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4.5 NOT USED

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

DATE: 10/16/94
BY: [Signature]
TITLE: [Signature]

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, FROM JUNE 1975, APRIL, 1993.

STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

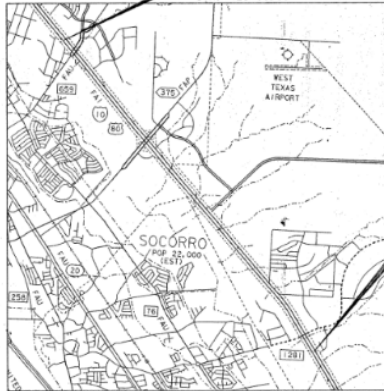
PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT, 10-1-12(1) 32
NET LENGTH OF PROJECT 35,000.00 FT. + 6.192 MILES

FROM ZARAGOZA RD. TO HORIZON BLVD.
RECONSTRUCTION OF MAIN LANES, RAMPS AND
FRONTAGE ROADS, CONSISTING OF GRADING,
A.C.P. (TY D) (LEVEL UP), A.C.P. (TY B)
BASE, C.P.C.R., STRUCTURES, CONTINUOUS
LUMINATION, M.B.G.F., CONCRETE TRAFFIC
BARRIER, SIGNING AND DELINEATION.

BEGIN PROJECT 2121-04-048

REF. MKL. 31+0.80
STA. 429+00.00



EXCEPTIONS: NONE
EQUATIONS: NONE

MAIN LANE DESIGN SPEED
FROM S. 10-10(1) STA. 429+00
TO 451+00 55 M.P.H.
FROM S. 10-10(1) STA. 451+00
TO 785+00 55 M.P.H.
RAMP DESIGN SPEED = 55 M.P.H.
RAMP DESIGN SPEED = 55 M.P.H.

DESIGN EXCEPTIONS: NONE

FINAL PLANS

DATE TIME CHANGES STARTED: OCT. 16/94
DATE WORK WAS COMPLETED & ACCEPTED: MAR. 16/98
FINAL CONTRACT COST: \$ 2,724,666.50
TOTAL DAYS CHARGED: 666

EAST EL PASO AREA ENGINEER

THE CITY HEREBY CONSENTS TO THE CONSTRUCTION OF THIS LIGHTING SYSTEM AS TO LOCATION AND MANNER OF CONSTRUCTION AS INDICATED ON THESE PLANS, SAID INSTALLATION BEING THE PART OF AGREEMENT FOR CONSTRUCTION, MAINTENANCE AND OPERATION OF STREET ILLUMINATION SYSTEM WITHIN MUNICIPALITY, DATED JANUARY 11, 1971.

