

[METRIC]
A-A-52163A
May 29, 1996
SUPERSEDING
A-A-52163
17 June 1991
MS500062A
9 December 1985

COMMERCIAL ITEM DESCRIPTION

LADDERS, VEHICLE-BOARDING

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. SCOPE. This CID covers nine different types of portable, metal, step-ladders (hereinafter referred to as ladders) for use by personnel in boarding vehicles.

2. SALIENT CHARACTERISTICS

2.1 Materials. The materials used for the ladders shall be either aluminum or steel as specified. However, the specific material compositions of the aluminum and steel shall be in accordance with the acceptable commercial material specifications for metal ladders. Component corrosion protection shall be equal to or exceed that provided by hot dip galvanized 1020 steel with coating thickness in accordance with ASTM A123.

2.2 Design and construction. The ladders shall conform to the physical and dimensional requirements specified in figures 1 thru 9. The ladders shall also conform to the applicable requirements of ANSI A14.2 for portable metal ladders. When applicable, drawings and dimensions of ladder components that are needed, but not shown in figures 1 thru 9, shall be provided by the procuring activity (see 6.2). The ladders shall conform to the applicable requirements of ANSI 14.2.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data which may improve this document should be sent by letter to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BLUE, Warren, MI 48397-5000.

AMSC N/A

FSC 2540

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

A-A-52163A

2.2.1 Dimensions. The dimensions specified in figures 1 thru 9 are in millimeters (mm).

2.2.2 Dimensional tolerances. Unless otherwise specified, the dimensions specified in figures 1 thru 9 shall have the following tolerances:

- a. For dimensions less than or equal to 10 mm, tolerances shall be ± 0.4 mm and ± 1 degree ($^{\circ}$).
- b. For dimensions greater than 10 mm and less than or equal to 100 mm, tolerances shall be ± 0.8 mm and $\pm 1^{\circ}$.
- c. For dimensions greater than 100 mm, tolerances shall be ± 2 mm and $\pm 1^{\circ}$.

2.3 Weight. The total weight of any ladder shall not exceed 18 kilograms (kg) [40 pounds (lb)].

2.4 Load. Each step of every ladder shall be capable of withstanding a 360 kg (800 lb) load without damage or permanent set to any of the ladder parts.

2.5 Welding. Welding procedures shall be performed in accordance with the manufacturer's standards for welds. In no event shall processes such as peening and plugging be used for reclaiming any part of the ladder without authorization from the procuring activity. Warpage shall be limited to 6.4 millimeters (mm) [0.25 inches (in)] out of plane. There shall be no lack of fusion which causes failure.

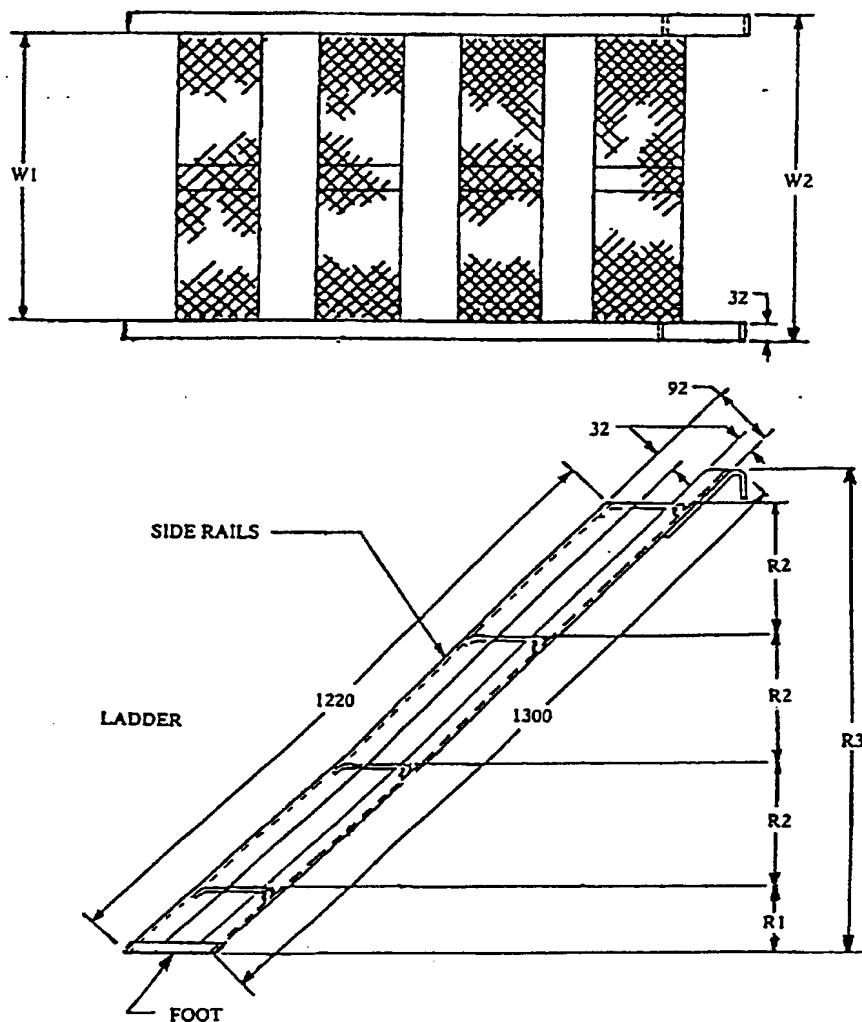
2.5.1 Welded surfaces. All welded parts shall be clean and free of dirt, sand, scale, and other extraneous materials. The welded surfaces shall be free of burrs, cracks, and inclusions. All sharp corners shall be rounded or beveled, except for those on the non-skid step surfaces.

2.6 Non-skid surfaces. All steps shall be constructed of material which has been formed in a manner to provide for a permanent non-skid surface.

2.7 Coatings. The ladders shall be cleaned, pretreated, primed, and painted in accordance with the accepted commercial standard practice. Unless otherwise specified (see 6.2), the base topcoat color shall be forest green, number 383 of FED-STD-595B. If CARC paint or camouflage patterns are required, it will be specified in the contract or order (see 6.2).

2.8 Warning labels. Ladders shall have warning labels that contain "Danger" markings in accordance with appendix A of ANSI 14.2, warning personnel that the ladder will conduct electricity. The label design and color shall conform to this standard.

A-A-52163A



PIN number		A52163-A1
Number of steps		4
Width, inside rails	W1	479 mm (18.9 in)
Width, outside rails	W2	543 mm (21.4 in)
First step rise	R1	102 mm (4 in)
Typical step rise	R2	254 mm (10 in)
Vertical rise, total	R3	921 mm (36.2 in)
Angle with ground	A	45 degrees (°)
Material		Steel

FIGURE 1. Ladder assembly, type A.

