



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

INSTRUCTIONAL BULLETIN No. 05-16

Regarding Erosion and Landscaping Drawings To Be Printed With The Plans

Effective for the June 3, 2005 letting, the various erosion control drawings attached to this instructional bulletin 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”.

Copies of these drawings are attached to this bulletin.

EROSION CONTROL AND LANDSCAPING

<u>Drawing Number</u>	<u>Current Revision Date</u>	<u>Drawing Title</u>
EC STR-3A ECM-STR-3A	7-29-04	TEMPORARY FILTER BARRIER
EC-STR-3B ECM-STR-3B	7-29-04	TEMPORARY SILT FENCE
EC-STR-3C ECM-STR-3C	7-29-04	TEMPORARY SILT FENCE WITH BACKING
EC-STR-3D ECM-STR-3D	7-29-04	TEMPORARY ENHANCED SILT FENCE
EC-STR-5 ECM-STR-5	1-19-05	STRAW OR HAY BALE OR FABRIC TEMPORARY EROSION CHECKS
EC-STR-7 ECM-STR-7	7-29-04	TEMPORARY SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM
EC-STR-34 ECM-STR-34	1-19-05	INSTALLATION DETAIL FOR EROSION CONTROL BLANKETS

EC-STR-55	GABION CHECK DAM
ECM-STR-55	
EC-STR-56	GABION CHECK DAM DESIGN TABLES
ECM-STR-56	
EC-STR-57	GABION ASSEMBLY DETAILS
ECM-STR-57	
EC-STR-58	GABION ASSEMBLY DETAILS
ECM-STR-58	
EC-STR-59	GABION CHECK DAM GENERAL NOTES
ECM-STR-59	AND COMPONENT PROPERTIES
EC-STR-60	TEMPORARY SEDIMENT TRAP WITH
ECM-STR-60	TEMPORARY GABION CHECK DAM

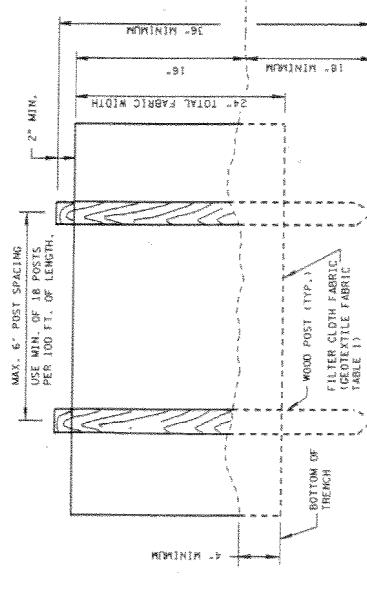


Jeff C. Jones, C.E. Director
Design Division

JCJ:mbd
Attachment
March 3, 2005

TEMPORARY FILTER BARRIER

(ITEM NO. 209-08-01)



ELEVATION VIEW

MIN. 1.5" (NOMINAL) x 1.5"
(ACTUAL X 1.25" ACTUAL)
1.56 SQ. IN. (HARDWOOD)
- LENGTH 36'

POSITION POST/FABRIC
ASSEMBLY AT VERTICAL
TO A MAX. 5° FROM
THE VERTICAL (ANGLED
TOWARD FLOW)

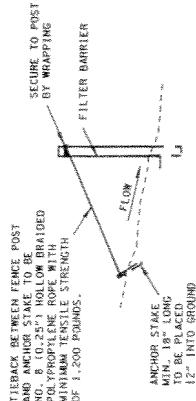
FILTER CLOTH FABRIC
(GEOTEXTILE FABRIC
TABLE 1)

TIEBACK BETWEEN FENCE POST
AND ANCHOR STAKE TO BE
NO. 6 (0.2" DIA.) IRON, DRAINED
NO. 4 (0.2" DIA.) IRON, DRAINED
MINIMUM TENSILE STRENGTH
OF 1,200 POUNDS.

ANCHOR STAKE
MIN. 18" LONG
IF PLACED
12" INTO GROUND

BACKFILL WITH
COMPACTED SOIL

ANCHOR FILTER CLOTH
FABRIC 4' KEPT WITH
4" RIN-CUT LENGTH



FILTER BARRIER TIEBACK DETAIL
(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS,
COST TO BE INCLUDED IN THE ITEMS FOR TEMPORARY FILTER BARRIER)

SECTIONAL VIEW

**TABLE 1
TEMPORARY SILT FENCE FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MAX. VALUES OF TEST DATA)
FABRIC TYPE	WOVEN SILT FABRIC
APPARENT OPENING SIZE (ASTM D4751)	* 30 TO * TO STANDARD SIEVE 1 X TO 10 X
WATER FLUX (ASTM D4431)	2.4 GPM/FT ²
TENSILE STRENGTH (ASTM D4632)	> 120 LB. (WARP DIRECTION) X 100 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D4355)	> 70%
ELONGATION (ASTM D4632)	< 20% (MAX)
BURST STRENGTH (ASTM D3786)	2 250 PSI
PUNCTURE STRENGTH (ASTM D4633)	> 60 LB.
TRAPEZOIDAL TEAR (ASTM D4633)	> 50 LB. (WARP DIRECTION) X 40 LB. (FILL DIRECTION)

TEMPORARY FILTER BARRIER GENERAL NOTES

- (A) 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. GI TEMPORARY FILTER BARRIER PER LINEAR FOOT.
- (B) FILTER BARRIERS ARE USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW IN COMMERCIAL AND RESIDENTIAL AREAS ONLY.
- (C) THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE $\frac{1}{4}$ ACRE PER 100 LINEAR FEET OF BARRIER LENGTH. MAXIMUM SLOPE LENGTH SHALL BE 100 FEET ON UPSIDE SLOPE SIDE OF BARRIER (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-STR-SE.
- (E) MAINTENANCE SHALL BE PERFORMED AS NEEDED; CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGE" DEVELOPS IN THE FILTER BARRIER AND/OR OTHER EVIDENCE OF FILTER CLOGGING IS OBSERVED.
- (F) THE FILTER FABRIC SHALL BE STAPLED TO THE WOODEN STAKES. HEAVY DUTY WIRE STAPLES WITH $\frac{1}{4}$ 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.
- (G) FILTER BARRIERS SHOULD BE PLACED HANGING NO NEAR SHE GRADE, FILLS OR MUD FIVE FEET OF ONE PERCENT (+0.5%).
- (H) A PREASSEMBLED FILTER BARRIER MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED FILTER BARRIER.

- (I) STATIC SLICING IS THE PREFERRED METHOD OF FILTER BARRIER INSTALLATION. STATIC SLICING INVOLVES THE USE OF THE UNPICKLED NARROW CUTTING BLADE, PLACED ON THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THE CONTRACT DOCUMENTS AND SUMMARIZED BELOW. PULLING THE FENCE ATRIUM INTO THE TRENCH AS THE TRENCH IS BEING EXCAVATED ALTERNATELY REBARAILED AND SUPPORTED BY THE EXCAVATOR'S CHAIN HOIST, ALSO ACCEPTABLE. FILTER BARRIER SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:

 - EXCAVATE TRENCH A MAXIMUM OF 1 INCHES WIDE AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL, THE TRENCH WALLS HANDLED WITH BRICKS, STONES, AND SOIL CLEARS FROM THE DREDGED EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS
 - 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.

- (J) DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. FOR PRE-ASSEMBLED FILTER BARRIER, DRIVE SUPPORT POSTS INTO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
- (K) ATTACH FABRIC TO THE POSTS USING #10 X 1 1/2" STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.

REV. 12-18-02, MODIFIED TABLE ① AND GENERAL NOTE ②	REV. 7-22-04, CHANGED VALUES IN TABLE 1 FROM MEAN TO MANY VALUES.
STATE OF TEXAS DEPARTMENT OF TRANSPORTATION	
TEMPORARY FILTER BARRIER	
12-18-02 EC-STR-3A	

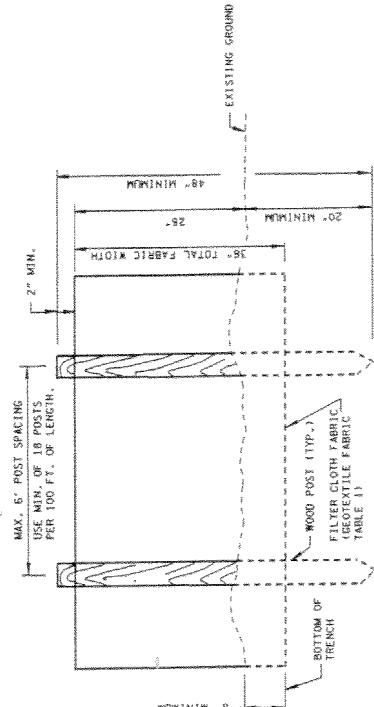
MINOR Revision -- FMA
Approval Not Required.

TEMPORARY SILT FENCE

ITEM NO. 209-08-03)

**TABLE 1
TEMPORARY SILT FENCE FABRIC SPECIFICATIONS**

FABRIC TYPE	REQUIRED PHYSICAL PROPERTIES (TEST METHODS)	REQUIRED VALUES OF TEST DATA
WOVEN SLIT FILM	• TO TO STANDARD SIEVE	
APPARENT OPENING SIZE (ASTM D4751) PERCENT OPEN AREA (POA)	1 % TO 10 % ≥ 4 GM/FT ²	
WATER FLUX (ASTM D4911)	≥ 120 LB. (WARP DIRECTION) X 100 LB. (FILL DIRECTION)	
TENSILE STRENGTH (ASTM D4632)		
LA TRA VIOLET STABILITY (AFTER 500 HRS PER ASTM D4355)	≥ 70%	
ELONGATION (ASTM D4632)	≤ 20X (MAX)	
BURST STRENGTH (ASTM D3786)	≥ 260 PSI	
PUNCTURE STRENGTH (ASTM D4933)	≥ 160 LB.	
TRAPEZOIDAL TEAR (ASTM D4535)	≥ 50 LB. (WARP DIRECTION) X 40 LB. (FILL DIRECTION)	



ELEVATION VIEW

MIN. 2" IN. (IN. 50 MM) X 2"
IN. (IN. 50 MM) ACTUAL
Y.L. 5' ACTUAL 1.25 SD. IN.
MARSHAL POST (OAK OR MICKORY)
OR MIN. 1.35 LB./SF. (WIRE
15 TO 17" OR 18" SECTION)
LENGTH 48"

POSITION POST/FABRIC
ASSEMBLY AT A MAX. OF 5' FROM
THE VERTICAL (ANGLED
TOWARD FLOW)

ANCHOR STAKE
WITH B. LONG
WITH B. 1200 POUNDS.
POST
NO. B. 1250 BROWN BRAIDED
WIRE
MINIMUM TENSILE STRENGTH
OF 1,200 POUNDS.

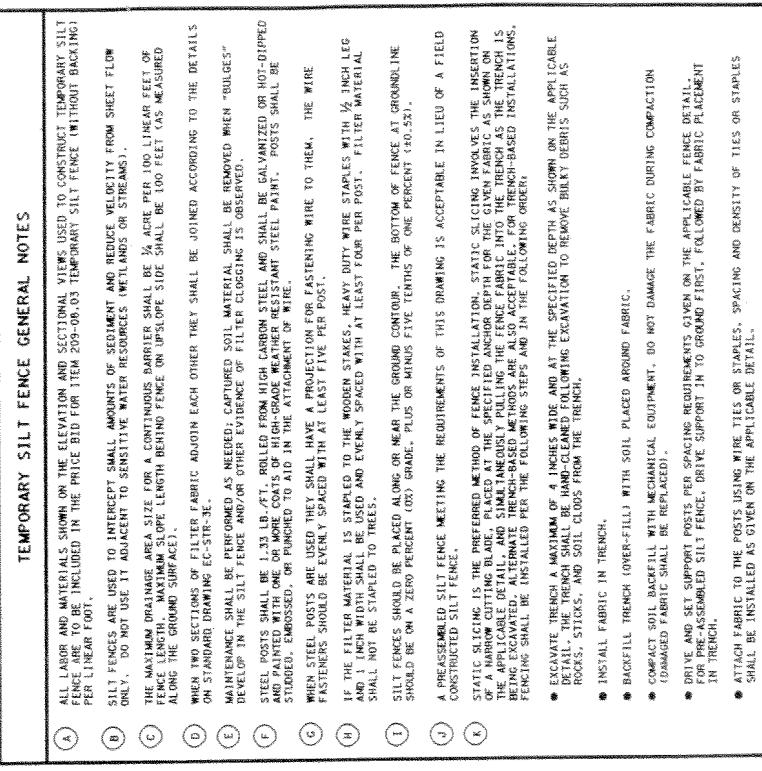
FILTER CLOTH FABRIC
(GEOTEXTILE FABRIC
TABLE 11)

EXISTING GROUND AND
BACKFILL WITH COMPACTED SOIL
FILTER CLOTH

POST
MINIMUM 12" DEPTH
ANCHOR FILTER CLOTH
FABRIC 6" DEEP WITH
4" RUN-OUT LENGTH

SECTIONAL VIEW

EROSION CONTROL PLAN LEGEND: * SF * SF * SF * SF * TEMPORARY SILT FENCE



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 209-08-03 TEMPORARY SILT FENCE (WITHOUT BACKING).
- (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 $\frac{1}{4}$ ACRE PER LINEAR FEET OF FENCE LENGTH. MAXIMUM SLOPE LENGTH BEARING CARBON 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-STR-3E.
- (E) MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND/OR OTHER EVIDENCE OF FILTER CLOGGING IS OBSERVED.
- (F) STEEL POSTS SHALL BE 1.33 LB./FT. ROLLED FROM HIGH GRADE 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 STORED, EMBOSED, OR PUNCHED TO AID IN THE ATTACHMENT OR WIRE.
- (G) WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FROM THE TOP OF FENCE 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 $\frac{1}{2}$ INCH LEG AND 1 INCH WIDTH SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. FILTER MATERIAL AND POSTS SHALL NOT BE STAPLED TO TREES.
- (I) SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUND LINE SHOULD BE ON A ZERO PERCENT (0%) GRADE. PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (+0.5%).
- (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 SIMPLY TANGLING PULLING THE FENCE FABRIC INTO THE TRENCH AS THE TRENCH IS BEING EXCAVATED. ALTERNATELY, 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 4 INCHES WIDE AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING EXCAVATION TO REMOVE BRICKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLOUDS FROM THE TRENCH.
 - * INSTALL FABRIC IN TRENCH.
 - * BACKFILL TRENCH (OVER-FILLED) WITH SOIL PLACED AROUND FABRIC.
 - * COMPACT SOIL AROUND FABRIC 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. 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 GIVEN ON THE APPLICABLE DETAIL.

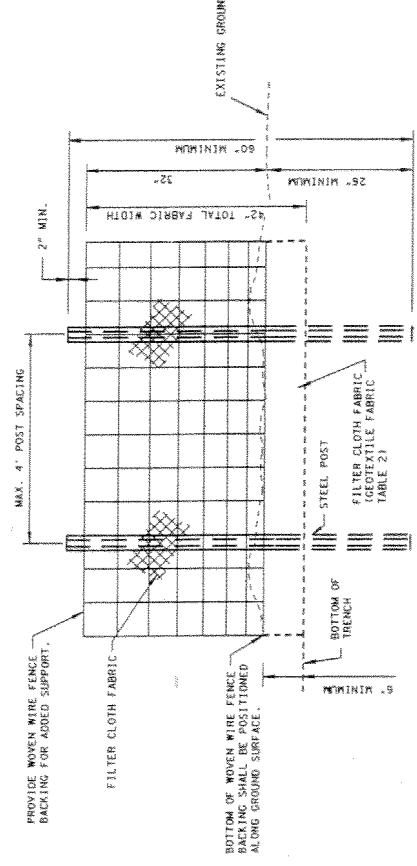
SILT FENCE TIEBACK FOR STEEL POSTS OR WOOD POSTS

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

- (D) MINOR REVISION -- FIRM APPROVAL NOT REQUIRED
- STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
- TEMPORARY
SILT
FENCE

TEMPORARY SILT FENCE WITH BACKING

(ITEM NO. 209-08-02)



ELEVATION VIEW

STEEL POST (10'-0" TALL OR 10'-0" SECTION) (SEE NOTE ④)

POSITION POST/FABRIC ASSEMBLY AT VERTICAL TO A MAX. 5° FROM THE VERTICAL (ANGLED TOWARD FLOW)

FILTER CLOTH FABRIC (GEOTEXTILE FABRIC) TABLE 2 WITH WOVEN WIRE FENCE BACKING.

TIEBACK BETWEEN FENCE POST AND ANCHOR STAKE TO BE NO. 8 (10.25") HOLLOW BRAIDED POLYPROPYLENE ROPE WITH MINIMUM TENSILE STRENGTH OF 1,200 POUNDS.

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

BACKFILL WITH COMPACTED SOIL

POST 26"- 150d

MINIMUM 9"

ANCHOR FILTER CLOTH FABRIC 6" DEEP WITH 4" RUN-OUT LENGTH

POST 26"- 150d

MINIMUM 9"

SECTIONAL VIEW

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



TEMPORARY SILT FENCE WITH BACKING

DRAFTER: REVISION: FIRM:
APPROVED: DATE: APPROVED: DATE:

REV. 7-20-04. CHANGED VALUES IN
TABLE 2 FROM MEAN TO MANY VALUES.

REV. 12-18-03. MODIFIED TABLE ④
AND GENERAL NOTE ④.
REV. 7-20-04. CHANGED VALUES IN
TABLE 2 FROM MEAN TO MANY VALUES.

