

TABLE 4

TABLE FOR ADJUSTING PLATFORM HEIGHT OFFSET ON
INSIDE OF CURVE BASED ON E_A AND D_C

		DEGREE OF CURVATURE (°)											
		H _{LOWER} (mm [in])											
		INSIDE	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5
SUPERELEVATION (in)	1	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	19.1 [3/4"]	25.4 [1"]	25.4 [1"]
	1.5	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]	31.8 [1 1/4"]
	2	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	44.5 [1 3/4"]	44.5 [1 3/4"]
	2.5	44.5 [1 3/4"]	44.5 [1 3/4"]	44.5 [1 3/4"]	44.5 [1 3/4"]	50.8 [2"]	50.8 [2"]	50.8 [2"]	50.8 [2"]	50.8 [2"]	50.8 [2"]	50.8 [2"]	50.8 [2"]
	3	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	63.5 [2 1/2"]	63.5 [2 1/2"]
	3.5	63.5 [2 1/2"]	63.5 [2 1/2"]	63.5 [2 1/2"]	63.5 [2 1/2"]	63.5 [2 1/2"]	69.9 [2 3/4"]	69.9 [2 3/4"]	69.9 [2 3/4"]	69.9 [2 3/4"]	69.9 [2 3/4"]	69.9 [2 3/4"]	69.9 [2 3/4"]

FOR COMBINATIONS OF D_C AND E_A THAT ARE NOT IN THE TABLE, USE THE FOLLOWING EQUATION:

$$H_{\text{LOWER}} = \frac{5}{8} [X_i - (\frac{B}{2})] + W_c + (\frac{B}{8}) E_A]$$

WHERE:

 X_i : 1753 mm

B: DISTANCE BETWEEN RAIL CENTERS (TABLE 4 USES 136lb RAIL = 1510 mm)

h: STANDARD PLATFORM HEIGHT ABOVE TOP OF RAIL (MIXED USE PLATFORM = 127 mm)

 W_c : ADDITIONAL WIDENING DUE TO HORIZONTAL CURVATURE (25.4 mm PER DEGREE OF CURVE) H_{LOWER} VALUES ARE TO BE ROUNDED UP TO NEAREST 6 mm OR $\frac{1}{4}$ in

TABLE 5

TABLE FOR ADJUSTING PLATFORM HEIGHT OFFSET ON
OUTSIDE OF CURVE BASED ON E_A AND D_C

		DEGREE OF CURVATURE (°)											
		H _{RAISE} (mm [in])											
		OUTSIDE	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5
SUPERELEVATION (in)	1	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]	38.1 [1 1/2"]
	1.5	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	57.2 [2 1/4"]	63.5 [2 1/2"]	63.5 [2 1/2"]
	2	76.2 [3"]	76.2 [3"]	76.2 [3"]	76.2 [3"]	76.2 [3"]	82.6 [3 1/4"]	82.6 [3 1/4"]	82.6 [3 1/4"]	82.6 [3 1/4"]	82.6 [3 1/4"]	82.6 [3 1/4"]	82.6 [3 1/4"]
	2.5	95.3 [3 3/4"]	95.3 [3 3/4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]	101.6 [4"]
	3	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	120.7 [4 3/4"]	127 [5"]	127 [5"]
	3.5	139.7 [5 1/2"]	139.7 [5 1/2"]	139.7 [5 1/2"]	139.7 [5 1/2"]	139.7 [5 1/2"]	139.7 [5 1/2"]	139.7 [5 1/2"]	139.7 [5 1/2"]	146.1 [5 3/4"]	146.1 [5 3/4"]	146.1 [5 3/4"]	146.1 [5 3/4"]

FOR COMBINATIONS OF D_C AND E_A THAT ARE NOT IN THE TABLE, USE THE FOLLOWING EQUATION:

$$H_{\text{RAISE}} = \frac{5}{8} [X_o + \frac{B}{2} + W_c]$$

WHERE:

 X_o : 1632 mm (FOR ACCESSIBILITY PLATFORMS, APPROPRIATE PLATFORM OFFSET IS TO BE USED IN FORMULA FOR H_{RAISE})

