[INCH-POUND]
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SUPERSEDING
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19 July 1983

COMMERCIAL ITEM DESCRIPTION

SLING, PALLET

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. SCOPE. This commercial item description (CID) covers three types of wire rope and steel pipe slings used to lift loaded cargo pallets.

2. CLASSIFICATION. Pallet slings shall be the following types. The type to be furnished shall be as specified (see 7.2(b)).

Type I - 2,500 pounds rated capacity (with cargo net)
Type II - 4,000 pounds rated capacity
Type III - 7,500 pounds rated capacity

3. SALIENT CHARACTERISTICS

3.1 General requirements. The pallet slings shall be built in accordance with the requirements herein and the drawings shown in figures 1 through 3.

3.2 Components. The pallet sling shall include, as a minimum, the following components:

3.2.1 Lifting ring. The lifting ring shall be forged or welded from low alloy steel in accordance with American Society for Testing and Materials (ASTM) A322, "Steel Bars, Alloy, Standard Grades", or A304, "Carbon and Alloy Steel Bars Subject to End-Quench Hardenability Requirements", and be heat-treated as required to meet strength requirements shown in table I. Unless otherwise specified (see 7.2(c)), the lifting ring shall be zinc coated to meet ASTM A153, "Zinc Coating (Hot-Dip) on Iron and Steel Hardware". When specified (see 7.2(d)), an oblong master or sling lifting link shall be substituted for the lifting ring provided it meets size and strength requirements shown in table 1.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data which may improve this document should be sent to: Defense Supply Center Richmond (DSCR), ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610.

AMSC N/A FSC 3940

3.2.2 Sling legs. The sling legs shall have 6 x 19 independent wire rope core (IWRC), galvanized, improved plow steel wire rope in accordance with American Petroleum Institute (API) 9A, "Specification for Wire Rope". Type I and II sling legs shall be 1/2-inch diameter. Type III sling legs shall be 3/4-inch diameter.

3.2.2.1 Flemish eye splice. The thimble end loops of the sling leg shall be formed with standard Flemish eye mechanical splices and swaged with one-piece stainless steel ferrules (swaging sleeves) that completely cover the wire rope strand ends.

3.2.2.2 Thimbles. Thimbles shall be the heavy wire rope thimbles shown in figure 4 for the sling leg wire rope diameter provided. The thimbles shall be zinc coated in accordance with ASTM A153, "Zinc Coating (Hot-Dip) on Iron and Steel Hardware".

3.2.3 Spreader bars. Spreader bars shall be straight grained type II hardwood in accordance with National Hardwood Lumber Association (NHLA) Rules for Measurement and Inspection of Hardwood and Cypress and be surfaced on four sides. Wood shall be free from defects other than small surface checks (perceptible openings not more than 4 inches long), slight cross grain (slope of grain not more than 1 inch in a length of 15 inches), and pin knots not exceeding 1/2-inch diameter. Wood shall be uniformly dried to a moisture content between 12 and 19 percent.

3.2.4 Lifting bars. Lifting bars shall be galvanized steel pipe of type S, grade A, weight class XXS; or type F, weight class XXS in accordance with ASTM A53, "Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless". Type I and II lifting bars shall have a nominal diameter of 1-1/2 inches. Type III lifting bars shall have a nominal diameter of 2 inches.

3.2.5 Nets. The nets for the type I sling shall consist of a minimum of 7 vertical and 6 horizontal nylon ropes spaced 8 ±1 by 11 ±1 inches apart to provide 12 ±1 inches of slack in the horizontal dimension. One strand of the horizontal rope shall be passed under one strand of the vertical rope and evenly relayed to form a firm interlocking weave. This shall be repeated at each intersection. Each horizontal rope shall have a 2-inch diameter eye splice at each end for looping over the sling legs. The bottom ends of the vertical ropes shall be fastened to the bottom horizontal rope and spliced into its own part with not fewer than three full tucks. The top end of each vertical rope shall terminate in a 6-inch diameter eye splice for looping over the spreader bars. The rope shall be a 3/4-inch circumference 3-strand nylon rope conforming to Cordage Institute (CI) publication CI 1303, "Nylon Fiber Rope 3-Strand and 8-Strand Constructions
CID-7 Splicing Instructions".

3.2.6 Wire rope clamp. Bolts and nuts shall be carbon steel in accordance with ASTM A108, "Steel Bars, Carbon, Cold-Finished, Standard Quality" and the saddle shall be made of forged steel with a corrugated rope path to accommodate wire rope having a right-hand helix. Size shall match wire rope used. Clamp components shall be zinc coated to meet ASTM A153.

3.2.7 Shackles. Shackles shall be the Dee screw pin type of the size shown in table II and figure 5 for the type of pallet sling furnished. The shackle body shall be permanently and legibly marked in raised or stamped letters with the manufacturer's name or trademark, the shackle size, and the recommended safe working load; the markings shall not interfere with the serviceability of the shackle. The shackle body shall be forged from carbon steel in accordance with ASTM A576, "Standard Specification for Special Quality, Hot-Wrought, Carbon Steel Bars." The screw pin shall be forged from alloy steel in accordance with ASTM A322. Both the shackle body and the screw pin shall be zinc coated in accordance with ASTM A153.

3.2.8 Miscellaneous hardware. Hardware (e.g. bolts, nuts, washers) shall be sized to meet the design factor of 5 and be corrosion resistant or be protected in accordance with their individual specifications to prevent deterioration. Where no protection system is specified, use zinc coating in accordance with ASTM A153 (see table II).

3.3 Performance. Unless otherwise specified (see 7.2(e)), the pallet sling shall meet the performance requirements shown in table I when tested in accordance with section 5.3 through 5.3.4.

TABLE I. Pallet sling component strength requirements.

Type	Wire rope diameter, inches	Construction IWRC	Lifting ring size[1], inches	Proof load per sling leg, pounds	SWL[2], pounds
I	1/2	6 x 19	1-1/8 x 6	1,250	2,500
II	1/2	6 x 19	1-3/8 x 6	2,000	4,000
III	3/4	6 x 19	1-1/2 x 6[3]	3,750	7,500

[1]Oblong master or sling lifting link of equivalent size and strength may be substituted for lifting ring.

[2]SWL is the maximum safe working load limit recommended based on a design factor of 5.

[3]Type II lifting ring may be used if strength requirements for the 1-1/2 x 6-inch ring are met.

3.4 Nameplate. The pallet sling shall be permanently and legibly marked with the manufacturer's name or trademark and the safe working load (SWL).

4. REGULATORY REQUIREMENTS

4.1 Recovered materials. 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).

4.2 Environmental protection. The item shall meet all applicable Environmental Protection Agency (EPA) restrictions in effect on the date of the contract. These regulations apply to the

emission of materials hazardous to the environmental or the user's health and shall be adhered to during the manufacturing, service, transportation, storage, and operation/use of the item.

4.3 Safety and health requirements. The manufacturer shall ensure that the pallet sling and all components used shall be in compliance with Occupational Safety and Health Administration (OSHA) 29 CFR PART 1910.184, "Slings", and 29 CFR PART 1926.251, "Rigging Equipment for Material Handling". If a conflict arises between this document and OSHA standards, the OSHA standards shall apply.

5. QUALITY ASSURANCE

5.1 Product conformance. The products provided shall meet the salient characteristics of this commercial item description; conform to the manufacturer's specifications, standards, and quality assurance practices; and be the same product offered for sale on the commercial market. The government reserves the right to require proof of such conformance.

5.2 Inspection. The pallet sling shall be inspected to determine compliance with all requirements specified in this CID.

5.3 Testing. Unless otherwise specified (see 7.2(f)), the pallet sling shall be tested in accordance with sections 5.3.1 through 5.3.4.

5.3.1 Sling leg proof test. Each sling leg shall be tested by lifting and lowering the proof load shown in table I five times, holding the suspended load from 2 to 5 minutes during each lift. At the conclusion of the test, the sling leg shall be carefully examined in accordance with OSHA 29 CFR PART 1910.184. Elongation, deformation, rupture or failure of a component, or slippage of a swaging sleeve shall be cause for rejection.

5.3.2 Lifting ring proof test. The lifting ring shall be tested to 4 times the individual leg proof load shown in table I and shall show no signs of distortion or damage.

5.3.3 Pallet sling test. The pallet sling assembly shall be tested by lifting and lowering twice its rated load capacity, holding the suspended load from 2 to 10 minutes. Elongation, deformation, rupture or failure of a component, or slippage of a swaging sleeve shall be cause for rejection.

5.3.4 Ultimate strength. The manufacturer shall certify that individual components when tested to destruction will not fail at loads less than 5 times the sling leg proof load shown in table I.

5.4 Acceptance. Unless otherwise specified (see 7.2(g)), preliminary and final acceptance tests shall be conducted at the manufacturer's site. The results of the performance tests shall be compared with the performance requirements of section 3.3. Failure of the pallet sling to meet the performance requirements of section 3.3 shall be cause for rejection. The manufacturer shall provide certification with each pallet sling that it meets proof load requirements and that components meet the minimum design factor of 5.

6. PACKAGING

6.1 Preservation, packing, and marking. For acquisition purposes, the pallet sling supplied shall be preserved, packed, and marked as specified in the acquisition order (see 7.2(h)).

7. NOTES

7.1 Sources of documents

7.1.1 ASTM standards. Copies of ASTM standards may be obtained from American Society for Testing & Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.1.2 API standards. Copies of API standards may be obtained from the American Petroleum Institute, 1220 L Street Northwest, Washington, DC 20005.

7.1.3 NHLA. Copies of the NHLA may be obtained from the National Hardwood Lumber Association, Box 34518, Memphis, TN 38148-0518.

7.1.4 CI standards. Copies of CI standards may be obtained from the Cordage Institute, 350 Lincoln Street, Hingham, MA 02043.

7.1.5 FAR. Copies of the FAR may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

7.1.6 OSHA standards. Copies of OSHA standards may be obtained from the U.S. Department of Labor, 200 Constitution Avenue NW, Room 423, Washington, DC 20210.

7.1.7 ISO standards. Copies of ISO standards may be obtained from the Int'l Organization for Standardization, Case Postale 56, Geneva, Switzerland CH-1211.

7.1.8 ASME standards. Copies of ASME standards may be obtained from the American Society of Mechanical Engineers, 345 47th Street, New York, NY 10017-2392.

7.2 Ordering Data. Acquisition documents must specify the following:

a. Title, number, and date of this document
b. Type of pallet sling required (see 2)
c. Lifting ring, if different (see 3.2.1)
d. Oblong master or sling lifting ring, if required (see 3.2.1)
e. Performance, if different (see 3.3)
f. Testing, if different (see 5.3)
g. Acceptance, if different (see 5.4)
h. Packaging requirements (see 6.1)

7.3 Part identification number (PIN). The following part identification numbering system is for government purposes and does not constitute a requirement for the contractor.

AA59343 – X

Type: 1 - Type I
2 - Type II
3 - Type III

CID number

7.4 Materials. The list of materials is shown in table II.

MILITARY INTERESTS:

Custodians:
Air Force - 99
Army - AT
Navy - SH

Reviewers:
Air Force - 84
Army - AV, MT
Navy - MC, SA, YD2

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - 7FXE

Preparing activity:
DLA - GS

(Project 3940-0010)

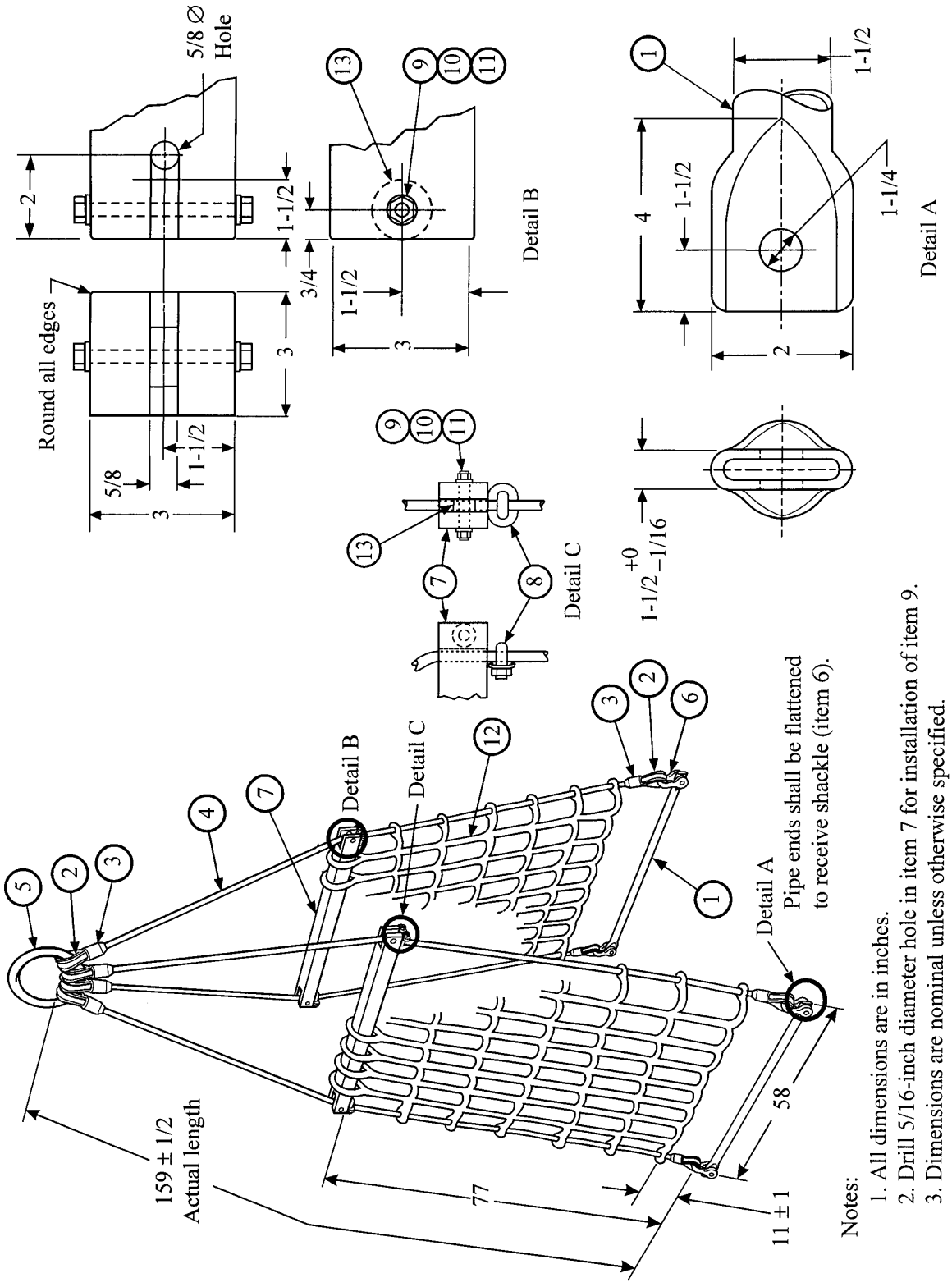


FIGURE 1. Type I, 2,500-pound capacity pallet sling with cargo net.

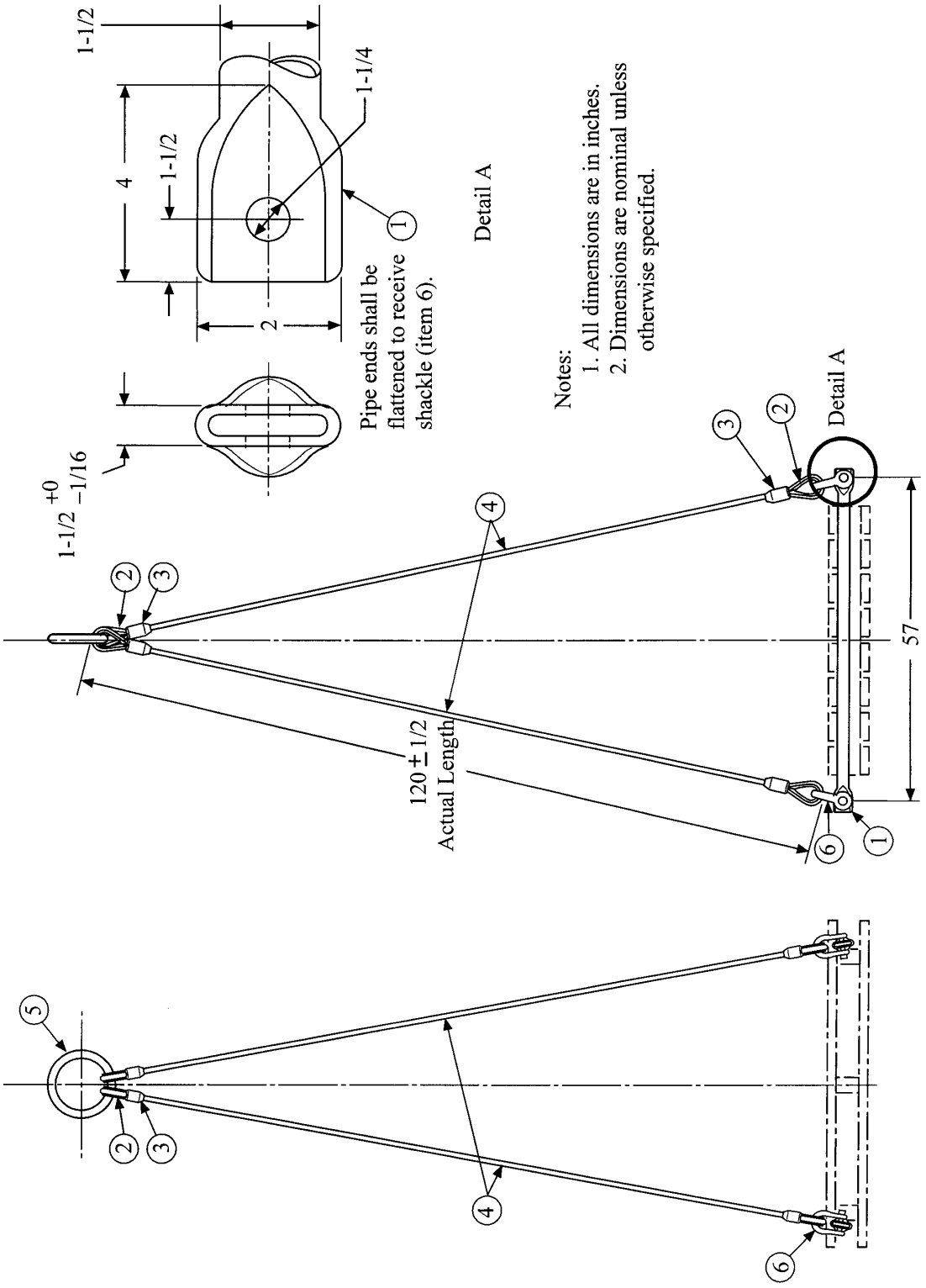


FIGURE 2. Type II, 4,000-pound capacity pallet sling.

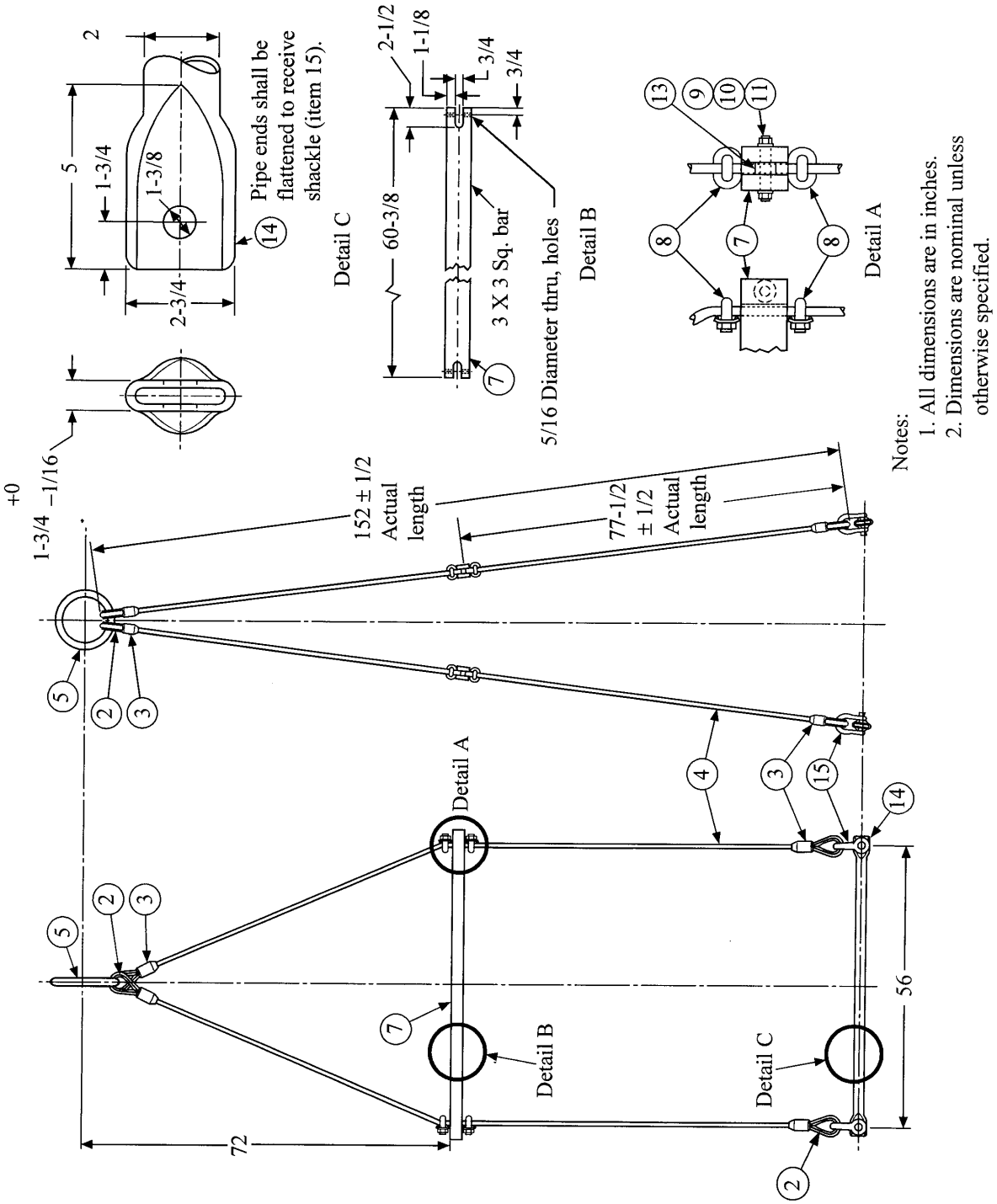
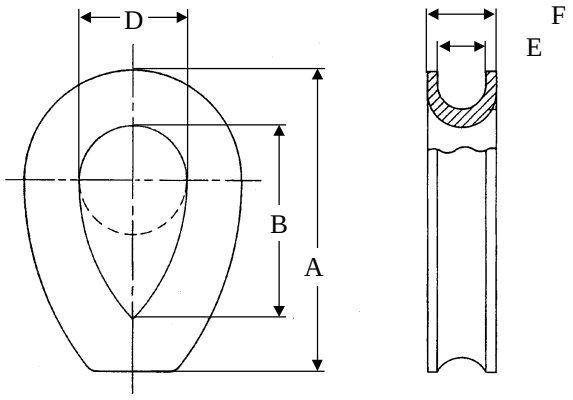
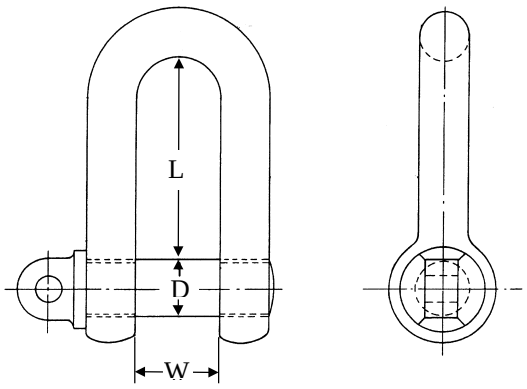


