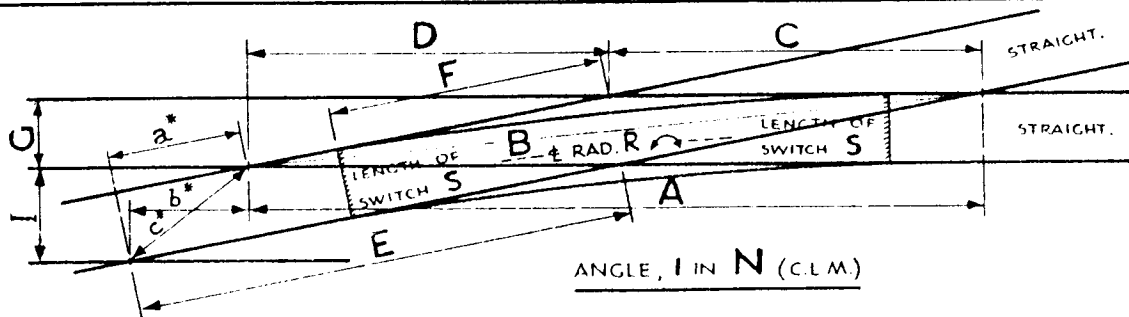


# PERMANENT WAY NOTES.

# DIMENSIONS, FORMULÆ ETC. FOR STANDARD DIAMONDS AND COMPOUNDS.

THESE NOTES ARE INTENDED FOR THE GUIDANCE AND ASSISTANCE OF STAFF EMPLOYED UPON PERMANENT WAY WORK. THEY DO NOT IN ANY WAY MODIFY, OR AMEND THE INSTRUCTIONS LAID DOWN IN E.D.I., STANDARD DRAWINGS, CIRCULARS ETC., WHICH SHOULD BE REFERRED TO IN ALL CASES.



\* FOR DIMENSIONS a, b AND c, SEE PERMANENT WAY NOTES, R1754, "CROSSOVER ROADS".

