

Erosion, Sediment and Storm Water Control Ordinance
Peoria County,
Illinois

EROSION, SEDIMENT, AND STORM WATER CONTROL ORDINANCE FOR PEORIA COUNTY

Including Amendments through April 9, 1996

PEORIA COUNTY, ILLINOIS EROSION, SEDIMENT, AND STORM WATER CONTROL ORDINANCE

Sec. 7.5-61. DEFINITIONS

[For the purposes of this article, 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) 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.

Appeals Board: The Erosion, Sediment and Storm Water Control Appeals Board.

Areas of concentrated flow or bodies of water: Any area where water may accumulate or flow, whether continual or as the 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.

Commission: The Tri-County Regional Planning Commission.

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.

Department: The Peoria County Department of Planning and Zoning.

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: Any area of land on which the pre-development ground surface will be affected or altered by the development activities. This includes but is not limited to grading, clearing, stock piling, tracking and other similar activities.

Drainage area: For 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 Peoria County Board 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 floodplains 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 County, 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, which may include, but are not limited to, the construction of conservation measures, plowing, disking, and cultivating.

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

Preproject 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 years. For example, if a site has been cropland for four of the past five 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 municipal 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.

Site Specific plan: A general erosion and sediment control permit required for projects where slope is greater than 10% and/or the site contains areas of concentrated flow or bodies of water. Slope shall be determined by the maximum slope indicated on the site according to the USDA Soil Survey or topographic survey as prepared by an Illinois Registered Surveyor.

Standards: The Illinois Environmental Protection Agency's Illinois Urban Manual, A Technical Manual Designed for Urban Ecosystem Protection and Enhancement published in 1995 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 Peoria County standards for Stormwater Design Analyses, found at Appendix "A", of this article, and the erosion and sediment control criteria and specifications found in Appendix "B" of this ordinance.

Standard plan: A general erosion and sediment control permit for projects where slope is less than 10% and there are no areas of concentrated flow or bodies of water on or immediately adjacent to the site. Slope shall be determined by the maximum slope indicated on the site according to the USDA Soil Survey or topographic survey as prepared by an Illinois Registered Surveyor.

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 24 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 and television cable; or gas, water and sewer pipes.

Working day: Shall not include Saturday, Sunday or any holiday when the Peoria County Courthouse is closed.

Sec. 7.5-62. APPLICABILITY OF ARTICLE

This article shall apply to:

1. AU projects within the boundaries and jurisdiction of the County. 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, except as follows:

a. Land disturbing activities which do not involve the construction of any new single or two-family dwellings and for which the disturbed area is less than 5,000 square feet; l

b. Normal agricultural practices; or

c. Routine maintenance of roads, access ways and utility service lines.

The Erosion Control Administrator reserves the right to require any nonagricultural, 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.

2. Any land within the boundaries and jurisdiction of the County on which there is located a permanent storm water control measure which was installed pursuant to this ordinance.

Sec. 7.5-63. STANDARDS FOR DESIGN AND MAINTENANCE OF CONTROL | MEASURES FOR SOIL EROSION, SEDIMENT AND STORM WATER

(a) EROSION AND SEDIMENT CONTROL MEASURES All control measures required under this ordinance shall conform to the design criteria, standards, and specifications provided in the applicable standards now in effect or as hereafter amended. AU control measures installed shall be sufficient to prevent sediment from leaving the permit site during a 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 within four hours, or by no later than the end of the work day. 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. AU 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 postproject condition do not exceed the corresponding storm event peak discharges for the preproject condition.

Evaluation of submitted plans shall be based on the Stormwater Design Analyses Standards in Appendix "A" at the end of this article.

(c) REGIONAL STORM WATER CONTROL SYSTEMS. To allow for the beneficial development and maintenance of 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 requirements in this section for permanent on site storm water controls from the Erosion Control Administrator. Such exemption shall not apply to any temporary stormwater control measures required by this article.

Sec. 7.5-64. 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 article.

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 the article 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 permanent 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 cleanup 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. However, on project areas with slopes not exceeding five (5%) percent, permanent vegetation shall be established by seeding within three days of the removal of sediment barriers during the spring or fall seeding periods. Summer seeding is acceptable on project areas which shall be watered. This does not apply to 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.

Sec. 7.5-65. GENERAL EROSION AND SEDIMENT CONTROL PERMITS

Before commencing any project involving construction of any new single or two-family dwelling or commencing any project with an area of 5,000 square feet or greater the

owner of the land, or his representative, shall be required to file an application for a General Erosion and Sediment Control Permit, as either a Standard Plan or Site Specific Plan, except as otherwise provided in Section 7.5-62 and Section 7.5-66.

(1) APPLICATION. The applicant shall file the application with the Department on forms provided by the Department. The fee for a Standard plan application shall be in the amount of \$100.00 for each permit, and the fee for a Site Specific plan application shall be \$150.00 for each permit. However, no fee shall be required for any project the purpose of which is agricultural, or initiated by a local unit of government. 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.

(2) APPLICATION REVIEW. Review of a General Erosion and Sediment Control Permit application shall be limited to verifying that the required information and permit fee have been provided and that it meets the standards. The Erosion Control Administrator shall issue or deny an application by: a) approving the permit for a standard plan within two (2) working days of the filing of a complete application; or b) initiate the review process for a site-specific plan and approve the same within five (5) working days of the filing of a complete application. If the permit is denied, it shall be returned to the applicant with a written explanation of its denial. The application shall be deemed approved if no response is made within the time frames provided above.

(3) DURATION. The general erosion and sediment control permit shall be issued for a period not exceeding two (2) years.

(4) CONTENT OF GENERAL EROSION AND SEDIMENT CONTROL PERMIT. The General Erosion and Sediment Control permit shall contain at a minimum the following general conditions:

- a. That written approval be obtained from the Erosion Control Administrator prior to making any modification to the erosion and sediment control plan as set forth in the application; and
- b. That all control measures identified in the application shall be installed; and
- c. That all control measures shall be maintained during construction; and
- d. Such other conditions as the Erosion Control Administrator deems appropriate to ensure compliance with the specific requirements and intent of this article.

(5) PERMANENT GROUND SURFACE COVER Under all circumstances, temporary control measures shall be maintained in accordance with Section 7.5-64. Without exception, all disturbed areas must have permanent ground cover within six months of project completion, or within six months of occupancy, whichever comes first.

Sec. 7.5-66. EROSION, SEDIMENT, AND STORM WATER CONTROL PERMITS

Before commencing any commercial institutional, multi-family or industrial project with an area of more than one-half (1/2) acre; or a project requiring subdivision approval by a unit of local government with an area of more than one-half (1/2) acre, the owner of the land, or his representative, shall be required to file an application for an Erosion, Sediment, and Storm Water Control Permit.

(1) APPLICATION. The applicant shall file the application with the Department on forms provided by the Department. 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:

a. 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:

1. Site boundaries and adjacent lands which accurately identify site location;

2. Lakes, streams, wetlands, channels, ditches, and other water courses on and immediately adjacent to the site;

3. Floodways and/or Zone A of the Floodplain as determined on the Flood Insurance Rate Map (FIRM:), and indicating the map panel number;

4. All off-site drainage onto or through the project site;

5. Location and dimensions of storm water management components on or adjacent to site;

6. Locations and dimensions of structures, roads, highways, easements and paved areas; and

7. Site topography: show contours at vertical intervals as follows:

(i) Slope of six (6) per cent or less, two-foot interval.

