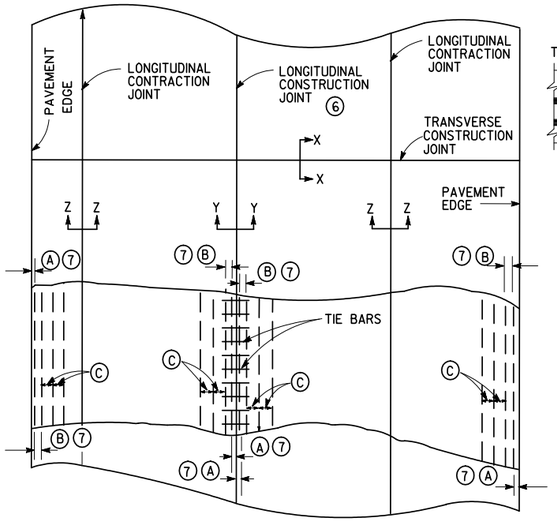
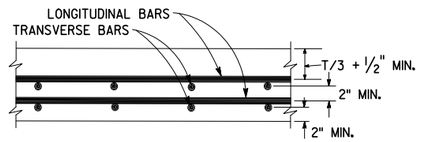


TWO LANE PAVEMENT PLAN

(38′ PLACEMENT OR 16′ & 22′ PLACEMENT ⑥)



OPTIONAL STEEL PLACEMENT

LONGITUDINAL REINFORCING							
SPACING C (IN.)	NUMBER OF BARS REQUIRED FOR VARIOUS TYPICAL PLACEMENT WIDTHS (FT.) ⑦						
	12′	16′	22′	24′	27′	34′	38′
6"	24	32	44	48	54	68	76
6.5"	23	30	41	45	50	63	70
7"	21	27	37	41	46	58	65
8"	18	24	33	36	41	51	57
8.5"	17	23	31	34	38	48	54
9"	16	22	30	32	36	46	51
9.5"	16	21	28	31	34	43	48

①		LONG. REINFORCING		TRANSVERSE REINFORCING				
	SLAB THK. "T" (IN.)	BAR SIZE	SPACING C (IN.)	BAR SIZE	MAXIMUM ALLOWABLE ② PAVEMENT WIDTH (FT.) FOR GIVEN TRANSVERSE STEEL			B_sW ③ FT^2
					12"	24"	36"	
SINGLE MAT REINFORCING	8"	#5	9"	#5 #6	186′ 264′	93′ 132′	62′ 88′	186.0 264.0
	9"	#6	9.5"	#5 #6	165′ 234′	82′ 117′	55′ 78′	165.3 234.7
	10"	#6	8.5"	#5 #6	148′ 211′	74′ 105′	49′ 70′	148.8 211.2
	11"	#6	7"	#5 #6	135′ 192′	67′ 96′	45′ 64′	135.3 192.0
	12"	#6	6"	#5 #6	124′ 176′	62′ 88′	41′ 58′	124.0 176.0
DOUBLE MAT REINFORCING	11"	#4	7"	#5 #6	270′ 384′	134′ 192′	90′ 128′	135.0 192.0
	12"	#5	9"	#5 #6	248′ 352′	124′ 176′	82′ 116′	124.0 176.0
	13"	#5	8"	#5 #6	228′ 324′	114′ 162′	76′ 108′	114.5 162.5
	14"	#5	7"	#5 #6	212′ 300	106′ 150′	70′ 100′	106.3 150.9
	15"	#5	6.5"	#5 #6	198′ 280′	98′ 140′	66′ 92′	99.2 140.8

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

NOTES:

① USE DEFORMED STEEL CONFORMING TO GRADE 60 AS NOTED IN THE STANDARD SPECIFICATIONS FOR LONGITUDINAL AND TRANSVERSE BARS.

② INCREASE TRANSVERSE STEEL AS PAVEMENTS WIDEN. MEASURE PAVEMENT WIDTH AT RIGHT ANGLES TO THE CENTERLINE AND SHALL INCLUDE ALL MAINLANES, CONNECTIONS, RAMPS, AND CONCRETE SHOULDERS THAT ARE TIED TOGETHER. WHERE WIDTHS EXCEED 100 FEET INCLUDE ADDITIONAL TRANSVERSE STEEL 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 MAY BE PLACED UNDER THE BARRIER.

