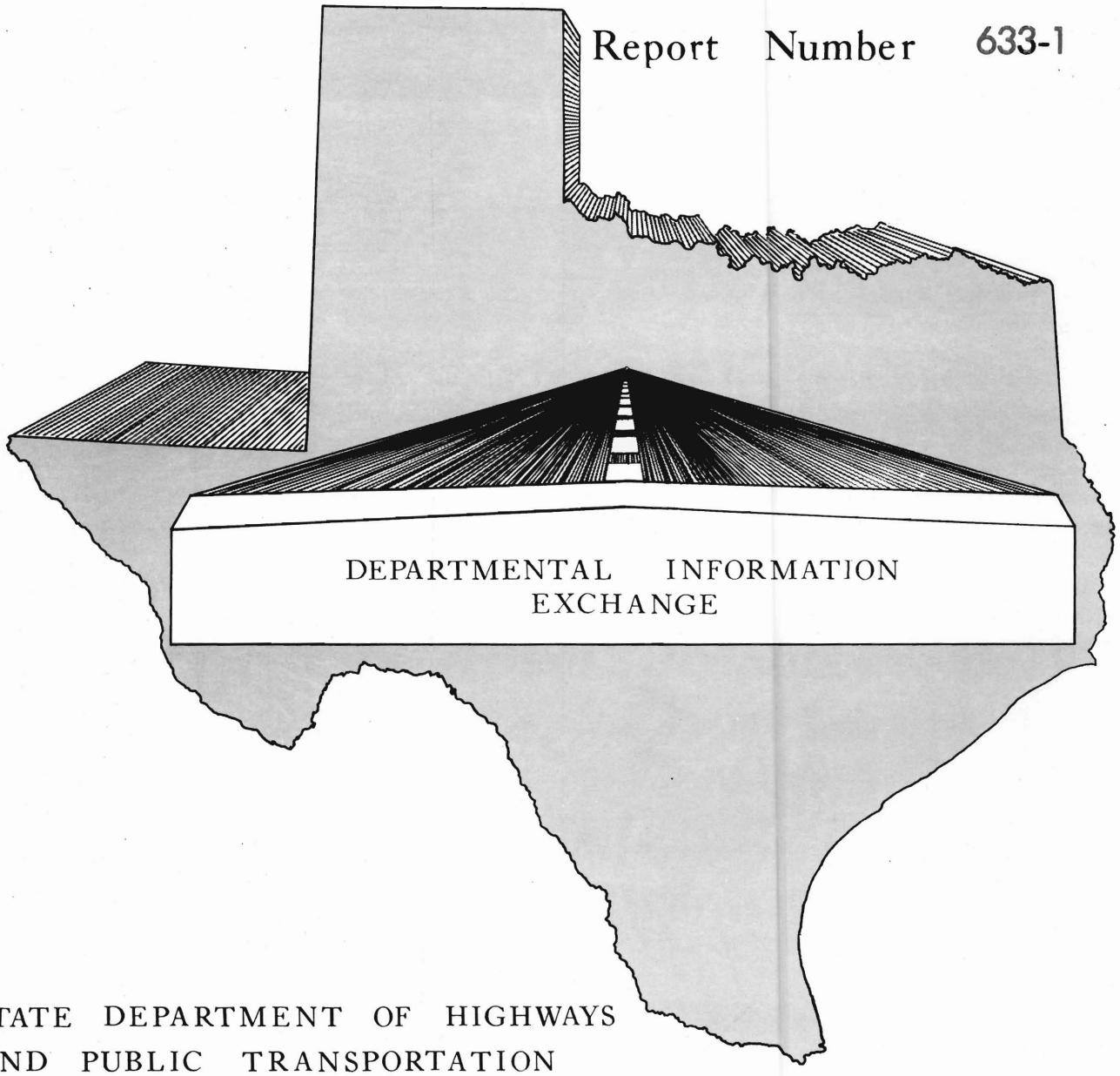
EXPERIMENTAL PROJECTS

THICK CONCRETE PAVEMENT EVALUATION REPORT

Report Number 633-1



STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION

TECHNICAL REPORT STANDARD TITLE PAGE

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12. Sponsoring Agency Name and Address State Department of Highways and Public Transportation District 19 Atlanta, Texas	14. Sponsoring Agency Code

15. Supplementary Notes

This report shall serve as the final report for experimental projects TX76-01, TX79-03A, TX79-03B, TX79-06 and TX83-05. These projects were performed in co-operation with the Federal Highway Administration.

16. Abstract

This report covers five projects in District 19, in which thick concrete pavements were constructed directly on soil subgrades without subgrade treatment, subbase or the use of load transfer devices at contraction joints. These methods were used at high volume intersections in urban areas and at diamond interchanges in this district with several distinct advantages. These advantages as evidenced by the data shown are documents along with the joint details.

17. Key Words	18. Distribution Statement
Pavement Concrete, Thick Design, Load Transfer, Contraction Joints	Available from: SDHPT Transportation Planning Division P.O. Box 5051 Austin, Texas 78763

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The material contained in this report is experimental in nature and is published for informational purposes only. Any discrepancies with official views or policies of the Texas State Department of Highways and Public Transportation should be discussed with the appropriate Austin Division prior to implementation of the procedures or results.

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TEXAS STATE HIGHWAYS AND PUBLIC TRANSPORTATION
DISTRICT 19

THICK CONCRETE PAVEMENT EVALUATION REPORT
MARCH 1985

BY SAWYER WIMBERLY
DISTRICT DESIGNING ENGINEER

SCOPE: to evaluate use and performance of thick concrete pavement constructed directly on soil subgrade without load transfer devices at contraction joints, subgrade treatment or a subbase.

USE: thick concrete pavement without load transfer devices has been used on city street projects in an urban environment to reconstruct pavement at medium to high volume intersections and to reconstruct pavement for diamond interchanges. It has been placed on clay sand to sandy clay soils which were moderately well drained. Five projects [TX 76-01, TX 79-06, TX 79-03A, TX 79-03B, TX 83-05] have been designated as experimental projects, as indicated in Table 1.

Construction of thick concrete pavements directly on sandy clay subgrade without load transfer devices offer certain advantages:

1. Only two construction operations are involved, i.e., prepare subgrade and place/finish concrete pavement.

2. Pavement may be placed in developed urban areas and street intersections using placing and finishing techniques other than high production paving trains developed for rural areas. The traffic control plan usually requires frequent leave-outs to maintain access to adjacent businesses having two or more driveways. The closure time for businesses with only one driveway may be held to a minimum and service restored within three or four days by opening the driveway to passenger cars only.

   Pavement may be placed in small blocks of an intersection where the traffic control plan requires that traffic be carried through the intersection.

3. The construction time is reduced. Conventional concrete pavement usually requires a subgrade and/or a subbase. Lime or cement treatment is not desirable in an urban area because the dust from either treatment will coat adjacent property. Also, neither of these subgrade/subbase treatment methods are adaptable to urban area since long curing periods are needed and leave-outs are impractical where driveways or intersections must be left open. Furthermore, subgrade/subbase construction is subject to longer delays due to inclement weather. These factors usually result in prohibitive cost.

4. Intersections controlled by stop signs or signals are subjected to high pavement stress due to braking and starting from a stop condition. Flexible pavements are subject to rutting and shoving where truck traffic volumes are moderate to high. Thick concrete pavement has been used to reconstruct intersections along with approximately 300 feet of pavement on each approach where truck stopping and starting conditions exist.

Refer to attached "Summary of Thick Concrete Pavement Use in District 19," (Tables 1-1 through 1-3). The projects listed indicate that the most frequent application has been to replace pavement at intersections where the pavement has failed due to braking, accelerating and turning vehicles. Usually the project has less than 15,000 square yards of surface area. The project is generally not adaptable to the high production of a paving train. Therefore, forming, consolidating, strike off and finishing equipment commonly used for construction of bridge slabs are adapted. One contractor attempted to use a slipform paver on a one mile long, 4-lane, flush median street project. After frequent startups which caused poor quality pavement, the contractor decided to complete the project using hand finishing techniques.

Thick concrete pavement constructed of a good quality mix has sufficient strength to carry heavy wheel loads without corner breaks. Slabs are normally laid out to have a maximum side dimension of 13 to 18 feet. At an intersection, individual slabs may be placed in a checkerboard pattern as required to carry traffic during the various traffic control phases. Slab widths exceeding 30 feet should not be tied; this is especially true when paced by phase construction.

A typical joint layout is illustrated in Figure 1. Joint details are illustrated in Figure 2. Figure 3 contains general notes. Requirements pertaining to access to abutting property and sequences of work are included in Figure 4, "Special Provision: Detours, Barricades, Working Signs, Sequence of Work, Etc."

PERFORMANCE: in reference to Tables 1-1 through 1-3.

1. Subgrade pumping - no subgrade pumping has been observed

2. Joint faulting or spalling - no significant amount of joint faulting or spalling has been observed.

3. Condition of seals - seals on the first projects placed have deteriorated and are in need of being replaced, but as of this date no projects have been resealed.

4. General appearance - good on all projects.

5. Ride characteristics - ride characteristics vary due to varied construction techniques used to form or saw the contraction joints.

6. Evidence of distress - slight evidence of distress is indicated on one (1) project. A little shrinkage cracking developed during theinitial set of the concrete. This cracking was probably due to tying too great a width of slab together, thereby creating a subgrade drag greater than the concrete could stand. Another area of distress occurred where considerable utility work was carried out in an intersection prior to construction.

7. Traffic conditions - type of traffic carried varies from high volumes of passenger cars with low percentage of trucks to routes carrying large volumes of heavy trucks.

8. Deflection data for TX 76-01 is attached as Table 3. Data for TX 79-03B is attached as Table 4.

SUMMARY OF THICK CONCRETE PAVEMENT USE IN DISTRICT 19

MARCH 1985

COMPLETED PROJECTS WITH 13" CPCD IN PLACE

HIGHWAY	COUNTY	CSJ	CONSTRUCTION PROJECT	LIMITS	LOCATION OF 13" CPCD	QUANTITY (SQ YD)	COST AND DATE COMPLETED	ADT '83	18 KSA*
US 67 & US 82 (8th St.)	Bowie	10-13-39	TX 76-01 M 7096(4)	From: Arkansas State Line To: Oak Street	Main Lanes	15,474	$17.50/SY 12-29-76	19,900	7.9
US 67 (8th St.)	Bowie	10-13-43	M-MG 7096(3)	From: Oak Street To: Whitaker Street in Texarkana	Main Lanes	3,179	$17.80/SY 8-15-77	19,900	7.9
US 67	Bowie	10-13-50	C 10-13-50	From: Milam Street To: T & P Railroad in Texarkana	Main Lanes	5,045	$24.00/SY 4-6-79	13,400	6.2
IH 20	Harrison	495-8-31	TX 79-06 FRI 20-7(24)599	At LP 281 Interchange	Ramp Connections at LP 281 Interchange	12,368	$36.40/SY 2-13-81	17,400**	32.5**
IH 20	Harrison	495-8-39	C 495-8-39	At FM 3251 Interchange	Ramp Connections & Cross-Over	14,805	$30.79/SY 6-20-83	12,300**	11.1**
LP 281	Harrison	2642-2-9	RS 2657(6)	From: 0.3 Mi. N. of US 80 To: FM 968	Main Lanes & Ramp Connections @ US 80 & Intersection w/FM 968	31,515 @ US 80 2,350 @ FM 968	$24.50/SY 10-1-84	5,200	10.7
US 59	Marion	62-5&6-44&35	CRP 62-5&6-44&35	From: 0.9 Mi. N. of SH 49 To: 0.1 Mi. S. of SH 49	Main Lanes & Flush Median	27,936	$26.36/SY 8-12-81	9,900	17.0

* 18 KSA IN MILLIONS
** IH 20 TRAFFIC

TABLE 1-1

SUMMARY OF THICK CONCRETE PAVEMENT USE IN DISTRICT 19

MARCH 1985

COMPLETED PROJECTS WITH 13" CPCD IN PLACE

HIGHWAY	COUNTY	CSJ	CONSTRUCTION PROJECT	LIMITS	LOCATION OF 13" CPCD	QUANTITY (SQ YD)	COST AND DATE COMPLETED	ADT '83	18 KSA*
US 59	Panola	63-3-32	CRP 63-3&4-32&32	At Intersection with LP 455 North of Carthage	Northbound Lanes	2,009	$29.97/SY 11-28-83	6,700	11.5
US 59 & US 79	Panola	63-3-32	CRP 63-3&4-32&32	At Intersection with US 79 & LP 455 North of Carthage	Ramp Connections	2,557	$29.97/SY 11-28-83	5,400	10.6
US 59 & US 79	Panola	63-3&4-32&32	CRP 63-3&4-32&32	At Intersection with US 79 (East)	Main Lanes & Ramp Connections	7,694	$29.97/SY 11-28-83	5,400	11.7
US 59	Panola	63-4-32	CRP 63-3&4-32&32	At Intersection with LP 455 South of Carthage	Ramp Connections	3,097	$29.97/SY 11-28-83	5,800	11.1
LP 419	Titus	221-9-10	MU-401(2)	From: US 67, South To: 12th Street	Traffic Lanes	9,718	$29.25/SY 6-22-83	13,300	28.5
IH 30	Titus	610-3-30	TX 79-03A IR 30-3(56)153	At Spur 185 Interchange	Ramp Connections & Cross-Over	15,533	$31.50/SY 7-2-80	12,700**	20.5**
IH 30	Titus	610-3-33	TX 79-03B IR 30-3(54)160	At US 271 Interchange	Ramp Connections at US 271 Interchange	10,900	$37.50/SY 3-17-81	10,800**	15.1**
IH 30	Titus	610-3-33	EXP PROJ # 7903B IR 30-3(54)160	At LP 419 Interchange	Ramp Connections at LP 419 Interchange	4,422	$37.50/SY 3-17-81	12,200**	21.0**
US 259	Upshur	392-2-41	CSB 392-2-41	At SH 155 Intersection	All 4 Approaches	3,345	$35.00/SY 11-12-82	10,700	18.6

* 18 KSA IN MILLIONS
** IH 30 TRAFFIC

TABLE 1-2

SUMMARY OF THICK CONCRETE PAVEMENT USE IN DISTRICT 19

MARCH 1985

PROJECTS PRESENTLY UNDER CONTRACT WHICH INCLUDE 13" CPCD

HIGHWAY	COUNTY	CSJ	CONSTRUCTION PROJECT	LIMITS	LOCATION OF 13" CPCD	QUANTITY (SQ YD)	COST AND LETTING DATE	ADT '83	18 KSA*
IH 30	Bowie	610-7-41	IR 30-3(80)211	At FM 989 Interchange	On FM 989 from N. Ftg. Rd. to S. Ftg. Rd.	7,380	$27.42/SY Aug. '84	** 2,200	1.6**
IH 30	Bowie	610-7-41	IR 30-3(80)211	At SH 93 Interchange	On SH 93 from N. Ftg. Rd. to S. Ftg. Rd.	10,974	$27.42/SY Aug. '84	*** 10,000	6.6***
SH 43 (Pincrest Drive)	Harrison	207-5-48	F-481(20)	From: 0.1 Mi. E. of S. Washington Avenue To: US 59 in Marshall	Main Lanes and Flush Median	33,955	$30.90/SY Mar. '84	9,300	12.6
US 259	Morris	392-1-43	TX 83-05 F 1141(1)	From: 1.4 Mi. N. of FM 250 To: FM 250 in Lone Star	Main Lanes and Flush Median	59,010	$27.00/SY Apr. '83	7,800	14.9
US 271	Titus	221-5-50, etc	FR 227(15) & FR 227(16)	At Intersection with US 67 in Mt. Pleasant	Main Lanes of US 271 and US 67 in Intersection Area	10,555	$31.50/SY Dec. '84	**** 11,100	**** 20.0
IH 30	Titus	610-3-38	IR 30-3(74)153	At US 271 Interchange	Main Lanes On US 271 Between IH 30 Ftg. Roads	10,267	$30.00/SY Mar. '84	4,400	8.2

* 18 KSA IN MILLIONS
** FM 989 TRAFFIC
*** SH 93 TRAFFIC
**** TOTAL TRAFFIC FOR INTERSECTION

TABLE 1-3

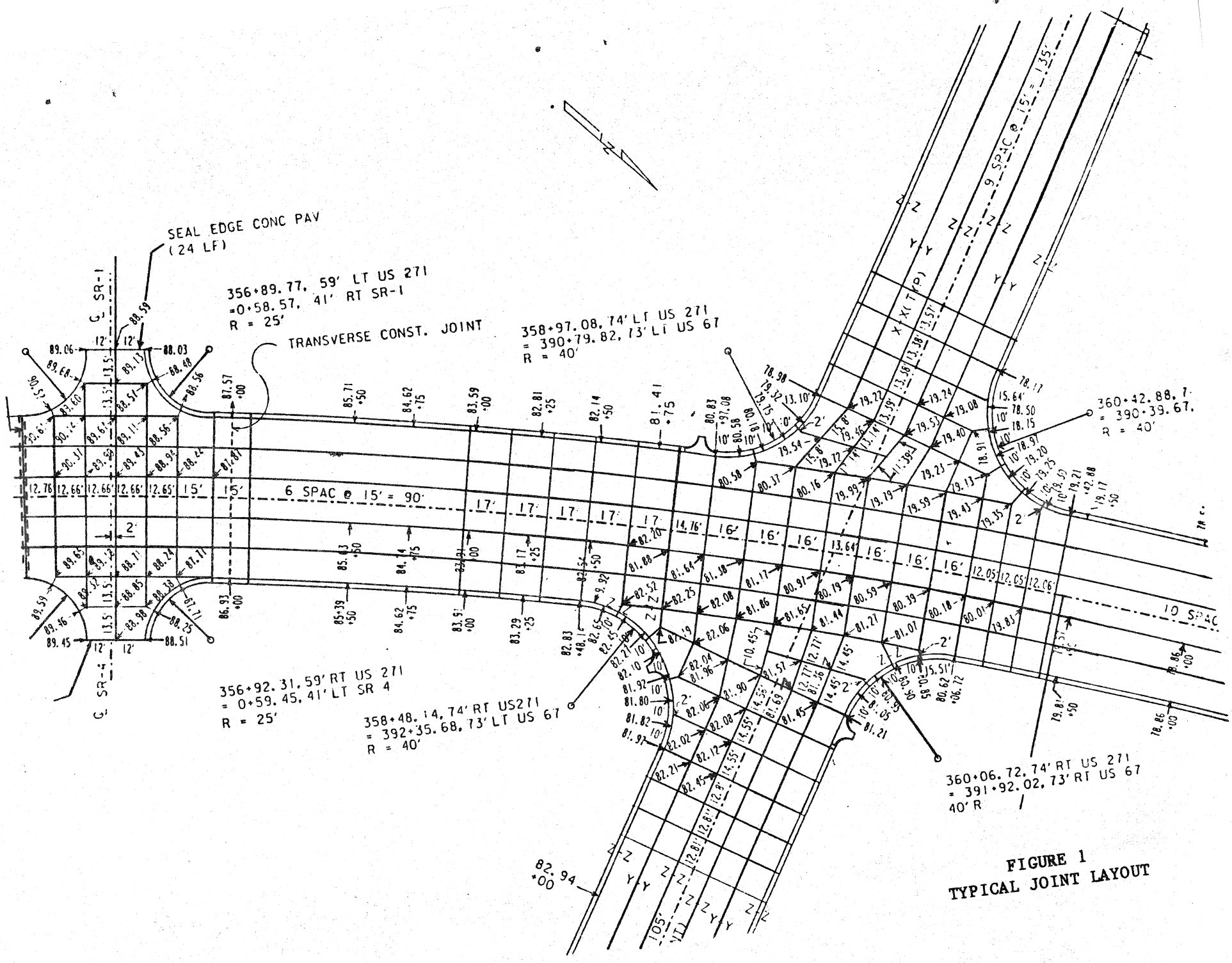
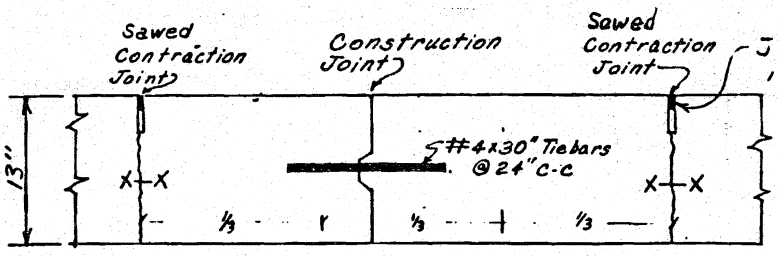
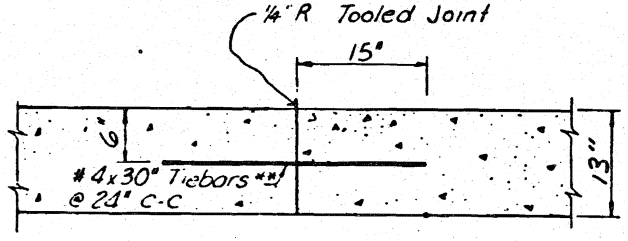


FIGURE 1
TYPICAL JOINT LAYOUT



Construction joints shall be located within the middle third of the joint interval.