(ii) Slope of over six (6) per cent but less than fifteen (15) per cent, five-foot interval.

(iii) Slope of over fifteen (15) per cent, ten- or twenty-foot intervals.

b. 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, buildings, landscaping, and other changes to the site, along with other predominate site features, e.g., open areas, bodies of water.

c. Sediment and Erosion control practices. A site construction plan including:

1. Locations and dimensions of all proposed land disturbing activities;
2. Locations and dimensions of all temporary soil and aggregate stockpiles;
3. Location, dimension and construction details of all construction site management control measures necessary to meet the requirements of this article and including proposed revegetation of disturbed areas;
4. Statement regarding provisions for maintenance and maintenance requirements of the construction site management control measures during construction;

d. Storm water management plans and controls. Design calculations and information related to the permanent storm water management system for any project with a net increase of impervious area greater than one-half (1/2) of an acre. For the purposes of this section, the net increase is the cumulative change since the implementation of this article, April 1, 1996. For example, in year 1, a commercial site increases the parking lot by 20,000 square feet. In year 2, the same commercial site adds a building with an area of 20,000 square feet. In year 1, no permanent storm water control measures (or calculations) are required by the ordinance. In year 2, storm water calculations shall be submitted and shall be based on the total increase of 40,000 square feet of impervious area. The following information shall also be provided by the applicant.

1. A map showing the drainage area boundaries, including off-site drainage areas that drain into or onto the site;

2. Location and identification of soil types for all drainage areas;

:

3. Location and identification of vegetative cover for all drainage areas;

4. Run-off curve number calculations for both pre- and post-project conditions for all each drainage area;

5. Time of concentration calculations for both pre- and post-project conditions for each drainage area, and include a map showing hydraulic flow lengths used;

6. Peak flow-rate calculations for 2 year and 25 year storms for both pre and post-project conditions;

7. Design calculations for detention basin outlets for both 2 year and 25 year storms, include stage-storage table and discharge rating curve data or outflow calculations (refer to optional form in Appendix A);

8. Location dimensions, and construction details of proposed detention basins and outlets;

9. Detention volume calculations;

10. Summary of peak flow-rates for pre-, post- and proposed conditions with detention showing that the requirements of the ordinance are met (refer to optional form in Appendix A); and

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

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

g. A plan of the continued management and maintenance of such permanent control measures.

h. Application fee. An application fee shall be submitted at the time of application. The fee shall be in the amount of fifty dollars (\$50.00) per acre with a minimum fee of two hundred-fifty dollars (\$250) and a maximum fee of \$2,000.00. However, no fee shall be required for any project the purpose of which is agricultural.

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.

(2) 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.

(3) 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 Peoria County for one hundred (100) percent of the applicant's engineer's estimated cost for all control measures required under this section. If the control measures are necessitated by construction which is also subject to Chapter 20 of The Peoria County Code, the applicant may submit one surety bond, irrevocable letter of credit or executed escrow agreement to cover one hundred (100) percent of both the Control Measures required pursuant to this section and the improvements governed by Chapter 20, Section 20-24. 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.

(4) DURATION. The Erosion, Sediment and Storm Water Control Permit shall be issued for a period not exceeding two years.

(5) PERMIT CONDITIONS. The Erosion, Sediment and Storm Water Control Permit shall contain at a minimum the following general conditions:

a. That written approval 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; :

b. That all control measures required in the permit shall be installed;

c. That all control measures shall be maintained during construction;

d. Such other conditions as the Erosion Control Administrator deems appropriate.

(6) PERMANENT GROUND SURFACE COVER Without exception, all disturbed areas must have permanent ground cover within six months of project completion, or within six months of occupancy, whichever comes first.

(7) 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 article, 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.

Sec. 7.5-67. MAINTENANCE OF PERMANENT STORM WATER CONTROL MEASURES

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

Sec. 7.5-68 ENFORCEMENT AND STOP WORK ORDER FEE

This chapter 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 ordinance to insure that said construction is in compliance with the provisions of the same; he shall make or cause to be made, investigations of violations of this chapter and shall cause any violations to be corrected.

Any permit issued pursuant to this ordinance shall be revoked by the Erosion Control Administrator when he finds Tom inspection or Tom 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 the field inspectors as a result of a violation of any of the terms of the ordinance, a fee of one hundred dollars (\$ 100) per stop work order will be charged.

See. 7.5-69. PENALTY

The violation of any of the terms of the ordinance shall constitute an offense punishable by a fine not to exceed five hundred dollars (\$500.00), with each day the violation remains uncorrected constituting a separate offense. Such fine is in addition to any other remedy provided by law.

Sec.7.5-70. APPEALS BOARD

The Appeals Board shall consider and decide upon appeals of any decision, order, or requirement of the Erosion Control Administrator made pursuant to this article.

(1). The Appeals Board is hereby authorized to be established. Said Appeals Board shall consist of 5 members. Each County Board Chairman of the counties adopting this ordinance shall appoint one member, the Soil & Water Conservation Districts shall collectively appoint one member, and the Chairman of the Tri-County Regional Planning Commission shall appoint one member. The members shall be: professional engineers, licensed architects, licensed landscape architects, landscape contractors, earthmoving contractors, home builders, or citizens who have extensive experience in control of storm water and soil erosion. The 5 members on the first Appeals Board shall draw lots to establish terms of 1, 2, 3, 4, and 5 years, respectively. Thereafter, as terms expire, each appointment shall be for 5 years.

(2). The chairman of the Appeals Board shall be elected at the beginning of each calendar year from among the members by a majority of the members.

(3). All decisions of the Appeals Board must receive the support of a majority of its members. A majority of the members of the Appeals Board shall constitute a quorum for the transaction of business; and all questions which shall arise at meetings shall be determined by the votes of the majority of members present. The Appeals Board shall keep minutes of its proceedings showing the vote of each member upon every question or if absent or failing to vote, indicating such facts, and shall keep records of its examinations and other official actions. Every rule, and every order, requirement, decision, or determination of the Appeals Board shall immediately be filed in the office of the Board and shall be a public record. The concurring vote of three (3) members of Appeals Board shall be necessary to reverse any order, requirement, decision or determination of the Erosion Control Administrator. The Appeals Board shall adopt its own rules of procedure not in conflict with state law or this chapter.

Sec. 7.5-71. APPEALS TO APPEALS BOARD

Any person directly aggrieved by any decision, order, requirement, or determination of the Erosion Control Administrator made pursuant to this article shall have the right to appeal such action to the Appeals Board. 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 \$45.00 payable to the Commission 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 Commission shall set a date for a public hearing before the Appeals Board. Such public hearing shall commence not sooner than 15 days nor more than 30 days after the date of receipt of the notice of appeal. At least 15 days notice of the time and place of such hearing shall be published in a newspaper of general circulation in the County. The Appeals Board shall decide the appeal within seven (7) days after the conclusion of the public hearing. The Appeals Board may affirm, modify or reverse any appealed action.

Sec. 7.5-72. APPEALS TO COURT

Appeals from the Appeals Board shall be made in conformity with the provisions of the Illinois Administrative Review Act, 73 5 TICS 5/3-101 et. seq. Copies of any orders or proceedings ordered by the appellant shall be furnished to him at his own cost.

