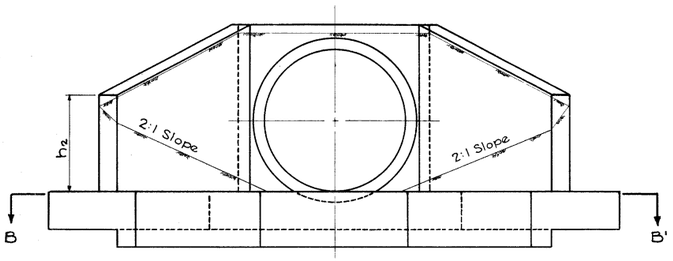
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO	I-71-5(15)233		

16
302

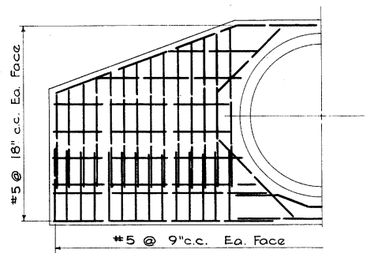
CUYAHOGA COUNTY
MED- 42-26.17
CUY- 42- 0.00

SLOPE 2:1

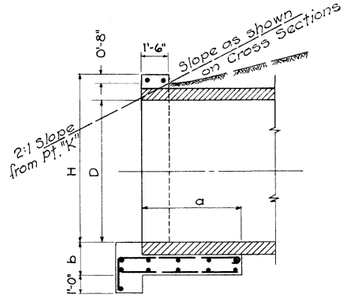
PIPE DIAM. D	H	a	b	c	bar d	∅ = 0° L2	h2	C.Y.Conc. C.M.P.	C.Y.Conc. R.C.P.	Steel lbs.	∅ = 15° L1	L2	h1	h2	C.Y.Conc. C.M.P.	C.Y.Conc. R.C.P.	Steel lbs.	∅ = 30° L1	L2	h1	h2	C.Y.Conc. C.M.P.	C.Y.Conc. R.C.P.	Steel lbs.	∅ = 45° L1	L2	h1	h2	C.Y.Conc. C.M.P.	C.Y.Conc. R.C.P.	Steel lbs.	PIPE DIAM. D
42"	4'-11"	3'-3"	1'-6"	2'-6"	#5	3'-7"	3'-1"	6.91	6.84	598	8'-9"	4'-6"	3'-8"	3'-2"	7.33	7.26	619	7'-10"	5'-9"	3'-2"	3'-3"	7.54	7.47	633	7'-10"	7'-9"	3'-2"	3'-3"	8.71	8.64	718	42"
48"	5'-5"	3'-6"	1'-6"	2'-9"	#5	4'-4"	3'-4"	8.49	8.23	793	10'-0"	5'-4"	4'-1"	3'-5"	8.93	8.67	776	8'-9"	6'-10"	3'-5"	3'-6"	9.07	8.81	801	8'-9"	9'-2"	3'-5"	3'-7"	10.54	10.28	925	48"
54"	5'-11"	3'-9"	1'-6"	3'-0"	#5	5'-2"	3'-8"	10.33	10.00	1,069	11'-4"	6'-3"	4'-6"	3'-8"	10.82	10.49	1,026	9'-8"	7'-11"	3'-8"	3'-9"	10.79	10.46	1,024	9'-8"	10'-7"	3'-8"	3'-10"	12.55	12.22	1,188	54"
60"	6'-6"	4'-0"	1'-6"	3'-3"	#5	5'-11"	3'-11"	12.24	11.84	1,149	12'-7"	7'-2"	4'-10"	4'-0"	12.86	12.45	1,174	10'-7"	9'-0"	3'-10"	4'-1"	12.68	12.27	1,157	10'-7"	12'-0"	3'-10"	4'-1"	14.76	14.36	1,354	60"
72"	7'-7"	4'-6"	1'-7"	3'-9"	#7	7'-5"	4'-5"	17.27	16.69	1,783	15'-1"	8'-11"	5'-7"	4'-6"	17.71	17.13	1,811	12'-5"	11'-2"	4'-3"	4'-7"	17.26	16.68	1,788	12'-5"	14'-10"	4'-3"	4'-8"	20.17	19.59	2,076	72"
84"	8'-8"	5'-0"	1'-10"	4'-3"	#8	9'-0"	5'-0"	23.64	22.85	2,595	17'-7"	10'-9"	6'-4"	5'-1"	24.73	23.94	2,596	14'-7"	13'-4"	4'-10"	5'-2"	24.12	23.33	2,511	14'-3"	17'-8"	4'-8"	5'-2"	27.82	27.03	2,990	84"
96"	9'-9"	5'-6"	2'-1"	4'-9"	#10	10'-6"	5'-6"	31.69	30.67	4,127	20'-1"	12'-6"	7'-1"	5'-7"	33.14	32.11	4,167	16'-8"	15'-6"	5'-4"	5'-8"	32.37	31.34	4,105	16'-1"	20'-6"	5'-1"	5'-9"	37.14	36.11	4,738	96"



