

3/17/2023 7:23:15 AM P:\StandDraw\DESIGN STANDARDS\Standards Drawings\Standard Roadway Drawings - CURRENT\In Progress\10-108.00 Erosion Prevention and Sediment Control IP\180.02 Slope Devices IP\ECSTR3C-2

SILT FENCE WITH WIRE BACKING FABRIC SPECIFICATIONS	
FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN MONOFILAMENT (PER AASHTO M288)
APPARENT OPENING SIZE (ASTM D4751)	# 70 TO # 100 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 18 GPM/FT ²
TENSILE STRENGTH (ASTM D4632)	≥ 310 LB. (WARP DIRECTION) X 200 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D4355)	≥ 90%
BURST STRENGTH (ASTM D3786)	≥ 400 PSI
PUNCTURE STRENGTH (ASTM D4833)	≥ 105 LB.
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 100 LB. (WARP DIRECTION) X 60 LB. (FILL DIRECTION)

REV. 12-18-03: MODIFIED TABLE 2 AND GENERAL NOTE (E)

REV. 7-29-04: CHANGED VALUES IN TABLE 2 FROM MEAN TO MARV VALUES.

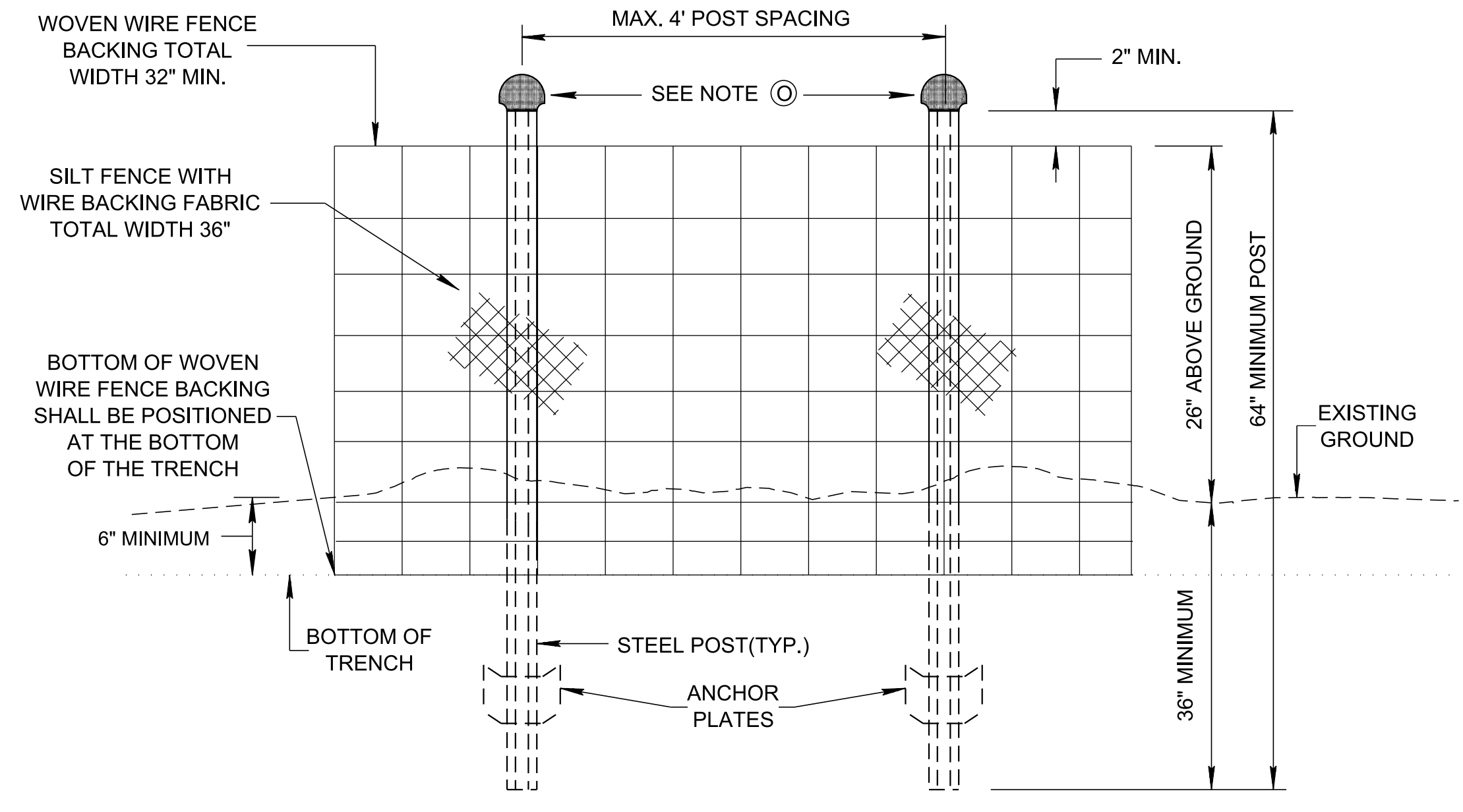
REV. 4-15-06: MODIFIED FABRIC HEIGHT. ADDED NOTES (J) AND (K). REVISED TABLE TITLE. REORDERED GENERAL NOTES. REFORMATTED SHEET. REVISED NOTES. MISC. EDITS TO DRAWING.

