



- REV. 12-18-03: MODIFIED SPACING FOR ENHANCED SILT FENCE DETAIL AND ADDED SUPPORTING TABLE. MODIFIED TABLE 4 AND GENERAL NOTES.
- REV. 3-15-04: CHANGED PLANS LEGEND SYMBOL.
- REV. 4-15-06: ADDED OVERFLOW WIER, SECTION B-B, REVISED TABLE TITLE, REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING, CHANGED PLAN SYMBOL, CHANGED DRAWING NAME.
- REV. 4-1-08: REMOVED TEMPORARY REFERENCE, MISC. EDITS TO DRAWING, CHANGED DRAWING NAME, REVISED GENERAL NOTES.
- REV. 1-1-10: MOVED SPACING DETAILS TO EC-STR-4B. REVISED GENERAL NOTES.

PLAN VIEW

ENHANCED SILT FENCE CHECK GENERAL NOTES

LIMITS OF FLOW										
WIDTH OF DITCH BOTTOM (FT) SEE NOTE (E)	② TOTAL ENHANCED SILT FENCE CHECK LENGTH 2L (LENGTH L) WITHIN FLAT-BOTTOM ZONE OF DITCH, (FT)	X ₁ OR X ₂ (FT)			TOTAL AVAILABLE SURFACE AREA OF FABRIC IN DITCH AT 18 INCHES OF FLOW DEPTH (FT ²)			① MAXIMUM ALLOWABLE PEAK FLOW (CFS)		
		2:1	3:1	4:1	2:1 SIDESLOPE	3:1 SIDESLOPE	4:1 SIDESLOPE	2:1 SIDESLOPE	3:1 SIDESLOPE	4:1 SIDESLOPE
3	4.2 (2.1)	4.2	6.4	8.5	12.6	15.8	19.0	4.6	5.5	6.4
4	5.7 (2.9)	4.2	6.4	8.5	14.9	18.0	21.2	5.6	6.5	7.4
5	7.0 (3.5)	4.2	6.4	8.5	16.8	20.0	23.2	6.4	7.3	8.3
6	8.5 (4.3)	4.2	6.4	8.5	19.1	22.2	25.4	7.4	8.3	9.2
7	9.9 (5.0)	4.2	6.4	8.5	21.2	24.3	27.5	8.3	9.2	10.1
8	11.3 (5.7)	4.2	6.4	8.5	23.3	26.4	29.6	9.2	10.1	11.1
9	12.7 (6.4)	4.2	6.4	8.5	25.4	28.5	31.7	10.1	11.0	12.0
10	14.1 (7.1)	4.2	6.4	8.5	27.5	30.6	33.8	11.0	12.0	12.9
12	17.0 (8.5)	4.2	6.4	8.5	31.8	35.0	38.2	12.9	13.8	14.8
15	21.2 (10.6)	4.2	6.4	8.5	38.1	41.3	44.5	15.7	16.6	17.5

① BASED ON 110 GPM/FT² (0.02 INCHES/SEC PERMEABILITY) ENHANCED SILT FENCE DITCH CHECK FABRIC AND TRAPEZOIDAL DITCH CROSS SECTION. SEE STANDARD DRAWING EC-STR-3D FOR FABRIC SPECIFICATIONS. A HEAD OF 18 INCHES BEHIND THE FENCE WAS USED TO DETERMINE MAXIMUM ALLOWABLE DESIGN PEAK FLOW THROUGH THE FILTER FABRIC. ALLOWABLE FLOWS DO NOT INCLUDE HYDRAULIC REDUCTION DUE TO ACCUMULATION OF CAPTURED SOIL PARTICLES ON THE FABRIC SURFACE AREA.

② THIS LENGTH IS TO BE ADDED TO CALCULATED LENGTHS X₁ AND X₂. LENGTH Y₁ AND Y₂ ARE BASED ON PERPENDICULAR SLOPE LENGTHS TO A POINT WHERE THE BASE OF POST ENTERING THE GROUND IS AT THE SAME ELEVATION AS A POINT 18 INCHES ABOVE THE GROUND AT THE LOW POINT OF THE DITCH. LENGTHS X₁ AND X₂ ARE CALCULATED BY MULTIPLYING THE LENGTHS OF SLOPE Y₁ OR Y₂ AT EACH INDIVIDUAL LOCATION BY 1.414.

