

GENERAL NOTES

- WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE NEW MEXICO DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT EDITION.
- CONCRETE SHALL CONFORM TO SECTION 511 - CONCRETE STRUCTURES. CONCRETE SHALL BE CLASS A. APPLY PENETRATING WATER REPELLENT PER SECTION 532.
- REINFORCING STEEL (REBAR) SHALL CONFORM TO SECTION 540 - STEEL REINFORCEMENT. REINFORCE CONCRETE BLANKETS WITH ONE (1) LAYER OF WELDED WIRE FABRIC. PLACE FABRIC IN THE CENTER OF THE CONCRETE BLANKET AND EXTEND INTO CUT-OFF WALL FULL DEPTH. FOR TYPICAL CONCRETE BLANKETS, REINFORCING BARS, WELDED WIRE FABRIC, AND ANCHORS SHALL BE CONSIDERED INCIDENTAL TO THE CONCRETE BID ITEM.
- THE HIGH DENSITY POLYETHYLENE PIPE (HDPE) SHALL BE ANCHORED TO THE BLANKET WITH A DOUBLE-NUTTED THREADED ROD. FOR SPACING AND LOCATION, SEE "ANCHOR LOCATION TABLE" ON STANDARD DRAWING 512-12A-1/2. BOLTS AND NUTS SHALL BE ZINC COATED.
- INSTALL SWELLABLE HYDROPHILIC WATERSTOP AT THE PIPE TO BLANKET INTERFACE IN ACCORDANCE WITH SECTION 511.
- PIPE SPACING FOR NEW NORMAL INSTALLATIONS, USE $D + 3'-0"$. FOR EXTENSIONS OR MODIFICATIONS TO EXISTING CULVERT INSTALLATIONS MATCH EXISTING CULVERT PIPE SPACING.
- PIPE SPACING FOR NEW SKEWED CULVERT INSTALLATIONS USE $(D + 3'-0") / \cos \phi$. FOR EXTENSIONS OR MODIFICATIONS TO EXISTING CULVERT INSTALLATIONS, MATCH EXISTING CULVERT PIPE SPACING.
- FOR D, ES AND ϕ SEE ROADWAY PLANS. WHEN EMBANKMENT SLOPE (ES) AT A STRUCTURE DIFFERS FROM THE ORDINARY ROADWAY EMBANKMENT SLOPE, THE CONTRACTOR WILL BE REQUIRED TO TRANSITION SLOPE AS SHOWN ON STANDARD DRAWING 511-13-3/3.
- FOR T, L, AND E DIMENSIONS SEE TABLES BELOW:

D (IN.)	T (IN.)	L								
		0°	5°	10°	15°	20°	25°	30°	35°	
24	6	1'-0"	1'-2"	1'-4"	1'-6"	1'-6"	1'-9"	1'-11"	2'-2"	
30	6	1'-0"	1'-2"	1'-4"	1'-6"	1'-6"	1'-9"	1'-11"	2'-2"	
36	6	1'-0"	1'-2"	1'-4"	1'-6"	1'-6"	1'-9"	1'-11"	2'-2"	
42	6	1'-0"	1'-2"	1'-4"	1'-6"	1'-6"	1'-9"	1'-11"	2'-2"	
48	8	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-11"	2'-4"	2'-5"	
54	8	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-11"	2'-4"	2'-5"	
60	8	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-11"	2'-4"	2'-5"	

ϕ (°)	E			
	T = 6"		T = 8"	
	ES=4:1	ES=6:1	ES=4:1	ES=6:1
0	1'-4"	2'-4"	2'-0"	3'-4"
5	1'-5"	2'-5"	2'-1"	3'-5"
10	1'-5"	2'-5"	2'-1"	3'-5"
15	1'-5"	2'-6"	2'-2"	3'-6"
20	1'-6"	2'-7"	2'-3"	3'-8"
25	1'-7"	2'-8"	2'-4"	3'-9"
30	1'-8"	2'-10"	2'-5"	4'-0"
35	1'-10"	3'-0"	2'-8"	4'-3"

- FOR VOLUME OF CONCRETE FOR DOUBLE PIPE CONCRETE BLANKETS, SEE TABLE BELOW. WEIGHT OF REINFORCING BARS, WELDED WIRE MESH, AND ANCHOR BOLTS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.

