STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

MAIN LANE DESIGN SPEED=70 M.P.H.

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	IM 10-1 (317)46			1
STATE	STATE DIST. NO.	COUNTY		
TEXAS	ELP	EL PASO		
CONT.	SECT.	JOB	HIGHWAY NO.	
2121	04	053	IH-10	

INDEX OF SHEETS

CHANGE ORDER DATA

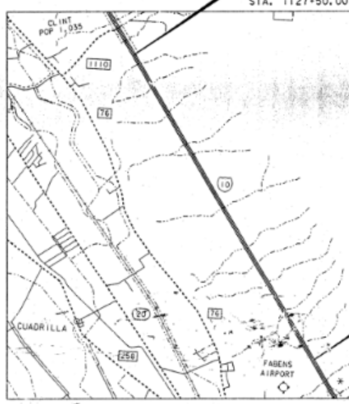
SHEET No.	CHANGE ORDER DATA	
4A	C.O. #1 - MODIFIES ORIGINAL TYPICAL SECTIONS BY ANTEMILLING APPROX. 9 IN. OF EXISTING ACP. INCREASES HMAC TY D & HMAC TY B, AND INCORPORATES STONE RIPRAP ITEM IN LIEU OF ORIGINAL CONC. RIPRAP ITEM FOR DITCH LINING.	- $276,646.87
13A, 14A, 15A, 16A, 21A, 22A.	C.O. #2 - MAJOR C.O. EXTENDS PROJECT LIMITS AND MODIFIES ORIGINAL TCP	- $66,754.05
N/A	C.O. #3 - PARTNERING WORKSHOP COST	$ 1,310.85
N/A	C.O. #4 - INCORPORATES ITEM 526-000 MEMBRANE CURING INTO ORIGINAL CONTRACT FOR A SECOND COAT APPLICATION AS RECOMMENDED BY DES AND C.M.D.	$ 27,400.00
N/A	C.O. #5 - REPLACES ORIGINAL COPOLYMER STRIPING ITEMS WITH THERMOPLASTIC STRIPING ITEMS AT SAME UNIT PRICE	$0.00

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT. IM 10-1 (317)46
NET LENGTH OF PROJECT: 13,700.00 FT. = 2.595 MILES

EL PASO COUNTY
I.H.-10 REHABILITATION
LIMITS: FROM 2.180 MILES EAST OF CLINT (FM 1110)
TO 4.775 MILES EAST OF CLINT (FM-1110)
RECONSTRUCTION OF MAIN LANES: CONSISTING OF
GRADING, A.C.P. (TY D) (LEVEL UP), A.C.P. (TY B)
BASE, C.P.C.P., STRUCTURES, SIGNING &
DELINEATION

BEGIN PROJECT 2121-04-053
REF. MRK. 44+1.77
STA. 1127+50.00



END PROJECT 2121-04-053
REF. MRK. 48+0.33
STA. 1264+50.00

EXCEPTIONS: NONE
EQUATIONS: NONE

FINAL PLANS

TIME CHARGES BEGAN: JUNE 16, 1996
DATE CONTRACTOR BEGAN WORK: JUNE 29, 1996
DATE WORK WAS COMPLETED & ACCEPTED: MARCH 18, 1998
FINAL CONTRACT COST: $ 6,922,812.20
TOTAL DAYS CHARGED: 197 DAYS
CONTRACTOR: J.D. ABRAMS, INC.

7-16-98
EAST EL PASO AREA ENGINEER — DATE

MATERIAL SOURCE (AGGREGATES)
HMAC (AGGR.) - JOBE CONC. PROD. INC, McKELLIGON QUARRY, TX.
CONCRETE (FINE AGGR.) - JOBE CONCRETE PRODUCTS, SECTION 10 PIT, TX.
CONCRETE (COARSE AGGR.) - JOBE CONC. PROD. INC, McKELLIGON QUARRY, TX.

TEXAS DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR LETTING: Jan 5, 96 — DISTRICT PROJECT DESIGN ENGINEER
RECOMMENDED FOR LETTING: 1/5, 96 — DIRECTOR, TRANSPORTATION PLANNING & DEVELOPMENT
RECOMMENDED FOR APPROVAL: — DIRECTOR OF TRAFFIC OPERATIONS
RECOMMENDED FOR APPROVAL: 5-16-96 — Robert R. ... P.E. — DIRECTOR DESIGN DIVISION
RECOMMENDED FOR LETTING: 1/8, 96 — ... SAFETY REVIEW COMMITTEE
RECOMMENDED FOR LETTING: 1-8-96 — Eddie Sanchez, P.E. — DISTRICT ENGINEER

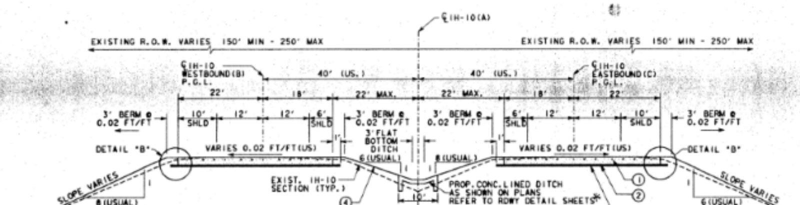
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:
DIVISION ADMINISTRATOR — DATE

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AND ARE APPLICABLE TO THIS PROJECT.

Craig S. Warren — 1-3-96
CRAIG S. WARREN, P.E.

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, MARCH 1, 1993 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, APRIL, 1993).

COUNTY: EL PASO — PROJ. NO. 2121-04-053
HWY. NO. — LETTING DATE
DATE ACCEPTED
EL PASO



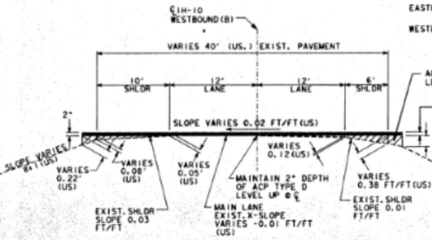
PROPOSED IH-10 IN EXCAVATION
REFERENCE FROM ℄ IH-10 (A)
EASTBOUND LANE: STATION 1127+50 TO STATION 1145+00
STATION 1256+00 TO STATION 1264+50
WESTBOUND LANE: STATION 1127+50 TO STATION 1146+50
STATION 1256+00 TO STATION 1264+50

* REFER TO CHANGE ORDER #1 FOR REPLACEMENT OF CONC. LINED DITCH WITH STONE RIPRAP.

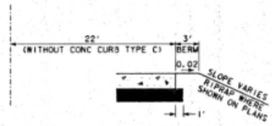
LEGEND

1. 12" C.P.C.R.
2. 4" (440#/SY) A.C.P. TY B BASE
3. EMUL ASPH CSS-1H (PRIME) @ 0.25 GALS/S.Y.
4. 4" FLEX BASE & SURF. TREAT., REFER TO RDWY DETAILS FOR ADDITIONAL INFORMATION.
5. 2" (220#/S.Y.) ACP TY D (LEVEL UP).

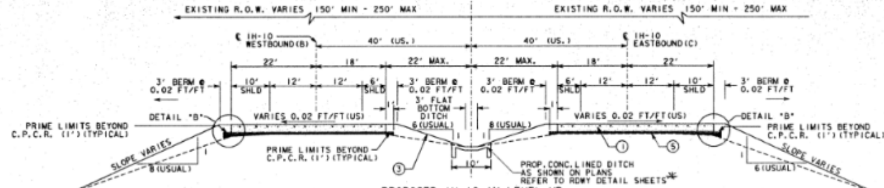
℄ IH-10
(A) DENOTES ALIGNMENT ℄ IH-10
(B) DENOTES ALIGNMENT ℄ IH-10 WESTBOUND
(C) DENOTES ALIGNMENT ℄ IH-10 EASTBOUND
P.G.L. - PROFILE GRADE LINE AS SHOWN ON PLAN AND PROFILE SHEETS (TYPICAL)



ACP LEVEL UP DETAIL FOR IH-10 MAIN LANES
REVERSE DETAIL FOR EASTBOUND LANES



DETAIL "B"



PROPOSED IH-10 IN LEVEL UP
REFERENCE FROM ℄ IH-10 (A)
EASTBOUND LANE: STATION 1145+00 TO STATION 1256+00
WESTBOUND LANE: STATION 1146+50 TO STATION 1256+00

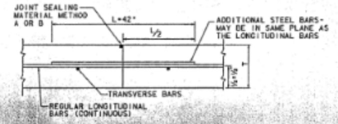
* REFER TO CHANGE ORDER #1 FOR REPLACEMENT OF CONC. LINED DITCH WITH STONE RIPRAP.

