STANDARD ST.7/F

GUIDELINES FOR COMPUTER OUTPUT MICROFICHES (COM)

INTRODUCTION

1. These guidelines relate to transparent A6 size computer output microfiche when used as an information carrier in exchange among or general distribution to industrial property offices of patent related data presented in tabular arrays analogous to the format and arrangement of computer printed listings.

2. The purpose of these guidelines is to provide a mutually satisfactory basis for the use of COMs by establishing a standardized format and acceptable quality criteria and by establishing criteria for the manner of supplying COM microfiches.

3. In the elaboration of these guidelines, the Draft International Standard ISO/DIS 5126 (revised) was taken into account as far as applicable. However, it should be noted that the reduction of 1:42 is widely and satisfactorily used in the exchange of data related to patents and official gazettes published by patent offices. The reduction of 1:42 in any ongoing system has to be acknowledged and further accepted. Also the International Standard ISO 2707 was considered with regard to the image arrangements.

4. These guidelines are based on the assumption that first generation film will not be offered for exchange but, in fact, a subsequent negative generation of film, most likely not more than second generation. It is recognized, accordingly, that attainment of the specified minimum quality in the image generation to be disseminated requires commensurate quality in the earlier generation(s), giving due regard to the nominal losses which occur in image transfer processes.

PHYSICAL CHARACTERISTICS

Sheet size

5. The external shape of the microfiche shall be a rectangle of the following sizes and manufacturing tolerances:

$$105\ ^{0}_{-0.2}\ \text{mm} \times 148\ ^{0}_{-0.5}\ \text{mm}$$

The tolerances specified apply immediately after processing. The measurements shall be made when the film has come to equilibrium at $23 \pm 2°C$ and $50 \pm 5\%$ relative humidity.

Thickness

6. The thickness of the microfiche shall be such as to provide sufficient stiffness for easy handling. The gross thickness ranges of microfiche exclusive of the heading area backing, if any, shall be the following:

Cellulose acetate film:	0.13 mm to 0.23 mm
Polyester base film:	0.10 mm to 0.23 mm.

An opaque or translucent backing for the heading area is optional (N.B., The use of such backing restricts further duplication). If a heading area backing is used, it shall not increase the thickness of the fiche by more than 0.01 mm.

Identification of sensitized side

7. To facilitate microfiche-to-microfiche copying, a notch or a corner cut may be used to identify the sensitized layer of the microfiche. When a notch is used, it shall be made in the shorter side of the sheet, near the appropriate corner. The notch may be of any shape, but it shall not penetrate more than 1.6 mm inward from the edge of the microfiche. When a corner cut is used, it shall be made in the appropriate corner of the heading area only. The cut shall extend a nominal 6 mm along the longer side of the microfiche and a nominal 9 mm along the shorter side of the microfiche.

8. The sensitized side shall be identified by one of the following methods:

Method A – When a sheet of raw film or a microfiche is held with the long sides in a horizontal position and the notch in the lower right-hand corner, or the corner cut is in the upper left-hand corner, the sensitized side will be towards the observer.

Method B – When a sheet of raw film or a microfiche is held with the long sides in a vertical position and the notch or corner cut is in the upper right-hand corner, the sensitized side will be towards the observer.

Corner rounding and measurements involving cut-off corners

9. The corners of the microfiche may be rounded, with the exception of the corner which has been subjected to a corner cut (see paragraph 7, above). When corners are rounded, the process shall not remove more than 3 mm of either of the two edges forming the corner. Where segments of an edge have been removed by corner rounding or corner cuts, a straight line extending the remainder of the edge in the relevant direction shall constitute the basis for measuring dimensions and spacing.

FRAME SIZE AND FORMAT

General layout

10. The following table specifies the arrangements that shall be used for computer output microfiche:

Arrangement1	Equivalent Document size	Reduction	Columns	Rows	Number of frames	See figure
No.2	A4	1:24	14	7	98	1
No.3	279 mm x 355 mm (11in x 14in)	1:24	9	7	63	2
No.4	A4	1:48	28	15	420	3
No.5	279 mm x 355 mm (11in x 14in)	1:48	18	15	270	4
		1:42	16	13	208	5

Frame size and placement of images in arrangements, 2, 3, 4 and 5 shall be in accordance with figure 1, 2, 3 or 4, respectively. [The frame size and placement of images on computer output microfiches with a reduction of 1:42 are specified in figure 5]. (See also paragraph 3, above).

Micro-image placement and orientation

11. Micro-images in arrangements 2, 3, 4 and 5 shall be positioned within the appropriate grid pattern shown in figures 1, 2, 3 and 4. All measurements will be made from the bottom edge and the bottom left-hand corner of the fiche as reference. When the microfiche is held so that the heading is right-reading and upright, micro-images shall always be right-reading and upright.

Effective reduction

12. Image arrangements No.2 and No.3 shall have an effective reduction of 1:23 to 1:25.5 and image arrangements No.4 and No.5 shall have an effective reduction of 1:47 to 1:50.

1 Arrangements No.2, 3, 4 and 5 are those recommended for COM microfiches in International Standard ISO 5126. Arrangement No.1 of International Standard ISO 2707 is not applicable to COM.

Heading area

13. The heading area above the image area of each microfiche shall be reserved for identification references. All characters in the heading area shall be upright and right-reading. All entries shall be readable without magnification.

14. The minimum areas reserved for the heading are indicated in figures 1, 2, 3 and 4 by shading. If additional heading space is required, the area allocated to the next entire row or rows of images shall be used. When more than one row is used for the heading, the frame identification, as specified in paragraphs 17 and 18, below, shall remain unchanged. The heading area constitutes the top of the microfiche. The minimum area reserved for the heading shall be used only for heading and identification purposes on all microfiches, and not for micro-images.

Pagination

15. When the microfiche is held so that the heading is upright and right-reading, the first micro-image shall be placed in the top left corner olf the grid area. Succeeding frames shall appear either in sequence downward from left to right from column to column (vertical pagination), or in sequence from left to right and downward from row to row (horizontal pagination).

Trailer microfiche identification

16. When trailer microfiches are used, each microfiche in the set, including the first one, shall be identified sequentially. Where practical, the last microfiche in the set should be identified as the last one.

Frame identification

17. Where coordinate identification is used for location of images, alphabetic letters shall be used to identify rows. Starting at the top row below the heading area, the first row shall be A, the second row B, etc., as indicated in figures 1, 2, 3 and 4.

18. Columns shall be identified by numerals starting at the left. The first column shall be 1, the second 2, and so on. The indication of coordinates on the microfiche is optional. If coordinates are shown on the microfiche, they shall be located in the margins (see figures 1, 2, 3 and 4) or in the lower portion of the heading area.2

AUTOMATION REQUIREMENTS: CUTTING MARK

19. Each microfiche may carry a cutting mark to provide for automatic cutting of processed roll film into microfiche. This cutting mark shall be 3.0 mm x 3.0 mm square, and the center of the square shall be located 32.0 $\pm$ 0.2 mm from the left edge of the microfiche with the bottom edge of the square within 0.2 mm of the bottom edge of the microfiche.

INDEX FRAME

20. If an index to the microfiche is to be provided, the last micro-image of the index shall be placed at the bottom right corner of the grid area. Preceding index frames shall appear in reverse sequence subtracting from the allotted format.

INFORMATION DENSITY (CHARACTER PACKING)

21. The dimensions of the computer output microfiche images are based on effective reductions. The character packing density of an equivalent paper document is assumed to be 60 characters per 6.45 cm^2 (square inch), corresponding to a character pitch of 2.54 mm (0.1 in) and a line spacing of 4.23 mm (0.16 in).

2 When coordinates are placed in the bottom margin, they may interfere with automatic cutters sensing the cutting mark.

QUALITY REQUIREMENTS

Legibility of first generation microfiche

Requirements

22. A square array of 12 lines, of at least 20 characters and symbols presented in a random sequence, and including all characters and symbols capable of being generated by the COM, shall be recorded in the center and each corner of the full frame size. Each of the five arrays should utilize different random number sequences. The test sample should contain a block of characters representative of each style of font used.

23. The test samples should contain information compacted horizontally and vertically, representative of the maximum information congestion anticipated for use. Each character or symbol so generated shall be identifiable without error when viewed on a paper print or reader screen.

Test method

24. A printer or reader magnification of not less than 12X shall be used so that the smallest size upper case character height shall be a maximum of 1.6 mm (0.063 in.). The space between successive lines of characters in the array shall be no greater than 7/8 the height of the capital letter E. Alphanumeric COMs with a character height between 2.28 and 2.54 mm (0.09 and 0.1 in.) would use a maximum reader or print magnification to determine system image quality of 16X for nominal 1:24 reduction and 32X for nominal 1:48 reduction COM images. Viewing shall be in an ambient illumination of approximately 540 lux.

25. Good quality-control practice dictates that this test be performed on a routine basis.

Legibility of reproduction copies

26. The subsequent generation which serves as the user copy shall meet the same legibility standard as that described for the first generation.

Curl and bow

27. A fully processed microfiche cut to distribution size shall be placed convex side down on a flat surface for at least six hours in an atmosphere in which the temperature is 23 ± 2°C and the relative humidity 50 ± 5%, after which no part of the microfiche shall be more than 6.5 mm above the surface.

Packaging

28. Microfiches to be disseminated shall be clean, dry and packaged in a manner that will afford adequate protection against deterioration and physical damage e.g., by packaging in sealed plastic bags. The microfiche shall be protected from bending, curling or distortion by the use of paperboard or fiberboard stiffeners.

29. Each microfiche, or, in case trailer microfiches are used, the complete set of microfiches, but not more than 4, may also be furnished in a paper envelope. In order to permit the reading of the information contained in the heading area, the envelopes shall be open at the top and cut away so as to permit such reading. The paper used for envelopes shall be of such quality as to provide physical protection of the microfiches during storing and handling and be free from chemicals which may cause deterioration of the microfiches.

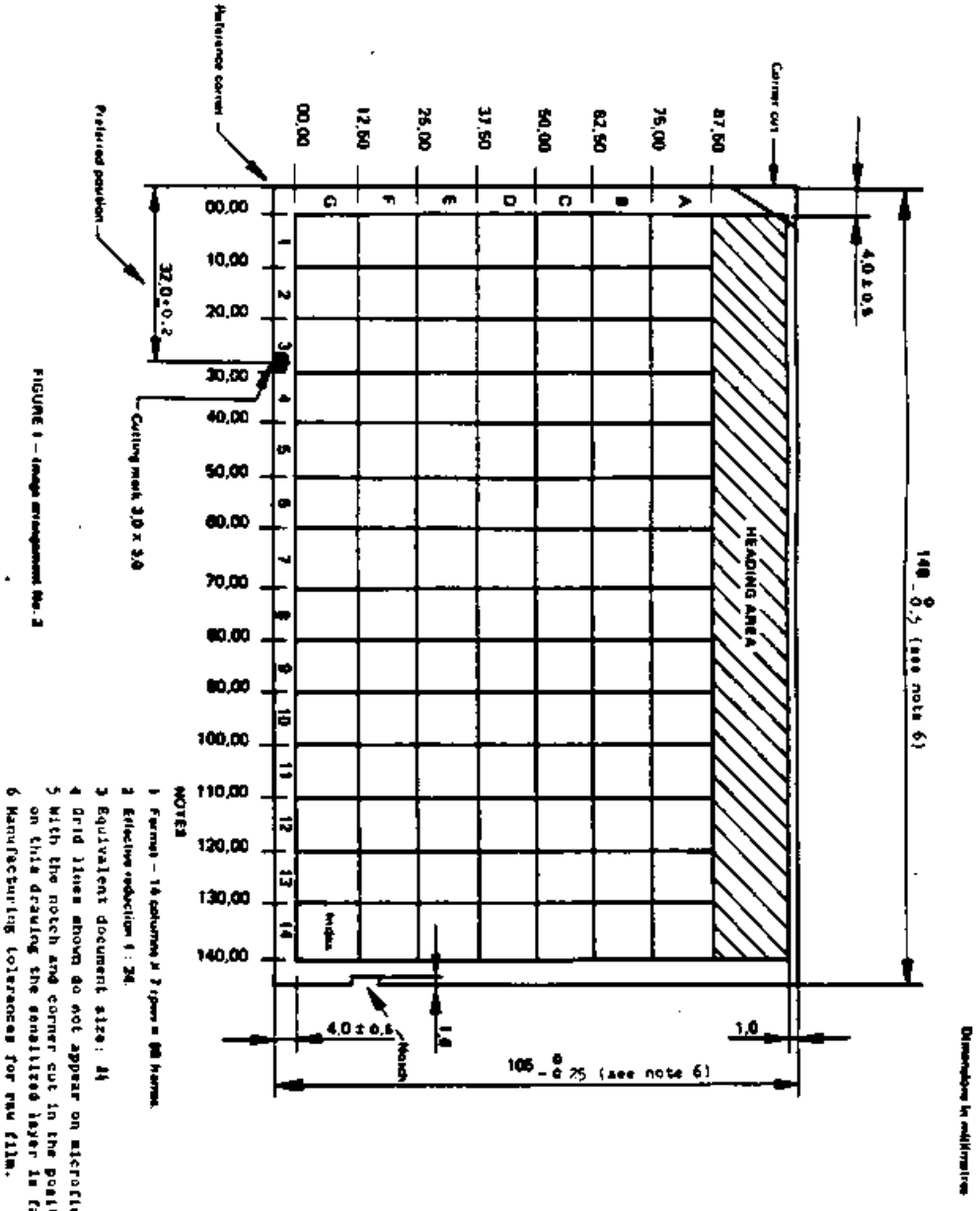

FIGURE 1 – Image arrangement No. 2

NOTES

1 Format – 14 columns x 7 rows = 98 frames.

2 Effective reduction 1 : 24.

3 Equivalent document size: A4

4 Grid lines shown do not appear on microfiche.

5 With the notch and corner cut in the positions shown on this drawing, the sensitized layer is facing the observer

6 Manufacturing tolerances for raw film.

Dimensions in millimetres

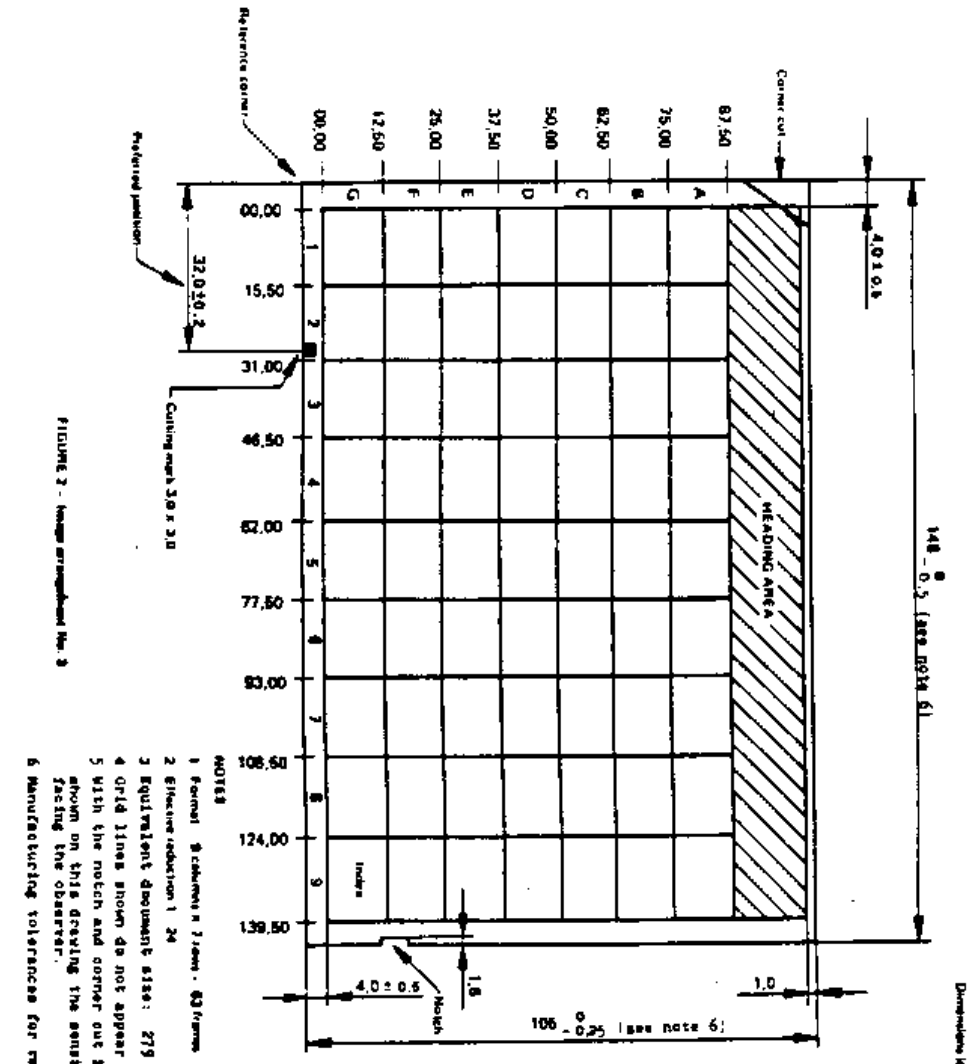

FIGURE 2 - Image arrangement No. 3

NOTES

1 Format: 9 columns x 7 rows - 63 frames

2 Effective reduction: 24

3 Equivalent document size: 279 mm x 355 mm (11 in. x 14 in.)

4 Grid lines shown do not appear on microfiche.

5 With the notch and corner cut in the position shown on this drawing the sensitized layer is facing the observer.

6 Manufacturing tolerances for raw film.

Dimensions in millimetres

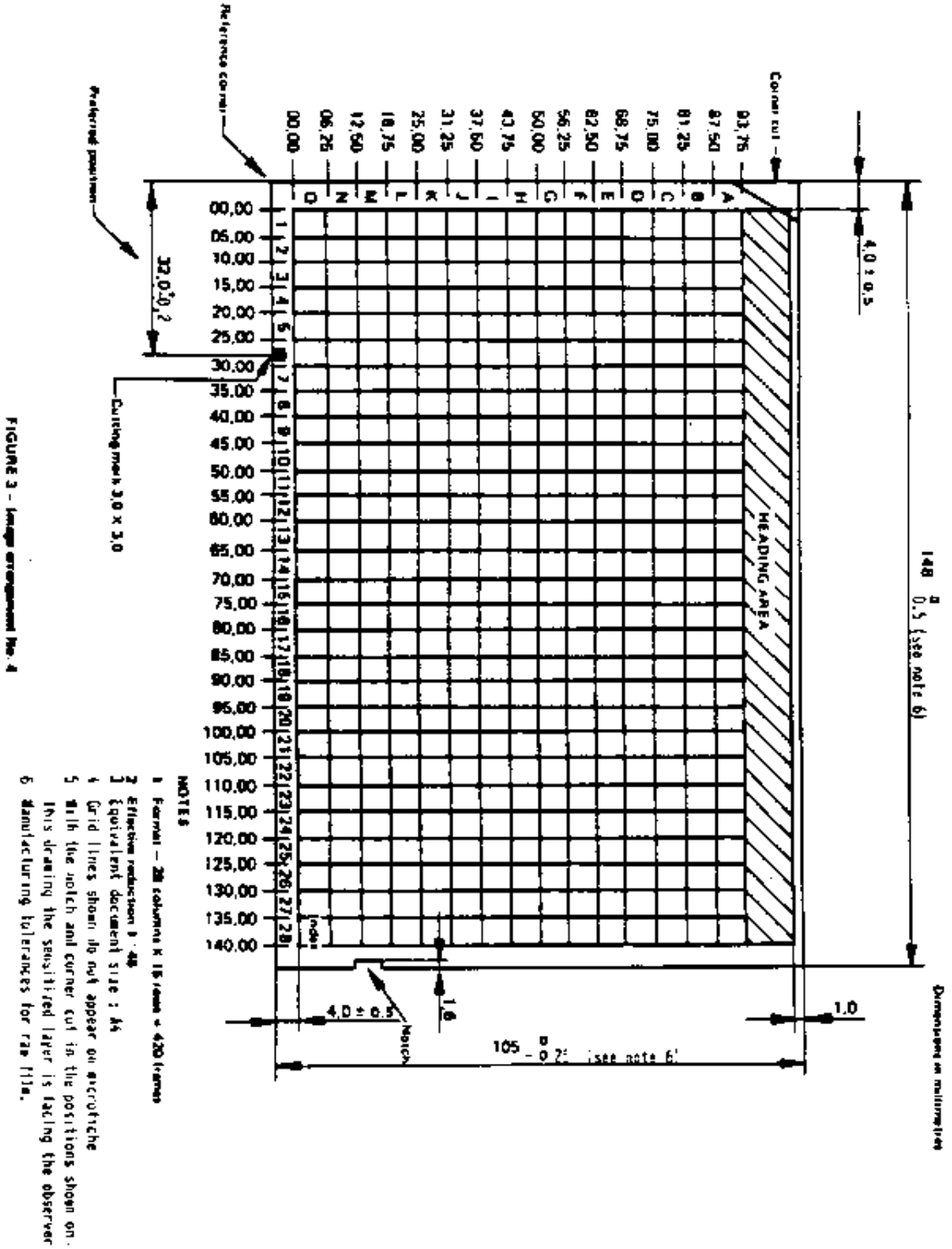

FIGURE 3 – Image arrangement No. 4

NOTES

1 Format – 288 columns x 432 frames

2 Effective reduction 9 : 48

3 Equivalent document size : A4

4 Grid lines shown do not appear on microfiche

5 With the notch and corner cut in the positions shown on this drawing the sensitized layer is facing the observer

6 Manufacturing tolerances for raw film.

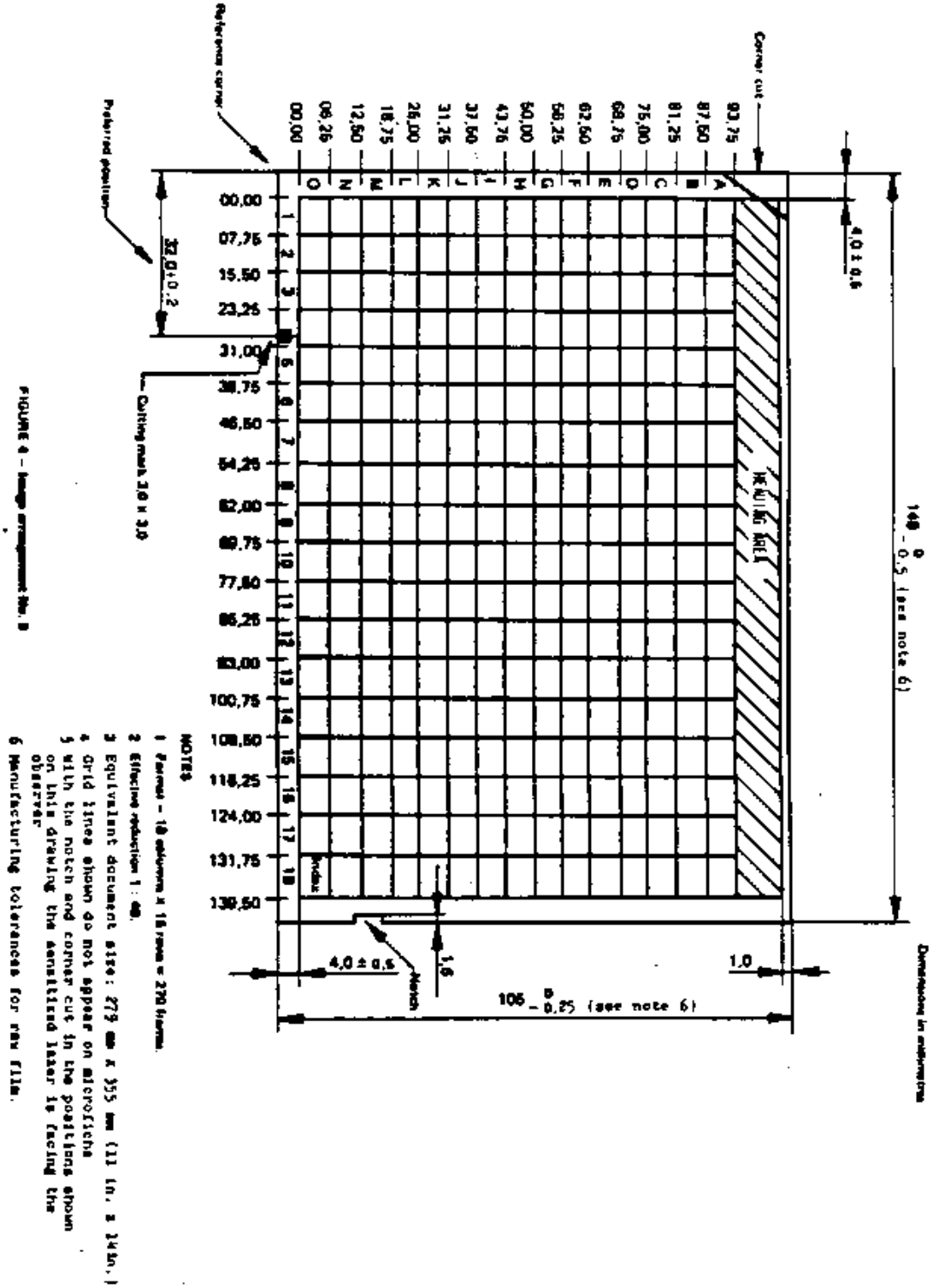

FIGURE 4 – Image arrangement No. 8

NOTES

1 Format – 18 columns x 15 rows = 270 frames.

2 Effective reduction 1 : 48.

3 Equivalent document size: 279 mm x 355 mm (11 in. x 14 in.)

4 Grid lines shown do not appear on microfiche

5 With the notch and corner cut in the positions shown on this drawing the sensitized layer is facing the observer

6 Manufacturing tolerances for raw film.

