28-NOV-2007 11:08

OPENING					H	E	C	J	D	L	M	S	BARS E								BARS E_1				#4 BARS J		BARS O			#4 BARS P	#4BARS H		#4BARS V		BARS M		#4 BARS TH		#4 BARS TH1		#4 BARS TV		#4 BARS TV1		CONC.	STEEL
Eq. Dia. in.	Span in.	Rise in.	No.	Area sq.ft.	Lgth. ft.in.	Lgth. ft.in.	Lgth. ft.in.	Lgth. ft.in.	Lgth. ft.in.	Lgth. ft.in.	Lgth. ft.in.	Lgth. ft.in.	Size	No.	Lgth. ft.in.	Spc. in.	X ft.in.	Y ft.in.	Z ft.in.	Size	No.	Lgth. ft.in.	Spc. in.	No.	Lgth. ft.in.	Size	No.	Lgth. ft.in.	Spc. in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	Size	No.	Lgth. ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	CU. YDS.	LBS.
60	73	45	1	17.7	5- 9	0-10	0- 8	4- 5	1- 0	13- 3	34- 8	2- 0	4	44	7- 5	7.5	1- 1	2	6- 2	4	0	0- 0	0.0	10	12-11	4	37	5- 7	11.5	9	34- 4	0	0- 0	8	8	4	2	34- 4	0	0- 0	0	0- 0	0	0- 0	0	0- 0	12.73	698
60	73	45	2	35.4	5- 9	0-10	0- 8	4- 5	1- 0	13- 3	45- 2	2- 0	4	48	7- 5	7.5	1- 1	2	6- 2	4	0	0- 0	0.0	10	12-11	4	48	5- 7	11.5	9	44-10	5	2- 0	16	8	4	2	44-10	0	0- 0	0	0- 0	0	0- 0	0	0- 0	16.06	846
60	73	45	3	53.1	5- 9	0-10	0- 8	4- 5	1- 0	13- 3	55- 8	2- 0	4	52	7- 5	7.5	1- 1	2	6- 2	4	0	0- 0	0.0	10	12-11	4	59	5- 7	11.5	9	55- 4	10	2- 0	24	8	4	2	55- 4	0	0- 0	0	0- 0	0	0- 0	0	0- 0	19.39	994
60	73	45	4	70.8	5- 9	0-10	0- 8	4- 5	1- 0	13- 3	66- 3	2- 0	4	56	7- 5	7.5	1- 1	2	6- 2	4	0	0- 0	0.0	10	12-11	4	70	5- 7	11.5	9	65-11	15	2- 0	32	8	4	2	65-11	0	0- 0	0	0- 0	0	0- 0	0	0- 0	22.75	1143
60	73	45	5	88.5	5- 9	0-10	0- 8	4- 5	1- 0	13- 3	76- 9	2- 0	4	60	7- 5	7.5	1- 1	2	6- 2	4	0	0- 0	0.0	10	12-11	4	81	5- 7	11.5	9	76- 5	20	2- 0	40	8	4	2	76- 5	0	0- 0	0	0- 0	0	0- 0	0	0- 0	26.08	1291
60	73	45	6	106.2	5- 9	0-10	0- 8	4- 5	1- 0	13- 3	87- 3	2- 0	4	64	7- 5	7.5	1- 1	2	6- 2	4	0	0- 0	0.0	10	12-11	4	92	5- 7	11.5	9	86-11	25	2- 0	48	8	4	2	86-11	0	0- 0	0	0- 0	0	0- 0	0	0- 0	29.41	1440
72	88	54	1	25.6	6- 8	1- 0	0- 8	4-10	1- 0	15- 5	40- 8	2- 3	4	68	4- 4	5.5	1- 3	2	2-11	4	34	5- 2	11.0	12	15- 1	4	58	6- 2	8.5	10	40- 4	0	0- 0	9	8	4	2	40- 4	0	0- 0	0	0- 0	0	0- 0	0	0- 0	16.53	1001
72	88	54	2	51.2	6- 8	1- 0	0- 8	4-10	1- 0	15- 5	53- 1	2- 3	4	74	4- 4	5.5	1- 3	2	2-11	4	37	5- 2	11.0	12	15- 1	4	75	6- 2	8.5	10	52- 9	6	2- 3	18	8	4	2	52- 9	0	0- 0	0	0- 0	0	0- 0	0	0- 0	20.83	1211
72	88	54	3	76.8	6- 8	1- 0	0- 8	4-10	1- 0	15- 5	65- 5	2- 3	4	80	4- 4	5.5	1- 3	2	2-11	4	40	5- 2	11.0	12	15- 1	4	93	6- 2	8.5	10	65- 1	12	2- 3	27	8	4	2	65- 1	0	0- 0	0	0- 0	0	0- 0	0	0- 0	25.10	1425
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84	102	62	1	34.6	7- 6	1- 1	0- 9	5- 2	1- 0	17- 4	46- 0	2- 7	4	84	4- 8	5.0	1- 5	2	3- 1	4	42	5-10	10.0	12	17- 0	4	79	6- 8	7.0	11	45- 8	0	0- 0	11	8	4	2	45- 8	0	0- 0	0	0- 0	0	0- 0	0	0- 0	21.18	1315
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96	122	77	1	51.7	8-11	1- 4	0-11	5- 9	1- 0	20- 7	54- 8	3- 0	5	90	5- 8	5.5	1- 9	3	3- 8	5	45	7- 0	11.0	16	20- 3	4	131	7- 8	5.0	12	54- 4	0	0- 0	13	8	5	4	54- 4	10	20- 3	0	0- 0	30	8- 7	18	8	31.42	2727
96	122	77	2	103.4	8-11	1- 4	0-11	5- 9	1- 0	20- 7	71- 7	3- 0	5	98	5- 8	5.5	1- 9	3	3- 8	5	43	7- 0	11.0	16	20- 3	4	172	7- 8	5.0	12	71- 3	8	3- 2	26	8	5	4	71- 3	10	20- 3	5	3- 2	33	8- 7	26	8	39.18	3274
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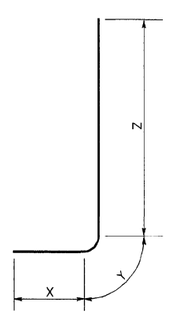
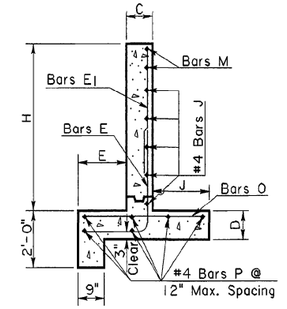
FEDERAL PROJECT	STATE PROJECT	PARISH	SHEET NO.