Sec. 7.5-73. EFFECTIVE DATE

Upon adoption by the Peoria County Board, these amendments shall be in full force and effect on April 1, 1996.

Erosion, Sediment, and Storm Water Control Ordinance for Peoria County

Appendix A

ENVIRONMENTAL PROTECTION § 7.5-72

Appendix A. Peoria County Standards For Stormwater Design Analyses

The following are the minimum standard methods and procedures to be used to comply with the stormwater design requirements of the Peoria County Stormwater and Erosion Control Ordinance [this Article 1111. 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 I and graphically in Figure 1.

Storm event rainfall runoff. Use the SCS Runoff Curve Number Method to determine rainfall run off depth. See Figure 2-I 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 work sheet 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

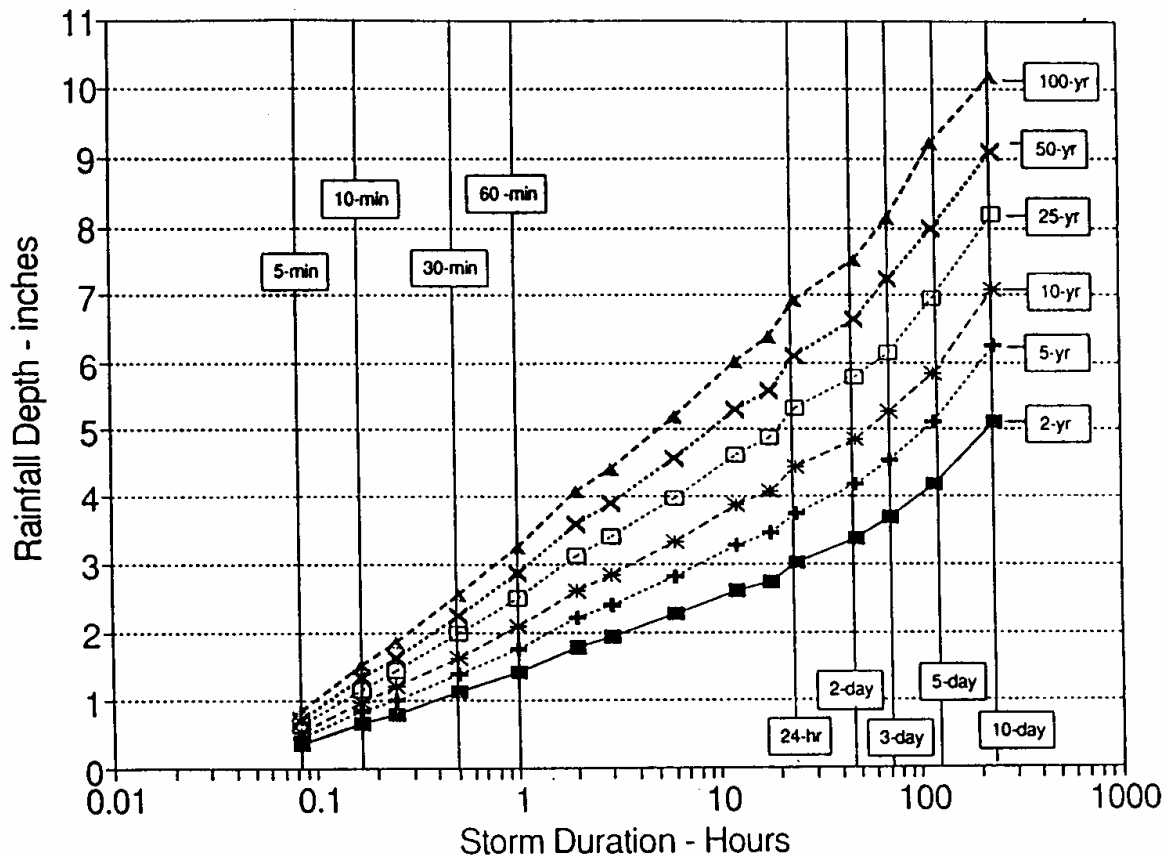


Figure 1. Rainfall Depth-Duration-Frequency Data for Peoria County

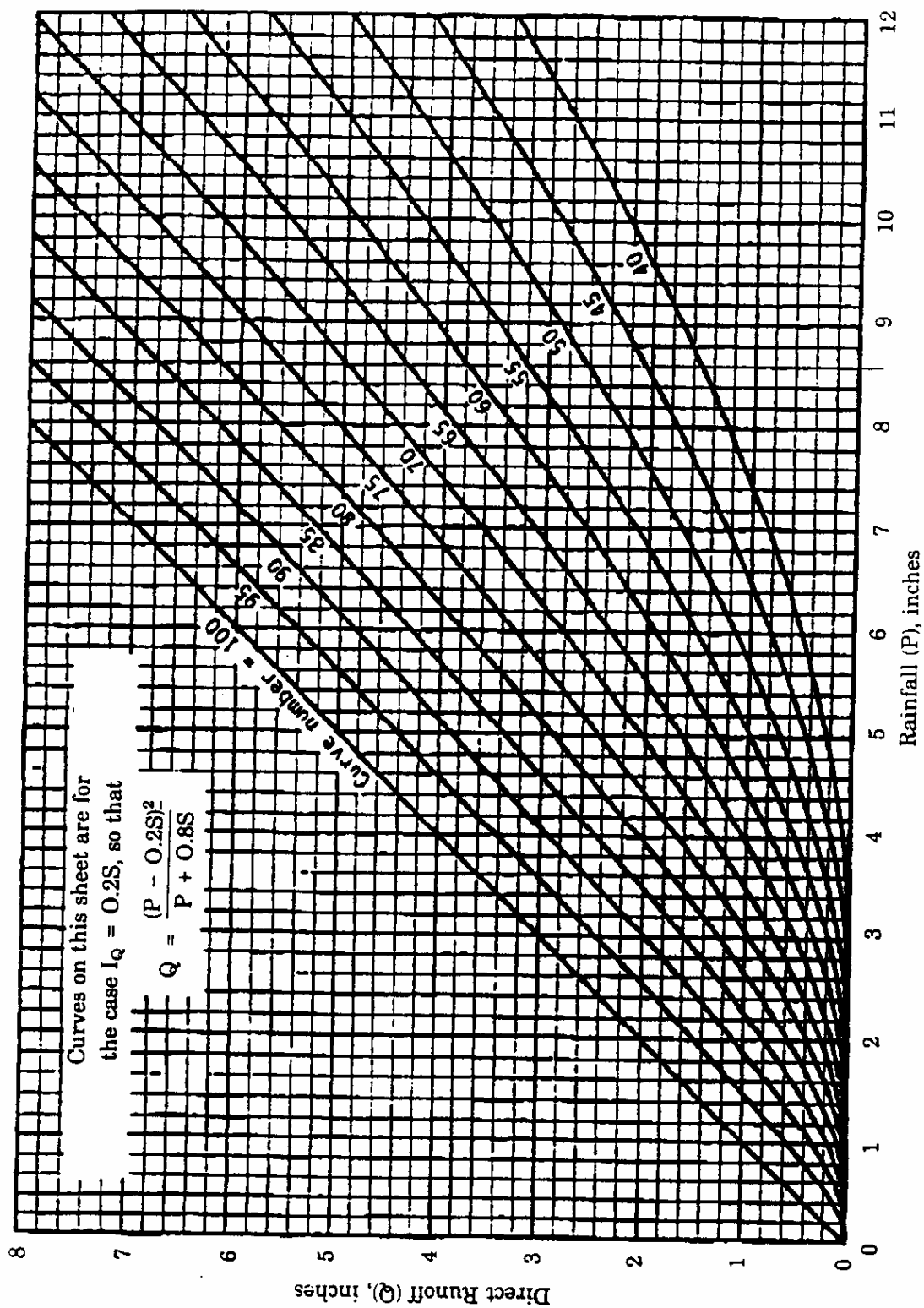


Figure 2-1. Solution of Runoff Equation

Table 2-2a. Runoff Curve Numbers for Urban Areas'

