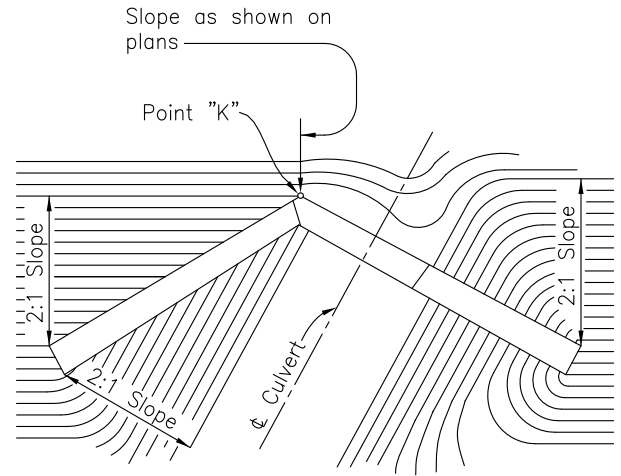
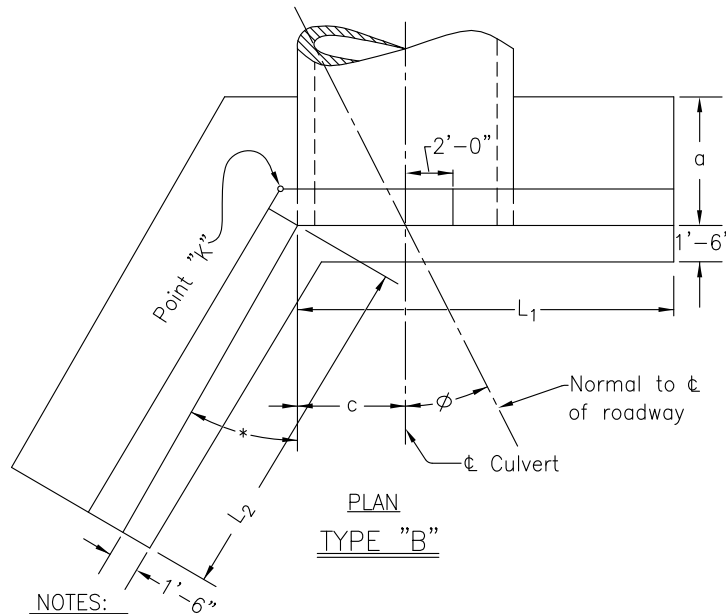


ELEVATION



LOCATION AND GRADING PLAN
FOR SKEWED PIPE CULVERT-TYPE "B"



PLAN
TYPE "B"

NOTES:

For footing details, see Sheet 1 of 2.

For Sections C-C & D-D, see Sheet 1 of 2.

$$* = 45^\circ \phi_2$$

Headwall where required will be provided for skewed and non-skewed culverts having a diameter or rise of 42" to 84" inclusive. Type "A" is used when the skew angle (ϕ) is 10° or less and Type "B" when the skew angle is 11° or over.

Reinforcing Steel Bars shall be 5/8 inch round, Epoxy Coated.

Dimensions and quantities are shown for circular sections only. When used with reinforced elliptical concrete pipe, it will be necessary to determine such dimensions and quantities which shall generally conform with those listed for the nearest size circular pipe. The dimensions established by vertical diameter shall apply to rise and the dimensions established by horizontal diameter shall apply to span. Chamfer all exposed corners 3/4".

Foundation: Where the soil borings indicate a bearing capacity of less than 2600 pounds per square foot it will be necessary to increase the width of the footing.

Concrete shall be Class "C".

Headwall location to be determined by the intersection of the embankment slope at the back of the headwall at point "K".

The slopes adjacent to the headwall shall be 2:1.

If slopes other than 2:1 are used, the Length L_1 & L_2 , and Height h_1 & h_2 will require adjustment.

PIPE DIAMETER "D"	H	$\phi = 30^\circ$					$\phi = 45^\circ$										
		a	b	c	BAR "d"	L_1	L_2	h_1	h_2	C.Y.* CONC. R.C.P.	STEEL lbs.	L_1	L_2	h_1	h_2	C.Y.* CONC. R.C.P.	STEEL lbs.
42"	4'-11"	3'-3"	1'-6"	2'-6"	"5	7'-10"	5'-9"	3'-2"	3'-3"	7.3	633	7'-10"	7'-9"	3'-2"	3'-3"	8.5	718
48"	5'-5"	3'-6"	1'-6"	2'-9"	"5	8'-9"	6'-10"	3'-5"	3'-6"	8.8	801	8'-9"	9'-2"	3'-5"	3'-7"	10.3	925
54"	5'-11"	3'-9"	1'-6"	3'-0"	"5	9'-8"	7'-11"	3'-8"	3'-9"	10.5	1,024	9'-8"	10'-7"	3'-8"	3'-10"	12.2	1,188
60"	6'-6"	4'-0"	1'-6"	3'-3"	"5	10'-7"	9'-0"	3'-10"	4'-1"	12.3	1,157	10'-7"	12'-0"	3'-10"	4'-1"	14.3	1,354
72"	7'-7"	4'-6"	1'-7"	3'-9"	"7	12'-5"	11'-2"	4'-3"	4'-7"	16.6	1,788	12'-5"	14'-10"	4'-3"	4'-8"	19.6	2,076
84"	8'-8"	5'-0"	1'-10"	4'-3"	"8	14'-7"	13'-4"	4'-10"	5'-2"	23.3	2,511	14'-3"	17'-8"	4'-8"	5'-2"	27.0	2,990

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Delaware County Engineer

Delaware County Engineer

APPROVED
1-22-2008

REVISED
1-04-2010

STANDARD CONSTRUCTION DRAWING

CAST IN PLACE PIPE
CULVERT HEADWALLS
42" TO 84"

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Drawn KS sheet 2
Checked EM of 2

FILE NO.
DCED-S167B