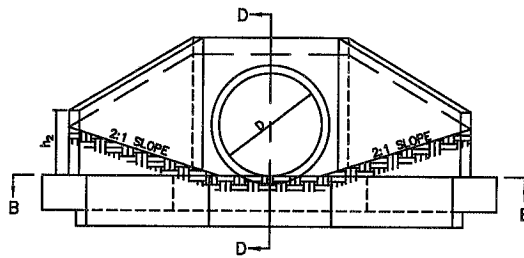
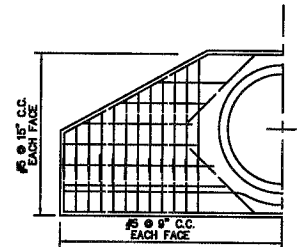


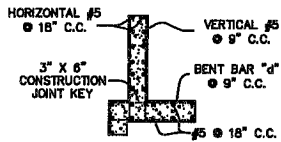
SECTION D-D



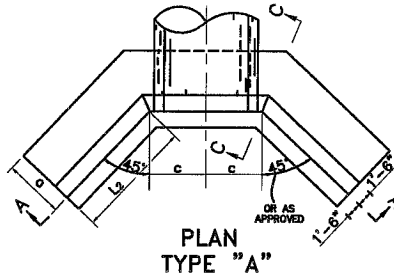
ELEVATION



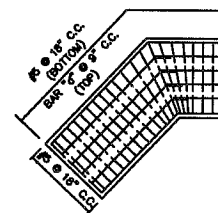
HALF-SECTION A-A



SECTION C-C



PLAN TYPE "A"



HALF-SECTION B-B

HW-3 HEADWALLS WHERE REQUIRED WILL BE PROVIDED FOR SKEWED AND NONSKEWED CULVERTS HAVING A DIAMETER OR RISE OF 42 TO 84 INCHES INCLUSIVE.

DIMENSIONS AND QUANTITIES ARE SHOWN FOR CIRCULAR SECTIONS ONLY. WHEN USED WITH REINFORCED ELLIPTICAL CONCRETE PIPE OR CORRUGATED METAL PIPE ARCHES IT WILL BE NECESSARY TO DETERMINE SUCH DIMENSIONS AND QUANTITIES WHICH SHALL GENERALLY CONFORM WITH THOSE LISTED FOR THE NEAREST SIZE CIRCULAR PIPE. THE DIMENSIONS ESTABLISHED BY VERTICAL DIAMETER SHALL APPLY TO RISE AND THE DIMENSIONS ESTABLISHED BY HORIZONTAL DIAMETER SHALL APPLY TO SPAN. CHAMFER ALL EXPOSED CORNERS TO 3/4 OF AN INCH.

FOUNDATION: WHERE THE SOIL BORINGS INDICATE A BEARING CAPACITY OF LESS THAN 2500 LBS. PER SQUARE FOOT IT WILL BE NECESSARY TO INCREASE THE WIDTH OF THE FOOTING.

PIPE DIAM. D	M	a	b	c	BAR d	L ₁	L ₂	C.Y. CONC. REQ.	C.Y. CONC. RES.	STEEL LBS.	PIPE DIAM. D
42"	4'-11"	3'-3"	1'-6"	2'-5"	#5	7'-9"	3'-3"	8.7	8.5	718	42"
48"	5'-5"	3'-8"	1'-6"	2'-9"	#5	9'-2"	3'-7"	10.6	10.3	925	48"
54"	5'-11"	3'-9"	1'-6"	3'-0"	#5	10'-7"	3'-10"	12.6	12.2	1188	54"
60"	6'-8"	4'-0"	1'-6"	3'-3"	#5	12'-0"	4'-1"	14.8	14.3	1354	60"
72"	7'-7"	4'-8"	1'-7"	3'-9"	#7	14'-10"	4'-8"	20.2	19.6	2075	72"
84"	8'-5"	5'-0"	1'-10"	4'-3"	#8	17'-8"	5'-2"	27.9	27.0	2990	84"

STANDARD WINGWALL

CITY OF CINCINNATI
METROPOLITAN SEWER DISTRICT
STORMWATER MANAGEMENT UTILITY

NO SCALE

AUGUST, 2014

APPROVED

[Signature]
SMU CHIEF ENGINEER

ACC. NO. 120341