IH-10
PHASE III
TYPICAL
SECTIONS

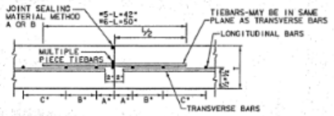
SHEET 2 OF 2

Craig S. Warren, P.E. 1-3-96

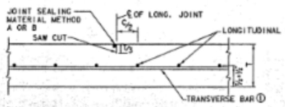
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	IM 10-1 (317)46			4
STATE	STATE DIST.	COUNTY		
TEXAS	ELP	EL PASO		
CONT.	SECT.	JOB	HIGHWAY NO.	
2121	04	053	IH-10	



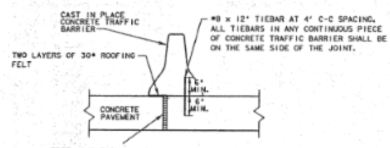
TRANSVERSE CONSTRUCTION JOINT
SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y - Y

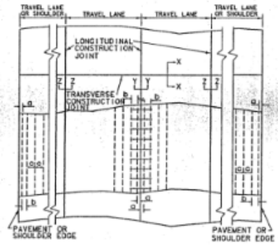


LONGITUDINAL CONTRACTION JOINT
SECTION Z - Z



FREE LONGITUDINAL JOINT WITH NO TIEBARS. LOCATION OF THE JOINT WILL BE AS DIRECTED BY THE ENGINEER FORMED WITH PREFORMED FIBER BOARD OR ASPHALT BOARD IN ACCORDANCE WITH ITEM "JOINT SEALANT AND FILLERS".

FREE LONGITUDINAL JOINT DETAIL



TYPICAL PAVEMENT LAYOUT

TABLE NO. 1 LONGITUDINAL STEEL						
LONGITUDINAL STEEL SIZE AND SPACINGS						
SLAB THICKNESS AND BAR SIZE		REGULAR REINFORCEMENT	FIRST SPACING AT EDGE OR JOINT	SECOND SPACING FROM EDGE OR JOINT	ADDITIONAL REINFORCEMENT AT TRANSVERSE CONST. JOINT	
T INCHES	BAR NUMBER	SPACING "C" INCHES	SPACING "A" INCHES	SPACING "B" INCHES	SPACING 2 x C INCHES	LENGTH "L" INCHES
8	5	9	3 TO 4	3 TO 9	18	42
9	5	7.5	3 TO 4	3 TO 7.5	15	42
10	6	8.5	3 TO 4	3 TO 8.5	NONE	-
11	6	7	3 TO 4	3 TO 7	NONE	-
12	6	6	3 TO 4	3 TO 6	NONE	-
13	6	5.5	3 TO 4	3 TO 5.5	NONE	-

TABLE NO. 2 ALLOWABLE PAVEMENT WIDTH (W) IN FT.
FOR TRANSVERSE BAR SPACING (Bs) NOT SHOWN USE FORMULAE.

SLAB THICKNESS	8"	9"	10"	11"	12"	13"
#5 BAR AT 36"	62	55	50	45	41	38
#5 BAR AT 24"	93	83	74	68	62	57
#6 BAR AT 36"	88	78	70	64	59	54
#6 BAR AT 24"	126	117	105	96	88	81

TRANSVERSE STEEL AND TIEBAR SPACINGS SHALL BE BASED ON THE FOLLOWING FORMULAE.

FOR #5 BARS: $W = \frac{17857\ N}{T\ Bs}$

FOR #6 BARS: $W = \frac{25346\ N}{T\ Bs}$

W - ALLOWABLE WIDTH OF PAVEMENT SLAB WIDTH IN FEET (MEASURED EDGE TO EDGE OR EDGE TO UNTIED JOINT)
N - NUMBER OF LAYERS OF STEEL (1 OR 2)
T - THICKNESS OF SLAB IN INCHES
Bs - BAR SPACING IN INCHES

MAXIMUM Bs = 36"
MINIMUM Bs = 12"

GENERAL NOTES

1. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND REINFORCEMENT, REFER TO THE GOVERNING SPECIFICATIONS FOR "CONCRETE" AND "REINFORCING STEEL."
2. LONGITUDINAL AND TRANSVERSE BARS SHALL BE DEFORMED STEEL CONFORMING TO ASTM A-615 (GRADE 60) OR ASTM A-616 (GRADE 60).
3. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS.
4. SPLICES SHALL BE A MINIMUM OF 33 TIMES THE NOMINAL STEEL DIAMETER.
5. CONSOLIDATION WITH HAND-MANIPULATED MECHANICAL VIBRATORS IS REQUIRED ADJACENT TO ALL TRANSVERSE CONSTRUCTION JOINTS.
6. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR WILL BE SHOWN IN CONCRETE PAVEMENT DETAIL, JOINT SEALANT.
7. PAVEMENT WIDTHS OF MORE THAN 16' SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6" OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
8. THE SAW CUT FOR THE LONGITUDINAL JOINT SHALL BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.
9. WITHIN ANY AREA BOUNDED BY TWO FEET OF PAVEMENT LENGTH MEASURED PARALLEL TO THE CENTERLINE AND TWELVE FEET OF WIDTH MEASURED PERPENDICULAR TO THE PAVEMENT CENTERLINE, NOT OVER 33% OF THE REGULAR LONGITUDINAL STEEL SHALL BE SPLICED.
10. MULTIPLE PIECE TIEBARS SHALL BE USED AT LONGITUDINAL CONSTRUCTION JOINTS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
11. FOR THE 13" SLAB THICKNESS, WHEN STANDARD DETAIL CPCR(1)-94 IS INCLUDED IN THE PLANS, THE CONTRACTOR MAY CHOOSE EITHER THE ONE OR TWO LAYER PLACEMENT OF REINFORCING STEEL UNLESS OTHERWISE SPECIFIED.

FOOTNOTE:

① WHEN MACHINE PLACING OF THE STEEL REINFORCEMENT IS USED, THE USE OF CHAIRS WILL NOT BE REQUIRED AND THE TRANSVERSE STEEL MAY BE PLACED ABOVE OR BELOW THE LONGITUDINAL STEEL. THE VERTICAL LOCATION OF THE BARS WILL BE APPROVED BY THE ENGINEER.

Texas Department of Transportation
Design Division (Pavement)

CONCRETE PAVEMENT DETAILS
CONTINUOUSLY REINFORCED STEEL BARS
ONE LAYER PLACEMENT
T-8, 9, 10, 11, 12, & 13 INCHES

CPCR(1)-94

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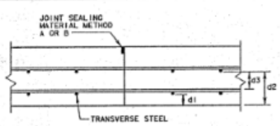
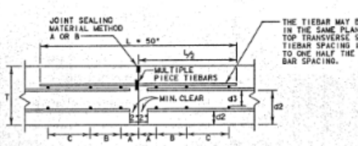
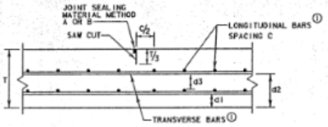


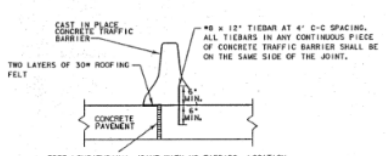
TRANSVERSE CONSTRUCTION JOINT
SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT
SEE TABLES FOR LABELED DIMENSIONS
SECTION Y - Y

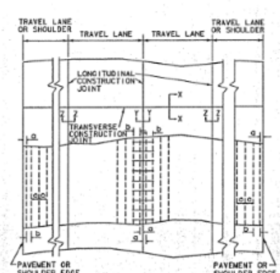


LONGITUDINAL CONTRACTION JOINT
SECTION Z - Z



FREE LONGITUDINAL JOINT WITH NO TIEBARS. LOCATION OF THE JOINT WILL BE AS DIRECTED BY THE ENGINEER FORMED WITH PREFORMED FIBER BOARD OR ASPHALT BOARD IN ACCORDANCE WITH ITEM "JOINT SEALANT AND FILLERS".

FREE LONGITUDINAL JOINT DETAIL



TYPICAL PAVEMENT LAYOUT

TABLE NO. 1 LONGITUDINAL STEEL				
LONGITUDINAL STEEL SIZE AND SPACINGS				
SLAB THICKNESS AND BAR SIZE		REGULAR REINFORCEMENT	FIRST SPACING AT EDGE OR JOINT	SECOND SPACING FROM EDGE OR JOINT
T INCHES	BAR NUMBER	SPACING "C" INCHES	SPACING "A" INCHES	SPACING "B" INCHES
13	6	10.5	3 TO 4	3 TO 10.5
14	6	9.5	3 TO 4	3 TO 9.5
15	6	8.5	3 TO 4	3 TO 8.5

TABLE NO. 2
ALLOWABLE PAVEMENT WIDTH (W) IN FT.
FOR TRANSVERSE BAR SPACING (Bs) NOT SHOWN USE FORMULAE.