A-A-52163A

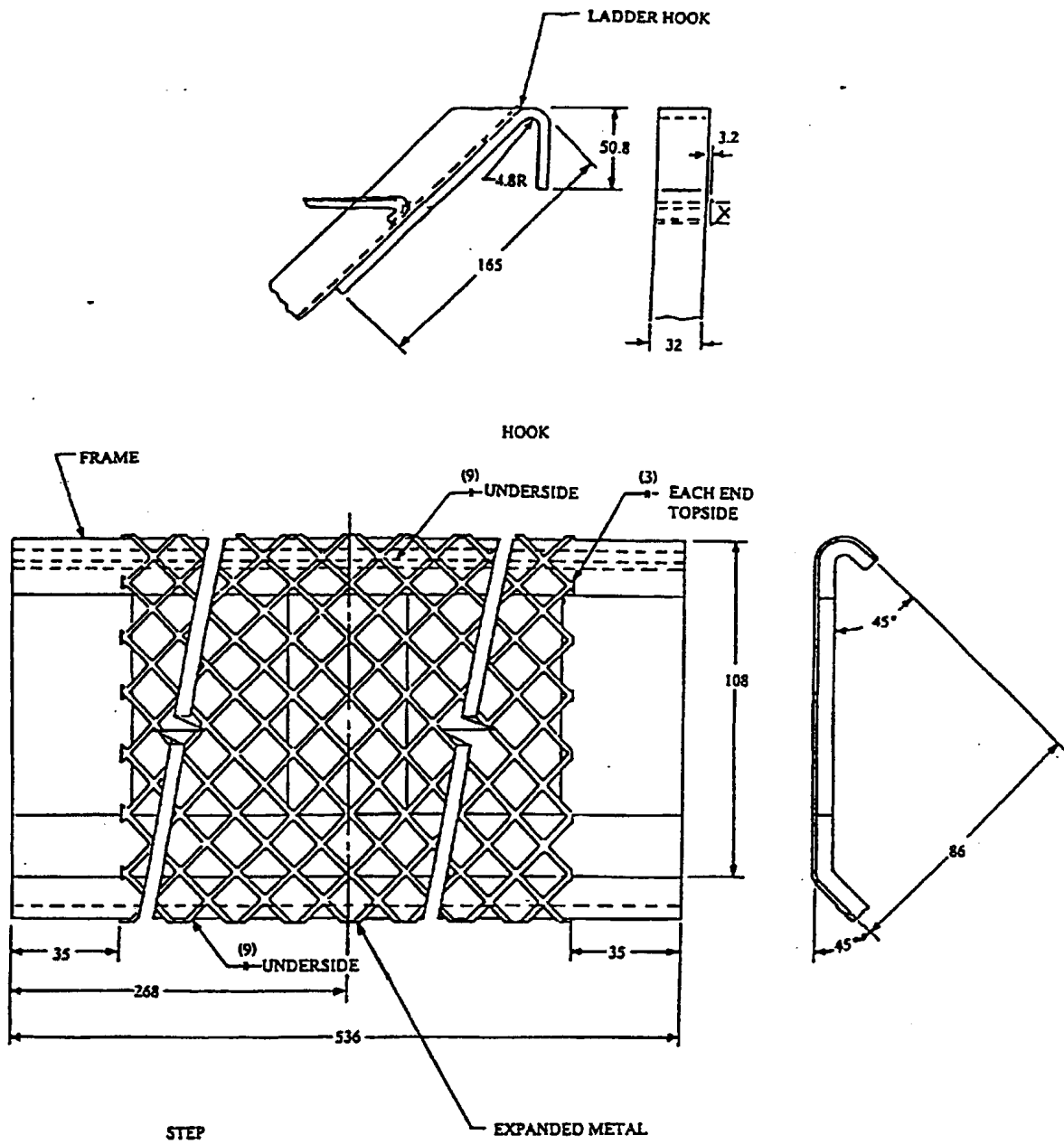
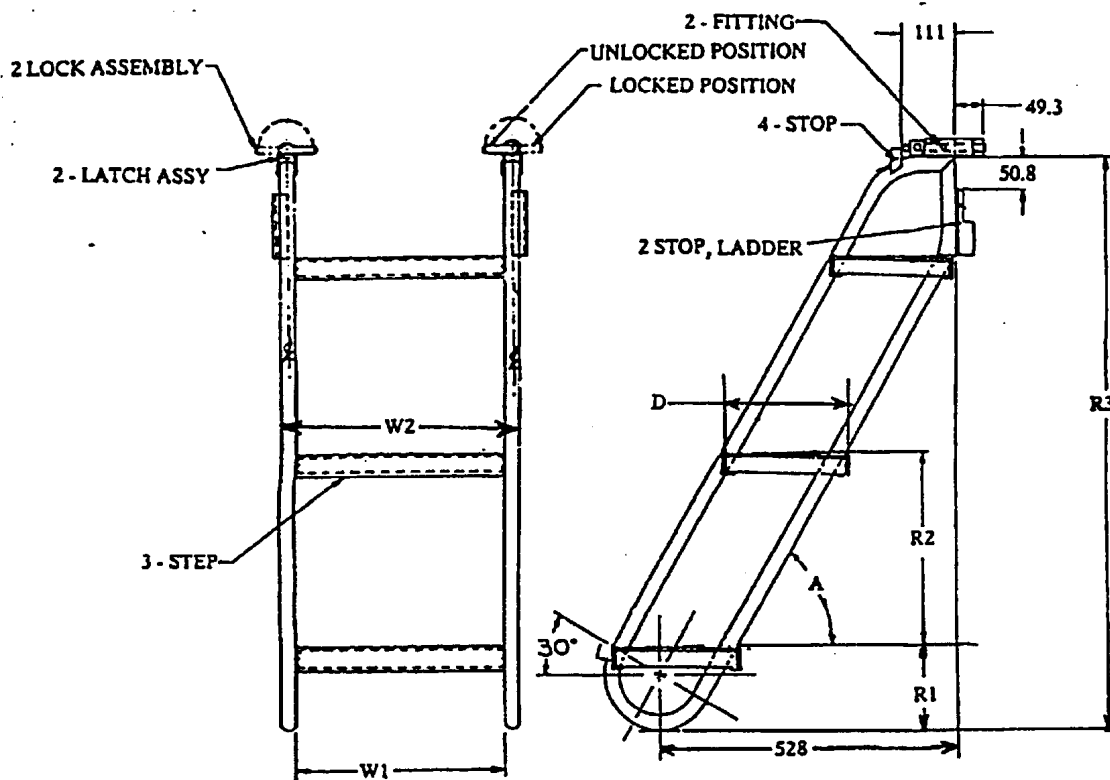


FIGURE 1. Ladder assembly, type A - Continued.

A-A-52163A

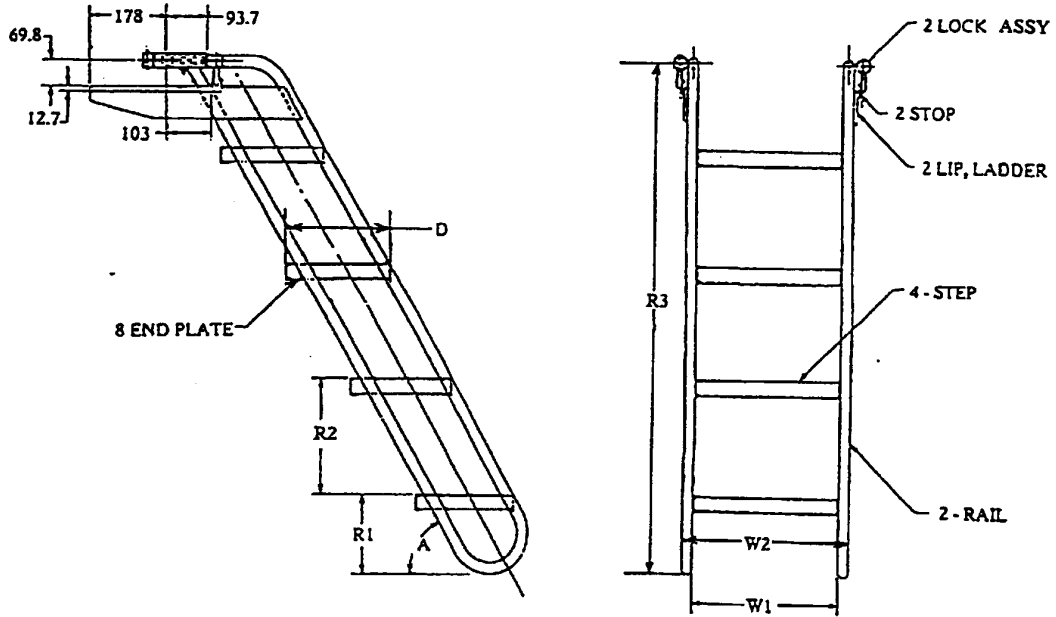


LADDER - TYPE B1, B3

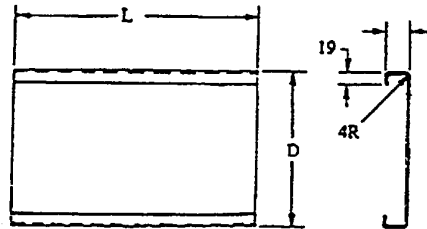
PIN number		A52163-B1	A52163-B2	A52163-B3	A52163-B4
Number of steps		3	4	3	4
Width, inside rails	W1	508 mm (20 in)	508 mm (20 in)	359 mm (14.1 in)	359 mm (14.1 in)
Width, outside rails	W2	559 mm (22 in)	559 mm (22 in)	410 mm (16.1 in)	410 mm (16.1 in)
Step depth	D	241 mm (9.5 in)	241 mm (9.5 in)	241 mm (9.5 in)	241 mm (9.5 in)
First step rise	R1	146 mm (5.8 in)	184 mm (7.25 in)	146 mm (5.8 in)	184 mm (7.25 in)
Typical step rise	R2	330 mm (13 in)	267 mm (10.5 in)	330 mm (13 in)	267 mm (10.5 in)
Vertical rise, total	R3	987 mm (38.9 in)	1190 mm (46.8 in)	987 mm (38.9 in)	1190 mm (46.8 in)
Angle with ground	A	60°	60°	60°	60°
Material, rail		Steel tubing	Steel tubing	Steel tubing	Steel tubing
Material, step		Steel	Steel	Steel	Steel

FIGURE 2. Ladder assembly, type B.

A-A-52163A



LADDER - TYPE B2, B4

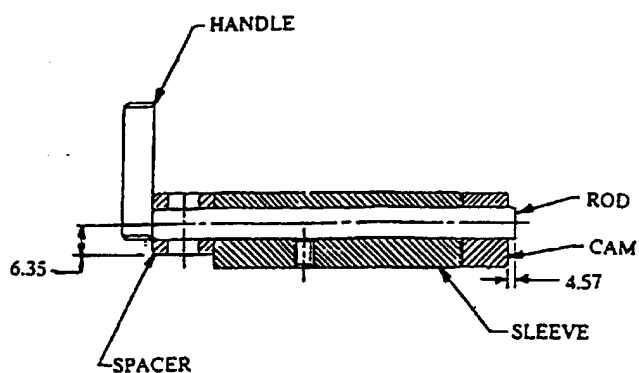


STEP

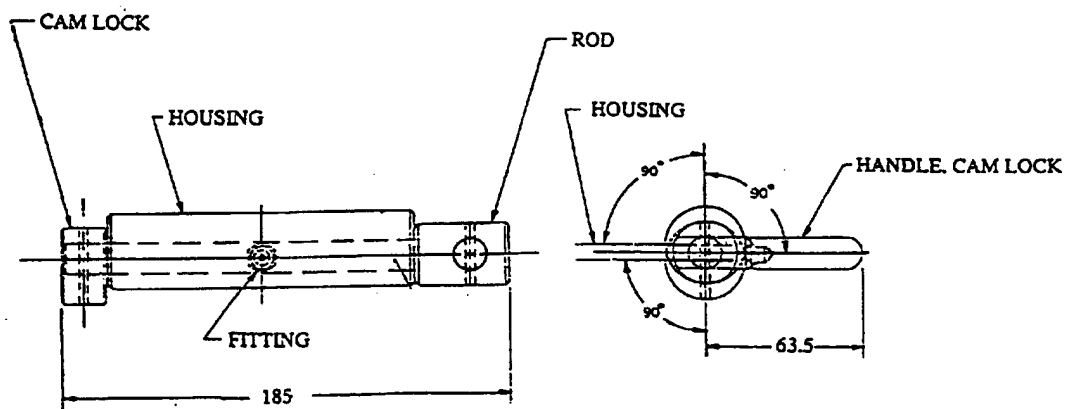
PIN NUMBER	L
A52163-B1, B2	508
A52163-B3, B4	356

FIGURE 2. Ladder assembly, type B - Continued.

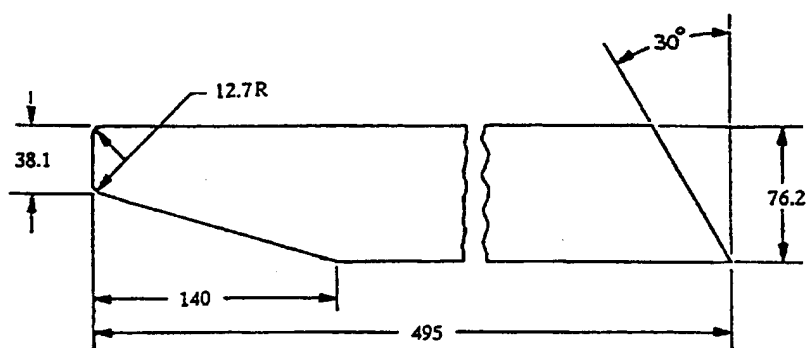
A-A-52163A



LATCH ASSY - TYPE B1, B3



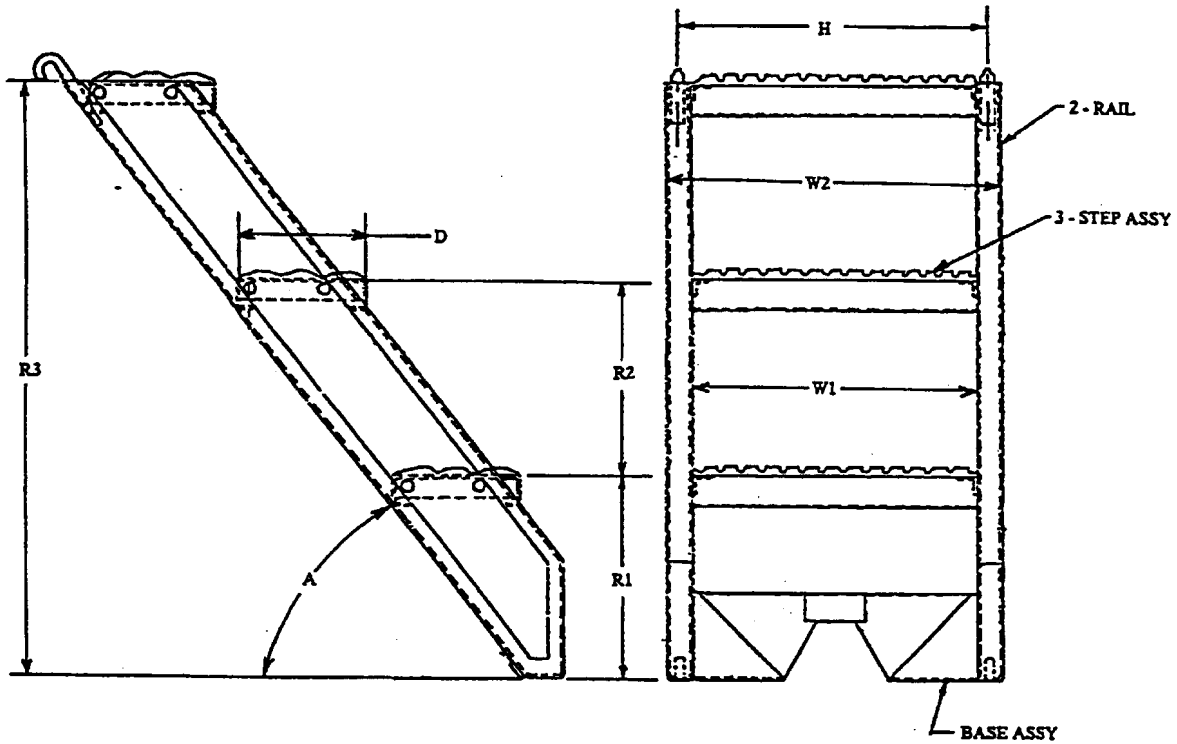
LOCK ASSEMBLY -- TYPE B2, B4



LIP - TYPE B2, B4

FIGURE 2. Ladder assembly, type B - Continued.

A-A-52163A



PIN number		A52163-C1
Number of steps		3
Width, inside rails	W1	400 mm (15.8 in)
Width, outside rails	W2	470 mm (18.5 in)
Hook centers	H	435 mm (17.1 in)
Step depth	D	184 mm (7.25 in)
First step rise	R1	293 mm (11.5 in)
Typical step rise	R2	280 mm (11 in)
Vertical rise, total	R3	853 mm (33.6 in)
Angle with ground	A	52°
Material		Aluminum alloy

FIGURE 3. Ladder assembly, type C.

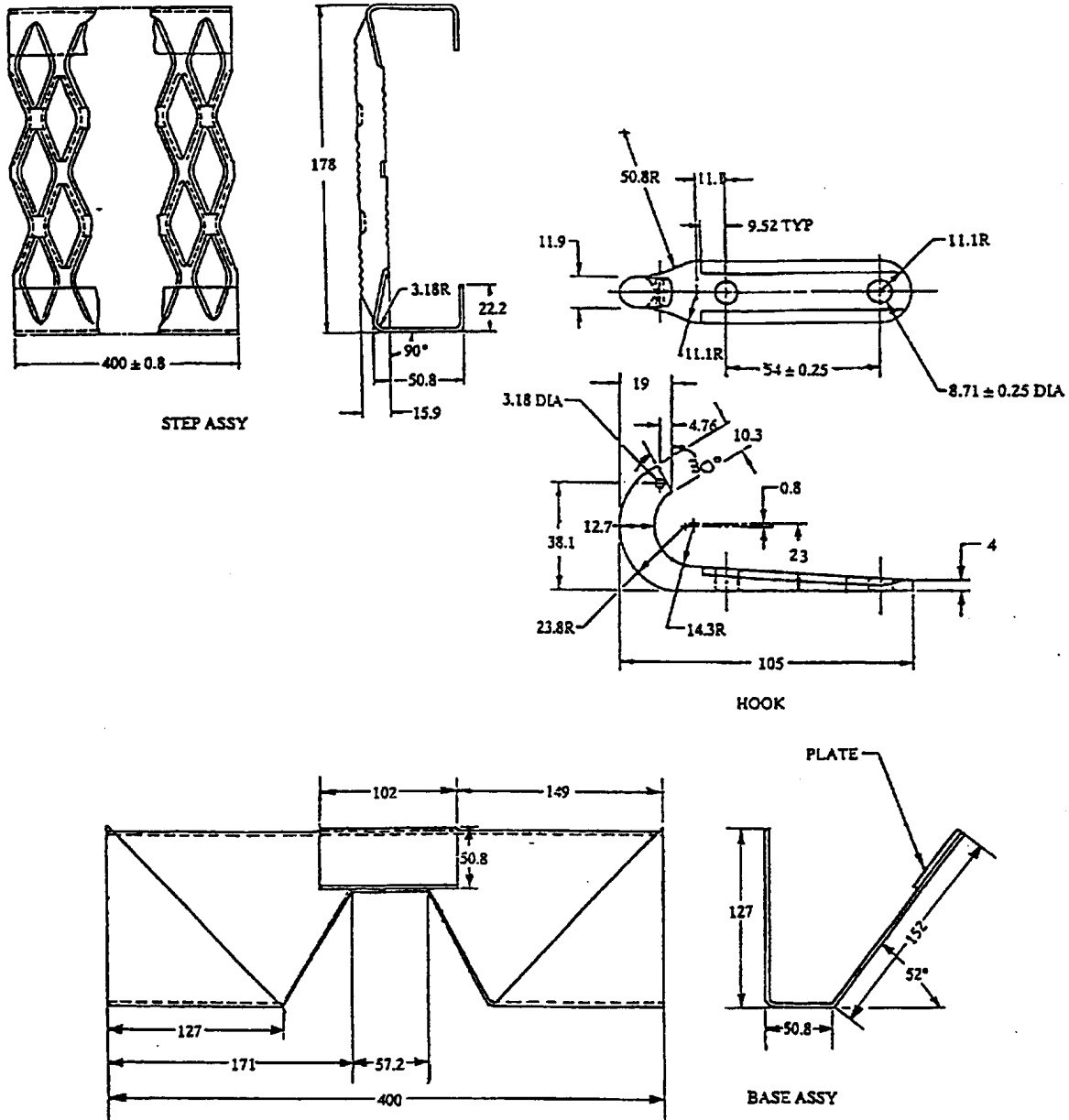
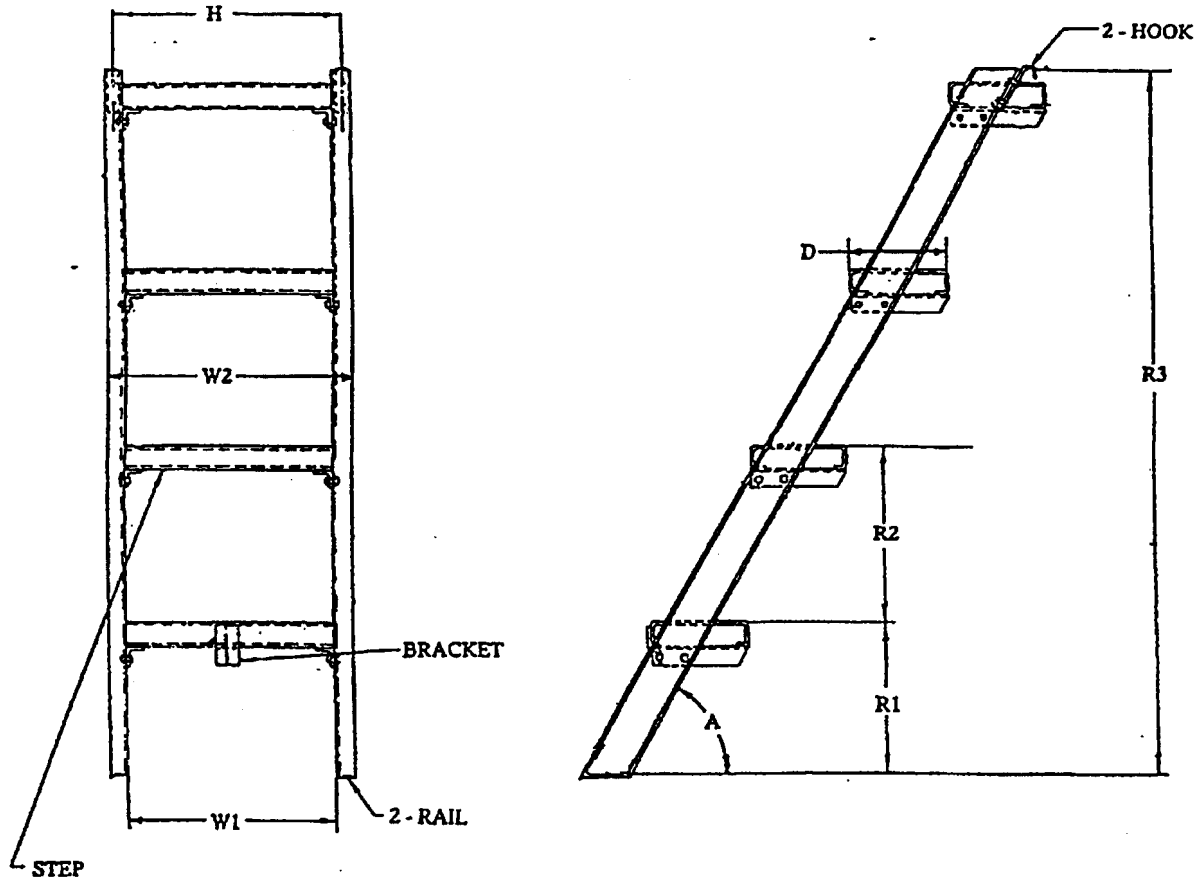