REV. 4-1-08: REMOVED TEMPORARY REFERENCE, REVISED NOTES, AND MISC. EDITS TO DRAWING.

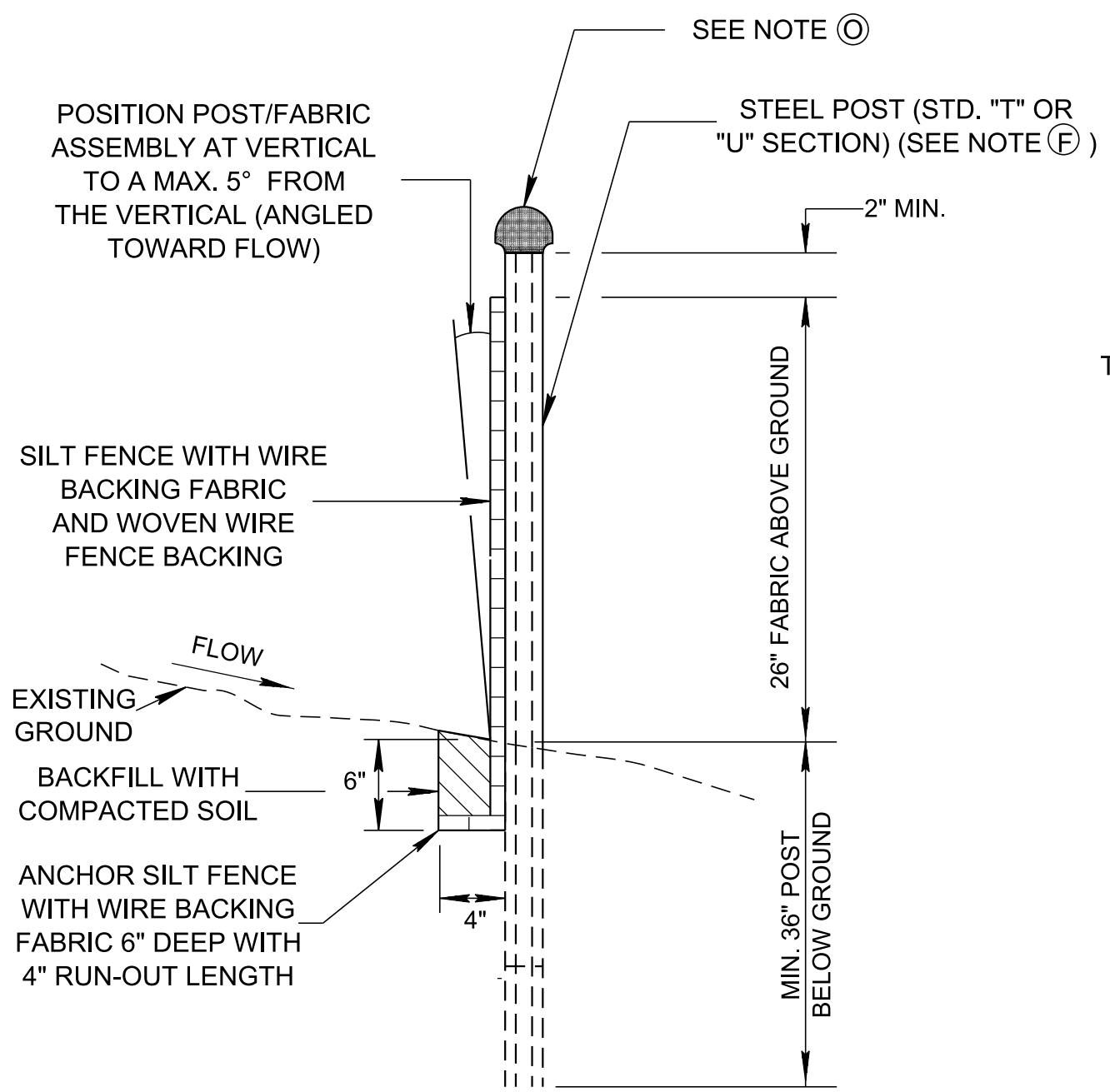
REV. 8-1-12: MINOR EDITS TO GENERAL NOTES.

REV. 06-28-2019: ADDED NOTE (O). REDREW SHEET.

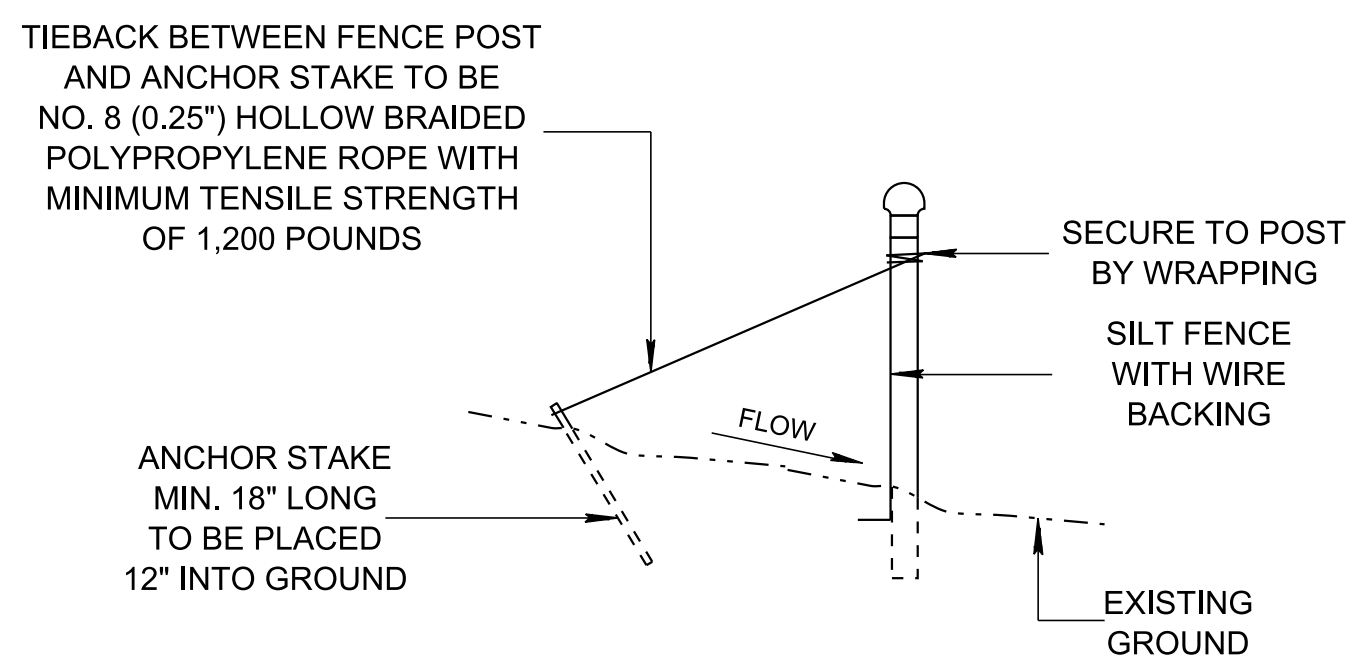
REV. 03-01-2023: REVISED GENERAL NOTE (O). ADDED METAL POST CAPS LEGEND.



ELEVATION VIEW



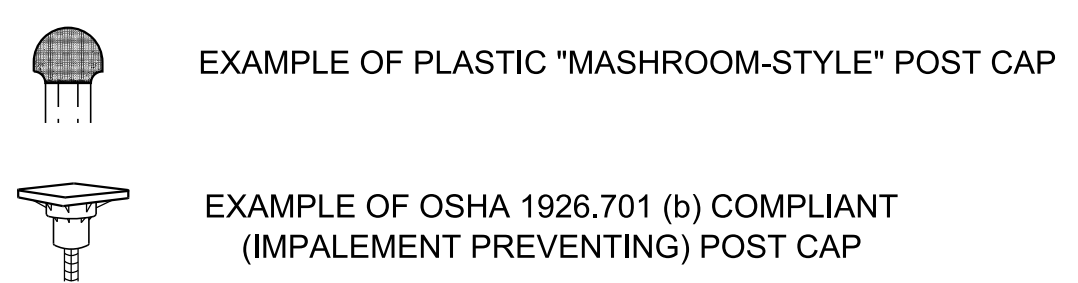
SECTIONAL VIEW



SILT FENCE TIEBACK

(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS. COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE WITH WIRE BACKING)

