STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	TSAP 193 (9)	84	135

TABLE P-5-1 MODIFIED PARAPET LENGTHS, L & K BAR LENGTHS AND QUANTITIES FOR USE WITH MULTIPLE LINES OF PRECAST BOX CULVERTS CONNECTED TO SKEWED WINGWALLS & PARAPETS.

DOUBLES

CLEAR SPAN	CLEAR HEIGHT	75° R1	75° R2	75° Modified Length of K Bars	75° CU. YD. CONC.	75° LBS. STEEL	60° R1	60° R2	60° Modified Length of L Bars	60° Modified Length of K Bars	60° CU. YDS. CONC	60° LBS. STEEL	45° R1	45° R2	45° Modified Length of L Bars	45° Modified Length of K Bars	45° CU. YDS. CONC.	45° LBS. STEEL
4'	4'	6' 6"	6' 1"	12' 3"	13.03	416	7' 0"	6' 11"	12' 5"	13' 7"	14.02	574	9' 0"	8' 9"	15' 0"	17' 1"	17.19	781
5'	4'	7' 7"	7' 2"	14' 5"	13.79	437	8' 3"	8' 1"	14'10"	16' 0"	14.87	659	10' 6"	10' 2"	18' 0"	20' 4"	18.25	854
	5'	7' 7"	7' 2"	14' 5"	16.45	531	8' 3"	8' 1"	14'10"	16' 0"	17.87	770	10' 6"	10' 2"	18' 0"	20' 4"	21.78	984
6'	3'	8' 8"	8' 3"	16' 7"	12.87	379	9' 6"	9' 3"	17' 2"	18' 5"	13.27	668	12' 1"	11' 8"	21' 0"	23' 5"	16.33	875
	4'	8' 8"	8' 3"	16' 7"	14.56	458	9' 6"	9' 3"	17' 2"	18' 5"	15.71	752	12' 1"	11' 9"	21' 0"	23' 6"	19.23	949
	5'	8' 8"	8' 3"	16' 7"	17.33	559	9' 6"	9' 5"	17' 5"	18' 8"	18.85	866	12' 1"	11'10"	21' 1"	23' 7"	23.30	1109
	6'	8' 8"	8' 3"	16' 7"	20.17	663	9' 6"	9' 5"	17' 5"	18' 8"	21.82	976	12' 1"	11'10"	21' 1"	23' 7"	26.55	1262
7'	4'	9'-11"	9'-7"	19' 2"	16.02	774	10'-10"	10'-10"	19' 10"	21' 4"	17.75	1070	13'-11"	13'-6"	24'-5"	27'-1"	20.95	1416
	5'	9'-11"	9'-8"	19' 3"	18.76	863	10'-10"	11'-1"	19' 10"	21' 7"	20.70	1139	13'-11"	13'-9"	24'-5"	27'-4"	25.14	1506
	6'	9'-11"	9'-8"	19' 3"	21.46	1000	10'-10"	11'-1"	19' 10"	21' 7"	23.67	1351	13'-11"	13'-9"	24'-5"	27' 4"	28.66	1746
	7'	9'-11"	9'-10"	19'-5"	26.93	1220	10'-10"	11'-3"	19' 10"	21' 9"	28.51	1576	13'-11"	14' 0"	24' 5"	27'-7"	35.84	2034
8'	4'	10'-11"	10'-7"	21'-2"	17.05	783	11'-11"	12' 0"	22' 2"	23' 7"	18.77	1235	15'-1"	15'-0"	27'-3"	29'-8"	23.12	1649
	5'	10'-11"	10'-8"	21'-3"	19.79	905	11'-11"	12'-2"	22' 2"	23' 9"	21.34	1383	15'-1"	15'-1"	27'-3"	29'-10"	26.64	1811
	6'	10'-11"	10'-11"	21'-3"	22.80	1061	11'-11"	12'-2"	22' 2"	23' 9"	25.20	1548	15'-1"	15'-1"	27'-3"	29'-10"	30.43	2000
	7'	10'-11"	10'-11"	21'-6"	27.96	1263	12' 0"	12'-5"	22' 2"	24' 1"	30.72	1765	15'-1"	15'-4"	27'-3"	30'-1"	37.24	2273
	8'	10'-11"	10'-11"	21'-6"	32.96	3144	12' 1"	12'-6"	22'-10"	24' 3"	36.12	3852	15'-1"	15'-5"	27'-9"	30'-2"	43.56	4629
9'	4'	12' 0"	11' 7"	23' 3"	18.43	831	13' 3"	13' 4"	24' 4"	26' 3"	20.42	1436	16' 7"	16' 7"	30' 3"	32' 8"	24.99	1912
	5'	12' 0"	11' 9"	23' 5"	20.88	946	13' 3"	13' 6"	24' 8"	26' 5"	23.13	1569	16' 7"	16' 9"	30' 3"	33' 0"	28.11	2051
	6'	12' 0"	11' 9"	23' 5"	24.05	1106	13' 3"	13' 6"	24' 8"	26' 5"	26.42	1731	16' 7"	16' 9"	30' 3"	33' 0"	32.24	2261
	7'	12' 0"	11'11"	23' 7"	29.27	1321	13' 3"	13' 8"	24' 8"	26' 7"	31.99	1951	16' 7"	17' 0"	30' 3"	33' 3"	39.03	2533
	8'	12' 0"	11'11"	23' 7"	34.28	2504	13' 4"	13' 9"	25' 1"	26' 9"	37.40	3272	16' 7"	17' 0"	30'11"	33' 3"	45.53	4124
	9'	12' 0"	12' 0"	23' 8"	40.77	3778	13' 5"	13'10"	25' 1"	26'11"	44.68	4743	16' 7"	17' 2"	30'11"	33' 5"	52.83	5690
	10'	12' 2"	12' 4"	24' 2"	45.34	4211	13' 9"	14' 2"	25' 4"	27' 7"	49.92	5335	16'10"	17' 5"	31' 2"	33'11"	58.53	6325
10'	4'	13' 7"	13' 0"	26' 3"	20.50	912	15' 2"	14' 0"	27' 1"	28'10"	22.60	1550	19' 2"	17' 1"	33' 4"	35'11"	27.13	1922
	5'	13'-7"	13'-0"	26' 3"	23.37	1069	15' 2"	14'-2"	27' 1"	29' 0"	25.75	1706	19'-2"	17'-1"	33'-4"	35'-11"	31.07	2100
	6'	13'-7"	13'-0"	26'-3"	26.46	1200	15' 2"	14' 2"	27' 1"	29' 0"	28.91	1858	19'-2"	17'-6"	33'-4"	36'-4"	34.87	2298
	7'	13'-7"	13'-0"	26'-3"	31.53	1407	15'-2"	14' 5"	27' 1"	29' 3"	34.34	2102	19'-2"	17'-6"	33'-4"	36'-4"	41.40	2611
	8'	13'-10"	13'-0"	26' 6"	40.27	2717	15' 4"	14'-5"	27' 6"	29' 5"	44.13	3569	19'-7"	17'-7"	34'-0"	36'-10"	52.69	4269
	9'	13'10"	13'0"	26' 6"	45.51	3069	15' 4"	14' 5"	27' 6"	29' 5"	49.57	3364	19' 7"	18' 0"	34' 0"	37' 3"	59.71	4763
	10'	13'10"	13' 0"	26' 6"	51.81	4055	15' 4"	14' 9"	27'10"	29' 9"	56.07	4961	19' 7"	18' 0"	34' 0"	37' 3"	67.42	5978

