

GGG-M-45D
April 25, 1974
SUPERSEDING
Fed. Spec. GGG-M-45C
June 5, 1970

FEDERAL SPECIFICATION

MACHETES, RIGID HANDLE

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers rigid handle machetes.

1.2 Classification. Machetes shall be of one type and of the following classes and sizes, as specified (see 6.2).

1.2.1 Classes and sizes.

- Class 1 - Straight blade.
- Size 1 - 14-1/2 inch blade.
- Class 2 - Tapered blade.
- Size 1 - 18 inch blade.
- Size 2 - 26 inch blade.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specifications:

- QQ-W-321 - Wire, Copper Alloy
- PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner
- PPP-P-40 - Packaging and Packing of Hand Tools

FSC 5110

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(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers, at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Ft. Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Specification:

MIL-M-14 - Molding Plastics, and Molded Plastics, Parts, Thermosetting

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-130 - Identification Marking of U. S. Military Property

DRAWINGS

ARMY NATICK LABORATORIES

2-9-128 - Machete, 18-Inch Blade

2-9-277 - Machete, 18-Inch Blade, Alternate Design

(Miniature copies of Drawings 2-9-128, and 2-9-277 identified as figures 3 and 4, are attached for information only.)

(Copies of Military Specifications, Standards, and Drawings required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply:

American Society for Testing and Materials (ASTM)

D 2016 Standard Methods of Test for Moisture Content of Wood

E 18 Rockwell Hardness and Rockwell Superficial Hardness for
Metallic Materials

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

National Motor Freight Traffic Association, Inc., Agent

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Associations, Inc., Tariff Order Section, 1616 P Street, N.W., Washington, DC 20036.)

Uniform Classification Committee, Agent

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago IL 60606.)

(Technical society and technical association specifications and standards are generally available for references from libraries. They are also distributed among technical groups and using Federal agencies.)

3. REQUIREMENTS

3.1 First article. When specified, the supplier shall furnish a sample of the item to be procured under this specification for first article inspection and approval (see 4.3, 6.2, and 6.3).

3.2 Materials. Materials not definitely specified shall be of the quality normally used by the manufacturer, provided the completed items comply with all the provisions of this specification.

3.2.1 Steel. Blades shall be of high carbon steel and shall conform to AISI 1070 to 1080 for class 1 machetes; AISI 1090 to 1095 for class 2, size 1 machetes; and 1085 to 1095 for class 2, size 2 machetes.

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3.2.2 Copper alloy. Copper alloy used for the rivets shall conform to Alloy Number 260 of QQ-W-321.

3.2.3 Wood. The wooden handles shall be fabricated from any of the following species: beech, dogwood, rosewood, yellow birch, (hard) sugar maple, black walnut, cocobolo, or persimmon. Wood shall be free of knots, knot holes, shakes, decay, brashness and checks, split, casehardening and honeycomb. The same species of wood shall be used for both halves of the handle. Moisture content of wood used in handles shall not exceed 12 percent when examined in accordance with 4.4.2.

3.2.4 Plastic. The plastic handles shall be made from phenolic thermosetting plastic material conforming to type CF1-20 of MIL-M-14, except that electrical property requirements shall not apply. Alternatively, the plastic shall be a commercially available phenolic thermosetting material normally used by the manufacturer for machete handles.

3.3 Construction.

3.3.1 Class 1, size 1, and class 2, size 2 machetes. Construction of all components and assemblies for the class 1, size 1, and class 2, size 2 machetes shall conform to the requirements of this specification and as shown on figures 1 and 2, as applicable. The class 1, size 1 machete shall consist of a 14-1/2 inch straight blade with an integral tang and a handle. The class 2, size 2 machete shall consist of a 26 inch tapered blade with an integral tang and a handle.

3.3.1.1 Class 1, size 1, and class 2, size 2 blades. The class 1, size 1, and class 2, size 2 blades shall be made of one piece of steel specified in 3.2.1. The blades shall be heat-treated to a hardness of Rockwell C50 to 58 inclusive, when tested as specified in 4.5.1. Cutting edges shall be ground in accordance with figure 1 or figure 2, as applicable.

3.3.1.2 Class 1, size 1, and class 2, size 2 handles. The handles for the class 1, size 1, machetes shall be made from either wood specified in 3.2.3 or plastic specified in 3.2.4, at the option of the manufacturer. The handles for the class 2, size 2 machetes shall be made only from plastic specified in 3.2.4. The handle shall be securely attached to the tang by at least four rivets made of copper alloy specified in 3.2.2. Alternatively, the rivets shall be made from a commercial grade of steel as normally used by the manufacturer. After riveting, the rivets shall be finished flush with the handle surface. The handle surfaces shall be smooth and flush with the steel tang on the two sides and end, eliminating any crack or protrusion between handle halves. The measurement at the smallest cross section of the handgrip area shall be 1-3/32 inch plus 1/32 inch, minus zero, by 1 inch plus 1/32 inch, minus zero. The class 2 handle shall contain a thong hole as shown on figure 2.

3.3.2 Class 2, size 1 machete. The class 2, size 1 machete shall be made in accordance with this specification and the requirements of Drawing 2-9-128, shown as figure 3 herein. The class 2, size 1 machete shall consist of an 18 inch tapered blade with an integral tang and a handle.

3.3.2.1 Class 2, size 1 blades and tangs. The class 2, size 1 blades and tangs shall be made on one piece of steel specified in 3.2.1. The blades shall be heat-treated to a hardness of Rockwell C50 to 55, inclusive, when tested as specified in 4.5.1. The cutting edge of the blade shall be ground in accordance with Drawing 2-9-128.

3.3.2.2 Class 2, size 1 handle. The class 2, size 1 handle shall be molded in two pieces from the plastic specified in 3.2.4. The handle shall be riveted tightly to the tang by using either countersunk head, solid or compression type rivets made of copper alloy specified in 3.2.2. After riveting, the rivets shall be finished flush with the handle surface. A thong hole shall be located in the handle. When specified (see 6.2), a commercial leather thong shall be furnished. Alternatively, the handle shall be made in accordance with Drawing 2-9-277, shown as figure 4 herein.

3.4 Finish.

3.4.1 Blades. The blades shall be free of any scale and burred edges, heavy grinding marks, gouges, pits or dents. The blades shall not be polished or show a bright finish.

3.4.2 Wood handles. Wood handles shall have all exposed surfaces sanded or smoothly finished, and dipped in a clear lacquer.

3.4.3 Plastic handles. Plastic handles shall have a dull finish that has not been produced as a result of application of lacquer or related materials.

3.5 Marking for identification.

3.5.1 Civilian use. The machetes shall be marked in a plain and permanent manner with the manufacturer's name or trademark of such known character that the source of manufacture may be readily determined.

3.5.2 Military use. The letters "U.S." in characters 3/16 inch high, and the manufacturer's name and trademark of such known character that the source of manufacture may be readily determined; in character's 3/32 inch high, shall be stamped, etched, or engraved in the location shown on Drawing 2-9-128. Marking shall be in accordance with MIL-STD-130 and shall not distort the surface of the metal or show evidence of penetration on the reverse side.

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3.6 Workmanship. Blades: There shall be no evidence of burrs, nicks, rough edges, bright finish, chipping or rust. Wood Handles: No rough machining marks, splintered edges, or chipped, loose, torn or raised grain. Plastic Handles: Not warped, nicked, dented, or porous nor have excess flashing, runners, ridges, sharp edges or sprues.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

1. First article inspection (see 4.3).
2. Quality conformance inspection (see 4.4).

4.3 First article inspection. When a first article is required, the machete shall be examined for defects listed in table I, and dimensions specified. Any nonconformance to table I defects, and specified dimensions shall constitute failure of the first article.

4.4 Quality conformance inspection. Except as otherwise specified herein, sampling for inspection shall be performed in accordance with the provisions set forth in MIL-STD-105.

4.4.1 Component and material inspection. In accordance with 4.1 above, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase document.

4.4.2 In-process inspection.

4.4.2.1 Intermediate testing.

4.4.2.1.1 Hardness. Testing for hardness of the blade shall be performed in accordance with 4.5.1 on each sample unit prior to assembly. Two determinations shall be made on each sample unit: at the tip and at the center

of the blade, 1/8 inch from the bevelled edge. Any reading not within the specified requirements shall be classified a defect. The results of the test shall be the average of the three readings. The sample unit shall be one blade. A lot shall consist of all blades submitted for inspection at one time. The inspection level shall be S-2 with an acceptable quality level (AQL) of 1.5 defects, expressed in terms of defects per hundred units.

4.4.2.1.2 Moisture content (wood). Determination of moisture content of wood used for handles shall be made in accordance with 4.5.2. When testing is performed by the electric moisture meter, three determinations shall be made per sample unit, and the average value obtained shall conform with 3.2.3. The sample unit shall be one piece of wood. A lot shall consist of all handles submitted for inspection at one time. The inspection level shall be S-2 with an AQL of 2.5 defects, expressed in terms of defects per hundred units.

4.4.3 End item inspection. The inspection lot shall be all machetes of one class and size offered for inspection at one time. The sample unit shall be one completely fabricated machete.

4.4.3.1 Visual examination. The machetes shall be examined for the defects listed in table I. The inspection level shall be level II with an AQL of 2.5 for major defects and 6.5 for total defects, expressed in terms of defects per hundred units.

TABLE I. Classification of defects

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>	
		<u>Major</u>	<u>Minor</u>
Construction workmanship			
Blade and tang	Fractured, bent, malformed or damaged	X	
	Scale, pits, rust, gouges, dents or heavy grinding marks	X	
Plastic handles	Not free from flashing, runners, sprues, ridges, warp, blisters, porosity, cracks, sharp edges, dents or nicks	X	

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TABLE I. Classification of defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Wood handles	Not free of knots, knot holes, shakes, decay, split, case hardening, honeycomb, brashness, checks, splinters or cracks	X	
	Not free of burrs, nicks, rough edges, bright finish, chipping or rust	X	
Assembly of handles	Not tight to tang	X	
	Handles not smooth and flush with tang		X
Rivets	Halves do not match		X
	Not properly set or not flush with surface of handle	X	
Finish (handles) (blade)	Not dull finish		X
	Not dull finish	X	
Marking	Missing, incomplete, not legible, not specified size or not applied as required surface or metal distorted from marking, or shows evidence of penetration thru metal	X	

4.4.3.2 Dimensional examination. Examination shall be made of the machetes for compliance with dimensions specified herein and as shown on figures 1 and 2 and Drawings 2-9-128 and 2-9-277, as applicable. Any dimensions not within the specified requirements shall constitute a defect. The inspection level shall be S-2 with an AQL of 4.0 defects, expressed in terms of defects per hundred units.

4.4.3.3 Examination of preparation for delivery. Examination of preparation for delivery shall be in accordance with PPP-P-40.

4.5 Tests.

4.5.1 Hardness test. Tests of the blades shall be performed in accordance with American Society for Testing and Materials (ASTM) E 18. Nonconformance to 3.3.1.1 and 3.3.2.1, as applicable, shall constitute failure of this test.

4.5.2 Wood, moisture test. The wood used for the handles shall be tested for moisture content in accordance with ASTM D 2016. Nonconformance to 3.2.3 shall constitute failure of this test.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packing and marking. Machetes of one class and size only shall be preserved, packed, and marked in accordance with level A, B, or C requirements of PPP-P-40, as specified (see 6.2). The gross weight of each shipping container shall not exceed 100 pounds.

6. NOTES

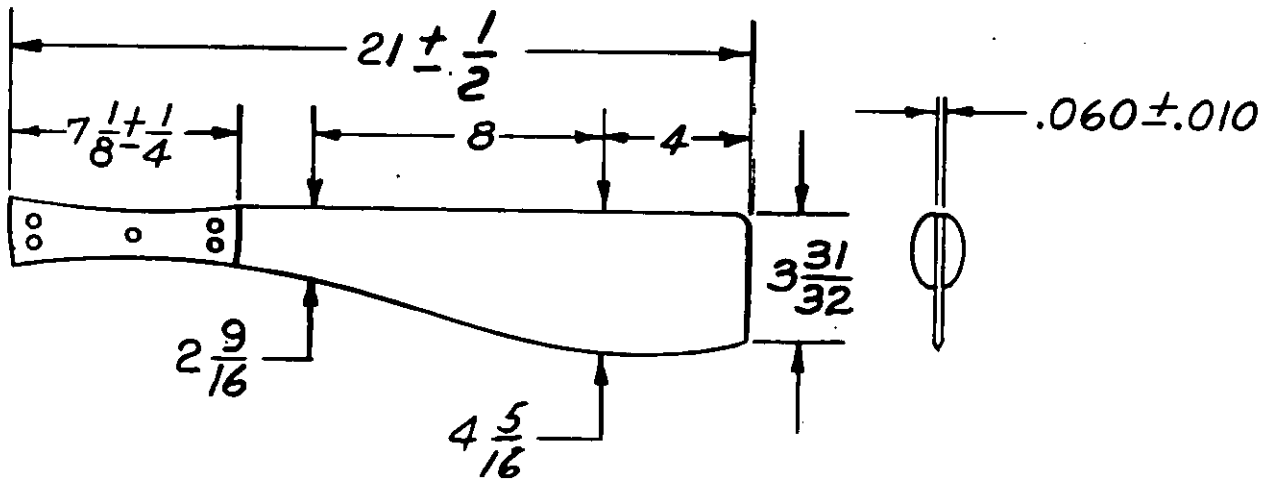
6.1 Intended use. The machetes covered by this specification are intended to be used as a means for chopping away brush and small saplings when clearing a trail or site and also for chopping and cutting of ice and snow.

6.2 Ordering data. Purchasers should exercise the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number, and date of this specification.
- (b) Class and size of machete (see 1.2).
- (c) First article. When a first article is required (see 3.1, 4.3 and 6.3).
- (d) When leather thong is required for class 2, size 1 machetes (see 3.3.2.2).
- (e) Selection of applicable levels of preservation and packing (see 5.1).

6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of ASPR 7-104.55. The first article should be preproduction sample, initial production item or other specific item described under the definition of a first article in the ASPR. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in all procurement instruments regarding first article examination and tests.

