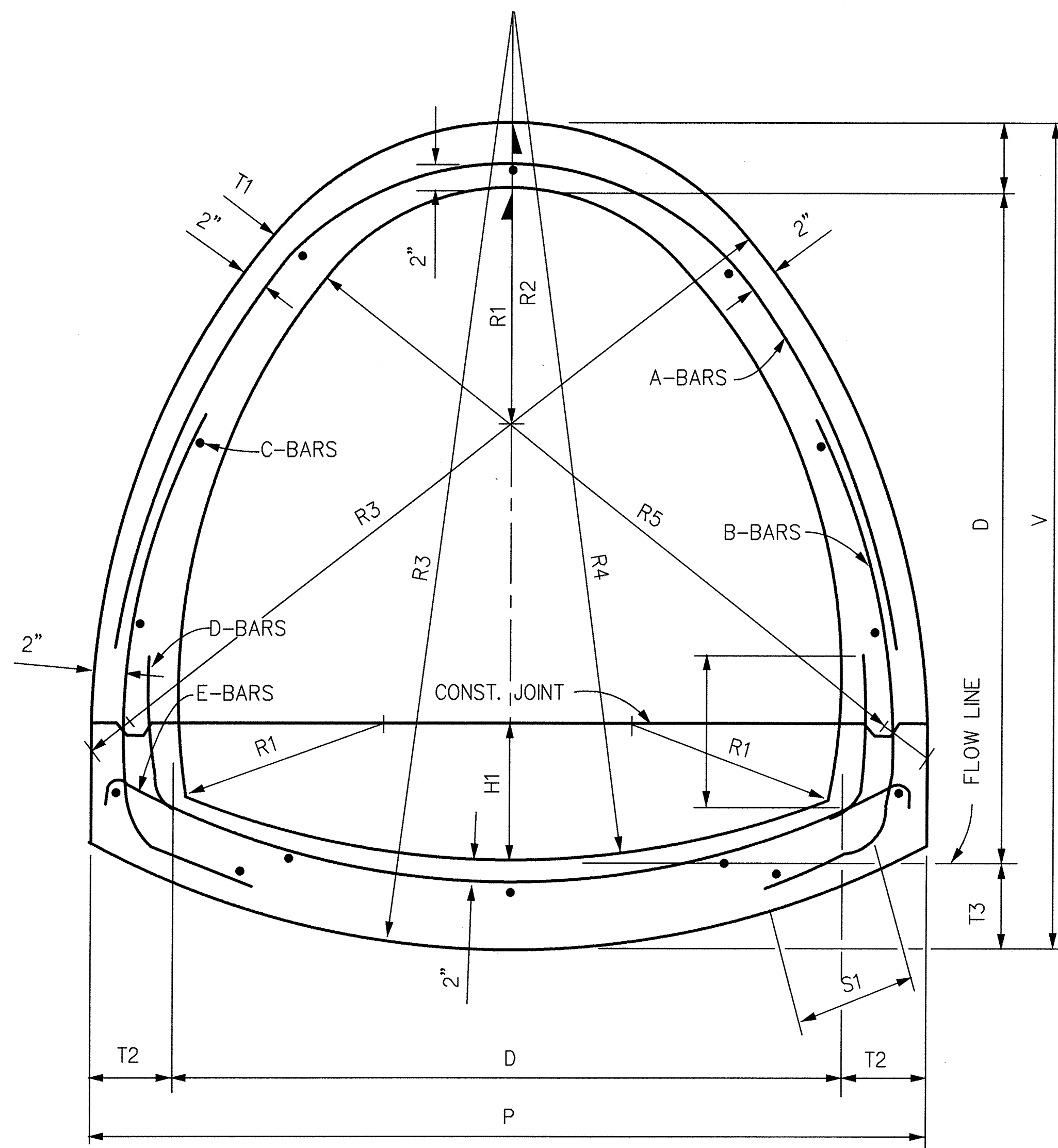


DEPTH OF BACKFILL NOT TO EXCEED 10'																REINFORCING STEEL										QUANTITIES (PER L.F.)					
SIZE	T1	T2	T3	H2	P	V	R1	R2	R3	R4	R5	H1	T4	S1	S2	A-BARS		B-BARS		C-BARS		D-BARS		E-BARS		CONCRETE					
																SIZE & SPACING	LENGTH	SIZE & SPACING	LENGTH	NUMBER & SIZE	LENGTH	SIZE & SPACING	LENGTH	SIZE & SPACING	LENGTH	ENTIRE SECTION	BELOW CONST. JT.	EXCAVATION BELOW FLOWLINE	STEEL	AREA OF WATERWAY	SIZE
																										C.Y.	C.Y.	C.Y.	LBS	SF	
36"	5"	6"	6"		4'-0"	3'-11"	1'-0"	1'-5"	4'-0"	4'-6"	3'-1 1/2"	0'-7 1/2"	1'-0"	0'-11"	5/8" @ 15"	6'-9"	5/8" @ 10"	3'-9"	12 - 1/2"	1'-0"	5/8" @ 20"	5'-0"	5/8" @ 20"	4'-6"	0.196	0.082	0.052	29.47	7.05	36"	
42"	5"	6"	6"		4'-6"	4'-5"	1'-2"	1'-7"	4'-6"	5'-0"	3'-7 3/4"	0'-8 3/4"	1'-0"	1'-0"	5/8" @ 12"	7'-8"	5/8" @ 8"	3'-6"	12 - 1/2"	1'-0"	5/8" @ 16"	5'-8"	5/8" @ 16"	4'-8"	0.222	0.095	0.054	35.64	9.59	42"	
48"	5 1/2"	7 1/2"	7 1/2"		5'-8"	5'-1"	1'-4"	1'-9 1/2"	5'-3"	5'-10 1/2"	4'-2"	0'-10"	1'-3"	1'-1 1/2"	5/8" @ 15"	8'-9"	5/8" @ 9"	4'-3"	12 - 1/2"	1'-0"	5/8" @ 18"	6'-6"	5/8" @ 17"	5'-6"	0.305	0.136	0.082	36.08	12.53	48"	
54"	6"	8"	8"		5'-10"	5'-8"	1'-6"	2'-0"	5'-10"	6'-6"	4'-8 1/4"	0'-11 1/4"	1'-6"	1'-3 1/2"	5/8" @ 13"	9'-6"	5/8" @ 8"	4'-9"	12 - 1/2"	1'-0"	5/8" @ 16"	7'-3"	5/8" F 16"	6'-3"	0.367	0.163	0.095	43.30	15.85	54"	
60"	6 1/2"	9"	9"		6'-6"	6'-3 1/2"	1'-8"	2'-2 1/2"	6'-6"	7'-3"	5'-2 1/2"	1'-0 1/2"	1'-6"	1'-5"	5/8" @ 14"	11'-0"	5/8" @ 9"	4'-9"	12 - 1/2"	1'-0"	5/8" @ 18"	8'-0"	5/8" @ 18"	7'-3"	0.453	0.205	0.119	42.36	19.58	60"	
