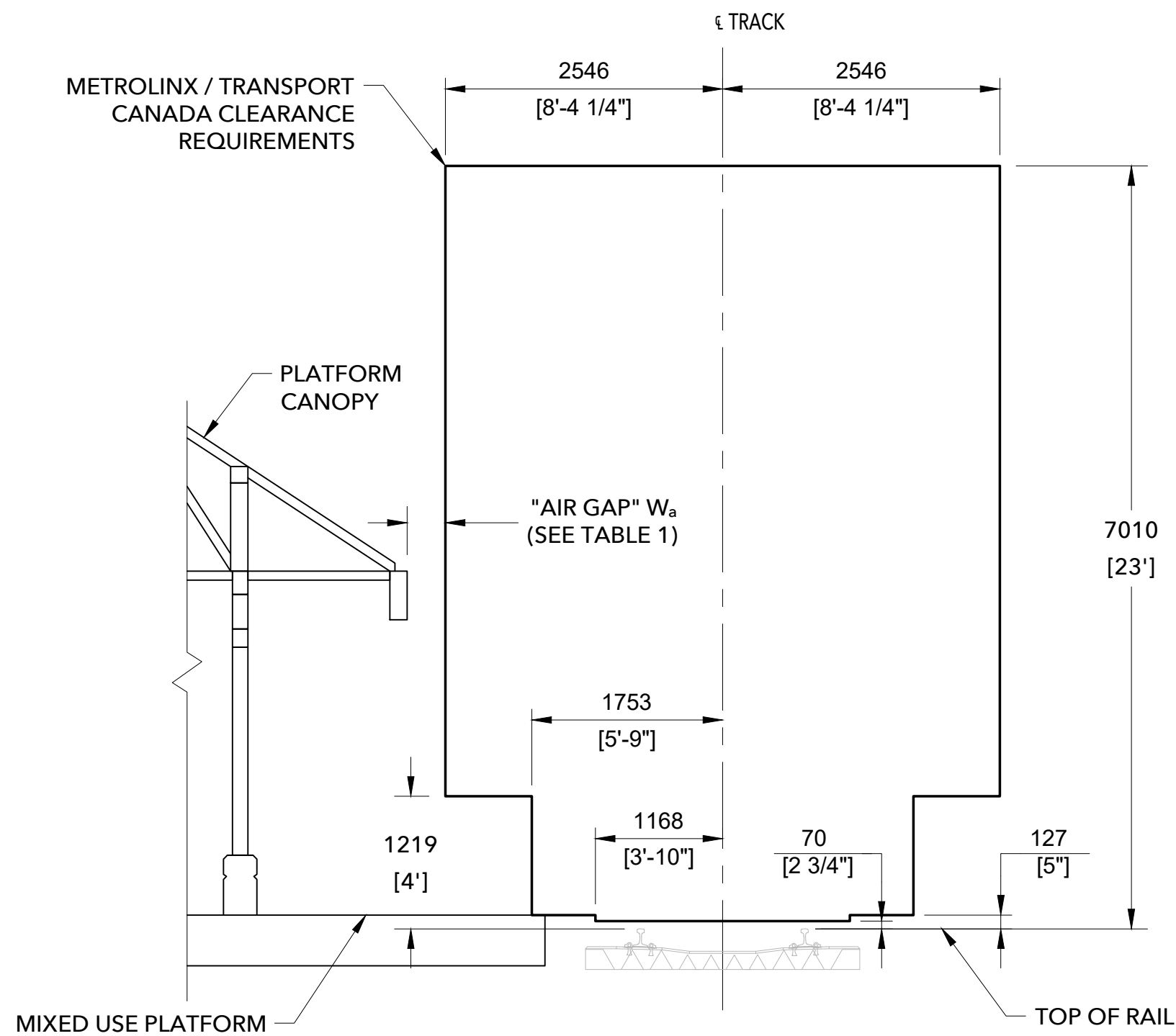
