

भारत सरकार (GOVERNMENT OF INDIA)
रेल मंत्रालय (MINISTRY OF RAILWAYS)
रेलवे बोर्ड (RAILWAY BOARD)

No. 2024/CE-II/CS/IRPWM2024

New Delhi, dated 18.08.2025

General Managers, All Indian Railways & Production Units
General Manager (Const.), N.F. Railway, Guwahati
General Manager/CORE/Prayagraj
Director General, RDSO/Alambagh, Lucknow
Chief Commissioner of Railway Safety, Lucknow
Director General, NAIR, Vadodara
Director General, IRICEN, Pune
Director General, IRIEEN, Nasik.
Director General, IRISSET, Secunderabad
Director General, IRIMEE, Jamalpur
Director General, IRITM, Lucknow
Principal Chief Engineers, All Indian Railways & Production Units
CAO/Const., All Indian Railways
Principal Financial Advisors, All Indian Railways & Production Units
Managing Director, IRCON, New Delhi
Managing Director, RITES, Gurugram
Managing Director, DMRC, New Delhi
Managing Director, CONCOR, New Delhi
Chairman & Managing Director, RVNL, New Delhi
Managing Director, DFCCIL, New Delhi
Managing Director, MRVC, Mumbai
Vice Chairman, RLDA, New Delhi
Chairman & Managing Director, KRCL, Mumbai
Genl. Secretaries, AIRF, NFIR, IRPOF, FROA, DAI (Railways) Rail Bhawan, New Delhi

Sub: Correction Slip No. 6 to the Indian Railways Permanent Way Manual-2024.

Ministry of Railways (Railway Board) has decided that correction/addition as indicated in the enclosed Correction Slip No. 6 dated 18.08.2025 to IRPWM-2024 be made.

Receipt of this letter may please be acknowledged.

Director, Civil Engg. (Plg.)
Railway Board

Copy to:-

Sr. PPS/PS to CRB & CEO, MF, MI, M(T&RS), M(O&BD), Secretary.
AM(CE), AM(Works), AM(Budget), AM(Traction), AM(Fin.), AM(Sig.), AM(Plg.),
AM(Mech.Engg.), AM(PU.), AM(Tele.), AM(Traffic), AM(M&BD), AM(T&C), AM(Comm.).

PED(Bridge), PED(Vigilance), PED(Safety), PED(Staff), PEDTT(M), PEDTK(M&MC), EDCE(P),
EDCE(G), EDCE(B&S), EDCE(B&S)-II, ED(L&A), ED/GS/SD,ED/Transf., ED/GS(Civil)-II,
EDV(E), ED/GS(Civil)-I, ED(Safety), EDF(X)-I, EDF(X)-II, EDTK(P&P), EDTK(MC), DCE(B&S),
DCE(B&S)-II, Dir./GS(Civil)-III, Dir./GS(Civil)-I, DVE-I & DVE-II

INDIAN RAILWAYS PERMANENT WAY MANUAL - 2024
ADDENDUM AND CORRIGENDUM SLIP NO. 06 DATED 18.08.2025

1. The existing para 838 shall be replaced by the following:

838 Working of Motor Trolleys –

(1) A motor trolley shall be run only under block protection or following a train/motor trolley in accordance with special instructions.

(2) When a motor trolley that is worked under block protection or following a train /motor trolley, breaks down (i.e. it cannot be propelled even by hand) in the block section, the official-in-charge should remove it clear off the track and send a written advice to the nearest Station Master/Block Hut-in-charge returning the 'Authority to proceed'/ Motor Trolley permit/ line clear ticket/ token/ tablet or advise the nearest Station Master/Control through the emergency telephone with exchange of Private Number about the same. He should not place again the motor trolley on the line without the written permission of either Station Master/ Block Hut-in-charge at the end of the block section concerned.

(3) Following a Train/Motor Trolley – Motor trolley may follow a fully vacuum/air brake train or a light engine or another motor trolley in the same block section during daylight hours and in clear weather under special instructions issued by the Railway Administration.

2. A new sub-para 852(7) shall be added to the existing para 852 as under:

- (7) (a) JE/SSE/P.Way may impose suitable speed restriction along with deployment of lookout man for adjacent line during unloading of ballast or sleeper DMT.
- (b) After unloading of ballast or sleepers, first train shall pass with restricted speed of 45 kmph or less, as imposed by JE/SSE/P.Way. Caution Order shall indicate the location where the material has been unloaded and also that the temporary engineering indicator boards are not displayed at site.

3. The existing sub-para 902(1) shall be replaced by the followings:

902(1) The classification of level crossings, based on the volume of rail and road traffic, shall be as under:

Class of LC	Criteria
Special.....for roads	TVUs greater than 50,000
'A' class.....for roads	TVUs from 50,000 & up to 30,000; or Line capacity utilization 80% (on single line) and number of road vehicles greater than 1000
'B' class.....for roads	TVUs less than 30,000 and up to 10,000 and number of road vehicles greater than 750 'B' Class is further subdivided as following– B1 class...TVUs less than 30,000 and up to 25,000 B2 class... TVUs less than 25,000 and up to 10,000
'C' class.....for roads	All other level crossings for road, not covered in above classes

4. Item No. 2, 3, 8, 9(b) & 9(d) of Annexure 9/1 shall be read as under:

Item	Details	Dimensions and details for various classes of crossings				Remarks
		Special	‘A’ Class	‘B’ Class	‘C’ Class	
1	2	3	4	5	6	7
2	Minimum length of check rail (for a square crossing)	2 metres more than width of gate.				
3	Angle of crossing between gates.	Not less than 45° between centre line of road and Railway.				
8	Minimum distance of gate lodge from- (a) Centre line of nearest Track	6 metres				If the line of approach road is on a curve at or near a level crossing, the gate lodge must be built on the outside of curve.
	(b) Edge of Road Metalling	6 metres				
	Old Standards –	6 metres	4.5 metres	4.5 metres	3 metres	
9	Interlocking and communication devices to be provided-					
	(b) Interlocking of gates with signals- (i) If within station limits.	Should be interlocked with station signals	Should be interlocked with station signals	Should be Interlocked with Station Signals irrespective of the location of gate i.e. Suburban, non-Suburban sections (where operated	Should be interlocked with signals. (i) Within station limits where operated from cabin, (ii) In Automatic Signalling territories.	(i) The level crossing inside station limits should be beyond the limits up to which shunting is normally carried out or at an adequate distance of at least 250 metres ahead of the starters and trailing points of the station where Advanced Starters/Shunting Limit Boards are not provided. (ii) In case of level crossings falling on Suburban Sections they may be considered for upgradation to 'B' class in the event of their not qualifying for upgradation to "Special" or 'A' class and when so upgraded to 'B' class the facilities as indicated in column 5 should be provided. Apart from above, Interlocking of level crossing gates can be considered by the Competent

				from cabins) or Automatic Signalling territories.		Authority as per the instruction issued from time to time.
	(ii) If outside station limits.	Should be interlocked with station signals	Should be interlocked with station signals	Should be Interlocked with Gate Signals irrespective of the location of gate i.e. Suburban, non-Suburban sections (where operated from cabins) or Automatic Signalling territories.	To be interlocked in Automatic Signalling territories.	(i) In the case of level crossings protected by signals where the sighting of the signal by an engine Driver is inadequate a warning board should be placed at not less than the emergency braking distance in rear of the gate stop signal. The board should be vertical 2000 mm by 450 mm with alternate black and yellow strips 125 mm wide painted on it at an angle of 45°. The top of the board should be 4 m above Rail level. The board need not be lit at night but should as far as possible be provided with scotchlite or other effective light reflectors. (ii) Where level crossing is situated outside the station limit but in close proximity thereof, the clear distance between the level crossing and an outer signal should not be less than a full train length. Apart from above, Interlocking of level crossing gates can be considered by the Competent Authority as per the instruction issued from time to time.
	(d) Warning bell operated by approaching train.	Provision of warning bell or hooter operated by approaching train at Interlocked LC Gates in suburban section and non-suburban sections be provided on sections having Automatic Signalling.				(Ref: RB's letter No. 2011/SIG/WP/LC/IR/1 dated 20.02.2013)

5. New items at S. No. 20 & 21 shall be added in Annexure 9/1 as under:

Item	Details	Dimensions and details for various classes of crossings				Remarks
		Special	'A' Class	'B' Class	'C' Class	
1	2	3	4	5	6	7
20	Vertical clearance between the underside of the top member of the height gauge and the road surface.	4.76 m to 4.78 m				
21	Clearance between the road surface and the boom of lifting barrier when the gate is closed to Road Traffic	0.8 m to 1 m				As per Para 14.2.1 (h) of IRSEM

6. The existing Annexure - 4/2, 4/5, 4/6 and 4/7 shall be replaced by the following:

Annexure - 4/2 ([Para 429](#))

Table for spacing of Sleepers in 1 in 12 fan shaped Turnout

(Taking off from Straight)

Sleeper No.	Spacing on gauge face on tongue rail for ML side		Spacing on gauge face of stock rail for ML side	
	Spacing	Cumulative From SRJ	Spacing	Cumulative from SRJ
	150		150	
1		150		150
	457		457	
2		607		607
	510		510	
3		1117		1117
	695		695	
4		1812		1812
	537		537	
5		2349		2349
	550		550	
6		2899		2899
	550		550	
7		3449		3449
	550		550	
8		3999		3999
	550		550	
9		4549		4549
	550		550	
10		5099		5099
	550		550	
11		5649		5649
	550		550	
12		6199		6199
	550		550	
13		6749		6749
	550		550	
14		7299		7299
	550		550	
15		7849		7849
	550		550	
16		8399		8399
	550		550	
17		8949		8949
	550		550	
18		9499		9499
	550		550	
19		10049		10049
	550		550	
20		10599		10599
	526		550	
21		11125		11149
	549		550	
22		11674		11699
	549		550	
23		12223		12249
	549		550	
24		12772		12799
	549		550	
25		13321		13349