Cover Description	Curve Numbers for Hydrologic Soil Group			
	A	B	C	D
Cover type and Hydrologic conditionAverage percent impervious areas				
Fully developed urban areas (vegetation established):				
Open space (lawns, parks, golf courses, 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 over > 75%).....		39	61	74 80
Impervious areas:				
Paved parking lots, roofs, drive ways, etc. (excluding right- of-way).....		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 (townhouses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	88
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82

Cover Description

Curve Numbers for
Hydrologic Soil Group

Cover type and hydrologic condition	Average percent impervious area	A	B	C	D
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Developing urban areas:

Newly graded areas (pervious areas only, no vegetation).	77	86	91	94
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Average runoff condition and IA = 0.2S.

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 1

Cover Description			Curve Numbers for Hydrologic Soil Group			
Cover type	Treatment 2	Hydrologic Conditions 3	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 (C&T)	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 rotation meadow	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

1 Average runoff condition and $1a = 0.2S$.

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

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 20r/o), and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff

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-1

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

1-Average runoff condition and $1-a = 0.2S$.

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.

3-Poor: <50% ground cover.

Fair: 50 to 75% ground cover.

Good: > 75% ground cover.

4-Actual curve number is less than 30 use $CN = 30$ for runoff computations.

5-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.

6-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 two-year storm (E_{2-yr}) = ft

First Stage control elevation (E_1)= ft

Head on first stage structure ($H_{2-yr} = E_{2-yr} - E_1$) ft

Allowable discharge for two-year storm (q_{2-yr}) = cfs

For rectangular weir outlet:

Required weir length $L_1 = q_{2-yr} / (3.2 * H_{2-yr}^{1.5})$ $/(3.2 * \quad^{1.5}) =$ sq ft

For orifice outlet:

Required orifice area $A_1 = q_{2-yr} / (4.98 * H_{2-yr}^{0.5})$
= $/(4.98 * \quad^{0.5}) =$ sq ft

SECOND STAGE

Maximum stage for twenty-five-year storm ($E_{25\text{-yr}}$) = ft

Second stage control elevation (E_2) = ft

Head on second stage structure ($H_{25\text{-yr}} = E_{25\text{-yr}} - (E_2)$) ft

Allowable discharge for twenty-five-year storm ($q_{25\text{-yr}}$) = cfs

Twenty-five-year storm discharge through first stage:

$$\text{Weir: } q' = 3.2 * L_1 * (E_{25\text{-yr}} - E_1)^{1.5} = 3.2 * \quad * (\quad - \quad)^{1.5}$$

$$= \quad \text{cfs}$$

$$\text{Orifice: } q' = 4.98 * A_1 * (E_{25\text{-yr}} - E_1)^{0.5} = 4.98 * \quad * (\quad - \quad)^{1.5}$$

$$= \quad \text{cfs}$$

Allowable discharge through second stage (q'') $q_{25\text{-yr}} - q' =$ cfs

For rectangular weir outlet:

$$\text{Required weir length } L_2 = q'' / (3.2 * H_{25\text{-yr}}^{1.5})$$

$$= \quad / (3.2 * \quad^{1.5}) = \quad \text{ft}$$

For orifice outlet:

$$\text{Required orifice area } A_2 = q'' / (4.98 * H_{25\text{-yr}}^{0.5})$$

$$= \quad / (4.98 * \quad^{0.5}) = \quad \text{sq ft}$$

Table 3 SCS Type 1I 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

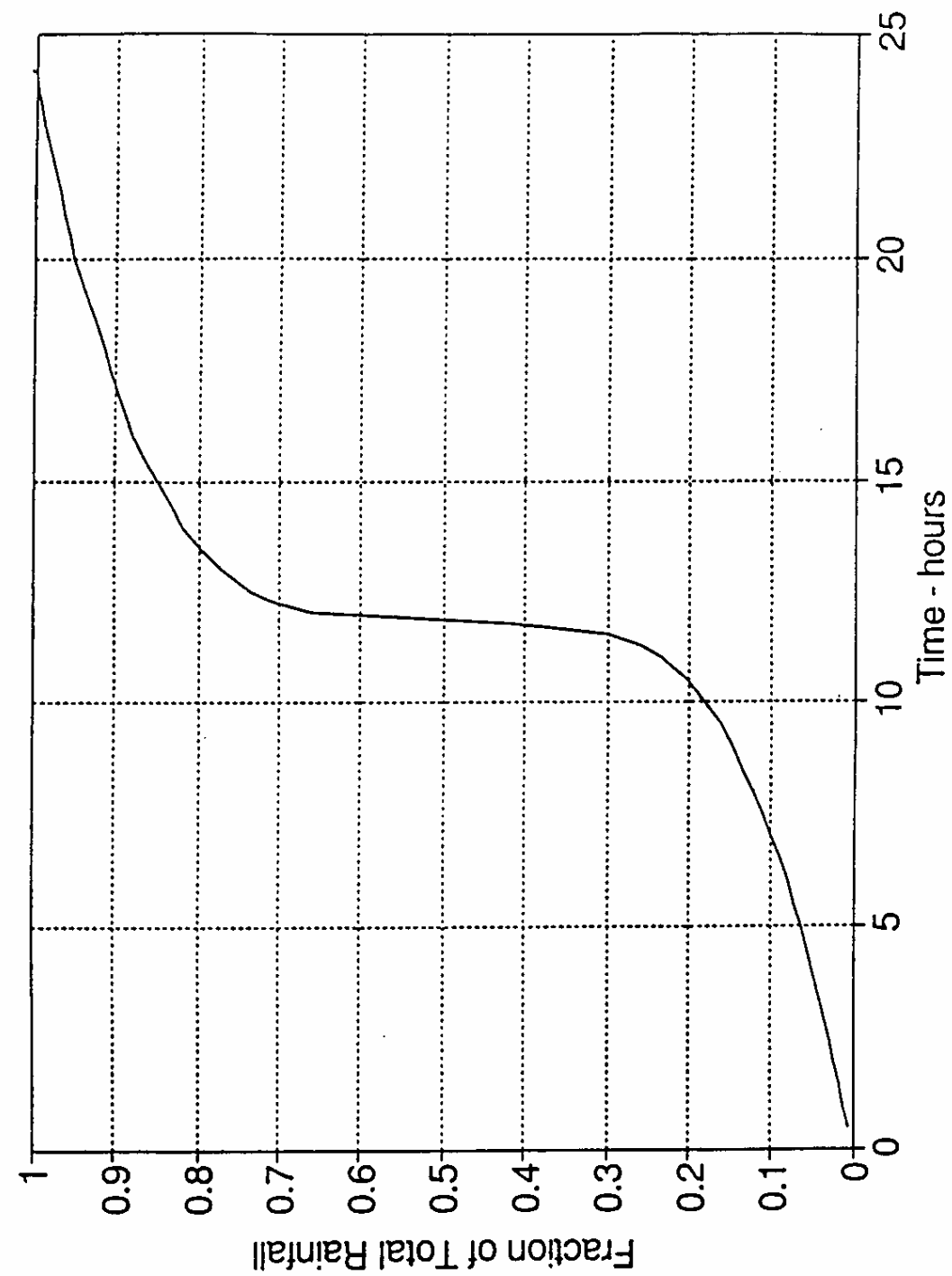


Figure 3. SCS Type II Storm Distribution

(Ord. of 1-11-94)