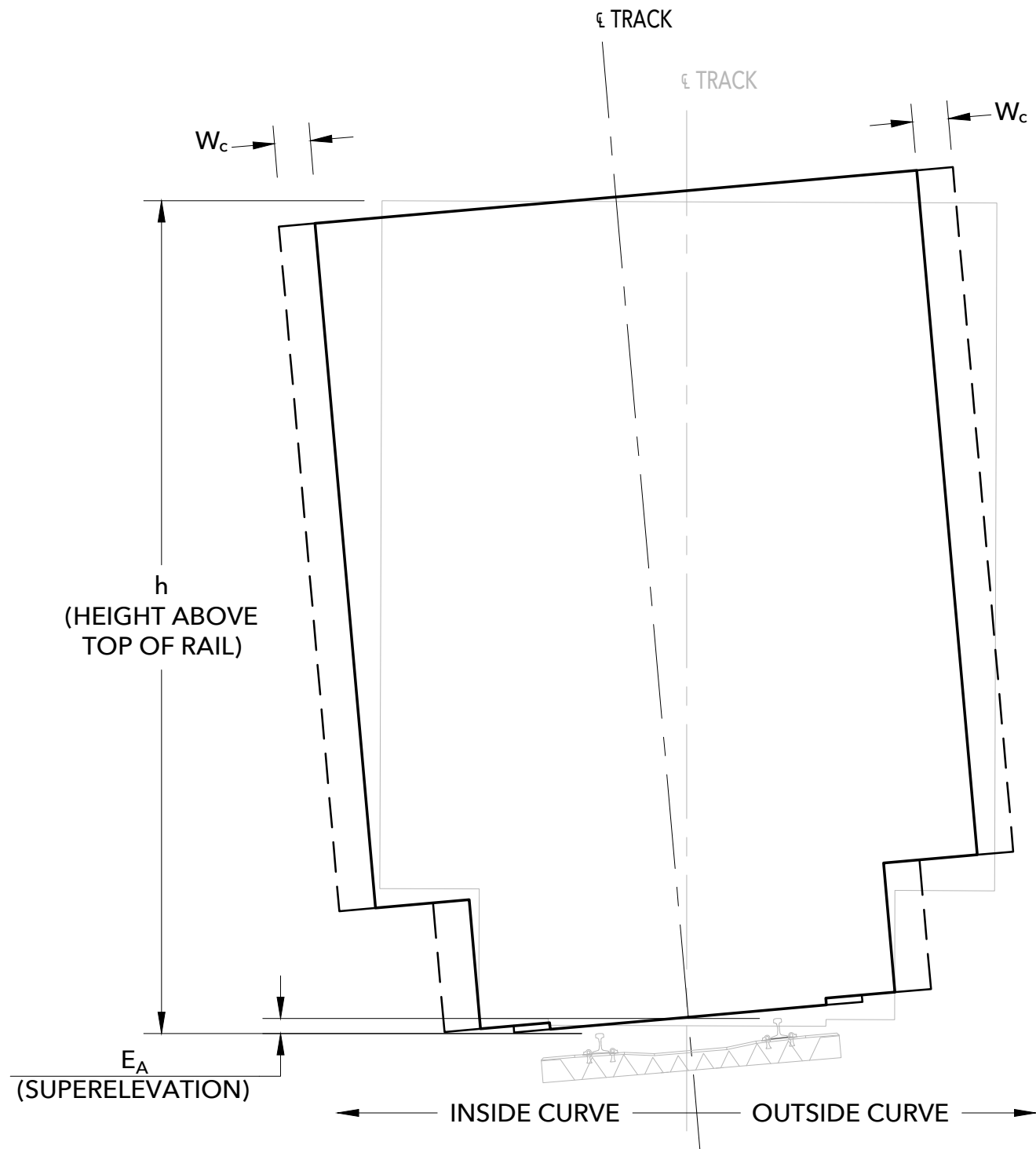
