4:1 Slope							
Pipe Diameter	H	L	W	S	Grate C		Grate B
					NO.	Length	Length
12	1'–5	5'–8	2'–0	5'–9	1	3'–4	1'–0
15 & 18	2'–0	8'–0	2'–0	8'–1	1	4'–0	2'–8
21 & 24	2'–6	10'–0	3'–0	10'–1	2	3'–0	2'–8
27 & 30	3'–1	12'–4	3'–0	12'–5	3	3'–0	2'–0
33 & 36	3'–7	14'–4	4'–0	14'–5	5	2'–4	1'–4
42	4'–2	16'–5	4'–0	17'–1	6	2'–4	1'–8
48	4'–8	18'–8	5'–0	19'–1	8	2'–0	1'–8
54	5'–3	21'–0	6'–0	21'–5	12	1'–8	–
60	5'–9	23'–0	6'–0	23'–5	12	1'–8	2'–0

10:1 Slope							
Pipe Diameter	H	L	W	S	Grate C		Grate B
					No.	Length	Length
12	1'–5	14'–2	2'–0	14'–1	2	4'–0	2'–8
15 & 18	2'–0	20'–0	2'–0	19'–9	4	3–8	1'–8
21 & 24	2'–6	25'–0	3'–0	24'–9	8	2'–8	–
27 & 30	3'–1	30'–10	3'–0	30'–5	9	3'–0	–
33 & 36	3'–7	35'–10	4'–0	35'–9	13	2'–4	2'–0
42	4'–2	41'–8	4'–0	41'–9	16	2'–4	1'–0
48	4'–8	46'–8	5'–0	46'–9	21	2'–0	1'–4
54	5'–3	52'–6	6'–0	52'–5	36	1'–4	1'–0
60	5'–9	57'–6	6'–0	57'–9	40	1'–4	1'–0

6:1 Slope							
Pipe Diameter	H	L	W	S	Grate C		Grate B
					No.	Length	Length
12	1'–5	8'–6	2'–0	8'–5	1	4'–0	2'–4
15 & 18	2'–0	12'–0	2'–0	11'–9	2	4'–0	1'–8
21 & 24	2'–6	15'–0	3'–0	15'–1	4	3'–0	1'–0
27 & 30	3'–1	18'–6	3'–0	18'–5	5	3'–0	1'–4
33 & 36	3'–7	21'–6	4'–0	21'–5	9	2'–0	1'–4
42	4'–2	25'–0	4'–0	25'–1	9	2'–4	2'–0
48	4'–8	28'–0	5'–0	28'–1	13	2'–0	–
54	5'–3	31'–6	6'–0	31'–9	17	1'–8	1'–4
60	5'–9	34'–6	6'–0	34'–9	19	1'–8	1'–0

GRATE A DIMENSIONS TABLE									
Slope	A	B	P	b	c	d	E	F	GA
4:1	1'–0½"	1'–0	2'–0	0'–8	0'–10	4"	1'–0½"	0'–10	2'–1
6:1	1'–6	1'–6	3'–0	1'–0	1'–6	6"	1'–6½"	1'–6	3'–1
10:1	2'–6	2'–6	5'–0	1'–8	2'–10	10"	2'–6½"	2'–10	5'–1

APPROXIMATE QUANTITIES												
Pipe Diameter	4:1 Slope				6:1 Slope				10:1 Slope			
	Conc., cys		Reinf. Steel, lb.	Str. Steel, lb.	Conc., cys		Reinf. Steel, lb.	Str. Steel, lb.	Conc., cys		Reinf. Steel, lb.	Str. Steel, lb.
	Conc. Pipe	C.M. Pipe			Conc. Pipe	C.M. Pipe			Conc. Pipe	C.M. Pipe		
12	1.1	1.1	295	335	1.5	1.5	400	480	2.3	2.4	605	790
15 & 18	1.6	1.6	395	445	2.2	2.2	550	645	3.4	3.4	865	1080
21 & 24	2.4	2.4	565	750	3.3	3.3	790	1130	5.2	5.2	1245	1830
27 & 30	2.9	3.0	695	910	4.2	4.3	980	1345	6.6	6.7	1580	2195
33 & 36	4.0	4.1	910	1415	5.7	5.8	1290	2115	9.1	9.2	2075	3455
42	4.8	4.9	1085	1655	6.9	7.0	1545	2415	11.0	11.2	2490	4015
48	6.2	6.3	1350	2230	8.8	9.0	1925	3265	14.2	14.4	3100	5425
54	7.8	8.0	1665	2955	11.3	11.4	2400	4375	18.1	18.3	3855	7440
60	8.7	8.9	1850	3215	12.6	12.8	2675	4780	20.4	20.4	4310	8175

INDIANA DEPARTMENT OF TRANSPORTATION

GRATED BOX END SECTION DIMENSIONS & QUANTITIES TYPE II

JANUARY 1999

STANDARD DRAWING NO. **E 715–GBTT–05**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

DETAILS PLACED IN THIS FORMAT 11-15-99

/s/ Anthony L. Uremovich 11-15-99
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 11-15-99
CHIEF HIGHWAY ENGINEER DATE

ORIGINALLY APPROVED 1-04-99