FIGURE 3. Type III, 7,500-pound capacity pallet sling.



Rope diameter, inch	A, inches	B, inches	D, inches	E, inch	F, inch
1/2	3-5/8	2-3/4	1-1/2	9/16	13/16
3/4	5	3-3/4	2	13/16	1-1/4

FIGURE 4. Heavy thimble dimensions.



Nominal size, inches	D, inches	L, inches	W, inches
1	1-1/8	3-3/16 to 3-5/16	1-11/16
1-1/8	1-1/4	3-1/2 to 3-5/8	1-13/16

FIGURE 5. Dee screw pin shackle dimensions.

TABLE II. List of materials.

Item number	Quantity required			Description	Specification
	Type I	Type II	Type III		
1	2	2	0	Lifting bar – galvanized pipe, 11/2-inch diameter, type S, grade A, weight class XXS; or type F, weight class XXS	ASTM A53
2	8	8	8	Thimble, heavy, zinc-plated (see figure 4)	Par. 3.2.2.2
3	8	8	8	Ferrule, stainless steel	ISO 8793[1]
4	4	4	4	Wire rope, 6 × 19 IWRC, improved plow steel, drawn galvanized wire: types I and II are 1/2-inch; type III is 3/4-inch	API 9A
5	1	1	1	Lifting ring (see table I)	Par. 3.2.1
6	4	4	0	Shackle, screw pin, 1-inch Dee (see figure5)	Par. 3.2.7
7	2	0	2	Spreader bar, wood, 3 × 3 inches	NHLA
8	4	0	8	Wire rope clamp	Par. 3.2.6
9	4	0	4	Bolt, 1/4-20 UNC-2A × 3 1/2 inches long, hex head, zinc-plated	ASME B18.2.1[2]
10	4	0	4	Hex nut, plain, 1/4-20 UNC-2B, zinc- plated	ASME B18.2.2[3]
11	4	0	4	Washer, flat, 5/16-inch inside diameter, zinc-plated	ASME B18.22.1[4]
12	2	0	0	Rope net, nylon, 3/4-inch circumference	CI 1303
13	4	0	4	Spacer, ANSI 6061 aluminum rod, 1 1/2-inch diameter with 3/8-inch hole, thickness shall be 5/8 inch for type I and 3/4 inch for type III.	ASTM B221[5]
14	0	0	2	Lifting bar – galvanized pipe, 2-inch diameter, type S, grade A, weight class XXS; or type F, weight class XXS	ASTM A53
15	0	0	4	Shackle, screw pin, 1-1/8-inch Dee (see figure 5)	Par. 3.2.7

[1]ISO 8793, "Steel Wire Ropes - Ferrule-Secured Eye Terminations First Edition"

[2]ASME B18.2.1, "Square and Hex Bolts and Screws (Inch Series)"

[3]ASME B18.2.2, "Square and Hex Nuts (Inch Series)"

[4]ASME B18.22.1, "Plain Washers Reaffirmation and Redesignation of ASA B27.2-1965"

[5]ASTM B221, "Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes"