HUDSON'S TABLES

VOL. II.

TABLES

FOR

CALCULATING THE CUBIC CONTENTS

OF

EXCAVATIONS AND EMBANKMENTS.

BY

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M. AM. SOC. C. E.

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PREFACE.

THE methods of computing earthwork quantities given in Articles 9, 10, and 11, are entirely distinct from those in the first volume. Each volume is independent of the other, and complete in itself. Article 8 is in both volumes. Attention is called to Article 9; the rule at the head of the article is very short and simple, and well adapted, in three-level ground, to take the place of the ordinary method of "averaging end areas;" it gives the same answer and the process is a third shorter. As is shown in the example, the entire process consists in addition, subtraction, and inspection of tables, and the errors that are liable to occur in the multiplications that are part of the usual methods are avoided. When, as is usual, three heights are taken at a station, the following examples will show by comparison the advantage of using the methods of computing earthwork quantities given in this work over the usual methods.

EXAMPLE, computed by the usual method of "averaging end areas." Road-bed, 18 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.	L. D.		Left.		Center.	Right.	R. D.	
1			17.6		8.6	4.6	3.6	12.6
2			16.6		7.6	2.0	10.2	19.2
17.6	2)4.6	30.2	8.6	12.2	69.46			
12.6	2.3	2.3	3.6	4.5	54.90			
30.2		906	12.2	610	124.36	124.36		
		604		488		115.90		
		69.46		54.90		2)240.26		
						27)120.13		
16.6	2)2.0	35.8	7.6	17.8	35.80	445	Ans. in cubic yards.	
19.2	1.0	1.0	10.2	4.5	80.10			
35.8		35.80	17.8	890	115.90			
				712				
				80.10				

Below the same example is computed in two-thirds of the time by the

first rule in Article 9, the distances (under L. D. and R. D.), from center to slope stakes are not used.

EXAMPLE. Road-bed, 18 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.	Left.	Center.	Right.
1	8.6	4.6	3.6
2	7.6	2.0	10.2

8.6	4.6	12.2	136	7.6	2.0	17.8	222		
3.6	4.6	9.2	96	10.2	2.0	4.0	37		
12.2	9.2		232	17.8	4.0		259	230	
		3.0	2			13.8	44	215	
			230				215	445	Ans. in cu. yds.

The third example in Article 9 shows another method of finding the "average end area" answer.

EXAMPLE. Road-bed, 24 feet wide. Slide slopes 1 to 1. Stations 100 feet long.

Station.	L. D.	Left.	Center.	Right.	R. D.
1	18.2	6.2	2.4	1.2	13.2
2	24.8	12.8	8.6	6.4	18.4

The following is the computation of the above example by the common method of "averaging end areas."

18.2	2)2.4	31.4	6.2	7.4	37.68		
13.3	1.2	1.2	1.2	6	44.40	82.08	
31.4		37.68	7.4	44.4	82.08	300.96	
						2)383.04	
24.8	2)8.6	43.2	12.8	19.2	185.76	27)191.52	
18.4	4.3	4.3	6.4	6	115.20	709	Ans. in cubic yards.
43.2		185.76	19.2	115.2	300.96		

By the second method of Article 9, the (distances under L. D. and R. D.), from center to slope stakes are not used, and the answer is found in two-thirds of the time, as follows :

6.2	29.1	70	12.8	40.0	344	152	
1.2	2.4	82	6.4	8.6	213	557	
7.4	69.84	152	19.2	344.00	557	709	Answer in cubic yards.

By the last method in Article 9, the process is nearly one-half shorter

than the computation by the usual form of the prismoidal formula, while the answer is the same.

EXAMPLE, computed by the usual form of the prismoidal formula :

Road-bed, 24 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.	L. D.	Left.	Center.	Right.	R. D.
1	18.2	6.2	2.4	1.2	13.2
2	24.8	12.8	8.6	6.4	18.4

18.2	2)2.4	31.4	6.2	7.4	37.68		
13.2	1.2	1.2	1.2	6	44.40		
31.4		37.68	7.4	44.4	82.08	82.08	
						300.96	
24.8	2)8.6	43.2	12.8	19.2	185.76	729.50	
18.4	4.3	4.3	6.4	6	115.20		
43.2		185.76	19.2	115.2	300.96	6)1112.54	
						27)185.42	
						687	Ans. in cu. yds.

31.4	1.2	74.6	7.4	26.6	410.30	
43.2	4.3	5.5	19.2	12	319.20	
74.6	5.5	410.30	26.6	319.2	729.50	

If the last method of Article 9 is used, the computation is very much shortened and becomes :

2.4	6.2	9.7	8.6	12.8	13.3	7.4	130	
2.4	1.2	13.4	8.6	6.4	19.6	19.2	261	
8.6	—		2.4	—		—	296	
—	7.4	129.98	—	19.2	260.68	26.6	—	
13.4			19.6				687	Ans. in cubic yards.

In Article 11, methods for cross sections of five or more heights are given.

The cross-section pages in Article 10 and at the end of the volume show forms for cross-section books that will be found useful and convenient for recording and preserving the field notes and office computation when these tables are used. The left hand pages of the cross-section books could be arranged for keeping field notes in the usual form. The number for 2.0 in Table VI, is the same as the number for 0.0 in Table VIII, and in many cases one table of side triangles may be used for several widths of road-bed by simply moving the numbers in the columns headed "Center Height." When, as is usual, three heights are taken at a station, much time is saved by using the tables of side triangles with either the "diagonal," "prismoidal formula," "mean proportional," or "averaging end sections" (with or without "prismoidal correction") methods

first rule in Article 9, the distances (under L. D. and R. D.), from center to slope stakes are not used.

EXAMPLE. Road-bed, 18 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.	Left.	Center.	Right.
1	8.6	4.6	3.6
2	7.6	2.0	10.2

8.6	4.6	12.2	136	7.6	2.0	17.8	222		
3.6	4.6	9.2	96	10.2	2.0	4.0	37		
12.2	9.2		232	17.8	4.0		259	230	
		3.0	2			13.8	44	215	
			230				215	445	Ans. in cu. yds.

The third example in Article 9 shows another method of finding the "average end area" answer.

EXAMPLE. Road-bed, 24 feet wide. Slide slopes 1 to 1. Stations 100 feet long.

Station.	L. D.	Left.	Center.	Right.	R. D.
1	18.2	6.2	2.4	1.2	13.2
2	24.8	12.8	8.6	6.4	18.4

The following is the computation of the above example by the common method of "averaging end areas."

18.2	2)2.4	31.4	6.2	7.4	37.68		
13.3	1.2	1.2	1.2	6	44.40	82.08	
31.4		37.68	7.4	44.4	82.08	300.96	
						2)383.04	
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18.4	4.3	4.3	6.4	6	115.20	709	Ans. in cubic yards.
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By the second method of Article 9, the (distances under L. D. and R. D.), from center to slope stakes are not used, and the answer is found in two-thirds of the time, as follows :

6.2	29.1	70	12.8	40.0	344	152	
1.2	2.4	82	6.4	8.6	213	557	
7.4	69.84	152	19.2	344.00	557	709	Answer in cubic yards.

By the last method in Article 9, the process is nearly one-half shorter

than the computation by the usual form of the prismoidal formula, while the answer is the same.

EXAMPLE, computed by the usual form of the prismoidal formula : Road-bed, 24 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.	L. D.	Left.	Center.	Right.	R. D.
1	18.2	6.2	2.4	1.2	13.2
2	24.8	12.8	8.6	6.4	18.4

18.2	2)2.4	31.4	6.2	7.4	37.68		
13.2	1.2	1.2	1.2	6	44.40		
31.4		37.68	7.4	44.4	82.08	82.08	
						300.96	
24.8	2)8.6	43.2	12.8	19.2	185.76	729.50	
18.4	4.3	4.3	6.4	6	115.20		
43.2		185.76	19.2	115.2	300.96	6)1112.54	
						27)185.42	
						687	Ans. in cu. yds.

31.4	1.2	74.6	7.4	26.6	410.30	
43.2	4.3	5.5	19.2	12	319.20	
74.6	5.5	410.30	26.6	319.2	729.50	

If the last method of Article 9 is used, the computation is very much shortened and becomes :

2.4	6.2	9.7	8.6	12.8	13.3	7.4	130	
2.4	1.2	13.4	8.6	6.4	19.6	19.2	261	
8.6	—		2.4	—		—	296	
—	7.4	129.98	—	19.2	260.68	26.6	—	
13.4			19.6				687	Ans. in cubic yards.

In Article 11, methods for cross sections of five or more heights are given.

The cross-section pages in Article 10 and at the end of the volume show forms for cross-section books that will be found useful and convenient for recording and preserving the field notes and office computation when these tables are used. The left hand pages of the cross-section books could be arranged for keeping field notes in the usual form. The number for 2.0 in Table VI, is the same as the number for 0.0 in Table VIII, and in many cases one table of side triangles may be used for several widths of road-bed by simply moving the numbers in the columns headed "Center Height." When, as is usual, three heights are taken at a station, much time is saved by using the tables of side triangles with either the "diagonal," "prismoidal formula," "mean proportional," or "averaging end sections" (with or without "prismoidal correction") methods

of computing earthwork quantities. Instead of finding the area of each cross section, the cubic yards in a solid, 100 feet long, of the given cross section, are found in three-fourths of the time from the tables, by the following rule: When the sum of the side heights is $\frac{\text{less}}{\text{greater}}$ than twice the center height—multiply the cubic yards found for the given center height in the table of side triangles, by the difference between the sum of the two side heights and twice the center height, and $\frac{\text{subtract}}{\text{add}}$ the product $\frac{\text{from}}{\text{to}}$ the cubic yards found for the given center height in the table of level cross sections. The cubic yards thus found can be used, as the areas are commonly used, in the different methods of computing earthwork quantities, omitting the multiplication by 100 and division by 27, as the quantities are already in cubic yards.

EXAMPLE. Road-bed 18 feet wide. Side slopes 1½ to 1. Stations 100 feet long.

Station.	Left.	Center.	Right.
1	28.0	15.0	9.0
2	14.0	9.0	5.0

28	15	37	58.3	2250	
9	2	30	7	408	
37	30	7	408.1	2658	2658
					1092
14	9	19	41.7	1050	2)3750
5	2	18	1	42	1875 Answer in cubic yards.
19	18	1	41.7	1092	

In the above example for Station 1, the sum of the two side heights is 37, twice the center height is 30, and 30 from 37 leaves 7. The number in Table VI for center height 15.0 is 58.3, and 58.3 multiplied by 7 is 408. In Table V the number for height 15.0 is 2250, and 2250 plus 408 equals 2658. In the same manner 1092 is found for station 2. Adding 2658 and 1092 and dividing 2, will give the same answer, 1875 cubic yards, as the common method of "averaging end areas." In Article 8, the above example is given with "prismoidal correction." In the cross-section book pages at the end of this volume are examples of the use of the above rule, with the "prismoidal formula" and "prismoidal correction" methods; and the first and second methods in Article 9 can be used with the "prismoidal formula" and "prismoidal correction" method; this is partly shown in Article 10. In the computation of earthwork quantities much time is saved if similar cross-section books are used; there is a place for nearly every number, so that errors are less liable to occur. For comparison the computation of the above example by the usual method of "averaging end areas" is given below:

EXAMPLE. Road-bed 18 feet wide. Side slopes $1\frac{1}{2}$ to 1. Stations 100 feet long.

Station.	L. D.		Left.		Center.	Right.	R. D.
1	51.0		28.0		15.0	9.0	22.5
2	30.0		14.0		9 0	5.0	16.5
51.0	2)15.0	73.5	28	37	551.25		
22.5	7.5	7.5	9	4.5	166.50	717.75	
						294.75	
73.5		3675	37	185	717.75		
		5145		148		2)1012.50	
						27)506.25	
		551.25		166.5		1875	Ans. in cubic yds.
						[33 / 1842]	
30.0	2)9.0	46.5	14	19	209.25		
16.5	4.5	4.5	5	4.5	85.50		
46.5		2325	19	95	294.75		
		1860		76			
		209.25		85.5			

The answer for the "prismoidal correction" has been added in brackets, so that the example can also be compared with the first example in Article 8, showing the advantage of using the latter method.

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	PRISMS. FT. LONG.	ROAD-BED. FT. WIDE.	SIDE SLOPES.
I. Level cross-sections.	100	10	1½ to 1
II. Side-triangles.	100	10	1½ to 1
III. Level cross-sections.	100	14	1½ to 1
IV. Side-triangles.	100	14	1½ to 1
V. Level cross-sections.	100	18	1½ to 1
VI. Side-triangles.	100	18	1½ to 1
VII. Level cross-sections.	100	24	1½ to 1
VIII. Side-triangles.	100	24	1½ to 1
IX. Level cross-sections.	100	26	1½ to 1
X. Side-triangles.	100	26	1½ to 1
XI. Level cross-sections.	100	16	1 to 1
XII. Side-triangles.	100	16	1 to 1
XIII. Level cross-sections.	100	20	1 to 1
XIV. Side-triangles.	100	20	1 to 1
XV. Level cross sections.	100	24	1 to 1
XVI. Side-triangles.	100	24	1 to 1
XVII. Level cross-sections.	100	28	1 to 1
XVIII. Side-triangles.	100	28	1 to 1
XIX. Level cross-sections.	100	28	½ to 1
XX. Side-triangles.	100	28	½ to 1
XXI. Level cross-sections.	100	20	¼ to 1
XXII. Side-triangles.	100	20	¼ to 1
XXIII. Level cross-sections.	100	28	¼ to 1
XXIV. Side-triangles.	100	28	¼ to 1
XXV. Level cross-sections.	$\frac{100}{6}$	10	1½ to 1
XXVI. Side triangles.	$\frac{100}{6}$	10	1½ to 1
XXVII. Level cross-sections.	$\frac{100}{6}$	12	1 to 1
XXVIII. Side-triangles.	$\frac{100}{6}$	12	1 to 1
XXIX. Level cross-sections.	$\frac{100}{6}$	14	1½ to 1
XXX. Side triangles.	$\frac{100}{6}$	14	1½ to 1
XXXI. Level cross-sections.	$\frac{100}{6}$	16	1 to 1
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XXXIII. Cu. yds. in $\frac{100}{8}$ ft. l'gths for given areas.			
XXXIV. Level cross-secs. Cu. yds. in 100 ft. lghs.		24	1½ to 1
XXXV. Level cross-sections.	100	12	1 to 1
XXXVI. Side triangles.	100	12	1 to 1
XXXVII. Prismoidal corrections.			
XXXVIII. Cubic yards in $\frac{100}{2}$ feet lengths for given areas.			

XXXIX. Cubic yards in $\frac{100}{12}$ feet lengths for given areas.

XL. Cubic yards $= \text{height} \frac{24 \times 100}{4 \times 27}$.

XLI. Cubic yards $= 100 \frac{D^2}{27 \times 16 \times 1}$, and cubic yards $= 100 \frac{D^2}{27 \times 16 \times \frac{2}{3}}$.

	PRISMS. FT. LONG.	ROAD-BED. FT. WIDE.	SIDE SLOPES.
XLII. Level cross-sections.	$\frac{100}{4}$	14	$1\frac{1}{2}$ to 1
XLIII. Level cross-sections.	$\frac{100}{4}$	18	1 to 1
XLIV. Cubic yards $= \frac{(\text{height} \times r + b)\ 100}{4 \times 27}$.		24	1 to 1
XLV. Cubic yards $= \frac{(\text{height})\ b \times 100}{8 \times 27}$.		24	
XLVI. Cubic yards $= \frac{(\text{height} \times r + b)\ 100}{12 \times 27}$.		24	1 to 1

ARTICLE 7.

The cubic yards in a prism 100 feet long, of level cross-section, can be found by multiplying the area of the cross-section by $\frac{100}{27}$. The area of a level cross-section can be found by adding the product of the side-slope ratio by the height to the width of the road-bed, and multiplying the sum by the height.

In any level cross-section let r equal the ratio of the side-slope to one, then, as will be more clearly seen by making a diagram,

Area for height 0.1 + area for height 0.9 + 2 $(0.9 \times 0.1 \times r)$
= area for height 1.0.

To change to cubic yards, multiply both terms by $\frac{100}{27}$, and let the cubic yards for height 0.9 equal Y, and 2 $(0.9 \times 0.1 \times r)\frac{100}{27}$ equal y, then

Cubic yards for height 0.1 + $Y + y$ = cubic yards for height 1.0,

and in the same way,

Cubic yards for height 0.2 + $Y + 2y$ = cubic yards for height 1.1,

and for a general equation

Cubic yards for any height $x + Y + 10xy$ = cubic yards for height $(x+0.9)$.

This equation can be used in making a table of cubic yards in prisms 100 feet long, of level cross-section. For side-slope 1½ to 1, y will equal 1.0; and for side slope 1 to 1, y will equal $\frac{2}{3}$, or 0.6 +. Find the cubic yards for height 0.9 or Y, and place them below the space for height 0.0 in a table made similar in form to Table C, place $Y + y$ below the space for height 0.1, and $Y + 2y$ below the space for height 0.2, etc., to the end of the first part of the table. Adding $9y$ to any number in the first part of the table will give the number below it; this can be used as a check, or after the first line of $Y+y$'s are in place the first part of the table can be completed by adding $9y$ to each number to find the number below it; and this is the easier method when the side-slope is 1 to 1, as then $9y$ equals 6, a whole number, while y equals $\frac{2}{3}$, a fraction. Find the cubic yards for

heights from 0.1 to 0.9, by the rule at the head of this article, or by the method given in Trautwine's "Excavations and Embankments," and place them in the table; then add the cubic yards for height 0.1 to $Y + y$, the number just below, to find the cubic yards for height 1.0, and add the cubic yards for height 0.2 to $Y + 2y$ to find the cubic yards for heights 1.1, and so on to the end of the table, and the complete table will be similar to the second part of Table C. The cubic yards in the last line should be checked by the rule at the head of this article; and a line drawn through the quantities $Y + y$, $Y + 2y$, etc.; then the table can be used, or copied into any more convenient form. Table C is for a road-bed 18 feet wide, side-slopes $1\frac{1}{2}$ to 1; Y equals 64.5; y equals 1.0; $Y + y$ equals 65.5; the cubic yards for 0.1 are 6.7, and 6.7 plus 65.5 equals 72.2, the cubic yards for height 1.0, and so on to the end of the table; and if it is continued to height 40.0 and copied, will give Table V.

The rule given in the Preface shows the use of these tables with the tables of side-triangles.

TABLE C.

Road-bed 18 feet wide. Side-slopes $1\frac{1}{2}$ to 1.

FIRST PART.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0		0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	64.5		65.5		66.5		67.5		68.5		69.5		70.5		71.5		72.5
0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6		1.7	
	73.5		74.5		75.5		76.5		77.5		78.5		79.5		80.5		81.5
1.8		1.9		2.0		2.1		2.2		2.3		2.4		2.5		2.6	
	82.5		83.5		84.5		85.5		86.5		87.5		88.5		89.5		90.5
2.7		2.8		2.9		3.0		3.1		3.2		3.3		3.4		3.5	
	91.5		92.5		93.5		94.5		95.5		96.5		97.5		98.5		99.5
3.6		3.7		3.8		3.9		4.0		4.1		4.2		4.3		4.4	
	100.5		101.5		102.5		103.5		104.5		105.5		106.5		107.5		108.5
4.5		4.6		4.7		4.8		4.9		5.0		5.1		5.2		5.3	

SECOND PART.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0.0	0.1	6.7	0.2	13.6	0.3	20.5	0.4	27.6	0.5	34.7	0.6	42.0	0.7	49.4	0.8	56.9
	64.5		65.5		66.5		67.5		68.5		69.5		70.5		71.5		72.5
0.9	64.5	1.0	72.2	1.1	80.1	1.2	88.0	1.3	96.1	1.4	104.2	1.5	112.5	1.6	120.9	1.7	129.4
	73.5		74.5		75.5		76.5		77.5		78.5		79.5		80.5		81.5
1.8	138.0	1.9	146.7	2.0	155.6	2.1	164.5	2.2	173.6	2.3	182.7	2.4	192.0	2.5	201.4	2.6	210.9
	82.5		83.5		84.5		85.5		86.5		87.5		88.5		89.5		90.5
2.7	220.5	2.8	230.2	2.9	240.1	3.0	250.4	3.1	260.1	3.2	270.2	3.3	280.5	3.4	290.9	3.5	301.4
	91.5		92.5		93.5		94.5		95.5		96.5		97.5		98.5		99.5
3.6	312.0	3.7	322.7	3.8	333.6	3.9	344.5	4.0	355.6	4.1	366.7	4.2	378.0	4.3	389.4	4.4	400.9
	100.5		101.5		102.5		103.5		104.5		105.5		106.5		107.5		108.5
4.5	412.5	4.6	424.2	4.7	436.1	4.8	448.0	4.9	460.1	5.0	472.2	5.1	484.5	5.2	496.9	5.3	509.4

In a three-level section in excavation, let the centre-cut equal c, the sum of the side-cuts equal s, the width of the road-bed equal B, the side-slope ratio equal r, the difference between the sum of the side-cuts and twice the centre-cut equal D, and the area of the cross-section equal A; then the following equation will be true :

$$2c\,\frac{B+cr}{2}\times\frac{100}{4\times 27}+s\,\frac{B+\frac{s}{2}r}{2}\times\frac{100}{4\times 27}-D\,\frac{Dr}{4}\times\frac{100}{4\times 27}=\frac{100A}{2\times 27}.$$

To use this equation prepare a table, similar to Tables XLII and XLIII, for each width of road-bed, showing opposite $2c$ the quantity

$$2c\,\frac{B+cr}{2}\times\frac{100}{4\times 27},$$

and opposite s the quantity

$$s\,\frac{B+\frac{s}{2}r}{2}\times\frac{100}{4\times 27};$$

this will be seen to be a table of level cuttings with double heights (cuts or fills) in the first column, and cubic yards in prisms $\frac{100}{4}$ feet long in the second column.

Then prepare a table similar to Table XLI, for each side-slope ratio, showing opposite D the quantity $D\,\frac{Dr}{4}\times\frac{100}{4\times 27}$. Find from the first table the cubic yards for s and for $2c$, add them, and from their sum subtract the cubic yards found in the second table for D. Add the cubic yards thus found for two adjacent stations to find the cubic yards in the prismoid, 100 feet long, between the stations; and the answer will be the same as that given by the common method of "averaging end-areas." In the following example the road-bed is 18 feet wide, the side-slope ratio 1 to 1, and the stations 100 feet apart :

	Station.	Left.	Centre.	Right.	
	1	19.6	12.0	9.2	
	2	25.2	17.6	4.4	
$s = 28.8$	432	$s' = 39.6$	693	760	
$2c = 24.0$	333	$2c' = 35.2$	580	1269	
	765		1273	2029	Answer in cubic yards.
$D = 4.8$	5	$D' = 4.4$	4		
	760		1269		

The sum of the side-cuts at station 1 is 28.8, twice the centre-cut is 24.0, and their difference is 4.8. In Table XLIII the number for 28.8 is 432, and the number for 24.0 is 333; and in Table XLI the number for 4.8 is 5; and 432 plus 333 minus 5 is 760. In the same way, 1269 is found for station 2, and 760 plus 1269 equals 2029, the answer in cubic yards. From this answer the "prismoidal correction" of 19 cubic yards, found from Table XXXVII, for the difference of centre-cuts, 17.6 minus 12.0 equals 5.6, can be deducted, leaving 2010 cubic yards for the answer.

To use the "prismoidal formula," find from the table the cubic yards for the mid-section, multiply by 4, add the product to the cubic yards for the end-sections, and divide the sum by 3, as follows:

$\frac{s+s'}{2} = 34.2$	556	760	
$c+c' = 29.6$	449	$1000 \times 4 = 4000$	
	1005	1269	
4.6	5	3 | 6029	
	1000	2010	Answer in cubic yards.

The same method can be used for embankments, and another example is shown in Article 9.

In a three-level section in excavation, let the centre-cut equal C, the sum of the two side-cuts equal S, the width of the road-bed equal B, the side-slope ratio equal r, the difference between the centre-cut and half the sum of the two side-cuts equal D, and the area of the cross-section equal A; then the following equation will be true:

$$C(B + Cr)\frac{100}{27} + \frac{S}{2}\left(B + \frac{S}{2}r\right)\frac{100}{27} - D^2 r\frac{100}{27} = 2A\frac{100}{27}.$$

To use the equation find from the tables of level cross-sections the cubic yards for C and for $\frac{S}{2}$, add them, and from their sum subtract the cubic yards found in Table XLVII for D. Add the cubic yards thus found for two adjacent stations, and divide the sum by 4, to find the cubic yards in the prismoid, 100 feet long, between the stations, and the answer will be the same as that given by the common method of "averaging end-areas." In the following example the road-bed is 18 feet wide, the side-slope ratio $1\frac{1}{2}$ to 1, and the stations 100 feet apart.

Station.		Left.		Centre.	Right.	
1		28.0		15.0	9.0	
2		14.0		9.0	5.0	
$\frac{S}{2} = 18.5$	3135		$\frac{S'}{2} = 9.5$	1135	5317	
$C = 15.0$	2250		$C' = 9.0$	1050	2184	
	5385			2185	4)7501	
$D = 3.5$	68		$D' = 0.5$	1	1875	Answer.
	5317			2184		

Half the sum of the side-cuts at station 1 is 18.5, the centre-cut is 15.0, and their difference is 3.5. In Table V the number for 18.5 is 3135, and the number for 15.0 is 2250, and in Table XLVII the number for 3.5 is 68, and 3135 plus 2250 minus 68 is 5317. In the same way, 2184 is found for station 2 ; and 5317 plus 2184 equals 7501, and 7501 divided by 4 gives 1875, the answer in cubic yards. From the tables of level cross-sections, tables that give the cubic yards in prisms $\frac{100}{2}$ feet long could be computed, and with a table that gives opposite D the quantity $D^2r\,\frac{100}{2 \times 27}$ could be used as above, dividing by 2 instead of 4, with the advantage of using smaller numbers. As shown, tables giving the cubic yards in prisms $\frac{100}{4}$ feet long can be used. In Tables XLII and XLIII double heights are used because it was thought easier to find twice the centre-height than half the sum of the side-heights. Double heights could be used in the ordinary tables of level cross-sections. This gives the choice of six methods of using the fact that twice the area of a three-level cross-section in excavation is equal to the area of the level cross-section of C, plus the area of the level cross-section of $\frac{S}{2}$, minus D^2r ; C being the centre-cut, S the sum of the two side-cuts, D the difference between C and $\frac{S}{2}$, and r the side-slope ratio. The same methods can be used for embankments.

ARTICLE 8.

PRISMOIDAL CORRECTION.

THE cubic yards given in Table XXXVII are found by multiplying the square of the difference of center heights (Diff. C. H.) by the ratio of the side slope to 1, and by 100, and dividing by 27 and 6. If three heights are taken at a station, find from the tables by the rule in the Preface the cubic yards for each end cross-section, add them, divide by 2, and subtract the cubic yards, given in Table XXXVII, for the difference of center heights; the answer will usually be a very little in excess of the answer by the prismoidal formula.

EXAMPLE. Road-bed 18 feet wide. Side slopes $1\frac{1}{2}$ to 1.

		Station.		Left.			Center.		Right.		
		1		28.0			15.0		9.0		
		2		14.0			9.0		5.0		
28	15	37	58.3	2250	14	9	19	41.7	1050	2658	15
9	2	30	7	408	5	2	18	1	42	1092	9
37	30	7	408.1	2658	19	18	1	41.7	1092	2)3750	6
										1875	
										33	
										1842	Ans.

In the above example for station 1, the sum of the side heights is 37, twice the center height is 30, and 30 from 37 leaves 7. The number in Table VI for center height 15.0 is 58.3, and 58.3 multiplied by 7 is 408.1. In Table V the number for height 15.0 is 2250, and $2250 + 408 = 2658$. Proceed in the same manner for station 2, then add the results, divide by 2, and subtract 33, the cubic yards found in Table XXXVII for the difference of center height 6.0, for the answer in cubic yards.

When three heights are taken at a station, the number of cubic yards in the prismoid between two adjacent stations can be found by the following rule, and the answer will be the same as by the prismoidal formula: Multiply the horizontal distance between the slope stakes at the first station by twice the center height of the first station plus the center height of the

second station; multiply the horizontal distance between the slope stakes at the second station by twice the center height of the second station plus the center height of the first station; and multiply the sum of the four side heights by $1\frac{1}{2}$ times the width of the road-bed; add these three products, and find the cubic yards for the resulting area in Table XXXIX.

EXAMPLE. Road-bed 14 feet wide. Side slopes $1\frac{1}{2}$ to 1.

Station.	L. D.	Left.	Center.	Right.	R. D.
1	11.5	3.0	2.6	1.8	9.7
2	13.3	4.2	1.4	1.0	8.5

11.5	5.2	21.2	13.3	2.8	21.8	3.0	21	139.92	
9.7	1.4	6.6	8.5	2.6	5.4	1.8	10.	117.72	
						4.2		210.	
21.2	6.6	139.92	21.8	5.4	117.72	1.0	210.		
						10.0		467.64 — 144 cu. yds. Ans.	

At station 1 the horizontal distance between the slope stakes is 21.2; twice the center height is 5.2, and 5.2 plus center height 1.4 is 6.6; the product of 21.2 by 6.6 is 139.92. At station 2 the horizontal distance between the slope stakes is 21.8, twice the center height is 2.8, and 2.8 plus center height 2.6 is 5.4; the product of 21.8 by 5.4 is 117.72; the sum of the side heights is 10, $1\frac{1}{2}$ times the width of the road-bed is 21, and the product of 21 by 10 is 210. The sum of the three products is 467.64, and in Table XXXIX for the nearest area (466.56) we find 144 cubic yards.

When more than three heights are taken at a station, we can multiply the sum of the end-areas by 100, and divide by 2 and 27, and deduct the cubic yards given in Table XXXVII, for the difference of center heights, for an answer usually a little in excess of the answer by the prismoidal formula.

After finding the sum of the end-areas, instead of multiplying by 100 and dividing by 2 and 27, we can find the cubic yards for 100 feet opposite the area nearest this sum in Table XXXVIII, and then deduct the cubic yards given in Table XXXVII for the difference of center heights.

EXAMPLE. Side slopes $1\frac{1}{2}$ to 1, center heights 1.2 and 5.2, end-areas 28 and 185. Sum of end-areas will be 213, and for area 212.76 in Table XXXVIII we find 394 cubic yards. The difference of center heights is 4.0, and for 4.0 we find in Table XXXVII 15 cubic yards, and 15 cubic yards from 394 cubic yards leaves 379 cubic yards, answer.

ARTICLE 9.

WHEN three heights are taken at a station, find from tables of level cross sections that give the cubic yards in prisms $\frac{1}{4}\frac{0}{0}$ feet long, the cubic yards for the sum of the side heights and for twice the center height; add them, and from their sum subtract the cubic yards found in Table XLI, for the difference between the sum of the side heights and twice the center height.

Add the cubic yards thus found for two adjacent stations, to find the cubic yards in the prismoid 100 feet long between the stations. The answer is the same as that given by the common method of "averaging end areas."

EXAMPLE. Road-bed 18 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.		Left.		Center.		Right.
1		8.6		4.6		3.6
2		7.6		2.0		10.2
$s = 12.2$	136	$s' = 17.8$	222			
$2c = 9.2$	96	$2c' = 4.0$	37	230		
	232		259	215		
$D = 3.0$	2	$D' = 13.8$	44	445	Answer in cubic yards.	
	230		215			

Let the sum of the side heights at station 1 equal $s = 8.6 + 3.6 = 12.2$; twice the center height equal $2c = 4.6 + 4.6 = 9.2$, and their difference equal $D = 3.0$. The number in Table XLIII for 12.2 is 136, and the number for 9.2 is 96, and $136 + 96 = 232$. In Table XLI the number for 3.0 is 2, and $232 - 2 = 230$. Let the sum of the side heights at station 2 equal $s' = 7.6 + 10\ 2 = 17.8$; twice the center height equal $2c' = 2.0 + 2.0 = 4.0$; and their difference equal $D' = 13.8$. In Table XLIII the number for 17.8 is 222, and the number for 4.0 is 37, and $222 + 37 = 259$. In Table XLI the number for 13.8 is 44, and $259 - 44 = 215$. Adding 230 and 215, we have 445, the answer in cubic yards. To find

the prismoidal correction, we can multiply the difference of the sums of the side heights by the difference of the center heights, and by the ratio of the side slope to 1, and find in Table XXXIX the cubic yards for the product. In the example given, let $s' - s = 17.8 - 12.2 = 5.6$, and $c - c' = 4.6 - 2.0 = 2.6$, and $5.6 \times 2.6 \times 1 = 14.56$, and in Table XXXIX for area 12.96 we have 4 cubic yards.

When, as is usual, the greater sum of the side heights is at the station with the greater center height, the prismoidal correction is to be subtracted, but in the example given, the greater center height is at station 1, while the greater sum of the side heights is at station 2, so the prismoidal correction is to be added, and we have 445 + 4 = 449, the answer in cubic yards by the prismoidal formula. Or, in most cases, Table XXXVII can be used as explained in Article 8. When, as is often the case, D and D' are small, they can be neglected, and the operation reduced to finding from the table the cubic yards for twice the center height and the sum of the side heights at each of two adjacent stations, and adding them together to find the cubic yards in the prismoid between the stations.

EXAMPLE. Road-bed 14 feet wide. Side slopes 1½ to 1. Stations 100 feet long.

Station.	Left.	Center.	Right.
1	19.4	12.4	6.4
2	6.4	4.2	1.2

24.8	374
25.8	398
8.4	79
7.6	69
	920 Answer in cubic yards.

For station 1, twice the center height is 24.8, the sum of the side heights is 25.8 ; for station 2, twice the center height is 8.4, the sum of the side heights is 7.6 ; finding the cubic yards for each of these numbers in Table XLII and adding them, we have 920 cubic yards for the answer.

Calling the center height at the first station c, the sum of the side heights s, and the center height at the second station c', the sum of the side heights s', the width of the road-bed b, and the side slope ratio r, we can find the "average end area" volume by the following formula:

$$c\frac{(sr + b)\,100}{4 \times 27} + \frac{(s)\,b\,100}{8 \times 27} + c'\frac{(s'r + b)\,100}{4 \times 27} + \frac{(s')\,b\,100}{8 \times 27} = \text{cubic yards.}$$

For a road-bed 24 feet wide, side slopes 1 to 1, we will find $\frac{(sr + b)\,100}{4 \times 27}$ and $\frac{(s'r + b)\,100}{4 \times 27}$ in Table XLIV, and $\frac{(s)\,b\,100}{8 \times 27}$ and $\frac{(s')\,b\,100}{8 \times 27}$ in Table XLV, opposite heights s and s'.

EXAMPLE. Road-bed 24 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.	Left.	Center.	Right.
1	6.2	2.4	1.2
2	12.8	8.6	6.4

6.2	29.1	70	12.8	40.0	344	152	
1.2	2.4	82	6.4	8.6	213	557	
7.4	69.84	152	19.2	344.00	557	709	Answer in cubic yards.

For station 1 the sum of the side heights is 7.4, and in Table XLIV the number for 7.4 is 29.1, and 29.1 multiplied by center height 2.4 is 69.84. In Table XLV the number for 7.4 is 82, and $70 + 82 = 152$. The sum of the side heights at station 2 is 19.2, and in Table XLIV the number for 19.2 is 40.0, and 40.0 multiplied by center height 8.6 is 344. In Table XLV the number for 19.2 is 213, and $344 + 213 = 557$. Adding 152 and 557, we have 709 cubic yards for the answer. From this we can subtract 24 cubic yards, found in Table XXXVII, for the difference of center heights 6.2 (giving in this case an answer a little less than that given by the prismoidal formula).

Where three heights are taken at a station, we can find the prismoidal contents of the prismoid between two adjacent stations by the following formula :

$$(2c + c')\frac{(sr + b)\,100}{12 \times 27} + (2c' + c)\frac{(s'r + b)\,100}{12 \times 27} + \frac{(s + s')\,b\,100}{8 \times 27} = \text{cu. yds.}$$

For a road-bed 24 feet wide, side slopes 1 to 1, we will find $\frac{(sr + b)\,100}{12 \times 27}$ and $\frac{(s'r + b)\,100}{12 \times 27}$ in Table XLVI, and $\frac{(s + s')\,b\,100}{8 \times 27}$ in Table XLV, opposite heights s and s'.

EXAMPLE. Road-bed 24 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.	Left.	Center.	Right.
1	6.2	2.4	1.2
2	12.8	8.6	6.4

2.4	6.2	9.7	8.6	12.8	13.3	7.4	130	
2.4	1.2	13.4	8.6	6.4	19.6	19.2	261	
8.6	—	—	2.4	—	—	—	296	
—	7.4	129.98	—	19.2	260.68	26.6	—	
13.4			19.6				687	Ans. in cu. yards.

Twice the center height of station 1 plus the center height of station 2 is 13.4, or $2c + c' = 13.4$; the sum of the side heights at station 1 is

7.4, or $s = 7.4$; the number for 7.4 in Table XLVI is 9.7, and $9.7 \times 13.4 = 129.98$.

Twice the center height of station 2, plus the center height of station 1 is 19.6, or $2c' + c = 19.6$; the sum of the side heights at station 2 is 19.2, or $s' = 19.2$; the number for 19.2 in Table XLVI is 13.3, and $13.3 \times 19.6 = 260.68$. The sum of the four side heights is 26.6, or $s + s' = 26.6$; the number for 26.6 in Table XLV is 296. Adding 130 and 261 and 296, we have 687, the answer in cubic yards by the prismoidal formula.

ARTICLE 10.

THE last page of this article represents two pages of a cross-section book. The first page is like that of an ordinary level book with the addition of columns 2 and 3 for the left and right distances of the slope stakes from the center. *C*, *L*, and *R*, in the first column, stand for center, left, and right; they are not necessary, but show in what order the rod readings, and therefore the cuts and fills, are taken. The first page contains the field notes; on the second page the cubic yards have been computed by the methods in Article 9. For fills the road-bed has been taken 14 feet wide, side slopes $1\frac{1}{2}$ to 1, and the cubic yards have been computed by the first rule of Article 9. For station 21, twice the center height is 5.6, eleventh column, the sum of the side heights is 5.2, eleventh column, and 5.2 from 5.6 leaves 0.4, twelfth column. The number in Table XLII for 5.6 is 47, thirteenth column, and the number for 5.2 is 43, thirteenth column, and $47 + 43 = 90$; in Table XLI the number for 0.4 is 0, fourteenth column, and $90 - 0 = 90$, fifteenth column. In the same way we find 173, fifteenth column, for station 22, and $90 + 173 = 263$, seventeenth column, the answer in cubic yards. From 263 we can deduct the prismoidal correction for the difference of center heights, as shown on the cross-section page at the end of this volume. In the prismoid between stations 22 and 23, the cubic yards (172, fifteenth column) found for the mid-section, are multiplied by 4 and the product added to the cubic yards found for stations 22 and 23; $173 + 688 + 167 = 1028$, eighteenth column, and 1028 divided by 3 equal 343, seventeenth column—the answer by the "prismoidal formula." Twice the center height for the mid-section is found by adding the center heights of stations 22 and 23; $4.4 + 2.6 = 7.0$, eleventh column. Half the sum of the side heights, 9.2 and 13.2, for stations 22 and 23, is 11.2, eleventh column, the sum of the side heights for the mid-section. The cuts at stations 1 and 2 are the same as those in the third and fourth examples of Article 9, and the computations are similar, but in a more convenient book form.

Station.	*D* from *C.*		Height Instrument.	Fore Sight.	Back Sight.	Elevation.	Grade.	Cut.	Fill.
	Left.	Right.							
B. M.			532.92		4.62	528.30			
21 *C.*				5.7		527.2	530.00		2.8
L.	13.3			7.1		525.8			4.2
R.		8.5		3.9		529.0			1.0
22				6.3		526.6	531.00		4.4
	16.9			8.5		524.4			6.6
		10.9		4.5		528.4			2.6
23				3.5		529.4	532.00		2.6
	14.5			5.9		527.0			5.0
		19.3		9.1		523.8			8.2
			563.23						
1				10.8		552.4	550.00	2.4	
	18.2			7.0		556.2		6.2	
		13.2		12.0		551.2		1.2	
2				4.6		558.6	550.00	8.6	
	24.8			0.4		562.8		12.8	
		18.4		6.8		556.4		6.4	
1								2.4	
								6.2	
								1.2	
2								8.6	
								12.8	
								6.4	
1	2	3	4	5	6	7	8	9	10

					Excavation.	Embankment.	
5.6		47					
5.2	0.4	43	0	90			
						263	
8.8		84					
9.2	0.4	89	0	173			
7.0		62					173
11.2	4.2	116	6	172			688
							167
5.2		43				343	1028
13.2	8.0	146	22	167			
7.4	29.1	70	82	152			
	2.4				709		
19.2	40.0	344	213	557			
	8.6						
4.8	8.6	13.4	9.7	130			
7.4							
					687		
17.2	2.4	19.6	13.3	261			
19.2	7.4	26.6		296			
11	12	13	14	15	16	17	18

ARTICLE 11.

WHEN heights are taken at the center and slope stakes, and over or under the edges of the road-bed, calling the width of the road-bed B, the side slope ratio r, the center height c, the left slope stake height h, the right slope stake height h', the left edge height n, and the right edge height n'; the cubic yards in a prism 100 feet long, of the given cross section, will equal

$$n\left(\frac{hr}{2}+\frac{B}{4}\right)\frac{100}{27}+n'\left(\frac{h'r}{2}+\frac{B}{4}\right)\frac{100}{27}+c\,\frac{2B\times 100}{4\times 27}.$$

We will find $\left(\frac{hr}{2}+\frac{B}{4}\right)\frac{100}{27}$ and $\left(\frac{h'r}{2}+\frac{B}{4}\right)\frac{100}{27}$ opposite heights h and h' in the tables of side triangles, and if the road-bed is 12 feet wide, we will find $c\frac{2B\times 100}{4\times 27}$, or $c\frac{24\times 100}{4\times 27}$, opposite height c in Table XL. (Tables similar to Table XL can easily be computed for any width of road-bed.) Add the cubic yards thus found for two adjacent stations and divide by 2; the answer will be the same as by the method of "averaging end areas."

EXAMPLE. Road-bed, 12 feet wide. Side slopes, 1 to 1. Stations, 100 feet long.

Station.		L. S.	L. E.	Center.	R. E.	R. S.
1		12.4	9.6	5.4	4.2	3.6
2		14.8	12.0	8.8	7.2	5.4

34.1	17.8	327	38.5	21.1	462	522	
9.6	4.2	75	12	7.2	152	810	
327.36	74.76	120	462.0	151.92	196	2)1332	
		522			810	666	Answer in cubic yards.

At station 1 the left slope stake height is 12.4, or $h = 12.4$, the left edge height is 9.6, or $n = 9.6$; in Table XXXVI the number for height 12.4 is 34.1 and $34.1 \times 9.6 = 327.36$. The right slope stake height is 3.6, or

$h' = 3.6$, the right edge height is 4.2, or $n' = 4.2$; in Table XXXVI the number for height 3.6 is 17.8, and $17.8 \times 4.2 = 74.76$. In Table XL the number for center height 5.4 is 120, and $327 + 75 + 120 = 522$. Proceed in the same manner for station 2, then add the results and divide by 2 for the answer in cubic yards. We can find the answer as given by the prismoidal formula, by using Tables XXVIII and XLV as follows :

9.6	31.2	12.0	33.6		178
9.6	5.7	12.0	6.4		215
12.0	177.84	9.6	215.04	5.4	47
31.2		33.6		8.8	65
				14.2	158
4.2	15.6	7.2	18.6		663 Answer in cubic yards.
4.2	3.0	7.2	3.5		
7.2	46.80	4.2	65.10		
15.6		18.6			

Twice the left edge height of station 1 plus the left edge height of station 2 is 31.2, the number in Table XXVIII for slope stake height 12.4 is 5.7, and $31.2 \times 5.7 = 177.84$; twice the left edge height of station 2 plus the left edge height of station 1 is 33.6, the number in Table XXVIII for slope stake height 14.8 is 6.4, and $33.6 \times 6.4 = 215.04$; twice the right edge height of station 1 plus the right edge height of station 2 is 15.6, the number in Table XXVIII for slope stake height 3.6 is 3.0, and $15.6 \times 3.0 = 46.80$; twice the right edge height of station 2 plus the right edge height of station 1 is 18.6, the number in Table XXVIII for slope stake height 5.4 is 3.5, and $18.6 \times 3.5 = 65.10$; the sum of the center heights 5.4 and 8.8 is 14.2, and the number for height 14.2 in Table XLV is 158; and $178 + 215 + 47 + 65 + 158 = 663$, the answer in cubic yards. The following is an example of an irregular cross section of more than three heights :

EXAMPLE. Road-bed 24 feet wide. Side slopes 1 to 1.

Station.	Left.				Center.	Right.	
	h	n				n'	h'
	g	f	e	d	c	d'	e'
	18.6	13.0	14.4	18.2	12.4	8.6	5.2
1	30.6	14.0	10.8	8.4	0.0	9.2	17.2
	G	F	E	D	C	D'	E'

In the above example the numerators, marked by small letters, are the heights, or cuts or fills, and the denominators, marked by large letters, are the distances from the center. Let B equal the width of road-bed, r the side slope ratio, h and h' the heights at the slope stakes, and n and n' the heights that come next to the slope stakes; then the cubic yards in a prism 100 feet long, of the given cross section, will equal

$$(h + h')\frac{B \times 100}{4 \times 27} + n\left(\frac{hr}{2} + \frac{B}{4}\right)\frac{100}{27} + n'\left(\frac{h'r}{2} + \frac{B}{4}\right)\frac{100}{27} +$$

$$\left[(c-e)D + (d-f)E + (e-g)F + (c-e')D'\right]\frac{100}{2 \times 27}$$

When, as in this example, $B = 24$, we will find $(h + h')\frac{B \times 100}{4 \times 27}$ in Table XL opposite height $h + h'$, and $\left(\frac{hr}{2} + \frac{B}{4}\right)\frac{100}{27}$, and $\left(\frac{h'r}{2} + \frac{B}{4}\right)\frac{100}{27}$ in Table XVI opposite heights h and h', and we will find

$$\left[(c-e)D + (d-f)E + (e-g)F + (c-e')D'\right]\frac{100}{2 \times 27}$$

in Table XXXVIII opposite area $(c-e)D+(d-f)E+(e-g)F+(c-e')D'$. Add the cubic yards thus found for two adjacent stations, and divide the sum by 2 for the answer, which will be the same as by the "average end area" method.

EXAMPLE. Road-bed 24 feet wide. Side slopes 1 to 1. Stations 100 feet long.

Station.		Left.		Center.		Right.	
1	18.6	13.0	14.4	18.2	12.4	8.6	5.2
	30.6	14.0	10.8	8.4	0.0	9.2	17.2
2				9.4	6.8	3.2	
				21.4	0.0	15.2	
18.6		56.7	31.9	12.4	8.4	−16.80	
5.2		13.0	8.6	14.4	−2.0	56.16	529
						−58.80	737
23.8	529	737.10	274.34	−2.0	−16.80	66.24	274
							87
18.2	10.8	14.4	14.0	12.4	9.2	46.80	
13.0	5.2	18.6	−4.2	5.2	7.2		1627
5.2	56.16	−4.2	−58.80	7.2	66.24		
					1627		
9.4		39.6	67.7	280	740		
3.2		28.1	6.8	460			
					2)2367		
12.6	280	67.7	460.36	740	1184	Answer in cubic yards.	

At station 1, $h + h' = 18.6 + 5.2 = 23.8$, and in Table XL the number for 23.8 is 529; $h = 18.6$, and the number for 18.6 in Table XVI is 56.7; $n = 13.0$, and $56.7 \times 13.0 = 737.10$; $h' = 5.2$, and the number for 5.2 in Table XVI is 31.9; $n' = 8.6$, and $31.9 \times 8.6 = 274.34$; $(c-e)D + (d-f)E + (e-g)F + (c-e')D'$ equal $(12.4 - 14.4)\,8.4 + (18.2 - 13.0)\,10.8 + (14.4 - 18.6)\,14.0 + (12.4 - 5.2)\,9.2 = 46.80$, and the

number for 46.80 in Table XXXVIII is 87; and 529 + 737 + 274 + 87 = 1627.

Since only three heights are taken at station 2, and $c = n = n'$, the formula is reduced to :

$$(h + h') \frac{B \times 100}{4 \times 27} + c \left[\left(\frac{hr}{2} + \frac{B}{4} \right) \frac{100}{27} + \left(\frac{h'r}{2} + \frac{B}{4} \right) \frac{100}{27} \right] = \text{cubic yards}$$

for cross section of station 2.

In Table XL the number for $h + h'$, or $9.4 + 3.2 = 12.6$, is 280 ; in Table XVI the number for height 9.4 is 39.6, and the number for height 3.2 is 28.1, and $39.6 + 28.1 = 67.7$; the product of 67.7 by center height 6.8 is 460.36 ; and $280 + 460 = 740$. Adding 740 to 1627, the cubic yards for station 1, and dividing the sum by 2, we have 1184, the answer in cubic yards.

