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The Science of Grading Patterns for Men's and Young Men's Clothing

by
HARRY SIMONS



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The Science of Grading Patterns *for* Men's and Young Men's Clothing

By HARRY SIMONS

Technical Editor of The Clothing Trade Journal;
Author of "Designing Overcoats," "Designing Sack Coats, Dress Coats and Vests,"
"Drafting Pants and Overalls," "Drafting Cotton Garments," "Drafting Shirts
and Undergarments," "Designing Boys' and Juveniles' Clothing."

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Foreword

THE generous reception accorded the first edition of "Science of Grading Patterns for Men's and Young Men's Clothing" and the evident need for an even more comprehensive work on the subject have encouraged the author to issue this second edition. This volume, while it is based on, and includes most of the material contained in, the first edition, treats the subject in greater detail, more comprehensive explanations being given where deemed necessary or desirable.

The system of grading presented in this text-book has fully proved its authoritativeness and reliability, to judge by the highly commendatory letters and personal expressions of satisfaction which the author has had the pleasure of receiving from those who have used his book. Not the least satisfying aspect of the author's first effort is the fact that the entire first edition has been exhausted, which of itself should be sufficient evidence that a second edition is in demand.

This edition, as the reader will observe, is of a size that can be easily and conveniently carried in one's coat pocket, if desired, and compact enough to fit nicely into one's drafting-table drawer.

The author has given careful thought to the preparation of this volume, and has tried to reflect in its pages the experience and knowledge gleaned during many years of teaching and manufacturing. It is without a doubt the most comprehensive work published on the subject.

This text not only teaches how to grade the regular style of garments, but also indicates how to "pick off" such garments as raglans, balmacaans, balmaroons, butterfly coats, etc. The subject of grading linings is also treated, as properly graded linings not only conduce to economy of material, but are of invaluable assistance in producing a well-fitting garment.

HARRY SIMONS.

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Grading Today

PATTERN GRADING is a science. It demands precise knowledge of human proportions, of the variations occasioned by growth. It demands minute calculation in the production of diagrams, and also accuracy, which is as vital to the system as it is in architecture.

The procedure is that of making a diagram for a given size and then grading up to larger sizes and down to smaller sizes. In picking off the sizes from the grade the model pattern is used to shape the next size. Each size is picked off separately from the grade, using the preceding one to shape from point to point. In this way the same lines and effects are given to each pattern.

The divisions allowed in this book are 1 inch in front for 4 sizes, $\frac{1}{2}$ inch at side seam of back for 4 sizes. It is strictly adhered to except where otherwise stated. A full inch is allowed in the width for both the increase and decrease of every size. The fallacy of using 5 divisions on this allowance is apparent, even considering the argument advanced by those using it. If anything, the larger sizes should have a greater allowance than the smaller, speaking only of the width of the size. The author of this book has used both. The allowance at shoulder is given as $\frac{4}{6}$ of an inch up to size 42 for every four sizes. You will note that in both the Stout Sack and Corpulent Sack a different allowance is given on the back. Wherever there is any deviation from the regular grade it is so stated.

The grading of linings is very important, as it is the only way to insure a perfect set. If the model is made correctly it should save the cost of fitting and prepare the garment right for the machine. The shoulders are graded to keep the correct proportion throughout. On the Corpulent Sack grade a clear idea is given how the sizes over 46 are to be graded.

MEN'S PROPORTIONS

[illegible]

Preliminary Explanation

THE following diagrams explain in detail how the model size is set on the paper, marked around and the base lines redrawn. It is essential to memorize every point of the first twelve drawings, as they form the basis for grading all types of sack coats. This method forms the fundamental construction lines and gives the key for grading all types of overcoats. Every point necessary for grading men's and young men's patterns is thoroughly explained in these diagrams.

As a rule, most of the patterns are graded by the same method. There are slight variations here and there, but the garments illustrated contain all the fundamental points. They have to be located by different methods, depending on the character of the garment, such as the butterfly coat and the cape coat.

The author feels confident that no matter what type of garment the reader desires to grade he will find in this book the points that can be used on that particular garment so as to correctly grade it. In many cases it will be observed that the results of the grading of various sizes will be somewhat different than if these sizes were drafted out of the system. This should be the case, because most systems are only good for proportionate sizes, where the increases and decreases of the height, the breast and the waist run regular, but when the sizes run abnormal, such as larger sizes and very small sizes, changes must be made in the system of drafting to keep this variation, where the grade, as outlined, takes care automatically of this difference. The result is that the grade, if properly carried out, is more dependable than any system. This has been proved by many years of experience and scientific test.

PROPORTIONS

In order to understand the science of grading it is necessary to understand human proportions and the various measurements of each size, such as the depth of scye, waist length, and growth in height; also the width of back, the blade, breast

measure, waist and seat measures, the inseam length, the arm length and the corresponding sizes of the neck. A full list of proportions, from size 34 to 52 breast, is included in this volume.

SIMPLE SYSTEM

The system taught in this book is very simple. It is based on grading from one size, either size 36 or 38. It is best to grade from these sizes because they are model sizes. Size 36 is used for grading young men's garments and size 38 for grading men's garments. For stouts, size 40 or 42 is preferable, because these sizes are larger, and it is best to use a larger size as the model.

In starting the grade, see that the model pattern is carefully copied on manila or detail paper; 2X manila is the best grade and thickness to use. Any paper that has a good edge and will cut clean can be employed. After the model is carefully copied, and all the points are carefully indicated by awl pricks, the size is cut out and remarked on another sheet of paper, ready to grade. The back, forepart, top sleeve, under sleeve, collar and facing are each to be graded separately.

TOOLS

The tools necessary to grade patterns are a parallel rule, an awl, proportional divider, tailor's square, a carpenter's pencil and a 6H hard lead pencil. Care must be exercised to make all the lines thin and sharp, because if there is any deviation, however slight, the difference will tend to increase or decrease in each size. It will be found later that on the larger and smaller sizes this deviation will show a big difference.

DIAGRAMS

The diagrams are laid out so that the student is taught how to grade step by step, beginning with the back, and traveling from point to point, until the most intricate and most complicated patterns are mastered. Every diagram explains new points. The method starts off with grading the back, as shown in Diagrams 1, 2 and 3. To start to grade the patterns, proceed as follows:

Diagram 1—Back Part of Sack Coat

Draw line A-B-C-D, which is called the base construction line.

Place the back at point A and the bottom at point F, being careful that the center seam of the back is in the same position as when the pattern was drafted. It is a good idea, when grading, always to have the breast and waist lines marked on it, although it is not absolutely necessary, because these lines can be easily located.

B-L is the breast line.

C-M is the waist line and D-N is the bottom.

B to O is 1 inch.

O is the point from which the neck line is located on the back.

This is raised 1 inch above the breast line so as to give the exact increase of the width of the neck, as will be explained further on in the system.

B to P is 1 inch. This locates the point of the shoulder line, P-H.

P is lowered 1 inch so as not to make the shoulders too wide. In some of the older systems P was located at the same place as point B.

Draw line O-G, which gives the increase and decrease for the neck sizes.

Draw line P-H, which establishes the different widths of shoulders for different sizes.

Point R is half way between H and G.

Draw line B-R, which is used as a guide line.

I is the sleeve notch of the back.

Draw line B-I.

Draw line B-J, which is the top of side seam of the back.

Parallel B-J to point K, which will give the same width of step for all sizes at the top of the side seam.

Extend lines at points A-L-M and N. This gives all the construction lines for grading the back.

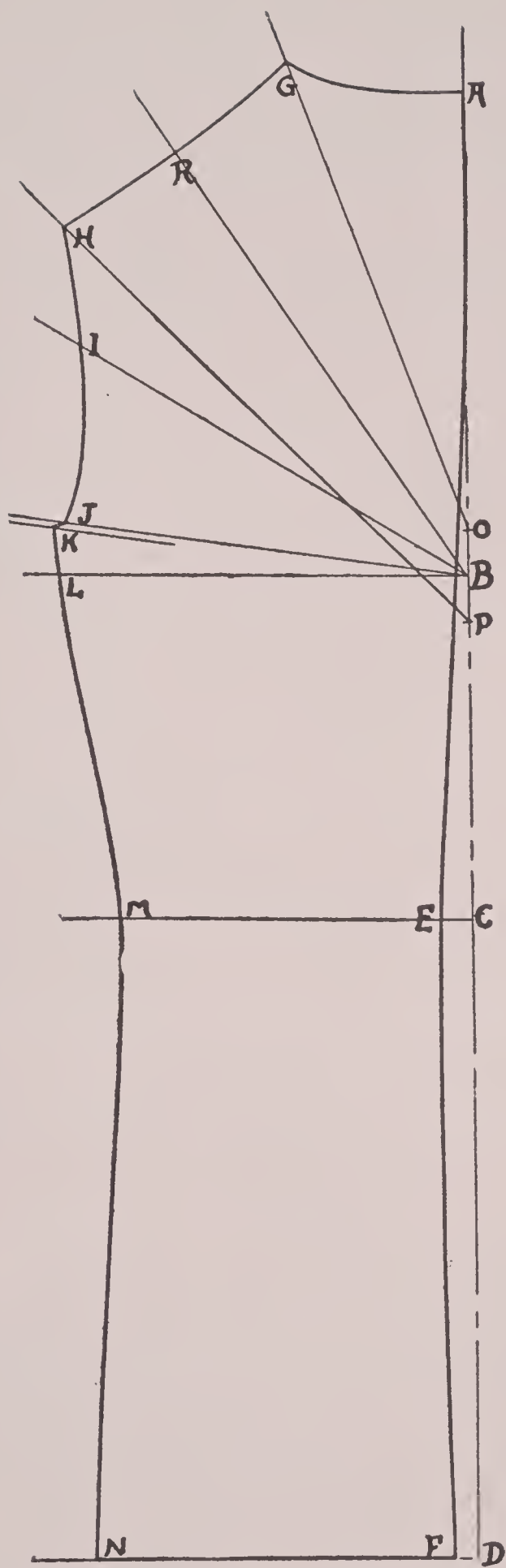


Diagram 1—Back Part

Diagram 2—Enlarging Back Four Sizes

Diagram 2 explains how the back is enlarged four sizes. In this diagram the proportional divider and the parallel rule are used. To establish the various points continue as follows:

From G to 2 is $\frac{4}{6}$ inch, which is the amount of increase in height for four sizes; $\frac{4}{6}$ inch is used in preference to any other measurement because it has been found by experience to be the exact amount necessary to get the proportionate height and also the correct width of the neck at the top of the back.

After this distance is established, put the parallel rule on points G and A and move it up to point 2. This establishes point 3.

Then parallel from G-R to point 2, which establishes point 4. Then parallel from G-H to point 2, which establishes point 5. This gives the increase for the four sizes on the shoulder and neck. To get the increase on the side seams continue as follows:

L to 6 is $\frac{1}{2}$ inch.

M to 7 is $\frac{1}{2}$ inch and N to 8 is $\frac{1}{2}$ inch. This gives $\frac{1}{2}$ inch allowance for four sizes on the side seams.

Parallel L-K to 6, which gives point 9.

J to 10 is the same distance as from K to 9.

Now take the back and draw line 10-5, which intersects line I, establishing point 11 by shaping. This produces the complete grade for the back for four sizes, or from 36 to 40, if size 36 is used as the model. The back is used in shaping lines 3-2, 2-5, 5-10, 10-9, and 9-8.

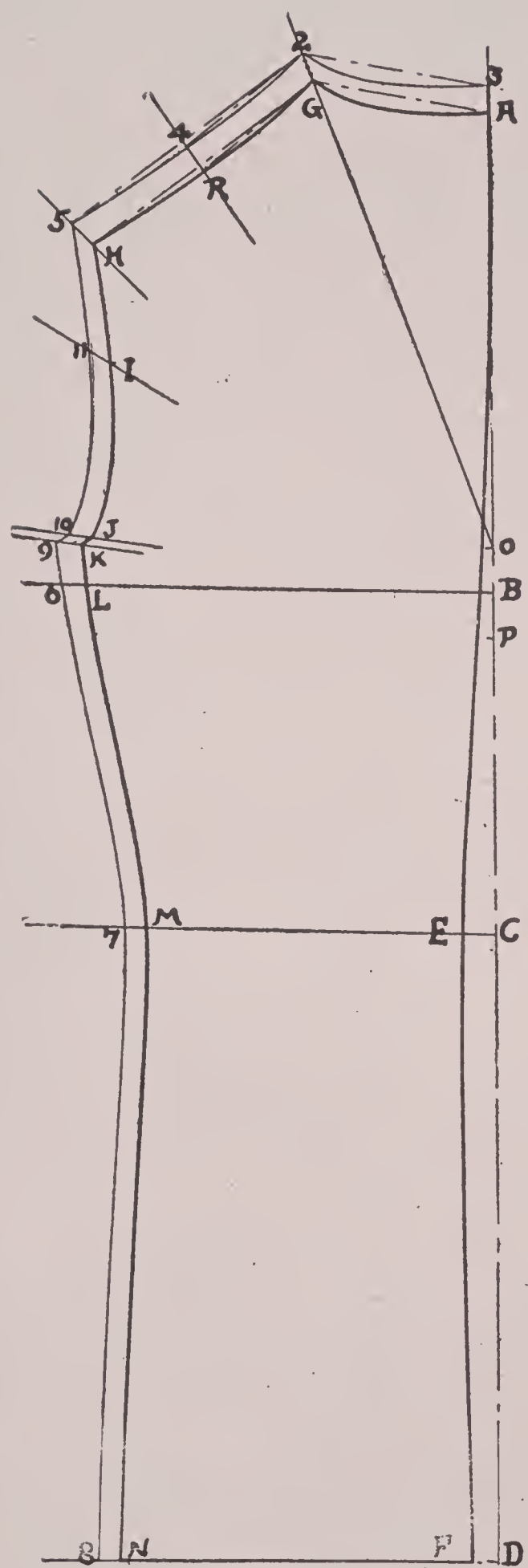


Diagram 2—Back Part

Diagram 3—Completing Grade of Back

This diagram shows how the grade is carried out from size 40 up and from size 36 down. On the same idea the grade can be carried out up to size 50 or 52 or down to size 32. All that is required to finish the grade on the small size is to shorten the length. This is explained in another diagram. To finish the grading of the back continue as follows:

Extend lines A-G-R and H-I-J-K-L-M-N, which are the grading lines at the various points. These lines must be extended forward and backward. Then space the different sizes, using the same divisions, with the exception of a few points, which are explained hereafter.

It will be observed that from 2 to 3, which is 40 to 44, there are only three divisions, because after size 42 the distance necessary for the depth of scye and the height of shoulder is half the amount of the normal size. That is why one division is used for two sizes. If an odd size is desired, say 43, a point should be placed half way between sizes 42 and 44. This scheme should be followed from size 42 up. This is carried out only at the neck and shoulder, for on the blade and side seam every size is marked. The sizes are given full proportions, the same divisions being carried throughout.

In sizes above 42, at the waist and bottom of the side seam $\frac{5}{8}$ inch is allowed for four sizes, instead of $\frac{1}{2}$ inch. After the allowance is made, the back is shaped, which finishes the grade.

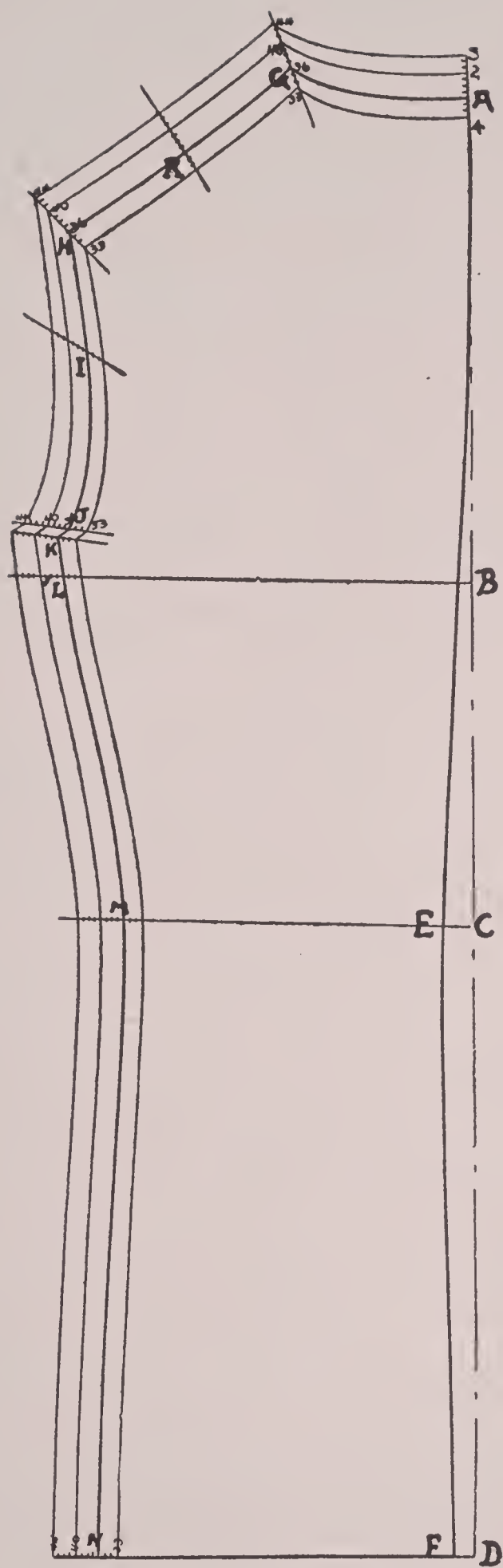


Diagram 3—Back Part

Diagram 4—Grading the Forepart

In grading the forepart there is very little variation except at the waist in the larger sizes, otherwise the divisions run regular. To grade the forepart, continue as follows:

FOREPART CONSTRUCTION LINES

Mark out the forepart as illustrated and draw the breast line, M-N, and waist line, R-P, on it. Then draw line B-C so that it strikes the front of the armhole at point A, the notch. This establishes point C, where the line B-A intersects the breast line. This line also gives the proper extension of the neck point at the forepart of the shoulder.

Point C is the same point from which the lines E-C, D-C, J-C and K-C radiate.

Point B is the neck point.

Point D is the notch for the break of the lapel in the gorge.

Point E is the notch for the front step of the collar and lapel.

Point J is a guide line for the center of the shoulder.

Point K is the top of the side seam.

Point F is the outside point of the lapel.

Line F should be parallel to line E-C.

L is the width of the step of the side seam on the forepart, and line L is parallel to line C-K.

H is the hollow part of the armhole and G is $1\frac{3}{4}$ inches from H.

Point G is extended this distance so as to guard against the shoulders becoming too wide on the larger sizes.

I is the shoulder point at the armhole.

Draw line I-G, which gives the run for the width of the shoulders for the various sizes.

O is the notch of the front of the lapel and shows the exact location of the break line.

Line O should run about parallel to line F.

P is the extension of the waist line at the front. R is an extension of the waist line at the side seam.

S is a guide line between the waist line and the bottom at the front.

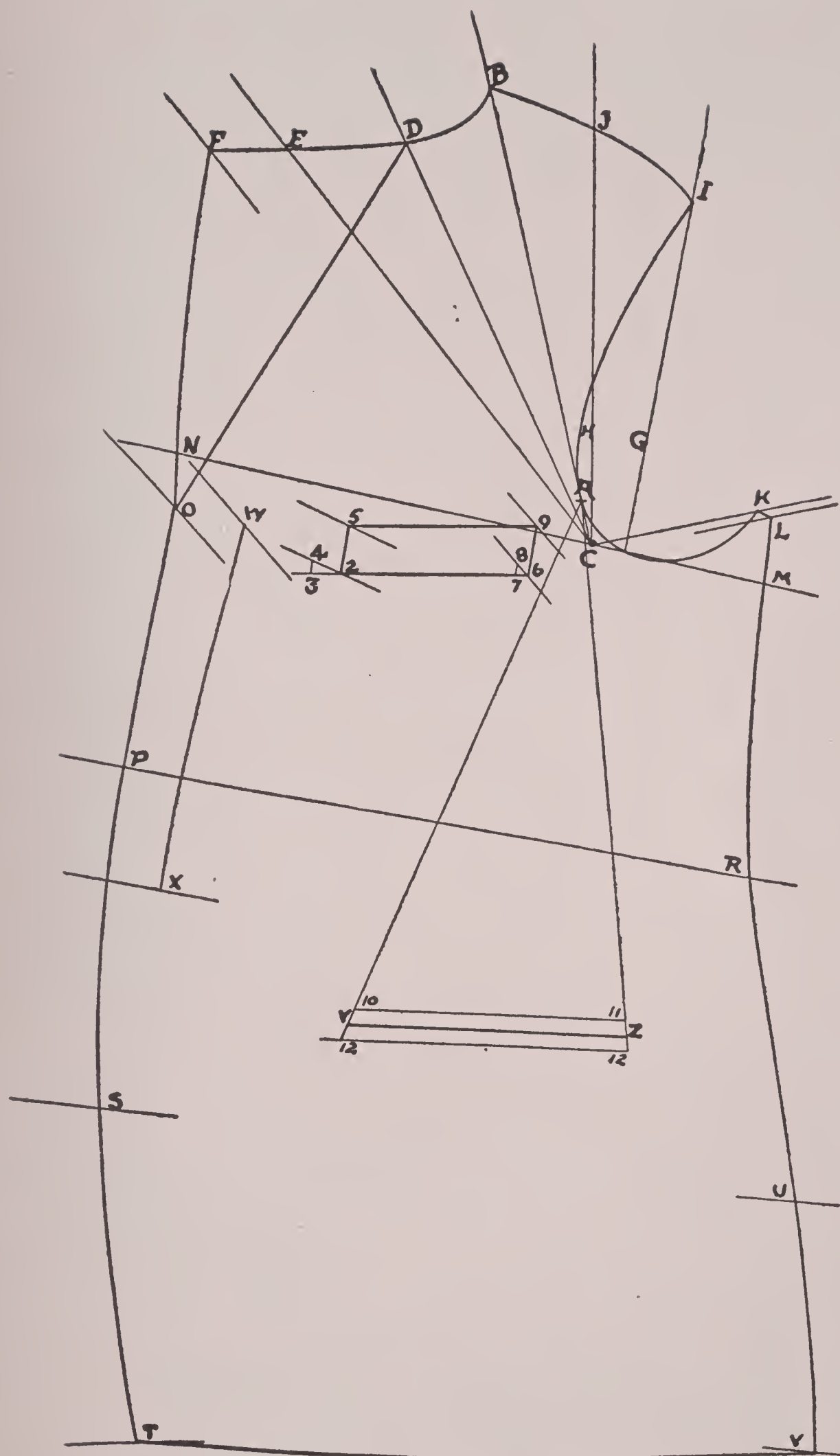


Diagram 4—Forepart

T is an extension of the bottom at the front.

U is a guide line between the waist line and the bottom at the side seam.

V is an extension of the side seam at the bottom.

POCKETS

From 2 to 3 is $\frac{3}{4}$ inch.

From 3 to 4 is $\frac{1}{4}$ inch.

Draw line 2-4, then parallel line 2-4 to 5, which establishes the run of the front part of the breast pocket.

6 to 7 is $\frac{1}{4}$ inch and 7 to 8 is $\frac{1}{4}$ inch. Draw line 6-8.

Parallel 6-8 to point 9, as illustrated.

LOWER POCKET

Draw lines Y-A and Z-A.

Y to 10 is $\frac{1}{4}$ inch and Y to 12 is $\frac{1}{4}$ inch.

Z to 11 is $\frac{1}{4}$ inch.

Z to 12 is $\frac{1}{4}$ inch. These divisions are used for four sizes.

Diagram 5—Grading Four Sizes of the Forepart

The preceding diagram explained how the basic lines of the grade were made. This diagram illustrates how four sizes are graded and the divisions allowed at the various points. To make the grade for four sizes proceed as follows:

B to 13 is $\frac{4}{6}$ inch. This allowance also is made on the back point of the neck, so that it will harmonize with the front.

Parallel from D-B to 13, establishing point 16 on the break line of the gorge. Then parallel from E-B to 13, establishing point 17. Parallel E-F to 17, establishing point 18.

N to 19 is 1 inch. Parallel N-O to 19, establishing point 20.

P to 21, S to 22 and T to 23 are each 1 inch. This produces the neck and the front for four sizes.

To obtain the increase at the shoulder, continue as follows:

Parallel B-J to 13, establishing point 14.

Parallel B-I to 13, establishing point 15.

M to 26 is $\frac{1}{2}$ inch.

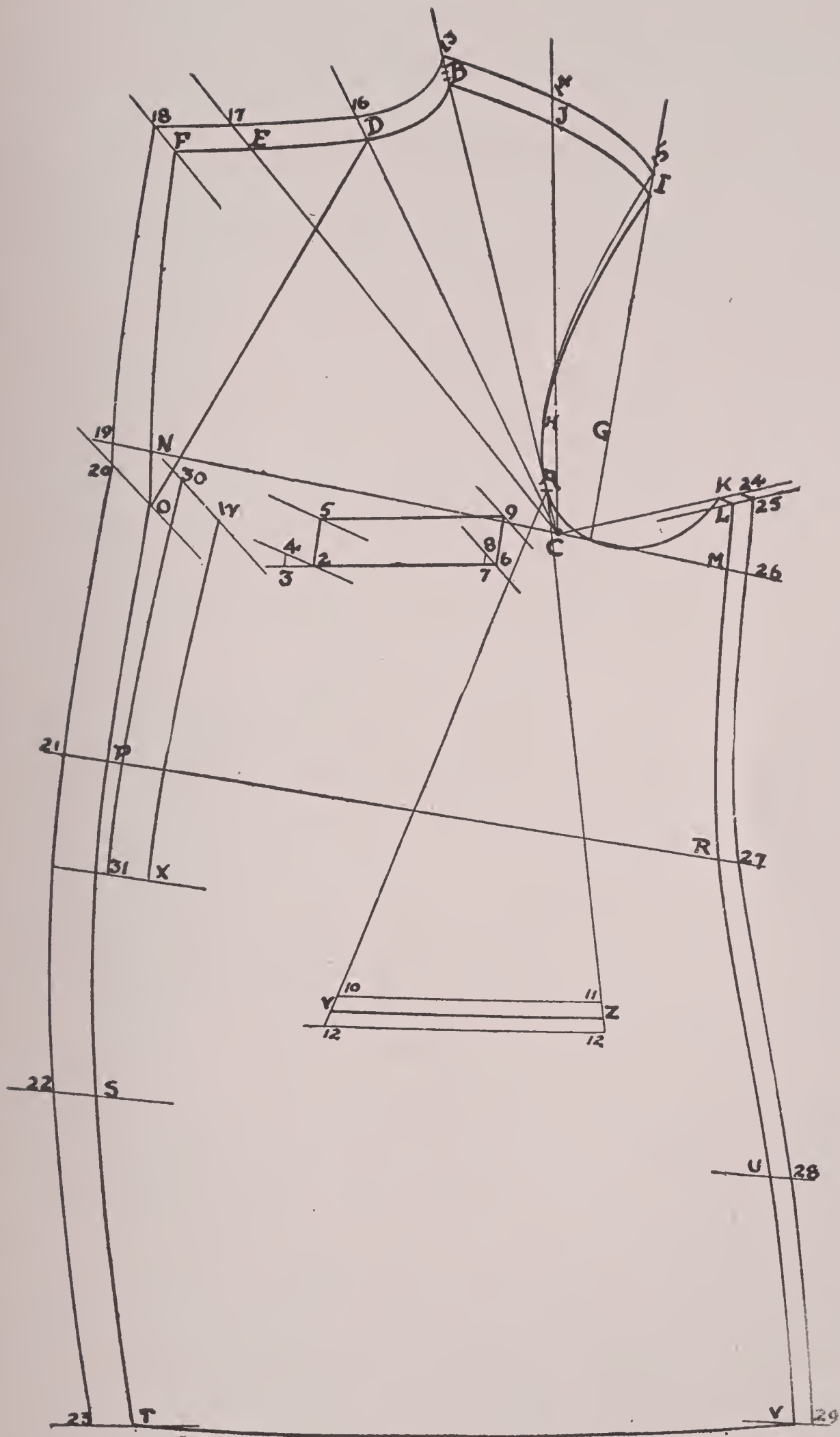


Diagram 5—Forepart

R to 27, U to 28 and V to 29 are each $\frac{1}{2}$ inch.

Parallel L-M to 26, establishing point 25.

From K to 24 is the same as from L to 25.

When using the inch measure on line N-19—the breast line for the front increase for four sizes—see that this inch is $\frac{1}{16}$ inch less; in other words, a small inch. A full inch should be allowed on the rest of the front.

BUTTONS

W to 30 is the same distance as O to 20 and should run parallel to line O-20.

X to 31 is 1 inch, and should be parallel to the waist line.

This finishes the grade for four sizes on the forepart.

Diagram 6—How to Complete the Grade of the Forepart

All the construction lines are extended both ways and the same divisions are used, with the exception of the increase at the waist after size 40.

After size 40, $1\frac{1}{4}$ inches is used on the front at the waist line, bottom and the point in between the waist line and the bottom; and $\frac{5}{8}$ inch is used for four sizes after size 40 on the side seam, waist line and bottom, and the point between the waist line and bottom.

It will be observed that at point H, the hollow part of the armhole, a line is drawn to space off the increase of the front arm scye. This increase is obtained when the armhole is drawn from the shoulder to the notch, which is shown by point A in the preceding diagram.

It will also be noted that at the lower pocket, from size 40 to 44, the line is extended in front instead of down. Otherwise the grade is carried out similarly to that in sizes 36 to 40, as illustrated in the preceding diagram. The model pattern is used to trace around the points on the larger sizes and on the smaller sizes.

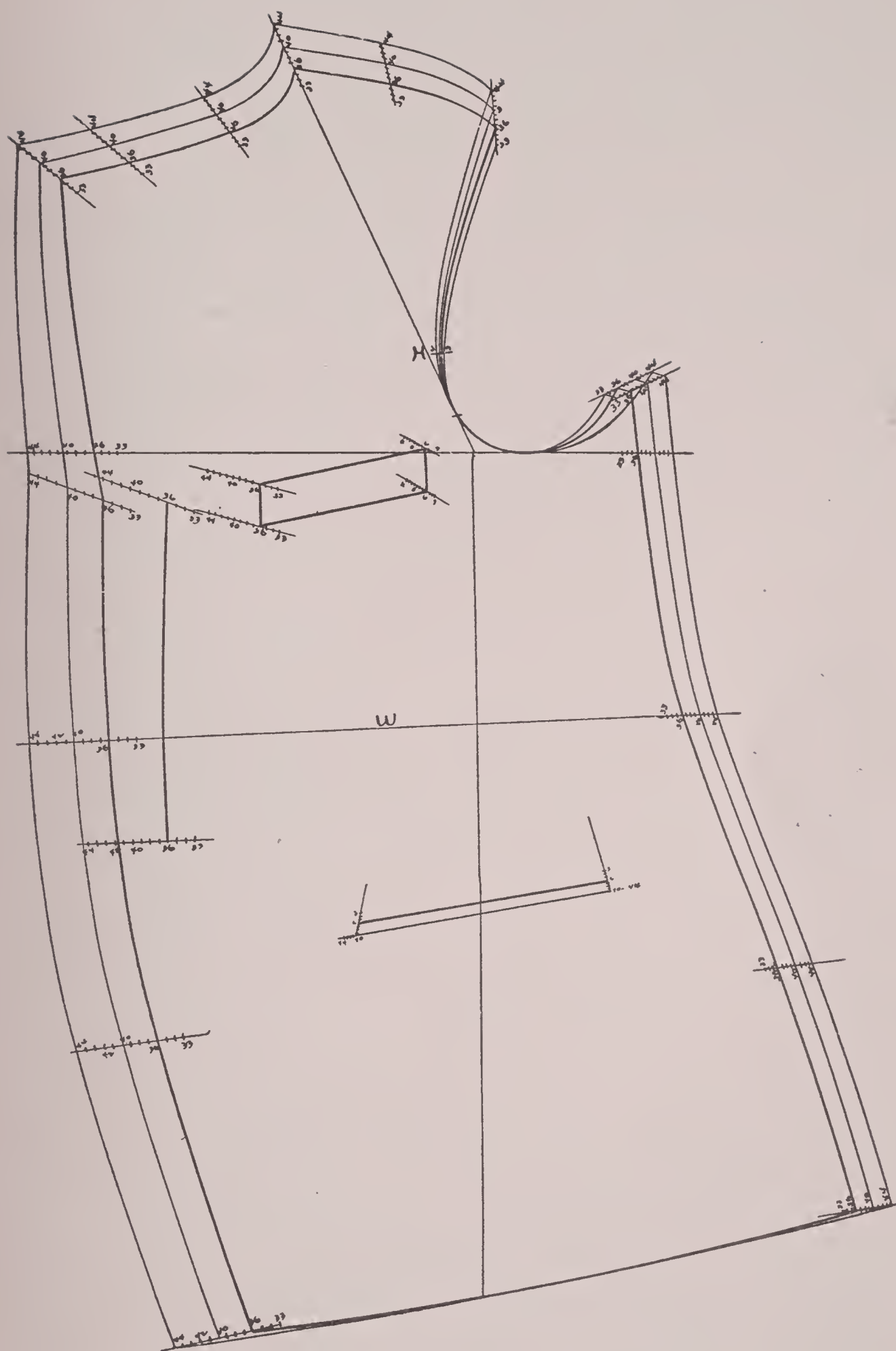


Diagram 6—Forepart

Diagram 7—Top Sleeve

This diagram shows how to grade four sizes of the top sleeve.

To grade the top sleeve, proceed as follows:

A-E-D-C-B-F-H is the top sleeve.

Space the ball in three sections, as shown by points E-D-C.

Point A is the sleeve notch.

Draw lines A-B, A-C, A-D and A-E.

B to G is $\frac{4}{6}$ inch, for four sizes.

Parallel from B-C to G, establishing point H on line A-C.

Parallel C-D to H, establishing point I on line A-D.

Parallel from D-E to I, establishing point J on line A-E.

F to K is $\frac{1}{4}$ inch, for four sizes.

H to L is $\frac{1}{4}$ inch, for four sizes.

Use the top sleeve to shape lines L-K, K-G and G-H-I-J-A, which completes the top sleeve. The larger and smaller sizes can be used on the same divisions.



Diagram 7—Top Sleeve

Diagram 8—Under Sleeve

This diagram explains how to grade four sizes of the under sleeve. To make the grade proceed as follows:

B-H-G-F-D-E-I-J-C is the under sleeve.

Place the inseam of top sleeve at points B and C, as illustrated.

Point A is the notch of top sleeve.

Space off the under sleeve line D-B in three sections, as indicated by points F-G-H. Then draw lines A-D, A-F, A-G and A-H.

D to K is $\frac{4}{6}$ inch for four sizes.

Parallel line D-K to E.

E to L is $\frac{4}{6}$ inch.

Parallel line D-F to K, establishing point M.

Parallel F-G to M, establishing N.

Parallel G-H to N, establishing O.

I to P is $\frac{1}{4}$ inch. J to R is $\frac{1}{4}$ inch.

Shape the lines R-P, P-L, L-K and K-E-M-N-O-B, which completes the grade of the under sleeve for four sizes. The larger and smaller sizes can be graded up and down by using the same divisions.

Diagram 9—Finishing the Grade of the Top Sleeve

This diagram explains in detail how the grade is extended from size 33 to size 44. The shortening of sleeves for smaller sizes is also explained. This idea is carried out only on young men's sizes.

Space off the increase and decrease of sizes, as indicated.

From 36 to 35 and 35 to 34 and 34 to 33 are, respectively, $\frac{1}{2}$ inch apart, which is indicated by the letters D-E-F-G-H-I-J-K. This shows the decrease in length of sleeve from size 36 to size 33.

Square up from point A to B.

B to C is $\frac{3}{16}$ inch for three sizes.

Draw line A-C, which gives the width of turn-up at the bottom of the sleeve.

Parallel A-C to 36, which gives line 33-36 at the bottom of the sleeve.



Diagram 9—Top Sleeve

Diagram 10—Under Sleeve

This diagram explains how to complete the grade of the under sleeve.

Space off the increase and decrease of sizes as indicated at the top of the sleeve.

From 36 to 35 and 35 to 34 and 34 to 33 are, respectively, $\frac{1}{2}$ inch apart, which is indicated by the letters D-E-F-G-H-I-J-K. This shows the decrease in length of sleeve from size 36 to size 33.

Square up from point A to B.

B to C is $\frac{3}{16}$ inch.

Draw line A-C, which gives the width of turn-up at the bottom of the sleeve.

Parallel A-C to 36, which gives line 33-36, at the bottom of the sleeve.



Diagram 10—Under Sleeve

Diagram 11—Grading the Collar

This diagram explains how to grade a collar for four sizes. The collar is graded from the drafting position in the neck, which is the correct way, in order to get the proper run of the collar, the roundness where it should be, and the proper increase of the collar at the back and at the front. To make the grade proceed as follows:

After placing the collar as it is drafted, draw lines A-B-C, B-D and B-E. The point where the collar line intersects A-C establishes point F.

F to G is $\frac{4}{6}$ inch, the same as the forepart.

X is the point of intersection of collar and line B-D.

E is the front point of collar on line B-E.

Parallel F-X to G, establishing Z.

Parallel X-E to Z, establishing T.

Parallel F-H, which is the back point of collar, to G, establishing point I.

Draw line G-I.

Parallel line F-G to point H, establishing point J. Then draw line J-H.

J to K is the increase of back of collar for four sizes (measure increase of back from grade).

Draw line H-K.

Parallel H-K to L, which gives line L-N.

Parallel L-N to O, which gives line O-P.

L to N and O to P are the same distance as H to K.

Draw line R.

Parallel E-T to U, which gives line U-V.

U-V is the same distance as E-T.

Draw line V-P, which gives point S on line R.

This completes the grade for four sizes of collar. This collar should measure exactly for every size. The collar increases accordingly for the larger and smaller sizes.

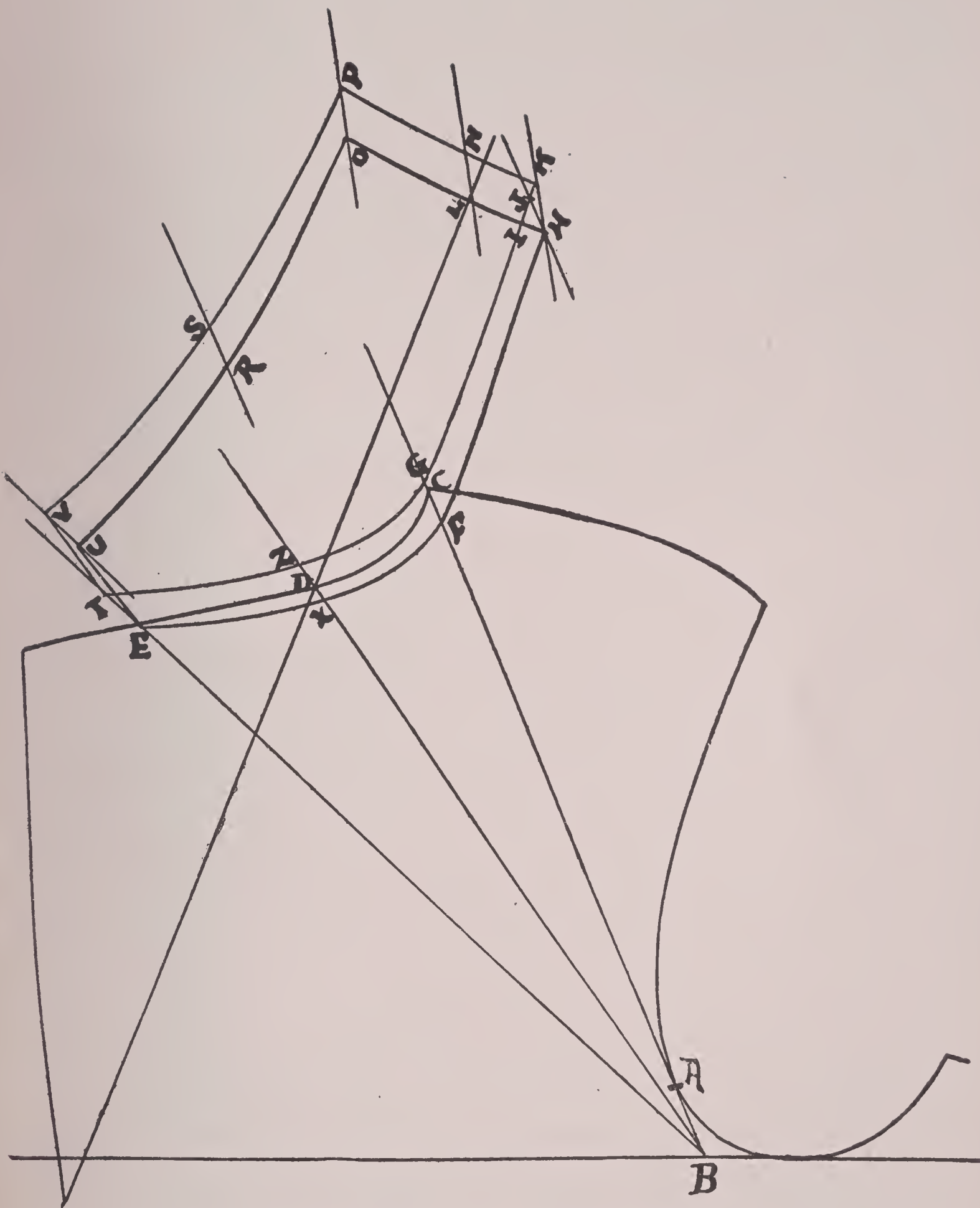


Diagram 11—Grading the Collar

Diagram 12—Finishing the Grade of the Under Collar

This diagram shows how to grade the under collar, as carried out from size 33 to 44. There is no variation whatsoever. The same divisions are used throughout. It can be extended to any size desired on the same basis. The same idea is used in all styles of garments for a regular collar, irrespective of the shape.

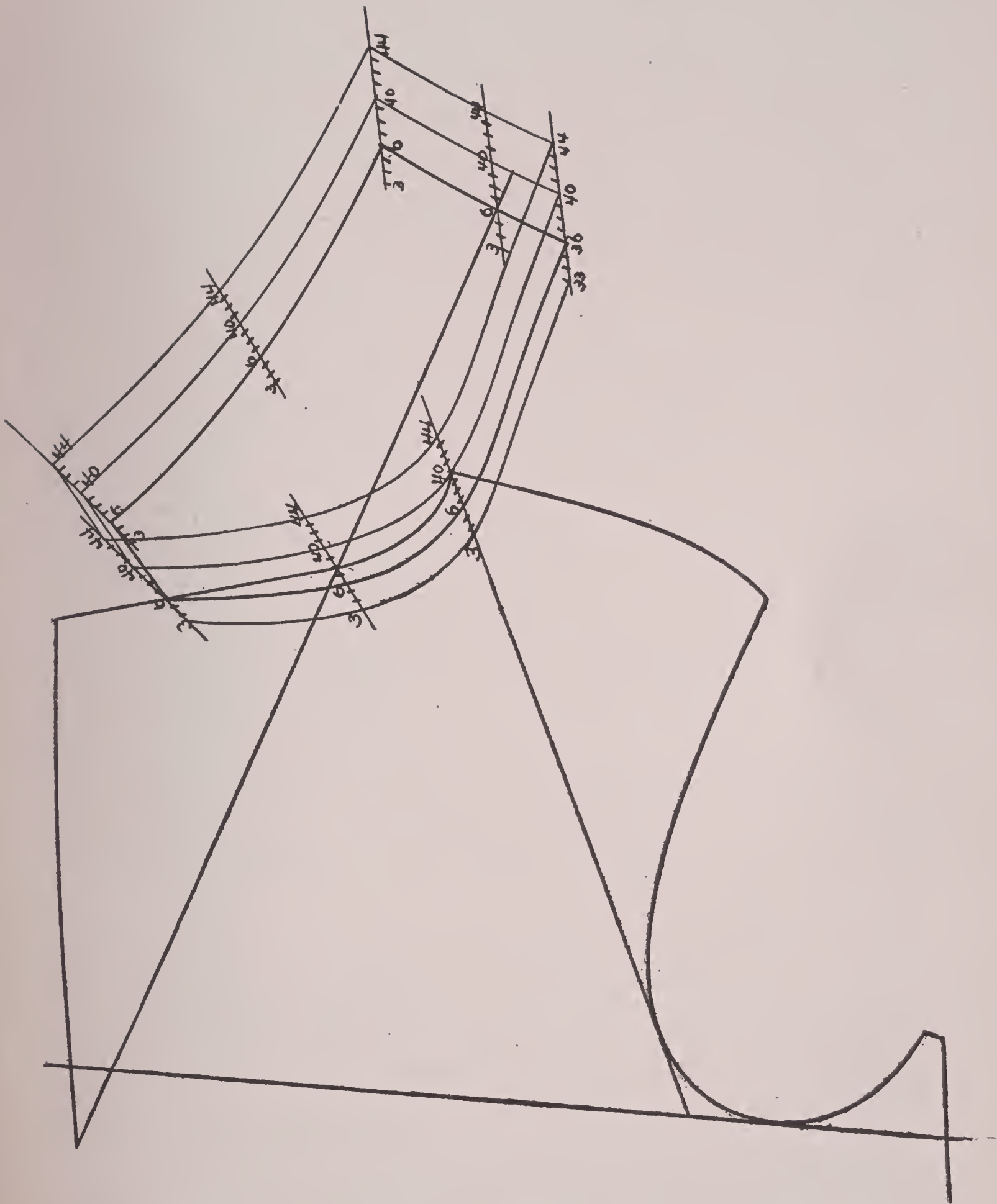


Diagram 12—Grading the Collar

Diagram 13—Stout Back

The back of a stout is graded similar to the back of a regular pattern, with the exception that $\frac{5}{8}$ inch is used on the side seam at the waist line, the bottom and seat line, and that $\frac{1}{2}$ inch divisions are used for four sizes at the neck point. There is no variation in the height at the back, as on the regular pattern, because a smaller division is used which takes care of the increase automatically. To make the grade proceed as follows:

B-N is the breast line.

C-O is the waist line.

D-P is the seat line.

S-R is the bottom.

B to F is 1 inch.

B to G is 1 inch.

Draw lines F-H, B-I, G-J, B-K, B-L.

Parallel line B-L to M.

H to 3 is $\frac{1}{2}$ inch.

Parallel H-A to 3, establishing point 2.

Parallel H-I to 3, establishing point 4.

Parallel H-J to 3, establishing point 5.

N to 9 is $\frac{1}{2}$ inch.

Parallel N-M to 9, establishing point 8.

L-7 is the same distance as M-8.

Draw line 5-7, which intersects line K-B at 6.

O-10, P-11 and R-12 are $\frac{5}{8}$ inch each.

This back is for sizes 40 to 44, and is graded with the same proportions for larger and smaller sizes.

