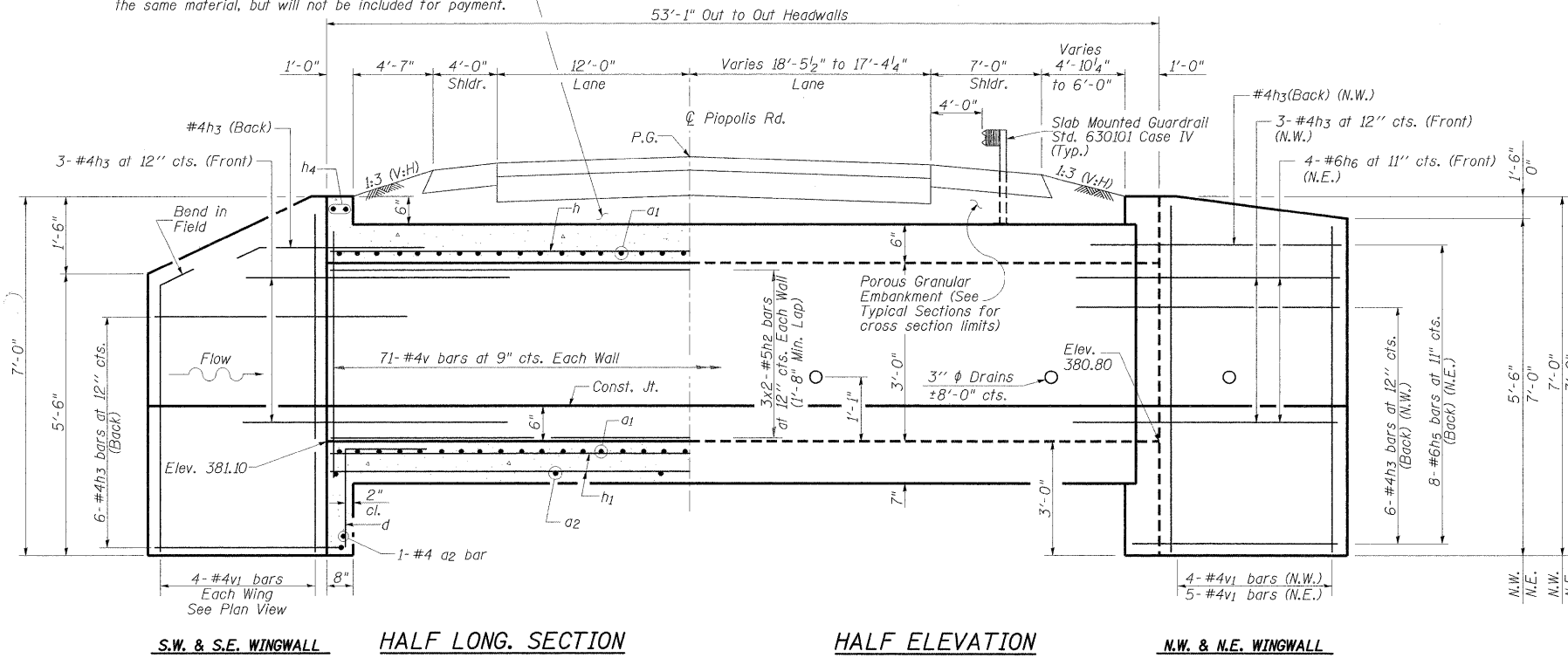


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Approximate limits of excavation and maximum limits of Porous Granular Embankment shall be 2' from the outside wall of the structure and extend up at a 1:1 slope normal to the culvert. (Porous granular backfill shall be CA-6 or CA-10). Outer 3' of culvert shall be backfilled with impervious material at each end. Excavation beyond these limits shall be backfilled with the same material, but will not be included for payment.

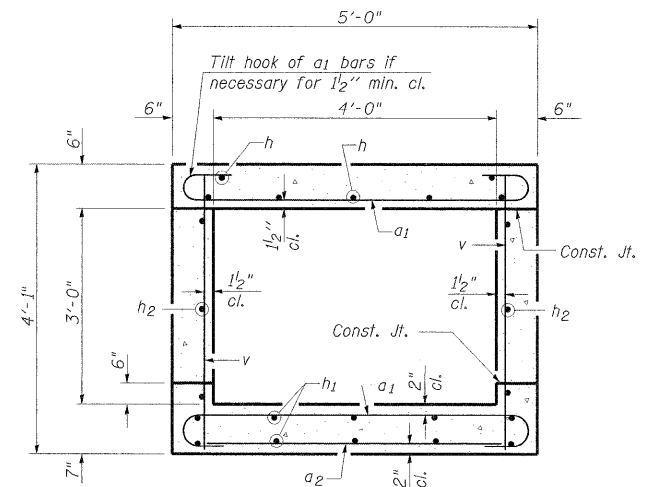


SECTION THRU HEADWALL
(Up Stream End Only)

LOADING HS 20-44
Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES
FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

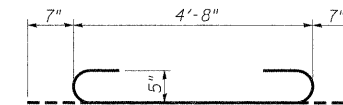
DESIGN SPECIFICATIONS
AASHTO Standard Specifications for Highway Bridges 2002



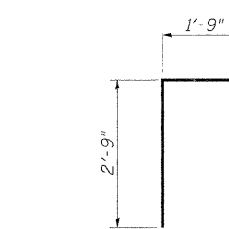
SECTION THRU BARREL

BILL OF MATERIAL

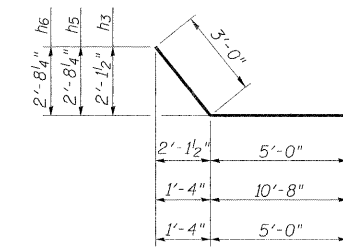
Bar	No.	Size	Length	Shape
a1	196	#5	5'-10"	U
a2	29	#4	4'-8"	—
d	8	#4	4'-6"	L
h	14	#5	27'-3"	—
h1	20	#4	27'-1"	—
h2	12	#5	27'-3"	—
h3	30	#4	8'-0"	—
h4	4	#6	4'-0"	—
h5	8	#6	13'-8"	—
h6	4	#6	8'-0"	—
v	146	#4	3'-9"	—
v1	17	#4	6'-8"	—
Porous Granular Embankment			Cu. Yd.	100
Concrete Box Culverts			Cu. Yd.	21.8
Reinforcement Bars			Pound	3250