TABLE NO. I.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 10 feet wide. Side slopes 1½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	324	10.0	926	15.0	1806	20.0	2963	25.0	4398	30.0	6111	35.0	8102
0.1	4	5.1	333	10.1	941	15.1	1826	20.1	2989	25.1	4430	30.1	6148	35.1	8145
0.2	8	5.2	343	10.2	956	15.2	1847	20.2	3015	25.2	4461	30.2	6185	35.2	8187
0.3	12	5.3	352	10.3	971	15.3	1867	20.3	3041	25.3	4493	30.3	6223	35.3	8230
0.4	16	5.4	362	10.4	986	15.4	1888	20.4	3068	25.4	4525	30.4	6260	35.4	8273
0.5	20	5.5	372	10.5	1001	15.5	1909	20.5	3094	25.5	4557	30.5	6298	35.5	8316
0.6	24	5.6	382	10.6	1017	15.6	1930	20.6	3121	25.6	4589	30.6	6335	35.6	8359
0.7	29	5.7	392	10.7	1032	15.7	1951	20.7	3147	25.7	4621	30.7	6373	35.7	8403
0.8	33	5.8	402	10.8	1048	15.8	1972	20.8	3174	25.8	4654	30.8	6411	35.8	8446
0.9	38	5.9	412	10.9	1064	15.9	1993	20.9	3201	25.9	4686	30.9	6449	35.9	8490
1.0	43	6.0	422	11.0	1080	16.0	2015	21.0	3228	26.0	4719	31.0	6487	36.0	8533
1.1	47	6.1	433	11.1	1096	16.1	2036	21.1	3255	26.1	4751	31.1	6525	36.1	8577
1.2	52	6.2	443	11.2	1112	16.2	2058	21.2	3282	26.2	4784	31 2	6564	36.2	8621
1.3	58	6.3	454	11.3	1128	16.3	2080	21.3	3309	26.3	4817	31.3	6602	36.3	8665
1.4	63	6.4	465	11.4	1144	16.4	2102	21.4	3337	26.4	4850	31.4	6641	36.4	8709
1.5	68	6.5	475	11.5	1161	16.5	2124	21.5	3364	26.5	4883	31.5	6679	36.5	8753
1.6	73	6.6	486	11.6	1177	16.6	2146	21.6	3392	26.6	4916	31.6	6718	36.6	8798
1.7	79	6.7	498	11.7	1194	16.7	2168	21.7	3420	26.7	4949	31.7	6757	36.7	8842
1.8	85	6.8	509	11.8	1211	16.8	2190	21.8	3448	26.8	4983	31.8	6796	36.8	8887
1.9	90	6.9	520	11.9	1227	16.9	2213	21.9	3476	26.9	5016	31.9	6835	36.9	8931
2.0	96	7.0	531	12.0	1244	17.0	2235	22.0	3504	27.0	5050	32.0	6874	37.0	8976
2.1	102	7.1	543	12.1	1262	17.1	2258	22.1	3532	27.1	5084	32.1	6913	37.1	9021
2.2	108	7.2	555	12.2	1279	17.2	2281	22.2	3560	27.2	5118	32.2	6953	37.2	9066
2.3	115	7.3	566	12.3	1296	17.3	2303	22.3	3589	27.3	5152	32.3	6992	37.3	9111
2.4	121	7.4	578	12.4	1313	17.4	2326	22.4	3617	27.4	5186	32.4	7032	37.4	9156
2.5	127	7.5	590	12.5	1331	17.5	2350	22.5	3646	27.5	5220	32.5	7072	37.5	9201
2.6	134	7.6	602	12.6	1349	17.6	2373	22.6	3675	27.6	5254	32.6	7112	37.6	9247
2.7	141	7.7	615	12.7	1366	17.7	2396	22.7	3703	27.7	5289	32.7	7152	37.7	9292
2.8	147	7.8	627	12.8	1384	17.8	2419	22.8	3732	27.8	5323	32.8	7192	37.8	9338
2.9	154	7.9	639	12.9	1402	17.9	2443	22.9	3762	27.9	5358	32.9	7232	37.9	9384
3.0	161	8.0	652	13.0	1420	18.0	2467	23.0	3791	28.0	5393	33.0	7272	38.0	9430
3.1	168	8.1	665	13.1	1439	18.1	2490	23.1	3820	28.1	5427	33.1	7313	38.1	9476
3.2	175	8.2	677	13.2	1457	18.2	2514	23.2	3849	28.2	5462	33.2	7353	38.2	9522
3.3	183	8.3	690	13.3	1475	18.3	2538	23.3	3879	28.3	5498	33.3	7394	38.3	9568
3.4	190	8.4	703	13.4	1494	18.4	2562	23.4	3909	28.4	5533	33 4	7435	38.4	9614
3.5	198	8.5	716	13.5	1513	18.5	2587	23.5	3938	28.5	5568	33.5	7475	38.5	9661
3.6	205	8.6	729	13.6	1531	18.6	2611	23 6	3968	28.6	5603	33.6	7516	38.6	9707
3.7	213	8.7	743	13.7	1550	18.7	2635	23.7	3998	28.7	5639	33.7	7558	38.7	9754
3.8	221	8.8	756	13.8	1569	18.8	2660	23.8	4028	28.8	5675	33.8	7599	38.8	9801
3.9	229	8.9	770	13.9	1588	18.9	2685	23.9	4059	28.9	5710	33.9	7640	38.9	9847
4.0	237	9.0	783	14.0	1607	19.0	2709	24.0	4089	29.0	5746	34.0	7681	39.0	9894
4.1	245	9.1	797	14.1	1627	19.1	2734	24.1	4119	29.1	5782	34.1	7723	39.1	9942
4.2	254	9.2	811	14.2	1646	19.2	2759	24.2	4150	29.2	5818	34.2	7765	39.2	9989
4.3	262	9.3	825	14.3	1666	19.3	2784	24.3	4181	29.3	5855	34.3	7806	39.3	10036
4.4	271	9.4	839	14.4	1685	19.4	2809	24.4	4211	29.4	5891	34.4	7848	39.4	10083
4.5	279	9.5	853	14.5	1705	19.5	2835	24.5	4242	29.5	5927	34.5	7890	39.5	10131
4.6	288	9.6	868	14.6	1725	19.6	2860	24.6	4273	29.6	5964	34.6	7932	39.6	10179
4.7	297	9.7	882	14.7	1745	19.7	2886	24.7	4304	29.7	6001	34.7	7975	39.7	10226
4.8	306	9.8	897	14.8	1765	19.8	2911	24.8	4335	29.8	6037	34 8	8017	39.8	10274
4.9	315	9.9	911	14.9	1785	19.9	2937	24.9	4367	29.9	6074	34.9	8059	39.9	10322

TABLE NO. II.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 10 feet wide. Side slopes 1½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0 0	9.3	5.0	23.1	10.0	37.0	15.0	50.9	20.0	64.8	25.0	78.7	30.0	92.6	35.0	106.5
0.1	9.5	5.1	23.4	10.1	37.3	15.1	51.2	20.1	65.1	25.1	79.0	30.1	92.9	35.1	106.8
0.2	9.8	5.2	23.7	10.2	37.6	15 2	51.5	20.2	65.4	25.2	79.3	30.2	93.1	35.2	107.0
0.3	10.1	5.3	24.0	10.3	37.9	15.3	51.8	20.3	65.6	25.3	79.5	30.3	93.4	35.3	107.3
0.4	10.4	5.4	24.3	10.4	38.1	15.4	52.0	20.4	65.9	25.4	79.8	30.4	93.7	35.4	107.6
0.5	10.6	5.5	24.5	10.5	38.4	15.5	52.3	20.5	66.2	25.5	80.1	30.5	94.0	35.5	107.9
0.6	10.9	5.6	24.8	10.6	38.7	15.6	52.6	20.6	66.5	25.6	80.4	30.6	94.3	35.6	108.1
0.7	11.2	5.7	25.1	10.7	39.0	15.7	52.9	20.7	66.8	25.7	80.6	30.7	94.5	35.7	108.4
0.8	11.5	5.8	25.4	10.8	39.3	15.8	53.1	20.8	67.0	25.8	80.9	30.8	94.8	35.8	108.7
0.9	11.8	5.9	25.6	10.9	39.5	15.9	53.4	20.9	67.3	25.9	81.2	30.9	95.1	35.9	109.0
1.0	12.0	6.0	25.9	11.0	39.8	16.0	53.7	21.0	67.6	26.0	81.5	31.0	95.4	36.0	109.5
1.1	12.3	6.1	26.2	11.1	40.1	16.1	54.0	21.1	67.9	26.1	81.8	31.1	95.6	36.1	109.5
1.2	12.6	6.2	26.5	11.2	40.4	16.2	54.3	21.2	68.1	26.2	82.0	31.2	95.9	36.2	109.8
1.3	12.9	6.3	26.8	11.3	40.6	16.3	54.5	21.3	68.4	26.3	82.3	31.3	96.2	36.3	110.1
1.4	13.1	6.4	27.0	11.4	40.9	16.4	54.8	21.4	68.7	26.4	82.6	31.4	96.5	36.4	110.4
1.5	13.4	6.5	27.3	11.5	41.2	16.5	55.1	21.5	69.0	26.5	82.9	31.5	96.8	36.5	110.6
1.6	13.7	6.6	27.6	11.6	41.5	16.6	55.4	21.6	69.3	26.6	83.1	31.6	97 0	36.6	110.9
1.7	14.0	6.7	27.9	11.7	41.8	16.7	55.6	21.7	69.5	26.7	83.4	31.7	97.3	36.7	111.2
1.8	14.3	6.8	28.1	11.8	42.0	16.8	55.9	21.8	69.8	26.8	83.7	31.8	97.6	36.8	111.5
1.9	14.5	6.9	28.4	11.9	42.3	16.9	56.2	21.9	70.1	26.9	84.0	31.9	97.9	36.9	111.8
2.0	14.8	7.0	28.7	12.0	42.6	17.0	56.5	22.0	70.4	27.0	84.3	32.0	98.1	37.0	112.0
2.1	15.1	7.1	29 0	12.1	42.9	17.1	56.8	22.1	70.6	27.1	84 5	32.1	98.4	37.1	112.3
2.2	15.4	7.2	29.3	12.2	43.1	17.2	57.0	22.2	70.9	27.2	84.8	32.2	98.7	37.2	112.6
2.3	15.6	7.3	29.5	12.3	43.4	17.3	57.3	22.3	71.2	27.3	85.1	32.3	99.0	37.3	112.9
2.4	15.9	7.4	29.8	12.4	43.7	17.4	57.6	22.4	71.5	27.4	85.4	32.4	99.3	37.4	113.1
2.5	16.2	7.5	30.1	12.5	44.0	17.5	57.9	22.5	71.8	27.5	85.6	32.5	99.5	37.5	113.4
2.6	16.5	7.6	30.4	12.6	44.3	17.6	58.1	22.6	72.0	27.6	85.9	32.6	99.8	37.6	113.7
2.7	16.8	7.7	30.6	12.7	44.5	17.7	58.4	22.7	72.3	27.7	86.2	32.7	100.1	37.7	114.0
2.8	17.0	7.8	30.9	12.8	44.8	17.8	58.7	22.8	72.6	27.8	86.5	32.8	100.4	37.8	114.3
2.9	17.3	7.9	31.2	12.9	45.1	17.9	59.0	22.9	72.9	27.9	86.8	32.9	100.6	37.9	114.5
3.0	17.6	8.0	31.5	13.0	45.4	18.0	59.3	23.0	73.1	28.0	87.0	33.0	100.9	38.0	114.8
3.1	17.9	8.1	31.8	13.1	45.6	18.1	59.5	23.1	73.4	28.1	87.3	33.1	101.2	38.1	115.1
3.2	18.1	8.2	32.0	13.2	45.9	18.2	59.8	23.2	73.7	28.2	87.6	33.2	101.5	38.2	115.4
3.3	18.4	8.3	32.3	13.3	46.2	18.3	60.1	23.3	74.0	28.3	87.9	33.3	101.8	38.3	115.6
3.4	18.7	8.4	32.6	13.4	46.5	18.4	60.4	23.4	74.3	28 4	88.1	33.4	102.0	38.4	115.9
3.5	19.0	8.5	32.9	13.5	46.8	18.5	60.6	23.5	74.5	28.5	88.4	33.5	102.3	38.5	116.2
3.6	19.3	8.6	33.1	13.6	47.0	18.6	60.9	23.6	74.8	28.6	88.7	33.6	102.6	38.6	116.5
3.7	19.5	8.7	33.4	13.7	47.3	18.7	61.2	23.7	75.1	28.7	89.0	33.7	102.9	38.7	116.8
3.8	19.8	8.8	33.7	13.8	47.6	18.8	61.5	23.8	75.4	28.8	89.3	33.8	103.1	38.8	117.0
3.9	20.1	8.9	34.0	13.9	47.9	18.9	61.8	23.9	75.6	28.9	89.5	33.9	103.4	38.9	117.3
4.0	20.4	9.0	34.3	14.0	48.1	19.0	62.0	24.0	75.9	29.0	89.8	34.0	103.7	39.0	117.6
4.1	20.6	9.1	34.5	14.1	48.4	19.1	62.3	24.1	76.2	29.1	90.1	34.1	104.0	39.1	117.9
4.2	20.9	9.2	34.8	14.2	48.7	19.2	62.6	24.2	76.5	29.2	90.4	34.2	104.3	39.2	118.1
4.3	21.2	9.3	35.1	14.3	49.0	19.3	62.9	24.3	76.8	29.3	90.6	34.3	104.5	39.3	118.4
4.4	21.5	9.4	35.4	14.4	49.3	19.4	63.1	24.4	77.0	29.4	90.9	34.4	104.8	39.4	118.7
4.5	21.8	9.5	35.6	14.5	49.5	19.5	63.4	24.5	77.3	29.5	91.2	34.5	105.1	39.5	119.0
4.6	22.0	9.6	35.9	14.6	49.8	19.6	63.7	24.6	77.6	29.6	91.5	34.6	105.4	39.6	119.3
4.7	22.3	9 7	36.2	14.7	50.1	19.7	64.0	24.7	77.9	29.7	91.8	34.7	105.6	39.7	119.5
4.8	22.6	9.8	36.5	14.8	50.4	19.8	64.3	24.8	78.1	29.8	92.0	34.8	105.9	39.8	119.8
4.9	22.9	9.9	36.8	14.9	50.6	19.9	64.5	24.9	78.4	29.9	92.3	34.9	106.2	39.9	120.1

TABLE NO. III.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 14 feet wide. Side slopes 1½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	398	10.0	1074	15.0	2028	20.0	3259	25.0	4769	30.0	6556	35.0	8620
0.1	5	5.1	409	10.1	1090	15.1	2050	20.1	3287	25.1	4802	30.1	6594	35.1	8665
0.2	11	5.2	420	10.2	1107	15.2	2072	20.2	3314	25.2	4835	30.2	6633	35.2	8709
0.3	16	5.3	431	10.3	1123	15.3	2094	20.3	3342	25.3	4868	30.3	6672	35.3	8753
0.4	22	5.4	442	10.4	1140	15.4	2116	20.4	3370	25.4	4901	30.4	6711	35.4	8798
0.5	27	5.5	453	10.5	1157	15.5	2138	20.5	3398	25.5	4935	30.5	6750	35.5	8842
0.6	33	5.6	465	10.6	1174	15.6	2161	20.6	3426	25.6	4968	30.6	6789	35.6	8887
0.7	39	5.7	476	10.7	1191	15.7	2183	20.7	3454	25.7	5002	30.7	6828	35.7	8932
0 8	45	5.8	488	10.8	1208	15.8	2206	20.8	3482	25.8	5036	30.8	6867	35.8	8977
0.9	51	5 9	499	10.9	1225	15.9	2229	20.9	3510	25.9	5070	30.9	6907	35.9	9022
1.0	57	6.0	511	11.0	1243	16.0	2252	21.0	3539	26.0	5104	31.0	6946	36.0	9067
1.1	64	6.1	523	11.1	1260	16.1	2275	21.1	3567	26.1	5138	31.1	6986	36.1	9112
1.2	70	6.2	535	11.2	1278	16.2	2298	21.2	3596	26.2	5172	31.2	7026	36.2	9157
1.3	77	6.3	547	11.3	1295	16.3	2321	21.3	3625	26.3	5206	31.3	7066	36.3	9203
1.4	83	6.4	559	11.4	1313	16.4	2345	21.4	3654	26.4	5241	31.4	7106	36.4	9248
1.5	90	6.5	572	11.5	1331	16.5	2368	21.5	3683	26.5	5275	31.5	7146	36.5	9294
1.6	97	6.6	584	11.6	1349	16.6	2392	21.6	3712	26.6	5310	31.6	7186	36.6	9340
1.7	104	6.7	597	11.7	1367	16.7	2415	21.7	3741	26.7	5345	31.7	7226	36.7	9386
1.8	111	6.8	609	11.8	1385	16.8	2439	21.8	3771	26.8	5380	31.8	7267	36.8	9432
1.9	119	6.9	622	11.9	1404	16.9	2463	21.9	3800	26.9	5415	31.9	7307	36.9	9478
2.0	126	7.0	635	12.0	1422	17.0	2487	22.0	3830	27.0	5450	32.0	7348	37.0	9524
2.1	133	7.1	648	12.1	1441	17.1	2511	22.1	3859	27.1	5485	32.1	7389	37.1	9570
2.2	141	7.2	661	12.2	1459	17.2	2535	22.2	3889	27.2	5521	32.2	7430	37.2	9617
2.3	149	7.3	675	12.3	1478	17.3	2560	22.3	3919	27.3	5556	32.3	7471	37.3	9663
2.4	156	7.4	688	12.4	1497	17.4	2584	22.4	3949	27.4	5592	32.4	7512	37.4	9710
2.5	164	7.5	701	12.5	1516	17.5	2609	22.5	3979	27.5	5627	32.5	7553	37.5	9757
2.6	172	7.6	715	12.6	1535	17.6	2633	22.6	4009	27.6	5663	32.6	7595	37.6	9804
2.7	181	7.7	729	12.7	1555	17.7	2658	22.7	4040	27.7	5699	32.7	7636	37.7	9851
2.8	189	7.8	742	12.8	1574	17.8	2683	22.8	4070	27.8	5735	32.8	7678	37.8	9898
2.9	197	7.9	756	12.9	1593	17.9	2708	22.9	4101	27.9	5771	32.9	7719	37.9	9945
3.0	206	8.0	770	13.0	1613	18.0	2733	23.0	4131	28.0	5807	33.0	7761	38.0	9993
3.1	214	8.1	785	13.1	1633	18.1	2759	23.1	4162	28.1	5844	33.1	7803	38.1	10040
3.2	223	8.2	799	13.2	1652	18.2	2784	23.2	4193	28.2	5880	33.2	7845	38.2	10088
3.3	232	8.3	813	13.3	1672	18.3	2809	23.3	4224	28.3	5917	33.3	7887	38.3	10135
3.4	241	8.4	828	13.4	1692	18.4	2835	23.4	4255	28.4	5953	33.4	7929	38.4	10183
3.5	250	8.5	842	13.5	1713	18.5	2861	23.5	4287	28.5	5990	33.5	7972	38.5	10231
3.6	259	8.6	857	13.6	1733	18.6	2886	23.6	4318	28.6	6027	33.6	8014	38.6	10279
3.7	268	8.7	872	13.7	1753	18.7	2912	23.7	4349	28.7	6064	33.7	8057	38.7	10327
3.8	277	8.8	887	13.8	1774	18.8	2938	23.8	4381	28.8	6101	33.8	8099	38.8	10375
3.9	287	8.9	902	13.9	1794	18.9	2965	23.9	4413	28.9	6139	33.9	8142	38.9	10424
4.0	296	9.0	917	14.0	1815	19.0	2991	24.0	4444	29.0	6176	34.0	8185	39.0	10472
4.1	306	9.1	932	14.1	1836	19.1	3017	24.1	4476	29.1	6213	34.1	8228	39.1	10521
4.2	316	9.2	947	14.2	1857	19.2	3044	24.2	4508	29.2	6251	34.2	8271	39.2	10569
4.3	326	9.3	963	14.3	1878	19.3	3070	24.3	4541	29.3	6289	34.3	8315	39.3	10618
4.4	336	9.4	978	14.4	1899	19.4	3097	24.4	4573	29.4	6326	34.4	8358	39.4	10667
4.5	346	9.5	994	14.5	1920	19.5	3124	24.5	4605	29.5	6364	34.5	8401	39.5	10716
4.6	356	9.6	1010	14.6	1941	19.6	3151	24.6	4638	29.6	6402	34.6	8445	39.6	10765
4.7	366	9.7	1026	14.7	1963	19.7	3178	24.7	4670	29.7	6441	34.7	8489	39.7	10815
4.8	377	9.8	1042	14.8	1984	19.8	3205	24.8	4703	29.8	6479	34.8	8532	39.8	10864
4.9	387	9.9	1058	14.9	2006	19.9	3232	24.9	4736	29.9	6517	34.9	8576	39.9	10913

TABLE NO. IV.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 14 feet wide. Side slopes 1½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	13.0	5.0	26.9	10.0	40.7	15.0	54.6	20.0	68.5	25.0	82.4	30.0	96.3	35.0	110.2
0.1	13.2	5.1	27.1	10.1	41.0	15.1	54.9	20.1	68.8	25.1	82.7	30.1	96.6	35.1	110.5
0.2	13.5	5.2	27.4	10.2	41.3	15.2	55.2	20.2	69.1	25.2	83.0	30.2	96.9	35.2	110.7
0.3	13.8	5.3	27.7	10.3	41.6	15.3	55.5	20.3	69.4	25.3	83.2	30.3	97.1	35.3	111.0
0.4	14.1	5.4	28.0	10.4	41.9	15.4	55.7	20.4	69.6	25.4	83.5	30.4	97.4	35.4	111.3
0.5	14.4	5.5	28.2	10.5	42.1	15.5	56.0	20.5	69.9	25.5	83.8	30.5	97.7	35.5	111.6
0.6	14.6	5.6	28.5	10.6	42.4	15.6	56.3	20.6	70.2	25.6	84.1	30 6	98.0	35.6	111.9
0.7	14.9	5.7	28.8	10.7	42.7	15.7	56.6	20.7	70.5	25.7	84.4	30.7	98.2	35.7	112.1
0.8	15.2	5.8	29.1	10.8	43.0	15 8	56.9	20.8	70.7	25.8	84.6	30.8	98.5	35.8	112.4
0.9	15.5	5.9	29.4	10.9	43.2	15.9	57.1	20.9	71.0	25.9	84.9	30.9	98.8	35.9	112.7
1.0	15.7	6.0	29.6	11.0	43.5	16.0	57.4	21.0	71.3	26.0	85.2	31.0	99.1	36.0	113.0
1.1	16.0	6.1	29.9	11.1	43.8	16.1	57.7	21.1	71.6	26.1	85.5	31.1	99.4	36.1	113.2
1.2	16.3	6.2	30.2	11.2	44.1	16.2	58.0	21.2	71.9	26.2	85.7	31.2	99.6	36.2	113.5
1.3	16.6	6.3	30.5	11.3	44.4	16.3	58.2	21.3	72.1	26.3	86.0	31.3	99.9	36.3	113.8
1.4	16.9	6.4	30.7	11.4	44.6	16.4	58.5	21.4	72.4	26.4	86.3	31.4	100.2	36.4	114.1
1.5	17.1	6.5	31.0	11.5	44.9	16.5	58.8	21.5	72.7	26.5	86.6	31.5	100.5	36.5	114.4
1.6	17.4	6.6	31.3	11.6	45.2	16.6	59.1	21.6	73.0	26.6	86.9	31.6	100.7	36.6	114.6
1.7	17.7	6.7	31.6	11.7	45.5	16.7	59.4	21.7	73.2	26.7	87.1	31.7	101.0	36.7	114.9
1.8	18.0	6.8	31.9	11.8	45.7	16.8	59.6	21.8	73.5	26.8	87.4	31.8	101.3	36.8	115.2
1.9	18.2	6.9	32.1	11.9	46.0	16.9	59.9	21.9	73.8	26.9	87.7	31.9	101.6	36.9	115.5
2.0	18.5	7.0	32.4	12.0	46.3	17.0	60.2	22.0	74.1	27.0	88.0	32.0	101.9	37.0	115.7
2.1	18.8	7.1	32.7	12.1	46.6	17.1	60.5	22.1	74.4	27.1	88.2	32.1	102.1	37.1	116.0
2.2	19.1	7.2	33 0	12.2	46.9	17.2	60.7	22.2	74.6	27.2	88.5	32.2	102.4	37.2	116.3
2.3	19.4	7.3	33.2	12.3	47.1	17.3	61.0	22.3	74.9	27.3	88.8	32.3	102.7	37.3	116.6
2.4	19.6	7.4	33.5	12.4	47.4	17.4	61.3	22.4	75.2	27.4	89.1	32.4	103.0	37.4	116.9
2.5	19.9	7.5	33.8	12.5	47.7	17.5	61.6	22.5	75.5	27.5	89.4	32.5	103.2	37.5	117.1
2.6	20.2	7.6	34.1	12.6	48.0	17.6	61.9	22.6	75.7	27.6	89.6	32.6	103.5	37.6	117.4
2.7	20.5	7.7	34.4	12.7	48.2	17.7	62.1	22.7	76.0	27.7	89.9	32.7	103.8	37.7	117.7
2.8	20.7	7.8	34.6	12.8	48.5	17.8	62.4	22.8	76.3	27.8	90.2	32.8	104.1	37.8	118.0
2.9	21.0	7.9	34.9	12.9	48.8	17.9	62.7	22.9	76.6	27.9	90.5	32.9	104.4	37.9	118.2
3.0	21 3	8.0	35.2	13.0	49.1	18.0	63.0	23.0	76.9	28.0	90.7	33.0	104.6	38.0	118.5
3.1	21 6	8.1	35.5	13.1	49.4	18.1	63.2	23.1	77.1	28.1	91.0	33.1	104.9	38.1	118.8
3.2	21.9	8.2	35.7	13.2	49.6	18.2	63.5	23.2	77.4	28.2	91.3	33.2	105.2	38.2	119.1
3.3	22.1	8.3	36.0	13.3	49.9	18.3	63.8	23.3	77.7	28.3	91.6	33.3	105.5	38.3	119.4
3.4	22.4	8.4	36.3	13.4	50.2	18.4	64.1	23.4	78.0	28.4	91.9	33.4	105.7	38.4	119.6
3.5	22.7	8.5	36.6	13.5	50.5	18.5	64.4	23.5	78.2	28.5	92.1	33.5	106.0	38.5	119.9
3.6	23.0	8.6	36.9	13.6	50.7	18.6	64.6	23.6	78.5	28.6	92.4	33.6	106.3	38.6	120.2
3.7	23.2	8.7	37.1	13.7	51.0	18 7	64.9	23.7	78.8	28.7	92.7	33.7	106.6	38.7	120.5
3.8	23.5	8.8	37.4	13.8	51.3	18.8	65.2	23.8	79.1	28.8	93.0	33.8	106 9	38.8	120.7
3.9	23.8	8.9	37.7	13.9	51.6	18.9	65.5	23.9	79.4	28.9	93.2	33.9	107.1	38.9	121.0
4.0	24.1	9.0	38.0	14.0	51.9	19.0	65.7	24.0	79.6	29.0	93.5	34.0	107.4	39.0	121.3
4.1	24.4	9.1	38.2	14.1	52.1	19.1	66.0	24.1	79.9	29.1	93.8	34.1	107.7	39.1	121.6
4.2	24.6	9.2	38.5	14.2	52.4	19.2	66.3	24.2	80.2	29.2	94.1	34.2	108.0	39.2	121.9
4.3	24.9	9.3	38.8	14.3	52.7	19.3	66.6	24.3	80.5	29.3	94.4	34.3	108.2	39.3	122.1
4.4	25.2	9.4	39.1	14.4	53.0	19.4	66 9	24.4	80.7	29.4	94.6	34.4	108.5	39.4	122.4
4.5	25.5	9.5	39.4	14.5	53.2	19.5	67.1	24.5	81.0	29.5	94.9	34.5	108.8	39.5	122.7
4.6	25.7	9.6	39.6	14.6	53.5	19.6	67.4	24.6	81.3	29.6	95 2	34.6	109.1	39.6	123.0
4.7	26.0	9.7	39.9	14.7	53.8	19.7	67.7	24.7	81.6	29.7	95.5	34.7	109.4	39.7	123.2
4.8	26.3	9.8	40.2	14.8	54.1	19.8	68.0	24 8	81.9	29.8	95.7	34.8	109.6	39.8	123.5
4.9	26.6	9.9	40.5	14.9	54.4	19.9	68.2	24.9	82.1	29.9	96.0	34.9	109.9	39.9	123.8

TABLE NO. V.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 18 feet wide. Side slopes 1½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	472	10.0	1222	15.0	2250	20.0	3556	25.0	5139	30.0	7000	35.0	9139
0.1	7	5.1	485	10.1	1240	15.1	2273	20 1	3585	25.1	5173	30.1	7040	35.1	9185
0.2	14	5.2	497	10.2	1258	15.2	2297	20.2	3614	25.2	5208	30.2	7080	35.2	9230
0.3	21	5.3	509	10.3	1276	15.3	2321	20.3	3643	25.3	5243	30.3	7121	35.3	9276
0.4	28	5.4	522	10.4	1294	15.4	2344	20.4	3672	25.4	5278	30.4	7161	35.4	9322
0.5	35	5.5	535	10.5	1313	15.5	2368	20.5	3701	25.5	5313	30.5	7201	35.5	9368
0.6	42	5.6	548	10.6	1331	15.6	2392	20.6	3731	25.6	5348	30.6	7242	35.6	9414
0.7	49	5.7	561	10.7	1349	15.7	2416	20.7	3761	25.7	5383	30.7	7283	35.7	9461
0.8	57	5.8	574	10.8	1368	15.8	2440	20.8	3790	25.8	5418	30.8	7324	35.8	9507
0.9	65	5.9	587	10.9	1387	15 9	2465	20.9	3820	25.9	5453	30.9	7365	35.9	9553
1.0	72	6.0	600	11.0	1406	16.0	2489	21.0	3850	26.0	5489	31.0	7406	36.0	9600
1.1	80	6.1	613	11.1	1425	16.1	2513	21.1	3880	26.1	5525	31.1	7447	36.1	9647
1.2	88	6.2	627	11.2	1444	16.2	2538	21.2	3910	26.2	5560	31.2	7488	36.2	9694
1.3	96	6.3	641	11.3	1463	16.3	2563	21.3	3941	26.3	5596	31.3	7529	36.3	9741
1.4	104	6.4	654	11.4	1482	16.4	2588	21.4	3971	26.4	5632	31.4	7571	36.4	9788
1.5	113	6.5	668	11.5	1501	16.5	2613	21.5	4001	26.5	5668	31.5	7613	36.5	9835
1.6	121	6.6	682	11 6	1521	16.6	2638	21.6	4032	26.6	5704	31.6	7654	36.6	9882
1.7	129	6.7	696	11.7	1541	16.7	2663	21.7	4063	26.7	5741	31.7	7696	36.7	9929
1.8	138	6.8	710	11.8	1560	16.8	2688	21.8	4094	26.8	5777	31.8	7738	36.8	9977
1.9	147	6.9	725	11.9	1580	16.9	2713	21.9	4125	26.9	5813	31.9	7780	36.9	10025
2.0	156	7.0	739	12.0	1600	17.0	2739	22.0	4156	27.0	5850	32.0	7822	37.0	10072
2.1	165	7.1	753	12.1	1620	17.1	2765	22.1	4187	27.1	5887	32.1	7865	37.1	10120
2.2	174	7.2	768	12.2	1640	17.2	2790	22.2	4218	27.2	5924	32.2	7907	37.2	10168
2.3	183	7.3	783	12.3	1661	17.3	2816	22.3	4249	27.3	5961	32.3	7949	37.3	10216
2.4	192	7.4	798	12.4	1681	17.4	2842	22.4	4281	27.4	5998	32.4	7992	37.4	10264
2.5	201	7.5	813	12.5	1701	17.5	2868	22.5	4313	27.5	6035	32.5	8035	37.5	10313
2.6	211	7.6	828	12.6	1722	17.6	2894	22.6	4344	27.6	6072	32.6	8078	37.6	10361
2.7	221	7.7	843	12.7	1743	17.7	2921	22.7	4376	27.7	6109	32.7	8121	37.7	10409
2.8	230	7.8	858	12.8	1764	17.8	2947	22.8	4408	27.8	6147	32.8	8164	37.8	10458
2.9	240	7.9	873	12.9	1785	17.9	2973	22.9	4440	27.9	6185	32.9	8207	37.9	10507
3.0	250	8.0	889	13.0	1806	18.0	3000	23.0	4472	28.0	6222	33.0	8250	38.0	10556
3.1	260	8.1	905	13.1	1827	18.1	3027	23.1	4505	28.1	6260	33.1	8293	38.1	10605
3.2	270	8.2	920	13.2	1848	18.2	3054	23.2	4537	28.2	6298	33.2	8337	38.2	10654
3.3	281	8.3	936	13.3	1869	18.3	3081	23.3	4569	28.3	6336	33.3	8381	38.3	10703
3.4	291	8.4	952	13.4	1891	18.4	3108	23.4	4602	28.4	6374	33.4	8424	38.4	10752
3.5	301	8.5	968	13.5	1913	18.5	3135	23.5	4635	28.5	6413	33.5	8468	38.5	10801
3.6	312	8.6	984	13.6	1934	18.6	3162	23.6	4668	28.6	6451	33.6	8512	38.6	10851
3 7	323	8.7	1001	13.7	1956	18.7	3189	23.7	4701	28.7	6489	33.7	8556	38.7	10901
3.8	334	8.8	1017	13.8	1978	18.8	3217	23.8	4734	28.8	6528	33.8	8600	38.8	10950
3.9	345	8.9	1033	13.9	2000	18.9	3245	23.9	4767	28.9	6567	33.9	8645	38.9	11000
4.0	356	9.0	1050	14.0	2022	19.0	3272	24.0	4800	29.0	6606	34.0	8689	39.0	11050
4.1	367	9.1	1067	14.1	2045	19.1	3300	24.1	4833	29.1	6645	34.1	8733	39.1	11100
4.2	378	9.2	1084	14.2	2067	19.2	3328	24.2	4867	29.2	6684	34.2	8778	39.2	11150
4.3	389	9.3	1101	14.3	2089	19.3	3356	24 3	4901	29.3	6723	34.3	8823	39.3	11201
4.4	401	9 4	1118	14.4	2112	19.4	3384	24.4	4934	29.4	6762	34.4	8868	39.4	11251
4.5	413	9.5	1135	14.5	2135	19.5	3413	24.5	4968	29.5	6801	34.5	8913	39.5	11301
4.6	424	9.6	1152	14.6	2158	19.6	3441	24.6	5002	29.6	6841	34.6	8958	39.6	11352
4.7	436	9.7	1169	14.7	2181	19.7	3469	24.7	5036	29.7	6881	34.7	9003	39.7	11403
4.8	448	9.8	1187	14.8	2204	19.8	3498	24.8	5070	29.8	6920	34.8	9048	39.8	11454
4.9	460	9.9	1205	14.9	2227	19.9	3527	24.9	5105	29.9	6960	34.9	9093	39.9	11505

TABLE NO. VI.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 18 feet wide. Side slopes 1½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	16.7	5.0	30.6	10.0	44.4	15.0	58.3	20.0	72.2	25.0	86.1	30.0	100.0	35.0	113.9
0.1	16.9	5.1	30.8	10.1	44.7	15.1	58.6	20.1	72.5	25.1	86.4	30.1	100.3	35.1	114.2
0.2	17.2	5.2	31.1	10.2	45.0	15.2	58.9	20.2	72.8	25.2	86.7	30.2	100.6	35.2	114.4
0.3	17.5	5.3	31.4	10.3	45.3	15.3	59.2	20.3	73.1	25.3	86.9	30.3	100.8	35.3	114.7
0.4	17.8	5.4	31.7	10.4	45.6	15.4	59.4	20.4	73.3	25.4	87.2	30.4	101.1	35.4	115.0
0.5	18.1	5.5	31.9	10.5	45.8	15.5	59.7	20.5	73.6	25.5	87.5	30.5	101.4	35.5	115.3
0.6	18.3	5.6	32.2	10.6	46.1	15.6	60.0	20.6	73.9	25.6	87.8	30.6	101.7	35.6	115.6
0.7	18.6	5 7	32.5	10.7	46.4	15.7	60.3	20.7	74.2	25.7	88.1	30.7	101.9	35.7	115.8
0.8	18.9	5.8	32.8	10.8	46.7	15.8	60.6	20.8	74.4	25.8	88.3	30.8	102.2	35.8	116.1
0.9	19.2	5.9	33.1	10.9	46.9	15.9	60.8	20.9	74.7	25.9	88.6	30.9	102.5	35.9	116.4
1.0	19.4	6.0	33.3	11.0	47.2	16 0	61.1	21.0	75.0	26.0	88.9	31.0	102.8	36.0	116.7
1.1	19.7	6.1	33.6	11.1	47.5	16.1	61.4	21.1	75.3	26.1	89.2	31.1	103.1	36.1	116.9
1.2	20.0	6.2	33.9	11.2	47.8	16.2	61.7	21.2	75.6	26.2	89.4	31.2	103.3	36.2	117.2
1.3	20.3	6.3	34.2	11.3	48.1	16.3	61.9	21.3	75.8	26.3	89.7	31.3	103.6	36.3	117.5
1.4	20.6	6 4	34.4	11.4	48.3	16.4	62.2	21.4	76.1	26.4	90.0	31.4	103.9	36.4	117.8
1.5	20.8	6.5	34.7	11.5	48.6	16.5	62.5	21.5	76.4	26.5	90.3	31.5	104.2	36.5	118.1
1.6	21.1	6.6	35.0	11.6	48.9	16.6	62.8	21.6	76.7	26.6	90.6	31.6	104.4	36.6	118.3
1.7	21.4	6.7	35.3	11.7	49.2	16.7	63.1	21.7	76.9	26.7	90.8	31.7	104.7	36.7	118.6
1.8	21.7	6.8	35.6	11.8	49.4	16.8	63.3	21.8	77.2	26.8	91.1	31.8	105.0	36.8	118.9
1.9	21.9	6.9	35.8	11.9	49.7	16.9	63.6	21.9	77.5	26.9	91.4	31.9	105.3	36.9	119.2
2.0	22.2	7.0	36.1	12.0	50.0	17.0	63.9	22.0	77.8	27.0	91.7	32.0	105.6	37.0	119.4
2.1	22.5	7.1	36.4	12.1	50.3	17.1	64.2	22.1	78.1	27.1	91.9	32.1	105.8	37.1	119.7
2.2	22.8	7.2	36.7	12.2	50.6	17.2	64.4	22.2	78.3	27.2	92.2	32.2	106.1	37.2	120.0
2.3	23.1	7.3	36.9	12.3	50.8	17.3	64.7	22.3	78.6	27.3	92.5	32.3	106.4	37.3	120.3
2.4	23.3	7.4	37.2	12.4	51.1	17.4	65.0	22.4	78.9	27.4	92.8	32.4	106.7	37.4	120.6
2.5	23.6	7.5	37.5	12.5	51.4	17.5	65.3	22.5	79.2	27.5	93.1	32.5	106.9	37.5	120.8
2.6	23.9	7.6	37.8	12.6	51.7	17.6	65.6	22.6	79.4	27.6	93.3	32.6	107.2	37.6	121.1
2.7	24.2	7.7	38.1	12.7	51.9	17.7	65.8	22.7	79.7	27.7	93.6	32.7	107.5	37.7	121.4
2.8	24.4	7.8	38.3	12.8	52.2	17.8	66.1	22.8	80.0	27.8	93.9	32.8	107.8	37.8	121.7
2.9	24.7	7.9	38.6	12.9	52.5	17.9	66.4	22.9	80.3	27.9	94.2	32.9	108.1	37.9	121.9
3.0	25.0	8.0	38.9	13.0	52.8	18.0	66.7	23.0	80.6	28.0	94.4	33.0	108.3	38.0	122.2
3.1	25.3	8.1	39.2	13.1	53.1	18.1	66.9	23.1	80.8	28.1	94.7	33.1	108.6	38.1	122.5
3.2	25.6	8.2	39.4	13.2	53.3	18.2	67.2	23.2	81.1	28.2	95.0	33.2	108.9	38.2	122.8
3.3	25.8	8.3	39.7	13.3	53.6	18.3	67.5	23.3	81.4	28.3	95.3	33 3	109.2	38.3	123.1
3.4	26.1	8.4	40.0	13.4	53.9	18.4	67.8	23.4	81.7	28.4	95.6	33.4	109.4	38.4	123.3
3.5	26.4	8.5	40.3	13.5	54.2	18.5	68.1	23.5	81.9	28.5	95.8	33.5	109.7	38.5	123.6
3.6	26.7	8.6	40.6	13.6	54.4	18.6	68.3	23.6	82.2	28.6	96.1	33.6	110.0	38.6	123.9
3.7	26.9	8.7	40.8	13.7	54.7	18.7	68.6	23.7	82.5	28.7	96.4	33.7	110.3	38.7	124.2
3.8	27.2	8.8	41.1	13.8	55.0	18.8	68.9	23.8	82.8	28.8	96.7	33.8	110.6	38.8	124.4
3.9	27.5	8.9	41.4	13.9	55.3	18.9	69.2	23.9	83.1	28.9	96.9	33.9	110.8	38.9	124.7
4.0	27.8	9.0	41.7	14.0	55.6	19.0	69.4	24.0	83.3	29.0	97.2	34.0	111.1	39.0	125.0
4.1	28.1	9.1	41.9	14.1	55.8	19.1	69.7	24.1	83.6	29.1	97.5	34.1	111 4	39.1	125.3
4.2	28.3	9.2	42.2	14.2	56.1	19.2	70.0	24.2	83.9	29.2	97.8	34.2	111.7	39.2	125.6
4.3	28.6	9.3	42.5	14.3	56.4	19.3	70.3	24.3	84.2	29.3	98.1	34.3	111.9	39.3	125.8
4.4	28.9	9.4	42.8	14.4	56.7	19.4	70.6	24.4	84.4	29.4	98.3	34.4	112.2	39.4	126.1
4.5	29.2	9.5	43.1	14.5	56.9	19.5	70.8	24.5	84.7	29.5	98.6	34.5	112.5	39.5	126.4
4.6	29.4	9.6	43.3	14.6	57.2	19.6	71.1	24.6	85.0	29.6	98.9	34.6	112.8	39 6	126.7
4.7	29.7	9.7	43.6	14.7	57.5	19.7	71.4	24.7	85.3	29.7	99.2	34.7	113.1	39.7	126.9
4.8	30.0	9.8	43.9	14.8	57.8	19.8	71.7	24.8	85.6	29.8	99.4	34.8	113.3	39.8	127.2
4.9	30.3	9.9	44.2	14 9	58.1	19.9	71 9	24.9	85.8	29.9	99.7	34 9	113.6	39.9	127.5

TABLE NO. VII.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

Road-bed, 24 feet wide. Side slopes, 1½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	583	10.0	1444	15.0	2583	20.0	4000	25.0	5694	30.0	7667	35.0	9917
0.1	9	5.1	598	10.1	1465	15.1	2609	20.1	4031	25.1	5731	30.1	7709	35.1	9965
0.2	18	5.2	612	10.2	1485	15.2	2635	20.2	4062	25.2	5768	30.2	7751	35.2	10012
0.3	27	5.3	627	10.3	1505	15.3	2661	20.3	4094	25.3	5805	30.3	7794	35.3	10061
0.4	36	5.4	642	10.4	1525	15.4	2686	20.4	4125	25.4	5842	30.4	7836	35.4	10109
0.5	46	5.5	657	10.5	1546	15.5	2713	20.5	4157	25.5	5879	30.5	7879	35.5	10157
0.6	55	5.6	672	10.6	1566	15.6	2739	20.6	4189	25.6	5916	30.6	7922	35.6	10205
0.7	65	5.7	687	10.7	1587	15.7	2765	20.7	4221	25.7	5954	30.7	7965	35.7	10254
0.8	75	5.8	702	10.8	1608	15.8	2791	20.8	4252	25.8	5991	30.8	8008	35.8	10302
0.9	85	5.9	718	10.9	1629	15.9	2818	20.9	4285	25.9	6029	30.9	8051	35.9	10351
1.0	94	6.0	733	11.0	1650	16.0	2844	21.0	4317	26.0	6067	31.0	8094	36.0	10400
1.1	105	6.1	749	11.1	1671	16.1	2871	21.1	4349	26.1	6105	31.1	8138	36.1	10449
1.2	115	6.2	765	11.2	1692	16.2	2898	21.2	4381	26.2	6142	31.2	8181	36.2	10498
1.3	125	6.3	781	11.3	1714	16.3	2925	21.3	4414	26.3	6181	31.3	8225	36.3	10547
1.4	135	6.4	796	11.4	1735	16.4	2952	21.4	4446	26.4	6219	31.4	8269	36.4	10596
1.5	146	6.5	813	11.5	1757	16.5	2979	21.5	4479	26.5	6257	31.5	8313	36.5	10646
1.6	156	6.6	829	11.6	1779	16.6	3006	21.6	4512	26.6	6295	31.6	8356	36.6	10695
1.7	167	6.7	845	11.7	1801	16.7	3034	21.7	4545	26.7	6334	31.7	8401	36.7	10745
1.8	178	6.8	861	11.8	1822	16.8	3061	21.8	4578	26.8	6372	31.8	8445	36.8	10795
1.9	189	6.9	878	11.9	1845	16.9	3089	21.9	4611	26.9	6411	31.9	8489	36.9	10845
2.0	200	7.0	894	12.0	1867	17.0	3117	22.0	4644	27.0	6450	32.0	8533	37.0	10894
2.1	211	7.1	911	12.1	1889	17.1	3145	22.1	4678	27.1	6489	32.1	8578	37.1	10945
2.2	222	7.2	928	12.2	1911	17.2	3172	22.2	4711	27.2	6528	32.2	8622	37.2	10995
2.3	234	7.3	945	12.3	1934	17.3	3201	22.3	4745	27.3	6567	32.3	8667	37.3	11045
2.4	245	7.4	962	12.4	1956	17.4	3229	22.4	4779	27.4	6606	32.4	8712	37.4	11095
2.5	257	7.5	979	12.5	1979	17.5	3257	22.5	4813	27.5	6646	32.5	8757	37.5	11146
2.6	269	7.6	996	12.6	2002	17.6	3285	22.6	4846	27.6	6685	32.6	8802	37.6	11196
2.7	281	7.7	1014	12.7	2025	17.7	3314	22.7	4881	27.7	6725	32.7	8847	37.7	11247
2.8	292	7.8	1031	12.8	2048	17.8	3342	22.8	4915	27.8	6765	32.8	8892	37.8	11298
2.9	305	7.9	1049	12.9	2071	17.9	3371	22.9	4949	27.9	6805	32.9	8938	37.9	11349
3.0	317	8.0	1067	13.0	2094	18.0	3400	23.0	4983	28.0	6844	33.0	8983	38.0	11400
3.1	329	8.1	1085	13.1	2118	18.1	3429	23.1	5018	28.1	6885	33.1	9029	38.1	11451
3.2	341	8.2	1102	13.2	2141	18.2	3458	23.2	5052	28.2	6925	33.2	9075	38.2	11502
3.3	354	8.3	1121	13.3	2165	18.3	3487	23.3	5087	28.3	6965	33.3	9121	38.3	11554
3.4	366	8.4	1139	13.4	2189	18.4	3516	23.4	5122	28.4	7005	33.4	9166	38.4	11605
3.5	379	8.5	1157	13.5	2213	18.5	3546	23.5	5157	28.5	7046	33.5	9213	38.5	11657
3.6	392	8.6	1175	13.6	2236	18.6	3575	23.6	5192	28.6	7086	33.6	9259	38.6	11709
3.7	405	8.7	1194	13.7	2261	18.7	3605	23.7	5227	28.7	7127	33.7	9305	38.7	11761
3.8	418	8.8	1212	13.8	2285	18.8	3635	23.8	5262	28.8	7168	33.8	9351	38.8	11812
3.9	431	8.9	1231	13.9	2309	18.9	3665	23.9	5298	28.9	7209	33.9	9398	38.9	11865
4.0	444	9.0	1250	14.0	2333	19.0	3694	24.0	5333	29.0	7250	34.0	9444	39.0	11917
4.1	458	9.1	1269	14.1	2358	19.1	3725	24.1	5369	29.1	7291	34.1	9491	39.1	11969
4.2	471	9.2	1288	14.2	2382	19.2	3755	24.2	5405	29.2	7332	34.2	9538	39.2	12021
4.3	485	9.3	1307	14.3	2407	19.3	3785	24.3	5441	29.3	7374	34.3	9585	39.3	12074
4.4	499	9.4	1326	14.4	2432	19.4	3815	24.4	5476	29.4	7415	34.4	9632	39.4	12126
4.5	513	9.5	1346	14.5	2457	19.5	3846	24.5	5513	29.5	7457	34.5	9679	39.5	12179
4.6	526	9.6	1365	14.6	2482	19.6	3876	24.6	5549	29.6	7499	34.6	9726	39.6	12232
4.7	541	9.7	1385	14.7	2507	19.7	3907	24.7	5585	29.7	7541	34.7	9774	39.7	12285
4.8	555	9.8	1405	14.8	2532	19.8	3938	24.8	5621	29.8	7582	34.8	9821	39.8	12338
4.9	569	9.9	1425	14.9	2558	19.9	3969	24.9	5658	29.9	7625	34.9	9869	39.9	12391