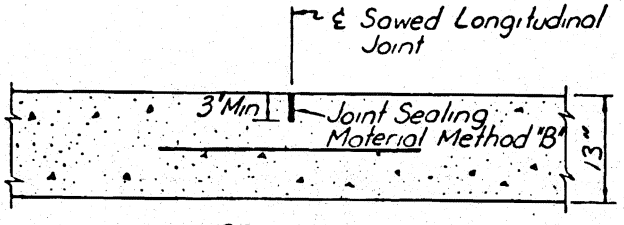
TRANSVERSE CONSTRUCTION JOINT & JOINTS X-X



LONGITUDINAL CONSTRUCTION JOINT

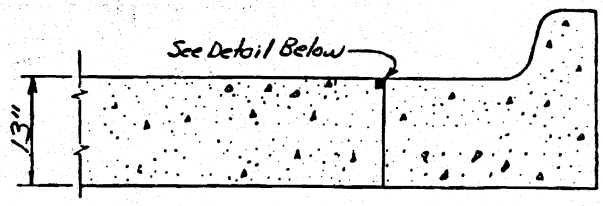
SECTION W-W

** With the approval of the Engineer, Multiple Piece Tiebars (Threaded Coupling or other Adequate Device) may be used to facilitate construction provided the system develops a force equal to 1½ times the minimum force of the tiebar shown. The spacings for the system shall be less than or equal to the spacing allowed for bars of similar yield strength



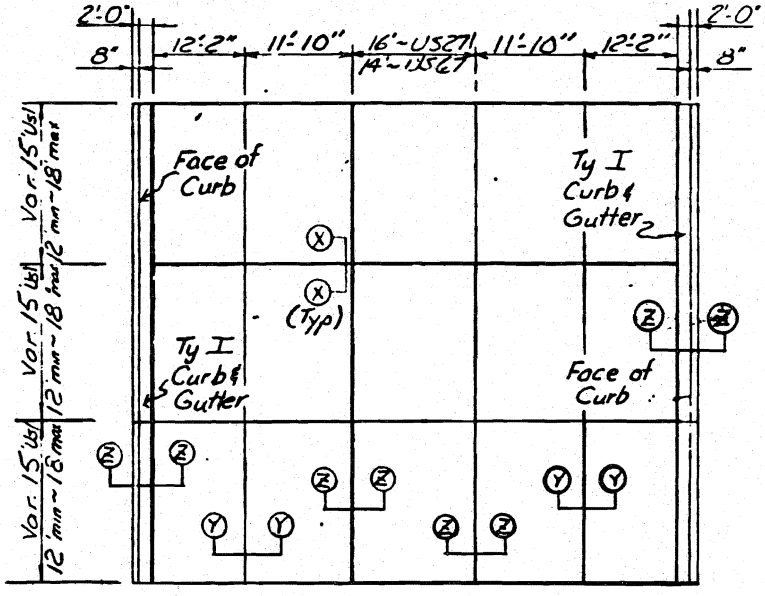
GROOVED LONGITUDINAL JOINT

SECTION Y-Y

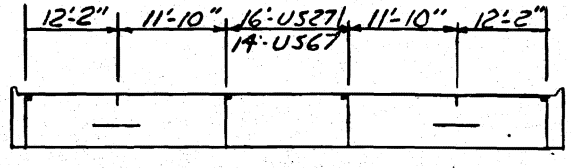


LONGITUDINAL CONSTRUCT JOINT

SECTION Z-Z



PAVEMENT PLAN



TYPICAL SECTION

FIGURE 2
JOINT DETAILS

FIGURE 3
GENERAL NOTES

ITEM 360
CLASS "A" CONCRETE SHALL BE DESIGNED TO SECURE AN AIR CONTENT BY VOLUME OF BETWEEN 3 PERCENT MINIMUM AND 6 PERCENT MAXIMUM BASED UPON MEASUREMENTS MADE ON CONCRETE IMMEDIATELY AFTER DISCHARGE FROM THE MIXER.

THE USE OF READY MIX CONCRETE WILL BE PERMITTED ON THIS PROJECT.

THE USE OF A SLIP FORM PAVER WILL NOT BE PERMITTED ON THIS PROJECT.

THE CONSTRUCTION OF THE SLEEPER SLABS INCLUDING ALL MATERIALS, EXCAVATION, LABOR, EQUIPMENT, AND INCIDENTALS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM, "CONCRETE PAVEMENT".

A SELF-PROPELLED TRANSVERSE MECHANICAL FINISHING MACHINE MEETING THE REQUIREMENTS OF THE ITEM "CONCRETE STRUCTURES" OR A SELF-PROPELLED FINISHING MACHINE APPROVED BY THE ENGINEER MAY BE USED ON THIS PROJECT.

HAND FINISHING WILL BE PERMITTED WHEN AUTHORIZED BY THE ENGINEER.

LONGITUDINAL JOINTS AND LONGITUDINAL CONSTRUCTION JOINTS SHALL BE SAWED AND SEALED.

THE JOINT SEALING COMPOUND FOR CONCRETE PAVEMENT SHALL BE CLASS 2 HOT POURED RUBBER.

A MINIMUM OF TWO TEST BEAMS WILL BE MADE FOR EACH 500 SQ. YD. OF PAVEMENT WITH AT LEAST TWO TEST BEAMS MADE PER DAY.

WHEN DIRECTED BY THE ENGINEER, PAVEMENT MAY BE OPENED TO TRAFFIC WHEN THE PAVEMENT HAS ATTAINED A FLEXURAL STRENGTH OF 400 POUNDS PER SQUARE INCH. ALL TEST SPECIMENS REPRESENTING TESTS FOR OPENING TO TRAFFIC SHALL BE CURED USING THE SAME METHODS AND UNDER THE SAME CONDITIONS AS THE CONCRETE REPRESENTED. IF THE CONCRETE FAILS TO REACH THE REQUIRED STRENGTH OF 400 POUNDS PER SQUARE INCH WITHIN 72 HOURS, THE ENGINEER MAY DIRECT THAT THE CONCRETE BE RE-DESIGNED AS NECESSARY TO MEET THESE REQUIREMENTS.

JOINTS IN NEW CURB AND GUTTER SHALL BE PLACED TO COINCIDE WITH THE JOINTS IN CONCRETE PAVEMENT AS DIRECTED BY THE ENGINEER. THE CURB AND GUTTER SHALL NOT BE TIED TO THE PAVEMENT WITHIN THE LIMITS OF THE RADIUS.

ACP FOR BACKFILLING AGAINST CONCRETE PAVEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE ITEM, "HOT MIX ASPHALTIC CONCRETE PAVEMENT TYPE C OR D". THIS MATERIAL WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM, "CONCRETE PAVEMENT".

SPECIAL PROVISION

DETOURS, BARRICADES, WARNING SIGNS,
SEQUENCE OF WORK, ETC.

THE CONTRACTOR'S PARTICULAR ATTENTION IS DIRECTED TO REQUIREMENTS OF ITEM 7, "LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC", OF THE STANDARD SPECIFICATIONS. IN ADDITION TO THESE REQUIREMENTS THE FOLLOWING PROVISIONS SHALL ALSO GOVERN ON THIS CONTRACT.

THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF WORK IN WRITING AND A CHART OR CALENDAR SHOWING ANTICIPATED PROGRESS FOR APPROVAL OF THE ENGINEER. THE CONTRACTOR'S SEQUENCE OF WORK SHALL INCLUDE HIS PROPOSED METHOD FOR HANDLING TRAFFIC THROUGH THE CONSTRUCTION AREA. THE APPROVED SEQUENCE OF WORK SHALL BE FOLLOWED AT ALL TIMES DURING THE PROSECUTION OF THE WORK, UNLESS OTHERWISE DIRECTED BY THE ENGINEER IN WRITING.

IN FORMULATING HIS PLAN OF OPERATION THE CONTRACTOR SHALL CONSIDER THE SEQUENCE OF WORK DETAILS SHOWN IN THE PLANS AND THE FOLLOWING:

IT IS THE INTENT OF THE PLANS TO PROVIDE FOR THE SAFE PASSAGE OF TWO-WAY TRAFFIC AT ALL TIMES. THE CONTRACTOR WILL BE REQUIRED TO PLAN AND EXECUTE HIS OPERATION IN A MANNER THAT WILL INSURE THE TRAVELING PUBLIC AND ABUTTING PROPERTY OWNERS A MINIMUM OF INCONVENIENCE.

IN ORDER TO OBTAIN THE OPTIMUM JOINT AT CONNECTIONS OF CONCRETE PAVEMENT AND ACP, THE CONCRETE PAVEMENT SHALL BE COMPLETED PRIOR TO PLACEMENT OF ADJACENT ACP.

SIGNING AND MARKINGS FOR TRANSITIONING TRAFFIC TO ONE SIDE OF THE ROADWAY IN THE CONSTRUCTION AREA SHALL BE IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE BARRICADE STANDARDS IN THE PLANS.

LONGITUDINAL JOINTS IN THE ACP SURFACE COURSE SHALL BE PLACED WHERE LANE LINES ARE PROPOSED.

THE CONTRACTOR SHALL PLAN AND COORDINATE ACP PLACEMENTS SO THAT TRAFFIC LANES WILL NOT BE LEFT WITH OPEN LONGITUDINAL JOINTS FOR MORE THAN TWO (2) DAYS PLACEMENT.

FIGURE 4

TRAFFIC CONES AND STANDARD SIGNS AND BARRICADES SHALL BE USED AS REQUIRED OR AS DIRECTED BY THE ENGIEER TO CHANNELIZE TRAFFIC AROUND AND/OR THROUGH THE WORK AREA. SIGNS, CW 21-13 AND VP-1L OR VP-1R AND/OR OTHER SIGNS AND DEVICES, AS APPROVED AND DIRECTED BY THE ENGINEER, SHALL BE USED TO MARK DROP OFFS AT THE EDGE OF THE PAVEMENT. SIGNS CW 21-14 SHALL BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ADDITIONAL BARRICADES, SIGNS, AND LIGHTS AS DIRECTED BY THE ENGINEER.

CONSTRUCTION PAVEMENT MARKINGS PLACED ON PAVEMENT NOT TO BE RESURFACED IN THIS CONTRACT SHALL BE OF REMOVABLE MATERIAL, AND THESE MARKINGS PLACED ON THE ACP SURFACE COURSE SHALL BE REMOVABLE AND ABBREVIATED.

