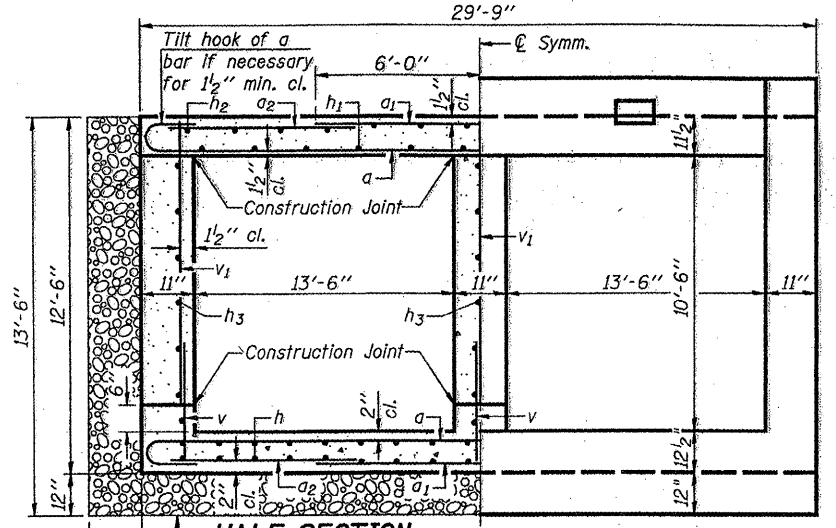
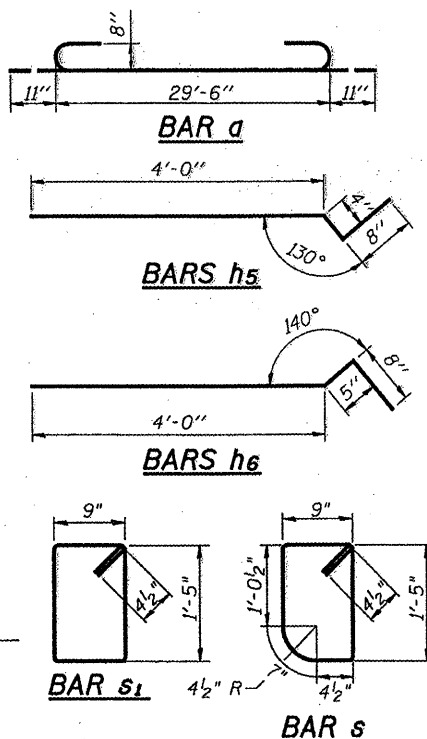


**HALF LONG SECTION**  
Showing bars in Center Wall  
Dimensions are at Right Angles to  $\odot$  Roadway

**HALF ELEVATION**  
Showing bars in Outside Wall

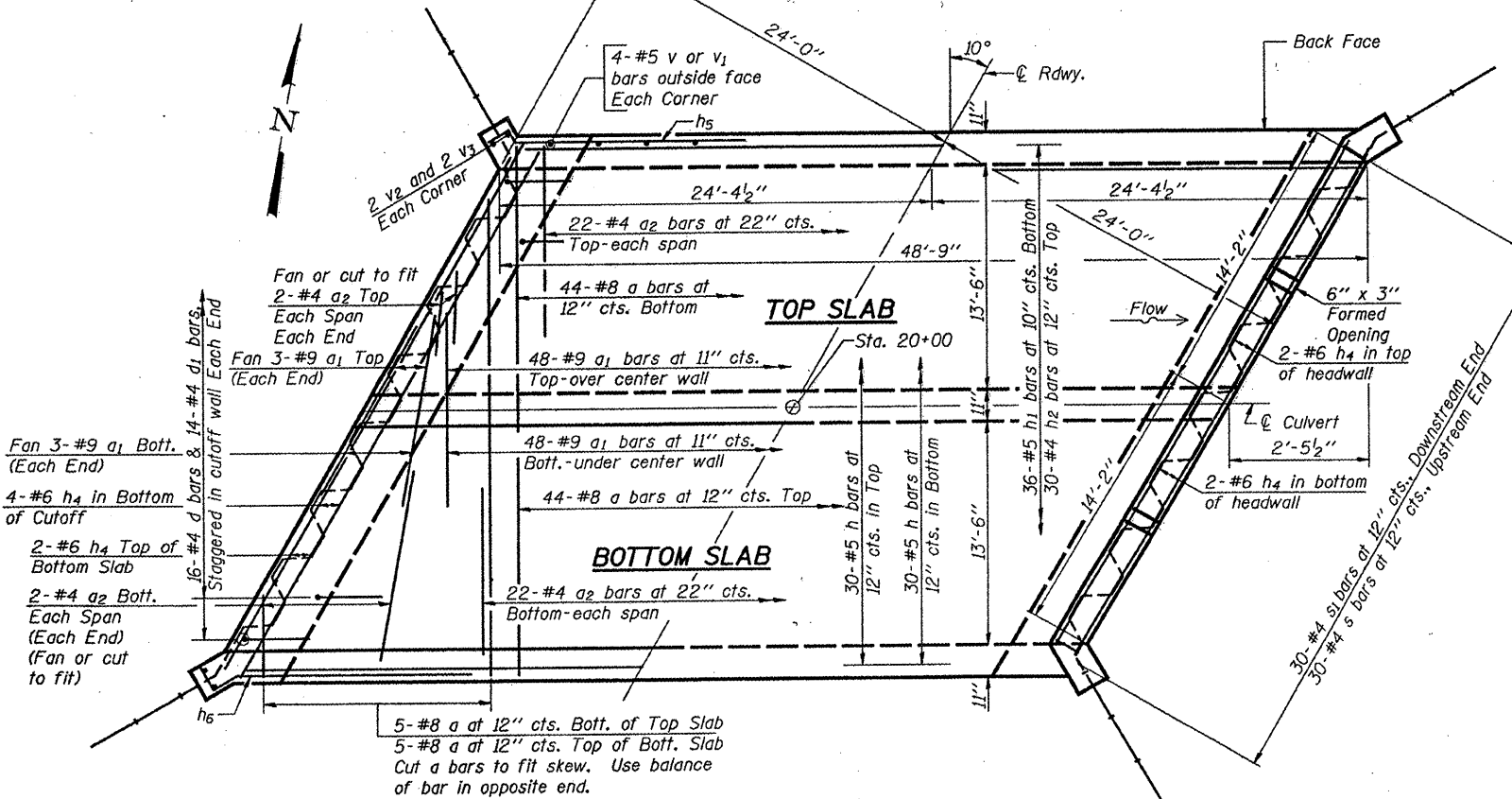


**HALF SECTION THRU BARREL**

**HALF END ELEVATION BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a	98	#8	31'-4"	
a1	108	#9	12'-0"	—
a2	104	#4	10'-1"	—
d	32	#4	3'-5"	
d1	28	#4	2'-9"	
h	60	#5	48'-5"	—
h1	36	#5	48'-5"	—
h2	30	#4	48'-5"	—
h3	36	#7	48'-5"	—
h4	20	#6	29'-0"	—
h5	28	#5	5'-0"	—
h6	28	#5	5'-1"	—
s	30	#4	5'-1"	
s1	30	#4	4'-11"	
v	238	#5	3'-6"	—
v1	238	#5	11'-2"	—
v2	8	#5	4'-6"	—
v3	8	#5	11'-9"	—

**NOTE:**  
Lap a2 bars with every other a1 bar.



**SHOWING REINFORCEMENT PLAN**

**SHOWING OUTLINES**

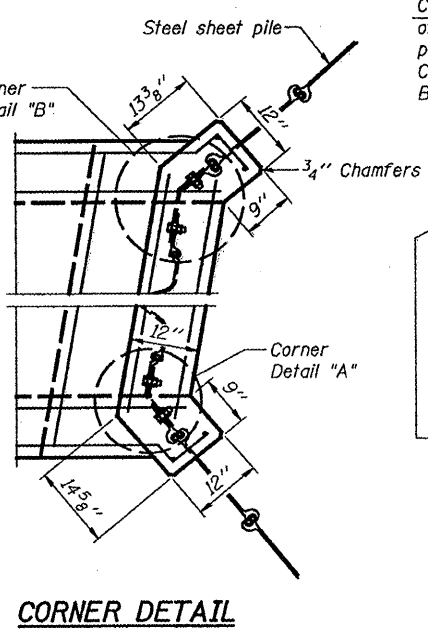
**LOADING HS20-44**  
Allow for 50 #/sq. ft. future wearing surface

**WATERWAY INFORMATION**

DRAINAGE AREA	3.88 Sq. Mi.
DESIGN DISCHARGE (20 Yr.)	1,150 CFS
EXISTING OPENING	192 Sq. Ft.
REQUIRED OPENING	284 Sq. Ft.
PROPOSED OPENING	284 Sq. Ft.
CREATED HEAD (20 Yr.)	0.52 Ft.
100 YR. DISCHARGE	1,780 CFS
CREATED HEAD (100 Yr.)	0.40 Ft.
HIGH WATER ELEV. (100 Yr.)	787.71

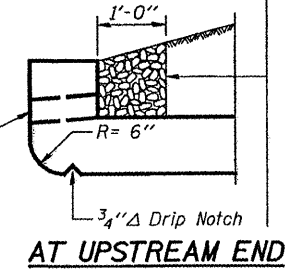
**DESIGN STRESSES**  
fy = 60,000 p.s.i.  
f'c = 3,500 p.s.i.

**DESIGN SPECIFICATIONS**  
Designed in Accordance with 2002 A.A.S.H.T.O. Standard Specifications - 17th Edition

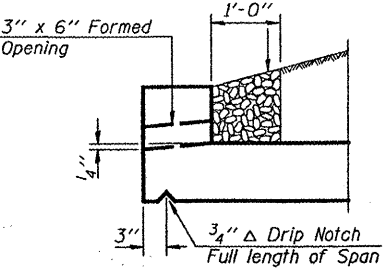


**CORNER DETAIL**

Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.



**AT UPSTREAM END**



**AT DOWNSTREAM END DRAIN DETAIL**

**NOTES:**  
\*PZ 27 = 729 sq. ft.  
PS 27.5 = 1,426 sq. ft.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.

All exposed edges shall be chamfered 3/4" unless otherwise noted.  
Required channel excavation & structure excavation shall be considered incidental to concrete box culvert.  
**PRECAST OPTION NOT ALLOWED.**

**DOUBLE BARREL BOX CULVERT DETAILS**  
**N. BOLTON ROAD OVER PRESTON CREEK**  
**STATION 20+00**  
**S.N. 089-5138**

**MINIMUM BAR LAP**

SIZE	LAP
#4	1'-4"
#5	1'-8"
#6	2'-0"
#7	3'-5"

PRESTON CREEK  
BUILT 2011 BY  
HARLEM ROAD DISTRICT  
SEC. 10-06118-00-BR  
FAS RT. 78 STA. 20+00  
STR. NO. 089-5138 LOADING HS20

**NAME PLATE LETTERING**  
Refer To Std. 515001-03



**Bryan K. Commey**  
DATE: 2/1/2011  
EXPIRES 11/30/12

I Certify That To The Best of My Knowledge, Information and Belief, This Bridge Design Is Structurally Adequate For The Design Loading Shown On The Plans, The Design Is An Economical One Complies With Requirements Of The Current "AASHTO Standard Specifications For Highway Bridges."

STRUCTURAL SHEET NO. 2 OF 4 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	78	10-06118-00-BR	STEPHENSON	18	11
CONTRACT NO. 85531					
WHA # 1120D10 ILLINOIS FED. AID PROJECT ER-0177(038)					