APPENDDIX B

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 Illinois Urban Manual, IEPA and USDA, ARCS, 1995 and the Illinois Standards for Urban Soil Erosion and Sediment Control, The Urban Committee of the Association of Illinois Soil and Water Conservation Districts, Revised July 1988.

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 no minimum width requirement	
2% to <5 %	vegetative (grass) filter strips 10' wide, minimum	size should be increased in proportion to the drainage area and slope
	filter fence *(page B-3)	drainage area less than 1/2 ac per 100 ft.; see standard for spacing criteria;
	straw bales *(page B-4)	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.
	sediment basin	can handle sediment from a larger area
5% to <10 %	vegetative (grass) filter strips 20' wide, minimum	size should be increased in proportion to the drainage area and slope

	filter fence (page B-3)	drainage area less than 1/2 ac per 100 ft.; see standard for spacing criteria
	straw bales (page B-4)	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.
	sediment basin	can handle sediment from a larger area
>10 %	filter fence (page B-3)	drainage area less than 1/2 ac per 100 ft.; see standard for spacing criteria
	sediment basin	can handle sediment from a larger area

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—Excavated Drain (page B-5)
- Inlet Protection—Block and Gravel (page B-6)
- Inlet Protection—Staked Straw Bales

C MUD AND DUST CONTROL:

to prevent mud and dust from leaving the site. Common measures include: Stabilized Construction Entrance (page B-7) Dust control, see the standards and specifications.

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 (page B-9 and B-10)
- Fabric Checks for Waterways (pages B-11 and B-12)
- Erosion Blanket

B OUTLET PROTECTION

All outlets should be stabilized to prevent downstream areas from erosion. Common measures include:

Pipe Outlet to Channel (page B- 13)

Pipe Outlet to Flat Area

C 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 30th]

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 15th—March 1st]

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:

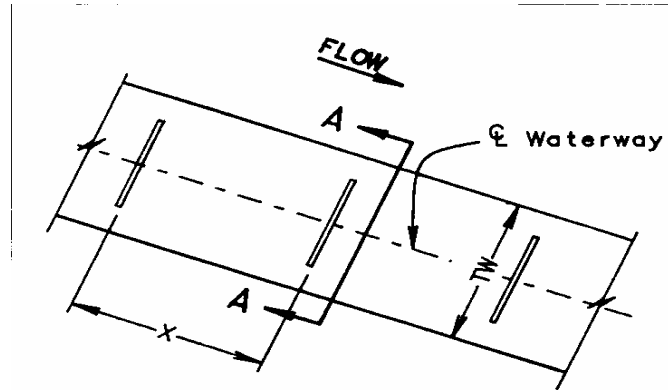
1 Mulching: Added insurance of a successful temporary or permanent seeding. Controls unwanted vegetation and preserves moisture. Provides cover where vegetation cannot be established.

2 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 offside.

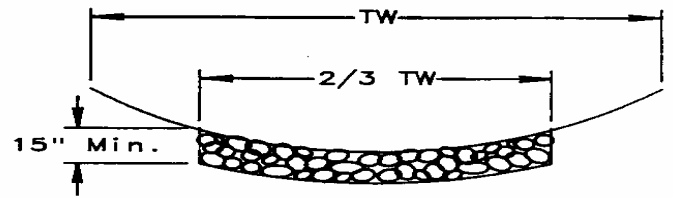
3 Paving: Provides permanent cover on parking lots, roads or other areas where vegetation cannot be

established.

ROCK CHECKS FOR WATERWAYS



PLAN VIEW



SECTION A-A

WATERY 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

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 ILLINOIS

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

REFERENCE

Project

Designed Date

Checked Date

Approved Date

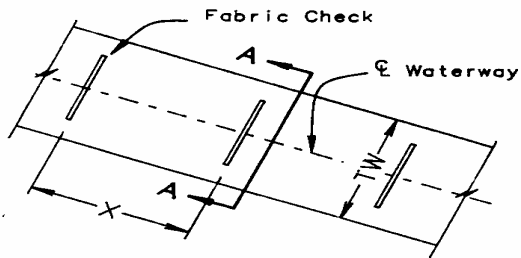
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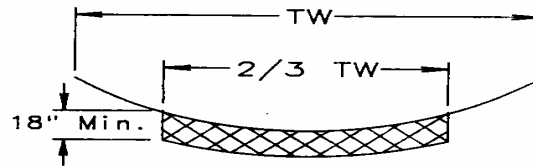
SHEET 2 OF 2

DATE 8-17-94

FABRIC CHECK FOR WATERWAYS



PLAN VIEW



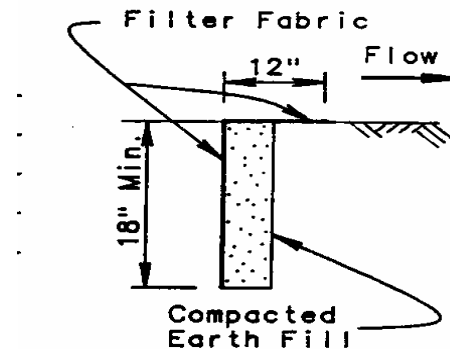
SECTION A-A

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

BILL OF MATERIALS
Filter Fabric Sq. Yds.
(Pieces, @ In. x 30 In.)

NOTES:

1. Excavate a trench 18 inches deep, wide enough to allow hand compaction of backfill.
2. Place the fabric against the upstream wall of the trench. Backfill the trench in hand compacted, 6 inch lifts. Lay 12 inch fabric flap downstream.



TYPICAL SECTION

LOCATION PLAN



County
Sec. T R

REFERENCE

Project
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SOIL CONSERVATION SERVICE
ILLINOIS

STANDARD DWG. NO. IL-542
SHEET 1 OF 2
DATE 8-17-94

FABRIC CHECK FOR WATERWAYS

FABRIC CHECK SPACING (FT.)

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

FABRIC QUANTITIES PER CHECK IN SQUARE YARDS

CHECK LENGTH (FT.)	15	18	21	24	27	30	33	36	39
FABRIC QUANTITY (SQ. YDS)	4.2	5.0	5.8	6.7	7.5	8.3	9.2	10.0	10.8

FILTER FABRIC SPECIFICATION

1. Openings in filter fabric shall be equal to or smaller than the openings in a #40 sieve (0.42mm).
2. Filter fabric shall have a tear strength in excess of 50 pounds.

