

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

SHOP SET, SPARE PARTS STORAGE,

FIELD MAINTENANCE, SET NO. 2

(NSN 4940-00-322-6017)

INSTALLATION IN ONE M35A2 CARGO TRUCK

WARNING

All electrically powered tools and equipment must be grounded prior to use.

Drill bits can fracture or break while in use. Wear safety glasses at all times when drilling holes.

TECHNICAL BULLETIN
NO. 9-4940-332-30

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D C 11 March 1970

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SHOP SET, SPARE PARTS STORAGE,

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INSTALLATION IN ONE M35A2 CARGO TRUCK

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*This bulletin supersedes TB 9-4940-332-30, dated 18 March 1970.

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1. General

Instructions contained in this bulletin are to be used as a guide for installation of set no. 2, field maintenance spare parts storage shop set (NSN 4940-00-322-6017) in one M35A2 cargo truck (fig. 1).

b. Slight variations to the installation instructions may be made at the discretion of the officer in charge.

Complete lists of items contained in this shop are found in SC 4940-95-CL-A10.

d. Personnel performing this installation should have a practical knowledge of electricity.

Items not mentioned in this bulletin, that may be components of this shop, may be stowed in storage cabinets and drawers or secured in such a manner as to avoid damage in transit.

f. All dimensions, fastener sizes, and hardware sizes are in inches.

g. When entering the shop, curbside is at right and roadside is at left.

2. Warnings and Cautions

WARNING

All electrically powered tools and equipment must be grounded prior to use.

Drill bits can fracture or break while in use. Wear safety glasses at all times when drilling holes.

CAUTION

Special care should be exercised to avoid damage to electrical connectors, wiring, or electrical equipment.

To preserve its waterproof characteristics, precautions should be taken not to puncture the outer skin when drilling holes into the walls or floor of the shop. Coat underside of vehicle body with coating compound (UNDER-COATING TT-C-520, NSN 8030-00-221-1834) where mounting hardware projects through floor.

3. Location of Equipment

a. Location of equipment installed or stowed in M35A2 cargo truck is referenced in figures 2 thru 5.

(1) Refer to table 1 for hardware required for installation.

(2) Refer to table 2 for components to be mounted.

(3) Refer to table 3 for electrical components to be mounted.

b. Refer to table 4 for standard conversion chart.

3. Location of Equipment--Continued

Table 1. Mounting Hardware

MS/part no.	Size and description	Qty	Application
AN970-4	1/4-in. Flat Washer	6	Fire extinguisher
MS3367-3-0	12.00-in. Tiedown Strap	28	Power cable assemblies
MS16992-521	5/16-in. Hex Head Lag Bolt X 1-1/4L	8	3-shelf storage cabinets
MS27183-11	5/16-in. Flat Washer	40	Storage cabinets
MS35190-289	1/4-20 UNC-2A Countersunk Head Machine Screw x 3/4 L	3	Fire extinguisher
MS35338-44	1/4-in. Lockwasher	3	Fire extinguisher
MS35338-45	5/16-in. LockWasher	48	Storage cabinets
MS35338-47	7/16-in. LockWasher	10	Truck bows
MS51861-49	#10 Thread Forming Screw x 1.00 L	20	Lampholder, duplex junction boxes, switch box
MS51967-2	1/4-20 UNC-2B Hex Nut	3	Fire extinguisher
MS51967-5	5/16-18 UNC-2B Hex Nut	40	Storage cabinets
MS51967-11	7/16-14 UNC-2B Hex Nut	10	Truck bows
MS90725-34	5/16-18 UNC-2A Hex Head Capscrew x 1.00L	40	Storage cabinets
MS90725-88	7/16-14 UNC-2A Hex Head Capscrew x 1-3/8 L	10	Truck bows
7550588-6	12.00-in. Retaining Strap	2	Extension lights

3. Location of Equipment--Continued

Table 2. Components to be Mounted

NSN	Qty	Description	Figure no.
7125-00-559-6223	2	CABINET, STORAGE: 2 shelves	2-4-5
7125-00-693-4352	6	CABINET, STORAGE: 12 drawers	2-4-5
7125-00-693-4353	2	CABINET, STORAGE: 24 drawers	2-4
7125-00-449-6862	2	CABINET, STORAGE: 3 shelves	2-4-5
4210-00-270-4512	1	EXTINGUISHER, FIRE, CARBON DIOXIDE	2-5
6230-00-729-9259	2	LIGHT, EXTENSION: 25 ft lg	2-5

Table 3. Electrical Components to be Mounted

Part No. or NSN	Qty	Description	Figure no.
APPLETON 15233	16	BOX CONNECTOR: type I, class 4, style M, (W-F-406)	7-9 thru 13
4910-00-800-1405	1	CABLE ASSEMBLY, ELECTRICAL POWER: (MIL-C-45820)	7
11021163	1	CABLE ASSEMBLY, POWER consisting of one each of the following: 44-in flex. cable (J-C-580) connector (W-C-596/92-1) box connector (W-F-406)	6-8-9
11021164	1	CABLE ASSEMBLY, POWER consisting of one each of the following: 44-in flex. cable (J-C-580) plug (W-C-596/91-1) box connector (W-F-406)	6-8-9
11021165	1	CABLE ASSEMBLY, POWER consisting of one each of the following: 37.50-in flex. cable (J-C-580) plug (W-C-596/91-1) box connector (W-F-406)	6-7-9

3. Location of Equipment--Continued

Table 3. Electrical Components to be Mounted--Continued

Part No. or NSN	Qty	Description	Figure no.
11021166	1	CABLE ASSEMBLY, POWER consisting of one each of the following: 37.50-in flex. cable (J-C-580) connector (W-C-596/92-1) box connector (W-F-406)	6-7-9
GE-GLD0533	2	CONNECTOR, CABLE OUTLET: 2-pole, 3-wire, 30 amp, grounding, 125 V, 50/60 Hz (W-C-596/92-1)	10-13
GE-GLD0531	2	CONNECTOR, PLUG, STRAIGHT: 2-pole, 3-wire, 30 amp, grounding, 125 V, 50/60 Hz (W-C-596/91-1)	11-12
6145-00-295-0855	42 ft	CABLE, FLEXIBLE: type S06CF3/10SRNJK (J-C-580)	6 thru 13
APPLETON 2510	4	COVER, JUNCTION BOX, DUPLEX: type VIII, size F, style 59 (W-J-800)	7-8
5975-00-281-0090	4	JUNCTION BOX, DUPLEX: type II (W-J-800)	6 thru 9
APPLETON 40-3/4	4	JUNCTION BOX, LAMPHOLDER: type I (W-J-800)	6 thru 9
GE-5740-7	4	LAMPHOLDER (GENERAL ELECTRIC)	7-8
5935-01-058-9269	4	CONNECTOR, RECEPTACLE: 2-pole, 3-wire (W-C-596/40)	7-8
SQUARE D D221NRB	1	SWITCH BOX (ENCLOSED): surface mtd, type NDS, class 2, design 2SN BOX, 120/240 V ac, 30 amp (W-S-865)	6-7-9
MS20659-141	27	TERMINAL LUG	9

4. Installation

a. Follow steps (1) thru (11) below for equipment installation in M35A2 cargo truck.

(1) Mark and drill four 0.34-in. diameter holes into bottom plate of storage cabinet(s) without holes. Locate at the four corners, allowing for minimum required clearance for 5/16-in. hex head capscrews.