③ DETERMINE THE MAXIMUM ALLOWABLE PAVEMENT WIDTH (W) FOR SPACING OTHER THAN THOSE GIVEN BY DIVIDING "BsW" (FOR THE GIVEN BAR SIZE) BY THE DESIRED TRANSVERSE BAR SPACING (B_S). ENSURE TRANSVERSE BAR SPACING IS NOT LESS THAN 12" NOR GREATER THAN 36".

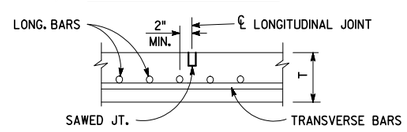
④ ADDITIONAL STEEL AT THE TRANSVERSE CONSTRUCTION JOINTS SHALL BE BARS OF EQUAL DIAMETER, AND A SPACING OF DOUBLE THAT SPECIFIED FOR THE LONGITUDINAL STEEL OF THE GIVEN THICKNESS. ENSURE THE LENGTH OF THE BARS IS 66 TIMES THE BAR DIAMETER ("D").

⑤ TRANSVERSE TIE BARS AT THE LONGITUDINAL CONSTRUCTION JOINTS SHALL BE BARS OF EQUAL DIAMETER AND SPACING TO THOSE SPECIFIED FOR THE TRANSVERSE STEEL OF THE GIVEN THICKNESS. ENSURE THE LENGTH OF THE BARS ARE 66 TIMES THE BAR DIAMETER ("D").

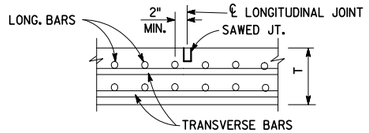
⑥ THE LONGITUDINAL CONSTRUCTION JOINT CAN BE RELOCATED OR MAY BE REPLACED BY A LONGITUDINAL CONTRACTION JOINT DEPENDING ON THE PLACEMENT WIDTH AND PLACED 4" MIN. FROM THE LANE LINE OR AS DIRECTED.

⑦ THE NUMBER OF BARS REQUIRED FOR THE VARIOUS PLACEMENT WIDTHS (INDICATED IN THE TABLE) INCLUDES 2 BARS AT "B" SPACING ON BOTH SIDES WITH A SETBACK "A" FROM THE LONG. JOINT.
"A" SPACING SHALL BE BETWEEN 3" AND 4".
"B" SPACING SHALL BE BETWEEN 3" AND THE MAX. SPACING FOR LONG. REINF. FROM THE TABLE ABOVE.
THE TWO SPACINGS COMBINED ("A" AND "B"), LOCATED AT BOTH LONGITUDINAL EDGES OF THE POUR, WILL PROVIDE FOR THE REMAINING SPACE AND STEEL LOCATION TO ROUND OUT THE PLACEMENT WIDTH.

