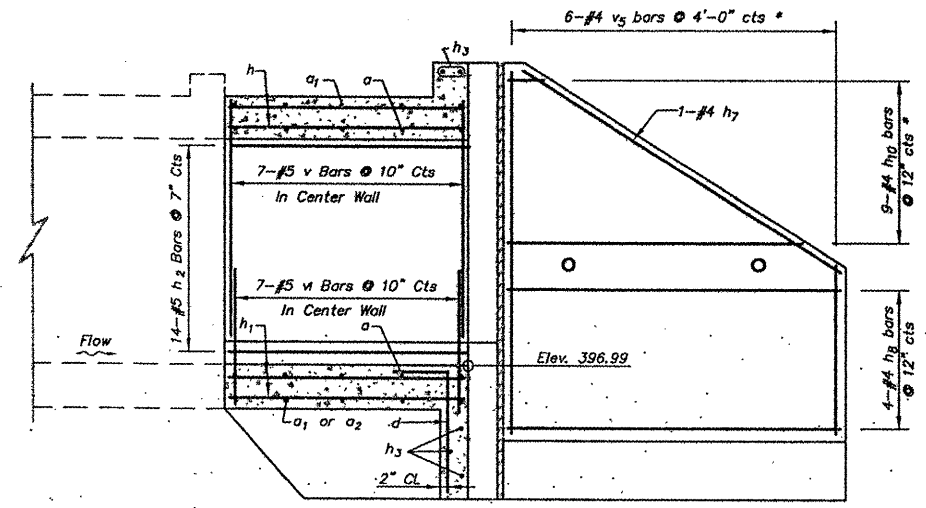
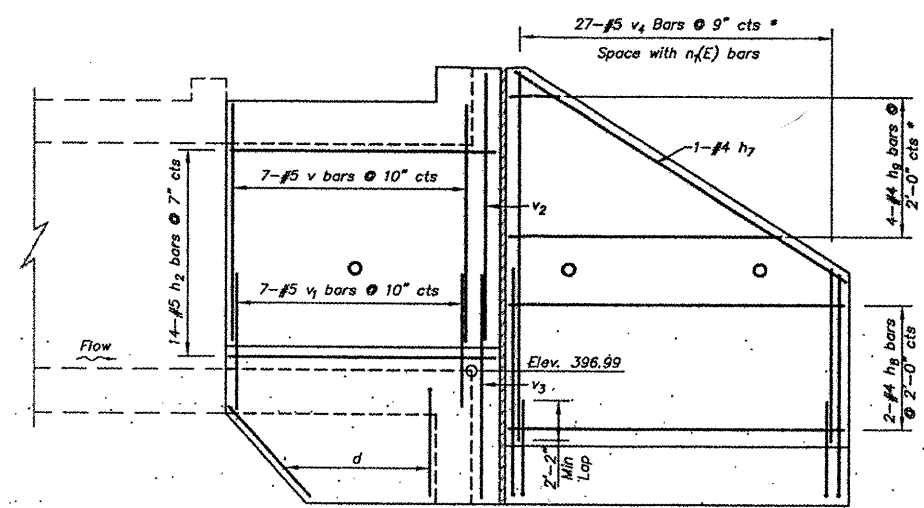


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	99-00009 -01-FP	ST. CLAIR		76
FED. ROAD DIST. NO. 8		ILLINOIS	FED. AID PROJECT- 98-089-97	
CULVERT STRUCTURAL				

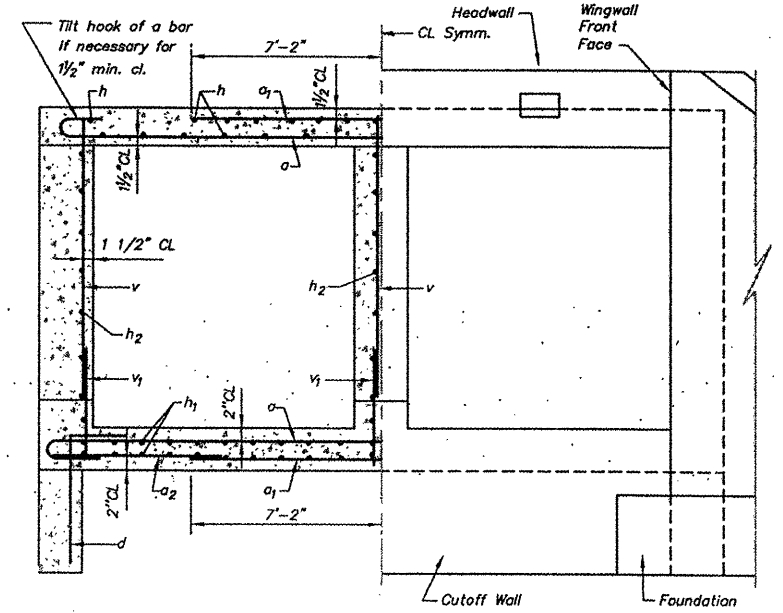


**PART SECTION**  
(Showing Bars in Center Wall)  
**SECTION B-B**  
**REINFORCEMENT FRONT FACE**

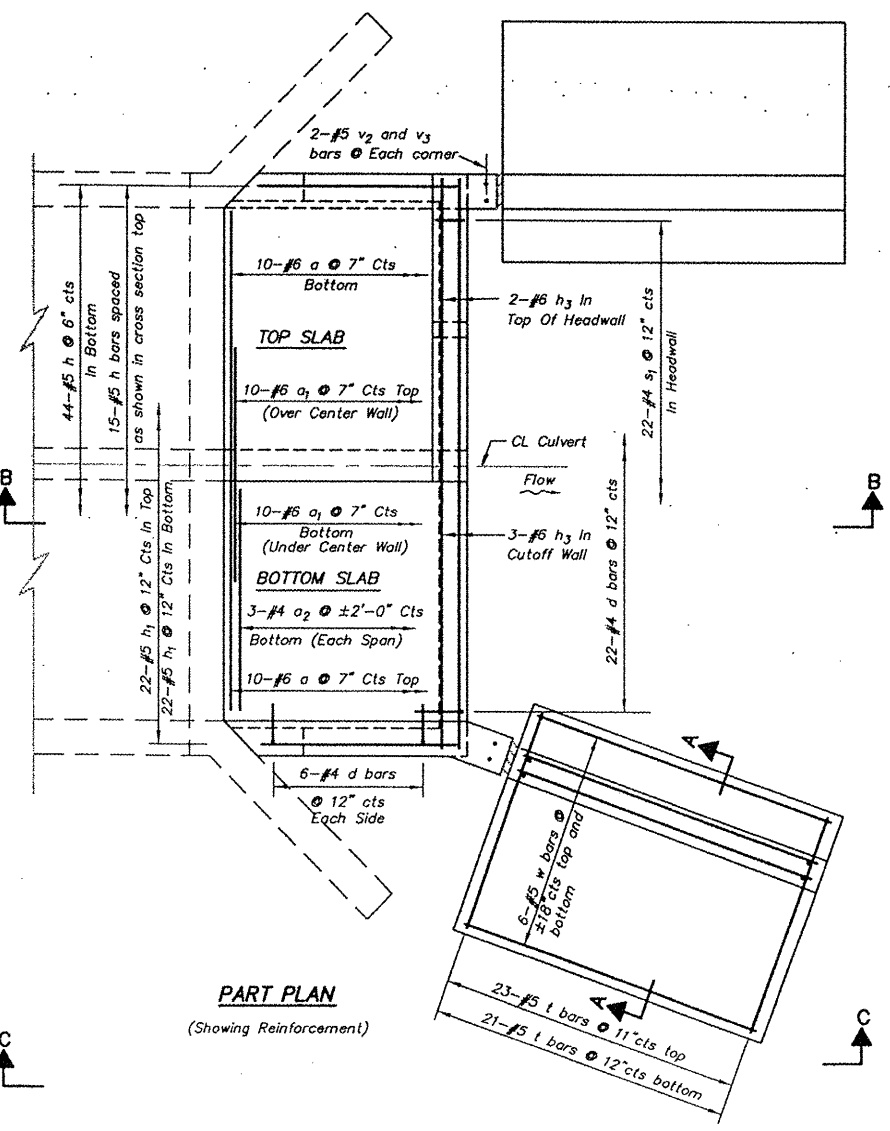


**PART ELEVATION**  
(Showing Bars in Outside Wall)  
**ELEVATION C-C**  
**REINFORCEMENT BACK FACE**

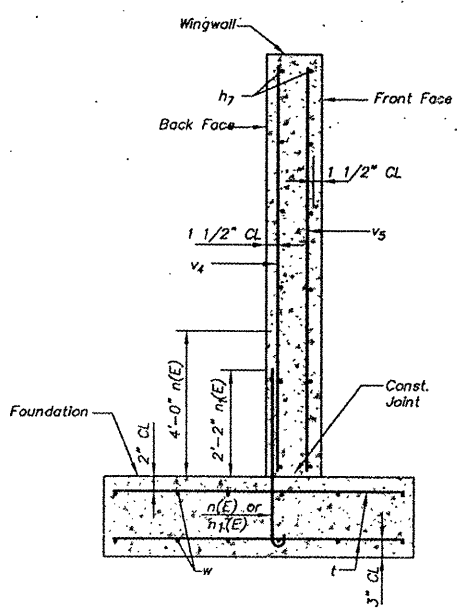
\* Cut  $v_4$ ,  $v_5$ ,  $h_9$  and  $h_{10}$  bars to fit steps. Use balance of bar in other wingwall.



**HALF SECTION THRU BARREL**  
(Showing Reinforcement)  
**HALF END ELEVATION**

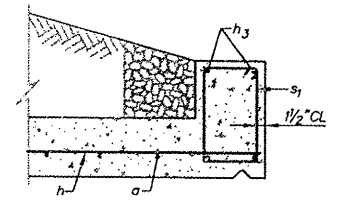
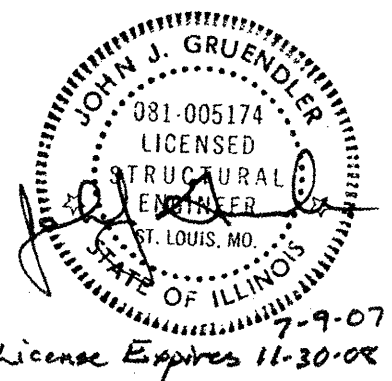


**PART PLAN**  
(Showing Reinforcement)

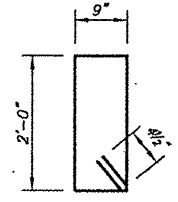


**SECTION A-A**

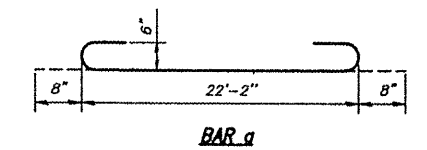
Note: Wingwall reinforcement similar each wingwall this end.



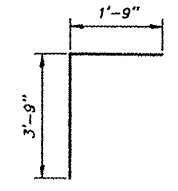
**HEADWALL SECTION AT DOWNSTREAM END**



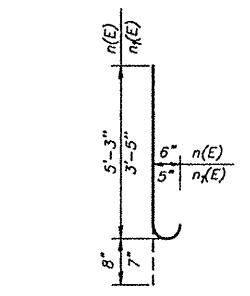
**BAR  $s_1$**



**BAR d**



**BAR d**



**BARS  $n(E)$  and  $n_k(E)$**

Notes:  
Reinforcement bars designated (E) shall be epoxy coated. Bars indicated thus 12x4-#5 etc. indicates 12 lines of bars with 4 lengths per line.

BILL OF MATERIAL				
Bar	No.	Size	Length	Shape
a	20	#6	23'-6"	
$a_1$	20	#6	14'-4"	
$a_2$	6	#4	5'-7"	
d	34	#4	5'-6"	
h	59	#5	5'-8"	
$h_1$	44	#5	5'-8"	
$h_2$	42	#5	5'-8"	
$h_3$	5	#6	22'-2"	
$h_7$	4	#4	22'-1"	
$h_8$	12	#4	20'-11"	
$h_9$	4	#4	22'-10"	
$h_{10}$	9	#4	21'-1"	
$n(E)$	56	#6	5'-11"	
$n_k(E)$	54	#5	4'-0"	
$s_1$	22	#4	6'-3"	
t	88	#5	7'-8"	
v	21	#5	8'-4"	
$v_1$	21	#5	2'-11"	
$v_2$	4	#5	10'-3"	
$v_3$	4	#5	5'-11"	
$v_4$	27	#5	16'-9"	
$v_5$	6	#4	16'-8"	
w	24	#5	20'-11"	
Concrete Box Culverts			Cu. Yd.	48.5
Reinforcement Bars, Epoxy Coated			Pound	720
Reinforcement Bars			Pound	4900

DESIGNED	*	
CHECKED	*	
DRAWN	PES	
CHECKED	TPW	

	200
EXAMINED	ENGINEER OF BRIDGE DESIGN
PASSED	ENGINEER OF BRIDGE AND STRUCTURES

(Drawings not to scale)