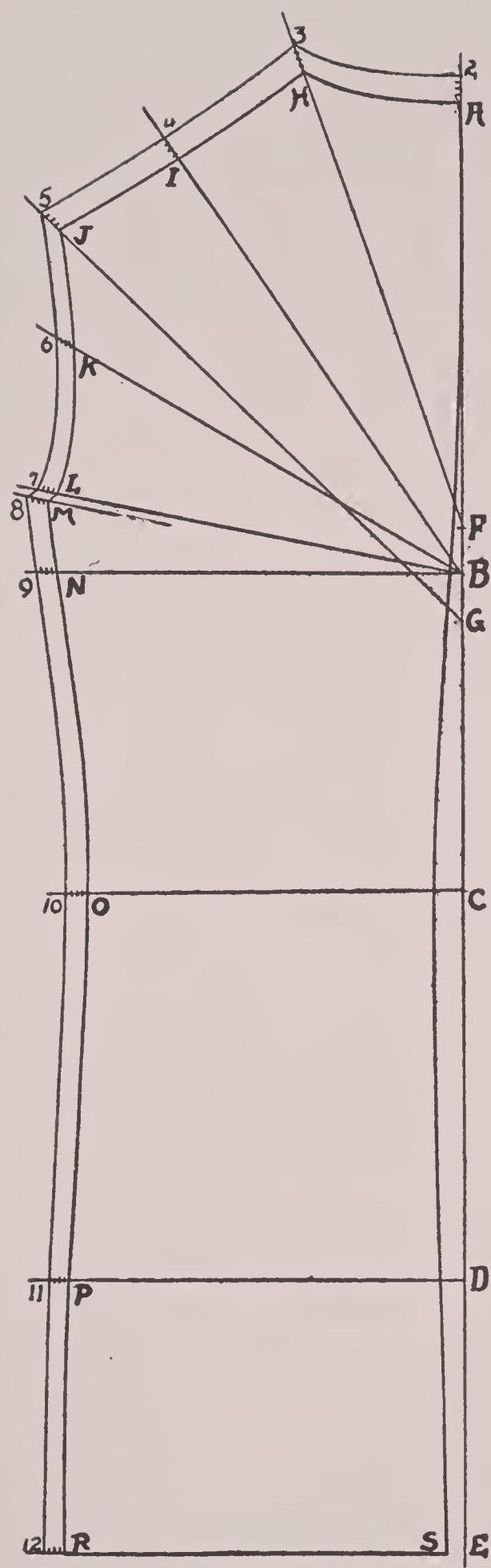


Diagram 13—Stout Back

Diagram 14—Stout Forepart

This diagram explains in detail how to grade a stout forepart for four sizes. It also explains how to grade a vee in the neck. It will be observed that this grade is somewhat similar to the regular forepart grade, with the exception that $1\frac{1}{4}$ inches is allowed for four sizes on the waist line, seat line and the bottom of the front, and $\frac{5}{8}$ inch is allowed for four sizes at the waist, seat line and the bottom on the side seam of the front. To grade the forepart proceed as follows:

J-B-U is the breast line.

L-R is the waist line.

M-P is the seat line.

N-O is the bottom.

Draw lines C-B, D-B, S-B, F-B, G-B and H-B.

Parallel line G-B to points 7 and 8.

Parallel line H-B to point I.

K-18 is parallel to I-16.

T-23 is parallel to S-22.

W to X is $1\frac{3}{4}$ inches.

Draw line X-E.

C to 9 is $\frac{4}{6}$ inch.

Parallel C-D to 9, establishing point 10.

Parallel C-E to 9, establishing point 11.

U to 24 is $\frac{1}{2}$ inch.

Parallel U-T to 24, establishing point 23.

S-22 is the same as T-23.

R to 25 is $\frac{5}{8}$ inch.

O to 27 is $\frac{5}{8}$ inch.

Parallel C-F to 9, establishing point 12.

Parallel F-G to 12, establishing point 13.

7-14 and 8-36 is the same as G-13.

Parallel C-H to 9, establishing point 15.

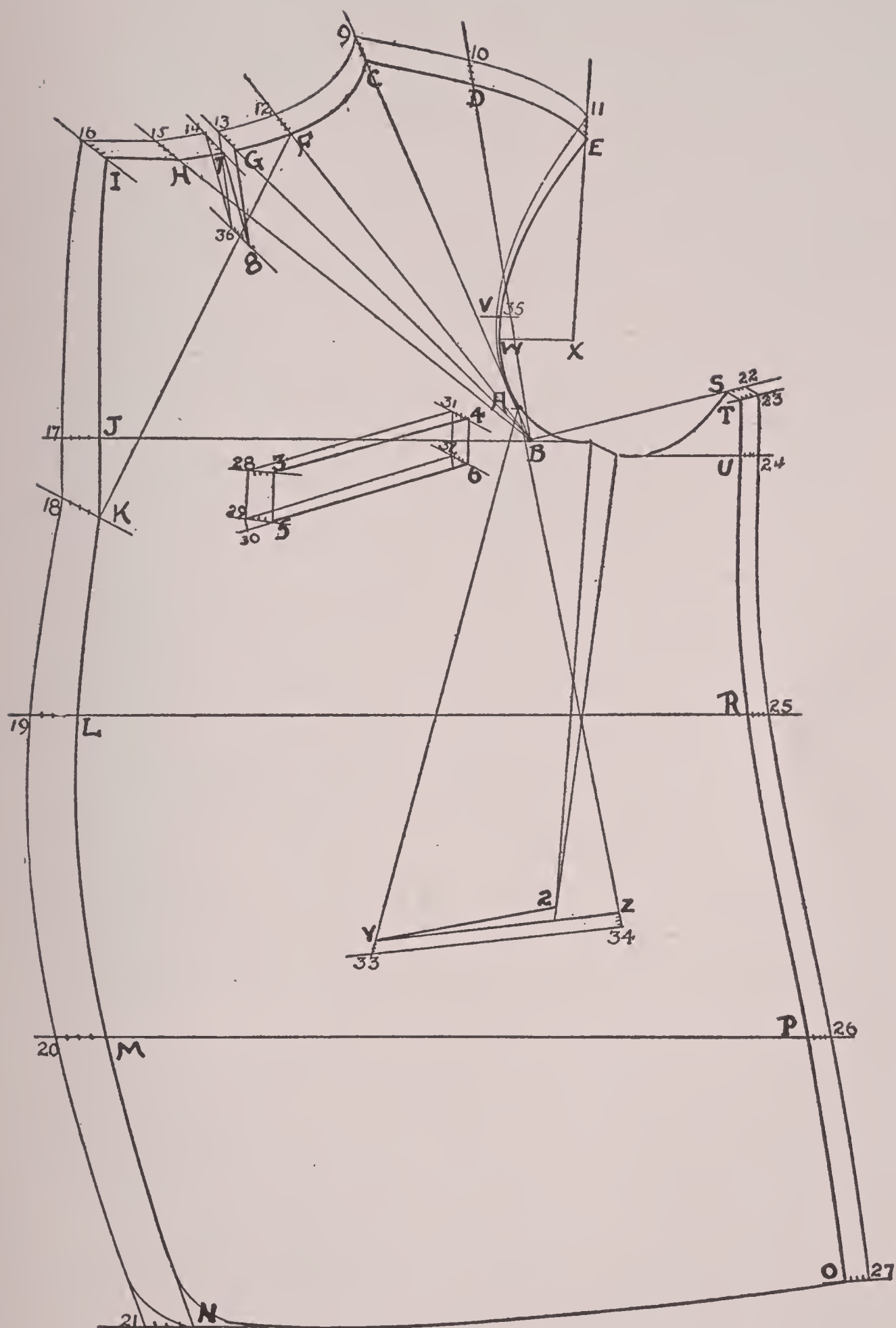


Diagram 14—Stout Forepart

Parallel H-I to 15, establishing point 16.

J to 17 is 1 inch.

L to 19 is $1\frac{1}{4}$ inches.

Draw line 19-17, which intersects line K to 18.

M to 20 is $1\frac{1}{4}$ inches.

N to 21 is $1\frac{1}{4}$ inches.

P to 26 is $\frac{5}{8}$ inch.

Z to 34 is $\frac{1}{4}$ inch.

Y to 33 is $\frac{1}{4}$ inch.

The vee remains in the same place, with the exception that it raises and lowers with the pocket.

BREAST POCKET

3-4-5-6 is the breast pocket.

5 to 30 is $\frac{3}{4}$ inch.

30 to 29 is $\frac{1}{4}$ inch.

Parallel 29-5 to 3.

Draw line 29-5.

Parallel 3-5 to point 29, which establishes point 28.

6 to line 31-32 is $\frac{1}{4}$ inch. Point 32 is $\frac{1}{4}$ inch up from line 5-6.

Parallel to point 4, which gives 4-31.

Draw line V-35 and space into four divisions, which completes the grade from size 40 to 44. The same divisions can be used for larger and smaller sizes. This completes the stout grade.

The sleeves are graded the same as the regular sack.

Coats and Vests

In the preceding pages a full explanation is given for grading regular sack coats and stout sack coats. All types of sack coats can be graded by the same method, either regular or stout. No matter what the shape of the garment, this method is absolutely reliable.

In the lessons following this page, vests, tuxedos, dress coats, trousers and all types of overcoats are explained. The system as outlined in the lesson on the sack coat is the basis for grading the overcoats. Wherever there is any variation it is carefully explained. If the explanation is followed closely there should be no difficulty to grade any style men's and young men's garments.

Diagram 15—Vest Back

This diagram explains how four sizes are graded for the vest back. The method used is similar to that employed in the sack back, with the exception that an inch is allowed at the side seam for four sizes instead of $\frac{1}{2}$ inch, which is the allowance on the side seam of the regular back of the sack coat. To make the grade proceed as follows:

Draw line A-E-B-F-C-D.

Place the top of back at point A, so that the waist line will be $\frac{3}{4}$ inch from point C.

B to E is 1 inch.

B to F is 1 inch.

Draw lines E-G, F-H, B-I, B-J, B-K and C-L.

Extend M to 9.

G to 3 is $\frac{4}{6}$ inch.

Parallel G-A to 3, establishing point 2.

Parallel G-H to 3, establishing point 4.

Parallel H-I to 4, establishing point 5.

K to 7 is 1 inch.

Draw line 5-7, which intersects B-J at 6.

L to 8 is 1 inch.

M to 9 is 1 inch.

This completes the back for four sizes from 36 to 40.

The larger and smaller sizes can be had by grading up and down.

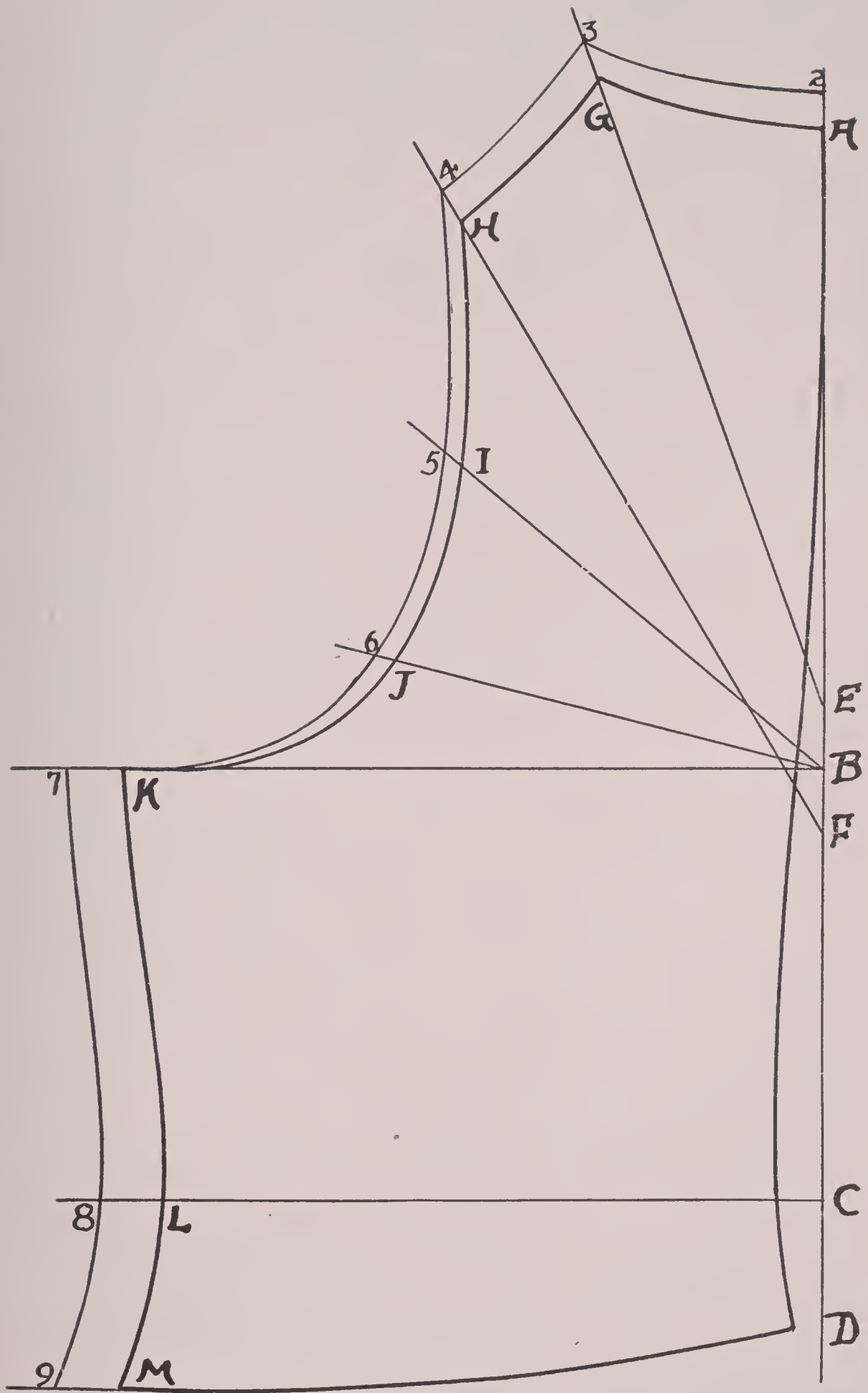


Diagram 15—Vest Back

Diagram 16—Forepart of Vest

You will note that this vest grade is somewhat similar to the sack forepart, with the exception of the side seam.

G-I is the breast line.

H-J is the waist line.

Draw line C-A, establishing point B on the breast line.

Draw line W-B.

Y to Z is $1\frac{3}{4}$ inches.

Draw line Z-X.

Draw lines B-D, B-E and B-F.

Extend the lines of the pocket, O-R and N-P, and of the lower pocket, S-U and T-V.

C to 2 is $\frac{4}{6}$ inch.

Parallel C-W to 2, establishing point 10.

Parallel C-X to 2, establishing point 11.

Parallel C-D to 2, establishing point 3.

6 to G is 1 inch.

Parallel G-F to 6, establishing point 5.

Draw line 3-5, using forepart as shaper, which intersects line B-E, establishing point 4.

H to 7 is 1 inch.

L to 8 is 1 inch.

M to 9 is 1 inch.

K to 12 is $\frac{3}{8}$ inch, which is used only for sizes 42 to 44, the natural increase of waist.

Draw line I-13-12.

O to 15 is $\frac{3}{4}$ inch.

N to 14 is $\frac{3}{4}$ inch.

R to 16 and P to 17 are each $\frac{1}{4}$ inch.

S to 18 and T to 20 are each $\frac{3}{4}$ inch.

U to 19 and V to 21 are each $\frac{1}{4}$ inch.

This completes the grade for the vest. For larger and smaller sizes, the lines are carried out the same as for the sack.

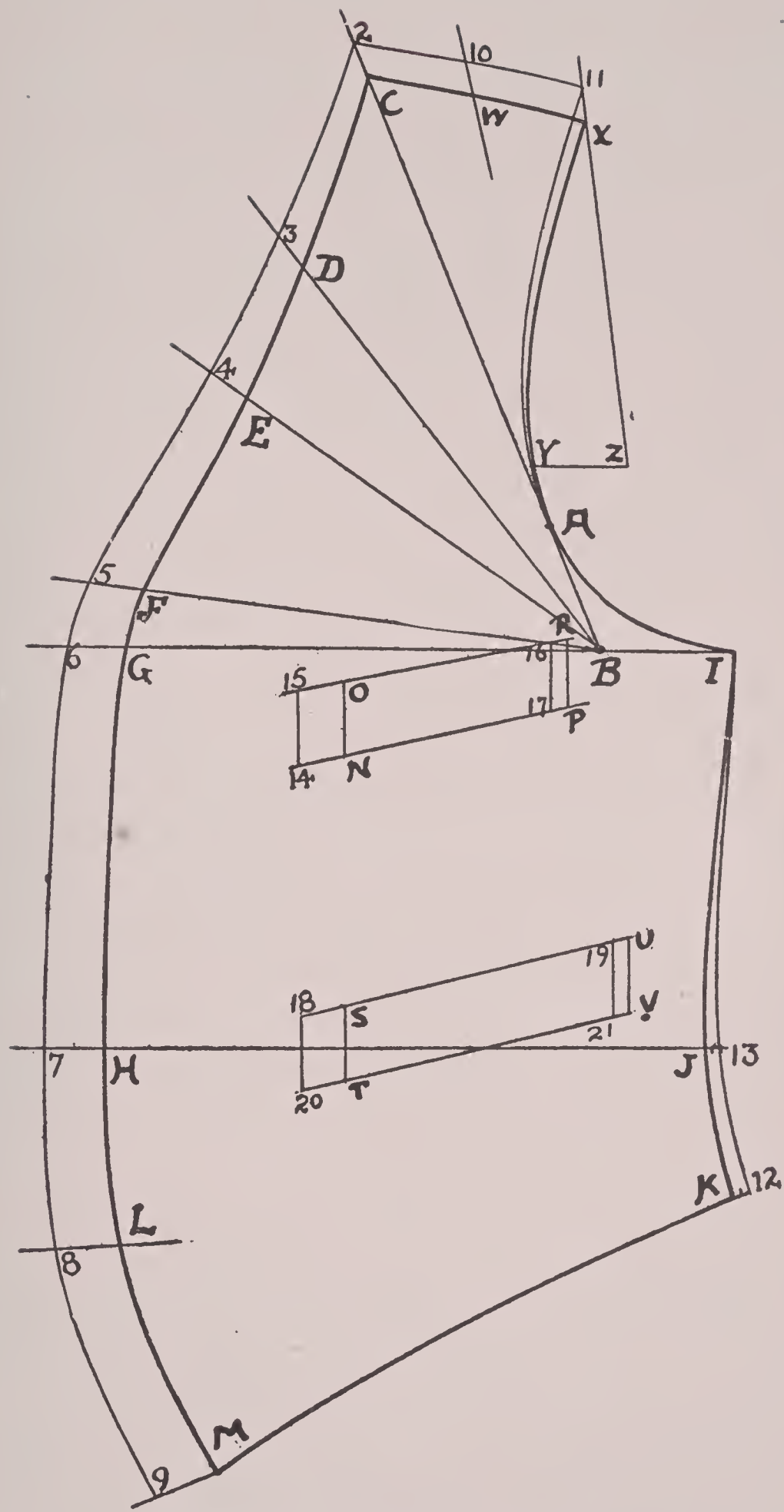


Diagram 16—Vest Forepart

Diagram 17—Stout Vest Back

The method employed in grading a stout vest back is similar to the regular vest back, except that $\frac{1}{2}$ inch is allowed at the neck point, similar to the stout sack back. The following explanation is given to show just how this back is graded:

Draw line A-B-C-D-E-F.

B to C is 1 inch.

B to D is 1 inch.

Draw lines C-G, H-D, I-B, J-B, K-B.

L-B is the breast line.

M-P is the waist line.

G to 3 is $\frac{1}{2}$ inch.

Parallel the same as the regular vest.

L to 8 is 1 inch.

M to 9 is $1\frac{1}{4}$ inches. N to 10 is $1\frac{1}{4}$ inches. This gives the proportionate increase of waist.

This grade is for four sizes from 40 to 44. For the larger and smaller sizes use the same divisions.

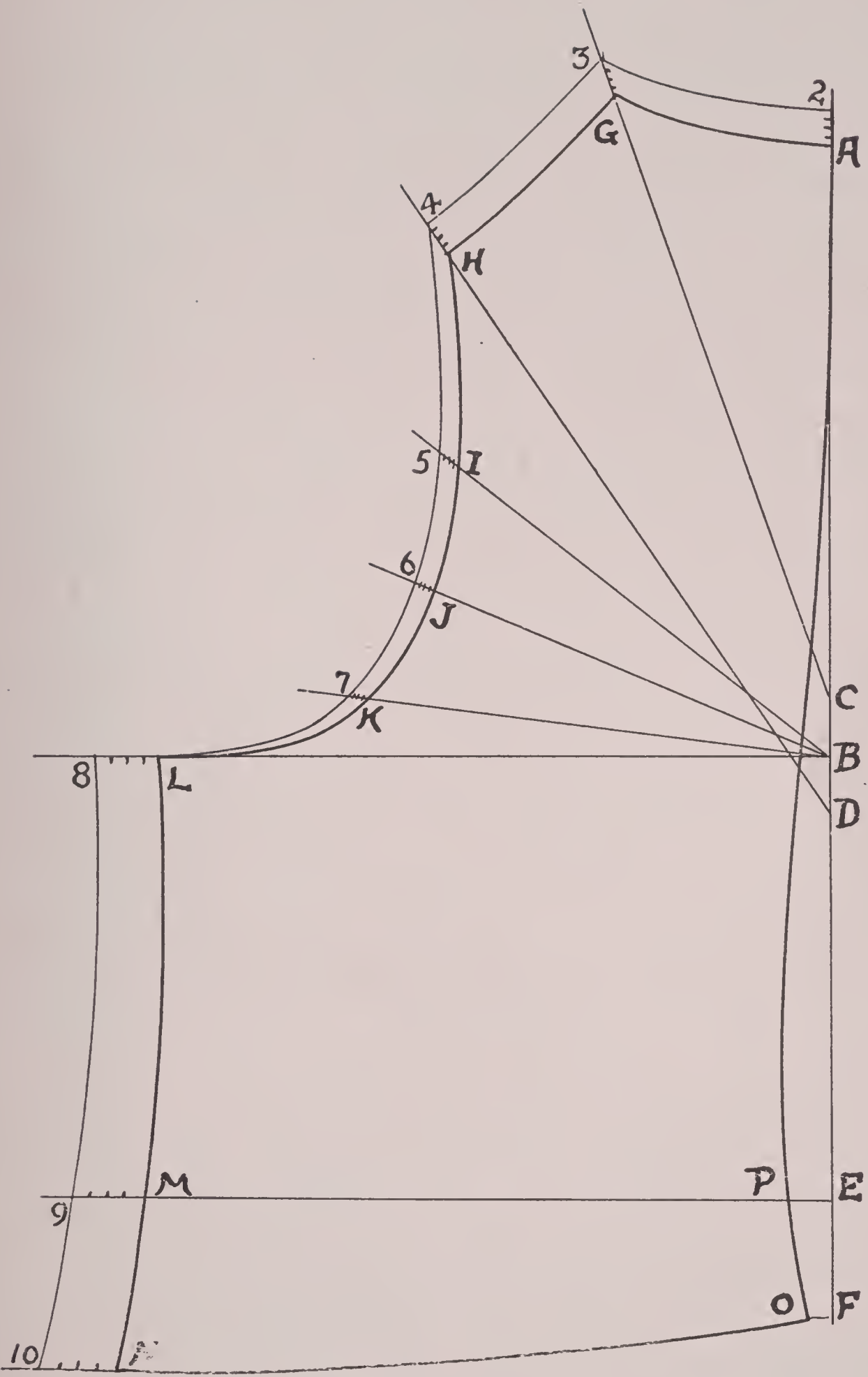


Diagram 17—Stout Vest Back

Diagram 18—Stout Vest Forepart

This diagram is somewhat similar to the regular vest, except that a greater allowance is made on the front, as will be explained. It also will be noted that a vee is taken out in the side of the vest. To make the grade continue as follows:

I-P is the breast line.

J-R is the waist line.

Draw line C-A-B.

Draw lines D-B, C-B, F-B, G-B and H-B.

2 to 3 is $1\frac{3}{4}$ inches, same as for the regular vest.

Draw line 3-E.

Draw lines X-12 and K-13.

C to 4 is $\frac{4}{6}$ inch.

Parallel to point 6 and down to H-9, the same as for the regular vest.

I to 10 is 1 inch.

J to 11 is $1\frac{1}{4}$ inches.

X to 12 is $1\frac{1}{4}$ inches.

K to 13 is $1\frac{1}{4}$ inches.

POCKETS

M to 14 and N to 17 are each $\frac{3}{4}$ inch.

L to 15 and O to 16 are each $\frac{1}{4}$ inch.

U to 21 and V to 20 are each $\frac{3}{4}$ inch.

T to 18 and W to 19 are each $\frac{1}{4}$ inch.

The vee remains in the same place and is lengthened according to the front of the lower pocket. This grade is for four sizes, and can be increased and decreased for the larger and smaller sizes by the same proportions.

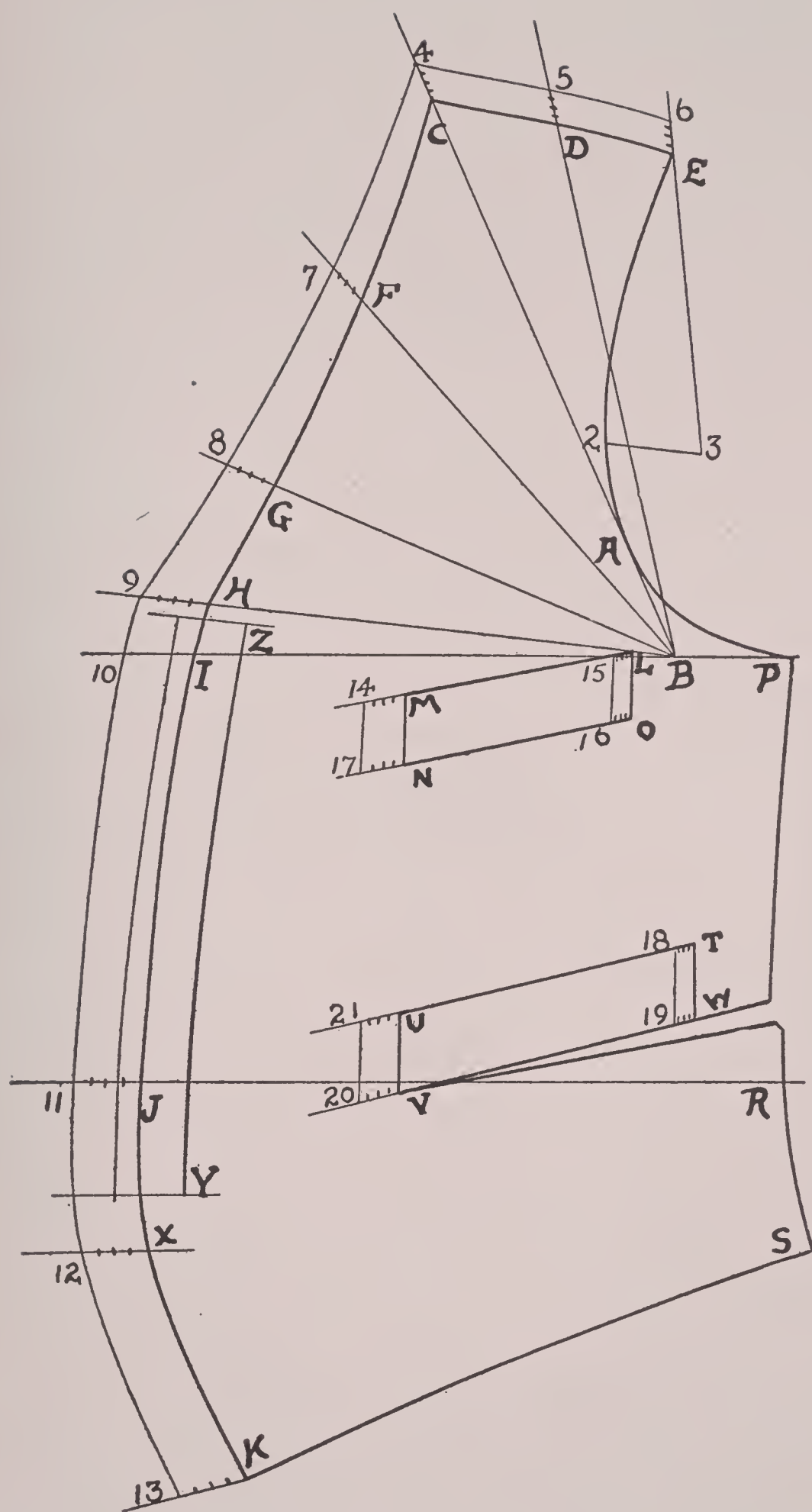


Diagram 18—Stout Vest Forepart

Diagram 19—Grading the Pants

The method explained here for grading the pants pattern is from one size. Most designers are still using two sizes for grading the pants, employing two patterns. This is a longer way, and the results are not quite so accurate, because two pants must be drafted, and it is difficult to obtain the same run or the exact lines of each size. Unless this is done the results are inaccurate.

All points are graded the same way, except that in young men's pants the inseam is shortened. This can be done by shortening the amount required at the bottom and splitting the difference at the knee line; because for every inch the trousers are lengthened or shortened, the knee line is either raised or lowered $\frac{1}{2}$ inch.

Every point necessary for grading all kinds of trousers are explained in the diagram of the grade of the forepart and the diagram of the grade of the back part. To make the grade for the forepart proceed as follows:

J-D is the seat line.

H-E is the knee line.

G-F is the bottom.

O is half way between J and D.

M-A is the waist line.

N is half way between M and A.

Draw lines N-O and O-R.

Extend line M-A.

A to 4 is $\frac{1}{2}$ inch.

Square up from 4 to 5.

4 to 5 is $\frac{1}{2}$ inch.

Draw line A-5.

M to 2 is $\frac{1}{2}$ inch.

2 to 3 is $\frac{1}{2}$ inch.

Draw line M-3.

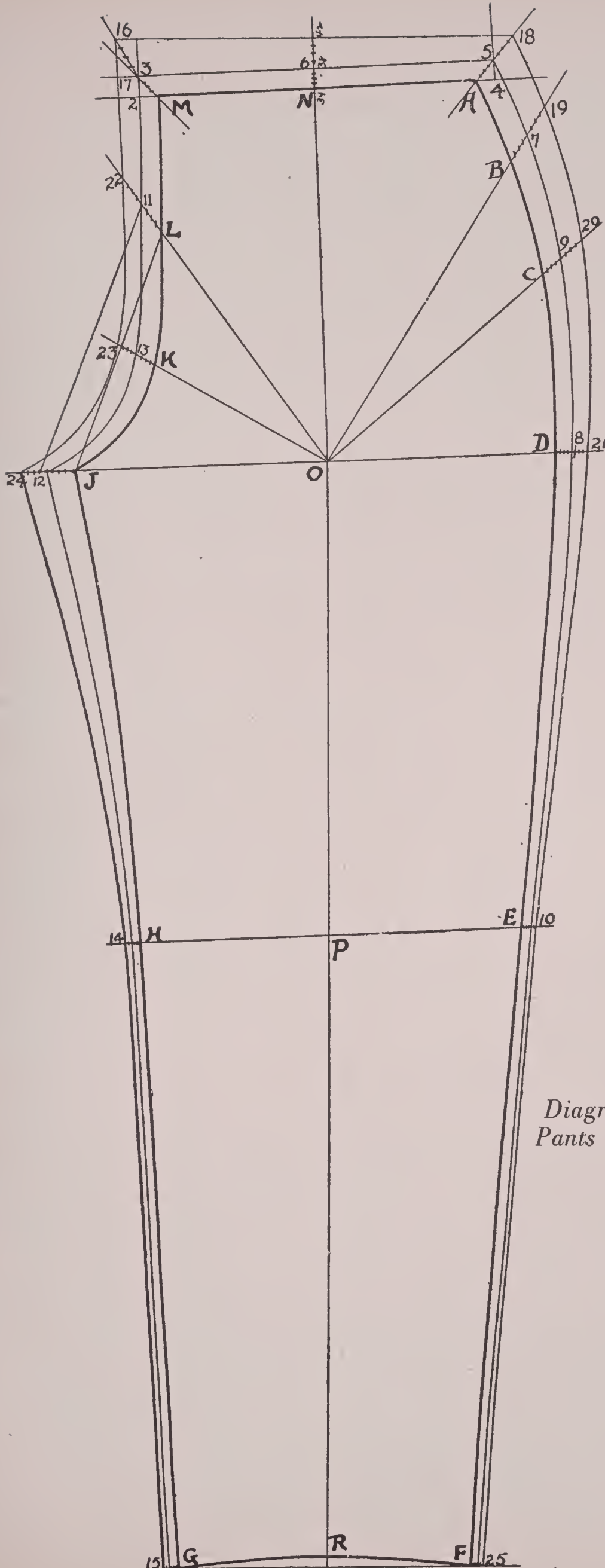


Diagram 19—
Pants Forepart

Space off M-J in three parts, then draw lines O-L and O-K.

Space off A-D in three parts, then draw lines O-B and O-C.

Parallel A-B to point 5, establishing point 7.

Parallel B-D to point 7, establishing point 8.

Space off from D to 8 in five divisions.

Draw line 7 to the fourth division of D-8, which intersects line O-C at point 9.

Draw line 5-3.

Parallel M-L to point 3, establishing point 11.

Parallel L-J to point 11, establishing point 12.

Divide J-12 into five divisions.

Shape the crotch 11-13 to the fourth division of J-12.

Use $\frac{1}{4}$ inch for four sizes at the knee at H and E.

Use $\frac{1}{4}$ inch for four sizes at bottom, at points G and F.

From 38 to 42 use $\frac{1}{8}$ inch at knee and bottom.

These sizes are increased and decreased according to these proportions, with the exception at the front of the waist, where, you will note, an allowance of $\frac{1}{2}$ inch is made from 3 to point 17 and of $\frac{3}{4}$ inch from 17 to 16. Then draw line 3-16 and space it into four divisions, which gives the natural increase of the front rise on the larger sizes.

Draw line 16-18, which finishes the diagram.

Diagram 20—Pants Back

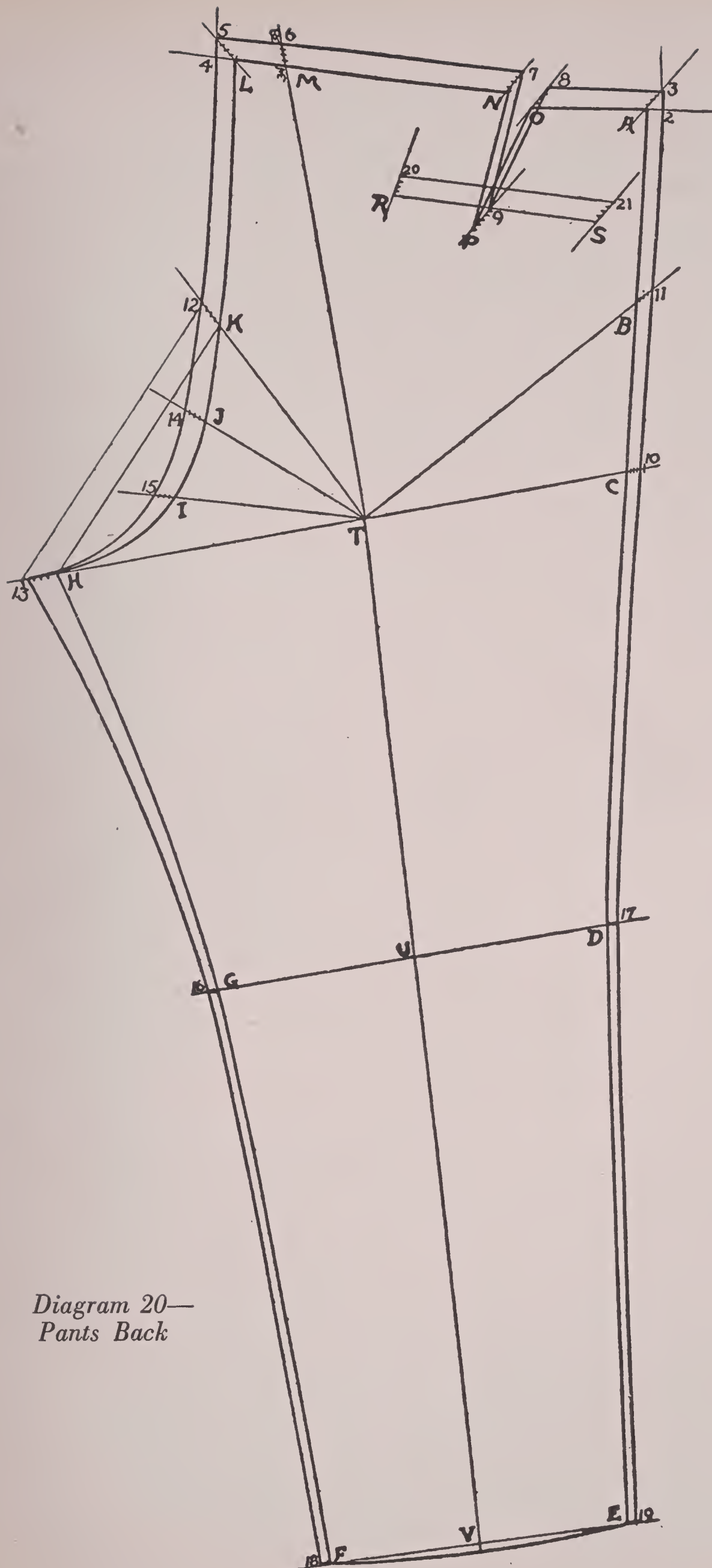
This diagram explains in detail how to grade the pants back for four sizes. It is important to memorize both this diagram and the preceding one, as they form the basis for grading all types of pants patterns. To make the grade proceed as follows:

H-C is the seat line.

G-D is the knee line.

F-E is the bottom line.

T is half way between H and C.



*Diagram 20—
Pants Back*

Square up from T to M.

V is half way between F and E.

Draw line T-V.

Prolong line O-A, also N-L.

L to 4 is $\frac{1}{2}$ inch. Square up from 4 to 5.

4 to 5 is $\frac{1}{2}$ inch.

Draw line L-5.

A to 2 is $\frac{1}{2}$ inch.

Square up from 2 to 3.

2 to 3 is $\frac{1}{2}$ inch.

Draw line A-3.

Parallel A-3 to O, establishing O-8.

Parallel O-8 to N.

Parallel O-8 to P, which gives P-9.

B is half way between A and C.

Draw line B-T.

Points K, J and I are guide lines and are placed, equally apart,
on the curve of stride of back.

Draw lines K-T, J-T and I-T.

Parallel L-K to 4, giving point 12 on line K-T.

Parallel K-H to 12, giving point 13 on line T-H.

Draw line 12-13 to the fourth division of H-13 (H-13 is divided
into five divisions, same as the forepart).

This gives points 14 and 15, where line 12-13 intersects lines
T-J and T-I respectively.

Parallel A-C to 2, giving point 10.

Divide C-10 into five divisions, then draw line 3-10 to the fourth
division of C-10.

D to 17 is $\frac{1}{4}$ inch.

G to 16 is $\frac{1}{4}$ inch.

F to 18 is $\frac{1}{4}$ inch.

E to 19 is $\frac{1}{4}$ inch.

This diagram is for sizes 34 to 38 and can be carried out
to the larger and smaller sizes on the same proportions, with

the exception of the knee and bottom, which are reduced $\frac{1}{8}$ inch for four sizes after size 38.

STOUT PANTS

To grade stout pants, the same system is employed as in grading the regular pants, with the exception that at the front of the forepart instead of coming out $\frac{1}{2}$ inch and up $\frac{1}{2}$ inch it is necessary to come out $\frac{1}{2}$ inch and up $\frac{3}{4}$ inch, the same as in the larger sizes of this grade. This is applicable only at the front of the waist of the forepart. The back-part waist is graded exactly the same as the regular pants.

In grading a stout it is always well to start with size 40 or 42. On the larger sizes the knee and bottom measurements must be held down; that is, instead of grading every size, skip the odd sizes and use $\frac{1}{4}$ inch for eight sizes at the knee and bottom, instead of $\frac{1}{4}$ inch for four sizes.

Knickerbocker and golf pants are graded the same as regular pants. The only difference is in the shape and the length. In other words, the regular pants grade can be used for grading all kinds of pants patterns for men and young men.

Diagram 21—Tuxedo

The tuxedo is graded the same as a regular sack. In grading the vee at the neck, line G-B is parallel to line H. Line W-16 is parallel to 8-H and M-13 is parallel to J-10.

The pocket and under-arm vee are graded similar to the sack.

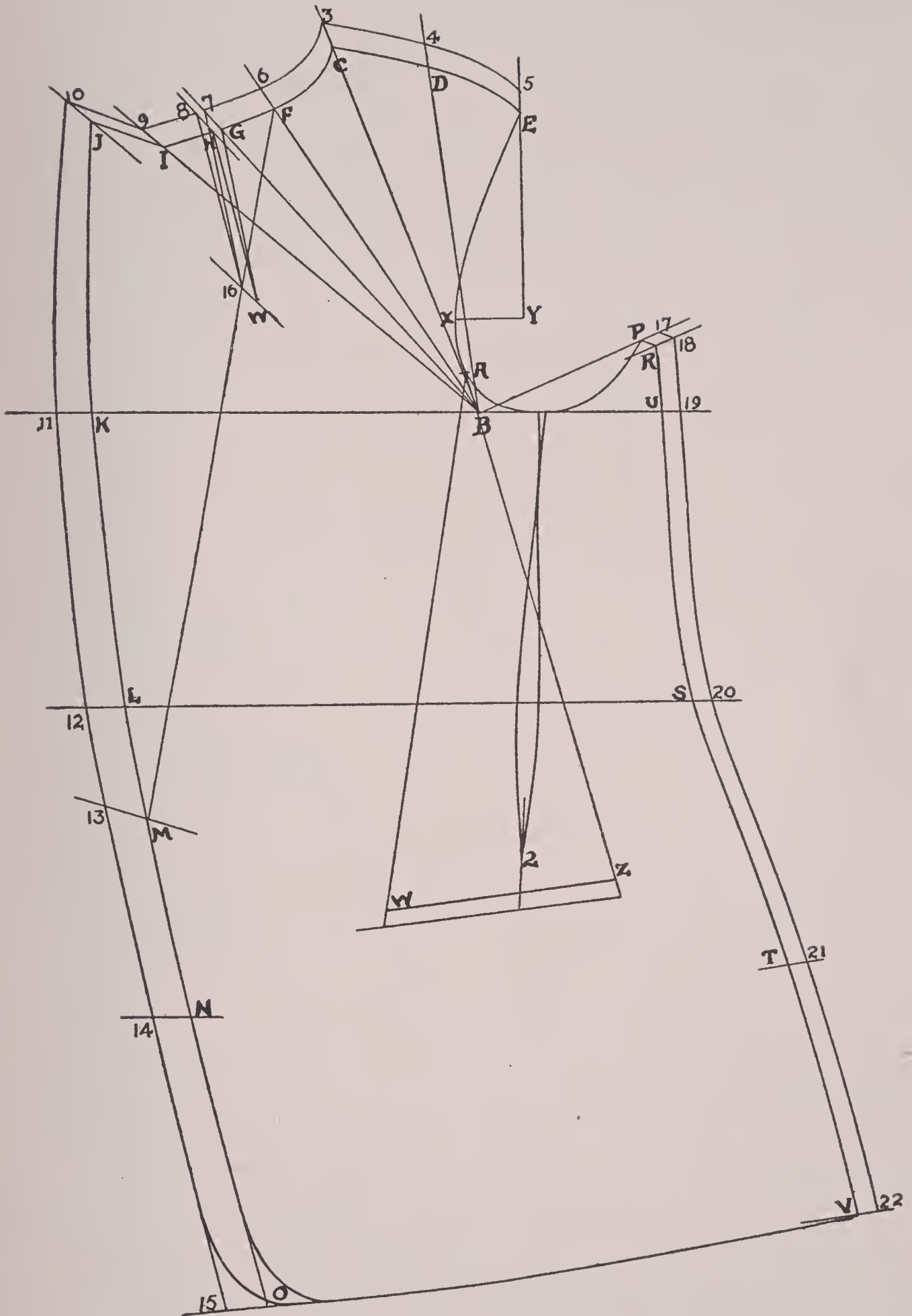


Diagram 21—Tuxedo

Diagram 22—Full Dress

The grade for the full-dress forepart is somewhat similar to the grade of the regular forepart of the sack coat, except for slight variations, which are explained in the text of this diagram. The diagram shows how this garment is graded for four sizes. To make the grade proceed as follows:

L-N is the **breast line**.

P-R is the waist line.

Draw lines C-B, D-B, F-B, J-B.

X to Y is $1\frac{3}{4}$ inches.

Draw line Y-E.

Parallel line F-B to G-H-I and M.

Parallel line J-B to K.

Draw line S parallel to K.

17 is parallel to O-16.

Draw line U-19 parallel to R-18.

C to 2 is $\frac{4}{6}$ inch.

Parallel C-F to 2, to establish point 5.

6-G, 7-H, 8-I and 12-M are the same distance as 5-F.

Parallel C-J to 2, to establish point 9.

Parallel J-K to 9, to establish point 10.

L to 11 is 1 inch.

P to 13 is 1 inch.

T to 15 is 1 inch.

Draw line 13-15, which establishes point 14.

N to 20 is $\frac{1}{2}$ inch.

O to 16 is $\frac{1}{2}$ inch.

R to 18 and U to 19 are each $\frac{1}{2}$ inch.

V to 21 is $\frac{1}{4}$ inch and W to 22 is $\frac{1}{4}$ inch.

V-21 and W-22 are parallel to the waist line.

This grade is for four sizes. The same proportions are used for the larger and smaller sizes. The side body, back and skirt are graded similar to the frock.

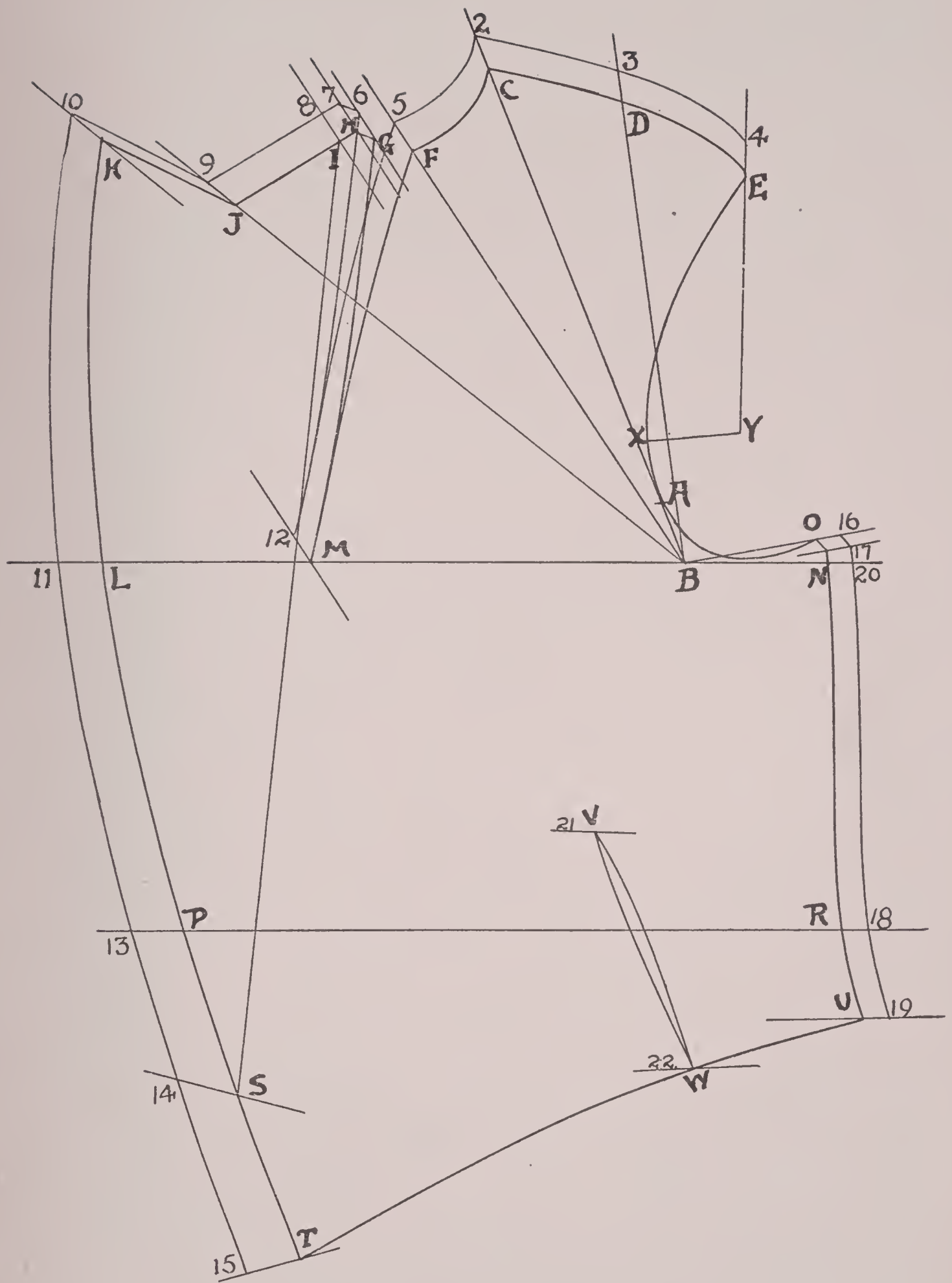


Diagram 22—Full Dress

Diagram 23—Frock Forepart

The frock forepart is graded almost the same as the full-dress forepart. To make the grade proceed as follows:

I-J is the breast line.

T-L is the waist line.

Draw lines B-K, B-D, B-C, B-F, B-G.

Parallel B-G to H.

T to U is $1\frac{3}{4}$ inches.

Draw line U-E.

C to 2 is $\frac{4}{6}$ inch, the same division as on the sack coat.

Parallel from C to D and C to E, the same as for the sack.

Parallel forward from C to H, the same as for the sack coat.

T to 9 is 1 inch.

Parallel from T to R, establishing point 10.

10-R is parallel to 7-H.

N to 11 is 1 inch.

K to 14 is $\frac{1}{2}$ inch.

J to 16 is $\frac{1}{2}$ inch.

L to 17 is $\frac{1}{2}$ inch.

M to 18 is $\frac{1}{2}$ inch.

Line P-O is the front vee.

P to 13 is $\frac{1}{4}$ inch.

O to 12 is $\frac{1}{4}$ inch.

This is for four sizes. The remainder of the forepart is carried out in the same way as the sack.

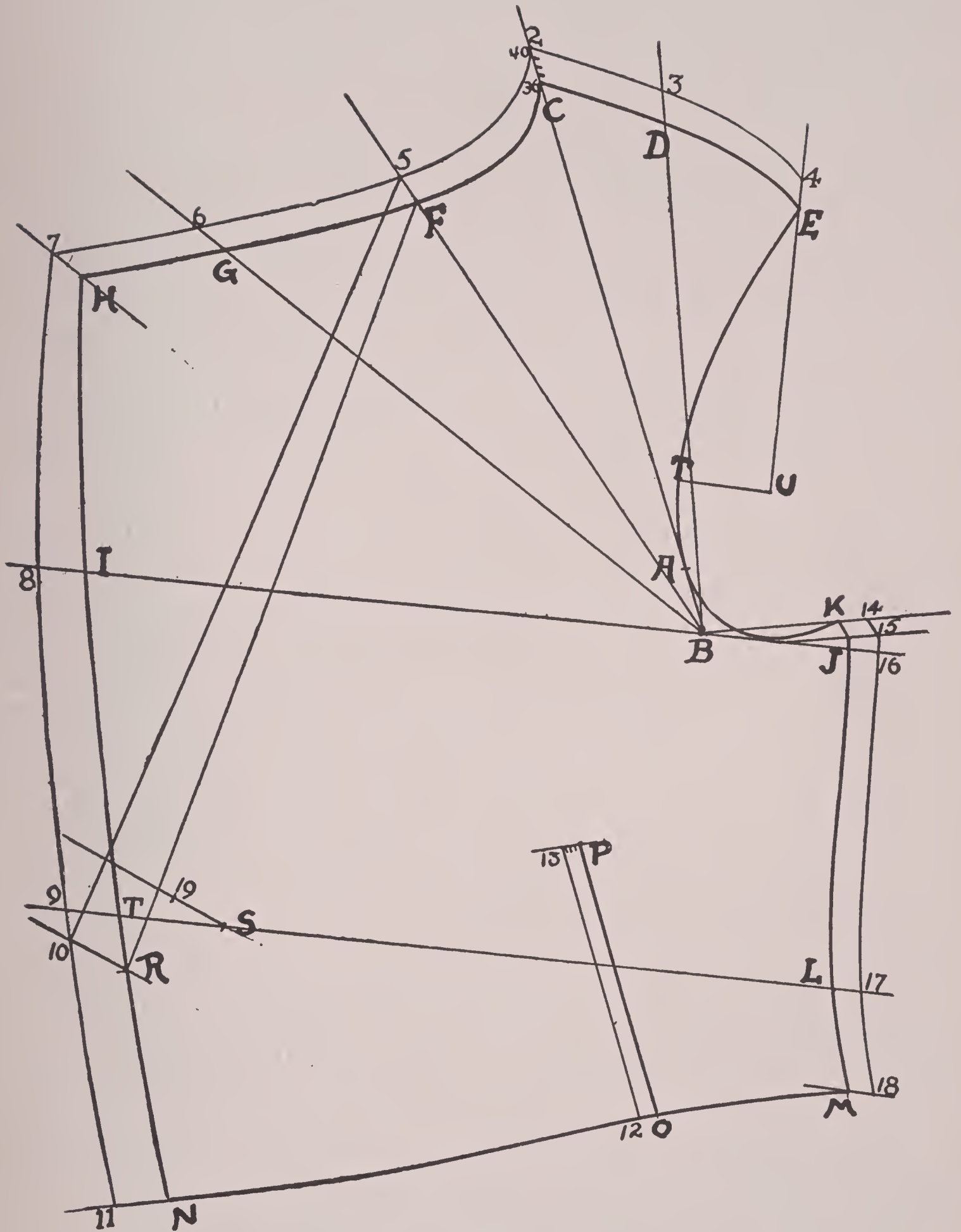


Diagram 23—Frock Forepart

Diagram 24—Grading the Side Body

The side body is a part of the garment that is used in both frock coats and full dress coats and should be very carefully handled, as it can be easily thrown out of adjustment. In order to make the grade proceed as follows:

Place the side body along the side seam of the forepart, as indicated by points M and J.

G-F is the breast line.

K-H is the waist line.

Draw line B-C and parallel to point D.

E is half way between D and F.

Draw lines B-E and B-K. Parallel B-K to M.

C to 2 is $\frac{1}{2}$ inch.

D to 3 is $\frac{1}{2}$ inch.

Parallel D-E to 3, establishing point 4; then parallel E-F to 4, establishing point 5.

H-6 and I-7 are the same distance as F-5.

L is half way between C and M.

Parallel C-2 to L-8 and L-8 to M-9.

Use the same distance as M-9 at points G-10, K-11 and J-12.

This grade is for four sizes, and the scheme can be carried out on the same proportions for smaller and larger sizes.

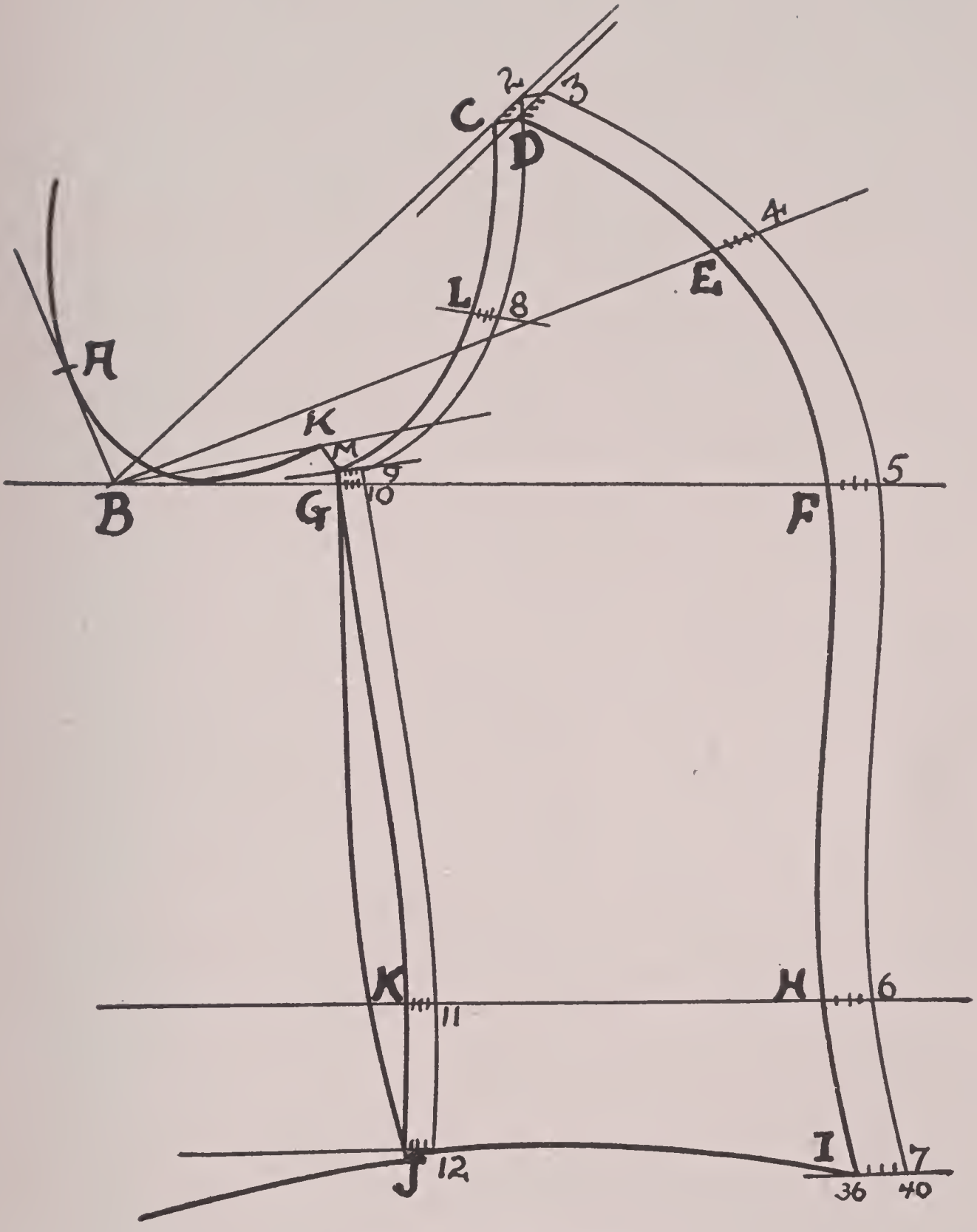


Diagram 24—Side Body

Diagram 25—Frock Back

This diagram has many points that are obtained in the same way as those for the regular sack back. The following explains in detail how a frock back is graded:

C-M is the breast line.

N-S is the natural waist line.

O-R is the fashionable waist line.

C to F is 1 inch.

C to G is 1 inch.

Draw lines I-F, J-C, K-G and L-C.

1 to 2 is $\frac{4}{6}$ inch.

Parallel I-A to 2, establishing point 3.

Parallel I-J to 2, establishing point 4.

Parallel I-K to 2, establishing point 5.

Parallel K-L to 5, establishing point 6.

Parallel L-M to 6, establishing point 7.

N to 8 is $\frac{1}{4}$ inch.

O-9, P-10, and T-11 are the same distance as N-8.

This grade is for sizes 36 to 40. The remainder of the grade for **larger and smaller sizes** is carried out the same as the grade of the regular sack coat.

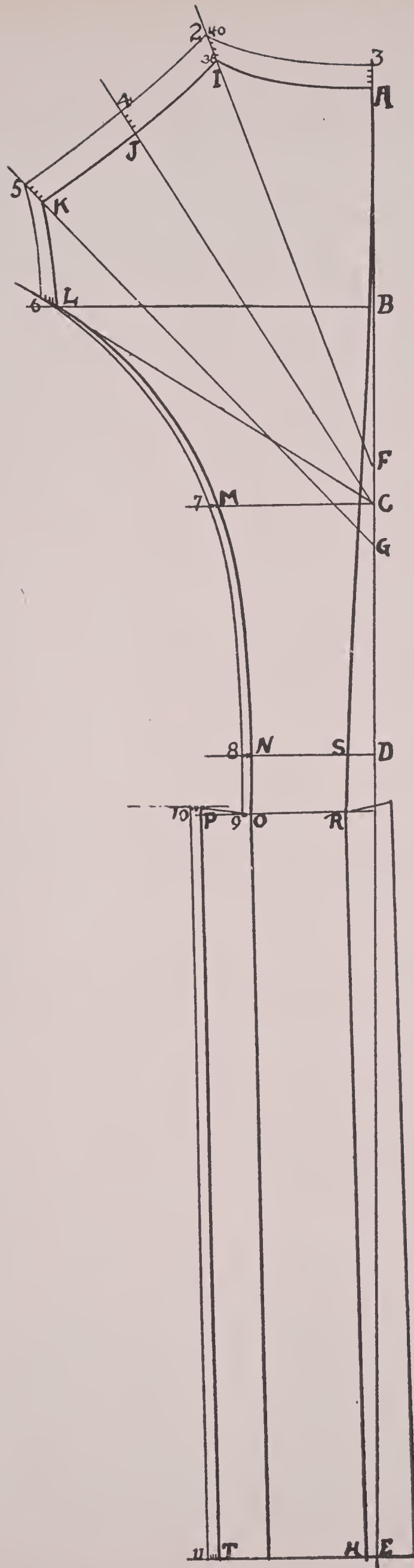


Diagram 25—
Frock Back

Diagram 26—The Revere

To grade the revere, which is generally used on a double-breasted frock, proceed as follows:

A-B-C-D is the revere, size 36.

B to 3 and A to 2 are the same increase as the height of the forepart. It increases and decreases in the same proportion.

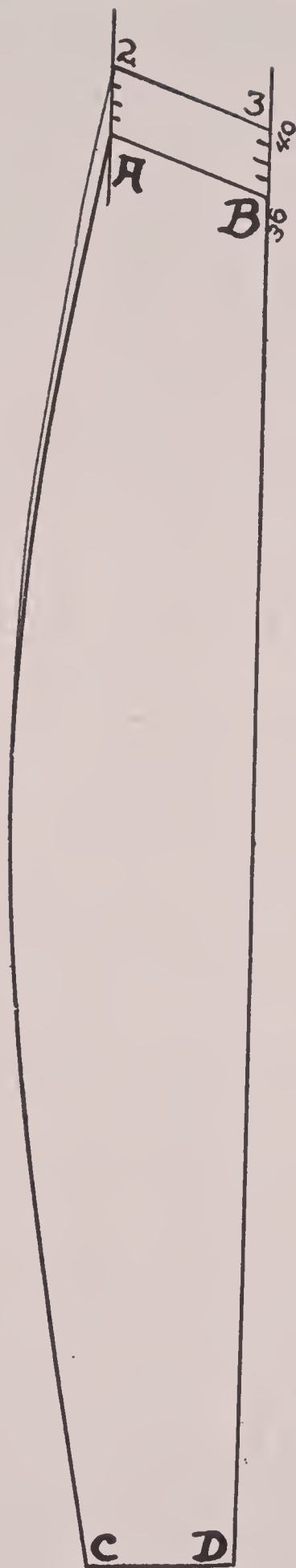


Diagram 26—The Revere

Diagram 27—Single-Breasted Frock Skirt

The single-breasted frock skirt and the skirt of the full dress are graded practically in the same way, except that instead of allowing $1\frac{3}{4}$ inches from A to V, which is the general rule on frocks, for the full dress only half of the increase should be allowed on the front, inasmuch as the skirt comes to only half of the front, which would mean that at the front of the full dress $1\frac{1}{4}$ inches would suffice for four sizes. Otherwise the full dress skirt is graded the same way as the frock skirt, which is explained as follows:

A-B-C-G is the skirt, size 36.

Draw line A-B.

A to 2 is the total increase of side body and forepart for 4 sizes.

3-F is the same as 2-A.

4-G is the same as 2-A.

Draw line 2-B.

Draw lines 5-D and 6-E and space into 4 sizes.

For the larger and smaller sizes use the same divisions.

Diagram 28—Double-Breasted Frock Skirt

The double-breasted frock skirt is graded almost identically as the single-breasted frock skirt. The following is a complete explanation of how this is accomplished:

A-B-C-D is the skirt.

A to 2 is the total increase of side body and forepart for four sizes.

C to 3 is the same as A to 2.

Draw line 2-B.

Draw lines E and F.

Space E-4 and F-5 into four sizes.

For the larger and smaller sizes use the same divisions.

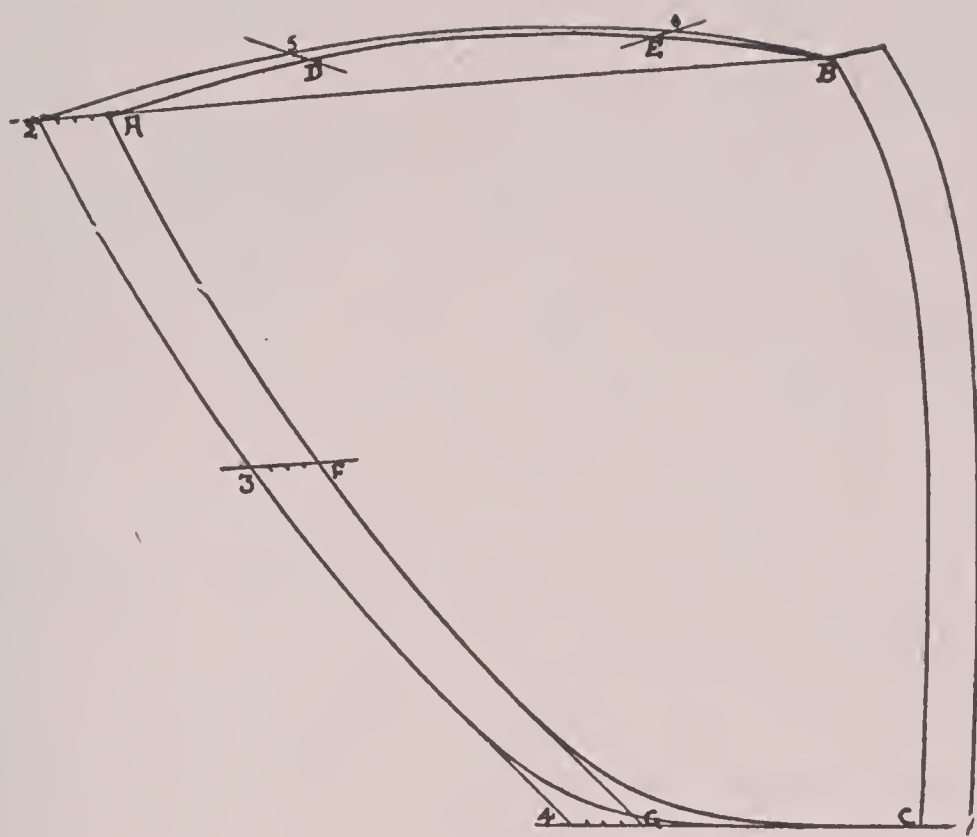


Diagram 27—Single-Breasted Frock Skirt

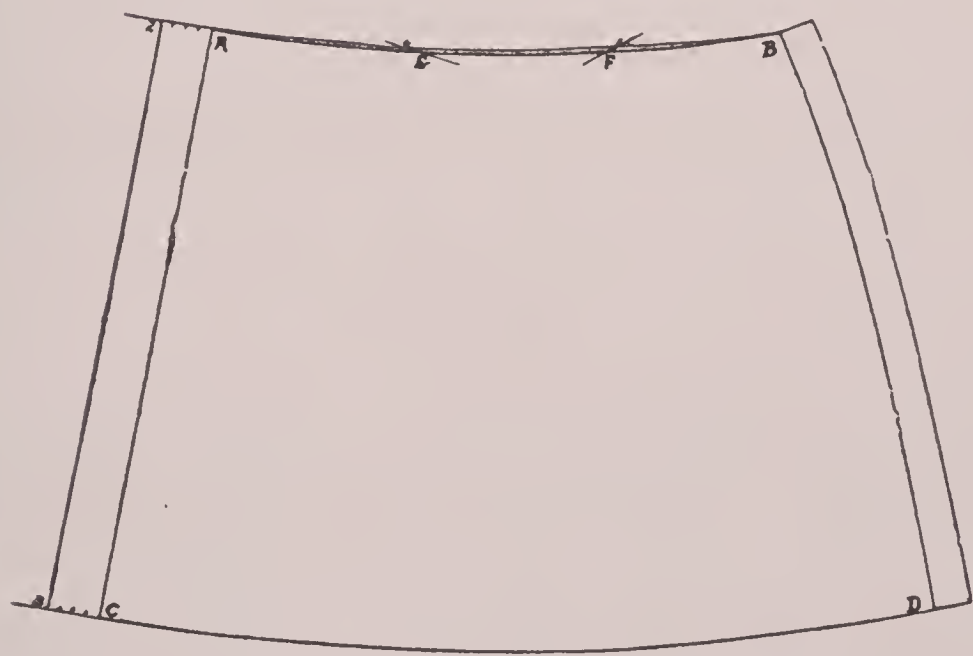


Diagram 28—Double-Breasted Frock Skirt

Diagram 29—Overcoat Back

The overcoat back is drafted in the same manner as the sack back. In this diagram is explained how to lengthen and shorten men's overcoats. This method also can be employed for lengthening and shortening sack coats for young men. To make the grade continue as follows:

A-B-C-D-E is the back construction line.

Place the back, as indicated, the same as when drafting.

B to C is 1 inch.

B to D is 1 inch.

Draw the construction lines the same as for the sack coat.

Parallel the same as for the sack coat.

Use the same divisions, $\frac{4}{6}$ inch at the neck point and $\frac{1}{2}$ inch at the side, for four sizes.

Shorten the coat $\frac{1}{2}$ inch for each size from 36 to 32.

Point 21 is $\frac{1}{2}$ inch from line L-M.

Draw line M-21, which gives the natural decrease at the bottom of the side seam.

Raise the waist line $\frac{1}{4}$ inch for each size from 36 to 32, as illustrated.

Point 20 is $\frac{1}{2}$ inch from line M-L.

This gives the natural decrease of the side seam at the waist. All coats can be shortened and lengthened by the same method.

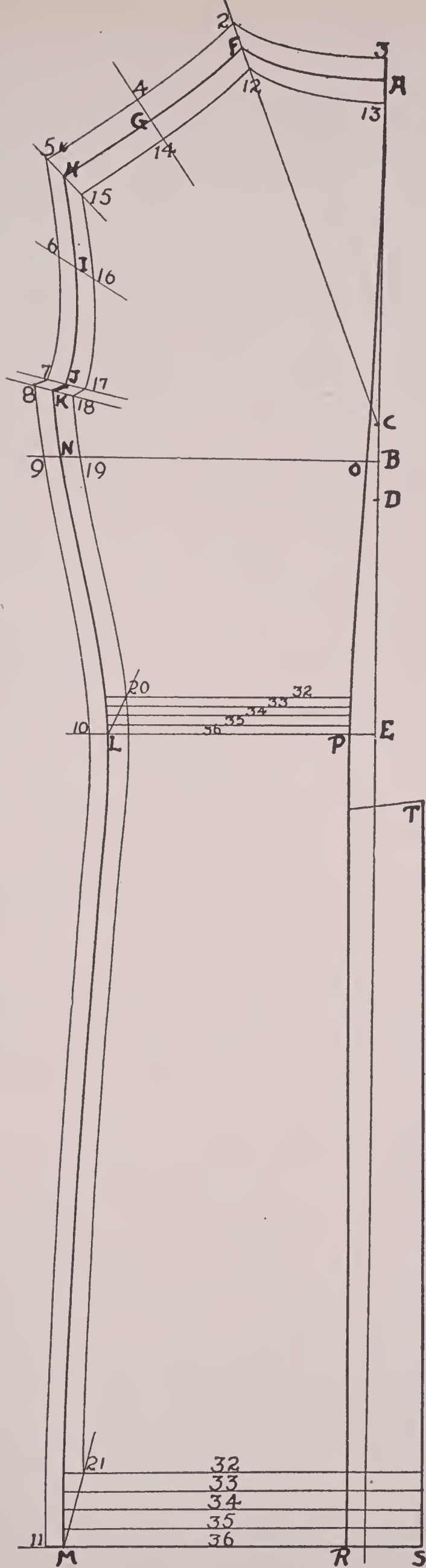


Diagram 29—
Overcoat Back

Diagram 30—Overcoat Forepart

The forepart of the overcoat is graded in the same manner as the forepart of the sack coat. All the construction lines are obtained by the same method. The waist line is raised, as indicated, from size 36 to 32, $\frac{1}{4}$ inch for each size. The length is also shortened $\frac{1}{2}$ inch on each size from size 36 to 32.

Point 28 is 1 inch from line J-H.

Draw line H-28 and space into four divisions, which gives the decrease at the front.

Point 45 is $\frac{1}{2}$ inch from line S-T.

Draw line T-45 and space into four divisions, or else the intersecting lines of the different sizes can be used.

POCKETS

W to 48 is 1 inch.

X to 49 is 1 inch.

Divide same into four sizes. This raises the pocket $\frac{1}{4}$ inch for every size from 36 to 32.

W to 18 and X to 19 are each $\frac{1}{4}$ inch.

This division is for four sizes of pocket, from 36 to 40. The vee is lowered and raised in accordance with the position of the pocket.

Y to 50 is 1 inch.

Y to 20 is $\frac{1}{4}$ inch.

Diagram 30—
Overcoat Forepart

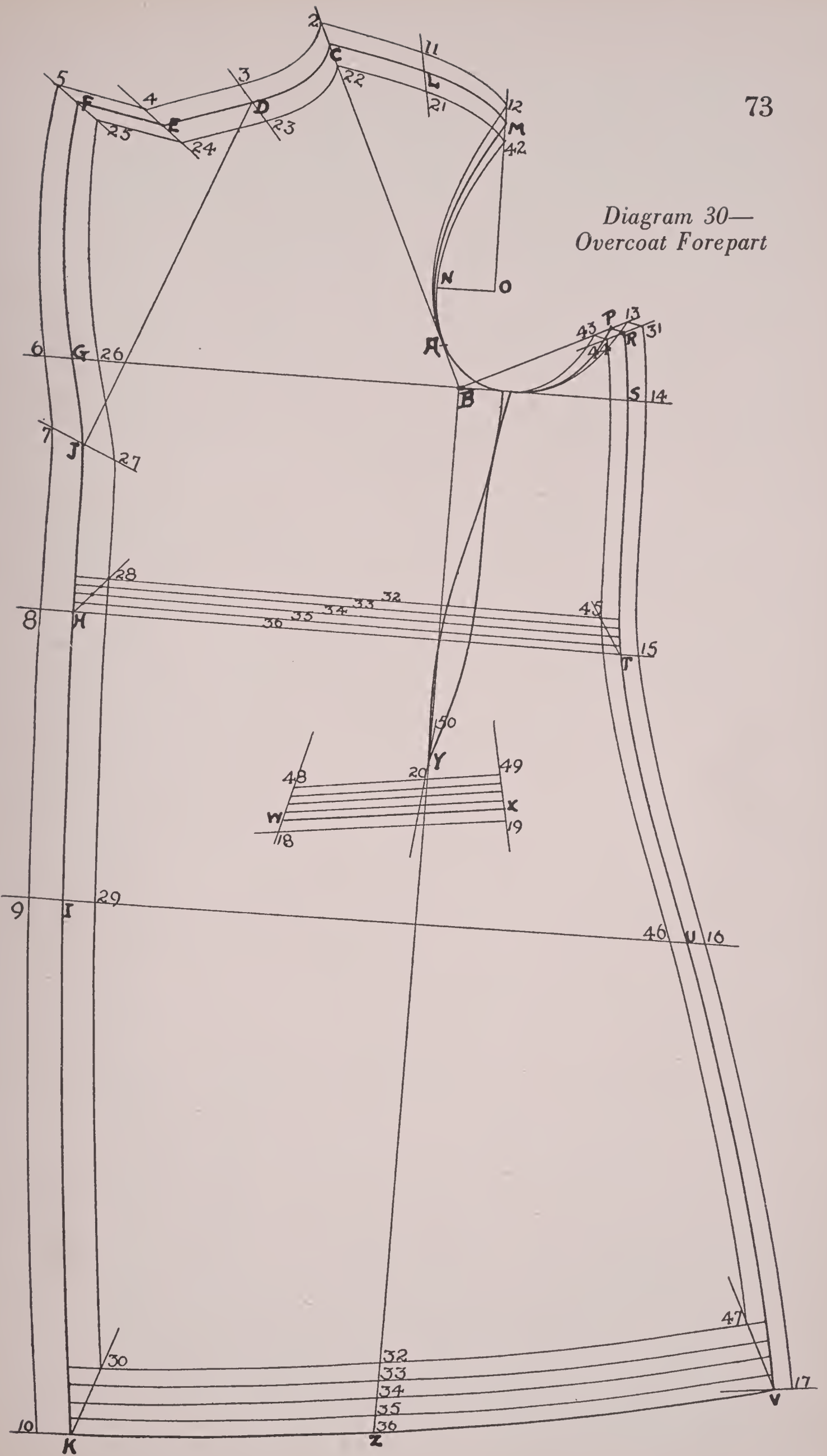


Diagram 31—Balmaroon Overcoat Back

The back of the balmaroon is graded with the same construction lines as that of the regular overcoat, $4/6$ inch at G-2 and $1/2$ inch at points L-8, M-9 and N-10, which are the allowances for four sizes.

Parallel I-J to point 5, establishing point 6.

Parallel J-K to point 6, establishing point 7.

The same allowances as on the regular overcoat can be used for the larger and smaller sizes.

Diagram 31—
Balmaroon Back

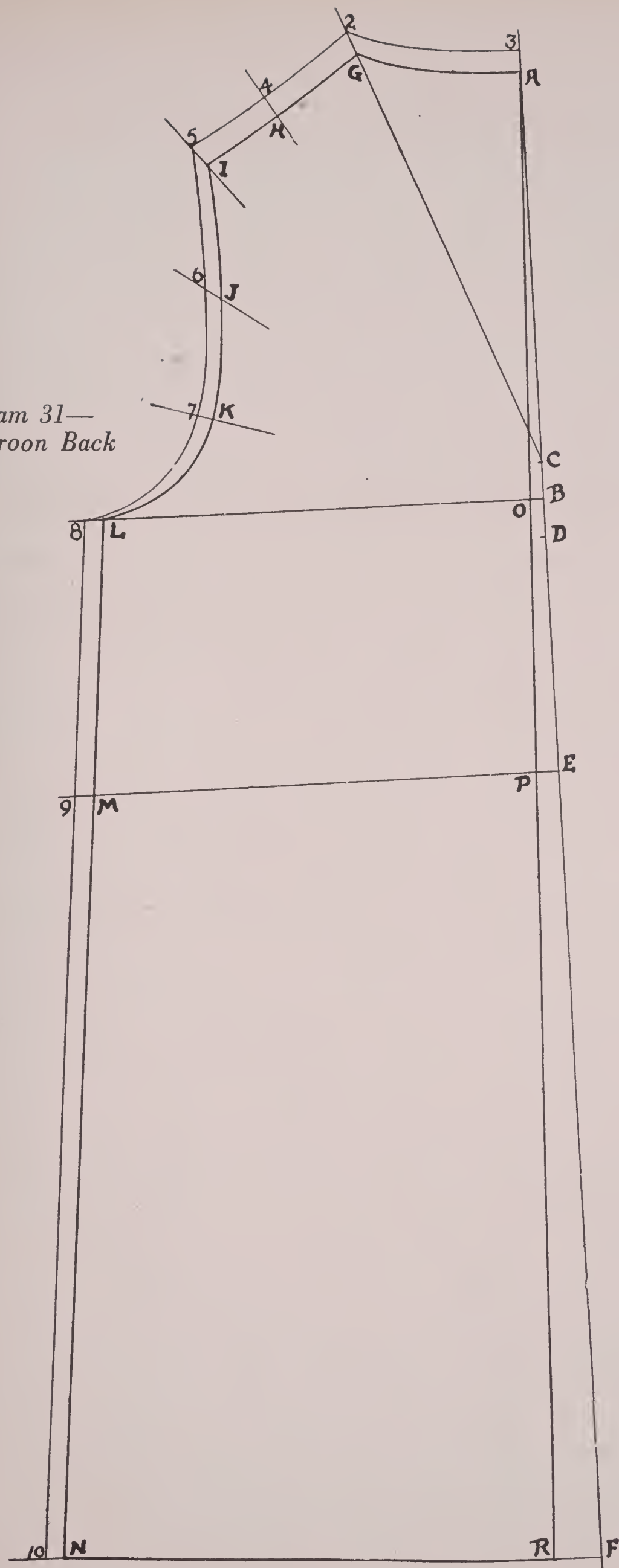


Diagram 32—Balmaroon Forepart

This forepart is also graded the same as the forepart of the regular overcoat. The only exception in this grade is the pocket, which is graded to the front, as illustrated.

Y to 21 is $\frac{1}{2}$ inch.

25 to 22 is $\frac{1}{2}$ inch.

Z to 23 is $\frac{1}{2}$ inch.

30 to 24 is $\frac{1}{2}$ inch.

N-14 is parallel to J-10, the top button.

O-15 is parallel to L-12, the lower button.

The same allowances as on the regular overcoat can be used for the larger and smaller sizes.

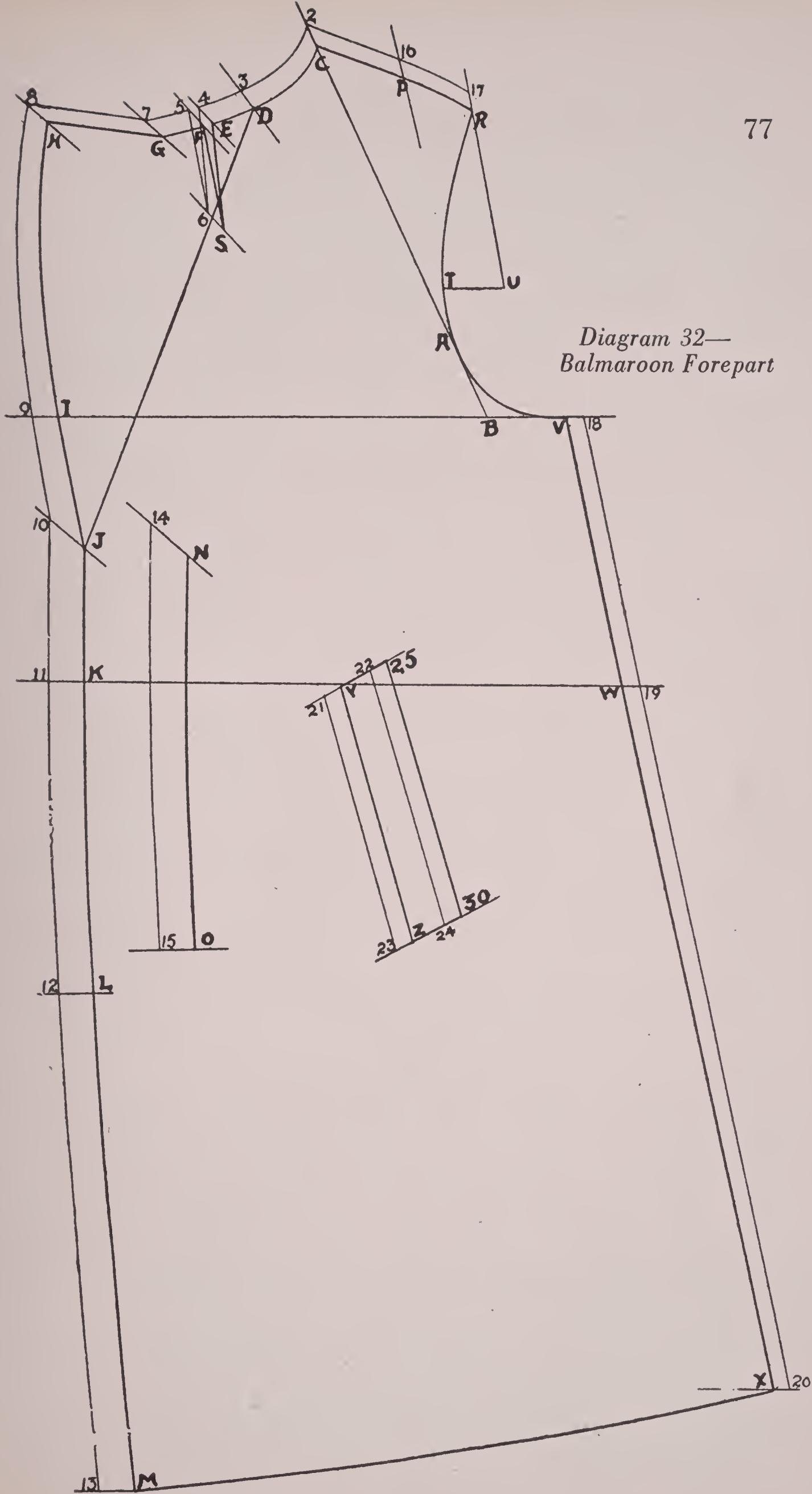


Diagram 32—
Balmaroon Forepart

Diagram 33—Balmaroon Sleeve

This diagram shows how to grade the new style balmaroon sleeve. It is drafted in two pieces, as illustrated. It will be observed that it is somewhat different from the regular sleeve. One-half inch is allowed at the side seams to equalize the amount allowed at the side seam of the back and forepart.

To grade this style sleeve, proceed thus:

Draw line C-B.

A is half way between C and B.

J is $\frac{3}{8}$ inch from A.

K is $\frac{3}{8}$ inch from A.

H-I is the bottom.

O to N is $\frac{3}{4}$ inch.

Square up from K to M.

Square up from J to L.

Space off M-B in about three equal parts.

Space off L-C in about three equal parts.

M to 3 and L to 2 are $\frac{1}{2}$ inch.

B to 10 and C to 6 are $\frac{1}{2}$ inch.

H to 7 and I to 12 are $\frac{1}{4}$ inch.

Parallel E-L to point 2 to establish point 4.

Parallel D-E' to point 4 to establish point 5.

Parallel M-F to point 3 to establish point 8.

Parallel F-G to point 8 to establish point 9.

Shape the head and side seam, as indicated, which finishes the grade for four sizes. The same allowances are made for the larger and smaller sizes.

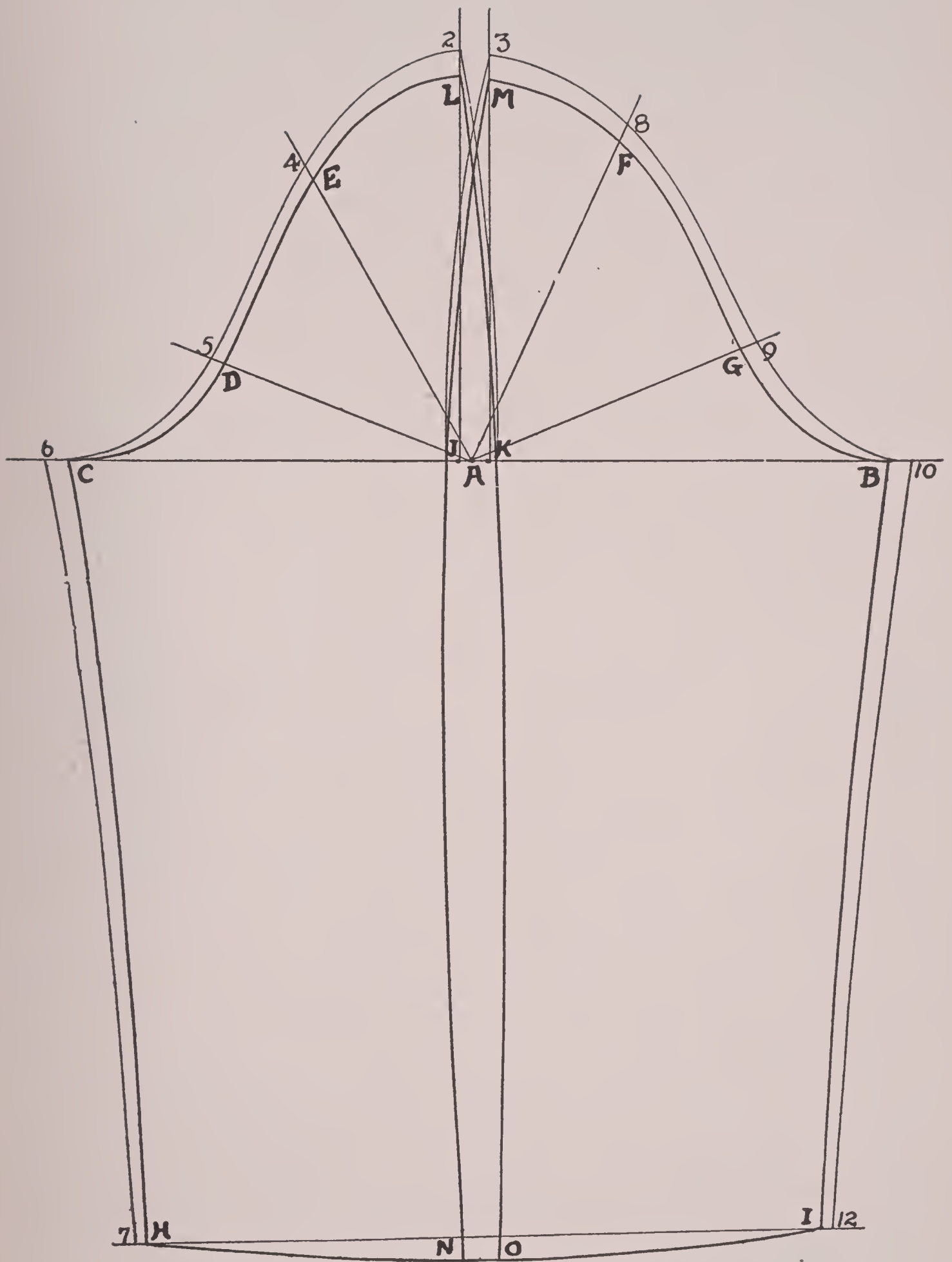


Diagram 33—Balmaroon Sleeve

Diagram 34—Grading the Raglan Back

Many of the points and lines employed in grading the raglan back are similar to those used in the regular overcoat back. It will be observed that in the raglan back there are no shoulder points. To make the grade proceed as follows:

A to B is 1 inch.

Draw lines B-C, B-E, A-F, A-G.

A-J is the breast line.

K-L is the waist line.

C to 2 is $\frac{4}{6}$ inch.

Parallel from C-D to 2, establishing point 3.

J to 8 is $\frac{1}{2}$ inch.

Parallel J-H to 8, establishing point 7.

G-6 is the same as H-7.

Draw line 4-6, which intersects line A-F, establishing point 5.

K-9 and M-10 are the same as J-8.

The remainder of the back is graded the same as the regular overcoat, using the same proportions on the larger and smaller sizes.

*Diagram 34—
Raglan Back*

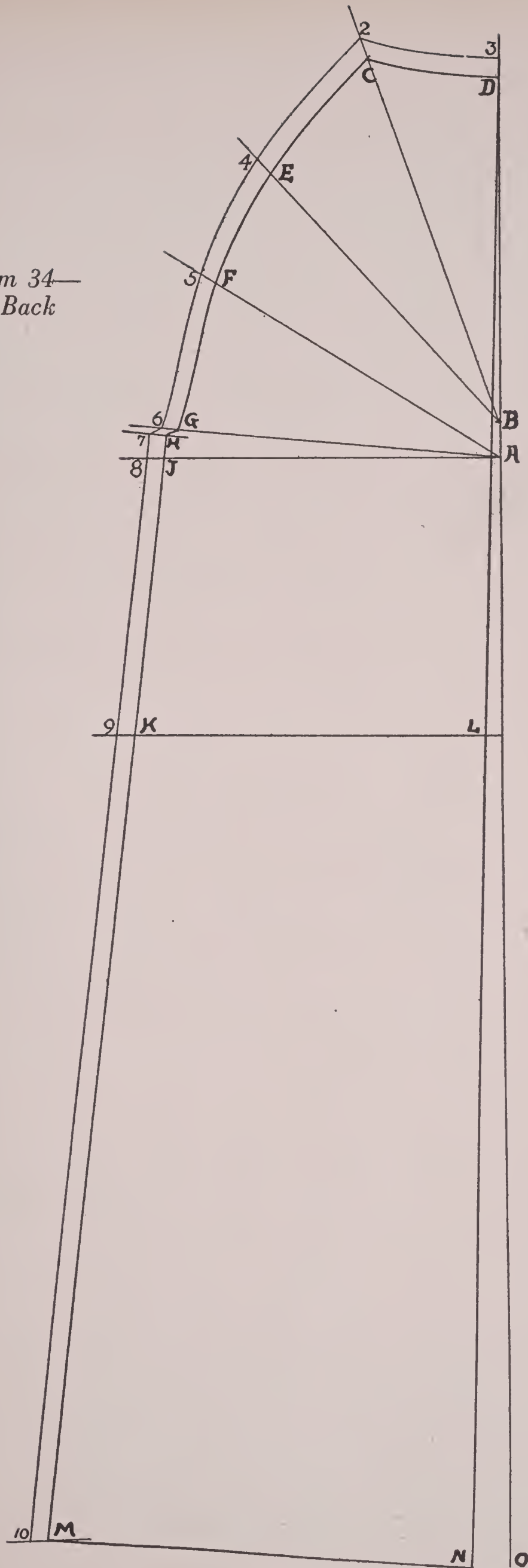


Diagram 35—Raglan Top Sleeve

The following is a practical method for grading a raglan top sleeve. The increase and decrease of the sleeve will correspond to the forepart, so that the sleeves will sew in correctly and have the necessary length. To make the grade, proceed as follows:

Place both parts of top sleeve as illustrated. Draw line A-B.

C is half way between 6 and 7.

Draw line C-D and C-E.

Parallel C-D to G. Parallel C-E to F.

D to 2 and G to 3 are each $\frac{4}{6}$ inch.

E to 8 and F to 9 are each $\frac{4}{6}$ inch.

Draw lines C-H and C-J.

Draw line 3-A, which intersects line C-H, establishing point 4.

Parallel from F-J to point 9, establishing point 11.

Parallel B-J to point 11, establishing point 12.

O to 13 is $\frac{1}{4}$ inch.

Draw lines L-5 and K-10, which are used as guide lines.

This finishes the grade for four sizes. The same proportions are used for the larger and smaller sizes.

The under sleeve is graded the same as the regular under sleeve, as explained in a preceding diagram.

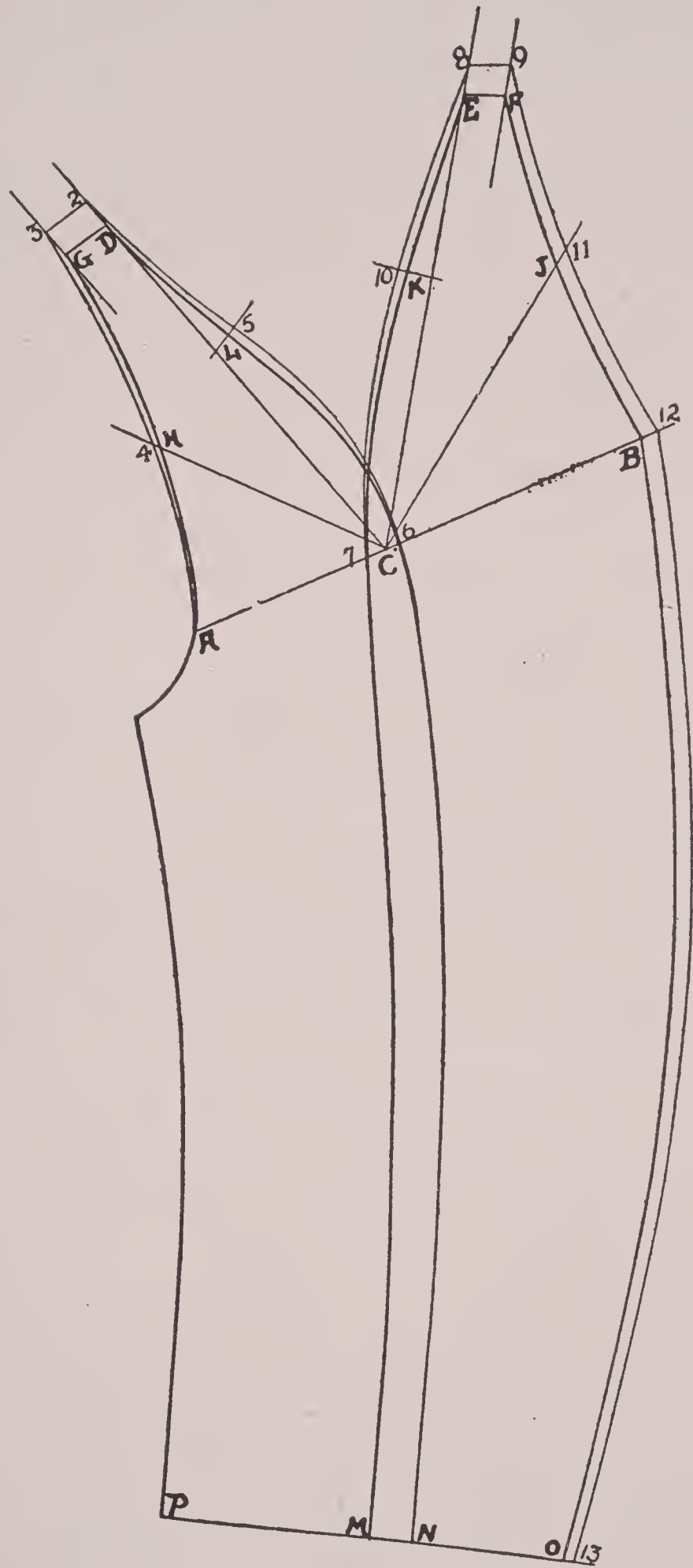


Diagram 35—Raglan Top Sleeve

Diagram 36—Raglan Forepart

In this diagram there are only a few points that are different from the overcoat, due to the fact that the shoulder is entirely cut away. To make the grade proceed as follows:

G-M is the breast line.

N-O is the waist line.

Draw line C-A-B.

C to 2 is $\frac{4}{6}$ inch.

Parallel C-2 to J.

J-3 is the same as C-2.

Parallel forward from C, respectively from points D and E.

Draw line F-6 parallel to E-5.

N to 9 is 1 inch.

Parallel N-H to 9, establishing point 8.

Draw line 6-8, which intersects line B-G at 7.

P-10 and 5-11 are the same distance apart as N-9.

Draw line B-K.

Parallel B-K to L.

M-15 is $\frac{1}{2}$ inch.

O-16, R-17 and T-18 are the same distance apart as M-15.

Parallel M-L to 15, establishing point 14.

K-13 is the same as L-14.

Draw line U-12, which is used as a guide line.

This finishes the grade for four sizes, from 36 to 40. The same proportions can be used for the larger and smaller sizes.

Diagram 36—
Raglan Forepart

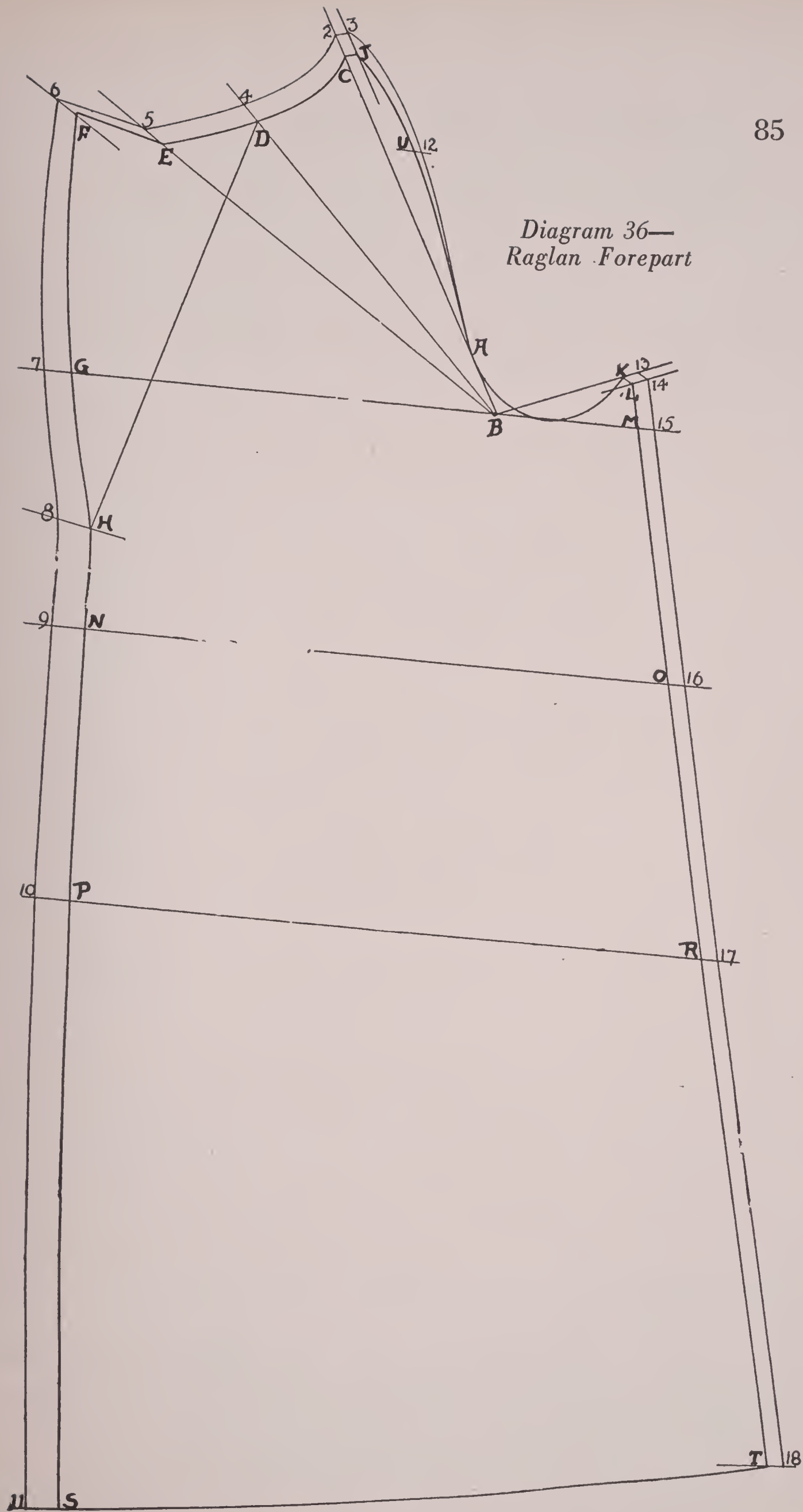


Diagram 37—Balmacaan Split Sleeve

The back and the forepart of the balmacaan are graded somewhat similar to the raglan, which is illustrated in the preceding diagram. Place the two halves of the sleeve as shown, then proceed as follows:

Draw line B-C.

A is half way between T and U.

S to R is $\frac{3}{4}$ inch.

U to T is $\frac{3}{4}$ inch.

Draw lines A-E and A-D.

Draw lines A-H, A-I, A-F and A-G.

Parallel line D-A to point 2.

Parallel line A-E to point 3.

D to 4 is $\frac{4}{6}$ inch.

5 to 2 is $\frac{4}{6}$ inch.

E to 18 is $\frac{4}{6}$ inch.

3 to 17 is $\frac{4}{6}$ inch.

Parallel E-F to 18, establishing 19.

Parallel F-G to 19, establishing 20.

Parallel A-C to N.

N to 21 is $\frac{1}{2}$ inch.

Parallel A-C to L.

L-M is $\frac{1}{2}$ inch.

P to 12 is $\frac{1}{4}$ inch.

Draw line 14-16. Then draw line 13-15.

Parallel D-H to 4, establishing 6.

Parallel H-I to 6, establishing 7.

Parallel B-A to J and K.

K to 8 is $\frac{1}{2}$ inch.

J to 9 is $\frac{1}{2}$ inch.

O to 11 is $\frac{1}{4}$ inch.

Draw line 9-11, establishing point 10, which completes the grade for four sizes. Use the same proportion on the larger and smaller sizes.

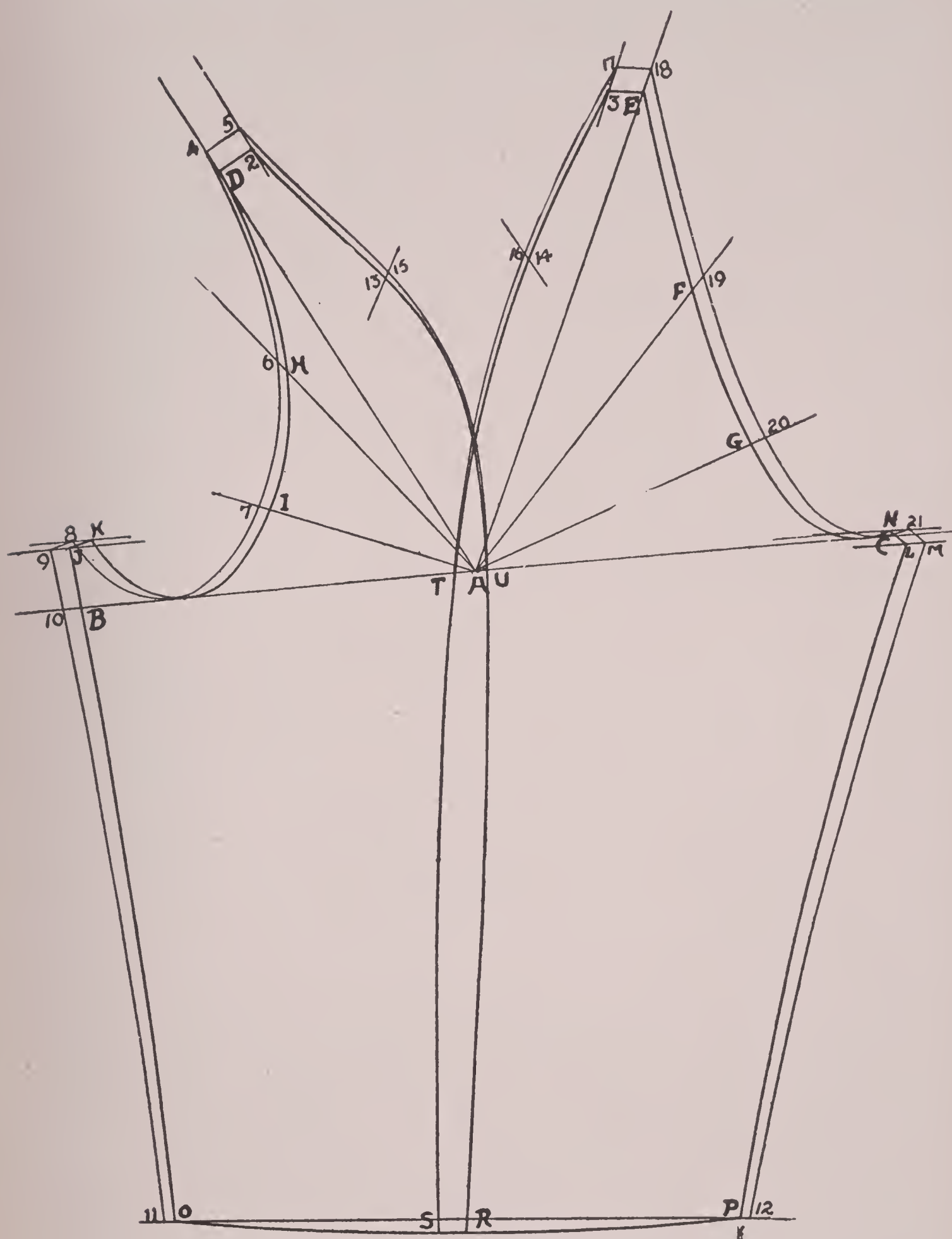


Diagram 37—Balmacaan Split Sleeve

Diagram 38—Balmacaan Sleeve

This diagram has many points that are similar to the grade of the split-sleeve balmacaan, especially at the side seams. To make the grade proceed as follows:

Draw line B-C.

A is half way between B and C.

Draw lines A-E, A-D, A-C, A-G, A-H, A-I.

Parallel E-A to F.

E to 2 is $\frac{4}{6}$ inch.

3 to F is $\frac{4}{6}$ inch.

Parallel F-G to 3, establishing point 10.

Parallel H-G to 10, establishing point 11.

Parallel I-H to 11, establishing point 12.

Parallel A-C to J.

J to 13 is $\frac{1}{2}$ inch.

C to 14 is $\frac{1}{2}$ inch.

Parallel E-D to 2, establishing point 4.

Parallel C-D to 4, establishing point 5.

Parallel A-B to K and L.

L to 6 is $\frac{1}{2}$ inch.

K to 7 is $\frac{1}{2}$ inch.

N to 15 and M to 9 are each $\frac{1}{4}$ inch.

Draw lines 14-15 and 7-9. This finishes the grade for four sizes.

The same proportions are to be used on the larger and smaller sizes.

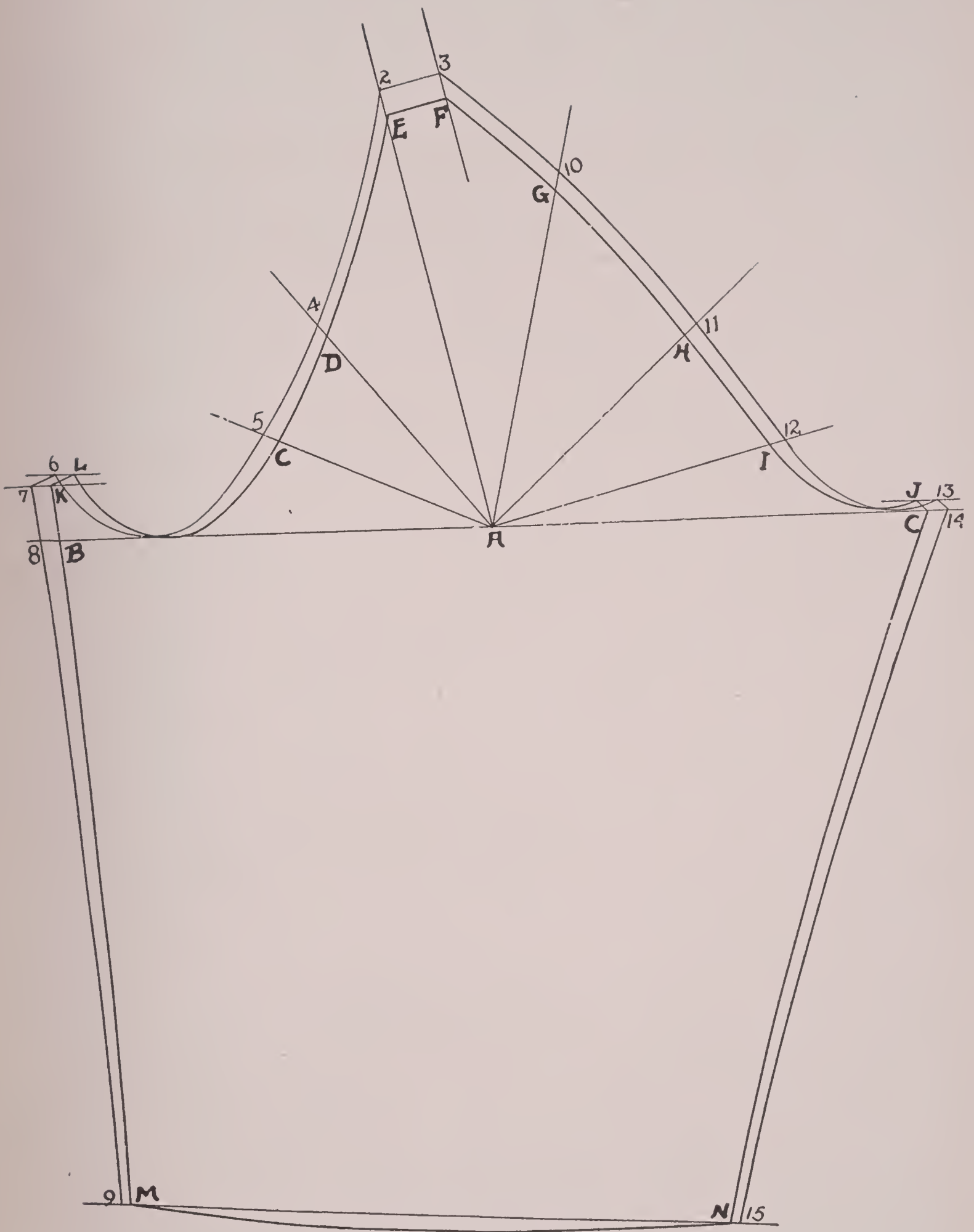


Diagram 38—Balmacaan Sleeve

Diagram 39—Butterfly Sleeve

This is a unique grade and shows just how a garment of this kind can be handled. In order to make the grade proceed as follows:

D-E-F-G is the back construction line.

B-A-C is the breast line.

Square up from point A to I.

Draw line A-D.

D to 2 is $\frac{4}{6}$ inch.

Parallel D-I to 2, establishing point 3.

Draw line A-J.

Parallel A-J to K.

J to 4 is $1\frac{1}{2}$ inches.

K to 5 is $1\frac{1}{2}$ inches.

L to 6 is $\frac{1}{2}$ inch.

6 to 7 is $\frac{1}{4}$ inch.

Draw line L-7.

M to 8 is $\frac{1}{4}$ inch.

8 to 9 is $\frac{1}{2}$ inch.

Draw line M-9.

H to 14 is $\frac{1}{2}$ inch.

Parallel lines N-11, O-12 and P-13 from line A-J.

P to 13 is $\frac{1}{2}$ inch.

N to 11 and O to 12 are each $\frac{1}{2}$ inch.

This completes the back for four sizes. The forepart is graded the same as the raglan forepart.

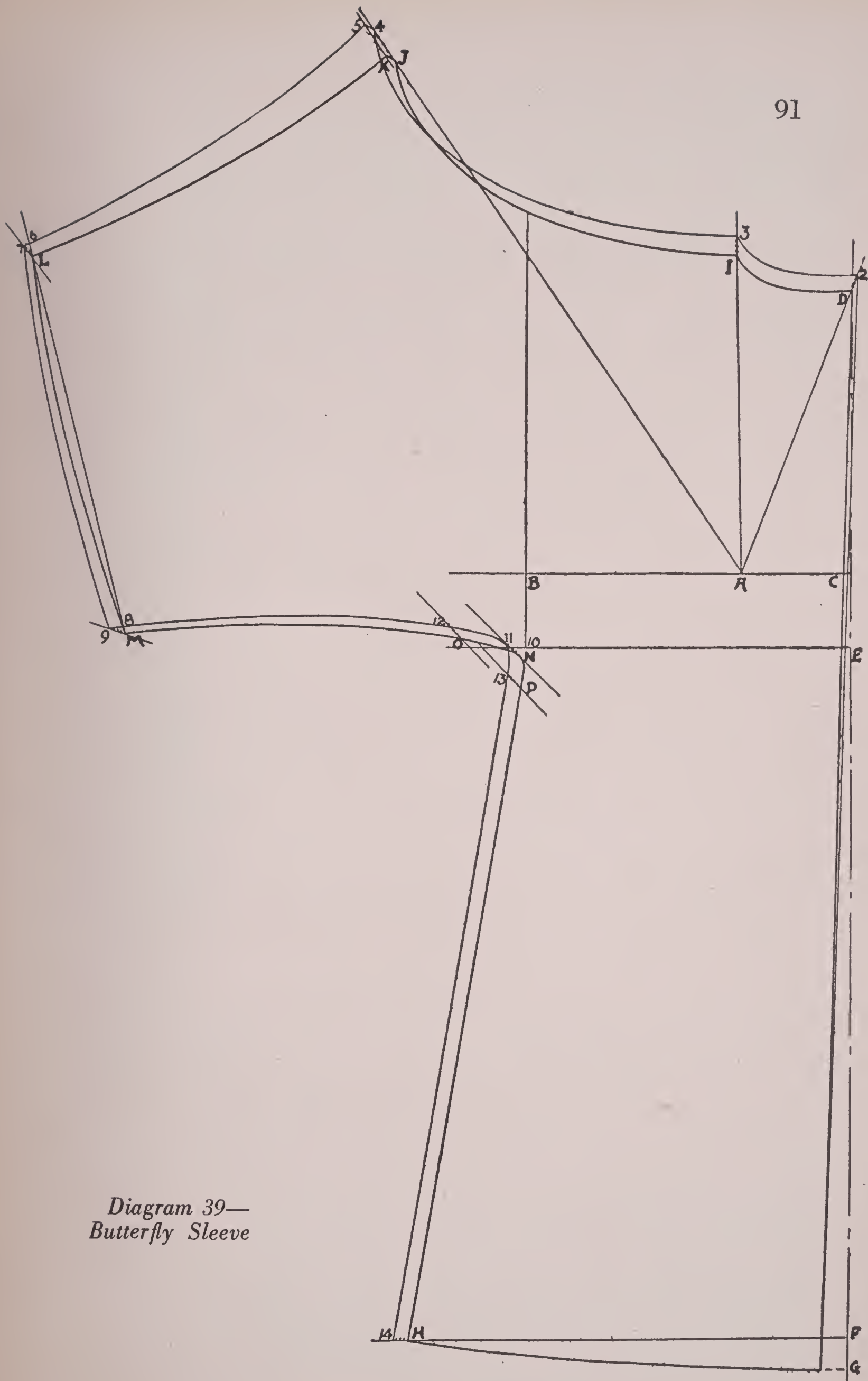


Diagram 40—Shoulder Cape Back

This grade is for a shoulder cape. The diagram explains how to grade a garment where there is no back arm scye line. It also explains how to obtain the exact increase for four sizes at the neck for a button-to-the-neck garment, so that the neck will come out proportionately for the various breast sizes. To make the grade proceed as follows:

F-C-H is the back construction line.