SINGLE MAT REINFORCED PAVEMENTS

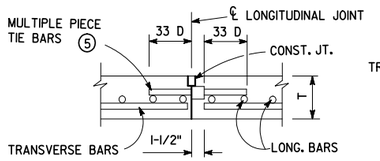


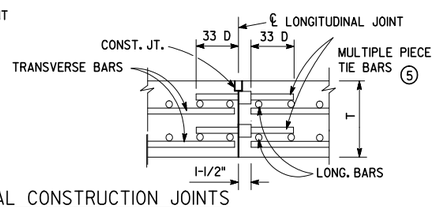
DOUBLE MAT REINFORCED PAVEMENTS



LONGITUDINAL CONTRACTION JOINTS

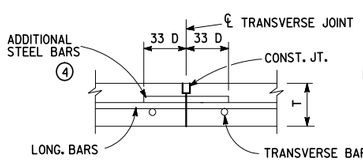
SECTION Z-Z

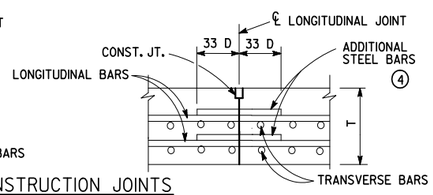




LONGITUDINAL CONSTRUCTION JOINTS

SECTION Y-Y





TRANSVERSE CONSTRUCTION JOINTS

SECTION X-X

JOINT DETAILS

GENERAL NOTES

1. DO NOT USE EXPANSION JOINTS EXCEPT AT STRUCTURE ENDS OR FIXED OBJECTS AS SHOWN ELSEWHERE ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. USE DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS SLOPE AS SHOWN ELSEWHERE ON THE PLANS. GENERALLY, PAVEMENT THICKNESS FOR CONNECTIONS AND RAMPS WILL BE THE SAME AS THE FREEWAY.
3. WITH THE APPROVAL OF THE ENGINEER, PLACE THE LONGITUDINAL CONSTRUCTION JOINT AT ANY OF THE LANE LINES TO GIVE A WIDER (MAXIMUM 3 LANE) OR DIFFERENT PLACEMENT. SAWED JOINTS WILL BE USED AT ALL INTERMEDIATE LANE LINES. IN WIDENED AREAS SAWED JOINTS WILL BE PLACED AS DIRECTED. LONGITUDINAL CONSTURCTION AND/OR SAWED JOINTS WILL NOT BE MORE THAN 17 FEET APART ON FREEWAY PAVEMENT AND FRONTAGE ROAD PAVEMENT AS MEASURED TRANSVERSELY UNLESS DIRECTED BY THE ENGINEER.
4. SAW LONGITUDINAL JOINTS AS SOON AS SAWING CAN BE ACCOMPLISHED WITHOUT DAMAGE TO THE PAVEMENT AND BEFORE 24 HOURS AFTER THE CONCRETE HAS BEEN PLACED. THE EXACT TIME TO BE APPROVED BY THE ENGINEER. ENSURE THE SAW CUT IS MADE WITH ONE PASS OF THE THE CONCRETE SAW.
5. ENSURE NOT TO SPLICE OVER 33% OF THE REGULAR LONGITUDINAL STEEL WITHIN ANY AREA BOUND BY TWO FEET PAVEMENT LENGTH (MEASURED PARALLEL TO THE CENTERLINE) AND TWELVE FEET PAVEMENT WIDTH (MEASURED PERPENDICULAR TO THE PAVEMENT CENTERLINE.)
6. PLACE THE LONGITUDINAL BARS, IN SINGLE MAT PLACEMENT, AT THE VERTICAL SLAB CENTER WITH A TOLERANCE OF 1/2 INCH. PLACE TRANSVERSE STEEL ABOVE OR BELOW THE LONGITUDINAL STEEL. ENSURE LONGITUDINAL AND TRANSVERSE STEEL SPACING DOES NOT VARY MORE THAN ONE TWELEFTH OF THE SPACING SHOWN HEREON.
7. ENSURE SPLICES ARE A MINIMUM OF 33 TIMES THE NOMINAL STEEL DIAMETER ("D").
8. THE CHAIRS USED TO SUPPORT THE BAR MAT SHALL BE OF SUFFICIENT STRUCTURAL QUALITY AND NUMBER TO HOLD THE MAT WITHIN THE PLACEMENT HEIGHT TOLERANCES, AND WILL BE OF A TYPE APPROVED BY THE ENGINEER. GALVANIZING OF CHAIRS WILL NOT BE REQUIRED. CHAIR SPACING WILL NOT EXCEED 30" IN THE TRANSVERSE AND 48" IN THE LONGITUDINAL DIRECTION. PLACEMENT MAY BE STAGGERED SO THAT CHAIRS IN ALTERNATE ROWS ARE CENTERED BETWEEN THE CHAIRS IN ADJACENT ROWS. WHEN MACHINE PLACING OF STEEL REINFORCEMENT IS USED, BAR CHAIRS WILL NOT BE REQUIRED, AND THE TRANSVERSE STEEL MAY BE PLACED EITHER ABOVE OR BELOW THE LONGITUDINAL STEEL. VIBRATION OF THE STEEL INTO POSITION WILL NOT BE PERMITTED.
9. ENSURE AT TRANSVERSE CONSTRUCTION JOINTS THAT THE REGULAR LONGITUDINAL STEEL EXTENDS A MINIMUM OF FOUR FEET ON EITHER SIDE OF THE JOINT.
10. VIBRATE CONCRETE WITH HAND-MANIPULATED MECHANICAL VIBRATORS ADJACENT TO ALL TRANSVERSE CONSTRUCTION JOINTS.
11. IF WIDTHS OCCUR OTHER THAN THE TYPICAL WIDTHS SHOWN, INDIVIDUAL BARS OF THE SIZE SPECIFIED HEREON MAY BE ADDED OR REMOVED TO OBTAIN THE APPROPRIATE WIDTH. ENSURE NOT TO EXCEED SPACING REQUIREMENTS.
12. USE MULTIPLE PIECE TIE BARS AT THE LONGITUDINAL CONSTRUCTION JOINTS. THE MULTIPLE PIECE TIE BAR ASSEMBLIES SHALL HAVE STOP TYPE COUPLINGS AND SHALL HAVE THREADS ON THE BARS. ENSURE THE MULTIPLE PIECE TIE BAR ASSEMBLIES DEVELOP A MINIMUM ULTIMATE TENSILE STRENGTH EQUAL TO 1-1/2 TIMES THE MINIMUM YIELD STRENGTH OF THE TRANSVERSE BARS BEING JOINED. TIE BARS SHALL BE DEFORMED REINFORCING BARS. TIE BAR ASSEMBLIES MADE MADE FROM STEELS OTHER THAN A 615 GRADE 60 WITH DEFORMATIONS OTHER THAN ASTM STD. MAY BE USED PROVIDED IT CAN BE PROVEN TO THE SATISFACTION OF THE ENGINEER THAT THEY ARE IN EVERY RESPECT THE EQUAL OF THE ASSEMBLIES SPECIFIED. LABORATORY TESTING OF THESE PROPOSED ASSEMBLIES, AT THE CONTRACTOR'S EXPENSE, MAY BE REQUIRED.
13. REPLACE TIE BARS OMITTED, LOST OR DAMAGED BY DRILLING AND EPOXY GROUTING AT THE CONTRACTOR'S EXPENSE.
14. ATTACH MULTIPLE PIECE TIE BARS TO THE REINFORCING MAT PRIOR TO PLACING CONCRETE. ENSURE THESE BARS SHALL NOT BE SHOVED, OR DRIVEN INTO THE SLAB AFTER THE CONCRETE HAS BEEN PLACED.
15. "LEAVE-OUTS" IN CONTINUOUSLY REINFORCED PAVEMENT SHALL BE KEPT TO A MINIMUM.
16. FOR TIE BAR JOINT LOCATIONS, SEE DETAILS SHOWN ELSEWHERE ON THE PLANS.
17. REPLACE ANY LONG. REINF. WHICH IS DAMAGED OR BENT. IF THERE IS NOT SUFFICIENT EXPOSED REINFORCING TO PROVIDE A MINIMUM OF A 33 BAR DIAMETER LAP. REMOVE THE EXISTING PAVEMENT AND EXPOSE THE EXISTING REINFORCING SUFFICIENTLY TO PROVIDE A 33 BAR DIAMETER LAP.