(2) Position five storage cabinets: two 12-drawer (7125-00-693-4352), two 24-drawer (7125-00-693-4353), and one 3-drawer (7125-00-559-6223), on right side of truck in accordance with figures 2 and 4.

CAUTION

Be sure storage cabinet drawers adjacent to hole locations are removed before drilling.

(3) Using the holes in the storage cabinet bottoms as templates, mark and drill twenty 0.34-in. diameter holes through truck floor in accordance with figure 3. Secure the storage cabinets to the floor, using twenty 5/16- x 1-in. hex head capscrews (MS90725-34), twenty 5/16-in. flat washers (MS27183-11), twenty 5/16-in. lockwashers (MS35338-45), and twenty 5/16-in. hex nuts (MS51967-5).

(4) Position five storage cabinets: four 12-drawer (7125-00-693-4352) and one 3-drawer (7125-00-559-6223), on left side of truck in accordance with figures 2 and 5.

CAUTION

Be sure storage cabinet drawers adjacent to hole locations are removed before drilling.

(5) Repeat step 3. Secure the storage cabinets to floor, duplicating the hardware listed in step 3.

(6) Position one 3-shelf storage cabinet (7125-00-449-6862) on top of 24-drawer storage cabinet on the right side of truck in accordance with figures 2 and 4.

(7) Mark and drill four 0.34-in. diameter holes through the 3-shelf storage cabinet bottom frame. Using the drilled holes in the bottom frame as a template, mark and drill four 0.22-in. diameter pilot holes into the 24-drawer storage cabinet wood top. Secure, using four 5/16- x 1-1/4-in. hex head lag bolts (MS16992-521) and four 5/16-in. lockwashers (MS35338-45).

(8) Position one 3-shelf storage cabinet (7125-00-449-6862) on top of 12-drawer storage cabinet on the left side of truck in accordance with figures 2 and 5.

(9) Repeat step 7. Secure 3-shelf storage cabinet to wooden top of 12-drawer storage cabinet, duplicating the hardware listed in step 7.

(10) Position mounting bracket of fire extinguisher (4210-00-270-4512) on the left, side of previously installed 3-shelf storage cabinet in accordance with figures 2 and 5. Mark and drill three 0.28-in. diameter holes in bracket. Secure mounting bracket to wire mesh wall of 3-shelf storage cabinet, using three 1/4- x 3/4-in. countersunk head machine screws (MS35190-289), six 1/4-in. flat washers (AN970-4) (three flat washers placed on inside of 3-shelf storage cabinet mesh wall), three 1/4-in. lockwashers (MS35338-44), and three 1/4-in. hex nuts (MS51967-2). Install fire extinguisher in mounting bracket.

(11) Position two extension lights (6230-00-729-9259) on truck slat in accordance with figures 2 and 5. Secure to slat, using two 12-in. retaining straps (7550588-6).

4. Installation--Continued

b. Follow steps (1) thru (14) below for electrical component installation in M35A2 cargo truck.

(1) To provide sufficient headroom for personnel to work in the M35A2 cargo truck, raise the bows 18 inches to a total height of 78 inches in accordance with figures 7 and 8, and drill ten 0.44-in. diameter holes through bow sockets and bows.

(2) Secure bows in place with ten 7/16- x 1-3/8-in. hex head capscrews (MS90725-88), ten 7/16-in. lockwashers (MS35338-47), and ten 7/16-in. hex nuts (MS51967-11).

(3) Position switch box (Square D D221NRB) on the two top slats in accordance with figure 7. Using holes of switch box as a template, mark and drill four 0.12-in. diameter pilot holes. Secure switch box to truck slat with four #10 x 1-in. thread forming screws (MS51861-49).

(4) Install electrical power cable assembly (4910-00-800-1405) through box connector in bottom of switch box and connect to circuit breaker inside switch box in accordance with figure 7.

(5) Position four lampholder junction boxes (Appleton 40-3/4) on inner side of second and fourth bows as shown in figure 6. Mark and drill eight 0.12-in. diameter pilot holes and secure lampholder junction boxes to bows with eight #10 x 1-in. thread forming screws (MS51861-49).

(6) Position four duplex junction boxes (5975-00-281-0090) on bows as shown in figures 7 and 8. Mark and drill eight 0.12-in. diameter pilot holes and secure duplex junction boxes to bows with eight #10 x 1-in. thread forming screws (MS51861-49).

(7) Remove two knockout slugs from each lampholder junction box and

each duplex junction box in line with bows. Install twelve box connectors (Appleton 15233) in the junction boxes and install jam nuts on box connectors in accordance with figure 9.

(8) Fabricate four power cable assemblies (11021163, 11021164, 11021165, and 11021166) using approximately 14 feet of flexible cable (6145-00-295-0855). Install four box connectors (Appleton 15233). Refer to figures 10 thru 13 for individual power cable assembly construction, and install in accordance with figures 6 thru 9.

(9) Install 28 feet of flexible cable (6145-00-295-0855) through duplex junction boxes and lampholder junction boxes on second and fourth bows. Refer to figures 6 thru 8. Strip a 3-in. length of outside insulation from flexible cable on inside of each junction box. Strip 1 inch of insulation from each individual wire and twist wire to fit terminal lugs (MS20659-141). Install and crimp terminal lugs in place in accordance with figure 9.

(10) Connect three wires to lampholder (GE-5740-7) and secure to lampholder junction box (Appleton 40-3/4) with screws provided with lampholder junction box. Repeat this step for remaining three lampholder junction boxes. Refer to figures 6 thru 9.

(11) Install four grounded duplex receptacles (5935-01-058-9269) after stripping 3 inches of outside insulation from flexible cable. Refer to figure 9. Strip 1 inch of insulation from each individual wire and twist wires to fit terminal lugs (MS20659-141). Install terminal lugs and crimp. Connect wires to grounded duplex receptacles, and secure grounded duplex receptacles to duplex junction boxes with screws provided with grounded duplex receptacles in accordance with figures 6 thru 9.

4. Installation--Continued

(12) Install four duplex junction box covers (Appleton 2510) to duplex junction boxes (5975-00-281-0090) and secure with screws provided in duplex junction box covers. Refer to figures 7 and 8.

(13) Tighten all box connectors (Appleton 15233) to secure flexible

cords in junction boxes and switch box. Refer to figures 6 thru 9.

(14) Secure power cable assemblies to bows and truck rack with twenty-eight tiedown straps (MS3367-3) in accordance with figures 6 thru 8.

