

NOT MEASUREMENT SENSITIVE

A-A-52471D

March 22, 1995

SUPERSEDING

A-A-52471C

November 21, 1994

COMMERCIAL ITEM DESCRIPTION

EXTINGUISHER, FIRE, CO₂
2-1/2-POUND, WITH BRACKET

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

ABSTRACT

This CID covers requirements for a refillable, hand held fire extinguisher containing 2.5 pounds of Carbon Dioxide (CO₂) with mounting bracket. The hand-held fire extinguisher is intended to extinguish incipient petroleum and electrical fires.

SALIENT CHARACTERISTICS (SC)

a. Materials. Unless otherwise specified herein, the materials used shall be in accordance with the manufacturer's specifications and drawings. The use of recovered materials made in compliance with regulatory requirements is acceptable providing that all requirements of this CID are met (see Note e) .

1. Cylinder. The material of the cylinder shall be coated steel or aluminum (see Note b).

b. Design and construction. Unless otherwise specified herein, the fire extinguisher assembly design and construction shall conform to ANSI/UL 154.

c. Assembly. The assembly shall consist of a cylinder, delivery system, horn, name plate, instructions, and bracket. The overall dimensions of the assembly shall be as shown in figure 1. When specified, a complete charged fire extinguisher with bracket shall be furnished (see Note b).

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-T, Warren, MI 48397-5000.

