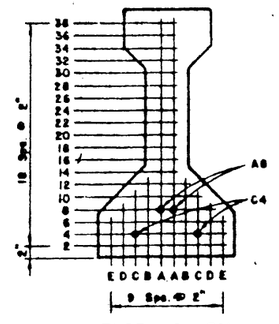
DESIGNED BEAMS (DEPRESSED STRANDS)

SPAN NUMBER	* SPAN LENGTH	BEAM NO.	BEAM LENGTH (FT.)	BEAM TYPE	PRESTRESSING STRANDS TOTAL NO.	TOTAL SIZE	TOTAL STRGTH	TOTAL "e" @ C. in.	TOTAL "e" END in.	DEPRESSED NO.	DEPRESSED TO	CONCRETE RELEASE STRENGTH f'ci (psi)	CONCRETE MINIMUM 28 DAY COMP. STRENGTH f'c (psi)
1	77'-6"	1-14	75.79	C	34	1/2"	270K	12.62	5.56	8	A-38	3260	5660
		15	75.81	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
		16	75.87		↓								
		17	75.99		34			12.62	5.56	8	A-38	3260	5660
2	67'-0"	1-14	63.92		22			13.82	8.36	6	A-26	4000	5000
		15	63.94		↓			↓	↓	↓	↓	↓	↓
		16	64.00										
		17	64.09		22			13.82	8.36	6	A-26	4000	5000
3	77'-6"	1-14	75.79		34			12.62	5.56	8	A-38	3260	5660
		15	75.81		↓			↓	↓	↓	↓	↓	↓
		16	75.84										
		17	75.90		↓	↓	↓	↓	↓	↓	↓	↓	↓
		18	75.99	C	34	1/2"	270K	12.62	5.56	8	A-38	3260	5660

OPTIONAL DESIGN

DN. LOAD COMP. STRESS (TOP @ C.) f'ci (psi)	DN. LOAD TENSILE STRESS (BOTT. @ C.) ftob (psi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (Ft.-Kips)
3275	3600	3300
↑	↑	↑
3275	3600	3300
2362	2690	2550
↑	↑	↑
2362	2690	2550
3275	3600	3300
↑	↑	↑
3275	3600	3300

* LENGTH AT ℄ OF TOLLWAY



TYPE C BM.

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 effected, 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

VERDE VALLEY LANE OVERPASS

PRESTRESSED CONCRETE BEAMS

Turner Collie & Braden Inc. (Consulting Engineers) SECTION VI

DRAWN DRD DATE 2-83 CHECKED FRW DATE 4-83 DESIGNED FRW DATE 2-83 SCALE NO SCALE

CONTRACT NO. DNT-114 SHEET S-13 OF S-82

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