

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

ROADWAY DESIGN DIVISION

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JOHN C. SCHROER COMMISSIONER BILL HASLAM GOVERNOR

INSTRUCTIONAL BULLETIN NO. 17-13

Regarding Revised Right-of-Way Stock Fence Design Standard Drawings

Effective March 23, 2018 letting (January 10, 2018 Turn-in), the following standard drawings have been revised. Also, Chapter 5 of the Roadway Design Guidelines has been revised to incorporate these changes.

Revised Standard Drawings:

DRAWING NUMBER	REVISION DATE	DESCRIPTION
S-F-10 ¹	11-15-17	STANDARD RIGHT-OF-WAY STOCK FENCE
S-F-10A ¹	11-15-17	STANDARD RIGHT-OF-WAY STOCK FENCE WITH TIMBER POSTS
S-F-10B ¹	11-15-17	STANDARD RIGHT-OF-WAY CHAIN LINK FENCE
S-F-10C ¹	11-15-17	RIGHT-OFWAY FENCE AT BRIDGES AND BOX CULVERTS
S-F-10D ¹	11-15-17	RIGHT-OF-WAY FENCE LOCATIONS AT INTERCHANGES
S-FG-11 ¹	11-15-17	STANDARD STOCK FENCE GATE
S-FG-20 ¹	11-15-17	EXAMPLES OF WATER GATES AND WATER CROSSINGS

Note 1: Various Minor Revisions (Corrected Spelling, General Notes, Pay Items, etc.)

These standard drawings and revised Chapter 5 of the Roadway Design Guidelines are available online.

Standard Drawings:

http://www.tn.gov/tdot/section/chief-engineer-design-standard-drawings-library

Roadway Design Guidelines:

http://www.tn.gov/tdot/topic/chief-engineer-design-design-guidelines

Jennifer Lloyd, PE Civil Engineering Director

Roadway Design Division

KJL:ARH:RBB;SSH November 9, 2017

REV. 6-3-69: ADDED NOTE REGARDING ALTERNATE TYPE TRUSS ROD AND

REV. 7-1-72: CHANGED DEPARTMENT

REV. 12-7-75: ADDED ITEM NO'S FOR END BRACED LINE AND CORNER POSTS.

REV. 1-1-76: CHANGED DRAWING NUMBER FROM RD-F-10(68), (SHEET 1) TO S-F-10.

REV. 11-9-76: REMOVED CHAIN LINK FENCE DETAILS AND SPECIES FROM THIS

REV. 2-25-77: DELETED BARED WIRE AT BOTT EM OF FENCE, CHANGED POST

SPACING ON BRACED LINE POSTS AND CORNER POSTS FROM 10' TO 8'. REV. 7-17-81: CHANGED ITEM NO. TO

AGREE WITH NEW SPECIFICATION BOOK. REV. 1-24-08: REDREW SHEET AND CHANGED LENGTH OF ALL FENCE POSTS.

MOVE STOCK FENCE AND CHAIN LINK

FENCE TO S-F-10C.

MAXIMUM INTERVALS.

REV. 6-1-09: REMOVED TIE WIRES BETWEEN LINE POSTS. MODIFIED GENERAL NOTE(A) ADDED GENERAL NOTE(B.) REVISED LINE POST SPACING.

REV. 11-15-17: ADDED LINE POST NOTE. CHANGED R.O.W FENCE LINE STYLE. CHANGED FONT. REWORDED THE BRACED LINE POST NOTE REGARDING