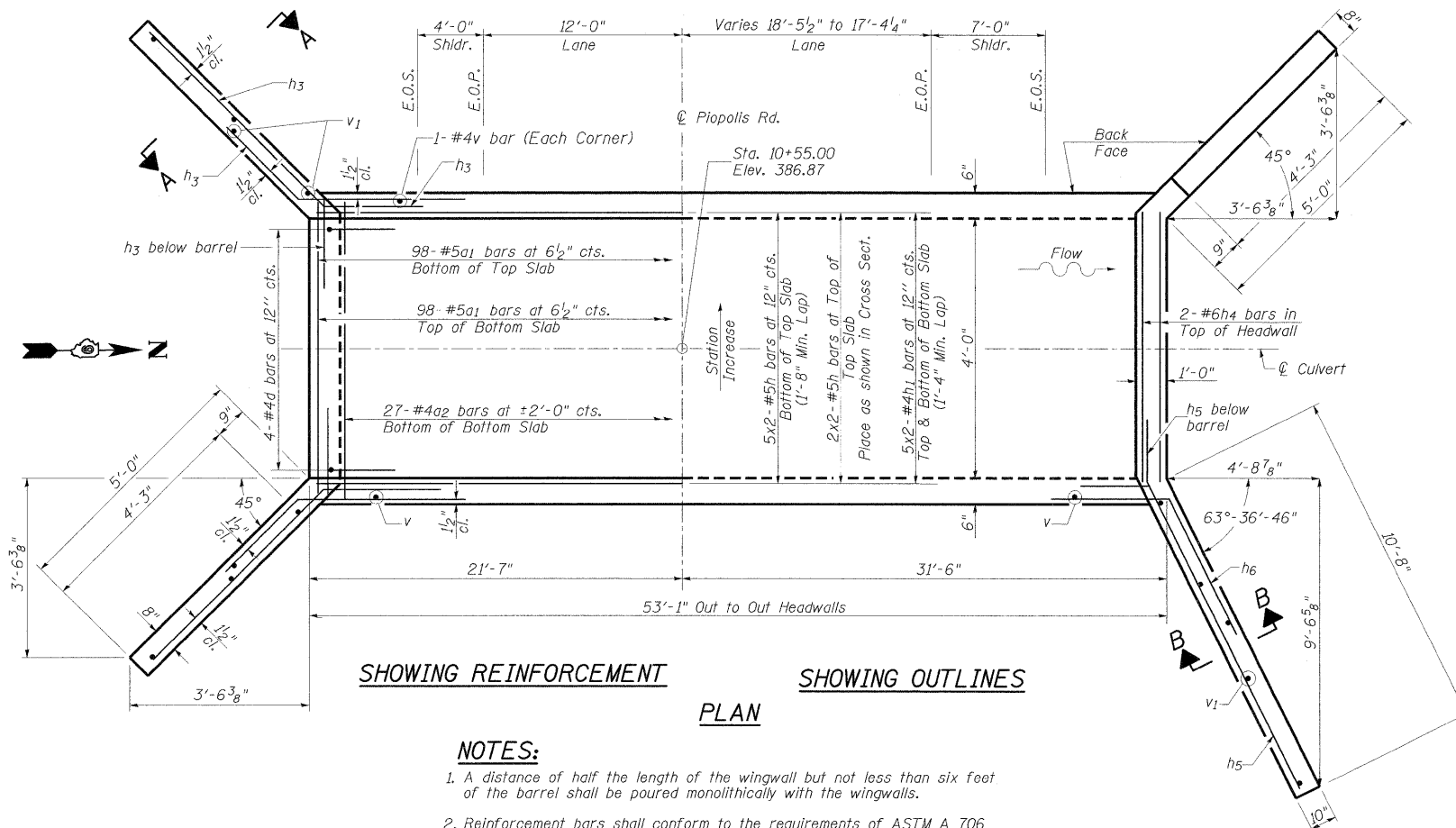
BAR a1



BAR d



BAR h3, h5 & h6



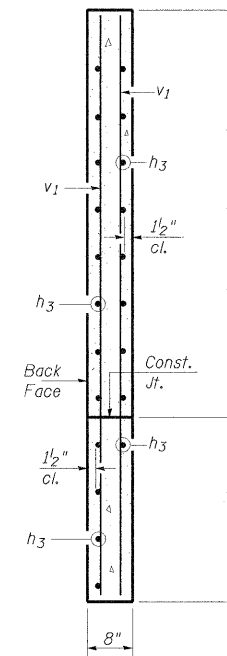
SHOWING REINFORCEMENT

SHOWING OUTLINES

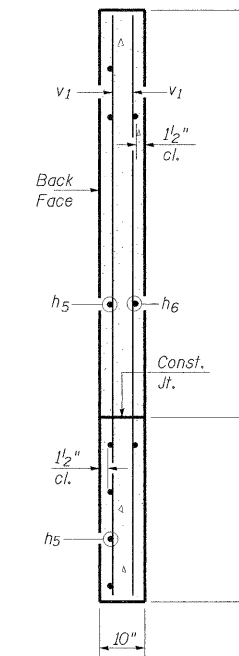
PLAN

NOTES:

- A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
- Precast culvert alternate is not allowed.



SECTION A-A



SECTION B-B

BOX CULVERT DETAILS
PIOPOLIS ROAD (C.H. 20) OVER UNNAMED STREAM
STATION 10+55.00

CRAWFORD MURPHY & TILLY, INC. CONSULTING ENGINEERS SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL DESIGNED BY: CJW CHECKED BY: WLB DRAWN BY: GLD DATE: 4/12/10	SHEET NO. 1	F.A.P. RTE. 776	SECTION 102B-4	COUNTY HAMILTON	TOTAL SHEETS 42	SHEET NO. 29
	1 SHEETS	CONTRACT NO. 78081			FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT	