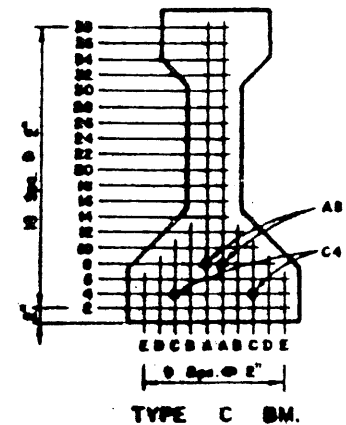


DESIGNED BEAMS (DEPRESSED STRANDS)												OPTIONAL DESIGN					
SPAN NUMBER	SPAN LENGTH	BEAM NO.	BEAM LENGTH (FT.)	BEAM TYPE	PRESTRESSING STRANDS					CONCRETE		DN. LOAD COMP. STRESS (TOP ψ)	DN. LOAD TENSILE STRESS (BOT. ψ)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (KIP-FT)			
					NO.	SIZE	STNGTH.	$\frac{1}{4}$ " END	$\frac{1}{4}$ " END	DEPRESSED NO.	TO				RELEASE STRENGTH (psi)	MINIMUM 28 DAY COMP. STRENGTH (psi)	
1	60'-6 3/4"	1	55.70	C	20	1/2"	270 ^K	14.09	10.09	4	A-24	4000	5000	2053	2446	2400	
		2	56.30														
		3	56.90														
		4	57.50			20			14.09	10.09	4	A-24			2053	2446	2400
		5	58.10			22			13.82	8.36	6	A-26			2160	2583	2522
		6	58.71			22			13.82	8.36	6	A-26			2160	2583	2522
		7	59.31			22			13.82	8.36	6	A-26			2160	2583	2522
		8	59.92			24			13.59	6.59	6	A-34			2424	2863	2763
		9	60.48														
		10	61.08														
		11	61.69														
		12	62.30														
		13	62.91			24			13.59	6.59	6	A-34	4000		2424	2863	2763
		14	63.52			26			13.40	6.47	6	A-36	4200		2564	3011	2890
		15	64.13			26			13.40	6.47	6	A-36	4200		2564	3011	2890
		16	64.75			26			13.40	6.47	6	A-36	4200		2564	3011	2890
2	53'-1 7/8"	1	52.70					14.34	10.84	4	A-18	4000		1729	2113	2103	
		2	52.70														
		3	52.71														
		4	52.72														
		5	52.73														
		6	52.74														
		7	52.76														
		8	52.77														
		9	52.78														
		10	52.80														
		11	52.82														
		12	52.83														
		13	52.85														
		14	52.87														
		15	52.89														
		16	52.91	C	14	1/2"	270 ^K		14.34	10.84	4	A-18	4000	5000	1729	2113	2103

9 LENGTH AT ϵ OF ARAPAHO ROAD



GENERAL NOTES:

Designed in accordance with current A.A.S.H.T.O. Specifications.
All concrete shall be Class H.

When shown on this sheet, the fabricator has the option of furnishing either the designed depressed strand beam or an approved optional beam design. Low relaxation strands may be used.

Prestressed losses for the designed beams have been calculated according to the A.A.S.H.T.O. 1982 Interim Specifications for a relative humidity of 65%. Optional designs shall likewise conform.

Certain beams with depressed strands are subject to cracking in the end of the beam. When such cracks occur, all subsequent beams of the same type and strand pattern shall have strands wrapped in the following manner:

1. Alternate rows of depressed strands shall be wrapped for 2 feet from each end of the beam.
2. One half of the straight strands, as nearly as possible, shall be wrapped for 4 feet from each end of the beam.
3. The wrapping pattern shall be symmetrical about the vertical axis of the beam for both depressed and straight strands.
4. Strands shall be wrapped so that the centers of gravity of the depressed strands and the straight strands will remain within 1 inch of their original location.
5. Strands shall be tightly wrapped with a waterproof adhesive tape or plastic tubing may be used provided both ends and the seam of the tube are sealed with a waterproof tape.
6. Revised shop drawings will not be required, but wrapping patterns, and the beams affected, shall appear on the as-built drawings.

For depressed strand designed beams, strands shall be located as low as possible on the 2" grid system shown hereon, unless a non-standard strand pattern is indicated. Fill Row "2", then Row "4", then Row "6", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position shall be depressed, maintaining the 2" spacing so that the upper two strands are in the position shown in the table at the beam ends.

Initial pretension for 1/2" 270 K strands = 28.9 K for regular stress relieved strand or 31.0 K for low relaxation strands.

Horizontal distances are shown for SPAN LENGTH and BEAM LENGTH. They must be corrected for grade or cross slope, where appropriate.

NO.	REVISION	BY	DATE
TEXAS TURNPIKE AUTHORITY DALLAS NORTH TOLLWAY			
ARAPAHO ROAD UNDERPASS PRESTRESSED CONCRETE BEAMS			
Turner Collier & Braden Inc. <small>(Consulting Engineers)</small>			SECTION VI
DESIGNED BY	DATE	DESIGNED BY	DATE
DRD	5-83	FRW	5-83
CHECKED BY	DATE	CHECKED BY	DATE
FRW	5-83	FRW	5-83
CONTRACT NO. DNT-114 SHEET S-45 of S-82			