	549		550	
26		13870		13899
	549		550	
27		14419		14449
	549		550	
28		14968		14999
	549		550	
29		15517		15549
	549		550	
30		16066		16099
	549		550	
31		16615		16649
	549		550	
32		17164		17199
	549		550	
33		17713		17749
	549		550	
34		18262		18299
	549		550	
35		18811		18849
	549		550	
36		19360		19399
	548		550	
37		19908		19949
	549		550	
38		20457		20499
	549		550	
39		21006		21049
	549		550	
40		21555		21599
	549		550	
41		22104		22149
	549		550	
42		22653		22699
	549		550	
43		23202		23249
	549		550	
44		23751		23799
	549		550	
45		24300		24349
	549		550	
46		24849		24899
	549		550	
47		25398		25449
	549		550	
48		25947		25999
	549		550	
49		26496		26549
	549		550	
50		27045		27099
	549		550	
51		27594		27649
	549		550	
52		28143		28199
	549		550	
53		28692		28749
	549		550	
54		29241		29299
	549		550	
55		29790		29849
	549		550	
56		30339		30399

	549		550	
57		30888		30949
	549		550	
58		31437		31499
	549		550	
59		31986		32049
	549		550	
60		32535		32599
	548		550	
61		33083		33149
	549		550	
62		33632		33699
	549		550	
63		34181		34249
	549		550	
64		34730		34799
	549		550	
65		35279		35349
	550		550	
66		35829		35899
	550		550	
67		36379		36449
	550		550	
68		36929		36999
	550		550	
69		37479		37549
	550		550	
70		38029		38099
	550		550	
71		38579		38649
	550		550	
72		39129		39199
	550		550	
73		39679		39749
	550		550	
74		40229		40299
	550		550	
75		40779		40849
	550		550	
76		41329		41399
	550		550	
77		41879		41949
	550		550	
78		42429		42499
	550		550	
79		42979		43049
	550		550	
80		43529		43599
	550		550	
81		44079		44149
	550		550	
82		44629		44699
	550		550	
83		45179		45249

Table for spacing of Sleepers in 1 in 8.5 fan shaped Turnout**(Taking off from Straight)**

Sleeper No.	Spacing on gauge face on tongue rail for ML side		Spacing on gauge Face of stock rail for ML side	
	Spacing	Cumulative from SRJ	Spacing	Cumulative from SRJ
	268		268	
1		268		268
	600		600	
2		868		868
	605		605	
3		1473		1473
	695		695	
4		2168		2168
	605		605	
5		2773		2773
	660		660	
6		3433		3433
	600		600	
7		4033		4033
	600		600	
8		4633		4633
	600		600	
9		5233		5233
	600		600	
10		5833		5833
	600		600	
11		6433		6433
	600		600	
12		7033		7033
	600		600	
13		7633		7633
	564		600	
14		8197		8233
	597		600	
15		8794		8833
	598		600	
16		9392		9433
	598		600	
17		9990		10033
	598		600	
18		10588		10633
	597		600	
19		11185		11233
	598		600	
20		11783		11833
	598		600	
21		12381		12433
	598		600	
22		12979		13033
	597		600	
23		13576		13633
	598		600	
24		14174		14233
	598		600	
25		14772		14833
	598		600	
26		15370		15433
	597		600	

27		15967		16033
	598		600	
28		16565		16633
	598		600	
29		17163		17233
	598		600	
30		17761		17833
	597		600	
31		18358		18433
	598		600	
32		18956		19033
	598		600	
33		19554		19633
	598		600	
34		20152		20233
	597		600	
35		20749		20833
	598		600	
36		21347		21433
	598		600	
37		21945		22033
	598		600	
38		22543		22633
	597		600	
39		23140		23233
	598		600	
40		23738		23833
	598		600	
41		24336		24433
	598		600	
42		24934		25033
	550		550	
43		25484		25583
	550		550	
44		26034		26133
	550		550	
45		26584		26683
	550		550	
46		27134		27233
	550		550	
47		27684		27783
	550		550	
48		28234		28333
	550		550	
49		28784		28883
	550		550	
50		29334		29433
	550		550	
51		29884		29983
	550		550	
52		30434		30533
	550		550	
53		30984		31083
	550		550	
54		31534		31633

**PARTICULARS OF TONGUE RAILS SHOWING LOCATION AND HEAD
THICKNESS AT LEVEL POINT OF STOCK AND TONGUE RAIL**

S No.	Description of switches	Drg. No. of tongue rails	Location of 13 mm head from ATS	Location of JOH from ATS	Location of level point of stock & tongue rail from ATS	Head thickness of tongue rail at level point
			mm	mm	mm	mm
1	6400 mm c/s on PSC BG 52 kg RT-4866	RT-4866/2	476.5	3023	1512	31.6
2	6400 mm c/s on PSC BG 60 kg RT-4966	RT-4966/1	476.5	3229	2348	48.25
3	10125 mm c/s on PSC, BG, 60 kg RT-4219	RT-4325/1	1682	5836	4244	43.4
4	10125 mm c/s on PSC BG 52 kg RT-4733	RT-4733/1	1682	5540	4029	40.34
5	7000 mm c/s on PSC, RDSO/T-5363, RDSO/T-5364 for 52 kg 1 in 8 ½ Diamond	RDSO/T-5364/1 to RDSO/T- 5364/3	480	3095	1547.5	32
6	7000 mm c/s on PSC, RDSO/T-6493, RDSO/T-6494 for 60 kg 1 in 8 ½ Diamond	RDSO/T-6494/1 to RDSO/T- 6494/3	585	3308	2406	50

Pre-curving requirements and revised sleeper spacing of 1 in 8½, 1 in 12 & 1 in 16 Thick Web Switches for Contrary Flexure Turnouts

- i) The tongue and stock rails of Thick Web Switches shall be given requisite amount of pre-curving at manufacturing premises only.
- ii) Sleepers will become skew due to curvature, therefore, grinding of liners for fitting on some of the sleepers may be required.
- iii) Pre-curving and sleeper spacing details have been specified for various groups of curvatures applicable for various curvature ranges. The details pertaining to relevant range shall be used for providing pre-curving and sleeper spacing.

a) 1 in 8½, BG 60kg Thick Web Switch in Contrary Flexure Turnout

Curvature Group	Applicable range of degree of curvature
Straight	up to 0.5°
1°	> 0.5° & up to 1.5°
2°	> 1.5° & up to 2.5°
3°	> 2.5° & up to 3.5°
4°	> 3.5° & up to 4.5°
5°	> 4.5° & up to 5.5°
6°	> 5.5° & up to 6.5°
7°	> 6.5° & up to 7.5°
8°	> 7.5° & up to 8.0°

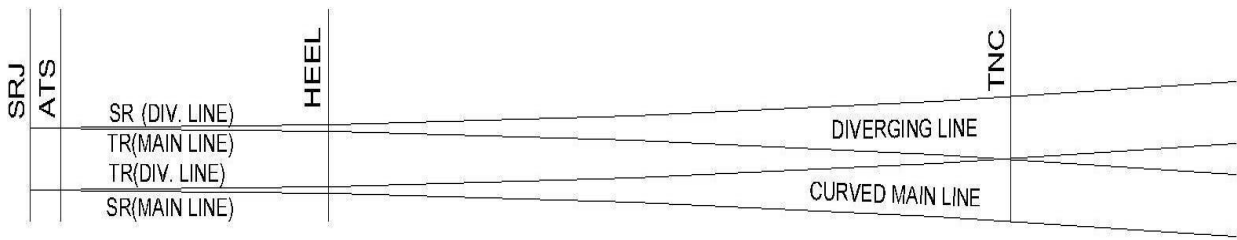
b) 1 in 12, BG 60kg Thick Web Switch in Contrary Flexure Turnout

Curvature Group	Applicable range of degree of curvature
Straight	up to 0.5°
1°	> 0.5° & up to 1.5°
2°	> 1.5° & up to 2.5°
3°	> 2.5° & up to 3.5°
4°	> 3.5° & up to 4.5°
5°	> 4.5° & up to 5.0°

c) 1 in 16, BG 60kg Thick Web Switch in Contrary Flexure Turnout

Curvature Group	Applicable range of degree of curvature
Straight	up to 0.5°
1°	> 0.5° & up to 1.5°
2°	> 1.5° & up to 2.5°
3°	> 2.5° & up to 3.5°
4°	> 3.5° & up to 4.5°
5°	> 4.5° & up to 5.0°