**TABLE 2
TEMPORARY SILT FENCE WITH BACKING
FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MEAN VALUES OF TEST DATA)
APPARENT OPENING SIZE (ASTM D4751)	WOVEN MONOFILAMENT • TO 100 STANDARD SIEVE
PERCENT OPEN AREA (POA)	1 % TO 10 %
WATER FLUX (ASTM D4491)	≥ 18 GPM/FT ²
TENSILE STRENGTH (ASTM D4632)	≥ 310 LB. (WARP DIRECTION) X 200 LB. (FILL DIRECTION)
TRAPEZOIDAL STABILITY (AFTER 500 HRS PER ASTM D4353)	≥ 360 LB.
BURST STRENGTH (ASTM D3786)	≥ 400 PSI
FUNCTURE STRENGTH (ASTM D4341)	≥ 105 LB.
TRAPEZOIDAL TEAR (ASTM D4633)	≥ 100 LB. (WARP DIRECTION) X 60 LB. (FILL DIRECTION)

TEMPORARY SILT FENCE WITH BACKING GENERAL NOTES

- (A) 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 IN GRADIENT OF AND ADJACENT TO MEANDERS, STREAMS, AND OTHER SENSITIVE WATER RESOURCES, STREAMS, AND OTHER SENSITIVE WATER RESOURCES.
- (B) THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS SILT FENCE WITH BACKING SHALL BE 3 ACRES 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).
- (C) WHEN TWO SECTIONS OF FILTER FABRIC JOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.
- (D) MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND/OR WHEN EVIDENCE OF FILTER CLOGGING IS OBSERVED.
- (E) STEEL POSTS SHALL BE 1.53" X 1.51", HOLLOW FROM HIGH CARBON STEEL, AND SHALL BE GALVANIZED OR NOT-DIPPED AND PAINTED IN ONE COAT OF HIGH-MOLECULAR-WEIGHT, HIGH-RESISTANT STEEL PAINT. POSTS SHALL BE STUBBED, EMBOSSED, OR CHAMFERED TO AID IN ATTACHMENT OF WIRE.
- (F) STEEL POSTS SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FABRIC SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE POSTS WITH WIRE TIES. FABRIC SHALL BE PLACED ALONG THE BOTTOM OF FENCE AT GROUND LINE SHOULDER TO EARTH, SPACED EVERY 24 INCHES ALONG TOP AND MIDSECTION. THE WIRE FASTENERS SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (±0.5%). DESIGN NO. B32-6-11, CLASS 3 COATING.
- (G) WOVEN WIRE FENCE BACKING SHALL MEET THE REQUIREMENTS FOR ASTM A-116 FOR NO. 11 FARM DESIGN NO. B32-6-11, CLASS 3 COATING.
- (H) SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR, THE BOTTOM OF FENCE AT GROUND LINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (±0.5%).
- (I) STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A NARROW CUTTING BLADE PLACED IN THE SPECIFIED ANCHOR DEPTH INTO THE GROUND. THE FABRIC IS THEN TORN IN THE APPLICABLE DETAIL AND SMALL TANGENCIES PULLED THE FABRIC INTO THE TRENCH AS THE TRENCH IS 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.
- (J) EXCAVATE TRENCH A MAXIMUM OF 4 INCHES DEEP AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHALL BE HAND-DUG AND THE SOILS REMOVED. REMOVE ROCKS SUCH AS ROCKS, STICKS, AND SOIL CLIPS FROM THE TRENCH.
- (K) INSTALL FABRIC IN TRENCH.
- (L) BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
- (M) COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION.
- (N) DAMAGED FABRIC SHALL BE REPLACED.
- (O) DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL.
- (P) ATTACH FABRIC TO THE POSTS USING WIRE TIES. SPACING AND DENSITY OF TIES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.



SECURE TO POST
BY WRAP TIE

SILT FENCE
WITH BACKING

SILT FENCE TIEBACK

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

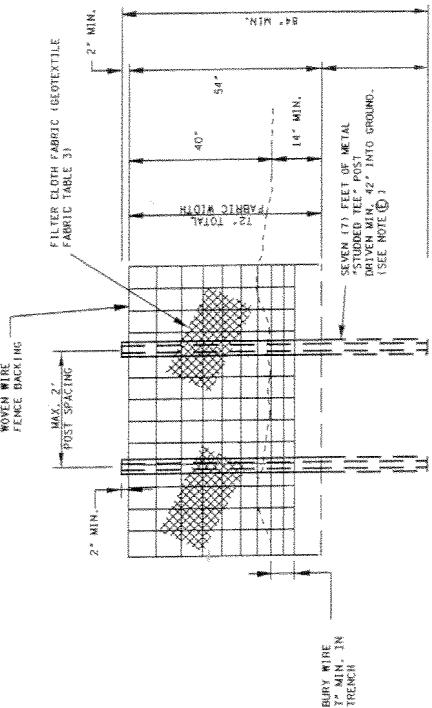
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TEMPORARY SILT
FENCE WITH
BACKING

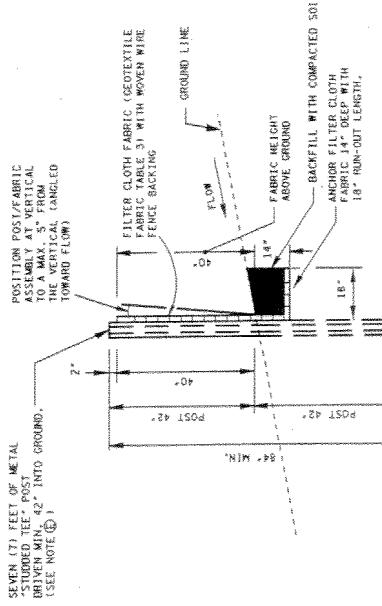
EC-STR-3C
12-18-02

ENHANCED SILT FENCE

ITEM NO. 209-08-041



ELEVATION VIEW



SECTIONAL VIEW

**TABLE 3
ENHANCED SILT FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (WAVEY VALUES OF TEST DATA)
FABRIC TYPE	WOVEN MONOFILAMENT
APPARENT OPENING SIZE (ASTM D4751)	0.50 TO 0.80 STANDARD SIEVE
WATER FLUX (ASTM D4491)	2.110 GM/M ² /2
TENSILE STRENGTH (ASTM D4632)	≥ 370 LBS. (WARP DIRECTION) X 230 LBS. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS. PER ASTM D4352)	≥ 90%
BREATH STRENGTH (ASTM D3786)	2.470 PSI
PUNCTURE STRENGTH (ASTM D4833)	2.110 LB.
TRAPEZOIDAL TEAR (ASTM D4523)	2.135 LB. (WARP DIRECTION) X 75 LB. (FILL DIRECTION)
PERMEABILITY (ASTM D4911)	> 0.02 INCHES/SEC
THICKNESS (ASTM D939)	≤ .35 MILS

ENHANCED SILT FENCE GENERAL NOTES

- (A) ALL LABOR AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL VIEWS USED TO CONSTRUCT ENHANCED SILT FENCE ARE TO BE INCLUDED IN THE PRICE BID FOR ITEM NO. 209-08-04 TEMPORARY ENHANCED SILT FENCE PER LINEAR FOOT.
- (B) ENHANCED SILT FENCE IS TO BE USED WHERE INTERCEPTION OF CONCENTRATED FLOWS (e.g., SPALLES, DITCHES, RUTS ALONG SLOPES) ARE ANTICIPATED. LIMITS OF FLOW APPLICATIONS FOR USE OF ENHANCED FILTER FENCE ARE GIVEN IN TABLE 4 AND TABLE 5 ON STANDARD DRAWINGS EC-STR-4 AND EC-STR-4A.
- (C) WHEN TWO SECTIONS OF ENHANCED SILT FABRIC ADJOIN EACH OTHER, THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.
- (D) MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN BOLUSES ARE DETECTED IN THE SILT FENCE AND/OR EVIDENCE OF FILTER BLINDING IS NOTED.
- (E) STEEL POSTS SHALL BE 1.33 LB./FT. ROLLED FROM HIGH CARBON STEEL AND HIGH GRADE NEUTRAL RESISTANT STEEL. PAINTED POSTS SHALL BE STUDDED. COATS OF EPOXY RESIN OR POLYURETHANE RESIN SHALL BE APPLIED TO THE ATTACHMENT OF THE FENCE TO THE AID IN THE ATTACHMENT OF WIRE.
- (F) WIRE FENCE SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. WOVEN WIRE FENCE BACKING TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST SIX PER POST.
- (G) WIRE FENCE FABRIC SHALL MEET THE REQUIREMENTS FOR ASTM A-116 FOR NO. 11 FARM, DESIGN NO. 1017-6-11, CLASS 3 COATING.
- (H) FILTER FABRIC SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE BACKING WITH TIES SPACED EVERY 24 INCHES ALONG TOP AND SIDES.
- (I) FOR TRENCH-BASED INSTALLATIONS, FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:

 - EXCAVATE TRENCH (MAXIMUM 10 INCHES 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 CLOUDS 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 COMPACTING (DAMAGED FABRIC SHALL BE REPLACED).
 - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL.
 - ATTACH WOVEN WIRE FENCE BACKING TO POSTS AND FABRIC TO THE BACKING USING WIRE TIES. SPACING AND DENSITY OF TIES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.

MINOR REVISION --
APPROVAL NOT REQUIRED.

STATE OF TRANSPORTATION
DEPARTMENT OF TRANSPORTATION

TEMPORARY
ENHANCED
SILT FENCE

EROSION CONTROL PLAN LEGEND: * ESF * ESF * (ENHANCED SILT FENCE)

12-18-02 EC-STIR-30

REV. 12-18-02; CHANGED DRAGGING
 NO. FROM EC-STR-5 TO EC-STR-5.
 REV. 8-7-01-02; CHANGED ITEM NO.
 209-06 TO 209-06-03.
 REV. 7-29-02; REMOVED DETAILS FOR
 TYPE EC V FILTER BARRIER, TYPE EC IC,
 AND TYPE EC 1D.
 REV. 12-18-02; CHANGED ALL
 REFERENCES TO SALT FENCE AND FILTER
 BARRIER TO ENHANCED 17' FENCE.
 REV. 10-26-03; DELETED DETAIL FOR
 TYPE EC V FILTER BARRIER.
 REV. 1-19-05; DELETED DETAIL FOR
 TYPE EC IV BARRIER, SOLIDED
 GENERAL NOTE ① TO GENERAL NOTE ②
 GENERAL NOTE ③ TO GENERAL NOTE ④.

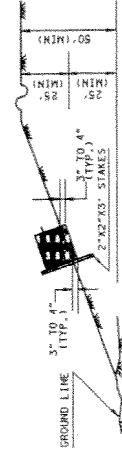
**GENERAL NOTES FOR
BALED HAY OR STRAW USED AS EROSION CHECKS**

- (A) 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.
- (B) HAY OR STRAW BALES SHALL BE A MINIMUM OF 5 CUBIC FEET IN VOLUME, WITH A MINIMUM DIMENSION OF 36" X 18" X 48" (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 4 INCHES.
- (E) BALED HAY OR STRAW USED FOR EROSION CHECKS ON FILL IS TO BE PAID FOR UNDER ITEM NO. 209-06. BALED HAY OR STRAW EROSION CHECKS PER BALE.

DRAWN BY: [Signature] FIRM:
 STATE OF TEXAS
 APPROVAL NOT REQUIRED
 STRAW OR HAY BALES
 OR FABRIC
 TEMPORARY
 EROSION CHECKS
 10-26-03 EC-STR-5

TYPE EC VI

BALED HAY OR STRAW ON FILL SLOPES

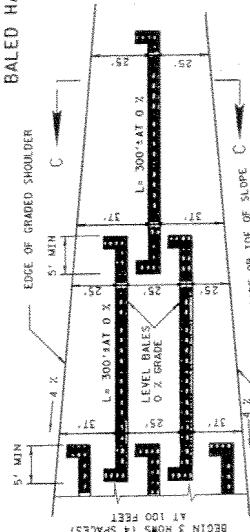


SECTION C-C

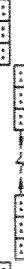
TOE ROW OF BALES SHOWN - 2 OR MORE MAY BE SPECIFIED

TYPICAL LONGITUDINAL VIEW (EXAMPLE)

(DIMENSIONS ARE MEASURED VERTICALLY)
 WHEN DITCH TOE OF SLOPE OR SHOULDER GRADE CHANGES, "L" WILL CHANGE ACCORDINGLY
 NO. 209-06-03 DRAWN BY: [Signature] FIRM: [Signature]



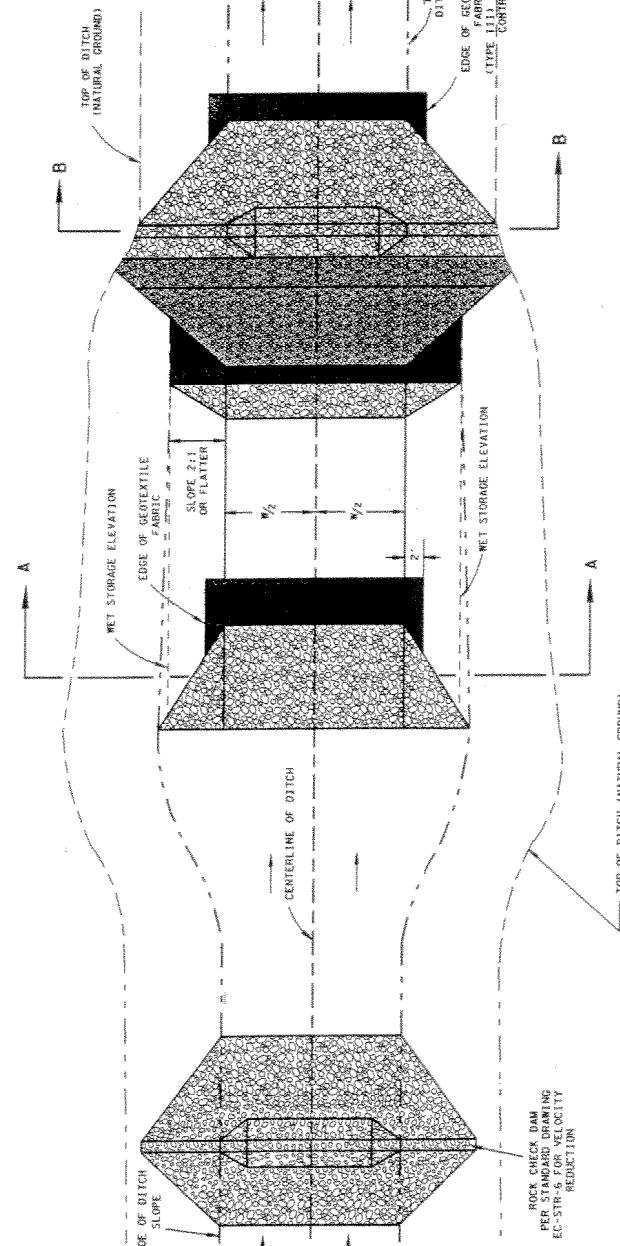
EROSION CONTROL PLAN LEGEND:



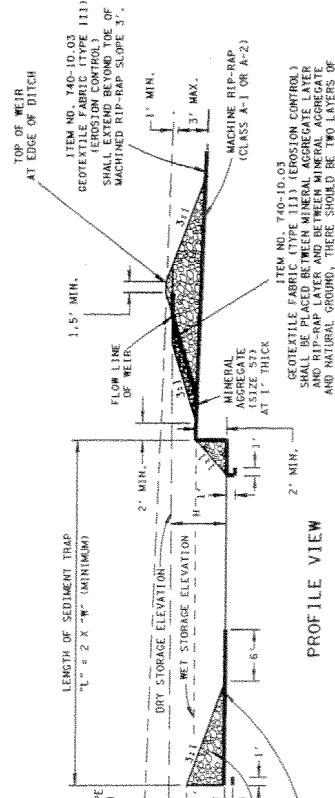
TOE ROW OF BALES SHOWN - 2 OR MORE MAY BE SPECIFIED

TEMPORARY SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM

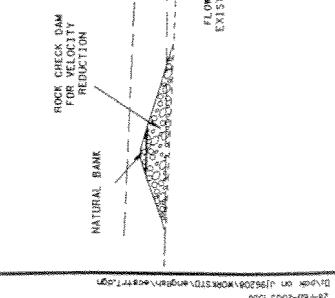
ITEM NOS. 209-05, 209-10-20 & 740-10-03



PLAN VIEW



PROFILE VIEW

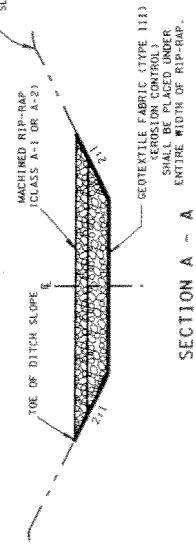


CROSS-SECTION

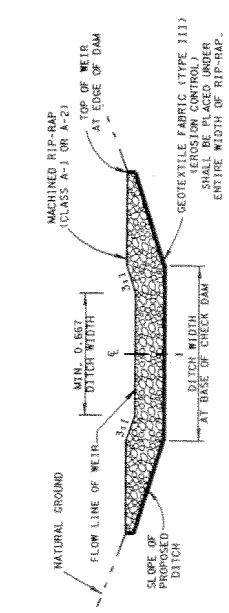
- REV. 1-22-03: CORRECTED GENERAL NOTE ① ADDED ADDITIONAL GEOTEXTILE FABRIC TO PROFILE VIEW.
- REV. 1-27-03: CHANGED ITEM NO. FROM EC-STR-7 TO EC-STR-7.
- REV. 1-29-04: ADDED DUCK CHECK DAM TO PLAN AND PROFILE VIEWS, CHANGED GENERAL NOTE ③.
- REV. 5-5-04: CORRECTED NOTE IN SECTION A-A AND SECTION B-B.
- REV. 1-2-18-05: CHANGED GENERAL NOTE ④.

GENERAL NOTES

- (A) THE DRAINAGE AREA FOR THE TEMPORARY SEDIMENT TRAP SHALL BE 3 ACRES OR LESS.
- (B) THE PELM (GROUND) TEMPORARY SEDIMENT TRAP IS LOCATED IN A DITCH LINE AND WILL REQUIRE DUMPED ROCK AT BOTH ENDS.
- (C) THE CENTER OF THE ROCK SILT SCREEN MUST BE AT LEAST ONE (1) FOOT LOWER THAN THE OUTER EDGES, THIS WILL ELIMINATE THE ROCK - SOIL FAILURE POINT WHERE THE ROCK SILT SCREEN AND NATURAL GROUND MEET.
- (D) GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF THE STANDARD SPECIFICATION FOR GEOTEXTILES (ASHTO DESIGNATION M-280), EROSION CONTROL.
- (E) TEMPORARY SEDIMENT TRAPS AND THEIR ATTACHED TEMPORARY ROCK SILT SCREENS SHALL BE PAID FOR UNDER ITEM NO. 209-10-20 TEMPORARY SEDIMENT TRAP PER CUBIC YARD, PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TEMPORARY SEDIMENT TRAP.
- (F) SEDIMENT SHALL BE REMOVED FROM TEMPORARY SEDIMENT TRAPS WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NO. 209-05, SEDIMENT REMOVAL PER CUBIC YARD.



SECTION A - A



SECTION B - B

EROSION CONTROL PLAN LEGEND:

-
-
-
-
-
-

TEMPORARY SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM

MINOR REVISION -- FORM APPROVAL NOT REQUIRED.

