

MIL-D-24241(SHIPS)
30 June 1966

MILITARY SPECIFICATION DRAWINGS, SONAR SYSTEMS; PRELIMINARY INSTALLATION PLANNING

1. SCOPE

1.1 This specification covers the compilation, arrangement of information, terms, and requirements governing the submission of preliminary installation planning drawings for sonar equipment and systems.

1.2 The preliminary installation planning drawings required by this specification do not in any way replace or supplement those required by MIL-D-23140.

1.3 These drawings are for preliminary planning purposes and are not to be used for the development of installation plans.

1.4 The purpose of this specification is to establish an early and continuous flow of design and development data to Ship Design Facilities for advance planning that will result in:

- (a) Improved control of ship or equipment physical interfaces or both.
- (b) Better stabilization and standardization of sonar equipment installation.
- (c) Continued and early knowledge of changes which is conducive to advanced planning.
- (d) Allowing contract design of ships to be based on the latest data available.
- (e) Providing a practical and efficient means of reviewing the interface and basic installation requirements of a sonar system before it is constructed.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on the date of the invitation for bids or request for proposal form a part of this specification to the extent specified herein:

SPECIFICATIONS

MILITARY

MIL-D-23140 - Drawings, Preliminary and Final, Electronic Equipment and Systems, Installation Control.

STANDARDS

MILITARY

MIL-STD - 100 - Engineering Drawing Practices.

PUBLICATIONS

MILITARY

DD-441 - Security Agreement and its Attachment, Industrial Security Manual for Safeguarding Classified Information

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Preliminary installation planning drawings. - The preliminary installation planning drawings as specified in this military specification are required in all production contracts and research, development, test and evaluation (RDT & E) contracts that result in a service test or a prototype sonar system.

3.2 Size and format. - The preliminary installation planning drawings shall be submitted on reproducible size "A" sheets in accordance with MIL-STD-100. The only deviations permissible from this size

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size will be those required for clarity of presentation of information and such deviations will require approval by the contracting agency. Drawings may be in the form of sketches on reproducible material as long as all information is legible. Oblique sketches in accordance with Figure 1 are acceptable provided the necessary information can be shown in this manner. The sketches do not have to be to scale, although scaled drawings are easier to read and allow for a minimum of misunderstanding. The scale used or the fact that the drawings are not to scale should be indicated.

3.3 Content. - The preliminary installation planning drawings shall contain as a minimum the following data or estimate for each unit in the sonar system or equipment:

- (1) Cabinet size and weight.
- (2) Heat dissipation (air or water or both).
- (3) Define maintenance access requirements or service area or both.
- (4) Cable entrance requirements, location and connections including space or access required for cables, piping, and so forth.
- (5) Critical cable lengths or runs and opposite unit termination.
- (6) Ship power required (voltage, frequency, phase, power factor, and regulation).
- (7) Electrical, electronics, and so forth interfaces between the ship and system (all system inputs or outputs or both).
- (8) Location, size and arrangement of ventilation ducts or liquid coolants required for each unit.
- (9) Mounting design (footing and sway bracing).
- (10) Recommended essential equipment groupings.
- (11) Maintenance standards and installation criteria that equipment vendor would like to propose or that was considered in the design of the equipment or both.
- (12) Peculiar environmental restrains (E or H fields, and so forth).
- (13) An itemized list of all units in the system shall be provided with each set of drawings. This list shall consist of unit number, unit nomenclature, drawing number, and applicable revision.
- (14) Any peculiarities of installation which require access only during the installation phase.
- (15) A list of cables susceptible to electromagnetic interference.
- (16) A list of cables that may cause electromagnetic interference to susceptible cables.
- (17) Any other information that is pertinent to planning shall be included as an item similar to presentation of above data.
- (18) Preliminary test equipment requirements.

3.4 Identification. - All sketches are to be stamped or marked "PRELIMINARY PRINT", and properly identified with the contractor's name or stamp, a title block showing the unit description, contractor's drawing number, a revision letter, and a date of sketch revision or origination.

3.5 Changes. - Any change in equipment design which results in a change to the ship or system interface or both must be incorporated into the next submission of drawings.