FOR THE CITY OF EL PASO
EXAMINED AND APPROVED: 1994

SAVOR
LARRY FRANCIS

** For CHANGE ORDER
INFORMATION SEE CITY
FILE #112

END PROJECT 2121-04-048

REF. MKL. 36+0.55
STA. 785+00.00

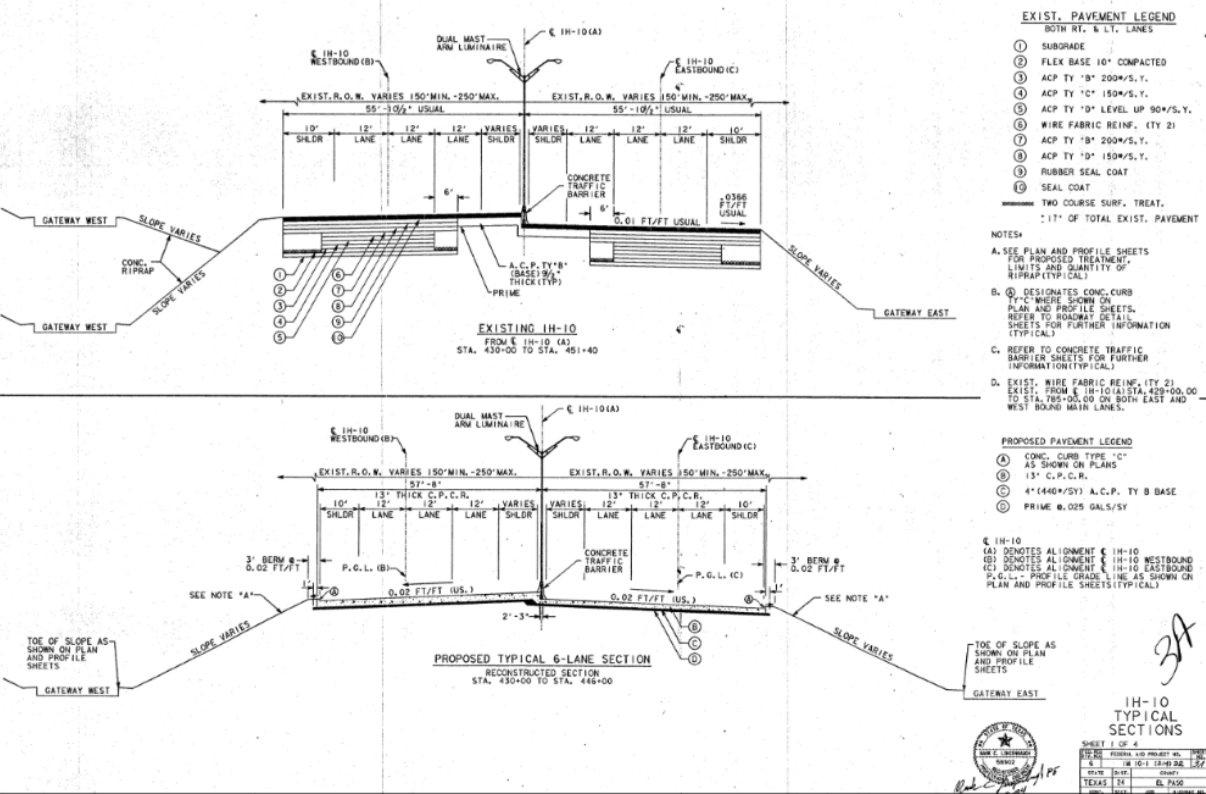
N TYPE 11(C) BARRICADES SHALL CONSIST OF ONE 12 FOOT PANEL ON EACH SIDE OF ROADWAY AND REQUIRED SIGN IN ACCORDANCE WITH 8011-89 THRU 8017-89 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
SIGNS 002-10 WITH TYPE A WARNING LIGHTS AND 020-2 TO BE PLACED ON INTERSECTING ROADS.

TEXAS DEPARTMENT OF TRANSPORTATION

APPROVED FOR LETTING: [Signature]
DATE: 10/16/94

APPROVED FOR LETTING: [Signature]
DATE: 10/16/94

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED: [Signature]
DIVISION ADMINISTRATION DATE: [Signature]



EXIST. PAVEMENT LEGEND

- 1 SUBGRADE
 - 2 FLEX BASE 10" COMPACTED
 - 3 ACP TY "B" 200#/S.Y.
 - 4 ACP TY "C" 150#/S.Y.
 - 5 ACP TY "D" LEVEL UP 90#/S.Y.
 - 6 WIRE FABRIC REINF. (TY 2)
 - 7 ACP TY "B" 200#/S.Y.
 - 8 ACP TY "D" 150#/S.Y.
 - 9 RUBBER SEAL COAT
 - 10 SEAL COAT
- TWO COURSE SURF. TREAT.
:17" OF TOTAL EXIST. PAVEMENT

- NOTES:
- A. SEE PLAN AND PROFILE SHEETS FOR PROPOSED TREATMENT LIMITS AND QUANTITY OF HYPER-TYPICAL.
 - B. (C) DESIGNATES CONC. CURB PLACED WHERE SHOWN ON PLAN AND PROFILE SHEETS. REFER TO ROADWAY DETAIL SHEETS FOR FURTHER INFORMATION (TYPICAL).
 - C. REFER TO CONCRETE TRAFFIC BARRIER SHEETS FOR FURTHER INFORMATION (TYPICAL).
 - D. EXIST. WIRE FABRIC REINF. (TY 2) EXIST. FROM E. 10-10(1) STA. 429+00.00 TO STA. 785+00.00 ON BOTH EAST AND WEST BOUND MAIN LANES.

