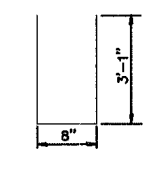
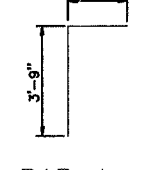


HALF LONG SECTION

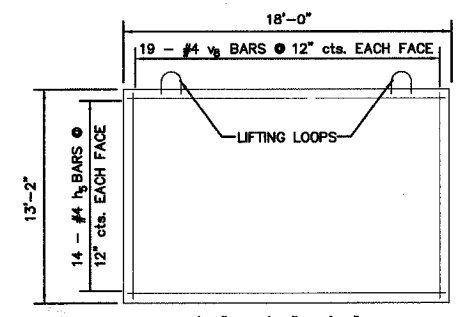
HALF ELEVATION



BAR s

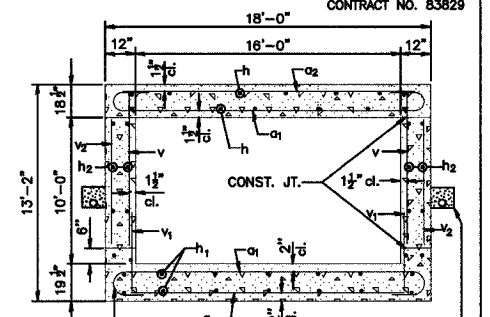


BAR d



PROVIDE 18'-0" x 13'-2" x 1'-0" CONCRETE END CAP AT BOTH ENDS OF CULVERT BARREL. CAULK AND HOLD IN PLACE WITH EARTH BACKFILL.

TEMPORARY END CAP DETAIL



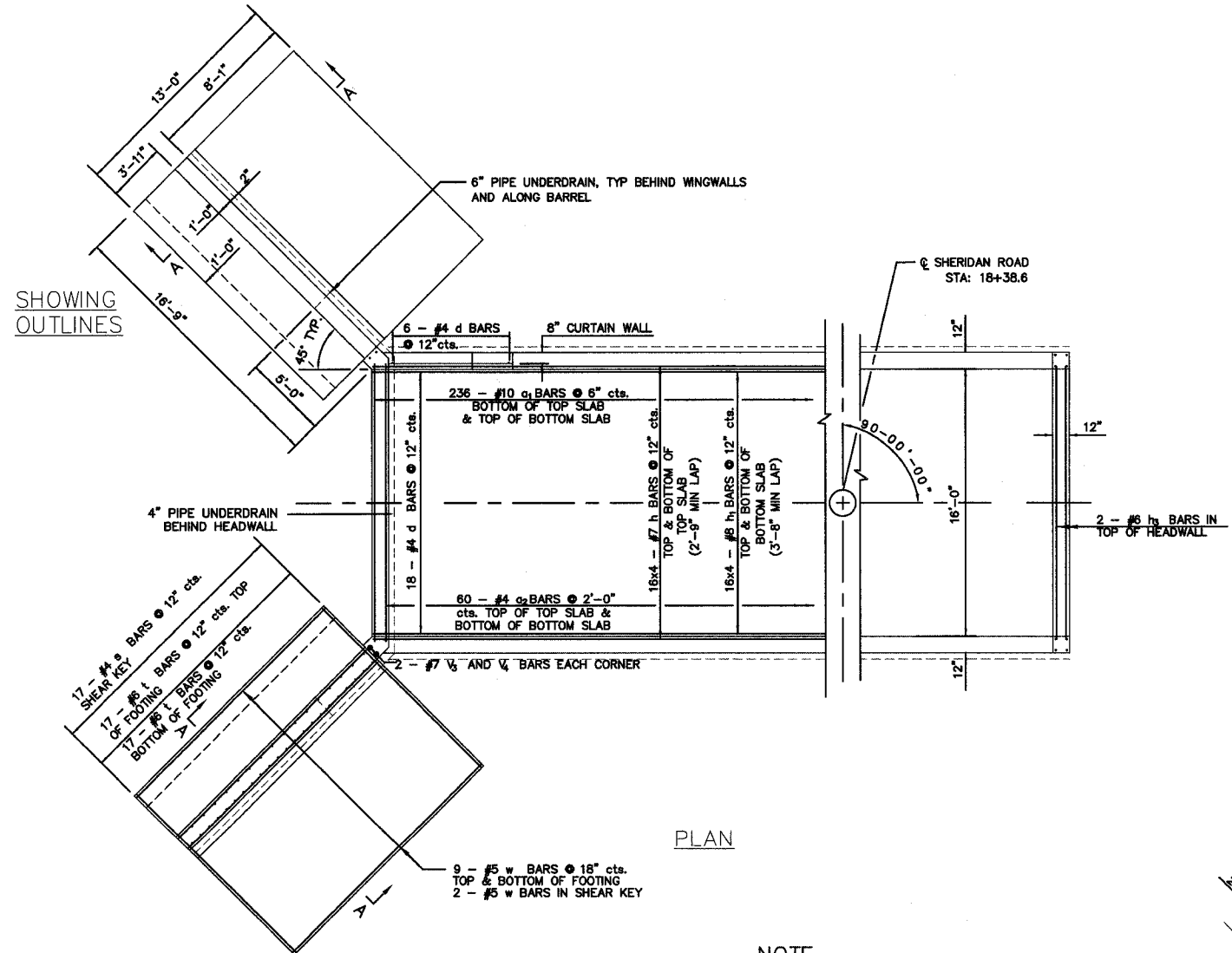
TILT HOOK OF a1 BARS IF NECESSARY TO PROVIDE THE SPECIFIED CLEARANCE (TYPICAL)

PIPE UNDERDRAIN 6", TYP BOTH SIDES OF BARREL SLOPE TO DRAIN, 1/2% MIN.