3.6 Security. - It is anticipated that all information included on the preliminary installation planning drawings will be of an UNCLASSIFIED nature. If any information is included of a classified nature, the contractor will see that it is properly marked and safeguarded in accordance with DD-441. When in doubt as to the classification of the material to be included, contact the contracting agency. Security on each sheet shall be that of the highest classification for any item or information shown on the individual sheet, and not the overall classification of the entire set of drawings of the end item.

3.7 Submission. - The preliminary installation planning drawings will be submitted to the contracting agency within 30 days after award of the contract and will be updated by the contractor every 30 days thereafter and resubmitted. Review or approval of these drawings within 30 days will be based on a review of the ship or equipment interface or both. Approval of the drawings constitutes the contracting agency's acceptance of the system interface and does not approve the equipment design.

4. QUALITY ASSURANCE PROVISIONS

4.1 Unless otherwise specified in the contract or purchase order, the contractor is responsible for the correctness, completeness, and legibility of the preliminary installation planning drawing reproducibles. The reproducibles may be on sepia, vellum, tracing paper, tracing cloth or other suitable medium.

4.2 Review and checking. - The contractor is responsible for assuring that the drawing format conforms to the specifications prescribed herein. The contracting agency reserves the right to review and approve the drawing format.

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5. PREPARATION FOR DELIVERY

5.1 Drawings. - Drawings shall be prepared for delivery in accordance with good commercial practice. Each package shall be labeled appropriately as to contents on the inside protective cover. Material in a classified security status shall be protected and handled in accordance with the Industrial Security Manual for Safeguarding Classified Information DD-441. One set of drawings shall be forwarded to the contracting agency and one set to the Naval Ship Engineering Center (NAVSEC), Code 6452E.

6. NOTES

6.1 Subject to the rights in data acquired under the contract, the preliminary installation planning drawing provided and revised under this specification may be used by other Department of Defense activities.

6.2 Definitions. -

6.2.1 Contractor. - A contractor is any individual, partnership, company, corporation, or association having a contract with the command or agency concerned for the design delineations, or manufacture of an item(s) under the terms of a contract.

6.2.2 Design activity. - A design activity is an activity having responsibility for the design and preparation and maintenance of the preliminary installation planning drawings for a given item of supply.

6.2.3 Interface. - An interface is any physical or functional confrontation with items not provided as part of the contracted hardware.

6.2.4 Preliminary installation planning drawings. - Preliminary installation planning drawings are right reading ink, pencil, or typewriter on reproducible material and containing all the items as set forth in this specification.

6.2.5 Reproducible. - A reproducible copy is any drawing or document reproduced on translucent material using diazo or electrostatic printing equipment. The reproducible prints shall be black line with a white background. The reproducible shall also be direct reading and capable of producing clear and distinct prints.

6.2.6 Set. - A set is a major unit, or group of units, that is capable of performing its primary function without the use of other sets.

6.2.7 System. - A system is a group of sets or units integrated to perform a specific function.

6.2.8 Unit. - A unit is a portion of a set that is designed to perform a specific function.

6.3 Ordering data. - Procurement documents should specify title, number and date of this specification.

Preparing activity:
Navy - SH
(Project DRPR-N006SH)