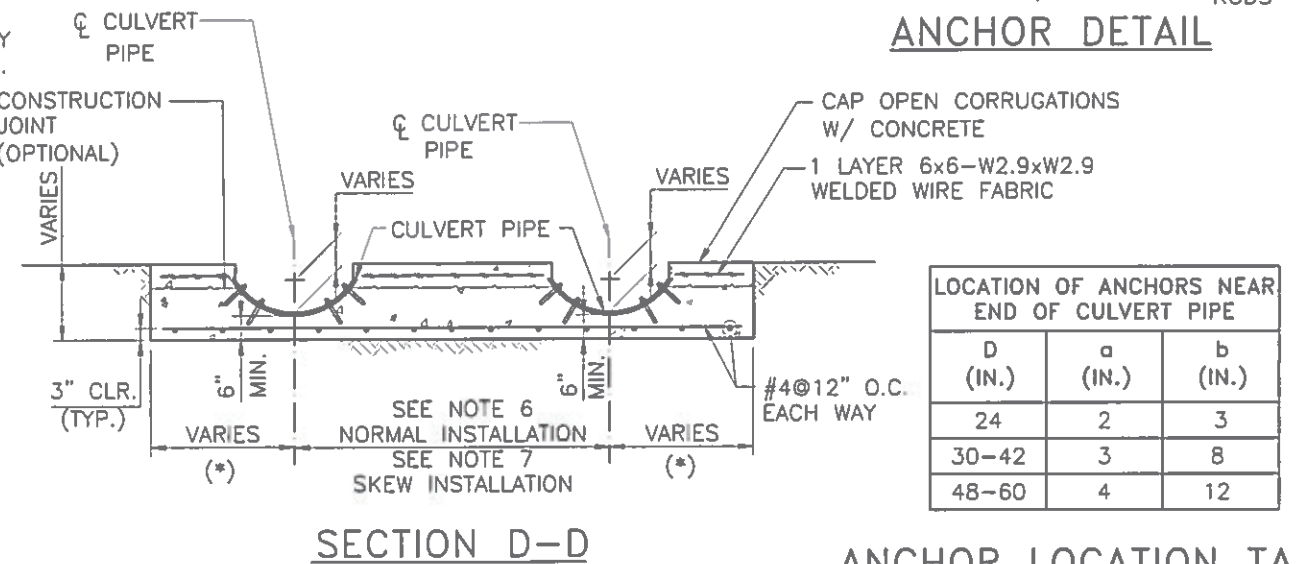
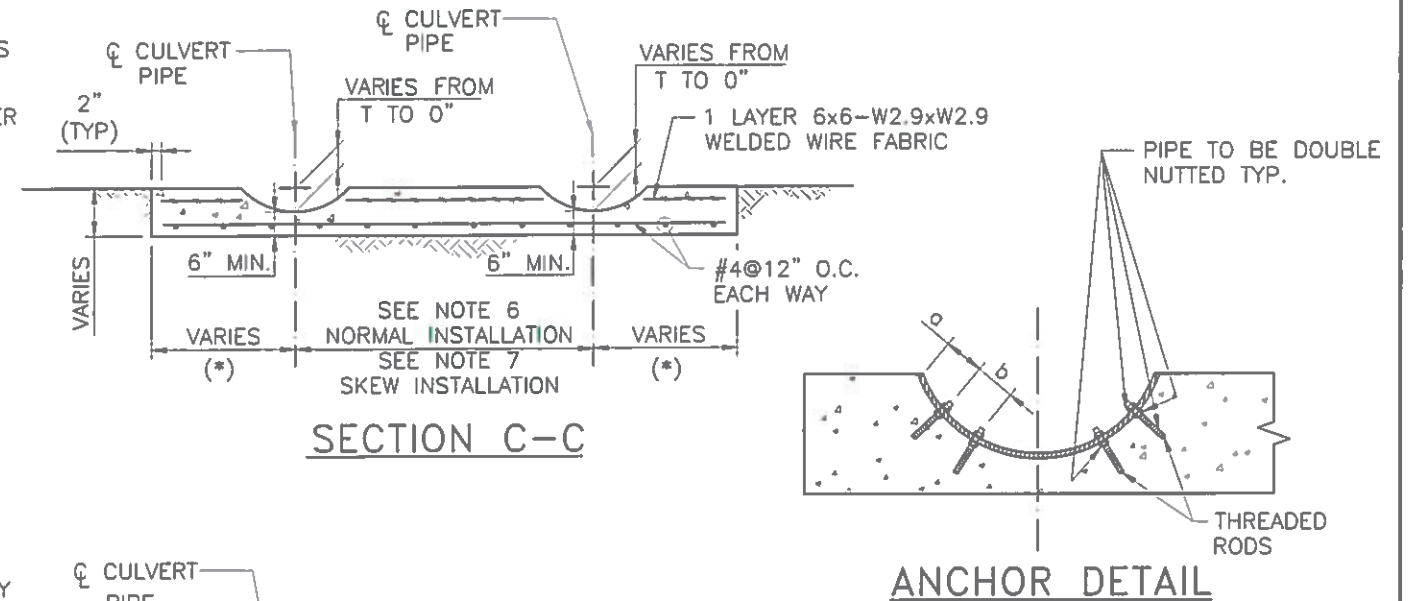
D (IN.)	CONCRETE QUANTITIES (CU. YDS.) - V_2															
	0°		5°		10°		15°		20°		25°		30°		35°	
	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1	ES:1
24	2.9	3.6	2.9	3.6	3.1	3.8	3.2	4.0	3.5	4.2	3.8	4.6	4.2	5.1	4.7	5.8
30	3.5	4.3	3.5	4.4	3.7	4.6	3.9	4.9	4.2	5.2	4.6	5.7	5.2	6.4	5.9	7.3
36	4.1	5.1	4.2	5.2	4.4	5.4	4.7	5.8	5.0	6.2	5.6	6.9	6.2	7.7	7.2	8.8
42	4.7	5.9	4.8	6.1	5.1	6.3	5.4	6.7	5.9	7.3	6.5	8.1	7.4	9.1	8.5	10.5
48	5.7	7.3	5.9	7.5	6.2	7.8	6.6	8.3	7.2	9.1	8.0	10.0	9.1	11.4	10.5	13.1
54	6.4	8.2	6.6	8.4	7.0	8.8	7.5	9.4	8.2	10.3	9.1	11.4	10.4	13.0	12.0	15.1
60	7.1	9.1	7.4	9.4	7.8	9.9	8.4	10.6	9.2	11.6	10.3	12.9	11.7	14.7	13.7	17.1

