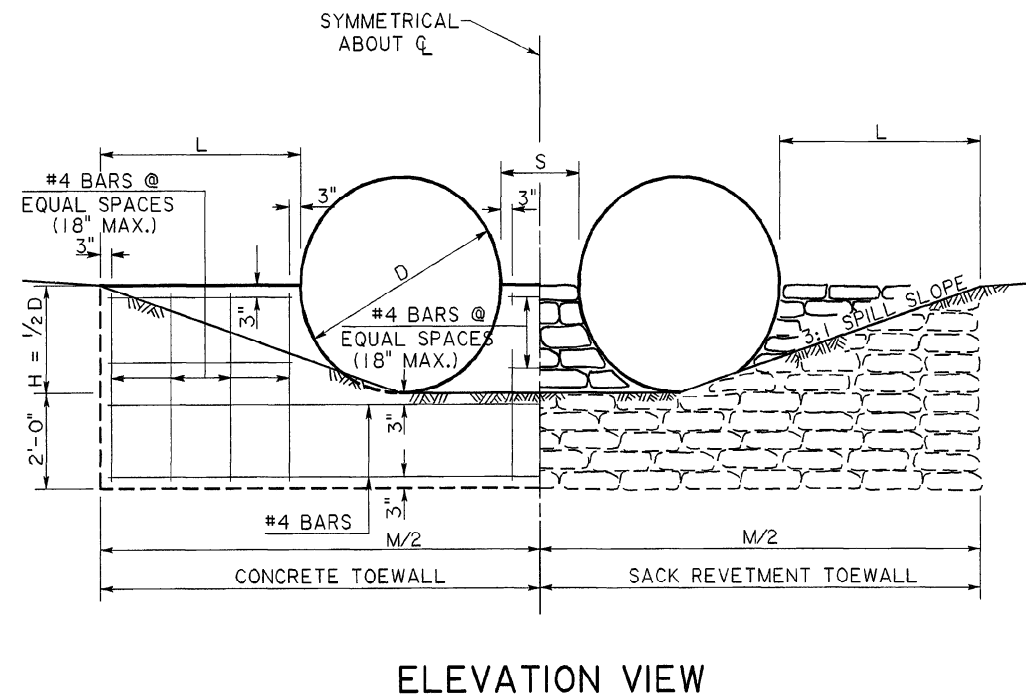
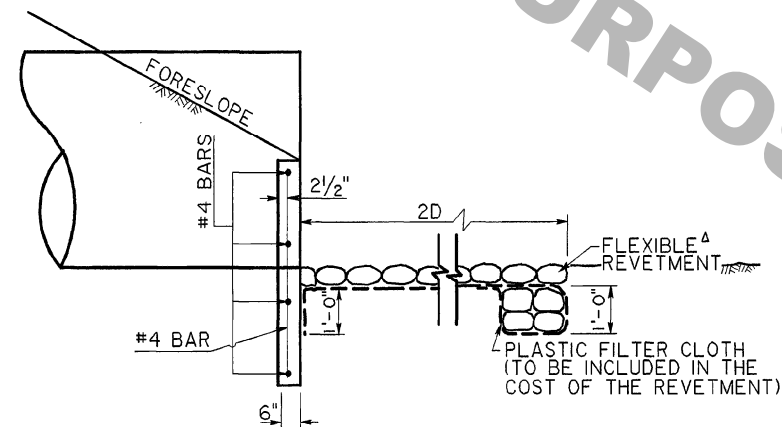