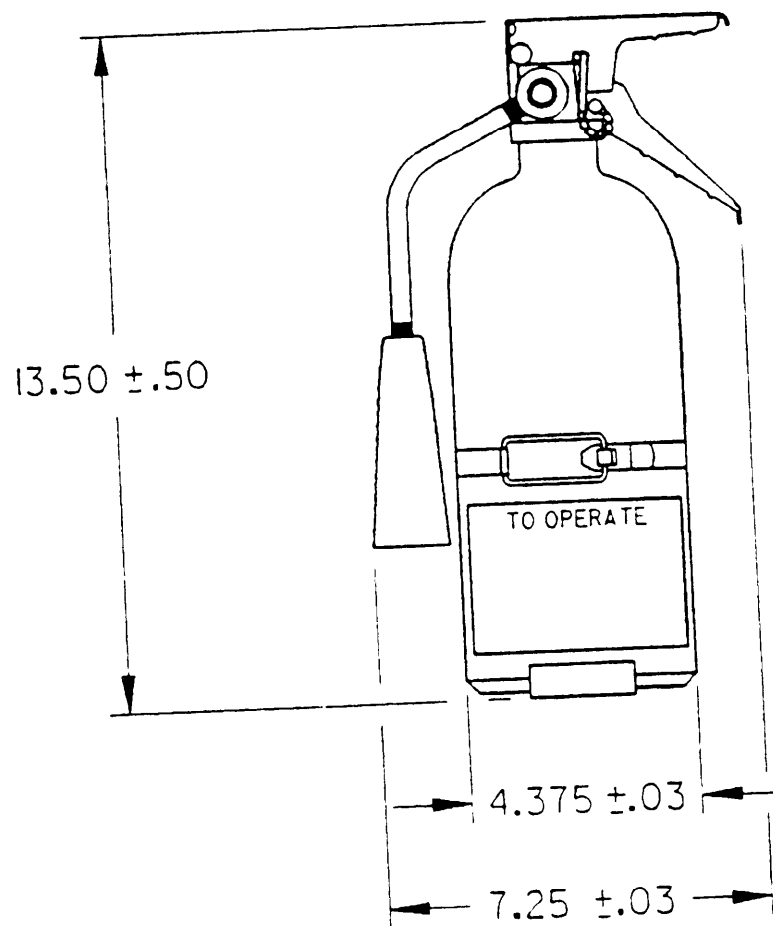
FSC 4210

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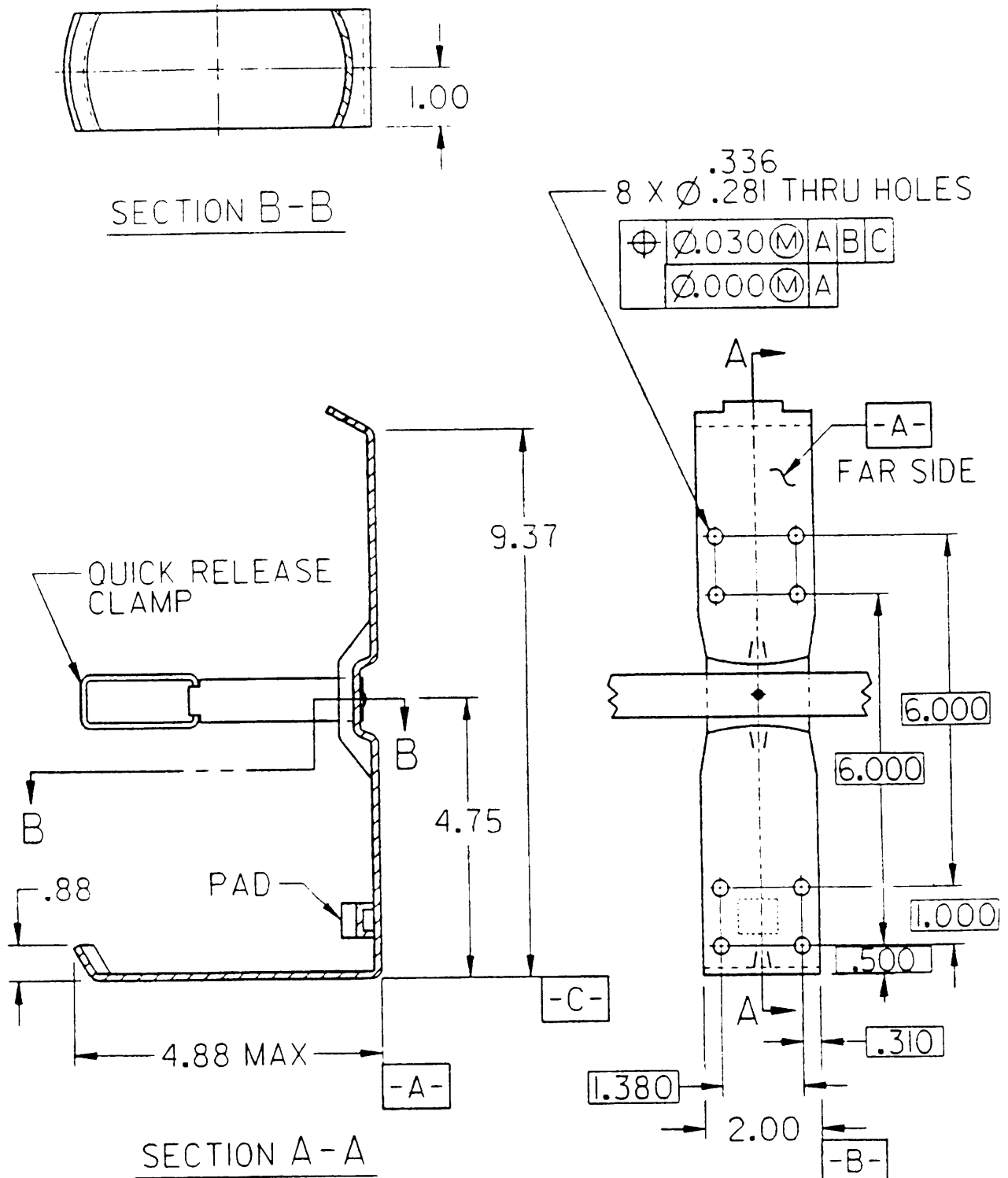
1. Cylinder. The cylinder shall conform to DOT 3AA or 3AL with a minimum service pressure of 1,800 pounds per square inch gage. The cylinder shall have an internal volume of 105 \pm 5 cubic inches and a diameter as shown in figure 1. Cylinder shall have a flat bottom, enabling the extinguisher to stand in an upright position without support.

2. Bracket. The bracket shall be as specified in figure 2. The bracket shall hold the fire extinguisher against static loading of 350 pounds downward and 88 pounds upward along the extinguisher axis when mounted vertically. The bracket shall permit quick, easy removal of the extinguisher from any position when the quick release clamp is released. The bracket shall also hold the extinguisher with a 200 pound outward loading applied to the extinguisher at the strap. This CID is not intended to limit bracket construction to features other than as shown herein. In addition, the bracket shall not show evidence of destruction to any metal surface when subjected to the salt spray corrosion test of ANSI/UL 154.



NOTE : Dimensions are in inches .

FIGURE 1. Complete unit overall dimensions.



NOTE : Dimensions are in inches. Tolerances are +.03 on 2 place decimals and + .003 on 3 place decimals.

FIGURE 2. Bracket nominal dimensions.

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d. Climatic extremes. The fire extinguisher shall operate at any air temperature from -50 degrees Fahrenheit ("F) without any benefit of solar radiation to +120°F while exposed to a solar radiation intensity of 360 Btu/sq ft./hr and shall be capable of safe storage at temperatures from -60°F for a period of 72 hours to +145°F for a period of 4 hours daily.

e. Carbon Dioxide. The fire extinguisher shall contain 2 pounds 8 ounces + 0% - 5% of CO₂ in accordance with BB-C-101.

f. Fragmentation and nonshatterability . Applicable cylinder shall not exceed 25 percent of its dimensional size in figure 1 after being subjected to the following:

1. Steel cylinder fragmentation resistance. When pierced by a tumbling .50 caliber M-2 armor-piercing projectile at a minimum velocity of 2,600 feet per second, the charged cylinder shall remain in one piece. To conduct the test the range of projectile fire shall be 50 yards maximum and the cylinder may be supported but not constrained. The test shall be conducted at gun room ambient temperature. Each cylinder shall be tested progressively, in a different position as detailed following:

- (a) With the longitudinal axis of the cylinder normal to the line of fire.
- (b) With the longitudinal axis of the cylinder 45 degrees from normal toward the gun position.
- (c) With the longitudinal axis of the cylinder parallel to the line of fire with inlet port face away from the gun position.

2. Aluminum cylinder nonshatterability. When pierced by a non-tumbling .50 caliber armor-piercing projectile at a velocity of 2800 +100 feet per second, the charged cylinder shall not shatter. To conduct the test the cylinder shall be in such a position that the projectile strikes the cylinder at right angles to the longitudinal centerline and near to the vertical centerline of the cylinder. The cylinder temperature at time of test shall be between 50 and 100°F. A cylinder shall be considered as having failed this test if the cylinder breaks into more than two pieces provided, however, that pieces smaller than 2 inches in diameter coming from the area (centering on the perforation and 4 inches in diameter) on the cylinder adjacent to the point of entry and exit of the projectile will not be counted. Cylinder designs, representative samples of which have passed this test, shall be permanently marked "NONSHAT" on the shoulder to indicate this fact.

g. Low temperature performance. Cool the fully charged extinguisher to a temperature of -40°F + 2°F and maintain at this temperature for not less than 12 hours. At the conclusion of this period, the extinguisher shall be immediately discharged. Sticking of the valve or clogging of the discharge orifices shall constitute failure of this test.

h. Shock requirements. The fire extinguisher assembly shall show no signs of damage when subjected to the shock which consists of imposing three shock impulses in each direction of the axis (6 shocks per axis) at each of the amplitudes and durations specified in table I. The shock requirements shall be verified by test procedures outlined in ATPD 2167.

TABLE I. Shock requirements.

Amplitude	Duration
30 g's	11 ms
100 g's	1.5 ms

NOTE: g's = gravities
ms = milliseconds

i. Refill. The fire extinguisher shall be capable of being refilled without leakage of CO₂. This shall be verified upon the tenth refill by testing in accordance with the procedure and criteria outlined in section 43.1 of ANSI/UL 154. In addition, the fire extinguisher shall not leak during refill.

j. Safety relief device. The fire extinguisher shall be equipped with a visual device to notify the user that the burst disk has ruptured. This device shall be securely fastened to the extinguisher and shall not be susceptible to accidental activation. In addition, it shall be of a bright color so as to distinguish itself among the other extinguisher components.

k. Vibration. The fire extinguisher and bracket shall withstand vibration testing without degradation in function per ATPD-2167 (ANSI/UL 154 shall not be used for vibration requirements).

l. Rating. The fire extinguisher shall have the fire extinguishing potential of at least a 2B fire and a class C designation per ANSI/UL 711.

m. Material safety data sheets (MSDS). An MSDS shall be prepared in accordance with FED-STD-313 (see Notes b and e).

n. Instructions and name labels. One mylar label shall be fixed to the cylinder covering the entire circumference and inscribed as per the following description. The letter size specified is in units of inches with a tolerance of + 0.10 inch. The inscription system is to be annotated: Black on Natural Color Metal (BNCM) and Natural Metal Color on Black (NMCB).