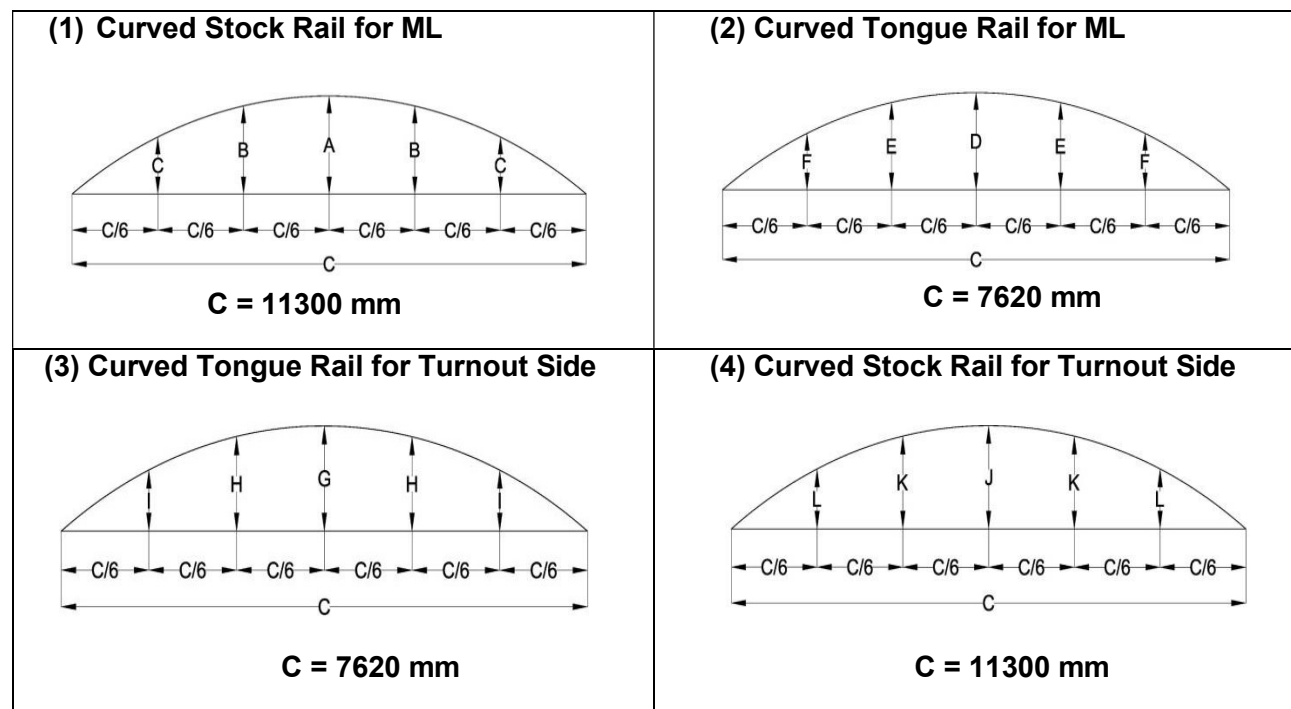
Pre-curving of Tongue Rails (TR) & Stock Rails (SR) for 1 in 8½, BG 60kg Turnout
with Zu-1-60/60E1A1 Thick-Web Switches for Contrary Flexure



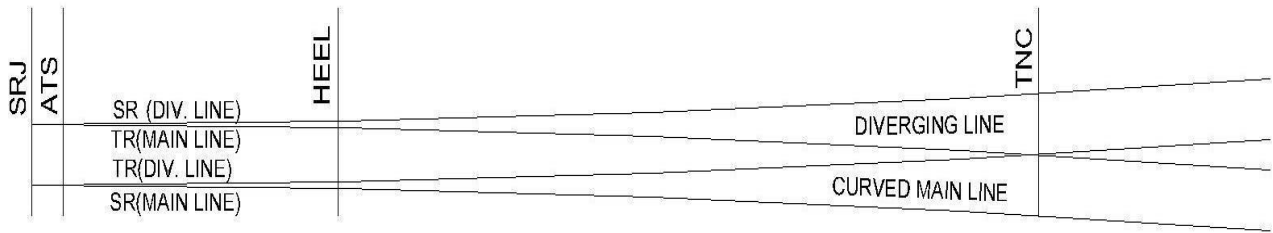
Applicable range of degree of curvature	Versine in mm for Main Line Track						Versine in mm for Diverging Track					
	For Stock Rail			For Tongue Rail			For Tongue Rail			For Stock Rail		
	A	B	C	D	E	F	G	H	I	J	K	L
Up to 0.5°	0	0	0	0	0	0	-31	-28	-17	-69	-62	-38
> 0.5° & up to 1.5°	9	8	5	4	.4	2	-27	-24	-15	-60	-53	-33
> 1.5° & up to 2.5°	18	16	10	8	7	5	-23	-20	-13	-51	-45	-28
> 2.5° & up to 3.5°	27	24	15	12	11	7	-19	-17	-10	-42	-37	-23
> 3.5° & up to 4.5°	36	32	20	17	15	9	-15	-13	-8	-32	-29	-18
> 4.5° & up to 5.5°	46	41	25	21	19	12	-11	-9	-6	-23	-21	-13
> 5.5° & up to 6.5°	55	49	30	25	22	14	-6	-6	-4	-14	-12	-8
> 6.5° & up to 7.5°	64	57	35	29	26	16	-2	-2	-1	-5	-4	-3
> 7.5° & up to 8.0°	73	65	41	33	30	19	2	2	1	4	4	2

Note : Negative versines of tongue and stock rails of diverging track indicates that curvature of tongue and stock rails of diverging track are in the reverse direction to the curvature of tongue and stock rails of main line track.

Contrary Flexure Turnout



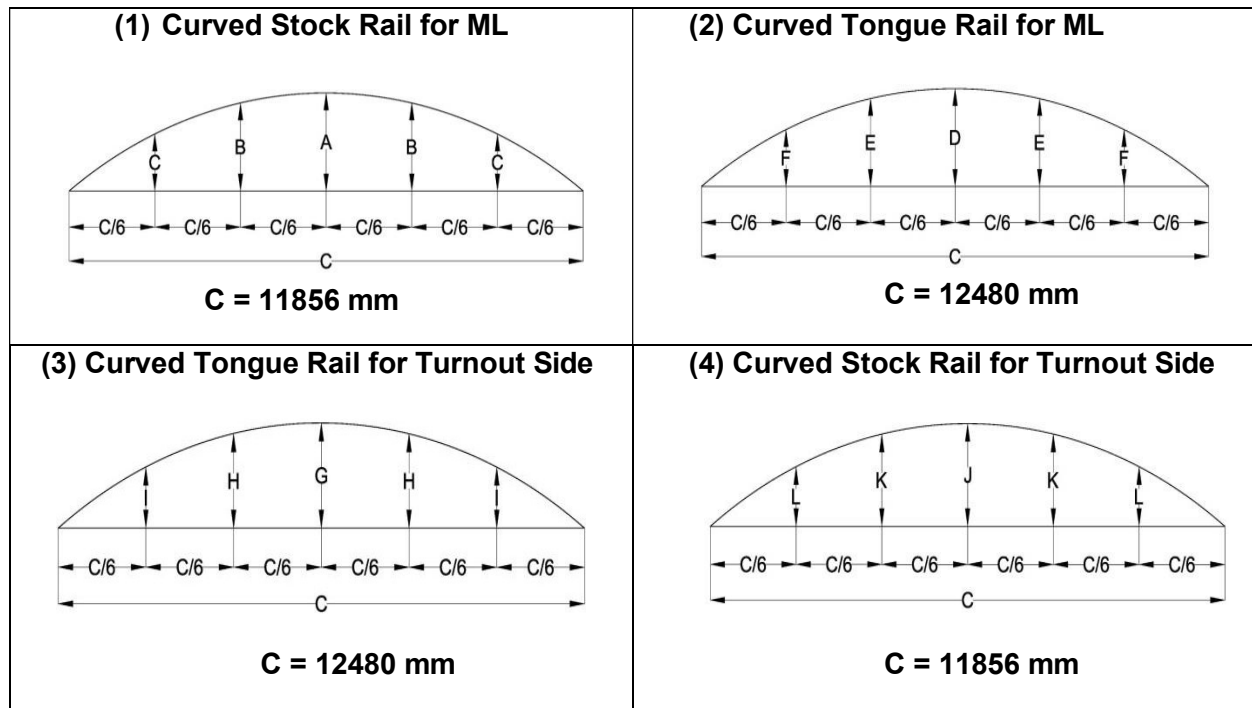
**Pre-curving of Tongue Rails (TR) & Stock Rails (SR) for 1:12, BG 60kg Turnout
with Zu-1-60/60E1A1 Thick-Web Switches for Contrary Flexure**



Applicable range of degree of curvature	Versine in mm for Main Line Track						Versine in mm for Diverging Track					
	For Stock Rail			For Tongue Rail			For Tongue Rail			For Stock Rail		
	A	B	C	D	E	F	G	H	I	J	K	L
Up to 0.5°	0	0	0	0	0	0	-44	-39	-25	-40	-36	-22
> 0.5° & up to 1.5°	10	9	6	11	10	6	-33	-29	-18	-30	-27	-17
> 1.5° & up to 2.5°	20	18	11	22	20	12	-22	-19	-12	-20	-18	-11
> 2.5° & up to 3.5°	30	27	17	33	30	19	-11	-10	-6	-10	-9	-5
> 3.5° & up to 4.5°	40	36	22	45	40	25	0	0	0	0	0	0
> 4.5° & up to 5.0°	50	45	28	56	50	31	12	10	6	10	9	6

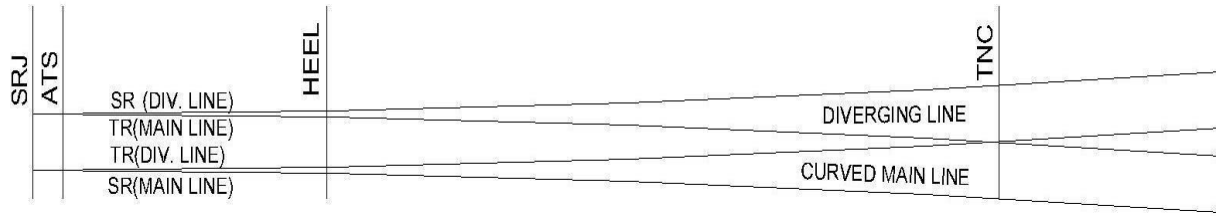
Note : Negative versines of tongue and stock rails of diverging track indicates that curvature of tongue and stock rails of diverging track are in the reverse direction to the curvature of tongue and stock rails of main line track.