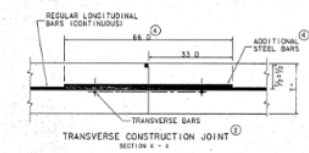
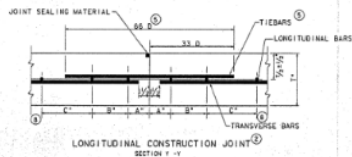
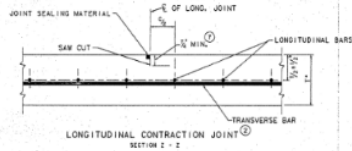
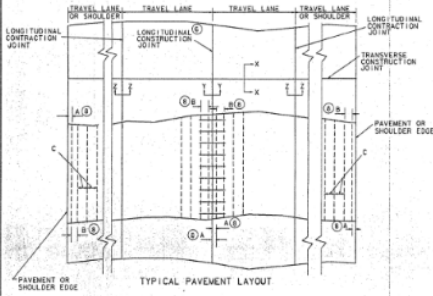
PROPOSED PAVEMENT LEGEND

- A CONC. CURB TYPE "C" AS SHOWN ON PLANS
- B 13" C.P.C.R.
- C 4" (440#/SY) A.C.P. TY B BASE
- D PRIME 0.025 GAL/SY

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

TOE OF SLOPE AS SHOWN ON PLAN AND PROFILE SHEETS

10-10 TYPICAL SECTIONS
SHEET 10-10
STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION
EL PASO



T INCH	LONG. BAR SIZE	TRANSVERSE STEEL REQUIREMENTS ① FOR GIVEN PAVEMENT WIDTHS (FT)
		5 40 41-50 51-60 61-70 71-80 81-90 91-100
8	5	#40 36 #40 29 #50 31 #50 32 #50 28 #40 35 #50 32
9	5	#40 32 #40 26 #50 33 #50 28 #40 35 #50 31 #50 28
10	6	#40 29 #50 30 #50 30 #40 36 #40 32 #40 28 #40 25
11	6	#40 26 #50 32 #50 27 #40 35 #40 25 #40 26 #40 23
12	6	#50 31 #50 30 #40 35 #40 30 #40 26 #40 23 #40 21
13	6	#40 36 #40 35 #40 30 #40 25 #50 34 #50 31 #50 27
14	6	#40 36 #40 33 #40 27 #50 30 #50 32 #50 28 #40 36
15	6	#40 36 #40 31 #40 26 #50 34 #50 30 #40 38 #40 34

FOOTNOTES

- ① FOR PAVEMENTS 13" OR GREATER IN THICKNESS, TWO LAYERS OF LONGITUDINAL AND TRANSVERSE STEEL SHALL BE USED. WHEN THE "DOUBLE STEEL-OFF" PROCEDURE IS NOT USED CHAIRS WILL BE REQUIRED TO SUPPORT BOTH LAYERS OF STEEL, AS SHOWN IN THE TABLE ABOVE. THE SPACINGS SHOWN FOR THESE THICKNESSES ARE FOR EACH LAYER.
- ② TRANSVERSE STEEL MUST BE INCREASED AS PAVEMENT WIDTHS. PAVEMENT WIDTH SHALL BE MEASURED AT RIGHT ANGLES TO THE CENTERLINE AND SHALL INCLUDE ALL MAINLANES, CONNECTORS, RAMP AND CONCRETE SHOULDERS THAT ARE TIED TOGETHER. WHERE WIDTHS EXCEED 100', ADDITIONAL TRANSVERSE STEEL WILL BE REQUIRED, UNLESS A FREE (NON-REINFORCED) LONGITUDINAL JOINT IS SHOWN ELSEWHERE IN THE PLANS. WHERE THE CENTER MEDIAN IS TO BE PAVED WITH CRCP AND A MEDIAN BARRIER IS PROVIDED, THE "FREE" (NON-REINFORCED) LONGITUDINAL JOINT WILL BE PLACED UNDER THE BARRIER.
- ③ ADDITIONAL STEEL AT THE TRANSVERSE CONSTRUCTION JOINTS SHALL BE BARS OF EQUAL DIAMETER AND A SPACING OF DOUBLE THAT SPECIFIED FOR THE LONGITUDINAL STEEL OF THE GIVEN THICKNESS. THE LENGTH OF THE BARS SHALL BE 66 TIMES THE BAR DIAMETER ("D").
- ④ TRANSVERSE TIEBARS AT THE LONGITUDINAL CONSTRUCTION JOINTS SHALL BE BARS OF EQUAL DIAMETER AND SPACING TO THOSE SPECIFIED FOR THE TRANSVERSE STEEL OF THE GIVEN THICKNESS. THE LENGTH OF THE BARS SHALL BE 66 TIMES THE BAR DIAMETER ("D").
- ⑤ PAVEMENT WIDTHS IN EXCESS OF 16' SHALL BE PROVIDED WITH A LONGITUDINAL JOINT (SECTION 2-2 OR 1-1). THESE JOINTS SHALL BE LOCATED WITHIN 8' OF THE LANE LINES UNLESS SHOWN ELSEWHERE ON THE PLANS.
- ⑥ IF SILICEOUS GRAVEL IS USED AS A COARSE AGGREGATE, THE SAW CUT DEPTH FOR LONGITUDINAL CONTRACTION JOINTS SHALL BE 1/2".
- ⑦ THE NUMBER OF BARS REQUIRED FOR THE VARIOUS PLACEMENT WIDTHS (INDICATED IN THE TABLE) INCLUDES BARS AT "B" SPACING ON BOTH SIDES WITH AN OVERHANG "A". "A" SPACING SHALL BE BETWEEN 3' AND 4'. "B" SPACING SHALL BE BETWEEN 1' AND 8'. THE TWO SPACINGS COMBINED ("A" AND "B") LOCATED AT BOTH LONGITUDINAL EDGES OF THE CONCRETE PLACEMENT SHALL PROVIDE FOR THE REINFORCING SPACE AND STEEL LOCATION TO ROUND OUT THE PLACEMENT WIDTH.