TRIPLES

CLEAR SPAN	CLEAR HEIGHT	75° R1	75° R2	75° Modified Length of K Bars	75° CU. YDS. CONC.	75° LBS. STEEL	60° R1	60° R2	60° Modified Length of L Bars	60° Modified Length of K Bars	60° CU. YDS. CONC.	60° LBS. STEEL	45° R1	45° R2	45° Modified Length of L Bars	45° Modified Length of K Bars	45° CU. YDS. CONC.	45° LBS. STEEL	CLEAR HEIGHT	CLEAR SPAN
4'	4'	9' 3"	8' 11"	17' 3"	15.21	472	10' 2"	10' 0"	18' 5"	19' 10"	16.43	747	12' 9"	12' 6"	23' 7"	24'11"	20.12	989	4'	4'
5'	4'	10' 6"	10' 1"	20' 3"	16.35	505	11' 4"	11' 0"	21' 4"	22' 8"	17.70	774	15' 1"	14' 9"	27' 2"	29' 6"	21.69	1087	4'	5'
	5'	10' 6"	10' 1"	20' 3"	19.11	600	11' 4"	11' 0"	21' 4"	22' 8"	20.82	938	15' 1"	14' 9"	27' 2"	29' 6"	25.36	1218	5'	
6'	3'	12' 8"	12' 4"	24' 8"	15.18	457	13'11"	13' 8"	25' 7"	27' 3"	16.38	881	17' 6"	17' 1"	31' 9"	34' 3"	20.15	1172	3'	6'
	4'	12' 8"	12' 4"	24' 8"	17.56	538	14' 0"	13'10"	25'11"	27' 6"	19.03	961	17' 6"	17' 1"	32' 0"	34' 3"	23.30	1254	4'	
	5'	12' 8"	12' 4"	24' 8"	21.04	640	14' 0"	13'11"	26' 7"	27' 7"	22.33	1083	17' 6"	17' 3"	32' 0"	34' 5"	27.24	1412	5'	
	6'	12' 8"	12' 4"	24' 8"	23.44	745	14' 0"	13'11"	26' 7"	27' 7"	25.43	1195	17' 6"	17' 3"	32' 0"	34' 5"	30.96	1567	6'	
7'	4'	14'-6"	14'-3"	28'-5"	19.50	916	16'-0"	16'-0"	30'-1"	31'-8"	21.65	1357	20'-1"	19'-9"	36'-11"	39'-6"	26.43	1822	4'	7'
	5'	14'-6"	14'-3"	28'-6"	22.39	1006	16'-0"	16'-3"	30'-1"	31'-11"	24.75	1398	20'-1"	20'-0"	36'-11"	39'-9"	30.09	1988	5'	
	6'	14'-6"	14'-3"	28'-6"	25.24	1143	16'-0"	16'-3"	30'-1"	31'-11"	27.87	1640	20'-1"	20'-0"	36'-11"	39'-9"	32.80	2154	6'	
	7'	14'-6"	14'-6"	28'-8"	30.83	1365	16'-0"	16'-5"	30'-1"	32'-1"	33.92	1877	20'-1"	20'-0"	36'-11"	40'-0"	40.23	2444	7'	
8'	4'	16'-0"	15'-9"	31'-5"	20.94	942	17'-8"	17'-9"	33'-7"	35'-1"	23.13	1603	22'-0"	21'-11"	41'-2"	43'-7"	28.44	2164	4'	8'
	5'	16'-0"	15'-10"	31'-6"	23.84	1064	17'-8"	17'-11"	33'-7"	35'-3"	26.45	1752	22'-0"	22'-1"	41'-2"	43'-9"	32.15	2334	5'	
	6'	16'-0"	15'-10"	31'-6"	26.98	1222	17'-8"	17'-11"	33'-7"	35'-3"	29.86	1921	22'-0"	22'-1"	41'-2"	43'-9"	35.13	2529	6'	
