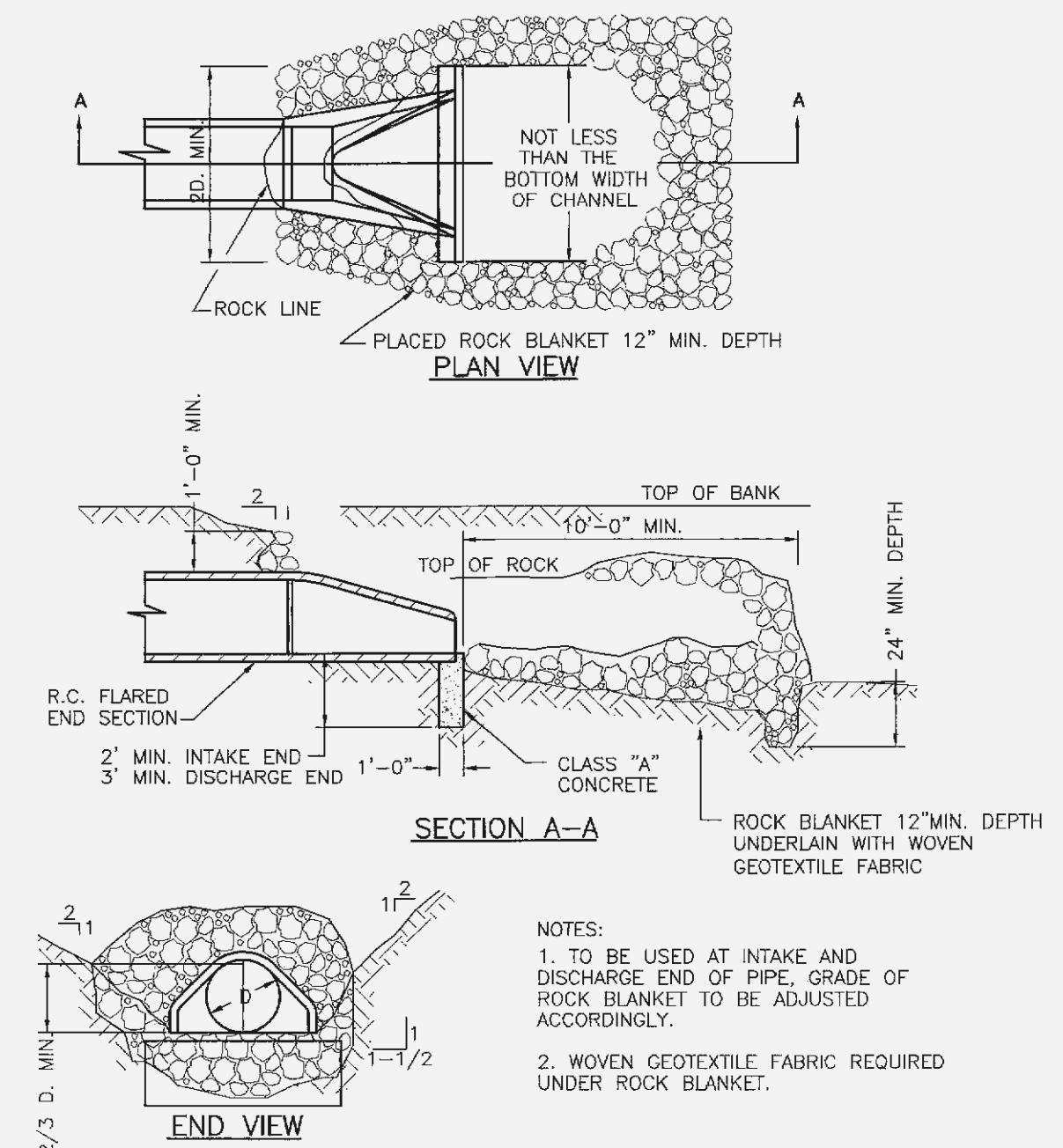