SECTION THRU BARREL

BILL OF MATERIAL

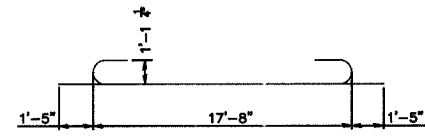
BAR NO.	SIZE	LENGTH	SHAPE	
a	2	#4	17'-8"	
a1	472	#10	20'-6"	
a2	120	#4	16'-3"	
d	60	#4	5'-6"	
h	128	#7	31'-6"	
h1	128	#8	32'-2"	
h2	160	#7	31'-6"	
h3	4	#6	16'-11"	
h4	46	#4	15'-8"	
h5	56	#4	17'-8"	
n (E)	38	#7	7'-6"	
n1 (E)	40	#6	3'-10"	
s	34	#4	6'-10"	
t	68	#6	12'-9"	
v	378	#8	10'-10"	
v1	378	#7	3'-8"	
v2	120	#5	9'-4"	
v3	8	#7	12'-1"	
v4	8	#7	6'-9"	
v5	40	#5	7'-6"	
v6	40	#4	8'-9"	
v7	8	#4	14'-7"	
v8	76	#4	12'-10"	
w	40	#5	15'-8"	
CONCRETE BOX CULVERTS			CU. YD.	399.7
REINFORCEMENT BARS, EPOXY COATED			POUND	813
REINFORCEMENT BARS			POUND	92,592
PIPE UNDERDRAINS FOR STRUCTURES (4")			LIN. FT.	38
PIPE UNDERDRAINS FOR STRUCTURES (6")			LIN. FT.	278



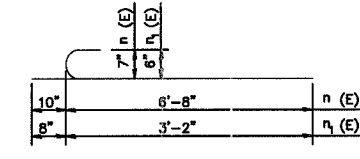
PLAN

SHOWING OUTLINES

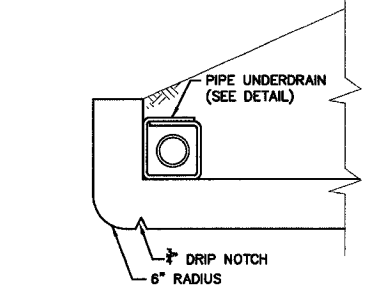
SHOWING REINFORCEMENT



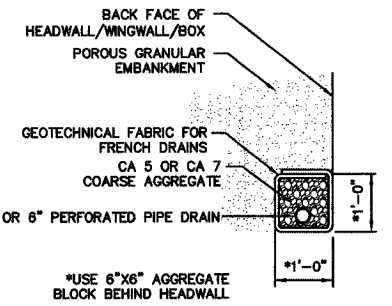
BAR a1



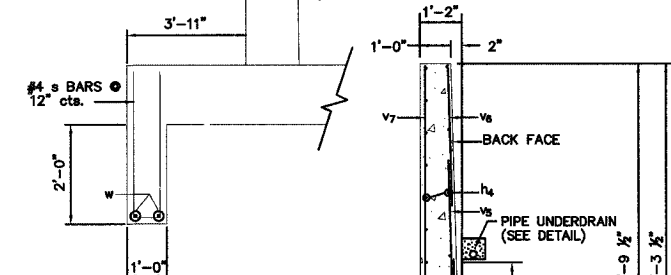
BAR n (E) & n1 (E)



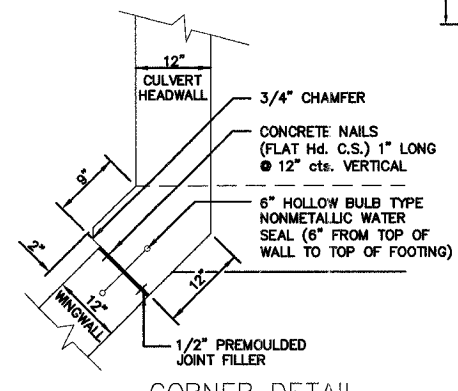
SECTION THRU WEST HEADWALL



PIPE UNDERDRAIN DETAIL



SHEAR KEY DETAIL



CORNER DETAIL

NOTE
TO FACILITATE FUTURE LENGTHENING, PROVIDE BAR SPlicERS FOR ALL LONGITUDINAL BARS AT EAST END OF BARREL. (104 REQ'D) SEE SHEET 3 FOR DETAILS

- REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
- BARS INDICATED THUS 12 X 4-#5 ETC. INDICATES 12 LINES OF BARS WITH 4 LENGTHS PER LINE.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60.

DESIGN STRESSES
FY = 60,000 PSI (REINFORCEMENT)
F'C = 3,500 PSI
MAXIMUM SOIL PRESSURE UNDER FOOTING: 1605 PSF

SHEET KEY

1	2	3	4	5	6	7	8	9	10	11	12
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REVISIONS

NO.	ITEM	DATE

SCALE: NTS
DRAWN BY: C/P
CHECKED BY: J/T
DATE: 1-16-06

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Design Firm License: Illinois #184-000818
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BOX CULVERT DETAILS
SHERIDAN ROAD IMPROVEMENTS
CITY OF WAUKEGAN
JOB NUMBER: 02-28-04-154
LAKE COUNTY, ILLINOIS
V:\dwg\WKS\SHERIDAN-RD\Underpass\N1-13-06\PEDESTRIAN UNDERPASS E5.dwg 1/16/2006 9:3904 AM CST