Contrary Flexure Turnout



Pre-curving of Tongue Rails (TR) & Stock Rails (SR) for 1:16, BG 60kg Turnout

with Zu-1-60/60E1A1 Thick-Web Switches for Contrary Flexure



Applicable range of degree of curvature	Versine in mm for Main Line Track						Versine in mm for Diverging Track					
	For Stock Rail			For Tongue Rail			For Tongue Rail			For Stock Rail		
	A	B	C	D	E	F	G	H	I	J	K	L
Up to 0.5°	0	0	0	0	0	0	-27	-24	-15	-22	-20	-12
> 0.5° & up to 1.5°	10	9	6	12	11	7	-15	-13	-8	-12	-11	-7
> 1.5° & up to 2.5°	20	18	11	24	21	13	-3	-2	-2	-2	-2	-1
> 2.5° & up to 3.5°	30	27	17	36	32	20	9	8	5	8	7	4
> 3.5° & up to 4.5°	40	36	22	48	43	27	21	19	12	18	16	10
> 4.5° & up to 5.0°	50	45	28	60	53	33	33	29	18	28	25	15

Note : Negative versines of tongue and stock rails of diverging track indicates that curvature of tongue and stock rails of diverging track are in the reverse direction to the curvature of tongue and stock rails of main line track.

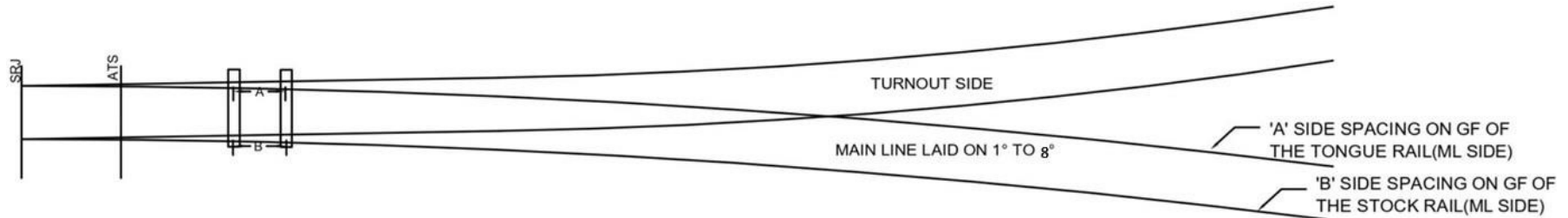
Contrary Flexure Turnout

(1) Curved Stock Rail for ML C = 11856 mm	(2) Curved Tongue Rail for ML C = 12935 mm
(3) Curved Tongue Rail for Turnout Side C = 12935 mm	(4) Curved Stock Rail for Turnout Side C = 11856 mm

Sleeper Spacing for 1 in 8½, BG, 60kg TWS (Contrary Flexure Turnout)																				
Location / Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°		Curvature of ML 6°		Curvature of ML 7°		Curvature of ML 8°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
SRJ		0		0		0		0		0		0		0		0		0		0
	268		268		268		268		268		268		268		268		268		268	
1		268		268		268		268		268		268		268		268		268		268
	600		600		600		600		600		600		600		600		600		600	
2		868		868		868		868		868		868		868		868		868		868
	600		600		600		600		600		600		600		600		600		600	
3		1468		1468		1468		1468		1468		1468		1468		1468		1468		1468
	745		745		745		745		745		745		745		745		745		745	
4		2213		2213		2213		2213		2213		2213		2213		2213		2213		2213
	560		560		560		560		560		560		560		560		560		560	
5		2773		2773		2773		2773		2773		2773		2773		2773		2773		2773
	660		660		660		660		660		660		660		660		660		660	
6		3433		3433		3433		3433		3433		3433		3433		3433		3433		3433
	600		600		600		600		600		600		600		600		600		600	
7		4033		4033		4033		4033		4033		4033		4033		4033		4033		4033
	600		600		600		600		600		600		600		600		600		600	
8		4633		4633		4633		4633		4633		4633		4633		4633		4633		4633
	600		600		600		600		600		600		600		600		600		600	
9		5233		5233		5233		5233		5233		5233		5233		5233		5233		5233
	600		600		600		600		600		600		600		600		600		600	
10		5833		5833		5833		5833		5833		5833		5833		5833		5833		5833
	600		600		600		600		600		600		600		600		600		600	
11		6433		6433		6433		6433		6433		6433		6433		6433		6433		6433
	600		600		600		600		600		600		600		600		600		600	
12		7033		7033		7033		7033		7033		7033		7033		7033		7033		7033
	600		600		600		600		600		600		600		600		600		600	
13		7633		7633		7633		7633		7633		7633		7633		7633		7633		7633
	564		600		592		584		576		569		561		553		545		537	
14		8197		8233		8225		8217		8209		8202		8194		8186		8178		8170
	597		600		599		599		598		598		597		597		596		595	
15		8794		8833		8824		8816		8807		8800		8791		8783		8774		8765
	598		600		599		599		598		598		597		597		596		595	
16		9392		9433		9423		9415		9405		9398		9388		9380		9370		9360
	598		600		599		599		598		598		597		597		596		595	
17		9990		10033		10022		10014		10003		9996		9985		9977		9966		9955
	598		600		599		599		598		598		597		597		596		595	
18		10588		10633		10621		10613		10601		10594		10582		10574		10562		10550
	597		600		599		599		598		598		597		597		596		595	
19		11185		11233		11220		11212		11199		11192		11179		11171		11158		11145
	598		600		599		599		598		598		597		597		596		595	

Sleeper Spacing for 1 in 8½, BG, 60kg TWS (Contrary Flexure Turnout)																				
Location / Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°		Curvature of ML3°		Curvature of ML4°		Curvature of ML5°		Curvature of ML6°		Curvature of ML7°		Curvature of ML8°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
20		11783		11833		11819		11811		11797		11790		11776		11768		11754		11740
	598		600		599		599		598		598		597		597		596		595	
21		12381		12433		12418		12410		12395		12388		12373		12365		12350		12335
	598		600		599		599		598		598		597		597		596		595	
22		12979		13033		13017		13009		12993		12986		12970		12962		12946		12930
	597		600		599		599		598		598		597		597		596		595	
23		13576		13633		13616		13608		13591		13584		13567		13559		13542		13525
	598		600		599		599		598		598		597		597		596		595	
24		14174		14233		14215		14207		14189		14182		14164		14156		14138		14120
	598		600		599		599		598		598		597		597		596		595	
25		14772		14833		14814		14806		14787		14780		14761		14753		14734		14715
	598		600		599		599		598		598		597		597		596		595	
26		15370		15433		15413		15405		15385		15378		15358		15350		15330		15310
	597		600		599		599		598		598		597		597		596		595	
27		15967		16033		16012		16004		15983		15976		15955		15947		15926		15905
	598		600		599		599		598		598		597		597		596		595	
28		16565		16633		16611		16603		16581		16574		16552		16544		16522		16500
	598		600		599		599		598		598		597		597		596		595	
29		17163		17233		17210		17202		17179		17172		17149		17141		17118		17095
	598		600		599		599		598		598		597		597		596		595	
30		17761		17833		17809		17801		17777		17770		17746		17738		17714		17690
	597		600		600		599		598		598		597		596		596		596	
31		18358		18433		18409		18400		18375		18368		18343		18334		18310		18286
	598		600		600		599		598		598		597		596		596		596	
32		18956		19033		19009		18999		18973		18966		18940		18930		18906		18882
	598		600		600		599		598		598		597		596		596		596	
33		19554		19633		19609		19598		19571		19564		19537		19526		19502		19478
	598		600		600		599		598		597		597		596		596		596	
34		20152		20233		20209		20197		20169		20161		20134		20122		20098		20074
	597		600		600		599		599		597		597		596		596		596	
35		20749		20833		20809		20796		20768		20758		20731		20718		20694		20670
	598		600		600		599		599		597		597		596		596		596	
36		21347		21433		21409		21395		21367		21355		21328		21314		21290		21266
	598		600		600		599		599		597		597		596		596		596	
37		21945		22033		22009		21994		21966		21952		21925		21910		21886		21862
	598		600		600		599		599		597		597		596		596		596	
38		22543		22633		22609		22593		22565		22549		22522		22506		22482		22458
	597		600		600		598		599		597		597		596		596		596	
39		23140		23233		23209		23191		23164		23146		23119		23102		23078		23054
	598		600		600		598		599		597		598		596		596		596	

Sleeper Spacing for 1 in 8½, BG, 60kg TWS (Contrary Flexure Turnout)																				
Location / Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		CurvatureofML1°		CurvatureofML2°		CurvatureofML3°		CurvatureofML4°		CurvatureofML5°		CurvatureofML6°		CurvatureofML7°		CurvatureofML8°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
40		23738		23833		23809		23789		23763		23743		23717		23698		23674		23650
	598		600		600		598		599		597		598		596		596		596	
41		24336		24433		24409		24387		24362		24340		24315		24294		24270		24246
	598		600		600		598		599		597		598		596		596		596	
42		24934		25033		25009		24985		24961		24937		24913		24890		24866		24842
	550		550		550		550		550		550		550		550		550		550	
43		25484		25583		25559		25535		25511		25487		25463		25440		25416		25392
	550		550		550		550		550		550		550		550		550		550	
44		26034		26133		26109		26085		26061		26037		26013		25990		25966		25942
	550		550		550		550		550		550		550		550		550		550	
45		26584		26683		26659		26635		26611		26587		26563		26540		26516		26492
	550		550		550		550		550		550		550		550		550		550	
46		27134		27233		27209		27185		27161		27137		27113		27090		27066		27042
	550		550		550		550		550		550		550		550		550		550	
47		27684		27783		27759		27735		27711		27687		27663		27640		27616		27592
	550		550		550		550		550		550		550		550		550		550	
48		28234		28333		28309		28285		28261		28237		28213		28190		28166		28142
	550		550		550		550		550		550		550		550		550		550	
49		28784		28883		28859		28835		28811		28787		28763		28740		28716		28692
	550		550		549		549		548		548		547		547		546		546	
50		29334		29433		29408		29384		29359		29335		29310		29287		29262		29238
	550		550		549		549		548		548		547		547		546		546	
51		29884		29983		29957		29933		29907		29883		29857		29834		29808		29784
	550		550		549		549		548		548		547		547		546		546	
52		30434		30533		30506		30482		30455		30431		30404		30381		30354		30330
	550		550		550		549		549		548		548		547		546		546	
53		30984		31083		31056		31031		31004		30979		30952		30928		30900		30876
	550		550		550		549		549		548		548		546		547		545	
54		31534		31633		31606		31580		31553		31527		31500		31474		31447		31421