TABLE NO. VIII.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 24 feet wide. Side slopes 1½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	22.2	5.0	36.1	10.0	50.0	15.0	63.9	20.0	77.8	25.0	91.7	30.0	105.6	35.0	119.4
0.1	22.5	5.1	36.4	10.1	50.3	15.1	64.2	20.1	78.1	25.1	91.9	30.1	105.8	35.1	119.7
0.2	22.8	5.2	36.7	10.2	50.6	15.2	64.4	20.2	78.3	25.2	92.2	30.2	106.1	35.2	120.0
0.3	23.1	5.3	36.9	10.3	50.8	15.3	64.7	20.3	78.6	25.3	92.5	30.3	106.4	35.3	120.3
0.4	23.3	5.4	37.2	10.4	51.1	15.4	65.0	20.4	78.9	25.4	92.8	30.4	106.7	35.4	120.6
0.5	23.6	5.5	37.5	10.5	51.4	15.5	65.3	20.5	79.2	25.5	93.1	30.5	106.9	35.5	120.8
0.6	23.9	5.6	37.8	10.6	51.7	15.6	65.6	20.6	79.4	25.6	93.3	30.6	107.2	35.6	121.1
0.7	24.2	5.7	38.1	10.7	51.9	15.7	65.8	20.7	79.7	25.7	93.6	30.7	107.5	35.7	121.4
0.8	24.4	5.8	38.3	10.8	52.2	15.8	66.1	20.8	80.0	25.8	93.9	30.8	107.8	35.8	121.7
0.9	24.7	5.9	38.6	10.9	52.5	15.9	66.4	20.9	80.3	25.9	94.2	30.9	108.1	35.9	121.9
1.0	25.0	6.0	38.9	11.0	52.8	16.0	66.7	21.0	80.6	26.0	94.4	31.0	108.3	36.0	122.2
1.1	25.3	6.1	39.2	11.1	53.1	16.1	66.9	21.1	80.8	26.1	94.7	31.1	108.6	36.1	122.5
1.2	25.6	6.2	39.4	11.2	53.3	16.2	67.2	21.2	81.1	26.2	95.0	31.2	108.9	36.2	122.8
1.3	25.8	6.3	39.7	11.3	53.6	16.3	67.5	21.3	81.4	26.3	95.3	31.3	109.2	36.3	123.1
1.4	26.1	6.4	40.0	11.4	53.9	16.4	67.8	21.4	81.7	26.4	95.6	31.4	109.4	36.4	123.3
1.5	26.4	6.5	40.3	11.5	54.2	16.5	68.1	21.5	81.9	26.5	95.8	31.5	109.7	36.5	123.6
1.6	26.7	6.6	40.6	11.6	54.4	16.6	68.3	21.6	82.2	26.6	96.1	31.6	110.0	36.6	123.9
1.7	26.9	6.7	40.8	11.7	54.7	16.7	68.6	21.7	82.5	26.7	96.4	31.7	110.3	36.7	124.2
1.8	27.2	6.8	41.1	11.8	55.0	16.8	68.9	21.8	82.8	26.8	96.7	31.8	110.6	36.8	124.4
1.9	27.5	6.9	41.4	11.9	55.3	16.9	69.2	21.9	83.1	26.9	96.9	31.9	110.8	36.9	124.7
2.0	27.8	7.0	41.7	12.0	55.6	17.0	69.4	22.0	83.3	27.0	97.2	32.0	111.1	37.0	125.0
2.1	28.1	7.1	41.9	12.1	55.8	17.1	69.7	22.1	83.6	27.1	97.5	32.1	111.4	37.1	125.3
2.2	28.3	7.2	42.2	12.2	56.1	17.2	70.0	22.2	83.9	27.2	97.8	32.2	111.7	37.2	125.6
2.3	28.6	7.3	42.5	12.3	56.4	17.3	70.3	22.3	84.2	27.3	98.1	32.3	111.9	37.3	125.8
2.4	28.9	7.4	42.8	12.4	56.7	17.4	70.6	22.4	84.4	27.4	98.3	32.4	112.2	37.4	126.1
2.5	29.2	7.5	43.1	12.5	56.9	17.5	70.8	22.5	84.7	27.5	98.6	32.5	112.5	37.5	126.4
2.6	29.4	7.6	43.3	12.6	57.2	17.6	71.1	22.6	85.0	27.6	98.9	32.6	112.8	37.6	126.7
2.7	29.7	7.7	43.6	12.7	57.5	17.7	71.4	22.7	85.3	27.7	99.2	32.7	113.1	37.7	126.9
2.8	30.0	7.8	43.9	12.8	57.8	17.8	71.7	22.8	85.6	27.8	99.4	32.8	113.3	37.8	127.2
2.9	30.3	7.9	44.2	12.9	58.1	17.9	71.9	22.9	85.8	27.9	99.7	32.9	113.6	37.9	127.5
3.0	30.6	8.0	44.4	13.0	58.3	18.0	72.2	23.0	86.1	28.0	100.0	33.0	113.9	38.0	127.8
3.1	30.8	8.1	44.7	13.1	58.6	18.1	72.5	23.1	86.4	28.1	100.3	33.1	114.2	38.1	128.1
3.2	31.1	8.2	45.0	13.2	58.9	18.2	72.8	23.2	86.7	28.2	100.6	33.2	114.4	38.2	128.3
3.3	31.4	8.3	45.3	13.3	59.2	18.3	73.1	23.3	86.9	28.3	100.8	33.3	114.7	38.3	128.6
3.4	31.7	8.4	45.6	13.4	59.4	18.4	73.3	23.4	87.2	28.4	101.1	33.4	115.0	38.4	128.9
3.5	31.9	8.5	45.8	13.5	59.7	18.5	73.6	23.5	87.5	28.5	101.4	33.5	115.3	38.5	129.2
3.6	32.2	8.6	46.1	13.6	60.0	18.6	73.9	23.6	87.8	28.6	101.7	33.6	115.6	38.6	129.4
3.7	32.5	8.7	46.4	13.7	60.3	18.7	74.2	23.7	88.1	28.7	101.9	33.7	115.8	38.7	129.7
3.8	32.8	8.8	46.7	13.8	60.6	18.8	74.4	23.8	88.3	28.8	102.2	33.8	116.1	38.8	130.0
3.9	33.1	8.9	46.9	13.9	60.8	18.9	74.7	23.9	88.6	28.9	102.5	33.9	116.4	38.9	130.3
4.0	33.3	9.0	47.2	14.0	61.1	19.0	75.0	24.0	88.9	29.0	102.8	34.0	116.7	39.0	130.6
4.1	33.6	9.1	47.5	14.1	61.4	19.1	75.3	24.1	89.2	29.1	103.1	34.1	116.9	39.1	130.8
4.2	33.9	9.2	47.8	14.2	61.7	19.2	75.6	24.2	89.4	29.2	103.3	34.2	117.2	39.2	131.1
4.3	34.2	9.3	48.1	14.3	61.9	19.3	75.8	24.3	89.7	29.3	103.6	34.3	117.5	39.3	131.4
4.4	34.4	9.4	48.3	14.4	62.2	19.4	76.1	24.4	90.0	29.4	103.9	34.4	117.8	39.4	131.7
4.5	34.7	9.5	48.6	14.5	62.5	19.5	76.4	24.5	90.3	29.5	104.2	34.5	118.1	39.5	131.9
4.6	35.0	9.6	48.9	14.6	62.8	19.6	76.7	24.6	90.6	29.6	104.4	34.6	118.3	39.6	132.2
4.7	35.3	9.7	49.2	14.7	63.1	19.7	76.9	24.7	90.8	29.7	104.7	32.7	118.6	39.7	132.5
4.8	35.6	9.8	49.4	14.8	63.3	19.8	77.2	24.8	91.1	29.8	105.0	34.8	118.9	39.8	132.8
4.9	35.8	9.9	49.7	14.9	63.6	19.9	77.5	24.9	91.4	29.9	105.3	34.9	119.2	39.9	133.1

TABLE NO. IX.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

Road-bed 26 feet wide. Side slopes 1½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	620	10.0	1519	15.0	2694	20.0	4148	25.0	5880	30.0	7889	35.0	10176
0.1	10	5.1	636	10.1	1539	15.1	2721	20.1	4180	25.1	5917	30.1	7932	35.1	10225
0.2	19	5.2	651	10.2	1560	15.2	2747	20.2	4212	25.2	5955	30.2	7975	35.2	10273
0.3	29	5.3	666	10.3	1581	15.3	2774	20.3	4244	25.3	5992	30.3	8018	35.3	10322
0.4	39	5.4	682	10.4	1602	15.4	2801	20.4	4276	25.4	6030	30.4	8062	35.4	10371
0.5	50	5.5	698	10.5	1624	15.5	2827	20.5	4309	25.5	6068	30.5	8105	35.5	10420
0.6	60	5.6	713	10.6	1645	15.6	2854	20.6	4341	25.6	6106	30.6	8149	35.6	10469
0.7	70	5.7	729	10.7	1666	15.7	2881	20.7	4374	25.7	6144	30.7	8192	35.7	10518
0.8	81	5.8	745	10.8	1688	15.8	2908	20.8	4407	25.8	6182	30.8	8236	35.8	10568
0.9	91	5.9	762	10.9	1710	15.9	2936	20.9	4439	25.9	6221	30.9	8280	35.9	10617
1.0	102	6.0	778	11.0	1731	16.0	2963	21.0	4472	26.0	6259	31.0	8324	36.0	10667
1.1	113	6.1	794	11.1	1753	16.1	2990	21.1	4505	26.1	6298	31.1	8368	36.1	10716
1.2	124	6.2	811	11.2	1775	16.2	3018	21.2	4538	26.2	6337	31.2	8412	36.2	10766
1.3	135	6.3	827	11.3	1798	16.3	3046	21.3	4572	26.3	6375	31.3	8457	36.3	10816
1.4	146	6.4	844	11.4	1820	16.4	3073	21.4	4605	26.4	6414	31.4	8501	36.4	10866
1.5	157	6.5	861	11.5	1842	16.5	3101	21.5	4638	26.5	6453	31.5	8546	36.5	10916
1.6	168	6.6	878	11.6	1865	16.6	3129	21.6	4672	26.6	6492	31.6	8591	36.6	10966
1.7	180	6.7	895	11.7	1887	16.7	3158	21.7	4706	26.7	6532	31.7	8635	36.7	11017
1.8	191	6.8	912	11.8	1910	16.8	3186	21.8	4739	26.8	6571	31.8	8680	36.8	11067
1.9	203	6.9	929	11.9	1933	16.9	3214	21.9	4773	26.9	6610	31.9	8725	36.9	11118
2.0	215	7.0	946	12.0	1956	17.0	3243	22.0	4807	27.0	6650	32.0	8770	37.0	11169
2.1	227	7.1	964	12.1	1979	17.1	3271	22.1	4842	27.1	6690	32.1	8816	37.1	11219
2.2	239	7.2	981	12.2	2002	17.2	3300	22.2	4876	27.2	6729	32.2	8861	37.2	11270
2.3	251	7.3	999	12.3	2025	17.3	3329	22.3	4910	27.3	6769	32.3	8906	37.3	11321
2.4	263	7.4	1017	12.4	2048	17.4	3358	22.4	4945	27.4	6809	32.4	8952	37.4	11372
2.5	275	7.5	1035	12.5	2072	17.5	3387	22.5	4979	27.5	6850	32.5	8998	37.5	11424
2.6	288	7.6	1053	12.6	2095	17.6	3416	22.6	5014	27.6	6890	32.6	9043	37.6	11475
2.7	301	7.7	1071	12.7	2119	17.7	3445	22.7	5049	27.7	6930	32.7	9089	37.7	11526
2.8	313	7.8	1089	12.8	2143	17.8	3474	22.8	5084	27.8	6971	32.8	9135	37.8	11578
2.9	326	7.9	1107	12.9	2167	17.9	3504	22.9	5119	27.9	7011	32.9	9182	37.9	11630
3.0	339	8.0	1126	13.0	2191	18.0	3533	23.0	5154	28.0	7052	33.0	9228	38.0	11681
3.1	352	8.1	1145	13.1	2215	18.1	3563	23.1	5189	28.1	7093	33.1	9274	38.1	11733
3.2	365	8.2	1163	13.2	2239	18.2	3593	23.2	5224	28.2	7134	33.2	9321	38.2	11785
3.3	378	8.3	1182	13.3	2263	18.3	3623	23.3	5260	28.3	7175	33.3	9367	38.3	11838
3.4	392	8.4	1201	13.4	2288	18.4	3653	23.4	5295	28.4	7216	33.4	9414	38.4	11890
3.5	405	8.5	1220	13.5	2313	18.5	3683	23.5	5331	28.5	7257	33.5	9461	38.5	11942
3.6	419	8.6	1239	13.6	2337	18.6	3713	23.6	5367	28.6	7298	33.6	9508	38.6	11995
3.7	432	8.7	1258	13.7	2362	18.7	3743	23.7	5403	28.7	7340	33.7	9555	38.7	12047
3.8	446	8.8	1278	13.8	2387	18.8	3774	23.8	5439	28.8	7381	33.8	9602	38.8	12100
3.9	460	8.9	1297	13.9	2412	18.9	3805	23.9	5475	28.9	7423	33.9	9649	38.9	12153
4.0	474	9.0	1317	14.0	2437	19.0	3835	24.0	5511	29.0	7465	34.0	9696	39.0	12206
4.1	488	9.1	1336	14.1	2462	19.1	3866	24.1	5547	29.1	7507	34.1	9744	39.1	12259
4.2	502	9.2	1356	14.2	2488	19.2	3897	24.2	5584	29.2	7549	34.2	9791	39.2	12312
4.3	517	9.3	1376	14.3	2513	19.3	3928	24.3	5621	29.3	7591	34.3	9839	39.3	12365
4.4	531	9.4	1396	14.4	2539	19.4	3959	24.4	5657	29.4	7633	34.4	9887	39.4	12418
4.5	546	9.5	1416	14.5	2564	19.5	3990	24.5	5694	29.5	7675	34.5	9935	39.5	12472
4.6	561	9.6	1436	14.6	2590	19.6	4022	24.6	5731	29.6	7718	34.6	9983	39.6	12525
4.7	575	9.7	1457	14.7	2616	19.7	4053	24.7	5768	29.7	7761	34.7	10031	39.7	12579
4.8	590	9.8	1477	14.8	2642	19.8	4085	24.8	5805	29.8	7803	34.8	10079	39.8	12633
4.9	605	9.9	1498	14.9	2668	19.9	4116	24.9	5842	29.9	7846	34.9	10127	39.9	12687

TABLE NO. X.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

Road-bed 26 feet wide. Side slopes 1½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	24.1	5.0	38.0	10.0	51.9	15.0	65.7	20.0	79.6	25.0	93.5	30.0	107.4	35.0	121.3
0.1	24.4	5.1	38.2	10.1	52.1	15.1	66.0	20.1	79.9	25.1	93.8	30.1	107.7	35.1	121.6
0.2	24.6	5.2	38.5	10.2	52.4	15.2	66.3	20.2	80.2	25.2	94.1	30.2	108.0	35.2	121.9
0.3	24.9	5.3	38.8	10.3	52.7	15.3	66.6	20.3	80.5	25.3	94.4	30.3	108.2	35.3	122.1
0.4	25.2	5.4	39.1	10.4	53.0	15.4	66.9	20.4	80.7	25.4	94.6	30.4	108.5	35.4	122.4
0.5	25.5	5.5	39.4	10.5	53.2	15.5	67.1	20.5	81.0	25.5	94.9	30.5	108.8	35.5	122.7
0.6	25.7	5.6	39.6	10.6	53.5	15.6	67.4	20.6	81.3	25.6	95.2	30.6	109.1	35.6	123.0
0.7	26.0	5.7	39.9	10.7	53.8	15.7	67.7	20.7	81.6	25.7	95.5	30.7	109.4	35.7	123.2
0.8	26.3	5.8	40.2	10.8	54.1	15.8	68.0	20.8	81.9	25.8	95.7	30.8	109.6	35.8	123.5
0.9	26.6	5.9	40.5	10.9	54.4	15.9	68.2	20.9	82.1	25.9	96.0	30.9	109.9	35.9	123.8
1.0	26.9	6.0	40.7	11.0	54.6	16.0	68.5	21.0	82.4	26.0	96.3	31.0	110.2	36.0	124.1
1.1	27.1	6.1	41.0	11.1	54.9	16.1	68.8	21.1	82.7	26.1	96.6	31.1	110.5	36.1	124.4
1.2	27.4	6.2	41.3	11.2	55.2	16.2	69.1	21.2	83.0	26.2	96.9	31.2	110.7	36.2	124.6
1.3	27.7	6.3	41.6	11.3	55.5	16.3	69.4	21.3	83.2	26.3	97.1	31.3	111.0	36.3	124.9
1.4	28.0	6.4	41.9	11.4	55.7	16.4	69.6	21.4	83.5	26.4	97.4	31.4	111.3	36.4	125.2
1.5	28.2	6.5	42.1	11.5	56.0	16.5	69.9	21.5	83.8	26.5	97.7	31.5	111.6	36.5	125.5
1.6	28.5	6.6	42.4	11.6	56.3	16.6	70.2	21.6	84.1	26.6	98.0	31.6	111.9	36.6	125.7
1.7	28.8	6.7	42.7	11.7	56.6	16.7	70.5	21.7	84.4	26.7	98.2	31.7	112.1	36.7	126.0
1.8	29.1	6.8	43.0	11.8	56.9	16.8	70.7	21.8	84.6	26.8	98.5	31.8	112.4	36.8	126.3
1.9	29.4	6.9	43.2	11.9	57.1	16.9	71.0	21.9	84.9	26.9	98.8	31.9	112.7	36.9	126.6
2.0	29.6	7.0	43.5	12.0	57.4	17.0	71.3	22.0	85.2	27.0	99.1	32.0	113.0	37.0	126.9
2.1	29.9	7.1	43.8	12.1	57.7	17.1	71.6	22.1	85.5	27.1	99.4	32.1	113.2	37.1	127.1
2.2	30.2	7.2	44.1	12.2	58.0	17.2	71.9	22.2	85.7	27.2	99.6	32.2	113.5	37.2	127.4
2.3	30.5	7.3	44.4	12.3	58.2	17.3	72.1	22.3	86.0	27.3	99.9	32.3	113.8	37.3	127.7
2.4	30.7	7.4	44.6	12.4	58.5	17.4	72.4	22.4	86.3	27.4	100.2	32.4	114.1	37.4	128.0
2.5	31.0	7.5	44.9	12.5	58.8	17.5	72.7	22.5	86.6	27.5	100.5	32.5	114.4	37.5	128.2
2.6	31.3	7.6	45.2	12.6	59.1	17.6	73.0	22.6	86.9	27.6	100.7	32.6	114.6	37.6	128.5
2.7	31.6	7.7	45.5	12.7	59.4	17.7	73.2	22.7	87.1	27.7	101.0	32.7	114.9	37.7	128.8
2.8	31.9	7.8	45.7	12.8	59.6	17.8	73.5	22.8	87.4	27.8	101.3	32.8	115.2	37.8	129.1
2.9	32.1	7.9	46.0	12.9	59.9	17.9	73.8	22.9	87.7	27.9	101.6	32.9	115.5	37.9	129.4
3.0	32.4	8.0	46.3	13.0	60.2	18.0	74.1	23.0	88.0	28.0	101.9	33.0	115.7	38.0	129.6
3.1	32.7	8.1	46.6	13.1	60.5	18.1	74.4	23.1	88.2	28.1	102.1	33.1	116.0	38.1	129.9
3.2	33.0	8.2	46.9	13.2	60.7	18.2	74.6	23.2	88.5	28.2	102.4	33.2	116.3	38.2	130.2
3.3	33.2	8.3	47.1	13.3	61.0	18.3	74.9	23.3	88.8	28.3	102.7	33.3	116.6	38.3	130.5
3.4	33.5	8.4	47.4	13.4	61.3	18.4	75.2	23.4	89.1	28.4	103.0	33.4	116.9	38.4	130.7
3.5	33.8	8.5	47.7	13.5	61.6	18.5	75.5	23.5	89.4	28.5	103.2	33.5	117.1	38.5	131.0
3.6	34.1	8.6	48.0	13.6	61.9	18.6	75.7	23.6	89.6	28.6	103.5	33.6	117.4	38.6	131.3
3.7	34.4	8.7	48.2	13.7	62.1	18.7	76.0	23.7	89.9	28.7	103.8	33.7	117.7	38.7	131.6
3.8	34.6	8.8	48.5	13.8	62.4	18.8	76.3	23.8	90.2	28.8	104.1	33.8	118.0	38.8	131.9
3.9	34.9	8.9	48.8	13.9	62.7	18.9	76.6	23.9	90.5	28.9	104.4	33.9	118.2	38.9	132.1
4.0	35.2	9.0	49.1	14.0	63.0	19.0	76.9	24.0	90.7	29.0	104.6	34.0	118.5	39.0	132.4
4.1	35.5	9.1	49.4	14.1	63.2	19.1	77.1	24.1	91.0	29.1	104.9	34.1	118.8	39.1	132.7
4.2	35.7	9.2	49.6	14.2	63.5	19.2	77.4	24.2	91.3	29.2	105.2	34.2	119.1	39.2	133.0
4.3	36.0	9.3	49.9	14.3	63.8	19.3	77.7	24.3	91.6	29.3	105.5	34.3	119.4	39.3	133.2
4.4	36.3	9.4	50.2	14.4	64.1	19.4	78.0	24.4	91.9	29.4	105.7	34.4	119.6	39.4	133.5
4.5	36.6	9.5	50.5	14.5	64.4	19.5	78.2	24.5	92.1	29.5	106.0	34.5	119.9	39.5	133.8
4.6	36.9	9.6	50.7	14.6	64.6	19.6	78.5	24.6	92.4	29.6	106.3	34.6	120.2	39.6	134.1
4.7	37.1	9.7	51.0	14.7	64.9	19.7	78.8	24.7	92.7	29.7	106.6	34.7	120.5	39.7	134.4
4.8	37.4	9.8	51.3	14.8	65.2	19.8	79.1	24.8	93.0	29.8	106.9	34.8	120.7	39.8	134.6
4.9	37.7	9.9	51.6	14.9	65.5	19.9	79.4	24.9	93.2	29.9	107.1	34.9	121.0	39.9	134.9

TABLE NO. XI.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 16 feet wide. Side slopes 1 to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	389	10.0	963	15.0	1722	20.0	2667	25.0	3796	30.0	5111	35.0	6611
0.1	6	5.1	399	10.1	976	15.1	1739	20.1	2687	25.1	3821	30.1	5139	35.1	6643
0.2	12	5.2	409	10.2	990	15.2	1756	20.2	2708	25.2	3845	30.2	5168	35.2	6675
0.3	18	5.3	418	10.3	1003	15.3	1774	20.3	2729	25.3	3870	30.3	5196	35.3	6707
0.4	24	5.4	428	10.4	1017	15.4	1791	20.4	2750	25.4	3895	30.4	5224	35.4	6739
0.5	31	5.5	438	10.5	1031	15.5	1808	20.5	2771	25.5	3919	30.5	5253	35.5	6771
0.6	37	5.6	448	10.6	1044	15.6	1826	20.6	2792	25.6	3944	30.6	5281	35.6	6804
0.7	43	5.7	458	10.7	1058	15.7	1843	20.7	2814	25.7	3969	30.7	5310	35.7	6836
0.8	50	5.8	468	10.8	1072	15.8	1861	20.8	2835	25.8	3994	30.8	5339	35.8	6868
0.9	56	5.9	479	10.9	1086	15.9	1879	20.9	2856	25.9	4019	30.9	5367	35.9	6901
1.0	63	6.0	489	11.0	1100	16.0	1896	21.0	2878	26.0	4044	31.0	5396	36.0	6933
1.1	70	6.1	499	11.1	1114	16.1	1914	21.1	2899	26.1	4070	31.1	5425	36.1	6966
1.2	76	6.2	510	11.2	1128	16.2	1932	21.2	2921	26.2	4095	31 2	5454	36.2	6999
1.3	83	6.3	520	11.3	1143	16.3	1950	21.3	2943	26.3	4120	31.3	5483	36.3	7031
1.4	90	6.4	531	11.4	1157	16.4	1968	21.4	2964	26.4	4146	31.4	5512	36.4	7064
1.5	97	6.5	542	11.5	1171	16.5	1986	21.5	2986	26.5	4171	31.5	5542	36.5	7097
1.6	104	6.6	552	11.6	1186	16.6	2004	21.6	3008	26.6	4197	31.6	5571	36.6	7130
1.7	111	6.7	563	11.7	1200	16.7	2023	21.7	3030	26.7	4223	31.7	5600	36.7	7163
1.8	119	6.8	574	11.8	1215	16.8	2041	21.8	3052	26.8	4248	31.8	5630	36.8	7196
1.9	126	6.9	585	11.9	1230	16.9	2059	21.9	3074	26.9	4274	31.9	5659	36.9	7230
2.0	133	7.0	596	12.0	1244	17.0	2078	22.0	3096	27.0	4300	32.0	5689	37.0	7263
2.1	141	7.1	607	12.1	1259	17.1	2096	22.1	3119	27.1	4326	32.1	5719	37.1	7296
2.2	148	7.2	619	12.2	1274	17.2	2115	22.2	3141	27.2	4352	32.2	5748	37.2	7330
2.3	156	7.3	630	12.3	1289	17.3	2134	22.3	3163	27.3	4378	32.3	5778	37.3	7363
2.4	164	7.4	641	12.4	1304	17.4	2152	22.4	3186	27.4	4404	32.4	5808	37.4	7397
2.5	171	7.5	653	12.5	1319	17.5	2171	22.5	3208	27.5	4431	32.5	5838	37.5	7431
2.6	179	7.6	664	12.6	1335	17.6	2190	22.6	3231	27.6	4457	32.6	5868	37.6	7464
2.7	187	7.7	676	12.7	1350	17.7	2209	22.7	3254	27.7	4483	32.7	5898	37.7	7498
2.8	195	7.8	688	12.8	1365	17.8	2228	22.8	3276	27.8	4510	32.8	5928	37.8	7532
2.9	203	7.9	699	12.9	1381	17.9	2247	22.9	3299	27.9	4536	32.9	5959	37.9	7566
3.0	211	8.0	711	13.0	1396	18.0	2267	23.0	3322	28.0	4563	33.0	5989	38.0	7600
3.1	219	8.1	723	13.1	1412	18.1	2286	23.1	3345	28.1	4590	33.1	6019	38.1	7634
3.2	228	8.2	735	13.2	1428	18.2	2305	23.2	3368	28.2	4616	33.2	6050	38.2	7668
3.3	236	8.3	747	13.3	1443	18.3	2325	23.3	3391	28.3	4643	33.3	6080	38.3	7703
3.4	244	8.4	759	13.4	1459	18.4	2344	23.4	3415	28.4	4670	33 4	6111	38.4	7737
3.5	253	8.5	771	13.5	1475	18.5	2364	23.5	3438	28.5	4697	33.5	6142	38.5	7771
3.6	261	8.6	784	13.6	1491	18.6	2384	23.6	3461	28.6	4724	33.6	6172	38.6	7806
3.7	270	8.7	796	13.7	1507	18.7	2403	23.7	3485	28.7	4751	33.7	6203	38.7	7840
3.8	279	8.8	808	13.8	1523	18.8	2423	23.8	3508	28.8	4779	33.8	6234	38.8	7875
3.9	287	8.9	821	13.9	1539	18.9	2443	23.9	3532	28.9	4806	33.9	6265	38.9	7910
4.0	296	9.0	833	14.0	1556	19.0	2463	24.0	3556	29.0	4833	34.0	6296	39.0	7944
4.1	305	9.1	846	14.1	1572	19.1	2483	24.1	3579	29.1	4861	34.1	6327	39.1	7979
4.2	314	9.2	859	14.2	1588	19.2	2503	24.2	3603	29.2	4888	34.2	6359	39.2	8014
4 3	323	9.3	871	14.3	1605	19.3	2523	24.3	3627	29.3	4916	34.3	6390	39.3	8049
4.4	332	9.4	884	14.4	1621	19.4	2544	24.4	3651	29.4	4944	34.4	6421	39.4	8084
4.5	342	9.5	897	14.5	1638	19.5	2564	24.5	3675	29.5	4971	34.5	6453	39.5	8119
4.6	351	9.6	910	14.6	1655	19.6	2584	24.6	3699	29.6	4999	34.6	6484	39.6	8155
4.7	360	9.7	923	14.7	1671	19.7	2605	24.7	3723	29.7	5027	34.7	6516	39.7	8190
4.8	370	9.8	936	14.8	1688	19.8	2625	24.8	3748	29.8	5055	34 8	6548	39.8	8225
4.9	379	9.9	950	14.9	1705	19.9	2646	24.9	3772	29.9	5083	34.9	6579	39.9	8261

TABLE NO. XII.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road bed 16 feet wide. Side slopes 1 to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0 0	14.8	5.0	24.1	10.0	33.3	15.0	42.6	20.0	51.9	25.0	61.1	30.0	70.4	35.0	79.6
0.1	15.0	5.1	24.3	10.1	33.5	15.1	42.8	20.1	52.0	25.1	61.3	30.1	70.6	35.1	79.8
0.2	15.2	5.2	24.4	10.2	33.7	15 2	43.0	20.2	52.2	25.2	61.5	30.2	70.7	35.2	80.0
0.3	15.4	5.3	24.6	10.3	33.9	15.3	43.1	20.3	52.4	25.3	61.7	30.3	70.9	35.3	80.2
0.4	15.6	5.4	24.8	10.4	34.1	15.4	43.3	20.4	52.6	25.4	61.9	30.4	71.1	35.4	80.4
0.5	15.7	5.5	25.0	10.5	34.3	15.5	43.5	20.5	52.8	25.5	62.0	30.5	71.3	35.5	80.6
0.6	15.9	5.6	25.2	10.6	34.4	15.6	43.7	20.6	53.0	25.6	62.2	30.6	71.5	35.6	80.7
0.7	16.1	5.7	25.4	10.7	34.6	15.7	43.9	20.7	53.1	25.7	62.4	30.7	71.7	35.7	80.9
0.8	16.3	5.8	25.6	10.8	34.8	15.8	44.1	20.8	53.3	25.8	62.6	30.8	71.9	35.8	81.1
0.9	16.5	5.9	25.7	10.9	35.0	15.9	44.3	20.9	53.5	25.9	62.8	30.9	72.0	35.9	81.3
1.0	16.7	6.0	25.9	11.0	35.2	16.0	44.4	21.0	53.7	26.0	63.0	31.0	72.2	36.0	81.5
1.1	16.9	6.1	26.1	11.1	35.4	16.1	44.6	21.1	53.9	26.1	63.1	31.1	72.4	36.1	81.7
1.2	17.0	6.2	26.3	11.2	35.6	16.2	44.8	21.2	54.1	26.2	63.3	31.2	72.6	36.2	81.9
1.3	17.2	6.3	26.5	11.3	35.7	16.3	45.0	21.3	54.3	26.3	63.5	31.3	72.8	36.3	82.0
1.4	17.4	6.4	26.7	11.4	35.9	16.4	45.2	21.4	54.4	26.4	63.7	31.4	73.0	36.4	82.2
1.5	17.6	6.5	26.9	11.5	36.1	16.5	45.4	21.5	54.6	26.5	63.9	31.5	73.1	36.5	82.4
1.6	17.8	6.6	27.0	11.6	36.3	16.6	45.6	21.6	54.8	26.6	64.1	31.6	73.3	36.6	82.6
1.7	18.0	6.7	27.2	11.7	36.5	16.7	45.7	21.7	55.0	26.7	64.3	31.7	73.5	36.7	82.8
1.8	18.1	6.8	27.4	11.8	36.7	16.8	45.9	21.8	55.2	26.8	64.4	31.8	73.7	36.8	83.0
1.9	18.3	6.9	27.6	11.9	36.9	16.9	46.1	21.9	55.4	26.9	64.6	31.9	73.9	36.9	83.1
2.0	18.5	7.0	27.8	12.0	37.0	17.0	46.3	22.0	55.6	27.0	64.8	32.0	74.1	37.0	83.3
2.1	18.7	7.1	28.0	12.1	37.2	17.1	46.5	22.1	55.7	27.1	65.0	32.1	74.3	37.1	83.5
2.2	18.9	7.2	28.1	12.2	37.4	17.2	46.7	22.2	55.9	27.2	65.2	32.2	74.4	37.2	83.7
2.3	19.1	7.3	28.3	12.3	37.6	17.3	46.9	22.3	56.1	27.3	65.4	32.3	74.6	37.3	83.9
2.4	19.3	7.4	28.5	12.4	37.8	17.4	47.0	22.4	56.3	27.4	65.6	32.4	74.8	37.4	84.1
2.5	19.4	7.5	28.7	12.5	38.0	17.5	47.2	22.5	56.5	27.5	65.7	32.5	75.0	37.5	84.3
2.6	19.6	7.6	28.9	12.6	38.1	17.6	47.4	22.6	56.7	27.6	65.9	32.6	75.2	37.6	84.4
2.7	19.8	7.7	29.1	12.7	38.3	17.7	47.6	22.7	56.9	27.7	66.1	32.7	75.4	37.7	84.6
2.8	20.0	7.8	29.3	12.8	38.5	17.8	47.8	22.8	57.0	27.8	66.3	32.8	75.6	37.8	84.8
2.9	20.2	7.9	29.4	12.9	38.7	17.9	48.0	22.9	57.2	27.9	66.5	32.9	75.7	37.9	85.0
3.0	20.4	8.0	29.6	13.0	38.9	18.0	48.1	23.0	57.4	28.0	66.7	33.0	75.9	38.0	85.2
3.1	20.6	8.1	29.8	13.1	39.1	18.1	48.3	23.1	57.6	28.1	66.9	33.1	76.1	38.1	85.4
3.2	20.7	8.2	30.0	13.2	39.3	18.2	48.5	23.2	57.8	28.2	67.0	33.2	76.3	38.2	85.6
3.3	20.9	8.3	30.2	13.3	39.4	18.3	48.7	23.3	58.0	28.3	67.2	33.3	76.5	38.3	85.7
3.4	21.1	8.4	30.4	13.4	39.6	18.4	48.9	23.4	58.1	28 4	67.4	33.4	76.7	38.4	85.9
3.5	21.3	8.5	30.6	13.5	39.8	18.5	49.1	23.5	58.3	28.5	67.6	33.5	76.9	38.5	86.1
3.6	21.5	8.6	30.7	13.6	40.0	18.6	49.3	23.6	58.5	28.6	67.8	33.6	77.0	38.6	86.3
3.7	21.7	8.7	30.9	13.7	40.2	18.7	49.4	23.7	58.7	28.7	68.0	33.7	77.2	38.7	86.5
3.8	21.9	8.8	31.1	13.8	40.4	18.8	49.6	23.8	58.9	28.8	68.1	33.8	77.4	38.8	86.7
3.9	22.0	8.9	31.3	13.9	40.6	18.9	49.8	23.9	59.1	28.9	68.3	33.9	77.6	38.9	86.9
4.0	22.2	9.0	31.5	14.0	40.7	19.0	50.0	24.0	59.3	29.0	68.5	34.0	77.8	39.0	87.0
4.1	22.4	9.1	31.7	14.1	40.9	19.1	50.2	24.1	59.4	29.1	68.7	34.1	78.0	39.1	87.2
4.2	22.6	9.2	31.9	14.2	41.1	19.2	50.4	24.2	59.6	29.2	68.9	34.2	78.1	39.2	87.4
4.3	22.8	9.3	32.0	14.3	41.3	19.3	50.6	24.3	59.8	29.3	69.1	34.3	78.3	39.3	87.6
4.4	23.0	9.4	32.2	14.4	41.5	19.4	50.7	24.4	60.0	29.4	69.3	34.4	78.5	39.4	87.8
4.5	23.1	9.5	32.4	14.5	41.7	19.5	50.9	24.5	60.2	29.5	69.4	34.5	78.7	39.5	88.0
4.6	23.3	9.6	32.6	14.6	41.9	19.6	51.1	24.6	60.4	29.6	69.6	34.6	78.9	39.6	88.1
4.7	23.5	9 7	32.8	14.7	42.0	19.7	51.3	24.7	60.6	29.7	69.8	34.7	79.1	39.7	88.3
4.8	23.7	9.8	33.0	14.8	42.2	19.8	51.5	24.8	60.7	29.8	70.0	34.8	79.3	39.8	88.5
4.9	23.9	9.9	33.1	14.9	42.4	19.9	51.7	24.9	60.9	29.9	70.2	34.9	79.4	39.9	88.7

TABLE NO. XIII.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 20 feet wide. Side slopes 1 to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	463	10.0	1111	15.0	1944	20.0	2963	25.0	4167	30.0	5556	35.0	7130
0.1	7	5.1	474	10.1	1126	15.1	1963	20.1	2985	25.1	4193	30.1	5585	35.1	7163
0.2	15	5.2	485	10.2	1141	15.2	1982	20.2	3008	25.2	4219	30.2	5615	35.2	7196
0.3	23	5.3	497	10.3	1156	15.3	2000	20.3	3030	25.3	4245	30.3	5645	35.3	7230
0.4	30	5.4	508	10.4	1171	15.4	2019	20.4	3052	25.4	4271	30.4	5675	35.4	7264
0.5	38	5.5	519	10.5	1186	15.5	2038	20.5	3075	25.5	4297	30.5	5705	35.5	7297
0.6	46	5.6	531	10.6	1201	15.6	2057	20.6	3098	25.6	4324	30.6	5735	35.6	7331
0.7	54	5.7	543	10.7	1217	15.7	2076	20.7	3120	25.7	4350	30.7	5765	35.7	7365
0 8	62	5.8	554	10.8	1232	15.8	2095	20.8	3143	25.8	4376	30.8	5795	35.8	7399
0.9	70	5 9	566	10.9	1247	15.9	2114	20.9	3166	25.9	4403	30.9	5825	35.9	7433
1.0	78	6.0	578	11.0	1263	16.0	2133	21.0	3189	26.0	4430	31.0	5856	36.0	7467
1.1	86	6.1	590	11.1	1279	16.1	2153	21.1	3212	26.1	4456	31.1	5886	36.1	7501
1.2	94	6.2	602	11.2	1294	16.2	2172	21.2	3235	26.2	4483	31.2	5916	36.2	7535
1.3	103	6.3	614	11.3	1310	16.3	2191	21.3	3258	26.3	4510	31.3	5947	36.3	7569
1.4	111	6.4	626	11.4	1326	16.4	2211	21.4	3281	26.4	4537	31.4	5978	36.4	7604
1.5	119	6.5	638	11.5	1342	16.5	2231	21.5	3305	26.5	4564	31.5	6008	36.5	7638
1.6	128	6.6	650	11.6	1358	16.6	2250	21.6	3328	26.6	4591	31.6	6039	36.6	7672
1.7	137	6.7	663	11.7	1374	16.7	2270	21.7	3351	26.7	4618	31.7	6070	36.7	7707
1.8	145	6.8	675	11.8	1390	16.8	2290	21.8	3375	26.8	4645	31.8	6101	36.8	7742
1.9	154	6.9	687	11.9	1406	16.9	2310	21.9	3399	26.9	4673	31.9	6132	36.9	7776
2.0	163	7.0	700	12.0	1422	17.0	2330	22.0	3422	27.0	4700	32.0	6163	37.0	7811
2.1	172	7.1	713	12.1	1439	17.1	2350	22.1	3446	27.1	4727	32.1	6194	37.1	7846
2.2	181	7.2	725	12.2	1455	17.2	2370	22.2	3470	27.2	4755	32.2	6225	37.2	7881
2.3	190	7.3	738	12.3	1471	17.3	2390	22.3	3494	27.3	4783	32.3	6257	37.3	7916
2.4	199	7.4	751	12.4	1488	17.4	2410	22.4	3518	27.4	4810	32.4	6288	37.4	7951
2.5	208	7.5	764	12.5	1505	17.5	2431	22.5	3542	27.5	4838	32.5	6319	37.5	7986
2.6	218	7.6	777	12.6	1521	17.6	2451	22.6	3566	27.6	4866	32.6	6351	37.6	8021
2.7	227	7.7	790	12.7	1538	17.7	2471	22.7	3590	27.7	4894	32.7	6383	37.7	8057
2.8	236	7.8	803	12.8	1555	17.8	2492	22.8	3614	27.8	4922	32.8	6414	37.8	8092
2.9	246	7.9	816	12.9	1572	17.9	2513	22.9	3639	27.9	4950	32.9	6446	37.9	8127
3.0	256	8.0	830	13.0	1589	18.0	2533	23.0	3663	28.0	4978	33.0	6478	38.0	8163
3.1	265	8.1	843	13.1	1606	18.1	2554	23.1	3687	28.1	5006	33.1	6510	38.1	8199
3.2	275	8.2	856	13.2	1623	18.2	2575	23.2	3712	28.2	5034	33.2	6542	38.2	8234
3.3	285	8.3	870	13.3	1640	18.3	2596	23.3	3737	28.3	5063	33.3	6574	38.3	8270
3.4	295	8.4	884	13.4	1658	18.4	2617	23.4	3761	28.4	5091	33.4	6606	38.4	8306
3.5	305	8.5	897	13.5	1675	18.5	2638	23.5	3786	28.5	5119	33.5	6638	38.5	8342
3.6	315	8.6	911	13.6	1692	18.6	2659	23.6	3811	28.6	5148	33.6	6670	38.6	8378
3.7	325	8.7	925	13.7	1710	18.7	2680	23.7	3836	28.7	5177	33.7	6703	38.7	8414
3.8	335	8.8	939	13.8	1728	18.8	2702	23.8	3861	28.8	5205	33.8	6735	38.8	8450
3.9	345	8.9	953	13.9	1745	18.9	2723	23.9	3886	28.9	5234	33.9	6767	38.9	8486
4.0	356	9.0	967	14.0	1763	19.0	2744	24.0	3911	29.0	5263	34.0	6800	39.0	8522
4.1	366	9.1	981	14.1	1781	19.1	2766	24.1	3936	29.1	5292	34.1	6833	39.1	8559
4.2	376	9.2	995	14.2	1799	19.2	2788	24.2	3962	29.2	5321	34.2	6865	39.2	8595
4.3	387	9.3	1009	14.3	1817	19.3	2809	24.3	3987	29.3	5350	34.3	6898	39.3	8631
4.4	398	9.4	1024	14.4	1835	19.4	2831	24.4	4012	29.4	5379	34.4	6931	39.4	8668
4.5	408	9.5	1038	14.5	1853	19.5	2853	24.5	4038	29.5	5408	34.5	6964	39.5	8705
4.6	419	9.6	1052	14.6	1871	19.6	2875	24.6	4064	29.6	5438	34.6	6997	39.6	8741
4.7	430	9.7	1067	14.7	1889	19.7	2897	24.7	4089	29.7	5467	34.7	7030	39.7	8778
4 8	441	9.8	1082	14.8	1908	19.8	2919	24.8	4115	29.8	5496	34.8	7063	39.8	8815
4 9	452	9.9	1096	14 9	1926	19.9	2941	24.9	4141	29.9	5526	34.9	7096	39.9	8852

TABLE NO. XIV.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 20 feet wide. Side slopes 1 to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	18.5	5.0	27.8	10.0	37.0	15.0	46.3	20.0	55.6	25.0	64.8	30.0	74.1	35.0	83.3
0.1	18.7	5.1	28.0	10.1	37.2	15.1	46.5	20.1	55.7	25.1	65.0	30.1	74.3	35.1	83.5
0.2	18.9	5.2	28.1	10.2	37.4	15.2	46.7	20.2	55.9	25.2	65.2	30.2	74.4	35.2	83.7
0.3	19.1	5.3	28.3	10.3	37.6	15.3	46.9	20.3	56.1	25.3	65.4	30.3	74.6	35.3	83.9
0.4	19.3	5.4	28.5	10.4	37.8	15.4	47.0	20.4	56.3	25.4	65.6	30.4	74.8	35.4	84.1
0.5	19.4	5.5	28.7	10.5	38.0	15.5	47.2	20.5	56.5	25.5	65.7	30.5	75.0	35.5	84.3
0.6	19.6	5.6	28.9	10.6	38.1	15.6	47.4	20.6	56.7	25.6	65.9	30 6	75.2	35.6	84.4
0.7	19.8	5.7	29.1	10.7	38.3	15.7	47.6	20.7	56.9	25.7	66.1	30.7	75.4	35.7	84.6
0.8	20.0	5.8	29.3	10.8	38.5	15 8	47.8	20.8	57.0	25.8	66.3	30.8	75.6	35.8	84.8
0.9	20.2	5.9	29.4	10.9	38.7	15.9	48.0	20.9	57.2	25.9	66.5	30.9	75.7	35.9	85.0
1.0	20.4	6.0	29.6	11.0	38.9	16.0	48.1	21.0	57.4	26.0	66.7	31.0	75.9	36.0	85.2
1.1	20.6	6.1	29.8	11.1	39.1	16.1	48.3	21.1	57.6	26.1	66.9	31.1	76.1	36.1	85.4
1.2	20.7	6.2	30.0	11.2	39.3	16.2	48.5	21.2	57.8	26.2	67.0	31.2	76.3	36.2	85.6
1.3	20.9	6.3	30.2	11.3	39.4	16.3	48.7	21.3	58.0	26.3	67.2	31.3	76.5	36.3	85.7
1.4	21.1	6.4	30.4	11.4	39.6	16.4	48.9	21.4	58.1	26.4	67.4	31.4	76.7	36.4	85.9
1.5	21.3	6.5	30.6	11.5	39.8	16.5	49.1	21.5	58.3	26.5	67.6	31.5	76.9	36.5	86.1
1.6	21.5	6.6	30.7	11.6	40.0	16.6	49.3	21.6	58.5	26.6	67.8	31.6	77.0	36.6	86.3
1.7	21.7	6.7	30.9	11.7	40.2	16.7	49.4	21.7	58.7	26.7	68.0	31.7	77.2	36.7	86.5
1.8	21.9	6.8	31.1	11.8	40.4	16.8	49.6	21.8	58.9	26.8	68.1	31.8	77.4	36.8	86.7
1.9	22.0	6.9	31.3	11.9	40.6	16.9	49.8	21.9	59·1	26.9	68.3	31.9	77.6	36.9	86.9
2.0	22.2	7.0	31.5	12.0	40.7	17.0	50.0	22.0	59.3	27.0	68.5	32.0	77.8	37.0	87.0
2.1	22.4	7.1	31.7	12.1	40.9	17.1	50.2	22.1	59.4	27.1	68.7	32.1	78.0	37.1	87.2
2.2	22.6	7.2	31.9	12.2	41.1	17.2	50.4	22.2	59.6	27.2	68.9	32.2	78.1	37.2	87.4
2.3	22.8	7.3	32.0	12.3	41.3	17.3	50.6	22.3	59.8	27.3	69.1	32.3	78.3	37.3	87.6
2.4	23.0	7.4	32.2	12.4	41.5	17.4	50.7	22.4	60.0	27.4	69.3	32.4	78.5	37.4	87.8
2.5	23.1	7.5	32.4	12.5	41.7	17.5	50.9	22.5	60.2	27.5	69.4	32.5	78.7	37.5	88.0
2.6	23.3	7.6	32.6	12.6	41.9	17.6	51.1	22.6	60.4	27.6	69.6	32.6	78.9	37.6	88.1
2.7	23.5	7.7	32.8	12.7	42.0	17.7	51.3	22.7	60.6	27.7	69.8	32.7	79.1	37.7	88.3
2.8	23.7	7.8	33.0	12.8	42.2	17.8	51.5	22.8	60.7	27.8	70.0	32.8	79.3	37.8	88.5
2.9	23.9	7.9	33.1	12.9	42.4	17.9	51.7	22.9	60.9	27.9	70.2	32.9	79.4	37.9	88.7
3.0	24.1	8.0	33.3	13.0	42.6	18.0	51.9	23.0	61.1	28.0	70.4	33.0	79.6	38.0	88.9
3.1	24.3	8.1	33.5	13.1	42.8	18.1	52.0	23.1	61.3	28.1	70.6	33.1	79.8	38.1	89.1
3.2	24.4	8.2	33.7	13.2	43.0	18.2	52.2	23.2	61.5	28.2	70.7	33.2	80.0	38.2	89.3
3.3	24.6	8.3	33.9	13.3	43.1	18.3	52.4	23.3	61.7	28.3	70.9	33.3	80.2	38.3	89.4
3.4	24.8	8.4	34.1	13.4	43.3	18.4	52.6	23.4	61.9	28.4	71.1	33.4	80.4	38.4	89.6
3.5	25.0	8.5	34.3	13.5	43.5	18.5	52.8	23.5	62.0	28.5	71.3	33.5	80.6	38.5	89.8
3.6	25.2	8.6	34.4	13.6	43.7	18.6	53.0	23.6	62.2	28.6	71.5	33.6	80.7	38.6	90.0
3.7	25.4	8.7	34.6	13.7	43.9	18 7	53.1	23.7	62.4	28.7	71.7	33.7	80.9	38.7	90.2
3.8	25.6	8.8	34.8	13.8	44.1	18.8	53.3	23.8	62.6	28.8	71.9	33.8	81.1	38.8	90.4
3.9	25.7	8.9	35.0	13.9	44.3	18.9	53.5	23.9	62.8	28.9	72.0	33.9	81.3	38.9	90.6
4.0	25.9	9.0	35.2	14.0	44.4	19.0	53.7	24.0	63.0	29.0	72.2	34.0	81.5	39.0	90.7
4.1	26.1	9.1	35.4	14.1	44.6	19.1	53.9	24.1	63.1	29.1	72.4	34.1	81.7	39.1	90.9
4.2	26.3	9.2	35.6	14.2	44.8	19.2	54.1	24.2	63.3	29.2	72.6	34.2	81.9	39.2	91.1
4.3	26.5	9.3	35.7	14.3	45.0	19.3	54.3	24.3	63.5	29.3	72.8	34.3	82.0	39.3	91.3
4.4	26.7	9.4	35.9	14.4	45.2	19.4	54.4	24.4	63.7	29.4	73.0	34.4	82.2	39.4	91.5
4.5	26.9	9.5	36.1	14.5	45.4	19.5	54.6	24.5	63.9	29.5	73.1	34.5	82.4	39.5	91.7
4.6	27.0	9.6	36.3	14.6	45.6	19.6	54.8	24.6	64.1	29.6	73.3	34.6	82.6	39 6	91.9
4.7	27.2	9.7	36.5	14.7	45.7	19.7	55.0	24.7	64.3	29.7	73.5	34.7	82.8	39.7	92.0
4.8	27.4	9.8	36.7	14.8	45.9	19.8	55.2	24.8	64.4	29.8	73.7	34.8	83.0	39.8	92.2
4.9	27.6	9.9	36.9	14.9	46.1	19.9	55.4	24.9	64.6	29.9	73.9	34.9	83.1	39.9	92.4