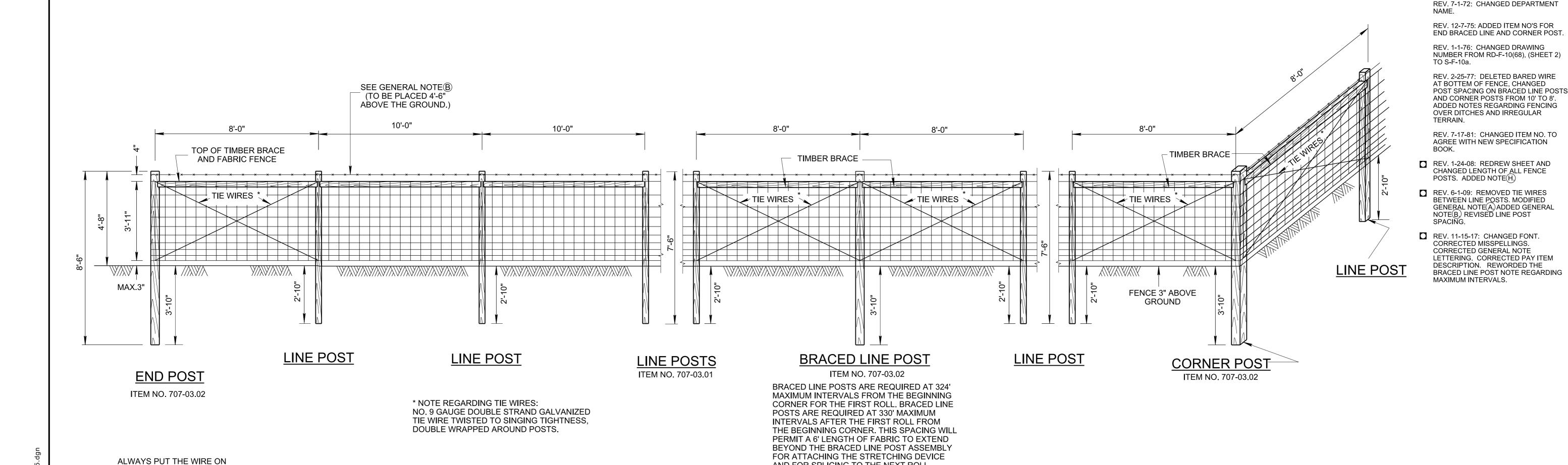
MINOR REVISION -- FHWA

APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF **TRANSPORTATION**

STANDARD **RIGHT-OF-WAY** STOCK FENCE

S-F-10

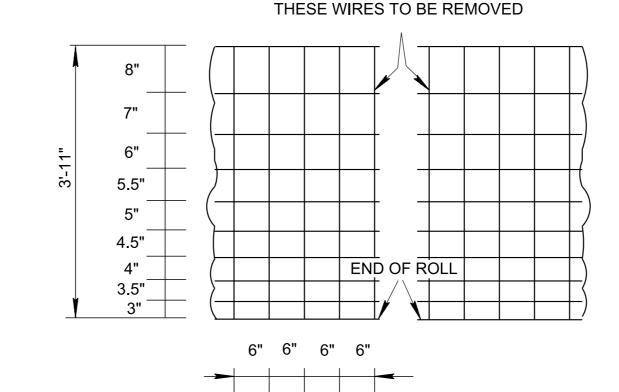


GENERAL NOTES

- (A) GALVANIZED STEEL WOVEN WIRE MEETING THE REQUIREMENTS OF ASTM A-116 FOR NO. 11 FARM, DESIGN NO. 1047-6-11, CLASS III COATING OR GALVANIZED HIGH TENSILE STRENGTH STEEL WOVEN WIRE MEETING THE REQUIREMENTS OF ASTM A-116 FOR NO. 12½ FARM DESIGN, CLASS III COATING EXCEPT THAT THE TOP AND BOTTOM STRAND SHALL BE 10½ GAUGE AND THE YIELD STRENGTH SHALL BE EQUIVALENT TO NO. 11 FARM DESIGN 1047-6-11.
- (B) THE BARBED WIRE SHALL CONSIST OF 2 NO. 12½ GAUGE TWISTED STEEL LINE WIRES WITH NO. 14 GAUGE 4-POINT BARBS SPACED NOT MORE THAN 5 IN. APART. IT MAY BE EITHER GALVANIZED OR ALUMINUM COATED. THE GALVANIZED WIRE SHALL MEET THE REQUIREMENTS OF ASTM A-121, CHAIN LINK FENCE GRADE. AT THE OPTION OF THE CONTRACTOR, HIGH TENSILE STRENGTH WIRE WITH BARB SPACINGS AS DESIGNATED ABOVE, MAY BE USED. IF THE CONTRACTOR ELECTS TO FURNISH HIGH TENSILE STRENGTH WIRE, IT SHALL MEET THE REQUIREMENTS OF ASTM A-121, CHAIN LINK FENCE GRADE FOR THE RESPECTIVE WIRE SIZE.
- © USE EITHER ROUND POST AND ROUND BRACING OR SQUARE POST AND SQUARE
- (D) USE 1.5" LONG NO.9 GAUGE GALVANIZED STAPLES FOR TIMBER POSTS.
- (E) AT ABRUPT CHANGES IN GRADE OR ALIGNMENT STAPLE EVERY LINE WIRE. AT LINE POSTS STAPLE EVERY LINE WIRE IN THE TOP HALF AND ALTERNATE LINE WIRE IN THE BOTTOM HALF. SEE STAPLING DETAILS.
- (F) SEE STANDARD DRAWING S-FG-20 FOR DETAILS OF FENCING OVER DITCHES AND AT OTHER ABRUPT DEPRESSIONS.
- G SEE STANDARD SPECIFICATIONS, SUB-SECTION 707.05 REGARDING FURNISHING AND PLACING ADDITIONAL BRACED LINE POSTS WHERE TERRAIN IS IRREGULAR.
- (H) SEE S-F-10C FOR FENCING AT BRIDGES AND CULVERTS
- (I) IF BARBED WIRE IS BEING USED FOR STOCK FENCE, IT IS TO BE FIVE STRAND BARBED WIRE AND THE TOP STRAND OF BARBED WIRE IS TO BE PLACED 54" ABOVE THE GROUND. THE BOTTOM STRAND OF BARBED WIRE IS TO BE PLACED NOT LESS THAN 6" ABOVE THE GROUND. THE NEXT TO THE BOTTOM STRAND OF BARBED WIRE IS TO BE PLACED NOT LESS THAN THAT 15" ABOVE THE GROUND. PAYMENT WILL BE MADE UNDER ITEM NO. 707-03.14, FIVE STRAND BARBED WIRE FENCE, PER LINEAR FOOT.
- (J) PAYMENT WILL BE MADE UNDER: ITEM NO. 707-03.01 STOCK FENCE PER LIN. FT.

FENCE POST DIMENSIONS

TENSET SOT BIMENSIONS					
	SIZE				
TYPE	ROUND (DIA.)	SQUARE (EDGE WIDTH)	LENGTH		
LINE POST	3½"	3½"	7'-6"		
BRACED LINE POST CORNER POST END POST	5"	5"	8'-6"		
TIMBER BRACE	3½"	3½"	7'-9"		



AND FOR SPLICING TO THE NEXT ROLL.

DETAIL OF FENCING ON CURVE

THE OUTSIDE OF THE POST ON THE CURVE SO THAT IT PULLS AGAINST THE FENCE

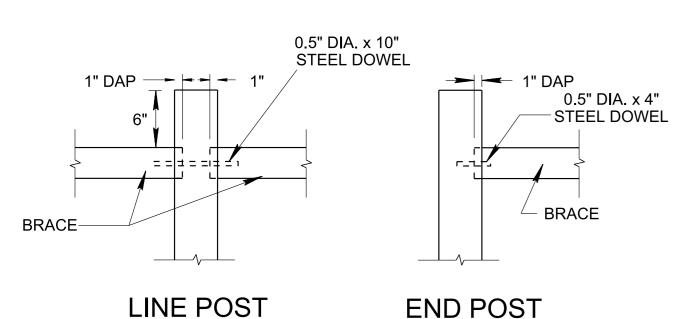
POSTS.

STRETCH FENCE

FROM END HAVING

LESS CURVATURE.

FARM FENCE WIRE DETAILS



- POSTS

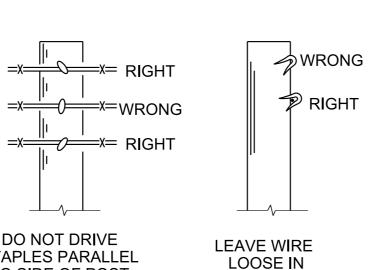
FENCE LINE

DIRECTION OF STRETCH

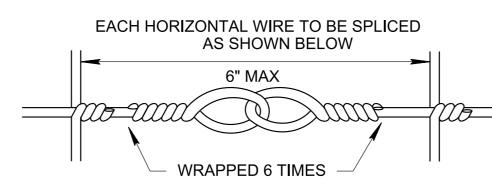
ANCHOR POST

→ RIGHT → WRONG DO NOT DRIVE **DRIVE STAPLES** STAPLES PARALLEL AT ANGLES TO SIDE OF POST

STAPLING DETAILS



STAPLE



SPLICE DETAIL FOR FENCE

TIMBER BRACING DETAILS

ITEM NO. 707-03.02 END, BRACED LINE, CORNER POST ASSEMBLY(STOCK FENCE) PER EACH

RIGHT-OF-WAY STOCK FENCE WITH TIMBER POSTS

■ MINOR REVISION -- FHWA

STATE OF TENNESSEE

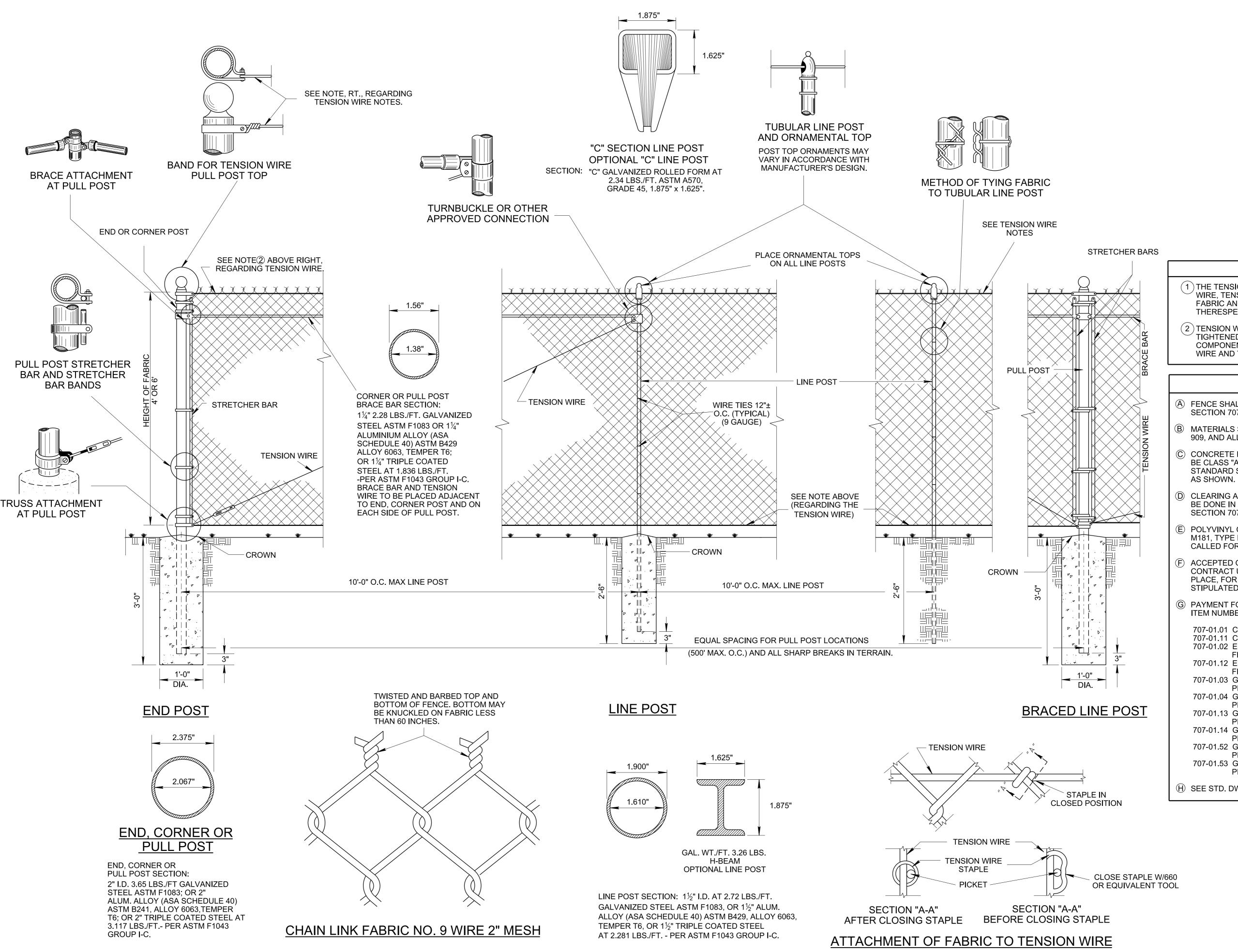
DEPARTMENT OF

TRANSPORTATION

STANDARD

APPROVAL NOT REQUIRED.

S-F-10A



REV. 2-25-77: DELETED NOTE REGARDING GRADING AND ADDED NOTE REGARDING CLEARING AND GRUBBING, ADDING OPTIONAL "C" AND "H" LINE POST, DELETED "2" BATTER AND ADDED "CROWN" FOR TOP OF CONC. FOOTING, ADDED TENSION WIRE AT BOTTOM OF FENCE.

REV. 7-17-81: CHANGE ITEM NO. TO AGREE WITH NEW SPECIFICATION BOOK.

- REV. 1-19-99: CHANGED VARIOUS SPECIFICATIONS AND GENERAL NOTES.
- REV. 6-30-00: MOVED TOP HORIZONTAL BRACE PIECE TO A POINT 6" BELOW TOP OF CHAIN LINK FABRIC.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE(G)
- REV. 5-14-10: ADDED GATE ITEM NUMBERS.
- REV. 11-15-17: CHANGED FONT. CORRECTED MISSPELLINGS. LABELED ELEVATION VIEW PER POST TYPE. ADDED DIMENSIONS TO HEIGHT OF FABRIC.