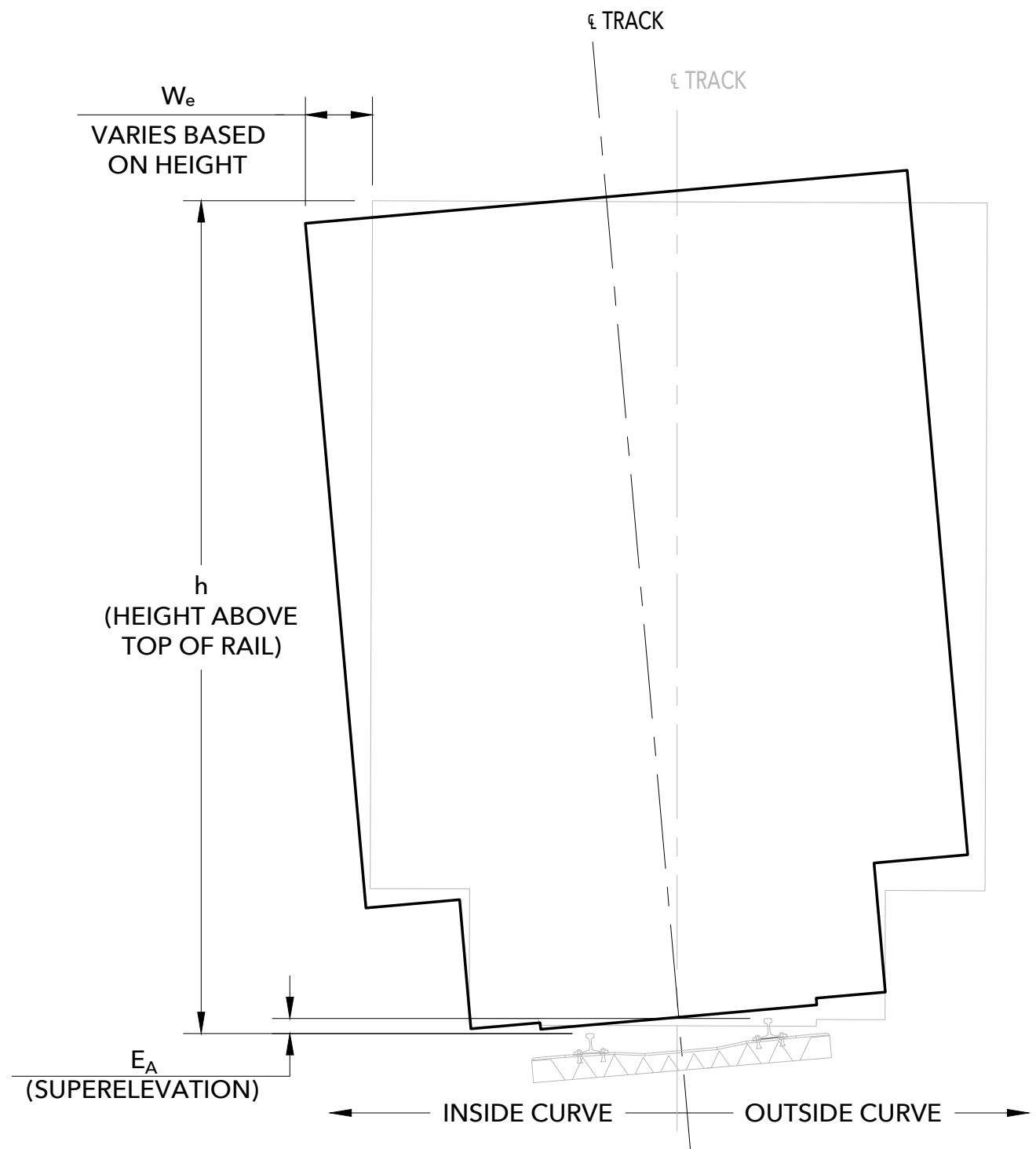