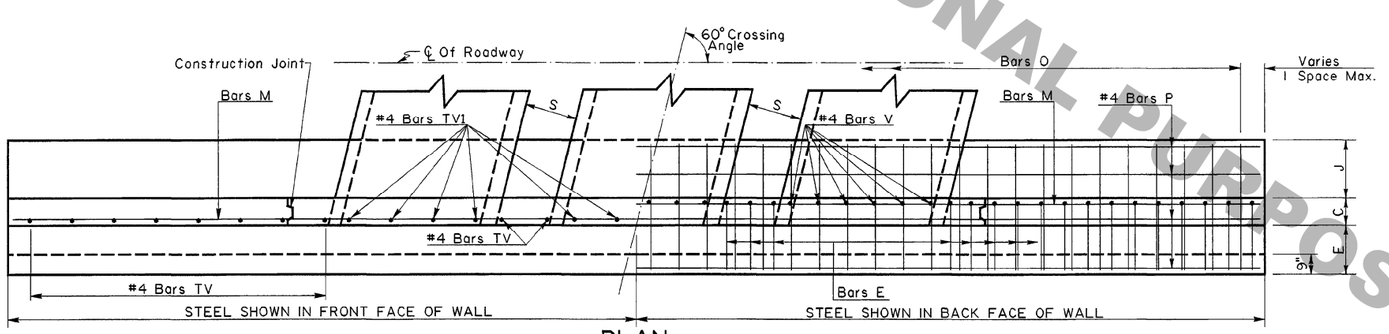


BARS E

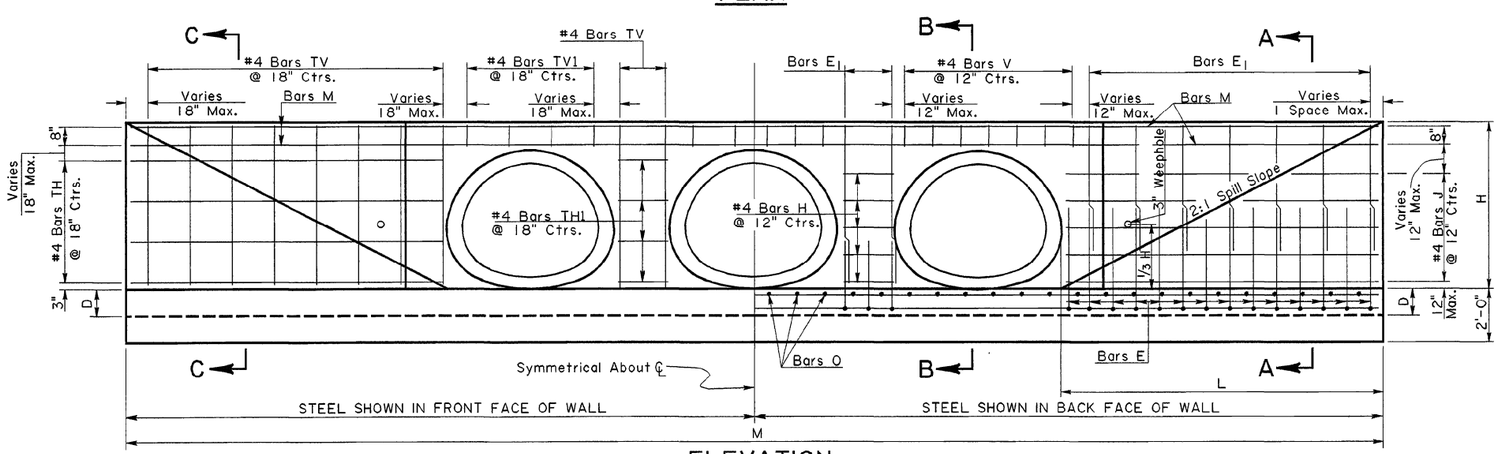


SECTION A-A

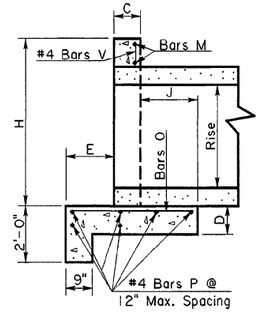
STEEL SHOWN IN BACK FACE OF WALL



PLAN

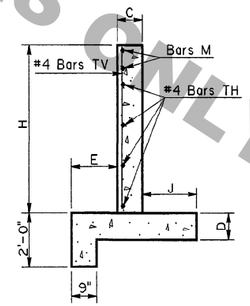


ELEVATION



SECTION B-B

STEEL SHOWN IN BACK FACE OF WALL



SECTION C-C

STEEL SHOWN IN FRONT FACE OF WALL

GENERAL NOTES

DESIGN: Method- Headwalls are designed as retaining walls according to current AASHTO working stress procedures. Walls are designed for a lateral earth pressure of 40 psf with 2.0 feet of surcharge. Overturning- A minimum safety factor of 2.0 is provided against overturning. The resultant of loads is within the middle third of the footing. Sliding - A minimum safety factor of 1.5 is provided against sliding. The coefficient of friction between the footing and soil is 0.5. Foundation - The design soil bearing pressure is 1800 psf. When strength of the soil at the site is less than 1800 psf, bedding material shall be added under the footing as directed.

MATERIALS: Concrete- All concrete shall be class A. All exposed edges shall be ¾ inch chamfered. Reinforcing Steel - Reinforcement shall be Grade 60. Bar spacing dimensions are to bar centers. Steel required for lap splices not detailed shall not be measured for payment. Reinforcing steel shall have 2" cover unless otherwise specified. Steel and concrete quantities shown in table are for one headwall.

