



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

**INSTRUCTIONAL BULLETIN NO. 03-12**

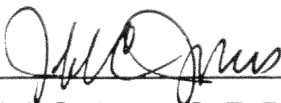
Regarding Temporary Filter Barrier and Silt Fence  
To Be Printed With The Plans

**Effective for the July 25, 2003 bid letting**, when using temporary filter barrier, silt fence, and silt fence with backing, the following drawings are to be printed with the plans. They shall be identified on the lower left hand corner of the index sheet - **"To be printed with the plans"**.

See general notes on each drawing for recommended usage. This will delete current standard drawing EC-STR-3 (ECM-STR-3).

Copies of these drawings are attached to this instructional bulletin.

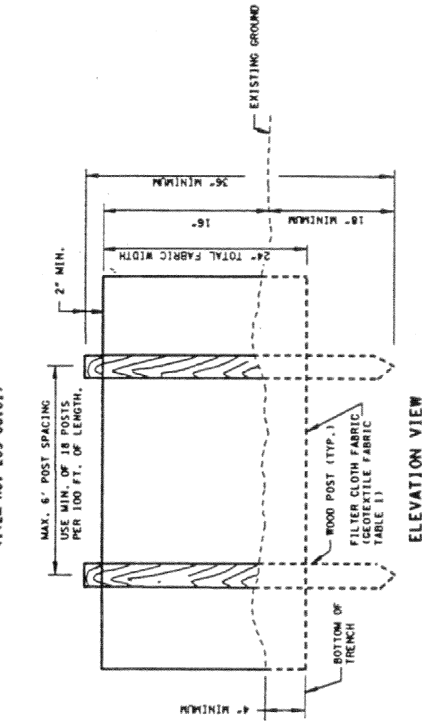
Drawing Number	Drawing Title
EC-STR-3A ECM-STR-3A	Temporary Filter Barrier
EC-STR-3B ECM-STR-3B	Temporary Silt Fence
EC-STR-3C ECM-STR-3C	Temporary Silt Fence with Backing

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

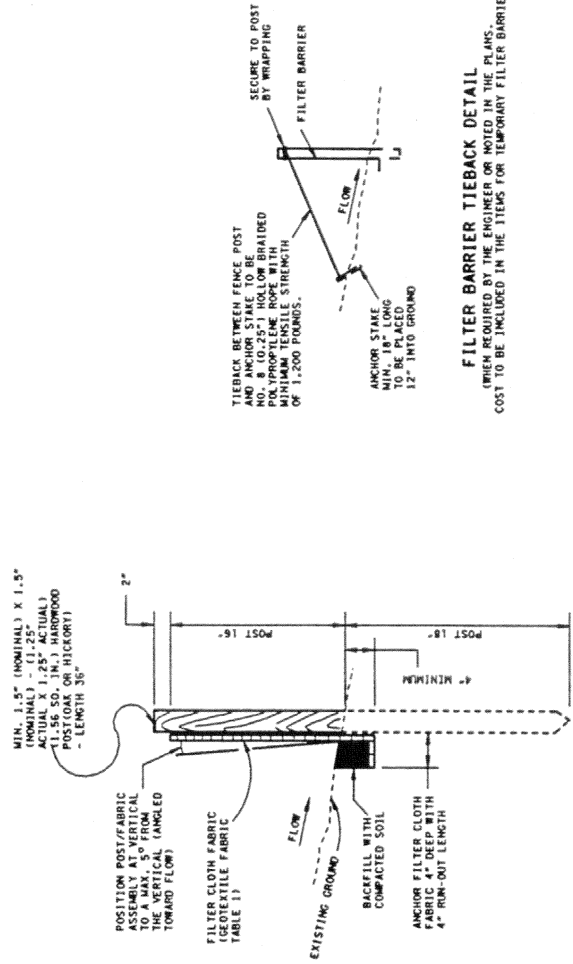
JW:edt  
Attachment  
May 1, 2003

### TEMPORARY FILTER BARRIER

(ITEM NO. 209-08.01)



ELEVATION VIEW



SECTIONAL VIEW

**ANCHOR STAKE**  
MIN. 18" LONG  
TO BE PLACED  
12" INTO GROUND

**SECURE TO POST**  
BY WRAPPING  
FILTER FABRIC

**ANCHOR STAKE**  
MIN. 18" LONG  
TO BE PLACED  
12" INTO GROUND

**TIEBACK BETWEEN FENCE POST**  
NO. 8 (10-25) HOLLOW BRAIDED  
POLYPROPYLENE ROPE WITH  
MINIMUM TENSILE STRENGTH  
OF 1,200 POUNDS.

