

DESIGN	UNITS REQUIRED PER TRANSVERSE SECTION											UNITS REQUIRED PER PANEL SECTION					DESIGN										
	WALL HEIGHT FEET	WALL HEIGHT FEET & INCHES	BEARING PLATES		FRONT COLUMN HEIGHT IN FEET				REAR COLUMN HEIGHT IN FEET				TOTAL COLUMN LENGTH IN FEET	COL. SPLICE	COL. CAP	SPACERS GAGE & LENGTH				BOTTOM SPACER GAGE & LENGTH	STRINGERS				STRINGER STIFF. NEER	WALL HEIGHT FEET	
			10 GA.	12 GA.	FIRST LIFT	SECOND LIFT	THIRD LIFT	TOTAL HEIGHT	FIRST LIFT	SECOND LIFT	THIRD LIFT	TOTAL HEIGHT				10 GA.		12 GA.	14 GA.		16 GA.	18 GA.	10 GA.	12 GA.			14 GA.
A	4.00	4'-0"	2		4.00		4.00	1.33		1.33	5.33	1	0								4			4.00	A		
	5.33	5'-4"	2		5.33		5.33	2.67		2.67	8.00	1	1								6			5.33			
	6.67	6'-8"	2		6.67		6.67	4.00		4.00	10.67	1	2								8			6.67			
	8.00	8'-0"	2		8.00		8.00	5.33		5.33	13.33	1	3								10			8.00			
	9.33	9'-4"	2		9.33		9.33	6.67		6.67	16.00	1	4								12			9.33			
B	10.67	10'-8"	2	2	10.67		10.67	8.00		8.00	19.67	1	5								14			10.67	B		
	12.00	12'-0"	2	2	12.00		12.00	9.33		9.33	21.33	1	6								14	2		12.00			
	13.33	13'-4"	2	2	8.00	5.33	13.33	10.67		10.67	24.00	1	7								14	4		13.33			
C	14.67	14'-8"	2	2	8.00	6.67	14.67	12.00		12.00	25.67	1	8								14	6		14.67	C		
	16.00	16'-0"	2	2	8.00	8.00	16.00	13.33		13.33	29.33	2	9								14	8		16.00			
	17.33	17'-4"	2	2	12.00	9.33	17.33	14.67		14.67	32.00	2	10								14	8	2	17.33			
D	18.67	18'-8"	2	2	12.00	6.67	18.67	16.00		16.00	34.67	2	11								14	8	4	18.67	D		
	20.00	20'-0"	2	2	12.00	8.00	20.00	17.33		17.33	37.33	2	12								14	8	6	20.00			
	21.33	21'-4"	2	2	12.00	9.33	21.33	18.67		18.67	40.00	2	13								14	8	8	21.33			
E	22.67	22'-8"	2	2	12.00	10.67	22.67	20.00		20.00	42.67	2	14								14	8	10	22.67	E		
	24.00	24'-0"	2	2	12.00	12.00	24.00	21.33		21.33	45.33	2	15								14	8	12	24.00			
	25.33	25'-4"	2	2	12.00	13.33	25.33	22.67		22.67	48.00	3	16								14	8	14	25.33			

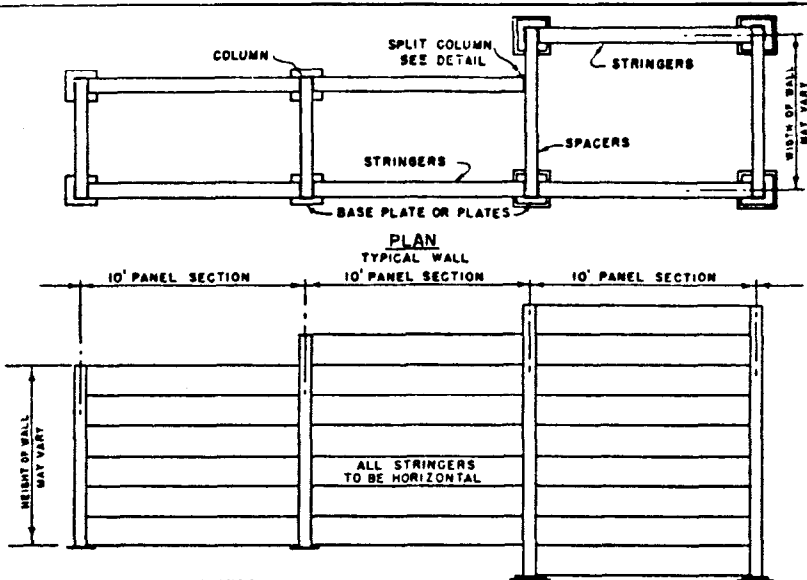
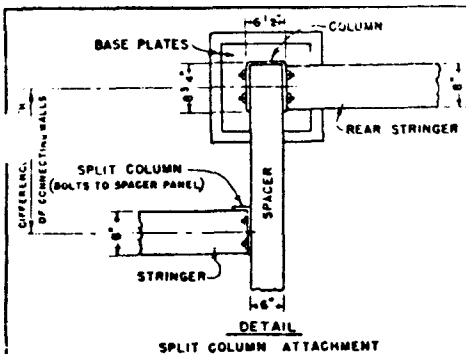
THIS TABLE APPLIES TO STANDARD PANEL SECTIONS AND INCLUDES UNITS FOR BOTH FRONT AND REAR OF ONE 10' SECTION OF WALL.

DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING CITY OF LOS ANGELES

**METAL BIN-TYPE RETAINING WALL**  
ARMCO DRAINAGE AND METAL PRODUCTS, INC.

DESIGNED BY ARMCO	SUBMITTED <u>JUN 10, 1949</u>	
DRAWN BY F.J.S.	BY <u>H. J. Wenter</u> ENGINEER OF STREET & PARKWAY DESIGN	APPROVED <u>JUN 10, 1949</u>
CHECKED BY T. R. G.	PREPARED BY <u>D. P. Rice</u> ENGINEER OF MAPS & SURVEYS	<u>W. J. Allen</u> CITY ENGINEER.

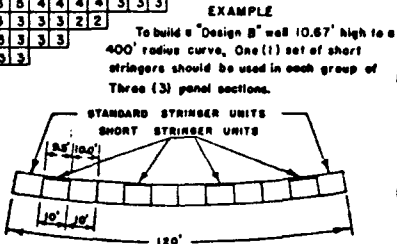
STANDARD PLAN  
**B-3251**  
SHEET 1 OF 2 SHEETS



		CURVATURE DATA																																					
		NUMBER OF PANELS THAT SHOULD CONTAIN ONE SET OF SHORT STRINGERS																																					
DESIGN	WALL HEIGHT IN FEET	DEGREE OF CURVE																																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35			
		RADIUS OF CURVE																																					
		5730	2865	1910	1435	1146	955	819	718	637	575	521	477	441	409	382	358	337	318	302	286	273	260	249	239	229	220	212	205	198	191	185	179	174	169	164			
A	4.00	6	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	5.33	6	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	6.67	6	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	8.00	6	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	9.33	6	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
B	10.67	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	12.00	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	13.33	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	14.67	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C	16.00	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	17.33	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	18.67	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	20.00	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
D	21.33	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	22.67	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	24.00	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	25.33	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

ELEVATION TYPICAL WALL

**USE OF CURVATURE TABLE**  
 CURVED WALLS IN THE FORM OF 10.0' AND 9.5' CHORDS ARE PRODUCED BY MEANS OF SLIGHT PLAY AT THE JOINTS AND BY INTRODUCING STRINGERS THAT ARE 6" SHORTER THAN THE STANDARD TYPE, IN EITHER THE FRONT OR REAR OF THE WALL. FIGURES IN THIS TABLE SHOW THE NUMBER OF PANELS INTO WHICH ONE SET OF SHORT STRINGERS MUST BE INSERTED FOR A DESIRED CURVATURE AND WALL HEIGHT. THIS TABLE APPLIES ONLY TO WALLS OF 1:6 BATTER.