- TO DETERMINE THE VOLUME OF CONCRETE (CU. YDS.) FOR INSTALLATION OF 3 OR MORE PIPES, USE THE FOLLOWING FORMULA: $VOLUME_{(2)} = V_2 + (V_2 - V_1) \times (N - 2)$

WHERE:

- V_1 = VOLUME OF CONCRETE FOR SINGLE PIPE INSTALLATION. (CU. YDS.) (SEE STANDARD DRAWINGS SHEET 511-11A-1/2)
- V_2 = VOLUME OF CONCRETE FOR DOUBLE PIPE INSTALLATION. (CU. YDS.) (SEE STANDARD DRAWINGS SHEET 511-12A-1/2)
- N = NUMBER OF PIPES WHICH MUST BE GREATER THAN 2.

DESIGNED BY: FDD DRAWN BY: SKL/BEE CHECKED BY: KHC



D (IN.)	a (IN.)	b (IN.)
24	2	3
30-42	3	8
48-60	4	12

ANCHOR LOCATION TABLE

(D IS THE DIAMETER OF CULVERT PIPE)

THIS STANDARD DRAWING IS FOR USE ON NMDOT PROJECTS. OTHERS WHO USE THE NMDOT STANDARD DRAWINGS DO SO AT THEIR OWN RISK. STANDARD DRAWINGS THAT ARE APPLICABLE TO A SPECIFIC PROJECT WILL BE IDENTIFIED ON THE PROJECT PLANS BUT WILL NOT BE PHYSICALLY INCLUDED IN THOSE PLANS. THE DESIGNER WHO SPECIFIES A STANDARD DRAWING ACCEPTS THE RESPONSIBILITY OF DETERMINING THEIR APPLICABILITY.

