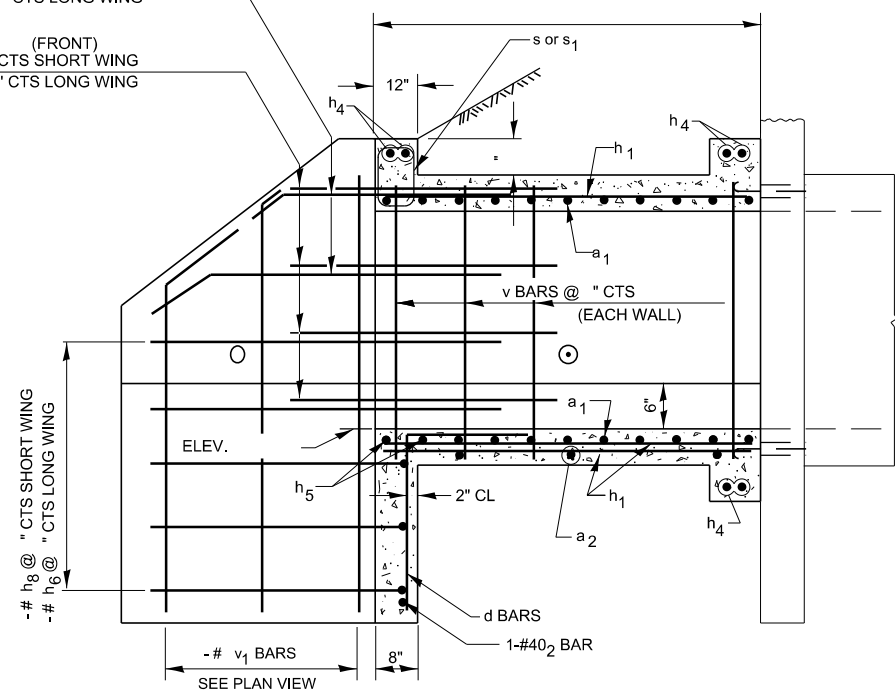
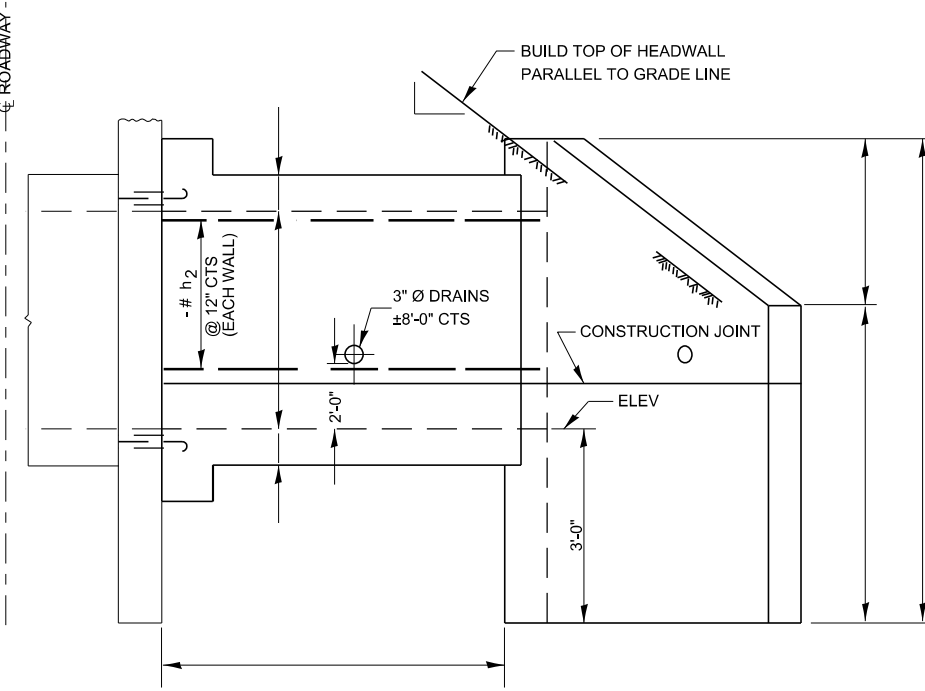