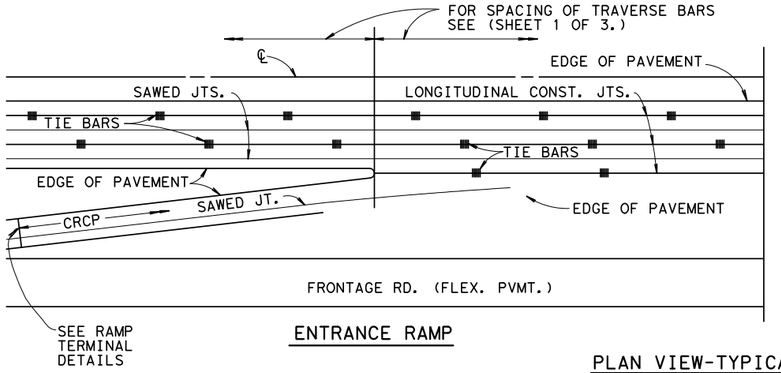
Texas Department of Transportation
Austin District Design

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT DETAILS

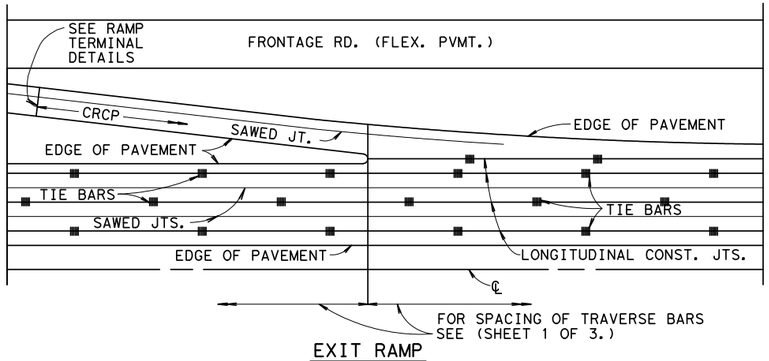
Austin District Standard

REVISIONS	DIST	FED REG	FEDERAL AID PROJECT •	SHEET
5/2009 Update for Terminal Anchor Jt. and notes mod.	AUS	6		
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