B: DISTANCE BETWEEN RAIL CENTERS (TABLE 5 USES 136lb RAIL = 1510 mm)

h: STANDARD PLATFORM HEIGHT ABOVE TOP OF RAIL (MIXED USE PLATFORM = 127 mm)

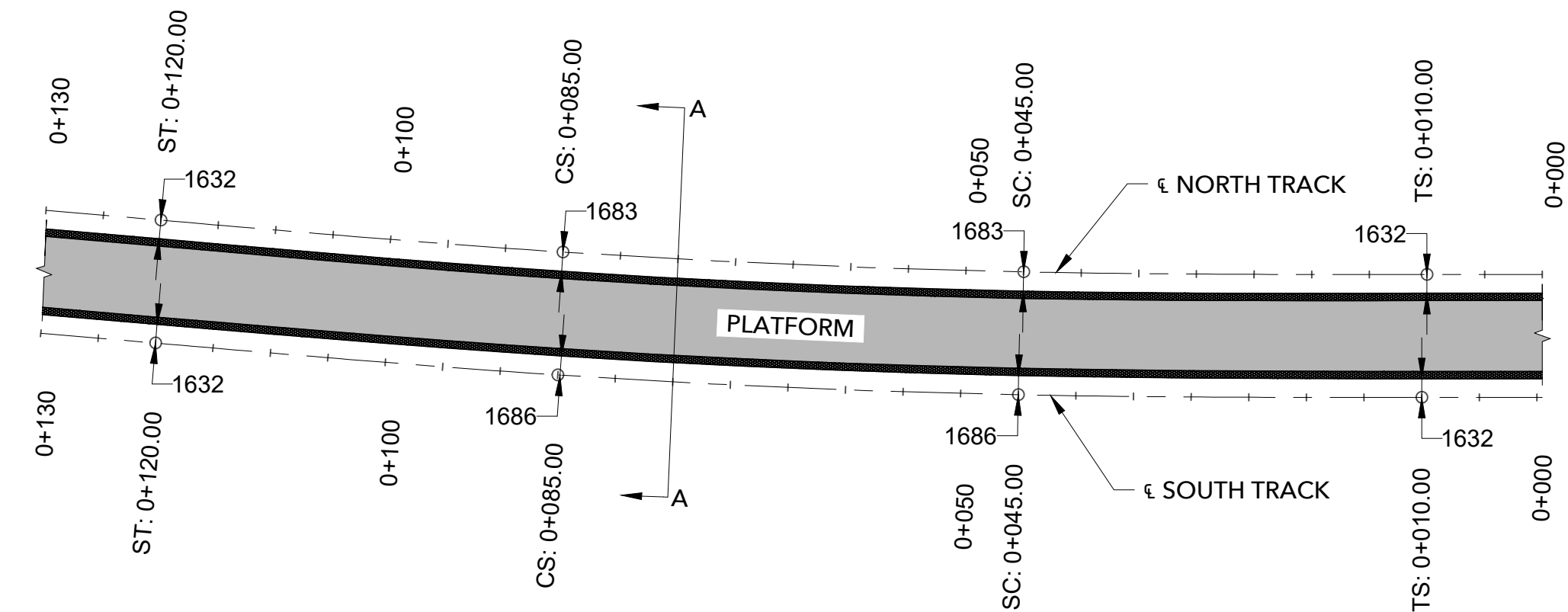
 W_c : ADDITIONAL WIDENING DUE TO HORIZONTAL CURVATURE (25.4 mm PER DEGREE OF CURVE) H_{RAISE} VALUES ARE TO BE ROUNDED DOWN TO NEAREST 6 mm OR $\frac{1}{4}$ in

