WEBBING, COTTON, NATURAL, OR IN COLORS

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications of the issue in effect on date of invitation for bids, shall form a part of this specification:

A-1a. Federal specification:

CCC-T-191—Textiles; General Specifications, Test Methods.

A-1b. U. S. Army specifications:

19-60—Paper; Kraft, Duplex, Waterproof, Flat, and Creped. 23-54—Box and crate for Domestic Shipment, Air Corps Supplies and Equipment.

100-2—Standard Specifications for Marking Shipments.

B. TYPES AND GRADES.

B-1. *Type*.—Webbing, cotton, natural, or in colors, shall be of the following types as specified:

Type I-Lightweight.

Type II-Mediumweight (hard texture).

Type IIa—Mediumweight (soft texture).

Type IIb-Medium heavyweight.

Type III-Heavyweight.

Type IV-Extra heavyweight.

Type V—Special use.

Type VI-Air Corps.

B-2. Grade.—Shall be "Firsts."

C. MATERIAL AND WORKMANSHIP.

C-1. Material.—The cotton used in the manufacture of this webbing shall have sufficient length of staple to meet the requirements of this specification. The cotton shall be thoroughly cleaned and carded (combed yarns acceptable), the yarns evenly spun and twisted.

C-2. Workmanship.—The webbing shall be evenly constructed, firmly and tightly woven, and free from any defects affecting appearance or

serviceability.

D. GENERAL REQUIREMENTS.

D-1. See section E.

E. DETAIL REQUIREMENTS.

E-1. Color.—The color of the webbing shall be as specified in the invitation for bids, natural, bleached, or in colors. If the webbing is dyed, it shall be yarn dyed (except types I and IIa which may be piece-dyed) and shall show "fair fastness" to light, weather, and laundering. The stuffer warp may be undyed. The use of sulphur colors is prohibited.

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E-2. Vat dues.—When specially provided for in the invitation for bids, vat dyes shall be used. When vat dyes are required, the webbing shall show "good fastness" when subjected to the tests specified above. E-3. Physical requirements.—The physical requirements shall be as

shown in table I.

TABLE I TYPE I-LIGHTWEIGHT

	nuces	2,000	M	linin	num	threa	ads	b	inim reakingth netho		Apr	oroxim	ate		
Width (inches)	r yard, o	1 nc]	full v	widt	h	Per]	Poun	ds			16/2 16/2 16/2 16/2 16/2 16/2 16/2 16/2		
	Minimum weight per linear yard, ounces	Previous weight designation		ck warp				Wa jaw incl apa	rs 3	Fill- ing, jaws 1 inch apart	t stuffer)				
	Minimum	Previous we	Total warp	Face and back warp	Binder warp	Stuffer warp	Filling	Full width	Per inch	Per inch	Warp (except stuffer) Filling	Stuffer			
14 98 34 76 1 1+6 1½ 1½ 1½ 1½ 2 24 2½ 24 234 3 5½	0. 20 . 25 . 30 . 35 . 40 . 45 . 50 . 60 . 70 . 80 . 90 1. 10 1. 20 2. 10	0. 31 - 43 - 54 - 64 86 	59 74 84 94 109 119 134 159 184 209 234 259 284 309 534	49 61 69 77 89 97 109 129 149 169 209 229 249 429	10 13 15 17 20 22 25 30 35 40 45 50 55 60 105		46 46 46 46 46 46 46 46 46 46 46 46	70 85 100 115 130 145 165 190 220 250 270 330 360	130	80	16/2 16/2 16/2 16/2 16/2 16/2 16/2 16/2	16/2 16/2 16/2 16/2 16/2 16/2 16/2 16/2			

¹This information is for use in connection with drawings and specifications prepared while the previous issues of this specification were in effect.

Notes:

1. Tolerance in width:

Webbings up to 1½ inches in width ±½ inch.

Webbings over 1½ inches in width ±½ inch, -½ inch.

2. 8/4 cotton yarn may be substituted for 10/5 provided the webbing meet all other requirements of this specification.

3. The webbing for type V, 1½ to 2½ inches shall taper from 2½ inches to 1½ inches as shown by sample furnished by contracting officer.

4. Unless otherwise specified, the weight per linear yard of the webbing required by the Air Corps shall be as specified in table I within a tolerance of plus or minus 10 percent.

