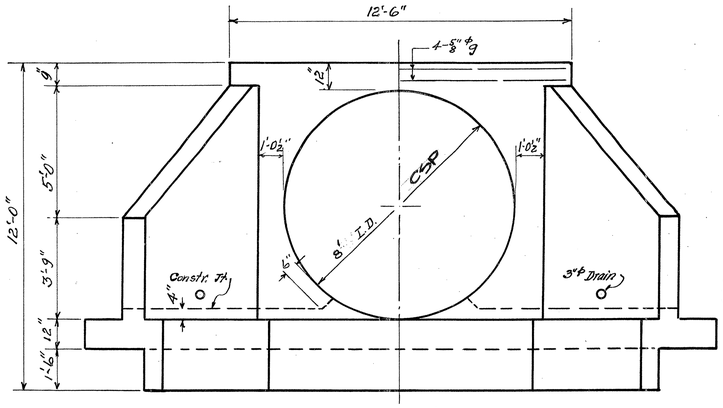
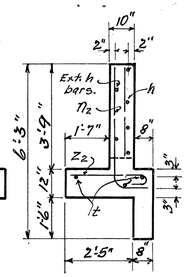
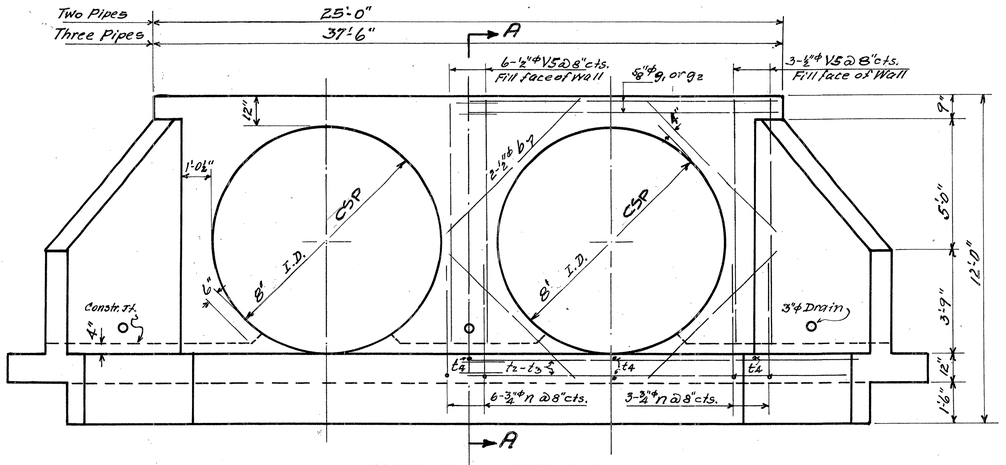
FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N. C.	8-3696	Z-A	



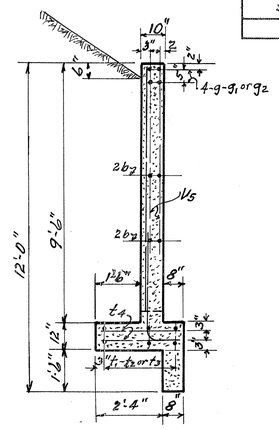
END ELEVATION



END OF WING



END ELEVATION



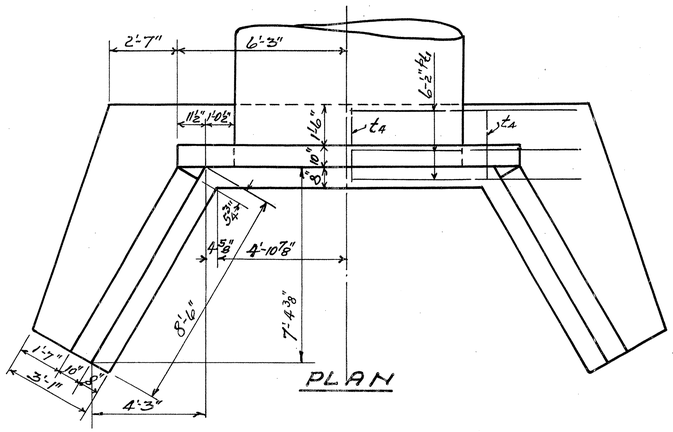
SECTION A-A
FOR ALL END WALLS

— DESIGN DATA —

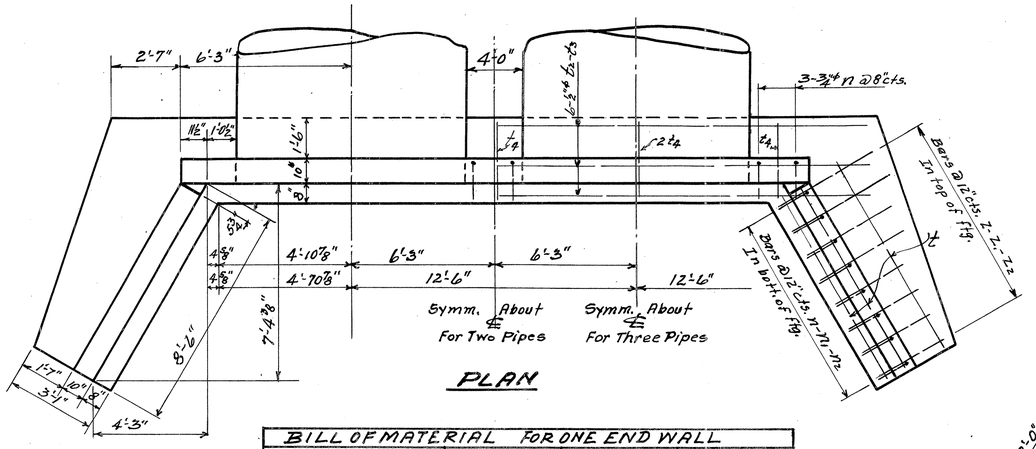
Specifications	A.A.S.H.O. 19
Steel in tension	20,000 Lbs. per Sq. in.
Concrete in compression	1,200 Lbs. per Sq. in.
Shear Class "A" concrete	90 Lbs. per Sq. in.
Equivalent fluid pressure of earth	30 Lbs. per Cu. Ft.