NO.	DATE	BY	DESCRIPTION

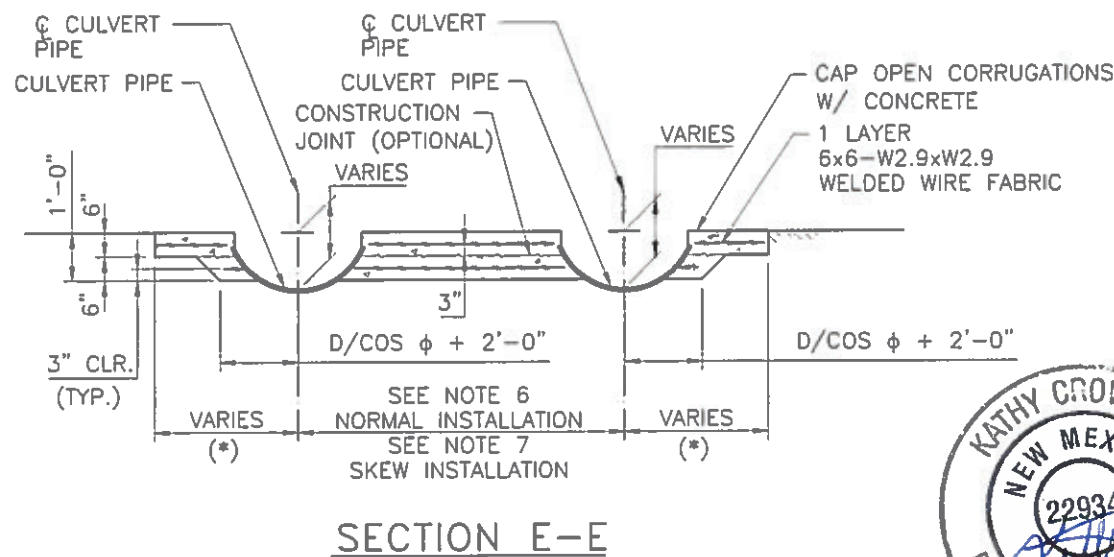
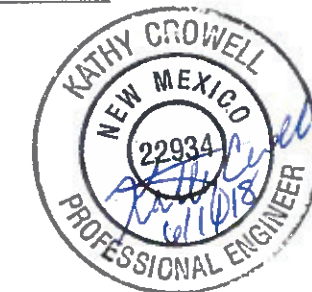
REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
DEPARTMENT OF TRANSPORTATION
STANDARD DRAWING