TABLE NO. XV.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

Road-bed, 24 feet wide. Side slopes, 1 to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	537	10.0	1259	15.0	2167	20.0	3259	25.0	4537	30.0	6000	35.0	7648
0.1	9	5.1	550	10.1	1276	15.1	2187	20.1	3283	25.1	4564	30.1	6031	35.1	7683
0.2	18	5.2	562	10.2	1292	15.2	2207	20.2	3307	25.2	4592	30.2	6062	35.2	7718
0.3	27	5.3	575	10.3	1308	15.3	2227	20.3	3331	25.3	4620	30.3	6094	35.3	7753
0.4	36	5.4	588	10.4	1325	15.4	2247	20.4	3355	25.4	4647	30.4	6125	35.4	7788
0.5	45	5.5	601	10.5	1342	15.5	2268	20.5	3379	25.5	4675	30.5	6156	35.5	7823
0.6	55	5.6	614	10.6	1358	15.6	2288	20.6	3403	25.6	4703	30.6	6188	35.6	7858
0.7	64	5.7	627	10.7	1375	15.7	2308	20.7	3427	25.7	4731	30.7	6220	35.7	7894
0.8	73	5.8	640	10.8	1392	15.8	2329	20.8	3451	25.8	4759	30.8	6251	35.8	7929
0.9	83	5.9	653	10.9	1409	15.9	2350	20.9	3476	25.9	4787	30.9	6283	35.9	7964
1.0	93	6.0	667	11.0	1426	16.0	2370	21.0	3500	26.0	4815	31.0	6315	36.0	8000
1.1	102	6.1	680	11.1	1443	16.1	2391	21.1	3524	26.1	4843	31.1	6347	36.1	8036
1.2	112	6.2	693	11.2	1460	16.2	2412	21.2	3549	26.2	4871	31.2	6379	36.2	8071
1.3	122	6.3	707	11.3	1477	16.3	2433	21.3	3574	26.3	4900	31.3	6411	36.3	8107
1.4	132	6.4	721	11.4	1495	16.4	2454	21.4	3598	26.4	4928	31.4	6443	36.4	8143
1.5	142	6.5	734	11.5	1512	16.5	2475	21.5	3623	26.5	4956	31.5	6475	36.5	8179
1.6	152	6.6	748	11.6	1529	16.6	2496	21.6	3648	26.6	4985	31.6	6507	36.6	8215
1.7	162	6.7	762	11.7	1547	16.7	2517	21.7	3673	26.7	5014	31.7	6540	36.7	8251
1.8	172	6.8	776	11.8	1565	16.8	2539	21.8	3698	26.8	5042	31.8	6572	36.8	8287
1.9	182	6.9	790	11.9	1582	16.9	2560	21.9	3723	26.9	5071	31.9	6604	36.9	8323
2.0	193	7.0	804	12.0	1600	17.0	2581	22.0	3748	27.0	5100	32.0	6637	37.0	8359
2.1	203	7.1	818	12.1	1618	17.1	2603	22.1	3773	27.1	5129	32.1	6670	37.1	8396
2.2	213	7.2	832	12.2	1636	17.2	2625	22.2	3799	27.2	5158	32.2	6702	37.2	8432
2.3	224	7.3	846	12.3	1654	17.3	2646	22.3	3824	27.3	5187	32.3	6735	37.3	8468
2.4	235	7.4	861	12.4	1672	17.4	2668	22.4	3849	27.4	5216	32.4	6768	37.4	8505
2.5	245	7.5	875	12.5	1690	17.5	2690	22.5	3875	27.5	5245	32.5	6801	37.5	8542
2.6	256	7.6	889	12.6	1708	17.6	2712	22.6	3901	27.6	5275	32.6	6834	37.6	8578
2.7	267	7.7	904	12.7	1726	17.7	2734	22.7	3926	27.7	5304	32.7	6867	37.7	8615
2.8	278	7.8	919	12.8	1745	17.8	2756	22.8	3952	27.8	5333	32.8	6900	37.8	8652
2.9	289	7.9	933	12.9	1763	17.9	2778	22.9	3978	27.9	5363	32.9	6933	37.9	8689
3.0	300	8.0	948	13.0	1781	18.0	2800	23.0	4004	28.0	5393	33.0	6967	38.0	8726
3.1	311	8.1	963	13.1	1800	18.1	2822	23.1	4030	28.1	5422	33.1	7000	38.1	8763
3.2	322	8.2	978	13.2	1819	18.2	2845	23.2	4056	28.2	5452	33.2	7033	38.2	8800
3.3	334	8.3	993	13.3	1837	18.3	2867	23.3	4082	28.3	5482	33.3	7067	38.3	8837
3.4	345	8.4	1008	13.4	1856	18.4	2889	23.4	4108	28.4	5512	33.4	7101	38.4	8875
3.5	356	8.5	1023	13.5	1875	18.5	2912	23.5	4134	28.5	5542	33.5	7134	38.5	8912
3.6	368	8.6	1038	13.6	1894	18.6	2935	23.6	4161	28.6	5572	33.6	7168	38.6	8949
3.7	380	8.7	1054	13.7	1913	18.7	2957	23.7	4187	28.7	5602	33.7	7202	38.7	8987
3.8	391	8.8	1069	13.8	1932	18.8	2980	23.8	4213	28.8	5632	33.8	7236	38.8	9025
3.9	403	8.9	1084	13.9	1951	18.9	3003	23.9	4240	28.9	5662	33.9	7270	38.9	9062
4.0	415	9.0	1100	14.0	1970	19.0	3026	24.0	4267	29.0	5693	34.0	7304	39.0	9100
4.1	427	9.1	1116	14.1	1990	19.1	3049	24.1	4293	29.1	5723	34.1	7338	39.1	9138
4.2	439	9.2	1131	14.2	2009	19.2	3072	24.2	4320	29.2	5753	34.2	7372	39.2	9176
4.3	451	9.3	1147	14.3	2028	19.3	3095	24.3	4347	29.3	5784	34.3	7406	39.3	9214
4.4	463	9.4	1163	14.4	2048	19.4	3118	24.4	4374	29.4	5815	34.4	7441	39.4	9252
4.5	475	9.5	1179	14.5	2068	19.5	3142	24.5	4401	29.5	5845	34.5	7475	39.5	9290
4.6	487	9.6	1195	14.6	2087	19.6	3165	24.6	4428	29.6	5876	34.6	7509	39.6	9328
4.7	500	9.7	1211	14.7	2107	19.7	3188	24.7	4455	29.7	5907	34.7	7544	39.7	9366
4.8	512	9.8	1227	14.8	2127	19.8	3212	24.8	4482	29.8	5938	34.8	7579	39.8	9405
4.9	524	9.9	1243	14.9	2147	19.9	3236	24.9	4510	29.9	5969	34.9	7613	39.9	9443

TABLE NO. XVI.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 24 feet wide. Side slopes 1 to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	22.2	5.0	31.5	10.0	40.7	15.0	50.0	20.0	59.3	25.0	68.5	30.0	77.8	35.0	87.0
0.1	22 4	5.1	31.7	10.1	40.9	15.1	50.2	20.1	59.4	25.1	68.7	30.1	78.0	35.1	87.2
0.2	22.6	5.2	31.9	10.2	41.1	15.2	50.4	20.2	59.6	25.2	68.9	30.2	78.1	35.2	87.4
0.3	22.8	5.3	32.0	10.3	41.3	15.3	50.6	20.3	59.8	25.3	69.1	30.3	78.3	35.3	87.6
0.4	23.0	5.4	32.2	10.4	41.5	15.4	50.7	20.4	60.0	25.4	69.3	30.4	78.5	35.4	87.8
0.5	23.1	5.5	32.4	10.5	41.7	15.5	50.9	20.5	60.2	25.5	69.4	30.5	78.7	35.5	88.0
0.6	23.3	5.6	32.6	10.6	41.9	15.6	51.1	20.6	60.4	25.6	69.6	30.6	78.9	35.6	88.1
0.7	23.5	5.7	32.8	10.7	42.0	15.7	51.3	20.7	60.6	25.7	69.8	30.7	79.1	35.7	88.3
0.8	23.7	5.8	33.0	10.8	42.2	15.8	51.5	20.8	60.7	25.8	70.0	30.8	79.3	35.8	88.5
0.9	23.9	5.9	33.1	10.9	42.4	15.9	51.7	20.9	60.9	25.9	70.2	30.9	79.4	35.9	88.7
1.0	24.1	6.0	33.3	11.0	42.6	16.0	51.9	21.0	61.1	26.0	70 4	31.0	79.6	36.0	88.9
1.1	24.3	6.1	33.5	11.1	42.8	16.1	52.0	21.1	61.3	26.1	70.6	31.1	79.8	36.1	89.1
1.2	24.4	6.2	33.7	11.2	43.0	16.2	52.2	21.2	61.5	26.2	70.7	31.2	80.0	36.2	89.3
1.3	24.6	6.3	33.9	11.3	43.1	16.3	52.4	21.3	61.7	26.3	70.9	31.3	80.2	36.3	89.4
1.4	24.8	6.4	34.1	11.4	43.3	16.4	52.6	21.4	61.9	26.4	71.1	31.4	80.4	36.4	89.6
1.5	25.0	6.5	34.3	11.5	43.5	16.5	52.8	21.5	62.0	26.5	71.3	31.5	80.6	36.5	89.8
1.6	25.2	6.6	34.4	11.6	43.7	16.6	53.0	21.6	62.2	26.6	71.5	31.6	80.7	36.6	90.0
1.7	25.4	6.7	34.6	11.7	43.9	16.7	53.1	21.7	62.4	26.7	71.7	31.7	80.9	36.7	90.2
1.8	25.6	6.8	34.8	11.8	44.1	16.8	53.3	21.8	62.6	26.8	71.9	31.8	81.1	36.8	90.4
1.9	25.7	6.9	35.0	11.9	44.3	16.9	53.5	21.9	62.8	26.9	72.0	31.9	81.3	36.9	90 6
2.0	25.9	7.0	35.2	12.0	44.4	17.0	53.7	22.0	63.0	27.0	72.2	32.0	81.5	37.0	90.7
2.1	26.1	7.1	35.4	12.1	44.6	17.1	53.9	22.1	63.1	27.1	72.4	32.1	81.7	37.1	90.9
2.2	26.3	7.2	35.6	12.2	44.8	17.2	54.1	22.2	63.3	27.2	72.6	32.2	81.9	37.2	91.1
2.3	26.5	7.3	35.7	12.3	45.0	17.3	54.3	22.3	63.5	27.3	72.8	32.3	82.0	37.3	91.3
2.4	26.7	7.4	35.9	12.4	45.2	17.4	54.4	22.4	63.7	27.4	73.0	32.4	82.2	37.4	91.5
2.5	26.9	7.5	36.1	12.5	45.4	17.5	54.6	22.5	63.9	27.5	73.1	32.5	82.4	37.5	91.7
2.6	27.0	7.6	36.3	12.6	45.6	17.6	54.8	22.6	64.1	27.6	73.3	32.6	82.6	37.6	91.9
2.7	27.2	7.7	36.5	12.7	45.7	17.7	55.0	22.7	64.3	27.7	73.5	32.7	82.8	37.7	92.0
2.8	27.4	7.8	36.7	12.8	45.9	17.8	55.2	22.8	64.4	27.8	73.7	32.8	83.0	37.8	92.2
2.9	27.6	7.9	36.9	12.9	46.1	17.9	55.4	22.9	64.6	27.9	73.9	32.9	83.1	37.9	92.4
3.0	27.8	8.0	37.0	13.0	46.3	18.0	55.6	23.0	64.8	28.0	74.1	33.0	83.3	38.0	92.6
3.1	28.0	8.1	37.2	13.1	46.5	18.1	55.7	23.1	65.0	28.1	74.3	33.1	83.5	38.1	92.8
3.2	28.1	8.2	37.4	13.2	46.7	18.2	55.9	23.2	65.2	28.2	74.4	33.2	83.7	38.2	93.0
3.3	28 3	8.3	37.6	13.3	46.9	18.3	56.1	23.3	65.4	28.3	74.6	33.3	83.9	38.3	93.1
3.4	28.5	8.4	37.8	13.4	47.0	18.4	56.3	23.4	65.6	28.4	74.8	33.4	84.1	38.4	93.3
3.5	28.7	8.5	38.0	13.5	47.2	18.5	56.5	23.5	65.7	28.5	75.0	33.5	84.3	38.5	93.5
3.6	28.9	8.6	38.1	13.6	47.4	18.6	56.7	23.6	65.9	28.6	75.2	33.6	84.4	38.6	93.7
3.7	29.1	8.7	38.3	13.7	47.6	18.7	56.9	23.7	66.1	28.7	75.4	33.7	84.6	38.7	93.9
3.8	29.3	8.8	38.5	13.8	47.8	18.8	57.0	23.8	66.3	28.8	75.6	33.8	84.8	38.8	94.1
3.9	29.4	8.9	38.7	13.9	48.0	18.9	57.2	23.9	66.5	28.9	75.7	33.9	85.0	38.9	94.3
4.0	29.6	9.0	38.9	14.0	48.1	19.0	57.4	24.0	66.7	29.0	75.9	34.0	85.2	39.0	94.4
4.1	29.8	9.1	39.1	14.1	48.3	19.1	57.6	24.1	66.9	29.1	76.1	34.1	85.4	39.1	94.6
4.2	30.0	9.2	39.3	14.2	48.5	19.2	57.8	24.2	67.0	29.2	76.3	34.2	85.6	39.2	94.8
4.3	30.2	9.3	39.4	14.3	48.7	19.3	58.0	24.3	67.2	29.3	76.5	34.3	85.7	39.3	95.0
4.4	30.4	9.4	39.6	14.4	48.9	19.4	58.1	24.4	67.4	29.4	76.7	34.4	85.9	39.4	95.2
4.5	30.6	9.5	39.8	14.5	49.1	19.5	58.3	24.5	67.6	29.5	76.9	34.5	86.1	39.5	95.4
4.6	30.7	9.6	40.0	14.6	49.3	19.6	58.5	24.6	67.8	29.6	77.0	34.6	86.3	39.6	95.6
4.7	30.9	9.7	40.2	14.7	49.4	19.7	58.7	24.7	68.0	29.7	77.2	34.7	86.5	39.7	95.7
4.8	31.1	9.8	40.4	14.8	49.6	19.8	58.9	24.8	68.1	29.8	77.4	34.8	86.7	39.8	95.9
4.9	31.3	9.9	40.6	14.9	49.8	19.9	59.1	24.9	68.3	29.9	77.6	34.9	86.9	39.9	96.1

TABLE NO. XVII.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

Road-bed 28 feet wide. Side slopes 1 to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	611	10.0	1407	15.0	2389	20.0	3556	25.0	4907	30.0	6444	35.0	8167
0.1	10	5.1	625	10.1	1425	15.1	2410	20.1	3581	25.1	4936	30.1	6477	35.1	8203
0.2	21	5.2	639	10.2	1443	15.2	2432	20.2	3606	25.2	4965	30.2	6510	35.2	8239
0.3	31	5.3	654	10.3	1461	15.3	2454	20.3	3631	25.3	4994	30.3	6543	35.3	8276
0.4	42	5.4	668	10.4	1479	15.4	2475	20.4	3657	25.4	5024	30.4	6575	35.4	8312
0.5	53	5.5	682	10.5	1497	15.5	2497	20.5	3682	25.5	5053	30.5	6608	35.5	8349
0.6	64	5.6	697	10.6	1515	15.6	2519	20.6	3708	25.6	5082	30.6	6641	35.6	8386
0.7	74	5.7	711	10.7	1534	15.7	2541	20.7	3734	25.7	5111	30.7	6674	35.7	8423
0.8	85	5.8	726	10.8	1552	15.8	2563	20.8	3759	25.8	5141	30.8	6708	35.8	8459
0.9	96	5.9	741	10.9	1570	15.9	2585	20.9	3785	25.9	5170	30.9	6741	35.9	8496
1.0	107	6.0	756	11.0	1589	16.0	2607	21.0	3811	26.0	5200	31.0	6774	36.0	8533
1.1	119	6.1	770	11.1	1607	16.1	2630	21.1	3837	26.1	5230	31.1	6807	36.1	8570
1.2	130	6.2	785	11.2	1626	16.2	2652	21.2	3863	26.2	5259	31.2	6841	36.2	8608
1.3	141	6.3	800	11.3	1645	16.3	2674	21.3	3889	26.3	5289	31.3	6874	36.3	8645
1.4	152	6.4	815	11.4	1664	16.4	2697	21.4	3915	26.4	5319	31.4	6908	36.4	8682
1.5	164	6.5	831	11.5	1682	16.5	2719	21.5	3942	26.5	5349	31.5	6942	36.5	8719
1.6	175	6.6	846	11.6	1701	16.6	2742	21.6	3968	26.6	5379	31.6	6975	36.6	8757
1.7	187	6.7	861	11.7	1720	16.7	2765	21.7	3994	26.7	5409	31.7	7009	36.7	8794
1.8	199	6.8	876	11.8	1739	16.8	2788	21.8	4021	26.8	5439	31.8	7043	36.8	8832
1.9	210	6.9	892	11.9	1759	16.9	2810	21.9	4047	26.9	5470	31.9	7077	36.9	8870
2.0	222	7.0	907	12.0	1778	17.0	2833	22.0	4074	27.0	5500	32.0	7111	37.0	8907
2.1	234	7.1	923	12.1	1797	17.1	2856	22.1	4101	27.1	5530	32.1	7145	37.1	8945
2.2	246	7.2	939	12.2	1816	17.2	2879	22.2	4128	27.2	5561	32.2	7179	37.2	8983
2.3	258	7.3	954	12.3	1836	17.3	2903	22.3	4154	27.3	5591	32.3	7214	37.3	9021
2.4	270	7.4	970	12.4	1855	17.4	2926	22.4	4181	27.4	5622	32.4	7248	37.4	9059
2.5	282	7.5	986	12.5	1875	17.5	2949	22.5	4208	27.5	5653	32.5	7282	37.5	9097
2.6	295	7.6	1002	12.6	1895	17.6	2972	22.6	4235	27.6	5684	32.6	7317	37.6	9135
2.7	307	7.7	1018	12.7	1914	17.7	2996	22.7	4263	27.7	5714	32.7	7351	37.7	9174
2.8	319	7.8	1034	12.8	1934	17.8	3019	22.8	4290	27.8	5745	32.8	7386	37.8	9212
2.9	332	7.9	1050	12.9	1954	17.9	3043	22.9	4317	27.9	5776	32.9	7421	37.9	9250
3.0	344	8.0	1067	13.0	1974	18.0	3067	23.0	4344	28.0	5807	33.0	7456	38.0	9289
3.1	357	8.1	1083	13.1	1994	18.1	3090	23.1	4372	28.1	5839	33.1	7490	38.1	9327
3.2	370	8.2	1099	13.2	2014	18.2	3114	23.2	4399	28.2	5870	33.2	7525	38.2	9366
3.3	383	8.3	1116	13.3	2034	18.3	3138	23.3	4427	28.3	5901	33.3	7560	38.3	9405
3.4	395	8.4	1132	13.4	2055	18.4	3162	23.4	4455	28.4	5932	33.4	7595	38.4	9444
3.5	408	8.5	1149	13.5	2075	18.5	3186	23.5	4482	28.5	5964	33.5	7631	38.5	9482
3.6	421	8.6	1166	13.6	2095	18.6	3210	23.6	4510	28.6	5995	33.6	7666	38.6	9521
3.7	434	8.7	1183	13.7	2116	18.7	3234	23.7	4538	28.7	6027	33.7	7701	38.7	9560
3.8	448	8.8	1199	13.8	2136	18.8	3259	23.8	4566	28.8	6059	33.8	7736	38.8	9599
3.9	461	8.9	1216	13.9	2157	18.9	3283	23.9	4594	28.9	6090	33.9	7772	38.9	9639
4.0	474	9.0	1233	14.0	2178	19.0	3307	24.0	4622	29.0	6122	34.0	7807	39.0	9678
4.1	487	9.1	1250	14.1	2199	19.1	3332	24.1	4650	29.1	6154	34.1	7843	39.1	9717
4.2	501	9.2	1268	14.2	2219	19.2	3356	24.2	4679	29.2	6186	34.2	7879	39.2	9756
4.3	514	9.3	1285	14.3	2240	19.3	3381	24.3	4707	29.3	6218	34.3	7914	39.3	9796
4.4	528	9.4	1302	14.4	2261	19.4	3406	24.4	4735	29.4	6250	34.4	7950	39.4	9835
4.5	542	9.5	1319	14.5	2282	19.5	3431	24.5	4764	29.5	6282	34.5	7986	39.5	9875
4.6	555	9.6	1337	14.6	2304	19.6	3455	24.6	4792	29.6	6315	34.6	8022	39.6	9915
4.7	569	9.7	1354	14.7	2325	19.7	3480	24.7	4821	29.7	6347	34.7	8058	39.7	9954
4.8	583	9.8	1372	14.8	2346	19.8	3505	24.8	4850	29.8	6379	34.8	8094	39.8	9994
4.9	597	9.9	1390	14.9	2367	19.9	3530	24.9	4879	29.9	6412	34.9	8130	39.9	10034

TABLE NO. XVIII.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

Road-bed 28 feet wide. Side slopes 1 to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	25.9	5.0	35.2	10.0	44.4	15.0	53.7	20.0	63.0	25.0	72.2	30.0	81.5	35.0	90.7
0.1	26.1	5.1	35.4	10.1	44.6	15.1	53.9	20.1	63.1	25.1	72.4	30.1	81.7	35.1	90.9
0.2	26.3	5.2	35.6	10.2	44.8	15.2	54.1	20.2	63.3	25.2	72.6	30.2	81.9	35.2	91.1
0.3	26.5	5.3	35.7	10.3	45.0	15.3	54.3	20.3	63.5	25.3	72.8	30.3	82.0	35.3	91.3
0.4	26.7	5.4	35.9	10.4	45.2	15.4	54.4	20.4	63.7	25.4	73.0	30.4	82.2	35.4	91.5
0.5	26.9	5.5	36.1	10.5	45.4	15.5	54.6	20.5	63.9	25.5	73.1	30.5	82.4	35.5	91.7
0.6	27.0	5.6	36.3	10.6	45.6	15.6	54.8	20.6	64.1	25.6	73.3	30.6	82.6	35.6	91.9
0.7	27.2	5.7	36.5	10.7	45.7	15.7	55.0	20.7	64.3	25.7	73.5	30.7	82.8	35.7	92.0
0.8	27.4	5.8	36.7	10.8	45.9	15.8	55.2	20.8	64.4	25.8	73.7	30.8	83.0	35.8	92.2
0.9	27.6	5.9	36.9	10.9	46.1	15.9	55.4	20.9	64.6	25.9	73.9	30.9	83.1	35.9	92.4
1.0	27.8	6.0	37.0	11.0	46.3	16.0	55.6	21.0	64.8	26.0	74.1	31.0	83.3	36.0	92.6
1.1	28.0	6.1	37.2	11.1	46.5	16.1	55.7	21.1	65.0	26.1	74.3	31.1	83.5	36.1	92.8
1.2	28.1	6.2	37.4	11.2	46.7	16.2	55.9	21.2	65.2	26.2	74.4	31.2	83.7	36.2	93.0
1.3	28.3	6.3	37.6	11.3	46.9	16.3	56.1	21.3	65.4	26.3	74.6	31.3	83.9	36.3	93.1
1.4	28.5	6.4	37.8	11.4	47.0	16.4	56.3	21.4	65.6	26.4	74.8	31.4	84.1	36.4	93.3
1.5	28.7	6.5	38.0	11.5	47.2	16.5	56.5	21.5	65.7	26.5	75.0	31.5	84.3	36.5	93.5
1.6	28.9	6.6	38.1	11.6	47.4	16.6	56.7	21.6	65.9	26.6	75.2	31.6	84.4	36.6	93.7
1.7	29.1	6.7	38.3	11.7	47.6	16.7	56.9	21.7	66.1	26.7	75.4	31.7	84.6	36.7	93.9
1.8	29.3	6.8	38.5	11.8	47.8	16.8	57.0	21.8	66.3	26.8	75.6	31.8	84.8	36.8	94.1
1.9	29.4	6.9	38.7	11.9	48.0	16.9	57.2	21.9	66.5	26.9	75.7	31.9	85.0	36.9	94.3
2.0	29.6	7.0	38.9	12.0	48.1	17.0	57.4	22.0	66.7	27.0	75.9	32.0	85.2	37.0	94.4
2.1	29.8	7.1	39.1	12.1	48.3	17.1	57.6	22.1	66.9	27.1	76.1	32.1	85.4	37.1	94.6
2.2	30.0	7.2	39.3	12.2	48.5	17.2	57.8	22.2	67.0	27.2	76.3	32.2	85.6	37.2	94.8
2.3	30.2	7.3	39.4	12.3	48.7	17.3	58.0	22.3	67.2	27.3	76.5	32.3	85.7	37.3	95.0
2.4	30.4	7.4	39.6	12.4	48.9	17.4	58.1	22.4	67.4	27.4	76.7	32.4	85.9	37.4	95.2
2.5	30.6	7.5	39.8	12.5	49.1	17.5	58.3	22.5	67.6	27.5	76.9	32.5	86.1	37.5	95.4
2.6	30.7	7.6	40.0	12.6	49.3	17.6	58.5	22.6	67.8	27.6	77.0	32.6	86.3	37.6	95.6
2.7	30.9	7.7	40.2	12.7	49.4	17.7	58.7	22.7	68.0	27.7	77.2	32.7	86.5	37.7	95.7
2.8	31.1	7.8	40.4	12.8	49.6	17.8	58.9	22.8	68.1	27.8	77.4	32.8	86.7	37.8	95.9
2.9	31.3	7.9	40.6	12.9	49.8	17.9	59.1	22.9	68.3	27.9	77.6	32.9	86.9	37.9	96.1
3.0	31.5	8.0	40.7	13.0	50.0	18.0	59.3	23.0	68.5	28.0	77.8	33.0	87.0	38.0	96.3
3.1	31.7	8.1	40.9	13.1	50.2	18.1	59.4	23.1	68.7	28.1	78.0	33.1	87.2	38.1	96.5
3.2	31.9	8.2	41.1	13.2	50.4	18.2	59.6	23.2	68.9	28.2	78.1	33.2	87.4	38.2	96.7
3.3	32.0	8.3	41.3	13.3	50.6	18.3	59.8	23.3	69.1	28.3	78.3	33.3	87.6	38.3	96.9
3.4	32.2	8.4	41.5	13.4	50.7	18.4	60.0	23.4	69.3	28.4	78.5	33.4	87.8	38.4	97.0
3.5	32.4	8.5	41.7	13.5	50.9	18.5	60.2	23.5	69.4	28.5	78.7	33.5	88.0	38.5	97.2
3.6	32.6	8.6	41.9	13.6	51.1	18.6	60.4	23.6	69.6	28.6	78.9	33.6	88.1	38.6	97.4
3.7	32.8	8.7	42.0	13.7	51.3	18.7	60.6	23.7	69.8	28.7	79.1	33.7	88.3	38.7	97.6
3.8	33.0	8.8	42.2	13.8	51.5	18.8	60.7	23.8	70.0	28.8	79.3	33.8	88.5	38.8	97.8
3.9	33.1	8.9	42.4	13.9	51.7	18.9	60.9	23.9	70.2	28.9	79.4	33.9	88.7	38.9	98.0
4.0	33.3	9.0	42.6	14.0	51.9	19.0	61.1	24.0	70.4	29.0	79.6	34.0	88.9	39.0	98.1
4.1	33.5	9.1	42.8	14.1	52.0	19.1	61.3	24.1	70.6	29.1	79.8	34.1	89.1	39.1	98.3
4.2	33.7	9.2	43.0	14.2	52.2	19.2	61.5	24.2	70.7	29.2	80.0	34.2	89.3	39.2	98.5
4.3	33.9	9.3	43.1	14.3	52.4	19.3	61.7	24.3	70.9	29.3	80.2	34.3	89.4	39.3	98.7
4.4	34.1	9.4	43.3	14.4	52.6	19.4	61.9	24.4	71.1	29.4	80.4	34.4	89.6	39.4	98.9
4.5	34.3	9.5	43.5	14.5	52.8	19.5	62.0	24.5	71.3	29.5	80.6	34.5	89.8	39.5	99.1
4.6	34.4	9.6	43.7	14.6	53.0	19.6	62.2	24.6	71.5	29.6	80.7	34.6	90.0	39.6	99.3
4.7	34.6	9.7	43.9	14.7	53.1	19.7	62.4	24.7	71.7	29.7	80.9	34.7	90.2	39.7	99.4
4.8	34.8	9.8	44.1	14.8	53.3	19.8	62.6	24.8	71.9	29.8	81.1	34.8	90.4	39.8	99.6
4.9	35.0	9.9	44.3	14.9	53.5	19.9	62.8	24.9	72.0	29.9	81.3	34.9	90.6	39.9	99.8

TABLE NO. XIX.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 28 feet wide. Side slopes ½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	565	10.0	1222	15.0	1972	20.0	2815	25.0	3750	30.0	4778	35.0	5898
0.1	10	5.1	577	10.1	1236	15.1	1988	20 1	2833	25.1	3770	30.1	4799	35.1	5922
0.2	21	5.2	589	10.2	1250	15.2	2004	20.2	2850	25.2	3789	30.2	4821	35.2	5945
0.3	31	5.3	602	10.3	1265	15.3	2020	20.3	2868	25.3	3809	30.3	4842	35.3	5968
0.4	42	5.4	614	10.4	1279	15.4	2036	20.4	2886	25.4	3829	30.4	4864	35.4	5992
0.5	52	5.5	626	10.5	1293	15.5	2052	20.5	2904	25.5	3849	30.5	4886	35.5	6015
0.6	63	5.6	639	10.6	1307	15.6	2068	20.6	2922	25.6	3868	30.6	4907	35.6	6039
0.7	74	5.7	651	10.7	1322	15.7	2085	20.7	2940	25.7	3888	30.7	4929	35.7	6062
0.8	84	5.8	664	10.8	1336	15.8	2101	20.8	2958	25.8	3908	30.8	4951	35.8	6086
0.9	95	5.9	676	10.9	1350	15.9	2117	20.9	2976	25.9	3928	30.9	4973	35.9	6110
1.0	106	6.0	689	11.0	1365	16.0	2133	21.0	2994	26.0	3948	31.0	4994	36.0	6133
1.1	116	6.1	702	11.1	1379	16.1	2150	21.1	3013	26.1	3968	31.1	5016	36.1	6157
1.2	127	6.2	714	11.2	1394	16.2	2166	21.2	3031	26.2	3988	31.2	5038	36.2	6181
1.3	138	6.3	727	11.3	1408	16.3	2182	21.3	3049	26.3	4008	31.3	5060	36.3	6205
1.4	149	6.4	740	11.4	1423	16.4	2199	21.4	3067	26.4	4028	31.4	5082	36.4	6228
1.5	160	6.5	752	11.5	1438	16.5	2215	21.5	3086	26.5	4049	31.5	5104	36.5	6252
1.6	171	6.6	765	11 6	1452	16.6	2232	21.6	3104	26.6	4069	31.6	5126	36.6	6276
1.7	182	6.7	778	11.7	1467	16.7	2248	21.7	3122	26.7	4089	31.7	5148	36.7	6300
1.8	193	6.8	791	11.8	1482	16.8	2265	21.8	3141	26.8	4109	31.8	5170	36.8	6324
1.9	204	6.9	804	11.9	1496	16.9	2282	21.9	3159	26.9	4130	31.9	5193	36.9	6348
2.0	215	7.0	817	12.0	1511	17.0	2298	22.0	3178	27.0	4150	32.0	5215	37.0	6372
2.1	226	7.1	830	12.1	1526	17.1	2315	22.1	3196	27.1	4170	32.1	5237	37.1	6396
2.2	237	7.2	843	12.2	1541	17.2	2332	22.2	3215	27.2	4191	32.2	5259	37.2	6420
2.3	248	7.3	856	12.3	1556	17.3	2348	22.3	3234	27.3	4211	32.3	5282	37.3	6445
2.4	260	7.4	869	12.4	1571	17.4	2365	22.4	3252	27.4	4232	32.4	5304	37.4	6469
2.5	271	7.5	882	12.5	1586	17.5	2382	22.5	3271	27.5	4252	32.5	5326	37.5	6493
2.6	282	7.6	895	12.6	1601	17.6	2399	22.6	3290	27.6	4273	32.6	5349	37.6	6517
2.7	294	7.7	908	12.7	1616	17.7	2416	22.7	3308	27.7	4294	32.7	5371	37.7	6542
2.8	305	7.8	922	12.8	1631	17.8	2433	22.8	3327	27.8	4314	32.8	5394	37.8	6566
2.9	316	7.9	935	12.9	1646	17.9	2450	22.9	3346	27.9	4335	32.9	5416	37.9	6590
3.0	328	8.0	948	13.0	1661	18.0	2467	23.0	3365	28.0	4356	33.0	5439	38.0	6615
3.1	339	8.1	962	13.1	1676	18.1	2484	23.1	3384	28.1	4376	33.1	5462	38.1	6639
3.2	351	8.2	975	13.2	1692	18.2	2501	23.2	3403	28.2	4397	33.2	5484	38.2	6664
3.3	362	8.3	988	13.3	1707	18.3	2518	23.3	3422	28.3	4418	33.3	5507	38.3	6688
3.4	374	8.4	1002	13.4	1722	18.4	2535	23.4	3441	28.4	4439	33.4	5530	38.4	6713
3.5	386	8.5	1015	13.5	1738	18.5	2552	23.5	3460	28.5	4460	33.5	5552	38.5	6738
3.6	397	8.6	1029	13.6	1753	18.6	2570	23.6	3479	28.6	4481	33.6	5575	38.6	6762
3.7	409	8.7	1042	13.7	1768	18.7	2587	23.7	3498	28.7	4502	33.7	5598	38.7	6787
3.8	421	8.8	1056	13.8	1784	18.8	2604	23.8	3517	28.8	4523	33.8	5621	38.8	6812
3.9	433	8.9	1070	13.9	1799	18.9	2622	23.9	3536	28.9	4544	33.9	5644	38.9	6836
4.0	444	9.0	1083	14.0	1815	19.0	2639	24.0	3556	29.0	4565	34.0	5667	39.0	6861
4.1	456	9.1	1097	14.1	1830	19.1	2656	24.1	3575	29.1	4586	34.1	5690	39.1	6886
4.2	468	9.2	1111	14.2	1846	19.2	2674	24.2	3594	29.2	4607	34.2	5713	39.2	6911
4.3	480	9.3	1125	14.3	1862	19.3	2691	24.3	3614	29.3	4628	34.3	5736	39.3	6936
4.4	492	9 4	1138	14.4	1877	19.4	2709	24.4	3633	29.4	4650	34.4	5759	39.4	6961
4.5	504	9.5	1152	14.5	1893	19.5	2726	24.5	3652	29.5	4671	34.5	5782	39.5	6986
4.6	516	9.6	1166	14.6	1909	19.6	2744	24.6	3672	29.6	4692	34.6	5805	39.6	7011
4.7	528	9.7	1180	14.7	1925	19.7	2762	24.7	3691	29.7	4714	34.7	5828	39.7	7036
4.8	540	9.8	1194	14.8	1940	19.8	2779	24.8	3711	29.8	4735	34.8	5852	39.8	7061
4.9	553	9.9	1208	14.9	1956	19.9	2797	24.9	3730	29.9	4756	34.9	5875	39.9	7086

TABLE NO. XX.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 28 feet wide. Side slopes ½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	25.9	5.0	30.6	10.0	35.2	15.0	39.8	20.0	44.4	25.0	49.1	30.0	53.7	35.0	58.3
0.1	26.0	5.1	30.6	10.1	35.3	15.1	39.9	20.1	44.5	25.1	49.2	30.1	53.8	35.1	58.4
0.2	26.1	5.2	30.7	10.2	35.4	15.2	40.0	20.2	44.6	25.2	49.3	30.2	53.9	35.2	58.5
0.3	26.2	5.3	30.8	10.3	35.5	15.3	40.1	20.3	44.7	25.3	49.4	30.3	54.0	35.3	58.6
0.4	26.3	5.4	30.9	10.4	35.6	15.4	40.2	20.4	44.8	25.4	49.4	30.4	54.1	35.4	58.7
0.5	26.4	5.5	31.0	10.5	35.6	15.5	40.3	20.5	44.9	25.5	49.5	30.5	54.2	35.5	58.8
0.6	26.5	5.6	31.1	10.6	35.7	15.6	40.4	20.6	45.0	25.6	49.6	30.6	54.3	35.6	58.9
0.7	26.6	5.7	31.2	10.7	35.8	15.7	40.5	20.7	45.1	25.7	49.7	30.7	54.4	35.7	59.0
0.8	26.7	5.8	31.3	10.8	35.9	15.8	40.6	20.8	45.2	25.8	49.8	30.8	54.4	35.8	59.1
0.9	26.8	5.9	31.4	10.9	36.0	15.9	40.6	20.9	45.3	25.9	49.9	30.9	54.5	35.9	59.2
1.0	26.9	6.0	31.5	11.0	36.1	16.0	40.7	21.0	45.4	26.0	50.0	31.0	54.6	36.0	59.3
1.1	26.9	6.1	31.6	11.1	36.2	16.1	40.8	21.1	45.5	26.1	50.1	31.1	54.7	36.1	59.4
1.2	27.0	6.2	31.7	11.2	36.3	16.2	40.9	21.2	45.6	26.2	50.2	31.2	54.8	36.2	59.4
1.3	27.1	6.3	31.8	11.3	36.4	16.3	41.0	21.3	45.6	26.3	50.3	31.3	54.9	36.3	59.5
1.4	27.2	6.4	31.9	11.4	36.5	16.4	41.1	21.4	45.7	26.4	50.4	31.4	55.0	36.4	59.6
1.5	27.3	6.5	31.9	11.5	36.6	16.5	41.2	21.5	45.8	26.5	50.5	31.5	55.1	36.5	59.7
1.6	27.4	6.6	32.0	11.6	36.7	16.6	41.3	21.6	45.9	26.6	50.6	31.6	55.2	36.6	59.8
1.7	27.5	6.7	32.1	11.7	36.8	16.7	41.4	21.7	46.0	26.7	50.6	31.7	55.3	36.7	59.9
1.8	27.6	6.8	32.2	11.8	36.9	16.8	41.5	21.8	46.1	26.8	50.7	31.8	55.4	36.8	60.0
1.9	27.7	6.9	32.3	11.9	36.9	16.9	41.6	21.9	46.2	26.9	50.8	31.9	55.5	36.9	60.1
2.0	27.8	7.0	32.4	12.0	37.0	17.0	41.7	22.0	46.3	27.0	50.9	32.0	55.6	37.0	60.2
2.1	27.9	7.1	32.5	12.1	37.1	17.1	41.8	22.1	46.4	27.1	51.0	32.1	55.6	37.1	60.3
2.2	28.0	7.2	32.6	12.2	37.2	17.2	41.9	22.2	46.5	27.2	51.1	32.2	55.7	37.2	60.4
2.3	28.1	7.3	32.7	12.3	37.3	17.3	41.9	22.3	46.6	27.3	51.2	32.3	55.8	37.3	60.5
2.4	28.1	7.4	32.8	12.4	37.4	17.4	42.0	22.4	46.7	27.4	51.3	32.4	55.9	37.4	60.6
2.5	28.2	7.5	32.9	12.5	37.5	17.5	42.1	22.5	46.8	27.5	51.4	32.5	56.0	37.5	60.6
2.6	28.3	7.6	33.0	12.6	37.6	17.6	42.2	22.6	46.9	27.6	51.5	32.6	56.1	37.6	60.7
2.7	28.4	7.7	33.1	12.7	37.7	17.7	42.3	22.7	46.9	27.7	51.6	32.7	56.2	37.7	60.8
2 8	28.5	7.8	33.1	12.8	37.8	17.8	42.4	22.8	47.0	27.8	51.7	32.8	56.3	37.8	60.9
2.9	28.6	7.9	33.2	12.9	37.9	17.9	42.5	22.9	47.1	27.9	51.8	32.9	56.4	37.9	61.0
3.0	28.7	8.0	33.3	13.0	38.0	18.0	42.6	23.0	47.2	28.0	51.9	33.0	56.5	38.0	61.1
3.1	28.8	8.1	33.4	13.1	38.1	18.1	42.7	23.1	47.3	28.1	51.9	33.1	56.6	38.1	61.2
3.2	28.9	8.2	33.5	13.2	38.1	18.2	42.8	23.2	47.4	28.2	52.0	33.2	56.7	38.2	61.3
3.3	29.0	8.3	33.6	13.3	38.2	18.3	42.9	23.3	47.5	28.3	52.1	33 3	56.8	38.3	61.4
3.4	29.1	8.4	33.7	13.4	38.3	18.4	43.0	23.4	47.6	28.4	52.2	33.4	56.9	38.4	61.5
3.5	29.2	8.5	33.8	13.5	38.4	18.5	43.1	23.5	47.7	28.5	52.3	33.5	56.9	38.5	61.6
3.6	29.3	8.6	33.9	13.6	38.5	18.6	43.1	23.6	47.8	28.6	52.4	33.6	57.0	38.6	61.7
3.7	29.4	8.7	34.0	13.7	38.6	18.7	43.2	23.7	47.9	28.7	52.5	33.7	57.1	38.7	61.8
3.8	29.4	8.8	34.1	13.8	38.7	18.8	43.3	23.8	48.0	28.8	52.6	33.8	57.2	38.8	61.9
3.9	29.5	8.9	34.2	13.9	38.8	18.9	43.4	23.9	48.1	28.9	52.7	33.9	57.3	38.9	61.9
4.0	29.6	9.0	34.3	14.0	38.9	19.0	43.5	24.0	48.1	29.0	52.8	34.0	57.4	39.0	62.0
4.1	29.7	9.1	34.4	14.1	39.0	19.1	43.6	24.1	48.2	29.1	52.9	34.1	57.5	39.1	62.1
4.2	29.8	9.2	34.4	14.2	39.1	19.2	43.7	24.2	48.3	29.2	53.0	34.2	57.6	39.2	62.2
4.3	29.9	9.3	34.5	14.3	39.2	19.3	43.8	24.3	48.4	29.3	53.1	34.3	57.7	39.3	62.3
4.4	30.0	9.4	34.6	14.4	39.3	19.4	43.9	24.4	48.5	29.4	53.1	34.4	57.8	39.4	62.4
4.5	30.1	9.5	34.7	14.5	39.4	19.5	44.0	24.5	48.6	29.5	53.2	34.5	57.9	39.5	62.5
4.6	30.2	9.6	34.8	14.6	39.4	19.6	44.1	24.6	48.7	29.6	53.3	34.6	58.0	39.6	62.6
4.7	30.3	9.7	34.9	14.7	39.5	19.7	44.2	24.7	48.8	29.7	53.4	34.7	58.1	39.7	62.7
4.8	30.4	9.8	35.0	14.8	39.6	19.8	44.3	24.8	48.9	29.8	53.5	34.8	58.1	39.8	62.8
4.9	30.5	9.9	35.1	14 9	39.7	19.9	44.4	24.9	49.0	29.9	53.6	34.9	58.2	39.9	62.9

TABLE NO. XXI.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 20 feet wide. Side slopes ½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	394	10.0	833	15.0	1319	20.0	1852	25.0	2431	30.0	3056	35.0	3727
0.1	7	5.1	402	10.1	843	15.1	1330	20.1	1863	25.1	2443	30.1	3069	35.1	3741
0.2	15	5.2	410	10.2	852	15.2	1340	20.2	1874	25.2	2455	30.2	3082	35.2	3755
0.3	22	5.3	419	10.3	861	15.3	1350	20.3	1885	25.3	2467	30.3	3095	35.3	3769
0.4	30	5.4	427	10.4	871	15.4	1360	20.4	1896	25.4	2479	30.4	3108	35.4	3783
0.5	37	5.5	435	10.5	880	15.5	1371	20.5	1908	25.5	2491	30.5	3121	35.5	3797
0.6	45	5.6	444	10.6	889	15.6	1381	20.6	1919	25.6	2503	30.6	3134	35.6	3811
0.7	52	5.7	452	10.7	899	15.7	1391	20.7	1930	25.7	2515	30.7	3147	35.7	3825
0.8	60	5.8	461	10.8	908	15.8	1402	20.8	1941	25.8	2527	30.8	3160	35.8	3839
0.9	67	5.9	469	10.9	917	15.9	1412	20.9	1953	25.9	2540	30.9	3173	35.9	3853
1.0	75	6.0	478	11.0	927	16.0	1422	21.0	1964	26.0	2552	31.0	3186	36.0	3867
1.1	83	6.1	486	11.1	936	16.1	1433	21.1	1975	26.1	2564	31.1	3199	36.1	3881
1.2	90	6.2	495	11.2	946	16.2	1443	21.2	1987	26.2	2576	31.2	3212	36.2	3895
1.3	98	6.3	503	11.3	955	16.3	1453	21.3	1998	26.3	2589	31.3	3226	36.3	3909
1.4	106	6.4	512	11.4	965	16.4	1464	21.4	2009	26.4	2601	31.4	3239	36.4	3923
1.5	113	6.5	521	11.5	974	16.5	1474	21.5	2021	26.5	2613	31.5	3252	36.5	3937
1.6	121	6.6	529	11.6	984	16.6	1485	21.6	2032	26.6	2626	31.6	3265	36.6	3951
1.7	129	6.7	538	11.7	993	16.7	1495	21.7	2043	26.7	2638	31.7	3279	36.7	3966
1.8	136	6.8	547	11.8	1003	16.8	1506	21.8	2055	26.8	2650	31.8	3292	36.8	3980
1.9	144	6.9	555	11.9	1013	16.9	1516	21.9	2066	26.9	2663	31.9	3305	36.9	3994
2.0	152	7.0	564	12.0	1022	17.0	1527	22.0	2078	27.0	2675	32 0	3319	37.0	4008
2.1	160	7.1	573	12.1	1032	17.1	1537	22.1	2089	27.1	2687	32.1	3332	37.1	4023
2.2	167	7.2	581	12.2	1042	17.2	1548	22.2	2101	27.2	2700	32.2	3345	37.2	4037
2.3	175	7.3	590	12.3	1051	17.3	1559	22.3	2112	27.3	2712	32.3	3359	37.3	4051
2.4	183	7.4	599	12.4	1061	17.4	1569	22.4	2124	27.4	2725	32.4	3372	37.4	4066
2.5	191	7.5	608	12.5	1071	17.5	1580	22.5	2135	27.5	2737	32.5	3385	37.5	4080
2.6	199	7.6	616	12.6	1080	17.6	1591	22.6	2147	27.6	2750	32.6	3399	37.6	4094
2.7	207	7.7	625	12.7	1090	17.7	1601	22.7	2159	27.7	2762	32.7	3412	37.7	4109
2.8	215	7.8	634	12.8	1100	17.8	1612	22.8	2170	27.8	2775	32.8	3426	37.8	4123
2.9	223	7.9	643	12.9	1110	17.9	1623	22.9	2182	27.9	2787	32.9	3439	37.9	4137
3.0	231	8.0	652	13.0	1119	18.0	1633	23.0	2194	28.0	2800	33.0	3453	38.0	4152
3.1	239	8.1	661	13.1	1129	18.1	1644	23.1	2205	28.1	2813	33.1	3466	38.1	4166
3.2	247	8.2	670	13.2	1139	18.2	1655	23.2	2217	28.2	2825	33.2	3480	38.2	4181
3.3	255	8.3	679	13.3	1149	18.3	1666	23.3	2229	28.3	2838	33.3	3493	38.3	4195
3.4	263	8.4	688	13.4	1159	18.4	1676	23.4	2240	28.4	2851	33.4	3507	38.4	4210
3.5	271	8.5	697	13.5	1169	18.5	1687	23.5	2252	28.5	2863	33.5	3521	38.5	4224
3.6	279	8.6	706	13.6	1179	18.6	1698	23.6	2264	28.6	2876	33.6	3534	38.6	4239
3.7	287	8.7	715	13.7	1189	18.7	1709	23.7	2276	28.7	2889	33.7	3548	38.7	4253
3.8	295	8.8	724	13.8	1199	18.8	1720	23.8	2287	28.8	2901	33.8	3562	38.8	4268
3.9	303	8.9	733	13.9	1209	18.9	1731	23.9	2299	28.9	2914	33.9	3575	38.9	4283
4.0	311	9.0	742	14.0	1219	19.0	1742	24.0	2311	29.0	2927	34.0	3589	39.0	4297
4.1	319	9.1	751	14.1	1229	19.1	1753	24.1	2323	29.1	2940	34.1	3603	39.1	4312
4.2	327	9.2	760	14.2	1239	19.2	1764	24.2	2335	29.2	2952	34.2	3616	39.2	4327
4 3	336	9.3	769	14.3	1249	19.3	1775	24.3	2347	29.3	2965	34.3	3630	39.3	4341
4.4	344	9.4	778	14.4	1259	19.4	1786	24.4	2359	29.4	2978	34.4	3644	39.4	4356
4.5	352	9.5	787	14.5	1269	19.5	1797	24.5	2371	29.5	2991	34.5	3658	39.5	4371
4.6	360	9.6	796	14.6	1279	19.6	1808	24.6	2383	29.6	3004	34.6	3671	39.6	4385
4.7	369	9.7	806	14.7	1289	19.7	1819	24.7	2395	29.7	3017	34.7	3685	39.7	4400
4.8	377	9.8	815	14.8	1299	19.8	1830	24.8	2407	29.8	3030	34.8	3699	39.8	4415
4.9	385	9.9	824	14.9	1309	19.9	1841	24.9	2419	29.9	3043	34.9	3713	39.9	4430