A 1'-6" square of geotextile fabric (see Section 1019 of the LA DOTD Standard Specifications) shall be placed in contact with concrete behind each weephole in addition to approximately 2 cu.ft. of concrete sand (see Section 1003.02 of the LA DOTD Standard Specifications).

CONSTRUCTION JOINTS: All construction joints shown are optional. For details of keyed construction joints see Standard Plan CM-49. For construction joints without key, the joint surface shall be roughened. Hardened surface shall be cleaned. Immediately before new concrete is placed, joint surface shall be saturated with water.

PRELIMINARY PLANS FOR INFORMATIONAL PURPOSES ONLY

STATE OF LOUISIANA
WILLIAM M. RAY
REG. No. 24936
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
7-26-01

SPECIAL DETAIL NO. HW60RCPA2 — SHEET 1 OF 1

STRAIGHT HEADWALL FOR RCPA ON A 60° CROSSING 60" EQUIV. THRU 132" EQUIV.

DATED March 22, 1993

DATE	DESCRIPTION	BY
11-14-97	Revised General Notes And Assigned Name HW60RCPA2	JCM

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DESIGNED PAA	DETAILED KAJ	DIR. spdetail/headwall/
CHECKED	CHECKED PAA	FILE hw60rcpa.dgn

HYDRAULICS SECTION

R:\Standard Plans\Special Details\English\Old Sheets\HW60RCPA2.dgn