SLAB THICKNESS	13"	14"	15"
#5 BAR AT 36"	76	70	66
#5 BAR AT 30"	91	85	79
#6 BAR AT 36"	108	100	93
#6 BAR AT 30"	130	120	112

TABLE NO. 3
TWO LAYER STEEL PLACEMENT
SPECIFICATIONS OF DIMENSIONS

THICKNESS T (INCHES)	d1 INCHES TOLERANCE (+/-0.5")	d2 INCHES TOLERANCE (+/-0.5")	d3 INCHES MINIMUM CLEARANCE
13	2.50	6.00	2
14	3.25	6.75	2
15	4.00	7.50	2

TRANSVERSE STEEL AND TIEBAR SPACINGS SHALL BE BASED ON THE FOLLOWING FORMULAE.

FOR #5 BARS: $W = \frac{17857\ N}{T\ Bs}$

FOR #6 BARS: $W = \frac{25346\ N}{T\ Bs}$

W - ALLOWABLE WIDTH OF PAVEMENT SLAB WIDTH IN FEET (MEASURED EDGE TO EDGE OR EDGE TO UNTIED JOINT)
N - NUMBER OF LAYERS OF STEEL (1 OR 2)
T - THICKNESS OF SLAB IN INCHES
Bs - BAR SPACING IN INCHES

MAXIMUM Bs = 36"
MINIMUM Bs = 12"

GENERAL NOTES

1. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND REINFORCEMENT, REFER TO THE GOVERNING SPECIFICATIONS FOR "CONCRETE" AND "REINFORCING STEEL."
2. LONGITUDINAL AND TRANSVERSE BARS SHALL BE DEFORMED STEEL CONFORMING TO ASTM A-615 (GRADE 60) OR ASTM A-616 (GRADE 60).
3. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS.
4. SPLICES SHALL BE A MINIMUM OF 33 TIMES THE NOMINAL STEEL DIAMETER.
5. CONSOLIDATION WITH HAND-MANIPULATED MECHANICAL VIBRATORS IS REQUIRED ADJACENT TO ALL TRANSVERSE CONSTRUCTION JOINTS.
6. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR WILL BE SHOWN IN CONCRETE PAVEMENT DETAIL, JOINT SEALANT.
7. PAVEMENT WIDTHS OF MORE THAN 16' SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6" OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
8. THE SAW CUT FOR THE LONGITUDINAL JOINT SHALL BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.
9. WITHIN ANY AREA BOUNDED BY TWO FEET OF PAVEMENT LENGTH MEASURED PARALLEL TO THE CENTERLINE AND TWELVE FEET OF WIDTH MEASURED PERPENDICULAR TO THE PAVEMENT CENTERLINE, NOT OVER 33% OF THE REGULAR LONGITUDINAL STEEL SHALL BE SPLICED.
10. MULTIPLE PIECE TIEBARS SHALL BE USED AT LONGITUDINAL CONSTRUCTION JOINTS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
11. FOR THE 13" SLAB THICKNESS, WHEN STANDARD DETAIL CPCR(2)-94 IS INCLUDED IN THE PLANS, THE CONTRACTOR MAY CHOOSE EITHER THE ONE OR TWO LAYER PLACEMENT OF REINFORCING STEEL UNLESS OTHERWISE SPECIFIED.

FOOTNOTE:

① WHEN MACHINE PLACING OF THE STEEL REINFORCEMENT IS USED, THE USE OF CHAIRS WILL NOT BE REQUIRED AND THE TRANSVERSE STEEL MAY BE PLACED ABOVE OR BELOW THE LONGITUDINAL STEEL. THE VERTICAL LOCATION OF THE BARS WILL BE APPROVED BY THE ENGINEER.

Texas Department of Transportation
Design Division (Pavement)

CONCRETE PAVEMENT DETAILS
CONTINUOUSLY REINFORCED STEEL BARS
TWO LAYER PLACEMENT
T-13, 14, & 15 INCHES

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