F-I is the center seam of back.

H to I is 1 inch, the amount the back is swung in from line F-H.

C-B is the breast line.

Square up from A to D.

D to E is $\frac{4}{6}$ inch.

E to 3 is $\frac{1}{4}$ inch.

Draw line 3-D.

Parallel D-F to 3, establishing point 2.

B to 5 is $\frac{1}{2}$ inch.

J to 6 is $\frac{1}{2}$ inch.

Draw line 3-5, establishing point 4 on line A-G.

This grade is for four sizes. The same changes are made after size 42 as on the regular back.

COLLAR

A-B-C-D-E-F is the collar.

The allowances for sizes are made at the back or center seam of collar. An allowance of $\frac{1}{2}$ inch is made at points A, B and C for 4 sizes.

Diagram 40—
Shoulder Cape Back

The diagram illustrates the construction of a 'Shoulder Cape Back' pattern. The main pattern piece is a large, curved shape with a vertical center line and a horizontal line across the middle. Key points are labeled: 'A' at the top center, 'B' at the top left, 'C' at the top right, 'D' at the bottom left, 'E' at the bottom right, 'F' at the bottom center, 'G' at the top left, 'H' at the top right, 'I' at the bottom left, and 'J' at the bottom right. A curved line labeled '5' runs along the left side, and a curved line labeled '6' runs along the bottom. A small detail of a collar is shown in the center, with points 'A', 'B', 'C', 'D', 'E', and 'F' labeled. The collar has a curved top edge and a straight bottom edge. The main pattern piece is divided into two sections by a horizontal line, with the top section being a trapezoid and the bottom section being a larger, curved shape. The collar detail is a separate piece that would be attached to the main pattern piece.



Diagram 41—Shoulder Cape Forepart

This illustration explains how to grade four sizes of the shoulder cape forepart. It also shows how to grade the neck of a garment that has no front arm scye, how to get the correct slant of the shoulder point, and how to obtain the correct increase for four sizes of the neck in proportion to the breast measurements. In order to make the grade proceed as follows:
B-C is the breast line.

Square up from A to D.

D to E is $\frac{4}{6}$ inch.

E to 2 is $\frac{1}{4}$ inch.

Draw line 2-D.

Parallel 2-D to 3.

3 to 4 is the same as D to 2.

Parallel D-11 to 2, establishing point 12.

Parallel D-5 to 2, establishing point 6.

2 to 6 is $\frac{1}{4}$ inch more than the distance D to 5.

Parallel line 6-5 to points 7 and 9.

7 to 8 and 9 to 10 are the same distance as 6 to 5.

B to 13 is 1 inch.

G to 14 and I to 15 is 1 inch.

C to 17 is $\frac{1}{2}$ inch.

H to 18 and J to 19 are each $\frac{1}{2}$ inch.

Draw line A-F, half way between 3 and C.

Draw line 4-17, which intersects line A-F, establishing 16.

This grade is for four sizes. The same proportions are used on the larger and smaller sizes.

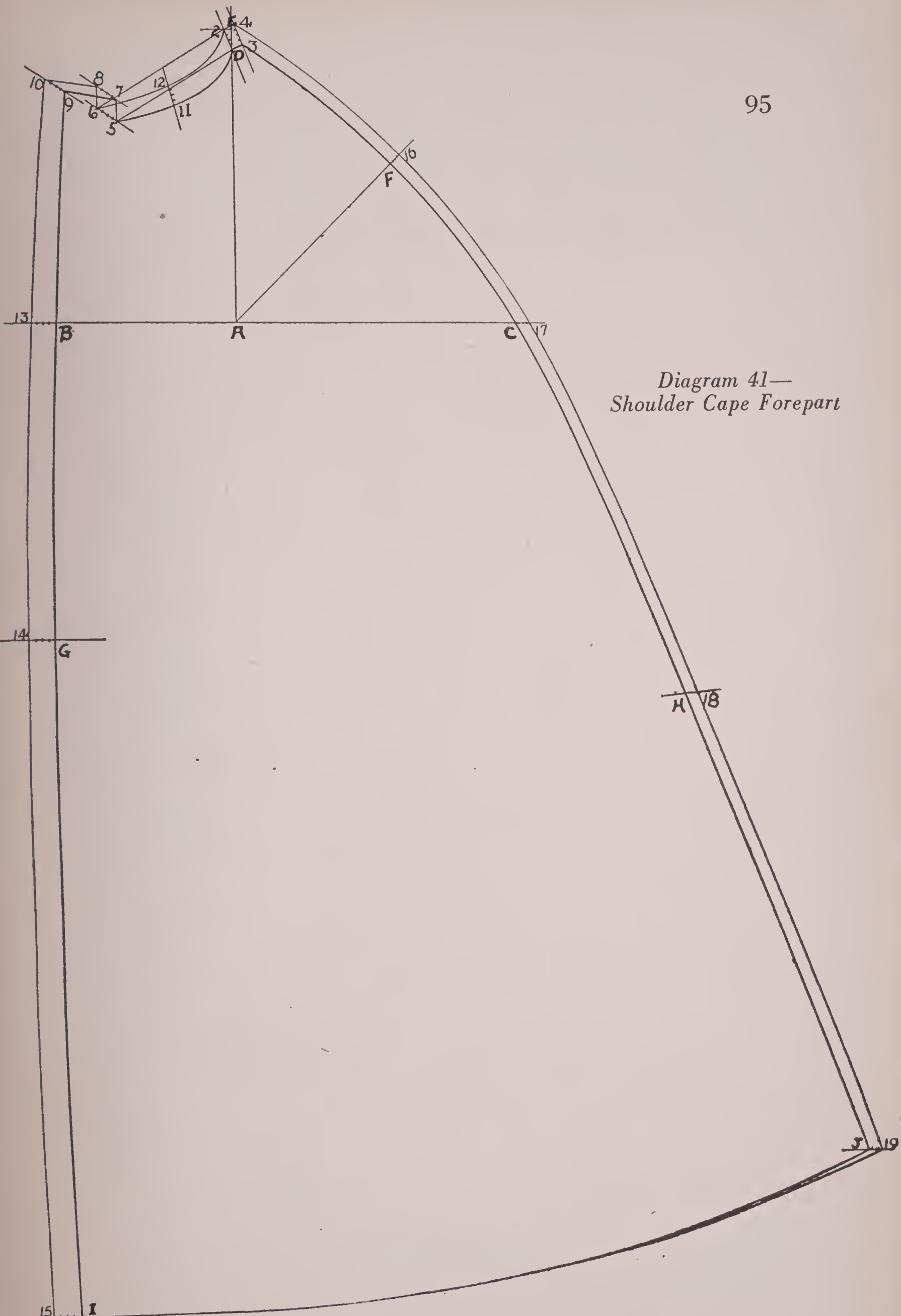


Diagram 41—
Shoulder Cape Forepart

Diagram 42—Corpulent Back

The corpulent sack coat is graded the same as the regular stout. The only difference is that at the point of neck, 1 to 2, $\frac{3}{8}$ inch is allowed for four sizes instead of $\frac{1}{2}$ inch. This is paralleled across the neck and shoulder. Otherwise all construction lines are the same. The diagram is for sizes 46 to 54.

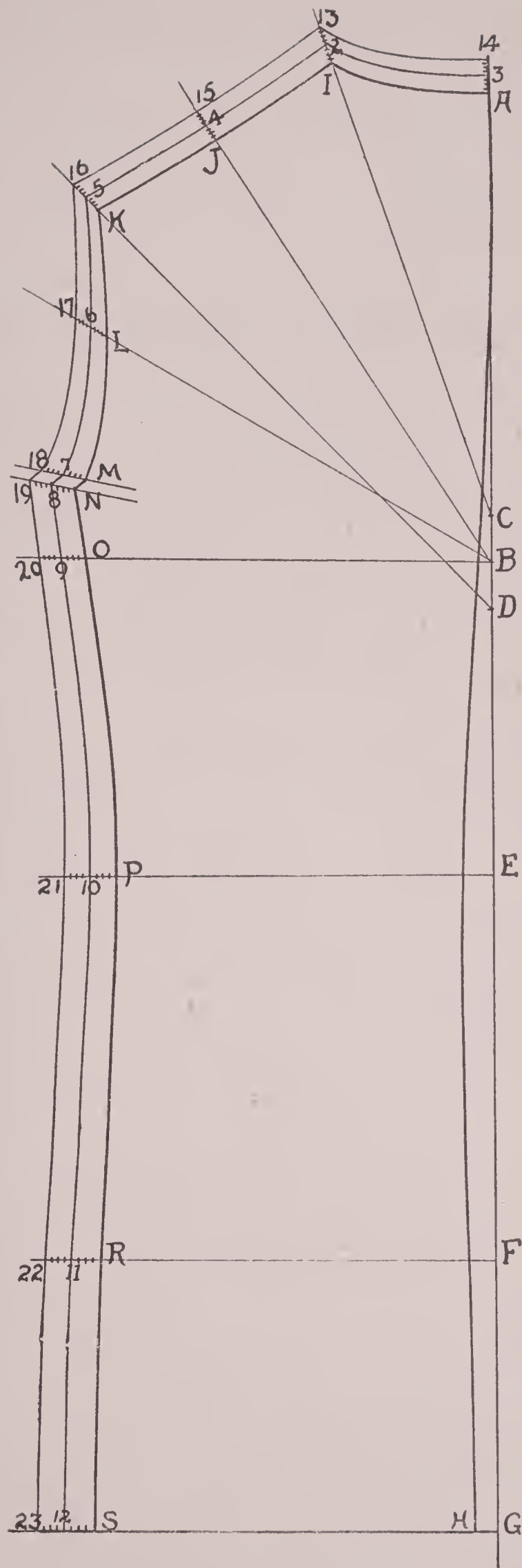


Diagram 42—Corpuient Back

Diagram 43—Corpulent Forepart

The forepart is graded the same as the regular stout forepart, with the exception that the shoulder point is thrown back, as illustrated by line K-C. It will be noted that line B-E is drawn from the pivot point B instead of going out $1\frac{3}{4}$ inches, as on the regular stout grade.

The pocket is not graded lower on this grade. It only extends forward, $\frac{1}{4}$ inch from W to 21 and $\frac{1}{4}$ inch from 21 to 41.

The construction lines are the same as for the regular stout, with the exception as stated above. The allowance at the waist from P to 12 is $1\frac{1}{4}$ inches for four sizes. From S to 18 it is $\frac{5}{8}$ inch for four sizes. On the breast line, from J to 10, it is 1 inch for four sizes. From L to 17 it is $\frac{1}{2}$ inch for four sizes. The same proportions are used for the larger sizes from 50 to 54 as here illustrated.

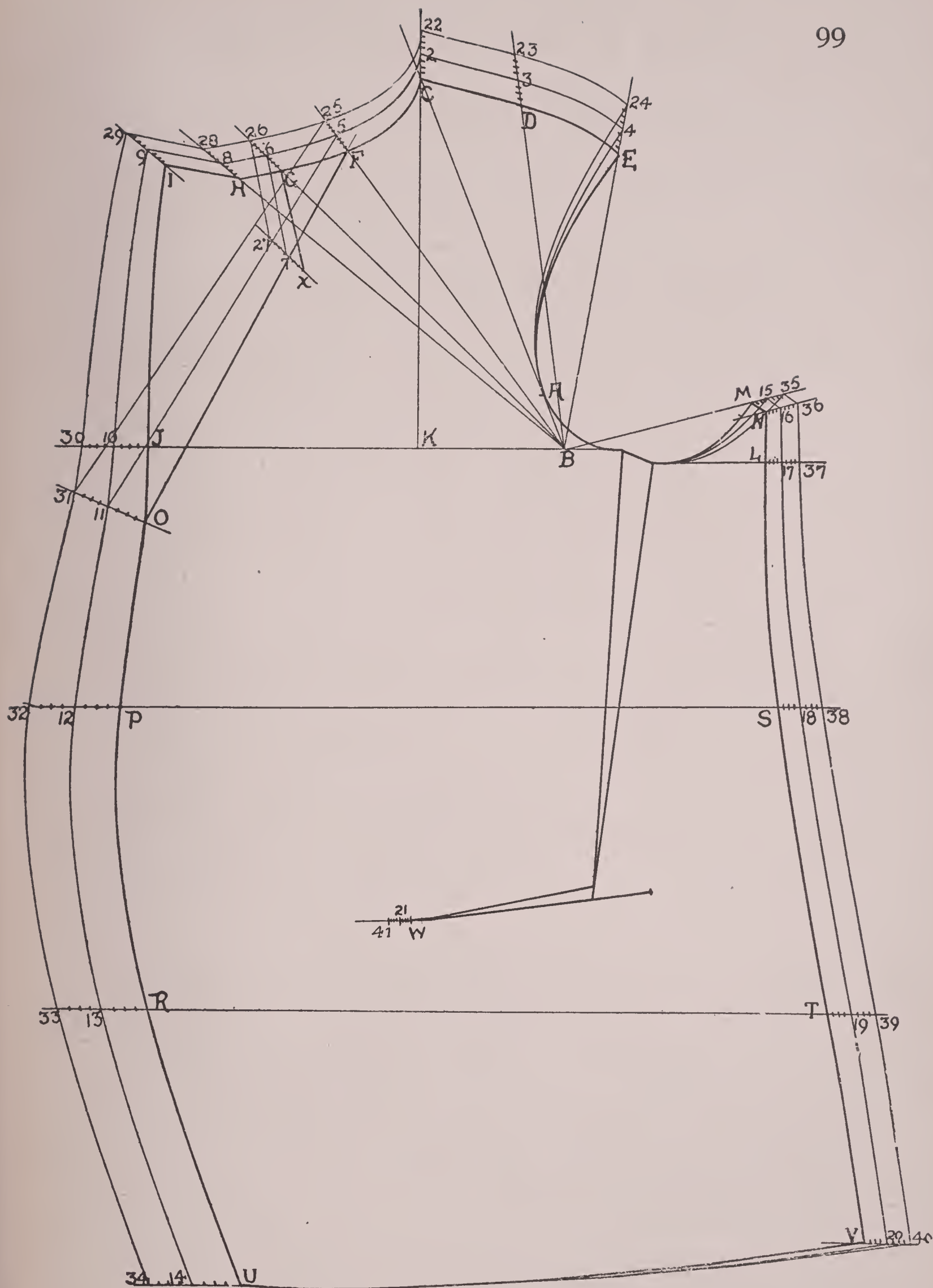


Diagram 43—Corpulent Forepart

Diagram 44—Back Lining

All lining patterns should be graded so as to insure a perfect **run of sizes**. This will eliminate fitting and prepare the coat for direct routing to the machine.

To make the grade proceed as follows:

A-B-C-D-E-F-G-H-I-J-K is the pattern of back.

L-M-K-J-R-P-O-N-F is the lining pattern. The lining pattern is placed in the same position as when constructed.

Draw lines B-F, C-G and H. These lines are the same as those on the regular back grade.

Parallel line G-C to O.

Parallel line H to P-R.

F to N is $\frac{4}{6}$ inch.

Parallel line F-L to N, establishing 2.

N to 3 is $\frac{4}{6}$ inch.

Parallel line N-O to 3, establishing 4.

6 to I is $\frac{1}{2}$ inch.

J to 7 and K to 8 are each $\frac{1}{2}$ inch.

P to 5 is $\frac{1}{2}$ inch.

Draw lines 2-N, N-3, 3-4, 4-5, 5-P and P-6-7-8, which completes the grade for four sizes. The remainder of the grade can be carried out the same as for the regular back.

Diagram 45—Forepart Lining and Facing

This diagram shows in detail how the forepart lining and facing are graded. It is a rather complicated diagram. If care is taken it will give the utmost satisfaction. In order to produce the grade proceed as follows:

B-E-I-J-D-C is the forepart.

F-G is the breast line.

H-K is the waist line.

Draw line B-A.

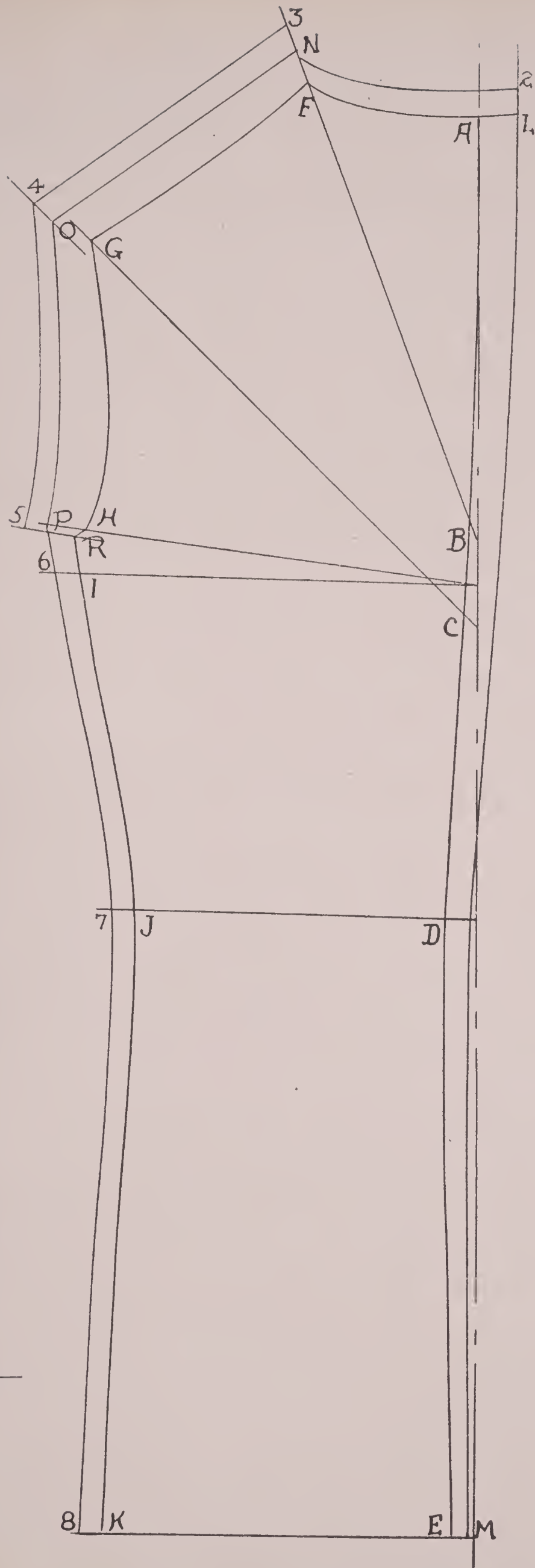


Diagram 44—
Back Lining

Place the lining as indicated by points 50, 56, 55, 52 and 51, the same as when constructed.

Draw line A-B.

Parallel A-B to point 50.

Draw line C.

Parallel C to point 51.

Draw line A-D.

Parallel D to point 52.

50 to 60 is $\frac{4}{6}$ inch, the same as on the regular forepart.

Parallel line 50-51 to 60, establishing point 61.

60 to 62 is $\frac{1}{2}$ inch.

53 to 63 is $\frac{1}{2}$ inch.

55 to 65 is $\frac{1}{2}$ inch.

68 to 58 is 1 inch.

67 to 57 is 1 inch.

56 to 66 is 1 inch, which completes the lining for four sizes.

For the larger and smaller sizes use the same divisions.

FACING

1-2-3-4-5-6-7-27-18-10-9 is the facing. Place the facing in the same position as when constructed.

Parallel line A-B to point 2.

Draw lines A-26 and A-3.

Parallel line A-3 to 4 and 5.

1 to 11 is $\frac{4}{6}$ inch.

2 to 12 is $\frac{4}{6}$ inch.

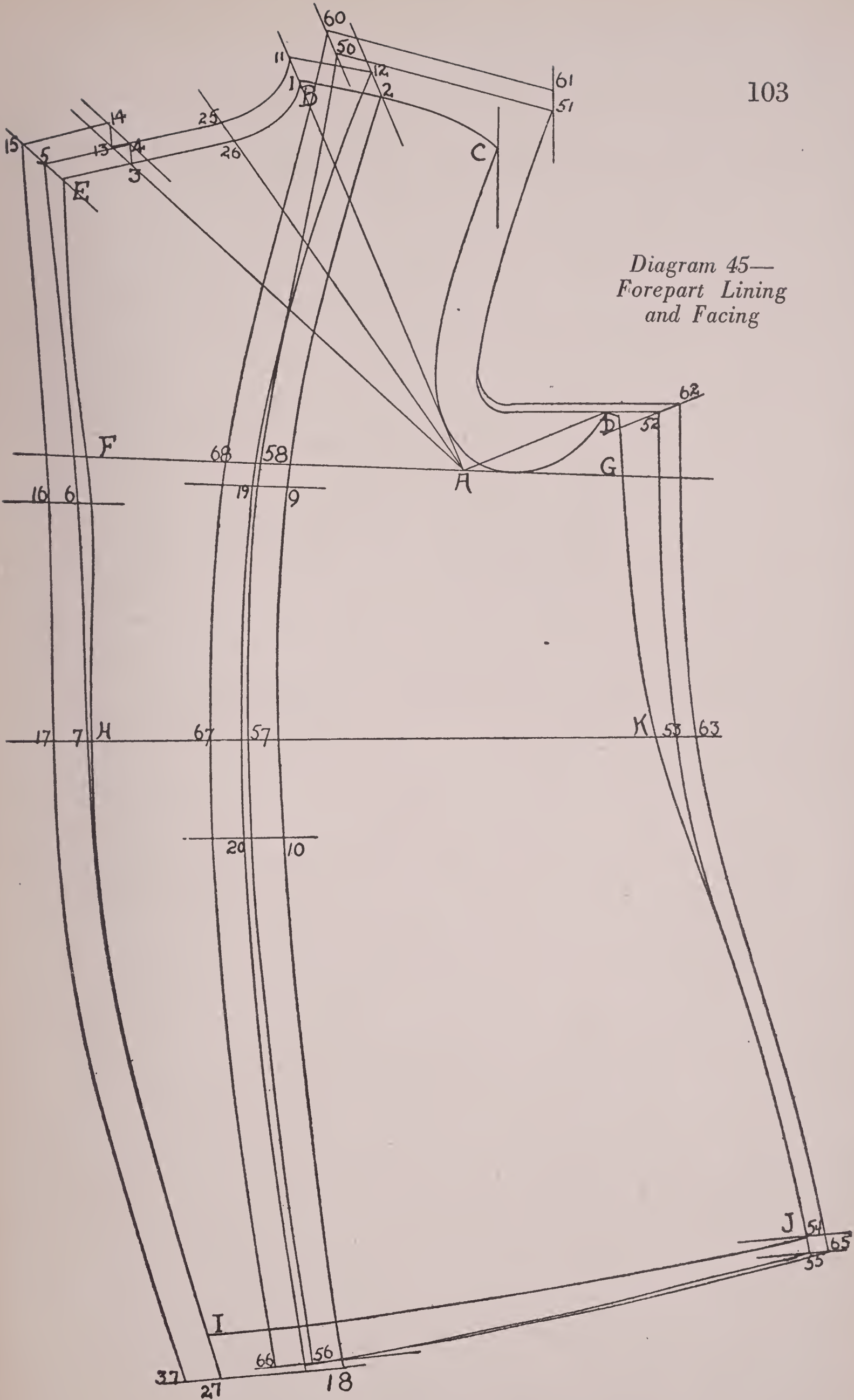
Parallel 1-26 to point 11, establishing point 25.

Parallel 1-3 to point 11, establishing point 13.

4-14 and 5-15 are the same as 3-13.

7-17, 27-37, 9-19, 10-20 and 18-56 are each 1 inch.

This completes the facing for four sizes. Use the same divisions for the larger and smaller sizes.





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