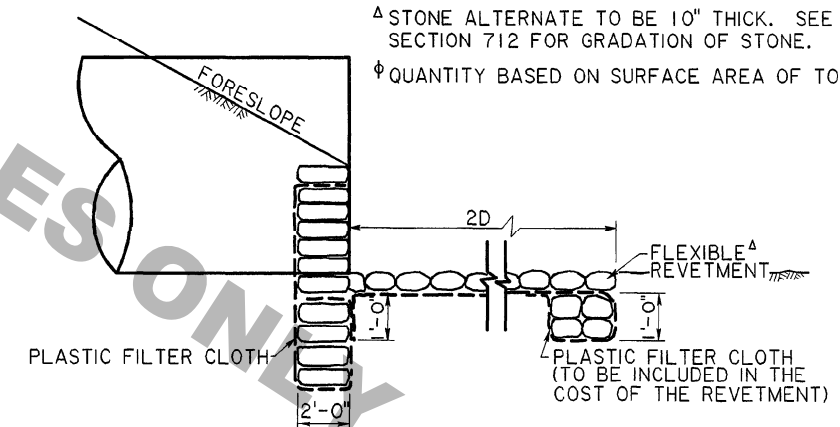
			90° CROSSING							75° CROSSING							60° CROSSING							45° CROSSING						
D/AM. (D)	H	NO OF PIPES	S	L	M	CONCRETE TOEWALL		FLEXIBLE ^Δ REVETMENT	SACK ^φ TOEWALL	S	L	M	CONCRETE TOEWALL		FLEXIBLE ^Δ REVETMENT	SACK ^φ TOEWALL	S	L	M	CONCRETE TOEWALL		FLEXIBLE ^Δ REVETMENT	SACK ^φ TOEWALL	S	L	M	CONCRETE TOEWALL		FLEXIBLE ^Δ REVETMENT	SACK ^φ TOEWALL
						CONCRETE	STEEL						CONCRETE	STEEL						CONCRETE	STEEL						CONCRETE	STEEL		
In.	Ft.-In.		Ft.-In.	Ft.-In.	Ft.-In.	Cu. Yds.	lbs.	Sq. Yds.	Sq. Yds.	Ft.-In.	Ft.-In.	Ft.-In.	Cu. Yds.	lbs.	Sq. Yds.	Sq. Yds.	Ft.-In.	Ft.-In.	Ft.-In.	Cu. Yds.	lbs.	Sq. Yds.	Sq. Yds.	Ft.-In.	Ft.-In.	Ft.-In.	Cu. Yds.	lbs.	Sq. Yds.	Sq. Yds.
24	1-0	1		2-0	6-0	0.30	19	3	2		2-1	6-3	0.32	23	3	2		2-4	7-0	0.36	25	3	2		2-10	8-6	0.43	28	4	3
		2	1-3	2-0	9-3	0.46	28	4	3	1-4	2-1	9-8	0.48	33	4	3	1-5	2-4	10-8	0.53	35	5	3	1-9	2-10	13-1	0.64	40	6	4
		3	1-3	2-0	12-6	0.61	37	6	4	1-4	2-1	13-1	0.64	42	6	4	1-5	2-4	14-5	0.70	45	6	4	1-9	2-10	17-8	0.86	51	8	5
		4	1-3	2-0	15-9	0.76	47	7	5	1-4	2-1	16-5	0.79	52	7	5	1-5	2-4	18-2	0.87	55	8	5	1-9	2-10	22-3	1.07	63	10	6
		5	1-3	2-0	19-0	0.91	56	8	5	1-4	2-1	19-10	0.95	61	9	6	1-5	2-4	21-11	1.05	65	10	6	1-9	2-10	26-10	1.29	75	12	8
		6	1-3	2-0	22-3	1.06	65	10	6	1-4	2-1	23-3	1.11	70	10	7	1-5	2-4	25-7	1.22	75	11	7	1-9	2-10	31-5	1.50	86	14	9
30	1-3	1		2-6	7-6	0.41	27	4	2		2-7	7-9	0.42	28	4	3		2-11	8-9	0.47	30	5	3		3-6	10-6	0.57	34	6	3
		2	1-3	2-6	11-3	0.59	37	6	4	1-4	2-7	11-8	0.61	38	6	4	1-5	2-11	13-0	0.68	41	7	4	1-9	3-6	15-10	0.82	47	9	5
		3	1-3	2-6	15-0	0.77	47	8	5	1-4	2-7	15-7	0.80	49	9	5	1-5	2-11	17-4	0.89	52	10	5	1-9	3-6	21-1	1.08	59	12	6
		4	1-3	2-6	18-9	0.95	57	10	6	1-4	2-7	19-6	0.99	59	11	6	1-5	2-11	21-8	1.09	63	12	7	1-9	3-6	26-5	1.33	72	15	8
		5	1-3	2-6	22-6	1.13	68	13	7	1-4	2-7	23-5	1.17	69	13	7	1-5	2-11	25-11	1.30	74	14	8	1-9	3-6	31-8	1.58	85	18	10
		6	1-3	2-6	26-3	1.31	78	15	8	1-4	2-7	27-4	1.36	80	15	8	1-5	2-11	30-3	1.51	85	17	9	1-9	3-6	37-0	1.84	98	21	11
36	1-6	1		3-0	9-0	0.52	31	6	3		3-1	9-3	0.53	32	6	3		3-6	10-6	0.60	35	7	4		4-3	12-9	0.73	44	9	4
		2	1-3	3-0	13-3	0.73	43	9	4	1-4	3-1	13-9	0.76	44	9	5	1-5	3-6	15-4	0.84	47	10	5	1-9	4-3	18-9	1.03	58	13	6
		3	1-3	3-0	17-6	0.94	54	12	6	1-4	3-1	18-2	0.97	55	12	6	1-5	3-6	20-3	1.09	59	14	7	1-9	4-3	24-9	1.33	72	17	8
		4	1-3	3-0	21-9	1.15	65	15	7	1-4	3-1	22-7	1.19	66	15	7	1-5	3-6	25-1	1.32	71	17	8	1-9	4-3	30-9	1.62	86	21	10
		5	1-3	3-0	26-0	1.36	76	17	8	1-4	3-1	27-0	1.41	78	18	8	1-5	3-6	30-0	1.57	84	20	9	1-9	4-3	36-9	1.92	101	25	12
		6	1-3	3-0	30-3	1.57	87	20	9	1-4	3-1	31-6	1.64	90	21	10	1-5	3-6	34-10	1.80	96	23	11	1-9	4-3	42-8	2.21	115	28	13
42	1-9	1		3-6	10-6	0.64	36	8	4		3-7	10-9	0.65	41	8	4		4-0	12-0	0.73	44	9	4		4-11	14-9	0.90	50	11	5
		2	1-5	3-6	15-5	0.89	48	12	5	1-6	3-7	15-11	0.92	54	12	6	1-8	4-0	17-9	1.03	58	14	6	2-0	4-11	21-9	1.26	66	17	8
		3	1-5	3-6	20-4	1.14	61	16	7	1-6	3-7	21-0	1.18	67	16	7	1-8	4-0	23-5	1.32	72	18	8	2-0	4-11	28-8	1.61	82	22	10
		4	1-5	3-6	25-3	1.40	73	20	8	1-6	3-7	26-2	1.45	80	20	9	1-8	4-0	29-2	1.61	86	23	10	2-0	4-11	35-8	1.97	98	28	12
		5	1-5	3-6	30-2	1.65	86	23	10	1-6	3-7	31-3	1.71	93	24	10	1-8	4-0	34-10	1.90	100	27	11	2-0	4-11	42-7	2.33	114	33	14
		6	1-5	3-6	35-1	1.90	99	27	11	1-6	3-7	36-5	1.98	106	28	12	1-8	4-0	40-7	2.20	114	32	13	2-0	4-11	49-6	2.68	130	39	16
48	2-0	1		4-0	12-0	0.77	45	11	5		4-2	12-6	0.81	46	11	5		4-7	13-9	0.88	49	12	5		5-8	17-0	1.09	61	15	7
		2	1-7	4-0	17-7	1.07	59	16	6	1-8	4-2	18-3	1.11	60	16	7	1-10	4-7	20-3	1.23	64	18	7	2-3	5-8	24-11	1.52	81	22	9
		3	1-7	4-0	23-2	1.37	73	21	8	1-8	4-2	24-1	1.42	75	21	9	1-10	4-7	26-8	1.57	80	24	9	2-3	5-8	32-10	1.94	102	29	12
		4	1-7	4-0	28-9	1.66	87	26	10	1-8	4-2	29-11	1.73	89	27	10	1-10	4-7	33-2	1.92	96	29	12	2-3	5-8	40-9	2.36	122	36	14
		5	1-7	4-0	34-4	1.96	101	31	12	1-8	4-2	35-8	2.04	104	32	12	1-10	4-7	39-7	2.26	111	35	14	2-3	5-8	48-7	2.78	143	43	17
		6	1-7	4-0	39-11	2.26	115	35	14	1-8	4-2	41-6	2.35	118	37	14	1-10	4-7	46-1	2.61	127	41	16	2-3	5-8	56-6	3.20	163	50	19