FILE: CRCP-09.dgn

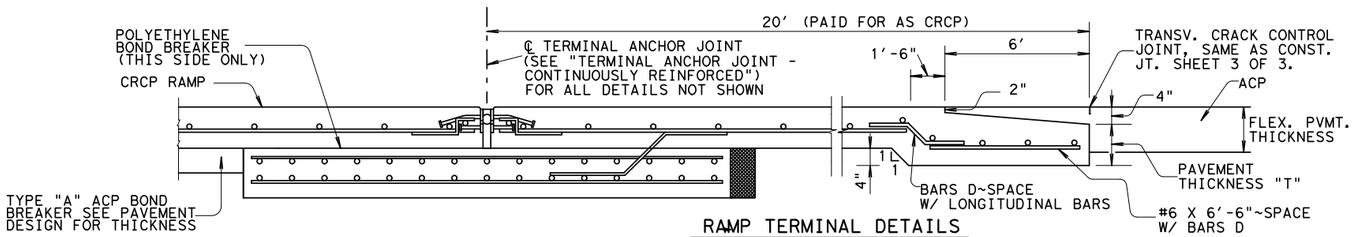


ENTRANCE RAMP

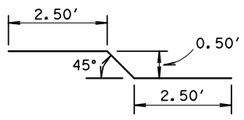


EXIT RAMP

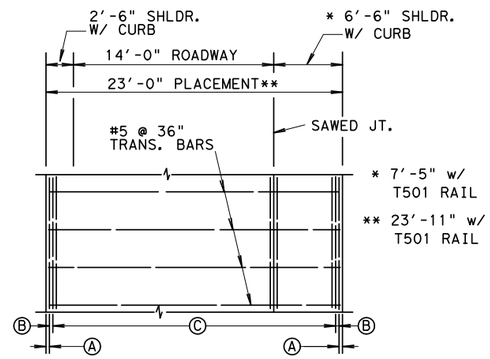
PLAN VIEW-TYPICAL FREEWAY PAVING



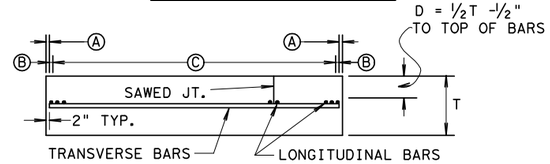
RAMP TERMINAL DETAILS



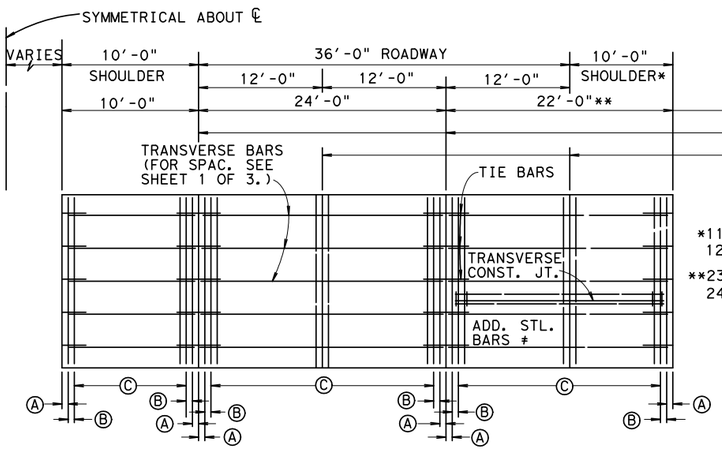
BARS D
(# 6)



