28-NOV-2007 11:04

OPENING			H	E	C	J	D	L	M	S	BARS E							#4 BARS J		BARS O				#4 BARS P	#4BARS H	#4BARS V		BARS M		CONC.	STEEL	OPENING		
Dia. 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 in.	Z ft.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.	CU. YDS.	LBS.	Area sq.ft.	No.	Dia. in.
15	1	1.2	2- 3	0- 4	0- 6	2-11	0-10	5- 2	11- 9	1- 3	4	12	3- 1	12.0	0- 5	2	2- 6	2	4-10	4	12	3- 5	12.0	7	11- 5	0	0- 0	1	8	4	2	11- 5	2.20	128	1.2	1	15
15	2	2.5	2- 3	0- 4	0- 6	2-11	0-10	5- 2	14- 8	1- 3	4	15	3- 1	12.0	0- 5	2	2- 6	2	4-10	4	15	3- 5	12.0	7	14- 4	1	1- 1	2	8	4	2	14- 4	2.73	159	2.5	2	15
15	3	4.2	2- 3	0- 4	0- 6	2-11	0-10	5- 2	17- 6	1- 3	4	18	3- 1	12.0	0- 5	2	2- 6	2	4-10	4	18	3- 5	12.0	7	17- 2	2	1- 1	3	8	4	2	17- 2	3.24	191	4.2	3	15
15	4	4.9	2- 3	0- 4	0- 6	2-11	0-10	5- 2	20- 4	1- 3	4	21	3- 1	12.0	0- 5	2	2- 6	2	4-10	4	21	3- 5	12.0	7	20- 0	3	1- 1	4	8	4	2	20- 0	3.75	222	4.9	4	15
15	5	6.1	2- 3	0- 4	0- 6	2-11	0-10	5- 2	23- 3	1- 3	4	24	3- 1	12.0	0- 5	2	2- 6	2	4-10	4	24	3- 5	12.0	7	22-11	4	1- 1	5	8	4	2	22-11	4.28	254	6.1	5	15
15	6	7.4	2- 3	0- 4	0- 6	2-11	0-10	5- 2	26- 1	1- 3	4	27	3- 1	12.0	0- 5	2	2- 6	2	4-10	4	27	3- 5	12.0	7	25- 9	5	1- 1	6	8	4	2	25- 9	4.79	285	7.4	6	15
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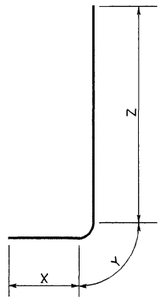
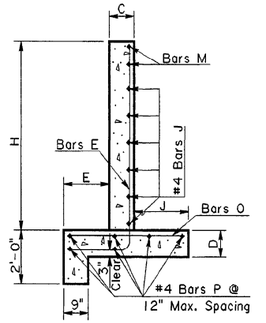
FEDERAL PROJECT	STATE PROJECT	PARISH	SHEET NO.



BARS E



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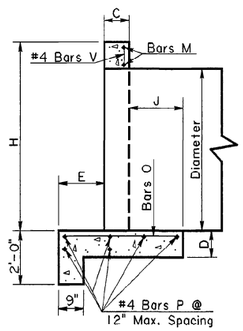

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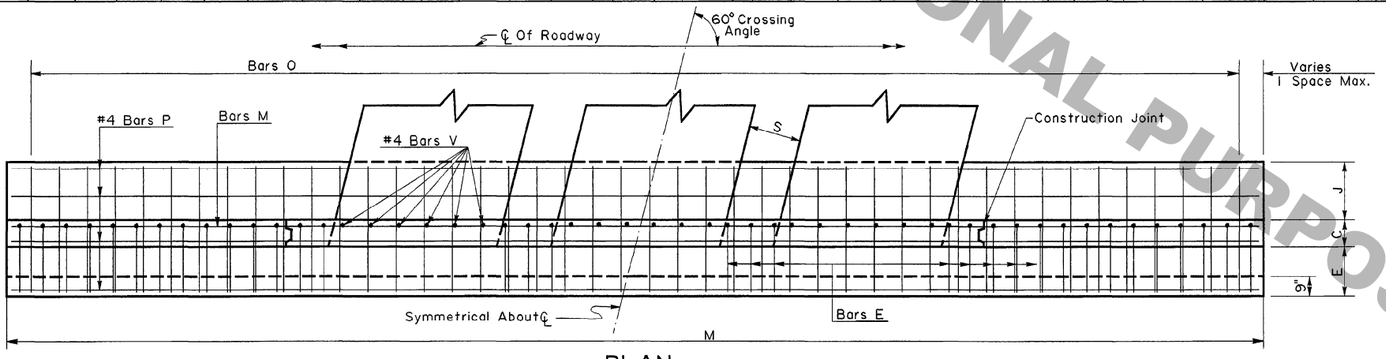
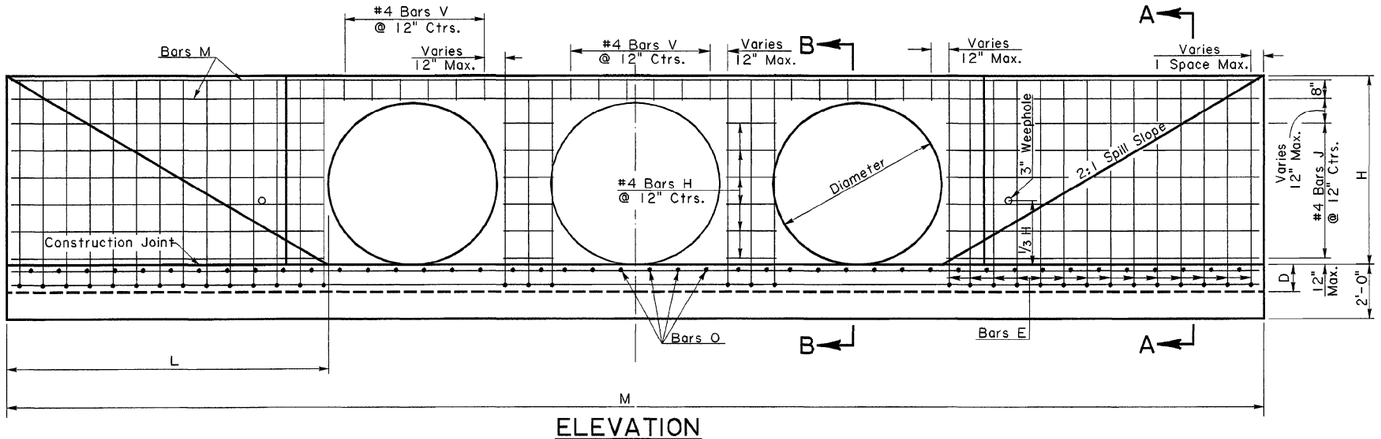


PLAN



ELEVATION

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.

FOR ILLUSTRATION PURPOSES ONLY

STATE OF LOUISIANA
WILLIAM M. RAY
REG. No. 24936
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
William M. Ray
1-20-01

SPECIAL DETAIL NO. HW60CMP1 — SHEET 1 OF 1

STRAIGHT HEADWALL FOR CMP ON A 60° CROSSING 15" THRU 54"

DATED January 6, 1993

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DESIGNED PAA	DETAILED KAJ	DIR. spdetail/headwall/
CHECKED	CHECKED PAA	FILE HW60cmp.dgn

HYDRAULICS SECTION

DATE	DESCRIPTION	BY
11-14-97	Revised General Notes And Assigned Name HW60CMP1	JCM

REVISIONS

R:\Standard Plans\Special Details\English\Old Sheets\HW60CMP1.dgn