66"	7"	9 1/2"	9 1/2"		7'-1"	6'-10 1/2"	1'-10"	2'-5"	7'-1"	7'-10 1/2"	5'-8 3/4"	1'-1 3/4"	1'-9"	1'-5"	5/8" @ 12"	11'-0"	5/8" @ 8 1/2"	5'-6"	12 - 1/2"	1'-0"	5/8" @ 17"	8'-6"	5/8" @ 17"	7'-6"	0.528	0.238	0.137	48.25	23.69	66"	
72"	7 1/2"	11"	11"		7'-10"	7'-6 1/2"	2'-0"	2'-7 1/2"	7'-10"	8'-9"	6'-3"	1'-3"	1'-9"	1'-7 1/2"	5/8" @ 11"	12'-6"	5/8" @ 8"	5'-6"	12 - 1/2"	1'-0"	5/8" @ 16"	9'-4"	5/8" @ 16"	8'-4"	0.650	0.305	0.178	54.15	28.20	72"	
76"	8"	11"	11"		8'-4"	8'-1"	2'-2"	2'-10"	8'-4"	9'-3"	6'-9 1/4"	1'-4 1/4"	1'-10"	1'-5 1/2"	5/8" @ 11"	13'-0"	5/8" @ 7"	6'-0"	14 - 1/2"	1'-0"	5/8" @ 14"	9'-6"	5/8" @ 14"	9'-0"	0.716	0.324	0.186	63.16	33.10	76"	
84"	8 1/2"	11 1/2"	11 1/2"		8'-11"	8'-8"	2'-4"	3'-0 1/2"	8'-11"	9'-10 1/2"	7'-3 1/2"	1'-5 1/2"	2'-1"	1'-8 1/2"	5/8" @ 10"	14'-0"	5/8" @ 7"	6'-6"	14 - 1/2"	1'-0"	5/8" @ 14"	10'-6"	5/8" @ 14"	9'-6"	0.803	0.361	0.203	69.12	38.40	84"	
90"	9"	12"	12"		9'-6"	9'-3"	2'-6"	3'-3"	9'-6"	10'-6"	7'-9 3/4"	1'-6 3/4"	2'-3"	1'-8 1/2"	5/8" @ 10"	14'-0"	5/8" @ 7"	7'-0"	14 - 1/2"	1'-0"	5/8" @ 14"	11'-0"	5/8" @ 14"	10'-3"	0.905	0.406	0.220	69.11	44.05	90"	
96"	10"	13"	13"		10'-2"	9'-11"	2'-8"	3'-6"	10'-2"	11'-3"	8'-4"	1'-8"	2'-4"	1'-11"	3/4" @ 14"	15'-6"	3/4" @ 9"	7'-6"	14 - 1/2"	1'-0"	3/4" @ 18"	12'-0"	3/4" @ 18"	10'-6"	1.053	0.471	0.260	82.92	50.10	96"	
102"	10 1/2"	13 1/2"	13 1/2"		10'-9"	10'-6"	2'-10"	3'-8 1/2"	10'-9"	11'-10 1/2"	8'-10 1/4"	1'-9 1/4"	2'-6"	1'-9 1/2"	3/4" @ 12"	16'-0"	3/4" @ 9"	9'-0"	14 - 1/2"	1'-0"	3/4" @ 18"	12'-3"	3/4" @ 18"	11'-9"	1.165	0.514	0.282	94.64	56.60	102"	
108"	11"	15"	15"		11'-6"	11'-2"	3'-0"	3'-11"	11'-6"	12'-9"	9'-4 1/2"	1'-10 1/2"	2'-6"	2'-0 1/2"	3/4" @ 13"	17'-0"	3/4" @ 8 1/2"	8'-6"	14 - 1/2"	1'-0"	3/4" @ 17"	13'-3"	3/4" @ 17"	12'-3"	1.352	0.613	0.343	97.22	63.40	108"	