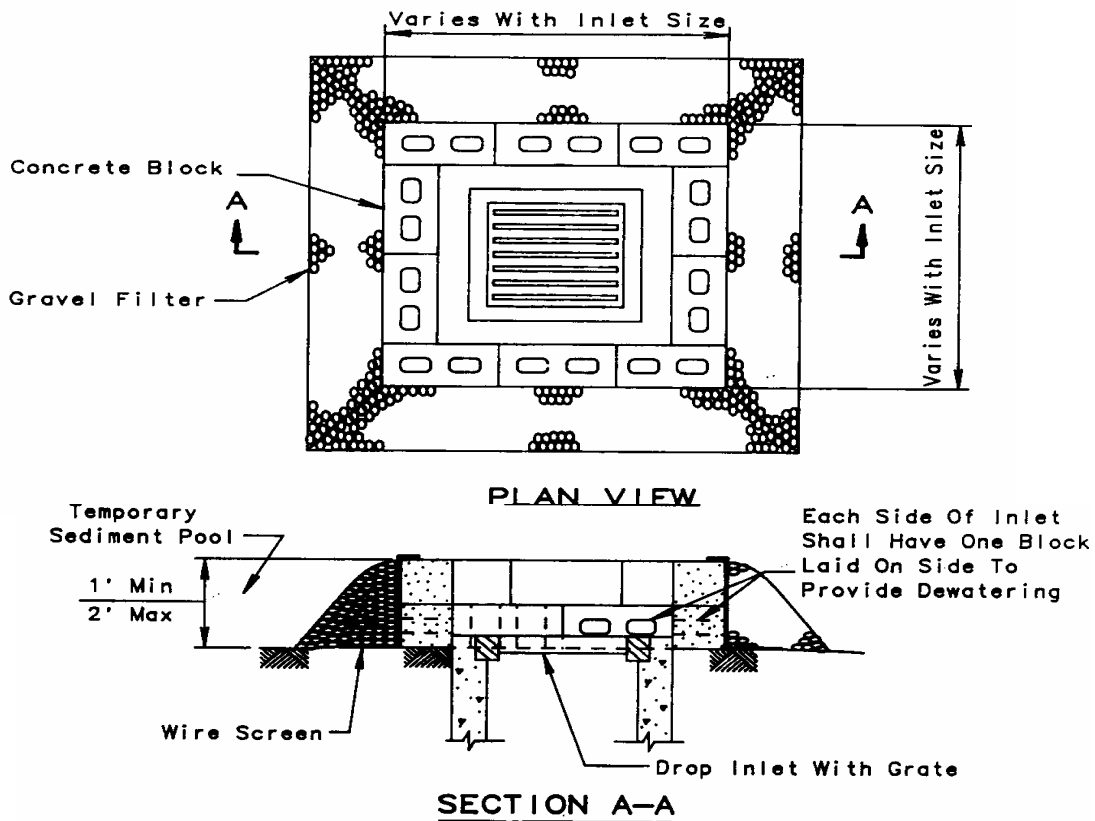
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STANDARD DWG. NO. IL-542
SHEET 2 OF 2
DATE 8-17-94

INLET PROTECTION – BLOCK AND GRAVEL PLAN



NOTES:

1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
3. The wire screen shall be hardware cloth or comparable wire mesh with 1/2 inch openings.
4. the gravel shall meet the requirements for coarse aggregate with IDOT gradations of CA-1, CA-2 or CA-3

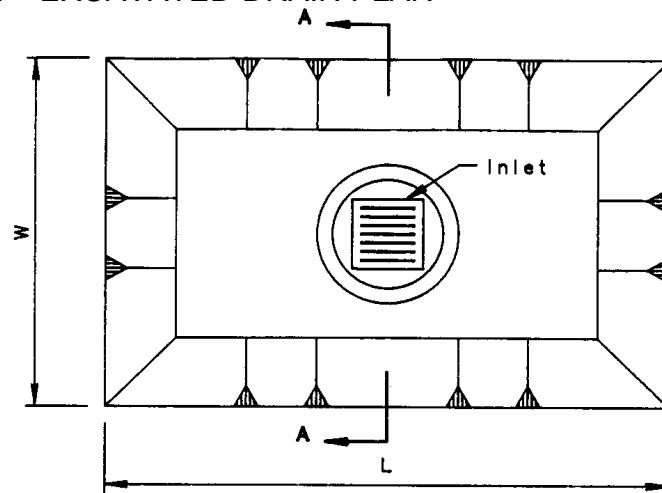
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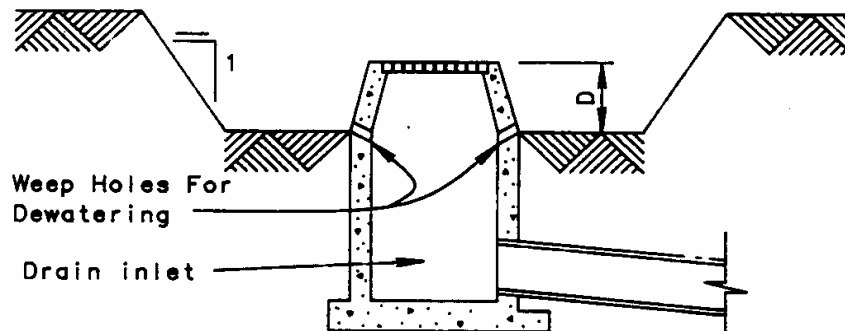
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STANDARD DWG. NO. IL-550
SHEET 1 OF 1
DATE 8-17-94

INLET PROTECTION – EXCAVATED DRAIN PLAN



PLAN VIEW



TYPICAL SECTION A-A

NOTES:

1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
3. All cut slopes shall be 2:1 or flatter.

