



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37243-0350

INSTRUCTIONAL BULLETIN No. IB02-17

Regarding Straw Bales, Hay Bales, or Filter Fabric
Temporary Erosion Checks

Effective for the December 6, 2002 bid letting, the use of straw bales, hay bales, and filter fabric for check dams in ditches, as currently shown on Standard Drawing EC-STR-5 (ECM-STR-5) for Type EC 1A, Type EC 1B, Type EC 1C, and Type EC 1D applications is no longer allowed.

This revision is required to comply with the Tennessee Department of Environment and Conservation (TDEC), Division of Water Pollution Control's storm water regulations, which require that erosion and sediment control structures must withstand the hydraulic forces, including associated peak velocities and maximum tangential shear stresses, produced during a 2-year frequency / 24-hour duration rainfall event.

A copy of revised Standard Drawing EC-STR-5 (ECM-STR-5) is attached to this instructional bulletin with these details removed. It is to be printed with the plans under revision date of July 29, 2002 until further advised.

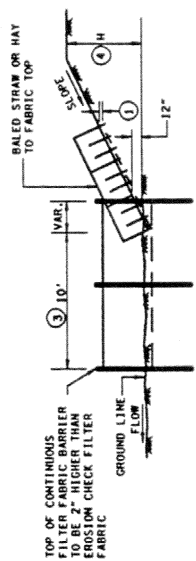
Standard Drawings with compliant erosion check details for areas of concentrated flow will be issued soon. In the interim, the designer should consider using rock check dams and rock silt screens for ditch applications when applicable.

A handwritten signature in black ink, appearing to read "Jeff C. Jones", is written over a horizontal line.

Jeff C. Jones, C. E. Director
Design Division

- REF. 12-18-93, CHANGED DRAINING NO. FROM EC-STR-5 TO EC-STR-3.
- REF. 5-21-01, CHANGED ITEM NO. 209-08 TO 209-08.03.
- REF. 1-28-07, REMOVED DETAILS FOR EC-10, TYPE EC 1C, AND TYPE EC 1D.

TYPE EC IV
TYPICAL LOCATIONS AT TOE OF SLOPES

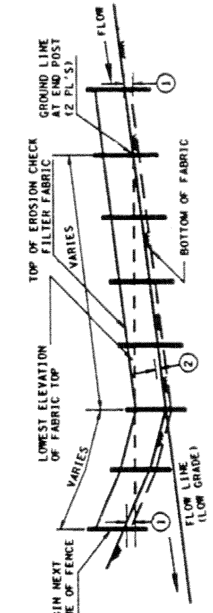


SECTION A-A
EROSION CONTROL PLAN LEGEND: EC — IV — EC

TYPE EC(IV)	
CASE I FILL SLOPES	
H (FT)	D (FT)
150-125	30
125-100	40
100-75	50
75-50	75
50-25	100
25-0	125

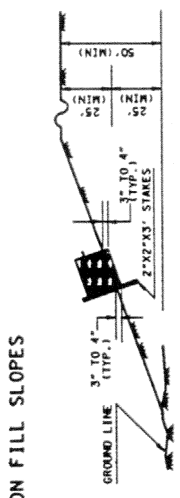
SEE STD. DWG. NO. RD-S-11

TYPE EC V



SECTION B-B
EROSION CONTROL PLAN LEGEND: EC — V — EC

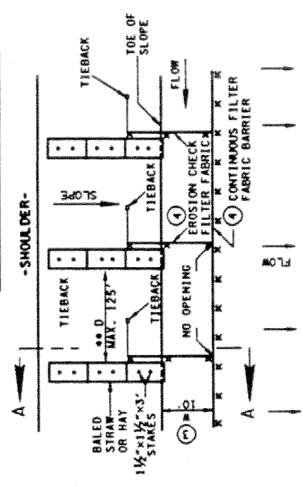
TYPE EC VI



SECTION C-C
(ONE ROW OF BALES SHOWN - 2 OR MORE MAY BE SPECIFIED)