114"	11 1/2"	16"	16"		12'-2"	11'-9 1/2"	3'-2"	4'-1 1/2"	12'-2"	13'-6"	9'-10 3/4"	1'-11 3/4"	2'-10"	2'-2"	3/4" @ 12"	17'-0"	3/4" @ 8 1/2"	9'-3"	14 - 1/2"	1'-0"	3/4" @ 17"	14'-0"	3/4" @ 17"	13'-0"	1.513	0.690	0.389	104.33	70.70	114"	
120"	12"	18"	18"		13'-0"	12'-6"	3'-4"	4'-4"	13'-0"	14'-6"	10'-5"	2'-1"	3'-0"	2'-2 1/2"	3/4" @ 12"	18'-0"	3/4" @ 8 1/2"	9'-9"	14 - 1/2"	1'-0"	3/4" @ 17"	14'-6"	3/4" @ 17"	14'-0"	1.744	0.825	0.481	109.29	78.30	120"	
126"	13"	20"	20"		13'-10"	13'-3"	3'-6"	4'-7"	13'-10"	15'-6"	10'-11 1/4"	2'-2 1/4"	3'-2"	2'-2 1/2"	3/4" @ 12"	19'-0"	3/4" @ 8 1/2"	10'-3"	14 - 1/2"	1'-0"	3/4" @ 17"	15'-0"	3/4" @ 17"	14'-6"	2.037	0.973	0.577	114.05	86.30	126"	
132"	14"	21"	21"		14'-6"	13'-11"	3'-8"	4'-10"	14'-6"	16'-5"	11'-5 1/2"	2'-3 1/2"	3'-4"	2'-2 1/2"	3/4" @ 12"	19'-6"	3/4" @ 8 1/2"	10'-10"	14 - 1/2"	1'-0"	3/4" @ 17"	15'-6"	3/4" @ 17"	15'-6"	2.266	1.075	0.639	118.90	94.75	132"	
138"	14 1/2"	22"	22"		15'-2"	14'-6 1/2"	3'-10"	5'-0 1/2"	15'-2"	17'-0"	11'-11 3/4"	2'-4 3/4"	3'-6"	2'-4 1/2"	3/4" @ 12"	20'-6"	3/4" @ 8"	11'-8"	14 - 1/2"	1'-0"	3/4" @ 17"	16'-3"	3/4" @ 16"	16'-3"	2.457	1.175	0.696	130.94	103.50	138"	
144"	15"	24"	24"		16'-0"	15'-3"	4'-0"	5'-3"	16'-0"	18'-0"	12'-6"	2'-6"	4'-0"	2'-5 1/2"	3/4" @ 12"	21'-0"	3/4" @ 8"	12'-0"	14 - 1/2"	1'-0"	3/4" @ 17"	17'-0"	3/4" @ 16"	17'-0"	2.779	1.366	0.821	134.92	112.75	144"	



TYPE 2 TO SERVE IN QUICKSAND OR LOOSE EARTH

NOTE:
ASSUMED LIVE LOAD = A 20 TON TRUCK

REVISION	BY	DATE

[Signature]
CITY ENGINEER

[Signature]
DESIGN MANAGER

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

TYPE 2 SEMI-ELLIPTICAL STORM SEWER
DEPTH OF BACKFILL NOT TO EXCEED 10'
(FOR REHAB AND REFERENCE ONLY)

DATE: OCTOBER 2013