THE PERMANENT PAVEMENT MARKINGS ON THE FINAL SURFACE COURSE WILL BE PLACED BY STATE FORCES.

THE CONTRACTOR MAY ELECT TO PLACE STANDARD SIZE PAINTED PAVEMENT MARKINGS AT THE CLOSE OF EACH DAY. IF ABBREVIATED MARKINGS ARE USED, THEY SHALL BE COVERED BY ADDITIONAL COURSES OR REPLACED WITH STANDARD MARKINGS WITHIN TWO WEEKS.

MAINTENANCE OF EXISTING TRAVELWAYS, NEW TRAVELWAYS, AND CONSTRUCTION DETOURS SHALL BE HANDLED AS FOLLOWS:

I. ALL EXISTING TRAVELWAYS BETWEEN CONSTRUCTION BARRICADES SHALL BE MAINTAINED BY THE STATE. THIS INCLUDES BOTH BASE AND SURFACING.

II. ANY NEW TRAVELWAYS CONSTRUCTED BY THE CONTRACTOR THAT ARE CARRYING TRAFFIC AS A PART OF THE COMPLETED ROADWAY WILL BE MAINTAINED BY THE CONTRACTOR.

III. ITEM 7.12, SECOND PARAGRAPH OF THE STANDARD SPECIFICATIONS, OUTLINES THE CONDITIONS UNDER WHICH THE STATE WILL ASSUME MAINTENANCE RESPONSIBILITY FOR ANY NEW ROADWAYS CONSTRUCTED BY THE CONTRACTOR.

FIGURE 4

ACCESS TO ABUTTING PROPERTY SHALL BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES, USING MATERIALS AND METHODS APPROVED BY THE ENGINEER. WORK REQUIRED TO MAINTAIN INGRESS AND EGRESS WITHIN THE LIMITS OF THIS PROJECT WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

THE CONTRACTOR SHALL HOLD THE MOVEMENT OF EQUIPMENT ACROSS TRAFFIC LANES TO AN ABSOLUTE MINIMUM.

THE CONTRACTOR SHALL HAVE AT LEAST ONE EMPLOYEE WITH A LOCAL ADDRESS AND TELEPHONE NUMBER ON CALL NIGHTS AND WEEKENDS (OR ANY OTHER TIME THAT WORK IS NOT IN PROGRESS) FOR MAINTENANCE OF SIGNS AND BARRICADES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THIS EMPLOYEE OR THESE EMPLOYEES. THE ENGINEER WILL FURNISH THIS INFORMATION TO LOCAL LAW ENFORCEMENT OFFICIALS.

EROSION CONTROL MEASURES SHALL BE APPLIED TO EXCAVATED AREAS IMMEDIATELY FOLLOWING COMPLETION OF THE EXCAVATION AS DIRECTED BY THE ENGINEER.

UNLESS OTHERWISE PROVIDED FOR, ALL MATERIALS FURNISHED AND WORK PERFORMED UNDER THESE PROVISIONS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED AS SUBSIDIARY WORK PERTAINING TO THE VARIOUS BID ITEMS OF THE CONTRACT.

TABLE 2: CODE FOR DEFLECTION DATA

TR-FJ - Transverse formed joint, no dowel

A - Load at crack or joint

B or Blank - Load midway between joints

TR-P-CJ - Transverse construction joint, no dowels or ties

End - Load at end of slab or at expansion joint

TR-TCJ - Transverse construction joint with tie-bars

CPJR - Concrete pavement joint reinforced with dowels

R - Right outside lane

L - Left outside lane

TEXAS HIGHWAY DEPARTMENT

DISTRICT 19 -DESIGN SECTION

DYNAFLECT DEFLECTIONS AND CALCULATED STIFFNESS COEFFICIENTS

THIS PROGRAM WAS RUN - 07-08-77

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US69	3-31-77	39

REASONS FOR MEASUREMENTS AND COMMENTS
TRAN FORMED JOINT

TOTAL PAV DEPTH
13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CDCD	13.00
SUBGRADE	0.0

****

PLOTS WERE REQUESTED WITH THIS PROGRAM.

****

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US69	3-31-77	39

DYNAFLECT DATA

STATION	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
499+83	0.340	0.270	0.249	0.213	0.162	0.070	0.30	0.75	TR-FJ-AL
499+90	0.252	0.210	0.222	0.204	0.165	0.042	0.30	0.85	BL
500+78	0.410	0.310	0.290	0.234	0.189	0.100	0.30	0.67	TR-FJ-AL
500+85	0.276	0.231	0.249	0.216	0.180	0.045	0.29	0.85	BL
502+20	0.490	0.370	0.330	0.270	0.243	0.120	0.29	0.66	TR-FJ-AL
502+27	0.270	0.222	0.240	0.201	0.174	0.048	0.30	0.82	-BL
503+39	0.300	0.225	0.225	0.198	0.168	0.075	0.32	0.69	TR-FJ-AL
503+46	0.280	0.240	0.237	0.213	0.186	0.040	0.28	0.91	BL
506+37	0.370	0.310	0.270	0.246	0.213	0.060	0.28	0.83	TR-FJ-AL
506+44	0.320	0.280	0.270	0.252	0.216	0.040	0.27	0.96	BL
508+17	0.490	0.420	0.360	0.310	0.252	0.070	0.25	0.88	TR-FJ-AR
508+24	0.360	0.330	0.300	0.280	0.234	0.030	0.24	1.16	BR
511+55	0.440	0.370	0.320	0.270	0.207	0.070	0.26	0.83	TR-FJ-AR
511+62	0.340	0.300	0.280	0.252	0.216	0.040	0.26	0.99	BR
515+27	0.400	0.310	0.270	0.207	0.162	0.090	0.29	0.70	TR-FJ-AR
515+34	0.240	0.219	0.201	0.177	0.150	0.021	0.26	1.16	BR
518+12	0.440	0.340	0.270	0.210	0.165	0.100	0.29	0.69	TR-FJ-AR
518+20	0.261	0.240	0.225	0.204	0.168	0.021	0.25	1.20	BR
521+79	0.430	0.350	0.290	0.225	0.174	0.080	0.28	0.77	TR-FJ-AR
521+86	0.258	0.246	0.225	0.198	0.162	0.012	0.23	1.50	BR
AVERAGES	0.348	0.290	0.266	0.229	0.189	0.059	0.28	0.89	
STANDARD DEVIATION						0.030	0.02	0.22	

NUMBER OF POINTS IN AVERAGE = 20

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

TEXAS HIGHWAY DEPARTMENT

DISTRICT 19 -DESIGN SECTION

DYNAFLECT DEFLECTIONS AND CALCULATED STIFFNESS COEFFICIENTS

THIS PROGRAM WAS RUN - 07-08-77

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

REASONS FOR MEASUREMENTS AND COMMENTS
TRAN CONSTRUCTION JOINT

TOTAL PAV DEPTH
13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CPCD	13.00
SUBGRADE	0.0

****

PLOTS WERE REQUESTED WITH THIS PROGRAM.

****

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

DYNAFLECT DATA

STATION	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
500+30	0.420	0.320	0.290	0.234	0.189	0.100	0.29	0.68	TR-P-CJ-AL
500+38	0.246	0.210	0.210	0.189	0.156	0.036	0.29	0.91	-BL
502+65	0.360	0.280	0.270	0.207	0.168	0.080	0.30	0.71	TR-P-CJ-AL
502+72	0.258	0.222	0.222	0.201	0.171	0.036	0.29	0.92	-BL
503+85	0.440	0.350	0.310	0.270	0.204	0.090	0.28	0.73	TR-P-CJ-AL
503+92	0.270	0.234	0.234	0.201	0.165	0.036	0.28	0.94	-BL
505+78	0.630	0.500	0.440	0.380	0.280	0.130	0.26	0.70	TR-P-CJ-AL
. 84	0.320	0.280	0.270	0.258	0.222	0.040	0.27	0.96	-BL
507+12	0.460	0.380	0.330	0.270	0.213	0.080	0.27	0.79	TR-P-CJ-AL
. 19	0.290	0.270	0.270	0.237	0.198	0.020	0.24	1.28	-BL
507+86	0.450	0.370	0.320	0.255	0.198	0.080	0.27	0.78	TR-P-CJ-AR
. 93	0.290	0.270	0.249	0.225	0.183	0.020	0.24	1.28	-BR
510+96	0.480	0.420	0.370	0.320	0.243	0.060	0.25	0.94	TR-P-CJ-AR
511+03	0.300	0.280	0.270	0.234	0.198	0.020	0.24	1.30	BR
514+96	0.320	0.270	0.219	0.192	0.150	0.050	0.28	0.86	TR-P-CJ-AR
515+03	0.231	0.198	0.186	0.162	0.132	0.033	0.29	0.92	BR
AVERAGES	0.360	0.303	0.279	0.240	0.192	0.057	0.27	0.92	
STANDARD DEVIATION						0.033	0.02	0.20	

NUMBER OF POINTS IN AVERAGE = 16

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

TEXAS HIGHWAY DEPARTMENT

DISTRICT 19 -DESIGN SECTION

DYNAFLECT DEFLECTIONS AND CALCULATED STIFFNESS COEFFICIENTS

THIS PROGRAM WAS RUN - 07-08-77

****

PROJECT IDENTIFICATION

IST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

REASONS FOR MEASUREMENTS AND COMMENTS
END MEASUREMENTS

TOTAL PAV DEPTH
13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CPCD	13.00
SUBGRADE	0.0

****

PLOTS WERE REQUESTED WITH THIS PROGRAM.

****

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

DYNAFLECT DATA

STATION	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
498+93	0.560	0.450	0.410	0.320	0.249	0.110	0.26	0.73	END-A-2L STATE-
500+00	0.290	0.270	0.276	0.240	0.213	0.020	0.24	1.28	B 2L STATE-
498+93	0.570	0.460	0.410	0.330	0.258	0.110	0.26	0.74	END-A-L STATE-
500+00	0.280	0.243	0.249	0.219	0.186	0.037	0.28	0.94	B-L STATE-
525+00	0.540	0.450	0.380	0.320	0.234	0.090	0.26	0.80	END-A OAK ST
524+93	0.340	0.300	0.280	0.237	0.216	0.040	0.26	0.99	B OAK ST
525+00	0.530	0.440	0.370	0.310	0.234	0.090	0.26	0.79	END A OAK ST
524+93	0.310	0.270	0.255	0.219	0.168	0.040	0.27	0.95	B OAK ST
524+93	0.310	0.270	0.246	0.222	0.183	0.040	0.27	0.95	B
525+00	0.590	0.470	0.410	0.350	0.270	0.120	0.26	0.71	END A-CORNER OAK 1
AVERAGES	0.432	0.362	0.329	0.277	0.221	0.070	0.26	0.89	
STANDARD DEVIATION						0.038	0.01	0.17	

NUMBER OF POINTS IN AVERAGE = 10

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

TEXAS HIGHWAY DEPARTMENT

DISTRICT 19 -DESIGN SECTION

DYNAFLECT DEFLECTIONS AND CALCULATED STIFFNESS COEFFICIENTS

THIS PROGRAM WAS RUN - 07-08-77

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

REASONS FOR MEASUREMENTS AND COMMENTS
LONGITUDINAL CRACKS

TOTAL PAV DEPTH
13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CPCD	13.00
SUBGRADE	0.0

****

PLOTS WERE REQUESTED WITH THIS PROGRAM.

****

TABLE 3-8

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

DYNAFLECT DATA

STATION	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
523+00	0.310	0.280	0.270	0.225	0.186	0.030	0.26	1.09	L-CRACK
523+15	0.300	0.270	0.240	0.225	0.183	0.030	0.26	1.07	L-CRACK
521+70	0.310	0.234	0.219	0.192	0.162	0.076	0.31	0.69	L-CRACK
521+70	0.290	0.270	0.240	0.216	0.180	0.020	0.24	1.28	L-B
521+55	0.320	0.270	0.231	0.195	0.159	0.050	0.28	0.86	L-CRACK
AVERAGES	0.306	0.265	0.240	0.211	0.174	0.041	0.27	1.00	
STANDARD DEVIATION						0.022	0.03	0.23	

NUMBER OF POINTS IN AVERAGE = 5

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

TEXAS HIGHWAY DEPARTMENT

DISTRICT 19 -DESIGN SECTION

DYNAFLECT DEFLECTIONS AND CALCULATED STIFFNESS COEFFICIENTS

THIS PROGRAM WAS RUN - 07-08-77

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

REASONS FOR MEASUREMENTS AND COMMENTS
TRANS TIED CONSTRUCT. JOINTS

TOTAL PAV DEPTH
13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CPCD	13.00
SUBGRADE	0.0

****

PLOTS WERE REQUESTED WITH THIS PROGRAM.

****

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	10	13	39	US67	3-31-77	39

DYNAFLECT DATA

STATION	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
519+63	0.243	0.222	0.198	0.165	0.135	0.021	0.26	1.16	TR-TCJ-AL
518+37	0.280	0.240	0.228	0.204	0.168	0.040	0.28	0.91	TR-TCJ-AL
518+41	0.258	0.243	0.243	0.231	0.174	0.015	0.24	1.39	BL
522+77	0.320	0.270	0.252	0.222	0.180	0.050	0.28	0.86	TR-TCJ AR
522+81	0.290	0.255	0.246	0.234	0.192	0.035	0.27	0.98	BR
522+77	0.310	0.270	0.249	0.216	0.177	0.040	0.27	0.95	TR-TCJ-AL
522. 81	0.280	0.225	0.225	0.219	0.186	0.055	0.30	0.78	BL
AVERAGES	0.283	0.246	0.234	0.213	0.173	0.037	0.27	1.00	
STANDARD DEVIATION						0.014	0.02	0.21	

NUMBER OF POINTS IN AVERAGE = 7

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

TEXAS HIGHWAY DEPARTMENT

DISTRICT 19 -DESIGN SECTION

DYNAFLECT DEFLECTIONS AND CALCULATED STIFFNESS COEFFICIENTS

THIS PROGRAM WAS RUN - 07-08-77

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	46	6		US82	3-31-77	39

REASONS FOR MEASUREMENTS AND COMMENTS — TOTAL PAV DEPTH
CRJR — 13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CPJR	8.00
ASPH. STAB. BASE	4.00
LIME TREAT. SUBGRADE	8.00
SUBGRADE	0.0

****

PLOTS WERE REQUESTED WITH THIS PROGRAM.

****

DIST.	COUNTY	CONT.	SECT.	JOB	HIGHWAY	DATE	DYNAFLECT
19	BOWIE	46	6		US82	3-31-77	39

DYNAFLECT DATA

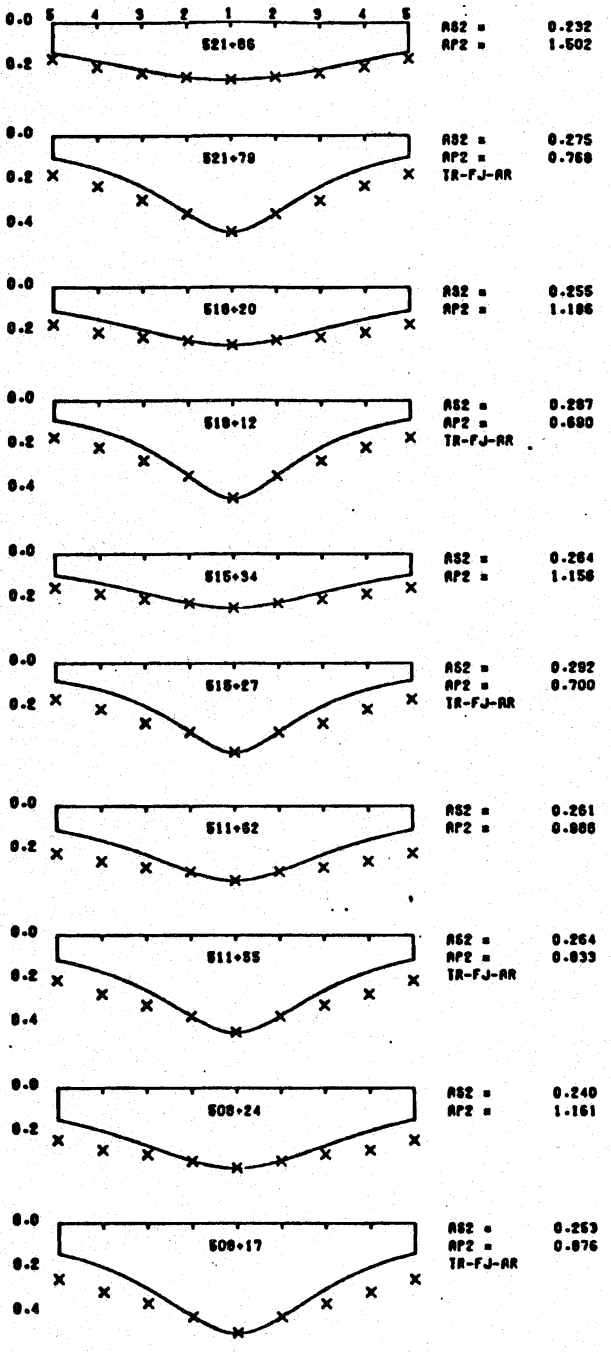
STATION	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
61+00.	0.420	0.370	0.350	0.320	0.270	0.050	0.25	0.97	CPJR-B
61+30	0.440	0.370	0.350	0.320	0.270	0.070	0.26	0.83	CPJR A
61+60	0.380	0.340	0.310	0.280	0.231	0.040	0.25	1.03	CPJR B
61+90	0.400	0.360	0.310	0.270	0.222	0.040	0.24	1.06	CPJR A
62+20	0.350	0.300	0.270	0.237	0.198	0.050	0.27	0.89	CPJR B
62+50	0.400	0.330	0.280	0.234	0.213	0.070	0.28	0.80	CPJR A
64+00	0.330	0.280	0.270	0.240	0.207	0.050	0.28	0.87	CPJR B
64+30	0.400	0.350	0.310	0.270	0.228	0.050	0.26	0.95	CPJR A
64+60	0.350	0.310	0.270	0.240	0.204	0.040	0.26	1.00	CPJR B
64+90	0.350	0.300	0.280	0.225	0.195	0.050	0.27	0.89	CPJR A
AVERAGES	0.382	0.331	0.300	0.264	0.224	0.051	0.26	0.93	
STANDARD DEVIATION						0.011	0.01	0.09	

NUMBER OF POINTS IN AVERAGE = 10

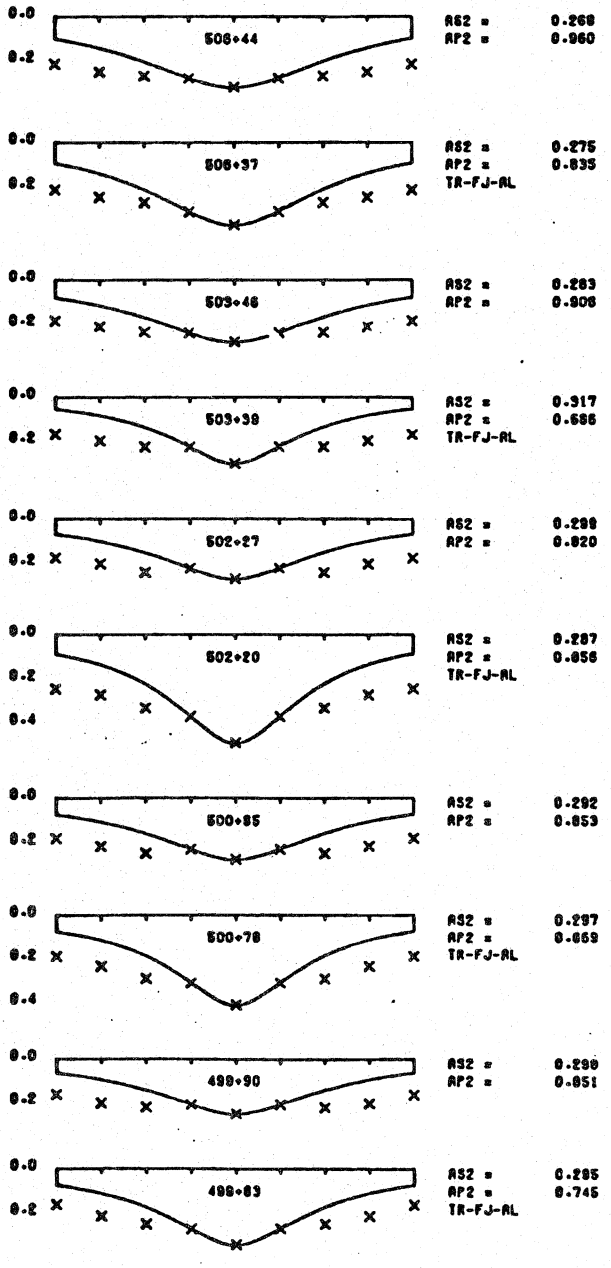
W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

DIST-18 CO-BOWIE CONT- 10-19 US69 9-31-77 DYNA-+39
DATE OF RUN - JUL 08, 1977 TOTAL PAVEMENT DEPTH - 13.00 INCHES

LINE TYPES
AS2, AP2 ——
AS5, AP5 —o—o—
ES5, EP5 ------
ALTERNATE ES5, EP5 —·—·—

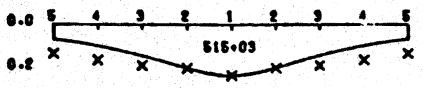


TX 76-01
TABLE 3-14

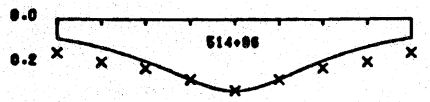


DIST-18 CO-BOWIE CONT- 10-13 US67 9-91-77 DYNA-+39
DATE OF RUN - JUL 08, 1977 TOTAL PAVEMENT DEPTH - 13.00 INCHES

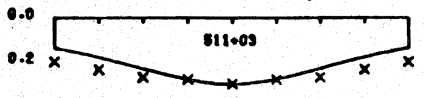
LINE TYPES
AS2, AP2
AS5, AP5
ES5, EP5
ALTERNATE ES5, EP5



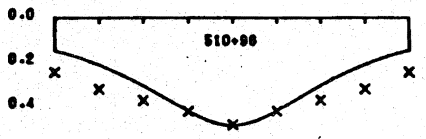
AS2 = 0.294
AP2 = 0.822



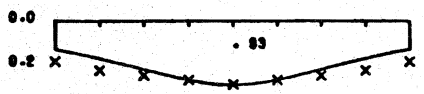
AS2 = 0.281
AP2 = 0.860
TR-P-CJ-AR



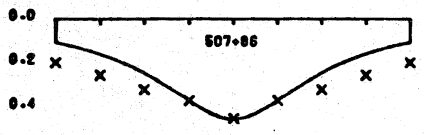
AS2 = 0.239
AP2 = 1.296



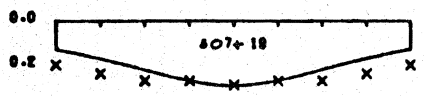
AS2 = 0.246
AP2 = 0.940
TR-P-CJ-AR



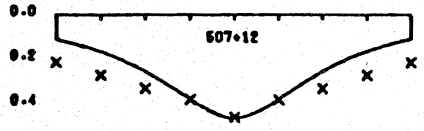
AS2 = 0.242
AP2 = 1.270



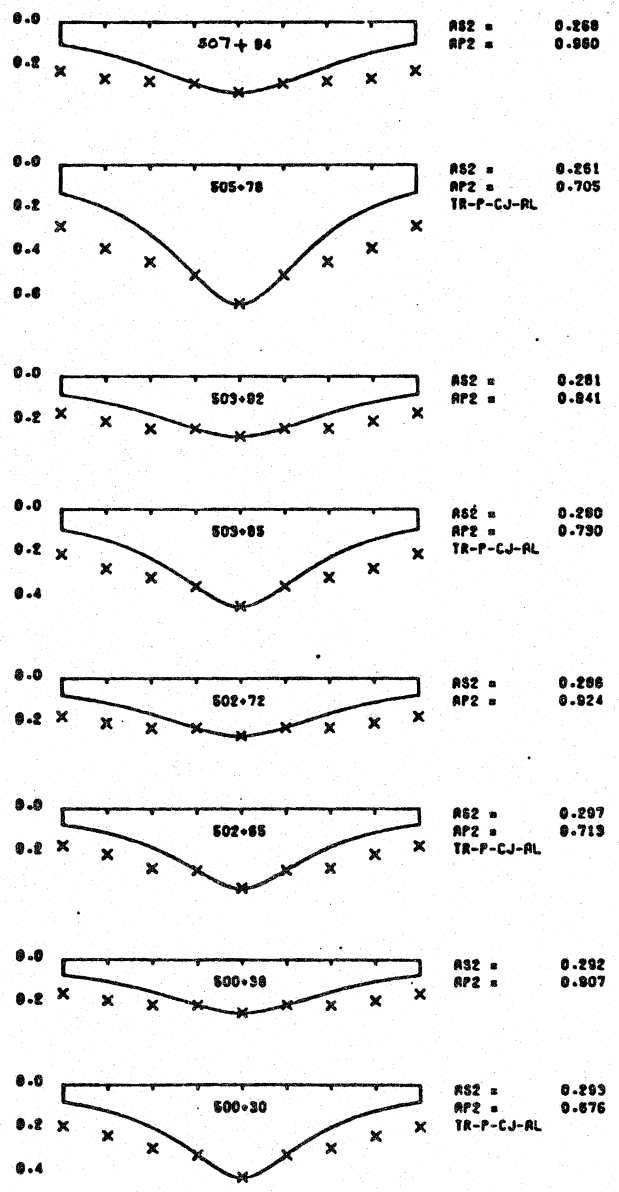
AS2 = 0.270
AP2 = 0.785
TR-P-CJ-AR



AS2 = 0.242
AP2 = 1.278



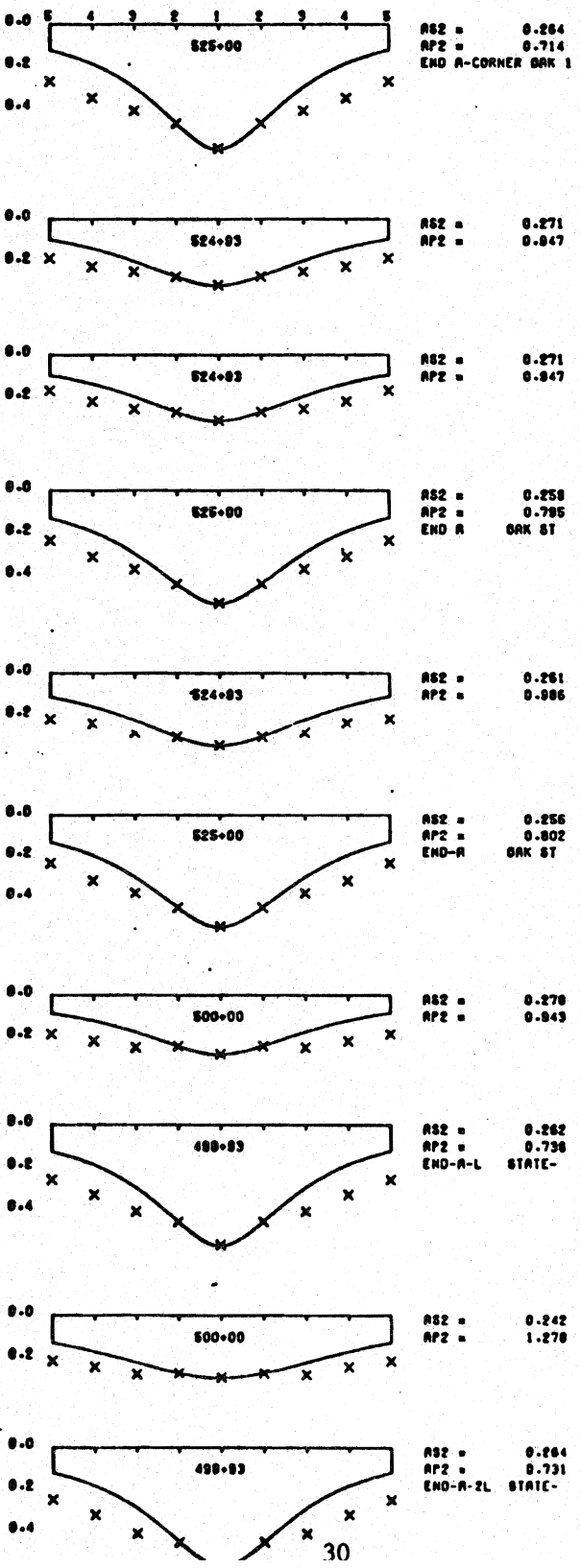
AS2 = 0.267
AP2 = 0.792
TR-P-CJ-AL


0.0
0.2
507+84
AS2 = 0.268
AP2 = 0.980
0.0
0.2
0.4
0.6
505+78
AS2 = 0.261
AP2 = 0.705
TR-P-CJ-AL
0.0
0.2
503+82
AS2 = 0.281
AP2 = 0.841
0.0
0.2
0.4
503+85
AS2 = 0.280
AP2 = 0.730
TR-P-CJ-AL
0.0
0.2
502+72
AS2 = 0.286
AP2 = 0.924
0.0
0.2
502+85
AS2 = 0.297
AP2 = 0.713
TR-P-CJ-AL
0.0
0.2
500+38
AS2 = 0.292
AP2 = 0.907
0.0
0.2
0.4
500+30
AS2 = 0.293
AP2 = 0.676
TR-P-CJ-AL

TX 76-01
TABLE 3-17

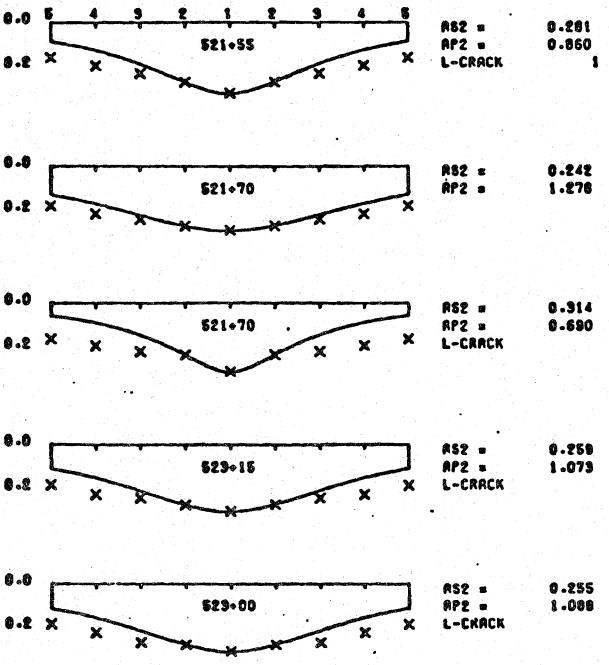
DIST-18 CO-BOWIE CONT- 18-13 U867 9-21-77 DYNA-+99
DATE OF RUN - JUL 00, 1977 TOTAL PAVEMENT DEPTH - 13.00 INCHES

LINE TYPES
AS2, AP2 ——
AS6, AP6 —•—•—
ES5, EP5 ------
ALTERNATE ES5, EP5 —·—·—



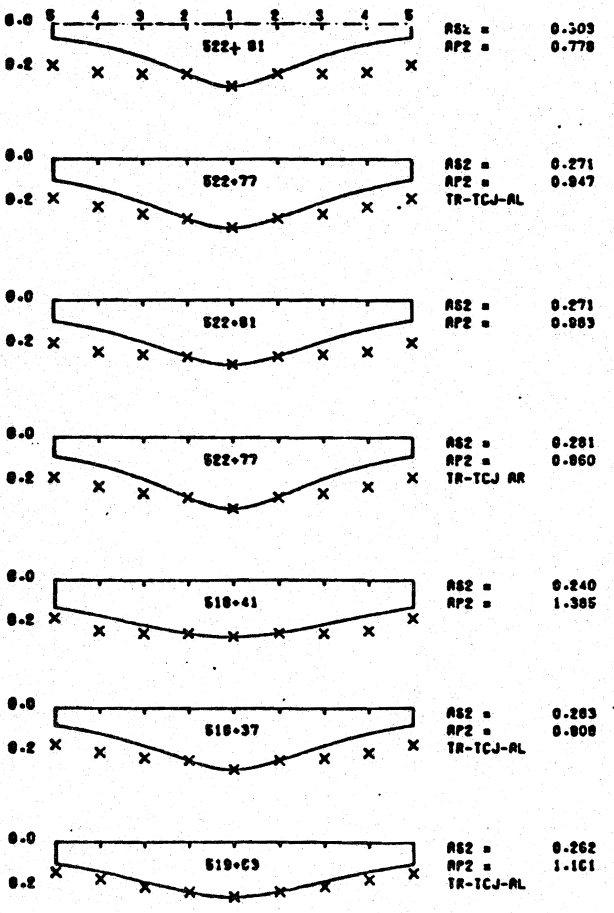
DIST-19 CO-BOWIE CONT- 10-13 U667 3-31-77 DYNA-+38
DATE OF RUN - JUL 08, 1977 TOTAL PAVEMENT DEPTH - 13.00 INCHES

LINE TYPES
AS2, AP2 ——
AS5, AP5 —o—o—
ES5, EP5 ------
ALTERNATE ES5, EP5 —+—+—



DIST-18 CO-BOWIE CONT- 18-13 0387 9-31-77 DYNA-+39
DATE OF RUN - JUL 08, 1977 TOTAL PAVEMENT DEPTH - 13.00 INCHES

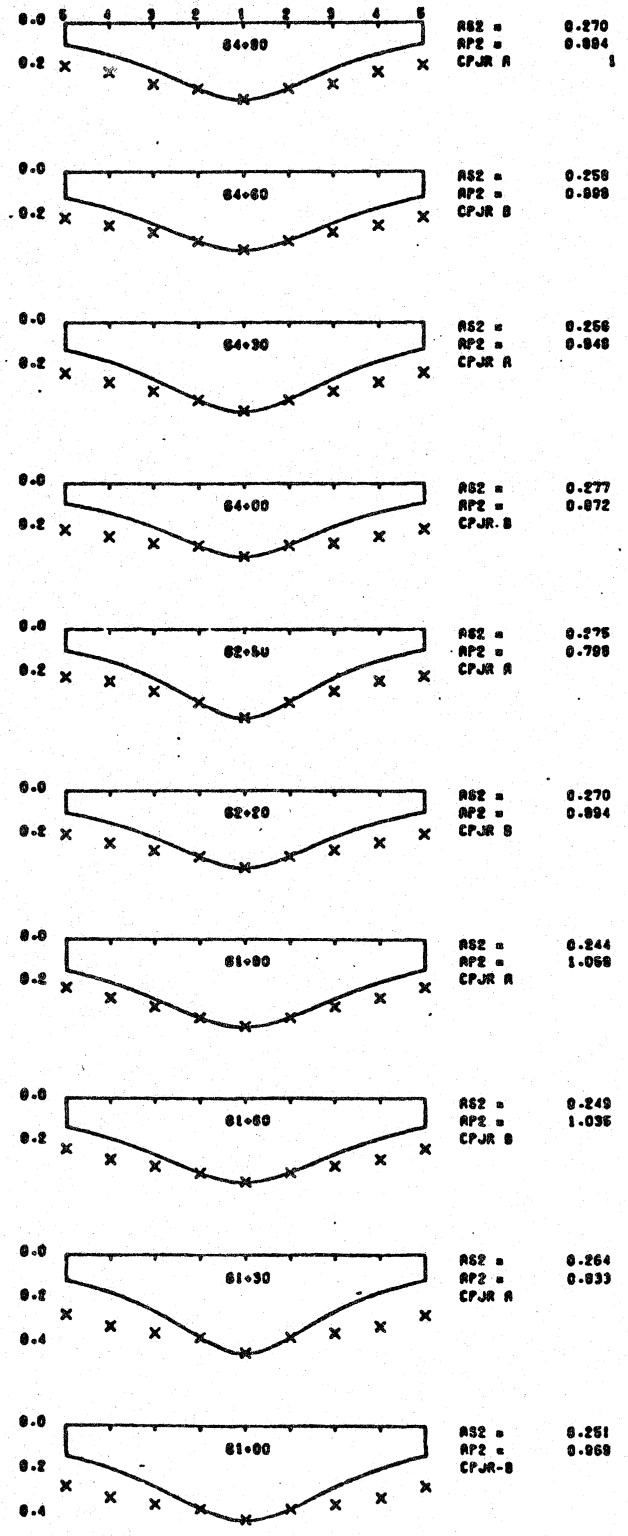
LINE TYPES
AS2, AP2 ——
AS5, AP5 —•—•—
ES5, EP5 ------
ALTERNATE ES5, EP5 —•—•—



TX 76-01
TABLE 3-20

DIST-10 CO-BOWIE CONT- 46- 6 0192 9-21-77 DYNA-038
DATE OF RUN - JUL 08, 1977 TOTAL P CMENT DEPTH - 13.00 INCHES

LINE TYPES
AS2, AP2 ——
AS5, AP5 —o—o—
ES5, EP5 ------
ALTERNATE ES5, EP5 —o—o—



DISTRICT 19 - DESIGN SECTION

THIS PROGRAM WAS RUN - 04-23-85

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PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

REASONS FOR MEASUREMENTS AND COMMENTS — TOTAL PAV DEPTH
DS - EXIT RAMP AT US 271 EB — 13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CONC PAV (CPCD-13")	13.00
SOIL CEM. TRT'D BASE	10.00
SELECT MATERIAL	12.00

****

GENERAL LOCATION INFORMATION

DIRECTION OF TRAVEL IS EAST WITH MILEPOINTS
MEASUREMENTS ARE 03 FEET FROM THE RIGHT SIDE OF LANE A

	DESCRIPTION OF LOCATION	ODOMETER READING	MILEPOINT
FROM-	BEG EXIT RAMP SLAB	000 FT.	000000
TO-	C/L US 271	1232 FT.	

****

DISTRICT 19 - DESIGN SECTION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

DYNAFLECT DATA

ODOMETER	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
000 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						BEG EXIT RAMP S
041 FT.	0.490	0.510	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						
100 FT.	0.470	0.430	0.380	0.330	0.310	0.040	0.23	1.14	
200 FT.	0.360	0.350	0.300	0.250	0.220	0.010	0.20	1.73	
300 FT.	0.350	0.330	0.290	0.260	0.240	0.020	0.22	1.38	
400 FT.	0.440	0.410	0.370	0.320	0.300	0.030	0.22	1.27	
500 FT.	0.370	0.350	0.310	0.270	0.250	0.020	0.22	1.41	
600 FT.	0.390	0.360	0.310	0.280	0.250	0.030	0.23	1.20	
700 FT.	0.410	0.380	0.330	0.290	0.250	0.030	0.23	1.23	
800 FT.	0.420	0.400	0.370	0.330	0.300	0.020	0.21	1.47	
900 FT.	0.380	0.360	0.340	0.290	0.260	0.020	0.22	1.42	
1000 FT.	0.300	0.290	0.260	0.220	0.190	0.010	0.21	1.66	
1100 FT.	0.350	0.340	0.310	0.260	0.240	0.010	0.20	1.72	
1180 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						END EXIT RAMP S
1232 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						C/L US 271
AVERAGES	0.385	0.364	0.325	0.282	0.255	0.022	0.22	1.42	
STANDARD DEVIATION						0.010	0.01	0.21	

NUMBER OF POINTS IN AVERAGE = 11

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

151 1

STCOEF

TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TX 79-03B

TABLE 4-3

VEP 2.0 MAY 8

DISTRICT 19 - DESIGN SECTION

THIS PROGRAM WAS RUN - 04-23-85

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PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

REASONS FOR MEASUREMENTS AND COMMENTS — TOTAL PAV DEPTH

DS - ENT RAMP AT US 271 EB — 13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CONC PAV (CPCD-13")	13.00
SOIL CEM. TRT'D BASE	10.00
SELECT MATERIAL	12.00

****

GENERAL LOCATION INFORMATION

DIRECTION OF TRAVEL IS EAST WITH MILEPOINTS

MEASUREMENTS ARE 03 FEET FROM THE RIGHT SIDE OF LANE A

	DESCRIPTION OF LOCATION	ODOMETER READING	MILEPOINT
FROM-	C/L US 271	000 FT.	000000
TO-	END ENTRANCE RAMP SLAB	1070 FT.	

****

TX 79-03B
TABLE 4-4

DISTRICT 19 - DESIGN SECTION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	71

DYNAFLECT DATA

ODOMETER	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
000 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED C/L US 271						
190 FT.	0.470	0.440	0.390	0.350	0.310	0.030	0.22	1.31	
300 FT.	0.450	0.440	0.420	0.340	0.310	0.010	0.19	1.81	
400 FT.	0.410	0.370	0.320	0.280	0.240	0.040	0.24	1.07	
500 FT.	0.400	0.370	0.330	0.280	0.250	0.030	0.23	1.22	
600 FT.	0.390	0.360	0.320	0.270	0.240	0.030	0.23	1.20	
700 FT.	0.480	0.450	0.410	0.350	0.320	0.030	0.21	1.32	
800 FT.	0.480	0.450	0.410	0.360	0.330	0.030	0.21	1.32	
900 FT.	0.510	0.480	0.420	0.370	0.330	0.030	0.21	1.35	
950 FT.	0.480	0.460	0.430	0.360	0.330	0.020	0.20	1.54	
1000 FT.	0.510	0.500	0.450	0.380	0.330	0.010	0.18	1.85	
1070 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED END SLAB						
AVERAGES	0.458	0.432	0.390	0.334	0.299	0.026	0.21	1.40	
STANDARD DEVIATION						0.010	0.02	0.26	

NUMBER OF POINTS IN AVERAGE = 10

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

151 1

STCOEF

TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TX 79-03B
TABLE 4-5

VER 2.0 MAY 8

DISTRICT 19 - DESIGN SECTION

THIS PROGRAM WAS RUN - 04-23-85

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

REASONS FOR MEASUREMENTS AND COMMENTS	TOTAL PAV DEPTH
DS - EXIT RAMP AT US 271 WB	13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CONC PAV (CPCD-13")	13.00
SOIL CEM. TR*TD BASE	10.00
SELECT MATERIAL	12.00

****

GENERAL LOCATION INFORMATION

DIRECTION OF TRAVEL IS WEST OPPOSITE MILEPOINTS
MEASUREMENTS ARE 03 FEET FROM THE RIGHT SIDE OF LANE A

	DESCRIPTION OF LOCATION	ODOMETER READING	MILEPOINT
FROM-	BEG. OFF RAMP SLAB	0000 FT.	000000
TO-	C/L US 271	1238 FT.	

****

PLOTS WERE REQUESTED WITH THIS PROGRAM.

****

TX 79-03B
TABLE 4-6

DISTRICT 19 - DESIGN SECTION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0010	05		IH 30	03-07-85	31

DYNAFLECT DATA

ODOMETER	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
000 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						BEG EXIT RAMP S
017 FT.	0.370	0.340	0.300	0.260	0.240	0.030	0.24	1.18	
100 FT.	0.370	0.340	0.300	0.260	0.230	0.030	0.24	1.18	
200 FT.	0.320	0.310	0.280	0.240	0.210	0.010	0.21	1.68	
300 FT.	0.390	0.370	0.330	0.290	0.270	0.020	0.22	1.43	
400 FT.	0.450	0.400	0.350	0.290	0.260	0.050	0.24	1.00	
500 FT.	0.400	0.380	0.350	0.320	0.210	0.020	0.21	1.45	
600 FT.	0.430	0.380	0.330	0.270	0.240	0.050	0.25	0.98	
700 FT.	0.410	0.360	0.310	0.260	0.220	0.050	0.25	0.96	
800 FT.	0.370	0.360	0.320	0.270	0.250	0.010	0.20	1.74	
900 FT.	0.390	0.360	0.320	0.270	0.250	0.030	0.23	1.20	
1000 FT.	0.600	0.530	0.450	0.390	0.340	0.070	0.23	0.96	
1100 FT.	0.460	0.440	0.390	0.350	0.320	0.020	0.20	1.52	
1238 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						
AVERAGES	0.413	0.381	0.336	0.289	0.253	0.033	0.23	1.27	
STANDARD DEVIATION						0.019	0.02	0.28	

NUMBER OF POINTS IN AVERAGE = 12

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

151 1

DISTRICT 19 - DESIGN SECTION

THIS PROGRAM WAS RUN - 04-23-85

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

REASONS FOR MEASUREMENTS AND COMMENTS — TOTAL PAV DEPTH
DS - ENT RAMP AT US 271 WB — 13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CONC PAV (CPCD-13")	13.00
SOIL CEM. TRT'D BASE	10.00
SELECT MATERIAL	12.00

****

GENERAL LOCATION INFORMATION

DIRECTION OF TRAVEL IS WEST OPPOSITE MILEPOINTS
MEASUREMENTS ARE 03 FEET FROM THE RIGHT SIDE OF LANE A

	DESCRIPTION OF LOCATION	ODOMETER READING	MILEPOINT
FROM-	C/L US 271	000 FT.	000000
TO-	END ENTRANCE RAMP SLAB	1027 FT.	

****

DISTRICT 19 - DESIGN SECTION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0010	03		IH 30	03-07-85	51

DYNAFLECT DATA

ODOMETER	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
000 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						C/L US 271
143 FT.	0.370	0.350	0.320	0.280	0.260	0.020	0.22	1.41	
200 FT.	0.320	0.290	0.260	0.220	0.190	0.030	0.25	1.10	
300 FT.	0.390	0.360	0.330	0.290	0.270	0.030	0.23	1.20	
400 FT.	0.400	0.380	0.350	0.320	0.290	0.020	0.21	1.45	
500 FT.	0.440	0.410	0.360	0.310	0.280	0.030	0.22	1.27	
600 FT.	0.410	0.390	0.350	0.310	0.290	0.020	0.21	1.46	
700 FT.	0.410	0.390	0.360	0.320	0.230	0.020	0.21	1.46	
750 FT.	0.370	0.360	0.340	0.290	0.260	0.010	0.20	1.74	
800 FT.	0.390	0.380	0.360	0.280	0.240	0.010	0.20	1.76	
850 FT.	0.420	0.400	0.360	0.310	0.280	0.020	0.21	1.47	
900 FT.	0.410	0.380	0.340	0.300	0.270	0.030	0.23	1.23	
950 FT.	0.370	0.350	0.320	0.280	0.250	0.020	0.22	1.41	
1027 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						END RAMP
AVERAGES	0.392	0.370	0.337	0.292	0.259	0.022	0.22	1.41	
STANDARD DEVIATION						0.007	0.01	0.20	

NUMBER OF POINTS IN AVERAGE = 12

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

151 1

STCOEF

TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
TX 79-03B
TABLE 4-9

VER 2.0 MAY 8

DISTRICT 19 - DESIGN SECTION

THIS PROGRAM WAS RUN - 04-23-85

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PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

REASONS FOR MEASUREMENTS AND COMMENTS — TOTAL PAV DEPTH
DS - EXIT RAMP AT LP 419 EB — 13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CONC PAV (CPCD-13")	13.00
SOIL CEM. TR*TD BASE	10.00
SELECT MATERIAL	12.00

****

GENERAL LOCATION INFORMATION

DIRECTION OF TRAVEL IS EAST WITH MILEPOINTS
MEASUREMENTS ARE 03 FEET FROM THE RIGHT SIDE OF LANE /

	DESCRIPTION OF LOCATION	ODOMETER READING	MILEPOINT
FROM-	BEG EXIT RAMP SLAB	000 FT.	000000
TO-	C/L LP 419	800 FT.	

****

DISTRICT 19 - DESIGN SECTION

THIS PROGRAM WAS RUN - 04-23-85

****

PROJECT IDENTIFICATION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

REASONS FOR MEASUREMENTS AND COMMENTS — TOTAL PAV DEPTH
DS - ENT RAMP AT LP 419 WB — 13.00 INCHES

****

EXISTING PAVEMENT

MATERIAL TYPE	LAYER THICK.(IN)
CONC PAV (CPCD-13")	13.00
SOIL CEM. TR'TD BASE	10.00
SELECT MATERIAL	12.00

****

GENERAL LOCATION INFORMATION

DIRECTION OF TRAVEL IS WEST OPPOSITE MILEPOINTS
MEASUREMENTS ARE 03 FEET FROM THE RIGHT SIDE OF LANE A

	DESCRIPTION OF LOCATION	ODOMETER READING	MILEPOINT
FROM-	C/L LP 419	000 FT.	000000
TO-	EDGE SLAB IH 30	1260 FT.	

****

STCOEF

TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TX 79-03B

TABLE 4-11

VER 2.0 MAY 8.

DISTRICT 19 - DESIGN SECTION

DIST.	COUNTY	CONT.	SECT.	PPSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

DYNAFLECT DATA

ODOMETER	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
000 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						BEGIN SLAB
050 FT.	0.500	0.440	0.390	0.340	0.300	0.060	0.24	0.96	
100 FT.	0.600	0.530	0.460	0.390	0.350	0.070	0.23	0.96	
150 FT.	0.490	0.470	0.410	0.350	0.310	0.020	0.20	1.54	
200 FT.	0.460	0.440	0.410	0.360	0.340	0.020	0.20	1.52	
250 FT.	0.440	0.400	0.370	0.320	0.290	0.040	0.23	1.11	
300 FT.	0.390	0.370	0.340	0.290	0.250	0.020	0.22	1.43	
350 FT.	0.400	0.380	0.340	0.300	0.280	0.020	0.21	1.45	
400 FT.	0.450	0.430	0.400	0.350	0.310	0.020	0.20	1.50	
550 FT.	0.430	0.410	0.390	0.320	0.300	0.020	0.21	1.48	
650 FT.	0.460	0.420	0.380	0.330	0.290	0.040	0.23	1.13	
800 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						C/L LP 419
AVERAGES	0.462	0.429	0.389	0.335	0.302	0.033	0.22	1.31	
STANDARD DEVIATION						0.019	0.02	0.24	

NUMBER OF POINTS IN AVERAGE = 10

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

151 1

STCOEF

TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TX 79-03B

TABLE 4-12

VER 2.0 MAY

DISTRICT 19 - DESIGN SECTION

DIST.	COUNTY	CONT.	SECT.	PRSN	HIGHWAY	DATE	DYNAFLECT
19	TITUS	0610	03		IH 30	03-07-85	31

DYNAFLECT DATA

ODOMETER	W1	W2	W3	W4	W5	SCI	AS2	AP2	REMARKS
000 FT.	0.000	0.000	SCI ZERO OR LESS,OTHER CALCULATIONS OMITTED						C/L LF 419
148 FT.	0.390	0.370	0.340	0.300	0.280	0.020	0.22	1.43	
200 FT.	0.340	0.330	0.290	0.250	0.220	0.010	0.21	1.71	
300 FT.	0.390	0.360	0.340	0.270	0.240	0.030	0.23	1.20	
400 FT.	0.360	0.340	0.300	0.260	0.230	0.020	0.22	1.39	
500 FT.	0.310	0.300	0.270	0.240	0.220	0.010	0.21	1.67	
600 FT.	0.330	0.310	0.270	0.230	0.220	0.020	0.23	1.35	
700 FT.	0.370	0.350	0.320	0.280	0.230	0.020	0.22	1.41	
800 FT.	0.310	0.300	0.280	0.230	0.210	0.010	0.21	1.67	
900 FT.	0.290	0.270	0.250	0.210	0.190	0.020	0.24	1.28	
980 FT.	0.330	0.300	0.270	0.230	0.210	0.030	0.25	1.12	
1260 FT.	0.480	0.420	0.340	0.270	0.210	0.060	0.25	0.94	END OF RAMP
AVERAGES	0.355	0.332	0.297	0.252	0.224	0.023	0.23	1.38	
STANDARD DEVIATION						0.014	0.01	0.24	

NUMBER OF POINTS IN AVERAGE = 11

W1-5 DEFLECTIONS AT GEOPHONES 1,2,3,4,&5
SCI SURFACE CURVATURE INDEX (W1 MINUS W2)
AS2 STIFFNESS COEFFICIENT OF THE SUBGRADE
AP2 STIFFNESS COEFFICIENT OF THE PAVEMENT

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

151 1