PLATFORM ON CURVED TRACK

ADJUSTMENT OF PLATFORM HEIGHT FOR SUPERELEVATION AND
PLATFORM HORIZONTAL OFFSET FOR DEGREE OF CURVATURE

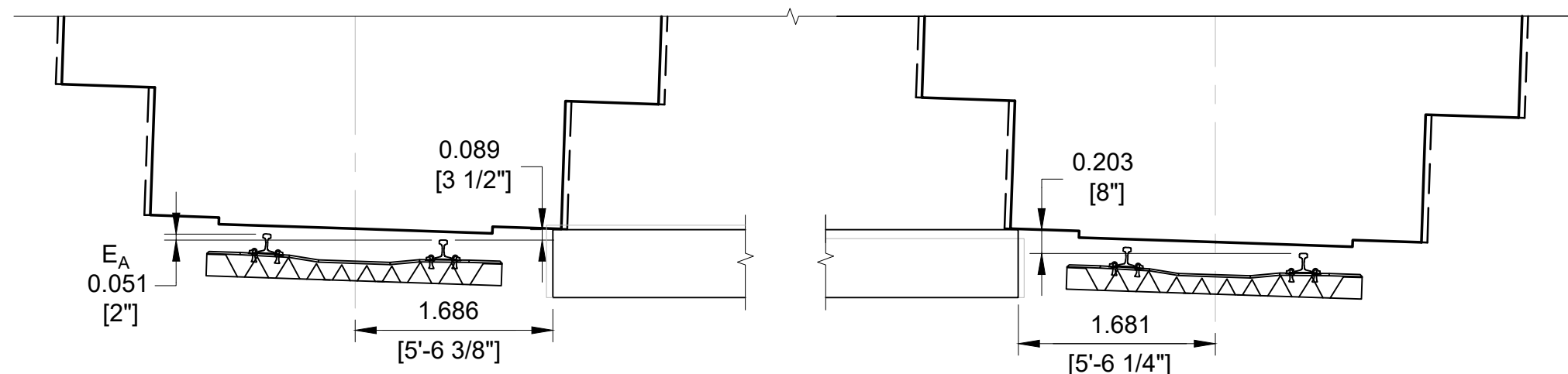
CURVED PLATFORM DESIGN EXAMPLE:

- $D_c = 2^\circ$
- $E_a = 2"$
- 136lb RAIL
- MIXED USE PLATFORM
- HORIZONTAL OFFSET: 1632 mm FROM TRACK CENTERLINE IN TANGENT TRACK (915 mm FROM GAUGE FACE OF RAIL)
- VERTICAL OFFSET: 127 mm FROM TOP OF RAIL IN TANGENT TRACK



EXAMPLE PLAN

(NOT TO SCALE)



EXAMPLE SECTION A-A

(NOT TO SCALE)

PLATFORM POSITION RELATIVE TO CURVE	DEGREE OF CURVATURE (°)	ACTUAL SUPERELEVATION (E_A)	HORIZONTAL OFFSET (RELATIVE TO TRACK CENTERLINE)	VERTICAL OFFSET (RELATIVE TO TOP OF LOW RAIL)	
				HEIGHT ADJUSTMENT - HRAISE	VERTICAL ADJUSTMENT
OUTSIDE	2	50.8 mm (2 in)	= HORIZONTAL OFFSET + W_c = 1632 mm + 50.8 mm = 1682.8 mm ROUNDED UP TO THE NEAREST 6 mm OR $\frac{1}{4}$ in: 1683 mm (66.25 in)	= $\frac{5}{8} [X_o + \frac{B}{2} + W_c]$ = $\frac{50.8}{1504} * (1632 + \frac{1504}{2} + 50.8) = 82.2$ mm ROUND DOWN TO THE NEAREST 6mm OR $\frac{1}{4}$ in: 76.2 mm (3 in)	= VERTICAL OFFSET + HEIGHT ADJUSTMENT = 127 mm + 76.2 mm = 203.2 mm (8 in)
PLATFORM POSITION RELATIVE TO CURVE	DEGREE OF CURVATURE (°)	ACTUAL SUPERELEVATION (E_A)	HORIZONTAL OFFSET (RELATIVE TO TRACK CENTERLINE)	VERTICAL OFFSET (RELATIVE TO TOP OF LOW RAIL)	
				HEIGHT ADJUSTMENT - HLOWER	VERTICAL ADJUSTMENT
INSIDE	2	50.8 mm (2 in)	= HORIZONTAL OFFSET + W_c + W_e = 1632 + 50.8 + $h(\frac{B}{8})$ = 1632 + 50.8 + 127 x $(\frac{50.8}{1504}) = 1687.1$ mm ROUND UP TO THE NEAREST 6mm OR $\frac{1}{4}$ in: 1689.1 mm (66.5 in)	= $\frac{5}{8} [X_i - \frac{B}{2} + W_c + E_A(\frac{B}{8})]$ = $\frac{50.8}{1504} * (1753 - \frac{1504}{2} + 50.8 + \frac{127}{8} * 50.8) = 35.7$ mm ROUND UP TO THE NEAREST 6mm OR $\frac{1}{4}$ in: 38.1 mm (1.5 in)	= VERTICAL OFFSET - HEIGHT ADJUSTMENT = 127 mm - 38.1 mm = 88.9 mm (3.5 in)