ANGLE N	A	B	C	D	E (FOR 6'-6" INTERVAL)	ADD FOR EA. ADDNL. FOOT OF INTERVAL	ADD FOR EA. ADDNL. INCH OF INTERVAL
2	18'-10"	19'-4 <sup>15</sup> / <sub>16</sub> "	10'-0 <sup>1</sup> / <sub>16</sub> "	8'-9 <sup>15</sup> / <sub>16</sub> "	13'-9 <sup>3</sup> / <sub>4</sub> "	2'-1 <sup>1</sup> / <sub>2</sub> "	2'13"
2 <sup>1</sup> / <sub>8</sub>	20'-0 <sup>1</sup> / <sub>8</sub> "	20'-6 <sup>3</sup> / <sub>4</sub> "	10'-6 <sup>11</sup> / <sub>16</sub> "	9'-5 <sup>7</sup> / <sub>16</sub> "	14'-6 <sup>15</sup> / <sub>16</sub> "	2'-2 <sup>15</sup> / <sub>16</sub> "	2'24"
2 <sup>1</sup> / <sub>4</sub>	21'-2 <sup>1</sup> / <sub>4</sub> "	21'-8 <sup>9</sup> / <sub>16</sub> "	11'-1 <sup>3</sup> / <sub>8</sub> "	10'-0 <sup>3</sup> / <sub>8</sub> "	15'-4 <sup>3</sup> / <sub>16</sub> "	2'-4 <sup>3</sup> / <sub>16</sub> "	2'36"
2 <sup>3</sup> / <sub>8</sub>	22'-4 <sup>3</sup> / <sub>8</sub> "	22'-10 <sup>3</sup> / <sub>8</sub> "	11'-8 <sup>1</sup> / <sub>8</sub> "	10'-8 <sup>1</sup> / <sub>4</sub> "	16'-1 <sup>7</sup> / <sub>16</sub> "	2'-5 <sup>3</sup> / <sub>4</sub> "	2'48"
2 <sup>1</sup> / <sub>2</sub>	23'-6 <sup>1</sup> / <sub>2</sub> "	24'-0 <sup>3</sup> / <sub>16</sub> "	12'-2 <sup>7</sup> / <sub>8</sub> "	11'-3 <sup>5</sup> / <sub>8</sub> "	16'-10 <sup>13</sup> / <sub>16</sub> "	2'-7 <sup>3</sup> / <sub>16</sub> "	2'60"
2 <sup>5</sup> / <sub>8</sub>	24'-8 <sup>5</sup> / <sub>8</sub> "	25'-2 <sup>1</sup> / <sub>16</sub> "	12'-9 <sup>11</sup> / <sub>16</sub> "	11'-10 <sup>15</sup> / <sub>16</sub> "	17'-8 <sup>3</sup> / <sub>16</sub> "	2'-8 <sup>3</sup> / <sub>8</sub> "	2'72"
2 <sup>3</sup> / <sub>4</sub>	25'-10 <sup>3</sup> / <sub>4</sub> "	26'-3 <sup>15</sup> / <sub>16</sub> "	13'-4 <sup>1</sup> / <sub>2</sub> "	12'-6 <sup>1</sup> / <sub>4</sub> "	18'-5 <sup>3</sup> / <sub>8</sub> "	2'-10 <sup>1</sup> / <sub>16</sub> "	2'84"
2 <sup>7</sup> / <sub>8</sub>	27'-0 <sup>7</sup> / <sub>8</sub> "	27'-5 <sup>13</sup> / <sub>16</sub> "	13'-11 <sup>3</sup> / <sub>8</sub> "	13'-1 <sup>1</sup> / <sub>2</sub> "	19'-3"	2'-11 <sup>3</sup> / <sub>16</sub> "	2'96"
3	28'-3"	28'-7 <sup>11</sup> / <sub>16</sub> "	14'-6 <sup>1</sup> / <sub>4</sub> "	13'-8 <sup>3</sup> / <sub>4</sub> "	20'-0 <sup>1</sup> / <sub>2</sub> "	3'-1"	3'08"
3 <sup>1</sup> / <sub>8</sub>	29'-5 <sup>1</sup> / <sub>8</sub> "	29'-9 <sup>5</sup> / <sub>8</sub> "	15'-1 <sup>1</sup> / <sub>8</sub> "	14'-4"	20'-10"	3'-2 <sup>1</sup> / <sub>16</sub> "	3'21"
3 <sup>1</sup> / <sub>4</sub>	30'-7 <sup>1</sup> / <sub>4</sub> "	30'-11 <sup>3</sup> / <sub>16</sub> "	15'-8"	14'-11 <sup>1</sup> / <sub>4</sub> "	21'-7 <sup>1</sup> / <sub>2</sub> "	3'-3 <sup>15</sup> / <sub>16</sub> "	3'33"
3 <sup>3</sup> / <sub>8</sub>	31'-9 <sup>3</sup> / <sub>8</sub> "	32'-1 <sup>1</sup> / <sub>2</sub> "	16'-2 <sup>3</sup> / <sub>8</sub> "	15'-6 <sup>1</sup> / <sub>2</sub> "	22'-5"	3'-5 <sup>3</sup> / <sub>8</sub> "	3'45"
3 <sup>1</sup> / <sub>2</sub>	32'-11 <sup>1</sup> / <sub>2</sub> "	33'-3 <sup>7</sup> / <sub>16</sub> "	16'-9 <sup>13</sup> / <sub>16</sub> "	16'-1 <sup>11</sup> / <sub>16</sub> "	23'-2 <sup>9</sup> / <sub>16</sub> "	3'-6 <sup>7</sup> / <sub>8</sub> "	3'57"
3 <sup>5</sup> / <sub>8</sub>	34'-1 <sup>5</sup> / <sub>8</sub> "	34'-5 <sup>7</sup> / <sub>16</sub> "	17'-4 <sup>11</sup> / <sub>16</sub> "	16'-8 <sup>15</sup> / <sub>16</sub> "	24'-0 <sup>1</sup> / <sub>8</sub> "	3'-8 <sup>5</sup> / <sub>16</sub> "	3'69"
3 <sup>3</sup> / <sub>4</sub>	35'-3 <sup>3</sup> / <sub>4</sub> "	35'-7 <sup>7</sup> / <sub>16</sub> "	17'-11 <sup>5</sup> / <sub>8</sub> "	17'-4 <sup>1</sup> / <sub>8</sub> "	24'-9 <sup>13</sup> / <sub>16</sub> "	3'-9 <sup>13</sup> / <sub>16</sub> "	3'82"
3 <sup>7</sup> / <sub>8</sub>	36'-5 <sup>7</sup> / <sub>8</sub> "	36'-9 <sup>7</sup> / <sub>16</sub> "	18'-6 <sup>3</sup> / <sub>16</sub> "	17'-11 <sup>5</sup> / <sub>16</sub> "	25'-7 <sup>1</sup> / <sub>4</sub> "	3'-11 <sup>1</sup> / <sub>4</sub> "	3'94"