TABLE NO. XXII.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 20 feet wide. Side slopes ¼ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0 0	18.5	5.0	20.8	10.0	23.1	15.0	25.5	20.0	27.8	25.0	30.1	30.0	32.4	35.0	34.7
0.1	18.6	5.1	20.9	10.1	23.2	15.1	25.5	20.1	27.8	25.1	30.1	30.1	32.5	35.1	34.8
0.2	18.6	5.2	20.9	10.2	23.2	15 2	25.6	20.2	27.9	25.2	30.2	30.2	32.5	35.2	34.8
0.3	18.7	5.3	21.0	10.3	23.3	15.3	25.6	20.3	27.9	25.3	30.2	30.3	32.5	35.3	34.9
0.4	18.7	5.4	21.0	10.4	23.3	15.4	25.6	20.4	28.0	25.4	30.3	30.4	32.6	35.4	34.9
0.5	18.8	5.5	21.1	10.5	23.4	15.5	25.7	20.5	28.0	25.5	30.3	30.5	32.6	35.5	35.0
0.6	18.8	5.6	21.1	10.6	23.4	15.6	25.7	20.6	28.1	25.6	30.4	30.6	32.7	35.6	35.0
0.7	18.8	5.7	21.2	10.7	23.5	15.7	25.8	20.7	28.1	25.7	30.4	30.7	32.7	35.7	35.0
0.8	18.9	5.8	21.2	10.8	23.5	15.8	25.8	20.8	28.1	25.8	30.5	30.8	32.8	35.8	35.1
0.9	18.9	5.9	21.3	10.9	23.6	15.9	25.9	20.9	28.2	25.9	30.5	30.9	32.8	35.9	35.1
1.0	19.0	6.0	21.3	11.0	23.6	16.0	25.9	21.0	28.2	26.0	30.6	31.0	32.9	36.0	35.2
1.1	19.0	6.1	21.3	11.1	23.7	16.1	26.0	21.1	28.3	26.1	30.6	31.1	32.9	36.1	35.2
1.2	19.1	6.2	21.4	11.2	23.7	16.2	26.0	21.2	28.3	26.2	30.6	31.2	33.0	36.2	35.3
1.3	19.1	6.3	21.4	11.3	23.8	16.3	26.1	21.3	28.4	26.3	30.7	31.3	33.0	36.3	35.3
1.4	19.2	6.4	21.5	11.4	23.8	16.4	26.1	21.4	28.4	26.4	30.7	31.4	33.1	36.4	35.4
1.5	19.2	6.5	21.5	11.5	23.8	16 5	26.2	21.5	28.5	26.5	30.8	31.5	33.1	36.5	35.4
1.6	19.3	6.6	21.6	11.6	23.9	16.6	26.2	21.6	28.5	26.6	30.8	31.6	33.1	36.6	35.5
1.7	19.3	6.7	21.6	11.7	23.9	16.7	26.3	21.7	28.6	26.7	30.9	31.7	33.2	36.7	35.5
1.8	19.4	6.8	21.7	11.8	24.0	16.8	26.3	21.8	28.6	26.8	30.9	31.8	33.2	36.8	35.6
1.9	19.4	6.9	21.7	11.9	24.0	16.9	26.3	21.9	28.7	26.9	31.0	31.9	33.3	36.9	35.6
2.0	19.4	7.0	21.8	12.0	24.1	17.0	26.4	22.0	28.7	27.0	31.0	32.0	33.3	37.0	35.6
2.1	19.5	7.1	21.8	12.1	24.1	17.1	26.4	22.1	28.8	27.1	31.1	32.1	33.4	37.1	35.7
2.2	19.5	7.2	21.9	12.2	24.2	17.2	26.5	22.2	28.8	27.2	31.1	32.2	33.4	37.2	35.7
2.3	19.6	7.3	21.9	12.3	24.2	17.3	26.5	22.3	28.8	27.3	31.2	32.3	33.5	37.3	35.8
2.4	19.6	7.4	21.9	12.4	24.3	17.4	26.6	22.4	28.9	27.4	31.2	32.4	33.5	37.4	35.8
2.5	19.7	7.5	22.0	12.5	24.3	17.5	26.6	22.5	28.9	27.5	31.3	32.5	33.6	37.5	35.9
2.6	19.7	7.6	22.0	12.6	24.4	17.6	26.7	22.6	29.0	27.6	31.3	32.6	33.6	37.6	35.9
2.7	19.8	7.7	22.1	12.7	24.4	17.7	26.7	22.7	29.0	27.7	31.3	32.7	33.7	37.7	36.0
2.8	19.8	7.8	22.1	12.8	24.4	17.8	26.8	22.8	29.1	27.8	31.4	32.8	33.7	37.8	36.0
2.9	19.9	7.9	22.2	12.9	24.5	17.9	26.8	22.9	29.1	27.9	31.4	32.9	33.8	37.9	36.1
3.0	19.9	8.0	22.2	13.0	24.5	18.0	26.9	23.0	29.2	28.0	31.5	33.0	33.8	38.0	36.1
3.1	20.0	8.1	22.3	13.1	24.6	18.1	26.9	23.1	29.2	28.1	31.5	33.1	33.8	38.1	36.2
3.2	20.0	8.2	22.3	13.2	24.6	18.2	26.9	23.2	29.3	28.2	31.6	33.2	33.9	38.2	36.2
3.3	20.0	8.3	22.4	13.3	24.7	18.3	27.0	23.3	29.3	28.3	31.6	33.3	33.9	38.3	36.3
3.4	20.1	8.4	22.4	13.4	24.7	18.4	27.0	23.4	29.4	28 4	31.7	33.4	34.0	38.4	36.3
3.5	20.1	8.5	22.5	13.5	24.8	18.5	27.1	23.5	29.4	28.5	31.7	33.5	34.0	38.5	36.3
3.6	20.2	8.6	22.5	13.6	24.8	18.6	27.1	23.6	29.4	28.6	31.8	33.6	34.1	38.6	36.4
3.7	20.2	8.7	22.5	13.7	24.9	18.7	27.2	23.7	29.5	28.7	31.8	33.7	34.1	38.7	36.4
3.8	20.3	8.8	22.6	13.8	24.9	18.8	27.2	23.8	29.5	28.8	31.9	33.8	34.2	38.8	36.5
3.9	20.3	8.9	22.6	13.9	25.0	18.9	27.3	23.9	29.6	28.9	31.9	33.9	34.2	38.9	36.5
4.0	20.4	9.0	22.7	14.0	25.0	19.0	27.3	24.0	29.6	29.0	31.9	34.0	34.3	39.0	36.6
4.1	20.4	9.1	22.7	14.1	25.0	19.1	27.4	24.1	29.7	29.1	32.0	34.1	34.3	39.1	36.6
4.2	20.5	9.2	22.8	14.2	25.1	19.2	27.4	24.2	29.7	29.2	32.0	34.2	34.4	39.2	36.7
4.3	20.5	9.3	22.8	14.3	25.1	19.3	27.5	24.3	29.8	29.3	32.1	34.3	34.4	39.3	36.7
4.4	20.6	9.4	22.9	14.4	25.2	19.4	27.5	24.4	29.8	29.4	32.1	34.4	34.4	39.4	36.8
4.5	20.6	9.5	22.9	14.5	25.2	19.5	27.5	24.5	29.9	29.5	32.2	34.5	34.5	39.5	36.8
4.6	20.6	9.6	23.0	14.6	25.3	19.6	27.6	24.6	29.9	29.6	32.2	34.6	34.5	39.6	36.9
4.7	20.7	9 7	23.0	14.7	25.3	19.7	27.6	24.7	30.0	29.7	32.3	34.7	34.6	39.7	36.9
4.8	20.7	9.8	23.1	14.8	25.4	19.8	27.7	24.8	30.0	29.8	32.3	34.8	34.6	39.8	36.9
4.9	20.8	9.9	23.1	14.9	25.4	19.9	27.7	24.9	30.0	29.9	32.4	34.9	34.7	39.9	37.0

TABLE NO. XXIII.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 28 feet wide. Side slopes ¼ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	542	10.0	1130	15.0	1764	20.0	2444	25.0	3171	30.0	3944	35.0	4764
0.1	10	5.1	553	10.1	1142	15.1	1777	20.1	2459	25.1	3186	30.1	3960	35.1	4781
0.2	21	5.2	564	10.2	1154	15.2	1790	20.2	2473	25.2	3201	30.2	3976	35.2	4798
0.3	31	5.3	576	10.3	1166	15.3	1803	20.3	2487	25.3	3216	30.3	3992	35.3	4815
0.4	42	5.4	587	10.4	1179	15.4	1817	20.4	2501	25.4	3231	30.4	4008	35.4	4831
0.5	52	5.5	598	10.5	1191	15.5	1830	20.5	2515	25.5	3247	30.5	4024	35.5	4848
0.6	63	5.6	610	10.6	1203	15.6	1843	20.6	2529	25.6	3262	30.6	4040	35.6	4865
0.7	73	5.7	621	10.7	1216	15.7	1856	20.7	2543	25.7	3277	30.7	4056	35.7	4882
0 8	84	5.8	633	10.8	1228	15.8	1870	20.8	2558	25.8	3292	30.8	4072	35.8	4899
0.9	94	5 9	644	10.9	1240	15.9	1883	20.9	2572	25.9	3307	30.9	4089	35.9	4916
1.0	105	6.0	656	11.0	1253	16.0	1896	21.0	2586	26.0	3322	31.0	4105	36.0	4933
1.1	115	6.1	667	11.1	1265	16.1	1910	21.1	2600	26.1	3337	31.1	4121	36.1	4950
1.2	126	6.2	679	11.2	1278	16.2	1923	21.2	2615	26.2	3353	31.2	4137	36.2	4967
1.3	136	6.3	690	11.3	1290	16.3	1936	21.3	2629	26.3	3368	31.3	4153	36.3	4985
1.4	147	6.4	702	11.4	1303	16.4	1950	21.4	2643	26.4	3383	31.4	4169	36.4	5002
1.5	158	6.5	713	11.5	1315	16.5	1963	21.5	2658	26.5	3398	31.5	4185	36.5	5019
1.6	168	6.6	725	11.6	1328	16.6	1977	21.6	2672	26.6	3414	31.6	4202	36.6	5036
1.7	179	6.7	736	11.7	1340	16.7	1990	21.7	2686	26.7	3429	31.7	4218	36.7	5053
1.8	190	6.8	748	11.8	1353	16.8	2004	21.8	2701	26.8	3444	31.8	4234	36.8	5070
1.9	200	6.9	760	11.9	1365	16.9	2017	21.9	2715	26.9	3460	31.9	4250	36.9	5087
2.0	211	7.0	771	12.0	1378	17.0	2031	22.0	2730	27.0	3475	32.0	4267	37.0	5105
2.1	222	7.1	783	12.1	1390	17.1	2044	22.1	2744	27.1	3490	32.1	4283	37.1	5122
2.2	233	7.2	795	12.2	1403	17.2	2058	22.2	2759	27.2	3506	32.2	4299	37.2	5139
2.3	243	7.3	806	12.3	1416	17.3	2071	22.3	2773	27.3	3521	32.3	4316	37.3	5156
2.4	254	7.4	818	12.4	1428	17.4	2085	22.4	2788	27.4	3537	32.4	4332	37.4	5174
2.5	265	7.5	830	12.5	1441	17.5	2098	22.5	2802	27.5	3552	32.5	4348	37.5	5191
2.6	276	7.6	842	12.6	1454	17.6	2112	22.6	2817	27.6	3568	32.6	4365	37.6	5208
2.7	287	7.7	853	12.7	1466	17.7	2126	22.7	2831	27.7	3583	32.7	4381	37.7	5226
2.8	298	7.8	865	12.8	1479	17.8	2139	22.8	2846	27.8	3599	32.8	4398	37.8	5243
2.9	309	7.9	877	12.9	1492	17.9	2153	22.9	2860	27.9	3614	32.9	4414	37.9	5260
3.0	319	8.0	889	13.0	1505	18.0	2167	23.0	2875	28.0	3630	33.0	4431	38.0	5278
3.1	330	8.1	901	13.1	1517	18.1	2180	23.1	2890	28.1	3645	33.1	4447	38.1	5295
3.2	341	8.2	913	13.2	1530	18.2	2194	23.2	2904	28.2	3661	33.2	4464	38.2	5313
3.3	352	8.3	925	13.3	1543	18.3	2208	23.3	2919	28.3	3676	33.3	4480	38.3	5330
3.4	363	8.4	936	13.4	1556	18.4	2222	23.4	2934	28.4	3692	33.4	4497	38.4	5348
3.5	374	8.5	948	13.5	1569	18.5	2235	23.5	2948	28.5	3708	33.5	4513	38.5	5365
3.6	385	8.6	960	13.6	1582	18.6	2249	23.6	2963	28.6	3723	33.6	4530	38.6	5383
3.7	396	8.7	972	13.7	1595	18.7	2263	23.7	2978	28.7	3739	33.7	4546	38.7	5400
3.8	407	8.8	984	13.8	1607	18.8	2277	23.8	2993	28.8	3755	33.8	4563	38.8	5418
3.9	419	8.9	996	13.9	1620	18.9	2291	23.9	3007	28.9	3770	33.9	4580	38.9	5435
4.0	430	9.0	1008	14.0	1633	19.0	2305	24.0	3022	29.0	3786	34.0	4596	39.0	5453
4.1	441	9.1	1020	14.1	1646	19.1	2319	24.1	3037	29.1	3802	34.1	4613	39.1	5470
4.2	452	9.2	1032	14.2	1659	19.2	2332	24.2	3052	29.2	3818	34.2	4630	39.2	5488
4.3	463	9.3	1045	14.3	1672	19.3	2346	24.3	3067	29.3	3833	34.3	4646	39.3	5506
4.4	474	9.4	1057	14.4	1685	19.4	2360	24.4	3082	29.4	3849	34.4	4663	39.4	5523
4.5	485	9.5	1069	14.5	1698	19.5	2374	24.5	3097	29.5	3865	34.5	4680	39.5	5541
4.6	497	9.6	1081	14.6	1711	19.6	2388	24.6	3111	29.6	3881	34.6	4697	39.6	5559
4.7	508	9.7	1093	14.7	1725	19.7	2402	24.7	3126	29.7	3897	34.7	4713	39.7	5576
4.8	519	9.8	1105	14.8	1738	19.8	2416	24.8	3141	29.8	3913	34.8	4730	39.8	5594
4.9	530	9.9	1117	14.9	1751	19.9	2430	24.9	3156	29.9	3929	34.9	4747	39.9	5612

TABLE NO. XXIV.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 28 feet wide. Side slopes ¼ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	25.9	5.0	28.2	10.0	30.6	15.0	32.9	20.0	35.2	25.0	37.5	30.0	39.8	35.0	42.1
0.1	26.0	5.1	28.3	10.1	30.6	15.1	32.9	20.1	35.2	25.1	37.5	30.1	39.9	35.1	42.2
0.2	26.0	5.2	28.3	10.2	30.6	15.2	33.0	20.2	35.3	25.2	37.6	30.2	39.9	35.2	42.2
0.3	26.1	5.3	28.4	10.3	30.7	15.3	33.0	20.3	35.3	25.3	37.6	30.3	40.0	35.3	42.3
0.4	26.1	5.4	28.4	10.4	30.7	15.4	33.1	20.4	35.4	25.4	37.7	30.4	40.0	35.4	42.3
0.5	26.2	5.5	28.5	10.5	30.8	15.5	33.1	20.5	35.4	25.5	37.7	30.5	40.0	35.5	42.4
0.6	26.2	5.6	28.5	10.6	30.8	15.6	33.1	20.6	35.5	25.6	37.8	30.6	40.1	35.6	42.4
0.7	26.3	5.7	28.6	10.7	30.9	15.7	33.2	20.7	35.5	25.7	37.8	30.7	40.1	35.7	42.5
0.8	26.3	5.8	28.6	10.8	30.9	15.8	33.2	20.8	35.6	25.8	37.9	30.8	40.2	35.8	42.5
0.9	26.3	5.9	28.7	10.9	31.0	15.9	33.3	20.9	35.6	25.9	37.9	30.9	40.2	35.9	42.5
1.0	26.4	6.0	28.7	11.0	31.0	16.0	33.3	21.0	35.6	26.0	38.0	31.0	40.3	36.0	42.6
1.1	26.4	6.1	28.8	11.1	31.1	16.1	33.4	21.1	35.7	26.1	38.0	31.1	40.3	36.1	42.6
1.2	26.5	6.2	28.8	11.2	31.1	16.2	33.4	21.2	35.7	26.2	38.1	31.2	40.4	36.2	42.7
1.3	26.5	6.3	28.8	11.3	31.2	16.3	33.5	21.3	35.8	26.3	38.1	31.3	40.4	36.3	42.7
1.4	26.6	6.4	28.9	11.4	31.2	16.4	33.5	21.4	35.8	26.4	38.1	31.4	40.5	36.4	42.8
1.5	26.6	6.5	28.9	11.5	31.3	16.5	33.6	21.5	35.9	26.5	38.2	31.5	40.5	36.5	42.8
1.6	26.7	6.6	29.0	11.6	31.3	16.6	33.6	21.6	35.9	26.6	38.2	31.6	40.6	36.6	42.9
1.7	26.7	6.7	29.0	11.7	31.3	16.7	33.7	21.7	36.0	26.7	38.3	31.7	40.6	36.7	42.9
1.8	26.8	6.8	29.1	11.8	31.4	16.8	33.7	21.8	36.0	26.8	38.3	31.8	40.6	36.8	43.0
1.9	26.8	6.9	29.1	11.9	31.4	16.9	33.8	21.9	36.1	26.9	38.4	31.9	40.7	36.9	43.0
2.0	26.9	7.0	29.2	12.0	31.5	17.0	33.8	22.0	36.1	27.0	38.4	32.0	40.7	37.0	43.1
2.1	26.9	7.1	29.2	12.1	31.5	17.1	33.8	22.1	36.2	27.1	38.5	32.1	40.8	37.1	43.1
2.2	26.9	7.2	29.3	12.2	31.6	17.2	33.9	22.2	36.2	27.2	38.5	32.2	40.8	37.2	43.1
2.3	27.0	7.3	29.3	12.3	31.6	17.3	33.9	22.3	36.3	27.3	38.6	32.3	40.9	37.3	43.2
2.4	27.0	7.4	29.4	12.4	31.7	17.4	34.0	22.4	36.3	27.4	38.6	32.4	40.9	37.4	43.2
2.5	27.1	7.5	29.4	12.5	31.7	17.5	34.0	22.5	36.3	27.5	38.7	32.5	41.0	37.5	43.3
2.6	27.1	7.6	29.4	12.6	31.8	17.6	34.1	22.6	36.4	27.6	38.7	32.6	41.0	37.6	43.3
2.7	27.2	7.7	29.5	12.7	31.8	17.7	34.1	22.7	36.4	27.7	38.8	32.7	41.1	37.7	43.4
2.8	27.2	7.8	29.5	12.8	31.9	17.8	34.2	22.8	36.5	27.8	38.8	32.8	41.1	37.8	43.4
2.9	27.3	7.9	29.6	12.9	31.9	17.9	34.2	22.9	36.5	27.9	38.8	32.9	41.2	37.9	43.5
3.0	27.3	8.0	29.6	13.0	31.9	18.0	34.3	23.0	36.6	28.0	38.9	33.0	41.2	38.0	43.5
3.1	27.4	8.1	29.7	13.1	32.0	18.1	34.3	23.1	36.6	28.1	38.9	33.1	41.3	38.1	43.6
3.2	27.4	8.2	29.7	13.2	32.0	18.2	34.4	23.2	36.7	28.2	39.0	33.2	41.3	38.2	43.6
3.3	27.5	8.3	29.8	13.3	32.1	18.3	34.4	23.3	36.7	28.3	39.0	33.3	41.3	38.3	43.7
3.4	27.5	8.4	29.8	13.4	32.1	18.4	34.4	23.4	36.8	28.4	39.1	33.4	41.4	38.4	43.7
3.5	27.5	8.5	29.9	13.5	32.2	18.5	34.5	23.5	36.8	28.5	39.1	33.5	41.4	38.5	43.8
3.6	27.6	8.6	29.9	13.6	32.2	18.6	34.5	23.6	36.9	28.6	39.2	33.6	41.5	38.6	43.8
3.7	27.6	8.7	30.0	13.7	32.3	18.7	34.6	23.7	36.9	28.7	39.2	33.7	41.5	38.7	43.8
3.8	27.7	8.8	30.0	13.8	32.3	18.8	34.6	23.8	36.9	28.8	39.3	33.8	41.6	38.8	43.9
3.9	27.7	8.9	30.0	13.9	32.4	18.9	34.7	23.9	37.0	28.9	39.3	33.9	41.6	38.9	43.9
4.0	27.8	9.0	30.1	14.0	32.4	19.0	34.7	24.0	37.0	29.0	39.4	34.0	41.7	39.0	44.0
4.1	27.8	9.1	30.1	14.1	32.5	19.1	34.8	24.1	37.1	29.1	39.4	34.1	41.7	39.1	44.0
4.2	27.9	9.2	30.2	14.2	32.5	19.2	34.8	24.2	37.1	29.2	39.4	34.2	41.8	39.2	44.1
4.3	27.9	9.3	30.2	14.3	32.5	19.3	34.9	24.3	37.2	29.3	39.5	34.3	41.8	39.3	44.1
4.4	28.0	9.4	30.3	14.4	32.6	19.4	34.9	24.4	37.2	29.4	39.5	34.4	41.9	39.4	44.2
4.5	28.0	9.5	30.3	14.5	32.6	19.5	35.0	24.5	37.3	29.5	39.6	34.5	41.9	39.5	44.2
4.6	28.1	9.6	30.4	14.6	32.7	19.6	35.0	24.6	37.3	29.6	39.6	34.6	41.9	39.6	44.3
4.7	28.1	9.7	30.4	14.7	32.7	19.7	35.0	24.7	37.4	29.7	39.7	34.7	42.0	39.7	44.3
4.8	28.1	9.8	30.5	14.8	32.8	19.8	35.1	24.8	37.4	29.8	39.7	34.8	42.0	39.8	44.4
4.9	28.2	9.9	30.5	14.9	32.8	19.9	35.1	24.9	37.5	29.9	39.8	34.9	42.1	39.9	44.4

TABLE NO. XXV.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, $\frac{100}{6}$ FEET LONG.

Road-bed, 10 feet wide. Side slopes, 1½ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0.0	5.0	54	10.0	154	15.0	301	20.0	494	25.0	733	30.0	1019	35.0	1350
0.1	0.6	5.1	56	10.1	157	15.1	304	20.1	498	25.1	738	30.1	1025	35.1	1357
0.2	1.3	5.2	57	10.2	159	15.2	308	20.2	503	25.2	744	30.2	1031	35.2	1365
0.3	1.9	5.3	59	10.3	162	15.3	311	20.3	507	25.3	749	30.3	1037	35.3	1372
0.4	2.6	5.4	60	10.4	164	15.4	315	20.4	511	25.4	754	30.4	1043	35.4	1379
0.5	3.3	5.5	62	10.5	167	15.5	318	20.5	516	25.5	759	30.5	1050	35.5	1386
0.6	4.0	5.6	64	10.6	169	15.6	322	20.6	520	25.6	765	30.6	1056	35.6	1393
0.7	4.8	5.7	65	10.7	172	15.7	325	20.7	525	25.7	770	30.7	1062	35.7	1400
0.8	5.5	5.8	67	10.8	175	15.8	329	20.8	529	25.8	776	30.8	1068	35.8	1408
0.9	6.3	5.9	69	10.9	177	15.9	332	20.9	533	25.9	781	30.9	1075	35.9	1415
1.0	7	6.0	70	11.0	180	16.0	336	21.0	538	26.0	786	31.0	1081	36.0	1422
1.1	8	6.1	72	11.1	183	16.1	339	21.1	542	26.1	792	31.1	1088	36.1	1430
1.2	9	6.2	74	11.2	185	16.2	343	21.2	547	26.2	797	31.2	1094	36.2	1437
1.3	10	6.3	76	11.3	188	16.3	347	21.3	552	26.3	803	31.3	1100	36.3	1444
1.4	10	6.4	77	11.4	191	16.4	350	21.4	556	26.4	808	31.4	1107	36.4	1452
1.5	11	6.5	79	11.5	193	16.5	354	21.5	561	26.5	814	31.5	1113	36.5	1459
1.6	12	6.6	81	11.6	196	16.6	358	21.6	565	26.6	819	31.6	1120	36.6	1466
1.7	13	6.7	83	11.7	199	16.7	361	21.7	570	26.7	825	31.7	1126	36.7	1474
1.8	14	6.8	85	11.8	202	16.8	365	21.8	575	26.8	830	31.8	1133	36.8	1481
1.9	15	6.9	87	11.9	205	16.9	369	21.9	579	26.9	836	31.9	1139	36.9	1489
2.0	16	7.0	89	12.0	207	17.0	373	22.0	584	27.0	842	32.0	1146	37.0	1496
2.1	17	7.1	91	12.1	210	17.1	376	22.1	589	27.1	847	32.1	1152	37.1	1503
2.2	18	7.2	92	12.2	213	17.2	380	22.2	593	27.2	853	32.2	1159	37.2	1511
2.3	19	7.3	94	12.3	216	17.3	384	22.3	598	27.3	859	32.3	1165	37.3	1518
2.4	20	7.4	96	12.4	219	17.4	388	22.4	603	27.4	864	32.4	1172	37.4	1526
2.5	21	7.5	98	12.5	222	17.5	392	22.5	608	27.5	870	32.5	1179	37.5	1534
2.6	22	7.6	100	12.6	225	17.6	395	22.6	612	27.6	876	32.6	1185	37.6	1541
2.7	23	7.7	102	12.7	228	17.7	399	22.7	617	27.7	881	32.7	1192	37.7	1549
2.8	25	7.8	104	12.8	231	17.8	403	22.8	622	27.8	887	32.8	1199	37.8	1556
2.9	26	7.9	107	12.9	234	17.9	407	22.9	627	27.9	893	32.9	1205	37.9	1564
3.0	27	8.0	109	13.0	237	18.0	411	23.0	632	28.0	899	33.0	1212	38.0	1572
3.1	28	8.1	111	13.1	240	18.1	415	23.1	637	28.1	905	33.1	1219	38.1	1579
3.2	29	8.2	113	13.2	243	18.2	419	23.2	642	28.2	910	33.2	1226	38.2	1587
3.3	30	8.3	115	13.3	246	18.3	423	23.3	647	28.3	916	33.3	1232	38.3	1595
3.4	32	8.4	117	13.4	249	18.4	427	23.4	651	28.4	922	33.4	1239	38.4	1602
3.5	33	8.5	119	13.5	252	18.5	431	23.5	656	28.5	928	33.5	1246	38.5	1610
3.6	34	8.6	122	13.6	255	18.6	435	23.6	661	28.6	934	33.6	1253	38.6	1618
3.7	36	8.7	124	13.7	258	18.7	439	23.7	666	28.7	940	33.7	1260	38.7	1626
3.8	37	8.8	126	13.8	262	18.8	443	23.8	671	28.8	946	33.8	1266	38.8	1633
3.9	38	8.9	128	13.9	265	18.9	447	23.9	676	28.9	952	33.9	1273	38.9	1641
4.0	40	9.0	131	14.0	268	19.0	452	24.0	681	29.0	958	34.0	1280	39.0	1649
4.1	41	9.1	133	14.1	271	19.1	456	24.1	687	29.1	964	34.1	1287	39.1	1657
4.2	42	9.2	135	14.2	274	19.2	460	24.2	692	29.2	970	34.2	1294	39.2	1665
4.3	44	9.3	137	14.3	278	19.3	464	24.3	697	29.3	976	34.3	1301	39.3	1673
4.4	45	9.4	140	14.4	281	19.4	468	24.4	702	29.4	982	34.4	1308	39.4	1681
4.5	47	9.5	142	14.5	284	19.5	472	24.5	707	29.5	988	34.5	1315	39.5	1689
4.6	48	9.6	145	14.6	287	19.6	477	24.6	712	29.6	994	34.6	1322	39.6	1696
4.7	49	9.7	147	14.7	291	19.7	481	24.7	717	29.7	1000	34.7	1329	39.7	1704
4.8	51	9.8	149	14.8	294	19.8	485	24.8	723	29.8	1006	34.8	1336	39.8	1712
4.9	52	9.9	152	14.9	298	19.9	490	24.9	728	29.9	1012	34.9	1343	39.9	1720

TABLE NO. XXVI.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS $\frac{100}{9}$ FEET LONG.

Road-bed 10 feet wide. Side slopes 1½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	1.5	5.0	3.9	10.0	6.2	15.0	8.5	20.0	10.8	25.0	13.1	30.0	15.4	35.0	17.7
0.1	1.6	5.1	3.9	10.1	6.2	15.1	8.5	20.1	10.8	25.1	13.2	30.1	15.5	35.1	17.8
0.2	1.6	5.2	4.0	10.2	6.3	15.2	8.6	20.2	10.9	25.2	13.2	30.2	15.5	35.2	17.8
0.3	1.7	5.3	4.0	10.3	6.3	15.3	8.6	20.3	10.9	25.3	13.3	30.3	15.6	35.3	17.9
0.4	1.7	5.4	4.0	10.4	6.4	15.4	8.7	20.4	11.0	25.4	13.3	30.4	15.6	35.4	17.9
0.5	1.8	5.5	4.1	10.5	6.4	15.5	8.7	20.5	11.0	25.5	13.3	30.5	15.7	35.5	18.0
0.6	1.8	5.6	4.1	10.6	6.5	15.6	8.8	20.6	11.1	25.6	13.4	30.6	15.7	35.6	18.0
0.7	1.9	5.7	4.2	10.7	6.5	15.7	8.8	20.7	11.1	25.7	13.4	30.7	15.8	35.7	18.1
0.8	1.9	5.8	4.2	10.8	6.5	15.8	8.9	20.8	11.2	25.8	13.5	30.8	15.8	35.8	18.1
0.9	2.0	5.9	4.3	10.9	6.6	15.9	8.9	20.9	11.2	25.9	13.5	30.9	15.8	35.9	18.2
1.0	2.0	6.0	4.3	11.0	6.6	16.0	9.0	21.0	11.3	26.0	13.6	31.0	15.9	36.0	18.2
1.1	2.1	6.1	4.4	11.1	6.7	16.1	9.0	21.1	11.3	26.1	13.6	31.1	15.9	36.1	18.3
1.2	2.1	6.2	4.4	11.2	6.7	16.2	9.0	21.2	11.4	26.2	13.7	31.2	16.0	36.2	18.3
1.3	2.1	6.3	4.5	11.3	6.8	16.3	9.1	21.3	11.4	26.3	13.7	31.3	16.0	36.3	18.3
1.4	2.2	6.4	4.5	11.4	6.8	16.4	9.1	21.4	11.5	26.4	13.8	31.4	16.1	36.4	18.4
1.5	2.2	6.5	4.6	11.5	6.9	16.5	9.2	21.5	11.5	26.5	13.8	31.5	16.1	36.5	18.4
1.6	2.3	6.6	4.6	11.6	6.9	16.6	9.2	21.6	11.5	26.6	13.9	31.6	16.2	36.6	18.5
1.7	2.3	6.7	4.6	11.7	7.0	16.7	9.3	21.7	11.6	26.7	13.9	31.7	16.2	36.7	18.5
1.8	2.4	6.8	4.7	11.8	7.0	16.8	9.3	21.8	11.6	26.8	14.0	31.8	16.3	36.8	18.6
1.9	2.4	6.9	4.7	11.9	7.1	16.9	9.4	21.9	11.7	26.9	14.0	31.9	16.3	36.9	18.6
2.0	2.5	7.0	4.8	12.0	7.1	17.0	9.4	22.0	11.7	27.0	14.0	32.0	16.4	37.0	18.7
2.1	2.5	7.1	4.8	12.1	7.1	17.1	9.5	22.1	11.8	27.1	14.1	32.1	16.4	37.1	18.7
2.2	2.6	7.2	4.9	12.2	7.2	17.2	9.5	22.2	11.8	27.2	14.1	32.2	16.5	37.2	18.8
2.3	2.6	7.3	4.9	12.3	7.2	17.3	9.6	22.3	11.9	27.3	14.2	32.3	16.5	37.3	18.8
2.4	2.7	7.4	5.0	12.4	7.3	17.4	9.6	22.4	11.9	27.4	14.2	32.4	16.5	37.4	18.9
2.5	2.7	7.5	5.0	12.5	7.3	17.5	9.6	22.5	12.0	27.5	14.3	32.5	16.6	37.5	18.9
2.6	2.7	7.6	5.1	12.6	7.4	17.6	9.7	22.6	12.0	27.6	14.3	32.6	16.6	37.6	19.0
2.7	2.8	7.7	5.1	12.7	7.4	17.7	9.7	22.7	12.1	27.7	14.4	32.7	16.7	37.7	19.0
2.8	2.8	7.8	5.2	12.8	7.5	17.8	9.8	22.8	12.1	27.8	14.4	32.8	16.7	37.8	19.0
2.9	2.9	7.9	5.2	12.9	7.5	17.9	9.8	22.9	12.1	27.9	14.5	32.9	16.8	37.9	19.1
3.0	2.9	8.0	5.2	13.0	7.6	18.0	9.9	23.0	12.2	28.0	14.5	33.0	16.8	38.0	19.1
3.1	3.0	8.1	5.3	13.1	7.6	18.1	9.9	23.1	12.2	28.1	14.6	33.1	16.9	38.1	19.2
3.2	3.0	8.2	5.3	13.2	7.7	18.2	10.0	23.2	12.3	28.2	14.6	33.2	16.9	38.2	19.2
3.3	3.1	8.3	5.4	13.3	7.7	18.3	10.0	23.3	12.3	28.3	14.6	33.3	17.0	38.3	19.3
3.4	3.1	8.4	5.4	13.4	7.7	18.4	10.1	23.4	12.4	28.4	14.7	33.4	17.0	38.4	19.3
3.5	3.2	8.5	5.5	13.5	7.8	18.5	10.1	23.5	12.4	28.5	14.7	33.5	17.1	38.5	19.4
3.6	3.2	8.6	5.5	13.6	7.8	18.6	10.2	23.6	12.5	28.6	14.8	33.6	17.1	38.6	19.4
3.7	3.3	8.7	5.6	13.7	7.9	18.7	10.2	23.7	12.5	28.7	14.8	33.7	17.1	38.7	19.5
3.8	3.3	8.8	5.6	13.8	7.9	18.8	10.2	23.8	12.6	28.8	14.9	33.8	17.2	38.8	19.5
3.9	3.3	8.9	5.7	13.9	8.0	18.9	10.3	23.9	12.6	28.9	14.9	33.9	17.2	38.9	19.6
4.0	3.4	9.0	5.7	14.0	8.0	19.0	10.3	24.0	12.7	29.0	15.0	34.0	17.3	39.0	19.6
4.1	3.4	9.1	5.8	14.1	8.1	19.1	10.4	24.1	12.7	29.1	15.0	34.1	17.3	39.1	19.6
4.2	3.5	9.2	5.8	14.2	8.1	19.2	10.4	24.2	12.7	29.2	15.1	34.2	17.4	39.2	19.7
4.3	3.5	9.3	5.8	14.3	8.2	19.3	10.5	24.3	12.8	29.3	15.1	34.3	17.4	39.3	19.7
4.4	3.6	9.4	5.9	14.4	8.2	19.4	10.5	24.4	12.8	29.4	15.2	34.4	17.5	39.4	19.8
4.5	3.6	9.5	5.9	14.5	8.3	19.5	10.6	24.5	12.9	29.5	15.2	34.5	17.5	39.5	19.8
4.6	3.7	9.6	6.0	14.6	8.3	19.6	10.6	24.6	12.9	29.6	15.2	34.6	17.6	39.6	19.9
4.7	3.7	9.7	6.0	14.7	8.3	19.7	10.7	24.7	13.0	29.7	15.3	34.7	17.6	39.7	19.9
4.8	3.8	9.8	6.1	14.8	8.4	19.8	10.7	24.8	13.0	29.8	15.3	34.8	17.7	39.8	20.0
4.9	3.8	9.9	6.1	14.9	8.4	19.9	10.8	24.9	13.1	29.9	15.4	34.9	17.7	39.9	20.0

TABLE NO. XXVII.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, $\frac{100}{6}$ FEET LONG.

Road-bed 12 feet wide. Side slopes 1 to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0.0	5.0	52	10.0	136	15.0	250	20.0	395	25.0	571	30.0	778	35.0	1015
0.1	0.7	5.1	54	10.1	138	15.1	253	20.1	398	25.1	575	30.1	782	35.1	1021
0.2	1.5	5.2	55	10.2	140	15.2	255	20.2	402	25.2	579	30.2	787	35.2	1026
0.3	2.3	5.3	57	10.3	142	15.3	258	20.3	405	25.3	583	30.3	791	35.3	1031
0.4	3.1	5.4	58	10.4	144	15.4	260	20.4	408	25.4	586	30.4	796	35.4	1036
0.5	4.0	5.5	59	10.5	146	15.5	263	20.5	411	25.5	590	30.5	800	35.5	1041
0.6	4.7	5.6	61	10.6	148	15.6	266	20.6	415	25.6	594	30.6	805	35.6	1046
0.7	5.5	5.7	62	10.7	150	15.7	268	20.7	418	25.7	598	30.7	809	35.7	1051
0.8	6.3	5.8	64	10.8	152	15.8	271	20.8	421	25.8	602	30.8	814	35.8	1056
0.9	7.2	5.9	65	10.9	154	15.9	274	20.9	424	25.9	606	30.9	818	25.9	1061
1.0	8	6.0	67	11.0	156	16.0	277	21.0	428	26.0	610	31.0	823	36.0	1067
1.1	9	6.1	68	11.1	158	16.1	279	21.1	431	26.1	614	31.1	827	36.1	1072
1.2	10	6.2	70	11.2	160	16.2	282	21.2	434	26.2	618	31.2	832	36.2	1077
1.3	11	6.3	71	11.3	163	16.3	285	21.3	438	26.3	622	31.3	837	36.3	1082
1.4	12	6.4	73	11.4	165	16.4	288	21.4	441	26.4	626	31.4	841	36.4	1088
1.5	13	6.5	74	11.5	167	16.5	290	21.5	445	26.5	630	31.5	846	36.5	1093
1.6	13	6.6	76	11.6	169	16.6	293	21.6	448	26.6	634	31.6	850	36.6	1098
1.7	14	6.7	77	11.7	171	16.7	296	21.7	451	26.7	638	31.7	855	36.7	1103
1.8	15	6.8	79	11.8	173	16.8	299	21.8	455	26.8	642	31.8	860	36.8	1109
1.9	16	6.9	81	11.9	176	16.9	301	21.9	458	26.9	646	31.9	864	36.9	1114
2.0	17	7.0	82	12.0	178	17.0	304	22.0	462	27.0	650	32.0	869	37.0	1119
2.1	18	7.1	84	12.1	180	17.1	307	22.1	465	27.1	654	32.1	874	37.1	1124
2.2	19	7.2	85	12.2	182	17.2	310	22.2	469	27.2	658	32.2	879	37.2	1130
2.3	20	7.3	87	12.3	185	17.3	313	22.3	472	27.3	662	32.3	883	37.3	1135
2.4	21	7.4	89	12.4	187	17.4	316	22.4	476	27.4	666	32.4	888	37.4	1140
2.5	22	7.5	90	12.5	189	17.5	319	22.5	479	27.5	671	32.5	893	37.5	1146
2.6	25	7.6	92	12.6	191	17.6	322	22.6	483	27.6	675	32.6	898	37.6	1151
2.7	25	7.7	94	12.7	194	17.7	325	22.7	486	27.7	679	32.7	902	37.7	1157
2.8	26	7.8	95	12.8	196	17.8	327	22.8	490	27.8	683	32.8	907	37.8	1162
2.9	27	7.9	97	12.9	198	17.9	330	22.9	493	27.9	687	32.9	912	37.9	1167
3.0	28	8.0	99	13.0	201	18.0	333	23.0	497	28.0	691	33.0	917	38.0	1173
3.1	29	8.1	101	13.1	203	18.1	336	23.1	501	28.1	696	33.1	921	38.1	1178
3.2	30	8.2	102	13.2	205	18.2	339	23.2	504	28.2	700	33.2	926	38.2	1184
3.3	31	8.3	104	13.3	208	18.3	342	23.3	508	28.3	704	33.3	931	38.3	1189
3.4	32	8.4	106	13.4	210	18.4	345	23.4	511	28.4	708	33.4	936	38.4	1195
3.5	33	8.5	108	13.5	213	18.5	348	23.5	515	28.5	713	33.5	941	38.5	1200
3.6	35	8.6	109	13.6	215	18.6	351	23.6	519	28.6	717	33.6	946	38.6	1206
3.7	36	8.7	111	13.7	217	18.7	354	23.7	522	28.7	721	33.7	951	38.7	1211
3.8	37	8.8	113	13.8	220	18.8	357	23.8	526	28.8	725	33.8	956	38.8	1217
3.9	38	8.9	115	13.9	222	18.9	361	23.9	530	28.9	730	33.9	961	38.9	1222
4.0	40	9.0	117	14.0	225	19.0	364	24.0	533	29.0	734	34.0	965	39.0	1228
4.1	41	9.1	119	14.1	227	19.1	367	24.1	537	29.1	738	34.1	970	39.1	1233
4.2	42	9.2	120	14.2	230	19.2	370	24.2	541	29.2	743	34.2	975	39.2	1239
4.3	43	9.3	122	14.3	232	19.3	373	24.3	545	29.3	747	34.3	980	39.3	1245
4.4	45	9.4	124	14.4	235	19.4	376	24.4	548	29.4	751	34.4	985	39.4	1250
4.5	46	9.5	126	14.5	237	19.5	379	24.5	552	29.5	756	34.5	990	39.5	1256
4.6	47	9.6	128	14.6	240	19.6	382	24.6	556	29.6	760	34.6	995	39.6	1261
4.7	48	9.7	130	14.7	242	19.7	385	24.7	560	29.7	765	34.7	1000	39.7	1267
4.8	50	9.8	132	14.8	245	19.8	389	24.8	563	29.8	769	34.8	1005	39.8	1273
4.9	51	9.9	134	14.9	247	19.9	392	24.9	567	29.9	773	34.9	1010	39.9	1278

TABLE NO. XXVIII.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS, $\frac{100}{6}$ FEET LONG.

Road-bed 12 feet wide. Side slopes 1 to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	1.9	5.0	3.4	10.0	4.9	15.0	6.5	20.0	8.0	25.0	9.6	30.0	11.1	35.0	12.7
0.1	1.9	5.1	3.4	10.1	5.0	15.1	6.5	20.1	8.1	25.1	9.6	30.1	11.1	35.1	12.7
0.2	1.9	5.2	3.5	10.2	5.0	15.2	6.5	20.2	8.1	25.2	9.6	30.2	11.2	35.2	12.7
0.3	1.9	5.3	3.5	10.3	5.0	15.3	6.6	20.3	8.1	25.3	9.7	30.3	11.2	35.3	12.7
0.4	2.0	5.4	3.5	10.4	5.1	15.4	6.6	20.4	8.1	25.4	9.7	30.4	11.2	35.4	12.8
0.5	2.0	5.5	3.5	10.5	5.1	15.5	6.6	20.5	8.2	25.5	9.7	30.5	11.3	35.5	12.8
0.6	2.0	5.6	3.6	10.6	5.1	15.6	6.7	20.6	8.2	25.6	9.8	30.6	11.3	35.6	12.8
0.7	2.1	5.7	3.6	10.7	5.2	15.7	6.7	20.7	8.2	25.7	9.8	30.7	11.3	35.7	12.9
0.8	2.1	5.8	3.6	10.8	5.2	15.8	6.7	20.8	8.3	25.8	9.8	30.8	11.4	35.8	12.9
0.9	2.1	5.9	3.7	10.9	5.2	15.9	6.8	20.9	8.3	25.9	9.8	30.9	11.4	35.9	12.9
1.0	2.2	6.0	3.7	11.0	5.2	16.0	6.8	21.0	8.3	26.0	9.9	31.0	11.4	36.0	13.0
1.1	2.2	6.1	3.7	11.1	5.3	16.1	6.8	21.1	8.4	26.1	9.9	31.1	11.5	36.1	13.0
1.2	2.2	6.2	3.8	11.2	5.3	16.2	6.9	21.2	8.4	26.2	9.9	31.2	11.5	36.2	13.0
1.3	2.3	6.3	3.8	11.3	5.3	16.3	6.9	21.3	8.4	26.3	10.0	31.3	11.5	36.3	13.1
1.4	2.3	6.4	3.8	11.4	5.4	16.4	6.9	21.4	8.5	26.4	10.0	31.4	11.5	36.4	13.1
1.5	2.3	6.5	3.9	11.5	5.4	16.5	6.9	21.5	8.5	26.5	10.0	31.5	11.6	36.5	13.1
1.6	2.3	6.6	3.9	11.6	5.4	16.6	7.0	21.6	8.5	26.6	10.1	31.6	11.6	36.6	13.1
1.7	2.4	6.7	3.9	11.7	5.5	16.7	7.0	21.7	8.5	26.7	10.1	31.7	11.6	36.7	13.2
1.8	2.4	6.8	4.0	11.8	5.5	16.8	7.0	21.8	8.6	26.8	10.1	31.8	11.7	36.8	13.2
1.9	2.4	6.9	4.0	11.9	5.5	16.9	7.1	21.9	8.6	26.9	10.2	31.9	11.7	36.9	13.2
2.0	2.5	7.0	4.0	12.0	5.6	17.0	7.1	22.0	8.6	27.0	10.2	32.0	11.7	37.0	13.3
2.1	2.5	7.1	4.0	12.1	5.6	17.1	7.1	22.1	8.7	27.1	10.2	32.1	11.8	37.1	13.3
2.2	2.5	7.2	4.1	12.2	5.6	17.2	7.2	22.2	8.7	27.2	10.2	32.2	11.8	37.2	13.3
2.3	2.6	7.3	4.1	12.3	5.6	17.3	7.2	22.3	8.7	27.3	10.3	32.3	11.8	37.3	13.4
2.4	2.6	7.4	4.1	12.4	5.7	17.4	7.2	22.4	8.8	27.4	10.3	32.4	11.9	37.4	13.4
2.5	2.6	7.5	4.2	12.5	5.7	17.5	7.3	22.5	8.8	27.5	10.3	32.5	11.9	37.5	13.4
2.6	2.7	7.6	4.2	12.6	5.7	17.6	7.3	22.6	8.8	27.6	10.4	32.6	11.9	37.6	13.5
2.7	2.7	7.7	4.2	12.7	5.8	17.7	7.3	22.7	8.9	27.7	10.4	32.7	11.9	37.7	13.5
2.8	2.7	7.8	4.3	12.8	5.8	17.8	7.3	22.8	8.9	27.8	10.4	32.8	12.0	37.8	13.5
2.9	2.7	7.9	4.3	12.9	5.8	17.9	7.4	22.9	8.9	27.9	10.5	32.9	12.0	37.9	13.5
3.0	2.8	8.0	4.3	13.0	5.9	18.0	7.4	23.0	9.0	28.0	10.5	33.0	12.0	38.0	13.6
3.1	2.8	8.1	4.4	13.1	5.9	18.1	7.4	23.1	9.0	28.1	10.5	33.1	12.1	38.1	13.6
3.2	2.8	8.2	4.4	13.2	5.9	18.2	7.5	23.2	9.0	28.2	10.6	33.2	12.1	38.2	13.6
3.3	2.9	8.3	4.4	13.3	6.0	18.3	7.5	23.3	9.0	28.3	10.6	33.3	12.1	38.3	13.7
3.4	2.9	8.4	4.4	13.4	6.0	18.4	7.5	23.4	9.1	28.4	10.6	33.4	12.2	38.4	13.7
3.5	2.9	8.5	4.5	13.5	6.0	18.5	7.6	23.5	9.1	28.5	10.6	33.5	12.2	38.5	13.7
3.6	3.0	8.6	4.5	13.6	6.0	18.6	7.6	23.6	9.1	28.6	10.7	33.6	12.2	38.6	13.8
3.7	3.0	8.7	4.5	13.7	6.1	18.7	7.6	23.7	9.2	28.7	10.7	33.7	12.3	38.7	13.8
3.8	3.0	8.8	4.6	13.8	6.1	18.8	7.7	23.8	9.2	28.8	10.7	33.8	12.3	38.8	13.8
3.9	3.1	8.9	4.6	13.9	6.1	18.9	7.7	23.9	9.2	28.9	10.8	33.9	12.3	38.9	13.9
4.0	3.1	9.0	4.6	14.0	6.2	19.0	7.7	24.0	9.3	29.0	10.8	34.0	12.3	39.0	13.9
4.1	3.1	9.1	4.7	14.1	6.2	19.1	7.7	24.1	9.3	29.1	10.8	34.1	12.4	39.1	13.9
4.2	3.1	9.2	4.7	14.2	6.2	19.2	7.8	24.2	9.3	29.2	10.9	34.2	12 4	39.2	14.0
4.3	3.2	9.3	4.7	14.3	6.3	19.3	7.8	24.3	9.4	29.3	10.9	34.3	12.4	39.3	14.0
4.4	3.2	9.4	4.8	14.4	6.3	19.4	7.8	24.4	9.4	29.4	10.9	34.4	12.5	39.4	14.0
4.5	3.2	9.5	4.8	14.5	6.3	19.5	7.9	24.5	9.4	29.5	11.0	34.5	12.5	39.5	14.0
4.6	3.3	9.6	4.8	14.6	6.4	19.6	7.9	24.6	9.4	29.6	11.0	34.6	12.5	39.6	14.1
4.7	3.3	9.7	4.8	14.7	6.4	19.7	7.9	24.7	9.5	29.7	11.0	34.7	12.6	39.7	14.1
4.8	3.3	9.8	4.9	14.8	6.4	19.8	8.0	24.8	9.5	29.8	11.0	34.8	12.6	39.8	14.1
4.9	3.4	9.9	4.9	14.9	6.5	19.9	8.0	24.9	9.5	29.9	11.1	34.9	12.6	39.9	14.2

TABLE NO. XXIX.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS $\frac{100}{3}$ FEET LONG.

Road-bed 14 feet wide. Side slopes $1\frac{1}{2}$ to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0.0	5.0	66.4	10.0	179.0	15.0	338.0	20.0	543.2	25.0	794.8	30.0	1092.6	35.0	1436.7
0.1	0.9	5.1	68.2	10.1	181.7	15.1	341.6	20.1	547.8	25.1	800.3	30.1	1099 0	35.1	1444.1
0.2	1.8	5.2	70.0	10.2	184.5	15.2	345.3	20.2	552.4	25.2	805.8	30.2	1105.5	35.2	1451.5
0.3	2.7	5.3	71.8	10.3	187.2	15.3	349.0	20.3	557.0	25.3	811.3	30.3	1111.9	35.3	1458.8
0.4	3.6	5.4	73.7	10.4	190.0	15.4	352.7	20.4	561.6	25.4	816.9	30.4	1118.4	35.4	1466.3
0.5	4.6	5.5	75.5	10.5	192.8	15.5	356.4	20.5	566.3	25.5	822.5	30.5	1124.9	35.5	1473.7
0.6	5.5	5.6	77.4	10.6	195.6	15.6	360.1	20.6	571.0	25.6	828.0	30.6	1131.4	35.6	1481.1
0.7	6.5	5.7	79.3	10.7	198.5	15.7	363.9	20.7	575.6	25.7	833.7	30.7	1138 0	35.7	1488.6
0.8	7.5	5.8	81.2	10.8	201.3	15.8	367.7	20.8	580.3	25.8	839.3	30.8	1144.5	35.8	1496.1
0.9	8.5	5.9	83.2	10.9	204.2	15 9	371.5	20.9	585.1	25.9	844.9	30.9	1151.1	35.9	1503.6
1.0	9.6	6.0	85.2	11.0	207.1	16.0	375.3	21.0	589.8	26.0	850.6	31.0	1157.7	36.0	1511.1
1.1	10.6	6.1	87.2	11.1	210.0	16.1	379.1	21.1	594.6	26.1	856.3	31.1	1164.3	36.1	1518.7
1.2	11.7	6.2	89.2	11.2	212.9	16.2	383.0	21.2	599.4	26.2	862.0	31.2	1171.0	36.2	1526.2
1.3	12.8	6.3	91.2	11.3	215.9	16.3	386.9	21.3	604.2	26.3	867.7	31.3	1177.6	36.3	1533.8
1.4	13.9	6.4	93.2	11.4	218.9	16.4	390.8	21.4	609.0	26.4	873.5	31.4	1184.3	36.4	1541.4
1.5	15.0	6.5	95.3	11.5	221.8	16.5	394.7	21.5	613.8	26.5	879.2	31.5	1191.0	36.5	1549.0
1.6	16.2	6.6	97.4	11 6	224.8	16.6	398.6	21.6	618.7	26.6	885.0	31.6	1197.7	36.6	1556.6
1.7	17.4	6.7	99.5	11.7	227.9	16.7	402.6	21.7	623.5	26.7	890.8	31.7	1204.4	36.7	1564.3
1.8	18.6	6.8	101.6	11.8	230.9	16.8	406.5	21.8	628.4	26.8	896.6	31.8	1211.1	36.8	1572.0
1.9	19.8	6.9	103.7	11.9	234.0	16.9	410.5	21.9	633.3	26.9	902.5	31.9	1217.9	36.9	1579.6
2.0	21.0	7.0	105.9	12.0	237.0	17.0	414.5	22.0	638.3	27.0	908.3	32.0	1224.7	37.0	1587.3
2.1	22.2	7.1	108.0	12.1	240.1	17.1	418.5	22.1	643.2	27.1	914.2	32.1	1231.5	37.1	1595.1
2.2	23.5	7.2	110.2	12.2	243.2	17.2	422.6	22.2	648.2	27.2	920.1	32.2	1238.3	37.2	1602.8
2.3	24.8	7.3	112.4	12.3	246.4	17.3	426.6	22.3	653.2	27.3	926.0	32.3	1245.1	37.3	1610.6
2.4	26.1	7.4	114.7	12.4	249.5	17.4	430.7	22.4	658.2	27.4	931.9	32.4	1252.0	37.4	1618.4
2.5	27.4	7.5	116.9	12.5	252.7	17.5	434.8	22.5	663.2	27.5	937.9	32.5	1258.9	37.5	1626.2
2.6	28.7	7.6	119.2	12.6	255.9	17.6	438.9	22.6	668.2	27.6	943.9	32.6	1265.8	37.6	1634.0
2.7	30.1	7.7	121.4	12.7	259.1	17.7	443.0	22.7	673.3	27.7	949.8	32.7	1272.7	37.7	1641.8
2.8	31.5	7.8	123.7	12.8	262.3	17.8	447.2	22.8	678.4	27.8	955.8	32.8	1279.6	37.8	1649.7
2.9	32.8	7.9	126.1	12.9	265.6	17.9	451.4	22.9	683.5	27.9	961.9	32.9	1286.6	37.9	1657.5
3.0	34.3	8.0	128.4	13.0	268.8	18.0	455.6	23.0	688.6	28.0	967.9	33.0	1293.5	38.0	1665.4
3.1	35.7	8.1	130.8	13.1	272.1	18.1	459.8	23.1	693.7	28.1	974.0	33.1	1300.5	38.1	1673.3
3.2	37.1	8.2	133.1	13.2	275.4	18.2	464.0	23.2	698.9	28.2	980.0	33.2	1307.5	38.2	1681.3
3.3	38.6	8.3	135.5	13.3	278.7	18.3	468.2	23.3	704.0	28.3	986.1	33.3	1314.5	38.3	1689.2
3.4	40.1	8.4	137.9	13.4	282.1	18.4	472.5	23.4	709.2	28.4	992.2	33.4	1321.6	38.4	1697.2
3.5	41.6	8.5	140.4	13.5	285.4	18.5	476.8	23.5	714.4	28.5	998.4	33.5	1328.6	38.5	1705.2
3.6	43.1	8.6	142.8	13.6	288.8	18.6	481.1	23.6	719.7	28.6	1004.5	33.6	1335.7	38.6	1713.2
3.7	44.7	8.7	145.3	13.7	292.2	18.7	485.4	23.7	724.9	28.7	1010.7	33.7	1342.8	38.7	1721.2
3.8	46.2	8.8	147.8	13.8	295.6	18.8	489.7	23.8	730.2	28.8	1016.9	33.8	1349.9	38.8	1729.2
3.9	47.8	8.9	150.3	13.9	299.0	18.9	494.1	23.9	735.4	28.9	1023.1	33.9	1357.0	38.9	1737.3
4.0	49.4	9.0	152.8	14.0	302.5	19.0	498.5	24.0	740.7	29.0	1029.3	34.0	1364.2	39.0	1745.4
4.1	51.0	9.1	155.3	14.1	305.9	19.1	502.8	24.1	746.1	29.1	1035.6	34.1	1371.4	39.1	1753.5
4.2	52.6	9.2	157.9	14.2	309.4	19.2	507.3	24.2	751.4	29.2	1041.8	34.2	1378.6	39.2	1761.6
4.3	54.3	9.3	160.5	14.3	312.9	19.3	511.7	24 3	756.8	29.3	1048.1	34.3	1385.8	39.3	1769.7
4.4	56.0	9 4	163.0	14.4	316.4	19.4	516.1	24.4	762.1	29.4	1054.4	34.4	1393.0	39.4	1777.9
4.5	57.6	9.5	165.7	14.5	320.0	19.5	520.6	24.5	767.5	29.5	1060.7	34.5	1400.2	39.5	1786.6
4.6	59.3	9.6	168.3	14.6	323.5	19.6	525.1	24.6	772.9	29.6	1067.1	34.6	1407.5	39.6	1794.2
4.7	61.1	9.7	170 9	14.7	327.1	19.7	529.6	24.7	778.4	29.7	1073.4	34.7	1414.8	39.7	1802.4
4.8	62.8	9.8	173.6	14.8	330.7	19.8	534.1	24.8	783.8	29.8	1079.8	34.8	1422.1	39.8	1810.7
4.9	64.6	9.9	176.3	14.9	334.3	19.9	538.7	24.9	789.3	29.9	1086.2	34.9	1429.4	39.9	1818.9

TABLE NO. XXX.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS $\frac{100}{6}$ FEET LONG.