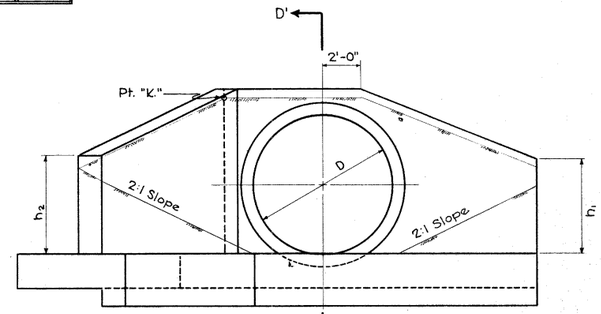
ELEVATION



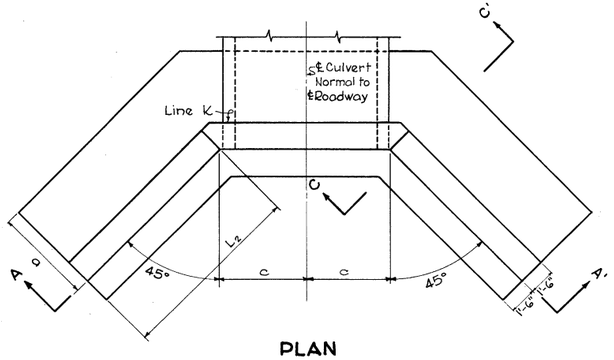
HALF - SECTION A-A'



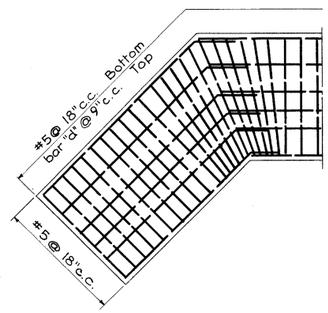
SECTION D-D'



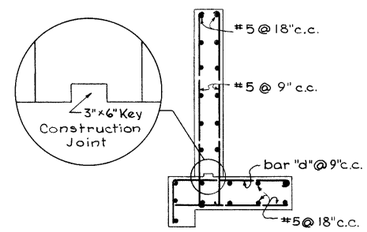
ELEVATION



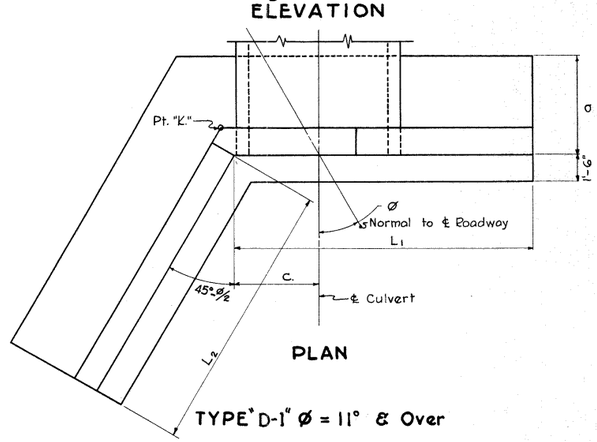
PLAN
TYPE "C-1" ∅ = 0° - 10°



HALF - SECTION B-B'

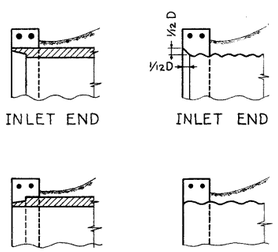


SECTION C-C'

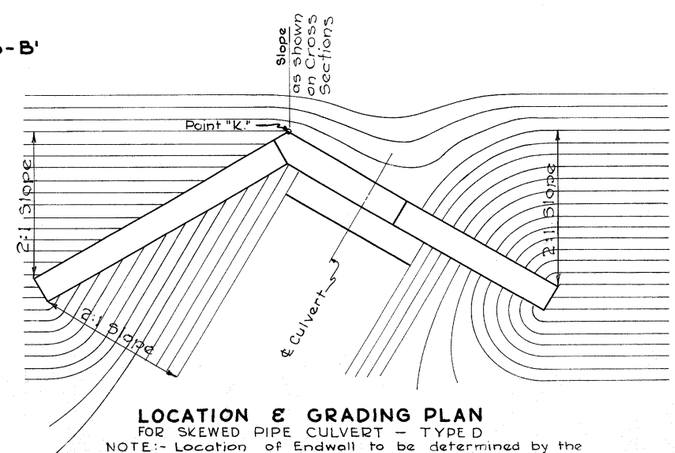


PLAN
TYPE "D-1" ∅ = 11° & Over

NOTES:
Min. Cover for reinforcing bars shall be 3" in footing and 2" elsewhere, or as shown.
Chamfer all corners 3/4"
All Concrete shall be Class "C"
No deductions are made in Payment Quantities due to the bedding of the Culvert in the heel of the footing.
Pipe Culvert Endwalls for Skew Angles not shown, shall have the same dimensions as shown for the nearest Skew Angle.
Endwalls shall be paid for under the provisions of Item 1.2 of the Specifications.
Concrete Quantities in table are payment Quantities.
Steel Quantities are for information only.



END TREATMENT AT ENDWALL



LOCATION & GRADING PLAN
FOR SKEWED PIPE CULVERT - TYPE D
NOTE:- Location of Endwall to be determined by the intersection of the Embankment Slope at the back of the Endwall at Point "K". The slopes adjacent to the Endwall shall be 2:1.

TYPICAL DETAILS
ENDWALLS
FOR PIPE SIZES 42"
& OVER -

MISCELLANEOUS DETAILS