METAL POST CAPS



SILT FENCE WITH WIRE BACKING GENERAL NOTES

- (A) SILT FENCE WITH WIRE BACKING IS USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. USE SILT FENCE WITH WIRE BACKING UP-GRADE TO, AND ALONG THE PERIMETER OF STREAMS, WETLANDS, PONDS, SPRINGS, OR OTHER NATURAL WATER RESOURCES LOCATED WITHIN OR ADJACENT TO THE PROJECT RIGHT-OF-WAY AND AT LARGE FILL SLOPES.
- (B) THE MAXIMUM DRAINAGE AREA SIZE FOR CONTINUOUS SILT FENCE WITH BACKING SHALL BE 1 ACRE PER 150 LINEAR FEET OF FENCE LENGTH. MAXIMUM SLOPE LENGTH BEHIND FENCE ON UP SLOPE SIDE SHALL BE 290 FEET (AS MEASURED ALONG THE GROUND SURFACE).
- (C) WHEN INSTALLED AT THE TOE OF A SLOPE SILT FENCE WITH WIRE BACKING SHOULD BE PLACED 5 FEET TO 10 FEET AWAY FROM THE TOE TO ALLOW SPACE FOR PONDING OF WATER, COLLECTION OF SEDIMENT, AND EASE OF MAINTENANCE AND REMOVAL.
- (D) WHEN TWO SECTIONS OF SILT FENCE WITH WIRE BACKING 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 WHEN EVIDENCE OF FILTER CLOGGING IS OBSERVED.
- (F) STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH GRADE WEATHER RESISTANT STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED TO AID IN THE ATTACHMENT OF THE WIRE BACKING. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
- (G) 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. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST SIX PER POST.
- (H) FABRIC SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE BACKING WITH THE TIES SPACED EVERY 24 INCHES ALONG TOP AND MIDSECTION.
- (I) WOVEN WIRE FENCE BACKING SHALL MEET THE REQUIREMENTS FOR AASHTO SPECIFICATIONS.
- (J) SILT FENCE WITH BACKING SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOURS. THE BOTTOM OF THE FENCE AT GROUND LINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS ONE HALF PERCENT (± 0.5%). THE END OF A ROW OF SILT FENCE WITH WIRE BACKING SHOULD BE TURNED UP SLOPE FORMING A J-HOOK TO FILTER ANY CONCENTRATED FLOW BEHIND FENCE.
- (K) FOR TRENCH-BASED INSTALLATIONS, SILT FENCING WITH WIRE BACKING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
 1. EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND 6 INCHES DEEP. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLODS FROM THE TRENCH.
 2. DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL.
 3. ATTACH WOVEN WIRE FENCE BACKING TO POSTS AND FABRIC TO THE WIRE BACKING USING WIRE TIES. SPACING AND DENSITY OF TIES SHALL BE INSTALLED ACCORDING TO NOTES (G) AND (H).
 4. INSTALL FABRIC IN TRENCH.
 5. BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
 6. COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
- (L) ONLY SILT FENCE WITH WIRE BACKING FABRIC LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED. ANY PRODUCTS LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED.
- (M) SILT FENCE WITH WIRE BACKING SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBER:

209-08.02, TEMPORARY SILT FENCE (WITH BACKING), L.F.

PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE SILT FENCE WITH WIRE BACKING.
- (N) SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WITH WIRE BACKING WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-05, SEDIMENT REMOVAL PER C.Y.
- (O) OSHA 1926.701(B) COMPLIANT (IMPALEMENT PREVENTING) POST CAPS SHALL BE REQUIRED FOR ANY METAL POST ABOVE WHICH PEOPLE MAY BE WORKING AND THE RISK OF FALLING DOWN ONTO THE POST IS PRESENT; REGARDLESS OF HOW HIGH THE POST STICKS UP OUT OF THE GROUND. PLASTIC "MUSHROOM-STYLE" POST CAPS SHALL BE REQUIRED FOR ANY METAL POST WITH AN INSTALLED HEIGHT LESS THAN 36" ABOVE THE GROUND AND WHEN THERE ARE NO WORKERS CONDUCTING WORK ABOVE THE POSTS. NO CAPS SHALL BE REQUIRED FOR METAL POSTS WITH AN INSTALLED HEIGHT OF 36" OR GREATER AND WHEN THERE ARE NO WORKERS CONDUCTING WORK ABOVE THE POSTS. ALL CAPS SHALL BE ORANGE OR YELLOW TO ENHANCE VISIBILITY. WHEN REQUIRED, PAYMENT OF POST CAPS SHALL BE INCLUDED IN THE TOTAL COST OF SILT FENCE.

EROSION CONTROL PLAN LEGEND: * SFB * SFB * SFB *

SILT FENCE WITH WIRE BACKING

NOT TO SCALE

APPROVED BY FHWA (ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

SILT FENCE WITH WIRE BACKING

12-18-2002 EC-STR-3C