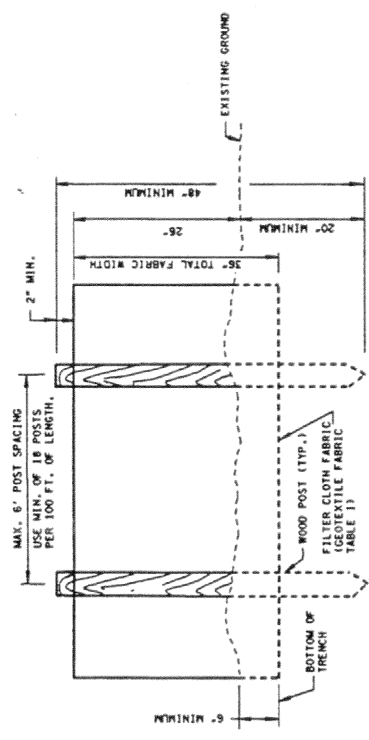
**TABLE 1**  
**TEMPORARY FILTER BARRIER FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (TYPICAL VALUES)
FABRIC TYPE	WOVEN SLIT FILM
APPEARANT OPENING SIZE (ASTM D-4753)	#50 TO #10 TO STANDARD SIEVE
PERCENT OPEN AREA (POA)	1 X TO 10 X
WATER FLOW (ASTM D-4491)	MINIMUM 15 GPM/FT <sup>2</sup>
TENSILE STRENGTH (ASTM D-4632)	125 LB. (WARP DIRECTION) X 125 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D-4355)	90%
ELONGATION (ASTM D-4632)	20% (MAX)
BUROST STRENGTH (ASTM D-3786)	300 PSI
PUNCTURE STRENGTH (ASTM D-4833)	TO LB.
TRAPEZOIDAL TEAR (ASTM D-4533)	65 LB. (WARP DIRECTION) X 65 LB. (FILL DIRECTION)

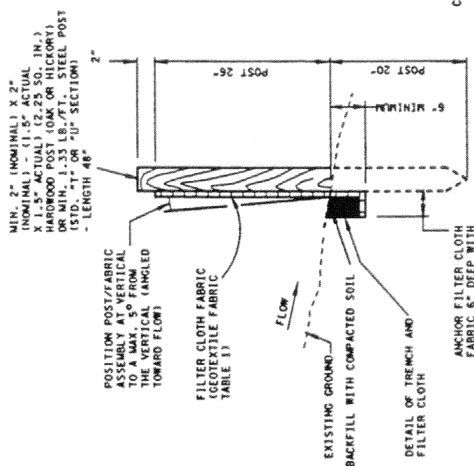
### TEMPORARY FILTER BARRIER GENERAL NOTES

- ALL LABOR AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL VIEWS USED TO CONSTRUCT TEMPORARY FILTER BARRIERS ARE TO BE INCLUDED IN THE PRICE BID FOR ITEM 209-08.01 TEMPORARY FILTER BARRIER PER LINEAR FOOT.
- FILTER BARRIERS ARE USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW IN COMMERCIAL AND RESIDENTIAL AREAS ONLY.
- THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF BARRIER LENGTH. A 3:1 SLOPE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE 100 FEET (AS MEASURED ALONG THE GROUND SURFACE).
- WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-SIR-3C.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED; CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE FILTER BARRIER.
- THE FILTER FABRIC SHALL BE STAPLED TO THE WOODEN STAKES. HEAVY DUTY WIRE STAPLES WITH 1/4 INCH LEG AND 1 INCH WIDTH SHALL BE USED AND EVENLY SPACED WITH THREE PER POST FOR FILTER BARRIERS. FILTER MATERIAL SHALL NOT BE STAPLED TO TREES.
- FILTER BARRIERS SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF BARRIER AT GROUNDLINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (40-5X). A PREASSEMBLED FILTER BARRIER MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED FILTER BARRIER.
- STATIC SLICING IS THE PREFERRED METHOD OF FILTER BARRIER INSTALLATION. STATIC SLICING INVOLVES THE CHAINING OF THE TRENCH WITH A SHOVEL AND SHAKING OFF DEBRIS. THE FILTER FABRIC SHALL BE PLACED ON THE APPLICABLE DETAIL AND SIMILARLY PULLING THE FILTER FABRIC INTO THE TRENCH. THE FILTER FABRIC SHALL BE EXCAVATED. ALTERNATE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE. FOR TRENCH-BASED INSTALLATIONS, FILTER BARRIER SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
  - EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHALL BE EXCAVATED TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLODS FROM THE TRENCH.
  - INSTALL FABRIC IN TRENCH.
  - BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
  - COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION. DAMAGED FABRIC SHALL BE REPLACED.
  - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE DETAIL. FOR PRE-ASSEMBLED FILTER BARRIER, DRIVE SUPPORT POSTS INTO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
  - ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.