FIGURE 3. Ladder assembly, type C - Continued.

A-A-52163A



PIN number		A52163-D1	A52163-D2	A52163-D3	A52163-D4
Number of steps		4	5	4	4
Width, inside rails	W1	457 mm (18 in)	387 mm (15.2 in)	508 mm (20 in)	400 mm (15.8 in)
Width, outside rails	W2	537 mm (21.1 in)	457 mm (18 in)	610 mm (24 in)	464 mm (18.2 in)
Hook centers	H	502 mm (19.8 in)	432 mm (17 in)	565 mm (22.2 in)	432 mm (17 in)
Step depth	D	203 mm (8 in)	159 mm (6.25 in)	178 mm (7 in)	178 mm (7 in)
First step rise	R1	286 mm (11.2 in)	129 mm (5.08 in)	254 mm (10 in)	270 mm (10.6 in)
Typical step rise	R2	280 mm (11 in)	254 mm (10 in)	254 mm (10 in)	280 mm (11 in)
Vertical rise, total	R3	1220 mm (48 in)	1150 mm (45.1 in)	1060 mm (41.8 in)	1300 mm (51.3 in)
Angle with ground	A	60°	53°	45°	60°
Material		Steel	Steel	Aluminum	Aluminum

FIGURE 4. Ladder assembly, type D.

A-A-52163A

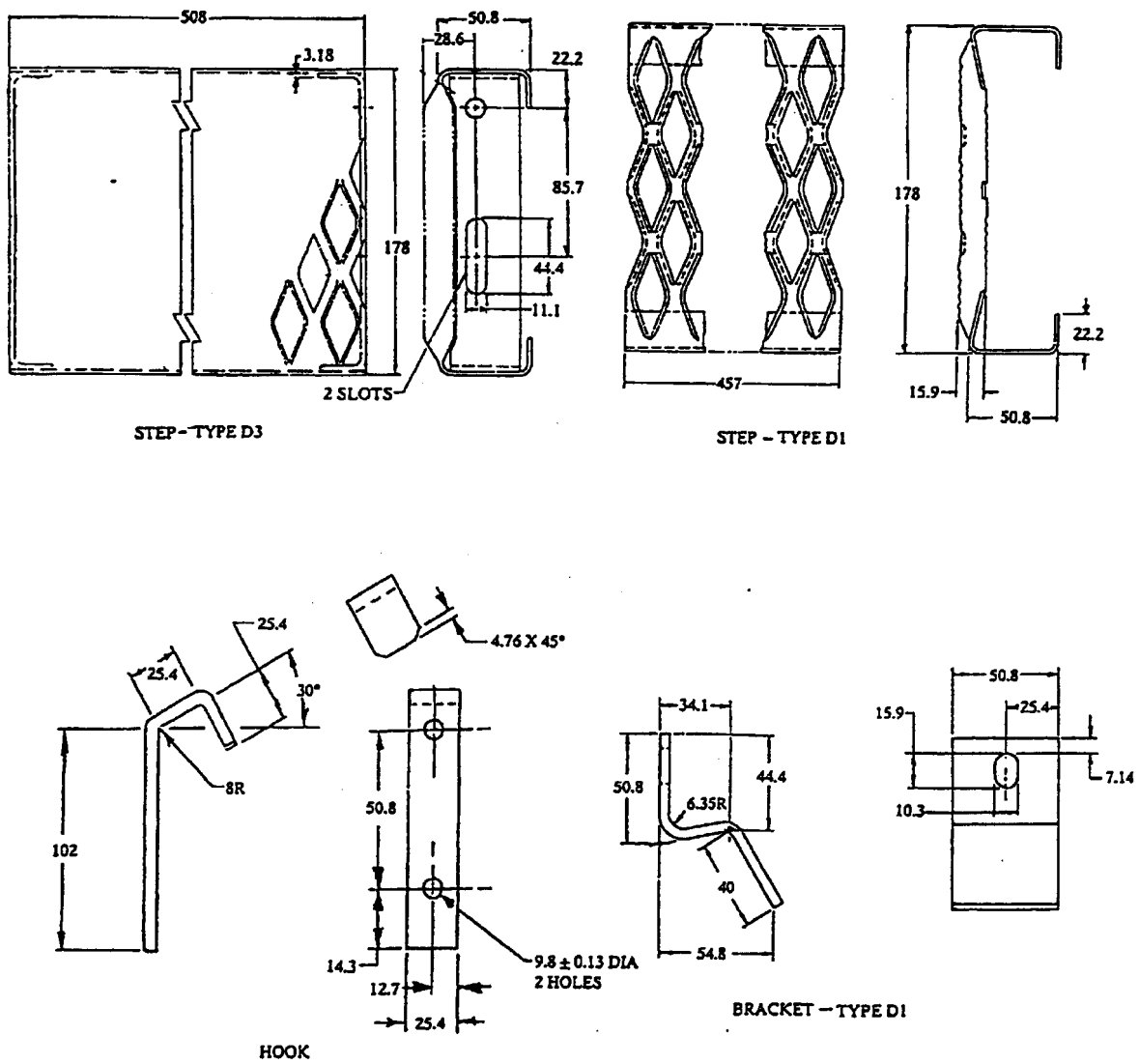
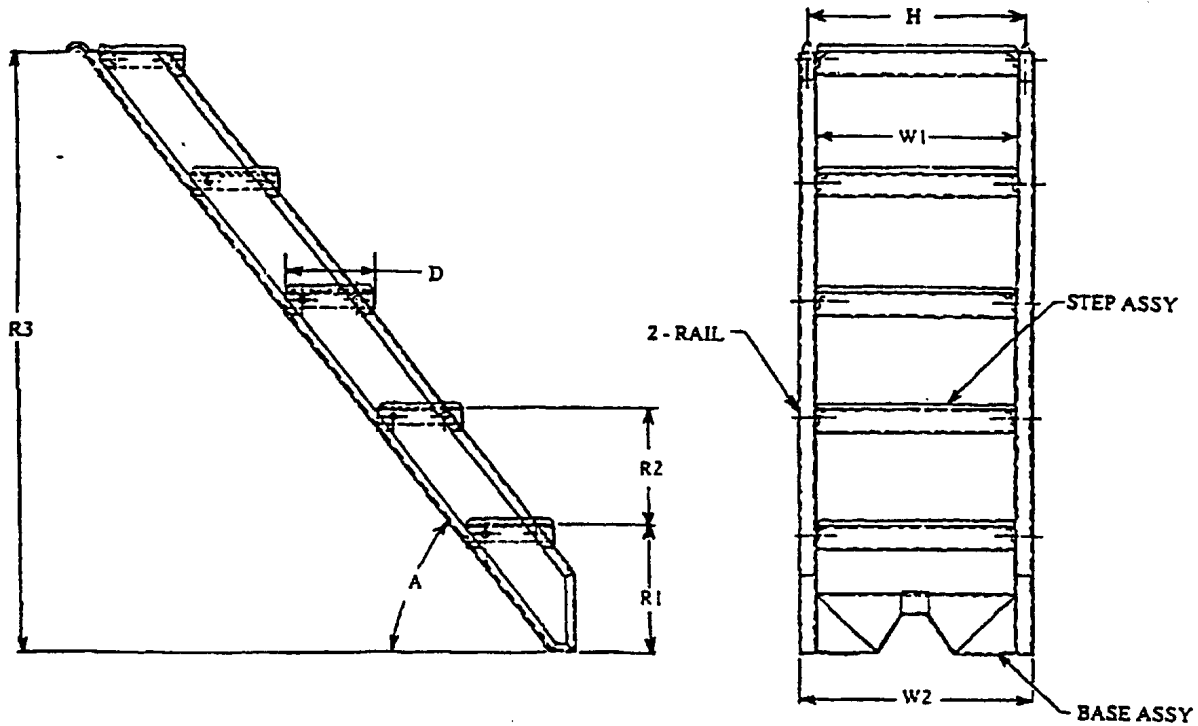


FIGURE 4. Ladder assembly, type D - Continued.

A-A-52163A



PIN number		A52163-E1	A52163-E2
Number of steps		5	5
Width, inside rails	W1	457 mm (18 in)	400 mm (15.8 in)
Width, outside rails	W2	527 mm (20.8 in)	470 mm (18.5 in)
Hook centers	H	492 mm (19.4 in)	435 mm (17.1 in)
Step depth	D	178 mm (7 in)	178 mm (7 in)
First step rise	R1	240 mm (9.54 in)	240 mm (9.45 in)
Typical step rise	R2	254 mm (10 in)	254 mm (10 in)
Vertical step rise	R3	1256 mm (49.4 in)	1256 mm (49.4 in)
Angle with ground	A	53°	53°
Material		Aluminum	Aluminum

FIGURE 5. Ladder assembly, type E.

A-A-52163A

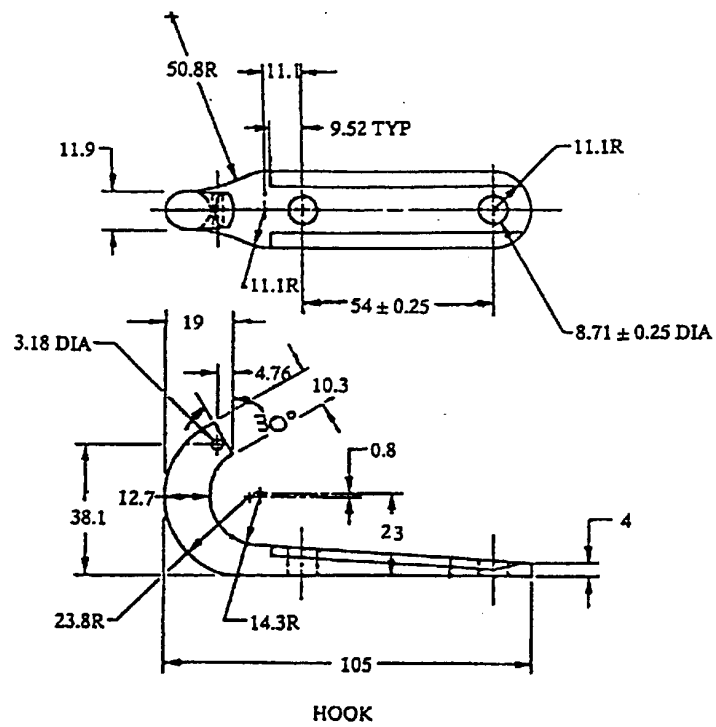
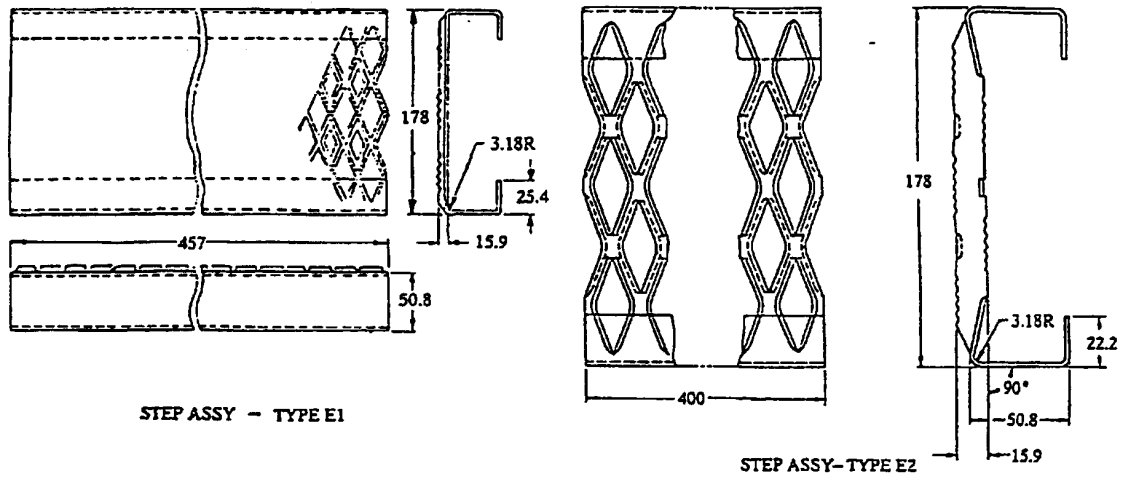


FIGURE 5. Ladder assembly, type E - Continued.

A-A-52163A

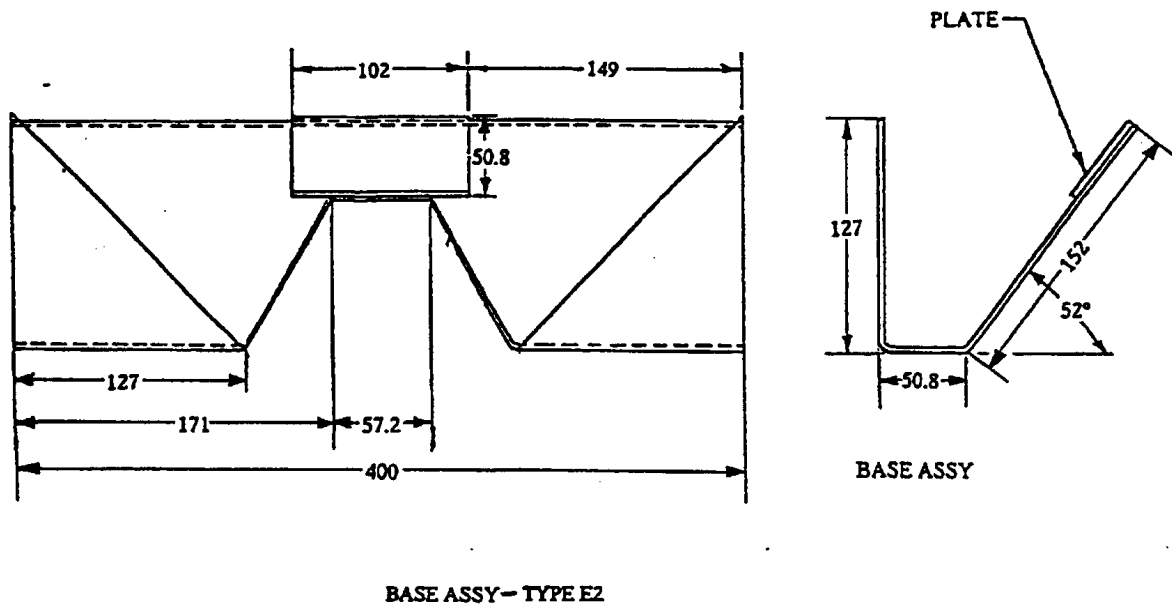
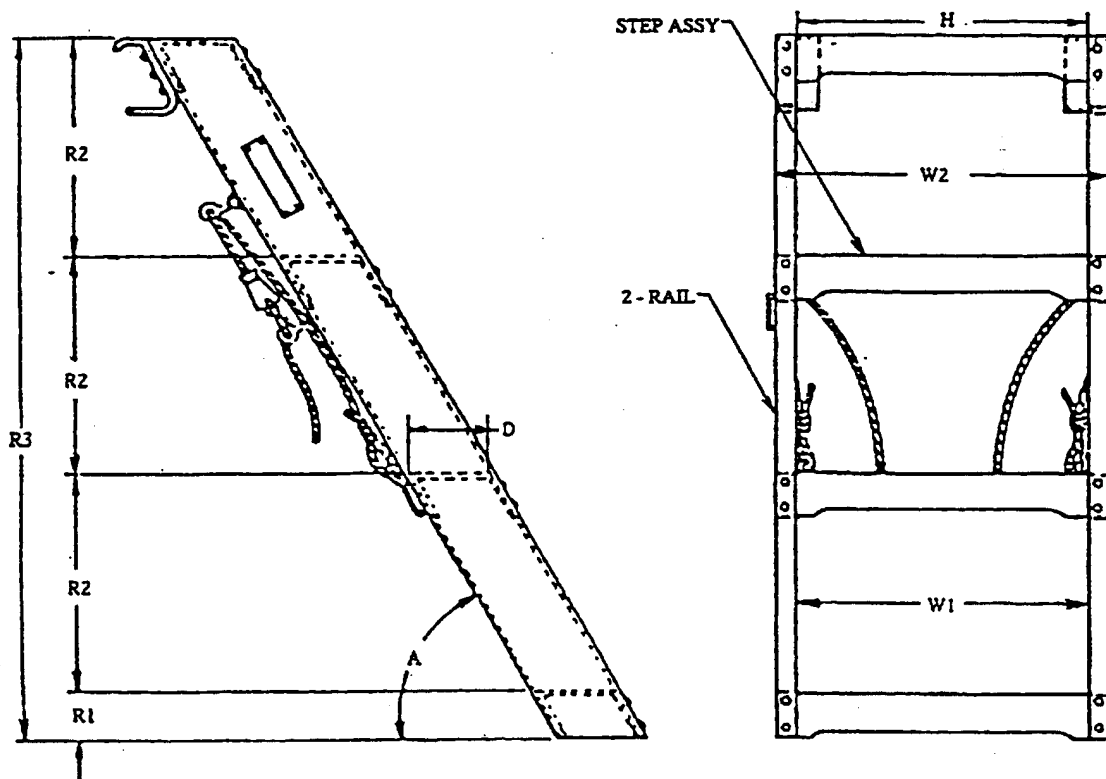


FIGURE 5. Ladder assembly, type E -Continued.

A-A-52163A



PIN number		A52163-F1	A52163-F2
Number of steps		4	6
Width, inside rails	W1	365 mm (14.4 in)	365 mm (14.4 in)
Width, outside rails	W2	416 mm (16.4 in)	416 mm (16.4 in)
Hook centers	H	365 mm (14.4 in)	365 mm (14.4 in)
Step depth	D	109 mm (4.28 in)	109 mm (4.28 in)
First step rise	R1	46.8 mm (1.84 in)	46.8 mm (1.84 in)
Typical step rise	R2	280 mm (11 in)	280 mm (11 in)
Vertical rise, total	R3	883 mm (34.8 in)	1370 mm (54 in)
Angle with ground	A	60°	60°
Material		Aluminum	Aluminum

FIGURE 6. Ladder assembly, type F.

A-A-52163A

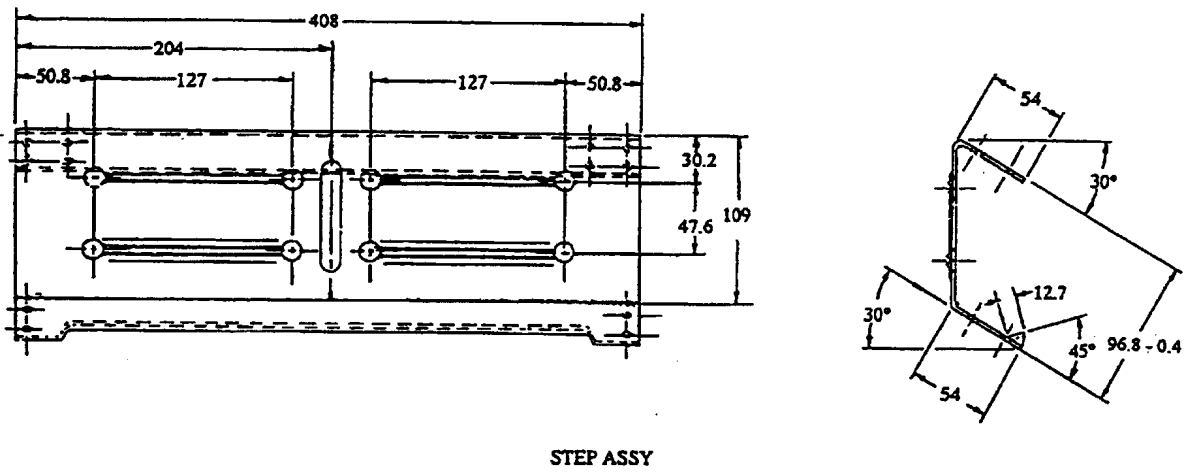
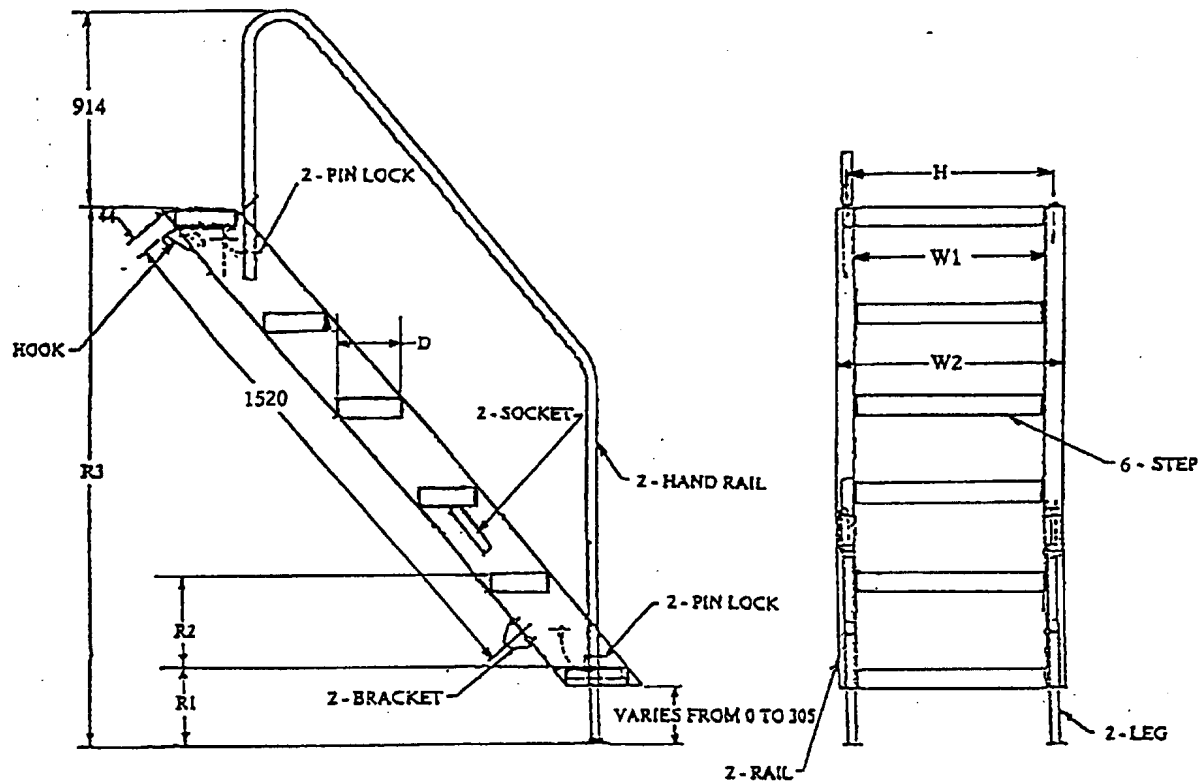


FIGURE 6. Ladder assembly, type F - Continued.

A-A-52163A



PIN number		A52163-G1
Number of steps		6
Width, inside rails	W1	508 mm (20 in)
Width, outside rails	W2	610 mm (24 in)
Hook centers	H	560 mm (22 in)
Step depth	D	180 mm (7 in)
First step rise (adjustable)	R1	57.2 to 362 mm (2.25 to 14.2 in)
Typical step rise	R2	274 mm (10.8 in)
Vertical rise, total	R3	1370 to 1675 mm (53.9 to 66 in)
Angle with ground	A	51°
Material		Aluminum

FIGURE 7. Ladder assembly, type G.