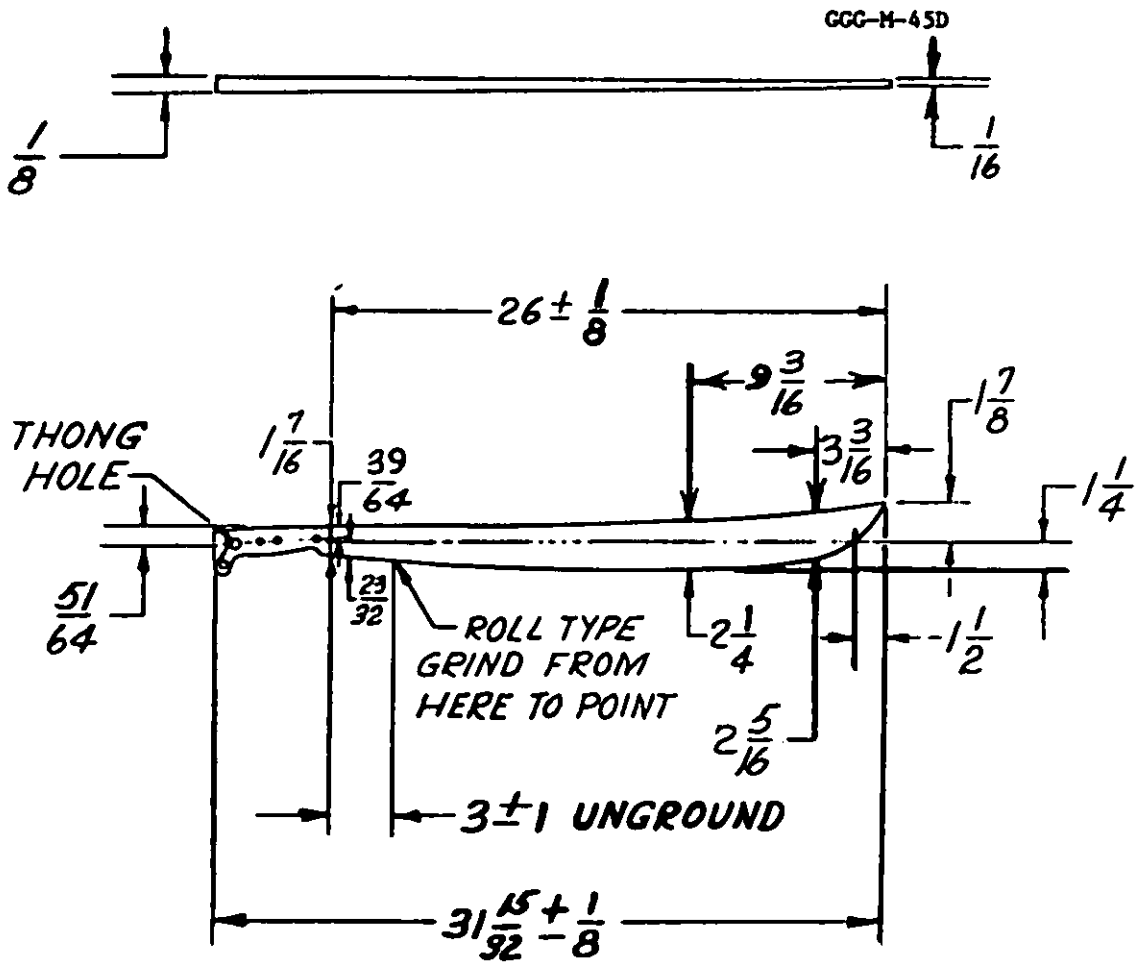
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NOTES:

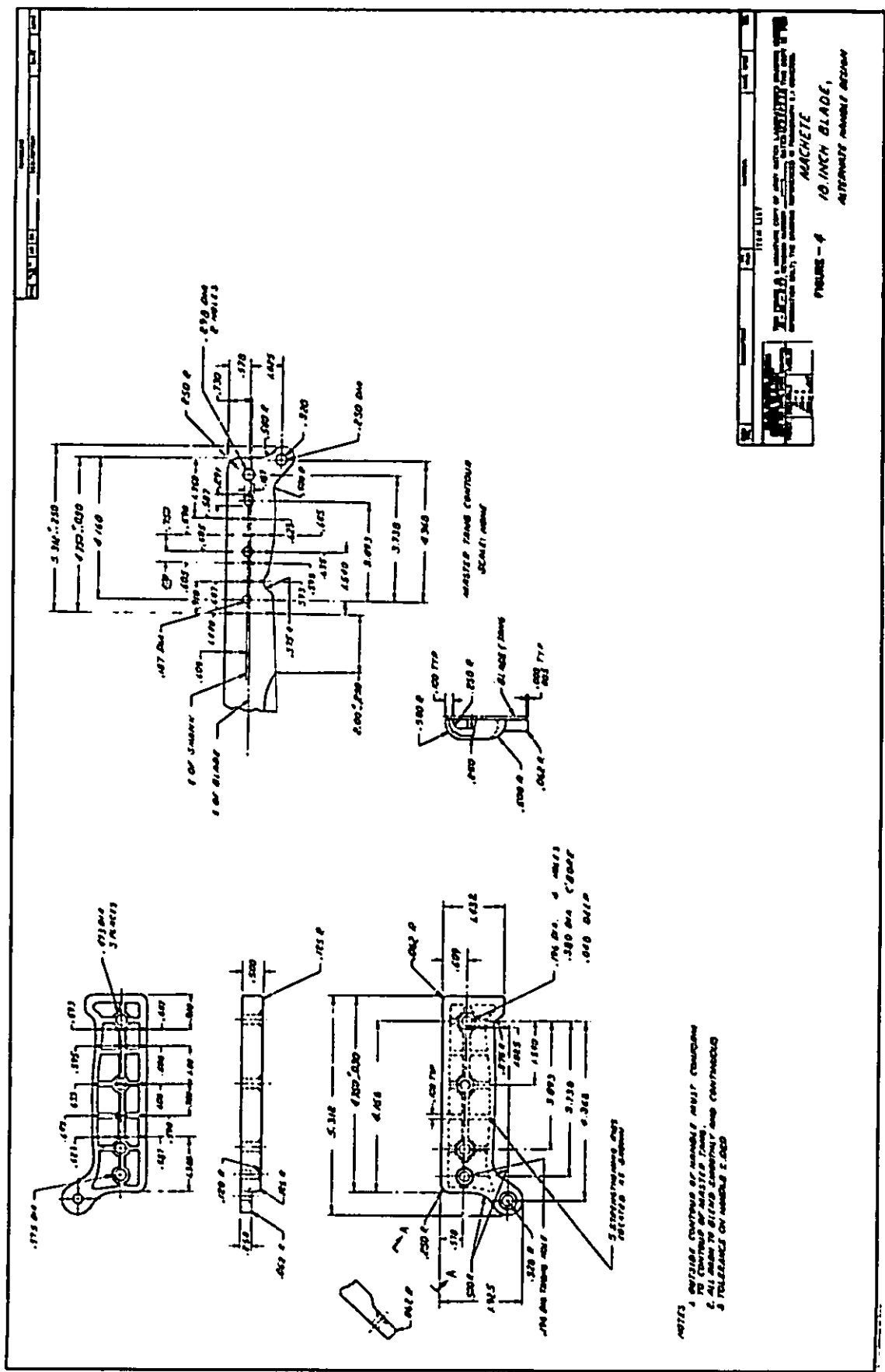
1. CUTTING EDGE SHALL BE GROUND WITH A WEDGE OR ROLL TYPE GRIND EXCEPT THE FIRST 4 ± 1 INCH FROM THE HANDLE WHICH SHALL BE UNGROUND.
2. TOLERANCES ON ALL DIMENSIONS NOT SPECIFIED SHALL BE $\pm \frac{1}{8}$ INCH.

FIGURE 1. CLASS 1, SIZE 1,
STRAIGHT BLADE.



UNLESS OTHERWISE STATED TOLERANCES ARE:
 WHOLE NUMBERS AND FRACTIONS UP TO TWO INCHES $\pm \frac{1}{64}$
 WHOLE NUMBERS AND FRACTIONS OVER TWO INCHES $\pm \frac{1}{4}$

FIGURE 2. CLASS 2, SIZE 2, 26 INCH TAPERED BLADE.



- 1. SURFACE FINISH OF HANDLE MUST CONFORM TO GGG-M-45D SPECIFICATION.
- 2. ALL DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED.
- 3. TOLERANCES ON HANDLE ±.005

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Army - GL
Air Force - 84

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Army - MD

User activities:

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Navy - MC, YD

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INTERIOR - MIN

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DOCUMENT IDENTIFIER AND TITLE**Machetes, Rigid Handle****GGG-M-45D**

NAME OF ORGANIZATION AND ADDRESS

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