TABLE 6

EXAMPLE OF PLATFORM OFFSET TABLE

SOUTH TRACK						
STATION	CURVE POINTS	NORTHING	EASTING	ELEVATION (m)	HORIZONTAL OFFSET FOR INSIDE CURVE (mm)	VERTICAL OFFSET FOR INSIDE CURVE (mm)
0+000	TANGENT	xxx	xxx	xxx	1632	127
0+005	TANGENT	xxx	xxx	xxx	1632	127
0+010	TANGENT TO SPIRAL (TS)	xxx	xxx	xxx	1632	127
0+015	SPIRAL	xxx	xxx	xxx	1640	122
0+020	SPIRAL	xxx	xxx	xxx	1647	116
0+025	SPIRAL	xxx	xxx	xxx	1655	111
0+030	SPIRAL	xxx	xxx	xxx	1663	105
0+035	SPIRAL	xxx	xxx	xxx	1670	100
0+040	SPIRAL	xxx	xxx	xxx	1678	94
0+045	SPIRAL TO CURVE (SC)	xxx	xxx	xxx	1686	89
0+050	CURVE	xxx	xxx	xxx	1686	89
0+055	CURVE	xxx	xxx	xxx	1686	89
0+060	CURVE	xxx	xxx	xxx	1686	89
0+065	CURVE	xxx	xxx	xxx	1686	89
0+070	CURVE	xxx	xxx	xxx	1686	89
0+075	CURVE	xxx	xxx	xxx	1686	89
0+080	CURVE	xxx	xxx	xxx	1686	89
0+085	CURVE TO SPIRAL (CS)	xxx	xxx	xxx	1686	89
0+090	SPIRAL	xxx	xxx	xxx	1678	94
0+095	SPIRAL	xxx	xxx	xxx	1670	100
0+100	SPIRAL	xxx	xxx	xxx	1663	105
0+105	SPIRAL	xxx	xxx	xxx	1655	111
0+110	SPIRAL	xxx	xxx	xxx	1647	116
0+115	SPIRAL	xxx	xxx	xxx	1640	122
0+120	SPIRAL TO TANGENT (ST)	xxx	xxx	xxx	1632	127
0+125	TANGENT	xxx	xxx	xxx	1632	127
0+130	TANGENT	xxx	xxx	xxx	1632	127

GENERAL NOTES:

- ALL UNITS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- ADDITIONAL CLEARANCE REQUIREMENTS MUST BE RUN OUT LINEARLY THROUGHOUT THE ENTIRE LENGTH OF THE SPIRAL.

METRIC CONVERSION: 1 inch=25.4mm, 1 foot=304.8mm

0	25/04/30	INITIAL VERSION ESTABLISHED	
No.	Date	Revision	By Approved

Standard		TRACK CLEARANCE DESIGN GUIDELINE RAIL PLATFORMS ON CURVED TRACK	
Drawn	AO	Checked	MD
Approved		Approved	
Director, Engineering		Track	

Date	APRIL 30, 2025	Plan Number	GTS-3004
Rev	0		
REFERENCE: -			Sheet 2 OF 2