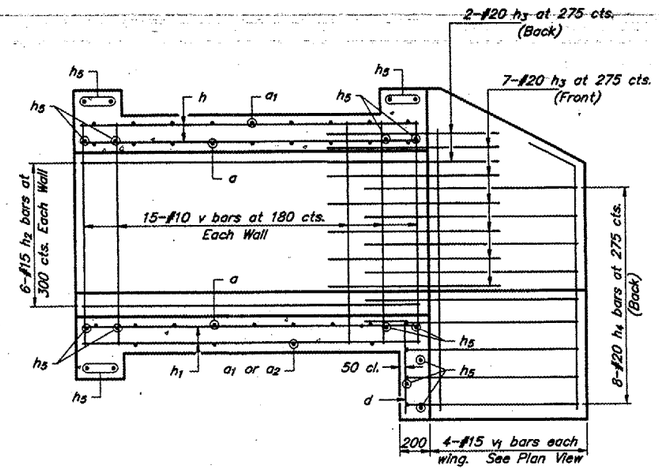
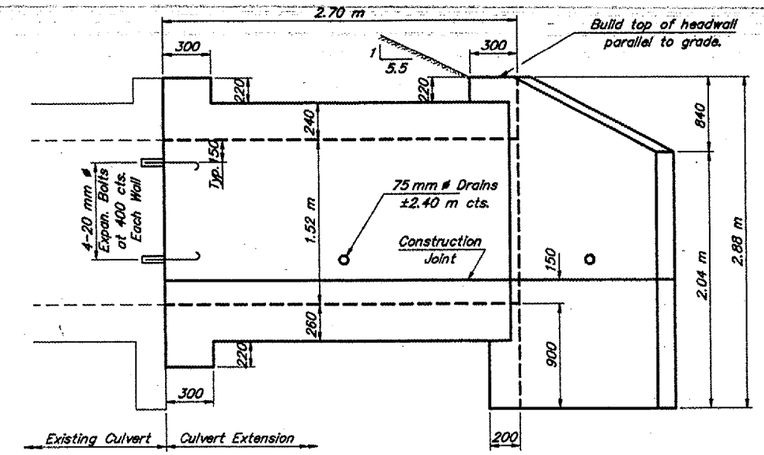
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1934	93-00017-01-RS	HARDIN	30	15
PROJECT NO.	STPSR-1934 (108)	CONTRACT NO. 99171		



SHOWING REINFORCEMENT



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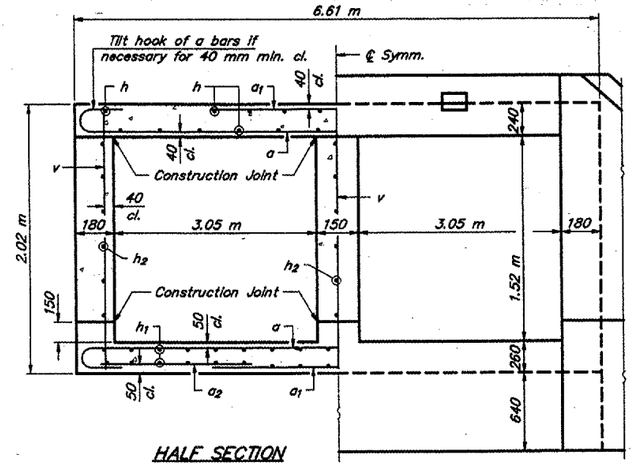
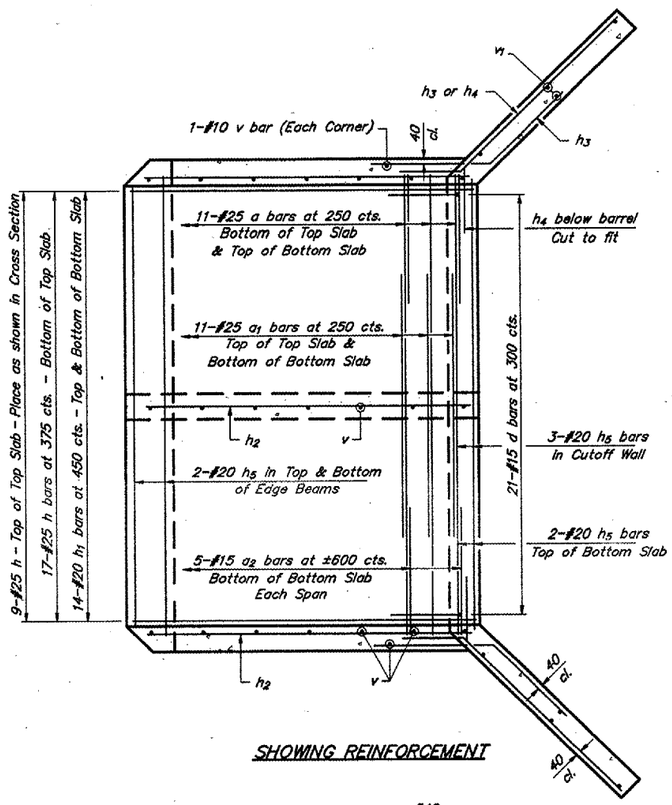


HALF SECTION THRU BARREL

HALF END ELEVATION

ELEVATION



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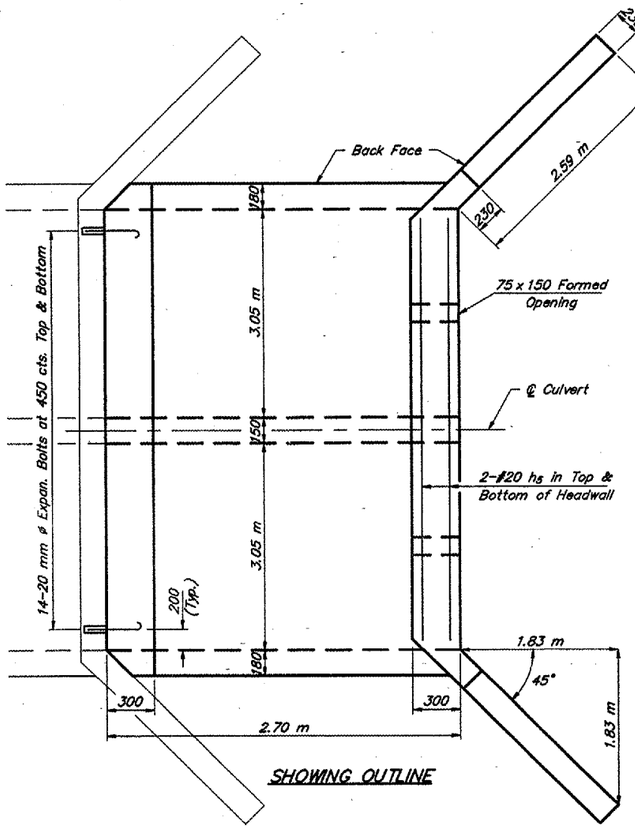
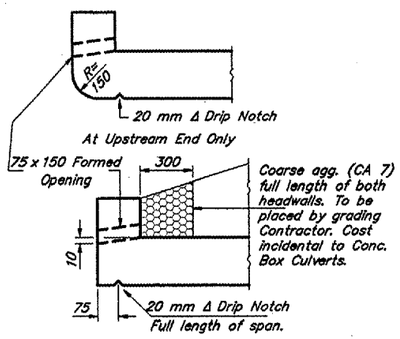
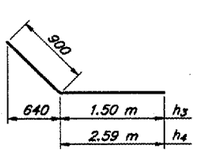


SHOWING OUTLINE

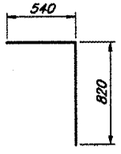


DRAIN DETAIL

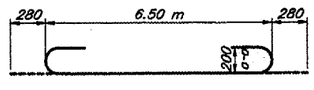
PLAN



BARS h3 & h4



BAR d



BAR a

DESIGN STRESSES
f_y = 400 MPa
f'_c = 24 MPa

LOADING MS 18 & ALT.

NOTES

Barrel shall be poured monolithically with wingwalls.
Exposed edges shall be beveled 20 mm.
Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M, Grade 400.
Expansion bolts shall consist of self drilling expansion shields and 20 mm ø hooked bolts. Bolts shall extend a minimum of 225 mm into new concrete.
All dimensions are in millimeters (mm) except as noted.

BILL OF MATERIAL
(One Extension)

Bar	No.	Size	Length
a	22	#25	7.06
a_1	22	#25	2.66
a_2	10	#15	2.50
d	21	#15	1.36
h	26	#25	2.60
h_1	28	#20	2.60
h_2	18	#15	2.60
h_3	18	#20	2.40
h_4	16	#20	3.49
h_5	17	#20	6.40
v	47	#10	1.92
v_1	8	#15	2.70
Conc. Box Culverts		m^3	15.5
Reinforcement Bars		kg	2030
Expansion Bolts		Each	40

BOX CULVERT EXTENSION
STATION 1+507.3 RT.
FAS ROUTE 1934
SECTION 93-00017-01-RS
PROJECT NO. STPSR-1934 (108)
HARDIN COUNTY

475BCEIR 06/18/02 15:43 RM