Road-bed 14 feet wide. Side slopes 1½ to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	2.16	5.0	4.48	10.0	6.79	15.0	9.10	20.0	11.42	25.0	13.73	30.0	16.05	35.0	18.36
0.1	2.21	5.1	4.52	10.1	6.84	15.1	9.15	20.1	11.47	25.1	13.78	30.1	16.10	35.1	18.41
0.2	2.25	5.2	4.57	10.2	6.88	15.2	9.20	20.2	11.51	25.2	13.83	30.2	16.14	35.2	18.46
0.3	2.30	5.3	4.61	10.3	6.93	15.3	9.24	20.3	11.56	25.3	13.87	30.3	16.19	35.3	18.50
0.4	2.35	5.4	4.66	10.4	6.98	15.4	9.29	20.4	11.60	25.4	13.92	30.4	16.23	35.4	18.55
0.5	2.39	5.5	4.71	10.5	7.02	15.5	9.34	20.5	11.65	25.5	13.97	30.5	16.28	35.5	18.60
0.6	2.44	5.6	4.75	10.6	7.07	15.6	9.38	20.6	11.70	25.6	14.01	30.6	16.33	35.6	18.64
0.7	2.48	5.7	4.80	10.7	7.11	15.7	9.43	20.7	11.74	25.7	14.06	30.7	16.37	35.7	18.69
0.8	2.53	5.8	4.85	10.8	7.16	15.8	9.48	20.8	11.79	25.8	14.10	30.8	16.42	35.8	18.73
0.9	2.58	5.9	4.89	10.9	7.21	15.9	9.52	20.9	11.84	25.9	14.15	30.9	16.47	35.9	18.78
1.0	2.62	6.0	4.94	11.0	7.25	16.0	9.57	21.0	11.88	26.0	14.20	31.0	16.51	36.0	18.83
1.1	2.67	6.1	4.98	11.1	7.30	16.1	9.61	21.1	11.93	26.1	14.24	31.1	16.56	36.1	18.87
1.2	2.72	6.2	5.03	11.2	7.35	16.2	9.66	21.2	11.98	26.2	14.29	31.2	16.60	36.2	18.92
1.3	2.76	6.3	5.08	11.3	7.39	16.3	9.71	21.3	12.02	26.3	14.34	31.3	16.65	36.3	18.97
1.4	2.81	6 4	5.12	11.4	7.44	16.4	9.75	21.4	12.07	26.4	14.38	31.4	16.70	36.4	19.01
1.5	2.85	6.5	5.17	11.5	7.48	16.5	9.80	21.5	12.11	26.5	14.43	31.5	16.74	36.5	19.06
1.6	2.90	6.6	5.22	11.6	7.53	16.6	9.85	21.6	12.16	26.6	14.48	31.6	16.79	36.6	19.10
1.7	2.95	6.7	5.26	11.7	7.58	16.7	9.89	21.7	12.21	26.7	14.52	31.7	16.84	36.7	19.15
1.8	2.99	6.8	5.31	11.8	7.62	16.8	9.94	21.8	12.25	26.8	14.57	31.8	16.88	36.8	19.20
1.9	3.04	6.9	5.35	11.9	7.67	16.9	9.98	21.9	12.30	26.9	14.61	31.9	16.93	36.9	19.24
2.0	3.09	7.0	5.40	12.0	7.72	17.0	10.03	22.0	12.35	27.0	14.66	32.0	16.98	37.0	19.29
2.1	3.13	7.1	5.45	12.1	7.76	17.1	10.08	22.1	12.39	27.1	14.71	32.1	17.02	37.1	19.34
2.2	3.18	7.2	5.49	12.2	7.81	17.2	10.12	22.2	12.44	27.2	14.75	32.2	17.07	37.2	19.38
2.3	3.23	7.3	5.54	12.3	7.85	17.3	10.17	22.3	12.48	27.3	14.80	32.3	17.11	37.3	19.43
2.4	3.27	7.4	5.59	12.4	7.90	17.4	10.22	22.4	12.53	27.4	14.85	32.4	17.16	37.4	19.48
2.5	3.32	7.5	5.63	12.5	7.95	17.5	10.26	22.5	12.58	27.5	14.89	32.5	17.21	37.5	19.52
2.6	3.36	7.6	5.68	12.6	7.99	17.6	10.31	22.6	12.62	27.6	14.94	32.6	17.25	37.6	19.57
2.7	3.41	7.7	5.73	12.7	8.04	17.7	10.35	22.7	12.67	27.7	14.98	32.7	17.30	37.7	19.61
2 8	3.46	7.8	5.77	12.8	8.09	17.8	10.40	22.8	12.72	27.8	15.03	32.8	17.35	37.8	19.66
2.9	3.50	7.9	5.82	12.9	8.13	17.9	10.45	22.9	12.76	27.9	15.08	32.9	17.39	37.9	19.71
3.0	3.55	8.0	5.86	13.0	8.18	18.0	10.49	23.0	12.81	28.0	15.12	33.0	17.44	38.0	19.75
3.1	3.60	8.1	5.91	13.1	8.23	18.1	10.54	23.1	12.85	28.1	15.17	33.1	17.48	38.1	19.80
3.2	3.64	8.2	5.96	13.2	8.27	18.2	10.59	23.2	12.90	28.2	15.22	33.2	17.53	38.2	19.85
3.3	3.69	8.3	6.00	13.3	8.32	18.3	10.63	23.3	12.95	28.3	15.26	33 3	17.58	38.3	19.89
3.4	3.73	8.4	6.05	13.4	8.36	18.4	10.68	23.4	12.99	28.4	15.31	33.4	17.62	38.4	19.94
3.5	3.78	8.5	6.10	13.5	8.41	18.5	10.73	23.5	13.04	28.5	15.35	33.5	17.67	38.5	19.98
3.6	3.83	8.6	6.14	13.6	8.46	18.6	10.77	23.6	13.09	28.6	15.40	33.6	17.72	38.6	20.03
3.7	3.87	8.7	6.19	13.7	8.50	18.7	10.82	23.7	13.13	28.7	15.45	33.7	17.76	38.7	20.08
3.8	3.92	8.8	6.23	13.8	8.55	18.8	10.86	23.8	13.18	28.8	15.49	33.8	17.81	38.8	20.12
3.9	3.97	8.9	6.28	13.9	8.60	18.9	10.91	23.9	13.23	28.9	15.54	33.9	17.85	38.9	20.17
4.0	4.01	9.0	6.33	14.0	8.64	19.0	10.96	24.0	13.27	29.0	15.59	34.0	17.90	39.0	20.22
4.1	4.06	9.1	6.37	14.1	8.69	19.1	11.00	24.1	13.32	29.1	15.63	34.1	17.95	39.1	20.26
4.2	4.10	9.2	6.42	14.2	8.73	19.2	11.05	24.2	13.36	29.2	15.68	34.2	17.99	39.2	20.31
4.3	4.15	9.3	6.47	14.3	8.78	19.3	11.10	24.3	13.41	29.3	15.73	34.3	18.04	39.3	20.35
4.4	4.20	9.4	6.51	14.4	8.83	19.4	11.14	24.4	13.46	29.4	15.77	34.4	18.09	39.4	20.40
4.5	4.24	9.5	6.56	14.5	8.87	19.5	11.19	24.5	13.50	29.5	15.82	34.5	18.13	39.5	20.45
4.6	4.29	9.6	6.60	14.6	8.92	19.6	11.23	24.6	13.55	29.6	15.86	34.6	18.18	39.6	20.49
4.7	4.34	9.7	6.65	14.7	8.97	19.7	11.28	24.7	13.60	29.7	15.91	34.7	18.23	39.7	20.54
4.8	4.38	9.8	6.70	14.8	9.01	19.8	11.33	24.8	13.64	29.8	15.96	34.8	18.27	39.8	20.59
4.9	4.43	9.9	6.74	14 9	9.06	19.9	11.37	24.9	13.69	29.9	16.00	34.9	18.32	39.9	20.63

TABLE NO. XXXI.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, $\frac{100}{6}$ FEET LONG.

Road-bed 16 feet wide. Side slopes 1 to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards
0.0	0.0	5.0	64.8	10.0	160.5	15.0	287.0	20.0	444.4	25.0	632.7	30.0	851.9	35.0	1101.9
0.1	1.0	5.1	66.4	10.1	162.7	15.1	289.9	20.1	447.9	25.1	636.8	30.1	856.5	35.1	1107.2
0.2	2.0	5.2	68.0	10.2	165.0	15.2	292.7	20.2	451.4	25.2	640.9	30.2	861.3	35.2	1112.5
0.3	3.0	5.3	69.7	10.3	167.2	15.3	295.6	20.3	454.9	25.3	645.0	30.3	866.0	35.3	1117.8
0.4	4.0	5.4	71.3	10.4	169.5	15.4	298.5	20.4	458.4	25.4	649.1	30.4	870.7	35.4	1123.2
0.5	5.1	5.5	73.0	10.5	171.8	15.5	301.4	20.5	461.9	25.5	653.2	30.5	875.5	35.5	1128.5
0.6	6.1	5.6	74.7	10.6	174.0	15.6	304.3	20.6	465.4	25.6	657.4	30.6	880.2	35.6	1133.9
0.7	7.2	5.7	76.4	10.7	176.4	15.7	307.2	20.7	468.9	25.7	661.5	30.7	885.0	35.7	1139.3
0.8	8.3	5.8	78.0	10.8	178.7	15.8	310.1	20.8	472.5	25.8	665.7	30.8	889.8	35.8	1144.7
0.9	9.4	5.9	79.8	10.9	181.0	15.9	313.1	20.9	476.1	25.9	669.9	30.9	894.6	35.9	1150.1
1.0	10.5	6.0	81.5	11.0	183.3	16.0	316.0	21.0	479.6	26.0	674.1	31.0	899 4	36.0	1155.6
1.1	11.6	6.1	83.2	11.1	185.7	16.1	319.0	21.1	483.2	26.1	678.3	31.1	904.2	36.1	1161.0
1.2	12.7	6.2	85.0	11.2	188.0	16.2	322.0	21.2	486.8	26.2	682.5	31.2	909.0	36.2	1166.4
1.3	13.9	6.3	86.7	11.3	190.4	16.3	325.0	21.3	490.4	26.3	686.7	31.3	913.9	36.3	1171.9
1.4	15.0	6.4	88.5	11.4	192.8	16.4	328.0	21.4	494.0	26.4	691.0	31.4	918.7	36.4	1177.4
1.5	16.2	6.5	90.3	11.5	195.2	16.5	331.0	21.5	497.7	26.5	695.2	31.5	923.6	36.5	1182.9
1.6	17.4	6.6	92.1	11.6	197.6	16.6	334.0	21.6	501.3	26.6	699.5	31.6	928.5	36.6	1188.4
1.7	18.6	6.7	93.9	11.7	200.1	16.7	337.1	21.7	505.0	26.7	703.8	31.7	933.4	36.7	1193.9
1.8	19.8	6.8	95.7	11.8	202.5	16.8	340.1	21.8	508.7	26.8	708.0	31.8	938 3	36.8	1199 4
1.9	21.0	6.9	97.5	11.9	205.0	16.9	343.2	21.9	512.4	26.9	712.4	31.9	943.2	36.9	1204.9
2.0	22.2	7.0	99.4	12.0	207.4	17.0	346.3	22.0	516.0	27.0	716.7	32.0	948.1	37.0	1210.5
2.1	23.5	7.1	101.2	12.1	209.9	17.1	349.4	22.1	519.8	27.1	721.0	32.1	953.1	37.1	1216.1
2.2	24.7	7.2	103.1	12.2	212.4	17.2	352.5	22.2	523.5	27.2	725.3	32.2	958.0	37.2	1221.6
2.3	26.0	7.3	105.0	12.3	214.9	17.3	355.6	22.3	527.2	27.3	729.7	32.3	963 0	37.3	1227.2
2.4	27.3	7.4	106.9	12.4	217.4	17.4	358.7	22.4	531.0	27.4	734.0	32.4	968.0	37.4	1232.8
2.5	28.5	7.5	108,8	12.5	219.9	17.5	361.9	22.5	534.7	27.5	738.4	32.5	973.0	37.5	1238.4
2.6	29.9	7.6	110.7	12.6	222.4	17.6	365.0	22.6	538.5	27.6	742.8	32.6	978.0	37.6	1244.0
2.7	31.2	7.7	112.6	12.7	225.0	17.7	368.2	22.7	542.3	27.7	747.2	32.7	983.0	37.7	1249.7
2.8	32.5	7.8	114.6	12.8	227.6	17.8	371.4	22.8	546.1	27.8	751.6	32.8	988.0	37.8	1255.3
2.9	33.8	7.9	116.5	12.9	230.1	17.9	374.6	22.9	549.9	27.9	756.1	32.9	993.1	37.9	1261.0
3.0	35.2	8.0	118.5	13.0	232.7	18.0	377.8	23.0	553.7	28.0	760.5	33.0	998.1	38.0	1266.7
3.1	36.5	8.1	120.5	13.1	235.3	18.1	381.0	23.1	557.5	28.1	764.9	33.1	1003.2	38.1	1272.4
3.2	37.9	8.2	122.5	13.2	237.9	18.2	384.2	23.2	561.4	28.2	769.4	33.2	1008.3	38.2	1278.0
3.3	39.3	8.3	124.5	13.3	240.5	18.3	387.5	23.3	565.2	28.3	773.9	33.3	1013 4	38.3	1283.8
3.4	40.7	8.4	126.5	13.4	243.2	18.4	390.7	23.4	569.1	28.4	778.4	33.4	1018.5	38.4	1289.5
3.5	42.1	8.5	128.5	13.5	245.8	18.5	394.0	23.5	573.0	28.5	782.9	33.5	1023.6	38.5	1295.2
3.6	43.6	8.6	130.6	13.6	248.5	18.6	397.3	23.6	576.9	28.6	787.4	33.6	1028.7	38.6	1301.0
3.7	45.0	8.7	132.6	13.7	251.2	18.7	400.5	23.7	580.8	28.7	791.9	33.7	1033.9	38.7	1306.7
3.8	46.5	8.8	134.7	13.8	253.9	18.8	403.9	23.8	584.7	28.8	796.4	33.8	1039.0	38.8	1312.5
3.9	47.9	8.9	136.8	13.9	256.5	18.9	407.2	23.9	588.6	28.9	801.0	33.9	1044.2	38.9	1318.3
4.0	49.4	9.0	138.9	14.0	259.3	19.0	410.5	24.0	592.6	29.0	805.6	34.0	1049.4	39.0	1324.1
4.1	50.9	9.1	141.0	14.1	262.0	19.1	413.8	24.1	596.5	29.1	810.1	34.1	1054.6	39.1	1329.9
4.2	52.4	9.2	143.1	14.2	264.7	19.2	417.2	24.2	600.5	29.2	814.7	34.2	1059.8	39.2	1335.7
4.3	53.9	9.3	145.2	14.3	267.5	19.3	420.5	24.3	604.5	29.3	819.3	34.3	1065.0	39.3	1341.5
4.4	55.4	9 4	147.4	14.4	270.2	19.4	423.9	24.4	608.5	29.4	823.9	34.4	1070.2	39.4	1347.4
4.5	56 9	9.5	149.5	14.5	273.0	19.5	427.3	24.5	612.5	29.5	828.5	34.5	1075.5	39.5	1353.2
4.6	58.5	9.6	151.7	14.6	275.8	19.6	430.7	24.6	616.5	29.6	833.2	34.6	1080.7	39.6	1359.1
4.7	60.1	9.7	153.9	14.7	278.6	19.7	434.1	24.7	620.5	29.7	837.8	34.7	1086.9	39.7	1365.0
4.8	61.6	9.8	156.1	14.8	281.4	19.8	437 6	24.8	624.6	29.8	842.5	34.8	1091.3	39.8	1370.9
4.9	63.2	9.9	158.3	14.9	284.2	19.9	441.0	24.9	628.6	29.9	847.2	34.9	1096.5	39.9	1376.8

TABLE NO. XXXII.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS $\frac{100}{6}$ FEET LONG.

Road-bed 16 feet wide. Side slopes 1 to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	2.47	5.0	4.01	10.0	5.56	15.0	7.10	20.0	8.64	25.0	10.19	30.0	11.73	35.0	13.27
0.1	2.50	5.1	4.04	10.1	5.59	15.1	7.13	20.1	8.67	25.1	10.22	30.1	11.76	35.1	13.30
0.2	2.53	5.2	4.07	10.2	5.62	15.2	7.16	20.2	8.70	25.2	10.25	30.2	11.79	35.2	13.33
0.3	2.56	5.3	4.10	10.3	5.65	15.3	7.19	20.3	8.73	25.3	10.28	30.3	11.82	35.3	13.36
0.4	2.59	5.4	4.14	10.4	5.68	15.4	7.22	20.4	8.77	25.4	10.31	30.4	11.85	35.4	13.40
0.5	2.62	5.5	4.17	10.5	5.71	15.5	7.25	20.5	8.80	25.5	10.34	30.5	11.88	35.5	13.43
0.6	2.65	5.6	4.20	10.6	5.74	15.6	7.28	20.6	8.83	25.6	10.37	30.6	11.91	35.6	13.46
0.7	2.69	5.7	4.23	10.7	5.77	15.7	7.31	20.7	8.86	25.7	10.40	30.7	11.94	35.7	13.49
0 8	2.72	5.8	4.26	10.8	5.80	15.8	7.35	20.8	8.89	25.8	10.43	30.8	11.98	35.8	13.52
0.9	2.75	5 9	4.29	10.9	5.83	15.9	7.38	20.9	8.92	25.9	10.46	30.9	12.01	35.9	13.55
1.0	2.78	6.0	4.32	11.0	5.86	16.0	7.41	21.0	8.95	26.0	10.49	31.0	12.04	36.0	13.58
1.1	2.81	6.1	4.35	11.1	5.90	16.1	7.44	21.1	8.98	26.1	10.52	31.1	12.07	36.1	13.61
1.2	2.84	6.2	4.38	11.2	5.93	16.2	7.47	21.2	9.01	26.2	10.56	31.2	12.10	36.2	13.64
1.3	2.87	6.3	4.41	11.3	5.96	16.3	7.50	21.3	9.04	26.3	10.59	31.3	12.13	36.3	13.67
1.4	2.90	6.4	4.44	11.4	5.99	16.4	7.53	21.4	9.07	26.4	10.62	31.4	12.16	36.4	13.70
1.5	2.93	6.5	4.48	11.5	6.02	16.5	7.56	21.5	9.10	26.5	10.65	31.5	12.19	36.5	13.73
1.6	2.96	6.6	4.51	11.6	6.05	16.6	7.59	21.6	9.14	26.6	10.68	31.6	12.22	36.6	13.77
1.7	2.99	6.7	4.54	11.7	6.08	16.7	7.62	21.7	9.17	26.7	10.71	31.7	12.25	36.7	13.80
1.8	3.02	6.8	4.57	11.8	6.11	16.8	7.65	21.8	9.20	26.8	10.74	31.8	12.28	36.8	13.83
1.9	3.06	6.9	4.60	11.9	6.14	16.9	7.69	21.9	9.23	26.9	10.77	31.9	12.31	36.9	13.86
2.0	3.09	7.0	4.63	12.0	6.17	17.0	7.72	22.0	9.26	27.0	10.80	32.0	12.35	37.0	13.89
2.1	3.12	7.1	4.66	12.1	6.20	17.1	7.75	22.1	9.29	27.1	10.83	32.1	12.38	37.1	13.92
2.2	3.15	7.2	4.69	12.2	6.23	17.2	7.78	22.2	9.32	27.2	10.86	32.2	12.41	37.2	13.95
2.3	3.18	7.3	4.72	12.3	6.27	17.3	7.81	22.3	9.35	27.3	10.90	32.3	12.44	37.3	13.98
2.4	3.21	7.4	4.75	12.4	6.30	17.4	7.84	22.4	9.38	27.4	10.93	32.4	12.47	37.4	14.01
2.5	3.24	7.5	4.78	12.5	6.33	17.5	7.87	22.5	9.41	27.5	10.96	32.5	12.50	37.5	14.04
2.6	3.27	7.6	4.81	12.6	6.36	17.6	7.90	22.6	9.44	27.6	10.99	32.6	12.53	37.6	14.07
2.7	3.30	7.7	4.85	12.7	6.39	17.7	7.93	22.7	9.48	27.7	11.02	32.7	12.56	37.7	14.10
2.8	3.33	7.8	4.88	12.8	6.42	17.8	7.96	22.8	9.51	27.8	11.05	32.8	12.59	37.8	14.14
2.9	3.36	7.9	4.91	12.9	6.45	17.9	7.99	22.9	9.54	27.9	11.08	32.9	12.62	37.9	14.17
3.0	3.40	8.0	4.94	13.0	6.48	18.0	8.02	23.0	9.57	28.0	11.11	33.0	12.65	38.0	14.20
3.1	3.43	8.1	4.97	13.1	6.51	18.1	8.06	23.1	9.60	28.1	11.14	33.1	12.69	38.1	14.23
3.2	3.46	8.2	5.00	13.2	6.54	18.2	8.09	23.2	9.63	28.2	11.17	33.2	12.72	38.2	14.26
3.3	3.49	8.3	5.03	13.3	6.57	18.3	8.12	23.3	9.66	28.3	11.20	33.3	12.75	38.3	14.29
3.4	3.52	8.4	5.06	13.4	6.60	18.4	8.15	23.4	9.69	28.4	11.23	33.4	12.78	38.4	14.32
3.5	3.55	8.5	5.09	13.5	6.64	18.5	8.18	23.5	9.72	28.5	11.27	33.5	12.81	38.5	14.35
3.6	3.58	8.6	5.12	13.6	6.67	18.6	8.21	23.6	9.75	28.6	11.30	33.6	12.84	38.6	14.38
3.7	3.61	8.7	5.15	13.7	6.70	18.7	8.24	23.7	9.78	28.7	11.33	33.7	12.87	38.7	14.41
3.8	3.64	8.8	5.19	13.8	6.73	18.8	8.27	23.8	9.81	28.8	11.36	33.8	12.90	38.8	14.44
3.9	3.67	8.9	5.22	13.9	6.76	18.9	8.30	23.9	9.85	28.9	11.39	33.9	12.93	38.9	14.48
4.0	3.70	9.0	5.25	14.0	6.79	19.0	8.33	24.0	9.88	29.0	11.42	34.0	12.96	39.0	14.51
4.1	3.73	9.1	5.28	14.1	6.82	19.1	8.36	24.1	9.91	29.1	11.45	34.1	12.99	39.1	14.54
4.2	3.77	9.2	5.31	14.2	6.85	19.2	8.40	24.2	9.94	29.2	11.48	34.2	13.02	39.2	14.57
4.3	3.80	9.3	5.34	14.3	6.88	19.3	8.43	24.3	9.97	29.3	11.51	34.3	13.06	39.3	14.60
4.4	3.83	9.4	5.37	14.4	6.91	19.4	8.46	24.4	10.00	29.4	11.54	34.4	13.09	39.4	14.63
4.5	3.86	9.5	5.40	14.5	6.94	19.5	8.49	24.5	10.03	29.5	11.57	34.5	13.12	39.5	14.66
4.6	3.89	9.6	5.43	14.6	6.98	19.6	8.52	24.6	10.06	29.6	11.60	34.6	13.15	39.6	14.69
4.7	3.92	9.7	5.46	14.7	7.01	19.7	8.55	24.7	10.09	29.7	11.64	34.7	13.18	39.7	14.72
4.8	3.95	9.8	5.49	14.8	7.04	19.8	8.58	24.8	10.12	29.8	11.67	34.8	13.21	39.8	14.75
4.9	3.98	9.9	5.52	14.9	7.07	19.9	8.61	24.9	10.15	29.9	11.70	34.9	13.24	39.9	14.78

TABLE NO. XXXIII

CUBIC YARDS, IN $\frac{100}{8}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
1.62	1	82.62	51	163.62	101	244.62	151	325.62	201
3.24	2	84.24	52	165.24	102	246.24	152	327.24	202
4.86	3	85.86	53	166.86	103	247.86	153	328.86	203
6.48	4	87.48	54	168.48	104	249.48	154	330.48	204
8.10	5	89.10	55	170.10	105	251.10	155	332.10	205
9.72	6	90.72	56	171.72	106	252.72	156	333.72	206
11.34	7	92.34	57	173.34	107	254.34	157	335.34	207
12.96	8	93.96	58	174.96	108	255.96	158	336.96	208
14.58	9	95.58	59	176.58	109	257.58	159	338.58	209
16.20	10	97.20	60	178.20	110	259.20	160	340.20	210
17.82	11	98.82	61	179.82	111	260.82	161	341.82	211
19.44	12	100.44	62	181.44	112	262.44	162	343.44	212
21.06	13	102.06	63	183.06	113	264.06	163	345.06	213
22.68	14	103.68	64	184.68	114	265.68	164	346.68	214
24.30	15	105.30	65	186.30	115	267.30	165	348.30	215
25.92	16	106.92	66	187.92	116	268.92	166	349.92	216
27.54	17	108.54	67	189.54	117	270.54	167	351.54	217
29.16	18	110.16	68	191.16	118	272.16	168	353.16	218
30.78	19	111.78	69	192.78	119	273.78	169	354.78	219
32.40	20	113.40	70	194.40	120	275.40	170	356.40	220
34.02	21	115.02	71	196.02	121	277.02	171	358.02	221
35.64	22	116.64	72	197.64	122	278.64	172	359.64	222
37.26	23	118.26	73	199.26	123	280.26	173	361.26	223
38.88	24	119.88	74	200.88	124	281.88	174	362.88	224
40.50	25	121.50	75	202.50	125	283.50	175	364.50	225
42.12	26	123.12	76	204.12	126	285.12	176	366.12	226
43.74	27	124.74	77	205.74	127	286.74	177	367.74	227
45.36	28	126.36	78	207.36	128	288.36	178	369.36	228
46.98	29	127.98	79	208.98	129	289.98	179	370.98	229
48.60	30	129.60	80	210.60	130	291.60	180	372.60	230
50.22	31	131.22	81	212.22	131	293.22	181	374.22	231
51.84	32	132.84	82	213.84	132	294.84	182	375.84	232
53.46	33	134.46	83	215.46	133	296.46	183	377.46	233
55.08	34	136.08	84	217.08	134	298.08	184	379.08	234
56.70	35	137.70	85	218.70	135	299.70	185	380.70	235
58.32	36	139.32	86	220.32	136	301.32	186	382.32	236
59.94	37	140.94	87	221.94	137	302.94	187	383.94	237
61.56	38	142.56	88	223.56	138	304.56	188	385.56	238
63.18	39	144.18	89	225.18	139	306.18	189	387.18	239
64.80	40	145.80	90	226.80	140	307.80	190	388.80	240
66.42	41	147.42	91	228.42	141	309.42	191	390.42	241
68.04	42	149.04	92	230.04	142	311.04	192	392.04	242
69.66	43	150.66	93	231.66	143	312.66	193	393.66	243
71.28	44	152.28	94	233.28	144	314.28	194	395.28	244
72.90	45	153.90	95	234.90	145	315.90	195	396.90	245
74.52	46	155.52	96	236.52	146	317.52	196	398.52	246
76.14	47	157.14	97	238.14	147	319.14	197	400.14	247
77.76	48	158.76	98	239.76	148	320.76	198	401.76	248
79.38	49	160.38	99	241.38	149	322.38	199	403.38	249
81.00	50	162.00	100	243.00	150	324.00	200	405.00	250

TABLE NO. XXXIII.—*Continued.*

CUBIC YARDS, IN $\frac{100}{8}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
406.62	251	487.62	301	568.62	351	649.62	401	730.62	451
408.24	252	489.24	302	570.24	352	651.24	402	732.24	452
409.86	253	490.86	303	571.86	353	652.86	403	733.86	453
411.48	254	492.48	304	573.48	354	654.48	404	735.48	454
413.10	255	494.10	305	575.10	355	656.10	405	737.10	455
414.72	256	495.72	306	576.72	356	657.72	406	738.72	456
416.34	257	497.34	307	578.34	357	659.34	407	740.34	457
417.96	258	498.96	308	579.96	358	660.96	408	741.96	458
419.58	259	500.58	309	581.58	359	662.58	409	743.58	459
421.20	260	502.20	310	583.20	360	664.20	410	745.20	460
422.82	261	503.82	311	584.82	361	665.82	411	746.82	461
424.44	262	505.44	312	586.44	362	667.44	412	748.44	462
426.06	263	507.06	313	588.06	363	669 06	413	750.06	463
427 68	264	508.68	314	589.68	364	670.68	414	751.68	464
429.30	265	510.30	315	591.30	365	672.30	415	753.30	465
430.92	266	511.92	316	592.92	366	673.92	416	754.92	466
432.54	267	513.54	317	594.54	367	675.54	417	756.54	467
434.16	268	515.16	318	596.16	368	677.16	418	758.16	468
435.78	269	516.78	319	597.78	369	678.78	419	759.78	469
437.40	270	518.40	320	599.40	370	680.40	420	761.40	470
439.02	271	520.02	321	601.02	371	682.02	421	763.02	471
440.64	272	521.64	322	602.64	372	683.64	422	764.64	472
442.26	273	523.26	323	604.26	373	685.26	423	766.26	473
443.88	274	524.88	324	605.88	374	686.88	424	767.88	474
445.50	275	526.50	325	607.50	375	688.50	425	769.50	475
447.12	276	528.12	326	609.12	376	690.12	426	771.12	476
448.74	277	529.74	327	610.74	377	691.74	427	772.74	477
450.36	278	531.36	328	612 36	378	693.36	428	774.36	478
451.98	279	532.98	329	613.98	379	694.98	429	775.98	479
453.60	280	534.60	330	615.60	380	696.60	430	777.60	480
455.22	281	536.22	331	617.22	381	698.22	431	779.22	481
456.84	282	537.84	332	618 84	382	699.84	432	780.84	482
458.46	283	539.46	333	620.46	383	701.46	433	782.46	483
460.08	284	541.08	334	622.08	384	703.08	434	784.08	484
461.70	285	542.70	335	623.70	385	704.70	435	785.70	485
463.32	286	544.32	336	625.32	386	706.32	436	787.32	486
464.94	287	545.94	337	626.94	387	707.94	437	788.94	487
466.56	288	547.56	338	628.56	388	709.56	438	790.56	488
468.18	289	549.18	339	630.18	389	711.18	439	792.18	489
469.80	290	550.80	340	631.80	390	712.80	440	793.80	490
471.42	291	552.42	341	633.42	391	714.42	441	795.42	491
473.04	292	554.04	342	635.04	392	716.04	442	797.04	492
474.66	293	555.66	343	636.66	393	717.66	443	798.66	493
476.28	294	557.28	344	638.28	394	719.28	444	800.28	494
477.90	295	558.90	345	639.90	395	720.90	445	801.90	495
479.52	296	560.52	346	641.52	396	722.52	446	803.52	496
481.14	297	562.14	347	643.14	397	724.14	447	805.14	497
482.76	298	563.76	348	644.76	398	725.76	448	806.76	498
484.38	299	565.38	349	646.38	399	727.38	449	808.38	499
486.00	300	567.00	350	648.00	400	729.00	450	810.00	500

CUBIC YARDS, IN $\frac{100}{8}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
811.62	501	892.62	551	973.62	601	1054.62	651	1135.62	701
813.24	502	894.24	552	975.24	602	1056.24	652	1137.24	702
814.86	503	895.86	553	976.86	603	1057.86	653	1138.86	703
816.48	504	897.48	554	978.48	604	1059.48	654	1140.48	704
818.10	505	899.10	555	980.10	605	1061.10	655	1142.10	705
819.72	506	900.72	556	981.72	606	1062.72	656	1143.72	706
821.34	507	902.34	557	983.34	607	1064.34	657	1145.34	707
822.96	508	903.96	558	984.96	608	1065.96	658	1146.96	708
824.58	509	905.58	559	986.58	609	1067.58	659	1148.58	709
826.20	510	907.20	560	988.20	610	1069.20	660	1150.20	710
827.82	511	908.82	561	989.82	611	1070.82	661	1151.82	711
829.44	512	910.44	562	991.44	612	1072.44	662	1153.44	712
831.06	513	912.06	563	993.06	613	1074.06	663	1155.06	713
832.68	514	913.68	564	994.68	614	1075.68	664	1156.68	714
834.30	515	915.30	565	996.30	615	1077.30	665	1158.30	715
835.92	516	916.92	566	997.92	616	1078.92	666	1159.92	716
837.54	517	918.54	567	999.54	617	1080.54	667	1161.54	717
839.16	518	920.16	568	1001.16	618	1082.16	668	1163.16	718
840.78	519	921.78	569	1002.78	619	1083.78	669	1164.78	719
842.40	520	923.40	570	1004.40	620	1085.40	670	1166.40	720
844.02	521	925.02	571	1006.02	621	1087.02	671	1168.02	721
845.64	522	926.64	572	1007.64	622	1088.64	672	1169.64	722
847.26	523	928.26	573	1009.26	623	1090.26	673	1171.26	723
848.88	524	929.88	574	1010.88	624	1091.88	674	1172.88	724
850.50	525	931.50	575	1012.50	625	1093.50	675	1174.50	725
852.12	526	933.12	576	1014.12	626	1095.12	676	1176.12	726
853.74	527	934.74	577	1015.74	627	1096.74	677	1177.74	727
855.36	528	936.36	578	1017.36	628	1098.36	678	1179.36	728
856.98	529	937.98	579	1018.98	629	1099.98	679	1180.98	729
858.60	530	939.60	580	1020.60	630	1101.60	680	1182.60	730
860.22	531	941.22	581	1022.22	631	1103.22	681	1184.22	731
861.84	532	942.84	582	1023.84	632	1104.84	682	1185.84	732
863.46	533	944.46	583	1025.46	633	1106.46	683	1187.46	733
865.08	534	946.08	584	1027.08	634	1108.08	684	1189.08	734
866.70	535	947.70	585	1028.70	635	1109.70	685	1190.70	735
868.32	536	949.32	586	1030.32	636	1111.32	686	1192.32	736
869.94	537	950.94	587	1031.94	637	1112.94	687	1193.94	737
871.56	538	952.56	588	1033.56	638	1114.56	688	1195.56	738
873.18	539	954.18	589	1035.18	639	1116.18	689	1197.18	739
874.80	540	955.80	590	1036.80	640	1117.80	690	1198.80	740
876.42	541	957.42	591	1038.42	641	1119.42	691	1200.42	741
878.04	542	959.04	592	1040.04	642	1121.04	692	1202.04	742
879.66	543	960.66	593	1041.66	643	1122.66	693	1203.66	743
881.28	544	962.28	594	1043.28	644	1124.28	694	1205.28	744
882.90	545	963.90	595	1044.90	645	1125.90	695	1206.90	745
884.52	546	965.52	596	1046.52	646	1127.52	696	1208.52	746
886.14	547	967.14	597	1048.14	647	1129.14	697	1210.14	747
887.76	548	968.76	598	1049.76	648	1130.76	698	1211.76	748
889.38	549	970.38	599	1051.38	649	1132.38	699	1213.38	749
891.00	550	972.00	600	1053.00	650	1134.00	700	1215.00	750

TABLE NO. XXXIII.—*Continued.*

CUBIC YARDS, IN $\frac{100}{8}$ FEET LENGTHS, FOR GIVEN AREAS

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
1216.62	751	1297.62	801	1378.62	851	1459.62	901	1540.62	951
1218.24	752	1299.24	802	1380.24	852	1461.24	902	1542.24	952
1219.86	753	1300.86	803	1381.86	853	1462.86	903	1543.86	953
1221.48	754	1302.48	804	1383.48	854	1464.48	904	1545.48	954
1223.10	755	1304.10	805	1385.10	855	1466.10	905	1547.10	955
1224.72	756	1305.72	806	1386.72	856	1467.72	906	1548.72	956
1226.34	757	1307.34	807	1388.34	857	1469.34	907	1550.34	957
1227.96	758	1308.96	808	1389.96	858	1470.96	908	1551.96	958
1229.58	759	1310.58	809	1391.58	859	1472.58	909	1553.58	959
1231.20	760	1312.20	810	1393.20	860	1474.20	910	1555.20	960
1232.82	761	1313.82	811	1394.82	861	1475.82	911	1556.82	961
1234.44	762	1315.44	812	1396.44	862	1477.44	912	1558.44	962
1236.06	763	1317.06	813	1398.06	863	1479.06	913	1560.06	963
1237.68	764	1318.68	814	1399.68	864	1480.68	914	1561.68	964
1239.30	765	1320.30	815	1401.30	865	1482.30	915	1563.30	965
1240.92	766	1321.92	816	1402.92	866	1483.92	916	1564.92	966
1242.54	767	1323.54	817	1404.54	867	1485.54	917	1566.54	967
1244.16	768	1325.16	818	1406.16	868	1487.16	918	1568.16	968
1245.78	769	1326.78	819	1407.78	869	1488.78	919	1569.78	969
1247.40	770	1328.40	820	1409.40	870	1490.40	920	1571.40	970
1249.02	771	1330.02	821	1411.02	871	1492.02	921	1573.02	971
1250.64	772	1331.64	822	1412.64	872	1493.64	922	1574.64	972
1252.26	773	1333.26	823	1414.26	873	1495.26	923	1576.26	973
1253.88	774	1334.88	824	1415.88	874	1496.88	924	1577.88	974
1255.50	775	1336.50	825	1417.50	875	1498.50	925	1579.50	975
1257.12	776	1338.12	826	1419.12	876	1500.12	926	1581.12	976
1258.74	777	1339.74	827	1420.74	877	1501.74	927	1582.74	977
1260.36	778	1341.36	828	1422.36	878	1503.36	928	1584.36	978
1261.98	779	1342.98	829	1423.98	879	1504.98	929	1585.98	979
1263.60	780	1344.60	830	1425.60	880	1506.60	930	1587.60	980
1265.22	781	1346.22	831	1427.22	881	1508.22	931	1589.22	981
1266.84	782	1347.84	832	1428.84	882	1509.84	932	1590.84	982
1268.46	783	1349.46	833	1430.46	883	1511.46	933	1592.46	983
1270.08	784	1351.08	834	1432.08	884	1513.08	934	1594.08	984
1271.70	785	1352.70	835	1433.70	885	1514.70	935	1595.70	985
1273.32	786	1354.32	836	1435.32	886	1516.32	936	1597.32	986
1274.94	787	1355.94	837	1436.94	887	1517.94	937	1598.94	987
1276.56	788	1357.56	838	1438.56	888	1519.56	938	1600.56	988
1278.18	789	1359.18	839	1440.18	889	1521.18	939	1602.18	989
1279.80	790	1360.80	840	1441.80	890	1522.80	940	1603.80	990
1281.42	791	1362.42	841	1443.42	891	1524.42	941	1605.42	991
1283.04	792	1364.04	842	1445.04	892	1526.04	942	1607.04	992
1284.66	793	1365.66	843	1446.66	893	1527.66	943	1608.66	993
1286.28	794	1367.28	844	1448.28	894	1529.28	944	1610.28	994
1287.90	795	1368.90	845	1449.90	895	1530.90	945	1611.90	995
1289.52	796	1370.52	846	1451.52	896	1532.52	946	1613.52	996
1291.14	797	1372.14	847	1453.14	897	1534.14	947	1615.14	997
1292.76	798	1373.76	848	1454.76	898	1535.76	948	1616.76	998
1294.38	799	1375.38	849	1456.38	899	1537.38	949	1618.38	999
1296.00	800	1377.00	850	1458.00	900	1539.00	950	1620.00	1000

TABLE A.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

PART FIRST.

Road-bed 18 feet wide. Side slopes 1½ to 1.

Height.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
.9	0	64.5	65.5	66.5	67.5	68.5	69.5	70.5	71.5	72.5	73.5
.8	83.5	1	74.5	75.5	76.5	77.5	78.5	79.5	80.5	81.5	82.5
.7	92.5	93.5	2	84.5	85.5	86.5	87.5	88.5	89.5	90.5	91.5
.6	101.5	102.5	103.5	3	94.5	95.5	96.5	97 5	98.5	99.5	100.5
.5	110.5	111.5	112.5	113.5	4	104.5	105.5	106.5	107.5	108.5	109.5
.4	119.5	120.5	121.5	122.5	123.5	5	114.5	115.5	116.5	117.5	118.5
.3	128.5	129 5	130.5	131.5	132.5	133.5	6	124.5	125.5	126.5	127.5
.2	137.5	138.5	139.5	140.5	141.5	142.5	143.5	7	134.5	135.5	136.5
.1	146.5	147.5	148.5	149.5	150.5	151.5	152.5	153.5	8	144.5	145.5
.0	155.5	156.5	157.5	158.5	159.5	160.5	161.5	162.5	163.5	9	154.5
	164.5	165.5	166.5	167.5	168.5	169.5	170.5	171.5	172.5	173.5	10
.9	11	174.5	175.5	176.5	177.5	178.5	179.5	180.5	181.5	182.5	183.5
.8	193.5	12	184.5	185.5	186.5	187.5	188.5	189.5	190.5	191.5	192.5
.7	202.5	203.5	13	194.5	195.5	196.5	197.5	198.5	199.5	200.5	201.5
6	211.5	212.5	213.5	14	204.5	205.5	206.5	207.5	208.5	209.5	210.5
					15						

TABLE A.—*Continued.*

PART SECOND.

Height.	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
	0	0.0	6.7	13.6	20.5	27.6	34.7	42.0	49.4	56.9	64.5
.9		64.5	65.5	66.5	67.5	68.5	69.5	70.5	71.5	72.5	73.5
	146.7	1	72.2	80.1	88.0	96.1	104.2	112.5	120.9	129.4	138.0
.8	83.5		74.5	75.5	76.5	77.5	78.5	79.5	80.5	81.5	82.5
	230.2	240.1	2	155.6	164.5	173.6	182.7	192.0	201.4	210.9	220.5
.7	92.5	93.5		84.5	85.5	86.5	87.5	88.5	89.5	90.5	91.5
	322.7	333.6	344.5	3	250.0	260.1	270.2	280.5	290.9	301.4	312.0
.6	101.5	102.5	103.5		94.5	95.5	96.5	97.5	98.5	99.5	100.5
	424.2	436.1	448.0	460.1	4	355.6	366.7	378.0	389.4	400.9	412.5
.5	110.5	111.5	112.5	113.5		104.5	105.5	106.5	107.5	108.5	109.5
	534.7	547.6	560.5	573.6	586.7	5	472.2	484.5	496.9	509.4	522.0
.4	119.5	120.5	121.5	122.5	123.5		114.5	115.5	116.5	117.5	118.5
	654.2	668.1	682.0	696.1	710.2	724.5	6	600.0	613.4	626.9	640.5
.3	128.5	129.5	130.5	131.5	132.5	133.5		124.5	125.5	126.5	127.5
	782.7	797.6	812.5	827.6	842.7	858.0	873.4	7	738.9	753.4	768.0
.2	137.5	138.5	139.5	140.5	141.5	142.5	143.5		134.5	135.5	136.5
	920.2	936.1	952.0	968.1	984.2	1000.5	1016.9	1033.4	8	888.9	904.5
.1	146.5	147.5	148.5	149.5	150.5	151.5	152.5	153.5		144.5	145.5
	1066.7	1083.6	1100.5	1117.6	1134.7	1152.0	1169.4	1186.9	1204.5	9	1050.0
.0	155.5	156.5	157.5	158.5	159.5	160.5	161.5	162.5	163.5		154.5
	1222.2	1240.1	1258.0	1276.1	1294.2	1312.5	1330.9	1349.4	1368.0	1386.7	10
	164.5	165.5	166.5	167.5	168.5	169.5	170.5	171.5	172.5	173.5	
	11	1405.6	1424.5	1443.6	1462.7	1482.0	1501.4	1520.9	1540.5	1560.2	1580.1
.9		174.5	175.5	176.5	177.5	178.5	179.5	180.5	181.5	182.5	183.5
	1784.5	12	1600.0	1620.1	1640.2	1660.5	1680.9	1701.4	1722.0	1742.7	1763.6
.8	193.5		184.5	185.5	186.5	187.5	188.5	189.5	190.5	191.5	192.5
	1978.0	2000.1	13	1805.6	1826.7	1848.0	1869.4	1890.9	1912.5	1934.2	1956.1
.7	202.5	203.5		194.5	195.5	196.5	197.5	198.5	199.5	200.5	201.5
	2180.5	2203.6	2226.7	14	2022.2	2044.5	2066.9	2089.4	2112.0	2134.7	2157.6
.6	211.5	212.5	213.5		204.5	205.5	206.5	207.5	208.5	209.5	210.5
	2392.0	2416.1	2440.2	2464.5	15	2250.0	2273.4	2296.9	2320.5	2344.2	2368.1

TABLE B.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, 100 FEET LONG.

Road-bed 28 feet wide. Side slopes ½ to 1.

Height.		.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
0		0.0	10.4	20.8	31.3	41.8	52.3	62.9	73.5	84.1	94.8
	94.	8 95.	2 95.	5 95.	8 96.	1 96.	5 96.	8 97.	2 97.	5 97.	9
1		105.6	116 3	127.1	137.9	148.8	159.7	170.7	181.6	192.7	203.7
	98.	1 98.	5 98.	8 99.	2 99.	5 99.	9 100.	1 100.	5 100.	8 101.	2
2		214.8	225.9	237.1	248.3	259.6	270.8	282.1	293.5	304.9	316.3
	101.	5 101.	9 102.	2 102.	5 102.	8 103.	2 103.	5 103.	8 104.	2 104.	5
3		327.8	339.3	350.8	362.4	374.0	385.6	397.3	409.1	420.8	432.6
	104.	8 105.	1 105.	5 105.	8 106.	2 106.	5 106.	9 107.	1 107.	5 107.	8
4		444.4	456.3	468.2	480.2	492.1	504.2	516.2	528.3	540.4	552.6
	108.	2 108.	5 108.	9 109.	1 109.	5 109.	8 110.	2 110.	5 110.	9 111.	2
5		564.8	577.1	589.3	601.6	614.0	626.4	638.8	651.3	663.8	676.3
	111.	5 111.	8 112.	2 112.	5 112.	8 113.	2 113.	5 113.	8 114.	1 114.	5
6		688.9	701.5	714.1	726.8	739.6	752.3	765.1	777.9	790.8	803.7
	114.	8 115.	2 115.	5 115.	9 116.	1 116.	5 116.	8 117.	2 117.	5 117.	9
7		816.7	829.6	842.7	855.7	868.8	881.9	895.1	908.3	921.6	934.8
	118.	1 118.	5 118.	8 119.	2 119.	5 119.	9 120.	2 120.	5 120.	8 121.	2
8		948.1	961.5	974.9	988.3	1001.8	1015.3	1028.8	1042.4	1056.0	1069.6
	121.	5 121.	8 122.	2 122.	5 122.	8 123.	1 123.	5 123.	8 124.	2 124.	5
9		1083.3	1097.1	1110.8	1124.6	1138.4	1152.3	1166.2	1180.2	1194.1	1208.2
	124.	9 125.	1 125.	5 125.	8 126.	2 126.	5 126.	9 127.	1 127.	5 127.	8
10		1222.2	1236.3	1250.4	1264.6	1278.8	1293.1	1307.3	1321.6	1336.0	1350.4

TABLE NO. XXXIV.