<u>Letter size</u>	<u>Data</u>	<u>Inscription</u>
3/16	To operate:	BNCM
5/32	1. Pull ring pin.	BNCM
5/32	2. Point horn close to base of fire.	BNCM
5/32	3. Depress lever for discharge and keep base of flame covered.	BNCM
5/32	4. Avoid breathing smoke.	BNCM
1/8	5. After use, save for refill.	
	Extinguisher, Fire, CO ₂ , 2.5 lbs.	NMCB

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A separate label shall be placed below one of the operating instruction labels and inscribed per the following:

<u>Letter size</u>	<u>Data</u>	<u>Inscription</u>
3/16	For Maintenance	
7/64	Recharge or replace with a new charged	
5/64	extinguisher "PART NUMBER"	NMCB
5/64	Weigh extinguisher cylinder every six months and replace if the gross weight has decreased by four ounces or more.	NMCB
3/32	"PART NUMBER"	NMCB
3/32	"MANUFACTURER'S CAGE CODE"	NMCB
3/32	"CONTRACT NO."	NMCB
3/32	"GROSS WEIGHT"	NMCB
7/64	Property of the U.S. Government	BNCM

o. Cylinder finish. The cylinder finish shall be red, number 11105 in accordance with FED-STD-595. The cylinder finish, including all metal pretreatments and primers, shall contain no more than 0.005 percent by weight (dry film) of cadmium, lead, or chrome. None of the metal pretreatments or cylinder finish materials, at the point of application, shall contain more than 1.5 pounds per gallon of volatile Organic Compounds as defined per EPA Method 24. Cylinder finish coatings shall provide effective substrate corrosion control performance. To verify corrosion control performance, cylinder finish coatings shall withstand 500 hours salt fog exposure per ASTM B117 for steel cylinders and 2000 hours salt fog exposure per ASTM B117 for aluminum cylinders. Cylinder finish coatings shall be considered to have passed the ASTM B117 salt fog test if no substrate corrosion products are visible on the external cylinder surfaces. All cylinder finish coatings shall comply with commercial standards regarding durability, adhesion, and resistance to fluids induced degradation (such as, exposure to lubricating oil, diesel fuel, and hydraulic fluid) .

pⁿ Identification and marking. Identification and marking of the fire extinguisher and bracket shall be permanent and legible and shall include, as a minimum, the national stock number (NSN), manufacturer's cage code and part number. The cylinder markings shall be detailed as specified in salient characteristic (SC) requirements f.2 and n. In addition, the cylinder shall be stamped in accordance with DOT regulations and ANSI/UL 154 requirements.

QUALITY ASSURANCE PROVISIONS (QAP)

a. Responsibility for inspection. The contractor is responsible for all inspections, including examinations and tests.

b. First article. When specified (see Note b) first article inspection shall be performed to verify compliance with the salient characteristic requirements of this document. The first article shall consist of the following:

1. For steel bottles: 9 coated units for fragmentation resistance testing (see SC f.1).

2. For aluminum bottles: 9 coated units for non-shatterability testing (see SC f. 2).
3. 24 units for all other examinations and testing, which includes:
 - (a) Shock requirements (see SC h) -
 - (b) All performance tests called for in ANSI/UL 154 and 711.

Twelve (12) of the 24 units are to be used for the One-Year Time Leakage Test of ANSI/UL 154. The remaining 12 units are to be used for concurrent testing so as to demonstrate compliance with QAP b.3 and to save testing time.

4. In addition to the above bottle tests, ANSI/UL 154 requires the following components be tested:

- (a) 12 frangible discs.
- (b) 12 valves,
- (c) 6 horns.

Fragmentation resistance and non-shatterability testing shall be conducted by the Government. Failure of any above listed examination or test shall result in first article disapproval.

c. Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this commercial item description 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 or order. Evidence of meeting the requirements of this CID shall include, but not limited to, the testing per ANSI/UL 154 and 711.

PRESERVATION, PACKAGING, PACKING, LABELING, AND MARKING

Preservation, packaging, packing, labeling, and marking shall be in accordance with appropriate applicable hazardous material regulations (1) Code of Federal Regulations Title 49 Parts 100-199 (49CFR), (2) International Air Transport Association (IATA) , or (3) International Maritime Dangerous Goods Code (IMDG) as determined by both transportation and contracting authorities (see Note b).

NOTES

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

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a. Addresses for obtaining copies of referenced documents.

1. Federal standards and specifications. Copies of BB-C-101 "Carbon Dioxide (CO₂) : Technical and U.S.P. ", FED-STD-313 "Material Safety Data I Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities" and FED-STD-595 "Colors used in Government Procurement-" are available from the Defense Printing Service Detachment Office, Bldg. 4D (Customer Service), 700 Robbins Avenue, Philadelphia, PA 19111-54094.

2. Army purchase description. Copies of ATPD-2167 "Environmental Test Methods" are available from the Contracting Officer, U.S. Army Tank-automotive and Armaments Command, Warren, MI 48397-5000.

3. Other Government documents. Copies of DOT Code of Federal Regulations (CFR) Title 49 and the Environmental Protection Agency (EPA) Method 24 are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.

4. Industry standards. Copies of ASTM B117 "Standard Test Method of Salt Spray (Fog) Testing" are available from the American Society for Testing and Materials (ASTM) , 1916 Race Street, Philadelphia, PA 19103.

5. UL standards. Copies of ANSI/UL 154 "Standard for Safety Carbon-Dioxide Fire Extinguishers" and ANSI/UL 711 "Standard for Safety Fire Extinguisher, Rating and Fire Testing of" are available from the Underwriters Laboratories Incorporated, 333 Pfingsten Road, Northbrook, IL 60062.

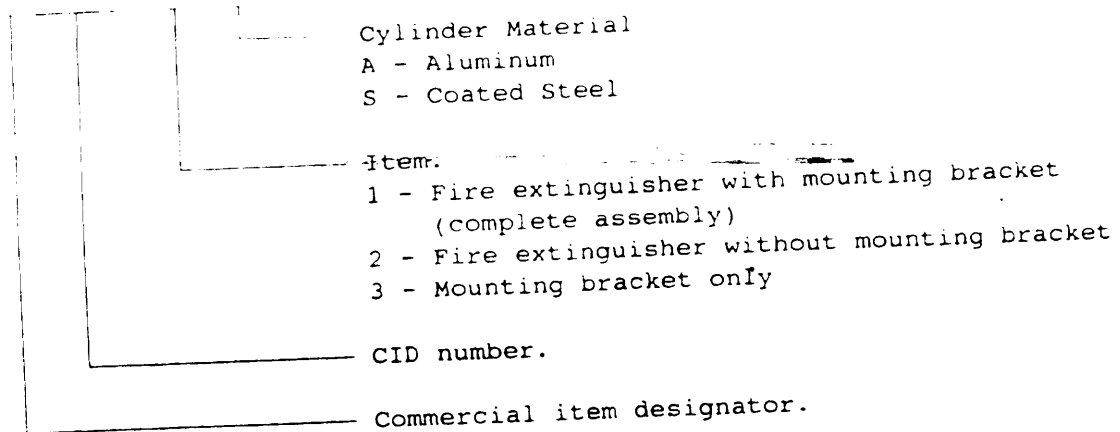
6. International standards. Copies of International Air Transport Association (IATA) documents are available from IATA, 2000 Peel Street, Montreal, Quebec, Canada H3A 2R4. Copies of International Maritime Dangerous Goods Code (IMDG), are available from Labelmaster, 5724 N. Pulaski Road, Chicago, IL 60646-6797.

b. ordering data. Acquisition documents must specify the following:

1. Title, number, and date of this CID.
2. Issue of DODISS to be cited in the solicitation and the specific issue of individual documents referenced.
3. Whether steel or aluminum cylinders are required.
4. Whether charged fire extinguisher with mounting bracket, charged fire extinguisher without mounting bracket, or mounting bracket only are required.
5. Identify activities requiring copies of completed MSDS and specify where the MSDS will be inspected.
6. Whether first article inspection is required.
7. Selection of appropriate and applicable hazardous material regulation(s) , preservation packaging, packing, labeling and marking requirements.

c. Part or identification number (PIN). The PINs to be used for extinguishers acquired to this CID are as follows:

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d. Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications and standards), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

e. Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent Practicable.

f. MSDS. The contracting officer should identify those activities requiring copies of the completed MSDS prepared in accordance with FED-STD-313.

MILITARY INTERESTS:
ACTIVITY:

Custodians:
Army - AT
Air Force - 99

CIVIL AGENCY COORDINATING

GSA - FSS

PREPARING ACTIVITY:
Army - AT

(Project 4210-0550)