**NOTES:**

1. CHANGES IN ELEVATION OF TOP OR BASE OCCUR ONLY IN STEPS OF 16" OR MULTIPLES OF 16", EVERY 10' OR MULTIPLES OF 10' OF LENGTH.
2. WHERE WALL-HEIGHT VARIES RAPIDLY IT IS CONVENIENT AND ECONOMICAL TO USE SAME BASE WIDTH THROUGHOUT.
3. TRENCHING FOR LOWER MEMBERS SHALL BE BACKFILLED AND THOROUGHLY TAMPED AND FILLING MATERIAL SHALL BE SPREAD OUT AND TAMPED IN LAYERS NOT EXCEEDING 6". BY COMPLETING BACKFILL OF EACH UNIT AS WORK PROGRESSES, THE EXCAVATED MATERIAL OF ONE BIN MAY BE USED DIRECTLY TO BACKFILL THE ADJACENT BIN MAKING IT UNNECESSARY TO LEAVE AN UNSTABLE SLOPE EXPOSED FOR LONG DISTANCES NOR FOR A LONG TIME.
4. BEFORE SETTING BEARING PLATES INSERT COLUMN BOLTS AND FASTEN WITH SPRING NUTS. SET FRONT AND REAR COLUMNS ON BEARING PLATES AND SLIP A COUPLE OF SPACERS INSIDE THE COLUMNS TEMPORARILY BOLTED AND BRACED SO SECTION WILL STAND ALONE. SIMILARLY ERECT THE SECOND TRANSVERSE SECTION LOOSELY BOLTED SO THAT STRINGERS MAY BE BOLTED TO THE CONNECTING CHANNELS. A STRINGER TEMPORARILY BOLTED NEAR THE TOP WILL NOW KEEP THE COLUMNS UPRIGHT FOR PLACING LOWER STRINGERS. PROCEED WITH PLACING SPACER UNITS, CONNECTING CHANNELS AND STRINGERS, IN THE ORDER NAMED, KEEPING SPACER UNITS ONE COURSE HIGHER THAN STRINGER UNITS, TO FACILITATE BOLTING AND PARALLISM. NUTS SHALL NOT BE TIGHTENED UNTIL A SUFFICIENT NUMBER OF UNITS ARE IN PLACE TO ASSURE PROPER ALIGNMENT, BATTER AND GRADE.
5. ALL MATERIALS SHALL CONFORM TO THE LATEST ADOPTED SPECIFICATIONS UNLESS GENERAL PLAN FOR THE WORK AUTHORIZES DEFINITE EXCEPTION.
6. WHERE NECESSARY, SUBSOIL, GROUND WATER AND FOUNDATIONS SHALL BE INVESTIGATED AND DRAINAGE PROVIDED ON GENERAL PLAN.

		UNITS REQUIRED PER SHORT PANEL SECTION												
DESIGN	WALL HEIGHT	SHORT STRINGERS IN FRONT OF WALL						SHORT STRINGERS IN REAR OF WALL						
		16 GAUGE		14 GAUGE		12 GAUGE		16 GAUGE		14 GAUGE		12 GAUGE		
		STD	SHORT	STD	SHORT	STD	SHORT	STD	SHORT	STD	SHORT	STD	SHORT	
FEET FEET-IN		9.5'	9.0'	9.5'	9.0'	9.5'	9.0'	9.5'	9.0'	9.5'	9.0'	9.5'	9.0'	
A	4.00	1	3					1	3	1				
	5.33	2	4					1	4	2				
	6.67	3	5					1	5	3				
	8.00	4	6					1	6	4				
	9.33	5	7					1	7	5				
B	10.67	6	8					1	8	6				
	12.00	6	8	1	1			1	8	6	1	1		
	13.33	6	8	2	2			1	8	6	2	2		
C	14.67	6	8	3	3			1	8	6	3	3		
	16.00	6	8	4	4			1	8	6	4	4		
	17.33	6	8	4	4	1	1	1	8	6	4	4	1	1
	18.67	6	8	4	4	2	2	1	8	6	4	4	2	2
D	20.00	6	8	4	4	3	3	1	8	6	4	4	3	3
	21.33	6	8	4	4	4	4	1	8	6	4	4	4	4
	22.67	6	8	4	4	5	5	1	8	6	4	4	5	5
	24.00	6	8	4	4	6	6	1	8	6	4	4	6	6
E	25.33	6	8	4	4	7	7	1	8	6	4	4	7	7

THIS TABLE APPLIES ONLY TO SHORT PANEL SECTIONS FOR CURVED WALLS AND INCLUDES UNITS FOR BOTH FRONT AND REAR OF A 9.5' BATTER OF WALL.

DEPARTMENT OF PUBLIC WORKS		CITY OF LOS ANGELES
BUREAU OF ENGINEERING		
<b>METAL BIN-TYPE RETAINING WALL</b>		
ARMCO DRAINAGE AND METAL PRODUCTS, INC.		
DESIGNED BY ARMCO	SUBMITTED JUN. 10, 1949 BY <i>H. H. Winter</i> ENGINEER OF STREET & PARKWAY DESIGN	STANDARD PLAN  <b>B-3251</b>
DRAWN BY F.J.S.	PREPARED BY <i>J. J. [Signature]</i> ENGINEER OF MAPS & SURVEYS	APPROVED <i>[Signature]</i> JAN. 12, 1949 CITY ENGINEER
CHECKED BY T.R.G.		SHEET 2 OF 2 SHEETS