MINOR REVISION -- FORM APPROVAL NOT REQUIRED.	SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM
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EC-STR-7
10-26-92

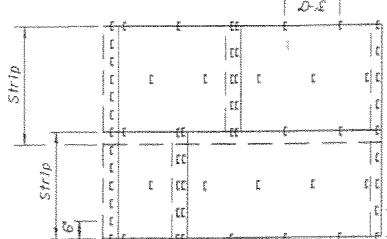
REV. 1-18-85: CHANGED DRAWING
 NO. FROM ECR-510-34 TO EC-STR-34.
 REV. 1-22-03: LAPPED LONGITUDINAL
 SEAM IN ISOMETRIC VIEW, REMOVED
 (b) SINCE TYPE I BLANKETS ARE
 LONGER USED.
 REV. 1-19-03: CHANGED GENERAL NOTE
 (b) TO READ: PLAN VIEW AND LONGITUDINAL
 SEAM NEW.

GENERAL NOTES FOR INSTALLATION DETAILS

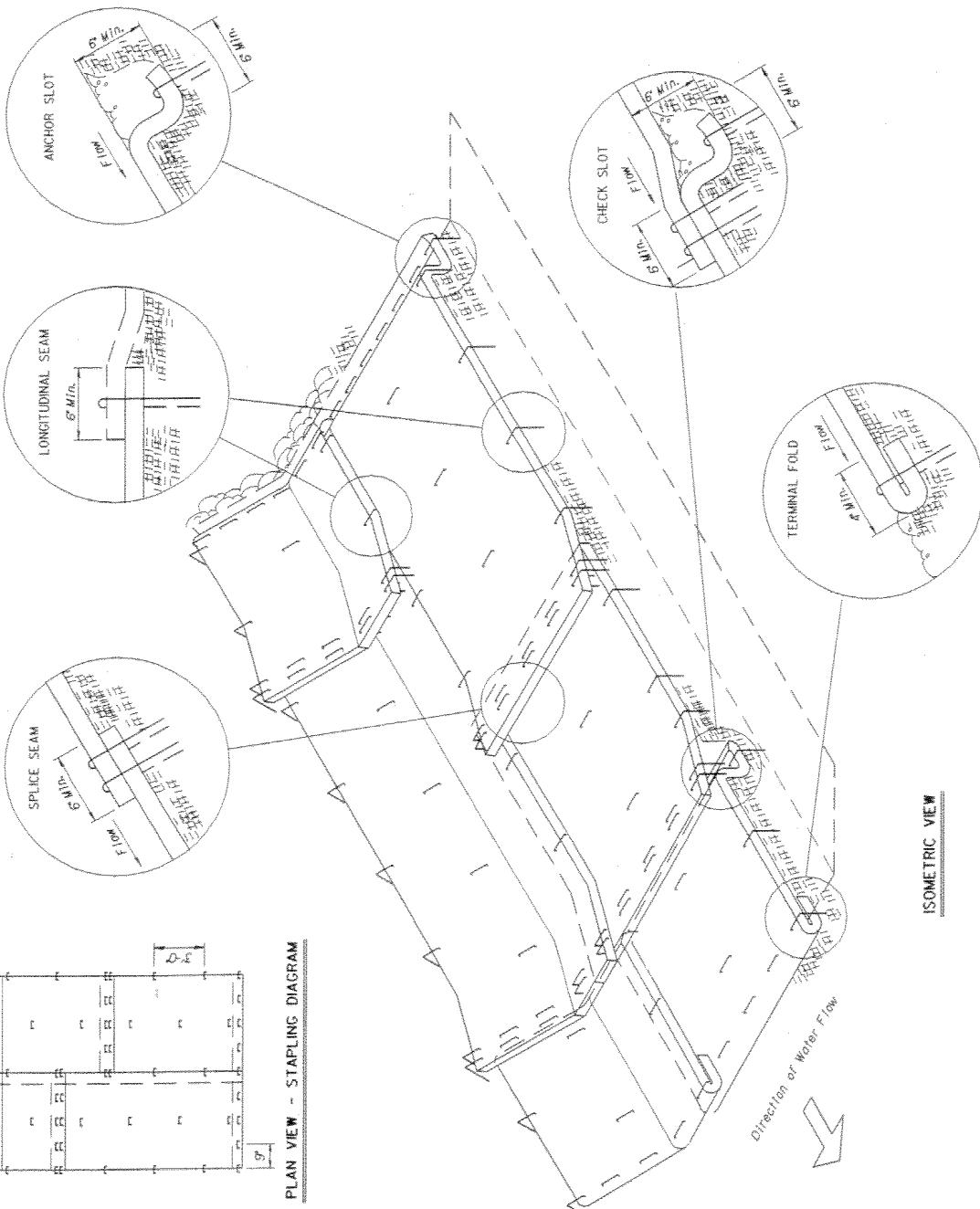
- Erosion control blankets shall be laid loosely in the direction of flow, with the first course at the centerline of the channel, where applicable. In order for the blanket to be in contact with the soil, lay the blanket loosely, avoiding stretching.
- (A) ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and stapled in place with staples 6 inches apart. The slots should be 6" wide x 6" deep with the blanket stapled in the bottom of the slot, then backfilled, tamped and sealed.
- (B) LONGITUDINAL SEAMS: The adjacent edges of the channel liner should overlap a minimum of 6 inches, with the staples catching the edges of both erosion control blankets.
- (C) SPLICE SEAMS: When splices are necessary, overlap the end a minimum of 6 inches in the direction of water flow - stagger splice seams.
- (D) CHECK SLOTS: Establish check slots transverse to slope every 35 feet. The slots should be 6" wide x 6" deep. The blank will be cut to a length 6" beyond the slot. The top of the downstream blanket shall be slotted in, stapled and buried. Tamped and sealed similar to the top anchor slot. The upstream blanket shall then cover the slot and be staked as shown.
- (E) TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then stapled in place with staples 9 inches apart.
- (F) TYPICAL STAPLES: Staples shall meet the requirements of standard specification for staples, section 910.19.
- (G) PAYMENT FOR EROSION CONTROL BLANKETS WILL BE MADE UNDER THE FOLLOWING ITEMS:
 805-12-02, EROSION CONTROL BLANKET (TYPE III) PER SQUARE YARD.
 805-12-03, EROSION CONTROL BLANKET (TYPE III) PER SQUARE YARD.
 805-12-04, EROSION CONTROL BLANKET (TYPE IV) PER SQUARE YARD.

<input checked="" type="checkbox"/> MINOR REVISION -- FIRM APPROVAL NOT REQUIRED.
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION
INSTALLATION
DETAIL FOR EROSION CONTROL BLANKETS
EC-STR-34

10-26-92



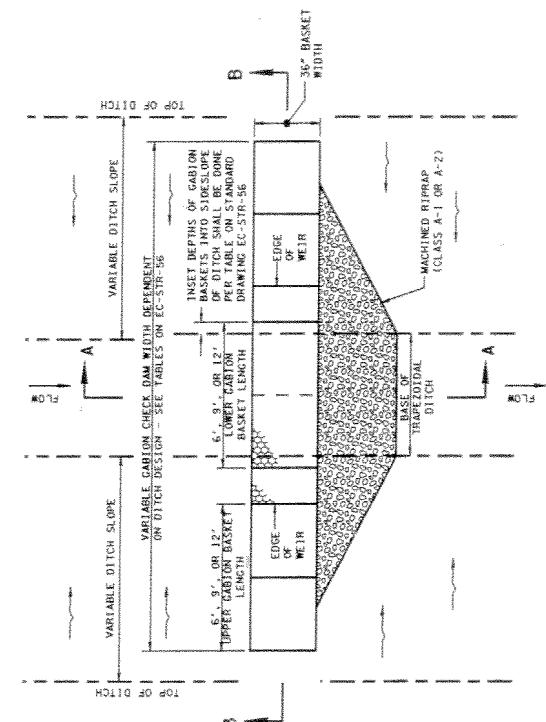
PLAN VIEW - STAPLING DIAGRAM



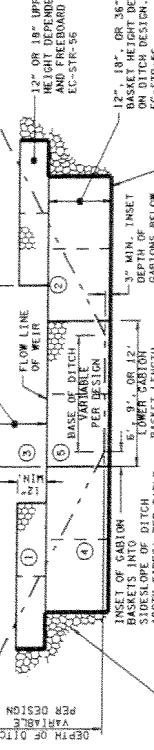
ISOMETRIC VIEW

TEMPORARY OR PERMANENT GABION CHECK DAM

ITEM NO. 209-09-251



PLAN



SECTION B-B

- (1) HEIGHT OF UPPER GABION SHALL BE EQUAL TO LOWER GABION AND SHALL NOT EXCEED 18".
- (2) VERTICAL JOINTS OF GABION BASSETS SHALL BE STAGGERED.
- (3) SITE WEIR TO CONTAIN THE 2YR/24HR STORM, CONTAIN DESIGN DISCHARGE WITHIN WEIR STRUCTURE WHERE POSSIBLE.

EROSION CONTROL PLAN LEGEND:



GABION CHECK DAM

- (4) DIAPHRAGMS SEPARATING INDIVIDUAL GABION CELLS,
- (5) BASKET-TO-BASKET CONNECTIONS SHALL BE AS DIRECTED ON STD. Dwg. EC-STR-56 & EC-STR-57.

* USE 18 OR 36 INCH GABIONS
** USE 36 INCH GABIONS

SECTION A-A AT WEIR



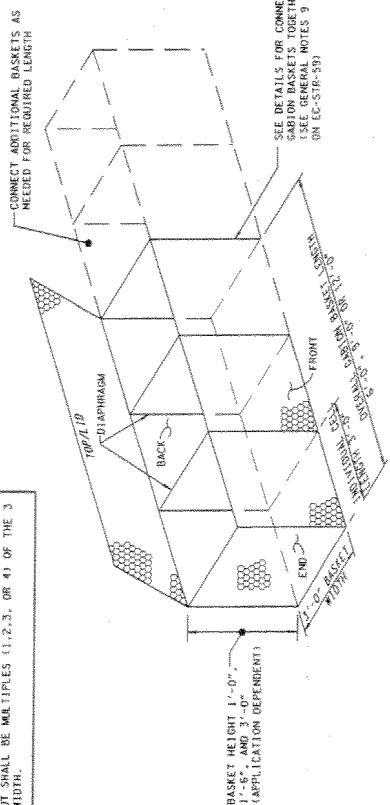
Z = THE DISTANCE SUCH THAT POINTS (X) AND (Y) ARE OF EQUAL ELEVATION

GABION CHECK DAM SPACING AT CENTER OF WEIR

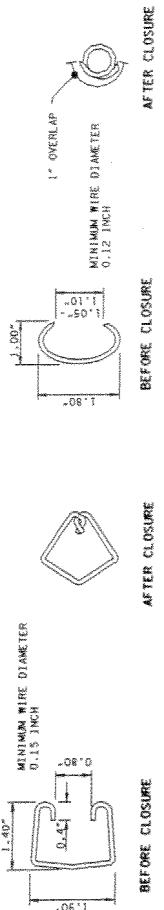
GABION SLOPE. S (FT/FT)	MAXIMUM SPACING BETWEEN GABIONS, BASKETS IN FEET		MAXIMUM SPACING BETWEEN GABIONS, BASKETS IN FEET
	FOR 18-INCH BASKETS	FOR 36-INCH BASKETS	
0.010	47	72	122
0.020	35	55	60
0.030	22	39	59
0.040	16	29	66
0.050	12	22	52
0.060	10	18	43
0.070	*	15	37
0.080	*	13	32
0.090	*	11	28
0.100	*	10	25
0.110	**	**	22
0.120	**	**	20
0.130	**	**	19
0.140	**	**	17
0.150	**	**	16
		**	11

GABION CHECK DAM

EXAMPLE BELOW SHOWS A 3' X 10' TYPICAL GABION BASKET WITH ATTACHED STOOL BOND GABION ACCORDING TO FIGURE 3. BASKET LENGTH WILL VARY AND SHALL BE MULTIPLES OF 3' OR 4' OF THE 3' FOOT BASKET WIDTH.

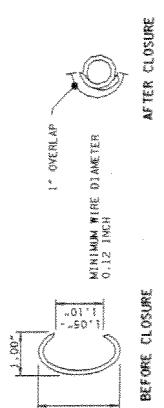


ISOMETRIC - TYPICAL GABION
R.I.S.

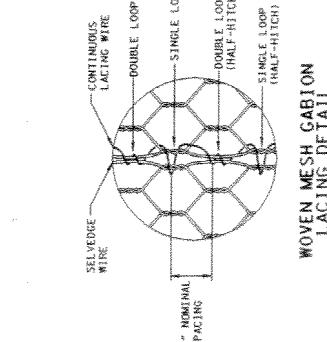


TYPE 1 FASTENER INTERLOCKING WIRE

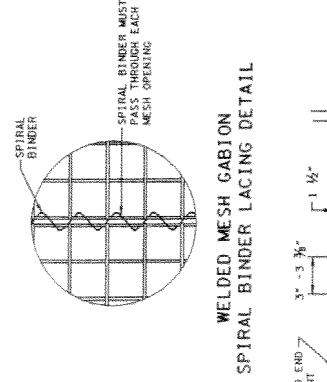
NOTE: DIMENSIONS SHOWN ARE NOMINAL
INSTALL TYPE 1 OR TYPE 2 FASTENERS AT EACH
MESH OPENING ALONG GABION BASKET EDGE.



TYPE 2 FASTENER OVERLAPPING RING



WOVEN MESH GABION
LACING DETAIL

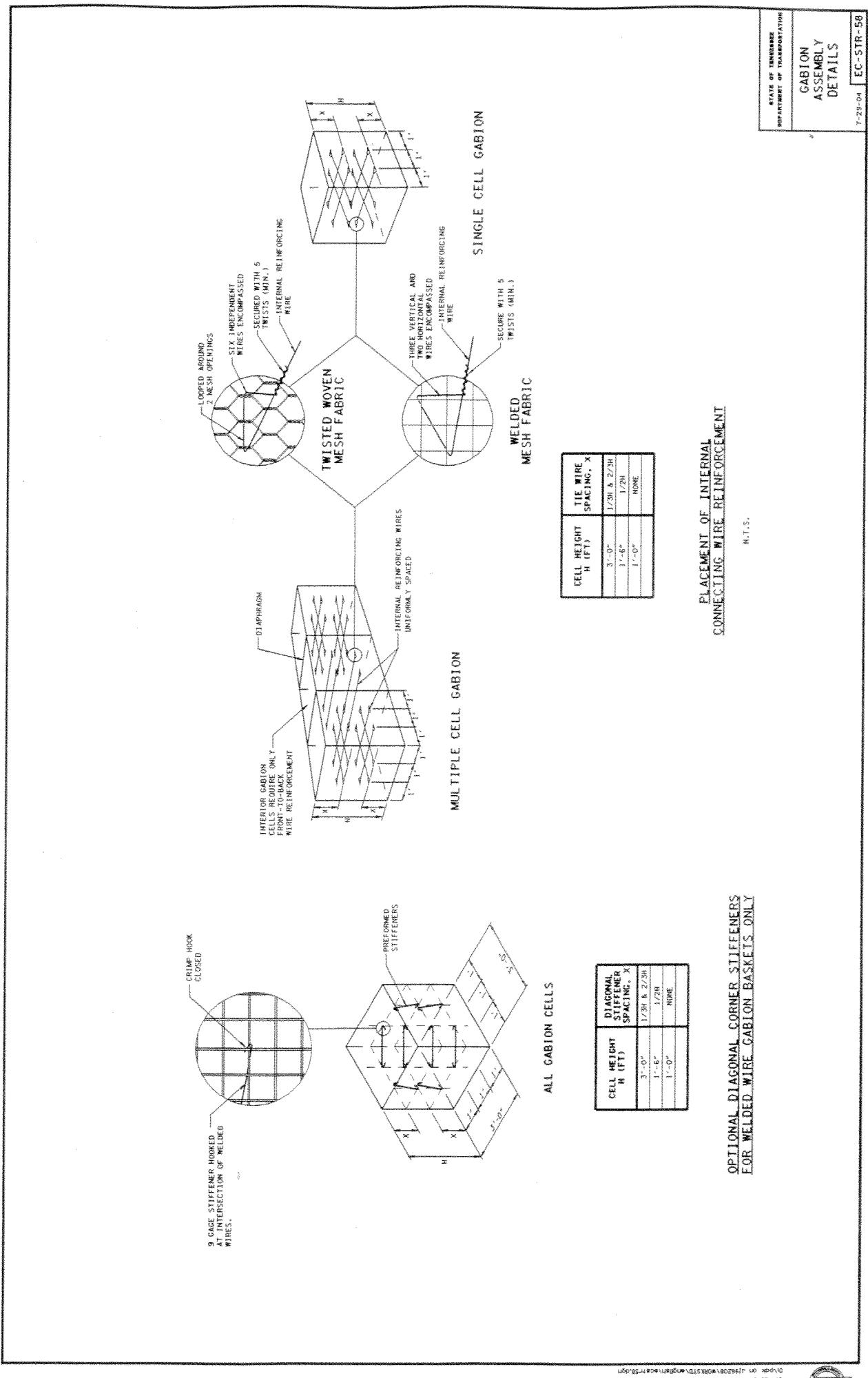


TYPE 3 FASTENER LACING WIRE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
GABION
ASSEMBLY
DETAILS
TO BE USED WITH
WELDED MESH ONLY