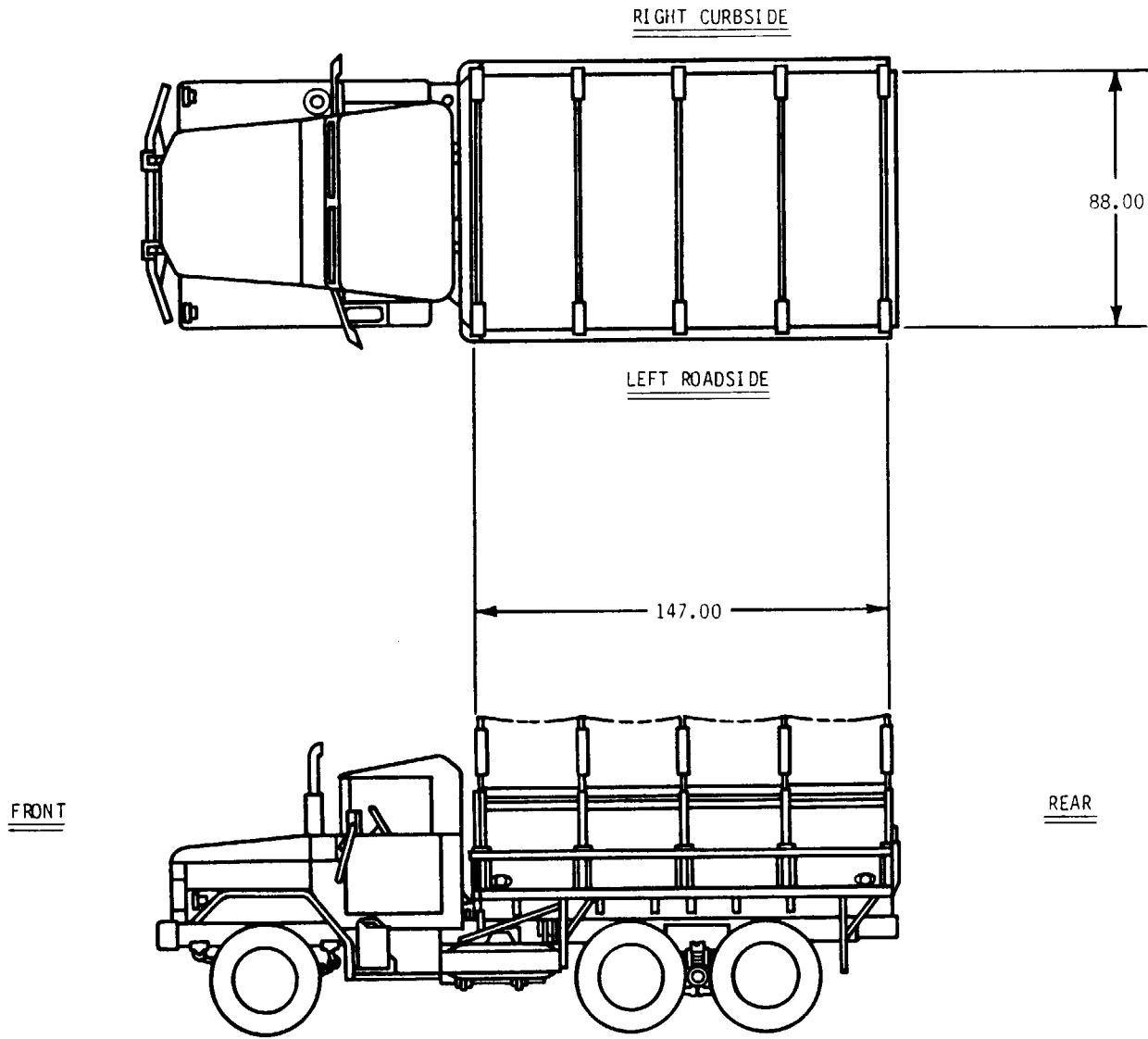


Figure 1. Cargo Truck, M35A2.

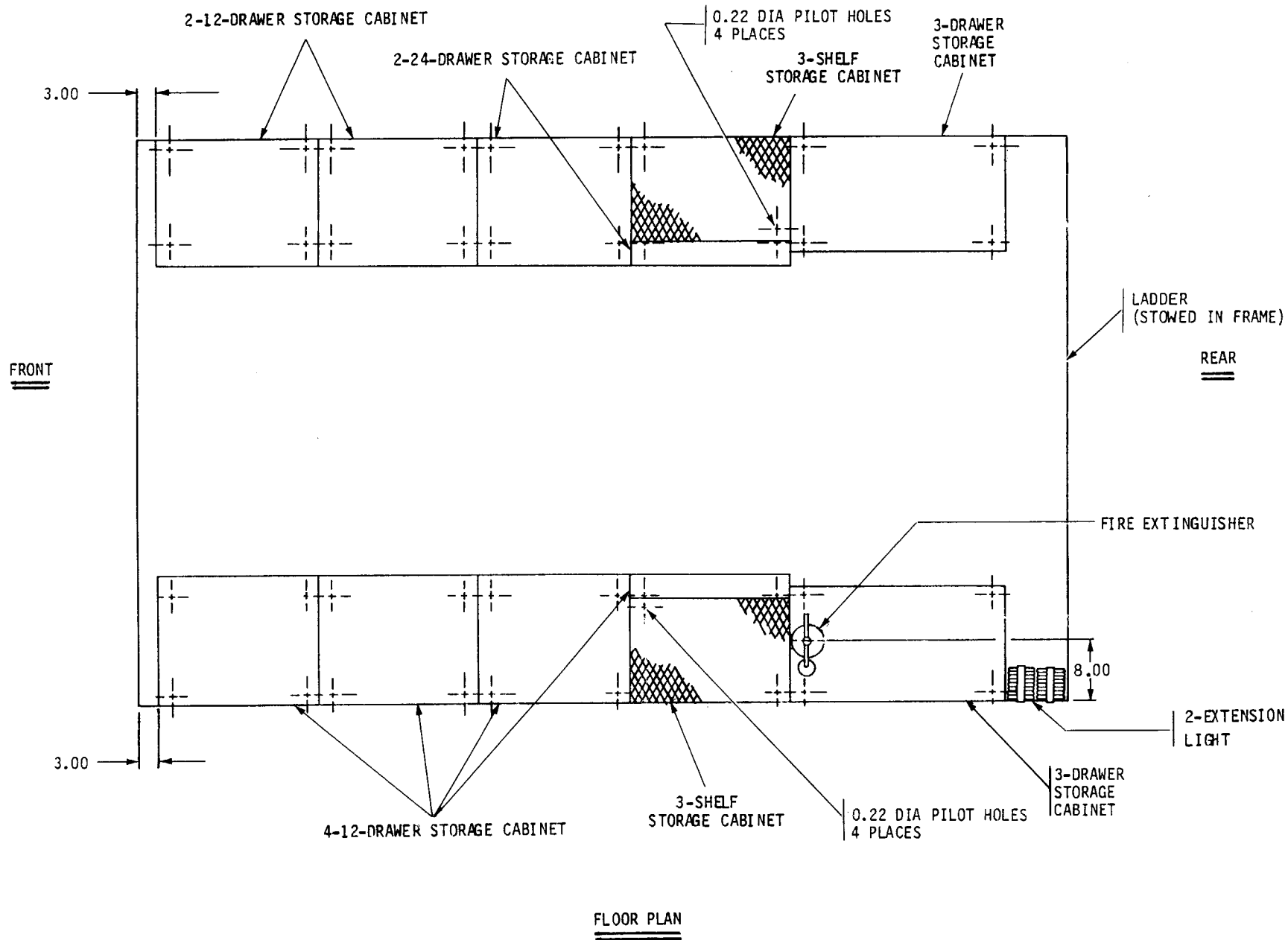


Figure 2. Components to be Mounted, M35A2, Floor Plan.

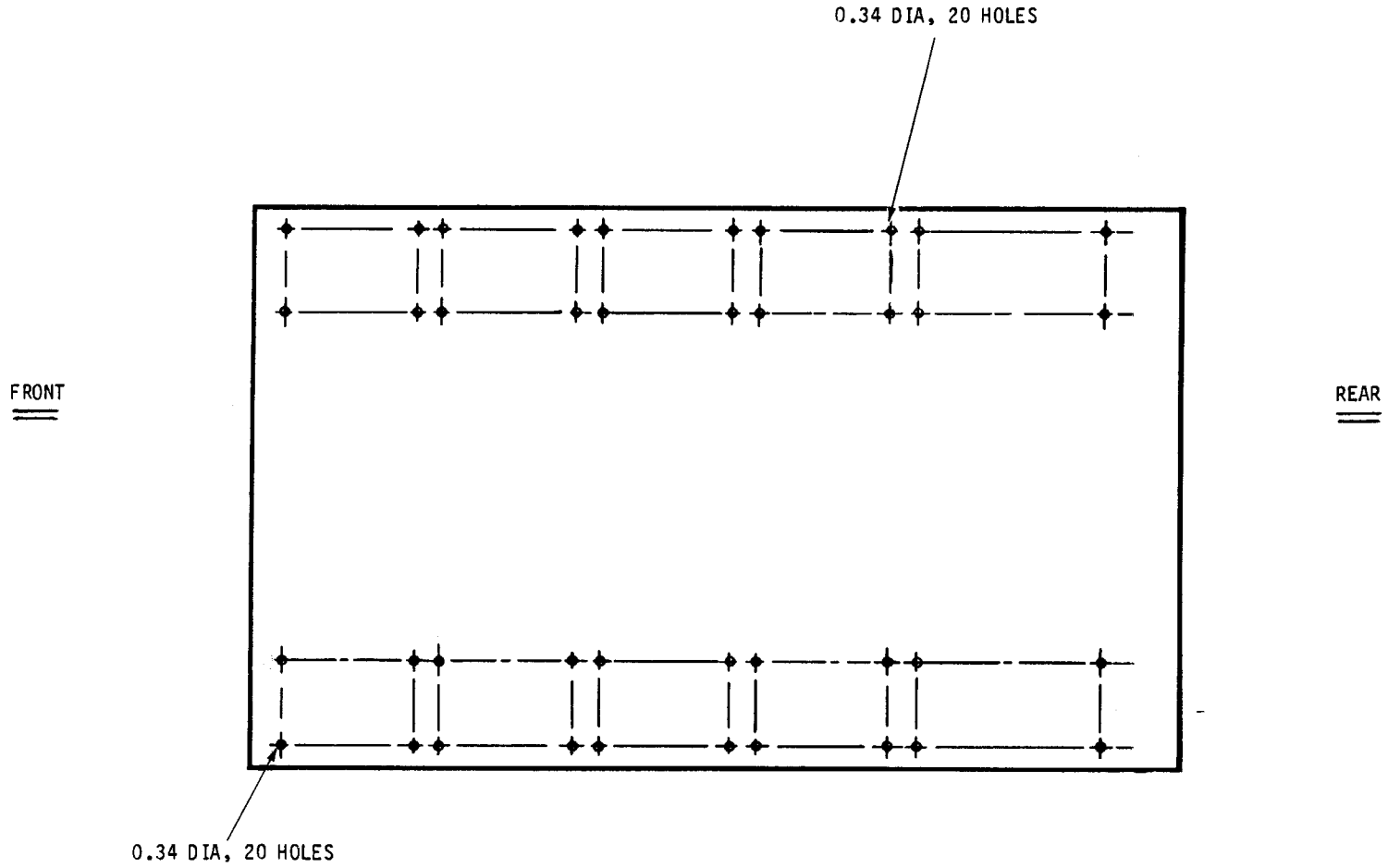


Figure 3. Hole Dimensions for Floor Mounted Storage Cabinets, M35A2.

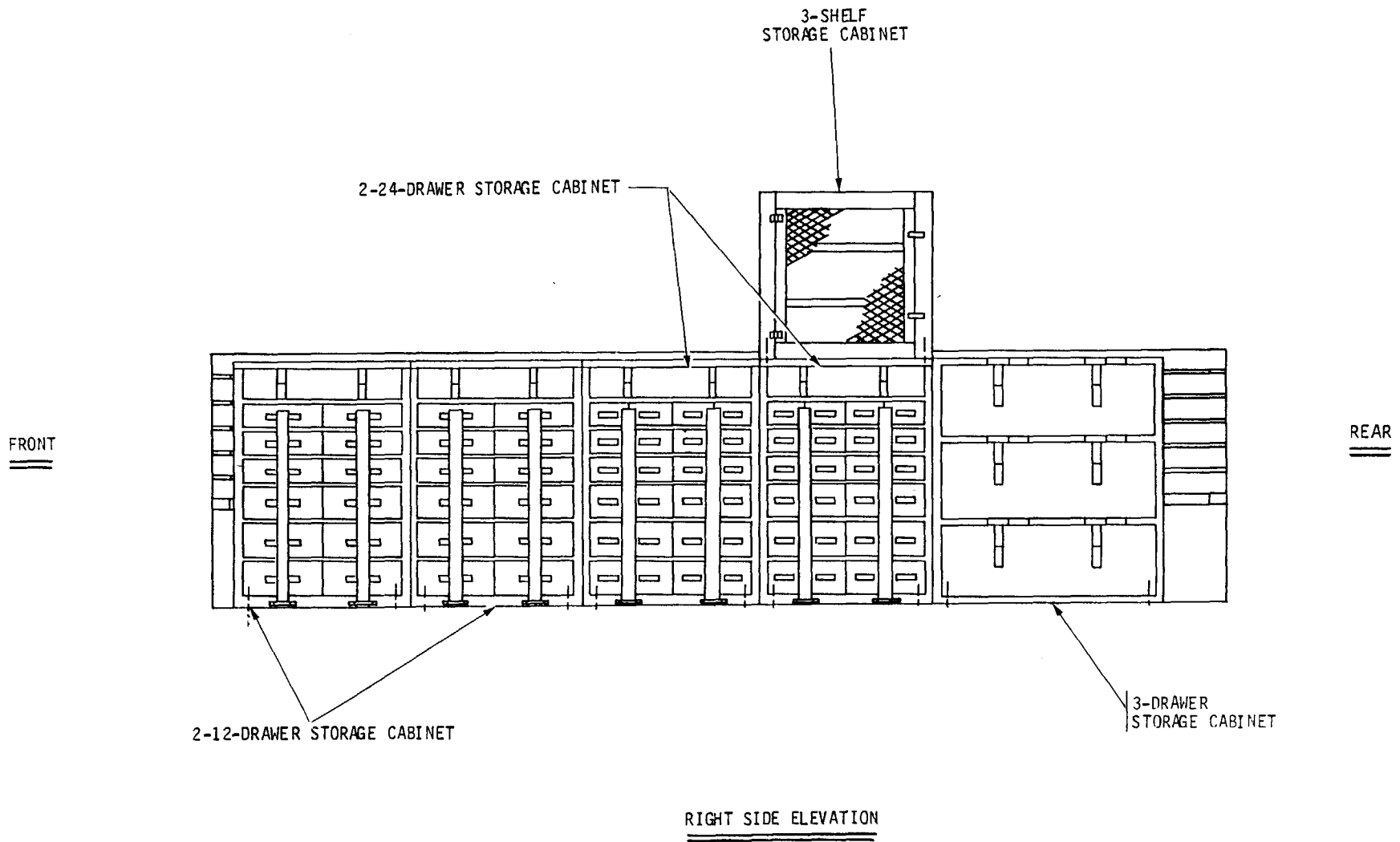


Figure 4. Components to be Mounted, M35A2, Right Side Elevation.

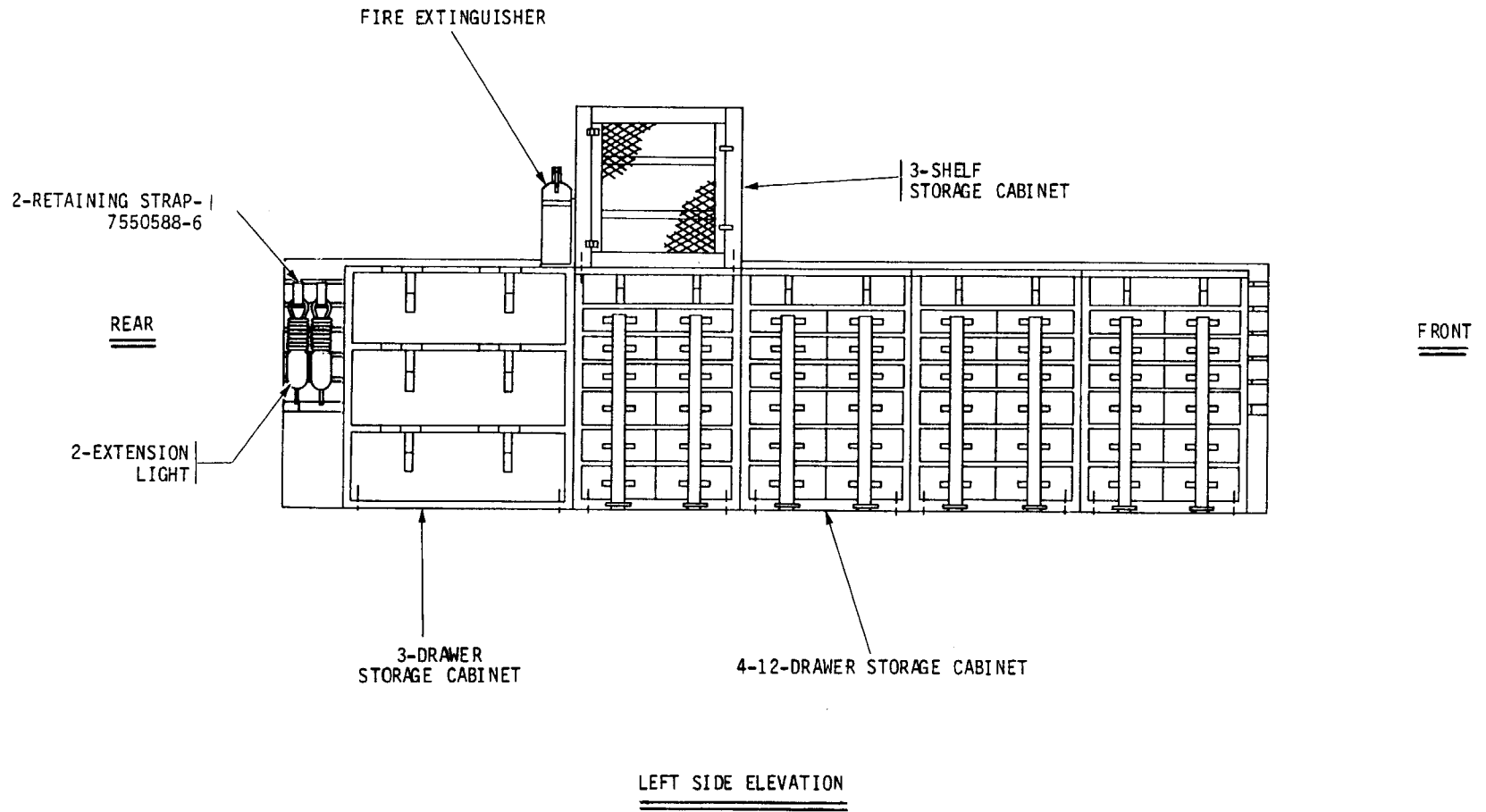


Figure 5. Components to be Mounted, M35A2, Left Side Elevation.

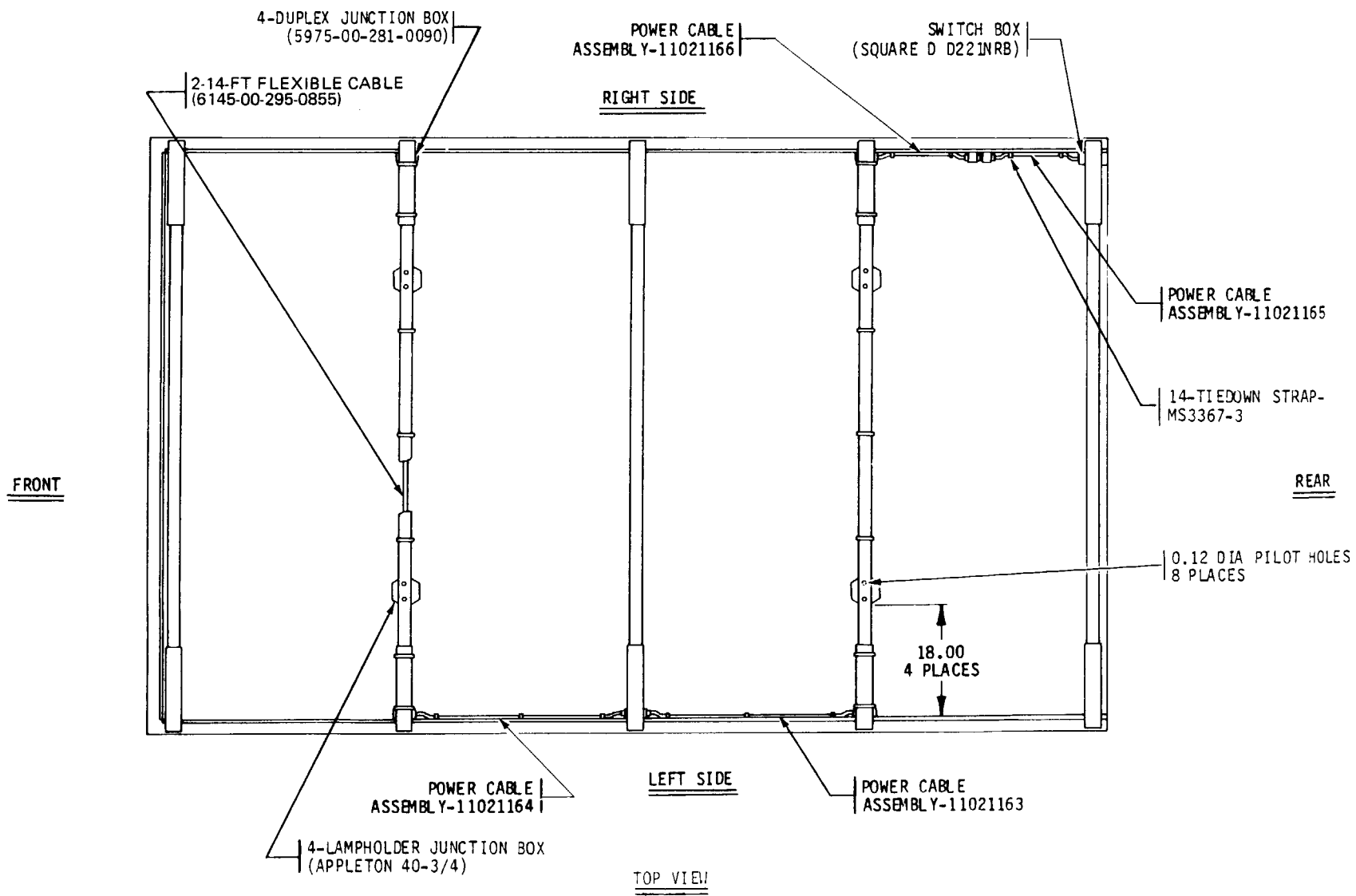


Figure 6. Electrical Components to be Mounted, M35A2, Top View.

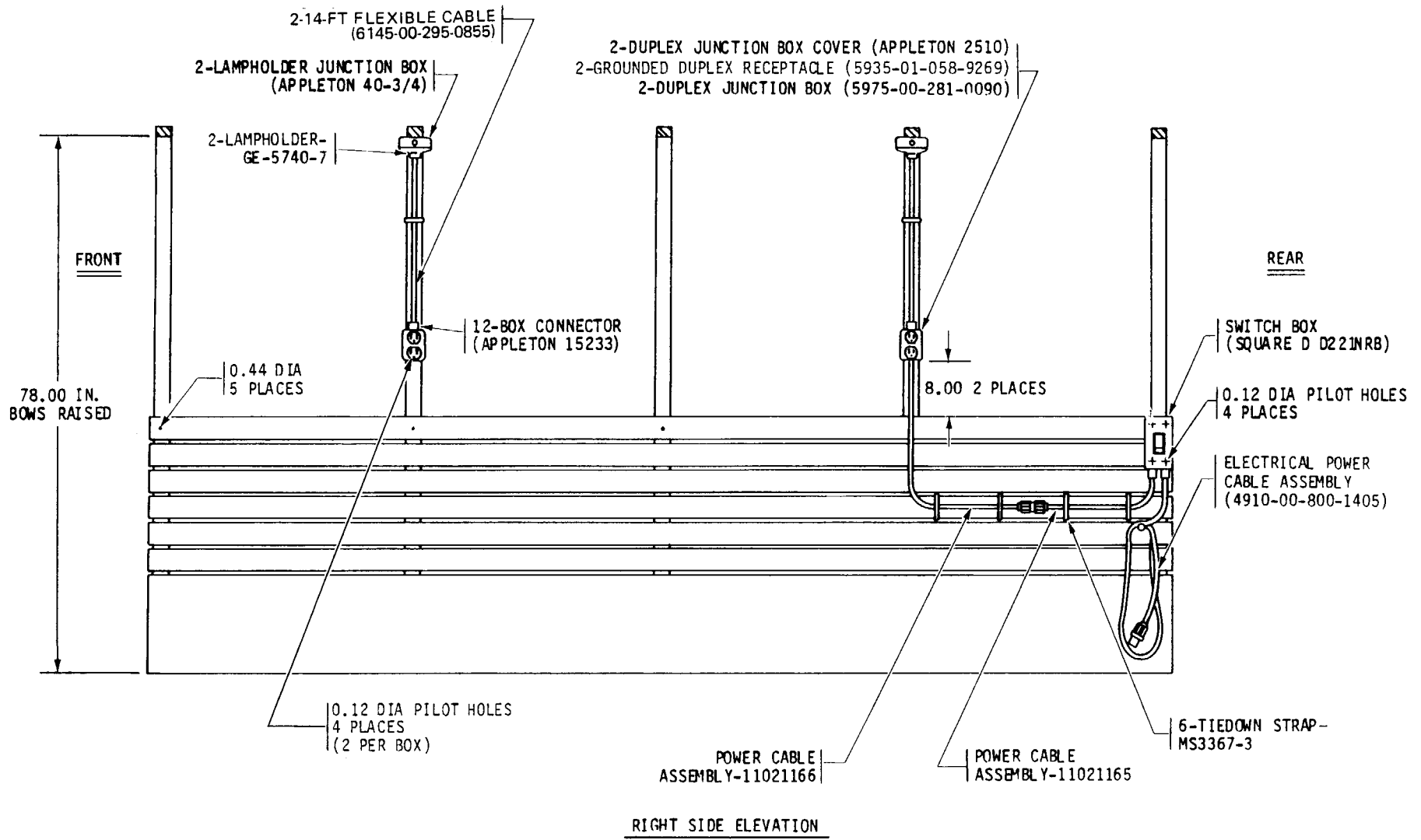


Figure 7. Electrical Components to be Mounted, M35A2, Right Side Elevation.

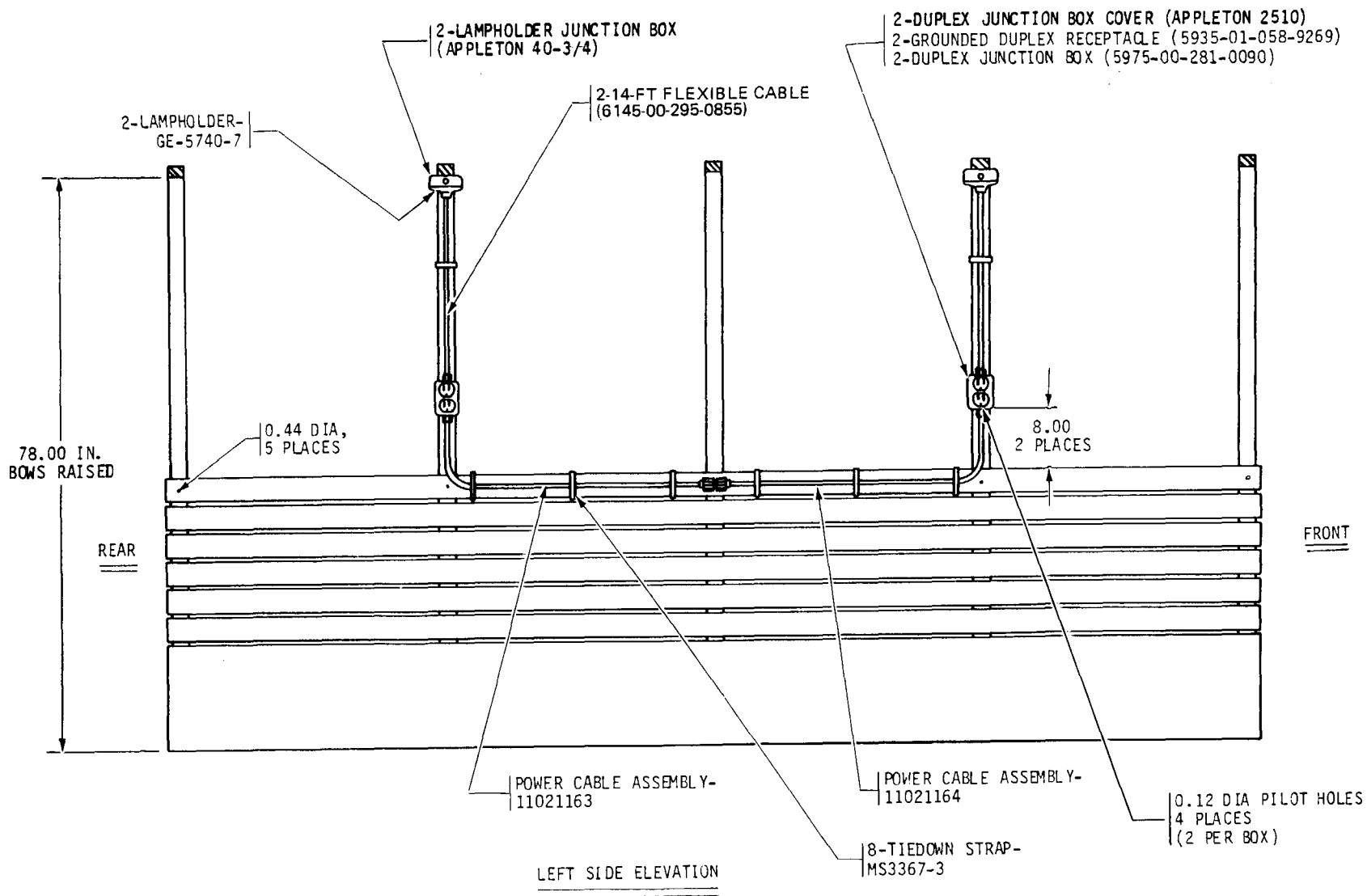


Figure 8. Dimensions for Electrical Components to be Mounted, M35A2, Left Side Elevation.

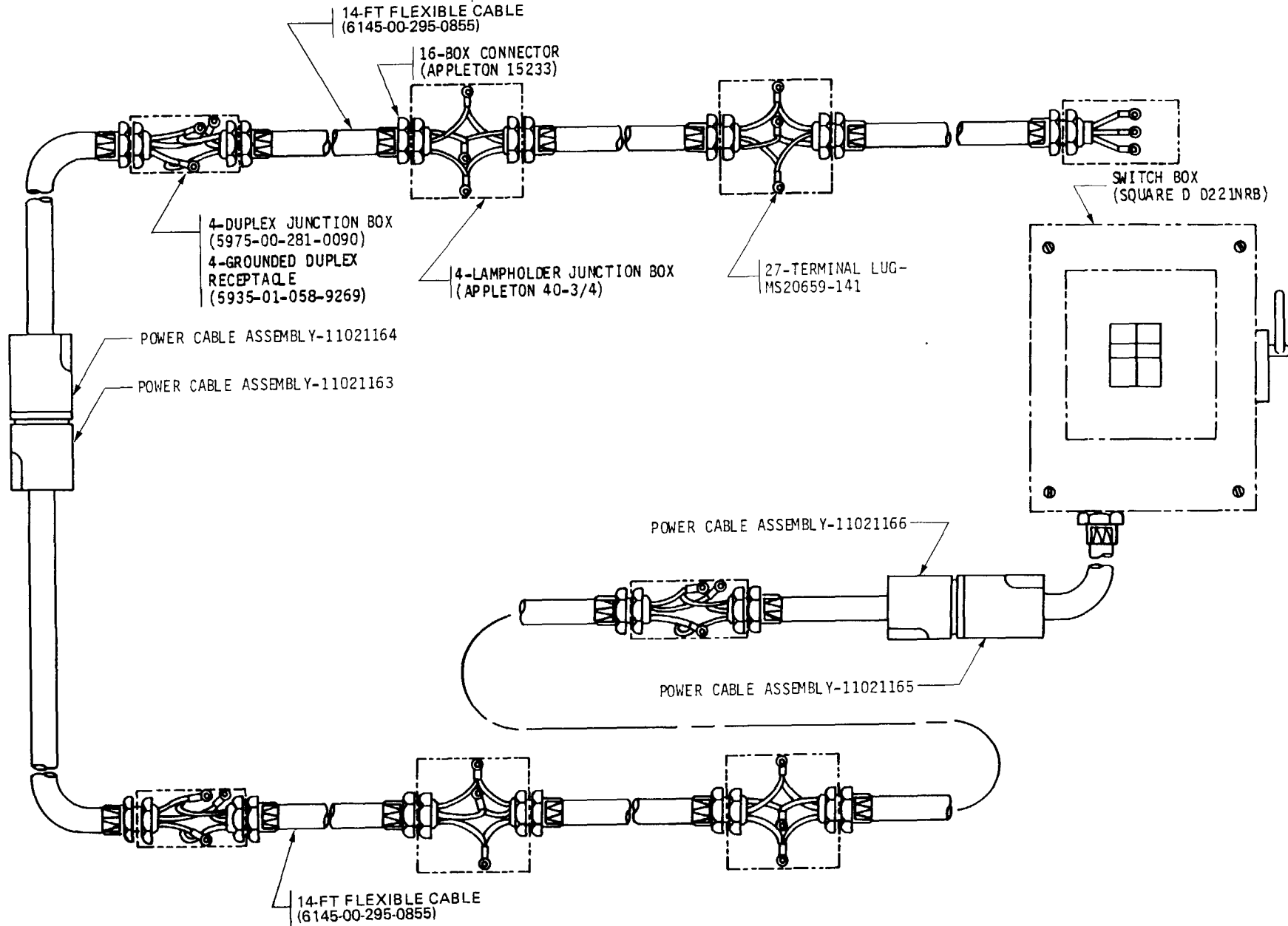


Figure 9. Electrical Schematic, M35A2.

WIRING DIAGRAM

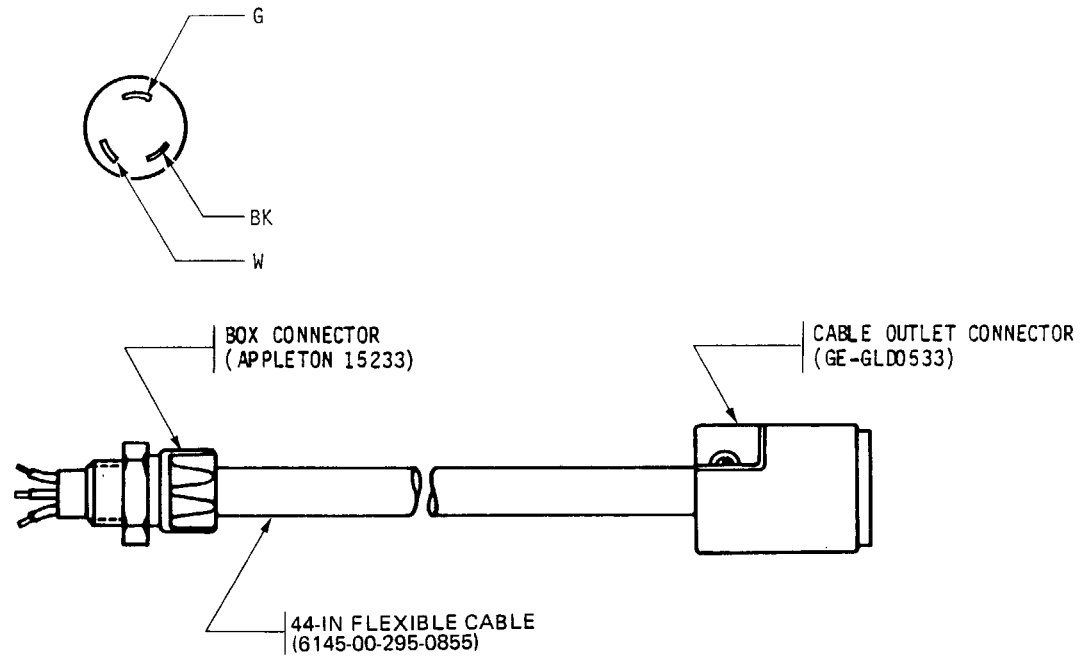


Figure 10. Power Cable Assembly, 11021163, M35A2.

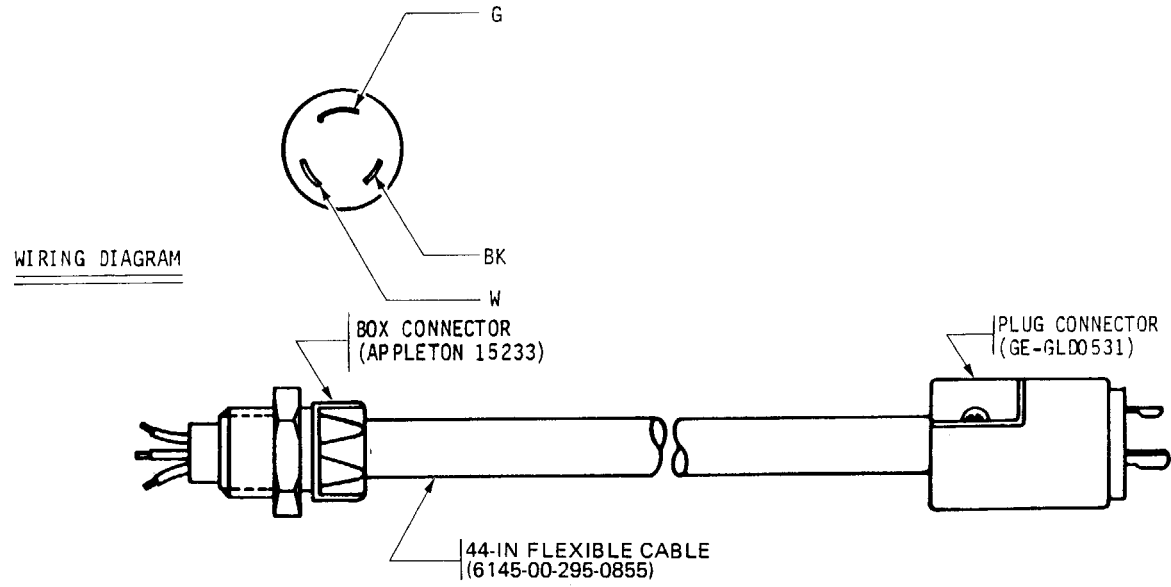
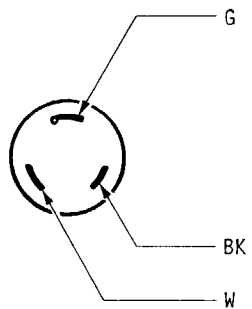


Figure 11. Power Cable Assembly, 11021164, M35A2.



WIRING DIAGRAM

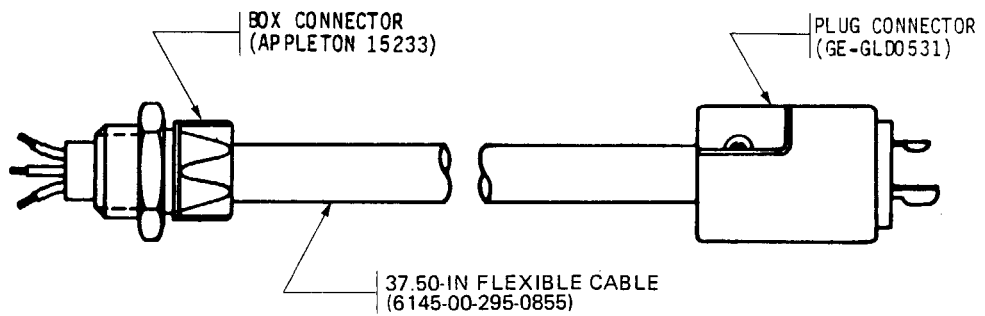


Figure 12. Power Cable Assembly, 11021165, M35A2.

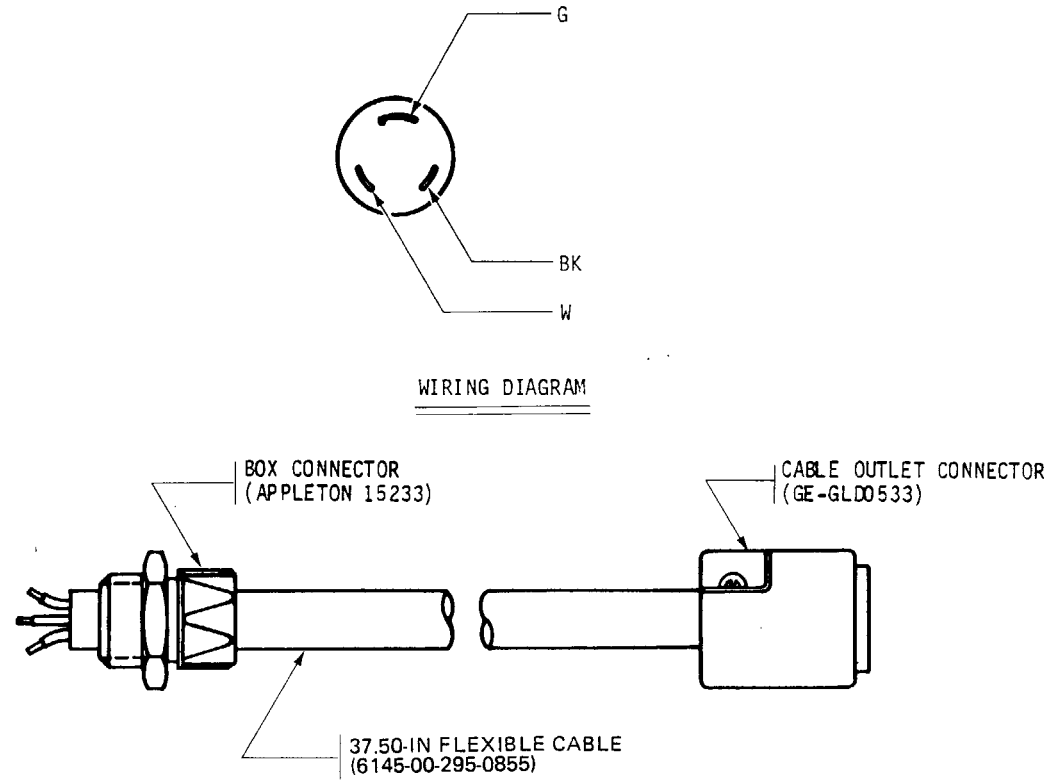


Figure 13. Power Cable Assembly, 11021166, M35A2.

Table 4. Standard Conversion Chart

Nominal size	Decimal size	Nominal size	Decimal size
1/16	0.06	35/64	0.55
5/64	0.08	9/16	0.56
3/32	0.09	37/64	0.58
7/64	0.11	19/32	0.59
1/8	0.12	39/64	0.61
9/64	0.14	5/8	0.62
5/32	0.16	41/64	0.64
11/64	0.17	21/32	0.66
3/16	0.19	43/64	0.67
13/64	0.20	11/16	0.69
7/32	0.22	45/64	0.70
15/64	0.23	23/32	0.72
1/4	0.25	47/64	0.73
17/64	0.27	3/4	0.75
9/32	0.28	49/64	0.77
19/64	0.30	25/32	0.78
5/16	0.31	51/64	0.80
21/64	0.33	13/16	0.81
11/32	0.34	53/64	0.83
23/64	0.36	27/32	0.84
3/8	0.38	55/64	0.86
25/64	0.39	7/8	0.88
13/32	0.41	57/64	0.89
27/64	0.42	29/32	0.91
7/16	0.44	59/64	0.92
29/64	0.45	15/16	0.94
15/32	0.47	61/64	0.95
31/64	0.48	31/32	0.97
1/2	0.50	63/64	0.98
33/64	0.52	1	1.00
17/32	0.53		

By Order of the Secretary of the Army:

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IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F Fahrenheit temperature 5/9 (after subtracting 32) Celsius temperature °C

PIN: 009218-000