**TEMPORARY SILT FENCE**  
(ITEM NO. 209-08-03)



**ELEVATION VIEW**

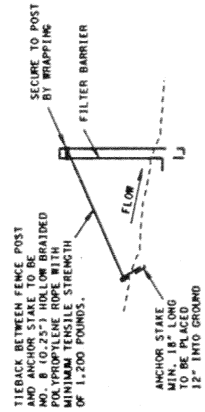


**SECTIONAL VIEW**



**SILT FENCE TIEBACK FOR STEEL POSTS OR WOOD POSTS**

WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS, COST TO BE INCLUDED IN THE TIERS FOR TEMPORARY SILT FENCE.)



**TABLE 1**  
**TEMPORARY SILT FENCE FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (TYPICAL VALUES)
FABRIC TYPE	WOVEN SILT FIRM
APPEARANT OPENING SIZE (ASTM D-4753)	#50 TO #70 STANDARD SIEVE
PERCENT OPEN AREA (FOA)	1 X TO 10 X
WATER FLOW (ASTM D-4491)	MINIMUM IS 600 FT <sup>2</sup>
TENSILE STRENGTH (ASTM D-4632)	125 LB. (WARP DIRECTION) X 125 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D-4535)	90%
ELONGATION (ASTM D-4632)	20% (MAX)
BURST STRENGTH (ASTM D-3786)	300 PSI
PUNCTURE STRENGTH (ASTM D-4933)	TO LB.
TRAPEZOIDAL TEAR (ASTM D-4533)	65 LB. (WARP DIRECTION) X 65 LB. (FILL DIRECTION)