TYPE 4 FASTENER SPIRAL BINDER



GABION CHECK DAM GENERAL NOTES

1. GABIONS SHALL BE APPLIED AS CHECK DAMS WHERE ALLOWABLE MAXIMUM SHEAR FORCES AND UNITS OF AGENT LAYERS OR TIRS, ALONG THE LENGTH OF THE CHECK DAM, SHALL BE STAGED BY A MINIMUM OF ONE CELL.
2. CHECK DAMS SHALL NOT BE USED IN LIVE-ACTIVE PERENNIAL STREAMS.
3. CHECK DAMS ARE TO BE USED AS, PRIMARILY, AN EROSION CONTROL MEASURE DUE TO VELOCITY REDUCTION.
4. CHECK DAMS MAY REMAIN IN PLACE AS PERMANENT CHECK DAMS, IF SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
5. THE CENTER OF THE CHECK DAM MUST BE AT LEAST ONE (1) FOOT LOWER THAN THE OUTER EDGES. THIS WILL ELIMINATE THE BASKET-SoIL FAILURE POINT WHERE THE GABION CHECK DAM AND NATURAL GROUND MERGE.
6. WHITE MESH GABION ALTERNATES:
 - A. ROVEN MESH - NON-RAPELING TRIPLE TWISTED HEXAGONAL WIRE MESH, CONSISTING OF OPENINGS THAT DO NOT EXCEED TO SQUARE INCHES, THE MINIMUM LINEAR DIMENSION OF A ROVEN MESH OPENING SHALL NOT EXCEED 4.5 INCHES.
 - B. WELDED MESH - WELDED WIRE MESH WITH A UNIFORM SQUARE OR RECTANGULAR PATTERN AND RESISTANCE HELD AT EACH INTERSECTION BY A SPOT WELD. ROVEN MESH CANNOT CONFORM TO ASTA (AS41) CLASS 2, SOFT TEMPER.
7. WIRE FOR FABRICATION AND ASSEMBLY SHALL BE HOT-DIPPED GALVANIZED STEEL WIRE, GALVANIZED STEEL WIRE, GALVANIZED STEEL WIRE, SMALL COPRON, HAVE A MINIMUM TENSILE STRENGTH OF 60,000 PSI, GALVANIZED STEEL WIRE, SMALL COPRON, CONFORM TO ASTM (AS41) CLASS 2, SOFT TEMPER.
8. TYPE 1, TYPE 2, AND TYPE 3 FASTENERS MUST PROVIDE A MINIMUM STRENGTH OF 1,400 POUNDS PER LINEAR INCH. GABION BASKETS, ALL FASTENERS SHALL MEET ALL OF THE COATING REQUIREMENTS OF THE GABION MANUFACTURER IN ADDITION TO ANY REQUIREMENTS SPECIFIED IN THESE GENERAL NOTES.
9. TYPE 4 SPHALIC BINDERS ARE FOR WELDED-MESH GABION BASKETS ONLY AND SHALL BE FORMED FROM ROVEN MESH BASKETS. HE FORBEADS MUST MEET THE SAME QUALITY AND COATING THICKNESS REQUIREMENTS AS SPECIFIED ON THE GABION.
10. FOUNDATION PREPARATION - SURFACE IRRREGULARITIES, LOOSE MATERIAL, VEGETATION, AND ALL FOREIGN MATTER SHALL BE REMOVED FROM FOUNDATIONS.
11. ASSEMBLY - ROTATE THE GABION PANELS INTO POSITION AND JOIN THE VERTICAL EGGS. MESH FASTENERS FOR GABION ASSEMBLY, WHERE LACE WIRE IS USED, WRAP THE WIRE MESH. CHAMP THE EGGS, MESH, WHERE SPHALIC FASTENERS ARE USED FOR WELDED-WIRE MESH, CHAMP THE EGGS, MESH, ALTERNATING SINGLE AND DOUBLE HALF-HITCHES AT INTERVALS BETWEEN FOUR (4) TO FIVE (5) INCHES, WHERE SPHALIC FASTENERS ARE USED FOR WELDED-WIRE MESH. CHAMP THE EGGS, MESH, SECURE THE SPHALICS IN PLACE, WHERE RING TYPE ALTERNATE FASTENERS ARE USED FOR BASKET FASTENING PROCEDURES, TOAMS MUST BE USED FOR DIAPHRAGMS WHERE THEY ARE REQUIRED. INTERIOR DIAPHRAGMS WILL BE REQUIRED WHEN ANY TADS OR TENDON OF A GABION BASKET EXCEDES 3 FEET.
12. PLACEMENT - PLACE THE EMPTY GABIONS ON THE FOUNDATION AND INTERCONNECT THE WOOL DRAFT GABIONS ALONG THE TOP, BOTTOM, AND VERTICAL EDGES USING LACING WIRE. WHERE WOOL DRAFT GABIONS ARE USED, USE A LACING SINGE AND DOUBLE HALF-HITCHES AT INTERVALS BETWEEN FOUR (4) TO FIVE (5) INCHES, WHERE SPHALIC FASTENERS ARE USED FOR WELDED-WIRE MESH, USE A LACING WIRE. THE ONLY FASTENER ALLOWED FOR INTERFACING SPHALIC WIRE WITH WELDED-WIRE MESH ASSEMBLIES ARE SPHALICS SCREWED DOWN AT THE CONNECTING EDGES, THEN EACH END OF THE SPHALIC IS SECURELY TIED DOWN TO PREVENT UNRAVELING. LACING MAY BE USED AS NEEDED TO SUPPLEMENT THE INTERCONNECTION OF WELDED-MESH GABIONS, AND THE CLOSING OF LIDS, FOR GABION LACING DETAILS, SEE EC-STR-57.
13. ROCK OR STONE FILL FOR USE IN GABION BASKETS SHALL BE BETWEEN 4 AND 8 INCHES WITH A D OF 6 INCHES. INTEGRAL AND EXTRALARGE COULD STONE, OR ROUGH BROWN QUARRY STONE, THE APPARENT OPENING SIZE OF INDIVIDUAL STONES SHALL BE OF 2.5-. STONES SHALL BE OF A DUALITY THAT WILL NOT DISINTEGRATE WITH EXPOSURE TO WATER OR HEATING.
14. SEPARATION GEOTEXTILE FABRIC SHALL MEET OR EXCEED THE REQUIREMENTS PROVIDED IN THE TABLE ON THIS SHEET.
15. CARE SHOULD BE TAKEN WHEN PLACING ROCK IN GABIONS TO INSURE THAT THE GABION BASKETS WILL NOT BE DAMAGED OR BROKEN.
16. ROCK OR STONE FILL FOR USE IN GABON BASKETS SHALL BE BETWEEN 4 AND 8 INCHES WITH A D OF 6 INCHES. INTEGRAL AND EXTRALARGE COULD STONE, OR ROUGH BROWN QUARRY STONE, THE APPARENT OPENING SIZE OF INDIVIDUAL STONES SHALL BE OF 2.5-. STONES SHALL BE OF A DUALITY THAT WILL NOT DISINTEGRATE WITH EXPOSURE TO WATER OR HEATING.
17. SEPARATION GEOTEXTILE FABRIC SHALL MEET OR EXCEED THE REQUIREMENTS PROVIDED IN THE TABLE ON THIS SHEET.
18. GABION CHECK DAMS SHALL BE DED FOR UNDER ITEM NO. 209-058-25, GABION CHECK DAMS PER CUBIC YARD, PAYMENT SHALL INCLUDE ALL MATERIALS, CONCRETE, ETC., EXCLUDING GEOTEXTILE AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF THE GABION CHECK DAMS.
19. SEDIMENT SHALL BE REMOVED FROM BEHIND THE GABION CHECK DAMS WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE DAM AND PAID FOR UNDER ITEM NO. 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

GABION CHECK DAM GENERAL NOTES (CONT.)

13. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE VERTICAL JOINTS BETWEEN GABION BASKET UNITS OF ADJACENT LAYERS OR TIRS, ALONG THE LENGTH OF THE CHECK DAM, SHALL BE STAGED BY A MINIMUM OF ONE CELL.
14. FILLING OPERATION
 - A. FOR REINFORCEMENT, INTERNAL CONNECTING WIRES SHALL BE PLACED IN EACH UNRESTRAINED GABION CELL. TWO INTERNAL CONNECTING WIRES SHALL BE PLACED (TWO ACROSS THE WIDTH UNRESTRAINED, TWO ACROSS THE LENGTH) CONCURRENTLY WITH ROCK PLACEMENT, AT THE SPECIFIED DEPTH (110MM). THE INTERNAL SKIRT OR STANDARD DRADING EC-STR-58. IN ROVEN MESH GABIONS, THE REINFORCING WIRES SHALL BE PLACED ALONG THE LONG FACE, AND CONNECTING TO THE BACK FACE. ALL CONNECTING WIRES SHALL BE LOPED AROUND THE MESH OPENINGS AND EACH WIRE END SHALL BE SECURED BY A MINIMUM OF EIGHT 100 DEGREE TURNS AROUND ITSELF AFTER LOOPING.
 - B. IN WELDED MESH GABIONS, OPTIONAL CORNER STIFFENERS MAY BE USED IN LIEU OF INTERNAL CONNECTING WIRE REINFORCEMENT. WHEN USED, DIAGONAL STIFFENERS SHALL BE PLACED ACROSS THE CORNERS OF THE GABIONS AT 12 INCHES FROM CORNERS AS DETAILED ON STANDARD DRAWINGS EC-STR-58. LACING WIRE OR PREFORMED HOOKING WIRE STIFFENERS MAY BE USED.
 - C. THE STABILISERS SHALL BE CAREFULLY FILLED WITH ROCK, EITHER BY MACHINE OR HAND. MINIMUM VOLUME, MACHINE PLACEMENT WILL REQUIRE SUPPLEMENTING WITH HAND WORK TO ENSURE THE DESIRED RESULTS. THE CELLS IN ANY ROW SHALL BE FILLED IN STAGES, SO THAT THE DEPTH OF ROCK PLACED IN ANY ONE CELL DOES NOT EXCEED THE DEPTH OF ROCK IN ANY ADJOINING CELL BY MORE THAN 3 INCHES. ALSO, THE EXPOSED FACES, THE OUTER LAYER OF STABILISERS SHALL BE CAREFULLY FILLED AND ARRANGED BY HAND TO ENSURE A NEAT, COMPACT PLACEMENT WITH UNIFORM APPEARANCE.
 - D. THE LAST LAYER OF ROCK SHALL BE UNIFORMLY LEVELLED TO THE TOP EDGES OF THE GABIONS. LIDS SHALL BE STRAPPED TIGHT OVER THE TOP EDGES OF GABIONS OR OTHER SINGLE POINT LEVERAGE BARS FOR LOAD CLOSING. IF NECESSARY, THE USE OF CROWBAR OR OTHER EQUIPMENT WILL BE ALLOWED. LIDS SHALL BE FILLED IN STAGES, SO THAT THE DEPTH OF ROCK PLACED IN ANY ONE CELL DOES NOT EXCEED THE DEPTH OF ROCK IN ANY ADJOINING CELL BY MORE THAN 3 INCHES. ALSO, THE EXPOSED FACES, THE OUTER LAYER OF STABILISERS SHALL BE CAREFULLY FILLED AND ARRANGED BY HAND TO ENSURE A NEAT, COMPACT PLACEMENT WITH UNIFORM APPEARANCE.
 - E. CARE SHOULD BE TAKEN WHEN PLACING ROCK IN GABIONS TO INSURE THAT THE GABION BASKETS WILL NOT BE DAMAGED OR BROKEN.
 - F. ROCK OR STONE FILL FOR USE IN GABON BASKETS SHALL BE BETWEEN 4 AND 8 INCHES WITH A D OF 6 INCHES. INTEGRAL AND EXTRALARGE COULD STONE, OR ROUGH BROWN QUARRY STONE, THE APPARENT OPENING SIZE OF INDIVIDUAL STONES SHALL BE OF 2.5-. STONES SHALL BE OF A DUALITY THAT WILL NOT DISINTEGRATE WITH EXPOSURE TO WATER OR HEATING.
 - G. SEPARATION GEOTEXTILE FABRIC SHALL MEET OR EXCEED THE REQUIREMENTS PROVIDED IN THE TABLE ON THIS SHEET.
 - H. GABION CHECK DAMS SHALL BE DED FOR UNDER ITEM NO. 209-058-25, GABION CHECK DAMS PER CUBIC YARD, PAYMENT SHALL INCLUDE ALL MATERIALS, CONCRETE, ETC., EXCLUDING GEOTEXTILE AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF THE GABION CHECK DAMS.
 - I. SEDIMENT SHALL BE REMOVED FROM BEHIND THE GABION CHECK DAMS WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE DAM AND PAID FOR UNDER ITEM NO. 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

GABION CHECK DAM COMPONENT PROPERTIES *

	TYPE OF WIRE WIRES (LISTED)	MECH SIZE (INCHES)	U.S. WIRE (GAUGE)	ZINC COATING (OZ/5.5 F.)	TOTAL DIAMETER (INCHES)
Woven (Woven)	WIRES (LISTED)	3/25 X 4.50	12	0.8	0.105
Welded Wire Mesh	WELDED WIRE MESH	3.00 X 3.00	12	0.8	0.105
	SELVEDGE	...	16	0.8	0.130
	LACING WIRE	...	13.5	0.8	0.187
	REINFORCING WIRE	...	12	0.8	0.105

* ALL COMPONENTS SHALL BE HOT-DIPPED GALVANIZED STEEL (SEE NOTE 65 REGARDING WELDED MESH GABIONS).

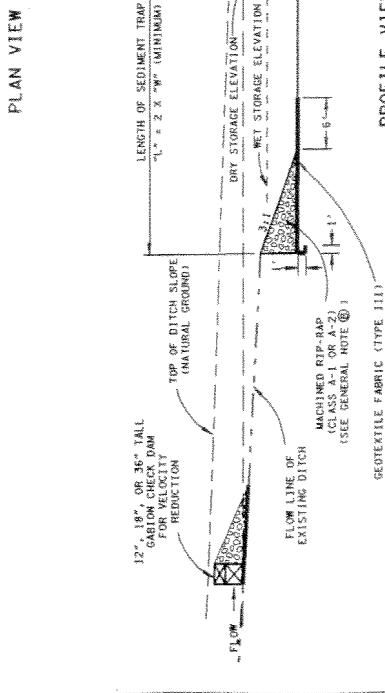
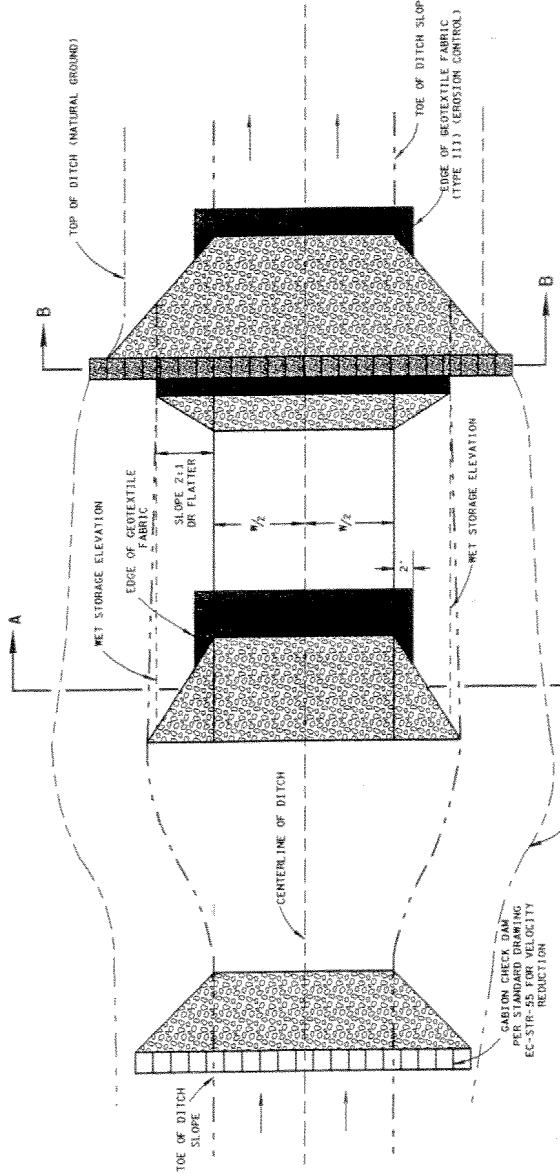
SEPARATION GEOTEXTILE SPECIFICATIONS

FABRIC TYPE : NON-WOVEN, NEEDLE-PUNCHED GEOTEXTILE	FABRIC PROPERTY	ASTM TEST METHOD	MINIMUM AVERAGE孔 VALUES (INCHES)
WEIGHT	ASTM D3716	MINIMUM 7 OZ/YD ²	325 LBS
GRAB TENSILE STRENGTH	ASTM D4632	250LBS	
GRAB ELONGATION	ASTM D4632	225% P.S.I	
MULLEN BURST	ASTM D3766	300 LBS	
FUNCTION STRENGTH	ASTM D4833	200 LBS	
TAPE/ZOIDAL TEAR	ASTM D4533	200 LBS	
APPARENT OPENING SIZE (AOS)	ASTM D4751	FINER THAN OR EQUAL TO NO. 70	
PERMITTIVITY	ASTM D4491	U.S. STANDARD SIEVE 21.2 SEC ¹	
WATER FLUX	ASTM D491	280 GALS/M ² /24 HRS 270 AT 500 HOURS	
UV RESISTANCE	ASTM D4355		

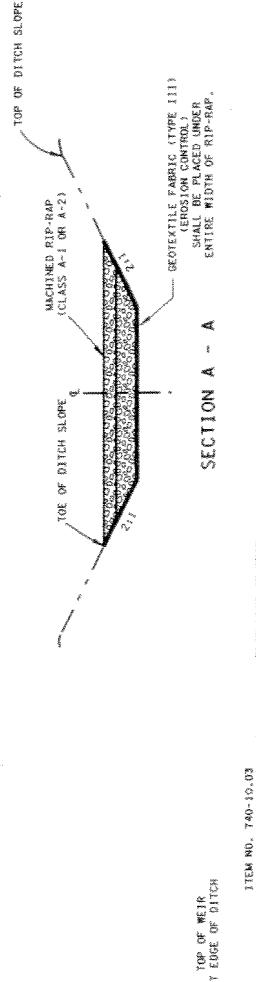
STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION
GABION CHECK DAM
GENERAL NOTES
AND COMPONENT
PROPERTIES

TEMPORARY SEDIMENT TRAP WITH TEMPORARY GABION CHECK DAM

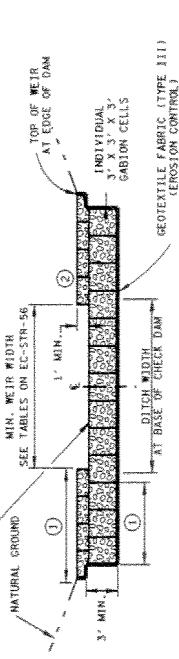
(ITEM NO. 209-05, 209-06, 209-09-25 & 740-10-03)



GENERAL NOTES	
①	THE DRAINAGE AREA FOR THE TEMPORARY SEDIMENT TRAP SHALL BE 3 ACRES OR LESS.
②	THE BELOW GROUND TEMPORARY SEDIMENT TRAP IS LOCATED IN A DITCH LINE AND WILL REQUIRE DRILLED ROCK AT BOTH ENDS.
③	THE CENTER OF THE GABION WEIR MUST BE AT LEAST ONE (1) FOOT LOWER THAN THE OUTER EDGES. THIS WILL ELIMINATE THE BASKET - SOIL FAILURE POINT WHERE THE GABION CHECK DAM AND NATURAL GROUND MERGE.
④	GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF THE STANDARD SPECIFICATION FOR GEOTEXTILES ASHTO DESIGNATION W-206, EROSION CONTROL.
⑤	TEMPORARY SEDIMENT TRAPS AND THEIR ATTACHED TEMPORARY GABION CHECK DAMS SHALL BE PAID FOR UNDER ITEM NO. 209-10-20 TEMPORARY SEDIMENT TRAP PER CUBIC YARD. PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TEMPORARY SEDIMENT TRAP.
⑥	SEDIMENT SHALL BE REMOVED FROM TEMPORARY SEDIMENT TRAPS WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NO. 209-05, SEDIMENT REMOVAL PER CUBIC YARD.
⑦	GABION CHECK DAMS SHALL BE BID FOR UNDER ITEM NO. 209-09-25, GABION CHECK DAMS GEOTEXTILE AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF THE GABION CHECK DAMS.