	7'	16'-0"	16'-1"	31'-9"	32.27	1425	17'-9"	18'-2"	33'-7"	35'-7"	35.55	2136	22'-0"	22'-4"	41'-2"	44'-0"	43.13	2799	7'	
	8'	16'-0"	16'-1"	31'-9"	37.47	3308	17'-9"	18'-2"	34'-0"	35'-7"	41.13	4233	22'-0"	22'-4"	41'-8"	44'-0"	49.70	5166	8'	
9'	4'	17' 8"	17' 3"	34' 7"	22.87	909	19' 7"	19' 8"	37' 4"	38'11"	25.39	1895	24' 4"	24' 4"	45'10"	48' 4"	31.04	2553	4'	9'
	5'	17' 8"	17' 6"	34'10"	25.47	1125	19' 7"	19'10"	37' 4"	39' 1"	28.33	2027	24' 4"	24' 6"	45'10"	48' 6"	34.37	2693	5'	
	6'	17' 8"	17' 6"	34'10"	28.79	1286	19' 7"	19'10"	37' 4"	39' 1"	31.71	2190	24' 4"	24' 6"	45'10"	48' 6"	38.70	2904	6'	
	7'	17' 8"	17' 8"	35' 0"	34.17	1505	19' 7"	20' 0"	37' 4"	39' 3"	37.45	2426	24' 4"	24' 9"	45'10"	48' 9"	45.76	3198	7'	
	8'	17' 8"	17' 8"	35' 0"	39.37	2687	19' 8"	20' 1"	37'10"	39' 5"	43.07	3735	24' 4"	24' 9"	46' 6"	48' 9"	52.48	4781	8'	
	9'	17' 9"	17' 8"	35' 1"	46.01	3961	19' 9"	20' 2"	37'10"	39' 7"	50.53	5153	24' 4"	24'11"	46' 6"	48'11"	60.00	6348	9'	
	10'	17'11"	18' 2"	35' 9"	50.73	4395	20' 2"	20' 7"	38' 2"	40' 5"	55.94	5796	24' 9"	25' 4"	47' 0"	49' 9"	65.91	6984	10'	
10'	4'	19'11"	19' 3"	38'10"	25.47	1106	22' 2"	21' 0"	41' 2"	42'11"	28.18	2052	27' 9"	25' 3"	50' 7"	53' 2"	33.94	2551	4'	10'
	5'	19'-11"	19'-3"	38'-10"	28.51	1269	22'-2"	21'-2"	41'-2"	43'-1"	31.49	2223	27' 9"	25' 3"	50' 7"	53'-2"	38.10	2751	5'	
	6'	19'-11"	19'-3"	38'-10"	31.77	1401	22'-2"	21'-2"	41'-2"	43'-1"	34.83	2373	27' 9"	26' 2"	50'-7"	53'-7"	42.12	2940	6'	
	7'	19'-11"	19'-3"	38'-10"	37.05	1608	22'-2"	21'-2"	41'-2"	43'-4"	40.52	2619	27' 9"	26' 2"	50'-7"	53'-7"	48.95	3254	7'	
	8'	20' 2"	19'-3"	39' 1"	45.96	2919	22'-5"	21'-6"	41'-8"	43'-7"	50.56	4089	28' 2"	26' 7"	51'-2"	54'-5"	60.47	4918	8'	
	9'	20' 2"	19' 3"	39' 1"	51.39	3279	22' 5"	21' 6"	41' 8"	43' 7"	56.13	4334	28' 2"	26' 7"	51' 2"	54' 5"	67.73	5423	9'	
	10'	20' 2"	19' 3"	39' 1"	57.89	4266	22' 5"	21'10"	41' 8"	43'11"	62.89	5501	28' 2"	26' 7"	51' 2"	54' 5"	75.75	6640	10'	