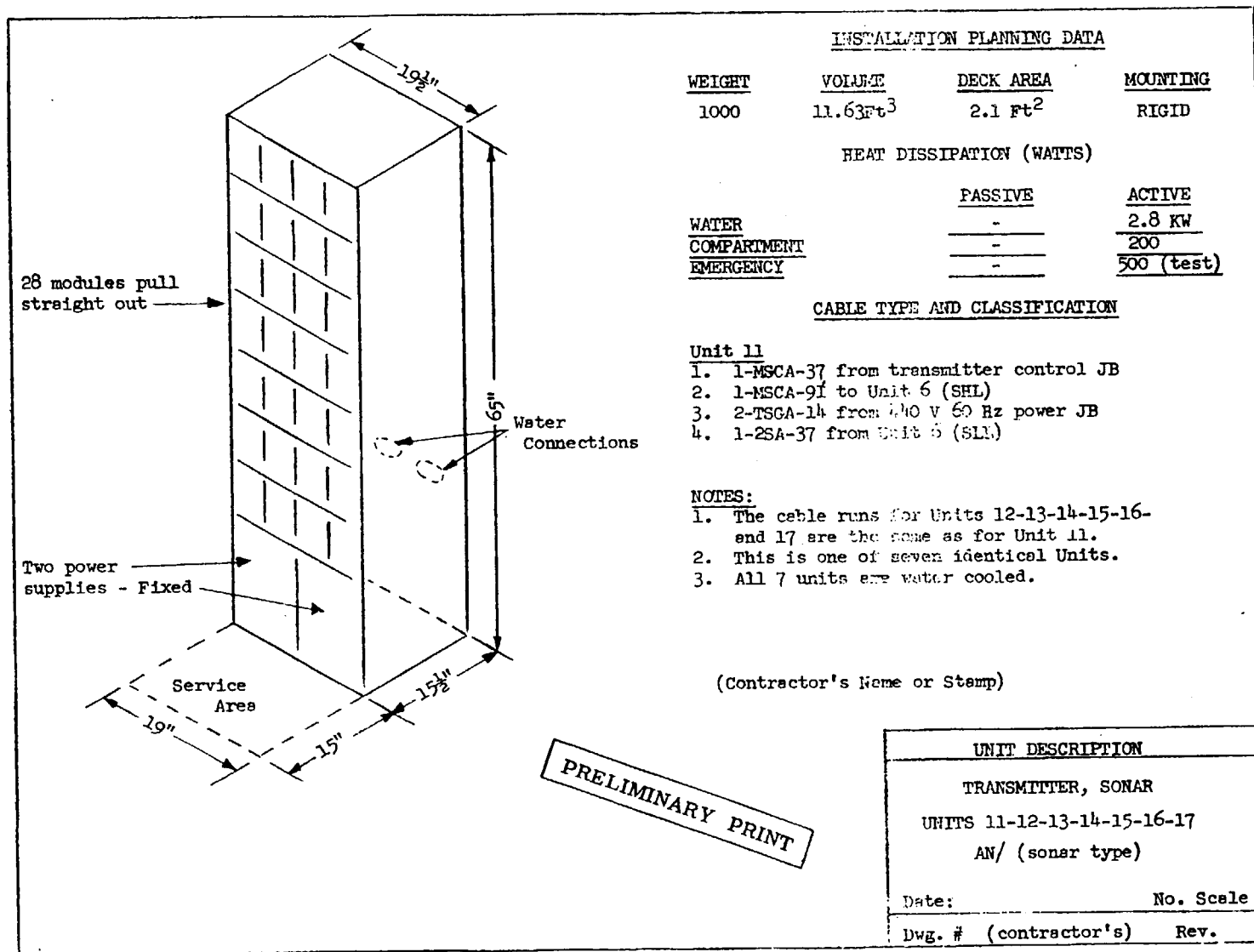


Figure 1 - Typical Installation Planning Drawing.

NOTES:

1. All external connections are via connectors bottom of 7A4.
2. Add 2" overall height for mounting feet.
3. Maintenance requires access to left and right sides of extended units. **DO NOT** install so that ends are adjacent to a bulkhead.

INSTALLATION PLANNING DATA

<u>WEIGHT</u>	<u>VOLUME</u>	<u>DECK AREA</u>	<u>MOUNTING</u>
1925	55.56 FT ³	13.33 FT ²	RIGID

Heat Dissipation (Watts)

	<u>PASSIVE</u>	<u>ACTIVE</u>
<u>WATER</u>	-	-
<u>COMPARTMENT</u>	300	300
<u>EMERGENCY</u>	300	300

CABLE TYPE AND CLASSIFICATION

1. 20-2SWA-37 from Units 1-2-3-4 (SLI)
2. 1-MSCA-24 from Unit 27 (Servo Test)
3. 1-2SWU-24 to Unit 9 (SLI)
4. 1-MSCA-24 to Unit 29
5. 1-2SA-30 to Unit 29 (SLI)
6. 1-MSCA-91 to Unit 29
7. 1-MSCA-24 from power distrib. JB
8. 1-2SWU-24 to Unit 9 (SLI)

(Contractor's Name or Stamp)

For connectors and to allow for cable bending radius.

PRELIMINARY PRINT**UNIT DESCRIPTION**

AMPLIFIER SCANNER GROUP
UNIT 7
AN/ (sonar type)

Date: No. Scale

Dwg. # (contractor's) Rev.

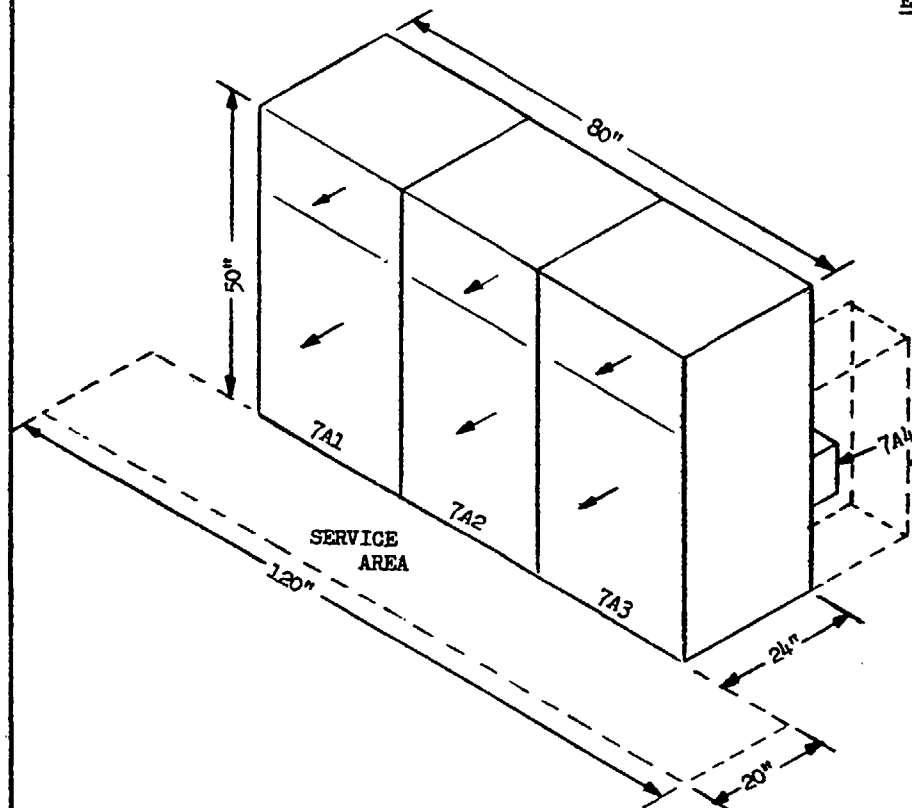


Figure 1 - Typical Installation Planning Drawing (cont'd).