GENERAL NOTES

1. NO EXPANSION JOINTS WILL BE USED EXCEPT AT STRUCTURE ENDS OR FIXED OBJECTS AS SHOWN ELSEWHERE IN THE PLANS.
2. LONGITUDINAL AND TRANSVERSE BARS SHALL BE DEFORMED STEEL CONFORMING TO ASTM A-615 OR ASTM A-616 (GRADE 60) AS NOTED IN THE STANDARD SPECIFICATIONS.
3. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND REINFORCEMENT, REFER TO THE GOVERNING SPECIFICATIONS FOR "CONCRETE PAVEMENT".
4. DETAILS AS TO PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
5. WITHIN AN AREA BOUNDED BY TWO FEET OF PAVEMENT LENGTH MEASURED PARALLEL TO THE CENTERLINE AND TWELVE FEET OF PAVEMENT WIDTH MEASURED PERPENDICULAR TO THE PAVEMENT CENTERLINE, NOT OVER 53% OF THE REGULAR LONGITUDINAL STEEL SHALL BE SPLICED.
6. THE LONGITUDINAL STEEL SHALL BE PLACED AT THE VERTICAL SLAB CENTER WITH A TOLERANCE OF 1/2" INCH. TRANSVERSE STEEL SHALL BE PLACED DIRECTLY ABOVE OR BELOW THE LONGITUDINAL STEEL.
7. SPLICES SHALL BE A MINIMUM OF 33 TIMES THE NOMINAL STEEL DIAMETER ("D").
8. BARS THAT REQUIRE BENDING SHALL BE GRADE 40 STEEL CONFORMING TO REQUIREMENTS OF ASTM SPECIFICATION A-615. SPACINGS FOR GRADE 40 STEEL SHALL BE 2/3 OF THAT SPECIFIED FOR GRADE 60 STEEL.
9. THE REGULAR LONGITUDINAL STEEL AT TRANSVERSE CONSTRUCTION JOINTS SHALL EXTEND A MINIMUM OF FOUR FEET ON EITHER SIDE OF THE JOINT.
10. VIBRATION WITH HAND-MANIPULATED MECHANICAL VIBRATORS WILL BE REQUIRED ADJACENT TO ALL TRANSVERSE CONSTRUCTION JOINTS.
11. THE CHAIRS USED TO SUPPORT THE STEEL SHALL BE OF SUFFICIENT STRUCTURAL QUALITY AND NUMBER TO HOLD THE STEEL MAT WITHIN THE PLACEMENT HEIGHT TOLERANCES. CHAIRS SHALL BE OF A TYPE APPROVED BY THE ENGINEER.
12. WITH THE APPROVAL OF THE ENGINEER, MULTIPLE PIECE TIEBARS (THREADED COUPLING OR OTHER ADEQUATE DEVICES) MAY BE USED TO FACILITATE CONSTRUCTION PROVIDED THE SYSTEM DEVELOPS A FORCE EQUAL TO 1-1/2 TIMES THE MINIMUM YIELD STRENGTH OF THE TIEBAR. HOWEVER, THE SPACING FOR THE SYSTEM SHALL BE LESS THAN OR EQUAL TO THAT OF THE TIEBARS SHOWN.
13. JOINT, GROOVE AND SEAL DETAILS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
14. LONGITUDINAL AND TRANSVERSE STEEL SPACING SHALL NOT VARY MORE THAN ONE-TWELFTH OF THE SPACING SHOWN HEREON.
15. IF WIDTHS OCCUR THAT ARE OTHER THAN THE TYPICAL WIDTHS SHOWN, INDIVIDUAL BARS OF THE SIZE SPECIFIED HEREON MAY BE ADDED OR REMOVED TO OBTAIN THE APPROPRIATE WIDTH. SPACING REQUIREMENTS SHALL NOT BE EXCEEDED, HOWEVER.
16. WHEN MACHINE PLACING OF STEEL REINFORCEMENT IS USED, THE USE OF CHAIRS SHALL NOT BE REQUIRED, AND THE TRANSVERSE STEEL MAY BE PLACED ABOVE OR BELOW THE LONGITUDINAL STEEL.

CHAIR SIZES (IN.) ② FOR TWO LAYER STEEL PLACEMENT	TOP LAYER	BOTTOM LAYER
13	6.5	3
14	7.5	4
15	8	4.5

SPACING	NUMBER OF BARS ③ REQUIRED FOR VARIOUS TYPICAL PLACEMENT WIDTHS (FT.)
5	12 18 24 30 36 42 48 54 60
6	16 24 32 40 48 56 64 72 80
7	21 27 36 45 54 63 72 81 90
8	24 32 40 48 56 64 72 80 88 96
9	27 36 45 54 63 72 81 90 99 108
10	30 40 50 60 70 80 90 100 110 120
11	33 44 55 66 77 88 99 110 121 132
12	36 48 60 72 84 96 108 120 132 144
13	39 52 65 78 91 104 117 130 143 156
14	42 56 70 84 98 112 126 140 154 168
15	45 60 75 90 105 120 135 150 165 180

TEXAS DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT DETAILS

CONTINUOUSLY REINFORCED
STEEL BARS

CRCP (B) - 89C

NO. _____ DATE _____

BY _____

FOR _____

PROJECT NO. _____

SECTION NO. _____

DATE OF PREP. _____

DATE OF REV. _____

BY _____

FOR _____