TENSION WIRE NOTES

- (1) THE TENSION WIRE SHALL BE NO. 7 GAUGE COILED SPRING WIRE, TENSIONED ALONG THE TOP AND BOTTOM OF THE FABRIC AND SHALL BE COATED SIMILARLY TO THERESPECTIVE WIRE FABRIC BEING USED.
- (2) TENSION WIRES AT CORNER AND BRACE POSTS SHALL BE TIGHTENED TO NEAR OPTIMUM STRENGTH OF THE COMPONENTS PRIOR TO APPLYING TENSION TO THE TOP WIRE AND THE FENCE.

GENERAL NOTES

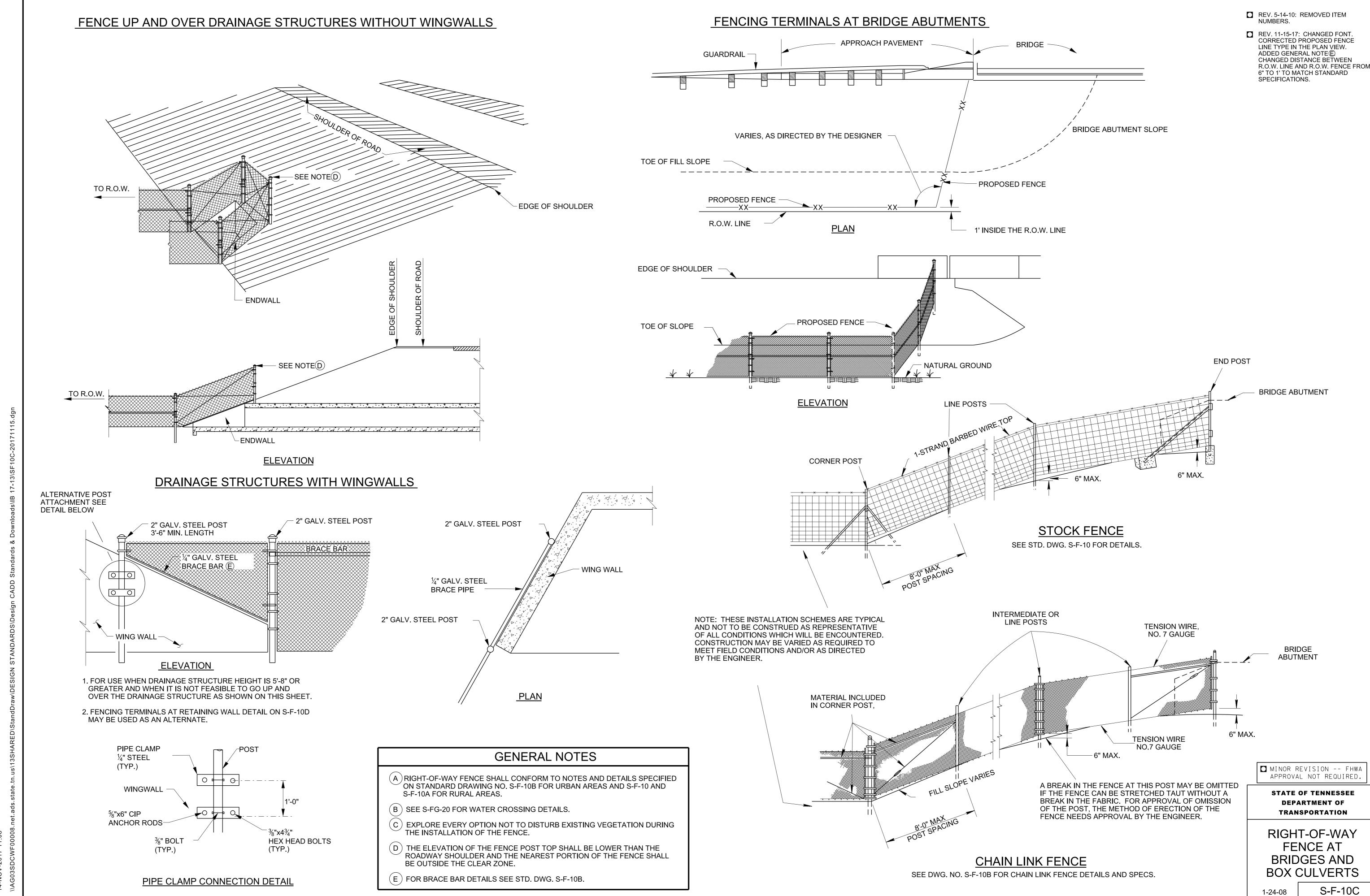
- (A) FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 707 OF STANDARD SPECIFICATIONS.
- (B) MATERIALS SPECIFICATIONS SHALL COMPLY WITH SECTION 909, AND ALL REVISIONS THERETO.
- (C) CONCRETE FOR BRACE, CORNER, AND GATE POSTS SHALL BE CLASS "A" IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS AND OF SIZE AND DIMENSION
- (D) CLEARING AND GRUBBING PRIOR TO SETTING FENCE SHALL BE DONE IN ACCORDANCE WITH STANDARD SPECIFICATIONS
- (E) POLYVINYL CHORIDE FABRIC IN ACCORDANCE WITH AASHTO M181, TYPE IV, CLASS B, MAY BE SUPPLIED ONLY WHEN CALLED FOR ELSEWHERE ON THE PLANS.
- (F) ACCEPTED QUANTITIES OF FENCE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, COMPLETE IN PLACE, FOR THE KIND, SHAPES, AND DIMENSIONS OF FENCE STIPULATED OR SHOWN ON PLANS.
- (G) PAYMENT FOR ALL COMPONENTS WILL BE MADE UNDER ITEM NUMBERS:
 - 707-01.01 CHAIN-LINK FENCE (4-FOOT) PER LINEAR FOOT 707-01.11 CHAIN LINK FENCE (6 FOOT) PER LINEAR FOOT. 707-01.02 END & CORNER POST ASSEMBLY(CHAIN-LINK FENCE 4') PER EACH.
 - 707-01.12 END & CÓRNER POST ASSEMBLY(CHAIN-LINK FENCE 6') PER EACH.
 - 707-01.03 GATE CHAIN-LINK FENCE-4 FOOT (DESCRIPTION) PER EACH
 - 707-01.04 GATE CHAIN-LINK FENCE-4 FOOT (DESCRIPTION) PER EACH
 - 707-01.13 GATE CHAIN-LINK FENCE-6 FOOT (DESCRIPTION) PER EACH
 - 707-01.14 GATE CHAIN-LINK FENCE-6 FOOT (DESCRIPTION) PER EACH 707-01.52 GATE - CHAIN-LINK FENCE (_ FOOT - DESCRIPTION)
 - PER EACH 707-01.53 GATE - CHAIN-LINK FENCE (_ FOOT - DESCRIPTION)
 - PER EACH
- (H) SEE STD. DWG. S-F-11 FOR GATE DETAILS.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