NOTE: MODIFIED WINGWALL AND PARAPET QUANTITIES ARE FOR FOUR WINGWALLS AND TWO PARAPETS EXPANDED FOR MULTIPLE LINES WITH A 6" SPACE. FOR TOTAL CAST-IN-PLACE QUANTITIES, MULTIPLY ΔL (BOTH ENDS) BY THE MODIFIED BARREL QUANTITIES - (SEE DETAIL SHEET NO P-4) - AND ADD THIS TO THE MODIFIED WINGWALL AND PARAPET QUANTITIES GIVEN ABOVE.

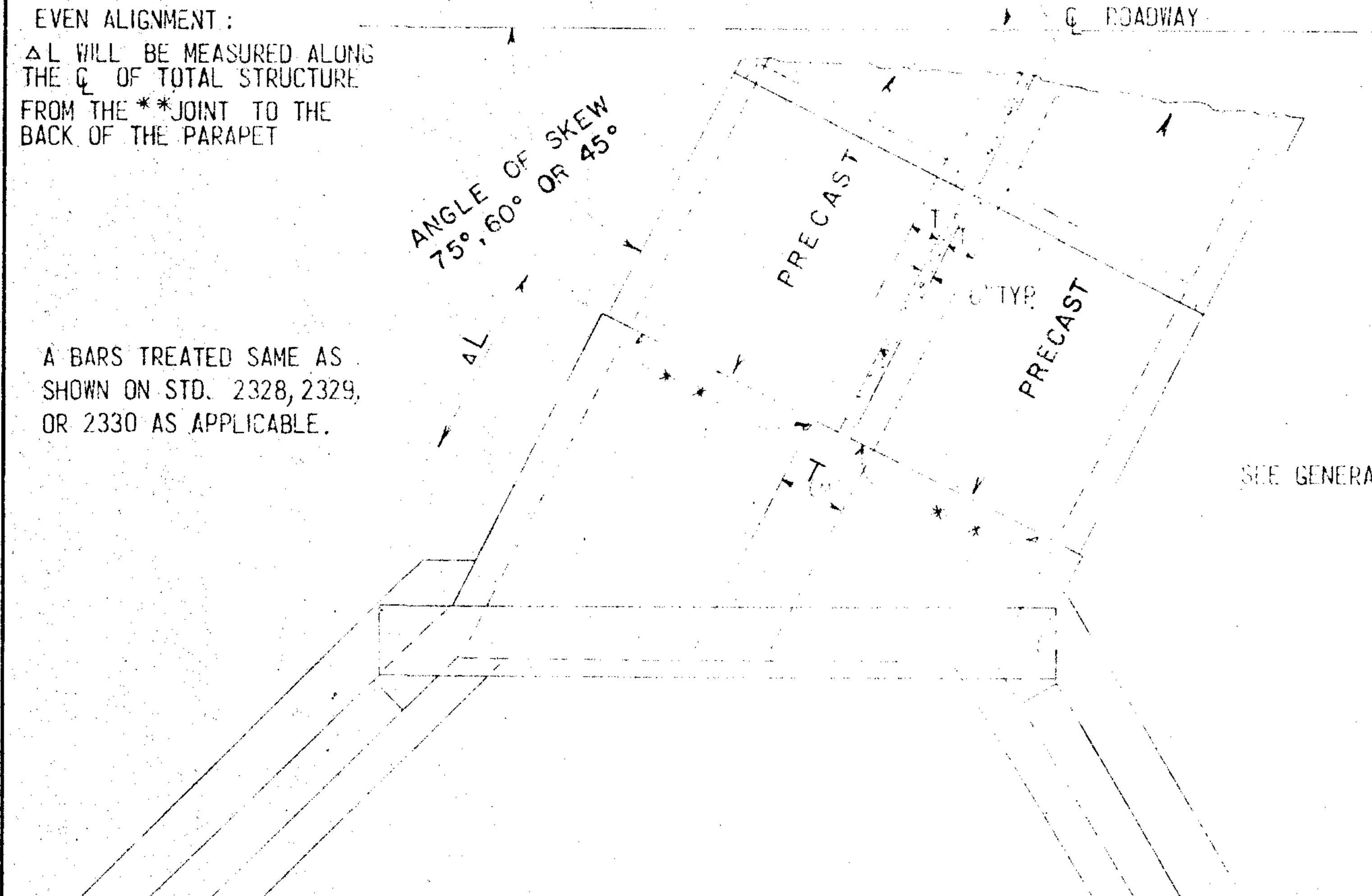
GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD AND/ OR SPECIAL PROVISIONS
2. THIS PLAN IS NOT COMPLETE IN ITSELF. SEE DETAIL SHEET NO. P-4 AND APPLICABLE STANDARD LISTED IN TABLE P-5-2 FOR ADDITIONAL INFORMATION.
3. MODIFIED CAST-IN-PLACE QUANTITIES ARE GIVEN FOR CONTRACTORS INFORMATION ONLY. SEE SPECIFICATIONS SEC.513 FOR BASIS OF PAYMENT
4. THE EVEN ALIGNMENT OF PRECAST SECTIONS MAY BE USED FOR ANY SKEWED MULTIPLE CULVERT. THE STAGGERED ALIGNMENT MAY BE USED ONLY WHERE THE PARAPET SKEW RELATIVE TO THE CULVERT IS 75°, 60°, OR 45° AT BOTH THE INLET AND OUTLET ENDS OF THE CULVERT.
5. SINGLE LINE CULVERTS ON SKEWS WILL BE CONSTRUCTED SIMILIAR TO THAT SHOWN FOR MULTIPLE LINES, BUT WITH NO MODIFICATIONS NECESSARY FOR THE CAST-IN-PLACE QUANTITIES