- (A) ENHANCED SILT FENCE CHECKS ARE USED TO REMOVE SUSPENDED SEDIMENTS FROM STORM WATER FLOW VIA SETTLING AND FILTRATION. THEY ARE ALSO USED FOR VELOCITY REDUCTION. ENHANCED SILT FENCE CHECKS SHOULD NOT BE PLACED IN STREAMS OR OTHER NATURAL WATER RESOURCES.
- (B) A DITCH WITH A TRAPEZOIDAL CROSS-SECTION IS ASSUMED WITH SIDE SLOPES AS NOTED.
- (C) CHECK LENGTH DESIGNATED IN THE "LIMITS OF FLOW" TABLE ONLY INCLUDES THE LENGTH OF FENCE STAKED WITHIN THE BOTTOM WIDTH OF DITCH (2L).
- (D) SELECT A DITCH BOTTOM WIDTH FROM THE "LIMITS OF FLOW" TABLE SUCH THAT THE MAXIMUM ALLOWABLE DESIGN PEAK FLOW OBTAINED FROM THE APPROPRIATE COLUMN AT THE RIGHT SIDE OF THE TABLE IS EQUAL TO OR GREATER THAN THE 2-YEAR, 24-HOUR FLOW RATE AT THE CHECK. IF THE SITE DRAINS TO A SEDIMENT-IMPAIRED OR HIGH-QUALITY STREAM, THE FLOW OBTAINED FROM THE TABLE MUST BE EQUAL TO OR GREATER THAN THE 5-YEAR, 24-HOUR FLOW RATE. FLOWS IN EXCESS OF THESE VALUES MAY BE PASSED OVER THE WEIR.
- (E) IT MAY BE NECESSARY TO FLATTEN THE DITCH SIDE SLOPES AND/OR WIDEN THE DITCH BOTTOM WIDTH IN THE VICINITY OF THE CHECK IN ORDER TO ACHIEVE THE SURFACE AREA OF FABRIC REQUIRED FOR THE CHECK. REFER TO EC-STR-4B.
- (F) THE SPACING OF ENHANCED SILT FENCE CHECKS ALONG A DITCH SHOULD BE BASED ON A COMBINATION OF HYDRAULIC PROPERTIES OF THE FENCE MATERIAL, LIMITS OF FLOW TABLE, AND THE SPACING TABLE (EC-STR-4B).
- (G) THE FLOW VALUES IN THE LIMITS OF FLOW TABLE ASSUME NO CLOGGING OF THE ENHANCED SILT FENCE CHECK FABRIC SURFACE. IN ORDER TO INSURE MINIMAL INFLUENCE FROM CLOGGING, ENHANCED SILT FENCE CHECKS SHOULD BE REGULARLY CLEANED BY DRY BRUSHING AND/OR PRESSURE WASHING THE FABRIC SURFACE.
- (H) FOR INSTALLATION DETAILS FOR ENHANCED SILT FENCE SEE STANDARD DRAWINGS EC-STR-3D AND EC-STR-3E.
- (I) UPON REMOVAL OF THE ENHANCED SILT FENCE CHECK THE AREA BENEATH THE ENHANCED SILT FENCE CHECK LOCATION SHOULD BE IMMEDIATELY COVERED WITH SEEDING AND EROSION CONTROL BLANKETS OR TURF REINFORCEMENT MATS OR IT SHOULD BE SODDED.
- (J) ANY PRODUCTS LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED.
- (K) ENHANCED SILT FENCE CHECKS SHOULD BE PAID FOR UNDER THE FOLLOWING ITEM NUMBER:
209-08.06 ENHANCED SILT FENCE CHECK (TRAPEZOIDAL) PER EACH
PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE ENHANCED SILT FENCE CHECK.
- (L) SEDIMENT SHALL BE REMOVED FROM BEHIND THE ENHANCED SILT FENCE CHECK WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT TO THE STRUCTURE AND PAID FOR UNDER ITEM NO. 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ENHANCED SILT FENCE CHECK (TRAPEZOIDAL DITCH)