> **STATE OF TENNESSEE** DEPARTMENT OF **TRANSPORTATION**

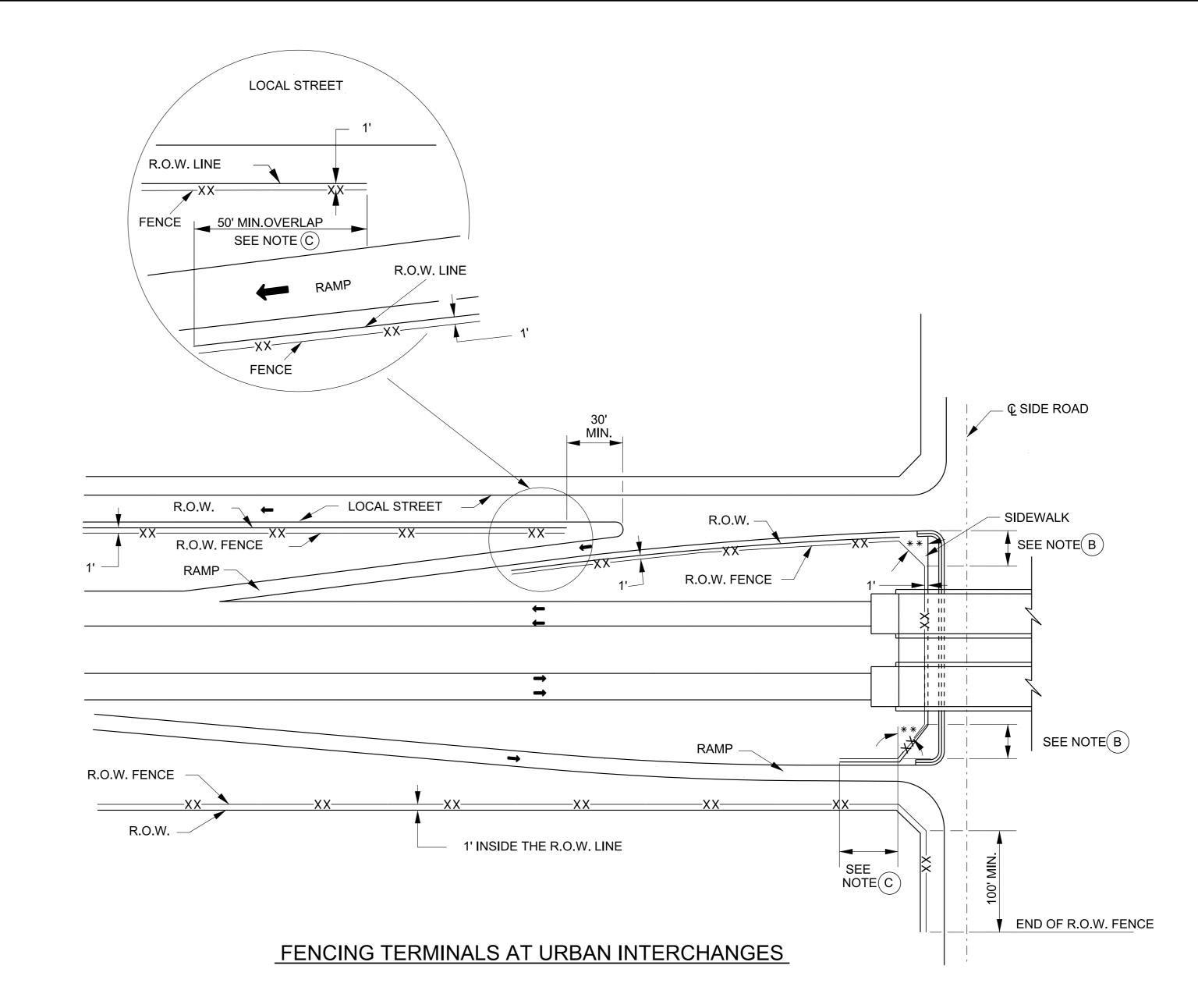
STANDARD **RIGHT-OF-WAY** CHAIN LINK **FENCE**

S-F-10B



FENCING TERMINALS AT RURAL INTERCHANGES

APPLIES TO BRIDGE OVER CROSSROAD AND CROSSROAD OVER INTERSTATE (BRIDGE OVER CROSSROAD SHOWN)

