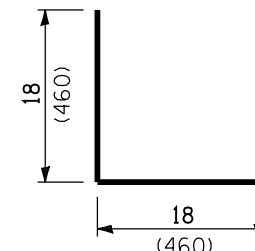


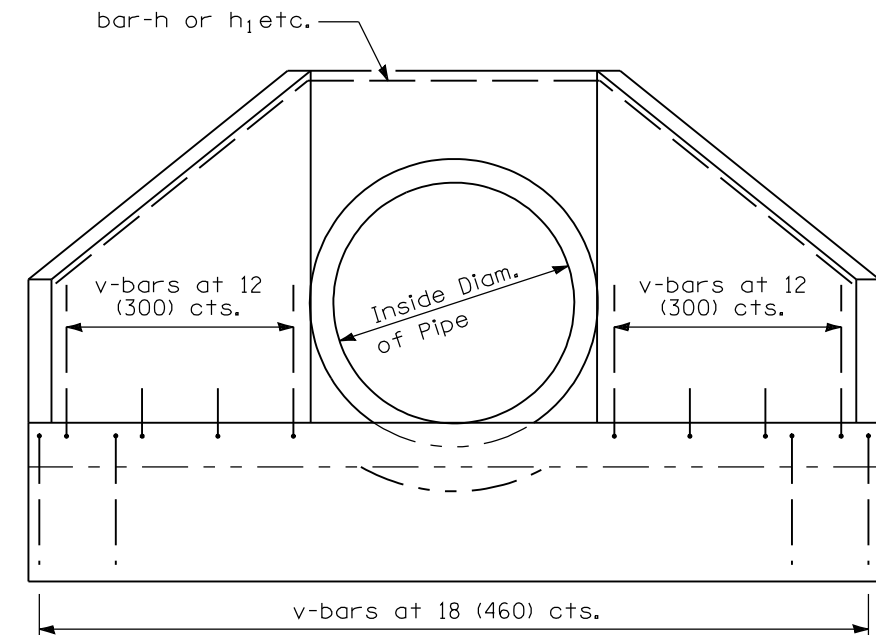
SECTION A-A

DIMENSIONS OF BARS-h to h₉

Bar	a	b
h	22 (560)	29 1/2 (750)
h ₁	22 (560)	38 1/2 (980)
h ₂	25 (640)	29 1/2 (750)
h ₃	25 (640)	38 1/2 (980)
h ₄	33 (840)	39 (990)
h ₅	33 (840)	4'-1 1/2" (1.26 m)
h ₆	39 (990)	3'-10 1/2" (1.18 m)
h ₇	39 (990)	4'-10 1/2" (1.50 m)
h ₈	3'-11" (1.19 m)	4'-8" (1.42 m)
h ₉	3'-11" (1.19 m)	5'-9 1/2" (1.77 m)



BAR v



END VIEW

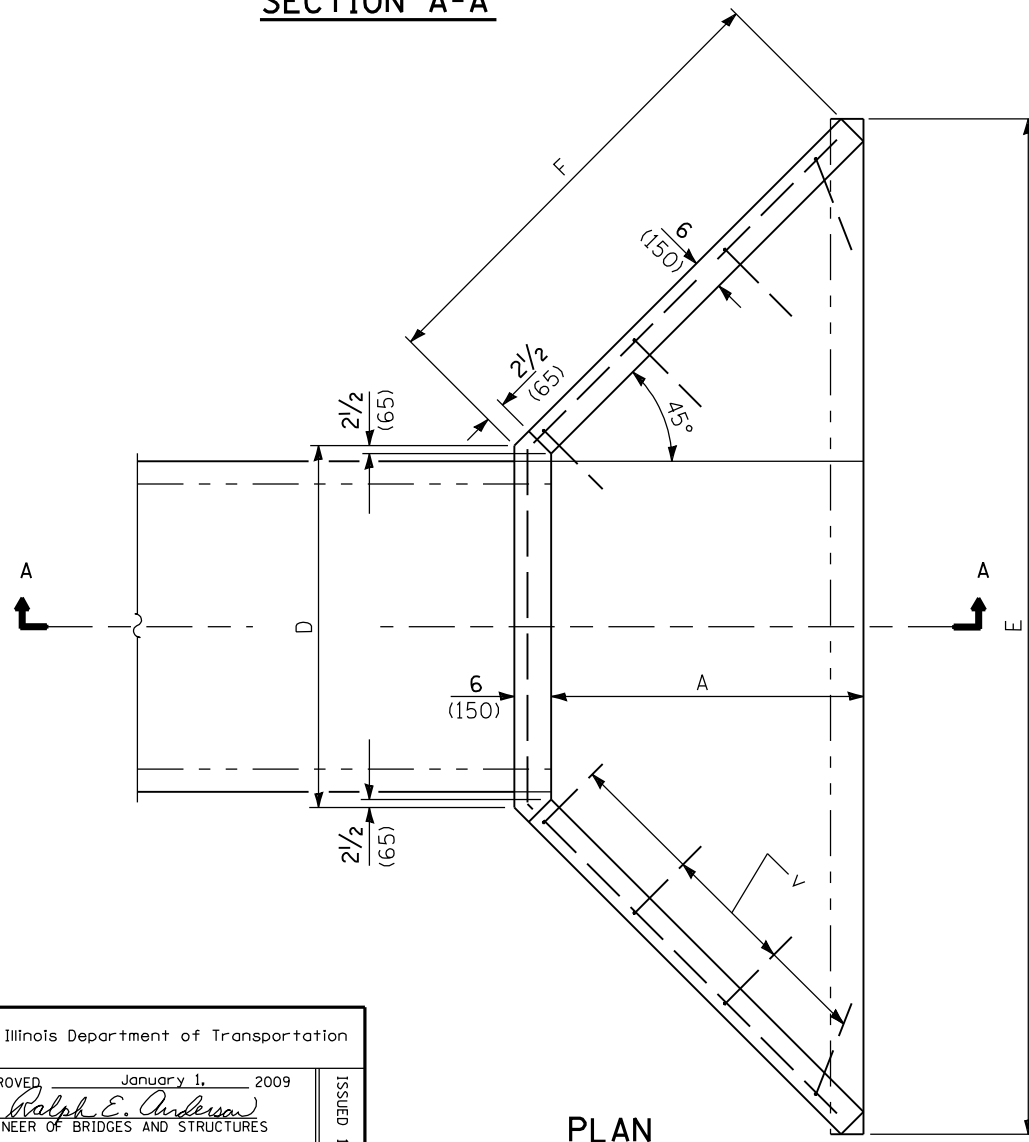
DIMENSIONS AND QUANTITIES

Design No.	Nominal Inside Dia. of Pipe	Slope of Wing Walls	Dimensions						Concrete 2 End Secs. cu. yds. (m ³)	Reinforcement Bars - No. 4 (No. 13)			
			A	B	C	D	E	F		h-Bars		Total Wt. 2 End Secs. lbs. (kg)	
										Bar	Length		
D15-1 1/2 (D375-1 1/2)	15 (375)	1:1 1/2	19 (485)	10 (260)	23 (590)	24 (610)	5'-5 1/2" (1.67 m)	29 1/2 (750)	0.9 (0.7)	h	6'-9" (2.06 m)	16	40 (18.1)
D15-2 (D375-2)	15 (375)	1:2	26 (660)	10 (260)	23 (590)	24 (610)	6'-7 1/2" (2.02 m)	3'-3 1/4" (1 m)	1.2 (0.9)	h ₁	8'-3" (2.52 m)	22	60 (27.2)
D18-1 1/2 (D450-1 1/2)	18 (450)	1:1 1/2	19 (485)	13 (330)	26 (660)	27 (690)	5'-8 1/2" (1.75 m)	29 1/2 (750)	1.3 (1.0)	h ₂	7'-0" (2.14 m)	16	40 (18.1)
D18-2 (D450-2)	18 (450)	1:2	26 (660)	13 (330)	26 (660)	27 (690)	6'-10 1/2" (2.11 m)	3'-3 1/4" (1 m)	1.3 (1.0)	h ₃	8'-6" (2.6 m)	22	60 (27.2)
D24-1 1/2 (D600-1 1/2)	24 (600)	1:1 1/2	25 (640)	16 (410)	33 (840)	35 (890)	7'-4 1/2" (2.26 m)	38 (970)	1.5 (1.1)	h ₄	9'-3" (2.82 m)	22	60 (27.2)
D24-2 (D600-2)	24 (600)	1:2	34 (865)	16 (410)	33 (840)	35 (890)	8'-10 1/2" (2.72 m)	4'-2 1/2" (1.29 m)	2.0 (1.5)	h ₅	11'-0" (3.24 m)	28	70 (31.8)
D30-1 1/2 (D750-1 1/2)	30 (750)	1:1 1/2	30 (770)	19 (480)	39 (990)	3'-5" (1.05 m)	8'-8 1/2" (2.68 m)	3'-9" (1.15 m)	2.0 (1.5)	h ₆	11'-0" (3.39 m)	28	70 (31.8)
D30-2 (D750-2)	30 (750)	1:2	3'-4" (1.01 m)	19 (480)	39 (990)	3'-5" (1.05 m)	10'-4 1/2" (3.17 m)	4'-11" (1.5 m)	2.6 (2.0)	h ₇	13'-0" (3.99 m)	34	80 (36.3)
D36-1 1/2 (D900-1 1/2)	36 (900)	1:1 1/2	36 (915)	22 (560)	3'-10" (1.17 m)	4'-1" (1.25 m)	10'-4 1/2" (3.17 m)	4'-5 1/2" (1.36 m)	2.6 (2.0)	h ₈	13'-3" (4.03 m)	30	80 (36.3)
D36-2 (D900-2)	36 (900)	1:2	4'-0" (1.22 m)	22 (560)	3'-10" (1.17 m)	4'-1" (1.25 m)	12'-4 1/2" (3.78 m)	5'-10 1/2" (1.79 m)	3.5 (2.7)	h ₉	15'-6" (4.73 m)	40	100 (45.4)

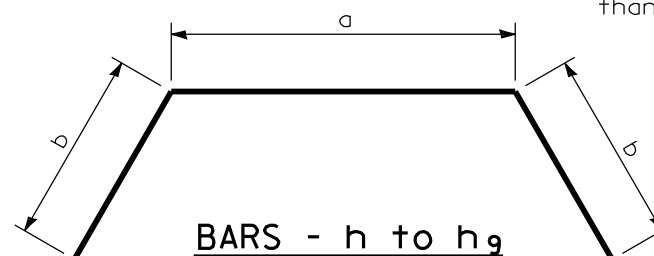
* If embankment slope above headwall is flatter than 1:2, provide wings for 1:2 slope.

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches (millimeters) unless otherwise shown.



PLAN



BARS - h to h₉
Bend in field one required in each headwall

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-07	Soft converted metric reinforcement bars.

REINFORCED CONCRETE END SECTIONS FOR PIPE CULVERTS 15" (375 mm) THRU 36" (900 mm) DIA. AT RIGHT ANGLES WITH ROADWAY

STANDARD 542101-02

Illinois Department of Transportation

APPROVED January 1, 2009
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

ISSUED 1-1-07

APPROVED January 1, 2009
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ENGINEER OF DESIGN AND ENVIRONMENT