CLEARANCE ENVELOPE FOR TANGENT TRACK



ADDITIONAL WIDENING DUE TO HORIZONTAL CURVATURE



ADDITIONAL WIDENING DUE TO SUPERELEVATION

CLEARANCE ENVELOPE FOR CURVED TRACK

INSIDE CURVE:		
BELOW 5" CLEARANCE	=	3'-10" + W _c + W _e
BETWEEN 5" AND 4' CLEARANCE	=	5'-9" + W _c + W _e
ABOVE 4' CLEARANCE	=	8'-4 1/4" + W _c + W _e + W _a
OUTSIDE CURVE:		
BELOW 5" CLEARANCE	=	3'-10" + W _c
BETWEEN 5" AND 4' CLEARANCE	=	5'-9" + W _c
ABOVE 4' CLEARANCE	=	8'-4 1/4" + W _c + W _a

TABLE 1

ADDITIONAL CLEARANCE W_a "AIR GAP" REQUIRED FOR ADJACENT STRUCTURES HIGHER THAN 1219mm (4') ABOVE TOP OF RAIL

TRACK SPEED (mph)	W _a (mm)	W _a (in)
30	25.4	1.0
40	38.1	1.5
50	50.8	2.0
60	63.5	2.5
70	76.2	3.0
80	88.9	3.5
90	101.6	4.0
100	114.3	4.5

*AIR GAP IS ADDITIONAL CLEARANCE BEYOND THE MINIMUM CLEARANCE ENVELOPE FOR SPEEDS GREATER THAN 30 mph. REQUIRED FOR FIXED STRUCTURES ADJACENT TO THE TRACK. THE AIR GAP ACCOUNTS FOR TOLERANCES OF TRACK AND ADJACENT STRUCTURES. THE REQUIREMENT FOR AN AIR GAP MAY BE WAIVED AT THE DISCRETION OF THE DIRECTOR, ENGINEERING - TRACK.

TABLE 2

TABLE OF ENVELOPE WIDENING FOR SUPERELEVATION AT THE TOP OF THE CLEARANCE ENVELOPE* (7010mm)

E _A (in)	E _A (mm)	W _e (mm)	W _e (in)
1	25.4	114.3	4 1/2
1 1/2	38.1	177.8	7
2	50.8	241.3	9 1/2
2 1/2	63.5	298.45	11 3/4
3	76.2	355.6	14
3 1/2	88.9	412.75	16 1/4
4	101.6	469.9	18 1/2
4 1/2	114.3	533.4	21
5	127	590.55	23 1/4