(BACK)
 -# h₃ @ " CTS SHORT WING
 -# h₇ @ " CTS LONG WING

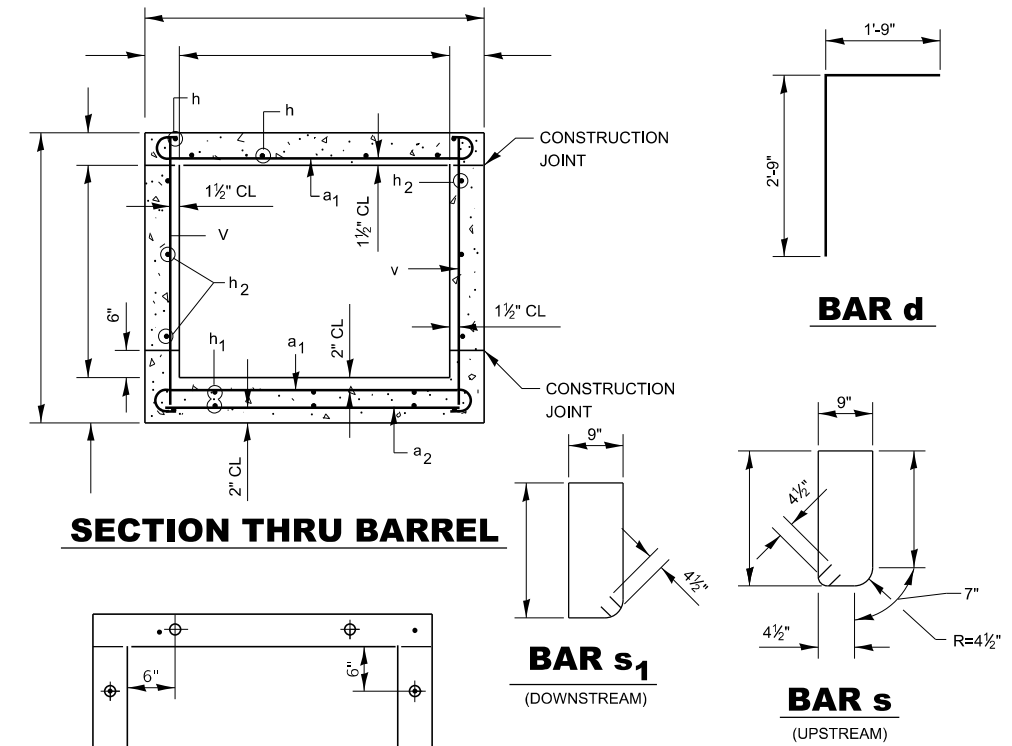
(FRONT)
 -# h₃ @ " CTS SHORT WING
 -# h₇ @ " CTS LONG WING



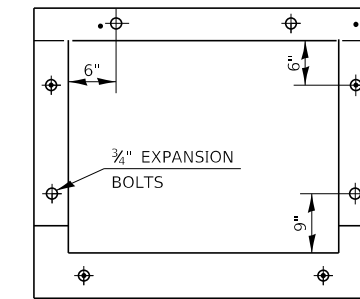
HALF LONG SECTION



HALF ELEVATION



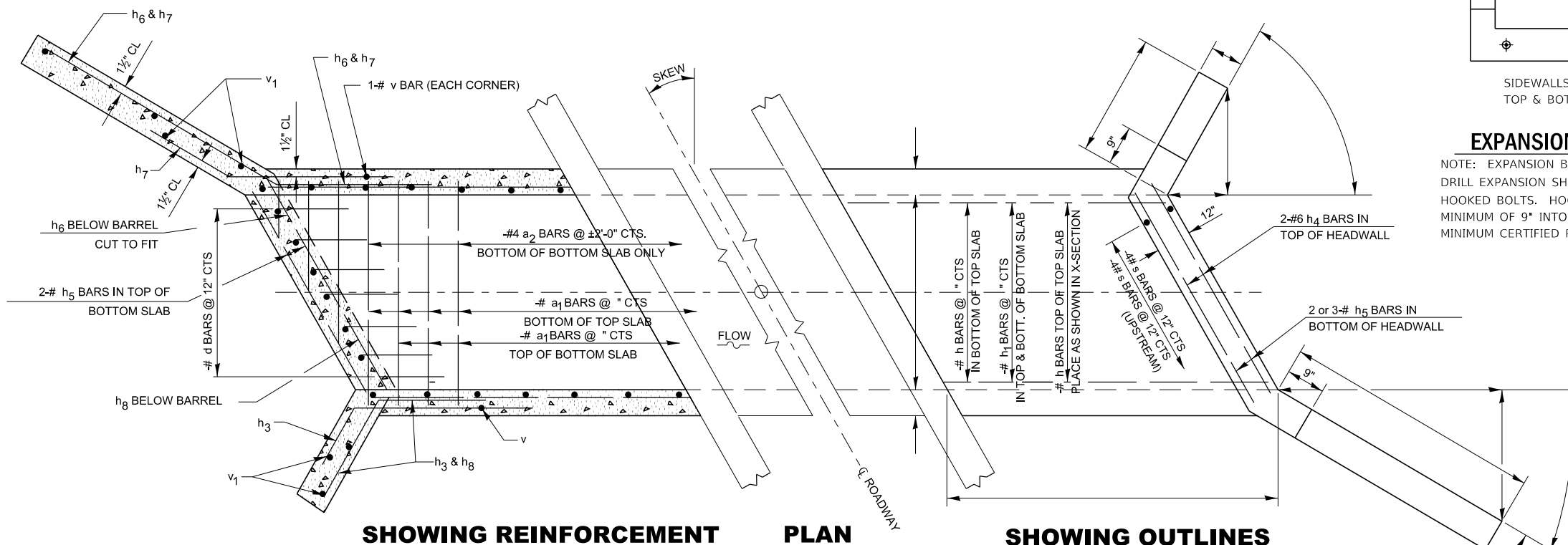
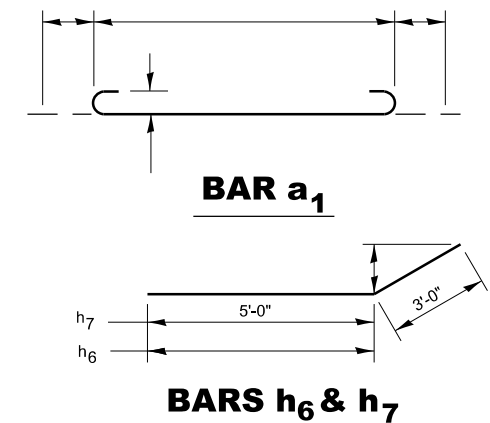
SECTION THRU BARREL