[illegible]

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Contrary Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	For all locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
13		6749		6749		6749		6749		6749		6749		6749
	550		550		550		550		550		550		550	
14		7299		7299		7299		7299		7299		7299		7299
	550		550		550		550		550		550		550	
15		7849		7849		7849		7849		7849		7849		7849
	550		550		550		550		550		550		550	
16		8399		8399		8399		8399		8399		8399		8399
	550		550		550		550		550		550		550	
17		8949		8949		8949		8949		8949		8949		8949
	550		550		550		550		550		550		550	
18		9499		9499		9499		9499		9499		9499		9499
	550		550		550		550		550		550		550	
19		10049		10049		10049		10049		10049		10049		10049
	550		550		550		550		550		550		550	
20		10599		10599		10599		10599		10599		10599		10599
	526		550		539		529		518		507		497	
21		11125		11149		11138		11128		11117		11106		11096
	549		550		549		549		548		548		547	
22		11674		11699		11687		11677		11665		11654		11643
	549		550		549		549		548		548		547	
23		12223		12249		12236		12226		12213		12202		12190
	549		550		549		549		548		548		547	
24		12772		12799		12785		12775		12761		12750		12737
	549		550		549		549		548		548		547	
25		13321		13349		13334		13324		13309		13298		13284
	549		550		549		549		548		548		547	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Contrary Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	For all locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
26		13870		13899		13883		13873		13857		13846		13831
	549		550		549		549		548		548		547	
27		14419		14449		14432		14422		14405		14394		14378
	549		550		549		549		548		548		547	
28		14968		14999		14981		14971		14953		14942		14925
	549		550		549		549		548		548		547	
29		15517		15549		15530		15520		15501		15490		15472
	549		550		549		549		548		548		547	
30		16066		16099		16079		16069		16049		16038		16019
	549		550		549		549		548		548		547	
31		16615		16649		16628		16618		16597		16586		16566
	549		550		549		549		548		548		547	
32		17164		17199		17177		17167		17145		17134		17113
	549		550		549		549		548		548		547	
33		17713		17749		17726		17716		17693		17682		17660
	549		550		549		549		548		548		547	
34		18262		18299		18275		18265		18241		18230		18207
	549		550		549		549		548		548		547	
35		18811		18849		18824		18814		18789		18778		18754
	549		550		549		549		548		548		547	
36		19360		19399		19373		19363		19337		19326		19301
	548		550		549		549		548		548		547	
37		19908		19949		19922		19912		19885		19874		19848
	549		550		549		549		548		548		547	
38		20457		20499		20471		20461		20433		20422		20395
	549		550		549		549		548		548		547	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Contrary Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	For all locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
39		21006		21049		21020		21010		20981		20970		20942
	549		550		549		549		548		548		547	
40		21555		21599		21569		21559		21529		21518		21489
	549		550		549		549		548		548		547	
41		22104		22149		22118		22108		22077		22066		22036
	549		550		549		549		548		548		547	
42		22653		22699		22667		22657		22625		22614		22583
	549		550		549		549		548		548		547	
43		23202		23249		23216		23206		23173		23162		23130
	549		550		549		549		548		548		547	
44		23751		23799		23765		23755		23721		23710		23677
	549		550		550		549		548		548		547	
45		24300		24349		24315		24304		24269		24258		24224
	549		550		550		549		548		548		547	
46		24849		24899		24865		24853		24817		24806		24771
	549		550		550		549		548		548		547	
47		25398		25449		25415		25402		25365		25354		25318
	549		550		550		549		549		548		547	
48		25947		25999		25965		25951		25914		25902		25865
	549		550		550		549		549		548		547	
49		26496		26549		26515		26500		26463		26450		26412
	549		550		550		549		549		548		548	
50		27045		27099		27065		27049		27012		26998		26960
	549		550		550		549		549		548		548	
51		27594		27649		27615		27598		27561		27546		27508
	549		550		550		549		549		548		548	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Contrary Flexure Turnout)

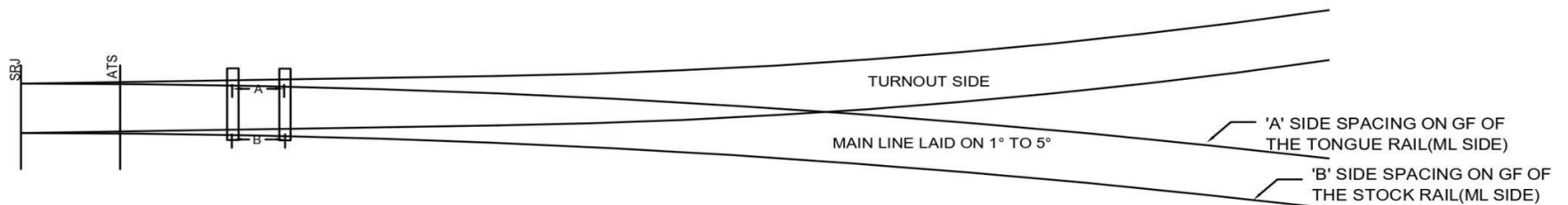
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	For all locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
52		28143		28199		28165		28147		28110		28094		28056
	549		550		550		549		549		548		548	
53		28692		28749		28715		28696		28659		28642		28604
	549		550		550		549		549		548		548	
54		29241		29299		29265		29245		29208		29190		29152
	549		550		550		549		549		548		548	
55		29790		29849		29815		29794		29757		29738		29700
	549		550		550		549		549		548		548	
56		30339		30399		30365		30343		30306		30286		30248
	549		550		550		549		549		548		548	
57		30888		30949		30915		30892		30855		30834		30796
	549		550		550		549		549		548		548	
58		31437		31499		31465		31441		31404		31382		31344
	549		550		550		549		549		548		548	
59		31986		32049		32015		31990		31953		31930		31892
	549		550		550		549		549		548		548	
60		32535		32599		32565		32539		32502		32478		32440
	549		550		550		549		549		548		548	
61		33084		33149		33115		33088		33051		33026		32988
	549		550		550		549		549		547		548	
62		33633		33699		33665		33637		33600		33573		33536
	549		550		550		548		549		547		548	
63		34182		34249		34215		34185		34149		34120		34084
	549		550		550		548		549		547		548	
64		34731		34799		34765		34733		34698		34667		34632
	549		550		550		548		549		547		548	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Contrary Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	For all locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
65		35280		35349		35315		35281		35247		35214		35180
	550		550		550		550		550		550		550	
66		35830		35899		35865		35831		35797		35764		35730
	550		550		550		550		550		550		550	
67		36380		36449		36415		36381		36347		36314		36280
	550		550		550		550		550		550		550	
68		36930		36999		36965		36931		36897		36864		36830
	550		550		550		550		550		550		550	
69		37480		37549		37515		37481		37447		37414		37380
	550		550		550		550		550		550		550	
70		38030		38099		38065		38031		37997		37964		37930
	550		550		550		550		550		550		550	
71		38580		38649		38615		38581		38547		38514		38480
	550		550		550		550		550		550		550	
72		39130		39199		39165		39131		39097		39064		39030
	550		550		550		550		550		550		550	
73		39680		39749		39715		39681		39647		39614		39580
	550		550		550		550		550		550		550	
74		40230		40299		40265		40231		40197		40164		40130
	550		550		549		549		548		548		547	
75		40780		40849		40814		40780		40745		40712		40677
	550		550		549		549		548		548		547	
76		41330		41399		41363		41329		41293		41260		41224
	550		550		549		549		548		548		547	
77		41880		41949		41912		41878		41841		41808		41771
	550		550		549		549		548		548		547	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Contrary Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	For all locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
78		42430		42499		42461		42427		42389		42356		42318
	550		550		549		549		548		548		547	
79		42980		43049		43010		42976		42937		42904		42865
	550		550		550		549		549		548		547	
80		43530		43599		43560		43525		43486		43452		43412
	550		550		550		549		549		548		548	
81		44080		44149		44110		44074		44035		44000		43960
	550		550		550		549		549		548		548	
82		44630		44699		44660		44623		44584		44548		44508
	550		550		550		549		549		547		548	
83		45180		45249		45210		45172		45133		45095		45056



[illegible]