RAMP PAVEMENT PLAN

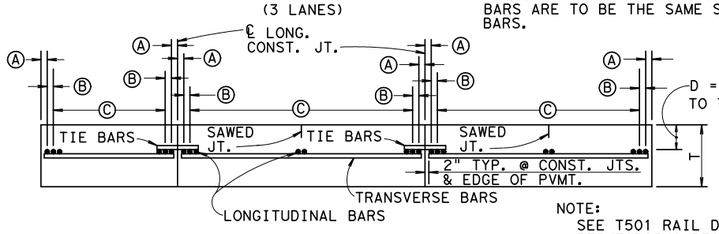


RAMP TYPICAL SECTION



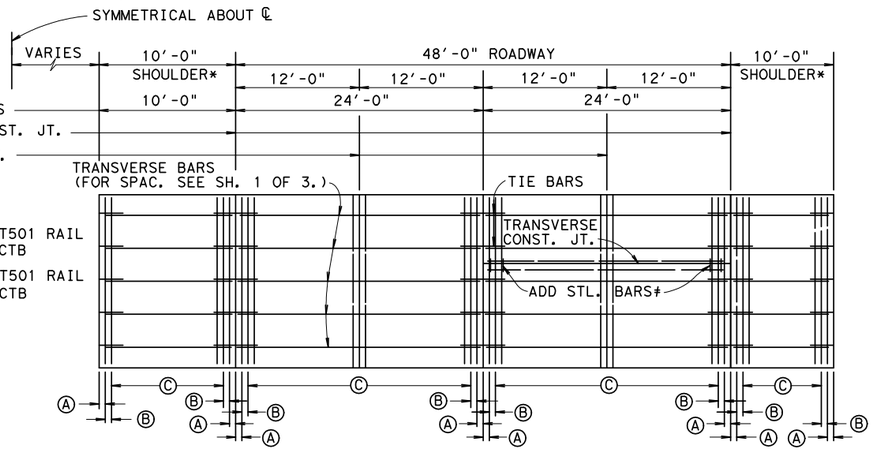
ROADWAY PAVEMENT PLAN
(3 LANES)

≠SEE SHEET 1 OF 3 FOR ADDITIONAL STEEL REQUIRED AT TRANSVERSE JOINTS. ADDITIONAL BARS ARE TO BE THE SAME SIZE AS LONGITUDINAL BARS.

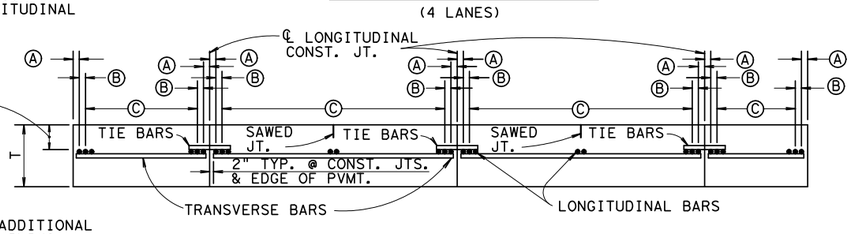


TYPICAL SECTION

NOTE:
SEE T501 RAIL DETAILS FOR ADDITIONAL REINFORCING REQUIRED FOR RAILING.



ROADWAY PAVEMENT PLAN
(4 LANES)



TYPICAL SECTION
(4 LANES)

NOTES:

THE SPACING Ⓒ, SHOWN ON SHEET 1 OF 3, FOR THE LONGITUDINAL REINFORCING IS THE MAXIMUM ALLOWABLE. WHERE PROPOSED PLACEMENT WIDTHS VARY FROM THE DESIGN WIDTHS SHOWN, THE SPACING Ⓑ AND ADJACENT SPACING Ⓒ SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER TO ACCOMODATE A REINFORCEMENT ARRANGEMENT EQUAL TO OR SLIGHTLY HEAVIER THAN THAT SHOWN.

ENSURE THE TRANSVERSE REINFORCEMENT IS IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH ON SHEET 1 OF 3. IF THE CONTRACTOR PREFERS A MORE UNIFORM TRANSVERSE REINFOREMENT SPACING THROUGHOUT, SPACINGS CLOSER THAN THOSE ESTABLISHED WILL BE ACCEPTABLE. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE EXTRA REINFORCING STEEL.

THE SPACING Ⓐ SHALL BE AS SHOWN ON SHEET 1 OF 3.

FOR LONGITUDINAL CONSTRUCTION AND SAWED JOINT DETAILS, TRANSVERSE CONSTRUCTION JOINT DETAILS, LONGITUDINAL SPLICES, AND GENERAL NOTES, SEE SHEETS 1 OF 3 AND 3 OF 3.