4	37'-8"	37'-11 <sup>7</sup> / <sub>16</sub> "	19'-1 <sup>3</sup> / <sub>4</sub> "	18'-6 <sup>7</sup> / <sub>16</sub> "	26'-4 <sup>7</sup> / <sub>8</sub> "	4'-0 <sup>3</sup> / <sub>4</sub> "	4'06"
4 <sup>1</sup> / <sub>4</sub>	40'-0 <sup>1</sup> / <sub>4</sub> "	40'-3 <sup>1</sup> / <sub>4</sub> "	20'-3 <sup>7</sup> / <sub>16</sub> "	19'-8 <sup>13</sup> / <sub>16</sub> "	28'-0 <sup>1</sup> / <sub>16</sub> "	4'-3 <sup>11</sup> / <sub>16</sub> "	4'31"
4 <sup>1</sup> / <sub>2</sub>	42'-4 <sup>1</sup> / <sub>2</sub> "	42'-7 <sup>7</sup> / <sub>16</sub> "	21'-5 <sup>3</sup> / <sub>8</sub> "	20'-11 <sup>1</sup> / <sub>8</sub> "	29'-7 <sup>5</sup> / <sub>16</sub> "	4'-6 <sup>11</sup> / <sub>16</sub> "	4'56"
4 <sup>3</sup> / <sub>4</sub>	44'-8 <sup>3</sup> / <sub>4</sub> "	44'-11 <sup>1</sup> / <sub>8</sub> "	22'-7 <sup>3</sup> / <sub>8</sub> "	22'-1 <sup>3</sup> / <sub>8</sub> "	31'-2 <sup>9</sup> / <sub>16</sub> "	4'-9 <sup>5</sup> / <sub>16</sub> "	4'80"
5	47'-1"	47'-3 <sup>3</sup> / <sub>4</sub> "	23'-9 <sup>5</sup> / <sub>16</sub> "	23'-3 <sup>11</sup> / <sub>16</sub> "	32'-9 <sup>7</sup> / <sub>8</sub> "	5'-0 <sup>5</sup> / <sub>8</sub> "	5'05"
5 <sup>1</sup> / <sub>4</sub>	49'-5 <sup>1</sup> / <sub>4</sub> "	49'-7 <sup>7</sup> / <sub>8</sub> "	24'-11 <sup>5</sup> / <sub>16</sub> "	24'-5 <sup>15</sup> / <sub>16</sub> "	34'-5 <sup>3</sup> / <sub>16</sub> "	5'-3 <sup>3</sup> / <sub>16</sub> "	5'30"
5 <sup>1</sup> / <sub>2</sub>	51'-9 <sup>1</sup> / <sub>2</sub> "	52'-0"	26'-1 <sup>5</sup> / <sub>16</sub> "	25'-8 <sup>3</sup> / <sub>16</sub> "	36'-0 <sup>9</sup> / <sub>16</sub> "	5'-6 <sup>3</sup> / <sub>16</sub> "	5'55"
5 <sup>3</sup> / <sub>4</sub>	54'-1 <sup>3</sup> / <sub>4</sub> "	54'-4 <sup>3</sup> / <sub>16</sub> "	27'-3 <sup>5</sup> / <sub>16</sub> "	26'-10 <sup>7</sup> / <sub>16</sub> "	37'-7 <sup>7</sup> / <sub>8</sub> "	5'-9 <sup>1</sup> / <sub>2</sub> "	5'79"
6	56'-6"	56'-8 <sup>3</sup> / <sub>8</sub> "	28'-5 <sup>3</sup> / <sub>8</sub> "	28'-0 <sup>5</sup> / <sub>8</sub> "	39'-3 <sup>1</sup> / <sub>4</sub> "	6'-0 <sup>1</sup> / <sub>2</sub> "	6'04"
6 <sup>1</sup> / <sub>4</sub>	58'-10 <sup>1</sup> / <sub>4</sub> "	59'-0 <sup>1</sup> / <sub>2</sub> "	29'-7 <sup>3</sup> / <sub>8</sub> "	29'-2 <sup>7</sup> / <sub>8</sub> "	40'-10 <sup>3</sup> / <sub>8</sub> "	6'-3 <sup>1</sup> / <sub>2</sub> "	6'29"
6 <sup>1</sup> / <sub>2</sub>	61'-2 <sup>1</sup> / <sub>2</sub> "	61'-4 <sup>11</sup> / <sub>16</sub> "	30'-9 <sup>7</sup> / <sub>16</sub> "	30'-5 <sup>1</sup> / <sub>16</sub> "	42'-6"	6'-6 <sup>7</sup> / <sub>16</sub> "	6'54"
6 <sup>3</sup> / <sub>4</sub>	63'-6 <sup>3</sup> / <sub>4</sub> "	63'-8 <sup>15</sup> / <sub>16</sub> "	31'-11 <sup>7</sup> / <sub>16</sub> "	31'-7 <sup>5</sup> / <sub>16</sub> "	44'-1 <sup>1</sup> / <sub>8</sub> "	6'-9 <sup>7</sup> / <sub>16</sub> "	6'79"
7	65'-11"	66'-1"	33'-1 <sup>1</sup> / <sub>2</sub> "	32'-9 <sup>1</sup> / <sub>2</sub> "	45'-8 <sup>3</sup> / <sub>4</sub> "	7'-0 <sup>1</sup> / <sub>16</sub> "	7'04"
7 <sup>1</sup> / <sub>4</sub>	68'-3 <sup>1</sup> / <sub>4</sub> "	68'-5 <sup>3</sup> / <sub>16</sub> "	34'-3 <sup>3</sup> / <sub>16</sub> "	33'-11 <sup>11</sup> / <sub>16</sub> "	47'-4 <sup>3</sup> / <sub>16</sub> "	7'-3 <sup>7</sup> / <sub>16</sub> "	7'28"
7 <sup>1</sup> / <sub>2</sub>	70'-7 <sup>1</sup> / <sub>2</sub> "	70'-9 <sup>7</sup> / <sub>16</sub> "	35'-5 <sup>5</sup> / <sub>8</sub> "	35'-1 <sup>7</sup> / <sub>8</sub> "	48'-11 <sup>5</sup> / <sub>16</sub> "	7'-6 <sup>3</sup> / <sub>8</sub> "	7'53"
7 <sup>3</sup> / <sub>4</sub>	72'-11 <sup>3</sup> / <sub>4</sub> "	73'-1 <sup>3</sup> / <sub>16</sub> "	36'-7 <sup>11</sup> / <sub>16</sub> "	36'-4 <sup>1</sup> / <sub>16</sub> "	50'-7"	7'-9 <sup>3</sup> / <sub>8</sub> "	7'78"
8	75'-4"	75'-5 <sup>3</sup> / <sub>4</sub> "	37'-9 <sup>3</sup> / <sub>4</sub> "	37'-6 <sup>1</sup> / <sub>4</sub> "	52'-2 <sup>7</sup> / <sub>16</sub> "	8'-0 <sup>3</sup> / <sub>8</sub> "	8'03"