— GENERAL NOTE —

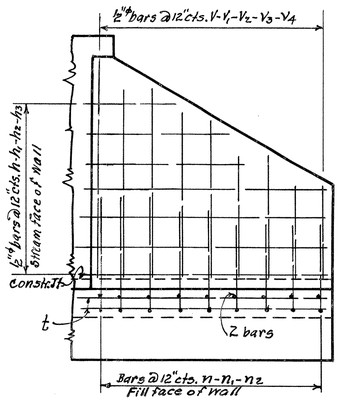
All concrete to be Class "A" using standard size N°57 coarse aggregate. All reinforcing steel shall be deformed bars. All dimensions relative to reinforcement are to center of bars. Where splicing of reinforcement is necessary bars are to be lapped 45 diameters.
3/4" ϕ Drains are to be placed in wall as shown and be 6" above flow line. The footings, curtain wall and 4" of the wall shall be poured in one operation allowing no time for initial set to take place between them. The remaining portions of the wall shall be poured in one continuous operation.
All exposed corners are to be chamfered 1".
All material and workmanship as per Specifications of the N.C. State Highway
The following extra bars are provided for retaining reinforcing steel in correct position in wings: 4h-2h1-2h2-2V-2V2-2V4-6t.



PLAN



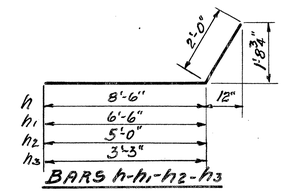
PLAN



ELEVATION OF WING
SHOWING REINFORCEMENT

BILL OF MATERIAL FOR ONE END WALL

			ONE PIPE		TWO PIPES		THREE PIPES	
Bar	Size	Length	N°	Weight	N°	Weight	N°	Weight
b	½"ϕ	6'-6"	8	35	16	69	24	104
g	⅝"ϕ	12'-3"	4	51	—	—	—	—
g1	⅝"ϕ	13'-6"	—	—	8	113	—	—
g2	⅝"ϕ	19'-9"	—	—	—	—	8	165
h	½"ϕ	10'-6"	12	84	12	84	12	84
h1	½"ϕ	8'-6"	4	23	4	23	4	23
h2	½"ϕ	7'-0"	2	9	2	9	2	9
h3	½"ϕ	5'-3"	4	14	4	14	4	14
n	¾"ϕ	5'-0"	12	90	18	135	24	180
n1	⅝"ϕ	4'-6"	4	19	4	19	4	19
n2	½"ϕ	4'-1"	8	22	8	22	8	22
t	½"ϕ	8'-6"	6	34	6	34	6	34
t1	½"ϕ	17'-4"	6	69	—	—	—	—
t2	½"ϕ	16'-0"	—	—	12	128	—	—
t3	½"ϕ	22'-3"	—	—	—	—	12	178
t4	½"ϕ	2'-9"	4	7	7	13	10	18
V	½"ϕ	8'-0"	4	11	4	11	4	11
V1	½"ϕ	7'-0"	4	19	4	19	4	19
V2	½"ϕ	5'-6"	6	22	6	22	6	22
V3	½"ϕ	4'-6"	4	12	4	12	4	12
V4	½"ϕ	3'-3"	6	13	6	13	6	13
V5	½"ϕ	9'-0"	6	36	12	72	18	108
Z	¾"ϕ	5'-0"	6	45	6	45	6	45
Z1	⅝"ϕ	4'-6"	4	19	4	19	4	19
Z2	½"ϕ	3'-9"	8	20	8	20	8	20
Reinforcing Steel Lbs.				654		896		1119
Class "A" concrete Cu. Yds.				10.1		13.9		17.6



NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON
7/28/04

PROJECT NO. _____
_____ COUNTY
STATION: _____

K87

STATE OF NORTH CAROLINA
STATE HIGHWAY AND PUBLIC WORKS COMMISSION
RALEIGH

DETAIL OF REINFORCED CONCRETE ENDWALL FOR 96" DIAMETER PIPE 90° SKEW JANUARY-1951

SPECIAL	ASSEMBLED BY		DATE
	CHECKED BY		DATE
STANDARD	DESIGNED BY		DATE
	DRAWN BY	C.F. Merkel	DATE Jan. 1951
	TRACED BY		DATE
	CHECKED BY	Robert A. Lacy	DATE Jan 1951

SUBMITTED BY _____ BRIDGE ENGINEER
APPROVED BY W.H. Rogers Jr. STATE HIGHWAY ENGINEER DATE 1-9-51

3PU 3PA T