Level Cross Sections.

CUBIC YARDS IN LENGTHS OF 100 FEET.

Road-bed 24 feet wide. Side slope 1½ to 1.

Height.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	Height.
0.0	0	4	9	14	18	23	27	32	37	42	46	51	56	61	66	71	0.0
0.1	4	9	13	18	23	27	32	37	41	46	51	56	61	66	71	76	0.1
0.2	9	13	18	23	27	32	37	41	46	51	56	61	65	70	75	80	0.2
0.3	14	18	23	27	32	36	41	46	51	56	60	65	70	75	80	85	0.3
0.4	18	23	27	32	36	41	46	51	55	60	65	70	75	80	85	90	0.4
0.5	23	27	32	36	41	46	51	55	60	65	70	75	80	85	90	95	0.5
0.6	27	32	37	41	46	51	55	60	65	70	75	80	85	90	95	100	0.6
0.7	32	37	41	46	51	55	60	65	70	75	80	85	90	95	100	105	0.7
0.8	37	41	46	51	55	60	65	70	75	80	85	90	95	100	105	110	0.8
0.9	42	46	51	56	60	65	70	75	80	85	89	94	100	105	110	115	0.9
1.0	46	51	56	60	65	70	75	80	85	89	94	99	105	110	115	120	1.0
1.1	51	56	61	65	70	75	80	85	90	94	99	105	110	115	120	125	1.1
1.2	56	61	65	70	75	80	85	90	95	100	105	110	115	120	125	130	1.2
1.3	61	66	70	75	80	85	90	95	100	105	110	115	120	125	130	135	1.3
1.4	66	71	75	80	85	90	95	100	105	110	115	120	125	130	135	141	1.4
1.5	71	76	80	85	90	95	100	105	110	115	120	125	130	135	141	146	1.5
Height.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	Height.

TABLE NO. XXXV.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 12 feet wide. Side slopes 1 to 1.

Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.	Height.	Cubic yards.
0.0	0	5.0	315	10.0	815	15.0	1500	20.0	2370	25.0	3426	30.0	4667	35.0	6093
0.1	4	5.1	323	10.1	827	15.1	1516	20.1	2390	25.1	3449	30.1	4693	35.1	6123
0.2	9	5.2	331	10.2	839	15.2	1531	20.2	2409	25.2	3472	30.2	4720	35.2	6153
0.3	14	5.3	340	10.3	851	15.3	1547	20.3	2429	25.3	3495	30.3	4747	35.3	6184
0.4	18	5.4	348	10.4	863	15.4	1563	20.4	2448	25.4	3518	30.4	4774	35.4	6115
0.5	23	5.5	356	10.5	875	15.5	1579	20.5	2468	25.5	3542	30.5	4801	35.5	6245
0.6	28	5.6	365	10.6	887	15.6	1595	20.6	2487	25.6	3565	30.6	4828	35.6	6276
0.7	33	5.7	374	10.7	900	15.7	1611	20.7	2507	25.7	3588	30.7	4855	35.7	6307
0.8	38	5.8	382	10.8	912	15.8	1627	20.8	2527	25.8	3612	30.8	4882	35.8	6338
0.9	43	5.9	391	10.9	924	15.9	1643	20.9	2547	25.9	3636	30.9	4910	35.9	6369
1.0	48	6.0	400	11.0	937	16.0	1659	21.0	2567	26.0	3659	31.0	4937	36.0	6400
1.1	53	6.1	409	11.1	950	16.1	1676	21.1	2587	26.1	3683	31.1	4964	36.1	6431
1.2	59	6.2	418	11.2	962	16.2	1692	21.2	2607	26.2	3707	31.2	4992	36.2	6462
1.3	64	6.3	427	11.3	975	16.3	1708	21.3	2627	26.3	3731	31.3	5020	36.3	6494
1.4	69	6.4	436	11.4	988	16.4	1725	21.4	2647	26.4	3755	31.4	5047	36.4	6525
1.5	75	6.5	445	11.5	1001	16.5	1742	21.5	2668	26.5	3779	31.5	5075	36.5	6556
1.6	81	6.6	455	11.6	1014	16.6	1758	21.6	2688	26.6	3803	31.6	5103	36.6	6588
1.7	86	6.7	464	11.7	1027	16.7	1775	21.7	2708	26.7	3827	31.7	5131	36.7	6620
1.8	92	6.8	473	11.8	1040	16.8	1792	21.8	2729	26.8	3851	31.8	5159	36.8	6651
1.9	98	6.9	483	11.9	1053	16.9	1809	21.9	2750	26.9	3876	31.9	5187	36.9	6683
2.0	104	7.0	493	12.0	1067	17.0	1826	22.0	2770	27.0	3900	32.0	5215	37.0	6715
2.1	110	7.1	502	12.1	1080	17.1	1843	22.1	2791	27.1	3924	32.1	5243	37.1	6747
2.2	116	7.2	512	12.2	1093	17.2	1860	22.2	2812	27.2	3949	32.2	5271	37.2	6779
2.3	122	7.3	522	12.3	1107	17.3	1877	22.3	2833	27.3	3974	32.3	5300	37.3	6811
2.4	128	7.4	532	12.4	1121	17.4	1895	22.4	2854	27.4	3998	32.4	5328	37.4	6843
2.5	134	7.5	542	12.5	1134	17.5	1912	22.5	2875	27.5	4023	32.5	5356	37.5	6875
2.6	141	7.6	552	12.6	1148	17.6	1929	22.6	2896	27.6	4048	32.6	5385	37.6	6907
2.7	147	7.7	562	12.7	1162	17.7	1947	22.7	2917	27.7	4073	32.7	5414	37.7	6940
2.8	153	7.8	572	12.8	1176	17.8	1965	22.8	2939	27.8	4098	32.8	5442	37.8	6972
2.9	160	7.9	582	12.9	1190	17.9	1982	22.9	2960	27.9	4123	32.9	5471	37.9	7004
3.0	167	8.0	593	13.0	1204	18.0	2000	23.0	2981	28.0	4148	33.0	5500	38.0	7037
3.1	173	8.1	603	13.1	1218	18.1	2018	23.1	3003	28.1	4173	33.1	5529	38.1	7070
3.2	180	8.2	613	13.2	1232	18.2	2036	23.2	3025	28.2	4199	33.2	5558	38.2	7102
3.3	187	8.3	624	13.3	1246	18.3	2054	23.3	3046	28.3	4224	33.3	5587	38.3	7135
3.4	194	8.4	635	13.4	1261	18.4	2072	23.4	3068	28.4	4249	33.4	5616	38.4	7168
3.5	201	8.5	645	13.5	1275	18.5	2090	23.5	3090	28.5	4275	33.5	5645	38.5	7201
3.6	208	8.6	656	13.6	1289	18.6	2108	23.6	3112	28.6	4301	33.6	5675	38.6	7234
3.7	215	8.7	667	13.7	1304	18.7	2126	23.7	3134	28.7	4326	33.7	5704	38.7	7267
3.8	222	8.8	678	13.8	1319	18.8	2145	23.8	3156	28.8	4352	33.8	5733	38.8	7300
3.9	230	8.9	689	13.9	1333	18.9	2163	23.9	3178	28.9	4378	33.9	5763	38.9	7333
4.0	237	9.0	700	14.0	1348	19.0	2181	24.0	3200	29.0	4404	34.0	5793	39.0	7367
4.1	244	9.1	711	14.1	1363	19.1	2200	24.1	3222	29.1	4430	34.1	5822	39.1	7400
4.2	252	9.2	722	14.2	1378	19.2	2219	24.2	3245	29.2	4456	34.2	5852	39.2	7433
4.3	260	9.3	734	14.3	1393	19.3	2237	24.3	3267	29.3	4482	34.3	5882	39.3	7467
4.4	267	9.4	745	14.4	1408	19.4	2256	24.4	3289	29.4	4508	34.4	5912	39.4	7501
4.5	275	9.5	756	14.5	1423	19.5	2275	24.5	3312	29.5	4534	34.5	5942	39.5	7534
4.6	283	9.6	768	14.6	1438	19.6	2294	24.6	3335	29.6	4561	34.6	5972	39.6	7568
4.7	291	9.7	780	14.7	1454	19.7	2313	24.7	3357	29.7	4587	34.7	6002	39.7	7602
4.8	299	9.8	791	14.8	1469	19.8	2332	24.8	3380	29.8	4613	34.8	6032	39.8	7636
4.9	307	9.9	803	14.9	1484	19.9	2351	24.9	3403	29.9	4640	34.9	6062	39.9	7670

TABLE NO. XXXVI.

Side Triangles.

CUBIC YARDS IN CORRESPONDING PRISMS 100 FEET LONG.

Road-bed 12 feet wide. Side slopes 1 to 1.

Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.	Center height.	Cubic yards.
0.0	11.1	5.0	20.4	10.0	29.6	15.0	38.9	20.0	48.1	25.0	57.4	30.0	66.7	35.0	75.9
0.1	11.3	5.1	20.6	10.1	29.8	15.1	39.1	20.1	48.3	25.1	57.6	30.1	66.9	35.1	76.1
0.2	11.5	5.2	20.7	10.2	30.0	15.2	39.3	20.2	48.5	25.2	57.8	30.2	67.0	35.2	76.3
0.3	11.7	5.3	20.9	10.3	30.2	15.3	39.4	20.3	48.7	25.3	58.0	30.3	67.2	35.3	76.5
0.4	11.9	5.4	21.1	10.4	30.4	15.4	39.6	20.4	48.9	25.4	58.1	30.4	67.4	35.4	76.7
0.5	12.0	5.5	21.3	10.5	30.6	15.5	39.8	20.5	49.1	25.5	58.3	30.5	67.6	35.5	76.9
0.6	12.2	5.6	21.5	10.6	30.7	15.6	40.0	20.6	49.3	25.6	58.5	30.6	67.8	35.6	77.0
0.7	12.4	5.7	21.7	10.7	30.9	15.7	40.2	20.7	49.4	25.7	58.7	30.7	68.0	35.7	77.2
0.8	12.6	5.8	21.9	10.8	31.1	15.8	40.4	20.8	49.6	25.8	58.9	30.8	68.1	35.8	77.4
0.9	12.8	5.9	22.0	10.9	31.3	15.9	40.6	20.9	49.8	25.9	59.1	30.9	68.3	35.9	77.6
1.0	13.0	6.0	22.2	11.0	31.5	16.0	40.7	21.0	50.0	26.0	59.3	31.0	68.5	36.0	77.8
1.1	13.1	6.1	22.4	11.1	31.7	16.1	40.9	21.1	50.2	26.1	59.4	31.1	68.7	36.1	78.0
1.2	13.3	6.2	22.6	11.2	31.9	16.2	41.1	21.2	50.4	26.2	59.6	31.2	68.9	36.2	78.1
1.3	13.5	6.3	22.8	11.3	32.0	16.3	41.3	21.3	50.6	26.3	59.8	31.3	69.1	36.3	78.3
1.4	13.7	6.4	23.0	11.4	32.2	16.4	41.5	21.4	50.7	26.4	60.0	31.4	69.3	36.4	78.5
1.5	13.9	6.5	23.1	11.5	32.4	16.5	41.7	21.5	50.9	26.5	60.2	31.5	69.4	36.5	78.7
1.6	14.1	6.6	23.3	11.6	32.6	16.6	41.9	21.6	51.1	26.6	60.4	31.6	69.6	36.6	78.9
1.7	14.3	6.7	23.5	11.7	32.8	16.7	42.0	21.7	51.3	26.7	60.6	31.7	69.8	36.7	79.1
1.8	14.4	6.8	23.7	11.8	33.0	16.8	42.2	21.8	51.5	26.8	60.7	31.8	70.0	36.8	79.3
1.9	14.6	6.9	23.9	11.9	33.1	16.9	42.4	21.9	51.7	26.9	60.9	31.9	70.2	36.9	79.4
2.0	14.8	7.0	24.1	12.0	33.3	17.0	42.6	22.0	51.9	27.0	61.1	32.0	70.4	37.0	79.6
2.1	15.0	7.1	24.3	12.1	33.5	17.1	42.8	22.1	52.0	27.1	61.3	32.1	70.6	37.1	79.8
2.2	15.2	7.2	24.4	12.2	33.7	17.2	43.0	22.2	52.2	27.2	61.5	32.2	70.7	37.2	80.0
2.3	15.4	7.3	24.6	12.3	33.9	17.3	43.1	22.3	52.4	27.3	61.7	32.3	70.9	37.3	80.2
2.4	15.6	7.4	24.8	12.4	34.1	17.4	43.3	22.4	52.6	27.4	61.9	32.4	71.1	37.4	80.4
2.5	15.7	7.5	25.0	12.5	34.3	17.5	43.5	22.5	52.8	27.5	62.0	32.5	71.3	37.5	80.6
2.6	15.9	7.6	25.2	12.6	34.4	17.6	43.7	22.6	53.0	27.6	62.2	32.6	71.5	37.6	80.7
2.7	16.1	7.7	25.4	12.7	34.6	17.7	43.9	22.7	53.1	27.7	62.4	32.7	71.7	37.7	80.9
2.8	16.3	7.8	25.6	12.8	34.8	17.8	44.1	22.8	53.3	27.8	62.6	32.8	71.9	37.8	81.1
2.9	16.5	7.9	25.7	12.9	35.0	17.9	44.3	22.9	53.5	27.9	62.8	32.9	72.0	37.9	81.3
3.0	16.7	8.0	25.9	13.0	35.2	18.0	44.4	23.0	53.7	28.0	63.0	33.0	72.2	38.0	81.5
3.1	16.9	8.1	26.1	13.1	35.4	18.1	44.6	23.1	53.9	28.1	63.1	33.1	72.4	38.1	81.7
3.2	17.0	8.2	26.3	13.2	35.6	18.2	44.8	23.2	54.1	28.2	63.3	33.2	72.6	38.2	81.9
3.3	17.2	8.3	26.5	13.3	35.7	18.3	45.0	23.3	54.3	28.3	63.5	33.3	72.8	38.3	82.0
3.4	17.4	8.4	26.7	13.4	35.9	18.4	45.2	23.4	54.4	28.4	63.7	33.4	73.0	38.4	82.2
3.5	17.6	8.5	26.9	13.5	36.1	18.5	45.4	23.5	54.6	28.5	63.9	33.5	73.1	38.5	82.4
3.6	17.8	8.6	27.0	13.6	36.3	18.6	45.6	23.6	54.8	28.6	64.1	33.6	73.3	38.6	82.6
3.7	18.0	8.7	27.2	13.7	36.5	18.7	45.7	23.7	55.0	28.7	64.3	33.7	73.5	38.7	82.8
3.8	18.1	8.8	27.4	13.8	36.7	18.8	45.9	23.8	55.2	28.8	64.4	33.8	73.7	38.8	83.0
3.9	18.3	8.9	27.6	13.9	36.9	18.9	46.1	23.9	55.4	28.9	64.6	33.9	73.9	38.9	83.1
4.0	18.5	9.0	27.8	14.0	37.0	19.0	46.3	24.0	55.6	29.0	64.8	34.0	74.1	39.0	83.3
4.1	18.7	9.1	28.0	14.1	37.2	19.1	46.5	24.1	55.7	29.1	65.0	34.1	74.3	39.1	83.5
4.2	18.9	9.2	28.1	14.2	37.4	19.2	46.7	24.2	55.9	29.2	65.2	34.2	74.4	39.2	83.7
4.3	19.1	9.3	28.3	14.3	37.6	19.3	46.9	24.3	56.1	29.3	65.4	34.3	74.6	39.3	83.9
4.4	19.3	9.4	28.5	14.4	37.8	19.4	47.0	24.4	56.3	29.4	65.6	34.4	74.8	39.4	84.1
4.5	19.4	9.5	28.7	14.5	38.0	19.5	47.2	24.5	56.5	29.5	65.7	34.5	75.0	39.5	84.3
4.6	19.6	9.6	28.9	14.6	38.1	19.6	47.4	24.6	56.7	29.6	65.9	34.6	75.2	39.6	84.4
4.7	19.8	9.7	29.1	14.7	38.3	19.7	47.6	24.7	56.9	29.7	66.1	34.7	75.4	39.7	84.6
4.8	20.0	9.8	29.3	14.8	38.5	19.8	47.8	24.8	57.0	29.8	66.3	34.8	75.6	39.8	84.8
4.9	20.2	9.9	29.4	14.9	38.7	19.9	48.0	24.9	57.2	29.9	66.5	34.9	75.7	39.9	85.0

TABLE NO. XXXVII.

Cubic yards, corresponding to differences of center heights, to be deducted when the method of averaging end sections is used.

SIDE SLOPE, 1 TO 1.

Diff. C. H.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Diff. C. H.
1	1	1	1	1	1	1	2	2	2	2	1
2	2	3	3	3	4	4	4	5	5	5	2
3	6	6	6	7	7	8	8	8	9	9	3
4	10	10	11	11	12	13	13	14	14	15	4
5	15	16	17	17	18	19	19	20	21	21	5
6	22	23	24	25	25	26	27	28	29	29	6
7	30	31	32	33	34	35	36	37	38	39	7
8	40	41	42	43	44	45	46	47	48	49	8
9	50	51	52	53	55	56	57	58	59	61	9
10	62	63	64	65	67	68	69	71	72	73	10
11	75	76	77	79	80	82	83	85	86	87	11
12	89	90	92	93	95	96	98	100	101	103	12
13	104	106	108	109	111	113	114	116	118	119	13
14	121	123	124	126	128	130	132	133	135	137	14
15	139	141	143	145	146	148	150	152	154	156	15
16	158	160	162	164	166	168	170	172	174	176	16
17	178	181	183	185	187	189	191	193	196	198	17
18	200	202	204	207	209	211	214	216	218	221	18
19	223	225	228	230	232	235	237	240	242	244	19
Diff. C. H.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Diff. C. H.

TABLE NO. XXXVII.—*Continued.*

Cubic yards, corresponding to differences of center heights, to be deducted when the method of averaging end sections is used.

SIDE SLOPE, $1\frac{1}{2}$ TO 1.

Diff. C. H.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Diff. C. H.
1	1	1	1	2	2	2	2	3	3	3	1
2	4	4	4	5	5	6	6	7	7	8	2
3	8	9	9	10	11	11	12	13	13	14	3
4	15	16	16	17	18	19	20	20	21	22	4
5	23	24	25	26	27	28	29	30	31	32	5
6	33	34	36	37	38	39	40	42	43	44	6
7	45	47	48	49	51	52	53	55	56	58	7
8	59	61	62	64	65	67	68	70	72	73	8
9	75	77	78	80	82	84	85	87	89	91	9
10	93	94	96	98	100	102	104	106	108	110	10
11	112	114	116	118	120	122	125	127	129	131	11
12	133	136	138	140	142	145	147	149	152	154	12
13	156	159	161	164	166	169	171	174	176	179	13
14	181	184	187	189	192	195	197	200	203	206	14
15	208	211	214	217	220	222	225	228	231	234	15
16	237	240	243	246	249	252	255	258	261	264	16
17	268	271	274	277	280	284	287	290	293	297	17
18	300	303	307	310	313	317	320	324	327	331	18
19	334	338	341	345	348	352	356	359	363	367	19
Diff. C. H.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Diff. C. H.

TABLE NO. XXXVIII.

CUBIC YARDS, IN $\frac{100}{2}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
.54	1	27.54	51	54.54	101	81.54	151	108.54	201
1.08	2	28.08	52	55.08	102	82.08	152	109.08	202
1.62	3	28.62	53	55.62	103	82.62	153	109.62	203
2.16	4	29.16	54	56.16	104	83.16	154	110.16	204
2.70	5	29.70	55	56.70	105	83.70	155	110.70	205
3.24	6	30.24	56	57.24	106	84.24	156	111.24	206
3.78	7	30.78	57	57.78	107	84.78	157	111.78	207
4.32	8	31.32	58	58.32	108	85.32	158	112.32	208
4.86	9	31.86	59	58.86	109	85.86	159	112.86	209
5.40	10	32.40	60	59.40	110	86.40	160	113.40	210
5.94	11	32.94	61	59.94	111	86.94	161	113.94	211
6.48	12	33.48	62	60.48	112	87.48	162	114.48	212
7.02	13	34.02	63	61.02	113	88.02	163	115.02	213
7.56	14	34.56	64	61.56	114	88.56	164	115.56	214
8.10	15	35.10	65	62.10	115	89.10	165	116.10	215
8.64	16	35.64	66	62.64	116	89.64	166	116.64	216
9.18	17	36.18	67	63.18	117	90.18	167	117.18	217
9.72	18	36.72	68	63.72	118	90.72	168	117.72	218
10.26	19	37.26	69	64.26	119	91.26	169	118.26	219
10.80	20	37.80	70	64.80	120	91.80	170	118.80	220
11.34	21	38.34	71	65.34	121	92.34	171	119.34	221
11.88	22	38.88	72	65.88	122	92.88	172	119.88	222
12.42	23	39.42	73	66.42	123	93.42	173	120.42	223
12.96	24	39.96	74	66.96	124	93.96	174	120.96	224
13.50	25	40.50	75	67.50	125	94.50	175	121.50	225
14.04	26	41.04	76	68.04	126	95.04	176	122.04	226
14.58	27	41.58	77	68.58	127	95.58	177	122.58	227
15.12	28	42.12	78	69.12	128	96.12	178	123.12	228
15.66	29	42.66	79	69.66	129	96.66	179	123.66	229
16.20	30	43.20	80	70.20	130	97.20	180	124.20	230
16.74	31	43.74	81	70.74	131	97.74	181	124.74	231
17.28	32	44.28	82	71.28	132	98.28	182	125.28	232
17.82	33	44.82	83	71.82	133	98.82	183	125.82	233
18.36	34	45.36	84	72.36	134	99.36	184	126.36	234
18.90	35	45.90	85	72.90	135	99.90	185	126.90	235
19.44	36	46.44	86	73.44	136	100.44	186	127.44	236
19.98	37	46.98	87	73.98	137	100.98	187	127.98	237
20.52	38	47.52	88	74.52	138	101.52	188	128.52	238
21.06	39	48.06	89	75.06	139	102.06	189	129.06	239
21.60	40	48.60	90	75.60	140	102.60	190	129.60	240
22.14	41	49.14	91	76.14	141	103.14	191	130.14	241
22.68	42	49.68	92	76.68	142	103.68	192	130.68	242
23.22	43	50.22	93	77.22	143	104.22	193	131.22	243
23.76	44	50.76	94	77.76	144	104.76	194	131.76	244
24.30	45	51.30	95	78.30	145	105.30	195	132.30	245
24.84	46	51.84	96	78.84	146	105.84	196	132.84	246
25.38	47	52.38	97	79.38	147	106.38	197	133.38	247
25.92	48	52.92	98	79.92	148	106.92	198	133.92	248
26.46	49	53.46	99	80.46	149	107.46	199	134.46	249
27.00	50	54.00	100	81.00	150	108.00	200	135.00	250

TABLE NO. XXXVIII.—*Continued.*

CUBIC YARDS, IN $\frac{100}{9}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
135.54	251	162.54	301	189.54	351	216.54	401	243.54	451
136.08	252	163.08	302	190.08	352	217.08	402	244.08	452
136.62	253	163.62	303	190.62	353	217.62	403	244.62	453
137.16	254	164.16	304	191.16	354	218.16	404	245.16	454
137.70	255	164.70	305	191.70	355	218.70	405	245.70	455
138.24	256	165.24	306	192.24	356	219.24	406	246.24	456
138.78	257	165.78	307	192.78	357	219.78	407	246.78	457
139.32	258	166.32	308	193.32	358	220.32	408	247.32	458
139.86	259	166.86	309	193.86	359	220.86	409	247.86	459
140.40	260	167.40	310	194.40	360	221.40	410	248.40	460
140.94	261	167.94	311	194.94	361	221.94	411	248.94	461
141.48	262	168.48	312	195.48	362	222.48	412	249.48	462
142.02	263	169.02	313	196.02	363	223.02	413	250.02	463
142.56	264	169.56	314	196.56	364	223.56	414	250.56	464
143.10	265	170.10	315	197.10	365	224.10	415	251.10	465
143.64	266	170.64	316	197.64	366	224.64	416	251.64	466
144.18	267	171.18	317	198.18	367	225.18	417	252.18	467
144.72	268	171.72	318	198.72	368	225.72	418	252.72	468
145.26	269	172.26	319	199.26	369	226.26	419	253.26	469
145.80	270	172.80	320	199.80	370	226.80	420	253.80	470
146.34	271	173.34	321	200.34	371	227.34	421	254.34	471
146.88	272	173.88	322	200.88	372	227.88	422	254.88	472
147.42	273	174.42	323	201.42	373	228.42	423	255.42	473
147.96	274	174.96	324	201.96	374	228.96	424	255.96	474
148.50	275	175.50	325	202.50	375	229.50	425	256.50	475
149.04	276	176.04	326	203.04	376	230.04	426	257.04	476
149.58	277	176.58	327	203.58	377	230.58	427	257.58	477
150.12	278	177.12	328	204.12	378	231.12	428	258.12	478
150.66	279	177.66	329	204.66	379	231.66	429	258.66	479
151.20	280	178.20	330	205.20	380	232.20	430	259.20	480
151.74	281	178.74	331	205.74	381	232.74	431	259.74	481
152.28	282	179.28	332	206.28	382	233.28	432	260.28	482
152.82	283	179.82	333	206.82	383	233.82	433	260.82	483
153.36	284	180.36	334	207.36	384	234.36	434	261.36	484
153.90	285	180.90	335	207.90	385	234.90	435	261.90	485
154.44	286	181.44	336	208.44	386	235.44	436	262.44	486
154.98	287	181.98	337	208.98	387	235.98	437	262.98	487
155.52	288	182.52	338	209.52	388	236.52	438	263.52	488
156.06	289	183.06	339	210.06	389	237.06	439	264.06	489
156.60	290	183.60	340	210.60	390	237.60	440	264.60	490
157.14	291	184.14	341	211.14	391	238.14	441	265.14	491
157.68	292	184.68	342	211.68	392	238.68	442	265.68	492
158.22	293	185.22	343	212.22	393	239.22	443	266.22	493
158.76	294	185.76	344	212.76	394	239.76	444	266.76	494
159.30	295	186.30	345	213.30	395	240.30	445	267.30	495
159.84	296	186.84	346	213.84	396	240.84	446	267.84	496
160.38	297	187.38	347	214.38	397	241.38	447	268.38	497
160.92	298	187.92	348	214.92	398	241.92	448	268.92	498
161.46	299	188.46	349	215.46	399	242.46	449	269.46	499
162.00	300	189.00	350	216.00	400	243.00	450	270.00	500

TABLE NO. XXXVIII.—*Continued.*

CUBIC YARDS, IN $\frac{100}{9}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
270.54	501	297.54	551	324.54	601	351.54	651	378.54	701
271.08	502	298.08	552	325.08	602	352.08	652	379.08	702
271.62	503	298.62	553	325.62	603	352.62	653	379.62	703
272.16	504	299.16	554	326.16	604	353.16	654	380.16	704
272.70	505	299.70	555	326.70	605	353.70	655	380.70	705
273.24	506	300.24	556	327.24	606	354.24	656	381.24	706
273.78	507	300.78	557	327.78	607	354.78	657	381.78	707
274.32	508	301.32	558	328.32	608	355.32	658	382.32	708
274.86	509	301.86	559	328.86	609	355.86	659	382.86	709
275.40	510	302.40	560	329.40	610	356.40	660	383.40	710
275.94	511	302.94	561	329.94	611	356.94	661	383.94	711
276.48	512	303.48	562	330.48	612	357.48	662	384.48	712
277.02	513	304.02	563	331.02	613	358.02	663	385.02	713
277.56	514	304.56	564	331.56	614	358.56	664	385.56	714
278.10	515	305.10	565	332.10	615	359.10	665	386.10	715
278.64	516	305.64	566	332.64	616	359.64	666	386.64	716
279.18	517	306.18	567	333.18	617	360.18	667	387.18	717
279.72	518	306.72	568	333.72	618	360.72	668	387.72	718
280.26	519	307.26	569	334.26	619	361.26	669	388.26	719
280.80	520	307.80	570	334.80	620	361.80	670	388.80	720
281.34	521	308.34	571	335.34	621	362.34	671	389.34	721
281.88	522	308.88	572	335.88	622	362.88	672	389.88	722
282.42	523	309.42	573	336 42	623	363.42	673	390.42	723
282.96	524	309.96	574	336.96	624	363.96	674	390.96	724
283.50	525	310.50	575	337.50	625	364.50	675	391.50	725
284.04	526	311.04	576	338.04	626	365.04	676	392.04	726
284.58	527	311.58	577	338.58	627	365.58	677	392.58	727
285.12	528	312.12	578	339.12	628	366.12	678	393.12	728
285.66	529	312.66	579	339.66	629	366.66	679	393.66	729
286.20	530	313.20	580	340.20	630	367.20	680	394.20	730
286.74	531	313.74	581	340.74	631	367.74	681	394.74	731
287.28	532	314.28	582	341.28	632	368.28	682	395.28	732
287.82	533	314.82	583	341.82	633	368.82	683	395.82	733
288.36	534	315.36	584	342.36	634	369.36	684	396.36	734
288.90	535	315.90	585	342.90	635	369.90	685	396.90	735
289.44	536	316.44	586	343.44	636	370.44	686	397.44	736
289.98	537	316.98	587	343.98	637	370.98	687	397.98	737
290.52	538	317.52	588	344.52	638	371.52	688	398.52	738
291.06	539	318.06	589	345.06	639	372.06	689	399.06	739
291.60	540	318.60	590	345.60	640	372.60	690	399.60	740
292.14	541	319.14	591	346.14	641	373.14	691	400.14	741
292.68	542	319.68	592	346.68	642	373.68	692	400.68	742
293.22	543	320.22	593	347.22	643	374.22	693	401.22	743
293.76	544	320.76	594	347.76	644	374.76	694	401.76	744
294.30	545	321.30	595	348.30	645	375.30	695	402.30	745
294.84	546	321.84	596	348.84	646	375.84	696	402.84	746
295.38	547	322.38	597	349.38	647	376.38	697	403.38	747
295.92	548	322.92	598	349.92	648	376.92	698	403.92	748
296.46	549	323.46	599	350.46	649	377.46	699	404.46	749
297.00	550	324.00	600	351.00	650	378.00	700	405.00	750

TABLE NO. XXXVIII.—*Continued.*

CUBIC YARDS, IN $\frac{100}{2}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
405.54	751	432.54	801	459.54	851	486.54	901	513.54	951
406.08	752	433.08	802	460.08	852	487.08	902	514.08	952
406.62	753	433.62	803	460.62	853	487.62	903	514.62	953
407.16	754	434.16	804	461.16	854	488.16	904	515.16	954
407.70	755	434.70	805	461.70	855	488.70	905	515.70	955
408.24	756	435.24	806	462.24	856	489.24	906	516.24	956
408.78	757	435.78	807	462.78	857	489.78	907	516.78	957
409.32	758	436.32	808	463.32	858	490.32	908	517.32	958
409.86	759	436.86	809	463.86	859	490.86	909	517.86	959
410.40	760	437.40	810	464.40	860	491.40	910	518.40	960
410.94	761	437.94	811	464.94	861	491.94	911	518.94	961
411.48	762	438.48	812	465.48	862	492.48	912	519.48	962
412.02	763	439.02	813	466.02	863	493.02	913	520.02	963
412.56	764	439.56	814	466.56	864	493.56	914	520.56	964
413.10	765	440.10	815	467.10	865	494.10	915	521.10	965
413.64	766	440.64	816	467.64	866	494.64	916	521.64	966
414.18	767	441.18	817	468.18	867	495.18	917	522.18	967
414.72	768	441.72	818	468.72	868	495.72	918	522.72	968
415.26	769	442.26	819	469.26	869	496.26	919	523.26	969
415.80	770	442.80	820	469.80	870	496.80	920	523.80	970
416.34	771	443.34	821	470.34	871	497.34	921	524.34	971
416.88	772	443.88	822	470.88	872	497.88	922	524.88	972
417.42	773	444.42	823	471.42	873	498.42	923	525.42	973
417.96	774	444.96	824	471.96	874	498.96	924	525.96	974
418.50	775	445.50	825	472.50	875	499.50	925	526.50	975
419.04	776	446.04	826	473.04	876	500.04	926	527.04	976
419.58	777	446.58	827	473.58	877	500.58	927	527.58	977
420.12	778	447.12	828	474.12	878	501.12	928	528.12	978
420.66	779	447.66	829	474.66	879	501.66	929	528.66	979
421.20	780	448.20	830	475.20	880	502.20	930	529.20	980
421.74	781	448.74	831	475.74	881	502.74	931	529.74	981
422.28	782	449.28	832	476.28	882	503.28	932	530.28	982
422.82	783	449.82	833	476.82	883	503.82	933	530.82	983
423.36	784	450.36	834	477.36	884	504.36	934	531.36	984
423.90	785	450.90	835	477.90	885	504 90	935	531.90	985
424.44	786	451.44	836	478.44	886	505.44	936	532.44	986
424.98	787	451.98	837	478.98	887	505.98	937	532.98	987
425.52	788	452.52	838	479.52	888	506.52	938	533.52	988
426.06	789	453.06	839	480.06	889	507.06	939	534.06	989
426.60	790	453.60	840	480.60	890	507.60	940	534.60	990
427.14	791	454.14	841	481.14	891	508.14	941	535.14	991
427.68	792	454.68	842	481.68	892	508.68	942	535.68	992
428.22	793	455.22	843	482.22	893	509.22	943	536.22	993
428.76	794	455.76	844	482.76	894	509.76	944	536.76	994
429.30	795	456.30	845	483.30	895	510.30	945	537.30	995
429.84	796	456.84	846	483.84	896	510.84	946	537.84	996
430.38	797	457.38	847	484.38	897	511.38	947	538.38	997
430.92	798	457.92	848	484.92	898	511.92	948	538.92	998
431.46	799	458.46	849	485.46	899	512.46	949	539.46	999
432.00	800	459.00	850	486.00	900	513.00	950	540.00	1000

TABLE NO. XXXIX.

CUBIC YARDS, IN $\frac{100}{12}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
3.24	1	165.24	51	327.24	101	489.24	151	651.24	201
6.48	2	168.48	52	330.48	102	492.48	152	654.48	202
9.72	3	171.72	53	333.72	103	495.72	153	657.72	203
12.96	4	174.96	54	336.96	104	498.96	154	660.96	204
16.20	5	178.20	55	340.20	105	502.20	155	664.20	205
19.44	6	181.44	56	343.44	106	505.44	156	667.44	206
22.68	7	184.68	57	346.68	107	508.68	157	670.68	207
25.92	8	187.92	58	349.92	108	511.92	158	673.92	208
29.16	9	191.16	59	353.16	109	515.16	159	677.16	209
32.40	10	194.40	60	356.40	110	518.40	160	680.40	210
35.64	11	197.64	61	359.64	111	521.64	161	683.64	211
38.88	12	200.88	62	362.88	112	524.88	162	686.88	212
42.12	13	204.12	63	366.12	113	528.12	163	690.12	213
45.36	14	207.36	64	369.36	114	531.36	164	693.36	214
48.60	15	210.60	65	372.60	115	534.60	165	696.60	215
51.84	16	213.84	66	375.84	116	537.84	166	699.84	216
55.08	17	217.08	67	379.08	117	541.08	167	703.08	217
58.32	18	220.32	68	382.32	118	544.32	168	706.32	218
61.56	19	223.56	69	385.56	119	547.56	169	709.56	219
64.80	20	226.80	70	388.80	120	550.80	170	712.80	220
68.04	21	230.04	71	392.04	121	554.04	171	716.04	221
71.28	22	233.28	72	395.28	122	557 28	172	719.28	222
74.52	23	236.52	73	398.52	123	560.52	173	722.52	223
77.76	24	239.76	74	401.76	124	563.76	174	725.76	224
81.00	25	243.00	75	405.00	125	567.00	175	729.00	225
84.24	26	246.24	76	408.24	126	570.24	176	732.24	226
87.48	27	249.48	77	411.48	127	573.48	177	735.48	227
90.72	28	252.72	78	414.72	128	576.72	178	738.72	228
93.96	29	255.96	79	417.96	129	579.96	179	741.96	229
97.20	30	259.20	80	421.20	130	583.20	180	745.20	230
100.44	31	262.44	81	424.44	131	586.44	181	748.44	231
103.68	32	265.68	82	427.68	132	589.68	182	751.68	232
106.92	33	268.92	83	430.92	133	592.92	183	754.92	233
110.16	34	272.16	84	434.16	134	596.16	184	758.16	234
113.40	35	275.40	85	437.40	135	599.40	185	761.40	235
116.64	36	278.64	86	440.64	136	602.64	186	764.64	236
119.88	37	281.88	87	443.88	137	605.88	187	767.88	237
123.12	38	285.12	88	447.12	138	609.12	188	771.12	238
126.36	39	288.36	89	450.36	139	612.36	189	774.36	239
129.60	40	291.60	90	453.60	140	615.60	190	777.60	240
132.84	41	294.84	91	456.84	141	618.84	191	780.84	241
136.08	42	298.08	92	460.08	142	622.08	192	784.08	242
139.32	43	301.32	93	463.32	143	625.32	193	787.32	243
142.56	44	304.56	94	466.56	144	628.56	194	790.56	244
145.80	45	307.80	95	469.80	145	631.80	195	793.80	245
149.04	46	311.04	96	473.04	146	635.04	196	797.04	246
152.28	47	314.28	97	476.28	147	638.28	197	800.28	247
155.52	48	317.52	98	479.52	148	641.52	198	803.52	248
158.76	49	320.76	99	482.76	149	644.76	199	806.76	249
162.00	50	324.00	100	486.00	150	648.00	200	810 00	250

TABLE NO. XXXIX.— *Continued.*

CUBIC YARDS, IN $\frac{100}{12}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
813.24	251	975.24	301	1137.24	351	1299.24	401	1461.24	451
816.48	252	978.48	302	1140.48	352	1302.48	402	1464.48	452
819.72	253	981.72	303	1143.72	353	1305.72	403	1467.72	453
822.96	254	984.96	304	1146.96	354	1308.96	404	1470.96	454
826.20	255	988.20	305	1150.20	355	1312.20	405	1474.20	455
829.44	256	991.44	306	1153.44	356	1315.44	406	1477.44	456
832.68	257	994.68	307	1156.68	357	1318.68	407	1480.68	457
835.92	258	997.92	308	1159.92	358	1321.92	408	1483.92	458
839.16	259	1001.16	309	1163.16	359	1325.16	409	1487.16	459
842.40	260	1004.40	310	1166.40	360	1328.40	410	1490.40	460
845.64	261	1007.64	311	1169.64	361	1331.64	411	1493.64	461
848.88	262	1010.88	312	1172.88	362	1334.88	412	1496.88	462
852.12	263	1014.12	313	1176.12	363	1338.12	413	1500.12	463
855.36	264	1017.36	314	1179.36	364	1341.36	414	1503.36	464
858.60	265	1020.60	315	1182.60	365	1344.60	415	1506.60	465
861.84	266	1023.84	316	1185.84	366	1347.84	416	1509.84	466
865.08	267	1027.08	317	1189.08	367	1351.08	417	1513.08	467
868.32	268	1030.32	318	1192.32	368	1354.32	418	1516.32	468
871.56	269	1033.56	319	1195.56	369	1357.56	419	1519.56	469
874.80	270	1036.80	320	1198.80	370	1360.80	420	1522.80	470
878.04	271	1040.04	321	1202.04	371	1364.04	421	1526.04	471
881.28	272	1043.28	322	1205.28	372	1367.28	422	1529.28	472
884.52	273	1046.52	323	1208.52	373	1370 52	423	1532.52	473
887.76	274	1049.76	324	1211.76	374	1373.76	424	1535.76	474
891.00	275	1053.00	325	1215.00	375	1377.00	425	1539.00	475
894.24	276	1056.24	326	1218.24	376	1380.24	426	1542.24	476
897.48	277	1059.48	327	1221.48	377	1383.48	427	1545.48	477
900.72	278	1062.72	328	1224.72	378	1386.72	428	1548.72	478
903.96	279	1065.96	329	1227.96	379	1389.96	429	1551.96	479
907.20	280	1069.20	330	1231.20	380	1393.20	430	1555.20	480
910.44	281	1072.44	331	1234.44	381	1396.44	431	1558.44	481
913.68	282	1075.68	332	1237.68	382	1399.68	432	1561.68	482
916.92	283	1078.92	333	1240.92	383	1402.92	433	1564.92	483
920.16	284	1082.16	334	1244.16	384	1406.16	434	1568.16	484
923.40	285	1085.40	335	1247.40	385	1409.40	435	1571.40	485
926.64	286	1088.64	336	1250.64	386	1412.64	436	1574.64	486
929.88	287	1091.88	337	1253.88	387	1415.88	437	1577.88	487
933.12	288	1095.12	338	1257.12	388	1419.12	438	1581.12	488
936.36	289	1098.36	339	1260.36	389	1422.36	439	1584.36	489
939.60	290	1101.60	340	1263.60	390	1425.60	440	1587.60	490
942.84	291	1104.84	341	1266.84	391	1428.84	441	1590.84	491
946.08	292	1108.08	342	1270.08	392	1432.08	442	1594.08	492
949.32	293	1111.32	343	1273.32	393	1435.32	443	1597.32	493
952.56	294	1114.56	344	1276.56	394	1438.56	444	1600.56	494
955 80	295	1117.80	345	1279.80	395	1441.80	445	1603.80	495
959.04	296	1121.04	346	1283.04	396	1445.04	446	1607.04	496
962.28	297	1124.28	347	1286.28	397	1448.28	447	1610.28	497
965.52	298	1127.52	348	1289.52	398	1451.52	448	1613.52	498
968.76	299	1130.76	349	1292.76	399	1454.76	449	1616.76	499
972.00	300	1134.00	350	1296.00	400	1458.00	450	1620.00	500

TABLE NO. XXXIX.—*Continued.*

CUBIC YARDS, IN $\frac{100}{12}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
1623.24	501	1785.24	551	1947.24	601	2109.24	651	2271.24	701
1626.48	502	1788.48	552	1950.48	602	2112.48	652	2274.48	702
1629.72	503	1791.72	553	1953.72	603	2115.72	653	2277.72	703
1632.96	504	1794.96	554	1956.96	604	2118.96	654	2280.96	704
1636.20	505	1798.20	555	1960.20	605	2122.20	655	2284.20	705
1639.44	506	1801.44	556	1963.44	606	2125.44	656	2287.44	706
1642.68	507	1804.68	557	1966.68	607	2128.68	657	2290.68	707
1645.92	508	1807.92	558	1969.92	608	2131.92	658	2293.92	708
1649.16	509	1811.16	559	1973.16	609	2135.16	659	2297.16	709
1652.40	510	1814.40	560	1976.40	610	2138.40	660	2300.40	710
1655.64	511	1817.64	561	1979.64	611	2141.64	661	2303.64	711
1658.88	512	1820.88	562	1982.88	612	2144.88	662	2306.88	712
1662.12	513	1824.12	563	1986.12	613	2148.12	663	2310.12	713
1665.36	514	1827.36	564	1989.36	614	2151.36	664	2313.36	714
1668.60	515	1830.60	565	1992.60	615	2154.60	665	2316.60	715
1671.84	516	1833.84	566	1995.84	616	2157.84	666	2319.84	716
1675.08	517	1837.08	567	1999.08	617	2161.08	667	2323.08	717
1678.32	518	1840.32	568	2002.32	618	2164.32	668	2326.32	718
1681.56	519	1843.56	569	2005.56	619	2167.56	669	2329.56	719
1684.80	520	1846.80	570	2008.80	620	2170.80	670	2332.80	720
1688.04	521	1850.04	571	2012.04	621	2174.04	671	2336.04	721
1691.28	522	1853.28	572	2015.28	622	2177.28	672	2339.28	722
1694.52	523	1856.52	573	2018.52	623	2180.52	673	2342.52	723
1697.76	524	1859.76	574	2021.76	624	2183.76	674	2345.76	724
1701.00	525	1863.00	575	2025.00	625	2187.00	675	2349.00	725
1704.24	526	1866.24	576	2028.24	626	2190.24	676	2352.24	726
1707.48	527	1869.48	577	2031.48	627	2193.48	677	2355.48	727
1710.72	528	1872.72	578	2034.72	628	2196.72	678	2358.72	728
1713.96	529	1875.96	579	2037.96	629	2199.96	679	2361.96	729
1717.20	530	1879.20	580	2041.20	630	2203.20	680	2365.20	730
1720.44	531	1882.44	581	2044.44	631	2206.44	681	2368.44	731
1723.68	532	1885.68	582	2047.68	632	2209.68	682	2371.68	732
1726.92	533	1888.92	583	2050.92	633	2212.92	683	2374.92	733
1730.16	534	1892.16	584	2054.16	634	2216.16	684	2378.16	734
1733.40	535	1895.40	585	2057.40	635	2219.40	685	2381.40	735
1736.64	536	1898.64	586	2060.64	636	2222.64	686	2384.64	736
1739.88	537	1901.88	587	2063.88	637	2225.88	687	2387.88	737
1743.12	538	1905.12	588	2067.12	638	2229.12	688	2391.12	738
1746.36	539	1908.36	589	2070.36	639	2232.36	689	2394.36	739
1749.60	540	1911.60	590	2073.60	640	2235.60	690	2397.60	740
1752.84	541	1914.84	591	2076.84	641	2238.84	691	2400.84	741
1756.08	542	1918.08	592	2080.08	642	2242.08	692	2404.08	742
1759.32	543	1921.32	593	2083.32	643	2245 32	693	2407.32	743
1762.56	544	1924.56	594	2086.56	644	2248.56	694	2410 56	744
1765.80	545	1927.80	595	2089.80	645	2251.80	695	2413.80	745
1769.04	546	1931.04	596	2093.04	646	2255.04	696	2417.04	746
1772.28	547	1934.28	597	2096.28	647	2258.28	697	2420.28	747
1775.52	548	1937.52	598	2099.52	648	2261.52	698	2423.52	748
1778.76	549	1940.76	599	2102.76	649	2264.76	699	2426.76	749
1782.00	550	1944.00	600	2106.00	650	2268.00	700	2430.00	750

TABLE NO. XXXIX.—*Continued.*

CUBIC YARDS, IN $\frac{100}{12}$ FEET LENGTHS, FOR GIVEN AREAS.

Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.	Area.	Cubic yards.
2433.24	751	2595.24	801	2757.24	851	2919.24	901	3081.24	951
2436.48	752	2598.48	802	2760.48	852	2922.48	902	3084.48	952
2439.72	753	2601.72	803	2763.72	853	2925.72	903	3087.72	953
2442.96	754	2604.96	804	2766.96	854	2928.96	904	3090.96	954
2446.20	755	2608.20	805	2770.20	855	2932.20	905	3094.20	955
2449.44	756	2611.44	806	2773.44	856	2935.44	906	3097.44	956
2452.68	757	2614.68	807	2776.68	857	2938.68	907	3100.68	957
2455.92	758	2617.92	808	2779.92	858	2941.92	908	3103.92	958
2459.16	759	2621.16	809	2783.16	859	2945.16	909	3107.16	959
2462.40	760	2624.40	810	2786.40	860	2948.40	910	3110.40	960
2465.64	761	2627.64	811	2789.64	861	2951.64	911	3113.64	961
2468.88	762	2630.88	812	2792.88	862	2954.88	912	3116.88	962
2472.12	763	2634.12	813	2796.12	863	2958.12	913	3120.12	963
2475.36	764	2637.36	814	2799.36	864	2961.36	914	3123.36	964
2478.60	765	2640.60	815	2802.60	865	2964.60	915	3126.60	965
2481.84	766	2643.84	816	2805.84	866	2967.84	916	3129.84	966
2485.08	767	2647.08	817	2809.08	867	2971.08	917	3133.08	967
2488.32	768	2650.32	818	2812.32	868	2974.32	918	3136.32	968
2491.56	769	2653.56	819	2815.56	869	2977.56	919	3139.56	969
2494.80	770	2656.80	820	2818.80	870	2980.80	920	3142.80	970
2498.04	771	2660.04	821	2822.04	871	2984.04	921	3146.04	971
2501.28	772	2663.28	822	2825.28	872	2987.28	922	3149.28	972
2504.52	773	2666.52	823	2828.52	873	2990 52	923	3152.52	973
2507.76	774	2669.76	824	2831.76	874	2993.76	924	3155.76	974
2511.00	775	2673.00	825	2835.00	875	2997.00	925	3159.00	975
2514.24	776	2676.24	826	2838.24	876	3000.24	926	3162.24	976
2517.48	777	2679.48	827	2841.48	877	3003.48	927	3165.48	977
2520.72	778	2682.72	828	2844.72	878	3006.72	928	3168.72	978
2523.96	779	2685.96	829	2847.96	879	3009.96	929	3171.96	979
2527.20	780	2689.20	830	2851.20	880	3013.20	930	3175.20	980
2530.44	781	2692.44	831	2854.44	881	3016.44	931	3178.44	981
2533.68	782	2695.68	832	2857.68	882	3019.68	932	3181.68	982
2536.92	783	2698.92	833	2860.92	883	3022.92	933	3184.92	983
2540.16	784	2702.16	834	2864.16	884	3026.16	934	3188.16	984
2543.40	785	2705.40	835	2867.40	885	3029.40	935	3191.40	985
2546.64	786	2708.64	836	2870.64	886	3032.64	936	3194.64	986
2549.88	787	2711.88	837	2873.88	887	3035.88	937	3197.88	987
2553.12	788	2715.12	838	2877.12	888	3039.12	938	3201.12	988
2556.36	789	2718.36	839	2880.36	889	3042.36	939	3204.36	989
2559.60	790	2721.60	840	2883.60	890	3045.60	940	3207.60	990
2562.84	791	2724.84	841	2886.84	891	3048.84	941	3210.84	991
2566.08	792	2728.08	842	2890.08	892	3052.08	942	3214.08	992
2569.32	793	2731.32	843	2893.32	893	3055.32	943	3217.32	993
2572.56	794	2734.56	844	2896.56	894	3058.56	944	3220.56	994
2575.80	795	2737.80	845	2899.80	895	3061.80	945	3223.80	995
2579.04	796	2741.04	846	2903.04	896	3065.04	946	3227.04	996
2582.28	797	2744.28	847	2906 28	897	3068.28	947	3230.28	997
2585.52	798	2747.52	848	2909.52	898	3071.52	948	3233.52	998
2588.76	799	2750.76	849	2912.76	899	3074.76	949	3236.76	999
2592.00	800	2754.00	850	2916.00	900	3078.00	950	3240.00	1000

TABLE NO. XL.