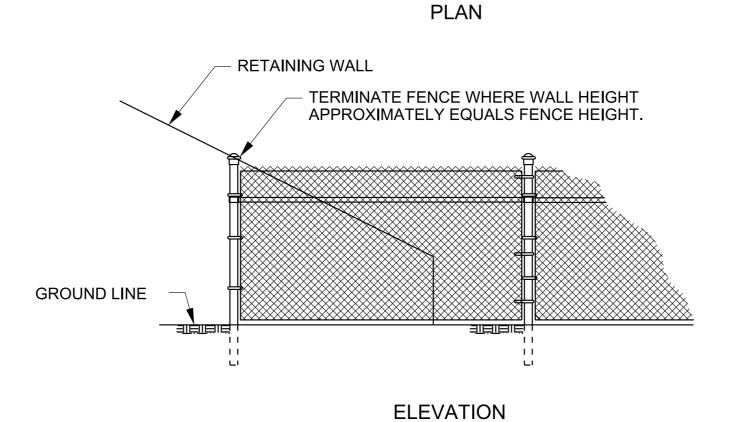


TERMINATE FENCE 6" FROM WALL OR WHERE FOOTING PERMITS VARIES XX R.O.W. FENCE

** 45° OR AS DIRECTED BY DESIGNER

FENCING TERMINALS AT RURAL INTERCHANGES GENERAL NOTES

- 1 RIGHT-OF-WAY FENCE SHALL CONFORM TO NOTES AND DETAILS SPECIFIED ON STANDARD DRAWING NO. S-F-10B.
- 2 RIGHT- OF- WAY FENCE ALONG THE CROSSROAD WILL EXTEND A MINIMUM 300 FEET BEYOND THE END OF THE ACCELERATION OR DECELERATION TAPER, WITH THE TAPER MOST REMOTE FROM THE PROJECT ESTABLISHING THE END FOR BOTH SIDES OF THE ROADWAY. IN THE ABSENCE OF A TAPER THE RADIUS POINT OF THE RAMP RETURN WILL BE USED WITH THE ABOVE CRITERIA.
- 3 FOR INTERCHANGE QUADRANTS HAVING NO RAMP, THE RIGHT-OF-WAY FENCE WILL EXTEND ALONG THE CROSSROAD TO A POINT OPPOSITE THE LIMIT OF LIMITED ACCESS RIGHT-OF-WAY ESTABLISHED BY THE RAMP TAPER OR RADIUS POINT AS NOTED ABOVE.



FENCING TERMINALS AT RETAINING WALLS

FENCING TERMINALS AT URBAN INTERCHANGES GENERAL NOTES

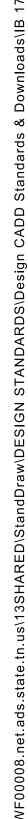
- A RIGHT-OF-WAY FENCE SHALL CONFORM TO NOTES AND DETAILS SPECIFIED ON STANDARD DRAWING NO. S-F-10 OR S-F-10A.
- B THE INDICATED DISTANCE SHALL BE SUFFICIENT TO PROVIDE SATISFACTORY SIGHT DISTANCE FOR THE TRAFFIC FROM THE RAMP.
- (C) END SECTIONS OF THE RIGHT-OF-WAY FENCE SECTIONS SHALL BE OVERLAPPED, MIN. 50'.
- (D) RIGHT-OF-WAY FENCE SHALL BE PLACED 1' INSIDE THE RIGHT-OF-WAY LINE.

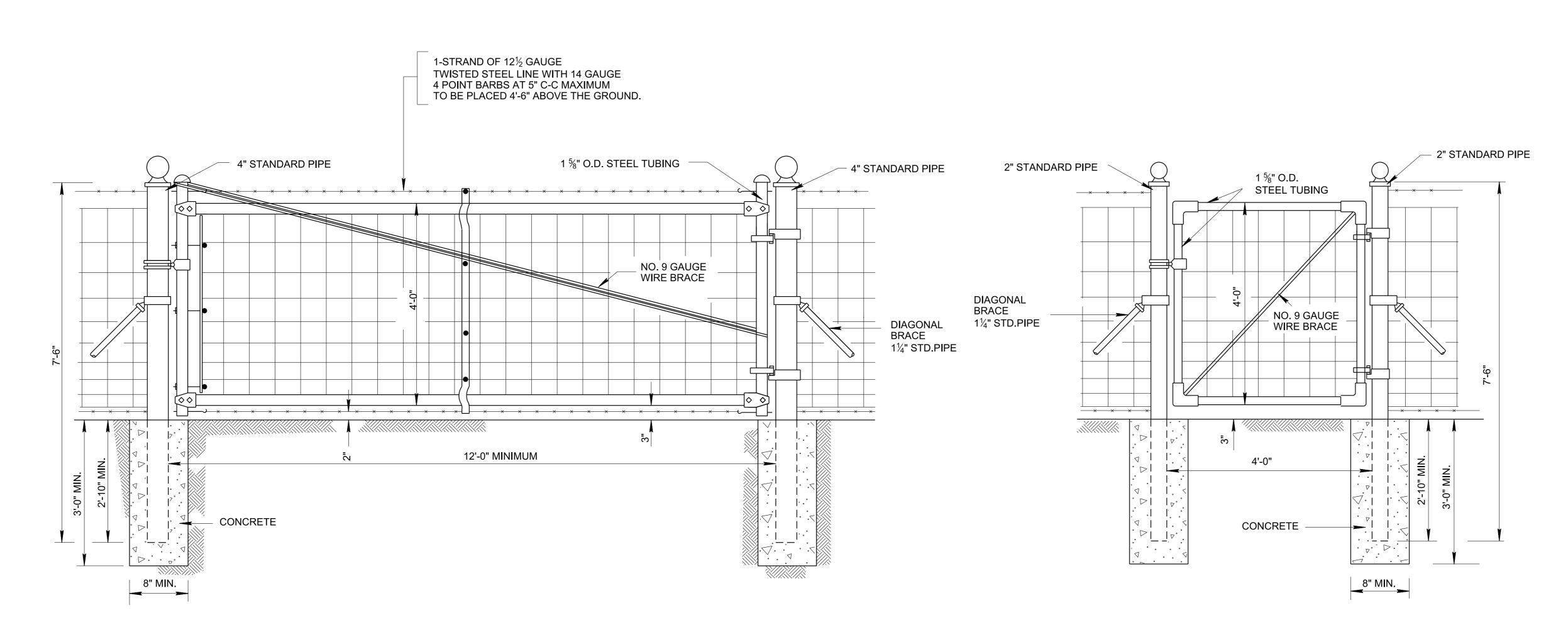
MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF
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RIGHT-OF-WAY FENCE LOCATIONS AT INTERCHANGES

24-08 S-F-10D





STOCK FENCE DRIVE GATE (12' X 4')

STOCK FENCE WALK GATE (4' X 4')

GENERAL NOTES

(A) DESCRIPTION

STOCK FENCE DRIVE GATE SHALL BE A TUBULAR STEEL FRAME 4 FEET HIGH AND OF SPECIFIED LENGTH WITH WIRE FABRIC FILLER WITHIN THE GATE FRAME, AND WITH TWO STRANDS OF BARBED WIRE ABOVE THE FRAME AND ONE STRAND OF BARBED WIRE BELOW THE FRAME, AND SHALL BE CONSTRUCTED OF THE MATERIALS INDICATED BELOW.