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Contrary Flexure Turnout)														
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
12		6879		6879		6879		6879		6879		6879		6879
	600		600		600		600		600		600		600	
13		7479		7479		7479		7479		7479		7479		7479
	600		600		600		600		600		600		600	
14		8079		8079		8079		8079		8079		8079		8079
	600		600		600		600		600		600		600	
15		8679		8679		8679		8679		8679		8679		8679
	600		600		600		600		600		600		600	
16		9279		9279		9279		9279		9279		9279		9279
	600		600		600		600		600		600		600	
17		9879		9879		9879		9879		9879		9879		9879
	600		600		600		600		600		600		600	
18		10479		10479		10479		10479		10479		10479		10479
	600		600		600		600		600		600		600	
19		11079		11079		11079		11079		11079		11079		11079
	600		600		600		600		600		600		600	
20		11679		11679		11679		11679		11679		11679		11679
	583		600		588		576		565		553		541	
21		12262		12279		12267		12255		12244		12232		12220
	599		600		599		599		598		598		597	
22		12861		12879		12866		12854		12842		12830		12817
	600		600		599		599		598		598		597	
23		13461		13479		13465		13453		13440		13428		13414
	599		600		599		599		598		598		597	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Contrary Flexure Turnout)														
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
24		14060		14079		14064		14052		14038		14026		14011
	599		600		599		599		598		598		597	
25		14659		14679		14663		14651		14636		14624		14608
	600		600		599		599		598		598		597	
26		15259		15279		15262		15250		15234		15222		15205
	599		600		599		599		598		598		597	
27		15858		15879		15861		15849		15832		15820		15802
	599		600		599		599		598		598		597	
28		16457		16479		16460		16448		16430		16418		16399
	600		600		599		599		598		598		597	
29		17057		17079		17059		17047		17028		17016		16996
	599		600		599		599		598		598		597	
30		17656		17679		17658		17646		17626		17614		17593
	600		600		599		599		598		598		597	
31		18256		18279		18257		18245		18224		18212		18190
	599		600		599		599		598		598		597	
32		18855		18879		18856		18844		18822		18810		18787
	599		600		599		599		598		598		597	
33		19454		19479		19455		19443		19420		19408		19384
	600		600		599		599		598		598		597	
34		20054		20079		20054		20042		20018		20006		19981
	599		600		599		599		598		598		597	
35		20653		20679		20653		20641		20616		20604		20578
	599		600		599		599		598		598		597	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Contrary Flexure Turnout)														
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
36		21252		21279		21252		21240		21214		21202		21175
	600		600		599		599		598		598		597	
37		21852		21879		21851		21839		21812		21800		21772
	599		600		599		599		598		598		597	
38		22451		22479		22450		22438		22410		22398		22369
	599		600		599		599		598		598		597	
39		23050		23079		23049		23037		23008		22996		22966
	600		600		599		599		598		598		597	
40		23650		23679		23648		23636		23606		23594		23563
	599		600		599		599		598		598		597	
41		24249		24279		24247		24235		24204		24192		24160
	600		600		599		599		598		598		597	
42		24849		24879		24846		24834		24802		24790		24757
	599		600		599		599		598		598		597	
43		25448		25479		25445		25433		25400		25388		25354
	599		600		599		599		598		598		597	
44		26047		26079		26044		26032		25998		25986		25951
	600		600		599		599		598		598		597	
45		26647		26679		26643		26631		26596		26584		26548
	599		600		599		599		598		598		597	
46		27246		27279		27242		27230		27194		27182		27145
	599		600		599		599		598		598		597	
47		27845		27879		27841		27829		27792		27780		27742
	600		600		599		599		598		598		597	

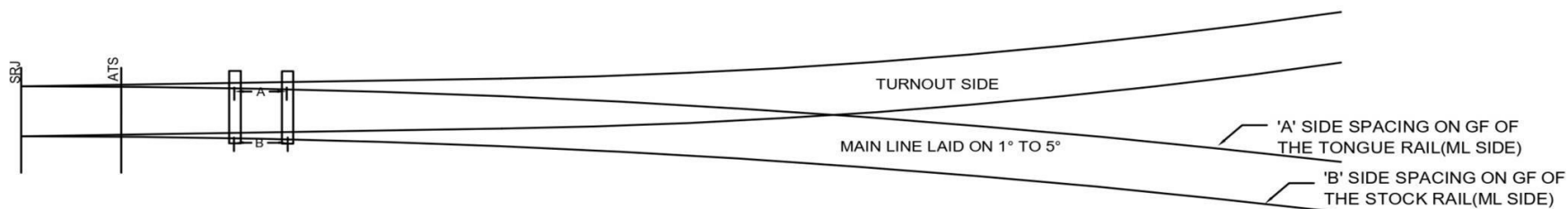
Sleeper Spacing for 1 in 16, BG, 60kg TWS (Contrary Flexure Turnout)														
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
48		28445		28479		28440		28428		28390		28378		28339
	599		600		599		599		598		598		597	
49		29044		29079		29039		29027		28988		28976		28936
	599		600		599		599		598		598		597	
50		29643		29679		29638		29626		29586		29574		29533
	600		600		599		599		598		598		597	
51		30243		30279		30237		30225		30184		30172		30130
	599		600		599		599		598		598		597	
52		30842		30879		30836		30824		30782		30770		30727
	599		600		599		599		598		598		597	
53		31441		31479		31435		31423		31380		31368		31324
	600		600		600		599		598		598		597	
54		32041		32079		32035		32022		31978		31966		31921
	599		600		600		599		598		598		597	
55		32640		32679		32635		32621		32576		32564		32518
	600		600		600		599		598		598		597	
56		33240		33279		33235		33220		33174		33162		33115
	599		600		600		599		598		598		597	
57		33839		33879		33835		33819		33772		33760		33712
	599		600		600		599		598		598		597	
58		34438		34479		34435		34418		34370		34358		34309
	600		600		600		599		598		598		597	
59		35038		35079		35035		35017		34968		34956		34906
	599		600		600		599		598		598		597	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Contrary Flexure Turnout)														
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
60		35637		35679		35635		35616		35566		35554		35503
	599		600		600		599		598		597		597	
61		36236		36279		36235		36215		36164		36151		36100
	600		600		600		599		598		597		597	
62		36836		36879		36835		36814		36762		36748		36697
	599		600		600		599		599		597		597	
63		37435		37479		37435		37413		37361		37345		37294
	599		600		600		599		599		597		597	
64		38034		38079		38035		38012		37960		37942		37891
	600		600		600		599		599		597		597	
65		38634		38679		38635		38611		38559		38539		38488
	599		600		600		599		599		597		597	
66		39233		39279		39235		39210		39158		39136		39085
	600		600		600		599		599		597		597	
67		39833		39879		39835		39809		39757		39733		39682
	599		600		600		599		599		597		597	
68		40432		40479		40435		40408		40356		40330		40279
	599		600		600		599		599		597		597	
69		41031		41079		41035		41007		40955		40927		40876
	600		600		600		598		599		597		597	
70		41631		41679		41635		41605		41554		41524		41473
	599		600		600		598		599		597		598	
71		42230		42279		42235		42203		42153		42121		42071
	599		600		600		598		599		597		598	

[illegible]

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Contrary Flexure Turnout)														
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
84		50027		50079		50035		49991		49947		49903		49859
	600		600		600		600		600		600		600	
85		50627		50679		50635		50591		50547		50503		50459
	600		600		600		600		600		600		600	
86		51227		51279		51235		51191		51147		51103		51059
	600		600		600		600		600		600		600	
87		51827		51879		51835		51791		51747		51703		51659
	600		600		599		599		598		598		597	
88		52427		52479		52434		52390		52345		52301		52256
	600		600		599		599		598		598		597	
89		53027		53079		53033		52989		52943		52899		52853
	600		600		599		599		598		598		597	
90		53627		53679		53632		53588		53541		53497		53450
	600		600		599		599		598		598		597	
91		54227		54279		54231		54187		54139		54095		54047
	600		600		599		599		598		598		597	
92		54827		54879		54830		54786		54737		54693		54644
	600		600		599		599		598		598		597	
93		55427		55479		55429		55385		55335		55291		55241
	600		600		599		599		598		598		597	
94		56027		56079		56028		55984		55933		55889		55838
	600		600		599		599		598		598		597	
95		56627		56679		56627		56583		56531		56487		56435
	600		600		600		599		598		598		597	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Contrary Flexure Turnout)														
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 4°		Curvature of ML 5°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
96		57227		57279		57227		57182		57129		57085		57032
	600		600		600		599		598		598		597	
97		57827		57879		57827		57781		57727		57683		57629
	600		600		600		599		599		597		597	
98		58427		58479		58427		58380		58326		58280		58226
	600		600		600		599		599		597		597	
99		59027		59079		59027		58979		58925		58877		58823
	600		600		600		598		599		597		598	
100		59627		59679		59627		59577		59524		59474		59421
	600		600		600		598		599		597		598	
101		60227		60279		60227		60175		60123		60071		60019



Pre-curving requirements and revised sleeper spacing of 1 in 12 & 1 in 16 Thick Web Switches for Similar Flexure Turnouts

- i) The tongue and stock rails of Thick Web Switches shall be given requisite amount of pre-curving at manufacturing premises only.
- ii) Sleepers will become skew due to curvature, therefore, grinding of liners for fitting on some of the sleepers may be required.
- iii) Pre-curving and sleeper spacing details have been specified for various groups of curvatures applicable for various curvature ranges. The details pertaining to relevant range shall be used for providing pre-curving and sleeper spacing.