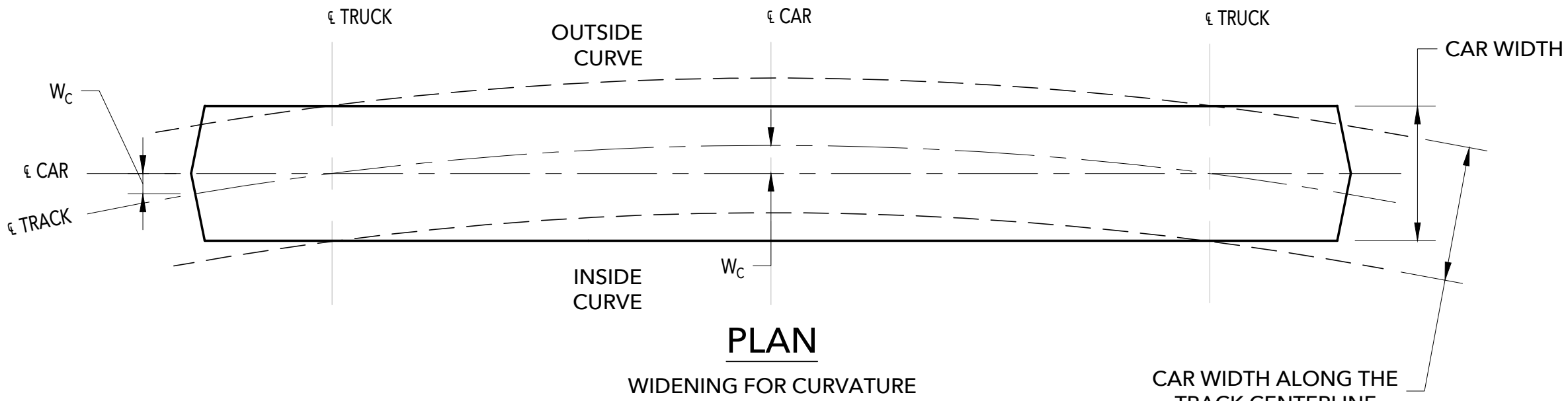
*FORMULA FOR WIDENING CLEARANCE ENVELOPE FOR SUPERELEVATION AT ANY SPECIFIC HEIGHT ABOVE TOP OF RAIL:
W_e = h (E_A/B)
W_e: WIDENING OF CLEARANCE ENVELOPE FOR SUPERELEVATION
h: HEIGHT TO OBSTRUCTION ABOVE TOP OF RAIL
E_A: SUPERELEVATION
B: DISTANCE BETWEEN CENTER OF RAILS (TABLE 2 USES 136lb RAIL = 1510mm)

TABLE 3

TABLE OF WIDENING FOR HORIZONTAL CURVATURE

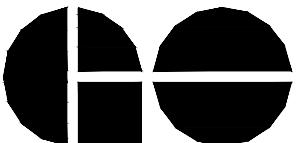
DEGREE OF CURVE	RADIUS (m)	W _c (mm)	W _c (in)
1	1746	25.4	1
2	873	50.8	2
3	582	76.2	3
4	436	101.6	4
5	349	127	5
6	291	152.4	6
7	249	177.8	7
8	218	203.2	8

*FORMULA FOR WIDENING CLEARANCE ENVELOPE FOR HORIZONTAL CURVATURE:
W_c = 25.4mm * DEGREE OF CURVE
W_c: WIDENING OF CLEARANCE ENVELOPE FOR HORIZONTAL CURVATURE



GENERAL NOTES:

- THIS DRAWING APPLIES TO STRUCTURES OVER OR BESIDE THE RAILWAY TRACKS, EXCEPT FOR RAILWAY TUNNELS, BRIDGES, SNOW SHEDS, OR ANY STRUCTURES RELATED TO INDUSTRIAL SIDINGS. EXAMPLES OF STRUCTURES TO WHICH THIS STANDARD APPLIES INCLUDE PLATFORMS, CANOPIES, BUILDINGS, POLES, FENCES, HANDRAILS, ETC. REFER TO GENERAL GUIDELINES FOR DESIGN OF RAILWAY BRIDGES AND STRUCTURES FOR MORE DETAILS.
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH GTS-3003 AND METROLINX TRACK STANDARDS SECTION 19.2. SHOULD THERE BE A CONFLICT BETWEEN THIS DRAWING AND THE STANDARDS, THE MOST RESTRICTIVE SHALL APPLY.
- ALL UNITS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

METRIC CONVERSION: 1 inch=25.4mm, 1 foot=304.8mm			
1	25/04/30	WIDENING FOR CURVATURE DETAILS UPDATED	
0	18/08/31	REVISED PDF VERSION ESTABLISHED	
No.	Date	Revision	By Approved
Standard/ TRACK CLEARANCE DESIGN GUIDELINE			
Drawn	NA	Checked MD	Approved Reb Director, Engineering - Track
 METROLINX			
Date	APRIL 30, 2025		Plan Number GTS-3004 Rev 1
REFERENCE: -			Sheet 1 OF 2