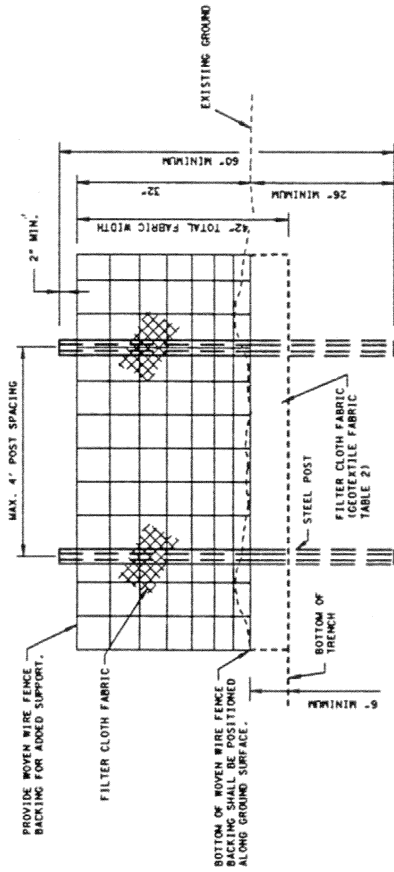
**TEMPORARY SILT FENCE GENERAL NOTES**

- A ALL LABS AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL VIEWS USED TO CONSTRUCT TEMPORARY SILT FENCE ARE TO BE INCLUDED IN THE PRICE BID FOR ITEM 209-08-03 TEMPORARY SILT FENCE (WITHOUT BACKING) PER LINEAR FOOT.
- B SILT FENCES ARE USED TO INTERCEPT SMALL AMOUNTS OF EQUIPMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. DO NOT USE IT ADJACENT TO SENSITIVE WATER RESOURCES (WETLANDS OR STREAMS).
- C THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF FENCE. THE MAXIMUM SLOPE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE 100 FEET (AS MEASURED ALONG THE GROUND SURFACE).
- D WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-519-36.
- E MAINTENANCE SHALL BE PERFORMED AS NEEDED; CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- F STEEL POSTS SHALL BE 1.33 LB./FT., ROLLED FROM HIGH CARBON STEEL AND SHALL BE GALVANIZED OR HOT-DIPPED AND PAINTED WITH ONE OR MORE COATS OF HIGH-GRADE WEATHER RESISTANT STEEL PAINT. POSTS SHALL BE STUBBED, EMBOSSED, OR PUGHED TO AID IN THE ATTACHMENT OF WIRE.
- G WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.
- H IF THE FILTER MATERIAL IS STAPLED TO THE WOODEN STAKES, HEAVY DUTY WIRE STAPLES WITH 1/4 INCH LEG AND 1 INCH WIDTH SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. FILTER MATERIAL SHALL NOT BE STAPLED TO TREES.
- I SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUNDLINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (10.5%).
- J A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED SILT FENCE.
- K STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THE APPLICABLE DETAIL, AND SIMULTANEOUSLY PULLING THE FENCE FABRIC INTO THE TRENCH AS SHOWN ON THE APPLICABLE DETAIL. THE FENCE FABRIC SHALL BE INSTALLED IN THE TRENCH AS SHOWN ON THE APPLICABLE DETAIL. FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
  - EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLODS FROM THE TRENCH.
  - INSTALL FABRIC IN TRENCH.
  - BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
  - COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
  - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS SHOWN ON THE APPLICABLE FENCE DETAIL FOR PRE-ASSEMBLED SILT FENCE. DRIVE SUPPORT IN TO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
  - ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS OTHER ON THE APPLICABLE DETAIL.

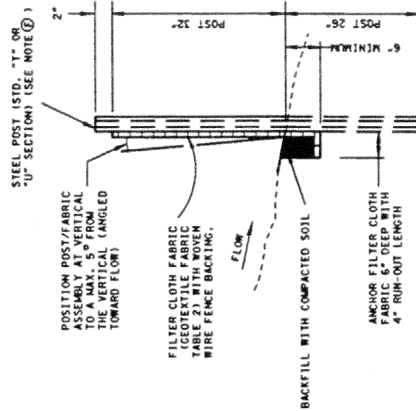
# TEMPORARY SILT FENCE WITH BACKING

(ITEM NO. 209-08.02)

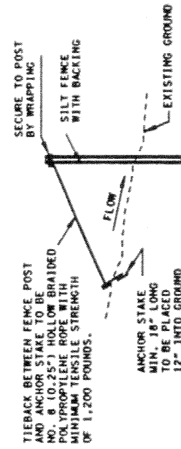
TABLE 2 TEMPORARY SILT FENCE WITH BACKING FABRIC SPECIFICATIONS	
FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (TYPICAL VALUES)
FABRIC TYPE	WOVEN MONOFILAMENT
APPERT OPENING SIZE (ASTM D-4751)	7 TO 10 "100 STANDARD SIEVE
PERCENT OPEN AREA (POA)	1 X TO 10 X
WATER FLUX (ASTM D-4491)	MINIMUM 20 GPM/FT <sup>2</sup>
TENSILE STRENGTH (ASTM D-4632)	375 LB. (WARP DIRECTION) X 240 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D-4355)	90%
BURST STRENGTH (ASTM D-3786)	460 PSI
PUNCTURE STRENGTH (ASTM D-4833)	140 LB.
TRAPEZOIDAL TEAR (ASTM D-4533)	120 LB. (WARP DIRECTION) X 80 LB. (FILL DIRECTION)



ELEVATION VIEW



SECTIONAL VIEW

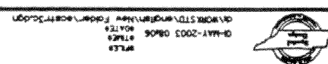


SILT FENCE TIEBACK

WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS, COST TO BE INCLUDED IN THE TIERS FOR TEMPORARY SILT FENCE (WITH BACKING)

