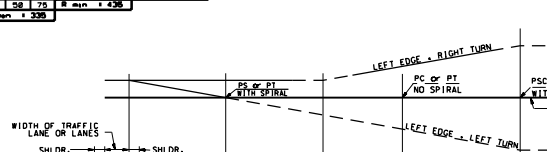
R METERS	Vd = 30 km/h L (METERS) %	Vd = 40 km/h L (METERS) TWO LANES	Vd = 40 km/h L (METERS) FOUR LANES	Vd = 50 km/h L (METERS) %	Vd = 50 km/h L (METERS) TWO LANES	Vd = 50 km/h L (METERS) FOUR LANES	Vd = 60 km/h L (METERS) %	Vd = 60 km/h L (METERS) TWO LANES	Vd = 60 km/h L (METERS) FOUR LANES	Vd = 70 km/h L (METERS) %	Vd = 70 km/h L (METERS) TWO LANES	Vd = 70 km/h L (METERS) FOUR LANES	Vd = 80 km/h L (METERS) %	Vd = 80 km/h L (METERS) TWO LANES	Vd = 80 km/h L (METERS) FOUR LANES	Vd = 90 km/h L (METERS) %	Vd = 90 km/h L (METERS) TWO LANES	Vd = 90 km/h L (METERS) FOUR LANES	Vd = 100 km/h L (METERS) %	Vd = 100 km/h L (METERS) TWO LANES	Vd = 100 km/h L (METERS) FOUR LANES	Vd = 110 km/h L (METERS) %	Vd = 110 km/h L (METERS) TWO LANES	Vd = 110 km/h L (METERS) FOUR LANES	Vd = 120 km/h L (METERS) %	Vd = 120 km/h L (METERS) TWO LANES	Vd = 120 km/h L (METERS) FOUR LANES
7000	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0
5000	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0
3000	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	RC	56	84	RC	61	92	2.3	67	101
2500	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	RC	56	84	2.3	61	92	2.7	67	101
2000	NC	0	0	NC	0	0	NC	0	0	NC	0	0	NC	0	0	RC	44	66	2.5	56	84	2.6	61	92	3.3	67	101
1500	NC	0	0	NC	0	0	NC	0	0	NC	0	0	RC	39	59	2.2	44	66	2.7	50	75	3.1	56	84	3.6	61	92
1400	NC	0	0	NC	0	0	NC	0	0	RC	39	59	2.4	44	66	2.8	50	75	3.3	56	84	3.8	61	92	4.4	67	101
1300	NC	0	0	NC	0	0	NC	0	0	RC	33	50	2.1	39	59	2.5	44	66	3.0	50	75	3.5	56	84	4.0	61	92
1200	NC	0	0	NC	0	0	NC	0	0	RC	33	50	2.2	39	59	2.7	44	66	3.2	50	75	3.7	56	84	4.2	61	92
1000	NC	0	0	NC	0	0	RC	28	42	2.1	33	50	2.6	39	59	3.1	44	66	3.6	50	75	4.2	56	84	4.8	61	92
900	NC	0	0	NC	0	0	RC	28	42	2.3	33	50	2.8	39	59	3.4	44	66	3.9	50	75	4.5	56	84	5.1	61	92
800	NC	0	0	NC	0	0	RC	28	42	2.5	33	50	3.1	39	59	3.6	44	66	4.2	50	75	4.9	56	84	5.4	61	92
700	NC	0	0	RC	22	33	2.1	28	42	2.8	33	50	3.4	39	59	4.0	44	66	4.6	50	75	5.2	56	84	5.7	61	92
600	NC	0	0	RC	22	33	2.4	28	42	3.1	33	50	3.8	39	59	4.3	44	66	5.0	50	75	5.6	56	84	6.0	61	92
500	NC	0	0	2.1	22	33	2.8	28	42	3.5	33	50	4.2	39	59	4.8	44	66	5.4	50	75	5.9	56	84			
400	RC	17	26	2.5	22	33	3.3	28	42	4.0	33	50	4.7	39	59	5.3	44	66	5.9	50	75						
300	RC	17	26	3.1	22	33	3.9	28	42	4.6	33	50	5.4	39	59	5.9	44	66									
250	2.3	17	26	3.5	22	33	4.2	28	42	5.0	33	50	5.7	39	59	6.0	44	66									
200	2.8	17	26	3.9	22	33	4.7	28	42	5.5	33	50	6.0	39	59												
175	3.0	17	26	4.1	22	33	5.0	28	42	5.8	35	52															
150	3.2	17	26	4.4	23	34	5.3	29	43	5.9	35	53															
140	3.5	17	26	4.5	24	35	5.4	29	44	6.0	36	54															
130	3.6	17	26	4.6	24	36	5.6	30	45																		
120	3.8	18	27	4.8	25	37	5.7	31	46																		
110	3.9	19	28	5.0	26	39	5.8	31	47																		
100	4.1	20	29	5.2	27	40	5.9	32	48																		
90	4.2	20	30	5.4	28	42	6.0	32	49																		
80	4.5	22	32	5.6	29	43																					
70	4.7	23	34	5.8	30	45																					
60	5.0	24	36	6.0	31	46																					
50	5.4	26	39																								
40	5.8	28	42																								
30	6.0	29	43																								

R min = 30 | R min = 55 | R min = 90 | R min = 135 | R min = 195 | R min = 250 | R min = 335 | R min = 435 | R min = 560 | R min = 705