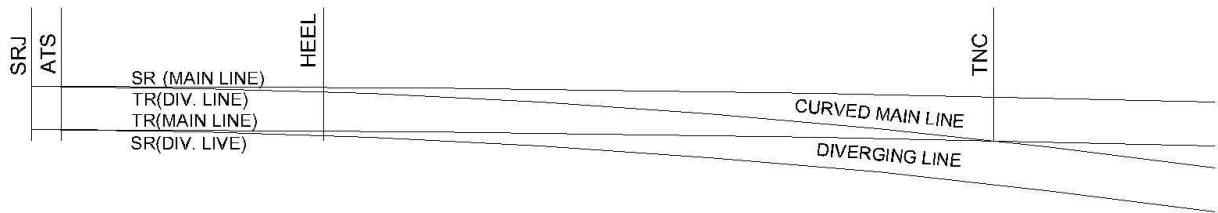
a) 1 in 12, BG 60kg Thick Web Switch in Similar Flexure Turnout

Curvature Group	Applicable range of degree of curvature
Straight	Up to 0.5°
1°	> 0.5° & up to 1.5°
2°	> 1.5° & up to 2.0°

b) 1 in 16, BG 60kg Thick Web Switch in Similar Flexure Turnout

Curvature Group	Applicable range of degree of curvature
Straight	Up to 0.5°
1°	> 0.5° & up to 1.5°
2°	> 1.5° & up to 2.5°
3°	> 2.5° & up to 3.5°
3.75°	> 3.5° & up to 3.75°

Pre-curving of Tongue Rails (TR) & Stock Rails (SR) for 1 in 12, BG 60kg Turnout
with Zu-1-60/60E1A1 Thick-Web Switches for Similar Flexure

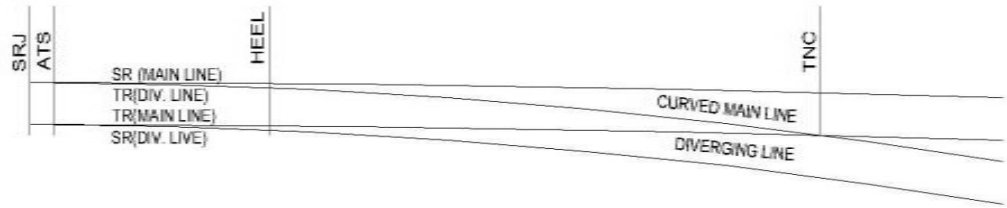


Applicable range of degree of curvature	Versine in mm for Main Line Track						Versine in mm for Diverging Track					
	For Stock Rail			For Tongue Rail			For Tongue Rail			For Stock Rail		
	A	B	C	D	E	F	G	H	I	J	K	L
Up to 0.5°	0	0	0	0	0	0	44	39	25	40	36	22
> 0.5° & up to 1.5°	10	9	6	11	10	6	55	49	31	50	45	28
> 1.5° & up to 2.0°	20	18	11	22	20	12	66	59	37	60	54	33

Similar Flexure Turnout

(1) Curved Stock Rail for ML C = 11856 mm	(2) Curved Tongue Rail for ML C = 12480 mm
(3) Curved Tongue Rail for Turnout Side C = 12480 mm	(4) Curved Stock Rail for Turnout Side C = 11856 mm

**Pre-curving of Tongue Rails (TR) & Stock Rails (SR) for 1 in 16, BG 60kg Turnout
with Zu-1-60/60E1A1 Thick-Web Switches for Similar Flexure**



Applicable range of degree of curvature	Versine in mm for Main Line Track						Versine in mm for Diverging Track					
	For Stock Rail			For Tongue Rail			For Tongue Rail			For Stock Rail		
	A	B	C	D	E	F	G	H	I	J	K	L
Up to 0.5°	0	0	0	0	0	0	27	24	15	22	20	12
> 0.5° & up to 1.5°	10	9	6	12	11	7	39	34	21	33	29	18
> 1.5° & up to 2.5°	20	18	11	24	21	13	51	45	28	43	38	24
> 2.5° & up to 3.5°	30	27	17	36	32	20	63	56	35	53	47	29
> 3.5° & up to 3.75°	38	33	21	45	40	25	71	64	40	60	54	34

Similar Flexure Turnout

(2) Curved Stock Rail for ML C = 11856 mm	(2) Curved Tongue Rail for ML C = 12935 mm
(3) Curved Tongue Rail for Turnout Side C = 12935 mm	(4) Curved Stock Rail for Turnout Side C = 11856 mm

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Similar Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
SRJ		0		0		0		0
	150		150		150		150	
1		150		150		150		150
	457		457		457		457	
2		607		607		607		607
	505		505		505		505	
3		1112		1112		1112		1112
	745		745		745		745	
4		1857		1857		1857		1857
	492		492		492		492	
5		2349		2349		2349		2349
	550		550		550		550	
6		2899		2899		2899		2899
	550		550		550		550	
7		3449		3449		3449		3449
	550		550		550		550	
8		3999		3999		3999		3999
	550		550		550		550	
9		4549		4549		4549		4549
	550		550		550		550	
10		5099		5099		5099		5099
	550		550		550		550	
11		5649		5649		5649		5649
	550		550		550		550	
12		6199		6199		6199		6199
	550		550		550		550	
13		6749		6749		6749		6749
	550		550		550		550	
14		7299		7299		7299		7299
	550		550		550		550	
15		7849		7849		7849		7849
	550		550		550		550	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Similar Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
16		8399		8399		8399		8399
	550		550		550		550	
17		8949		8949		8949		8949
	550		550		550		550	
18		9499		9499		9499		9499
	550		550		550		550	
19		10049		10049		10049		10049
	550		550		550		550	
20		10599		10599		10599		10599
	526		550		561		571	
21		11125		11149		11160		11170
	549		550		551		551	
22		11674		11699		11711		11721
	549		550		551		551	
23		12223		12249		12262		12272
	549		550		551		551	
24		12772		12799		12813		12823
	549		550		551		551	
25		13321		13349		13364		13374
	549		550		551		551	
26		13870		13899		13915		13925
	549		550		551		551	
27		14419		14449		14466		14476
	549		550		551		551	
28		14968		14999		15017		15027
	549		550		551		551	
29		15517		15549		15568		15578
	549		550		551		551	
30		16066		16099		16119		16129
	549		550		551		551	
31		16615		16649		16670		16680
	549		550		551		551	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Similar Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
32		17164		17199		17221		17231
	549		550		551		551	
33		17713		17749		17772		17782
	549		550		551		551	
34		18262		18299		18323		18333
	549		550		551		551	
35		18811		18849		18874		18884
	549		550		551		551	
36		19360		19399		19425		19435
	548		550		551		551	
37		19908		19949		19976		19986
	549		550		551		551	
38		20457		20499		20527		20537
	549		550		551		551	
39		21006		21049		21078		21088
	549		550		551		551	
40		21555		21599		21629		21639
	549		550		551		551	
41		22104		22149		22180		22190
	549		550		551		551	
42		22653		22699		22731		22741
	549		550		551		551	
43		23202		23249		23282		23292
	549		550		551		551	
44		23751		23799		23833		23843
	549		550		550		551	
45		24300		24349		24383		24394
	549		550		550		551	
46		24849		24899		24933		24945
	549		550		550		551	
47		25398		25449		25483		25496
	549		550		550		551	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Similar Flexure Turnout)

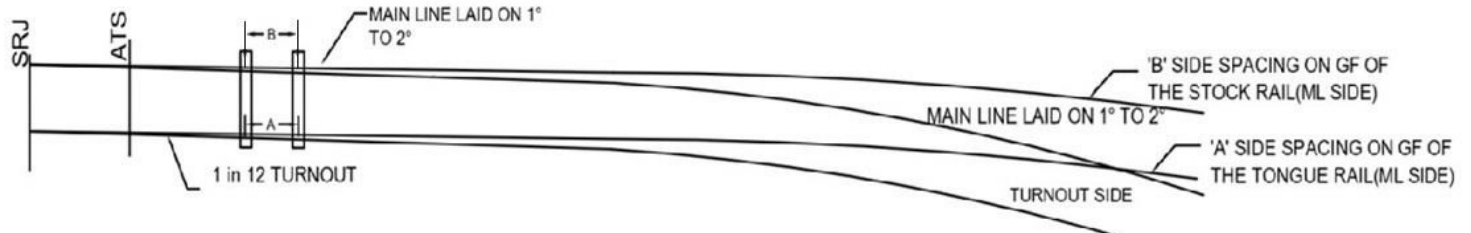
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
48		25947		25999		26033		26047
	549		550		550		551	
49		26496		26549		26583		26598
	549		550		550		551	
50		27045		27099		27133		27149
	549		550		550		551	
51		27594		27649		27683		27700
	549		550		550		551	
52		28143		28199		28233		28251
	549		550		550		551	
53		28692		28749		28783		28802
	549		550		550		551	
54		29241		29299		29333		29353
	549		550		550		551	
55		29790		29849		29883		29904
	549		550		550		551	
56		30339		30399		30433		30455
	549		550		550		551	
57		30888		30949		30983		31006
	549		550		550		551	
58		31437		31499		31533		31557
	549		550		550		551	
59		31986		32049		32083		32108
	549		550		550		551	
60		32535		32599		32633		32659
	549		550		550		551	
61		33084		33149		33183		33210
	549		550		550		551	
62		33633		33699		33733		33761
	549		550		550		552	
63		34182		34249		34283		34313
	549		550		550		552	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Similar Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
64		34731		34799		34833		34865
	549		550		550		552	
65		35280		35349		35383		35417
	550		550		550		550	
66		35830		35899		35933		35967
	550		550		550		550	
67		36380		36449		36483		36517
	550		550		550		550	
68		36930		36999		37033		37067
	550		550		550		550	
69		37480		37549		37583		37617
	550		550		550		550	
70		38030		38099		38133		38167
	550		550		550		550	
71		38580		38649		38683		38717
	550		550		550		550	
72		39130		39199		39233		39267
	550		550		550		550	
73		39680		39749		39783		39817
	550		550		550		550	
74		40230		40299		40333		40367
	550		550		551		551	
75		40780		40849		40884		40918
	550		550		551		551	
76		41330		41399		41435		41469
	550		550		551		551	
77		41880		41949		41986		42020
	550		550		551		551	
78		42430		42499		42537		42571
	550		550		551		551	
79		42980		43049		43088		43122
	550		550		550		551	

Sleeper Spacing for 1 in 12, BG, 60kg TWS (Similar Flexure Turnout)

Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
80		43530		43599		43638		43673
	550		550		550		551	
81		44080		44149		44188		44224
	550		550		550		551	
82		44630		44699		44738		44775
	550		550		550		551	
83		45180		45249		45288		45326



Sleeper Spacing for 1 in 16, BG, 60kg TWS (Similar Flexure Turnout)												
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°		Curvature of ML3°		Curvature of ML3.75°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
SRJ		0		0		0		0		0		0
	244		244		244		244		244		244	
1		244		244		244		244		244		244
	568		568		568		568		568		568	
2		812		812		812		812		812		812
	745		745		745		745		745		745	
3		1557		1557		1557		1557		1557		1557
	522		522		522		522		522		522	
4		2079		2079		2079		2079		2079		2079
	600		600		600		600		600		600	
5		2679		2679		2679		2679		2679		2679
	600		600		600		600		600		600	
6		3279		3279		3279		3279		3279		3279
	600		600		600		600		600		600	
7		3879		3879		3879		3879		3879		3879
	600		600		600		600		600		600	
8		4479		4479		4479		4479		4479		4479
	600		600		600		600		600		600	
9		5079		5079		5079		5079		5079		5079
	600		600		600		600		600		600	
10		5679		5679		5679		5679		5679		5679
	600		600		600		600		600		600	
11		6279		6279		6279		6279		6279		6279
	600		600		600		600		600		600	
12		6879		6879		6879		6879		6879		6879
	600		600		600		600		600		600	
13		7479		7479		7479		7479		7479		7479
	600		600		600		600		600		600	
14		8079		8079		8079		8079		8079		8079
	600		600		600		600		600		600	
15		8679		8679		8679		8679		8679		8679
	600		600		600		600		600		600	
16		9279		9279		9279		9279		9279		9279
	600		600		600		600		600		600	
17		9879		9879		9879		9879		9879		9879
	600		600		600		600		600		600	
18		10479		10479		10479		10479		10479		10479
	600		600		600		600		600		600	
19		11079		11079		11079		11079		11079		11079
	600		600		600		600		600		600	
20		11679		11679		11679		11679		11679		11679
	583		600		612		624		635		644	
21		12262		12279		12291		12303		12314		12323
	599		600		601		601		602		602	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Similar Flexure Turnout)												
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°		Curvature of ML3°		Curvature of ML3.75°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
22		12861		12879		12892		12904		12916		12925
	600		600		601		601		602		602	
23		13461		13479		13493		13505		13518		13527
	599		600		601		601		602		602	
24		14060		14079		14094		14106		14120		14129
	599		600		601		601		602		602	
25		14659		14679		14695		14707		14722		14731
	600		600		601		601		602		602	
26		15259		15279		15296		15308		15324		15333
	599		600		601		601		602		602	
27		15858		15879		15897		15909		15926		15935
	599		600		601		601		602		602	
28		16457		16479		16498		16510		16528		16537
	600		600		601		601		602		602	
29		17057		17079		17099		17111		17130		17139
	599		600		601		601		602		602	
30		17656		17679		17700		17712		17732		17741
	600		600		601		601		602		602	
31		18256		18279		18301		18313		18334		18343
	599		600		601		601		602		602	
32		18855		18879		18902		18914		18936		18945
	599		600		601		601		602		602	
33		19454		19479		19503		19515		19538		19547
	600		600		601		601		602		602	
34		20054		20079		20104		20116		20140		20149
	599		600		601		601		602		602	
35		20653		20679		20705		20717		20742		20751
	599		600		601		601		602		602	
36		21252		21279		21306		21318		21344		21353
	600		600		601		601		602		602	
37		21852		21879		21907		21919		21946		21955
	599		600		601		601		602		602	
38		22451		22479		22508		22520		22548		22557
	599		600		601		601		602		602	
39		23050		23079		23109		23121		23150		23159
	600		600		601		601		602		602	
40		23650		23679		23710		23722		23752		23761
	599		600		601		601		602		602	
41		24249		24279		24311		24323		24354		24363
	600		600		601		601		602		602	
42		24849		24879		24912		24924		24956		24965
	599		600		601		601		602		602	
43		25448		25479		25513		25525		25558		25567
	599		600		601		601		602		602	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Similar Flexure Turnout)												
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°		Curvature of ML3°		Curvature of ML3.75°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
44		26047		26079		26114		26126		26160		26169
	600		600		601		601		602		602	
45		26647		26679		26715		26727		26762		26771
	599		600		601		601		602		602	
46		27246		27279		27316		27328		27364		27373
	599		600		601		601		602		602	
47		27845		27879		27917		27929		27966		27975
	600		600		601		601		602		602	
48		28445		28479		28518		28530		28568		28577
	599		600		601		601		602		602	
49		29044		29079		29119		29131		29170		29179
	599		600		601		601		602		602	
50		29643		29679		29720		29732		29772		29781
	600		600		601		601		602		602	
51		30243		30279		30321		30333		30374		30383
	599		600		601		601		602		602	
52		30842		30879		30922		30934		30976		30985
	599		600		601		601		602		602	
53		31441		31479		31523		31535		31578		31587
	600		600		600		601		602		602	
54		32041		32079		32123		32136		32180		32189
	599		600		600		601		602		602	
55		32640		32679		32723		32737		32782		32791
	600		600		600		601		602		602	
56		33240		33279		33323		33338		33384		33393
	599		600		600		601		602		602	
57		33839		33879		33923		33939		33986		33995
	599		600		600		601		602		602	
58		34438		34479		34523		34540		34588		34597
	600		600		600		601		602		602	
59		35038		35079		35123		35141		35190		35199
	599		600		600		601		602		602	
60		35637		35679		35723		35742		35792		35801
	599		600		600		601		602		602	
61		36236		36279		36323		36343		36394		36403
	600		600		600		601		602		602	
62		36836		36879		36923		36944		36996		37005
	599		600		600		601		601		602	
63		37435		37479		37523		37545		37597		37607
	599		600		600		601		601		602	
64		38034		38079		38123		38146		38198		38209
	600		600		600		601		601		602	
65		38634		38679		38723		38747		38799		38811
	599		600		600		601		601		602	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Similar Flexure Turnout)												
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML 1°		Curvature of ML 2°		Curvature of ML 3°		Curvature of ML 3.75°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
66		39233		39279		39323		39348		39400		39413
	600		600		600		601		601		602	
67		39833		39879		39923		39949		40001		40015
	599		600		600		601		601		602	
68		40432		40479		40523		40550		40602		40617
	599		600		600		601		601		603	
69		41031		41079		41123		41151		41203		41220
	600		600		600		602		601		603	
70		41631		41679		41723		41753		41804		41823
	599		600		600		602		601		603	
71		42230		42279		42323		42355		42405		42426
	599		600		600		602		601		603	
72		42829		42879		42923		42957		43006		43029
	600		600		600		602		601		603	
73		43429		43479		43523		43559		43607		43632
	599		600		600		602		601		603	
74		44028		44079		44123		44161		44208		44235
	599		600		600		602		601		603	
75		44627		44679		44723		44763		44809		44838
	600		600		600		602		601		603	
76		45227		45279		45323		45365		45410		45441
	600		600		600		602		601		603	
77		45827		45879		45923		45967		46011		46044
	600		600		600		600		600		600	
78		46427		46479		46523		46567		46611		46644
	600		600		600		600		600		600	
79		47027		47079		47123		47167		47211		47244
	600		600		600		600		600		600	
80		47627		47679		47723		47767		47811		47844
	600		600		600		600		600		600	
81		48227		48279		48323		48367		48411		48444
	600		600		600		600		600		600	
82		48827		48879		48923		48967		49011		49044
	600		600		600		600		600		600	
83		49427		49479		49523		49567		49611		49644
	600		600		600		600		600		600	
84		50027		50079		50123		50167		50211		50244
	600		600		600		600		600		600	
85		50627		50679		50723		50767		50811		50844
	600		600		600		600		600		600	
86		51227		51279		51323		51367		51411		51444
	600		600		600		600		600		600	
87		51827		51879		51923		51967		52011		52044
	600		600		601		601		602		602	

Sleeper Spacing for 1 in 16, BG, 60kg TWS (Similar Flexure Turnout)												
Location/ Sleeper No.	C/C spacing of sleepers to be measured along gauge face of tongue rail of mainline (A)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)		C/C spacing of sleepers to be measured along gauge face of stock rail of mainline (B)	
	All locations		Mainline - Straight		Curvature of ML1°		Curvature of ML2°		Curvature of ML3°		Curvature of ML3.75°	
	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing	Spacing	Cumulative Spacing
88		52427		52479		52524		52568		52613		52646
	600		600		601		601		602		602	
89		53027		53079		53125		53169		53215		53248
	600		600		601		601		602		602	
90		53627		53679		53726		53770		53817		53850
	600		600		601		601		602		602	
91		54227		54279		54327		54371		54419		54452
	600		600		601		601		602		602	
92		54827		54879		54928		54972		55021		55054
	600		600		601		601		602		602	
93		55427		55479		55529		55573		55623		55656
	600		600		601		601		602		602	
94		56027		56079		56130		56174		56225		56258
	600		600		601		601		602		602	
95		56627		56679		56731		56775		56827		56860
	600		600		600		601		602		602	
96		57227		57279		57331		57376		57429		57462
	600		600		600		601		602		602	
97		57827		57879		57931		57977		58031		58064
	600		600		600		601		601		602	
98		58427		58479		58531		58578		58632		58666
	600		600		600		601		601		602	
99		59027		59079		59131		59179		59233		59268
	600		600		600		602		601		603	
100		59627		59679		59731		59781		59834		59871
	600		600		600		602		601		603	
101		60227		60279		60331		60383		60435		60474