STOCK FENCE WALK GATE SHALL BE A TUBULAR STEEL FRAME 4 FEET HIGH AND 4 FEET LONG WITH WIRE FABRIC FILLER WITHIN THE GATE FRAME, AND SHALL BE CONSTRUCTED OF THE MATERIALS INDICATED BELOW.

(B) MATERIALS

DRIVE GATE: THE GATE SHALL CONSIST OF 1\%" O.D. HIGH CARBON STEEL TUBING FASTENED AT EACH CORNER WITH MALLEABLE IRON OR PRESSED STEEL FITTINGS BOLTED TO THE TUBULAR FRAME. THE GATE FRAME SHALL BE BRACED VERTICALLY AT THE CENTER WITH TWO 1" X 1" ANGLE IRONS OR TWO ¾" X ¾" CHANNEL IRONS BOLTED TOGETHER, AND SHALL BE BRACED DIAGONALLY WITH A NO. 9 GALVANIZED WIRE BRACE ATTACHED IN A MANNER TO PROVIDE ADJUSTMENT. GATES MORE THAN 12 FEET IN LENGTH SHALL HAVE TWO EQUALLY SPACED VERTICAL BRACES. THE END MEMBERS OF THE GATE FRAME SHALL BE PROVIDED WITH METAL

WALK GATE: THE WALK GATE SHALL CONSIST OF 1%" O.D. HIGH CARBON STEEL TUBING FASTENED AT EACH CORNER WITH MALLEABLE IRON OR PRESSED STEEL FITTINGS ATTACHED IN A MANNER SATISFACTORY TO THE ENGINEER. THE FRAME SHALL BE BRACED DIAGONALLY WITH A NO. 9 GALVANIZED WIRE BRACE ATTACHED IN A MANNER TO PROVIDE ADJUSTMENT.

(C) CONSTRUCTION

GATES SHALL BE INSTALLED AT THE LOCATIONS INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THE GATE SHALL BE INSTALLED BETWEEN AND FASTENED TO PROPERLY SPACED GATE POSTS, WHICH SHALL BE SET IN THE GROUND A FULL 34 INCHES. THE POSTS AND BRACES SHALL BE SET IN CONCRETE BASES BETWEEN AND FASTENED TO PROPERLY SPACED GATE POSTS, WHICH SHALL BE SET IN THE GROUND A FULL 34 INCHES. THE POSTS AND BRACES SHALL BE SET IN CONCRETE BASES WHICH SHALL BE AT LEAST 8 INCHES IN DIAMETER AND SHALL EXTEND 3 FEET OR MORE BELOW THE SURFACE OF THE GROUND.

(D) PAYMENT

PAYMENT FOR ALL COMPONENTS WILL BE MADE UNDER ITEM NUMBERS:

ITEM NO. 707-03.20 DRIVE GATE (STOCK FENCE) (DESCRIPTION) PER EACH ITEM NO. 707-03.21 WALK GATE (STOCK FENCE) (DESCRIPTION) PER EACH

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

REV. 7-1-72: CHANGED DEPARTMENT

FROM RD-F-11(68) TO S-F-11.

REV. 5-2-90: ADDED PAY ITEMS.

REV. 1-24-08: REDREW SHEET AND

CORRECTED MISSPELLINGS.

DESCRIPTIONS.

REV. 5-14-10: MODIFIED ITEM NUMBER

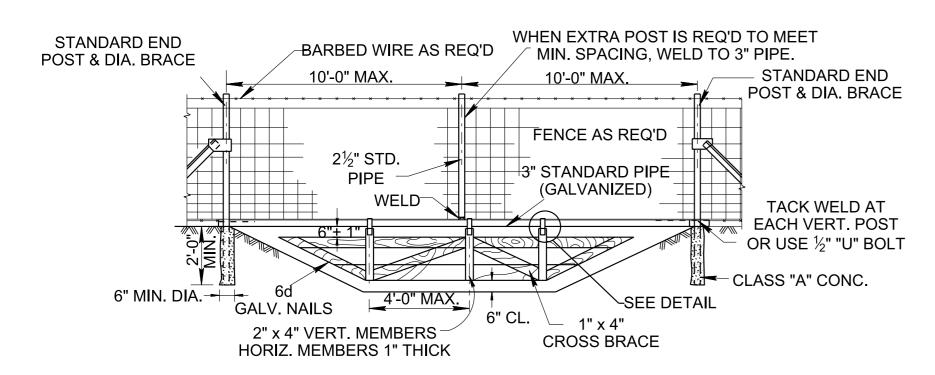
REV. 1-1-76: CHANGED DRAWING NUMBER

CHANGED LENGTH OF ALL FENCE POSTS.

REV. 11-15-17: CHANGED FONT. CLARIFIED PAYMENT FOR ALL COMPONENTS.