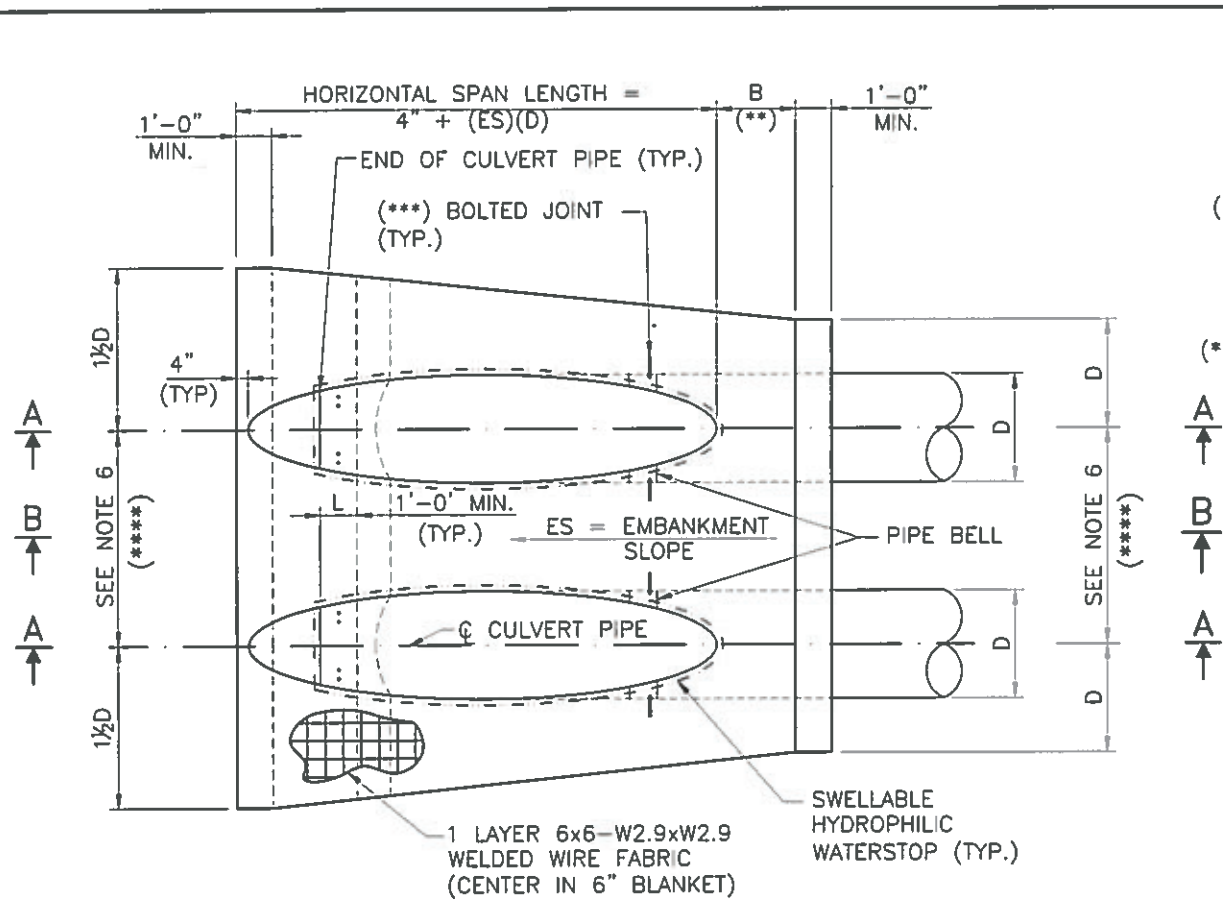
MULTIPLE HDPE PIPE
CONCRETE
BLANKET
WITHOUT SAFETY GRATE
(NORMAL & 5° TO 35° SKEW)