** JOINT BETWEEN PRECAST AND CAST-IN-PLACE CONSTRUCTION: ... SID ...

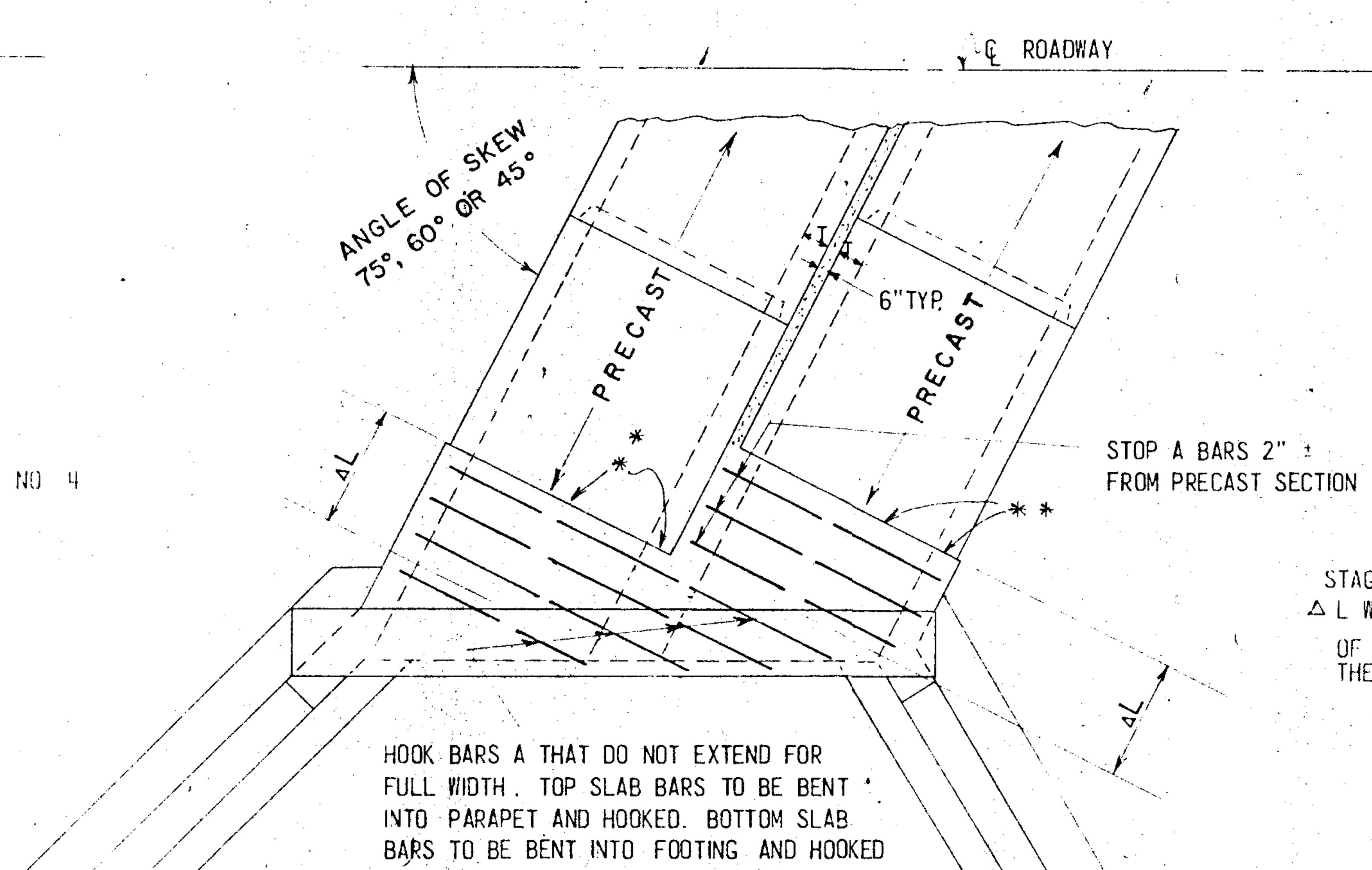
EVEN ALIGNMENT :
ΔL WILL BE MEASURED ALONG THE ℄ OF TOTAL STRUCTURE FROM THE ** JOINT TO THE BACK OF THE PARAPET