SECTION A - A



SECTION B - B

- NOTES:
 (1) OVERALL GABION BASKET LENGTHS SHALL BE 6'-0", 9'-0", OR 12'-0"
 (2) SEE EC-STR-56 AND EC-STR-57 FOR GABION ASSEMBLY DETAILS

ITEM NO. 740-10-03
GEOTEXTILE FABRIC (TYPE III)
SMALL EXTEND BEYOND LENGTH OF MACHINED RIP-RAP SLOPE 3'.

EROSION CONTROL PLAN LEGEND:



TEMPORARY GABION CHECK DAM

7-29-04 EC-STR-60

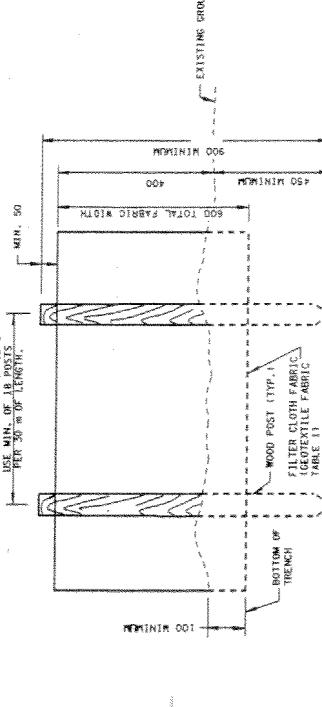
STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

TEMPORARY SEDIMENT TRAP WITH
TEMPORARY GABION CHECK DAM

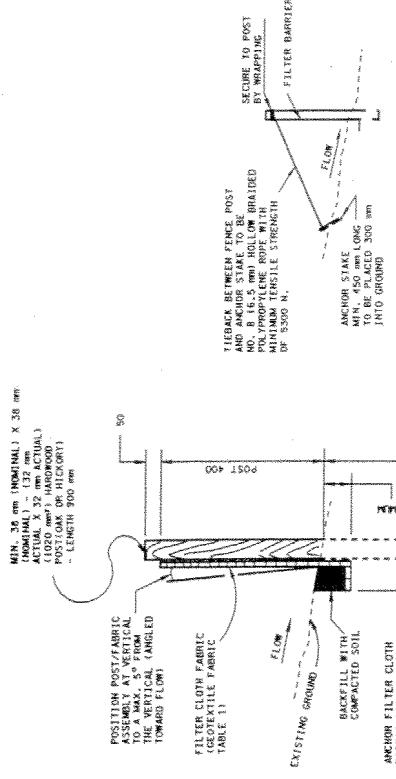
7-29-04 EC-STR-60

TEMPORARY FILTER BARRIER

(ITEM NO. 209008-01)



ELEVATION VIEW



SECTIONAL VIEW

**TABLE 1
TEMPORARY SILT FENCE FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MAX. VALUES OF TEST DATA)
FABRIC TYPE	Woven Silt Film
AIRPERM OPENING SIZE (ASTM D4751)	■ 20 TO ■ 10 TO 2
PERCENT OPEN AREA (FORD)	2.163 (%MIN/M²)
WATER FLUX (ASTM D4451)	≥ 533 (WARP DIRECTION) X 444 N (FILL DIRECTION)
TEAR STRENGTH (ASTM D4852)	≥ 170 N (TOZ)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D4355)	≤ 20% (MAX)
ELONGATION (ASTM D4632)	≥ 172.3 KPO
BREAST STRENGTH (ASTM D3786)	≥ 266 N (WARP DIRECTION) X 177 N (FILL DIRECTION)
PUNCTURE STRENGTH (ASTM D4853)	≥ 222 N (WARP DIRECTION) X 177 N (FILL DIRECTION)
TRAPEZOIDAL TEAR (ASTM D4353)	

TEMPORARY FILTER BARRIER GENERAL NOTES

- ④ 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 209008-01 TEMPORARY FILTER BARRIER PER METER.
- ⑤ BARRIERS ARE USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW IN COMMERCIAL AND RESIDENTIAL AREAS ONLY.
- ⑥ THE MINIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 9'-10" DEEP PER 30' OF BARRIER LENGTH, SURFACE AREA.
- ⑦ WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, THEY SHALL BE JOINED ACCORDING TO THE DETAILS OF STANDARD DRAWING EWS-T-3E.
- ⑧ MAINTENANCE SHALL BE PERFORMED AS NEEDED, CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BLOCKS" DEVELOP IN THE FILTER BARRIER AND OR OTHER EVIDENCE OF FILTER CLOGGING IS OBSERVED.
- ⑨ THE FILTER FABRIC SHALL BE STAPLED TO THE WOODEN STAKES, HEAVY DUTY WIRE STAPLES WITH 13 mm LEG AND 25.5 mm WIDTH SHALL BE USED AND EVENLY SPACED WITH THREE PER POST FOR FILTER BARRIERS. FILTER MATERIAL SHALL NOT BE STAPLED TO TREES.
- ⑩ FILTER BARRIERS SHOULD BE PLACED ALONG THE BOTTOM OF THE GROUND CONTROL LINE NEAR THE POINT OF ONE PERCENT (0.1%) GRADE, PLUS OR MINUS ONE TENTH OF ONE PERCENT (± 0.05%).
- ⑪ A PREASSEMBLED FILTER BARRIER MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED FILTER BARRIER.
- ⑫ STATIC SLICING IS THE PREFERRED METHOD OF FILTER BARRIER INSTALLATION. STATIC SLICING TOWERS THE GROUND FABRIC AS SHOWN ON THE APPLICABLE DETAIL, AND THEN TAKES AY PELLING THE FABRIC INTO THE TRENCH DEPTH FOR THE GROUND FABRIC AS SHOWN PELLING, EXCAVATE ALTERNATE TRENCH-BASED METHOD ALSO AY PELLING THE FABRIC INTO THE TRENCH AS THE TRENCH IS EXCAVATED. SMALLER TRENCHES SHALL BE INSTALLED FOR THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER, FILTER BARRIERS SHOULD BE PLACED ALONG THE BOTTOM OF THE GROUND CONTROL LINE NEAR THE POINT OF ONE PERCENT (0.1%) GRADE, PLUS OR MINUS ONE TENTH OF ONE PERCENT (± 0.05%).
- ⑬ SECURE TO POST BY WHIPPING.
- ⑭ TIEBACK BETWEEN FENCE POST AND ANCHOR STAKE TO BE BRIDGED BY YARDROPS, WHICH ARE ROLLED WITH A ROLLER, AND ANCHORED WITH ANCHOR STAKES. ANCHOR STAKES ARE 100 mm LONG, 100 mm DEEP WITH MINIMUM TENSILE STRENGTH OF 5300 N.
- ⑮ BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
- ⑯ COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION. DAMAGED FABRIC SHALL BE REPLACED.
- ⑰ DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS SHOWN ON THE APPLICABLE FENCE DETAIL, DETAIL THE FENCE SUPPORT POSTS INTO THE GROUND FIRST, FOLLOWED BY FABRIC FOR PRE-ASSEMBLED FILTER BARRIER, DRIVE SUPPORT POSTS INTO THE GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
- ⑱ ATTACH FABRIC TO THE POSTS USING NYLON TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS GIVEN ON THE APPLICABLE DETAIL.

FILTER BARRIER TIEBACK DETAIL

WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS,
COST TO BE INCLUDED IN THE ITEMS FOR TEMPORARY FILTER BARRIER

ITEM NO. 209008-01

SECTIONAL VIEW

EROSION CONTROL PLAN LEGEND: * FB * FB * FB * TEMPORARY FILTER BARRIER

REV. 12-2-A-01, MODIFIED TABLE (D)
AND GENERAL NOTE
REV. 7-29-04, CHANGED VALUES IN
TABLE 1 FROM MEAN TO MANY VALUES.



MINOR REVISION - TIME
APPROVAL NOT REQUIRED.
ALL UNITS ARE IN MILLIMETERS
(UNLESS NOTED OTHERWISE).

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
TEMPORARY
FILTER
BARRIER

12-18-02 ECR STR 3A

REV. 7-29-04, CHANGED VALUES IN
TABLE 1 FROM MEAN TO MAX VALUES.

TABLE 1
TEMPORARY SILT FENCE FABRIC SPECIFICATIONS

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MEAN VALUES OF TEST DATA)
FABRIC TYPE APPARENT OPENING SIZE (ASTM D4751) PERCENT OPEN AREA (PDA) WATER FLUX (ASTM D4491) TENSILE STRENGTH (ASTM D4632)	Woven silt fence 0.075 mm 1.2 to 1.2% 1.465 L/min/m ² ≥ 933 N (WARP DIRECTION) X 444 N (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D4351)	≥ 70%
ELONGATION (ASTM D4632) BURST STRENGTH (ASTM D3786) PUNCTURE STRENGTH (ASTM D4833) TRAPEZOIDAL TEAR (ASTM D4533)	≤ 20% (MAX) ≥ 1723 kPa ≥ 266 N ≥ 222 N (WARP DIRECTION) X 177 N (FILL DIRECTION)

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 ON ITEM 203(WB-03) TEMPORARY SILT FENCE (W/TOOTY BACKING).
- (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 CONTAINMENT BARRIER SHALL BE 0.046 PER 30' OF FENCE LENGTH. MAXIMUM SLOPE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE 30' AS MEASURED ALONG THE GROUND SURFACE.
- (D) WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS PROVIDED IN THE FILTER CLOTH AND GEOTEXTILE FABRIC DATA SHEET.
- (E) MAINTENANCE SHALL BE PROVIDED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BURGED".
- (F) STEEL POSTS SHALL BE 2.0" OD, ROLLED FROM HIGH CARBON STEEL, AND SHALL BE GALVANIZED ON HOT-DIPPED AND PAINTED WITH ONE OR MORE COATS OF HIGH-GRADE WEATHER-RESISTANT STEEL PAINT. POSTS SHALL BE STORED UPRIGHT, ON LONGSIDE. ON LONGSIDE TO A LINE 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 ALONG THE POST.
- (H) IF THE FILTER MATERIAL IS STAKED TO THE WORK, STAKES HEAVY DUTY PINE STAKES WITH 1.3" DIAM. AND 2.5" TWO-WAY NAILS SHALL BE USED AND EVENLY SPACED WITH AT LEAST FIVE PER POST. FILTER MATERIAL SHALL NOT BE STAPLED TO TREES.
- (I) SILT FENCE SHOULD BE PLACED ALONG ONE NEAR THE GROUND CONTROL. THE BOTTOM OF FENCE SHOULD BE ON A ZERO PERCENT (0% GRADE), PLUS OR MINUS FIVE PERCENT (± 0.5%).
- (J) A PRESSESLED SILT FENCE CONSTRUCTED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD ELEVATION.
- (K) STATIC ELEVATING THE PRE-TERRIFIED METHOD OF FENCE INSTALLATIONS, STATIC SLICING INVOLVES THE INSERTION OF HOLLOW TRENCHES AND ANCHORS SIMILARLY PULLED INTO THE TRENCHES, SHOWN ON THE DRAWINGS, BEING EXCAVATED. ALTERNATIVE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE. THE TRENCH-FENCED INSTALLATION FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:

 - EXCAVATE A TRENCH A MAXIMUM OF 100 mm DEEP AND AT THE SPECIFIED DEPTH AS SHOWN ON THE APPLICABLE DRAWINGS.
 - REMOVE THE TRENCH SOIL, THAW, CLEANED, FOLLOWING EXCAVATION TO REMOVE BURNT GURUS SUCH AS FROSTS, STICKS, AND STONES 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 PRE-ASSEMBLED 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.

ITEM NO. 203(WB-03)

TEMPORARY SILT FENCE

ELEVATION VIEW

POSITION POST/FABRIC ASSEMBLY AT VERTICAL TO A MAX. 5° FROM TOWARD FLOW

ANCHOR STAKE BETWEEN FENCE POST AND ANCHOR STAKE

TIEBACK

DETAIL OF TRENCH AND FILTER CLOTH

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 ITEMS FOR TEMPORARY SILT FENCE)

REV. 7-29-04
REVISION 7-29-04
CHANGED VALUES IN
TABLE 1 FROM MEAN TO MAX VALUES.

SECTIONAL VIEW

ITEM NO. 203(WB-03)

EROSION CONTROL PLAN LEGEND:

- * SF * SF * SF * SF = TEMPORARY SILT FENCE

REV. 7-29-04
REVISION 7-29-04
CHANGED VALUES IN
TABLE 1 FROM MEAN TO MAX VALUES.

REV. 7-29-04
REVISION 7-29-04
CHANGED VALUES IN
TABLE 1 FROM MEAN TO MAX VALUES.

REV. 7-29-04
REVISION 7-29-04
CHANGED VALUES IN
TABLE 1 FROM MEAN TO MAX VALUES.

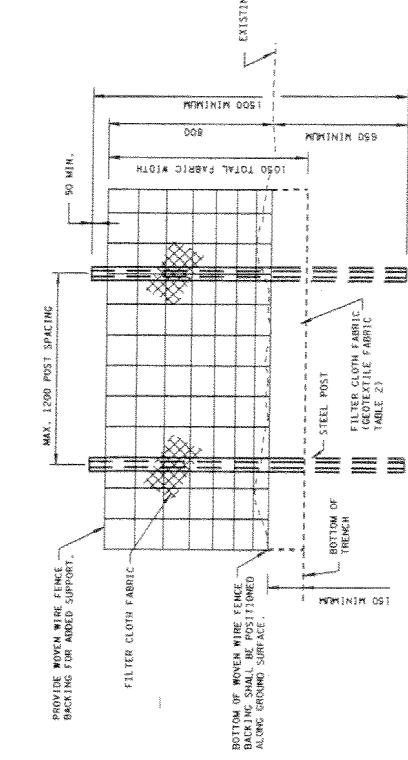
METRIC

TEMPORARY
SILT
FENCE

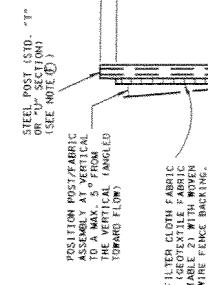
12-16-02 ECM-STR-3B

TEMPORARY SILT FENCE WITH BACKING

ITEM NO. 209-08-02



ELEVATION VIEW



SECTIONAL VIEW

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

TABLE 2
TEMPORARY SILT FENCE WITH BACKING

FABRIC PROPERTY AND TEST METHODS		REQUIRED PHYSICAL PROPERTIES (MIN. VALUES OF TEST DATA)
FABRIC TYPE	WOVEN SLIT FILM	WOVEN SLIT FILM
APPARENT OPENING SIZE (ASTM D4761)	1.1 X 10.1 %	1.1 X 10.1 %
PERCENT OPEN AREA (PDA)	≤ 10% STANDARD SIEVE	≤ 10% STANDARD SIEVE
WATER FILM (ASTM D4491)	2.723 kN/m²	2.130 N (WARP DIRECTION) X 809 N (FILL DIRECTION)
TENSILE STRENGTH (ASTM D4622)	500 NRS	500 NRS
ULTRAVIOLET STABILITY AFTER PER ASTM D43551	≥ 90%	≥ 90%
BURST STRENGTH (ASTM D3763)	≥ 2750 kPa	≥ 457 N (WARP DIRECTION) X 256 N (FILL DIRECTION)
PUNCTURE STRENGTH (ASTM D4433)	≥ 474 N	≥ 444 N (WARP DIRECTION) X 256 N (FILL DIRECTION)
TRAPEZOIDAL TEAR (ASTM D533)	≥ 50 m	≥ 50 m

TEMPORARY SILT FENCE WITH BACKING GENERAL NOTES

- (A) ALL LABOR AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL ITEMS USED TO CONSTRUCT SILT FENCE WITH BACKING ARE TO BE INCLUDED IN THE PRICE bid FOR Item 209-08-02 TEMPORARY SILT FENCE.
- (B) SILT FENCES WITH BACKING ARE TO INTERFERE, SMALL AMOUNTS OF SEDIMENT AND MUDULE VELOCITY FROM SHEET FLOW ONLY. USE FILTER CLOTH FENCE WITH BACKING IN SLOPES WITH GRAVITY OR ADJACENT TO MEADOWS, STREAMS, AND OTHER SENSITIVE WATER RESOURCES.
- (C) THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 0.4 ha PER 45 m OF BARRIER LENGTH, SUBJECT TO ONE LINEAR BREATHING FENCE ON A SLOPE SIDE SHALL BE 30 m (AS MEASURED ALONG THE GROUND SURFACE).
- (D) BOTH TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS SHOWN ON ITEM 209-08-02.
- (E) MAINTENANCE SHALL BE PERFORMED AS NEEDED CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" FORM IN THE SILT FENCE AND/OR OTHER FILTER CLOGGING IS OBSERVED.
- (F) STEEL POSTS SHALL BE 2.0 mm ROLLED FROM HIGH CARBON STEEL AND SHALL BE GALVANIZED OR HOT-DIPPED AND EMBOSED, OR FINISHED TO THE SPECIFIED COLOR. COAT THICKNESS SHALL BE 120 µm. WHETHER PAINT, POWDER COAT, OR ENAMELLED.
- (G) STEEL POSTS SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. WOVEN WIRE FENCING TO BE USED FOR FILTER FABRIC WITH THE FENCE ASSEMBLY. THE WIRE SHOULD BE TIED SECURELY TO THE TOP AND MIDSECTION. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST 50 mm POSTS.
- (H) MOVED WIRE FENCE BACKING SHALL MEET THE REQUIREMENTS FOR ASTM A-116 FOR NO. 11 FARM DESIGN NO. 252-6-11, CLASS 3 COATING.
- (I) SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTROL, THE BOTTOM OF FENCE AT GROUND LINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE PERCENT (±5%).
- (J) STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. THIS INVOLVES THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANGLE, AND DYNAMIC SLICING INVOLVES THE INSERTION OF THE APPROPRIATE DETAIL, AND SIMILARLY, PLACING THE FENCE FABRIC INTO THE TRENCH AS THE TRENCH IS BEING EXCAVATED. ALTERNATIVE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE. FOR TRENCH-BASED INSTALLATIONS, FENCE SHOULD BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
 - EXCAVATE TRENCH A MAXIMUM OF 100 mm DEEP AND AT THE SPECIFIED LENGTH AS SHOWN ON THE APPLICABLE DETAIL. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROCKS, SILTS, AND SOIL CLOUDS FROM THE TRENCH.
 - INSTALL FABRIC IN TRENCH.
 - BACKFILL TRENCH (OPEN-FILL) WITH SOIL PLACED AROUND FABRIC.
 - COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION. COMPRESSED FABRIC SHALL BE REPAVED.
 - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS SHOWN ON THE APPLICABLE FENCE DETAIL.
 - ATTACH FABRIC TO THE POSTS USING WIRE TIES. SPACING AND DENSITY OF TIES SHALL BE INSTALLED AS SHOWN ON THE APPLICABLE DETAIL.