REFERENCE

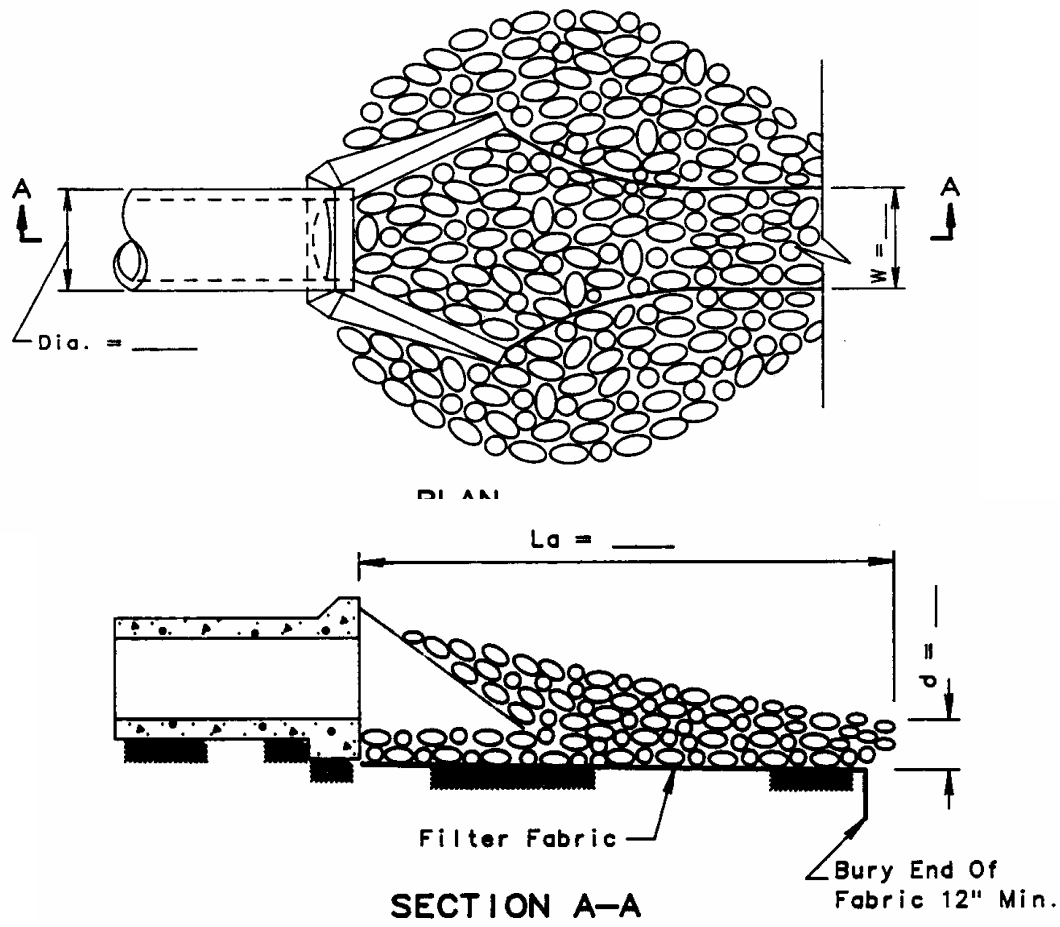
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SHEET 1 OF 1
DATE 3-11-94

PIPE OUTLET TO CHANNEL

Pipe Outlet To Well-Defined Channel



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.

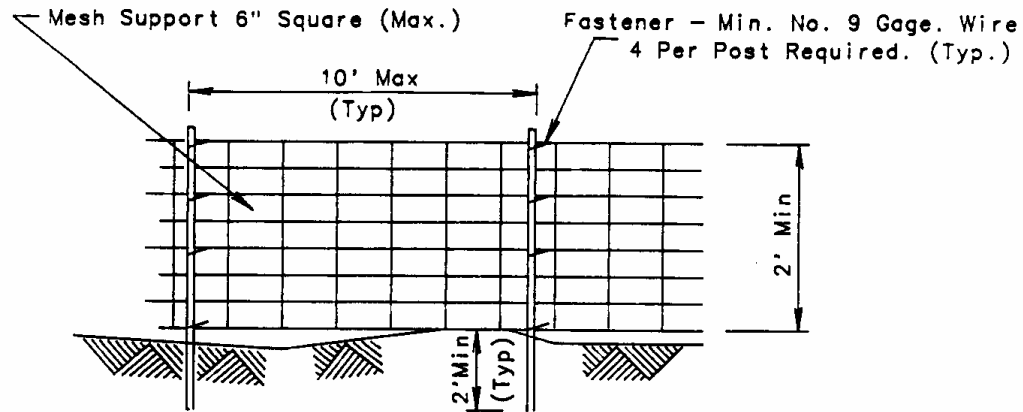
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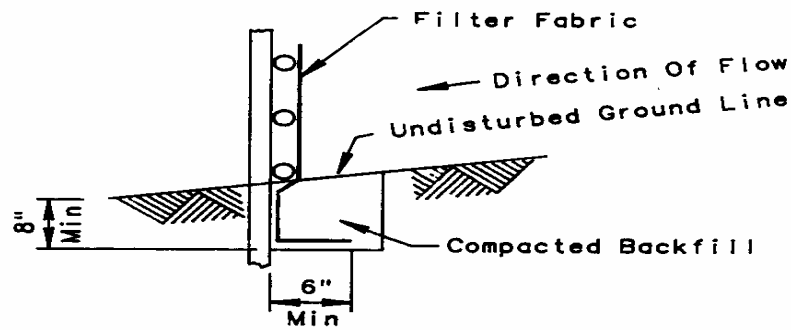
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STANDARD DWG. NO. IL-611
SHEET 1 OF 1
DATE 8-18-94

SILT FENCE PLAN



ELEVATION



FABRIC ANCHOR DETAIL

NOTES:

1. Top and bottom wires of mesh support shall be min. gage no. 9.
2. Intermediate wires of mesh supports shall be min. no. 11.
3. 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.
4. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class T with equivalent opening size of at least 30 nonwoven and 50 woven.
5. Fence post shall be either standard steel post or wood post with a minimum sectional area 3.0 sq. in.
6. the mesh support may be omitted if a maximum of 5' is used for post post spacing.

REFERENCE

Project
Designed Date
Checked Date
Approved Date

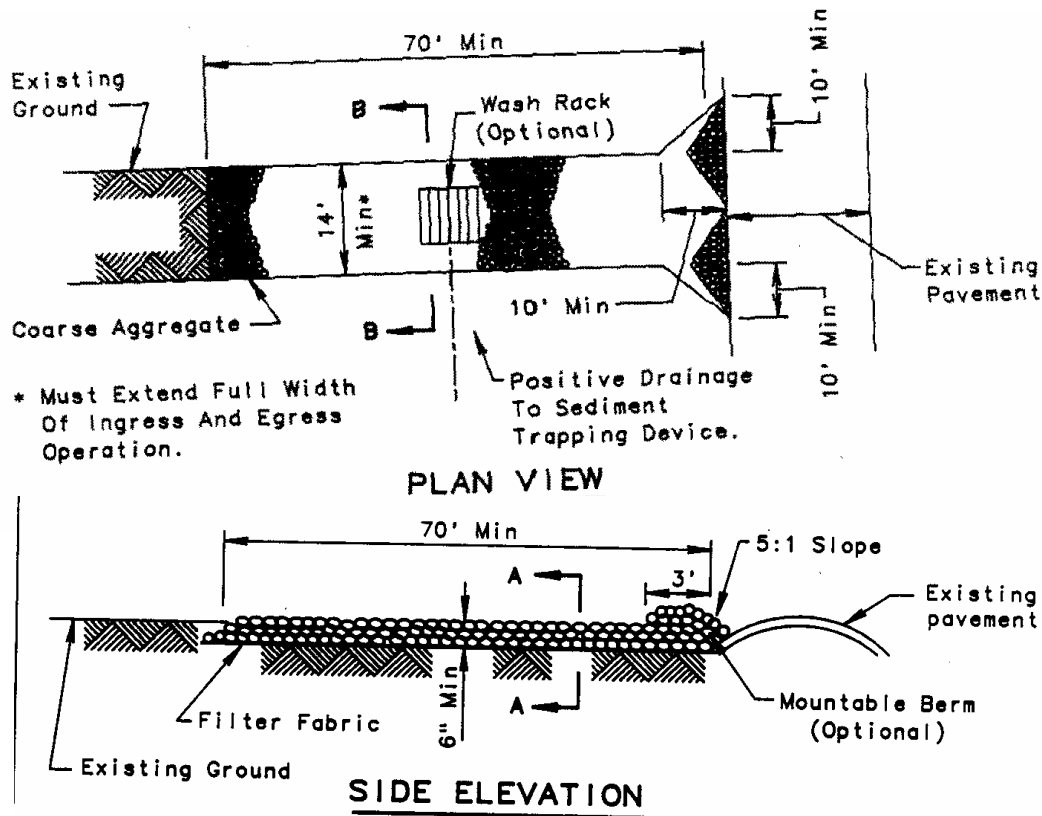
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STANDARD DWG. NO. IL-620

SHEET 1 OF 1

DATE 3-3-94

STABILIZED CONSTRUCTION ENTRANCE PLAN



NOTES:

1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table 1 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 manufacturers specifications.

REFERENCE

Project
Designed Date
Checked Date
Approved Date

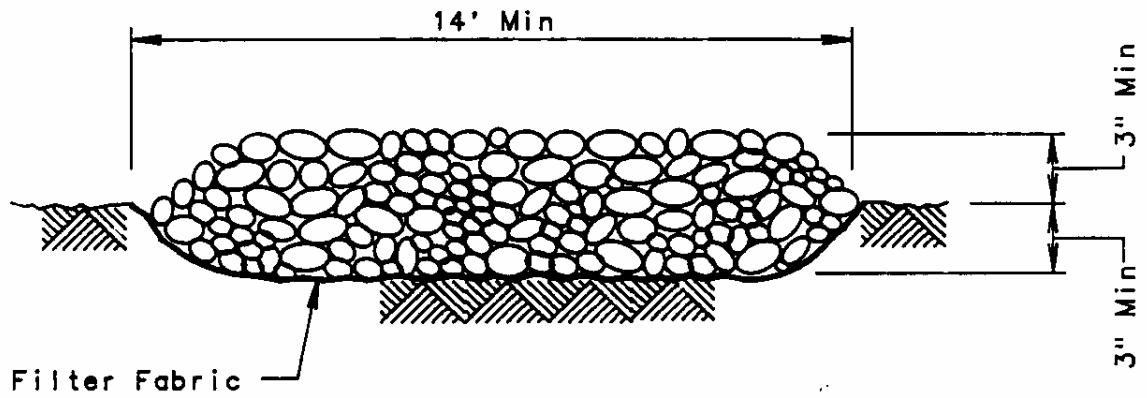
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STANDARD DWG. NO. IL-630

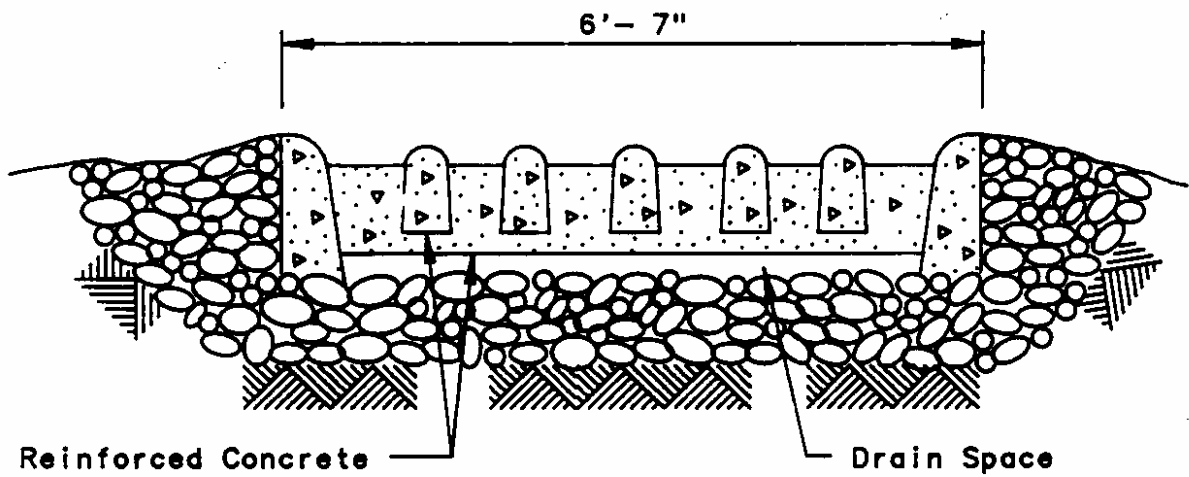
SHEET 1 OF 2

DATE 8-18-94

STABILIZED CONSTRUCTION ENTRANCE PLAN



SECTION A-A



SECTION B-B

REFERENCE

Project

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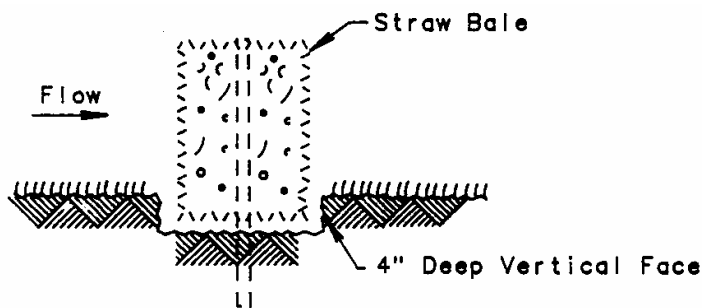
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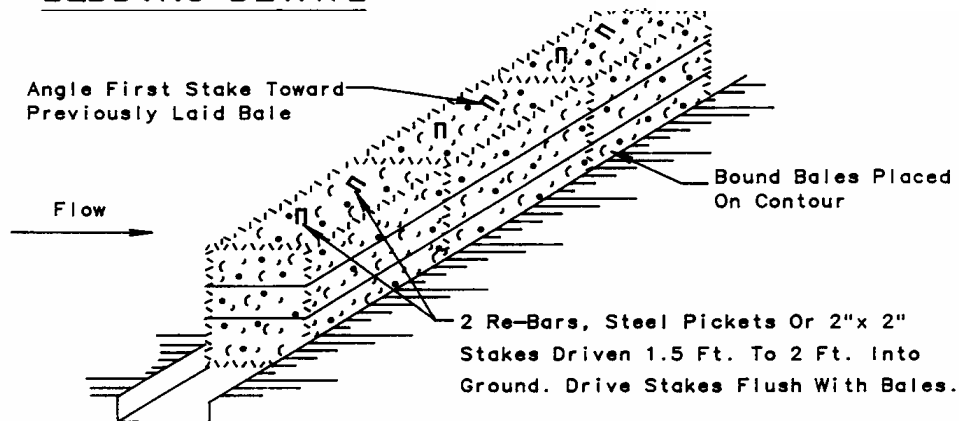
SHEET 2 OF 2

DATE 8-18-94

STRAW BALE BARRIER PLAN



BEDDING DETAIL



ANCHORING DETAIL

NOTES:

1. Bales shall be placed at the top of slope or on the contour and in a row with ends tightly abutting the adjacent bales.
2. Each bale shall be embedded in the soil a minimum of 4", and placed so that bindings are horizontal.
3. Bales shall be securely anchored in the place by either two stakes or re-bars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the bale.
4. Inspection shall be frequent and repair shall be made promptly as needed.
5. Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

REFERENCE

Project

Designed Date

Checked Date

Approved Date

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ILLINOIS

STANDARD DWG. NO. IL-635

SHEET 1 OF 1

DATE 8-18-94