## TEMPORARY SILT FENCE WITH BACKING GENERAL NOTES

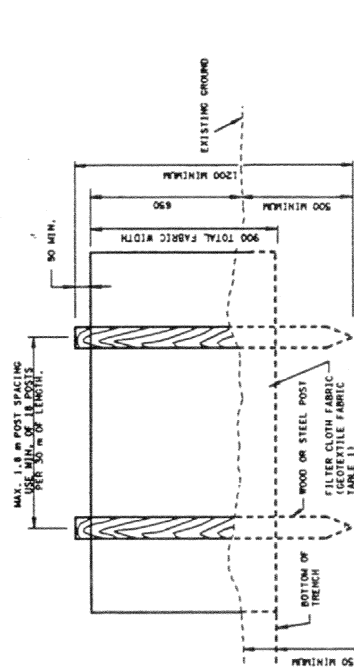
- ALL LABOR AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL VIEWS USED TO CONSTRUCT SILT FENCE SHALL BE SHOWN IN THE PRICE BID FOR ITEM 209-08.02 TEMPORARY SILT FENCE (WITH BACKING) PER LINEAR FOOT.
- SILT FENCES WITH BACKING ARE USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. USE TEMPORARY SILT FENCES WITH BACKING UPGRADIENT OF AND ADJACENT TO WETLANDS, STREAMS, AND OTHER SENSITIVE WATER RESOURCES.
- THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS SILT FENCE WITH BACKING SHALL BE 1 ACRE PER 150 LINEAR FEET OF FENCE LENGTH. MAXIMUM SLOPE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE 300 FEET (AS MEASURED ALONG THE GROUND SURFACE).
- WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED; CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- STEEL POSTS SHALL BE 1.33 LB./FT., ROLLED FROM HIGH CARBON STEEL AND SHALL BE GALVANIZED OR HOT-DIPPED AND PAINTED WITH ONE OR MORE COATS OF HIGH-GRADE WEATHER RESISTANT STEEL PAINT. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED TO AID IN THE ATTACHMENT OF WIRE.
- STEEL POSTS SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. WOVEN WIRE FENCE BACKING TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FABRIC SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE BACKING WITH THE TIES SPACED EVERY 2 INCHES ALONG TOP AND MIDSECTION. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST SIX PER POST.
- WOVEN WIRE FENCE BACKING SHALL MEET THE REQUIREMENTS FOR ASTM A-116 FOR NO. 11 FARM, DESIGN NO. 832-6-11, CLASS 3 COATING.
- SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUNDLINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (4.0-5.1).
- STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THE APPLICABLE DETAIL, AND SIMULTANEOUSLY PULLING THE FENCE FABRIC INTO THE TRENCH AS THE TRENCH IS EXCAVATED. THE FABRIC SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
  - EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHOULD BE FOLLOWED FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLODS FROM THE TRENCH.
  - INSTALL FABRIC IN TRENCH.
  - BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
  - CONDUCT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (LOADED FABRIC SHALL BE REPLACED).
  - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL.
  - ATTACH FABRIC TO THE POSTS USING WIRE TIES. SPACING AND DENSITY OF TIES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.





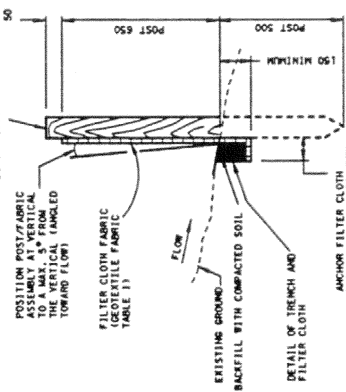
## TEMPORARY SILT FENCE

(ITEM NO. 209008-03)



### ELEVATION VIEW

MIN. 50 mm (INDICIAL) X 50 mm (INDICIAL) (1.8 m ACTUAL)  
HARDWOOD POST (OAK OR HICKORY)  
MIN. 2.0 kg/m<sup>2</sup> STEEL POST (SEE SECTION)  
-LENGTH 1200 mm



### SECTIONAL VIEW

EROSION CONTROL PLAN LEGEND: • SF • SF • SF • (TEMPORARY SILT FENCE)

FABRIC TYPE	REQUIRED PHYSICAL PROPERTIES (TYPICAL VALUES)
WEVER SLIT FILM	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
APPEARANT OPENING SIZE (ASTM D-4751)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
PERCENT OPEN AREA (POA)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
WATER FLOW (ASTM D-4981)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
TENSILE STRENGTH (ASTM D-4632)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D-4355)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
ELONGATION (ASTM D-4632)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
BURST STRENGTH (ASTM D-3786)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
PUNCTURE STRENGTH (ASTM D-4833)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg
TRAPEZOIDAL TEAR (ASTM D-4533)	MINIMUM TENSILE STRENGTH (TENSILE DIRECTION) X 37 kg