511-12A-1/2

1 of 2

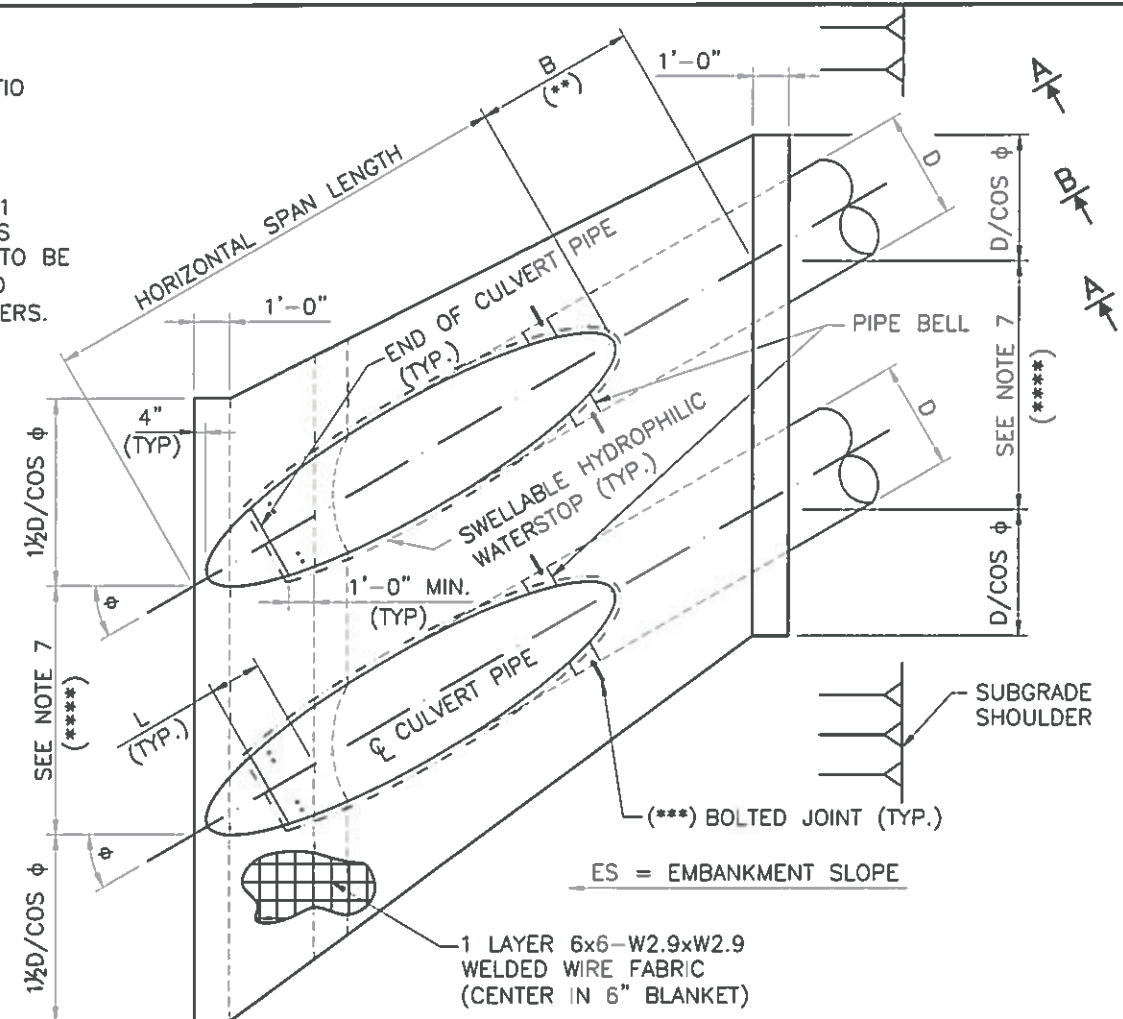


- (*) SEE PLAN VIEW ON SHEET NO. 511-12A-2/2 FOR NORMAL INSTALLATIONS AND SKEWED INSTALLATIONS

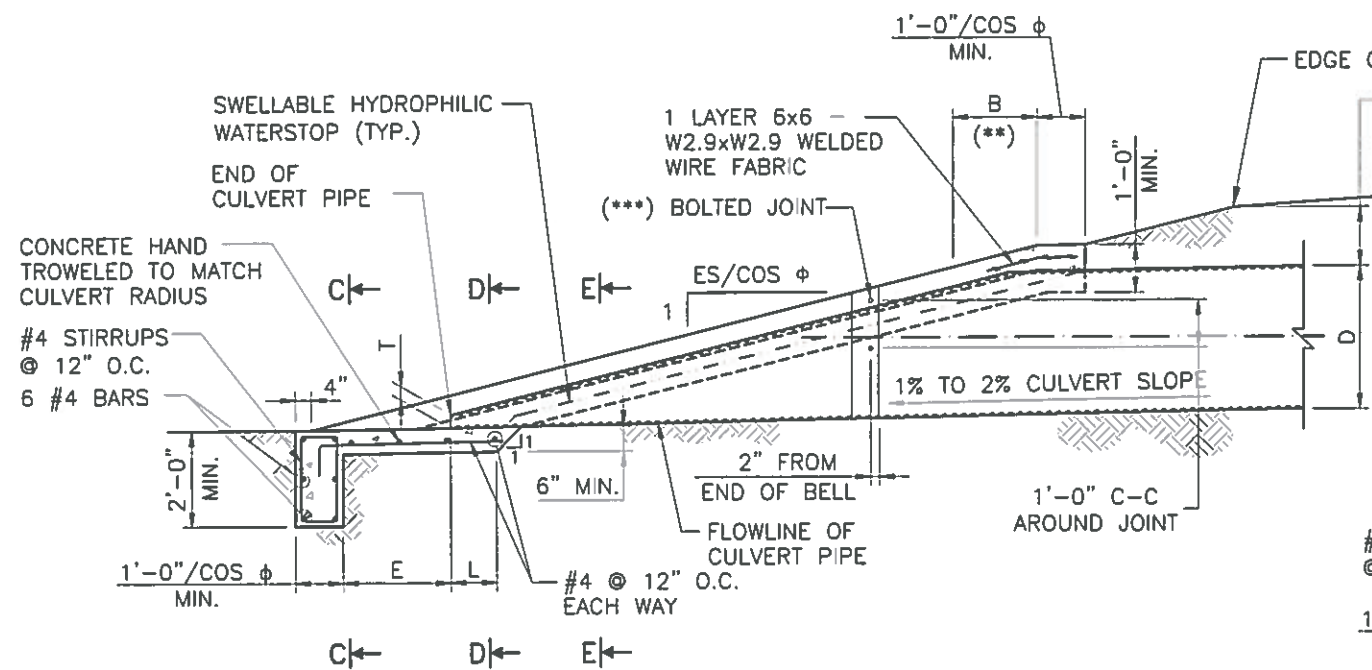


PLAN AT MULTIPLE PIPES
(NORMAL INSTALLATIONS)

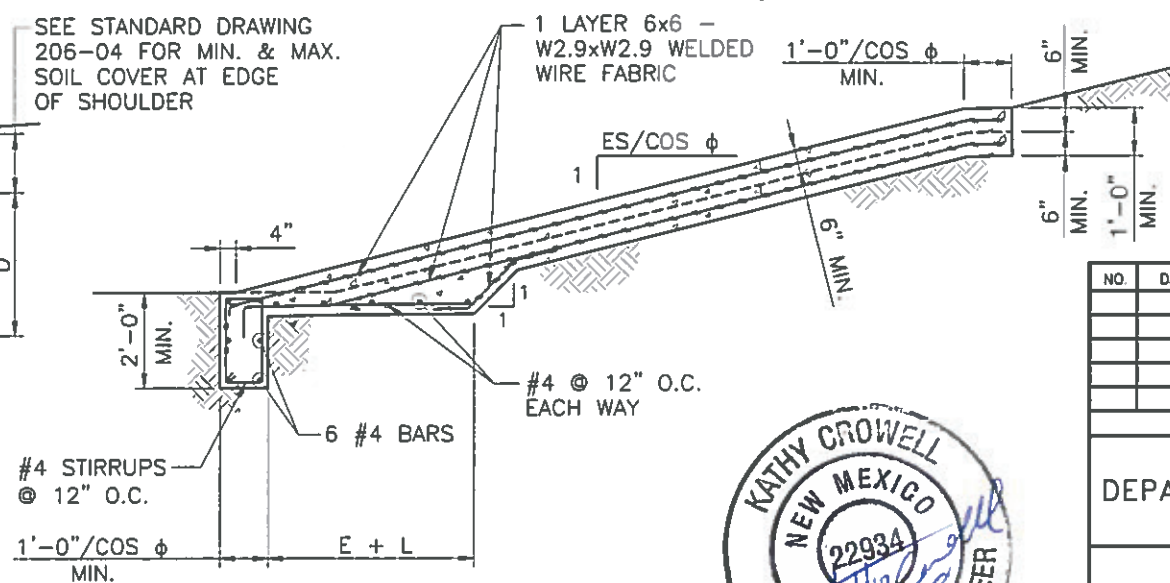
- (**) $B = \frac{1}{3}$ THE HORIZONTAL COMPONENT OF THE SLOPE RATIO (ES) IN FEET, SO AS TO PRODUCE A 6" MIN. CONCRETE COVER OVER THE CULVERT.
- (***) FOR 42", 48", 54" AND 60" 6:1 SLOPES, THE MITRE SHALL PASS THROUGH THE JOINT. JOINT IS TO BE BOLTED WITH $\frac{3}{4}$ " GALVANIZED ANCHOR BOLTS WITH 3" WASHERS.
- (****) SEE GENERAL NOTES 6 AND 7 ON SHEET 511-12A-1/2.



PLAN AT MULTIPLE PIPES
(SKEWED INSTALLATIONS)



SECTION A-A



SECTION B-B

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MULTIPLE HDPE PIPE
CONCRETE BLANKET
WITHOUT SAFETY GRATE
(NORMAL & 5° TO 35° SKEW)