## FORMULÆ. (ACCURATE)

$$A = 2GN$$

$$B = G\sqrt{4N^2 + 1}$$

$$C = G(N + \frac{1}{4N})$$

$$D = G(N - \frac{1}{4N})$$

$$E = I(N + \frac{1}{4N})$$

$$F = C - \sqrt{.375G(4N^2 + 1)} + S$$

$$R = 2GN^2$$

## CURVED ROADS.

WHEN BOTH ROADS ARE CURVED TO THE SAME RADIUS AND IN THE SAME DIRECTION IT IS SUFFICIENTLY ACCURATE TO ASSUME THAT THE LENGTHS OF SIDES ARE THE SAME AS IF BOTH ROADS WERE STRAIGHT.

## LIMITING ANGLES.

NO DIAMOND (WITHOUT MOVABLE ELBOWS) TO BE LAID TO A FLATTER ANGLE THAN 1 IN 8 AND AS FAR AS POSSIBLE TO BE LIMITED TO 1 IN 7<sup>1</sup>/<sub>2</sub>. 1 IN 8 TO BE LAID ONLY IN STRAIGHT LINES (E.D.I., §183. IX)

F	R	LENGTH OF SW.
22'-5 <sup>7</sup> / <sub>16</sub> "	339'-0"	10'-0"
22'-11 <sup>1</sup> / <sub>2</sub> "	367'-10"	10'-0"
25'-5 <sup>5</sup> / <sub>8</sub> "	397'-10 <sup>1</sup> / <sub>4</sub> "	12'-0"
25'-11 <sup>5</sup> / <sub>8</sub> "	429'-0 <sup>1</sup> / <sub>2</sub> "	12'-0"
26'-5 <sup>3</sup> / <sub>4</sub> "	461'-5"	12'-0"
26'-11 <sup>7</sup> / <sub>8</sub> "	494'-11 <sup>1</sup> / <sub>2</sub> "	12'-0"
27'-5 <sup>15</sup> / <sub>16</sub> "	529'-8 <sup>1</sup> / <sub>4</sub> "	12'-0"
28'-0 <sup>1</sup> / <sub>16</sub> "	565'-7"	12'-0"
30'-6 <sup>3</sup> / <sub>16</sub> "	602'-8"	14'-0"

R1778

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