### TEMPORARY SILT FENCE GENERAL NOTES

- (A) ALL LABOR AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL VIEWS USED TO CONSTRUCT TEMPORARY SILT FENCE ARE TO BE INCLUDED IN THE PRICE BID FOR ITEM 209008-03 TEMPORARY SILT FENCE (WITHOUT BACKING) PER METER.
- (B) SILT FENCES ARE USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. DO NOT USE IT ADJACENT TO SENSITIVE WATER RESOURCES (WETLANDS OR STREAMS).
- (C) THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 0.10 ha per 30 m of FENCE LENGTH. MAXIMUM SLOPE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE 30 m (AS MEASURED ALONG THE GROUND SURFACE).
- (D) WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING ECH-STR-3C.
- (E) MAINTENANCE SHALL BE PERFORMED AS NEEDED; CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- (F) STEEL POSTS SHALL BE 2.0 kg/m<sup>2</sup> ROLLED FROM HIGH CARBON STEEL AND SHALL BE GALVANIZED OR HOT-DIPPED IN ZINC. WOOD POSTS SHALL BE 1.8 m LONG AND 50 mm DIAMETER. STEEL POSTS SHALL BE STUBBED, EMBOSSED, OR PUNCHED TO AID IN THE ATTACHMENT OF WIRE.
- (G) WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.
- (H) IF THE FILTER MATERIAL IS STAPLED TO THE WOODEN STAPLES, HEAVY DUTY WIRE STAPLES WITH 13 mm LEG AND 25 mm WIDTH SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. FILTER MATERIAL SHALL NOT BE STAPLED TO TREES.
- (I) SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUNDLINE SHOULD BE ON A ZERO PERCENT (0% GRADE), PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (40:50).
- (J) A PRESSURED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED SILT FENCE.
- (K) STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A SHARP SLICING TOOL INTO THE FENCE FABRIC AND STABILIZINGLY PULLING THE FENCE FABRIC INTO THE TRENCH AS BEING EXCAVATED. ALTERNATE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE FOR TRENCH-BASED INSTALLATIONS. FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
  - EXCAVATE TRENCH A MAXIMUM OF 100 mm WIDE AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLODS FROM THE TRENCH.
  - INSTALL FABRIC IN TRENCH.
  - BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
  - COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
  - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING SILT FENCE DRIVE SUPPORT POSTS INTO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
  - ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.



ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

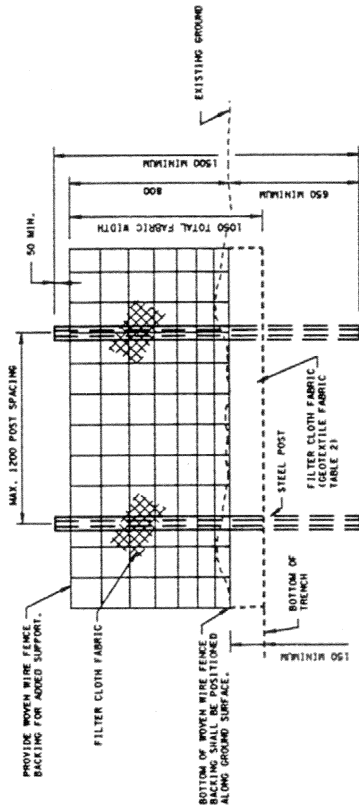
STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

TEMPORARY  
SILT  
FENCE

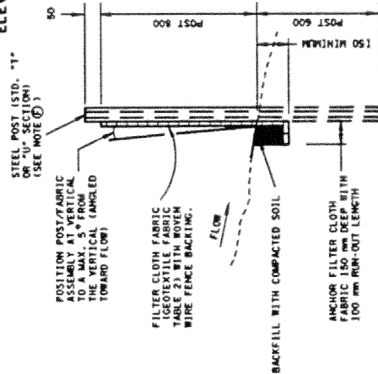
12-18-02 ECH-STR-3B

# TEMPORARY SILT FENCE WITH BACKING

(ITEM NO. 209-06-02)

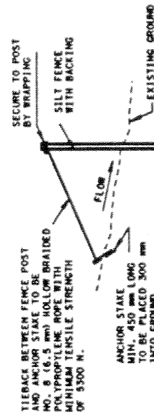


## ELEVATION VIEW



## SECTIONAL VIEW

## SILT FENCE TIEBACK



WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS, COST TO BE INCLUDED IN THE TIERS FOR TEMPORARY SILT FENCE WITH BACKING.