ELEVATION VIEW



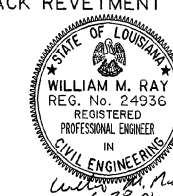
PROFILE VIEW
SHOWING CONCRETE TOEWALL



PROFILE VIEW
SHOWING SACK REVETMENT TOEWALL

Φ QUANTITY BASED ON SURFACE AREA OF TOEWALL FACE.

1. CONSTRUCTION SPECIFICATIONS SHALL BE THE LATEST L.A. D.O.T.D. STANDARD SPECIFICATIONS.
2. ALL CONCRETE TO BE CLASS A.
3. DIMENSIONS RELATING TO REINF. STEEL ARE TO BAR CENTERS.
4. REINFORCEMENT SHALL BE AS PER D.O.T.D. SPECS.
5. QUANTITIES GIVEN ARE FOR ONE TOEWALL.
6. TOEWALL REQUIRED ON UPSTREAM AND DOWNSTREAM END OF PIPES UNLESS OTHERWISE NOTED ON PLANS.
7. TOEWALL IS PARALLEL TO ROADWAY FOR ALL CROSSING ANGLES.



E

				STATE OF LOUISIANA					
				DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT					
				DESIGNED	LAB	DETAILED	KAJ	DIR.	spdetail/toewall
				CHECKED	MN	CHECKED	SD	FILE	tw-90cmlp.dgn
				HYDRAULICS SECTION					
				REVISIONS					