A BARS TREATED SAME AS SHOWN ON STD. 2328, 2329, OR 2330 AS APPLICABLE.



PLAN VIEW
(EVEN ALIGNMENT)

SEE GENERAL NOTE NO. 4



STOP A BARS 2" ± FROM PRECAST SECTION

HOOK BARS A THAT DO NOT EXTEND FOR FULL WIDTH. TOP SLAB BARS TO BE BENT INTO PARAPET AND HOOKED. BOTTOM SLAB BARS TO BE BENT INTO FOOTING AND HOOKED

PLAN VIEW
(STAGGERED ALIGNMENT)

STAGGERED ALIGNMENT :
ΔL WILL BE MEASURED ALONG THE ℄ OF THE INDIVIDUAL CULVERT LINE FROM THE ** JOINT TO THE BACK OF THE PARAPET.

FOR WINGWALLS & PARAPET QUANTITIES OF SINGLE LINE CULVERTS, SEE STANDARD 2331. FOR WINGWALLS AND PARAPET QUANTITIES OF MULTIPLE LINES, SEE TABLE AT TOP LT.

TABLE P-5-2 STANDARDS FOR BUILT IN PLACE DETAILS.

CULVERT SIZE	SINGLE LINE (SKEWED)	DOUBLE* OR TRIPLE * (SKEWED)
4' X4' TO 6'X6'	STD. 2321 & 2328	STD. 2325 & 2328
7'X4' TO 9'X 10'	STD. 2323 & 2329	STD. 2326 & 2329
10'X4' TO 10'X 10'	STD. 2324 & 2330	STD. 2327 & 2330

* CAST-IN-PLACE CONSTRUCTION AT THE ENDS OF DOUBLE AND TRIPLE PRECAST CULVERTS WILL BE AS SHOWN ON STANDARDS LISTED, EXCEPT THAT THE INTERIOR WALL THICKNESS AND THE PARAPET LENGTHS WILL BE INCREASED AS SHOWN.

6-8-79

PRECAST BOX CULVERT TO WINGWALLS AND PARAPET CONNECTIONS ADDITIONAL DETAILS FOR 75°, 60° & 45° SKEWS

GEN. REV.

NO SCALE 4-3-79

R.M.U.

P-5

FORM EF3