STATE OF TENNESSEE DEPARTMENT OF **TRANSPORTATION**

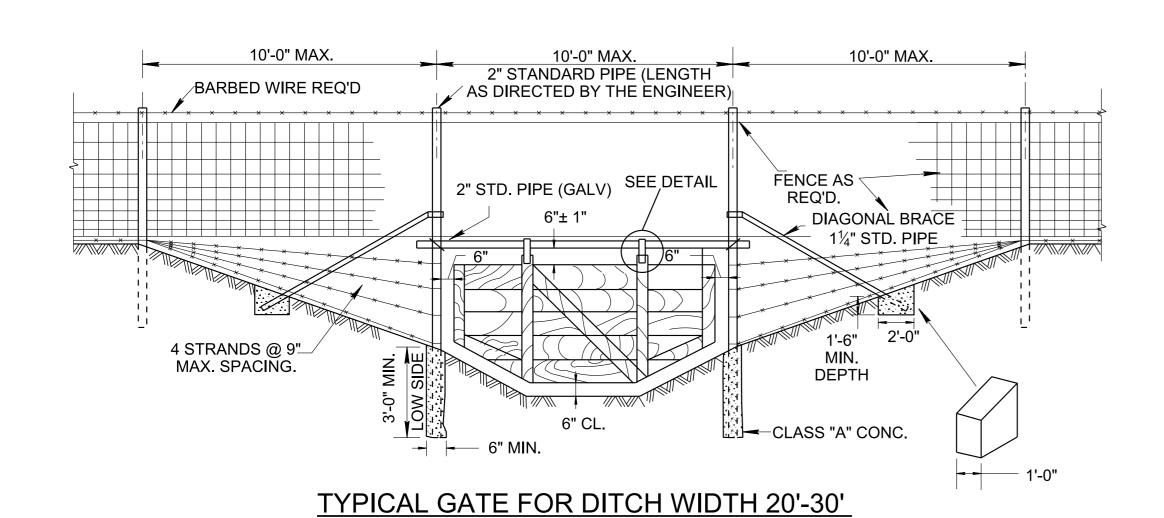
STANDARD STOCK FENCE **GATE**



DETAIL

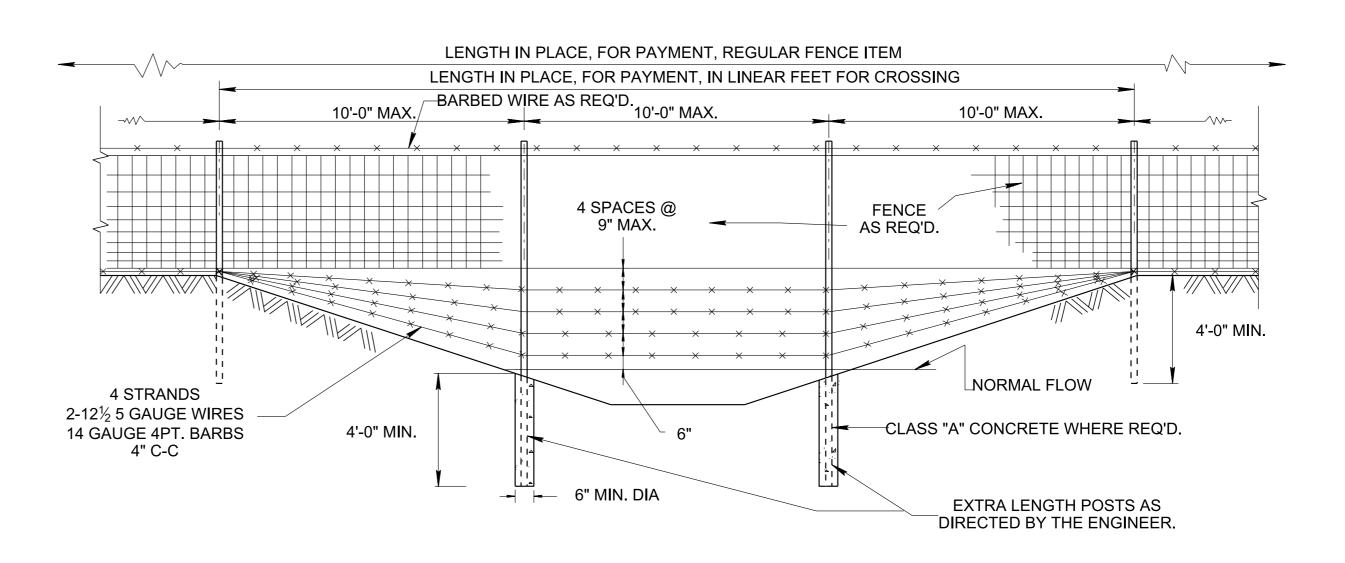
ELEVATION VIEW

TYPICAL GATE FOR DITCH WIDTH 10'-20' TYPE B



DETAILS NOT SHOWN ABOVE ARE SAME AS FOR TYPE "B" GATE

TYPE C



WATER CROSSING

AS DIRECTED BY THE ENGINEER.

GENERAL NOTES (A) GATE FOR DITCH SHALL BE ERECTED AT LOCATIONS INDICATED IN THE PLANS OR AS INDICATED BY THE ENGINEER (B) COMPENSATION FOR WATER GATES AND WATER CROSSINGS IS INTENDED ONLY FOR ADDITIONAL MATERIAL INCLUDING ADDITIONAL PIPE, EXTRA LENGTHS OF POSTS, WIRE, LUMBER, HARDWARE AND CONCRETE AND WORK REQUIRED FOR THE FACILITIES WHICH ARE NOT PROVIDED FOR IN THE REGULAR RIGHT-OF-WAY FENCE ITEM. (C) PAYMENT WILL BE MADE UNDER: ITEM NO.707-04 WATER CROSSING PER LINEAR FT. ITEM NO.707-05 WATER GATE PER SQUARE FT. (D) THESE INSTALLATION SCHEMES ARE TYPICAL AND NOT TO BE CONSTRUED AS REPRESENTATIVE OF ALL CONDITIONS WHICH WILL BE ENCOUNTERED. CONSTRUCTION MAY BE VARIED AS REQUIRED TO MEET FIELD CONDITIONS AND/OR

MINOR REVISION -- FHWA

APPROVAL NOT REQUIRED.

REV. 7-1-72: CHANGED DEPARTMENT NAME

REV. 1-1-76: CHANGED DRAWING NUMBER FROM RD-F-20(68), (SHEET 2) TO S-F-20.

REV. 1-24-08: REDREW SHEET AND CHANGED

REV. 11-15-17: CHANGED FONT. CORRECTED R.O.W. FENCE LINE TYPE. CORRECTED

REV. 5-2-90: ADDED PAY ITEMS.

LENGTH OF ALL FENCE POSTS.

MISSPELLINGS.

STATE OF TENNESSEE DEPARTMENT OF

TRANSPORTATION

EXAMPLES OF WATER GATES **AND** WATER CROSSINGS

S-FG-20