A-A-52163A

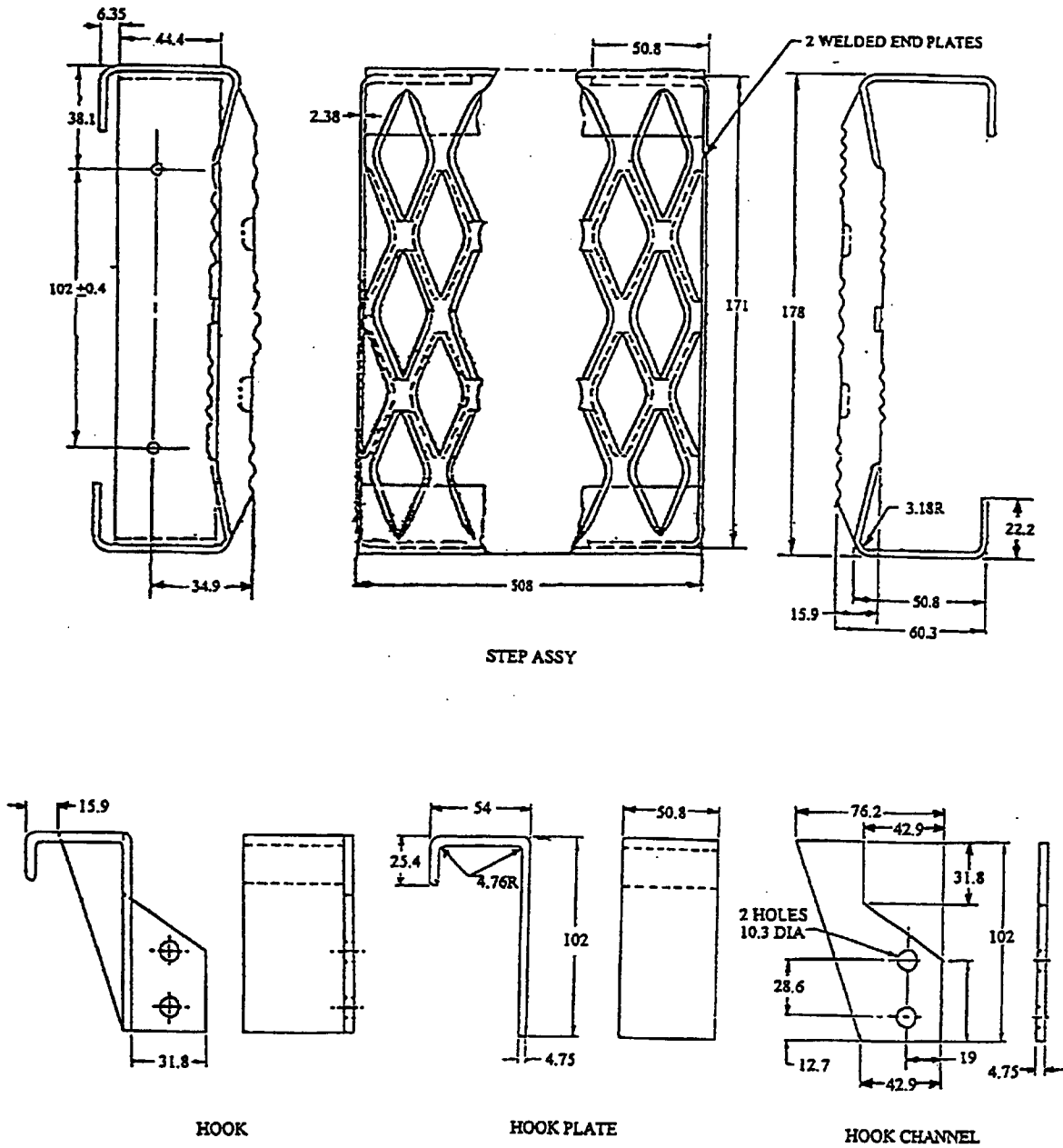


FIGURE 7. Ladder assembly, type G - Continued.

A-A-52163A

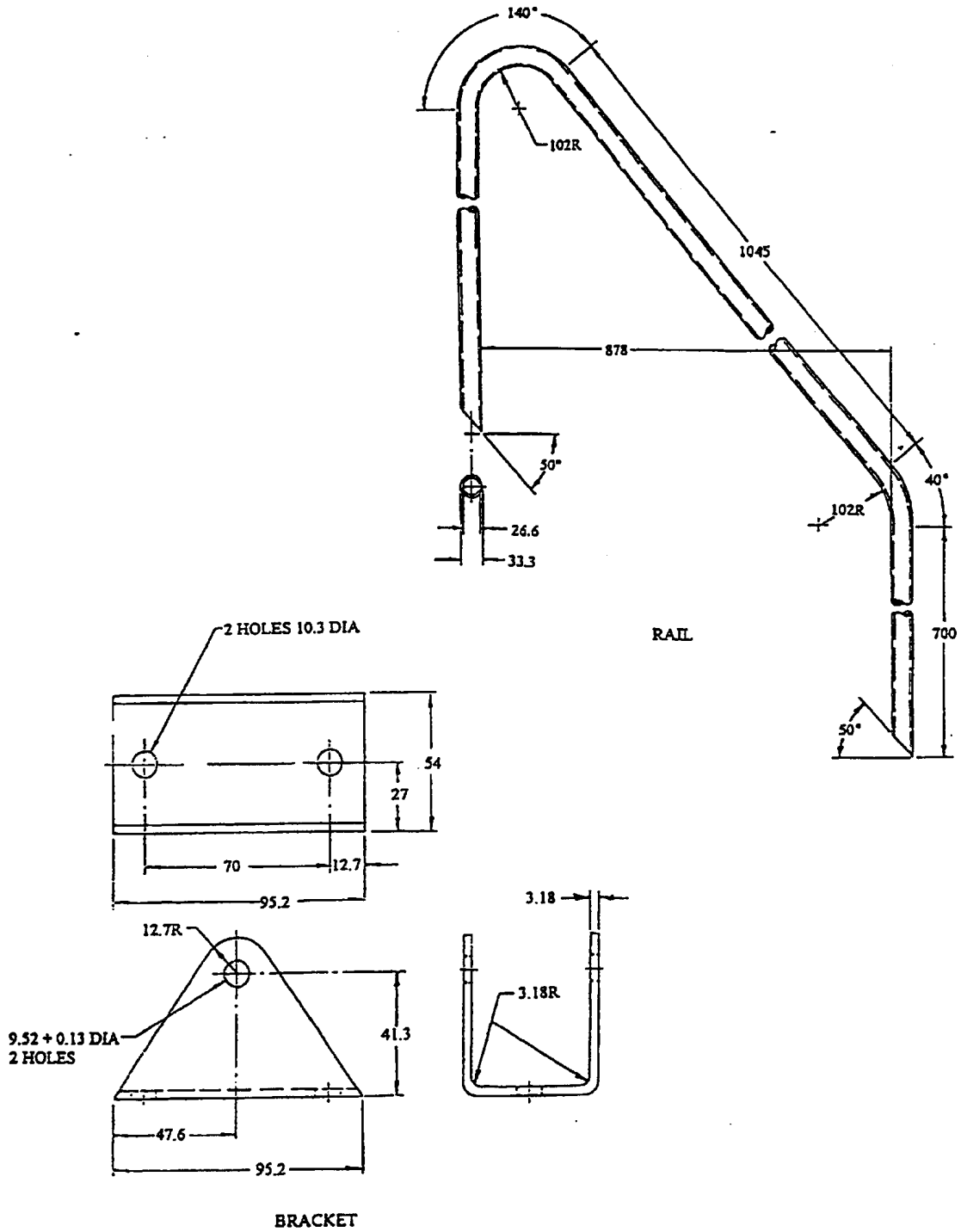
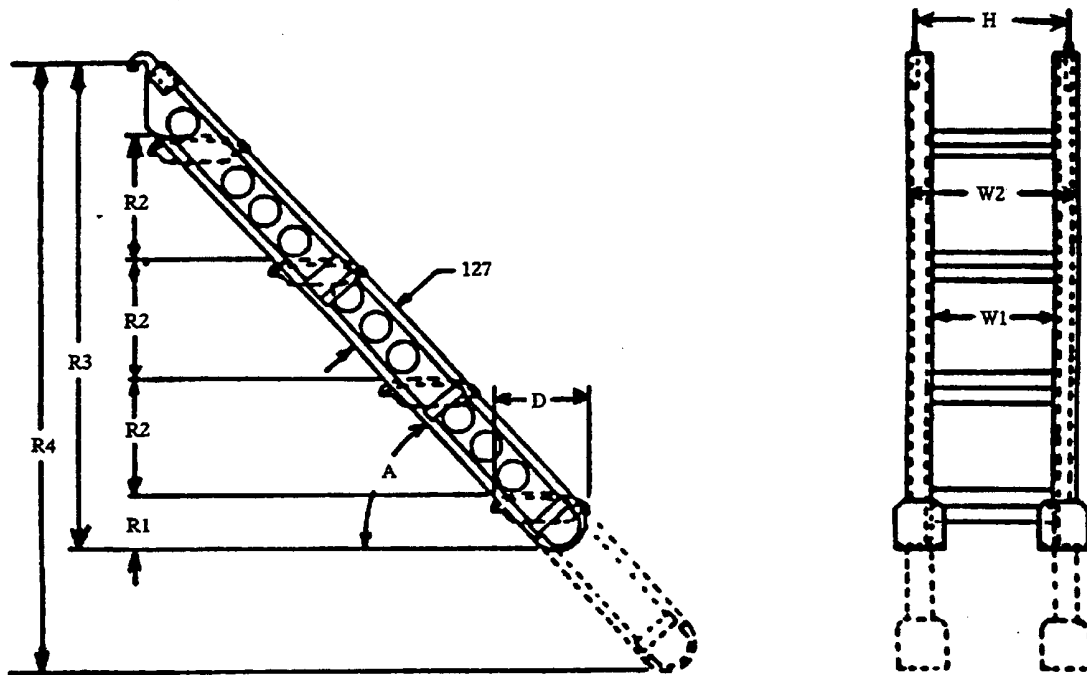


FIGURE 7. Ladder assembly, type G - Continued.

A-A-52163A



PIN number		A52163-H1
Number of steps		4
Width, inside rails	W1	314 mm (12.4 in)
Width, outside rails	W2	375 mm (14.8 in)
Hook centers	H	367 mm (14.4 in)
Step depth	D	229 mm (9 in)
First step rise	R1	146 mm (5.75 in)
Typical step rise	R2	286 mm (11.2 in)
Vertical rise, retracted	R3	1140 mm (45 in)
Vertical rise, extended	R4	1430 mm (56.2 in)
Angle with ground	A	48°
Material		Steel

FIGURE 8. Ladder assembly, type H.

A-A-52163A

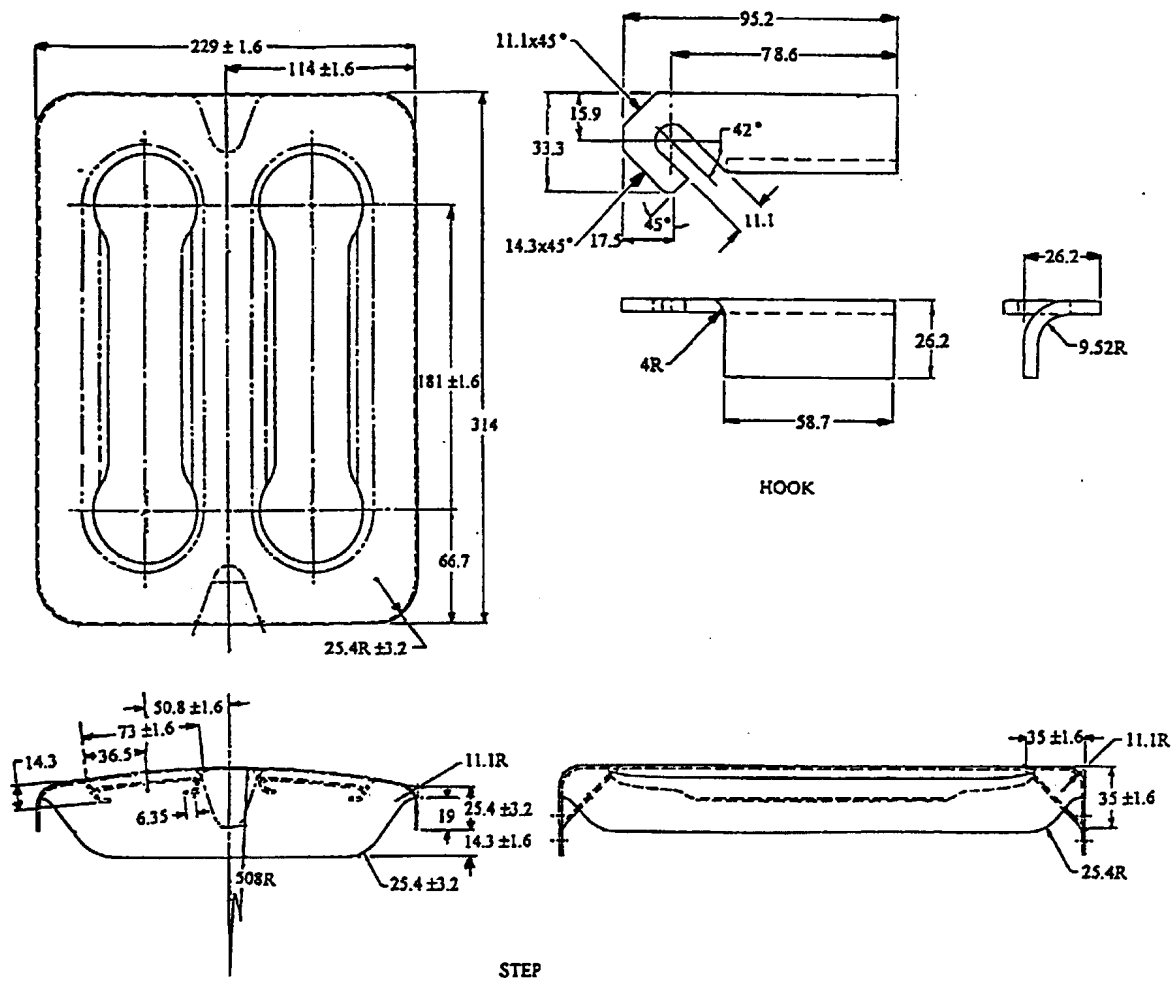
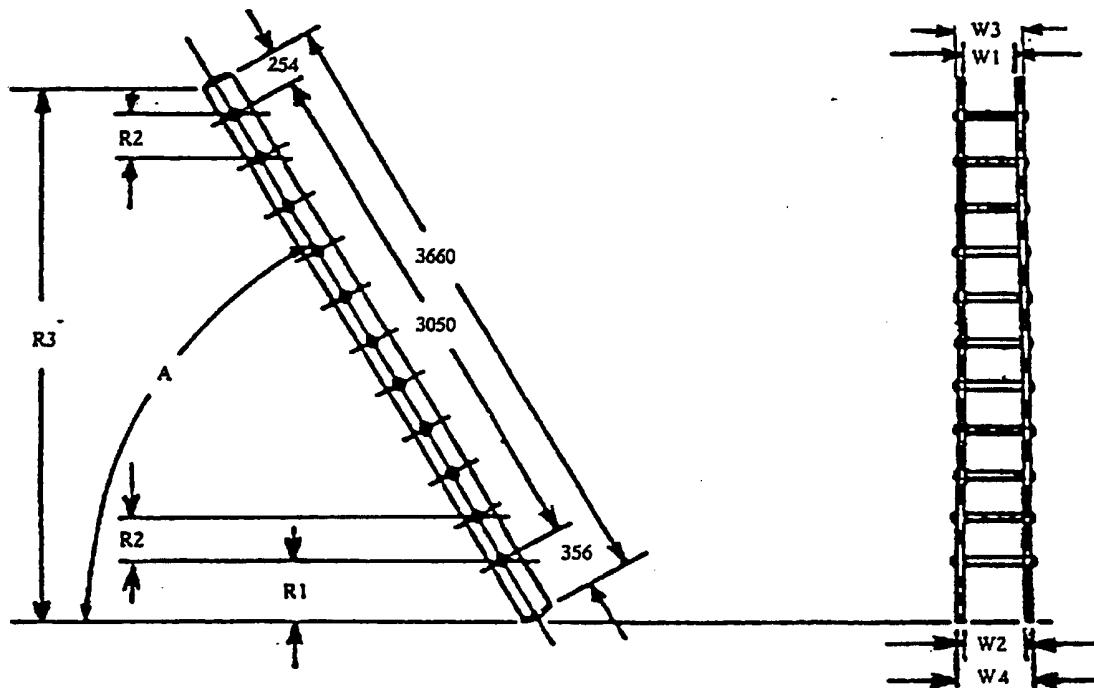


FIGURE 8. Ladder assembly, type H - Continued.

A-A-52163A



PIN number		A52163-I1
Number of rungs		11
Width, inside top rails	W1	292 mm (11.5 in)
Width, inside bottom rails	W2	368 mm (14.5 in)
Width, outside top rails	W3	330 mm (13 in)
Width, outside bottom rails	W4	406 mm (16 in)
Angle with ground	A	60° (approximately)
First rung rise	R1	308 mm (12.1 in)
Typical rung rise	R2	264 mm (10.4 in)
Vertical rise, total	R3	317 mm (12.5 in)
Rung section diameters		25.4 mm outside diameter (O.D.) x 19.1 mm inside diameter (I.D.)
Rail section dimensions		(1 in O.D. x 0.75 in I.D.) 57.2 x 19.1 x 2.4 mm
Material		(2.25 x 0.75 x 0.094 in) Aluminum

FIGURE 9. Ladder assembly, type I.

A-A-52163A

2.9 Identification markings. The ladder shall be permanently and legibly marked with the following information:

- a. "Ladder, vehicle boarding"
- b. Manufacturer's identification code (CAGE)
- c. Contract number
- d. National stock number (NSN)
- e. Part identification number (PIN)

3. REGULATORY REQUIREMENTS

3.1 Recovered material. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections, examinations, and tests.

4.2 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this CID and that the product conforms to the producer's own drawings, specifications, workmanship standards, and quality assurance practices. Items with known defects shall not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

5. PACKING. Preservation, packing, and marking shall be as specified in the contract or order (see 6.2).

6. NOTES. (This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Addresses for obtaining copies of referenced documents.

6.1.1 Government documents. The Code of Federal Regulations (CFR) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Copies of FED-STD-595 may be obtained from the Defense Printing Service Detachment Office, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

6.1.2 Government drawings. Army drawings are available from the U.S. Army Tank-automotive and Armaments Command, AMSTA-TR-E/BLUE, Warren, MI 48397-5000.

A-A-52163A

6.1.3 Non-Government publications. Copies of ANSI A14.2, "Portable Metal Ladders" are available from the American National Standards Institute (ANSI), 11 West 42nd Street, New York, NY 10036. Copies of ASTM A123 are available from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

6.2 Ordering data. Acquisition documents must specify the following:

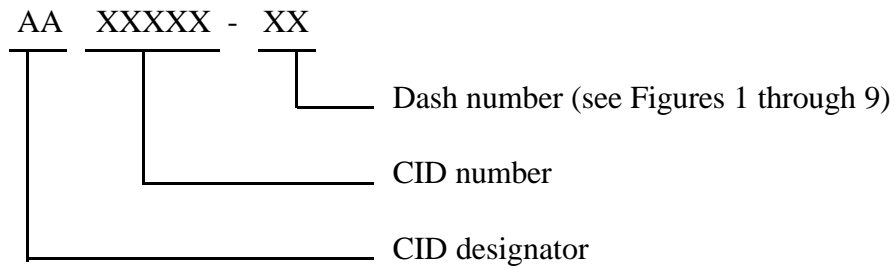
- a. Title, number, and date of this CID.
- b. Issue of Department of Defense Index of Specifications and Standards (DoDISS) to be cited in the solicitation.
- c. If additional drawings are needed.
- d. If CARC paint is required.
- e. If camouflage patterns and colors are required.
- f. Identification and marking if other than specified.
- g. PIN and quantity required.

6.3 Cross-reference data. Ladders conforming to this CID are interchangeable/substitutable with ladders conforming to the A-A-52163 and MS500062A. Applicable Army drawing numbers cross-referenced to applicable CID PINs are listed as follows:

Army drawing number	CID PIN number
10882157-1	A52163-B1
8389462-1	A52163-B2
10882157	A52163-B3
8389462	A52163-B4
10885309	A52163-C1
7034270	A52163-D1
8757809	A52163-D2
10031621	A52163-D3
7341560	A52163-D4
7084975	A52163-E1
8759434	A52163-E2
SCD147189	A52163-F1
SCD108737	A52163-F2
8722222	A52163-G1
8161317	A52163-H1
10891462	A52163-I1

A-A-52163A

6.4 Part or identification number (PIN). The PIN to be used for ladders acquired to this CID are created as follows:

**MILITARY INTERESTS:**

Custodians:

Army - AT
Navy - MC
Air Force - 99

Review Activities:

Army - MI
Air Force - 84

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

Preparing Activity:

Army - AT

(Project 2540-0422)