5. Type IIa is less durable than type II, but is softer and more flexible.

6. Type V—Special Use.—The thickness of the 3-inch 4.20-ounce webbing is to be 0.09-0.115 inch.

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TABLE I—Continued TYPE II-MEDIUMWEIGHT (HARD TEXTURE)

The state of the s													
A power stars	ounces		М	inim	num	threa	ıds	Minimum breaking strength (grab method)			Approximate yarn sizes		
Width (inches)	ır yard,	on 1					Perinch	Pounds					
	Minimum weight per linear yard, ounces	Previous weight designation		ck warp				Wai jaw inch apa	s 3 ies	Fill- ing, jaws 1 inch apart	t stuffer)		0/5
	Minimum w	Previous we	Total warp	Face and back warp	Binder warp	Stuffer warp	Filling	Full width	Per inch	Per inch	Warp (except stuffer)	Filling	
14	. 73 . 81 . 97 1. 13 1. 30 1. 46 1. 62 1. 78 1. 95 2. 43 3. 25 3. 65	1. 40 2. 01 2. 25 2. 80 3. 65 3. 75	24 30 36 42 48 54 60 72 84 96 108 120 213 240 270 336				14 14 14 14 14 14 14 14 14 14 14 14 14 1	160 200 235 275 315 350 385 460 520 585 645 700 760 810		140 140 140 140 140	10/5 10/5 10/5 10/5 10/5 10/5 10/5 10/5	10/5 10/5 10/5 10/5 10/5 10/5 10/5 10/5	
TYP	E II	а—М	EDI	UM	WEI	GH	T (SO	FTI	EX	TURE)		
½ ½ ¾ ¾ ½ 1 1½ 1½ 1½ 1½ 2 2½ 2½ 2½ 2½ 2½ 2½ 2½ 3	. 73 . 81 . 97 1. 13 1. 30 1. 47 1. 62 1. 78		65 74 92 101 119 128 146 173 200 227 254 281 308 335	47 53 65 71 83 89 101 119 137 155 173 191 209 227	6 7 9 10 12 13 15 18 21 24 27 30 33 36	12 14 18 20 24 26 30 36 42 48 54 60 66 72	36 36 36 36 36 36 36 36 36 36 36	160 195 230 265 300 335 370 440 510 580 645 710 775 840			12/2 12/2 12/2 12/2 12/2 12/2 12/2 12/2	12/2 12/2 12/2 12/2 12/2 12/2 12/2 12/2	8/3 8/3 8/3 8/3 8/3 8/3 8/3 8/3

See footnote 1 on p. 2. [No. 6-185C]

TABLE I—Continued
TYPE IIb—MEDIUM HEAVYWEIGHT

shows to sold in	ounces		M	inim	um	threa	ıds	stren	inim reaki gth etho	ng (grab		roximate rn sizes	
Width (inches)	r yard,	1 uc	Full width				Perinch	Pounds					
	Minimum weight per linear yard, ounces	Previous weight designation		ck warp				War jaw inch apa	s 3 ies	Fill- ing, jaws 1 inch apart	ot stuffer)		
	Minimum w	Previous we	Total warp	Face and back warp	Binder warp	Stuffer warp	Filling	Full width	Por inch	Per inch	Warp (except stuffer)	Filling	Stuffer
152 56 34 76 1 114 115 134 2	0. 48 .60 .72 .84 .96 1. 20 1. 44 1. 68 1. 92		45 54 63 72 81 99 117 135 153	41 49 57 65 73 89 105 121 137	4 5 6 7 8 10 12 14 16		24 24 24 24 24 24 24 24 24 24 24	420 475 590 700 815 925			10/5 10/5 10/5 10/5 10/5 10/5 10/5 10/5	10/3 10/3 10/3 10/3 10/3 10/3 10/3 10/3	
2½ 2½ 2¾ 3	2. 16 2. 40 2. 64 2. 88		171 189 207 225	153 169 185 201	18 20 22 24		24 24	1,040 1,150 1,265 1,375			10/5 10/5 10/5 10/5	10/3 10/3 10/3 10/3	
TYPE III—HEAVYWEIGHT													
%34	1.00 1.20	1.00	85	57 65	5 6	12 14					10/5 10/5	10/5 10/5	10/5 4/4
1	1. 33	1. 33	107	81	8						10/5	10/5	10/5
11/4	2. 00 2. 40	{1.60 2.72	129 }151	97 113	10 12		26 26				10/5 10/5	10/5 10/5	4/4
134	2. 40		173	129	14		26	980			10/5	10/5	4/4
21/2	2.65 4.00	2.87	195 239	145	16	34	26 26	1, 100 1, 360			10/5	10/5 10/5	
3	4. 80		283	209	24		26	1, 560			10/5	10/5	

See footnote 1 on p. 2. [No. 6-185C]

TABLE I—Continued TYPE IV—EXTRA HEAVYWEIGHT

TIPE IV—EXIKA HEAVI WEIGHT															
Width (inches)	nces		М	linin	num	threa	ads	Minimum breaking strength (grab method)			Approximate yarn sizes				
	yard on	1 u	I	Full v	widtl	n	Per inch	1	Poun	ds		1			
	Minimum weight perlinear yard ounces	Previous weight designation		ck warp	Binder warp	Stuffer warp		jaws, 3 ing inches jaw apart 1 in		Fill- ing, jaws 1 inch apart	t stuffer)				
	Minimum w	Previous wei	Total warp	Face and back warp			Filling	Full width	Per inch	Per inch	Warp (except stuffer)	Filling	Stuffer		
11/4	1. 50 1. 90 2. 09 3. 25 3. 16 4. 10 4. 50	1. 50 1. 90 3. 25 3. 50	98 113 143 173 203 233 263	129	5 6 8 10 12 14 16	36 42 54 66 78 90 102	26 26	650 750 900 1,300 1,300 1,575 1,850			10/5 10/5 10/5 10/5 10/5 10/5 10/5	10/5 10/5 10/5 10/5 10/5 10/5 10/5	4/4 4/4 10/5 4/4 10/5 4/4 4/4		
TYPE V-SPECIAL USE															
1 1¼ 1¼ 1¼ 1¼ 2 2 2¼ 3	0. 64 2. 50 1. 60 2. 00 . 35 1. 50 1. 20 3. 40 4. 20 3. 20	1. 63 3. 75	159 135 88 109 130 128 238 276 246 230	135 76 94 104 167 228	10 	24	26	600 400 500 160 500 500			14/2 10/5 10/5 10/5 24/2 10/4 20/3 10/5 5 ply 5 ply	14/2 10/5 10/5 10/5 24/2 10/4 10/5 10/5 4 ply 3 ply	10/4		

See footnote 1 on p. 2. [No. 6-185C]

TYPE VI-AIR CORPS

Air Corps designation	Width (inches)	Maximum weight per linear yard (ounces)	Thickness (inches)	Picks per inch (minimum)	Breaking strength (minimum)
C-1	9/6±1/32 1±1/32 11/4±1/32 3±1/4 5±1/4 13/4±1/16 3±1/4 1±1/16 13/4±1/16 13/4±1/16	. 75 . 90 2. 50 4. 30 2. 10 3. 00 4. 65 1. 35 1. 25	0.04-0.05 .0405 .0405 .0510 .0510 .0709 .1417 .0709 .09115 .09110 .0405 .1417	20 20 20 16 16 11 24 10 12 26 20 22	350 575 750 1, 900 3, 100 1, 800 2, 600 2, 900 4, 500 1, 000 1, 000 3, 400

¹ Type C-8 webbing shall have 2 marker threads, black in color, in the center warp of the webbing. They shall be the same material and construction as the other warp yarns.

E-4: Weave-

E-4a. Weave for type I shall be composed of two ground warps (face and back), one binder warp and one filling. The face warp shall weave plain weave with the picks that show on the face. The back warp shall weave plain weave with the picks that show on the back. The binder warp shall weave plain weave throughout. There shall be seven ground warp threads on one edge and six ground warp threads on the other.

E-4b. Weave for type II shall be a plain weave with two warp threads weaving as one, except that at the selvages there shall be

three warp threads weaving singly.

E-4c. Weave for type IIa shall be the same as for type I. except there shall be two stuffer warp threads between each binder and one on each edge; nine ground warp threads on one edge and eight ground warp threads on the other.

E-4d. Weave for type IIb shall be the same as type I, except there shall be nine ground warp threads on one edge and eight

ground warp threads on the other.

E-4e. Weave for type III shall be the same as for type I, except that there shall be 2 ends of ground warp weaving as 1; there shall be 2 stuffer warp threads between each binder and on each edge and 12 ground warp threads weaving singly on the other.

E-4f. Weave for type IV shall be the same as for type III, except that there shall be six stuffer warp threads between each binder

and on each edge.

E-4g. Weaves for type V.—

For 3/4 inch, 0.64 ounce.—Shall be the same as type I, except it shall have six stuffer warp threads between each binder and three on each edge. There shall be nine ground warp threads on one edge and eight ground warp threads on the other.

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For 115 inches to 21/4 inches, 2.50 ounces.—Shall be a tubular

For 1 inch, 1.60 ounces and 11/4 inches, 2 ounces.—Shall be composed of three ground warps (face, middle, and back), one binder warp and one filling. The face warp shall weave plain weave with the picks that show on the face. The back warp shall weave plain weave with the picks that show on the back. The middle warp shall weave plain weave with the picks that weave in the middle. The binder warp shall weave three up (one face, one middle, one face) and three down (one back, one middle, one back). Each binder shall weave the same so as to form a filling rib effect on both face and back of the webbing. There shall be five ground warp threads on each side so as to form a square edge. The filling shall weave as follows:

1 pick on face.

1 pick in middle.

1 pick on face. 1 pick on back.

1 pick in middle.

1 pick on back.

For 11/8 inches, 0.35 ounce.—Shall be a 2/2 herringbone twill, 44 ends to the right, 42 ends to the left, and 44 ends to the

For 2 inches, 1.20 ounces,-

12 ends of 2-

2 twill to the right.

12 ends of 2-2 warp rib starting with 2 up.

12 ends of 2-2 warp rib starting with 1 up.

166 ends of 2-

2 twill to the right.

12 ends of 2-2 warp rib starting with 1 up. 12 ends of 2-2 warp rib starting with 2 up.

12 ends of 2-

2 twill to the right.

For 21/4 inches, 3.40 ounces.—Shall be the same as for type I. except that there shall be two ends of ground warp weaving as one; 11 warp ribs formed by having 9 stuffer warp theads in each rib with at least one binder between each rib; 4 ground warp threads weaving singly on one edge and 3 ground warp threads weaving singly on the other.

For 3 inches, 4.20 ounces.—Shall be the same as type I, except that there shall be two ends of ground warp weaving as one. There shall be one binder end after each 12 warp ends. The binder warp shall weave plain weave throughout.

For 5 inch, 3.20 ounces.—Shall be a conventional two up and two down herringbone twill with one reversal of twill in the full width of the webbing.

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E-4h. Weave for type VI.—C-1 to C-6, inclusive, C-8, C-9, and C-12 shall be a conventional two up and two down herringbone twill with one reversal of twill in full width of the webbing.

The weave for C-7 and C-13 shall be in accordance with figure I. The material shall be a two-ply fabric, interwoven 2 up and 4 down. warp face, herringbone twill the full width of the webbing.

The weave for C-11 shall be in accordance with figure II. The material shall be a two-ply fabric, interwoven 1 up and 3 down warp

face, herringbone twill the full width of the webbing.

E-5. Variations.—Heavier yarns may be used provided that the minimum texture is maintained. The contracting officer may authorize the use of weaves varying from the above, the use of finer yarns, accompanied by a proportionate higher texture, the omission of the stuffer warp, provided that the desired appearance, firmness, and other characteristics are maintained.

E-6. Sizing.—The webbing shall contain not more than 5-percent sizing when tested as outlined in section V, of Federal Specification

CCC-T-191.

E-7. Length of each roll.—Unless otherwise specified in invitation for bids, webbing shall be put up in rolls as follows, each roll to contain not more than three pieces:

Type I-Lightweight. Not more than 100 yards per roll.

Type II-Mediumweight (hard texture). Not more than 100 yards per roll.

Type IIa-Mediumweight (soft texture). Not more than 100 yards per roll.

Type IIb-Medium heavyweight. Not more than 80 yards

per roll.

Tune III—Heavyweight. Not more than 60 yards per roll. Tupe IV—Extra heavyweight. Not more than 50 yards per roll.

Type V-Special use:

- 1. 34 inch, 0.64 ounce. Not more than 100 yards per roll. 2. 115/16 inch to 21/4 inches 2.50 ounces. Not more than 60 yards per roll.
- 3. 1 inch, 1.60 ounces. Not more than 60 yards per roll.
- 4. 11/4 inches, 2.00 ounces. Not more than 60 yards per roll.
- 5. 1% inches, 0.35 ounces. Not more than 100 yards per
- 6. 14 inches, 1.50 ounces. Not more than 100 yards per roll.
- 7. 2 inches, 1.20 ounces. Not more than 80 yards per roll. 8. 21/4 inches, 3.40 ounces. May be furnished in 26, 52 or 78 yard rolls.
- 9. 3 inches, 4.20 ounces. Not more than 100 yards per
- 10. 5 inches, 3.20 ounces. Not more than 100 yards per roll.

Type VI-Air Corps.—Webbing shall be delivered in flat rolls containing approximately 100 yards each except types C-7 [No. 6-185C]

and C-13 which shall be delivered in flat rolls containing approximately 50 yards each. Each roll shall contain not more than two pieces, and no piece shall be less than ten yards in length.

E-8. Waterproofing.—When invitation for bids specifies that webbing shall be waterproofed, and unless otherwise specified, the waterproofing ingredients shall thoroughly impregnate the fabric so that it shall be water and mildew resistant, shall leave the material soft and pliable under various climatic conditions and shall not crack, rub off, or stain.

E-9. Tickets.—Each roll shall have a ticket attached to the selvage with not finer than fivefold cotton string doubled to not less than 8 inches long. The ticket shall be made of heavy cardboard and shall be provided with a metal eyelet for attaching the tying cord. The ticket shall be legibly printed with indelible ink and contain

the following information:

Type, width of webbing. Name of contractor. Date and number of contract. Specification number. Stock number. Name of contracting office. Actual yards _____ Net vards _____

In addition, a blank space shall be provided for the inspector's stamp. E-10. Contractor's inspection.—The contractor shall thoroughly inspect the webbing for compliance with this specification prior to submitting it to the United States Government for final inspection.

F. METHODS OF SAMPLING, INSPECTION, AND TESTS.

F-1. Sampling.—Samples of any materials, components, etc., not furnished by the United States Government, entering into the manufacture of the articles covered herein, shall be selected from time to time by the Government inspector and carefully examined and tests made to determine if they are in accordance with this specification.

F-2. Inspection.—Inspection may be made throughout the entire process of manufacture. The passing as satisfactory of any detail of construction or material shall not relieve the contractor of responsibility for faulty workmanship or material which may be discovered at any time prior to final acceptance. Final inspection of the finished articles shall be made either at point of production or at point of delivery designated in the contract or purchase order of procuring agency. In case of factory inspection, every facility shall be afforded inspectors, by the manufacturer, for the prosecution of their work.

F-3. Tests.—The methods of testing described in Federal Specifica-

tion CCC-T-191, wherever applicable, shall be followed.

F-3a. Fastness to weather.—Samples to be exposed continually to the elements for 10, 20, and 30 days, unless otherwise specified, in a horizontal position on a roof or other unprotected place.

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F-3b. Other color tests to be conducted by procedures of paragraphs 1a to 1b, inclusive; paragraphs 2a to 2c, inclusive; and paragraph 4 of section XIII of Federal Specification CCC-T-191.

F-3c. Sulphur test.—Dissolve one gram of lead acetate in 20 cubic centimers of distilled water and clear with a few drops of acetic acid. A piece of filter paper, approximately 4 inches square, is thoroughly saturated with the lead acetate solution immediately

before accomplishing the following:

Approximately 10 grams of the dyed sample, finely cut, is dropped into an Erlenmeyer flask containing a solution of 30 cubic centimeters of ½0 normal hydrochloric acid and one-half gram of metallic zinc. The filter paper prepared as above, is placed over the mouth of the flask and the acid solution heated to a temperature of 100° F. plus or minus 10° F. (37.8° C. plus or minus 5.5° C.) for a period of 30 minutes. No brown deposit shall be formed on the filter paper during this period.

F-3d. Waterproofing test.—Place 1 cubic centimeter of water on the surface of the webbing to be tested (the water should be poured on from a height of about 1/4 inch by means of a pipette or an eye dropper). Shake off the water at the end of 3 minutes, snap the webbing once by hand to remove loosely adhering water droplets,

examine the surface for spotting or wetting.

The webbing will be considered satisfactory providing there is no penetration whatsoever and only a slight sticking or spotting of the upper surface.

G. PACKAGING, PACKING, AND MARKING.

G-1. Packaging.—Unless otherwise specified in invitation for bids, the webbing shall be put up in rolls as specified in paragraph E-7.

G-2. Packing.—Unless otherwise specified in invitation for bids, at the discretion of contractor, webbing may be prepared for shipment by either of the following methods:

G-2a. In wooden commercial containers so constructed as to insure acceptance by common or other carriers, for safe transportation, at lowest rate, to the point of delivery.

G-2b. In bundles constructed as follows:

G-2b (1). One piece of heavy cardboard shall be placed at each end of bundle. The bundle shall then be wrapped in No. 1 kraft paper, 120 pounds per 1,000 sheets, based on size 24 x 36 inches and securely tied.

G-2b (2). Over the first wrapper shall be placed a wrapping of type II duplex waterproof kraft paper conforming to United States

Army Specification 19-60.

G-2b (3). Bundles shall be covered with burlap weighing 12 ounces per linear yard based on 40-inch width or 10.8 ounces per square yard. Thread count shall be not less than 11 threads per inch in filling or warp.

G-2b (4). Stitching shall be done with either cotton or jute twine,

having not less than 40 pounds tensile strength.

G-2b (5). Rolls of webbing in each box or bundle shall contain approximately the same number of yards.

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G-2b (6). Bundles shall be marked: "Use no hooks."

G-3. Export shipment for Air Corps.—The rolls shall be packed for export shipment in accordance with United States Army Specification 23-54.

G-4. Marking.-

G-4a. The description of contents, etc., required on the ends of each case shall be in the following form; the lettering to be approximately 4 inch in height, viz.:

Stock number.

Webbing, cotton, natural, or in colors.

Quantity.

Type and width.

Specification number.

Name of contractor.

Contract number. Contract date.

Name of contracting office.

G-4b. The shipping containers shall be marked to conform to the requirements of United States Army Specification 100-2, Standard Specifications for Marking Shipments.

H. NOTES.

H-1. Before production is commenced, unless otherwise specified in the invitation for bids, a sample of the finished webbing shall be submitted to the contracting officer for approval.

H-2. When webbing in commercial lengths on spools or tubes is desired instead of in rolls, the invitation for bids will so state.

H-3. This webbing will be used in the making of articles of clothing and equipage for the Army.

H-4. The use of this specification for the type of article covered

herein is mandatory on all procuring agencies of the Army.

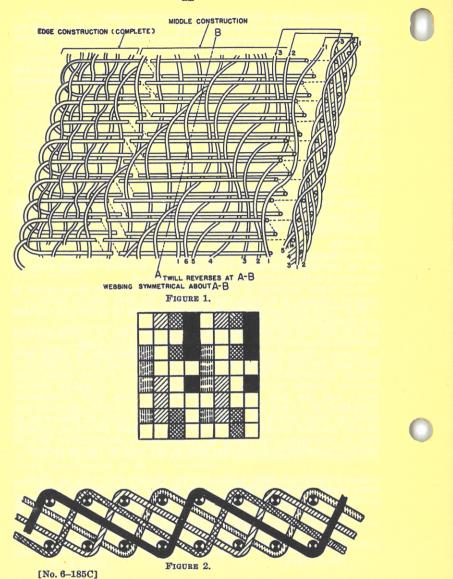
Notice.—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

NOTE.—Unless otherwise specified in the invitation for bids, or purchase order, copies of this specification may be obtained at the following points:

Jersey City Quartermaster Depot, 26 Exchange Place, Jersey City, N. J. Chicago Quartermaster Depot, 1819 West Pershing Road, Chicago, Ill. San Francisco General Depot, Fort Mason, San Francisco, Calif. San Antonio General Depot, Fort Sam Houston, Tex. Jeffersonville Quartermaster Depot, Jeffersonville, Ind.

Kansas City Quartermaster Depot, Independence and Hardesty Aves., Kansas City, Mo.

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