Texas Department of Transportation
Austin District Design

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT DETAILS

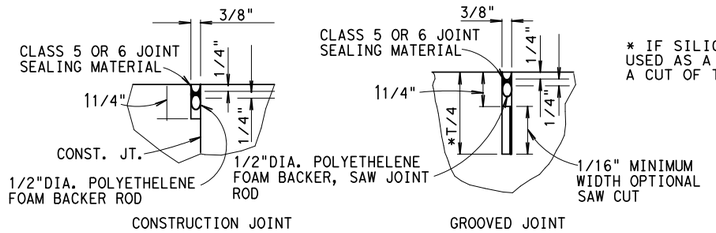
Austin District Standard

DIST	FED REG	FEDERAL AID PROJECT #	SHEET
AUS	6		

REVISIONS
5/2009 Update for Terminal Anchor Jt. and notes mod.

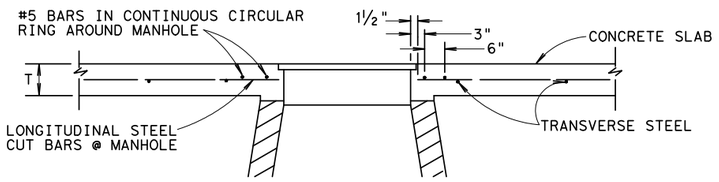
COUNTY	CONTROL	SECT	JOB	HIGHWAY

FILE: CRCP-09.dgn



* IF SILICEOUS RIVER GRAVEL IS USED AS A COARSE AGGREGATE, A CUT OF T/3 SHALL BE REQUIRED.

JOINT SEALING DETAILS

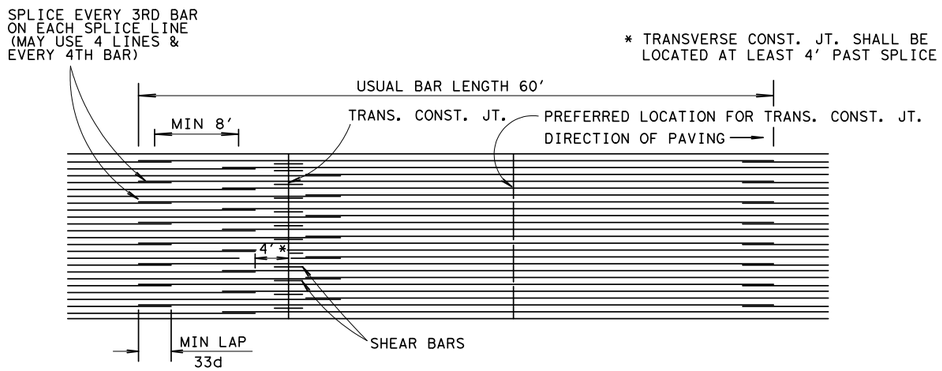


SECTION THRU MANHOLE

SHOWING ADDED REINFORCING STEEL IN SLAB

NOTE:

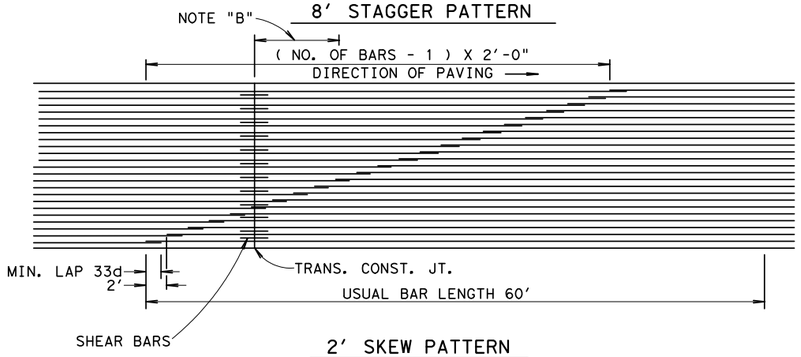
MANHOLES MAY BE LOCATED IN FREEWAY MEDIANS OR SHOULDERS BUT MUST BE AT LEAST ONE FOOT CLEAR OF THE TRAFFIC LANES. MANHOLES SHALL BE CONSTRUCTED AT LOCATIONS SHOWN ON THE PLANS. MANHOLE LOCATIONS SHALL NOT BE REVISED UNLESS APPROVED BY THE ENGINEER.