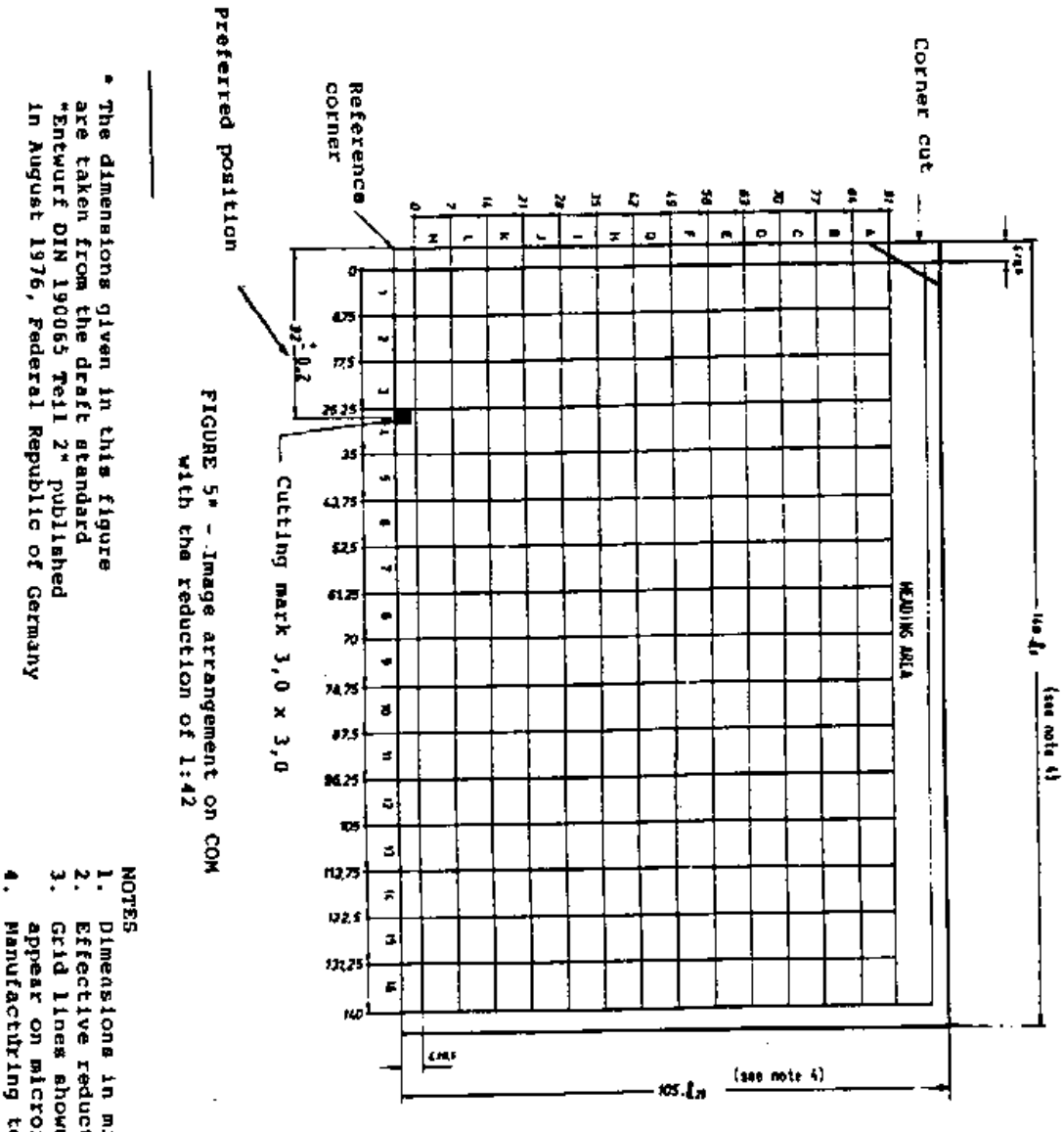

FIGURE 5* - Image arrangement on COM with the reduction of 1:42

NOTES

1. Dimensions in millimeter
2. Effective reduction 1:42
3. Grid lines shown do not appear on microfiche
4. Manufacturing tolerances for raw film

* The dimensions given in this figure are taken from the draft standard "Entwurf DIN 19065 Teil 2" published in August 1976, Federal Republic of Germany

[End of Standard ST.7/F]