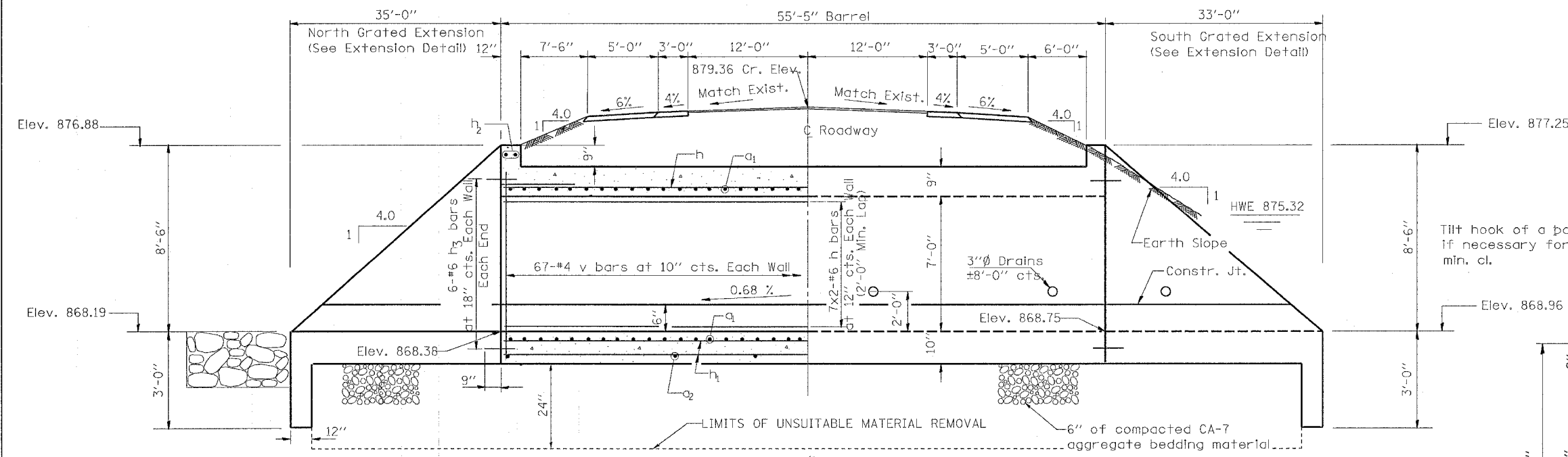
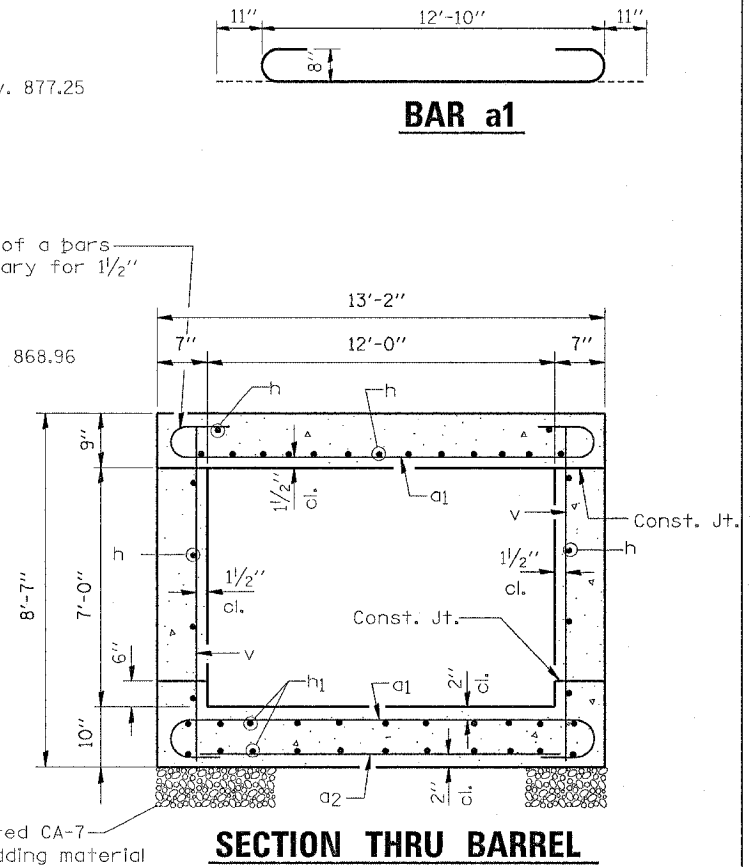


F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	116RS-1	OGLE	593	205
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
SHEET 1 OF 3				

# CONCRETE BOX CULVERTS STA 438+13

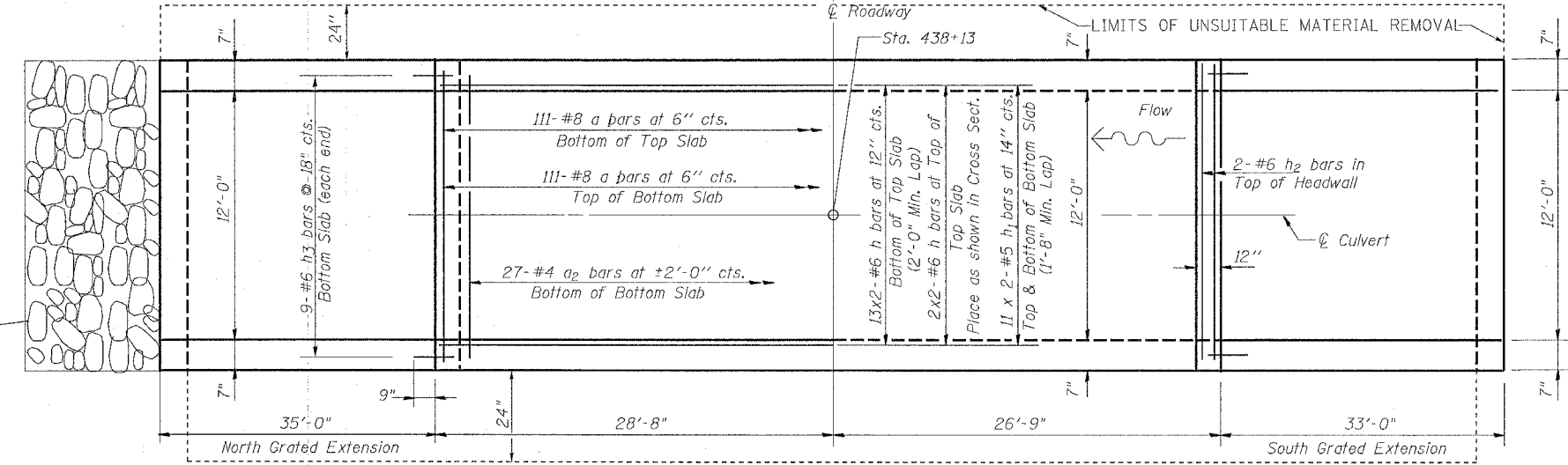


**HALF LONG SECTION**      **HALF ELEVATION**



**SECTION THRU BARREL**

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



**SHOWING REINFORCEMENT PLAN**      **SHOWING OUTLINES**

## BILL OF MATERIAL

(Barrel Only)

Bar	No.	Size	Length	Shape
a1	222	#8	14'-8"	U
a2	27	#4	12'-10"	—
h	58	#6	31'-5"	—
h1	44	#5	30'-8"	—
h2	4	#6	12'-10"	—
h3	42	#6	1'-6"	—
v	134	#4	8'-3"	—
Concrete Box Culverts			Cu. Yd.	60.6
Reinforcement Bars			Ton	13979.43
Remove Unsuitable Material			Cu. Yd.	137.3
Breaker-Run Stone			Ton	211

## WATERWAY INFORMATION

Drainage Area = 1.2 sq mi      Low Grade Elev. 879.39 (Exist) 879.58 (Proposed) @ Sta 438+13

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Ten-Year	10	384	48.7	71.4	874.70	0.99	0.33	875.69	875.03	
Design	50	596	56.2	78.8	875.32	2.05	1.14	877.37	876.46	
Base	100	685	58.6	81.2	875.52	2.53	1.62	878.05	877.14	
Overtop (Ex.)	250	805	76.3	-	877.00	2.39	-	879.39	-	
Overtop (Pr.)	500	897	-	84.0	875.85	-	3.16	-	879.01	

## DESIGN STRESSES

f<sub>y</sub> = 60,000 psi  
f'c = 3,500 psi

## LOADING HS 20-44 & ALT.

## NOTES

- A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
- 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.
- 6" of compacted CA-7 aggregate bedding material shall be placed beneath the box culvert. The cost for the CA-7 aggregate shall be included in the cost of Concrete Box Culverts.
- The cost of excavation and backfilling shall be included in the cost of Concrete Box Culverts.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		SCALE: VERT. HORIZ. DATE DRAWN BY CHECKED BY

PLOT DATE = Wed Feb 09 07:48:17 2005  
 PLOT SCALE = 50.0000 7.00  
 PLOT FILE = \\s200417\user17\sp1.dgn