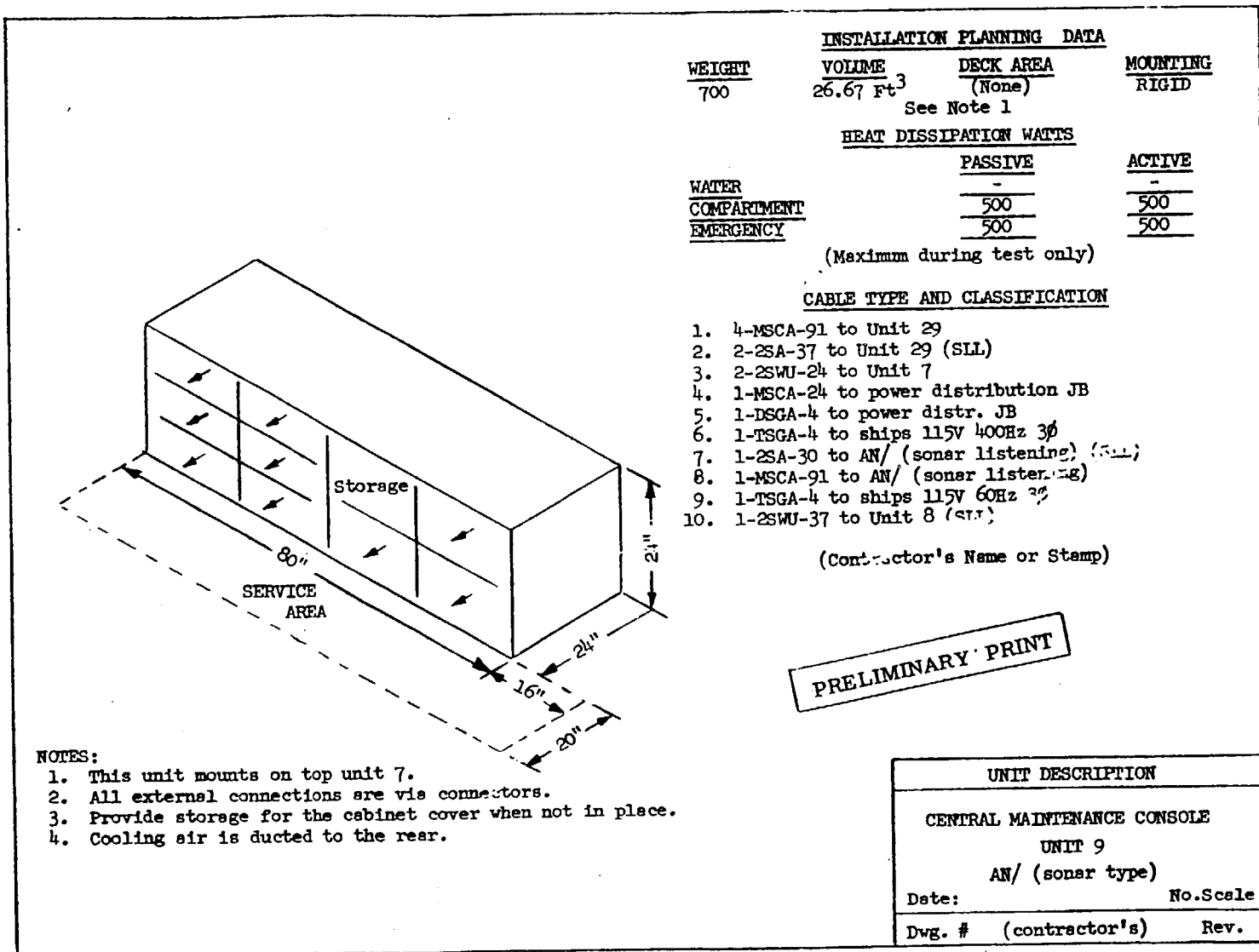


Figure 1 - Typical Installation Planning Drawing (cont'd).

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UNIT NO.	UNIT NAME	VOLTS	+	CYCLE	PHASE	AMPS	POWER FACTOR
1	AMPLIFIER RELAY	} DC FROM UNIT 5					
2	AMPLIFIER RELAY						
3	AMPLIFIER RELAY						
4	AMPLIFIER RELAY						
5	PRIMARY POWER CONTROL	115/440	10%	60	3/3		
6	PHASE SWITCHING GROUP						
7	AMPLIFIER-SCANNER GROUP	115/115	10%	60/400	1/1		
8	SONAR RECEIVER						
9	CENTRAL MAINTENANCE CONSOLE						
10	ELECTRONIC COMMAND SIG PROGRAMMER						
11	SONAR	440	10%	60	3	525	0.8
THRU	TRANSMITTER	DUTY CYCLE IS 0.067					
17	SEVEN IDENTICAL CABINETS	AVERAGE CURRENT - 35A					
18	SYNCHRO DATA CONVERTER						
19	ACTIVE CONSOLE						
20	PASSIVE CONSOLE						
21	TRANSDUCER ELEMENT (1245)				NA		
22	AZIMUTH-RANGE INDICATOR	115/115	10%	60/400	3/3		
23	SPEAKER CONTROL # 1				NA		
24	SPEAKER CONTROL # 2				NA		
25	ELECTRICAL DUMMY LOAD				NA		
26	INTERCOMMUNICATION SET						
27	AMPLIFIER TEST SET						
28	INSTALLATION KIT				NA		
29	CMS SWITCH INTERCONNECTION BOX						
30	SONAR RECEIVER STORER						

NOTES:
1. NA - NOT APPLICABLE

PRELIMINARY PRINT

(CONTRACTOR'S NAME
OR STAMP)

UNIT DESCRIPTION	
SYSTEM POWER REQUIREMENT SUMMARY	
AN/ (sonar type)	
Date:	No. Scale
Drw. #	(contractor's) Rev.

Figure 1 - Typical Installation Planning Drawing (cont'd).

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
<p align="center"><u>INSTRUCTIONS</u></p> <p>This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).</p>		
SPECIFICATION		
ORGANIZATION (Of submitter)		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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