INSTRUCTIONS

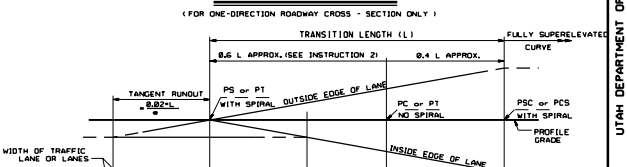
1. SPIRALS WITH CURVES ARE NOT REQUIRED BUT MAY BE DESIRABLE UNDER HIGH SPEEDS AND SHARP CURVES. WHEN A SPIRAL IS USED, THE LENGTH OF SPIRAL IS EQUAL TO MINIMUM TRANSITION LENGTHS.
2. ADJUST THE 0.6 L AND 0.4 L DIMENSIONS (SEE PROFILE SKETCH) SO THAT THE BEGIN AND END POINTS OF THE TRANSITION FALL ON EVEN, 20 m INTERVALS.
3. THE LAST LINE OF EACH SECTION OF THE TABLE SHOWS MINIMUM RADIUS FOR THE GIVEN SPEED.
4. SUPERELEVATE SURFACED SHOULDERS SHALL BE AT SAME RATE AS TRAFFIC LANES.
5. PLACE THE FOLLOWING INFORMATION ON THE CONSTRUCTION PLANS. RATE OF SUPERELEVATION
   BEGIN AND END OF TANGENT RUNOUT
   BEGIN AND END OF TRANSITION IF SPIRALS ARE NOT USED



NOTE: ANGULAR BREAKS TO BE APPROPRIATELY ROUNDED AS SHOWN BY DOTTED LINE.

PROFILE - SINGLE CROWN ROAD

(FOR ONE-DIRECTION ROADWAY CROSS - SECTION ONLY)



* USE THE LARGER OF THE TWO W's.

PROFILE - DOUBLE CROWN ROAD

DESIGN WIDTHS OF PAVEMENT FOR TURNING ROADWAYS (m)

EXCLUSIVE TURN LANES AND RAMPS

RADIUS ON INNER EDGE OF PAVEMENT R (m)	CASE I ONE-LANE, ONE-WAY OPERATION- NO PROVISION FOR PASSING A STALLED VEHICLE			CASE II ONE-LANE, ONE-WAY OPERATION- WITH PROVISION FOR PASSING A STALLED VEHICLE			CASE III EITHER ONE-WAY OR TWO-WAY		
	DESIGN TRAFFIC CONDITION								
	A	B	C	A	B	C	A	B	C
	PAVEMENT WIDTH (METERS)								
15	5.4	5.4	6.9	6.9	7.5	8.7	9.3	10.5	12.6
25	4.8	5.1	5.7	6.3	6.9	8.1	8.7	9.9	11.1
30	4.5	4.8	5.4	6.0	6.6	7.5	8.4	9.3	10.5
45	4.2	4.8	5.1	5.7	6.3	7.2	8.1	9.0	9.9
60	3.9	4.8	4.8	5.7	6.3	6.9	8.1	8.7	9.3
90	3.9	4.5	4.8	5.4	6.0	6.6	7.8	8.4	9.0
120	3.9	4.5	4.8	5.4	6.0	6.6	7.8	8.4	8.7
150	3.6	4.5	4.5	5.4	6.0	6.6	7.8	8.4	8.7
TANGENT	3.6	4.5	4.5	5.1	5.7	6.3	7.5	8.1	8.1

WIDTH MODIFICATION REGARDING EDGE OF PAVEMENT TREATMENT:				
NO STABILIZED SHOULDER	NONE	NONE	NONE	
MOUNTABLE CURB	NONE	NONE	NONE	
BARRIER CURB:	ONE SIDE	NONE	ADD 0.3 m	
	TWO SIDES	ADD 0.6 m	ADD 0.3 m	ADD 0.6 m
STABILIZED SHOULDER, ONE OR BOTH SIDES	NONE	DEDUCT SHOULDER WIDTH MINIMUM PAVEMENT WIDTH AS UNDER CASE I	DEDUCT 0.6 m WHERE SHOULDER IS 1.2 m WIDER	

NOTE: TRAFFIC CONDITION A = PREDOMINANTLY P VEHICLES, BUT SOME CONSIDERATION FOR SU TRUCKS.
TRAFFIC CONDITION B = SUFFICIENT SU VEHICLES TO GOVERN DESIGN, BUT SOME CONSIDERATION FOR SEMI-TRAILER VEHICLES.
TRAFFIC CONDITION C = SUFFIENT BUS AND COMBINATION - TYPES OF VEHICLES TO GOVERN DESIGN.

LEGEND

V - DESIGN SPEED
R - RADIUS OF CURVE - (METERS)
e - SUPERELEVATION - %
W - CROSS SECTIONAL DISTANCE IN METERS FROM AXIS OF ROTATION (NORMALLY THE CONTROL LINE) TO THE OUTER EDGE OF THE TRAFFIC LANE OR LANES.
L - TRANSITION LENGTH - m (METERS)
NC= NORMAL CROWN
RC= REVERSE CROWN (REMOVE ADVERSE CROWN AND SUPERELEVATE AT NORMAL CROWN)

ALL DIMENSIONS ARE SHOWN IN METERS (m) UNLESS OTHERWISE NOTED.

NO.	DATE	REVISIONS	REMARKS
1	1/27/2.74	BA CORRECT ERROR IN 5-6-6.6.5.6.8 VALUE	

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL: DATE DEC 14, 1999
CHAIRMAN STANDARDS COMMITTEE: DATE DEC 14, 1999
APPROVED: DEPUTY DIRECTOR

(METRIC)
SUPERELEVATION AND WIDENING

STANDARD DRAWING TITLE

STD. DWG. NO.
805-1