Cubic yards equal height $\frac{24 \times 100}{4 \times 27}$.

Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.
0.0	0	5.0	111	10.0	222	15.0	333	20.0	444	25.0	556	30.0	667	35.0	778
0.1	2	5.1	113	10.1	224	15.1	336	20.1	447	25.1	558	30.1	669	35.1	780
0.2	4	5.2	116	10.2	227	15.2	338	20.2	449	25.2	560	30.2	671	35.2	782
0.3	7	5.3	118	10.3	229	15.3	340	20.3	451	25.3	562	30.3	673	35.3	784
0.4	9	5.4	120	10.4	231	15.4	342	20.4	453	25.4	564	30.4	676	35.4	787
0.5	11	5.5	122	10.5	233	15.5	344	20.5	456	25.5	567	30.5	678	35.5	789
0.6	13	5.6	124	10.6	236	15.6	347	20.6	458	25.6	569	30.6	680	35.6	791
0.7	16	5.7	127	10.7	238	15.7	349	20.7	460	25.7	571	30.7	682	35.7	793
0.8	18	5.8	129	10.8	240	15.8	351	20.8	462	25.8	573	30.8	684	35.8	796
0.9	20	5.9	131	10.9	242	15.9	353	20.9	464	25.9	576	30.9	687	35.9	798
1.0	22	6.0	133	11.0	244	16.0	356	21.0	467	26.0	578	31.0	689	36.0	800
1.1	24	6.1	136	11.1	247	16.1	358	21.1	469	26.1	580	31.1	691	36.1	802
1.2	27	6.2	138	11.2	249	16.2	360	21.2	471	26.2	582	31.2	693	36.2	804
1.3	29	6.3	140	11.3	251	16.3	362	21.3	473	26.3	584	31.3	696	36.3	807
1.4	31	6.4	142	11.4	253	16.4	364	21.4	476	26.4	587	31.4	698	36.4	809
1.5	33	6.5	144	11.5	256	16.5	367	21.5	478	26.5	589	31.5	700	36.5	811
1.6	36	6.6	147	11.6	258	16.6	369	21.6	480	26.6	591	31.6	702	36.6	813
1.7	38	6.7	149	11.7	260	16.7	371	21.7	482	26.7	593	31.7	704	36.7	816
1.8	40	6.8	151	11.8	262	16.8	373	21.8	484	26.8	596	31.8	707	36.8	818
1.9	42	6.9	153	11.9	264	16.9	376	21.9	487	26.9	598	31.9	709	36.9	820
2.0	44	7.0	156	12.0	267	17.0	378	22.0	489	27.0	600	32.0	711	37.0	822
2.1	47	7.1	158	12.1	269	17.1	380	22.1	491	27.1	602	32.1	713	37.1	824
2.2	49	7.2	160	12.2	271	17.2	382	22.2	493	27.2	604	32.2	716	37.2	827
2.3	51	7.3	162	12.3	273	17.3	384	22.3	496	27.3	607	32.3	718	37.3	829
2.4	53	7.4	164	12.4	276	17.4	387	22.4	498	27.4	609	32.4	720	37.4	831
2.5	56	7.5	167	12.5	278	17.5	389	22.5	500	27.5	611	32.5	722	37.5	833
2.6	58	7.6	169	12.6	280	17.6	391	22.6	502	27.6	613	32.6	724	37.6	836
2.7	60	7.7	171	12.7	282	17.7	393	22.7	504	27.7	616	32.7	727	37.7	838
2.8	62	7.8	173	12.8	284	17.8	396	22.8	507	27.8	618	32.7	729	37.8	840
2.9	64	7.9	176	12.9	287	17.9	398	22.9	509	27.9	620	32.9	731	37.9	842
3.0	67	8.0	178	13.0	289	18.0	400	23.0	511	28.0	622	33.0	733	38.0	844
3.1	69	8.1	180	13.1	291	18.1	402	23.1	513	28.1	624	33.1	736	38.1	847
3.2	71	8.2	182	13.2	293	18.2	404	23.2	516	28.2	627	33.2	738	38.2	849
3.3	73	8.3	184	13.3	296	18.3	407	23.3	518	28.3	629	33.3	740	38.3	851
3.4	76	8.4	187	13.4	298	18.4	409	23.4	520	28.4	631	33.4	742	38.4	853
3.5	78	8.5	189	13.5	300	18.5	411	23.5	522	28.5	633	33.5	744	38.5	856
3.6	80	8.6	191	13.6	302	18.6	413	23.6	524	28.6	636	33.6	747	38.6	858
3.7	82	8.7	193	13.7	304	18.7	416	23.7	527	28.7	638	33.7	749	38.7	860
3.8	84	8.8	196	13.8	307	18.8	418	23.8	529	28.8	640	33.8	751	38.8	862
3.9	87	8.9	198	13.9	309	18.9	420	23.9	531	28.6	642	33.9	753	38.9	864
4.0	89	9.0	200	14.0	311	19.0	422	24.0	533	29.0	644	34.0	756	39.0	867
4.1	91	9.1	202	14.1	313	19.1	424	24.1	536	29.1	647	34.1	758	39.1	869
4.2	93	9.2	204	14.2	316	19.2	427	24.2	538	29.2	649	34.2	760	39.2	871
4.3	96	9.3	207	14.3	318	19.3	429	24.3	540	29.3	651	34.3	762	39.3	873
4.4	98	9.4	209	14.4	320	19.4	431	24.4	542	29.4	653	34.4	764	39.4	876
4.5	100	9.5	211	14.5	322	19.5	433	24.6	544	29.5	656	34.5	767	39.5	878
4.6	102	9.6	213	14.6	324	19.6	436	24.6	547	29.6	658	34.6	769	39.6	880
4.7	104	9.7	216	14.7	327	19.7	438	24.7	549	29.7	660	34.7	771	39.7	882
4.8	107	9.8	218	14.8	329	19.8	440	24.8	551	29.8	662	34.8	773	39.8	884
4.9	109	9.9	220	14.9	331	19.9	442	24.9	553	29.9	664	34.9	776	39.9	887

TABLE NO. XLI.

Cubic yards equal 100 $\frac{D^2}{27 \times 16 \times 1}$. Side slopes 1 to 1.

D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.
1						1	1	1	1	1	1
2	1	1	1	1	1	1	2	2	2	2	2
3	2	2	2	3	3	3	3	3	3	4	3
4	4	4	4	4	4	5	5	5	5	6	4
5	6	6	6	7	7	7	7	8	8	8	5
6	8	9	9	9	9	10	10	10	11	11	6
7	11	12	12	12	13	13	13	14	14	14	7
8	15	15	16	16	16	17	17	18	18	18	8
9	19	19	20	20	20	21	21	22	22	23	9
10	23	24	24	25	25	26	26	27	27	28	10
11	28	29	29	30	30	31	31	32	32	33	11
12	33	34	34	35	36	36	37	37	38	39	12
13	39	40	40	41	42	42	43	43	44	45	13
14	45	46	47	47	48	49	49	50	51	51	14
15	52	53	53	54	55	56	56	57	58	59	15
16	59	60	61	62	62	63	64	65	65	66	16
17	67	68	68	69	70	71	72	73	73	74	17
18	75	76	77	78	78	79	80	81	82	83	18
19	84	84	85	86	87	88	89	90	91	92	19
D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.

Cubic yards equal 100 $\frac{D^2}{27 \times 16 \times \frac{3}{2}}$. Side slopes 1½ to 1.

D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.
1			1	1	1	1	1	1	1	1	1
2	1	2	2	2	2	2	2	3	3	3	2
3	3	3	4	4	4	4	5	5	5	5	3
4	6	6	6	6	7	7	7	8	8	8	4
5	9	9	9	10	10	11	11	11	12	12	5
6	13	13	13	14	14	15	15	16	16	17	6
7	17	18	18	19	19	20	20	21	21	22	7
8	22	23	23	24	25	25	26	26	27	28	8
9	28	29	29	30	31	31	32	33	33	34	9
10	35	35	36	37	38	38	39	40	41	41	10
11	42	43	44	44	45	46	47	48	48	49	11
12	50	51	52	53	53	54	55	56	57	58	12
13	59	60	61	61	62	63	64	65	66	67	13
14	68	69	70	71	72	73	74	75	76	77	14
15	78	79	80	81	82	83	85	86	87	88	15
16	89	90	91	92	93	95	96	97	98	99	16
17	100	102	103	104	105	106	108	109	110	111	17
18	113	114	115	116	118	119	120	121	123	124	18
19	125	127	128	129	131	132	133	135	136	138	19
D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.

TABLE NO XLII.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, $\frac{100}{4}$ FEET LONG.

Road-bed 14 feet wide. Side slopes 1½ to 1.

Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.
0.0	0	5.0	41	10.0	100	15.0	175	20.0	269	25.0	379	30.0	507	35.0	652
0.1	1	5.1	42	10.1	101	15.1	177	20.1	271	25.1	381	30.1	510	35.1	655
0.2	1	5.2	43	10.2	102	15.2	179	20.2	273	25.2	384	30.2	512	35.2	658
0.3	2	5.3	44	10.3	104	15.3	180	20.3	275	25.3	386	30.3	515	35.3	661
0.4	3	5.4	45	10.4	105	15.4	182	20.4	277	25.4	389	30.4	518	35.4	665
0.5	3	5.5	46	10.5	106	15.5	184	20.5	279	25.5	391	30.5	521	35.5	668
0.6	4	5.6	47	10.6	108	15.6	186	20.6	281	25.6	393	30.6	523	35.6	671
0.7	5	5.7	48	10.7	109	15.7	187	20.7	283	25.7	396	30.7	526	35.7	674
0.8	5	5.8	49	10.8	111	15.8	189	20.8	285	25.8	398	30.8	529	35.8	677
0.9	6	5.9	50	10.9	112	15.9	191	20.9	287	25.9	401	30.9	532	35.9	680
1.0	7	6.0	51	11.0	113	16 0	193	21.0	289	26.0	403	31.0	535	36.0	683
1.1	8	6.1	52	11.1	115	16.1	194	21.1	291	26.1	406	31.1	537	36.1	686
1.2	8	6.2	54	11.2	116	16.2	196	21.2	293	26.2	408	31.2	540	36.2	690
1.3	9	6.3	55	11.3	118	16.3	198	21.3	296	26.3	411	31.3	543	36.3	693
1.4	10	6.4	56	11.4	119	16.4	200	21.4	298	26.4	413	31.4	546	36.4	696
1.5	11	6.5	57	11.5	120	16.5	201	21.5	300	26.5	416	31.5	549	36.5	699
1.6	11	6.6	58	11.6	122	16.6	203	21 6	302	26.6	418	31.6	552	36.6	702
1.7	12	6.7	59	11.7	123	16.7	205	21.7	304	26.7	421	31.7	554	36.7	706
1.8	13	6.8	60	11.8	125	16.8	207	21.8	306	26.8	423	31.8	557	36.8	709
1.9	14	6.9	61	11.9	126	16.9	209	21.9	308	26.9	426	31.9	560	36.9	712
2.0	14	7.0	62	12.0	128	17.0	211	22.0	311	27.0	428	32.0	563	37.0	715
2.1	15	7.1	64	12.1	129	17.1	212	22.1	313	27.1	431	32.1	566	37.1	718
2.2	16	7.2	65	12.2	131	17.2	214	22.2	315	27.2	433	32.2	569	37.2	722
2.3	17	7.3	66	12.3	132	17.3	216	22.3	317	27.3	436	32.3	572	37.3	725
2.4	18	7.4	67	12.4	134	17.4	218	22.4	319	27.4	438	32.4	575	37.4	728
2.5	18	7.5	68	12.5	135	17.5	220	22 5	322	27.5	441	32.5	577	37.5	731
2.6	19	7.6	69	12.6	137	17.6	222	22 6	324	27.6	443	32.6	580	37.6	735
2.7	20	7.7	70	12.7	138	17.7	224	22.7	326	27.7	446	32.7	583	37.7	738
2.8	21	7.8	72	12.8	140	17.8	225	22.8	328	27.8	449	32.8	586	37.8	741
2.9	22	7.9	73	12.9	141	17.9	227	22.9	331	27.9	451	32.9	589	37.9	744
3.0	23	8.0	74	13.0	143	18.0	229	23.0	333	28.0	454	33.0	592	38.0	748
3.1	23	8.1	75	13.1	144	18.1	231	23.1	335	28 1	456	33.1	595	38.1	751
3.2	24	8.2	76	13.2	146	18.2	233	23.2	337	28.2	459	33.2	598	38.2	754
3.3	25	8.3	78	13 3	148	18.3	235	23.3	340	28.3	462	33.3	601	38.3	758
3.4	26	8.4	79	13.4	149	18.4	237	23.4	342	28.4	464	33.4	604	38.4	761
3.5	27	8.5	80	13.5	151	18.5	239	23.5	344	28.5	467	33.5	607	38.5	764
3.6	28	8.6	81	13.6	152	18.6	241	23.6	346	28.6	469	33.6	610	38.6	768
3.7	29	8.7	83	13.7	154	18.7	243	23.7	349	28.7	472	33.7	613	38.7	771
3.8	30	8.8	84	13.8	156	18.8	245	23.8	351	28.8	475	33.8	616	38.8	774
3.9	31	8.9	85	13.9	157	18.9	247	23.9	353	28.9	477	33.9	619	38.9	778
4.0	31	9.0	86	14.0	159	19.0	248	24.0	356	29.0	480	34.0	622	39.0	781
4.1	32	9.1	88	14.1	160	19.1	250	24.1	358	29.1	483	34.1	625	39.1	784
4.2	33	9 2	89	14.2	162	19.2	252	24.2	360	29.2	485	34.2	628	39.2	788
4.3	34	9.3	90	14.3	164	19.3	254	24.3	363	29.3	488	34.3	631	39.3	791
4.4	35	9.4	92	14.4	165	19.4	256	24.4	365	29.4	491	34.4	634	39.4	794
4.5	36	9.5	93	14.5	167	19.5	258	24.5	367	29.5	493	34.5	637	39.5	798
4.6	37	9.6	94	14.6	169	19.6	260	24.6	370	29.6	496	34.6	640	39.6	801
4.7	38	9.7	96	14.7	170	19.7	262	24.7	372	29.7	499	34.7	643	39.7	805
4.8	39	9.8	97	14.8	172	19.8	264	24.8	374	29.8	501	34.8	646	39.8	808
4.9	40	9.9	98	14.9	174	19.9	266	24.9	377	29.9	504	34.9	649	39.9	811

TABLE NO. XLIII.

Level Cross Sections.

CUBIC YARDS IN CORRESPONDING PRISMS, $\frac{100}{4}$ FEET LONG.

Road-bed 18 feet wide. Side slopes 1 to 1.

Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.	Double Height.	Cubic Yards.
0.0	0	5.0	47	10.0	106	15.0	177	20.0	259	25.0	353	30.0	458	35.0	575
0.1	1	5.1	49	10.1	108	15.1	179	20.1	261	25.1	355	30.1	461	35.1	578
0.2	2	5.2	50	10.2	109	15.2	180	20.2	263	25.2	357	30.2	463	35.2	580
0.3	3	5.3	51	10.3	110	15.3	182	20.3	265	25.3	359	30.3	465	35.3	583
0.4	3	5.4	52	10.4	112	15.4	183	20.4	266	22 4	361	30.4	467	35.4	585
0.5	4	5.5	53	10.5	113	15.4	185	20.5	268	25.5	363	30.5	470	35.5	588
0.6	5	5.6	54	10.6	114	15.6	186	20.6	270	25.6	365	30.6	472	35.6	590
0.7	6	5.7	55	10.7	116	15.7	188	20.7	272	25.7	367	30.7	474	35.7	593
0.8	7	5.8	56	10.8	117	15.8	189	20.8	273	25.8	369	30.8	476	35.8	595
0.9	8	5.9	57	10.9	118	15.9	191	20.9	275	25.9	371	30.9	479	35.9	598
1.0	9	6.0	58	11.0	120	16.0	193	21.0	277	26.0	373	31.0	481	36.0	600
1.1	9	6.1	59	11.1	121	16.1	194	21.1	279	26.1	375	31.1	483	36.1	603
1.2	10	6.2	61	11.2	122	16.2	196	21.2	281	26.2	377	31.2	485	36.2	605
1.3	11	6.3	62	11.3	124	16.3	197	21.3	283	26.3	379	31.3	488	36.3	608
1.4	12	6.4	63	11.4	125	16.4	199	21.4	284	26.4	381	31.4	490	36.4	610
1.5	13	6.5	64	11.5	126	16.5	201	21.5	286	26.5	383	31.5	492	36.5	613
1.6	14	6.6	65	11.6	128	16.6	202	21.6	288	26.6	385	31.6	494	36.6	615
1.7	15	6.7	66	11.7	129	16.7	204	21.7	290	26.7	388	31.7	497	36.7	618
1.8	16	6.8	67	11.8	131	16.8	205	21.8	292	26.8	390	31.8	499	36.8	620
1.9	17	6.9	69	11.9	132	16.9	207	21.9	294	26.9	392	31.9	501	36.9	623
2.0	18	7.0	70	12.0	133	17.0	209	22.0	295	27.0	394	32.0	504	37.0	625
2.1	19	7.1	71	12.1	135	17.1	210	22.1	297	27.1	396	32.1	506	37.1	628
2.2	19	7.2	72	12.2	136	17.2	212	22.2	299	27.2	398	32.2	508	37.2	630
2.3	20	7.3	73	12.3	138	17.3	213	22.3	301	27.3	400	32.3	511	37.3	633
2.4	21	7.4	74	12.4	139	17.4	215	22.4	303	27.4	402	32.4	513	37.4	635
2.5	22	7.5	76	12.5	140	17.5	217	22.5	305	27.5	404	32.5	515	37.5	638
2.6	23	7.6	77	12.6	142	17.6	218	22.6	307	27.6	406	32.6	518	37.6	641
2.7	24	7.7	78	12.7	143	17.7	220	22.7	308	27.7	408	32.7	520	37.7	643
2.8	25	7.8	79	12 8	145	17.8	222	22.8	310	27.8	411	32.8	522	37.8	646
2.9	26	7.9	80	12.9	146	17.9	223	22.9	312	27.9	413	32.9	525	37.9	648
3.0	27	8.0	81	13.0	147	18.0	225	23.0	314	28.0	415	33.0	527	38.0	651
3.1	28	8.1	83	13.1	149	18.1	227	23.1	316	28.1	417	33.1	529	38.1	654
3.2	29	8.2	84	13.2	150	18.2	228	23.2	318	28.2	419	33.2	532	38.2	656
3.3	30	8.3	85	13.3	152	18.3	230	23.3	320	28.3	421	33.3	534	38.3	659
3.4	31	8.4	86	13.4	153	18.4	232	23.4	322	28.4	423	33.4	537	38.4	661
3.5	32	8.5	88	13.5	155	18.5	233	23.5	324	28.5	426	33.5	539	38.5	664
3.6	33	8.6	89	13.6	156	18.6	235	23.6	326	28.6	428	23.6	541	38.6	667
3.7	34	8.7	90	13.7	158	18.7	237	23.7	328	28.7	430	33.7	544	38.7	669
3.8	35	8.8	91	13.8	159	18.8	238	23.8	329	28.8	432	33.8	546	38 8	672
3.9	36	8.9	93	13.9	161	18.9	240	23.9	331	28.9	434	33.9	549	38.9	674
4.0	37	9.0	94	14.0	162	19.0	242	24.0	333	29.0	436	34.0	551	39.0	677
4.1	38	9.1	95	14 1	164	19.1	244	24.1	335	29.1	439	34.1	553	39.1	680
4.2	39	9.2	96	14.2	165	19.2	245	24.2	337	29.2	441	34.2	556	39.2	682
4.3	40	9.3	98	14.3	167	19.3	247	24.3	339	29.3	443	34.3	558	39.3	685
4.4	41	9 4	99	14.4	168	19.4	249	24.4	341	29.4	445	34.4	561	39.4	688
4.5	42	9.5	100	14.5	170	19.5	251	24.5	343	29.5	447	34.5	563	39.5	690
4.6	43	9.6	101	14.6	171	19.6	252	24.6	345	29.6	449	34.6	565	39.6	693
4.7	44	9.7	103	14.7	173	19.7	254	24.7	347	29.7	452	34.7	568	39.7	696
4.8	45	9.8	104	14.8	174	19.8	256	24.8	349	29.8	454	34.8	570	39.8	698
4.9	46	9.9	105	14.9	176	19.9	258	24.9	351	29.9	456	34 9	573	39.9	701

TABLE NO. XLIV.

Cubic yards equal $\frac{(\text{height} \times r + b)\ 100}{4 \times 27}$.

Road-bed 24 feet wide. Side slopes 1 to 1.

Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.
0.0	22.2	5.0	26.9	10.0	31.5	15.0	36.1	20.0	40.7	25.0	45.4	30.0	50.0	35.0	54.6
0.1	22.3	5.1	26.9	10.1	31.6	15.1	36.2	20.1	40.8	25.1	45.5	30.1	50.1	35.1	54.7
0.2	22.4	5.2	27.0	10.2	31.7	15.2	36.3	20.2	40.9	25.2	45.6	30.2	50.2	35.2	54.8
0.3	22.5	5.3	27.1	10.3	31.8	15.3	36.4	20.3	41.0	25.3	45.6	30.3	50.3	35.3	54.9
0.4	22.6	5.4	27.2	10.4	31 9	15.4	36.5	20.4	41.1	25.4	45.7	30.4	50.4	35.4	55.0
0.5	22.7	5.5	27.3	10.5	31.9	15.5	36.6	20.5	41.2	25.5	45.8	30 5	50.5	35.5	55.1
0.6	22.8	5.6	27.4	10.6	32.0	15.6	36.7	20.6	41.3	25.6	45.9	30.6	50.6	35.6	55.2
0.7	22.9	5.7	27.5	10.7	32.1	15.7	36.8	20.7	41.4	25.7	46.0	30.7	50.6	35.7	55.3
0.8	23.0	5.8	27.6	10.8	32.2	15.8	36.9	20.8	41.5	25.8	46.1	30.8	50.7	35.8	55.4
0.9	23.1	5.9	27.7	10.9	32.3	15.9	36.9	20.9	41.6	25.9	46.2	30.9	50.8	35.9	55.5
1.0	23.1	6.0	27.8	11.0	32.4	16.0	37.0	21.0	41.7	26.0	46.3	31.0	50.9	36.0	55.6
1.1	23.2	6.1	27.9	11.1	32.5	16.1	37.1	21.1	41.8	26.1	46.4	31.1	51.0	36.1	55.6
1.2	23.3	6.2	28.0	11.2	32.6	16.2	37.2	21.2	41.9	26.2	46.5	31.2	51.1	36.2	55.7
1.3	23.4	6.3	28.1	11.3	32.7	16.3	37.3	21.3	41.9	26.3	46.6	31.3	51.2	36.3	55.8
1.4	23.5	6.4	28.1	11.4	32.8	16.4	37.4	21.4	42.0	26.4	46.7	31.4	51.3	36.4	55.9
1.5	23.6	6.5	28.2	11.5	32.9	16.5	37.5	21.5	42.1	26.5	46.8	31.5	51.4	36.5	56.0
1.6	23.7	6.6	28.3	11.6	33.0	16.6	37.6	21.6	42.2	26.6	46.9	31.6	51.5	36.6	56.1
1.7	23.8	6.7	28.4	11.7	33.1	16.7	37.7	21.7	42.3	26.7	46.9	31.7	51.6	36.7	56.2
1.8	23.9	6.8	28.5	11.8	33.1	16.8	37.8	21.8	42.4	26.8	47.0	31.8	51.7	36.8	56.3
1.9	24.0	6.9	28.6	11 9	33.2	16.9	37.9	21.9	42.5	26.9	47.1	31.9	51.8	36.9	56.4
2 0	24.1	7.0	28.7	12.0	33.3	17.0	38.0	22.0	42.6	27.0	47.2	32.0	51.9	37.0	56.5
2.1	24.2	7.1	28.8	12.1	33.4	17.1	38.1	22.1	42.7	27.1	47.3	32.1	51.9	37.1	56.6
2.2	24.3	7.2	28.9	12.2	33.5	17.2	38.1	22.2	42.8	27.2	47.4	32.2	52.0	37.2	56.7
2.3	24.4	7.3	29.0	12.3	33.6	17.3	38.2	22.3	42.9	27.3	47.5	32.3	52 1	37.3	56.8
2.4	24.4	7.4	29.1	12.4	33.7	17.4	38.3	22.4	43.0	27.4	47.6	32.4	52.2	37.4	56.9
2.5	24.5	7.5	29.2	12.5	33.8	17.5	38.4	22.5	43.1	27.5	47.7	32.5	52.3	37.5	56.9
2.6	24.6	7.6	29.3	12.6	33.9	17.6	38.5	22.6	43.1	27.6	47.8	32.6	52.4	37.6	57.0
2.7	24.7	7.7	29.4	12.7	34.0	17.7	38.6	22.7	43.2	27.7	47.9	32.7	52.5	37.7	57.1
2.8	24.8	7.8	29.4	12 8	34.1	17.8	38.7	22.8	43.3	27.8	48.0	32.8	52.6	37.8	57.2
2.9	24.9	7.9	29.5	12.9	34.2	17.9	38.8	22.9	43.4	27.9	48.1	32.9	52.7	37.9	57.3
3.0	25.0	8.0	29.6	13.0	34.3	18.0	38.9	23 0	43.5	28.0	48.1	33.0	52.8	38.0	57.4
3.1	25.1	8.1	29.7	13.1	34.4	18.1	39.0	23.1	43.6	28.1	48.2	33.1	52.9	38.1	57.5
3.2	25.2	8.2	29.8	13.2	34.4	18.2	39.1	23.2	43.7	28.2	48.3	33.2	53.0	38.2	57.6
3.3	25.3	8.3	29.9	13.3	34.5	18.3	39.2	23.3	43.8	28.3	48.4	33.3	53.1	38.3	57.7
3.4	25.4	8.4	30.0	13.4	34.6	18.4	39.3	23.4	43.9	28.4	48.5	33.4	53.1	38.4	57.8
3.5	25.5	8.5	30.1	13.5	34.7	18.5	39.4	23.5	44.0	28.5	48.6	33.5	53.2	38.5	57.9
3.6	25.6	8.6	30.2	13.6	34.8	18.6	39.4	23.6	44.1	28.6	48.7	33.6	53.3	38.6	58.0
3.7	25.6	8.7	30.3	13.7	34.9	18.7	39.5	23.7	44.2	28.7	48.8	33.7	53.4	38.7	58.1
3.8	25.7	8.8	30.4	13.8	35.0	18.8	39.6	23.8	44.3	28.8	48.9	33.8	53.5	38.8	58.1
3.9	25.8	8.9	30.5	13.9	35.1	18.9	39.7	23.9	44.4	28.9	49.0	33.9	53.6	38.9	58.2
4.0	25.9	9.0	30.6	14.0	35.2	19.0	39.8	24.0	44.4	29.0	49.1	34.0	53.7	39.0	58.3
4.1	26.0	9.1	30.6	14.1	35.3	19.1	39.9	24.1	44.5	29.1	49.2	34.1	53 8	39.1	58.4
4.2	26.1	9.2	30.7	14.2	35.4	19.2	40.0	24.2	44.6	29.2	49.3	34.2	53.9	39.2	58.5
4.3	26.2	9.3	30.8	14 3	35.5	19.3	40.1	24.3	44.7	29.3	49.4	34.3	54.0	39.3	58.6
4 4	26.3	9.4	30.9	14.4	35.6	19.4	40.2	24.4	44.8	29.4	49.4	34.4	54.1	39.4	58.7
4.5	26.4	9.5	31.0	14.5	35.6	19.5	40.3	24.5	44.9	29.5	49.5	34.5	54.2	39.5	58.8
4.6	26.5	9.6	31.1	14.6	35.7	19.6	40.4	24.6	45.0	29.6	49.6	34 6	54.3	39.6	58.9
4.7	26.6	9.7	31.2	14.7	35.8	19.7	40.5	24.7	45.1	29.7	49.7	34.7	54.4	39.7	59.0
4.8	26.7	9.8	31.3	14.8	35.9	19.8	40.6	24.8	45.2	29.8	49.8	34.8	54.4	39.8	59.1
4.9	26.8	9.9	31.4	14.9	36.0	19 9	40.6	24.9	45.3	29.9	49.9	34.9	54.5	39.9	59.2

TABLE NO. XLV.

Cubic yards equal $\frac{(\text{height}) \; b \; 100}{8 \times 27}$.

Road-bed 24 feet wide.

Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.
0.0	0	5.0	56	10.0	111	15.0	167	20.0	222	25.0	278	30.0	333	35.0	389
0.1	1	5.1	57	10.1	112	15.1	168	20.1	223	25.1	279	30.1	334	35.1	390
0.2	2	5.2	58	10.2	113	15.2	169	20.2	224	25.2	280	30.2	336	35.2	391
0.3	3	5.3	59	10.3	114	15.3	170	20.3	226	25.3	281	30.3	337	35.3	392
0.4	4	5.4	60	10.4	116	15.4	171	20.4	227	25.4	282	30.4	338	35.4	393
0.5	6	5.5	61	10.5	117	15.5	172	20.5	228	25.5	283	30.5	339	35.5	394
0.6	7	5.6	62	10.6	118	15.6	173	20.6	229	25.6	284	30.6	340	35.6	396
0.7	8	5.7	63	10.7	119	15.7	174	20.7	230	25.7	286	30.7	341	35.7	397
0.8	9	5.8	64	10.8	120	15.8	176	20.8	231	25.8	287	30.8	342	35.8	398
0.9	10	5.9	66	10.9	121	15.9	177	20.9	232	25.9	288	30.9	343	35.9	399
1.0	11	6.0	67	11 0	122	16.0	178	21.0	233	26.0	289	31.0	344	36.0	400
1.1	12	6.1	68	11.1	123	16.1	179	21.1	234	26.1	290	31.1	346	36.1	401
1.2	13	6.2	69	11.2	124	16.2	180	21.2	236	26.2	291	31.2	347	36.2	402
1.3	14	6.3	70	11.3	126	16.3	181	21.3	237	26.3	292	31.3	348	36.3	403
1.4	16	6.4	71	11.4	127	16.4	182	21.4	238	26.4	293	31.4	349	36.4	404
1.5	17	6.5	72	11.5	128	16.5	183	21.5	239	26.5	294	31.5	350	36.5	406
1.6	18	6.6	73	11.6	129	16.6	184	21.6	240	26.6	296	31.6	351	36.6	407
1.7	19	6.7	74	11.7	130	16.7	186	21.7	241	26.7	297	31.7	352	36.7	408
1.8	20	6.8	76	11.8	131	16.8	187	21.8	242	26.8	298	31.8	353	36.8	409
1.9	21	6.9	77	11.9	132	16.9	188	21.9	243	26.9	299	31.9	354	36.9	410
2.0	22	7.0	78	12.0	133	17.0	189	22.0	244	27.0	300	32.0	356	37.0	411
2.1	23	7.1	79	12.1	134	17.1	190	22.1	246	27.1	301	32.1	357	37.1	412
2.2	24	7.2	80	12.2	136	17.2	191	22.2	247	27.2	302	32.2	358	37.2	413
2.3	26	7.3	81	12.3	137	17.3	192	22.3	248	27.3	303	32.3	359	37.3	414
2.4	27	7.4	82	12.4	138	17.4	193	22.4	249	27.4	304	32.4	360	37.4	416
2.5	28	7.5	83	12.5	139	17.5	194	22.5	250	27.5	306	32.5	361	37.5	417
2.6	29	7.6	84	12.6	140	17.6	196	22.6	251	27.6	307	32.6	362	37.6	418
2.7	30	7.7	86	12.7	141	17.7	197	22.7	252	27.7	308	32.7	363	37.7	419
2.8	31	7.8	87	12.8	142	17.8	198	22.8	253	27.8	309	32.8	364	37.8	420
2.9	32	7.9	88	12.9	143	17.9	199	22.9	254	27.9	310	32.9	366	37.9	421
3.0	33	8.0	89	13.0	144	18.0	200	23.0	256	28.0	311	33 0	367	38.0	422
3.1	34	8.1	90	13.1	146	18.1	201	23.1	257	28.1	312	33.1	368	38.1	423
3.2	36	8.2	91	13.2	147	18.2	202	23.3	258	28.2	313	33.2	369	38.2	424
3.3	37	8.3	92	13.3	148	18.3	203	23.3	259	28.3	314	33.3	370	38.3	426
3.4	38	8.4	93	13.4	149	18.4	204	23.4	260	28.4	316	33.4	371	38.4	427
3.5	39	8.5	94	13.5	150	18.5	206	23.5	261	28.5	317	33.5	372	38.5	428
3.6	40	8.6	96	13.6	151	18.6	207	23.6	262	28.6	318	33.6	373	38.6	429
3.7	41	8.7	97	13.7	152	18.7	208	23.7	263	28.7	319	33.7	374	38.7	430
3.8	42	8.8	98	13.8	153	18.8	209	23.8	264	28.8	320	33.8	376	38.8	431
3.9	43	8.9	99	13.9	154	18.9	210	23.9	266	28.9	321	33.9	377	38.9	432
4.0	44	9.0	100	14.0	156	19.0	211	24.0	267	29.0	322	34.0	378	39.0	433
4.1	46	9.1	101	14.1	157	19.1	212	24.1	268	29.1	323	34.1	379	39.1	434
4.2	47	9.2	102	14.2	158	19.2	213	24.2	269	29.2	324	34.2	380	39.2	436
4.3	48	9.3	103	14.3	159	19.3	214	24.3	270	29.3	326	34.3	381	39.3	437
4.4	49	9.4	104	14.4	160	19.4	216	24.4	271	29.4	327	34.4	382	39.4	438
4.5	50	9.5	106	14 5	161	19.5	217	24.5	272	29.5	328	34.5	383	39.5	439
4.6	51	9.6	107	14.6	162	19.6	218	24.6	273	29.6	329	34.6	384	39.6	440
4.7	52	9.7	108	14.7	163	19.7	219	24.7	274	29.7	330	34.7	386	39.7	441
4.8	53	9.8	109	14.8	164	19.8	220	24.8	276	29.8	331	34.8	387	39.8	442
4.9	54	9.9	110	14.9	166	19.9	221	24.9	277	29.9	332	34.9	388	39.9	443

TABLE NO. XLVI.

Cubic yards equal $\frac{(\text{height} \times r + b)\ 100}{12 \times 27}$.

Road-bed 24 feet wide. Side slopes 1 to 1.

Height	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.	Height.	Cubic Yards.
0.0	7.4	5.0	9.0	10.0	10.5	15.0	12.0	20.0	13.6	25.0	15.1	30.0	16.7	35.0	18.2
0.1	7.4	5.1	9.0	10.1	10.5	15.1	12.1	20.1	13.6	25.1	15.2	30.1	16.7	35.1	18.2
0.2	7.5	5.2	9.0	10.2	10.6	15.2	12.1	20.2	13.6	25.2	15.2	30.2	16.7	35.2	18.3
0.3	7.5	5.3	9.0	10.3	10.6	15.3	12.1	20.3	13.7	25.3	15.2	30.3	16.8	35.3	18.3
0.4	7.5	5.4	9.1	10.4	10.6	15.4	12.2	20.4	13.7	25.4	15.2	30.4	16.8	35.4	18.3
0.5	7.6	5.5	9.1	10.5	10.6	15.5	12.2	20.5	13.7	25.5	15.3	30.5	16.8	35.5	18.4
0.6	7.6	5.6	9.1	10.6	10.7	15 6	12.2	20.6	13.8	25.6	15.3	30.6	16.9	35.6	18.4
0.7	7.6	5.7	9.2	10.7	10.7	15.7	12.3	20.7	13.8	25.7	15.3	30.7	16.9	35.7	18.4
0.8	7.7	5.8	9.2	10.8	10.7	15.8	12.3	20.8	13.8	25.8	15.4	30.8	16.9	35.8	18.5
0.9	7.7	5.9	9.2	10.9	10.8	15.9	12.3	20.9	13.9	25.9	15.4	30.9	16.9	35.9	18.5
1.0	7.7	6.0	9.3	11.0	10.8	16.0	12.3	21.0	13.9	26.0	15.4	31.0	17.0	36.0	18.5
1.1	7.7	6.1	9.3	11.1	10.8	16.1	12.4	21.1	13.9	26.1	15.5	31.1	17.0	36.1	18.5
1.2	7.8	6.2	9.3	11.2	10.9	16.2	12.4	21.2	14.0	26.2	15 5	31.2	17.0	36.2	18.6
1.3	7.8	6.3	9.4	11.3	10.9	16.3	12.4	21.3	14.0	26.3	15.5	31.3	17.1	36.3	18.6
1.4	7.8	6.4	9.4	11.4	10.9	16.4	12.5	21.4	14.0	26.4	15.6	31.4	17.1	36.4	18.6
1.5	7.9	6.5	9.4	11.5	11.0	16.5	12.5	21.5	14.0	26.5	15.6	31.5	17.1	36.5	18.7
1.6	7.9	6.6	9.4	11.6	11.0	16.6	12.5	21.6	14.1	26.6	15.6	31.6	17.2	36.6	18.7
1.7	7.9	6.7	9.5	11.7	11.0	16.7	12.6	21.7	14.1	26.7	15.6	31.7	17.2	36.7	18.7
1.8	8.0	6.8	9.5	11.8	11.0	16.8	12.6	21.8	14.1	26.8	15.7	31.8	17.2	36.8	18.8
1.9	8.0	6.9	9.5	11.9	11.1	16.9	12.6	21.9	14.2	26.9	15.7	31.9	17.3	36.9	18.8
2.0	8.0	7.0	9.6	12.0	11.1	17.0	12.7	22.0	14.2	27.0	15.7	32.0	17.3	37.0	18.8
2.1	8.1	7.1	9.6	12.1	11.1	17.1	12.7	22.1	14.2	27.1	15.8	32.1	17.3	37.1	18.9
2.2	8.1	7.2	9.6	12.2	11.2	17.2	12.7	22.2	14.3	27.2	15.8	32.2	17.3	37.2	18.9
2.3	8.1	7.3	9.7	12.3	11.2	17.3	12.7	22.3	14.3	27.3	15.8	32.3	17.4	37.3	18.9
2.4	8.1	7.4	9.7	12.4	11.2	17.4	12.8	22.4	14.3	27.4	15.9	32.4	17.4	37.4	19.0
2.5	8.2	7.5	9.7	12.5	11.3	17.5	12.8	22.5	14.4	27.5	15.9	32.5	17.4	37.5	19.0
2.6	8.2	7.6	9.8	12.6	11.3	17.6	12.8	22.6	14.4	27.6	15.9	32.6	17.5	37.6	19.0
2.7	8.2	7.7	9.8	12.7	11.3	17.7	12.9	22.7	14.4	27.7	16.0	32.7	17.5	37.7	19.0
2.8	8.3	7.8	9.8	12.8	11.4	17.8	12.9	22 8	14.4	27.8	16.0	32.8	17.5	37.8	19.1
2.9	8.3	7.9	9.8	12.9	11.4	17.9	12.9	22.9	14.5	27.9	16.0	32.9	17 6	37.9	19.1
3.0	8.3	8.0	9.9	13.0	11.4	18.0	13.0	23.0	14.5	28.0	16.0	33.0	17.6	38.0	19.1
3.1	8.4	8.1	9.9	13.1	11.5	18.1	13.0	23.1	14.5	28.1	16.1	33.1	17 6	38.1	19.2
3.2	8.4	8.2	9.9	13.2	11.5	18.2	13.0	23.2	14.6	28.2	16.1	33.2	17.7	38.2	19.2
3.3	8.4	8.3	10.0	13.3	11.5	18.3	13.1	23.3	14.6	28.3	16.1	33.3	17.7	38.3	19.2
3.4	8.5	8.4	10.0	13.4	11.5	18.4	13.1	23.4	14.6	28.4	16.2	33.4	17.7	38.4	19.3
3.5	8.5	8.5	10.0	13.5	11.6	18.5	13.1	23.5	14.7	28.5	16.2	33.5	17.7	38.5	19.3
3.6	8.5	8.6	10.1	13.6	11.6	18.6	13.1	23.6	14.7	28.6	16.2	33.6	17.8	38.6	19.3
3.7	8.5	8.7	10.1	13.7	11.6	18.7	13.2	23.7	14.7	28.7	16.3	33.7	17.8	38.7	19.4
3.8	8.6	8 8	10.1	13.8	11.7	18.8	13.2	23.8	14.8	28.8	16.3	33.8	17.8	38.8	19.4
3.9	8.6	8.9	10.2	13.9	11.7	18.9	13.2	23.9	14.8	28.9	16.3	33.9	17.9	38.9	19.4
4.0	8.6	9 0	10.2	14.0	11.7	19.0	13.3	24.0	14 8	29.0	16.4	34.0	17.9	39.0	19.4
4.1	8.7	9.1	10.2	14.1	11.8	19.1	13.3	24.1	14.8	29.1	16.4	34.1	17.9	39.1	19.5
4.2	8.7	9.2	10 2	14.2	11.8	19.2	13.3	24.2	14.9	29.2	16.4	34.2	18.0	39.2	19.5
4.3	8.7	9.3	10.3	14.3	11.8	19.3	13.4	24.3	14.9	29.3	16.5	34.3	18.0	39.3	19.5
4.3	8.8	9.4	10.3	14.4	11.9	19.4	13.4	24.4	14.9	29.4	16.5	34.4	18.0	39.4	19.6
4.5	8.8	9.5	10.3	14.5	11.9	19.5	13.4	24.5	15.0	29.5	16.5	34.5	18.1	39.5	19.6
4.6	8.8	9.6	10.4	14.6	11.9	19.6	13.5	24.6	15.0	29.6	16.5	34.6	18.1	39.6	19.6
4.7	8.9	9.7	10.4	14.7	11.9	19.7	13.5	24.7	15.0	29.7	16.6	34.7	18.1	39.7	19.7
4.8	8.9	9 8	10.4	14.8	12.0	19.8	13.5	24.8	15.1	29.8	16.6	34.8	18.1	39.8	19.7
4.9	8.9	9.9	10.5	14.9	12.0	19.9	13.5	24.9	15.1	29.9	16.6	34.9	18.2	39.9	19.7

TABLE NO. XLVII.

Cubic yards equal $D^2 1 \times \frac{100}{27}$. Side slopes 1 to 1.

D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.
0					1	1	1	2	2	3	0
1	4	4	5	6	7	8	9	11	12	13	1
2	15	16	18	20	21	23	25	27	29	31	2
3	33	36	38	40	43	45	48	51	53	56	3
4	59	62	65	68	72	75	78	82	85	89	4
5	93	96	100	104	108	112	116	120	125	129	5
6	133	138	142	147	152	156	161	166	171	176	6
7	181	187	192	197	203	208	214	220	225	231	7
8	237	243	249	255	261	268	274	280	287	293	8
9	300	307	313	320	327	334	341	348	356	363	9
10	370	378	385	393	401	408	416	424	432	440	10
11	448	456	465	473	481	490	498	507	516	524	11
12	533	542	551	560	569	579	588	597	607	616	12
13	626	636	645	655	665	675	685	695	705	716	13
14	726	736	747	757	768	779	789	800	811	822	14
15	833	844	856	867	878	890	901	913	925	936	15
16	948	960	972	984	996	1008	1021	1033	1045	1058	16
17	1070	1083	1096	1108	1121	1134	1147	1160	1173	1187	17
18	1200	1213	1227	1240	1254	1268	1281	1295	1309	1323	18
19	1337	1351	1365	1380	1394	1408	1423	1437	1452	1467	19
D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.

Cubic yards equal $D^2 1\frac{1}{2} \times \frac{100}{27}$. Side slopes $1\frac{1}{2}$ to 1.

D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.
0				1	1	1	2	3	4	5	0
1	6	7	8	9	11	13	14	16	18	20	1
2	22	25	27	29	32	35	38	41	44	47	2
3	50	53	57	61	64	68	72	76	80	85	3
4	89	93	98	103	108	113	118	123	128	133	4
5	139	145	150	156	162	168	174	181	187	193	5
6	200	207	214	221	228	235	242	249	257	265	6
7	272	280	288	296	304	313	321	329	338	347	7
8	356	365	374	383	392	401	411	421	430	440	8
9	450	460	470	481	491	501	512	523	534	545	9
10	556	567	578	589	601	613	624	636	648	660	10
11	672	685	697	709	722	735	748	761	774	787	11
12	800	813	827	841	854	868	882	896	910	925	12
13	939	953	968	983	998	1013	1028	1043	1058	1073	13
14	1089	1105	1120	1136	1152	1168	1184	1201	1217	1233	14
15	1250	1267	1284	1301	1318	1335	1352	1369	1387	1405	15
16	1422	1440	1458	1476	1494	1513	1531	1549	1568	1587	16
17	1606	1625	1644	1663	1682	1701	1721	1741	1760	1780	17
18	1800	1820	1840	1861	1881	1901	1922	1943	1964	1985	18
19	2006	2027	2048	2069	2091	2113	2134	2156	2178	2200	19
D.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	D.

A Cross-section Book is indicated and represented (as to form, size, and arrangement) on the succeeding pages, which will be found useful and convenient for keeping both the field-notes and office computations by adopting the following method: In the seventh column is the elevation, 528.30, of the bench-mark; in the fourth column is the back sight, 4.62; and in the second column their sum, or the height of instrument, 532.92. Take the grade from the height of instrument and place the difference in the fourth column, and from this difference take the side fore sights, that are placed in the fifth column, to find the side cuts or fills. Taking the grade, 529.00, at station 20, from the height of instrument, the difference is 3.9, the left fore sight is 5.5, and 5.5 from 3.9 leaves — 1.6, or fill 1.6, in sixth column, for the left side. The right fore sight, 4.1, placed under the left fore sight, taken from 3.9 leaves — 0.2, or fill 0.2, in eighth column, for the right side. The road-bed is taken 14 feet wide, side slopes $1\frac{1}{2}$ to 1, and the left and right side distances, 9.4 and 7.3, are placed in the sixth and eighth columns under the left and right fills. The center fill is supposed to have been previously found and copied into the cross-section book, but there is room to place a center fore sight in the fore-sight column; this has been done at station 23 + 50, where 2.2 is the center fore sight. Under the center cut or fill, seventh column, is a space for the center elevation, which it is sometimes convenient to have in the cross-section book.

The field-notes are all in the first eight columns; the remaining columns are for the computation of the earthwork quantities. Multiply the number found in the table of side triangles for the center height by the difference between the sum of the two side heights and twice the center height; *add* this product to the number found in the table of level cross-sections for the center height, when the sum of the two side heights is *greater* than twice the center height; *subtract* when it is *less*. For station 20 the sum of the side heights is 1.8, ninth column, twice the center height is 2.0, tenth column, and 2.0 from 1.8 leaves — 0.2, eleventh column. The number in Table IV for center height 1.0 is 15.7, twelfth column, and the product of 15.7 by — 0.2 is — 3, thirteenth column. The number in Table III for height 1.0 is 57, fourteenth column, and 3 from 57 leaves 54, fifteenth column. In the same way we find 181, fifteenth column, for station 21; and 54 + 181 = 235, fifteenth column, and half of 236 is 118, seventeenth column, the answer in cubic yards by the common method of "averaging end-sections volumes." The cubic yards in the 100 feet between 21 and 22 have been computed by the method of "averaging end-sections volumes" and then deducting the "prismoidal correction" for the

difference of center heights (see Article 8). The difference of center heights is 1.6, and in Table XXXVII, side slope 1½ to 1, the number for 1.6 is 2 nineteenth column, and 2 from 263, eighteenth column, leaves 261, seventeenth column, answer in cubic yards. The cubic yards in the 100 feet between 22 and 23 are computed by the "prismoidal formula," Article 4. Twice the center height, 7.0, tenth column, for the mid-section is found by adding the center heights of stations 22 and 23; $4.4 + 2.6 = 7.0$, tenth column; the difference 4.2, eleventh column, is found by taking half the sum of the numbers in the eleventh column for stations 22 and 23; half the sum of 0.4 and 8.0 is 4.2.

The number for the mid-section is 345, fifteenth column, and 4 times $345 = 1380$; the number for station 22 is 346, the number for station 23 is 334, and the sum of 346, 1380, and 334, eighteenth column, is 2060, nineteenth column, and $2060 \div 6 = 343$, seventeenth column, the answer in cubic yards.

After the field-notes for a certain number of stations have been completed, first complete the twelfth column, and then the fourteenth column, from the tables for that number of stations, and then proceed to compute the quantities; this will be found the most rapid method. Where more than three heights are taken at a station, some of the columns can be ignored, and the small squares will be found useful for keeping the field-notes of very irregular cross-sections.

Station.	Height Instrument.	Grade.	Difference and Back Sight.	Fore Sight.	Left.	Center and Elevation.	Right.	Sum Side Heights.	Twice Center Height.
Bench Mark.	5 3 2.9 2		4.6 2			5 2 8.3 0			
2 0		5 2 9.0 0	3.9	5.5	−1.6	−1.0	−0.2	1.8	2.0
				4.1	9.4	5 2 8.0	7.3		
2 1		5 3 0.0 0	2.9	7.1	−4.2	−2.8	−1.0	5.2	5.6
				3.9	1 3.3	5 2 7.2	8.5		
2 2		5 3 1.0 0	1.9	8.5	−6.6	−4.4	−2.6	9.2	8.8
				4.5	1 6.9	5 2 6.6	1 0.9		7.0
2 3		5 3 2.0 0	0.9	5.9	−5.0	−2.6	−8.2	1 3.2	5.2
				9.1	1 4.5	5 2 9.4	1 9.3		
Turning point.	5 3 0.5 1		3.8 3	6.2 4		5 2 6.6 8			
+5 0		5 3 2.5 0	−2.0	2.2	−12.6	−4.2	−2.4	1 5.0	8.4
				1 0.6					
				0.4	2 5.9	5 2 8.3	1 0.6		
2 4		5 3 3.0 0	−2.5	1 1.7	−14.2	−9.4	−6.2	2 0.4	18.8
				3.7	2 8.3	5 2 3.6	1 6.3		
1	2	3	4	5	6	7	8	9	10

Difference.	From S. T. Table.	Product.	From L. C. S. Table.	Volume.	Excavation.	Embankment.		
							On oak, 70	ft. Rt. Sta. 20
−0.2	15.7	−3	57	54				
				235		118		
−0.4	20.7	−8	189	181				
				527		261	263	2
0.4	25.2	10	336	346			346	
4.2	22.7	95	250	345		343	1380	2060
8.0	20.2	162	172	334			334	
				812		203		
6.6	24.6	162	316	478				
				1519		380		
1.6	39.1	63	978	1041				
11	12	13	14	15	16	17	18	19