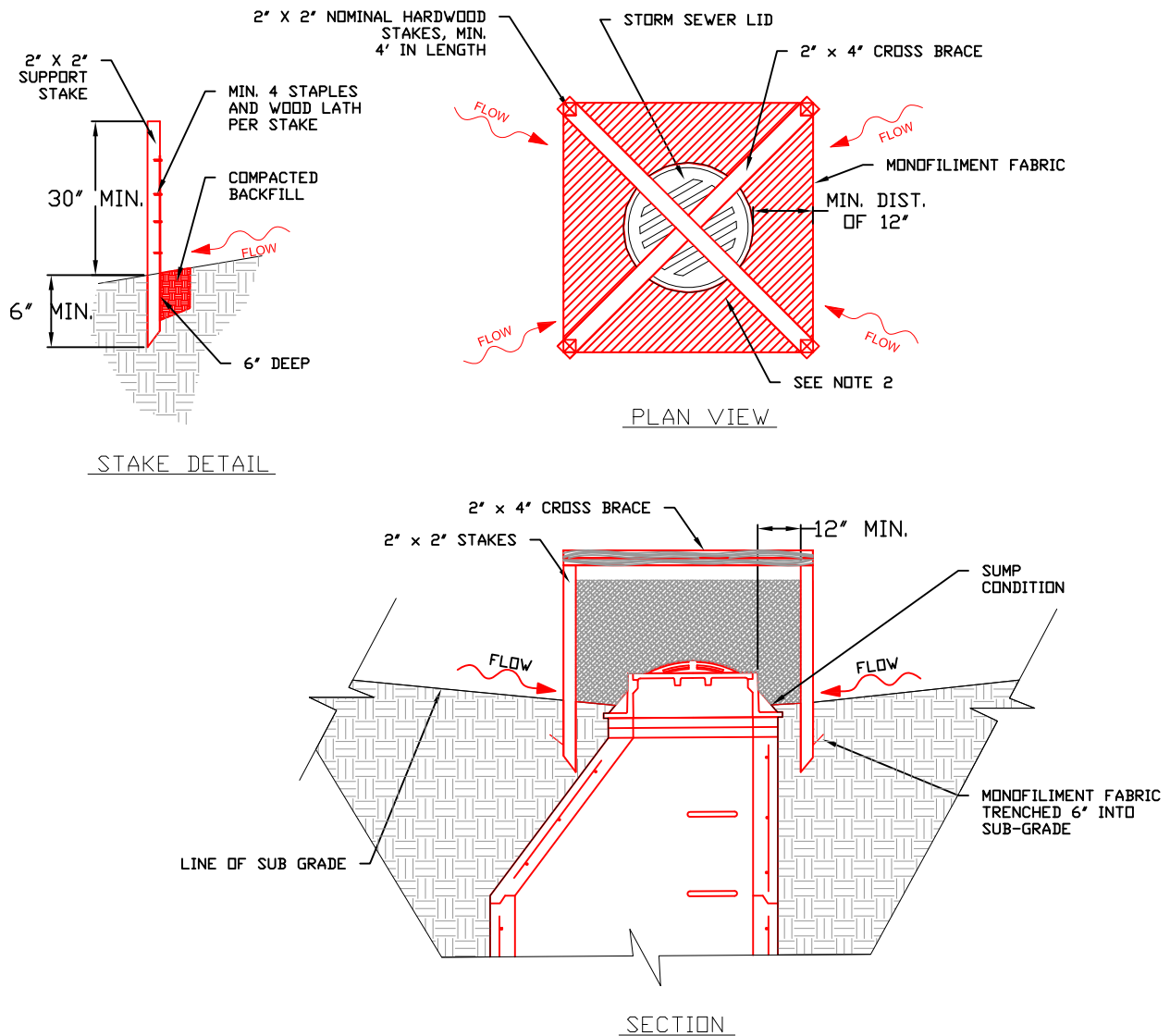
IUM-561D

SHEET 1 OF 1

DATE 01-11-11



# INLET PROTECTION - MONOFILAMENT FABRIC BARRIER FENCE



## NOTES:

1. 2 x 2 nominal hardwood stakes, 4 foot minimum length, driven into ground approximately 18 inches, stakes driven a minimum width of 12 inches away from the drop inlet.
2. Area inside the fence, from edge of fabric to structure, must be stabilized with Erosion Control Blanket, Turf Reinforcement Mat, Geotextile 592 Table 2 Class 2 or CA-7 stone
3. Maximum height of the fabric above the crest of the drop inlet shall be 30". Place the bottom 6 inches of the fabric in a trench and backfill with 6 inches of 95% compacted soil.
4. Stakes must be a maximum of 4 feet apart.
5. A maintenance schedule must maintain a sediment accumulation of less than 50% of the height of the monofilament fabric.
6. Monofilament fabric shall meet the requirement of Material Specification 592 Geotextile Table 1, Class 4.
7. Monofilament fabric shall be secured to each 2" x 2" nominal hardwood stake with a minimum of 4 steel staple fasteners and wood lath. Wood lath shall be a minimum length of 10 inches. Wire fasteners should be used if metal T-Posts are installed in place of hardwood stakes.

## REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_

## STANDARD DWG. NO.

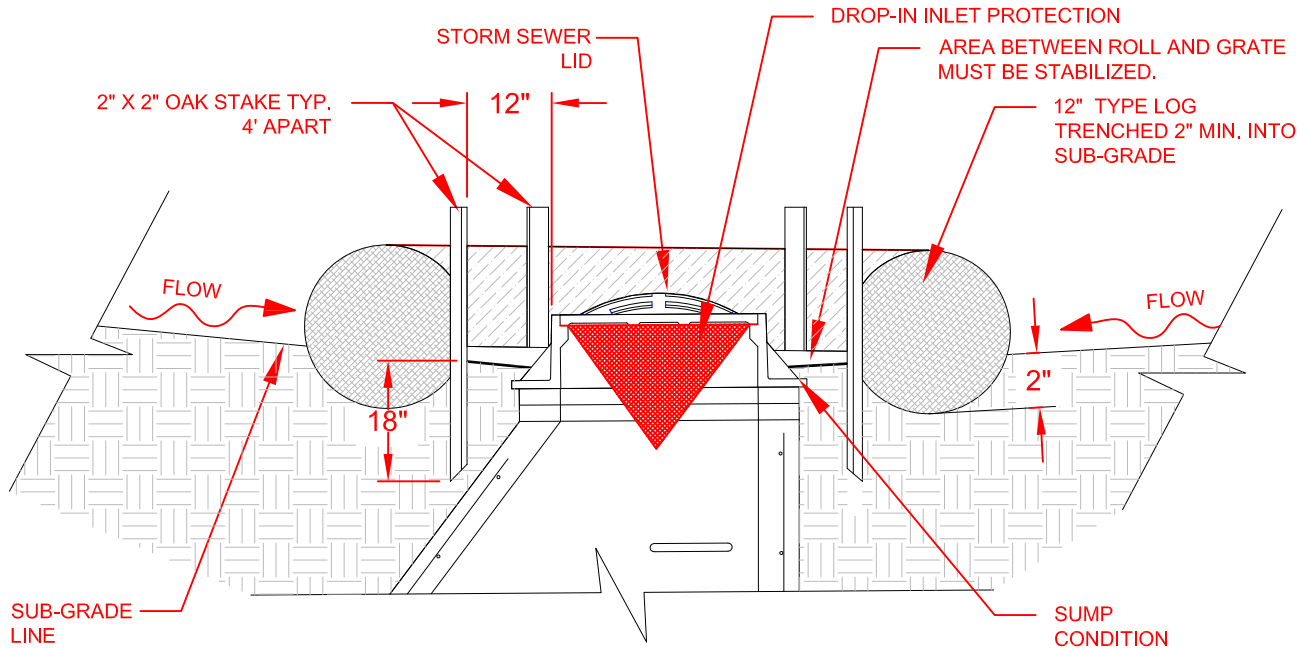
IUM-531

SHEET 1 OF 1

DATE 04-6-15

# INLET PROTECTION LOG TYPE

NOT-TO SCALE



## SECTION

### NOTES:

1. 2" x 2" nominal hardwood stakes, 4 foot minimum length, driven into ground approximately 18 inches, stakes driven a minimum width of 12 inches away from the drop inlet.
2. Area inside the log, from edge of fabric to structure, must be stabilized with Erosion Control Blanket, Turf Reinforcement Mat, Geotextile 592 Table 2 Class 2 or CA-7 stone
3. The maximum distance between the stakes should be 4 feet.
4. A maintenance schedule must maintain a sediment accumulation of less than 50% of the height of the log.

### REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_

### STANDARD DWG. NO.

IUM-562

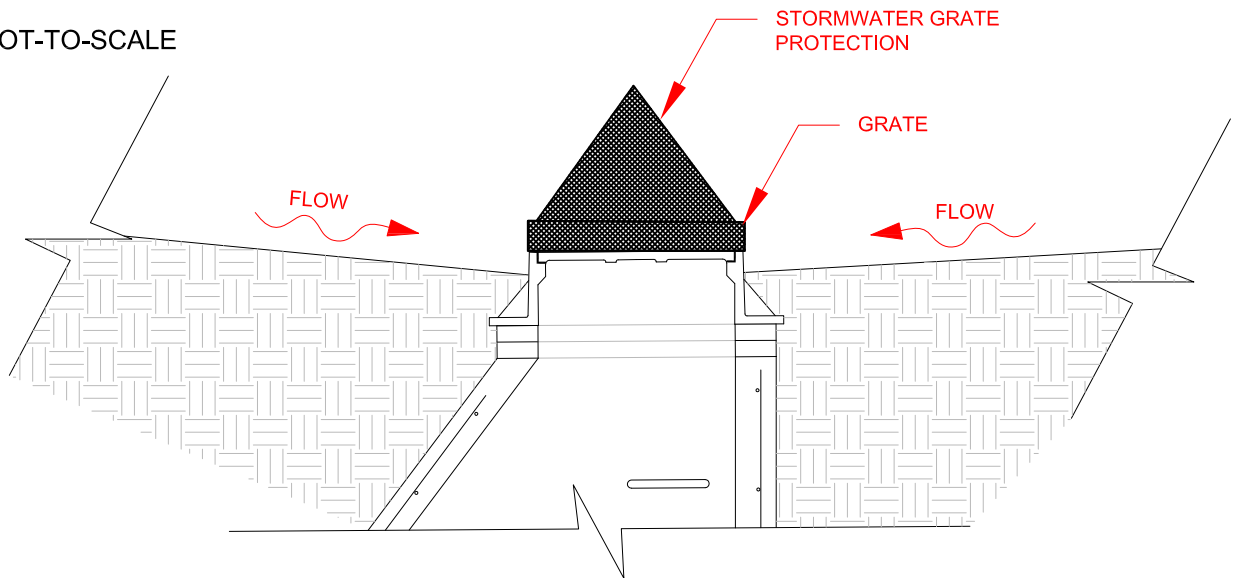
SHEET 1 OF 1

DATE 11-30-15

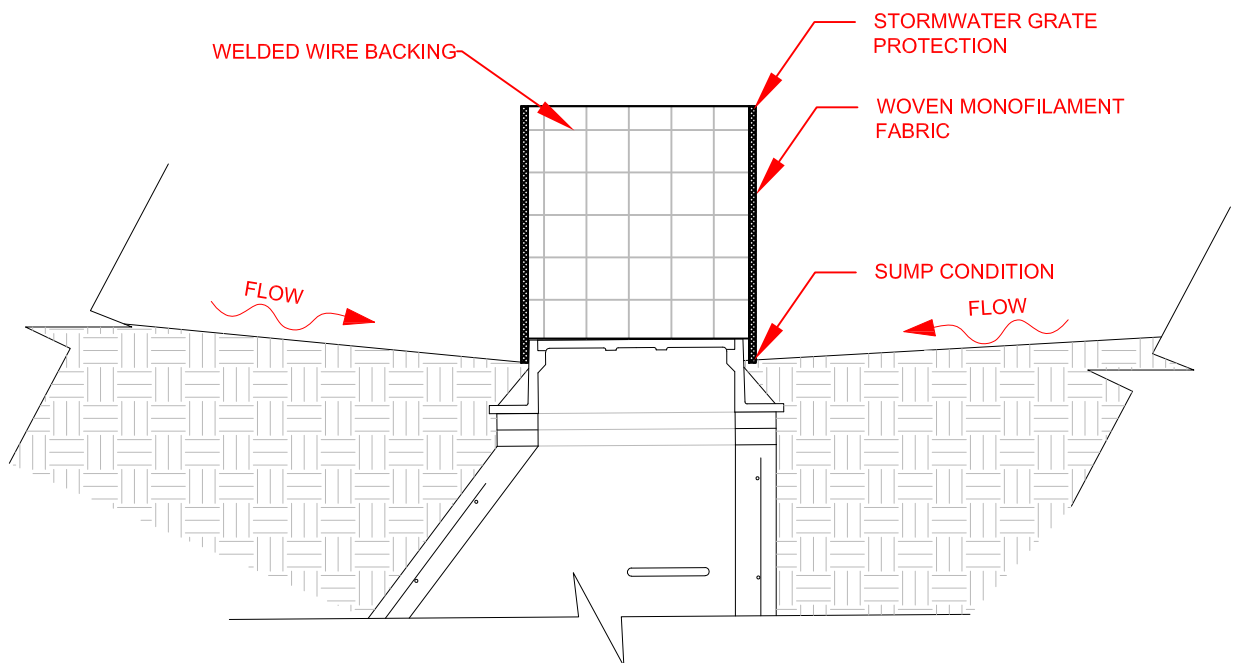
# MANUFACTURED ABOVE GRADE INLET PROTECTION

APPENDIX B9

NOT-TO-SCALE



SECTION



SECTION

## NOTES:

1. A maintenance schedule must maintain a sediment accumulation of less than 50% of the height of the inlet protection.
2. Device should be supported.
3. Fabric type should be IUM 592 Standard Table 1 Class 4

## REFERENCE

Project \_\_\_\_\_  
Designed \_\_\_\_\_ Date \_\_\_\_\_  
Checked \_\_\_\_\_ Date \_\_\_\_\_  
Approved \_\_\_\_\_ Date \_\_\_\_\_

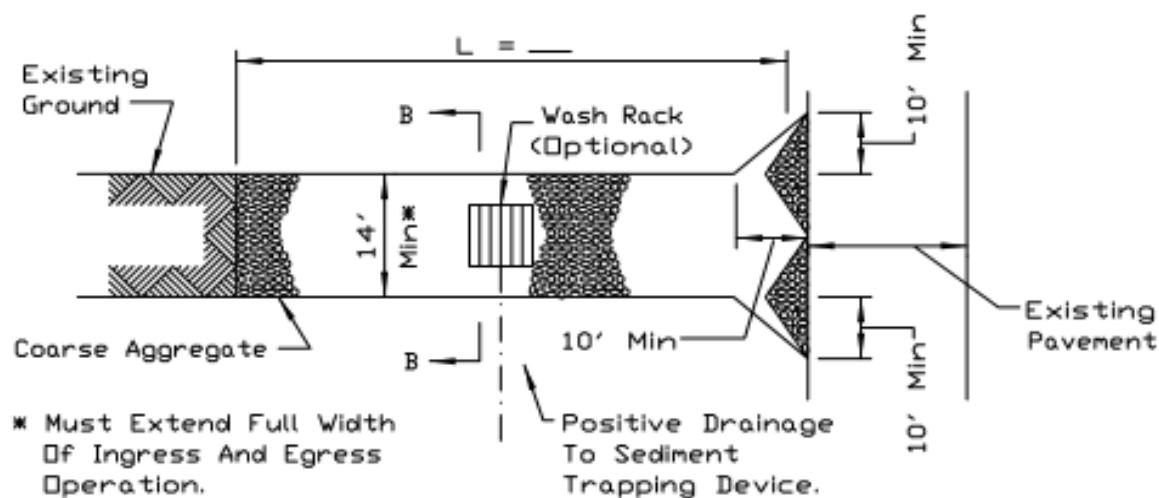
## STANDARD DWG. NO.

IUM-531

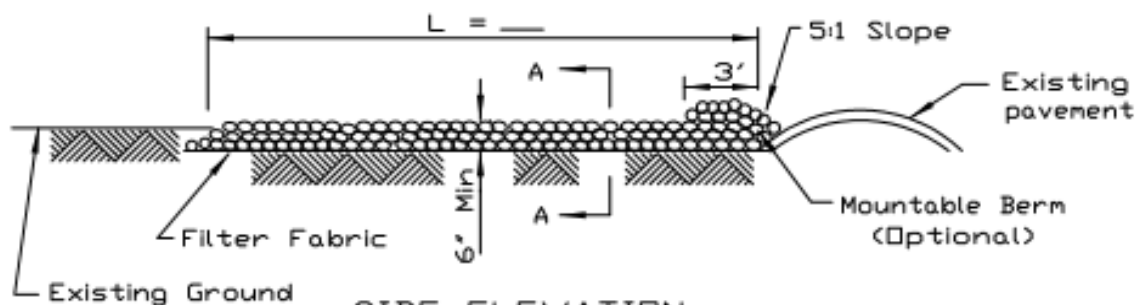
SHEET 1 OF 1

DATE 03-27-17

# STABILIZED CONSTRUCTION ENTRANCE PLAN



PLAN VIEW



SIDE ELEVATION

## NOTES:

1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table I or 2, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
2. Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
3. Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
4. If wash racks are used they shall be installed according to the manufacturer's specifications.

## REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



**NRCS**

Natural Resources Conservation Service

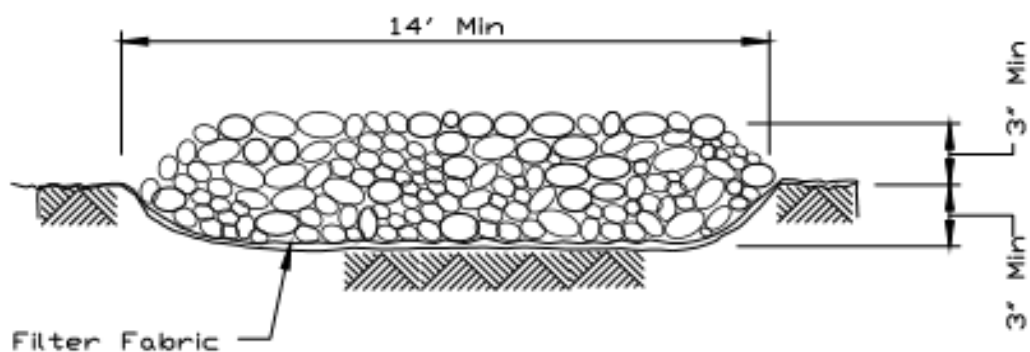
## STANDARD DWG. NO.

IL-630

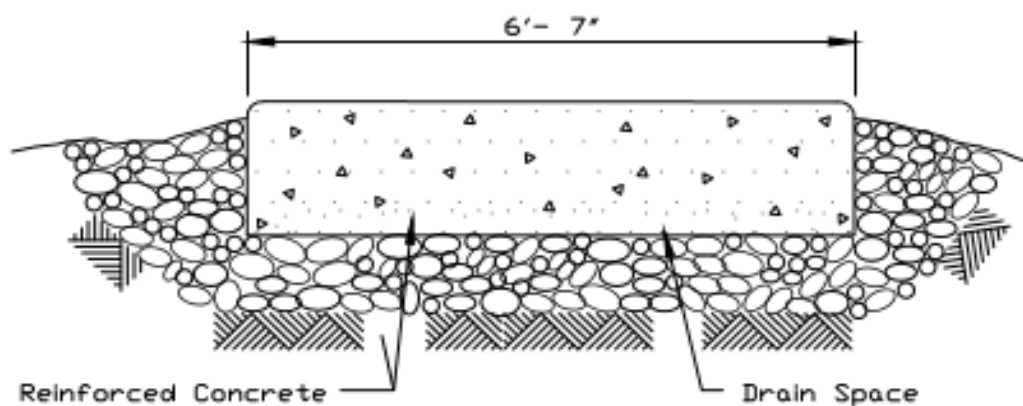
SHEET 1 OF 2

DATE 8-18-94

# STABILIZED CONSTRUCTION ENTRANCE PLAN



SECTION A-A



SECTION B-B

REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



**NRCS**

Natural Resource Conservation Service

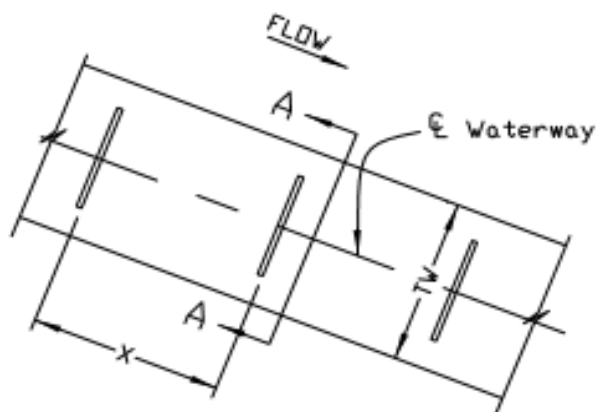
STANDARD DWG. NO.

IL-630

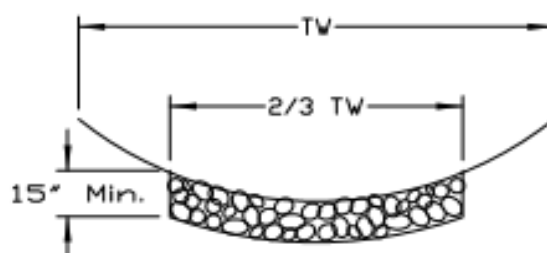
SHEET 2 OF 2

DATE 8-18-94

# ROCK CHECKS FOR WATERWAYS



PLAN VIEW



SECTION A-A

WATERWAY NUMBER .....  
 FROM STATION .....  
 TO STATION .....  
 CHECK SPACING (X) .....  
 CHECK WIDTH (2/3 TW) .....

## BILL OF MATERIALS

Rock - IDOT RR3, or equivalent - \_\_\_\_\_ Tons

## NOTES:

1. Excavate trench 12 inches wide or one backhoe bucket wide, whichever is greater.
2. Compact rock backfill by rolling with construction equipment.
3. Finished rock surface will be flush with the ground surface when completed.

## LOCATION PLAN



County \_\_\_\_\_

Sec. \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_

## REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



Natural Resources Conservation Service

**NRCS**

## STANDARD DWG. NO.

IL-541

SHEET 1 OF 2

DATE 8-17-94

## ROCK CHECKS FOR WATERWAYS

### ROCK CHECK SPACING

WATERWAY GRADE %	MAXIMUM SPACING FT.
0 - 1.5	100
1.5 - 3.0	75
> 3.0	50

### ROCK QUANTITIES IN TONS - PER ROCK CHECK

DEPTH (In.)	ROCK CHECK WIDTH - 2/3 TW - IN FEET										
	10	12	14	16	18	20	22	24	26	28	30
15	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.1	4.4
18	1.8	2.1	2.5	2.8	3.2	3.6	3.9	4.3	4.6	5.0	5.3
24	2.4	2.8	3.3	3.8	4.3	4.7	5.2	5.7	6.2	6.6	7.1

Note: Quantities based on 2 foot wide trench and 1.6 Tons/Cu. Yd.  
(Divide quantities by 2 for 12 inch trench widths.)

### ROCK GRADATION - IDOT RR3

Size	% Passing By Weight
50 Lb.	100
10 Lb.	30 - 70
1 Lb.	0 - 16

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



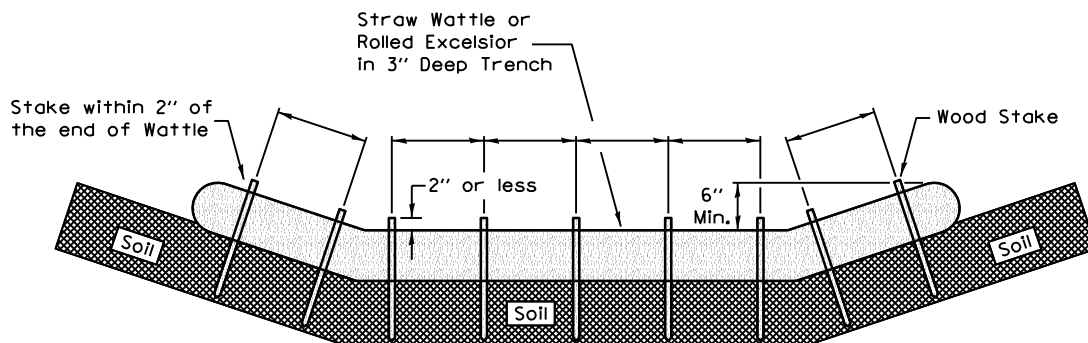
**NRCS**  
 Natural Resource Conservation Service

IL-541

SHEET 2 OF 2  
 DATE 8-17-94

# ROLLED EROSION CONTROL PRODUCTS

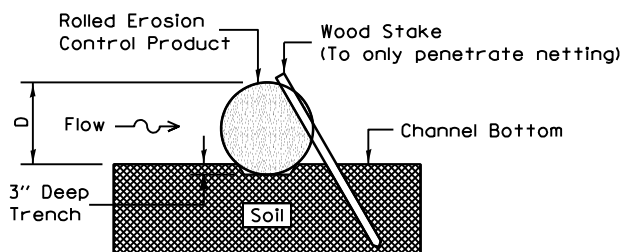
## Staking Pattern Guide



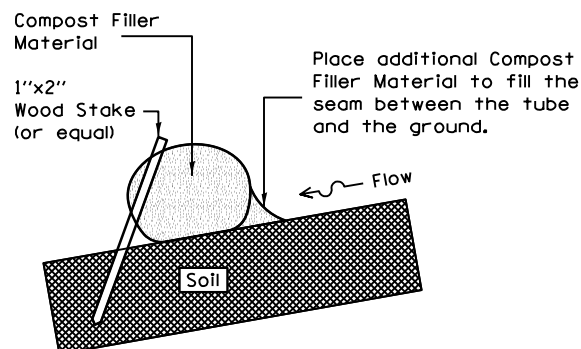
### Notes:

1. Overlap minimum is the diameter of the roll.
2. 4' spacing for wattles.
3. 2' spacing for rolled excelsior.
4. Or space according to manufacturer's specifications.

## Stake Detail



## Compost Filter Sock Detail



When compost filter sock ditch check is used, place a compost berm upstream of the filter sock (see IUM 805). A trench is not required.

### Notes:

1. Drawings are not to scale.
2. Ends of wattles or rolled excelsior shall be turned at least 6" upslope.
3. Recommended stakes are 1 1/8" wide x 1 1/8" thick x 30" long
4. Stakes shall not extend above the straw wattle more than 2".
5. Spacing: The toe of the upstream ditch check shall create a horizontal line with the top of the downstream ditch check.
6. When compost filter sock ditch check is used, place a compost berm upstream of the filter sock (see IUM 805). A trench is not required.

### REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



### STANDARD DWG. NO.

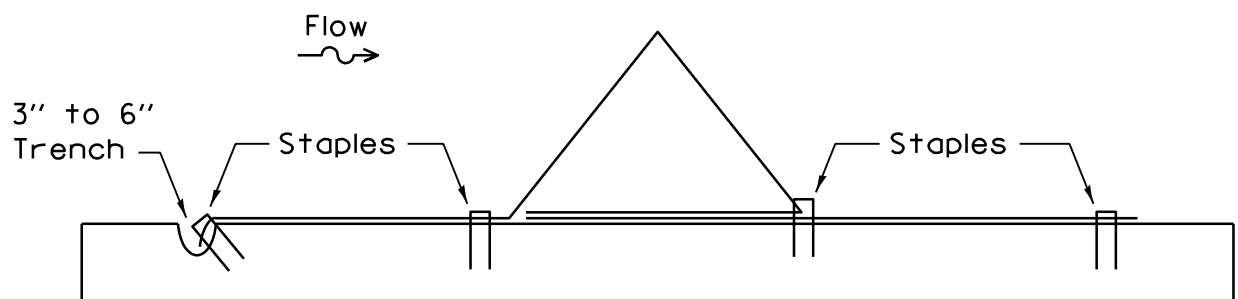
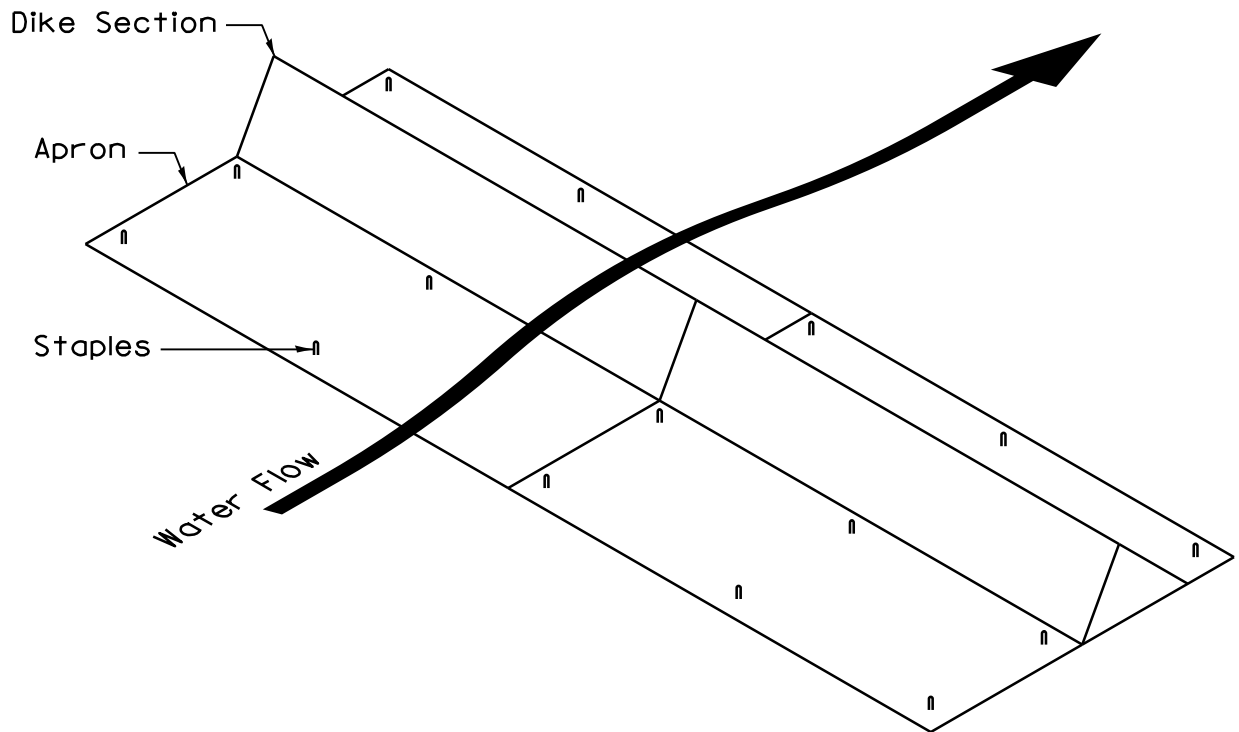
IUM-514

SHEET 1 OF 1

DATE 8-19-11



# URETHANE FOAM GEOTEXTILES



## REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_

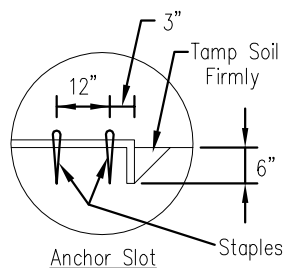
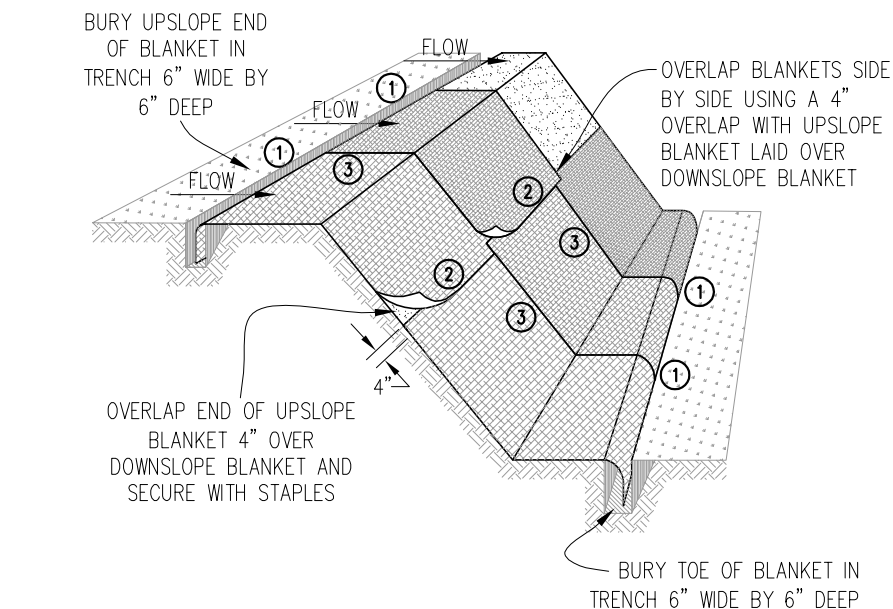
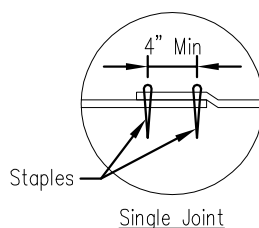
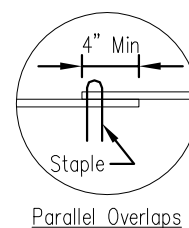
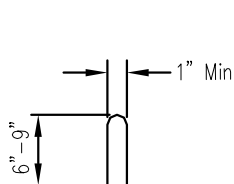
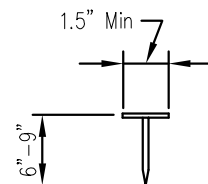


STANDARD DWG. NO.

IUM-514

SHEET 1 OF 1

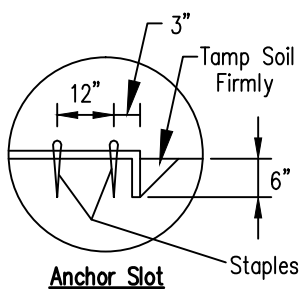
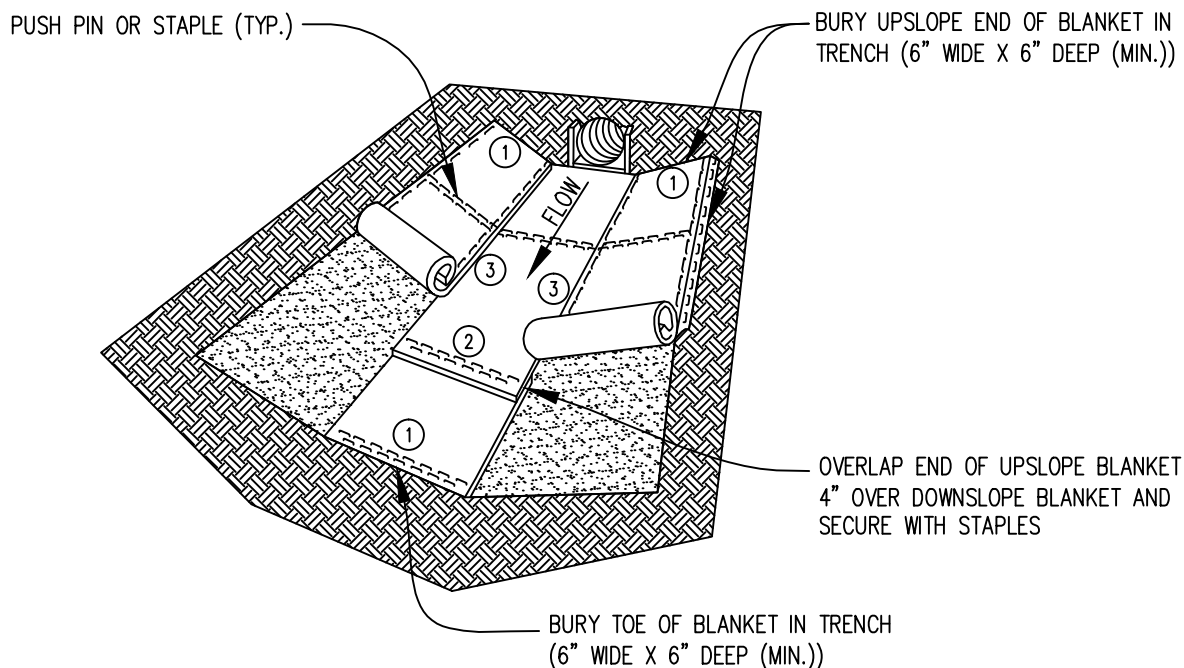
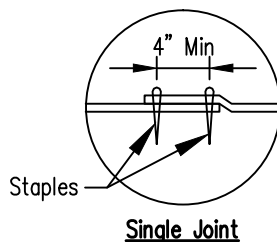
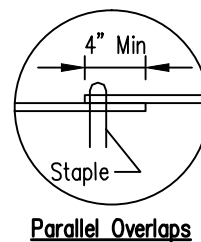
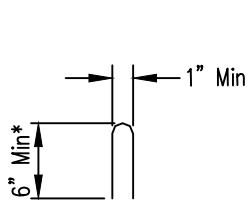
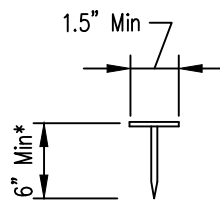
DATE 6-30-11

DETAIL 1DETAIL 2DETAIL 3STAPLE DETAILPUSH 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 - TURF REINFORCEMENT MAT (TRM)

**DETAIL 1****DETAIL 2****DETAIL 3****STAPLE DETAIL****PUSH PIN DETAIL**

\*Note:

1. For sandy soil conditions, staple or push pin shall be a minimum 8 inches.

## REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



STANDARD DWG. NO.

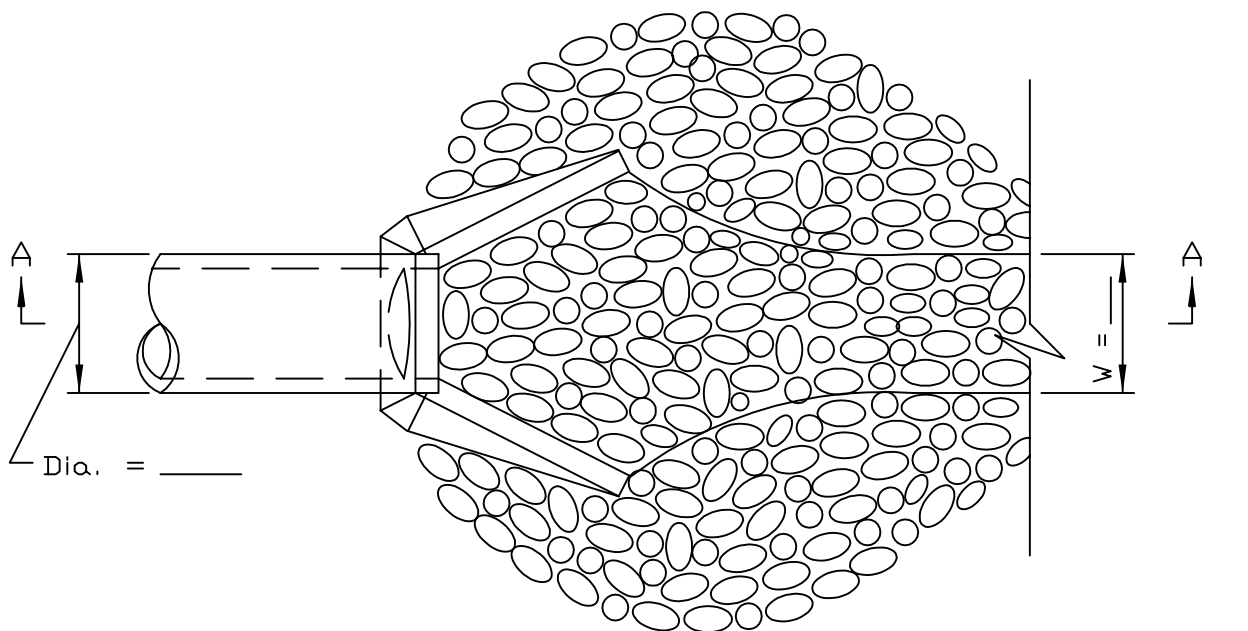
IUM-531

SHEET 1 OF 1

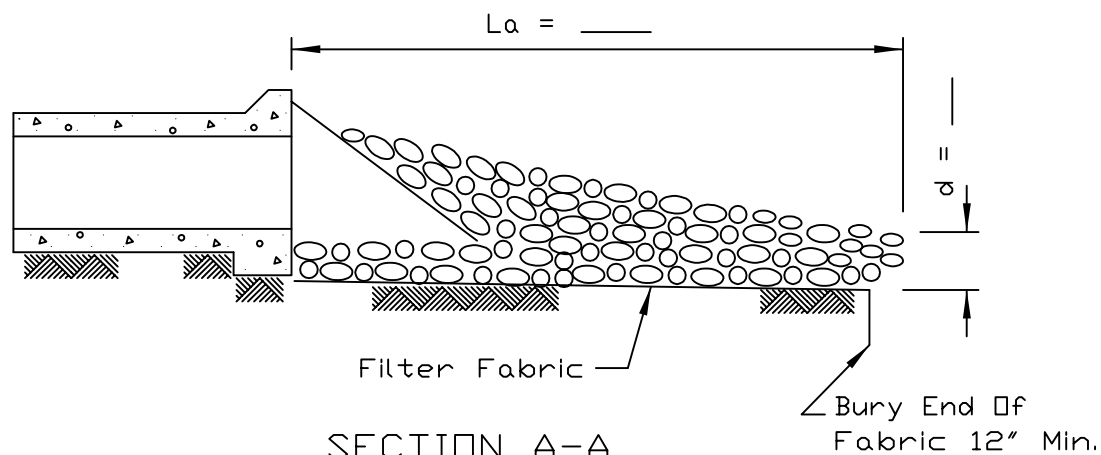
DATE 02-22-11

# PIPE OUTLET TO CHANNEL

## Pipe Outlet To Well-Defined Channel



### PLAN



### SECTION A-A

#### NOTES:

1. The filter fabric shall meet the requirements in material specification 592 GEOTEXTILE Table 1 or 2, Class I, II or III.
2. The rock riprap shall meet the IDOT requirements for the following gradation \_\_\_\_\_.
3. The riprap shall be placed according to construction specification 61 LOOSE ROCK RIPRAP. The rock may be equipment placed.

#### REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



Natural Resources Conservation Service

# NRCS

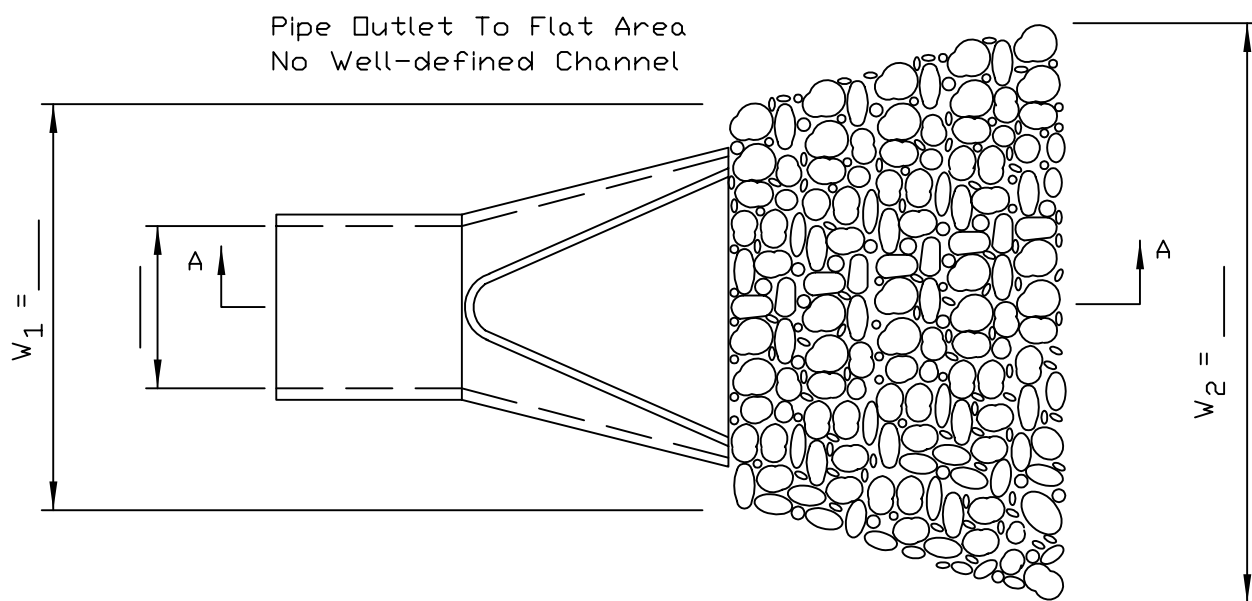
STANDARD DWG. NO.

IL-611

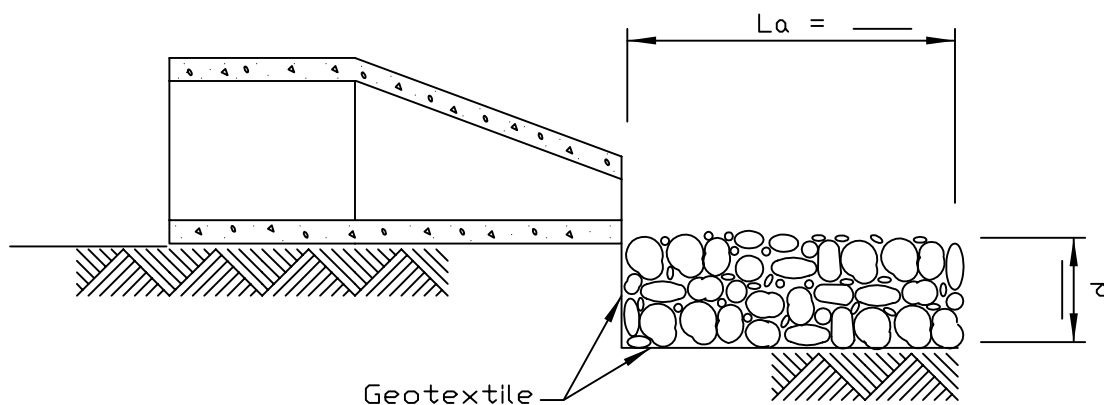
SHEET 1 OF 1

DATE 8-18-94

# PIPE OUTLET TO FLAT AREA



PLAN



SECTION A-A

## NOTES:

1. The filter fabric shall meet the requirements in material specifications 592 GEOTEXTILE Table 1 or 2, class I, II or III.
2. The rock riprap shall meet the IDOT requirements for the following gradation: RR \_\_\_\_\_, Quality \_\_\_\_\_.
3. The riprap shall be placed according to construction specification 61 LOOSE ROCK RIPRAP. The rock may be equipment placed.

## REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



Natural Resources Conservation Service

# NRCS

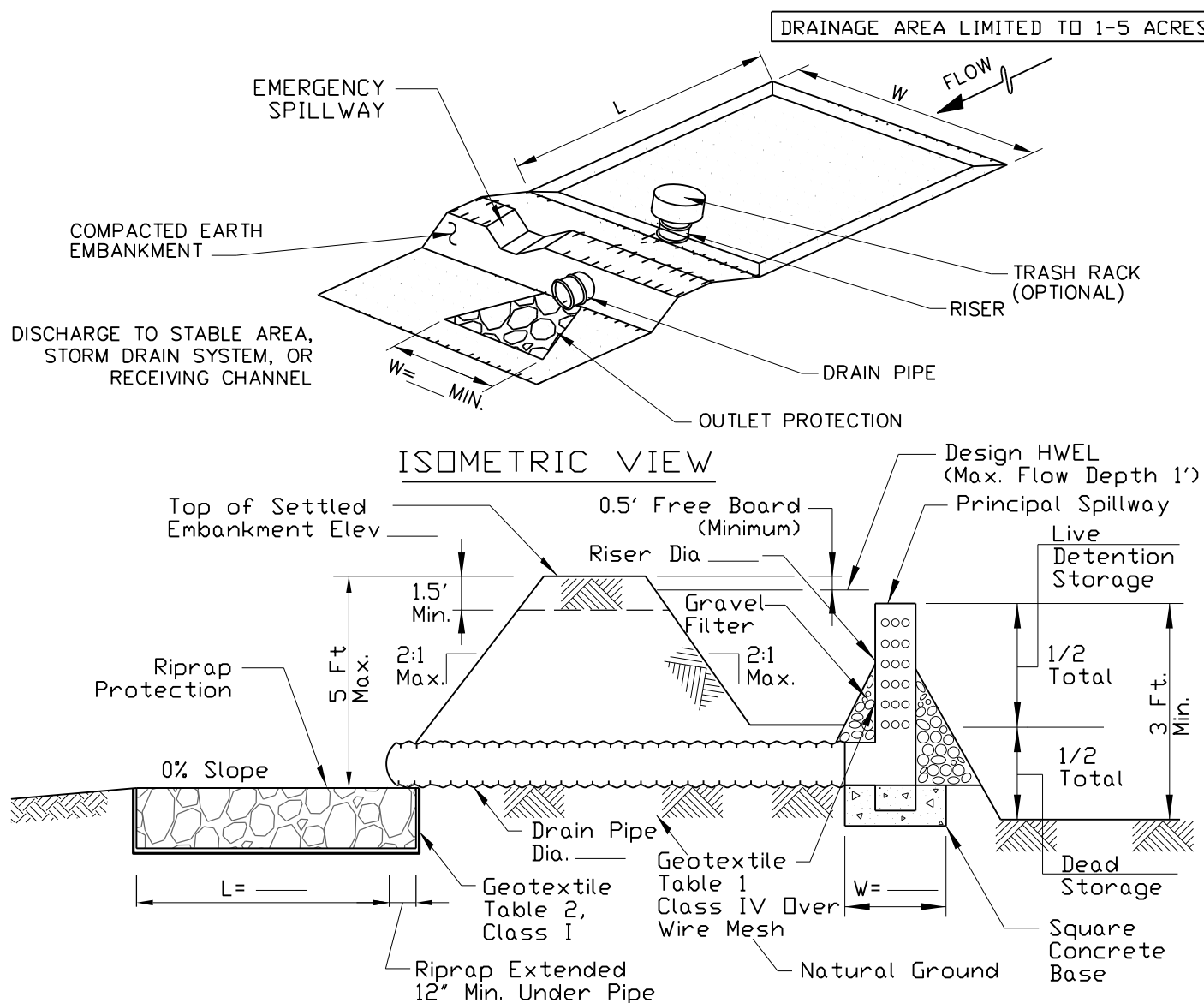
STANDARD DWG. NO.

IL-610

SHEET 1 OF 1

DATE 9-15-93

# TEMPORARY SEDIMENT TRAP (PIPE OUTLET)



## NOTES:

1. Riser with slotted inlets shall be fabricated from corrugated metal, polyethylene or smooth steel.
2. Slots shall be cut cleanly and deburred. Ends of slots may be round or square.
3. Gravel filter, if used, shall be a maximum stone diameter of 2".
4. Principal spillway shall be fabricated or standard elbow; fabricated or standard tee with the pipe or plug in upstream end; or standard tee with one end embedded in concrete.
5. The emergency spillway must be stabilized and/or armored as appropriate based upon overflow velocities.
6. Minimum top width of compacted earth embankment shall be 5'.

## REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



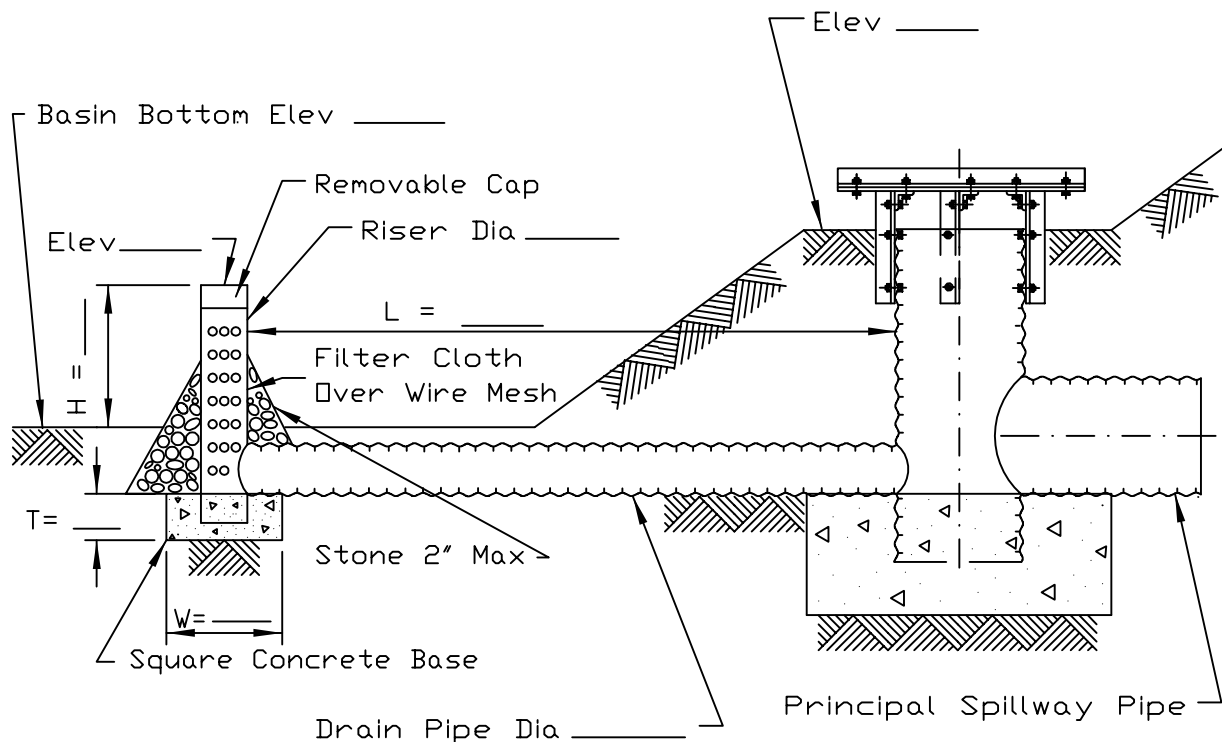
## STANDARD DWG. NO.

IUM-660P

SHEET 1 OF 1

DATE 10-05-2017

# SEDIMENT BASIN DEWATERING DEVICE



## SECTION ON CENTERLINE

### NOTES:

1. Slotted inlets shall be fabricated from corrugated metal or smooth steel.
2. Slots shall be cut cleanly and deburred. Ends of slots may be round or square.
3. Gravel filter, if used, shall be pit run sand and gravel with a maximum particle diameter of 2".
4. Fabricated or standard elbow; fabricated or standard tee with the pipe or plug in upstream end; or standard tee with one end embedded in concrete.
5. Thirty 1" diameter holes per foot of riser may be substituted for the 1"x 4" slots for 6" diameter risers.
6. Drain pipe shall be the same material and gauge as the principle spillway pipe.
7. Slot spacing and size shall be as shown on standard drawing IL-580.
8. Coupling bands shall be as shown on standard drawing IL-580.

### REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



Natural Resources Conservation Service

# NRCS

STANDARD DWG. NO.

IL-615

SHEET 1 OF 1

DATE 9-22-93