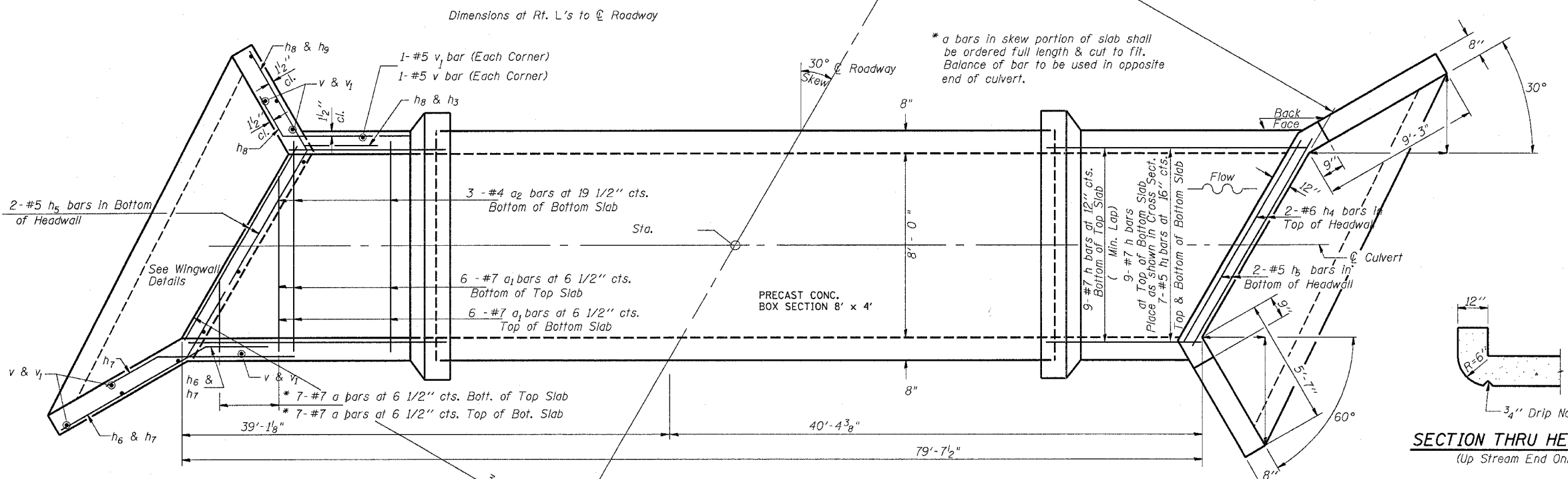
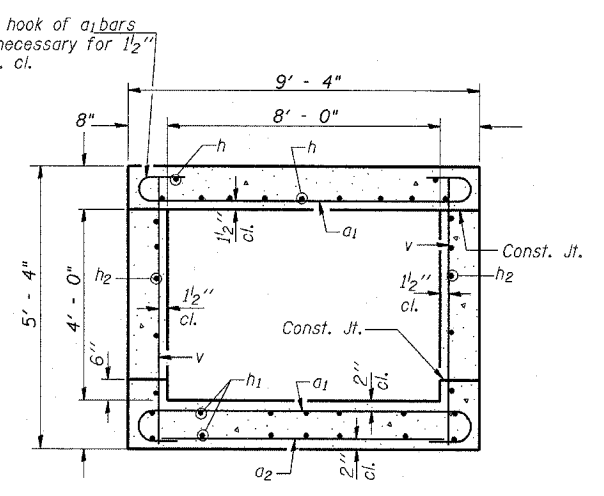
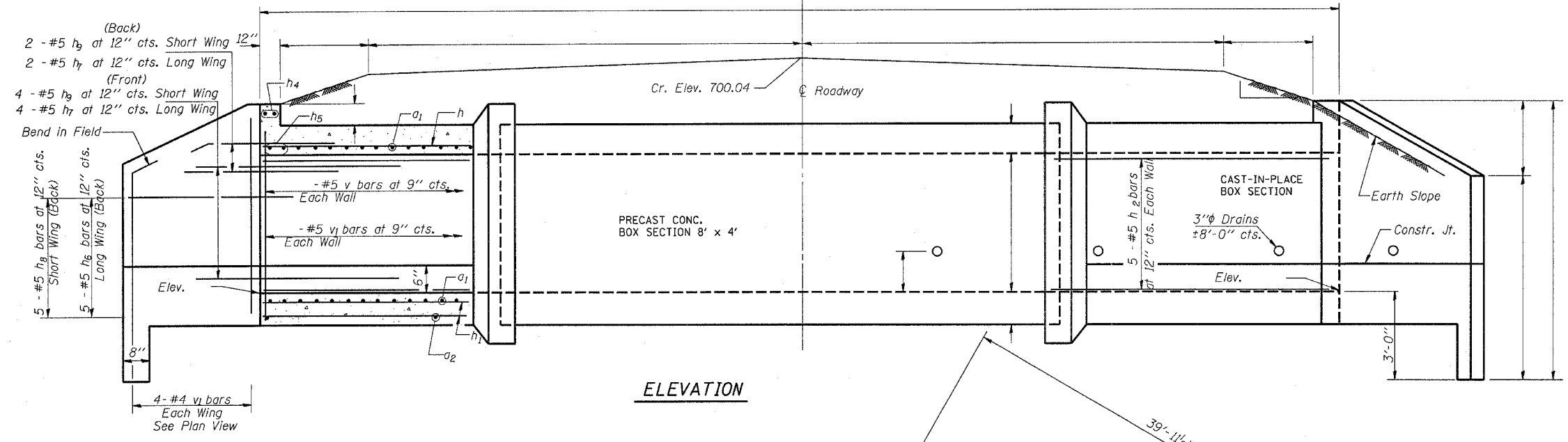


F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	IN & TS	KENDALL	174	70
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



**BILL OF MATERIAL**

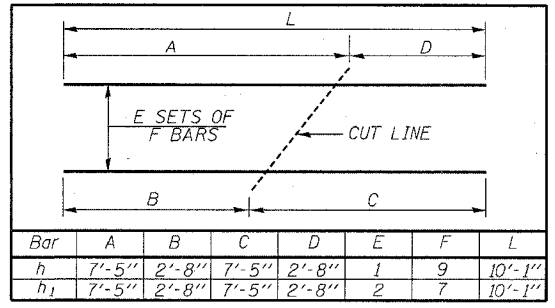
Bar	No.	Size	Length	Shape
$a_1$	38	#7	10'-4"	
$a_2$	6	#4	8'-3"	
h	11	#7	10'-1"	
$h_1$	14	#7	10'-1"	
$h_2$	10	#5	7'-4"	
$h_3$	10	#5	2'-8"	
$h_4$	4	#6	9'-7"	
$h_5$	4	#5	9'-7"	
$h_6$	10	#5	12'-1"	
$h_7$	10	#5	8'-0"	
$h_8$	12	#5	7'-8"	
$h_9$	12	#5	7'-3"	
v	44	#5	3'-11"	
$v_1$	44	#5	2'-10"	
Concrete Box Culverts Cu. Yd.				18
Reinforcement Bars Pounds				2258.6

**SECTION THRU HEADWALL**  
(Up Stream End Only)

**NOTES**

Reinforcement Bars shall conform to the requirements of AASHTO M-31, M-42 or M-53, Grade 60.  
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.  
 All construction joints shall be bonded.

**BAR CUTTING DIAGRAM**



**DESIGN STRESSES**

$f_y = 60,000$  psi  
 $f'c = 3,500$  psi

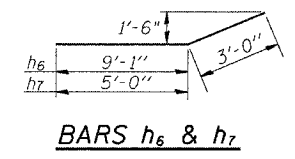
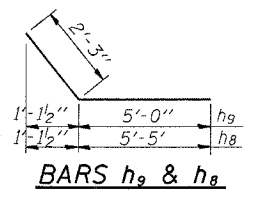
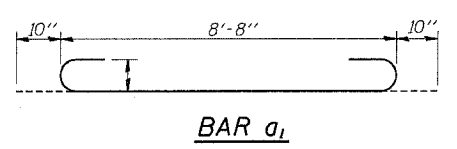
**LOADING HS 20-44 & ALT.**

ILLINOIS DEPARTMENT OF TRANSPORTATION

**CULVERTS AND WINGWALLS**

**DETAIL STA. 67+00**

DRAWN BY  
 CHECKED BY



**MIN. LAP SPLICE**

Bar	Min. Lap Splice
Bar	Barrels Wingwalls
#4	1'-4" 1'-8"
#5	1'-8" 2'-2"