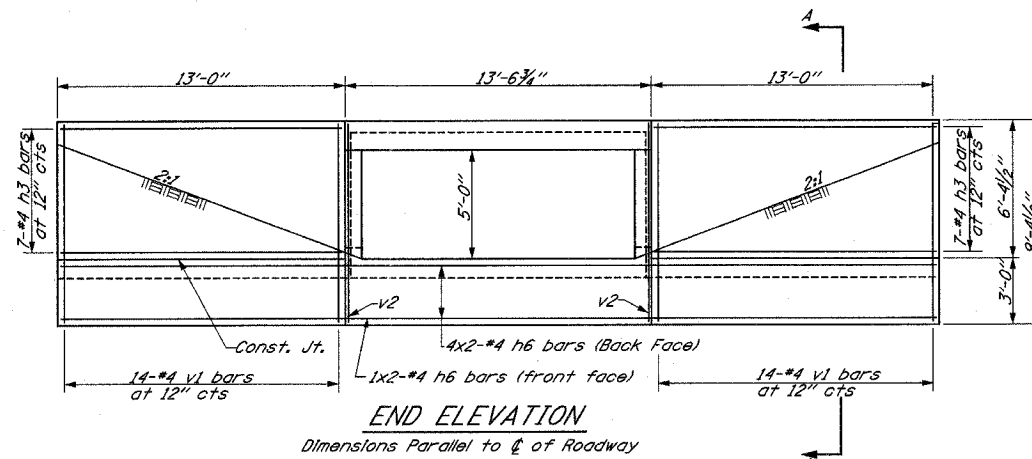
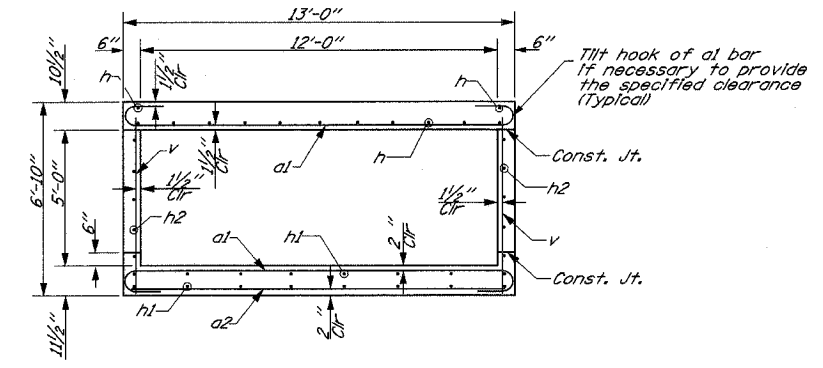


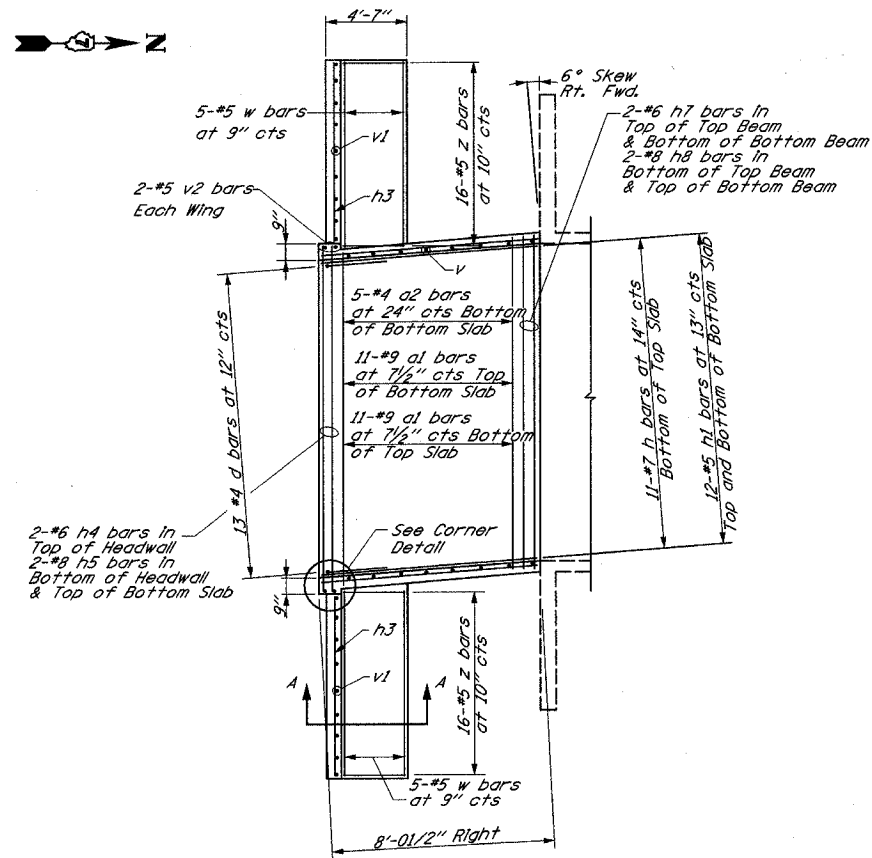
**HALF LONG SECTION**  
Dimensions at Rt L to & of Roadway



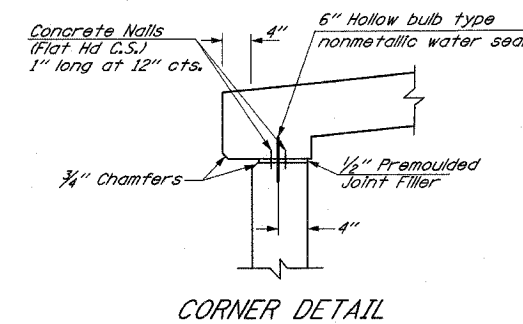
**END ELEVATION**  
Dimensions Parallel to & of Roadway



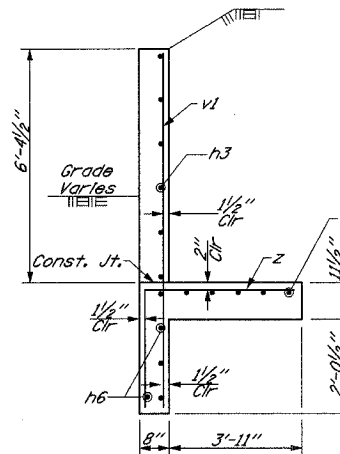
**SECTION THRU BARREL**



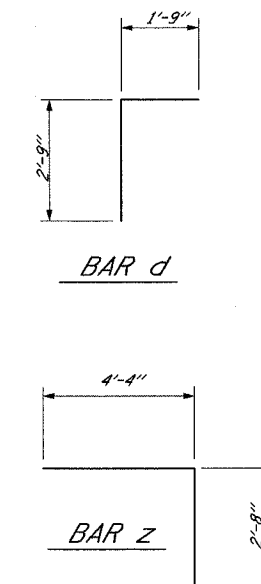
**PLAN SHOWING REINFORCEMENT**



**CORNER DETAIL**



**SECTION A-A**

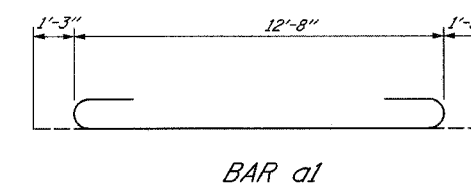


**BAR d**

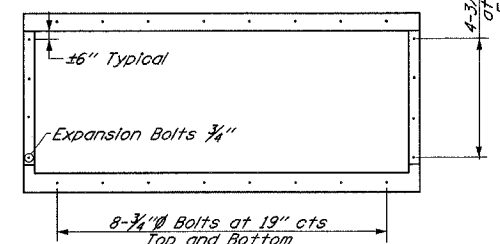
**BAR z**

**BILL OF MATERIAL**

Bar No.	Size	Length	Concrete Box Culverts	CU Yd
a1	#9	15'-2"		
a2	#4	12'-8"		
d	#4	4'-6"		
h	#7	7'-8"		
h1	#5	7'-8"		
h2	#5	7'-8"		
h3	#4	12'-8"		
h4	#6	13'-2"		
h5	#8	13'-2"		
h6	#4	21'-4"		
h7	#6	12'-8"		
h8	#8	12'-8"		
v	#4	6'-6"		
v1	#4	9'-0"		
v2	#5	9'-0"		
w	#5	12'-10"		
z	#4	7'-0"		
			Concrete Box Culverts	CU Yd 19.7
			Reinforcement Bars	Pound 2930
			Expansion Bolts 3/4"	Each 24



**BAR a1**



**EXPANSION BOLT PLACEMENT DETAIL**

**NOTES:**

- Bench Mark: & IL Route 33 at & Culvert (Sta. 238+44.88), Elev. 589.55.
- Design Fill Height 2' Rt.
- Exposed edges shall be chamfered 3/4".
- Class SI Concrete shall be used throughout.
- Reinforcement Bars shall conform to the requirements of AASHTO M31 or M322, Grade 60.
- Bars indicated thus 12x4-#5 etc. indicates 12 lines of #5 bars with 4 lengths per line.
- Nonmetallic water seal used in the wingwall joints shall extend from the top of the footing to within 6" of the top of the headwall.
- For Backfilling and Embankment, see Standard Specifications.
- Hooked Expansion Bolts shall consist of self-drilling expansion shields and hooked bolts.
- Hooked Bolts shall extend a minimum of 9" into new concrete.

**SPECIFICATION**

1996 AASHTO with 1997, 1998, 1999, 2000 and 2002 Interims

**DESIGN STRESSES**

$f_y = 60,000 \text{ psi}$   
 $f'_c = 3,500 \text{ psi}$

**LOADING HS 20-44**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**CULVERT EXTENSION DETAILS**  
& STA. 238+44.88 RT.  
SHEET 1 OF 5

DATE 9/01  
DRAWN BY BDM  
CHECKED BY SJK