SIDEWALLS @ " CTS
 TOP & BOTTOM @ " CTS

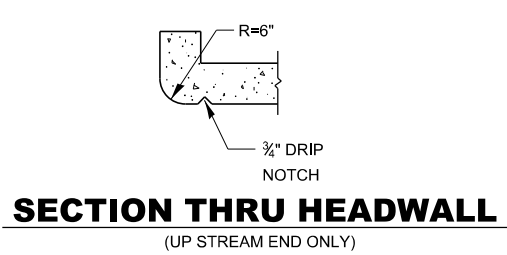
EXPANSION BOLT LOCATION

NOTE: EXPANSION BOLTS SHALL CONSIST OF SELF DRILL EXPANSION SHIELDS AND 3/8" DIAMETER HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9" INTO NEW CONCRETE. MINIMUM CERTIFIED PROOF LOAD = 4,080 LBS.



SHOWING REINFORCEMENT PLAN

SHOWING OUTLINES



SECTION THRU HEADWALL

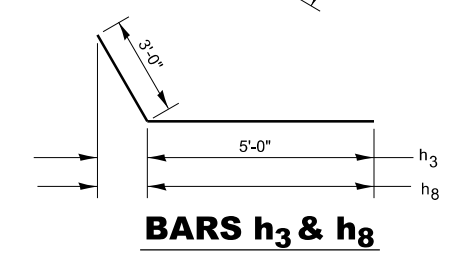
GENERAL NOTES

CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
 AT LEAST SIX FEET OF BARREL SHALL BE POURED MONOLITHICALLY WITH WINGWALLS.
 EXPOSED EDGES SHALL BE BEVELED 3/8".
 FOR BACKFILLING AND EMBANKMENTS SEE STANDARD SPECIFICATIONS.
 TILT HOOK OF a₁ BARS, IF NECESSARY, TO OBTAIN 1 1/2" MINIMUM CLEARANCE AT THE TOP OF HOOK.
 REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60.

DESIGN STRESSES

f_y = 60,000 PSI
 f'c = 3,500 PSI

LOADING HS 20-44 & ALT



BARS h₃ & h₈

BILL OF MATERIALS

BAR	NUMBER	SIZE	LENGTH
a ₁		#4	
a ₂		#4	
d			
h			
h ₁			
h ₂			
h ₃			
h ₄		#6	
h ₅			
h ₆			
h ₇			
h ₈			
v			
v ₁			
s		#4	
s ₁		#4	
CONC BOX CULV		CU YDS	
REINFORCEMENT BARS		LBS	
EXPANSION BOLTS		EACH	

540-3

MODEL: det 3 dets.tbl
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USER NAME = Anthony.Grunstad	DESIGNED -	REVISED -
PLOT SCALE = 100,000 ' / in.	DRAWN -	REVISED -
PLOT DATE = 9/27/23	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

BOX CULVERT EXTENSION STATION

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				