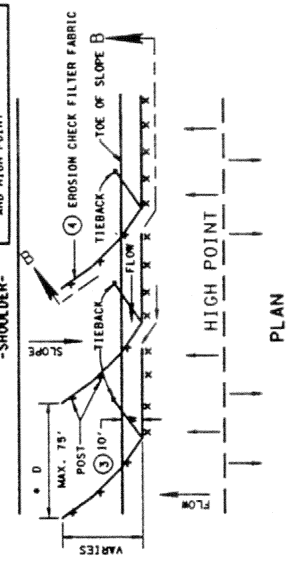
EROSION CONTROL PLAN LEGEND: EC — VI — EC

** MAXIMUM OF 10,000 SF (1) FLOW AREA BETWEEN SHOULDER AND HIGH POINT



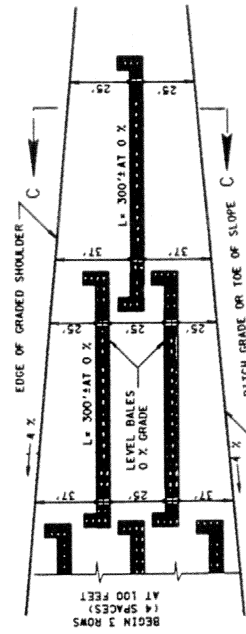
PLAN

* MAXIMUM OF 10,000 SF (1) FLOW AREA BETWEEN SHOULDER AND HIGH POINT



PLAN

BALED HAY OR STRAW ON FILL SLOPES



TYPICAL LONGITUDINAL VIEW (EXAMPLE)

(DIMENSIONS ARE MEASURED VERTICALLY)
WHEN DITCH TOE OF SLOPE OR SHOULDER GRADE CHANGES, "L" WILL CHANGE ACCORDINGLY

FOOTNOTES

- ELEVATION TO BE MINIMUM OF 6 INCHES ABOVE TOP OF FABRIC OR HAY BALE IN CENTER OF DITCH.
- THE ELEVATION DIFFERENCE BETWEEN THE FLOW LINE (LOW GRADE) AND THE TOE OF SLOPE AT THE BASE OF THE SILT FENCE SHOULD BE A MINIMUM OF 6 INCHES.
- "M" = 10 FEET UNLESS OTHERWISE NOTED ON THE PLANS.
- USE SILT FENCE WHEN "M" IS GREATER THAN 15 FEET. USE FILTER BARRIER WHEN "M" IS LESS THAN 15 FEET.

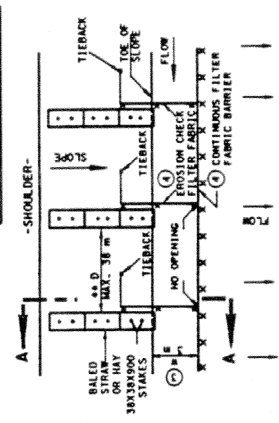
GENERAL NOTES FOR FILTER FABRIC BALED HAY OR STRAW EROSION CHECKS

- THE DRAINAGE AREA FOR THE FILTER FABRIC, BALED HAY OR STRAW EROSION CHECKS SHALL BE 2 ACRES OR LESS. THEY SHALL BE UTILIZED TO DECREASE FLOW VELOCITY AND TO RETAIN SMALL AMOUNTS OF SEDIMENT.
- HAY OR STRAW BALES SHALL BE A MINIMUM OF 5 CUBIC FEET IN VOLUME WITH A MINIMUM DIMENSION OF 36"X18"X14" (LENGTH X WIDTH X HEIGHT).
- ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED AND THE BALES SHALL BE PLACED IN POSITION TO MAINTAIN THE BINDING IN A HORIZONTAL POSITION.
- ALL BALES SHALL BE BURIED A MINIMUM OF 4 INCHES.
- SEE EC-STR-3 FOR FILTER BARRIER AND SILT FENCE DETAILS. GENERAL NOTES AND SPECIFICATIONS.
- PAYMENT FOR CONTINUOUS FABRIC FILTER BARRIER AND TEMPORARY EROSION CHECKS WILL BE MADE AS FOLLOWS:
ITEM NO. 209-06, 01 - BALED HAY OR STRAW EROSION CHECKS PER BALE.
ITEM NO. 209-07, 01 - FILTER BARRIER PER LINEAR FOOT.
ITEM NO. 209-08, 03 - TEMPORARY SILT FENCE (WITHOUT BACKING) PER LINEAR FOOT.

- REV. 11-1-95: CHANGED TO METRIC.
- REV. 5-21-01: CHANGED ITEM NO. 20300R TO 20300R.03.
- REV. 7-29-02: REMOVED DETAILS FOR ITEM NO. 20300R.03, EC 1A, TYPE EC 1C, AND TYPE EC 1D.

TYPE EC IV TYPICAL LOCATIONS AT TOE OF SLOPES

** MAXIMUM OF 330 m² (1.3 FLOW AREA) BETWEEN CONTINUOUS FABRIC AND SHOULDER

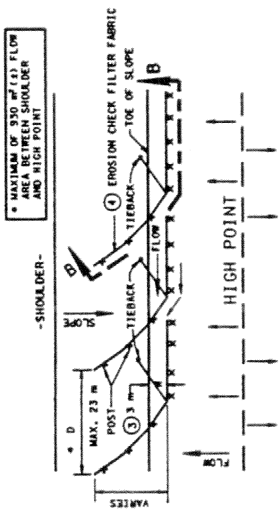


PLAN

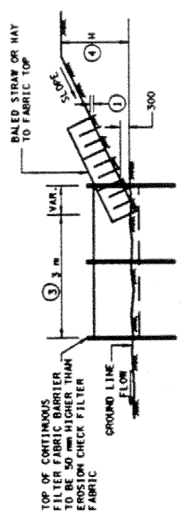
TYPE EC (IV) CASE 1 FILL SLOPES	
H (m)	D (m)
45.7-30.3	9
30.3-20.5	12
30.3-22.9	15
22.9-18.2	23
15.2-7.6	30
7.6-0	38

SEE STD.DWG. NO. RM-5-11

TYPE EC V



PLAN



SECTION A-A

EROSION CONTROL PLAN LEGEND: EC IV — EC

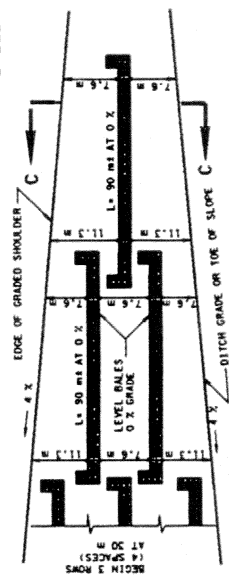
FOOTNOTES

- 1 ELEVATION TO BE MINIMUM OF 150 mm ABOVE TOP OF FABRIC OR HAY BALE IN CENTER OF DITCH.
- 2 THE ELEVATION DIFFERENCE BETWEEN THE FLOW LINE (LOW GRADE) AND THE TOP OF SLOPE AT THE BASE OF THE SILT FENCE SHOULD BE A MINIMUM OF 150 mm.
- 3 "W" IS 3 m UNLESS OTHERWISE NOTED ON THE PLANS.
- 4 USE SILT FENCE WHEN "W" IS GREATER THAN 4.6 m. USE FILTER BARRIER WHEN "W" IS LESS THAN 4.6 m.

GENERAL NOTES FOR FILTER FABRIC BALED HAY OR STRAW EROSION CHECKS

- A THE DRAINAGE AREA FOR THE FILTER FABRIC, BALED HAY OR STRAW EROSION CHECKS SHALL BE LIMITED TO DECREASE FLOW VELOCITY AND TO RETAIN SMALL AMOUNTS OF SEDIMENT.
- B HAY OR STRAW BALES SHALL BE A MINIMUM OF 0.14 m² IN VALUE WITH A MINIMUM DIMENSION OF 300x300mm (LENGTH X WIDTH X HEIGHT).
- C ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED AND THE BALES SHALL BE PLACED IN POSITION TO MAINTAIN THE BINDING IN A HORIZONTAL POSITION.
- D ALL BALES SHALL BE BURIED A MINIMUM OF 100 mm.
- E SEE CHAPTER 8 FOR FILTER BARRIER AND SILT FENCE DETAILS. GENERAL NOTES AND SPECIFICATIONS.
- F PAYMENT FOR CONTINUOUS FABRIC FILTER BARRIER AND TEMPORARY EROSION CHECKS WILL BE MADE AS FOLLOWS:
ITEM NO. 20300R, BALED HAY OR STRAW EROSION CHECKS PER BALE.
ITEM NO. 20300R.03, TEMPORARY FILTER FABRIC BARRIER PER METER.
ITEM NO. 20300R.01, TEMPORARY SILT FENCE (WITHOUT BACKING) PER METER.

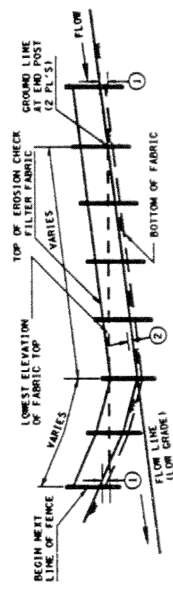
TYPE EC VI BALED HAY OR STRAW ON FILL SLOPES



PLAN

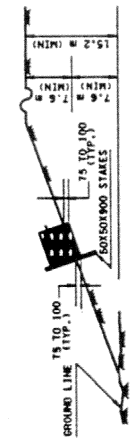
TYPICAL LONGITUDINAL VIEW (EXAMPLE)

(DIMENSIONS ARE MEASURED VERTICALLY)
WHEN DITCH TOE OF SLOPE OR SHOULDER GRADE CHANGES, "L" WILL CHANGE ACCORDINGLY



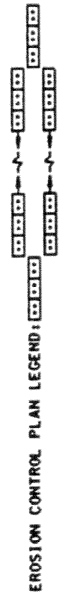
SECTION B-B

EROSION CONTROL PLAN LEGEND: EC V — EC



SECTION C-C

(ONE ROW OF BALES SHOWN - 2 OR MORE MAY BE SPECIFIED)



ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
IF ANY REVISION IS MADE APPROVAL NOT REQUIRED.

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

STRAW OR HAY BALE
OR FABRIC
TEMPORARY
EROSION CHECKS

11-1-95 | ECM-STR-5