TABLE 2 TEMPORARY SILT FENCE WITH BACKING FABRIC SPECIFICATIONS	
FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (TYPICAL VALUES)
FABRIC TYPE	WOVEN MONOFILAMENT
APARENT OPENING SIZE (ASTM D-4751)	10 TO 100 STANDARD SIEVE
PERCENT OPEN AREA (POA)	1 X 10 X
WATER FLUX (ASTM D-4481)	MINIMUM 14 L/SEC/M <sup>2</sup>
TENSILE STRENGTH (ASTM D-4532)	170 KG (WARP DIRECTION) X 240 KG (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 800 HRS PER ASTM D-4555)	90%
BURST STRENGTH (ASTM D-3786)	312 KG
PUNCTURE STRENGTH (ASTM D-4835)	64 KG
TRAPEZOIDAL TEAR (ASTM D-4533)	54 KG (WARP DIRECTION) X 36 KG (FILL DIRECTION)

## TEMPORARY SILT FENCE WITH BACKING GENERAL NOTES

- ALL LABOR AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL VIEWS USED TO CONSTRUCT SILT FENCE WITH BACKING ARE TO BE INCLUDED IN THE PRICE BID FOR ITEM 20906.02 TEMPORARY SILT FENCE WITH BACKING PER METER.
- SILT FENCES WITH BACKING ARE USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. USE TEMPORARY SILT FENCES WITH BACKING UPGRADIENT OF AND ADJACENT TO BELTWAYS, STREAMS, AND OTHER SENSITIVE WATER RESOURCES.
- THE MAXIMUM UPSTREAM AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 0.4 M<sup>2</sup> PER 45 M<sup>2</sup> OF BARRIER LENGTH. THE MAXIMUM DOWNSTREAM BEHIND FENCE ON UPSLOPE SIDE SHALL BE 30 M<sup>2</sup> AS MEASURED ALONG THE GROUND SURFACE.
- WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON ECM-S1R-3C.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED; CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BURGES" DEVELOP IN THE SILT FENCE.
- STEEL POSTS SHALL BE 2.0 M<sup>2</sup> ROLLED FROM HIGH CARBON STEEL AND SHALL BE GALVANIZED OR HOT-DIPPED AND PAINTED WITH ONE OR MORE COATS OF HIGH QUALITY RESISTANT STEEL PAINT. POSTS SHALL BE STOKED, END-TO-END, OR PACKED TO AIGHTEN FOR PROTECTION OF HIGH END.
- FOR USE TO PREVENT SOIL EROSION FROM EXISTING WIRE TO THEM, WOVEN WIRE FENCE BACKING TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FABRIC SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE BACKING WITH THE TIES SPACED EVERY 600 MM ALONG TOP AND MIDSECTION. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST SIX PER POST.
- WOVEN WIRE FENCE BACKING SHALL MEET THE REQUIREMENTS FOR ASTM A-118 FOR NO. 11 FARM DESIGN NO. 832-G-11, CLASS 3 COATING.
- SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUNDLINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE PERCENT OF ONE PERCENT (100.5%).
- STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A HARBOR CUTTING BLADE PLACED AT THE SPECIFIED ANCHOR POINTS FOR THE FABRIC INTO THE TRENCH AS BEING EXCAVATED. ALTERNATE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE. FOR TRENCH-BASED INSTALLATIONS, FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
  - EXCAVATE TRENCH A MAXIMUM OF 100 mm WIDE AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROOTS, STICKS, AND SOIL CLODS FROM THE TRENCH.
  - INSTALL FABRIC IN TRENCH.
  - BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
  - COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
  - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL.
  - ATTACH FABRIC TO THE POSTS USING WIRE TIES. SPACING AND DENSITY OF TIES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.

EROSION CONTROL PLAN LEGEND: • SFB • SFB • SFB • (TEMPORARY SILT FENCE WITH BACKING)



ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.