* TRANSVERSE CONST. JT. SHALL BE LOCATED AT LEAST 4' PAST SPLICE

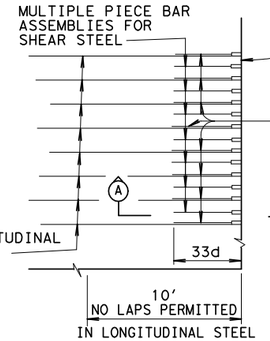
PREFERRED LOCATION FOR TRANS. CONST. JT.
DIRECTION OF PAVING →

8' STAGGER PATTERN



2' SKEW PATTERN

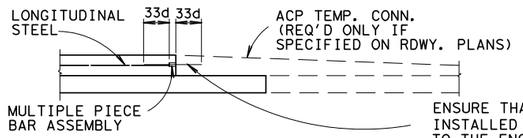
ALTERNATE SPLICE PATTERNS



PARTIAL PLAN

NOTE:

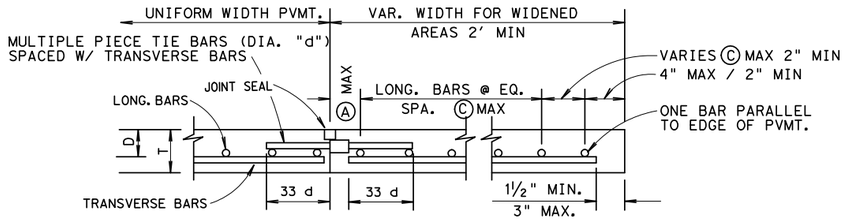
USE MULTIPLE PIECE BAR ASSEMBLIES AT THE TRANSVERSE CONSTRUCTION JOINT AT THE TEMPORARY END OF PAVEMENT. REFER TO NOTE 12 ON SHEET 1 OF 3 FOR REQUIREMENTS RELATING TO MULTIPLE PIECE BAR ASSEMBLIES. LAP SPLICE MULTIPLE PIECE BAR ASSEMBLIES AS SHOWN. USE ADDITIONAL SHEAR STEEL OF THE SAME MULTIPLE PIECE BAR ASSEMBLIES AS FURNISHED FOR THE LONGITUDINAL STEEL.



SECTION A-A

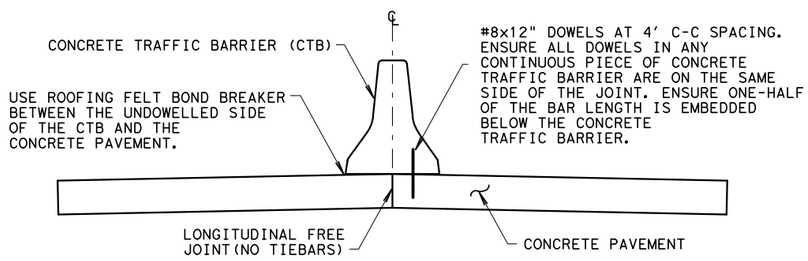
ENSURE THAT THIS END OF THE MULTIPLE PIECE BAR ASSEMBLY IS NOT INSTALLED ON THIS PROJECT. FURNISH AND DELIVER THIS PIECE TO THE ENGINEER FOR INSTALLATION ON THE ADJOINING PROJECT. INSTALL THREADED PLUGS IN ENDS OF COUPLERS TO PROTECT COUPLERS.

TRANSVERSE CONSTRUCTION JOINT AT TEMPORARY END OF CRCP BETWEEN ADJACENT PROJECTS



NOTE: TIE BARS ARE SHOWN ABOVE LONGITUDINAL BARS FOR CLARITY PLACE AT THE SAME LEVEL AS TRANSVERSE BARS.

LONGITUDINAL CONSTRUCTION JOINT



LONGITUDINAL FREE JOINT DETAIL UNDER A CAST-IN-PLACE CONCRETE TRAFFIC BARRIER

Texas Department of Transportation
Austin District Design

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT DETAILS

Austin District Standard

REVISIONS

5/2009 Update for Terminal Anchor Jt. and notes mod.

DIST	FED REG	FEDERAL AID PROJECT •		SHEET
AUS	6			
COUNTY		CONTROL	SECT	JOB	HIGHWAY

FILE: CRCP-09.dgn