SILT FENCE TIEBACK

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

SECTIONAL VIEW



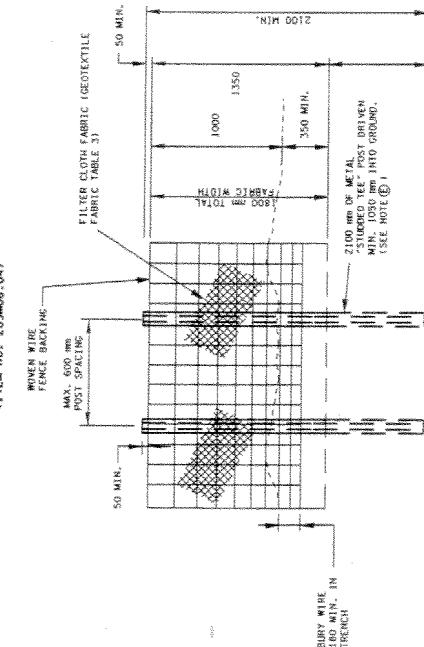
TEMPORARY SILT FENCE WITH BACKING
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ITEM NUMBER: ECM-STR-3C
ITEM DESCRIPTION: TEMPORARY SILT FENCE WITH BACKING
ITEM APPROVAL: NOT REQUIRED.
ALL UNITS ARE IN MILLIMETERS
UNLESS NOTED OTHERWISE.

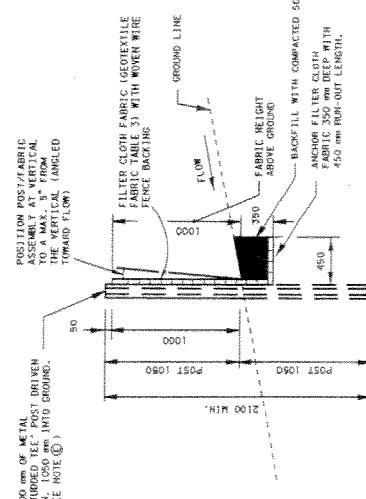
EROSION CONTROL PLAN LEGEND: * SFB * SFB * SFB * SFB * (TEMPORARY SILT FENCE WITH BACKING)

REV. 12-18-02
NEW 12-18-02, MODIFIED JANUARY 2003
AND SERIAL NUMBER 03
REV. 7-29-04, CHANGED VALUES IN
TABLE 2 FROM MEAN TO MANY VALUES.

ENHANCED SILT FENCE
ITEM NO. 209008.04



ELEVATION VIEW



SECTIONAL VIEW

EROSION CONTROL PLAN LEGEND: * ESF * ESF * ESF * (ENHANCED SILT FENCE)

**TABLE 3
ENHANCED SILT FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (AVERAGE VALUES OF TEST DATA)
FABRIC TYPE APPARENT OPENING SIZE (ASTM D4751)	WOVEN MONofilAMENT 30 TO 90 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 4477 L/MIN/m ²
TENSILE STRENGTH LASTM D4632	≥ 1605 N (WARP DIRECTION) X 1023 N (FILL DIRECTION)
18. TRAVELLET STABILITY (AFTER 500 HRS PER ASTM D4551)	≥ 90%
BURST STRENGTH (ASTM D3786)	≥ 3240 kPa
PUNCTURE STRENGTH (ASTM D4833)	≥ 489 N
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 511 N (WARP DIRECTION) X 333 N (FILL DIRECTION)
PERMEABILITY (ASTM D4411)	≥ 0.06 CM/SEC
THICKNESS (ASTM D5199)	≤ .35 MILS

ENHANCED SILT FENCE GENERAL NOTES

- (A) ALL LABOR AND MATERIALS SHOWN ON THE ELEVATION AND SECTIONAL VIEWS USED TO CONSTRUCT ENHANCED SILT FENCE ARE TO BE INCLUDED IN THE PRICE BID FOR ITEM NO. 209008 OR TEMPORARY ENHANCED SILT FENCE PER METRE.
- (B) ENHANCED SILT FENCE IS TO BE USED WHERE INTERCEPTION OF CONCRETEATED FLOWS (e.g. SWALES, DITCHES, RUTS ALONG SLOPES) ARE ANTICIPATED. LIMITS OF FLOW APPLICATIONS FOR USE OF ENHANCED SILT FENCE ARE GIVEN IN TABLE 5 ON STANDARD DRAWINGS ECM-STR-4 AND ECM-STR-4A, RESPECTIVELY.
- (C) WHEN TWO SECTIONS OF ENHANCED SILT FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS IN THE APPENDIX OF DRAWING ECM-STR-4 AND ECM-STR-4A.
- (D) MAINTENANCE SHALL BE PERFORMED AS NEEDED; CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN 'BULGES' DEVELOP IN THE SILT FENCE AND/OR WHEN EVIDENCE OF FILTER BLINDING IS NOTED.
- (E) STEEL POSTS SHALL BE 2.0 kg/m ROLLED FROM HIGH CARBON STEEL AND SHALL BE GALVANIZED OR HOT-DIPPED AND PAINTED WITH ONE OR MORE COATS OF HIGH-GRADE PAINTED OR RESISTANT STEEL PAINT; POSTS SHALL BE STUDDED, EMBOSSED, OR PERFORATED IN THE ATTACHMENT AREA OF WIRE.
- (F) STEEL POSTS SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. WIRE TIE FENCE BACKING TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE POSTS. THE WIRE TIE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST SIX PER POST.
- (G) WIRE FENCE FABRIC SHALL MEET THE REQUIREMENTS FOR ASTM A-116 FOR NO. 31 FABRIC, RESTRICTION, Grade-11, Class 5 Coating.
- (H) FILTER FABRIC SHALL BE FASTENED SECURELY TO WIRE FENCE BACKING WITH TILES SPACED EVERY 600 MM ALONG TOP AND MUD SECTION.
- (I) FOR TRENCH-BASED INSTALLATIONS, FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
 - EXCAVATE TRENCH TO A MAXIMUM DEPTH AS SHOWN ON THE APP CABLE AND AT THE SPECIFIED DEPTH FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLOUDS FROM THE TRENCH.
 - INSTALL FABRIC IN TRENCH.
 - COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT, DO NOT DAMAGE THE FABRIC DURING COMPACTION.
 - ATTACH WIRE FENCE BACKING TO POSTS AND FABRIC TO THE MUD BACKING USING WIRE TIES, SPACING AND DENSITY OF TIES SHALL BE INSTALLED AS GIVEN ON THE APPROPRIATE DETAIL.

METRIC

DRAWN BY: [Signature]

APPROVED BY: [Signature]

NOT DRAWN OTHERWISE

ALL UNITS ARE IN MILLIMETERS

UNLESS NOTED OTHERWISE

STATE OF TORONTO

DEPARTMENT OF TRANSPORTATION

TEMPORARY
ENHANCED
SILT FENCE

12-1-02

ECM-STR-30

- REV. 11-1-91 CHANGED TO METRIC.
 REV. 5-27-91 CHANGED ITEM NO.
 209608 TO 209609 02.
 REV. 7-20-91 ADDED DETAIL FOR
 TYPE EC IA, TYPE EC IB, TYPE EC IC,
 AND TYPE EC ID.
 REV. 12-16-91 CHANGED ALL
 REQUIREMENTS FOR DRAULIC AND FILTER
 CHECKERS TO EIGHTY-FIVE PERCENT.
 REV. 10-20-91 DELETED ALL DETAILS
 FOR THE FILTER CHECKER.
 REV. 11-1-91 ADDED DETAIL FOR
 GENERAL NOTES AND CHANGED
 GENERAL NOTE ④ TO GENERAL NOTE ⑤.

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 0.8 m² OR LESS. THEY SHALL BE UTILIZED TO DECREASE FLOW VELOCITY AND TO RETAIN SMALL AMOUNTS OF SEDIMENT.
 (B) HAY OR STRAW BALES SHALL BE A MINIMUM OF 0.4 m³ IN VOLUME, WITH A MINIMUM DIMENSION OF 300x60x90 (LENGTH X WIDTH X HEIGHT).
 (C) ALL BALES SHALL BE EITHER WHITE-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) BALED HAY OR STRAW USED FOR EROSION CHECKS ON FILL IS TO BE PAID FOR UNDER ITEM NO. 209606. BALED HAY OR STRAW EROSION CHECKS PER BALE.



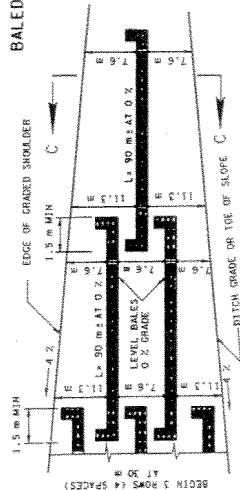
ALL UNITS ARE IN MILLIMETERS
(UNLESS NOTED OTHERWISE)

(F) MINOR REVISION - FIMA
APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STRAW OR HAY BALE
OR FABRIC
TEMPORARY
EROSION CHECKS

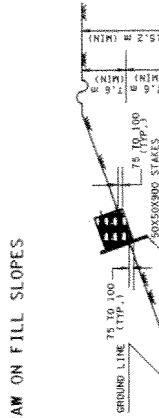
11-1-95 ECM-STR-5

TYPE EC VI BALED HAY OR STRAW ON FILL SLOPES



TONE ROW OF BALES SHOWN - 2 OR MORE MAY BE SPECIFIED

TYPICAL LONGITUDINAL VIEW (EXAMPLE)
DIMENSIONS ARE MEASURED VERTICALLY
WHEN DITCH TOE OR SLOPE OR TEE OF SLOPE C



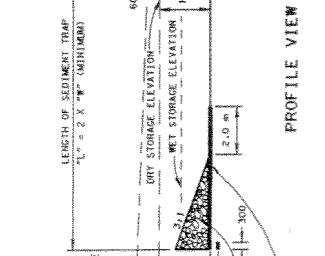
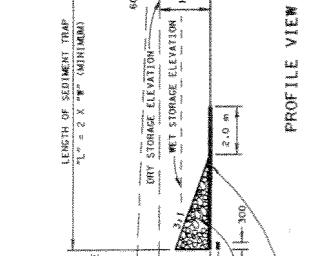
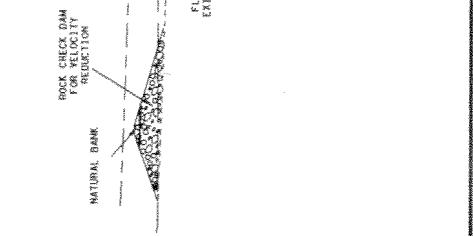
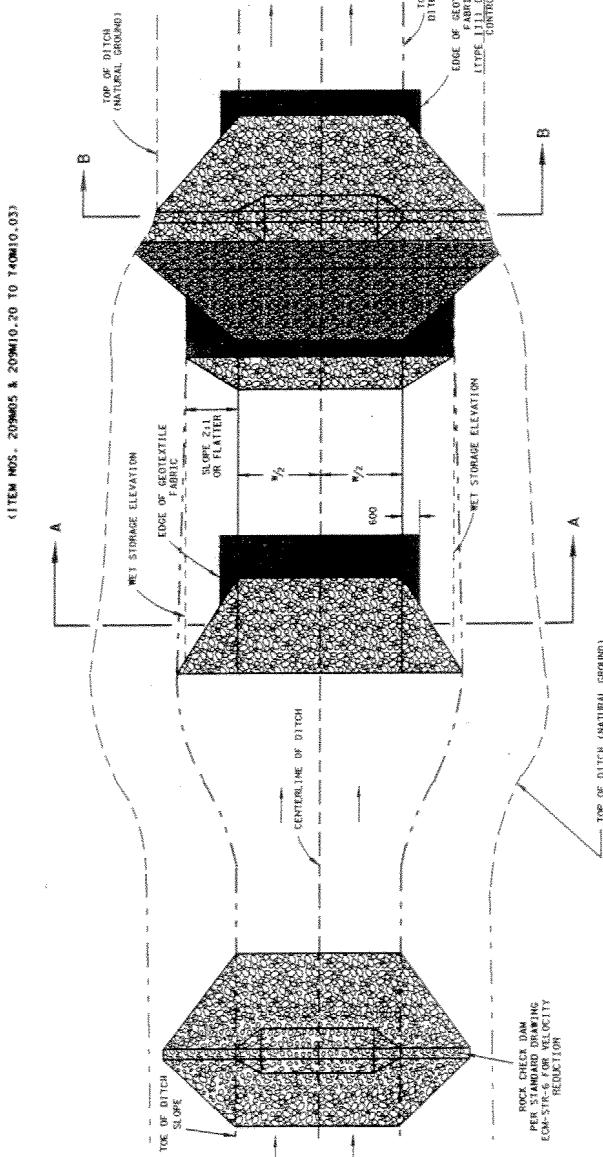
EROSION CONTROL PLAN LEGEND:
[Diagram showing symbols for different materials and structures]

WHEN DITCH TOE OR SLOPE OR TEE OF SLOPE C



TEMPORARY SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM

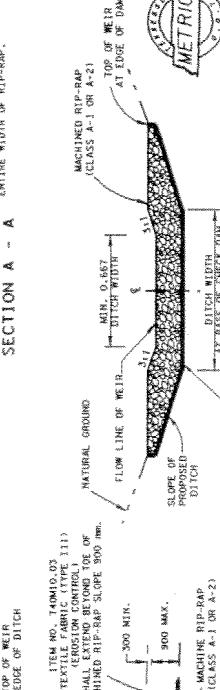
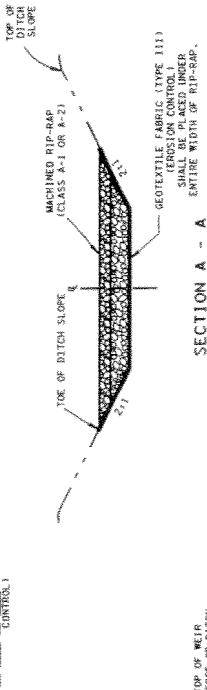
(ITEM NOS. 209405 & 209410-20 TO 240410-03)



REV. 11-1-95: CHANGED TO METRIC.
REV. 5-27-01: CHANGED ITEM NOS. 209405.00 THROUGH 209410.19 TO 209405.03.
REV. 9-5-01: CORRECTED NOTE REGARDING GEOTEXTILE FABRIC IN SECTION B-B.
REV. 12-9-02: CHANGED GENERAL NOTE.
REV. 1-22-03: CORRECTED GENERAL NOTE. GEOTEXTILE FABRIC ADDITIONAL TO PROFILE VIEW.
REV. 7-29-04: ADDED ROCK CHECK DAM AND GEOTEXTILE FABRIC IN SECTION B-B.
REV. 1-12-05: CHANGED GENERAL NOTE.
REV. 1-22-05: CORRECTED GENERAL NOTE. GEOTEXTILE FABRIC ADDITIONAL TO PROFILE VIEW.
REV. 7-29-05: ADDED ROCK CHECK DAM AND GEOTEXTILE FABRIC IN SECTION B-B.
GEOTEXTILE ASSTO RELEGATION M-208, EROSION CONTROL.
TEMPORARY SEDIMENT TRAP AND ROCK CHECK DAM ARE TO BE PLACED IN TWO OPEN ROCK TRENCHES, ONE ON EACH SIDE OF THE EXISTING DITCH. THE PAVING SHALL BE PAVED 100 MM UNDER ITEM NO. 209405.00 AND 100 MM OVER ITEM NO. 209410.19. THE PAVING SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TEMPORARY SEDIMENT TRAP.
SEDIMENT SHALL BE REMOVED FROM TEMPORARY SEDIMENT TRAPS WHEN IT HAS ACCUMULATED 20905 MM, SEDIMENT REMOVAL PER CUBIC METER.

GENERAL NOTES

- (A) THE DRAINAGE AREA FOR THE TEMPORARY SEDIMENT TRAP SHALL BE 1.2 NO OR LESS.
- (B) THE REINFORCED ROCK AT BOTH SPOTS.
- (C) THE CENTER OF THE ROCK SILT SCREEN MATT BE AT LEAST 200 MM AWAY FROM THE ROCK SPOTS.
- (D) THIS WILL ELLIMINATE THE ROCK-SILT FAILURE POINT WHERE THE ROCK, SILTY SCREEN AND NATURAL GROUND MERGE.
- (E) GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF THE STANDARD SPECIFICATION FOR GEOTEXTILES ASSTO RELEGATION M-208, EROSION CONTROL.
- (F) TEMPORARY SEDIMENT TRAP AND ROCK CHECK DAM ARE TO BE PLACED IN TWO OPEN ROCK TRENCHES, ONE ON EACH SIDE OF THE EXISTING DITCH. THE PAVING SHALL BE PAIVED 100 MM UNDER ITEM NO. 209405.00 AND 100 MM OVER ITEM NO. 209410.19. THE PAVING SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TEMPORARY SEDIMENT TRAP.
- (G) TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NO. 20905, SEDIMENT REMOVAL PER CUBIC METER.



REV. 11-1-95: CHANGED TO METRIC.
REV. 5-27-01: CHANGED ITEM NOS. 209405.00 THROUGH 209410.19 TO 209405.03.
REV. 9-5-01: CORRECTED NOTE REGARDING GEOTEXTILE FABRIC IN SECTION B-B.
REV. 12-9-02: CHANGED GENERAL NOTE.
REV. 1-22-03: CORRECTED GENERAL NOTE. GEOTEXTILE FABRIC ADDITIONAL TO PROFILE VIEW.
REV. 7-29-04: ADDED ROCK CHECK DAM AND GEOTEXTILE FABRIC IN SECTION B-B.
REV. 1-12-05: CHANGED GENERAL NOTE.
REV. 1-22-05: CORRECTED GENERAL NOTE. GEOTEXTILE FABRIC ADDITIONAL TO PROFILE VIEW.
REV. 7-29-05: ADDED ROCK CHECK DAM AND GEOTEXTILE FABRIC IN SECTION B-B.
GEOTEXTILE ASSTO RELEGATION M-208, EROSION CONTROL.
TEMPORARY SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM

EROSION CONTROL PLAN LEGEND:



TEMPORARY SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM

ECM-STR-7
111-1-95

<input type="checkbox"/> REV. 11-1-95, CHANGED TO METRIC.
<input type="checkbox"/> REV. 12-1-95, CHANGED HAVING NO. FROM ECR-STR-34 TO ECR-STR-34.
<input type="checkbox"/> REV. 1-9-96, CHANGED TO INCORPORATE SEAM IN ISOMETRIC VIEW, REMOVING ITEM REFERENCED FROM GENERAL NOTE.
<input type="checkbox"/> SIGHTS: 1 BLANKETS ARE NO LONGER USED.
<input type="checkbox"/> REV. 1-9-96, CHANGED GENERAL METRIC SCAM VIEW.