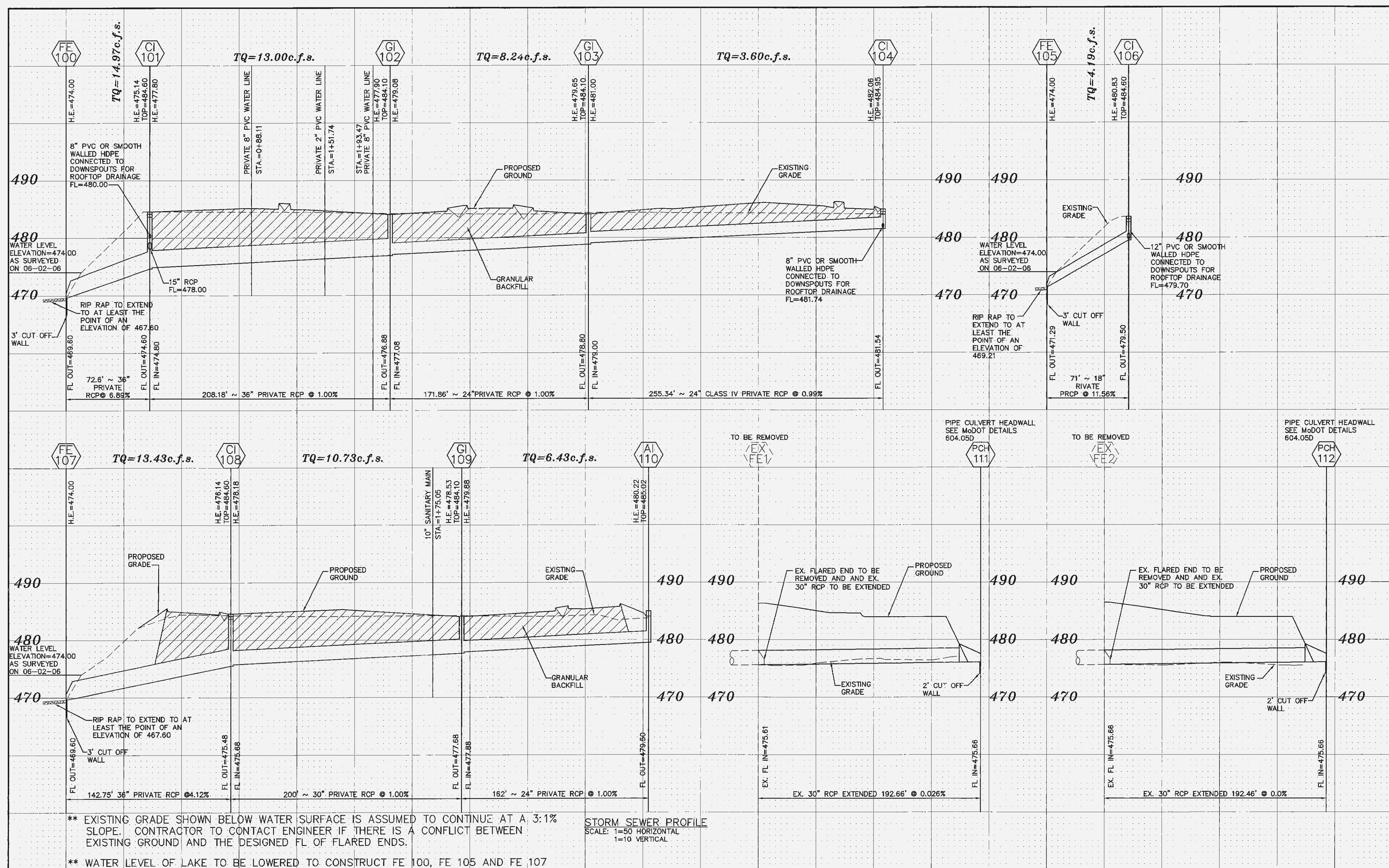


REVISIONS:
09-19-06 Per City Comments
10-02-06 Per MODOT
10-02-06 Per Duckett Creek
10-12-06 Per Client
10-17-06 Per Duckett Creek
11-08-06 Per Cottleville Fire

06-13706 10-02-06



NOTES:
1. TO BE USED AT INTAKE AND DISCHARGE END OF PIPE. GRADE OF ROCK BLANKET TO BE ADJUSTED ACCORDINGLY.
2. WOVEN GEOTEXTILE FABRIC REQUIRED UNDER ROCK BLANKET.

FLARED END SECTION

ROUND PIPE			
Inside Diameter of Pipe (Inches)	"W" Payline Width of Trench (Inches)	"M" Payline Width of Trench (Feet)	Pay-volumes cu. ft. per ft. Concrete Encasement
4	28	2.33	3.20
6	28	2.33	3.46
8	28	2.33	3.70
10	28	2.33	3.86
12	28	2.33	3.98
15	32	2.67	4.89
18	35	2.92	5.63
21	39	3.25	6.61
24	42	3.50	7.39
27	45	3.75	8.18
30	49	4.08	9.30
33	53	4.42	10.53
36	56	4.67	11.43
39	DISCONTINUED		
42	63	5.25	13.38

TABLE NO. 1
PAYLINE WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE

FILENAME: 13706_08-17-06_KLW (15YR-20 MIN.)

UPP STR	LOW STR	L	DIA	UPPER FL LN	LOWER FL LN	PS	UPPER ST EL	DEPTH HY GR	UPPER HY EL	LOWER HY EL	HYDR GRADE	FR HEAD	VEL	VEL HEAD	JUNC LOSS	TURN LOSS	TQ	PIPE CAP	REMARKS
AI 104	GI 103	255	24	481.54	479.00	0.99	484.95	2.89	482.06*	481.00	.00030	0.06	1.15	0.02	0.02	0.02	3.60	22.56	3
GI 103	GI 102	172	24	478.80	477.08	1.00	484.10	4.45	479.65*	479.08	.00130	0.23	2.62	0.11	0.11	0.01	8.24	22.63	4
GI 102	CI 101	208	36	476.88	474.80	1.00	484.10	6.14	477.36	474.00	.00040	0.08	1.84	0.05	0.02	0.06	13.00	66.67	5
CI 101	FE 100	73	36	474.60	469.60	6.89	484.60	9.46	475.14*	474.00	.00050	0.04	2.12	0.07	0.05	0.03	14.97	175.04	6 HW=474.00
CI 106	FE 105	71	18	479.50	471.29	11.56	484.60	4.74	479.86*	474.00	.00160	0.11	2.37	0.09	0.00	0.02	4.19	35.72	8 HW=474.00
AI 110	GI 109	162	24	479.50	477.88	1.00	485.02	4.80	480.22*	479.88	.00080	0.13	2.05	0.07	0.07	0.00	6.43	22.62	9
GI 109	CI 108	200	30	477.68	475.68	1.00	484.10	5.57	478.53*	478.18	.00070	0.14	2.19	0.07	0.03	0.00	10.73	41.02	10
CI 108	FE 107	143	36	475.48	469.60	4.12	484.60	8.46	476.14*	474.00	.00040	0.06	1.90	0.06	0.01	0.01	13.43	135.37	11 HW=474.00

* INDICATES CRITICAL DEPTH

FILENAME: 13706_15YR (FROM FLOOD STUDY)

UPP STR	LOW STR	L	DIA	UPPER FL LN	LOWER FL LN	PS	UPPER ST EL	DEPTH HY GR	UPPER HY EL	LOWER HY EL	HYDR GRADE	FR HEAD	VEL	VEL HEAD	JUNC LOSS	TURN LOSS	TQ	PIPE CAP	REMARKS
AI 104	GI 103	255	24	481.54	479.00	0.99	484.95	1.87	483.08	482.98	.00030	0.06	1.15	0.02	0.02	0.02	3.60	22.56	3
GI 103	GI 102	172	24	478.80	477.08	1.00	484.10	1.12	482.98	482.63	.00130	0.23	2.62	0.11	0.11	0.01	8.24	22.63	4
GI 102	CI 101	208	36	476.88	474.80	1.00	484.10	1.47	482.63	482.47	.00040	0.08	1.84	0.05	0.02	0.06	13.00	66.67	5
CI 101	FE 100	73	36	474.60	469.60	6.89	484.60	2.13	482.47	482.35	.00050	0.04	2.12	0.07	0.05	0.03	14.97	175.04	6 HW=482.35
CI 106	FE 105	71	18	479.50	471.29	11.56	484.60	2.12	482.48	482.35	.00160	0.11	2.37	0.09	0.00	0.02	4.19	35.72	8 HW=482.35
AI 110	GI 109	162	24	479.50	477.88	1.00	485.02	2.22	482.80	482.60	.00080	0.13	2.05	0.07	0.07	0.00	6.43	22.62	9
GI 109	CI 108	200	30	477.68	475.68	1.00	484.10	1.50	482.60	482.43	.00070	0.14	2.19	0.07	0.03	0.00	10.73	41.02	10
CI 108	FE 107	143	36	475.48	469.60	4.12	484.60	2.17	482.43	482.35	.00040	0.06	1.90	0.06	0.01	0.01	13.43	135.37	11 HW=482.35

* INDICATES CRITICAL DEPTH

FILENAME: 13706_100YR (FROM FLOOD STUDY)

UPP STR	LOW STR	L	DIA	UPPER FL LN	LOWER FL LN	PS	UPPER ST EL	DEPTH HY GR	UPPER HY EL	LOWER HY EL	HYDR GRADE	FR HEAD	VEL	VEL HEAD	JUNC LOSS	TURN LOSS	TQ	PIPE CAP	REMARKS
AI 104	GI 103	255	24	481.54	479.00	0.99	484.95	-0.22	484.73	484.63	.00030	0.06	1.15	0.02	0.02	0.02	3.60	22.56	3
GI 103	GI 102	172	24	478.80	477.08	1.00	484.10	-0.33	484.63	484.28	.00130	0.23	2.62	0.11	0.11	0.01	8.24	22.63	4
GI 102	CI 101	208	36	476.88	474.80	1.00	484.10	-0.18	484.28	484.12	.00040	0.08	1.84	0.05	0.02	0.06	13.00	66.67	5
CI 101	FE 100	73	36	474.60	469.60	6.89	484.60	0.48	484.12	484.00	.00050	0.04	2.12	0.07	0.05	0.03	14.97	175.04	6 HW=484.00
CI 106	FE 105	71	18	479.50	471.29	11.56	484.60	0.47	484.13	484.00	.00160	0.11	2.37	0.09	0.00	0.02	4.19	35.72	8 HW=484.00
AI 110	GI 109	162	24	479.50	477.88	1.00	485.02	0.57	484.45	484.25	.00080	0.13	2.05	0.07	0.07	0.00	6.43	22.62	9
GI 109	CI 108	200	30	477.68	475.68	1.00	484.10	-0.15	484.25	484.08	.00070	0.14	2.19	0.07	0.03	0.00	10.73	41.02	10
CI 108	FE 107	143	36	475.48	469.60	4.12	484.60	0.52	484.08	484.00	.00040	0.06	1.90	0.06	0.01	0.01	13.43	135.37	11 HW=484.00

* INDICATES CRITICAL DEPTH

P&Z FILE NUMBER 00-16.04 SITE PLAN APPROVED 07-06-06
00-16.03 CONDITIONAL USE NUMBER APPROVED 07-13-06

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.