GENERAL NOTES FOR INSTALLATION DETAILS

- EROSION CONTROL BLANKETS SHALL BE LAID LOOSELY IN THE DIRECTION OF FLOW, WITH THE FIRST COURSE AT THE CENTERLINE OF THE CHANNEL, WHERE APPLICABLE, IN ORDER FOR THE BLANKET TO BE IN CONTACT WITH THE SOIL, LAY THE BLANKET LOOSELY, AVOIDING STRETCHING.
- (A) ANCHOR SLOTS: THE TOP OF THE BLANKET SHOULD BE "SLOTED IN" AT THE TOP OF THE SLOPE AND STAPLED IN PLACE WITH STAPLES 150 mm apart. THE SLOTS SHOULD BE 150 mm wide x 150 mm deep with the BLANKET STAPLED IN THE BOTTOM OF THE SLOT, THEN BACKFILLED, TAMPED AND SEALED.
- (B) LONGITUDINAL SEAMS: THE ADJACENT EDGES OF THE CHANNEL LINER SHOULD OVERLAP A MINIMUM OF 150 mm, WITH THE STAPLES CATCHING THE EDGES OF BOTH EROSION CONTROL BLANKETS.
- (C) SPLICE SEAM: WHEN SPLICES ARE NECESSARY, OVERLAP THE END A MINIMUM OF 150 mm IN THE DIRECTION OF WATER FLOW. STAGGER SPLICE SEAMS.
- (D) CHECK SLOTS: ESTABLISH CHECK SLOTS TRANSVERSE TO SLOPE EVERY 10 m. THE SLOTS SHOULD BE 150 mm wide x 150 mm deep. THE TOP OF THE DOWNSTREAM BLANKET SHALL BE SLOTTED IN, STAPLED IN, AND BURIED, TAMPED AND SEALED SIMILAR TO THE TOP ANCHOR SLOT. THE UPSTREAM BLANKET SHALL THEN COVER THE SLOT AND BE SEALED AS SHOWN.
- (E) TERMINAL FOLD: THE BOTTOM EDGE OF THE BLANKET SHALL BE TURNED UNDER A MINIMUM OF 100 mm, THEN STAPLED IN PLACE WITH STAPLES 225 mm apart.
- (F) TYPICAL STAPLES: STAPLES SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION FOR STAPLES, SECTION 918-13.
- (G) PAYMENT FOR EROSION CONTROL BLANKETS WILL BE MADE UNDER THE FOLLOWING ITEMS:
- RSOM42-02, EROSION CONTROL BLANKET (TYPE 311) PER SQUARE METER.
 RSOM42-03, EROSION CONTROL BLANKET (TYPE 311) PER SQUARE METER.
 RSOM42-04, EROSION CONTROL BLANKET (TYPE 311) PER SQUARE METER.

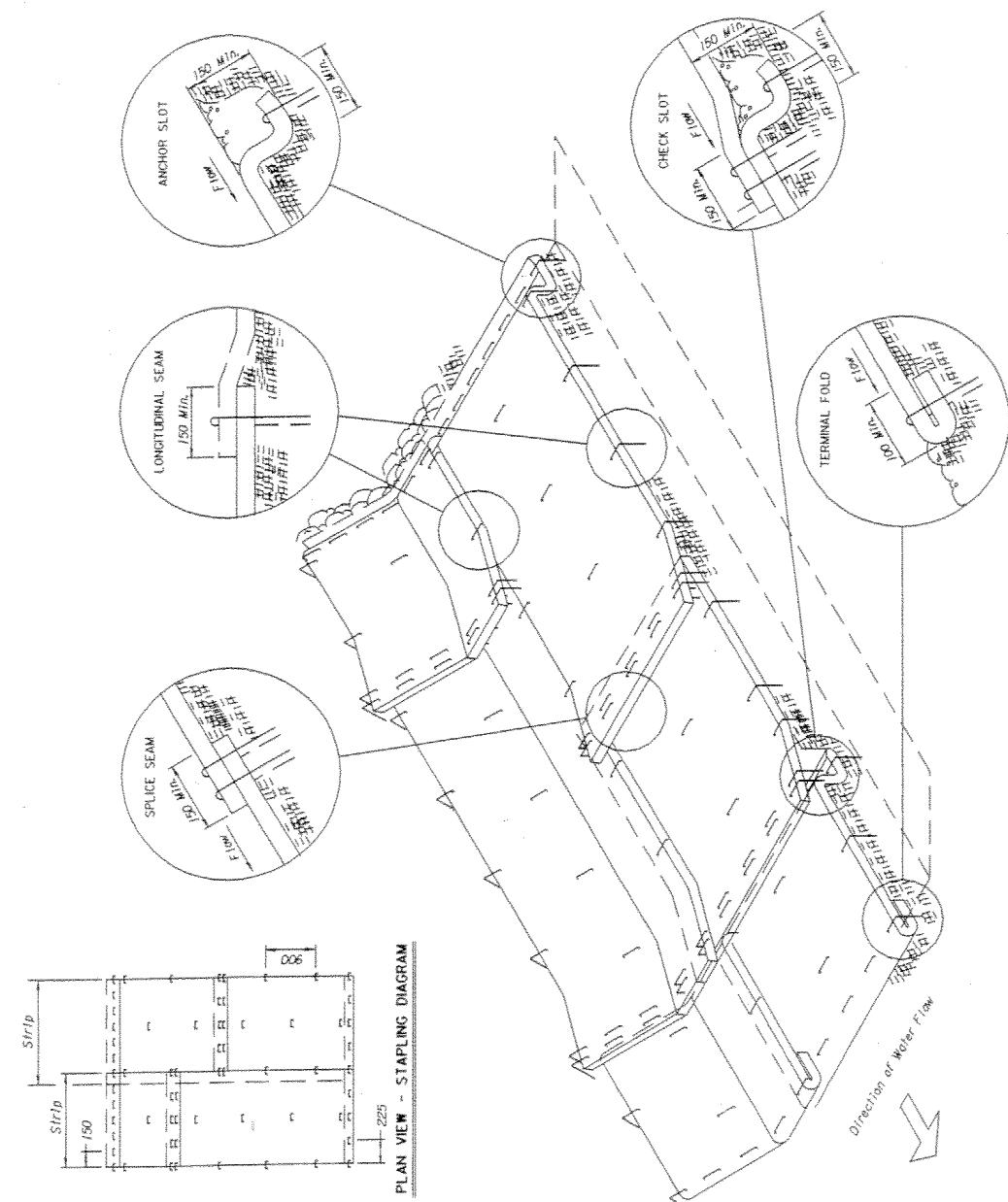


APPROVAL IS NOT REQUIRED.
 ALL NOTINGS IN THIS DRAWING ARE FOR INFORMATION ONLY.

APPROVAL IS REQUIRED.
 APPROVAL IS NOT REQUIRED.

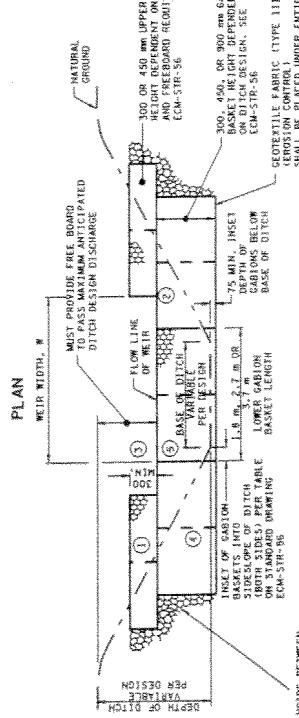
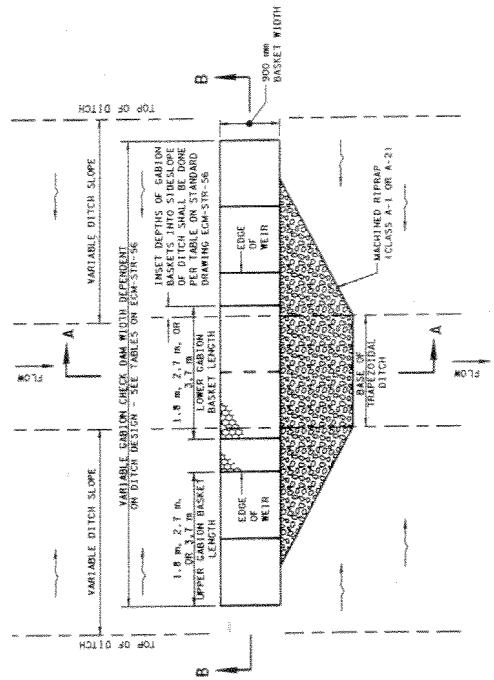
STATE OF TRANSPORTATION
 DEPARTMENT OF TRANSPORTATION
 INSTALLATION
 DETAIL FOR EROSION
 CONTROL BLANKETS

11-1-95 ECR-STR-34



TEMPORARY OR PERMANENT GABION CHECK DAM

(ITEM NO. 209M09-25)



SECTION A-A

AT WEIR

2 =

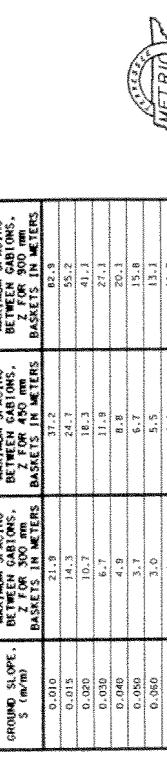
2 = THE DISTANCE SUCH THAT POINTS (2)

AND (1) ARE AT EQUAL ELEVATION

**ITEM 209M09-25
GEOTEXTILE FABRIC (TYPE 111)
LEDGES ON CONTROL LENGTH
SHALL BE PLACED UNDER ENTIRE
WIDTH OF CHECK DAM AND CONFORM
TO THE REQUIREMENTS PER TABLE
ON STANDARD DRAWING ECA-STR-56**

GABION CHECK DAM SPACING AT CENTER OF WEIR

**ITEM 209M09-25
GEOTEXTILE FABRIC (TYPE 111)
LEDGES ON CONTROL LENGTH
SHALL BE PLACED UNDER ENTIRE
WIDTH OF CHECK DAM AND CONFORM
TO THE REQUIREMENTS PER TABLE
ON STANDARD DRAWING ECA-STR-56**



SECTION B-B

**(1) HEIGHT OF UPPER GABION SHALL BE OF EQUAL
HEIGHT OR LESSER HEIGHT THAN LOWER GABION AND SHALL
NOT EXCEED 450 mm.**

**(2) VERTICAL JOINTS OF GABION BASKETS SHALL BE
STACKEDED.**

**(3) SIDE WITH TO CONTAIN THE 2TH/2HR STORM, CONTAIN
THE DISCHARGE WITHIN WEIR STRUCTURE WHERE
POSSIBLE.**

(4) DIAPHRAGMS SEPARATING INDIVIDUAL GABION CELLS.

**(5) BASKET-TO-BASKET CONNECTIONS SHALL BE AS
DIRECTED ON STD. DRW. ECA-STR-56 & ECA-STR-57.**

EROSION CONTROL PLAN LEGEND :



GABION CHECK DAM

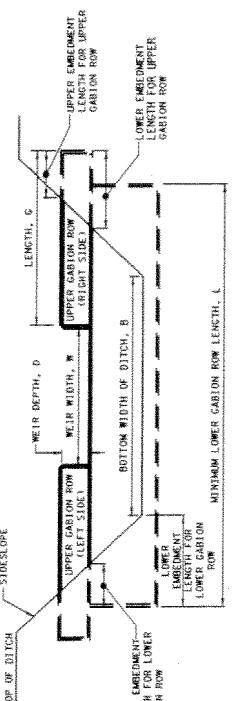
GABION CHECK DAM SPACING TABLE			
GROUND SLOPE, S (m/m)	MAXIMUM SPACING BETWEEN GABIONS, BASKETS IN METERS	MAXIMUM SPACING BETWEEN GABIONS, BASKETS IN METERS	MAXIMUM SPACING BETWEEN GABIONS, BASKETS IN METERS
0.010	21.9	31.2	31.2
0.015	16.3	24.7	24.7
0.020	10.7	18.3	18.3
0.030	6.7	11.9	27.1
0.040	4.9	8.8	20.1
0.050	3.7	6.7	15.8
0.060	3.0	5.5	13.1
0.070	*	4.6	11.3
0.080	*	4.0	9.8
0.090	*	3.4	6.5
0.100	*	3.0	7.6
0.110	**	**	6.7
0.120	**	**	6.1
0.130	**	**	5.8
0.140	**	**	5.2
0.150	**	**	4.9
0.200	**	**	3.4

* USE 450 OR 900 MILLIMETER GABIONS
** USE 380 MILLIMETER GABIONS

GABION CHECK DAM

ECA-STR-55

7-29-04



GABION CHECK DAM IN TRAPEZOIDAL DITCH

LENGTH AND EMBEDMENT FOR UPPER GABION ROW											
UPPER GABION ROW, 300 mm GABION HEIGHT						UPPER GABION ROW, 450 mm GABION HEIGHT					
ROTATION BUTTRESS OR DITCH, 0 METERS	LENGTH OF UPPER ROW, 0 METERS	LAYER THICKNESS, 0 METERS	EMBEDMENT DEPTH, 0 METERS	EMBEDMENT DEPTH, 0 METERS	UPPER GABION ROW, 300 MM HIGHT	UPPER GABION ROW, 450 MM HIGHT	SHORELINE SLOPE	SHORELINE SLOPE	EMBEDMENT DEPTH, 0 METERS	EMBEDMENT DEPTH, 0 METERS	UPPER GABION ROW, 450 MM HIGHT
2.11	3.13	0.11	2.71	3.41	0.41	2.71	0.41	2.11	3.13	0.41	2.71
0.815	0.815	0.12	1.829	0.640	1.372	0.203	0.457	0.151	2.143	3.141	0.541
2.128	0.916	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
1.224	0.916	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
1.828	0.916	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
2.134	0.916	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
2.246	0.916	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
2.143	0.916	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
3.048	0.815	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
3.648	0.815	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541
4.372	0.916	0.12	1.829	0.640	1.372	0.203	0.457	0.152	2.143	3.141	0.541

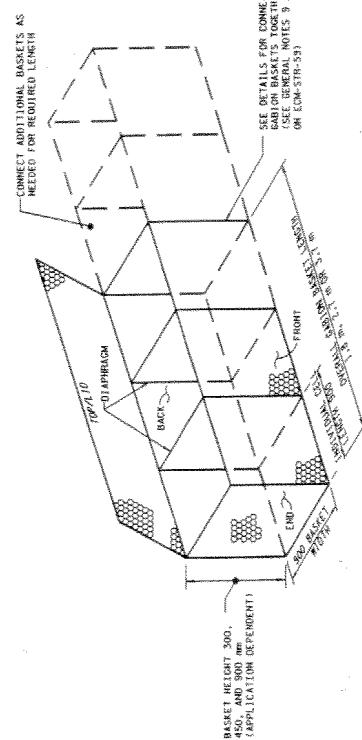
LENGTH AND EMBEDMENT FOR LOWER GABION ROW

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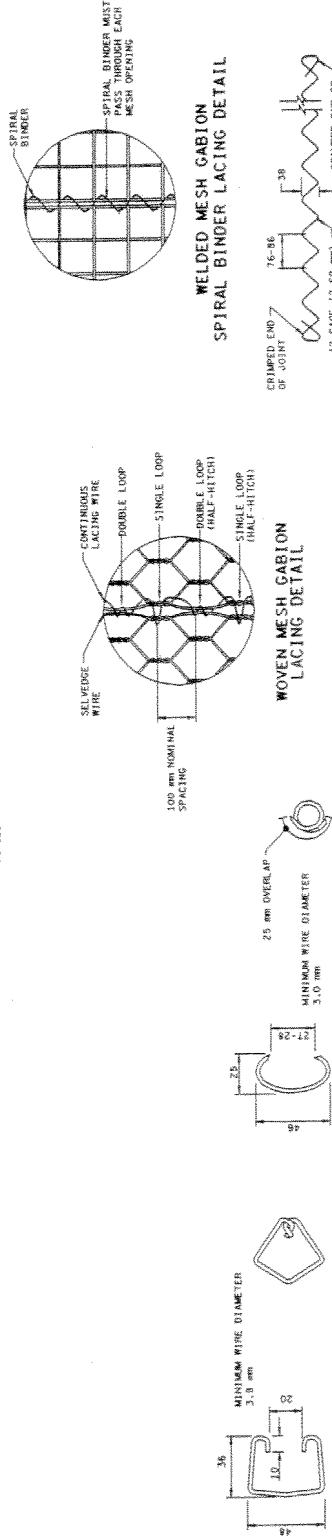


**GABION CHECK
DAM DESIGN
TABLES**

EXAMPLE BELOW SHOWS 3-CELLED, 2.7 METER LONG GABION BASKET WITH ATTACHED 1.8 METER LONG GABION, ACTUAL GABION LENGTHS WILL VARY, BUT SHALL BE MULTIPLES 1, 2, 3, OR 4! OF THE 0.9 METER BASKET WIDTH.



ISOMETRIC - TYPICAL GABION

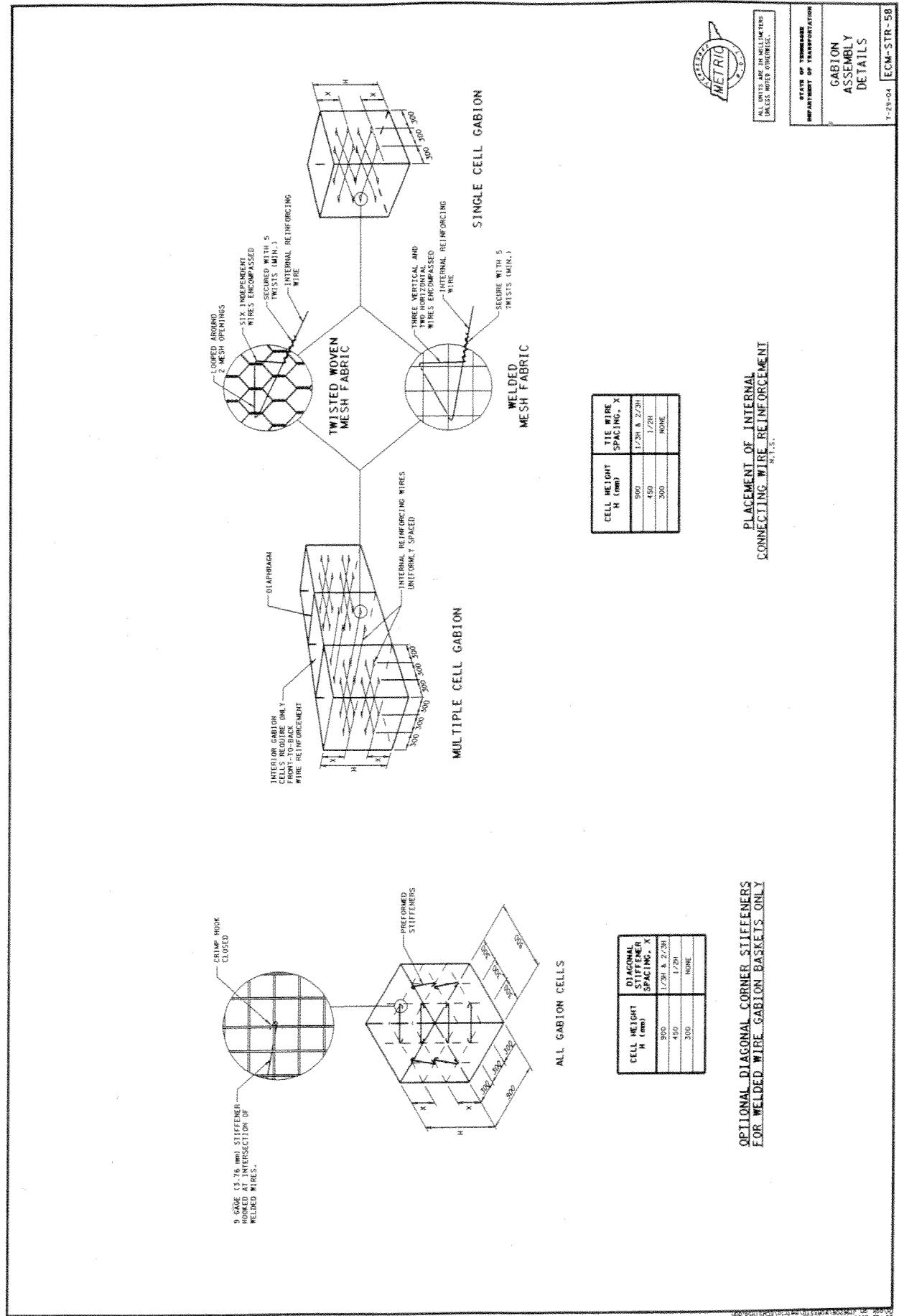


TYPE 1 FASTENER INTERLOCKING WIRE
TYPE 2 FASTENER OVERAPPING RING
TYPE 3 FASTENER LACING WIRE
TYPE 4 FASTENER SPIRAL BINDER

ALL UNITS ARE IN MILLIMETERS
UNLESS NOTED OTHERWISE.
TYPE OF FENCELINE
DEPENDANT ON TRANSPORTATION
GABION ASSEMBLY DETAILS
7-29-04 ECM-STR-57

TO BE USED WITH WELDED MESH ONLY

NOTE: DIMENSIONS SHOWN ARE NOMINAL.
INSTALL TYPE 1 OR TYPE 2 FASTENERS AT EACH
MESH OPENING ALONG GABION BASKET EDGE.



GABION CHECK DAM COMPONENT PROPERTIES *

TYPE OF WIRE	MESH SIZE (mm)	U.S. 3.5 WIRE (mm)	GALVANIZED COATING (kg/m ²)	TOTAL DIAMETER (mm)
WIRE TWISTED	B3 X 114 (2.63 mm)	12	0.24	2.67
WIRE MESH	---	12	0.24	2.67
WELDED WIRE MESH	76 X 76 (2.69 mm)	12	0.24	2.67

* ALL MATERIALS SHALL BE STAINLESS STEEL EXCEPT AS NOTED.

SEPARATION GEOTEXTILE SPECIFICATIONS

FABRIC TYPE & NON-WOVEN, NEEDLE-PUNCHED GEOTEXTILE	FABRIC PROPERTY	ASTM TEST METHOD	MINIMUM AVERAGEROLL VALUES (MM/S)
---	---	---	---
ASTM D432	ASTM D376	ASTM D376	10
2.912 kN/cm ²	2.912 kN/cm ²	2.912 kN/cm ²	1.30
2500	2500	2500	1.30

WATER FLOW	ASTM D4355	TEST AT 500 HOURS
2360 L/MIN/m ²	2360 L/MIN/m ²	2360 L/MIN/m ²

ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE INDICATED

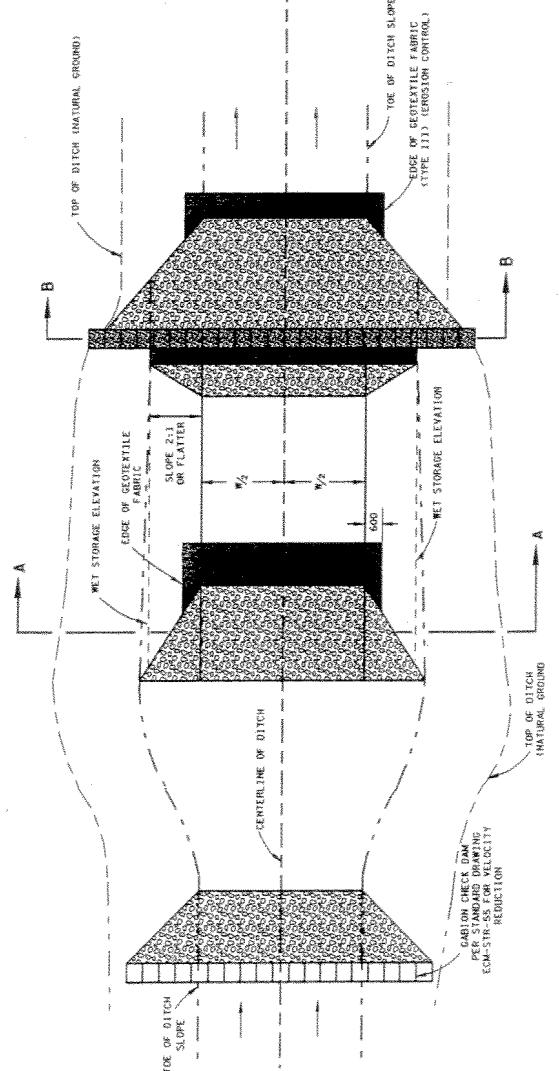
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION	GABION CHECK DAM GENERAL NOTES AND COMPONENT PROPERTIES
7-29-04	ECM-STR-59

GABION CHECK DAM GENERAL NOTES (CONT.)

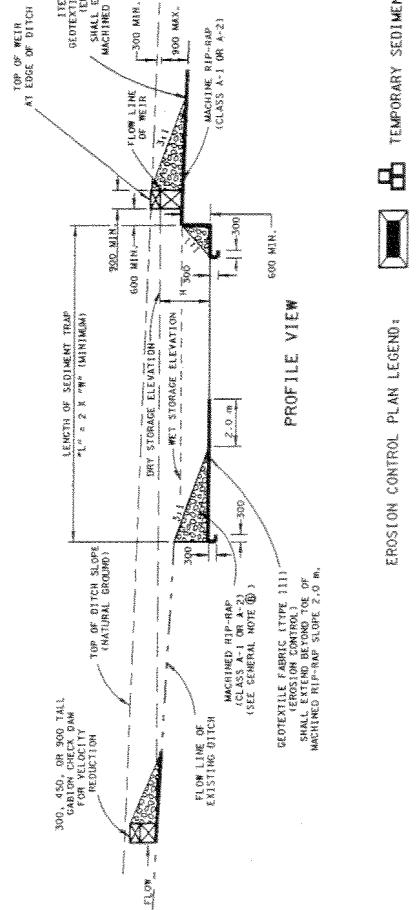
15. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE VERTICAL JOINTS BETWEEN GABION BASKET UNITS OR ADJACENT LAYERS OR TIERS, ALONG THE LENGTH OF THE CHECK DAM, SHALL BE STAGED BY A MINIMUM OF ONE SEWER.
14. FILLING OPERATION
- A. FOR REINFORCEMENT, INTERNAL CONNECTING WIRE SHALL BE PLACED IN EACH UNREINFORCED GABION CELL AND TWO INTERNAL CONNECTING WIRE SHALL BE PLACED TWO ACROSS THE LENGTH OF THE GABION AND TWO ACROSS THE LENGTH CONCURRENTLY WITH ROCK PLACEMENT, AT THE SPECIFIED DEPTH INTERVAL, SHOWN ON STANDARD DRAFTING SHEET 514. IN WOVEN MESH GABIONS THESE REINFORCING WIRES SHALL BE EVENLY SPACED ALONG THE FRONT FACE AND CONNECTING TO THE BACK WIRE END FACE.
- B. IN WELDED GABIONS, INTERNAL CONNECTING WIRES SHALL BE LOOSED AROUND AND TIED OFF AFTER LOADING.
- B. IN WELDED GABIONS, OPTIONAL CORNER STIFFENERS MAY BE USED IN LIEU OF INTERNAL CONNECTING WIRE REINFORCEMENT. WHEN USED, DIAGONAL STIFFENERS SHALL BE PLACED ACROSS THE CORNERS OF THE GABIONS AT 45°. FROM CORNERS, STIFFENERS SHALL BE PLACED IN A LINE, DRAUGHTED AS SHOWN ON THE DRAWINGS.
- C. THE GABIONS SHALL BE CAREFULLY FILLED WITH ROCK, EITHER BY MACHINE OR HAND, FIRST METHODS, ENDS UP, AVOIDING BULGES AND PROTRUSIONS, WITH A MAXIMUM ROCK SIZE THAT MATCHES THE SIZE OF THE GABION OPENINGS. THE ROCK SHALL NOT EXCEED 150 MM IN ANY DIRECTION. THE ROCK PLACED IN ANY ONE CELL DOES NOT EXCEED THE DEPTH OF ROCK IN ANY ADJACENT CELL BY MORE THAN 76 MILLIMETERS ALONG THE EXPOSED FACE; THE OUTER LAYER OF STONE SHALL BE CAREFULLY LACED AND STRUNG, THE GABION LID SHALL BE WRAPPED WITH ALTERNATING SINGLE AND DOUBLE HALO BUILTHOTS IN THE MESH OPENINGS.
- D. THE LAST LAYER OF ROCK SHALL BE UNIFORMLY LEVELED TO THE TOP EDGES OF THE GABIONS. LIDS SHALL BE STRETCHED TIGHT OVER THE ROCK, FOLLOWING ON APPROVED AND CLOSING TOOLS AS NECESSARY. THE USE OF HAMMERS, CHISELS, Hammers AND HAMMER HAMMERS, CHISEL HAMMERS, AND HAMMER CHISELS IS PROHIBITED. THE GABION LID SHALL BE STRETCHED AND THEN BE STRETCHED TO THE SURFACE. THE GABION LID SHALL MEET THE REINFORCING WIRE AT THE SIDES, EDGES, AND DIAPHRAGMS, INTERLOCKING WHERE OVERAPPING RING FASTENERS OR LACING WIRE WRAPPED WITH ALTERNATING SINGLE AND DOUBLE HALO BUILTHOTS.
- E. CARE SHOULD BE TAKEN WHEN REMOVING THE GABION BASKET'S WALL. THE GABION BASKET'S WALL NOT BE DAMAGED OR BROKEN.
- F. GABION CHECK DAMS SHALL BE BID FOR UNDER ITEM NO. 202M09-25, GABION CHECK DAMS PER CUBIC METER, PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, EXCAVATION, GEOTEXTILE AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF THE GABION CHECK DAMS.
- G. GABION CHECK DAMS SHALL BE REMOVED FROM BEHIND THE GABION CHECK DAM WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE DAM AND PAID FOR UNDER ITEM NO. 203M05, SEDIMENT REMOVAL PER CUBIC METER.
- H. GABION CHECK DAMS SHALL BE BID FOR UNDER ITEM NO. 202M09-27, GABION CHECK DAMS PER CUBIC METER, PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, EXCAVATION, GEOTEXTILE AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF THE GABION CHECK DAMS.
- I. GABION CHECK DAMS SHALL BE REMOVED FROM BEHIND THE GABION CHECK DAM WHEN IT HAS ACCUMULATED ONE-HALF THE ORIGINAL HEIGHT OF THE DAM AND PAID FOR UNDER ITEM NO. 203M05, SEDIMENT REMOVAL PER CUBIC METER.
- J. ASSEMBLY - ROTATE THE GABION PANEL INTO POSITION AND JOIN THE REPTILIC CORNER WITH FASTENERS FOR GABION BASKETS. MAKE SURE THAT THE REPTILIC IS TURNED 180° TO 132 MILLIMETERS, WHERE REPTILIC FASTENERS ARE USED FOR WELDED WIRE MESH GABIONS. THE SAME REPTILIC AND COATINGS THIS GABION ASSEMBLY AS SPECIFIED FOR THE GABIONS.
- K. FOUNDATION PREPARATION - SURFACE irregularities, loose material, vegetation, and all foreign matter shall be removed from foundations.
- L. PLACEMENT - PLACE THE EMPTY GABIONS ON THE GUNNAR LOK AND INTERLOCKING REPTILIC fasteners for gabion baskets. Make sure that the Reptilic is turned 180° to 132 millimeters, where Reptilic fasteners are used for welded-wire mesh gabions. spiral fasteners are used for the interconnection of welded-mesh gabions. The same stabilizing procedures to install them. In the case of woven-mesh gabions, use a similar process. All the required tensioning must be met before backfilling.
- M. INTEGRITY - PLACE THE GABION BASKET INTO POSITION AND JOIN THE REPTILIC CORNER WITH FASTENERS FOR GABION BASKETS. MAKE SURE THAT THE REPTILIC IS TURNED 180° TO 132 MILLIMETERS, WHERE REPTILIC FASTENERS ARE USED FOR WELDED WIRE MESH GABIONS. SPIRAL FASTENERS ARE COMMONLY USED FOR THE ASSEMBLY AND INTERCONNECTION OF WELDED-MESH GABIONS. REPTILIC fasteners are used to prevent backfilling. Lacing may be used as needed to supplement the interconnection of welded-wire mesh gabions, and the closing of loks.
- N. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- O. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- P. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- Q. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- R. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- S. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- T. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- U. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- V. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- W. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- X. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- Y. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.
- Z. ALL REPTILIC FASTENERS MUST BE USED AS SPECIFIED FOR THE GABION BASKET EDITIONS 0.915 METERS.

TEMPORARY SEDIMENT TRAP WITH TEMPORARY GABION CHECK DAM

ITEM NOS. 209M05, 209M09, 25 & 74M00, 031



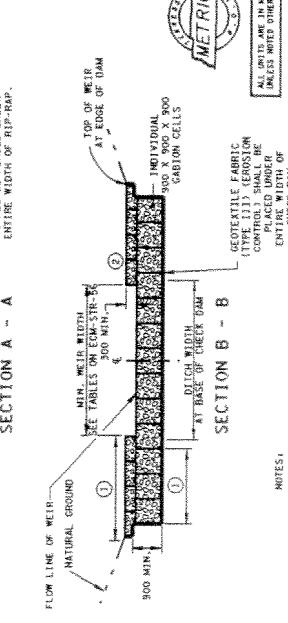
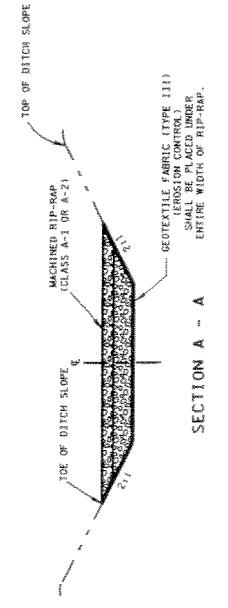
PLAN VIEW



PROFILE VIEW

GENERAL NOTES

- (4) THE BRIDGING AREA FOR THE TEMPORARY SEDIMENT TRAP SHALL BE 1:2 NO OR LESS.
- (5) THE BELOW GROWING TEMPORARY SEDIMENT TRAP IS LOCATED IN A DITCH LINE AND WILL REQUIRE DUMPED ROCK AT BOTH ENDS.
- (6) THE CENTER OF THE GABION WEIR MUST BE AT LEAST 200 MM LOWER THAN THE OUTER EDGES. THIS WILL ELIMINATE THE BASKET - SOIL FAILURE POINT WHERE THE GABION CHECK DAM AND NATURAL GROUND MEET.
- (7) GEOTEXTILE FABRIC SMALL WEET REQUIREMENTS OF THE STANDARD SPECIFICATION FOR GEOTEXTILES ASSIST IN EROSION CONTROL.
- (8) TEMPORARY SEDIMENT TRAPS AND THEIR ATTACHED TEMPORARY GABION CHECK DAMS SHALL BE PAID FOR UNDER ITEM NO. 209M10-20 TEMPORARY SEDIMENT TRAP PER CUBIC METER. PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TEMPORARY SEDIMENT TRAP.
- (9) SEDIMENT SHALL BE REMOVED FROM TEMPORARY SEDIMENT TRAPS WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NO. 209M05, SEDIMENT REMOVAL PER CUBIC METER.
- (10) GABION CHECK DAMS SHALL BE BUD FOR UNDER ITEM NO. 209M05-25, GABION CHECK DAMS PER CUBIC METER. PAYMENT SHALL INCLUDE ALL MATERIALS, EQUIPMENT, EXCAVATION, GEOTEXTILE AND LABOR NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF THE GABION CHECK DAMS.



NOTES:	
(1)	OVERALL GABION BASKET LENGTHS SHALL BE 1.8 m., 2.7 m., OR 3.7 m.
(2)	SEE ECN-STR-55 AND ECN-STR-57 FOR GABION ASSEMBLY DETAILS
SECTION B - B	

TEMPORARY SEDIMENT TRAP WITH TEMPORARY GABION CHECK DAM

EROSION CONTROL PLAN LEGEND :



TEMPORARY SEDIMENT TRAP WITH TEMPORARY GABION CHECK DAM

7-28-04 ECM-STR-60