

SEIP 015

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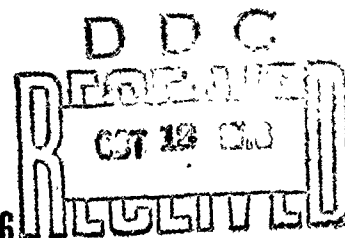
**STANDARD
ENGINEERING INSTALLATION PACKAGE**

AD A030643

VOICE OF THE ARMY

**TELEPHONE TRAFFIC
RECORDER SYSTEM**

9 AUGUST 1976



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This standard engineering installation package (SEIP) helps engineers, techni- cians, logistics personnel and project officers to engineer, install, and stand- ardize small, medium, and large traffic recorder systems at Army posts, camps, and stations worldwide. It gives a system description along with the technical aspects of the equipment and installation areas. It contains a list of appli- cable documents, describes a comprehensive checklist for site surveys, tells how to install equipment, reproduces 8 engineering drawings. <i>(continued)</i>			

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20. Abstract--and gives a bill of materials with which to accomplish it all. The SEIP describes quality assurance inspections and gives sample forms to ascertain areas of responsibility, checklists, and certification. One section gives a detailed test plan and checkout procedure while the system is in operation and suggests the form for a technical acceptance certificate. The SEIP also contains sample coordination documents of all agencies involved and a completion certification that the project has met all the test criteria.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY COMMUNICATIONS COMMAND
Fort Huachuca, Arizona 85613

USACC SEIP
No. 015

9 August 1976

Standard Engineering Installation Package
TELEPHONE TRAFFIC RECORDER SYSTEM

Paragraph		Page
<u>SECTION I. GENERAL</u>		
1.1	GENERAL	1-1
1.2	PURPOSE AND USE	1-1
1.3	SYSTEM DESCRIPTION.	1-1
1.4	TECHNICAL DESCRIPTION	1-4
1.5	MAINTENANCE PHILOSOPHY.	1-6
1.6	LIST OF APPLICABLE DOCUMENTS.	1-6
1.7	COMMENTS ON PUBLICATION	1-10
<u>SECTION 2. SITE SURVEY DATA AND CHECKLIST</u>		
2.1	GENERAL	2-1
2.2	SITE SURVEY CRITERION	2-1
<u>SECTION 3. INSTALLATION INSTRUCTIONS</u>		
3.1	GENERAL	3-1
3.2	INSTALLATION PERSONNEL.	3-1
3.3	INSTALLATION CRITERIA	3-1
3.4	INSTALLATION STEPS.	3-22
3.5	CHANGES TO ENGINEERING INSTALLATION PACKAGES AND FACILITIES SPECIFICATIONS	3-22
<u>SECTION 4. ENGINEERING INSTALLATION DRAWINGS</u>		
4.1	GENERAL	4-1
4.2	INSTALLATION DRAWINGS CONTROL	4-1
4.3	CORRECTIONS AND DELETIONS	4-1
4.4	USACEEIA-CED DRAWINGS	4-1
<u>SECTION 5. BILL OF MATERIALS</u>		
5.1	GENERAL	5-1
5.2	BILL OF MATERIALS	5-1

Paragraph

Page

SECTION 6. QUALITY ASSURANCE

6.1	GENERAL	6-1
6.2	INSPECTION RESPONSIBILITIES	6-1
6.3	QUALITY ASSURANCE INSPECTION.	6-1
6.4	QUALITY ASSURANCE ACCEPTANCE OR REJECTION	6-4
6.5	EVIDENCE OF QUALITY ASSURANCE INSPECTIONS	6-5
6.6	APPLICABILITY	6-5
6.7	REVISIONS TO THE QA CHECKLIST	6-5

SECTION 7. OPERATIONAL TEST PLAN AND
CHECKOUT PROCEDURES

7.1	GENERAL	7-1
7.2	STATIC CABLE TESTS.	7-1
7.3	SYSTEMS EQUIPMENT TESTS	7-1
7.4	TROUBLESHOOTING PROCEDURES.	7-1
7.5	TESTING ACCEPTANCE.	7-2

SECTION 8. PROJECT COORDINATION LETTER

8.1	GENERAL	8-1
8.2	USACEEIA SURVEY/SITE CONCURRENCE RESPONSIBILITIES	8-1
8.3	AGREEMENTS DURING SITE SURVEYS.	8-1
8.4	PROJECT COORDINATION DOCUMENTATION.	8-1

SECTION 9. COMPLETION CERTIFICATION

9.1	GENERAL	9-1
9.2	DISTRIBUTION.	9-1
9.3	WAIVERS	9-1

9 August 1976

SEIP 015

LIST OF ILLUSTRATIONS

Figure No.	Title	Page
1-1	Traffic recorder systems equipment.	1-2
1-2	Typical traffic recorder system interface cabling . . .	1-3
1-3	Reperforator Tape Output, TT-345/FG	1-7
1-4	Typical page printout from optional teletypewriter. . .	1-8
2-1	Sample Site Survey Checklist.	2-2
3-1	Typical layout of equipment and patch panels in a single rack (small telephone exchange).	3-3
3-2	Typical electrical distribution/patch panel layout (small telephone exchange).	3-4
3-3	Typical electrical distribution/patch panel layout (medium telephone exchange) (2 racks)	3-5
3-4	Typical equipment layout (large telephone exchange) . .	3-6
3-5	Typical electrical distribution/patch panel layout (large telephone exchange).	3-7
3-6	Distribution/patch panel layout and mounting.	3-9
3-7	Typical distribution panel assignments (small telephone exchange)	3-10
6-1	Sample of Cognizant Agency, Command, and Facility Points of Contact	6-6
6-2	Sample of Preinstallation Quality Assurance Site Inspection.	6-9
6-3	Sample of Installation Quality Assurance Inspection . .	6-11
6-4	Sample of Final Installation Inspection	6-13
6-5	Sample of Equipment Shakedown Quality Assurance Inspection.	6-16
6-6	Sample of Quality Assurance Inspection Certificate. . .	6-17
7-1	Sample of Technical Acceptance Certificate.	7-9
7-2	Sample of Technical Acceptance Test	7-12
8-1	Sample Project Coordination Letter.	8-2
8-2	Sample Inclosure 1 to Project Coordination Letter . . .	8-4
8-3	Sample Inclosure 2 to Project Coordination Letter . . .	8-5
8-4	Sample Inclosure 3 to Project Coordination Letter . . .	8-6
8-5	Sample Inclosure 4 to Project Coordination Letter . . .	8-7
8-6	Sample Inclosure 5 to Project Coordination Letter . . .	8-8
8-7	Sample Inclosure 6 to Project Coordination Letter . . .	8-9
8-8	Sample Inclosure 7 to Project Coordination Letter . . .	8-10
9-1	Sample Materiel Acceptance Record	9-2

LIST OF TABLES

Table No.	Title	Page
1-1	Telephone Traffic Recorder Systems Equipment, Physical and Electrical Characteristics	1-5
3-1	Recorder Assignment Sequence.	3-8
3-2	Count Monitor Register Assignment (Small and Medium Exchanges).	3-11
3-3	Count Monitor Register Assignments (Large Exchange) . .	3-15
7-1	Telephone Traffic Recorder (To 2300 Lines) Test Data Sheet.	7-3

9 August 1976

SEIP 015

SECTION 1. GENERAL

1.1 BACKGROUND. The US Army Communications-Electronics Engineering Installation Agency (USACEEIA) is responsible for engineering, installing, and standardizing traffic recorder systems at Army posts, camps, and stations worldwide. In June 1971 the Alston Division of CONRAC Corporation was awarded a contract to furnish traffic recorder systems for CONUS installations. The first traffic recorder system became operational in late 1975. All CONUS installations are expected to have traffic recorder systems operational by early 1979.

1.2 PURPOSE AND USE. This standard engineering installation package (SEIP) provides guidance to all activities involved in the worldwide program described herein.

1.2.1 Application. This SEIP is prepared for engineers, technicians, logistics personnel, and project officers. Together with related sections and drawings, it covers the basic requirements and installation instructions for small, medium, and large telephone traffic recorder systems applicable to Army telephone exchanges. This SEIP applies mainly to new facilities and upgrading dial central offices (DCO) which do not have a traffic recorder system. It is not intended to result in a major re-engineering effort to make existing operational installations conform to its provisions.

1.2.2 Use. This SEIP should be used to identify major bill of materials (BOM) items in order to stockpile them for callout and by site engineers to develop the BOM for a specific installation. Items peculiar to a specific installation should be added as necessary.

1.3 SYSTEM DESCRIPTION.

1.3.1 General. The system provides a means of acquiring essential traffic data. Timely receipt of this data by traffic engineering personnel will result in more accurate evaluation of the facilities. Based upon known usage, future requirements may be predicted. The DCO will not be functionally changed by this system; however, the system, when installed, will provide an increased study capability characterized by greater efficiency and flexibility. Traffic data must be forwarded by mail, or electrically retransmitted as required from posts, camps, and stations. Systems equipment and equipment interfacing are depicted in figures 1-1 and 1-2. Electrical transmission of traffic data to a central computer for processing is in future planning.

9 August 1976

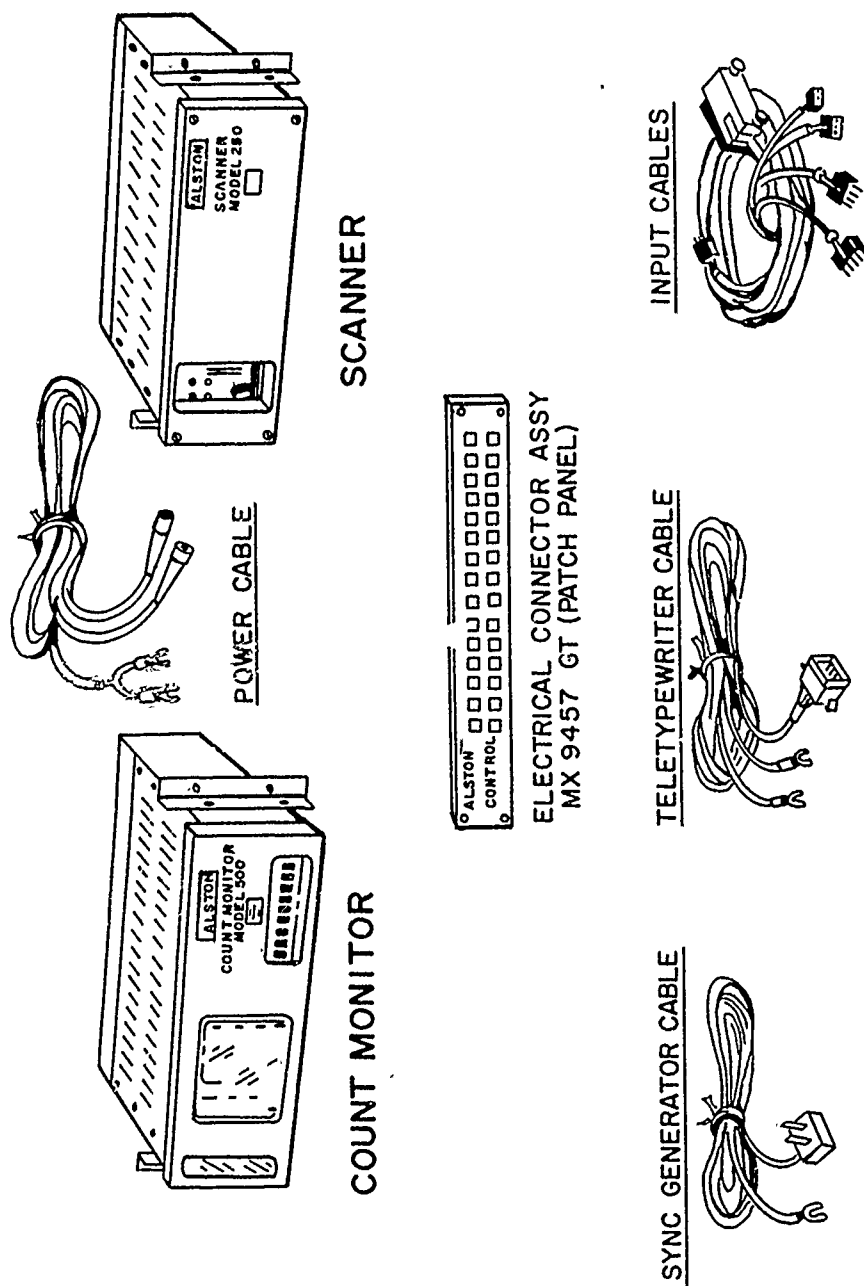


Figure 1-1. Traffic recorder systems equipment.

9 August 1976

SEIP 015

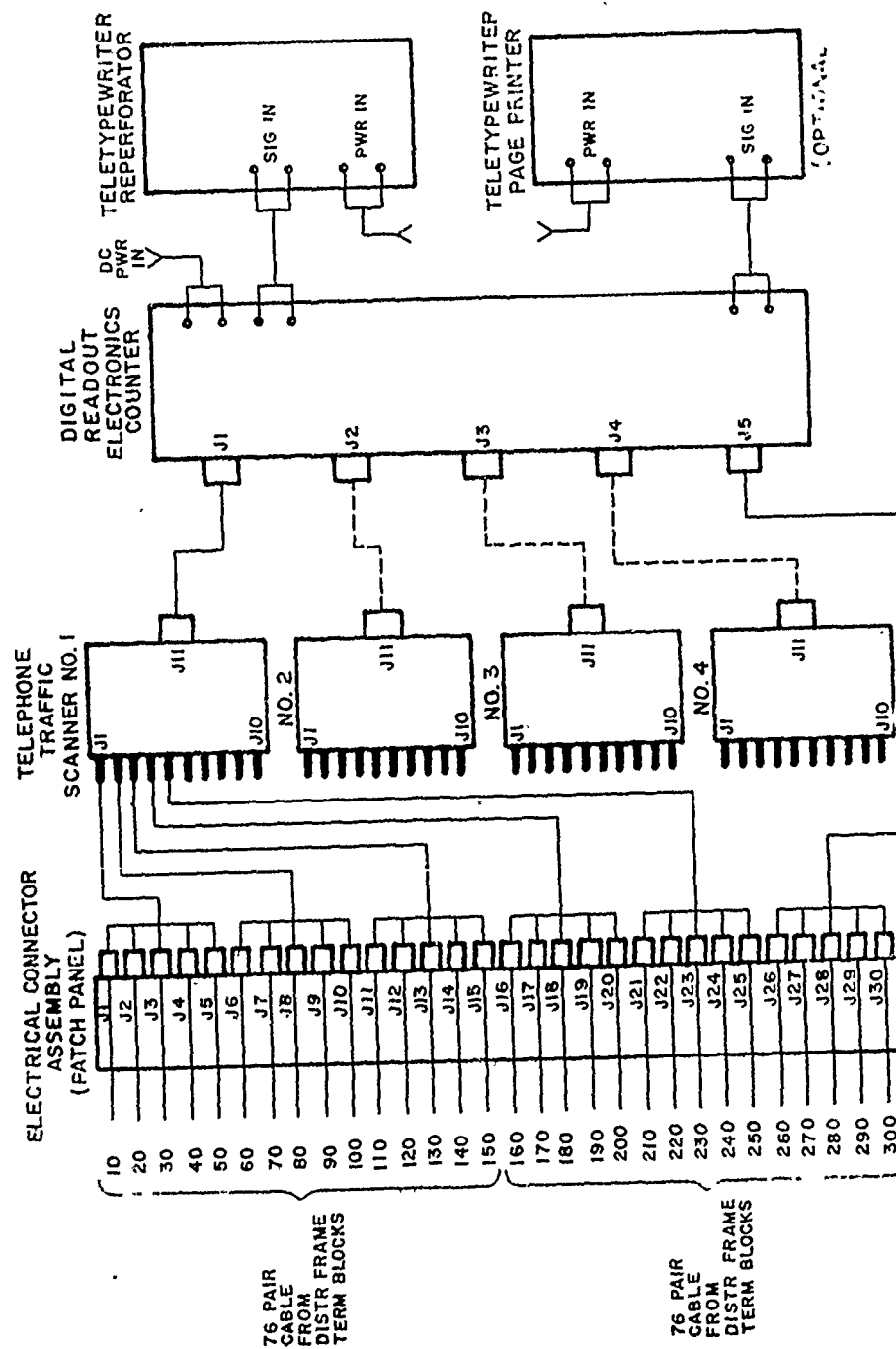


Figure 1-2. Typical traffic scanner system interface cabling.

1.3.2 Components. The traffic recorder system consists of a patching facility which connects the switches and trunks to rack-mounted traffic scanners and count monitors. A reperforator provides punched tape output and an optional teletypewriter is used to obtain a hard copy printout of required data. Preferable installation practices have been included in this SEIP.

1.3.3 Type of Data. Data provided by the system as specified by the preparing engineer, may be: total usage counts, peg counts, all trunks busy, last trunk busy, and overflow data. Information is obtained by sampling individual switch and trunk leads, (i.e., "C" leads) for a busy or idle condition at selected time intervals.

1.4 TECHNICAL DESCRIPTION. The electrical and physical characteristics of telephone traffic recorder systems equipment are in table 1-1. A description of each equipment follows.

1.4.1 Telephone Traffic Scanner, TA 917/GT. The Telephone Traffic Scanner, TA 917/GT, hereinafter called the scanner, obtains telephone traffic usage measurements from up to 500 trunks. A scan is initiated by an external time pulse. Scanner input groups are in blocks of 10 each. Each group of 10 inputs is wired internally to 1 output and may be grouped in any combination up to 150 inputs per group. Scanner outputs are used to drive electronic register units in the Model 500 Count Monitor.

1.4.2 Digital Readout Electronic Counter, CP-1147/GT. The Digital Readout Electronic Counter, CP-1147/GT, hereinafter called the counter, receives up to 250 input data lines from the scanner and stores all register counts in one of two separate electronic buffers. Stored data feeds out at periodic intervals to a printout device.

1.4.2.1 The counter(s) can drive a local teletypewriter or a remote unit at a central data collection center. Auxiliary equipment converts the teletype output signal to a tone-shift frequency signal for transmission over dedicated line/link facilities, i.e., frequency-division (frequency-shift-keyed) multiplexing. If a direct distance dialing (DDD) facility is required, auxiliary equipment must be used. Equipment at the data collection center decodes the signals, which then drive a teletypewriter. Printout may be initiated from the collection center by a reverse control signal sent back to the counter location. The counter can automatically poll several remote offices from a common control center.

9 August 1976

SEIP 015

Table 1-1. Telephone Traffic Recorder Systems Equipment,
Physical and Electrical Characteristics

Equipment	Power-input	Size (inches) Height, Width, Depth	Weight (lbs)
Telephone Traffic Scanner, TA 917/GT	-48 V dc .75A	7 x 19 3/16 x 12	20
Digital Readout Electronic Counter CP 1147/GT	120 V ac 50/60 10 -48 V dc	7 x 19 3/16 x 9 3/8	17
Electrical Connector Assembly MX 9457/GT	None	4 x 19	5
Reperforator, TT 345/FG	115 V ac 50,60 Hz		37

Power supply (Optional equipment source to be determined by
Facility Engineering).

Fuse panel (Optional equipment determined by Facility Engineering).

Teletypewriter (Optional equipment determined by Facility Engineering).

1.4.2.2 Both units (scanner and counter) consist of rack-mounted card files containing printed circuit cards. All connections are made at the rear of the units. Controls are on the front panels, with the exception of scan interval controls which are on the rear of the scanner.

1.4.3 Electrical Connector Assembly, MX 9457/GT. The Electrical Connector Assembly, MX 9457/GT, hereinafter called the patch panel, is provided with 30 connectors which can receive the 10-pin plugs from the equipment cables. The electrical connector assembly serves as a 19-inch rack-mounted electrical distribution center between the "C" leads to be monitored and the traffic recorder equipment.

1.4.4 Reperforator, TT 345/FG. The Reperforator, TT 345/FG, is the primary device providing a five-level perforated tape output (see fig. 1-3) compatible with current state-of-the-art computers. The tape output provides a page printout (see fig. 1-4) from a teletypewriter when processed through a tape reader or transmitter distributor (TD). Additionally, a counter may drive a teletypewriter directly. (See fig. 1-2.)

1.5 MAINTENANCE PHILOSOPHY. Major item maintenance is performed on-site only. No off-site maintenance is authorized. The Dial Central Office Repairman (MOS 36H) will give direct maintenance support to the operator and organization, in accordance with the applicable Department of the Army technical manuals referenced in paragraph 1.6.

9 August 1976

SEIP 015

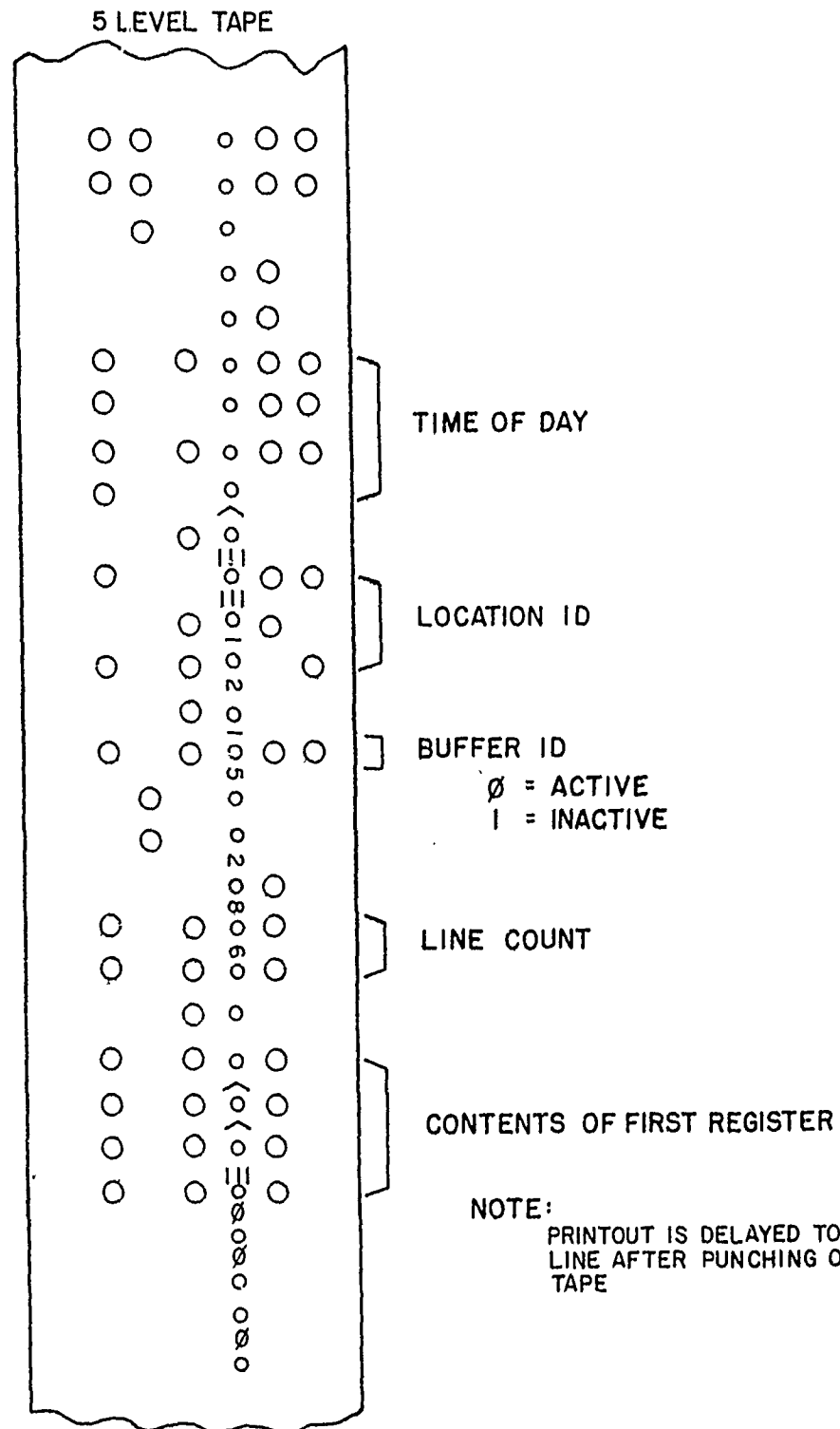


Figure 1-3. Reperforator Tape Output, TT-345/FG.

9 August 1976

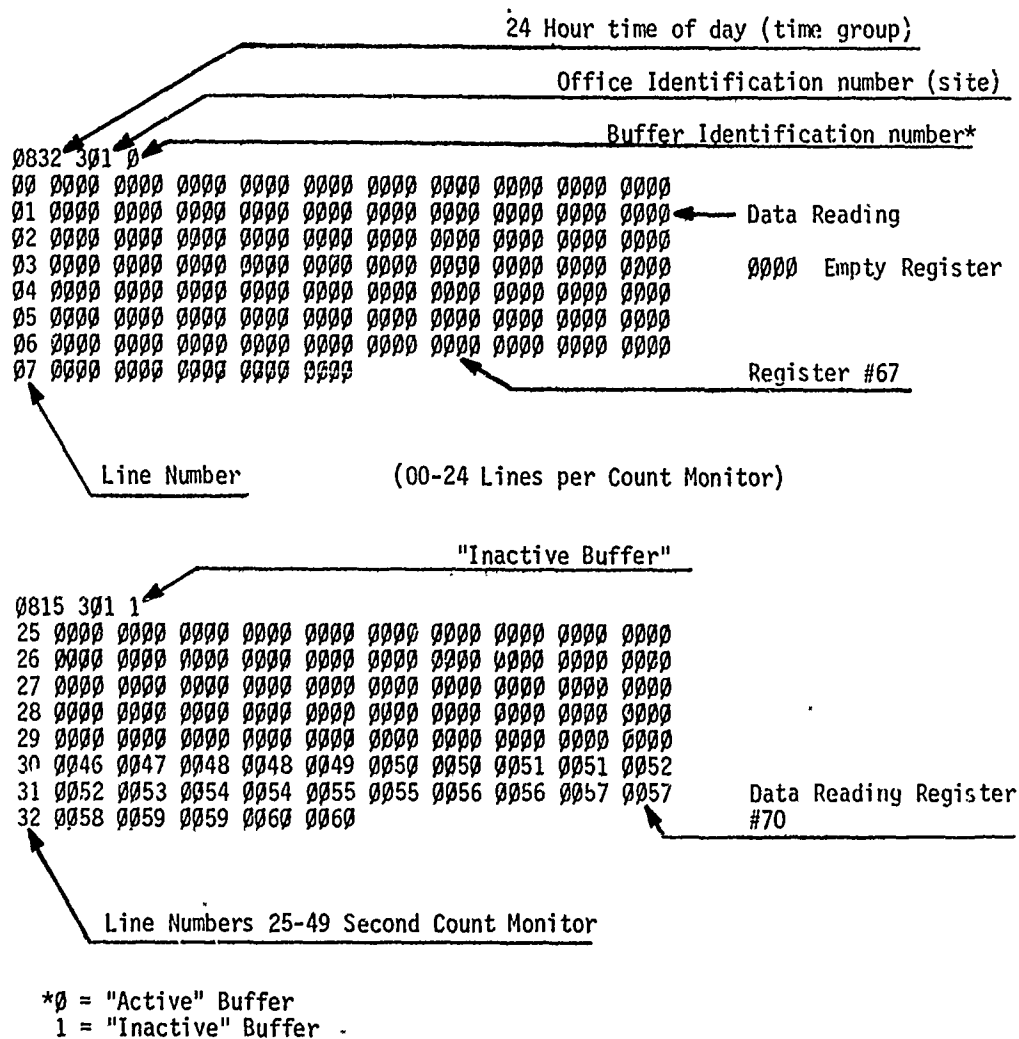


Figure 1-4. Typical page printout from optional teletypewriter.

9 August 1976

SEIP SEIP 015

1.6 LIST OF APPLICABLE DOCUMENTS. The following publications contain information applicable to the installation, operation, and maintenance of the Army's traffic recorder systems equipment:

a. Government Documents.

SPECIFICATIONS:

MIL-I-45208	Inspection System Requirements
-------------	--------------------------------

STANDARDS:

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
-------------	-------------------------------------------------------------

MIL-STD-188	Military Communication System Technical Standards
-------------	---------------------------------------------------

MIL-STD-454	Standard General Requirements for Electronic Equipment
-------------	--------------------------------------------------------

OTHER PUBLICATIONS:

Manuals

TM 11-471	Manual Telephone Central Office Installation
-----------	----------------------------------------------

TM 11-2226	Teletypewriter Reperforators TT-107/FG, TT-107B/FG, TT-108/FG, TT-109/FG, TT-345/FG, TT-345A/FG, TT-346/FG, and TT-346A/FG
------------	-------------------------------------------------------------------------------------------------------------------------------------

TM 11-5805-640-13	Operator's, Organizational, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools Lists) for Scanner Groups, Telephone Traffic OA-8746(V)1/GT and OA-8746(V)2/GT
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TM 11-5805-642-13	Operator's, Organizational, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools Lists) for Counter Groups, Digital, OA-8745(V)2/GT and OA-8745(V)2/GT
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TM 38-750	The Army Maintenance Management System (TAMMS)
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SEIP 015

9 August 1976

TM 740-90-1	Administrative Storage of Equipment
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command)
CCTM 105-50-21	USACC Telecommunications Engineering Installation Practices, Installation-General
Regulations	
AR 105-22	Telecommunications Requirements, Planning, Developing, and Processing
CCR 702-1	Product Assurance, Quality Assurance Program
CCR 702-1-2	USACC Quality Assurance Program for Engineering, Installation, and Acceptance of Communications-Electronics Equipment and Systems
CCCR 702-1	Product Assurance, USACEEIA Quality Assurance and Testing Program
CCCR 702-2	Product Assurance, Preparation of Documentation for Test and Evaluation of Communications-Electronics Materiel
CCCR 702-3	Product Assurance, Role of the Test Director
CCCR 702-4	Product Assurance, Quality Assurance During On-Site Installation
CCCR 702-6	Product Assurance, Quality Assurance Reports
Bulletins	
SB 708-42	Federal Supply Code for Manufacturers-United States and Canada- Code to Name (Cataloging Handbook H4-2)
TB 95-1	US Army Air Traffic Control and NAVAID Facility Standards

9 August 1976

SEIP 015

Circulars

DCAC 370-160-3

Site Survey Data Book for Communica-
tions Facilities

DA Pamphlets

DA Pam 310-4

Index of Technical Manuals, Technical
Bulletins, Supply Manuals (types 7, 8,
and 9), Supply Bulletins, and Lubri-
cation Orders

DA Pam 310-7

Index of Modification Work Orders

b. Non-Government documents.

STANDARDS:

ANSI-C-1

National Electrical Code

1.7 COMMENTS ON PUBLICATION. Users of this publication are in-
vited to submit recommendations for its improvement. Comments
should be keyed to the page, paragraph, and line of the text for
which the change is recommended. A mailing card for convenience
is bound with this SEIP. Comments should be sent directly to the
Commander, US Army Communications-Electronics Engineering Instal-
lation Agency, ATTN: CCC-CED-SEP, Fort Huachuca, Arizona 85613.

9 August 1976

SEIP 015

SECTION 2. SITE SURVEY DATA AND CHECKLIST

2.1 GENERAL. This section contains information to perform site surveys, including office or the recorder systems equipment installation.

2.2 SITE SURVEY CRITERION. The site survey is conducted in accordance with the guidelines set forth in Defense Communications Agency (DCA) Circular 370-160-3, Site Survey Data Book for Communications Facilities. A telecon survey or statement of survey is not acceptable and will not negate the need to perform a physical review and complete a site survey checklist.

2.2.1 Site Survey Checklist. A site survey checklist (see a sample in fig. 2-1) is used by the survey team as a guide to identify and assemble required technical data during the site survey.

SEIP 015

9 August 1976

SITE SURVEY CHECKLIST

FOR

DATE: _____

PROJECT NUMBER: _____

SITE LOCATION: _____

CITY: _____ COUNTRY: _____

INSTALLATION: _____

BUILDING: _____ ROOM: _____

PROJECT ENGINEER: _____

CLASSIFICATION: _____

9 August 1976

SEIP 015

PROJECT OR TASK NO: _____

1. PURPOSE OF SITE SURVEY: _____

2. PERSONNEL CONTACTED OR PRESENT DURING SURVEY:

<u>Name, Grade, and Title</u>	<u>Organization</u>	<u>Phone No.</u>
a. _____	_____	_____
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____
e. _____	_____	_____
f. _____	_____	_____
g. _____	_____	_____
h. _____	_____	_____

3. EQUIPMENT TO BE INSTALLED:

- a. Contractor furnished and installed.
- b. GFE, Government installed.
- c. GFE, Contractor installed.

9 August 1976

PROJECT OR TASK NO: _____

a. Documentation of the status of the physical plant should be completed by requisition and review of the plant-in-place (P-I-P) drawings. The list of P-I-P drawings obtained is as follows:

[illegible]

b. Drawings not available during the site survey should be requested by the local military authorities through the most expeditious channels. Once obtained, the drawings should be immediately forwarded to Commander, US Army Communications-Electronics Engineering Installation Agency, ATTN: CCC-CED-SWST, Fort Huachuca, Arizona 85613.

c. If P-I-P drawings of the physical plant are not available, lack sufficient details, or are otherwise inadequate, provide a dimensioned sketch of the floor plan including the location, dimensions, and identity of each equipment. (Please attach the sketch.)

Figure 2-1. Sample Site Survey Checklist (sheet 3 of 5).

9 August 1976

SEIP 015

PROJECT OR TASK NO: _____

d. Additional general information, which bears on the engineering of the facility, is as follows:

5. ROOM CONFIGURATION (To be supported by scaled drawing):

a. Room numbers: _____

b. Floor:

(1) Material: _____

(2) Condition: _____

(3) Loading capacity: _____

6. STATION GROUND:

a. Signal ground installed: Yes ___ No ___

(1) Type (water pipe, rod, etc.) _____

(2) Resistance of true earth ground _____ ohms

(3) Date measured:

(4) Method used:

b. Protective ac ground installed Yes ___ No ___

Figure 2-1. Sample Site Survey Checklist (sheet 4 of 5).

SFIP 015

9 August 1976

PROJECT OR TASK NO: _____

(1) All equipment grounded to ac protective ground by
separate wires Yes ☐ No ☐

(2) Ferrous shields tied to ac protective ground bus:
Yes ☐ No ☐

7. MISCELLANEOUS:

Date

Site Survey Team Chief

9 August 1976

SEIP 015

SECTION 3. INSTALLATION INSTRUCTIONS

3.1 GENERAL. Installation instructions provide guidance to activities responsible for the engineering and installation of traffic recorder systems equipment. Installation supervisors and the quality assurance representative must be familiar with the installation specifications and applicable documents listed in paragraph 1.6 to direct the installation effort and inspect all work.

3.2 INSTALLATION PERSONNEL. Installation personnel are assigned in accordance with program priorities established by USACEEIA and the scheduling of teams to the area being served.

3.3 INSTALLATION CRITERIA. The equipment is installed in accordance with the established criteria, the inclosed engineering drawings, and referenced drawings and publications. Installation personnel must be familiar with CCTM 105-50-21, Telecommunications Engineering-Installation Practices, Installation-General, to ensure conformation to standard installation procedures. The operating command will determine the mode of operation and supply this information to the project engineer during the site survey. Necessary strapping and wiring will be specified by the project engineer.

3.3.1 Referenced Drawings. Drawings listed and provided in section 4, Engineering Installation Drawings, are used as engineering and installation guidelines. A set of current issue microfilm drawings (35-millimeter aperture cards) may be obtained from the US Army Communications-Electronics Engineering Installation Agency, ATTN: CCC-CED-SET, Fort Huachuca, Arizona 85613.

3.3.2 Cabling and Wiring.

3.3.2.1 All switchboard and power cables are furnished in bulk and shall be cut and formed on the job by the installer. Refer to SEIP drawings, cable running lists and the manufacturers' recommendations provided with the equipment.

3.3.2.2 Whenever possible use existing cable racks and superstructure but without overloading. Extending superstructure to facilitate equipment in new racks may be required.

3.3.2.3 Cable ends from the cable runs to the office equipment that will be monitored will terminate on terminal blocks of the distributing frame and equipment bays concerned. Test points selected will be cross connected to the 10 by 30 or 10 by 20 terminal blocks on their respective frame, i.e., IDF, TDF, CDF, or equipment bays. These blocks will then be cabled and wired directly to the corresponding patch panel, MX 9457/GT.

3.3.2.4 Terminal blocks (10 by 30 or 10 by 20), for installation at equipment bays and the size of subsequent cable to the patch panel, must be determined on an as-required basis for each post, camp, or station configuration. The most commonly used sizes are recorded on the BOM, section 5.

3.3.3 Major and Minor Items of Equipment.

3.3.3.1 Patch panels will be required in a quantity according to the DCO size, sampling requirements, and potential growth. Figures 3-1 through 3-5 depict typical layouts for small, medium, and large offices. These illustrations are for guidance only in preparation of the engineering installation package (EIP). Each EIP will be individually engineered to the DCO requirements. However, the sequence of assignment (top to bottom) is standardized and will be followed as shown in table 3-1 and figures 3-6 and 3-7. The counter register assignments for the small, medium, and large exchanges are shown in tables 3-2 and 3-3.

3.3.3.2 Counter.

a. It is recommended that printed circuit boards (PCB's) be removed and stored until the system has been completely installed and continuity tested. When reinstalling, precaution must be taken to assure the power is OFF and PCB's are properly color-code mated to their respective sockets.

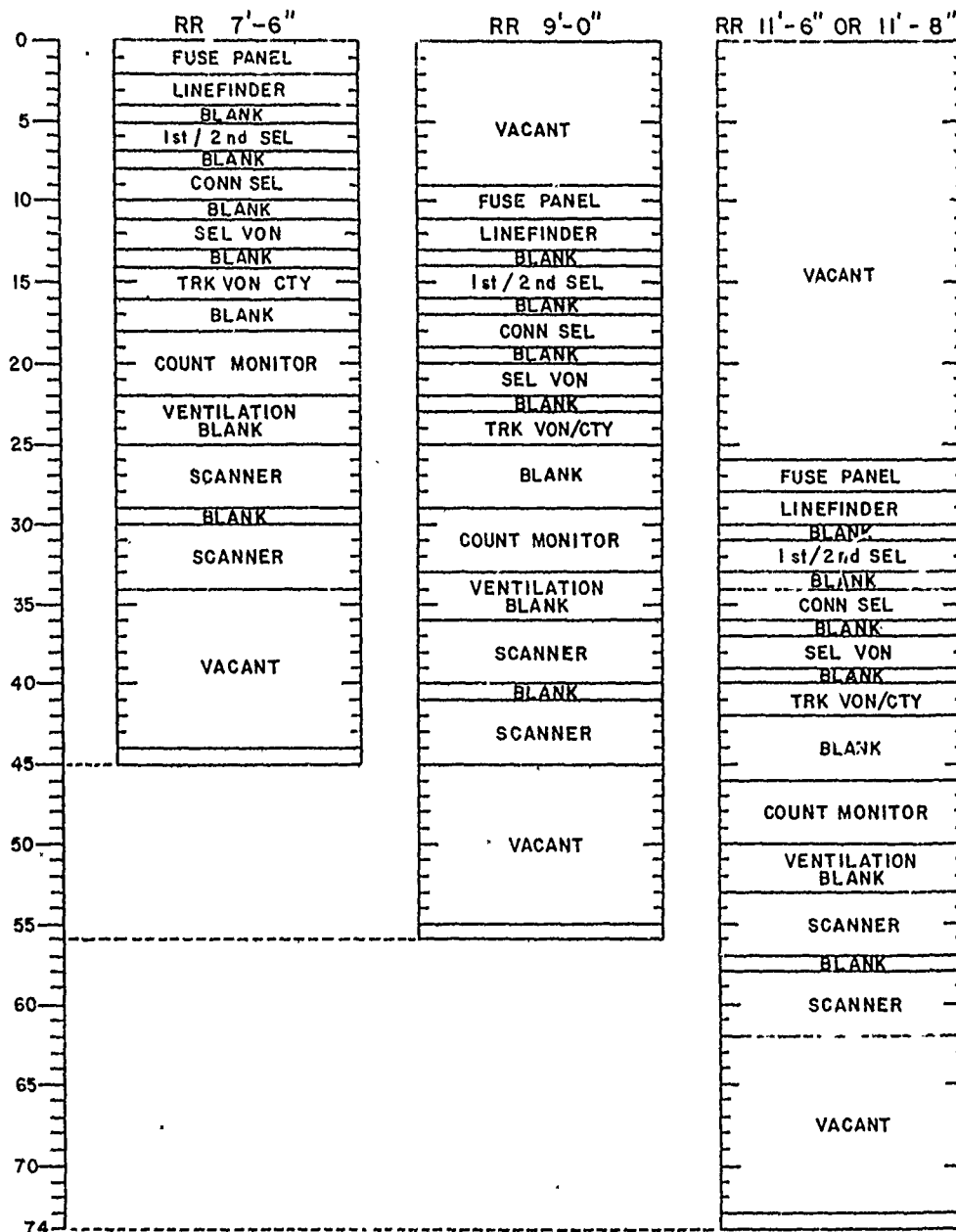
b. When a second counter is used it must be connected in a chain so as to provide sequential readout into the same teletype-writer unit. Programing is accomplished by terminal strapping in the counter per manufacturer's instructions.

c. The front panel identification thumbwheel is set to the 3-digit office number of the DCO. Instructions for setting the clock and presetting counter switches and controls is contained in both the manufacturer's publication and TM 11-5805-642-13.

d. The counter's preformed cable provides the flexibility of plugging the input and output of any counter to any distribution panel (figures 1-1 and 1-2). The input connections are labeled J1 through J5 and run in consecutive vertical columns of 10 from top to bottom, beginning with input 1 (register 1) at the upper left corner of J1. The input numbers 0 through 9 are at the left of J1 and apply to all rows of all five connectors. The 25 vertical columns (each representing one printout line of ten registers) are labeled 0 through 24 (five columns per connector). Thus, the 250th register input will be at row 9 of column 24 on connector J5.

9 August 1976

SEIP 015

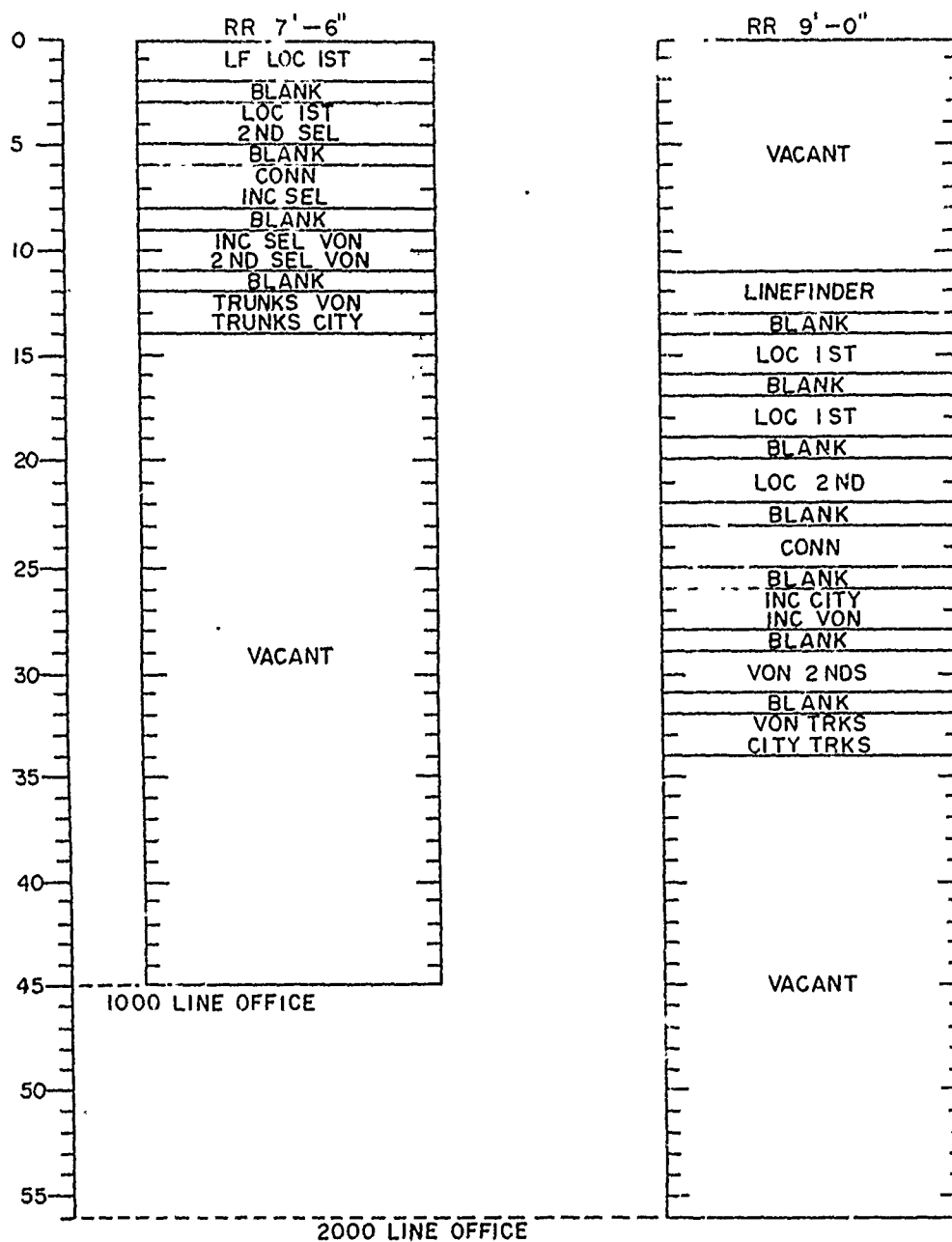


NOTES:

1. CONFIGURATIONS REQUIRING MORE EQUIPMENT AND/OR PATCH PANELS, TWO RACKS SHALL BE USED.
2. TOP PATCH PANEL (#1) WILL BE MOUNTED NO-HIGHER THAN 7'-6" ABOVE FLOOR LEVEL.
3. ALLOW ONE VACANT SPACE BETWEEN PATCH PANELS.
4. ALLOW TWO VACANT SPACES BETWEEN PATCH AND FUSE PANEL.
5. ALLOW THREE VACANT SPACES BELOW COUNT MONITOR FOR PROPER VENTILATION.

Figure 3-1. Typical layout of equipment and patch panels in a single rack (small telephone exchange).

9 August 1976



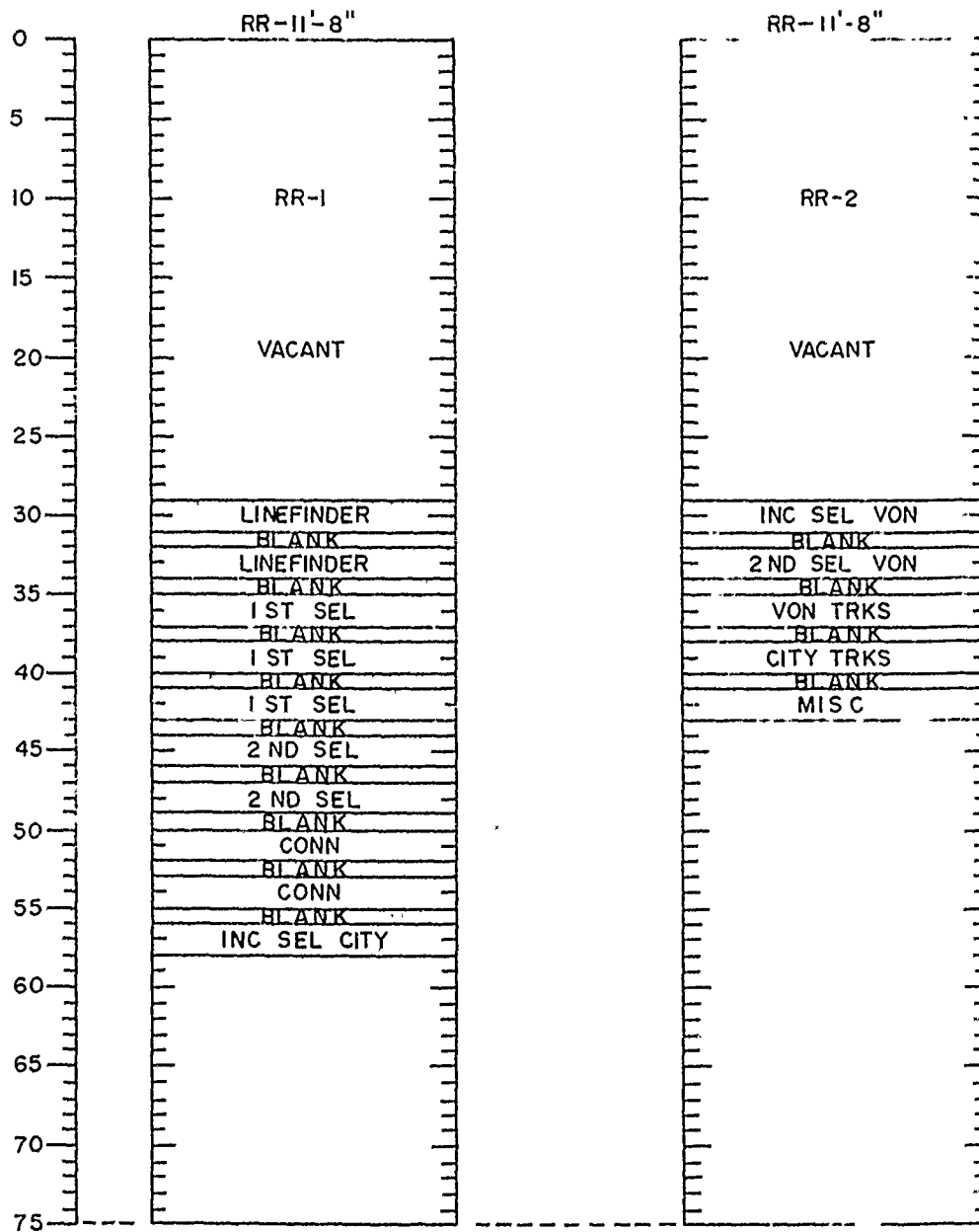
NOTES:

1. WHEN USING A HIGHER RACK THAN SHOWN, LEAVE ALL ABOVE 7' 6" VACANT.
2. IF REQUIRED, ADDITIONAL PATCH PANELS MAY BE INSTALLED FOR FUTURE EXPANSION.

Figure 3-2. Typical electrical distribution/patch panel layout (small telephone exchange).

9 August 1976

SEIP 015



NOTES:

1. IF USING A 9'-0" RACK, TOP OF FIRST PANEL IS POSITION NO. 11.
2. INTERCONNECTING PATCH CABLES SHOULD FEED FROM BACK TO FRONT THROUGH BLANK SPACES TO CONNECT WITH THE MATING PANEL
3. IF REQUIRED, ADDITIONAL PATCH PANELS MAY BE INSTALLED AT THE BOTTOM OF RACK.

Figure 3-3. Typical electrical distribution/patch panel layout (medium telephone exchange) (2 racks).

9 August 1976

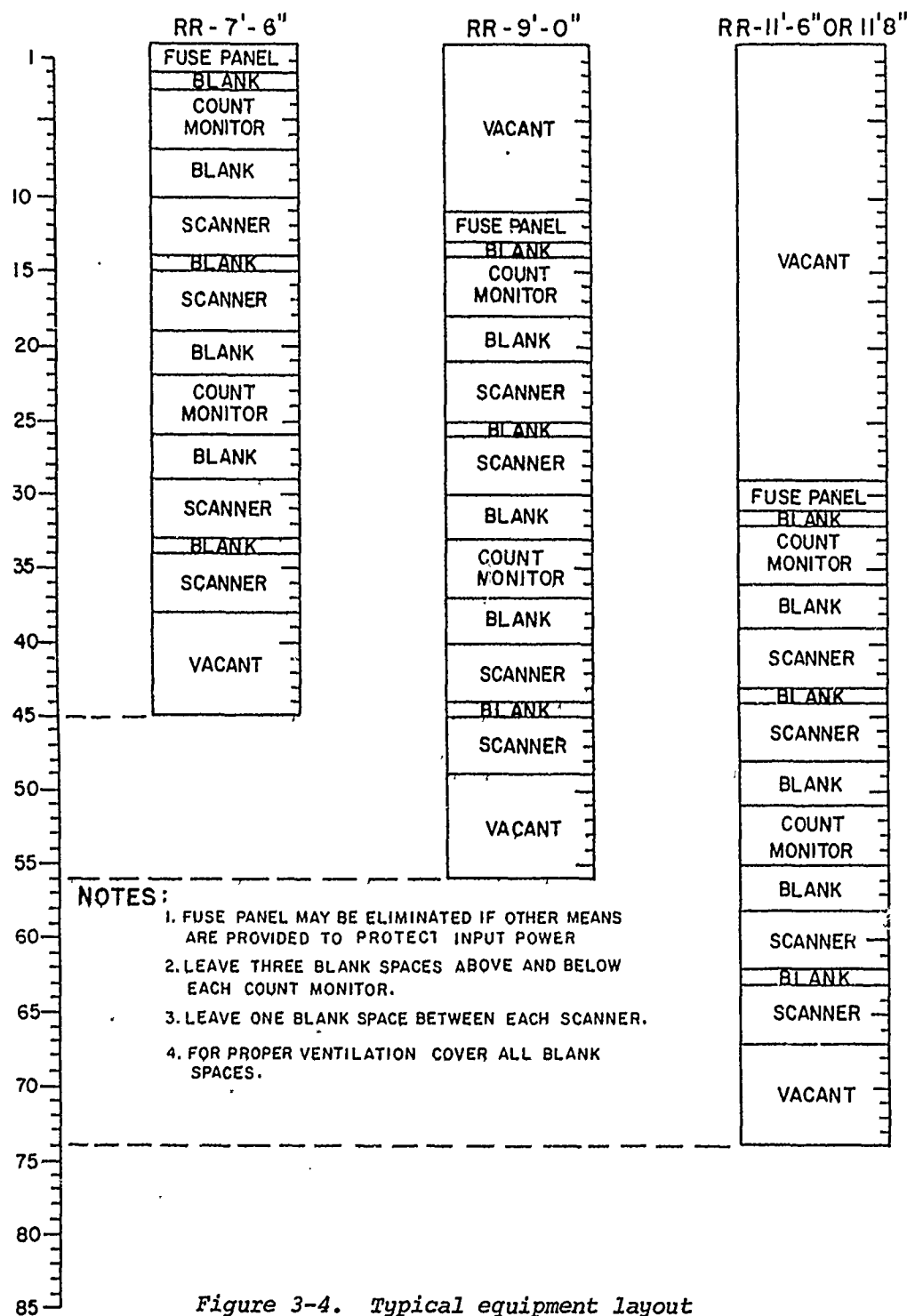
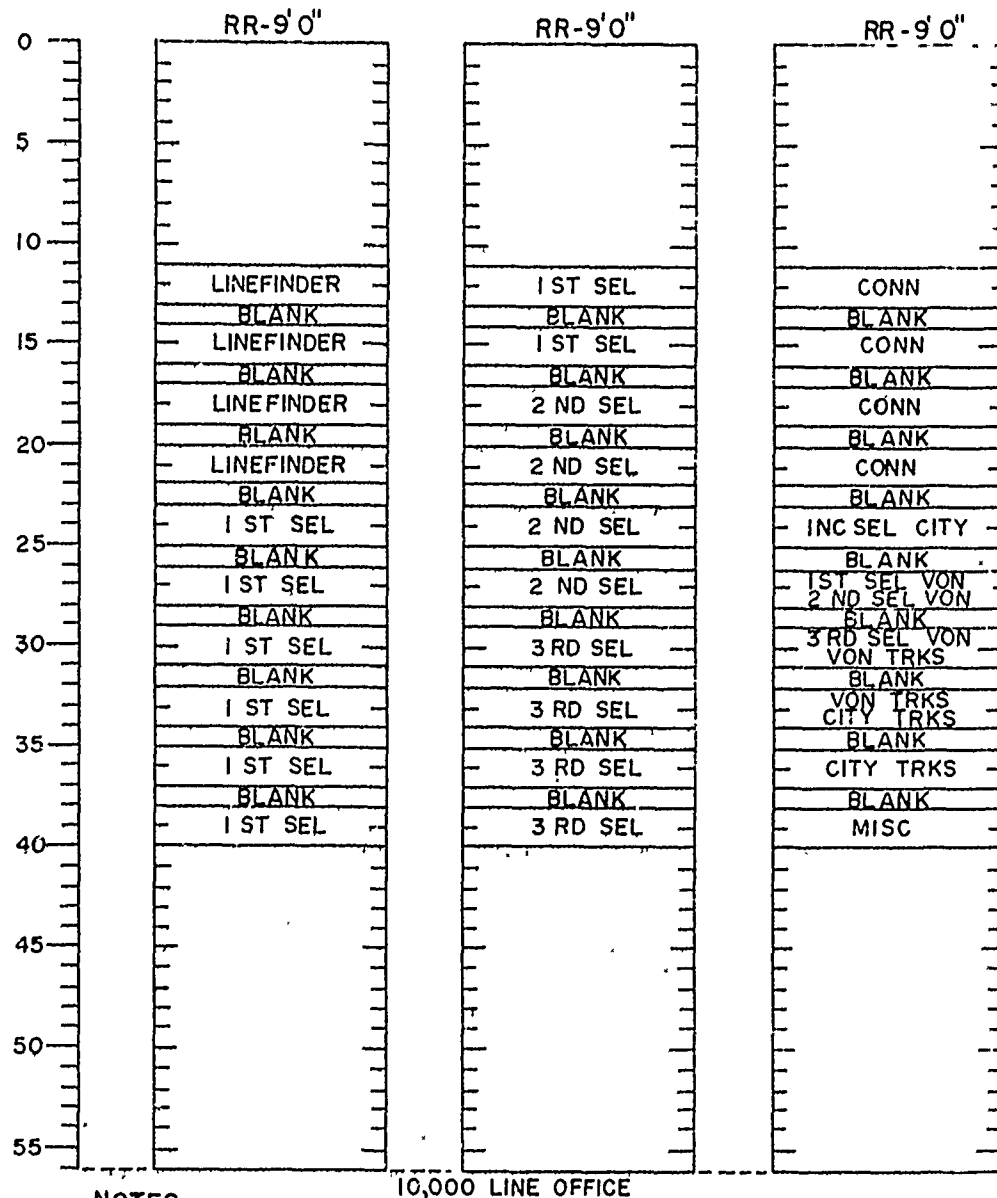


Figure 3-4. Typical equipment layout
(large telephone exchange).

9 August 1976

SEIP 015



NOTES:

1. WHEN USING RACKS HIGHER THAN SHOWN LEAVE ALL ABOVE 7' 6" VACANT.
2. INTERCONNECTING PATCH CABLES SHOULD FEED FROM BACK TO FRONT THROUGH BLANK SPACES TO CONNECT WITH PATCH PANELS ABOVE
3. IF REQUIRED, ADDITIONAL PATCH PANELS MAY BE INSERTED AT THE BOTTOM OF RACK.

Figure 3-5. Typical electrical distribution/patch panel layout (large telephone exchange).

Table 3-1. Recorder Assignment Sequence

Patch panels and pin assignments are made in accordance with the central office size and number of "C" leads to be sampled. Regardless of office size the sequence will be standardized as follows:

NOMENCLATURE:

Line Finders	LF
1st Selectors	1st Sel Lev
2nd Selectors	2nd Sel
3rd Selectors	3rd Sel
Connectors	Conn
Incoming Selectors	Inc
Incoming Selectors (AUTOVON)	Inc Sel
AUTOVON 2nd Selectors	VON
AUTOVON 3rd Selectors	VON
AUTOVON Trunk (in)	VON IN
AUTOVON Trunk (out)	VON OUT
AUTOVON Trunk (2-way)	VON
Military Trunks	
Register Sender	
Expansion (future use)	EXP

(Reference figures 3-6 and 3-7 for typical layouts.)

9 August 1976

SEIP 015

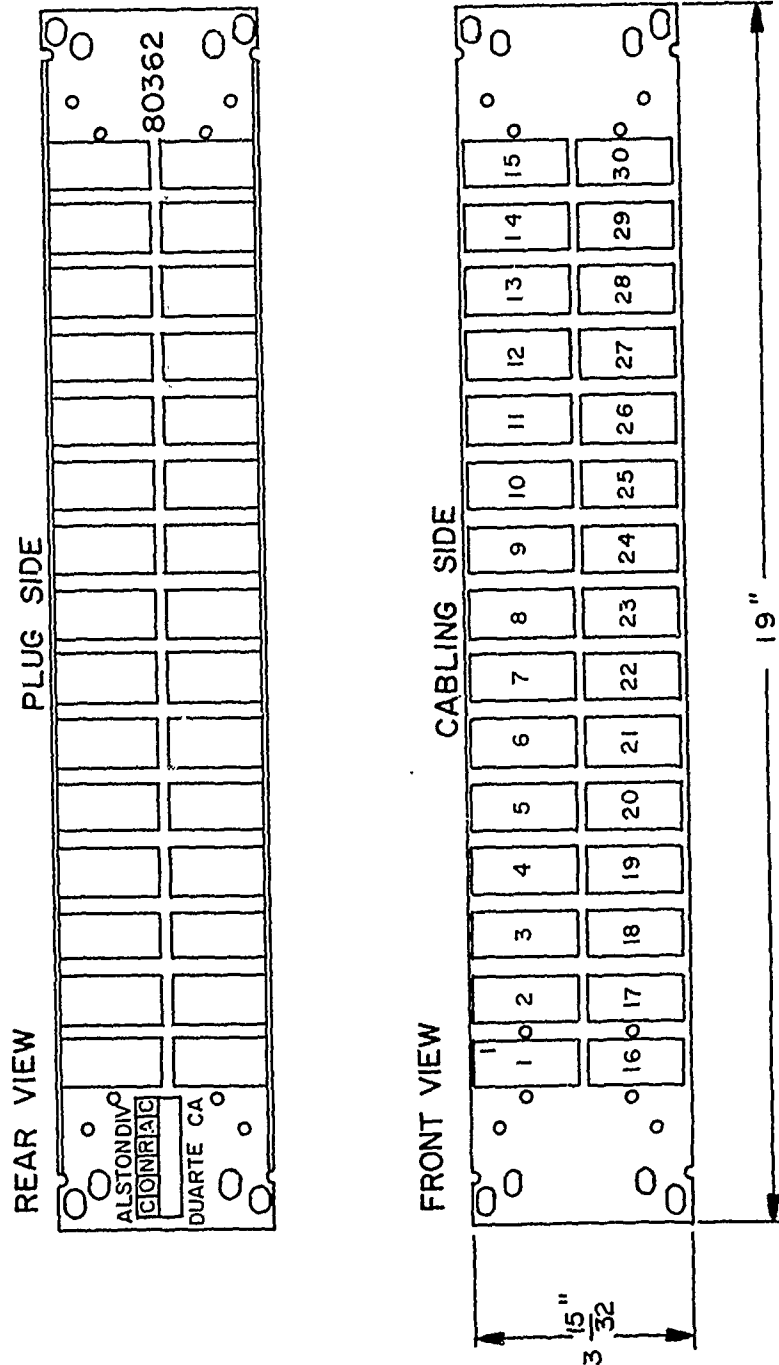


Figure 3-6. Distribution (patch) panel layout and mounting.

9 August 1976

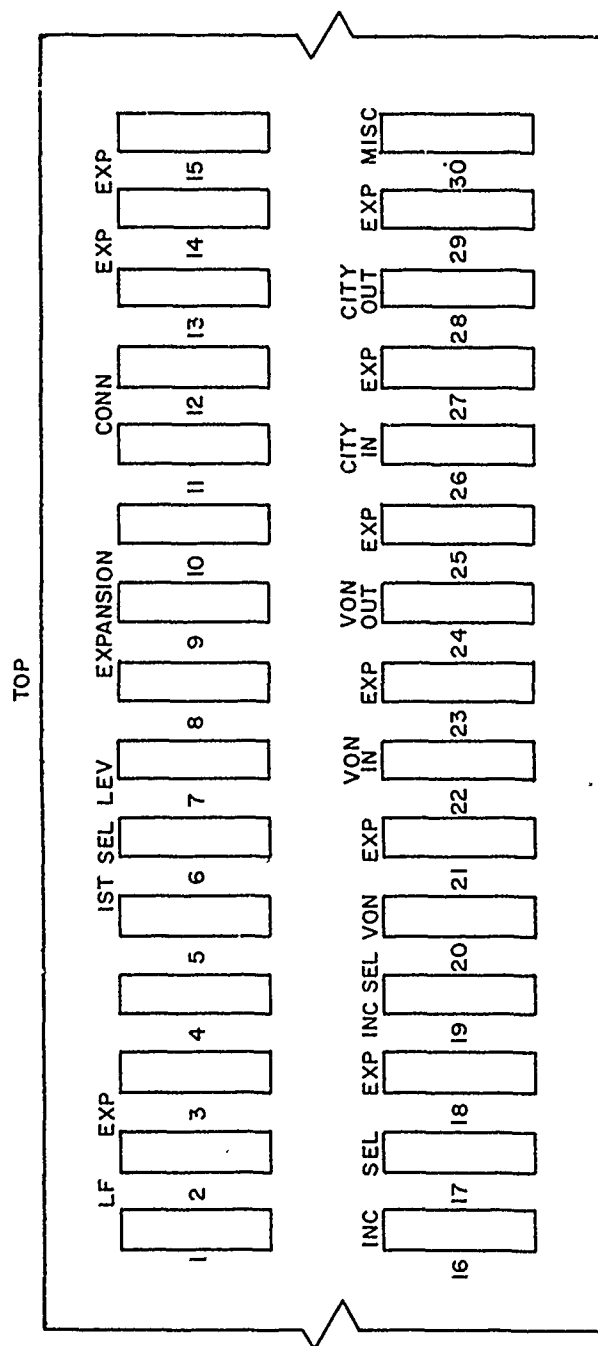


Figure 3-7. Typical distribution panel assignments (small telephone exchange).

9 August 1976

SEIP 015

Table 3-2. Count Monitor Register Assignment
(Small and Medium Exchanges)

<u>Type Service</u>				<u>Type Service</u>			
Equipment	CCS	or	PC	Equipment	CCS	or	PC
Scan Check	00-09			WATS OUT Band 2	40		*41
VON MLP IN	10		*11	WATS OUT Band 3	42*		43
VON MLP OUT	12		*13	WATS OUT Band 4	44		*45
VON IN ONLY	14		*15	WATS OUT Band 5	46		*47
VON 2/W IN	16			WATS OUT Band 6	48		*49
VON 2/W Total	17		*18	WATS OUT INTRA 1	50		*51
VON OUT	19		*20	WATS OUT INTRA 2	52		*53
VON MCA	21		*22	FTS IN ONLY	54		*55
VON OPR ASST	23		*24	FTS OUT ONLY	56		*57
City LOC IN	25		*26	FTS 2/W Total	58		*60
City LOC OUT	27		*28	FTS 2/W IN/OUT	59		
2/W Total City LOC	29			FX IN	61		*62
2/W IN/OUT City LOC	30		*31	FX IN	63		*64
LD Toll Incoming	32		*33	FX IN	65		*66
LD Toll OUT	34		*35	FX IN	67		*68
City Listed Number	36		*37	FX IN	69		*70
WATS OUT Band 1	38		*39	FX IN	71		*72
				FX IN	73		*74

*1st Trunk Only.

Table 3-2. Count Monitor Register Assignment
(Small and Medium Exchanges)--continued

<u>Type Service</u>			<u>Type Service</u>		
Equipment	CCS	or PC	Equipment	CCS	or PC
FX IN	75	*76	FX 2/W Total	107	*109
FX IN	77	*78	FX 2/W IN	108	
FX IN	79*	*80	FX 2/W Total	110	*112
FX OUT	81	*82	FX 2/W IN	111	
FX OUT	83	*84	FX 2/W Total	113	*115
FX OUT	85	*86	FX 2/W IN	114	
FX OUT	*87	*88	FX 2/W Total	116	116
FX OUT	89	*90	FX 2/W IN	117	
FX OUT	91	*92	FX 2/W Total	119	121
FX OUT	93	*94	FX 2/W IN	120	
FX OUT	95	*96	FX 2/W Total	122	124
FX OUT	97	*98	FX 2/W IN	123	
FX OUT	99	*100	FX 2/W Total	125	127
FX 2/W Total	101	*103	FX 2/W IN	126	
FX 2/W IN	102		FX 2/W Total	128	
FX 2/W Total	104	*106	FX 2/W IN/OUT	129	130
FX 2/W IN	105		"0" Level	131	

*1st Trunk Only.

9 August 1976

SEIP 015

Table 3-2. Count Monitor Register Assignment
(Small and Medium Exchanges)--continued

<u>Type Service</u>			<u>Type Service</u>		
Equipment	CCS	or PC	Equipment	CCS	or PC
Lo INFO	132		LF 7	156	179
Misc INFO	133		8	157	180
Misc INFO	134		9	158	181
Misc TRK	135	136	10	159	182
Misc TRK	137	138*	11	160	183
Misc TRK	139	140*	12	161	184
Misc TRK	141	142*	13	162	185
Misc TRK	143	144*	14	163	186
Misc TRK	145	146*	15	164	187
Misc TRK	147	148*	16	165	188
SPARE			17	166	189
LF 1	150	173	18	167	190
2	151	174	19	168	191
3	152	175	20	169	192
4	153	176	21	170	193
5	154	177	22	171	194
6	155	178	23	172	195

*1st Trunk Only.

Table 3-2. Count Monitor Register Assignment
(Small and Medium Exchanges)--continued

<u>Type of Service</u>				<u>Type of Service</u>			
Equipment		CCS	or PC	Equipment		CCS	or PC
CONN	1	196	219	CONN	15	210	233
	2	197	220		16	211	234
	3	198	221		17	212	235
	4	199	222		18	213	236
	5	200	223		19	214	237
	6	201	224		20	215	238
	7	202	225		21	216	239
	8	203	226		22	217	240
	9	204	227		23	218	241
	10	205	228	SEL	LEV	242	
	11	206	229	SEL	LEV	243	
	12	207	230	SEL	LEV	244	
	13	208	231	SEL	LEV	245	
	14	209	232	SEL	LEV	246	

9 August 1976

SEIP 015

Table 3-3. Count Monitor Register Assignments
(Large Exchange)

<u>Type Service</u>			<u>Type Service</u>		
Equipment	CCS	or PC	Equipment	CCS	or PC
Scan Check	00-09		WATS OUT Band 2	40	41
VON MLP IN	10	11	WATS OUT Band 3	43	44
VON MLP OUT	12	13	WATS OUT Band 4	44	45
VON IN ONLY	14	15	WATS OUT Band 5	46	47
VON 2/W IN	16		WATS OUT Band 6	48	49
VON 2/W Total	17	18	WATS OUT Intra 1	50	51
VON OUT	19	20	WATS OUT Intra 2	52	53
VON MCA	21	22	FTS IN	54	55
VON OPR ASC	23	24	FTS OUT	56	57
City Loc IN	25	26	FTS 2/W Total	58	60
City Loc OUT	27	28	FTS 2/W IN	59	
2/W Total	29	31	FX IN	61	62
City Loc			FX IN	63	64
2/W City Loc	30		FX IN	65	66
Toll Incoming	32	33	FX IN	67	68
Toll OUT	34	35	FX IN	69	70
City Listed	36	37	FX IN	71	72
Number			FX IN	73	74
WATS OUT Band 1	38	39			

SEIP 015

9 August 1976

Table 3-3. Count Monitor Register Assignments
(Large Exchange)--continued

<u>Type Service</u>			<u>Type Service</u>		
Equipment	CCS	or PC	Equipment	CCS	or PC
FX IN	75	76	FX 2/W IN	108	
FX IN	77	78	FX 2/W Total	110	112
FX IN	79	80	FX 2/W IN	111	
FX OUT	81	82	FX 2/W Total	113	115
FX OUT	83	84	FX 2/W IN	114	
FX OUT	85	86	FX 2/W Total	116	116
FX OUT	87	88	FX 2/W IN	117	
FX OUT	89	90	FX 2/W Total	119	121
FX OUT	91	92	FX 2/W IN	120	
FX OUT	93	94	FX 2/W Total	122	124
FX OUT	95	96	FX 2/W IN	123	
FX OUT	97	98	FX 2/W Total	125	127
FX OUT	99	100	FX 2/W IN	126	
FX 2/W Total	101	103	FX 2/W Total	128	130
FX 2/W IN	102		FX 2/W IN	129	
FX 2/W Total	104	106	"0" Level	131	
FX 2/W IN	105		LOC INFO	132	
FX 2/W Total	107	109	Misc INFO	133	

9 August 1976

SEIP 015

Table 3-3. Count Monitor Register Assignments
(Large Exchange)--continued

<u>Type Service</u>			<u>Type Service</u>		
Equipment	CCS	or PC	Equipment	CCS	or PC
Misc INFO	134		LF 10	159	219
Misc TRK	135	136	11	160	220
Misc TRK	137	138	12	161	221
Misc TRK	139	140	13	162	222
Misc TRK	141	142	14	163	223
Misc TRK	143	144	15	164	224
Misc TRK	145	146	16	165	225
Misc TRK	147	148	17	166	226
SPARE	149		18	167	227
LF 1	150	210	19	168	228
2	151	211	20	169	229
3	152	212	21	170	230
4	153	213	22	171	231
5	154	214	23	172	232
6	155	215	24	173	233
7	156	216	25	174	234
8	157	217	26	175	235
9	158	218	27	176	236

Table 3-3. Count Monitor Register Assignments
(Large Exchange)--continued

<u>Type Service</u>			<u>Type Service</u>		
Equipment	CCS	or PC	Equipment	CCS	or PC
LF 28	177	237	LF 46	195	255
29	178	238	47	196	256
30	179	239	48	197	257
31	180	240	49	198	258
32	181	241	50	199	259
33	182	242	51	200	260
34	183	243	52	201	261
35	184	244	53	202	262
36	185	245	54	203	263
37	186	246	55	204	264
38	187	247	56	205	265
39	188	248	57	206	266
40	189	249	58	207	267
41	190	250	59	208	268
42	191	251	60	209	269
43	192	252	CONN GP 1	270	330
44	193	253	2	271	331
45	194	254	3	272	332

9 August 1976

SEIP 015

Table 3-3. Count Monitor Register Assignments
(Large Exchange)--continued

<u>Type Service</u>				<u>Type Service</u>			
Equipment		CCS	or PC	Equipment		CCS	or PC
CONN GP	4	273	333	CONN GP	22	291	351
	5	274	334		23	292	352
	6	275	335		24	293	353
	7	276	336		25	294	354
	8	277	337		26	295	355
	9	278	338		27	296	356
	10	279	339		28	297	357
	11	280	340		29	298	358
	12	281	341		30	299	359
	13	282	342		31	300	360
	14	283	343		32	301	361
	15	284	344		33	302	362
	16	285	345		34	303	363
	17	286	346		35	304	364
	18	287	347		36	305	365
	19	288	348		37	306	366
	20	289	349		38	307	367
	21	290	350		39	308	368

SEIP 015

9 August 1976

Table 3-3. Count Monitor Register Assignment
(Large Exchange)--continued

<u>Type Service</u>			<u>Type Service</u>		
Equipment	CCS	or PC	Equipment	CCS	or PC
CONN GP 40	309	369	CONN GP 56	325	385
41	310	370	57	326	386
42	311	371	58	327	387
43	312	372	59	328	388
44	313	373	60	329	389
45	314	374	SEL LV	390	
46	315	375	SEL LV	391	
47	316	376	SEL LV	392	
48	317	377	SEL LV	393	
49	318	378	SEL LV	394	
50	319	379	SEL LV	395	
51	320	380	SEL LV	396	
52	321	381	SEL LV	397	
53	322	382	SEL LV	398	
54	323	383	SEL LV	399	
55	324	384			

9. August 1976

SEIP 015

e. The counter output terminals TS-11 and TS-12 on the rear of the unit are used for connecting to the reperforator. Caution: the reperforator will not run if these terminals are reversed. TS-13 and TS-14 are used only when a 60-mA loop current is required for teletypewriter operation.

f. Counters receive power from a -48 V dc central office talk battery source connected to terminals TS-1 and -2 on the back side by means of a two-wire cable fused externally at 1-1/2 ampere.

g. Master clock accuracy is assured by connecting a 120 V ac, 50/60 Hz source to terminal TS-4 via the sync generator cable, figure 1-1.

3.3.3.3 Scanner.

a. Input connectors are in four sections marked 1, 2, 3, and 4, respectively. The first 3 sections have 150 inputs each. The 4th section is represented by a single connector and contains 50 inputs. Input numbering is indicated on the first connector of the left side of the rear panel. The terminals are arranged in five vertical columns labeled 0-9. The horizontal columns are labeled 0-4. Scanning begins at the first pin (00) of the first connector in each input set and moves down to the right. Patch cable 365097 is used to connect both scanners and counters to their associated patch panels.

b. Output is a 50-pin connector. There is one output terminal for each input ten's group (one for each column of input terminals) or 50 output totals. Pin 00 of the connector is the output for the first ten's group of input group 1, pin 01 is the output of the second ten's group of input group 1, etc. Output grouping is accomplished by jumping the terminal block pins associated with the scanner output cable. The grouping output lines thus obtained may be connected to the inputs of a counter.

c. Scanner terminal "TP" at the back of the unit receives the 100-second time ground-pulse from the counter. A -48 V dc, DCO power source is connected to the -MB terminal with +ground to the terminal marked GND. Each unit will be fused by an external 1-1/3 ampere alarm DCO fuse. Fuses may be assigned at the time of installation.

3.3.3.4 Reperforator. For proper operation, set the control to 100 words per minute (wpm) or 600 characters per minute and verify that the fiber gear on the motor shaft also is 100 wpm. If it is not, remove the gear from the motor shaft and replace with the proper gear which should be attached to the chassis behind the motor. The line switch on the front right-hand side of the

9 August 1976

reperforator must be in the 60 mA position. The reperforator receives its input signal via a two-conductor cable from the counter. This cable terminates at posts marked E1 and E2.

3.4 INSTALLATION STEPS. The following sequence is used within the constraints of available manpower, materials, and noninterference to normal operation.

- a. Inventory material and equipment.
- b. Remove, identify, and store PCB's.
- c. When required, install additional ducting and conduit.
- d. Install new relay racks and identify them.
- e. Install 19-inch patch panels, terminal blocks, and wire that interfaces with the system.
- f. Install the equipment power distribution and optional power supply if required.
- g. Connect the newly installed racks to the facilities grounding system in accordance with applicable TM's and facilities drawings.
- h. Install cables and verify proper routing before terminating.
- i. Install traffic recorder equipment chassis in racks.
- j. Terminate all cables and check for proper routing in accordance with the cable running list and drawings.
- k. Connect all ac wiring at equipment and the external power distribution fuse panel.
- l. Stencil all newly installed racks, distribution panels, and patch panels.

3.5 CHANGES TO ENGINEERING INSTALLATION PACKAGES AND FACILITIES SPECIFICATIONS.

3.5.1 Minor Changes. An installation team chief is authorized to make minor changes to the requirements and instruction contained in an EIP without prior approval of the engineer if it has no significant impact and complies with the following:

- a. Will not alter the floor plan.

9 August 1976

SEIP 015

- b. Will not be in conflict with a published standard.
- c. Will not alter the intended operational capability of the system.
- d. Will not affect the quantity or quality of the data being sampled.

3.5.2 Major Changes. Those changes having an impact on items in paragraph 3.5.1 may be made by the team chief only if coordinated directly with the responsible engineer and fully documented in writing. Documentation (agreement to change) will accompany the marked up facilities drawing package at the completion of the upgrade and be forwarded to the proponent of the EIP.

SECTION 4. ENGINEERING INSTALLATION DRAWINGS.

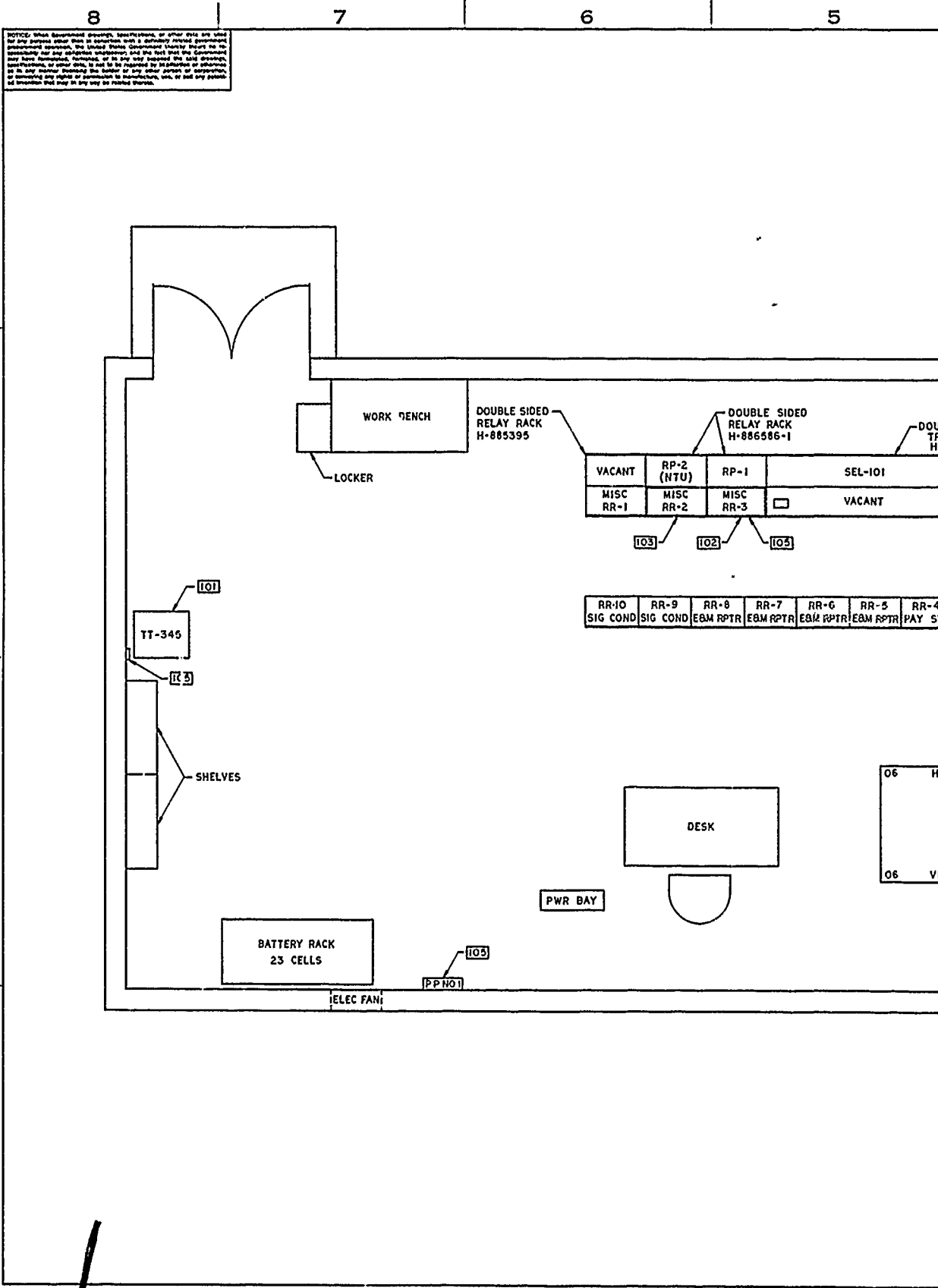
4.1 GENERAL. Installation drawings show typical cabling, equipment mounting and floor planning of existing installations and are used as standardization models for preparing traffic recorder systems common drawings.

4.2 INSTALLATION DRAWINGS CONTROL. The engineering drawings are selected and modified by USACC field engineers to satisfy individual installation requirements determined by site survey. To attain standardization, modifications to accomplish site adaptation are kept to the minimum. Upon completion of installation, one set of the as-built drawings is left on site and one set is forwarded to the originator of the drawings for correction. The corrected as-built drawings will be provided to the DCO after completing the testing and acceptance phase. One microfilm set of the corrected as-built drawings will be provided to Commander, USACEEIA, ATTN: CCC-CED-SWS, Fort Huachuca, Arizona 85613. In the event that a microfilm set of drawings is not available, blue-line prints will be forwarded to CCC-CED-SWS for the as-built data bank.

4.3 CORRECTIONS AND DELETIONS. Recommended corrections and deletions to the standard drawings listed below should be forwarded to Commander, US Army Communications-Electronics Engineering Installation Agency, ATTN: CCC-CED-SWS, Fort Huachuca, Arizona 85613.

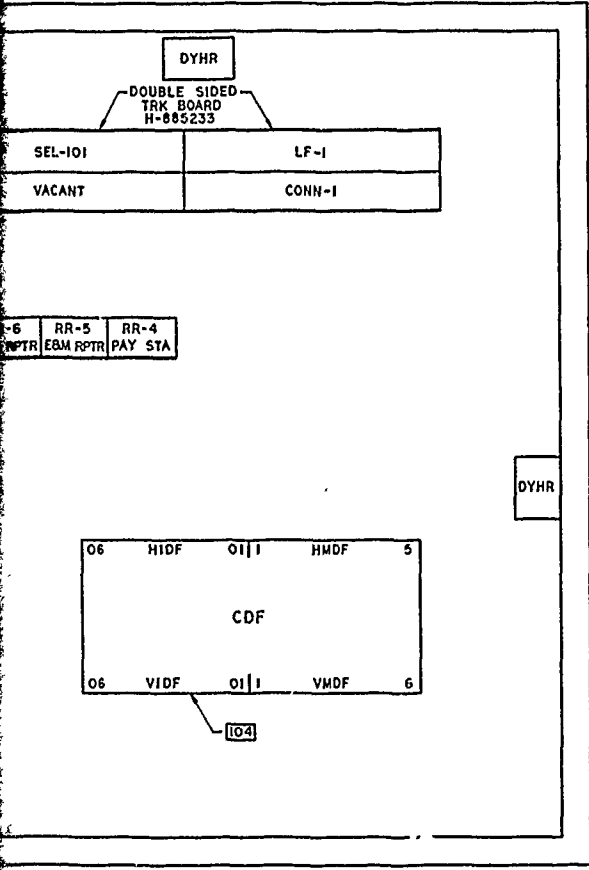
4.4 USACEEIA-CED DRAWINGS.

COM-TL03-160 (1 sheet)	Telephone Traffic Recorder System Small DCO Floor Plan
COM-TL03-161 (1 sheet)	Telephone Traffic Recorder System Single Line Diagram
COM-TL03-162 (1 sheet)	Telephone Traffic Recorder System Typical Distribution Panel Assignments and Stencil Data
COM-TL03-163 (1 sheet)	Telephone Traffic Recorder System Input Patch Cable and Connector Assembly, MX-9457/GT
COM-TL03-164 (2 sheets)	Telephone Traffic Recorder System Digital Readout Electronic Counter, CP-1147/GT
COM-TL03-165 (2 sheets)	Telephone Traffic Recorder System Telephone Traffic Scanner, TA-917/GT



5 4 3 2 1

REVISIONS				
STN	ZONE	DESCRIPTION	DATE	APPROVED



LEGEND

- HEAVY LINE INDICATES FRONT OF EQUIPMENT
- 101 INDICATES SEE NOTE 101

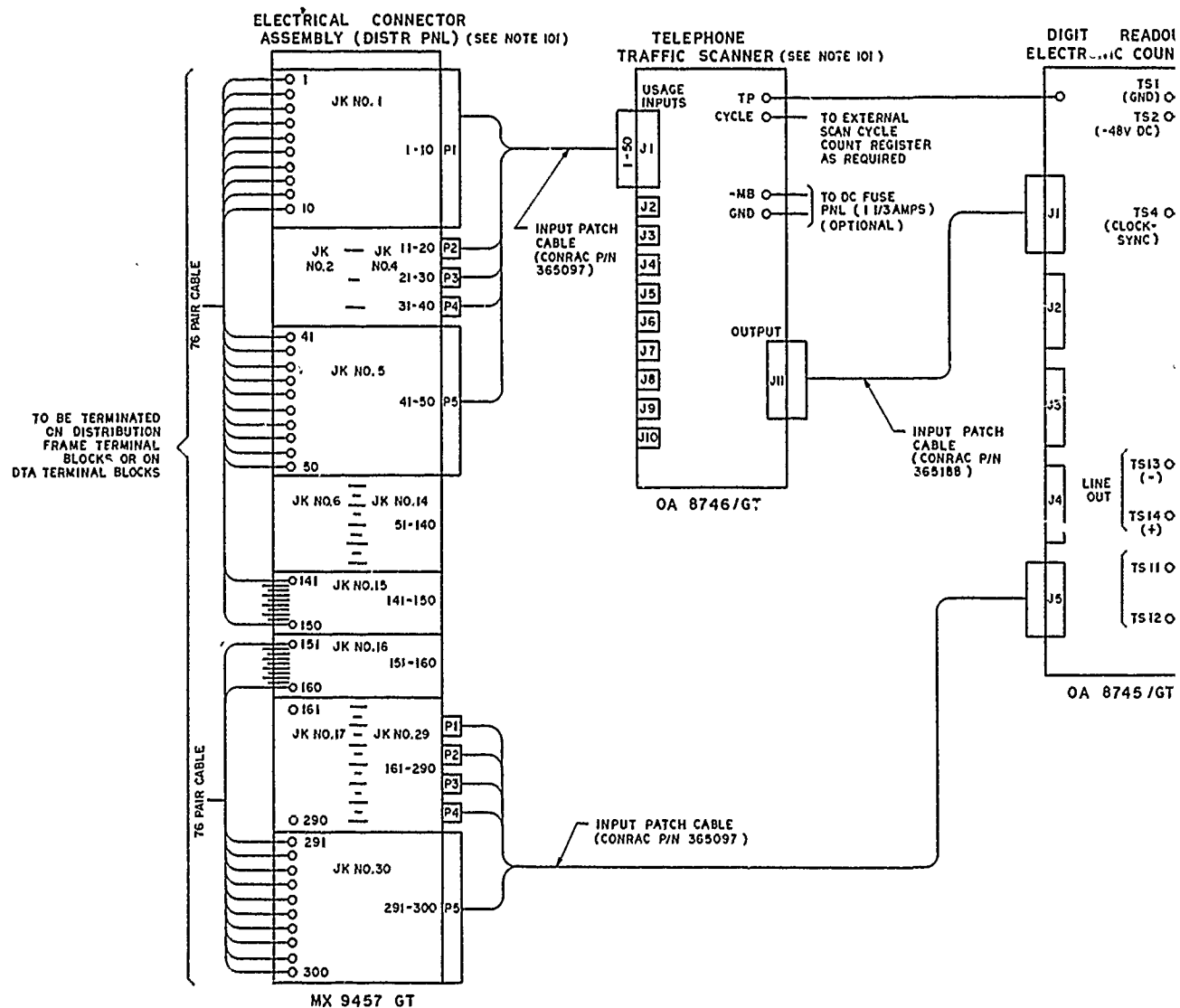
NOTES:

- RESERVE SPACE FOR ONE TELETYPEWRITER REPERFORATOR (TT-345).
- RESERVE PANEL SPACE 16-17 IN RR-3 FOR ONE CONNECTOR ASSEMBLY.
- RESERVE TWO SPARE DC FUSES (2 AMP) IN FUSE PANEL LOCATED IN RR-2.
- RESERVE TERMINAL BLOCK SPACE O1E,O1F AND O1G ON THE VERTICAL IDF.
- INSTALL ONE DUAL AC OUTLET IN THE VICINITY OF THE TT-345 REPERFORATOR AND ONE DUAL AC OUTLET IN THE BOTTOM OF RR-3. CONNECT BOTH AC OUTLETS TO THE SPARE BREAKER IN POWER PANEL NO.1.

2

ITEM	DESCRIPTION	FSN	UI	QTY
LIST OF MATERIALS				
DESIGN BY G. F. BISHOP		ORGANIZATION		
DRAFTSMAN G. OLSON		USACEEIA-CED		
CHECKER <i>[Signature]</i>		FORT HUACHUCA, ARIZONA		
DATE 25 MAY 76		TELEPHONE TRAFFIC RECORDER SYSTEM		
ORGANIZATION APPROVAL <i>[Signature]</i>		SMALL DCO		
APPROVAL		FLOOR PLAN		
CODE IDENT NO.		SIZE	COM-TL03-160	
50470		D		
SCALE NONE		SHEET 1 OF 1		

A ————— B ————— C ————— D —————



5

4

3

2

1

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED

DIGIT READOUT ELECTRONIC COUNTER (SEE NOTE 101)

TS1 (GND)
TS2 (-48V DC)
TO DC FUSE PANEL
(1 1/3 AMP)

TS4 (CLOCK-SYNC)

ISOLATION PLUG
CONRAC P/N
365106

TO AC POWER
OUTLET

TELETYPEWRITER REPERFORATOR

RECEIVE CORD
(P/O
TELETYPEWRITER
REPERFORATOR)

SIGNAL
INPUT

POWER CORD
(P/O TELETYPEWRITER
REPERFORATOR)

AC
POWER

TO AC POWER
OUTLET

OA 8745 /GT

TT 345 /FG

TELETYPEWRITER PAGE PRINTER

SIGNAL
INPUT

(OPTIONAL)

TTY

NOTES:

101. MAJOR EQUIPMENT QUANTITIES FOR EACH
TRAFFIC RECORDER PROJECT ARE SHOWN
IN THE ENGINEERING INSTALLATION PACKAGE
FOR THAT DCO.

ITEM	DESCRIPTION	FSN	UI	QTY
LIST OF MATERIALS				
ORGANIZATION USACEIA-CED FORT HUACHUCA, ARIZONA				
DESIGN BY G. BISHOP	TELEPHONE TRAFFIC RECORDER SYSTEM SINGLE LINE DIAGRAM			
DRAFTSMAN J. KALLBERG				
CHECKER <i>[Signature]</i>				
DATE 26 MAY 76				
ORGANIZATION APPROVAL <i>[Signature]</i>	CODE IDENT NO. 50470	SIZE D	COM-TL03-161	
APPROVAL <i>[Signature]</i>	SCALE NONE	SHEET 1 OF 1		

FORM 848787
50470

8

7

6

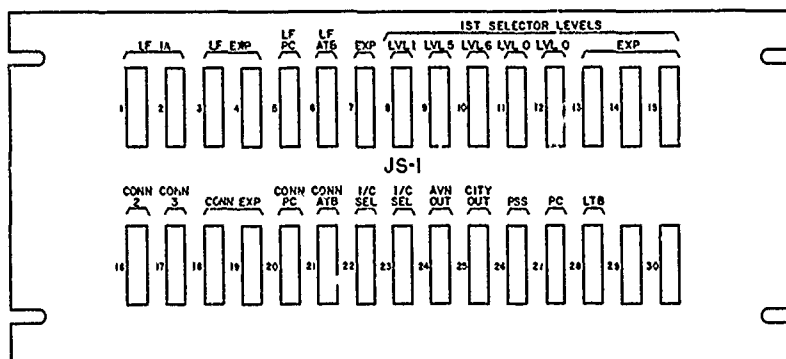
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4

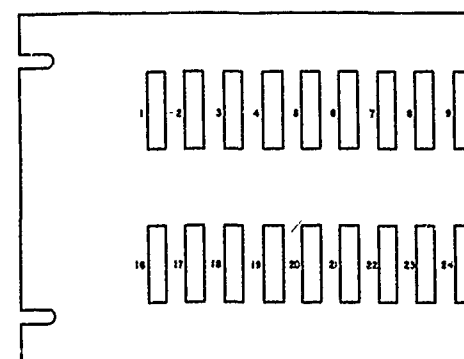
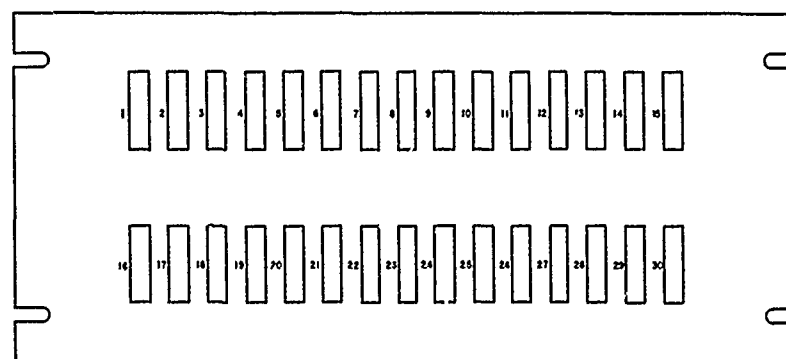
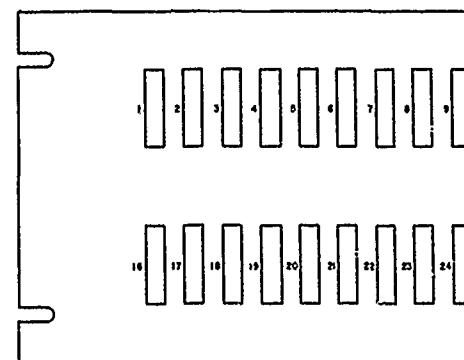
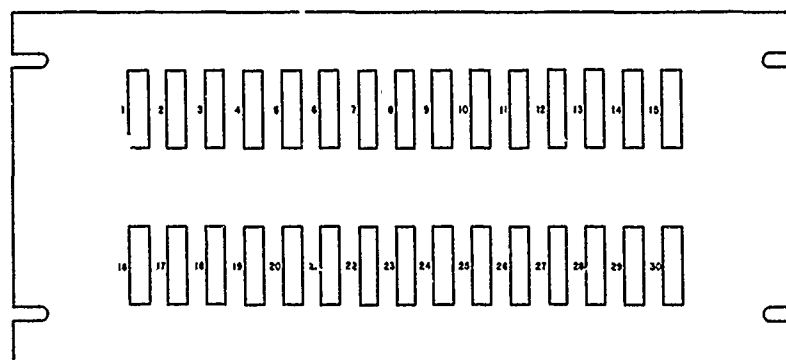
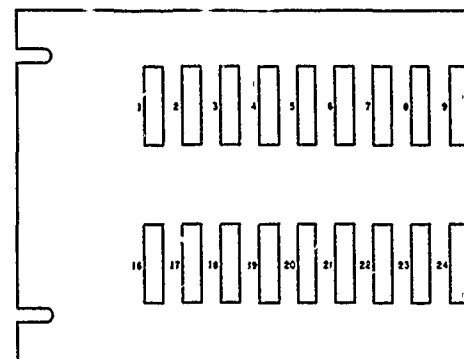
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JACK STRIP TERMINATION

LOCATION	TB NO.
VIDF	OIG
VIDF	OIF



DISTRIBUTION PATCH PANEL



4

3

2

1

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED

D

C

B

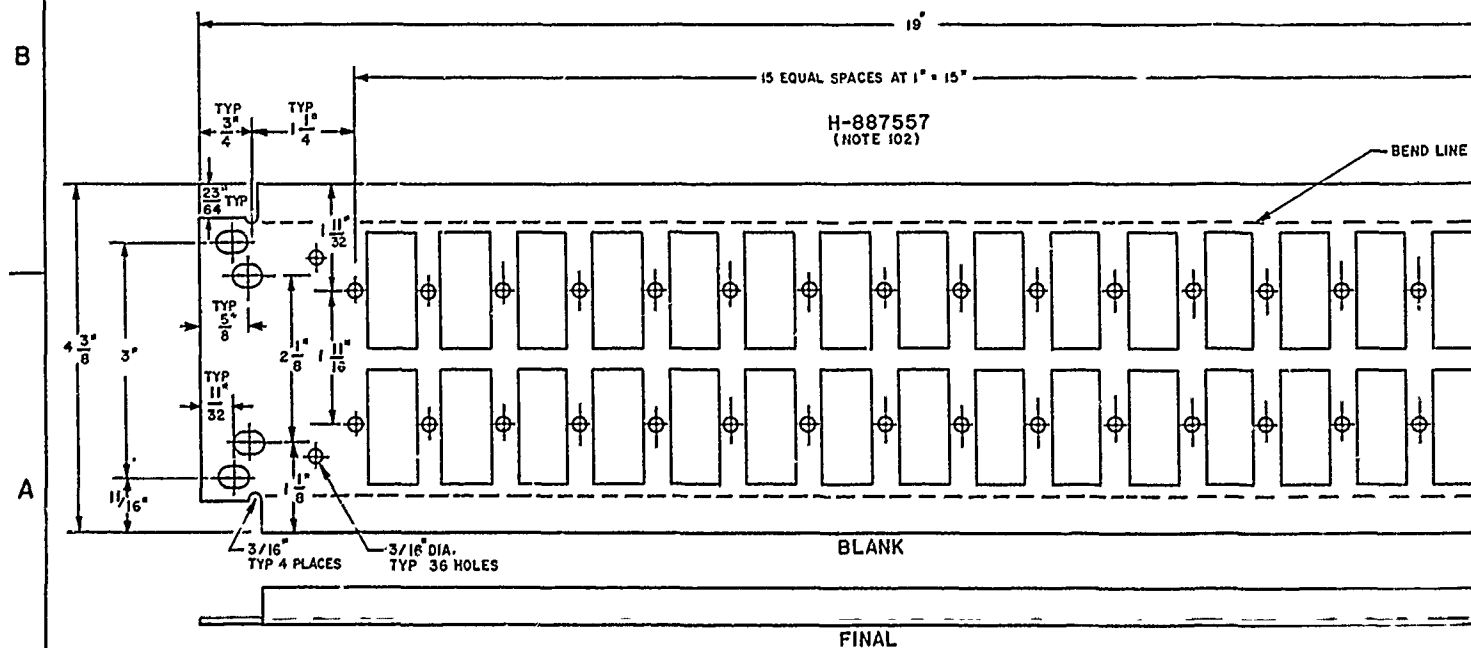
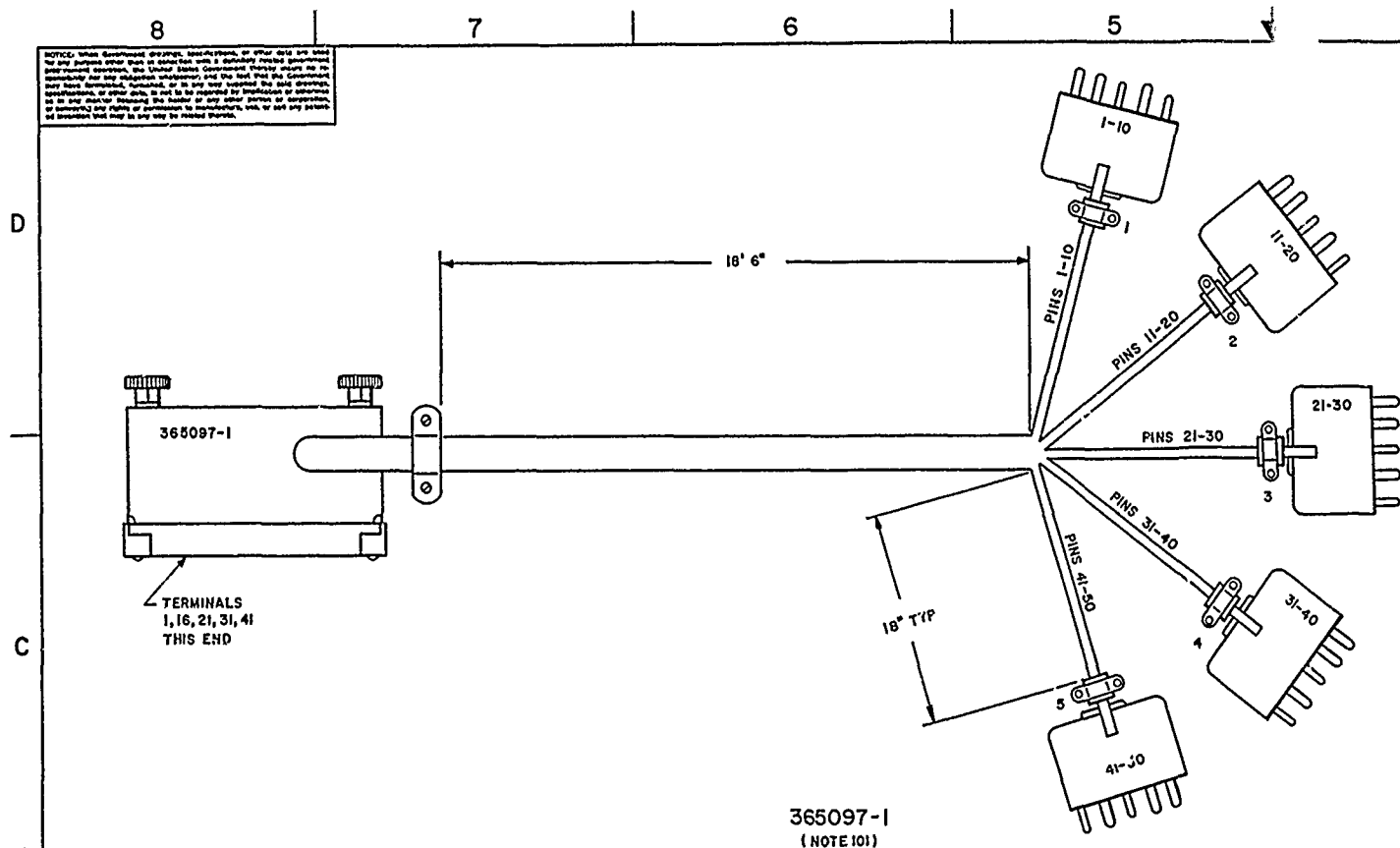
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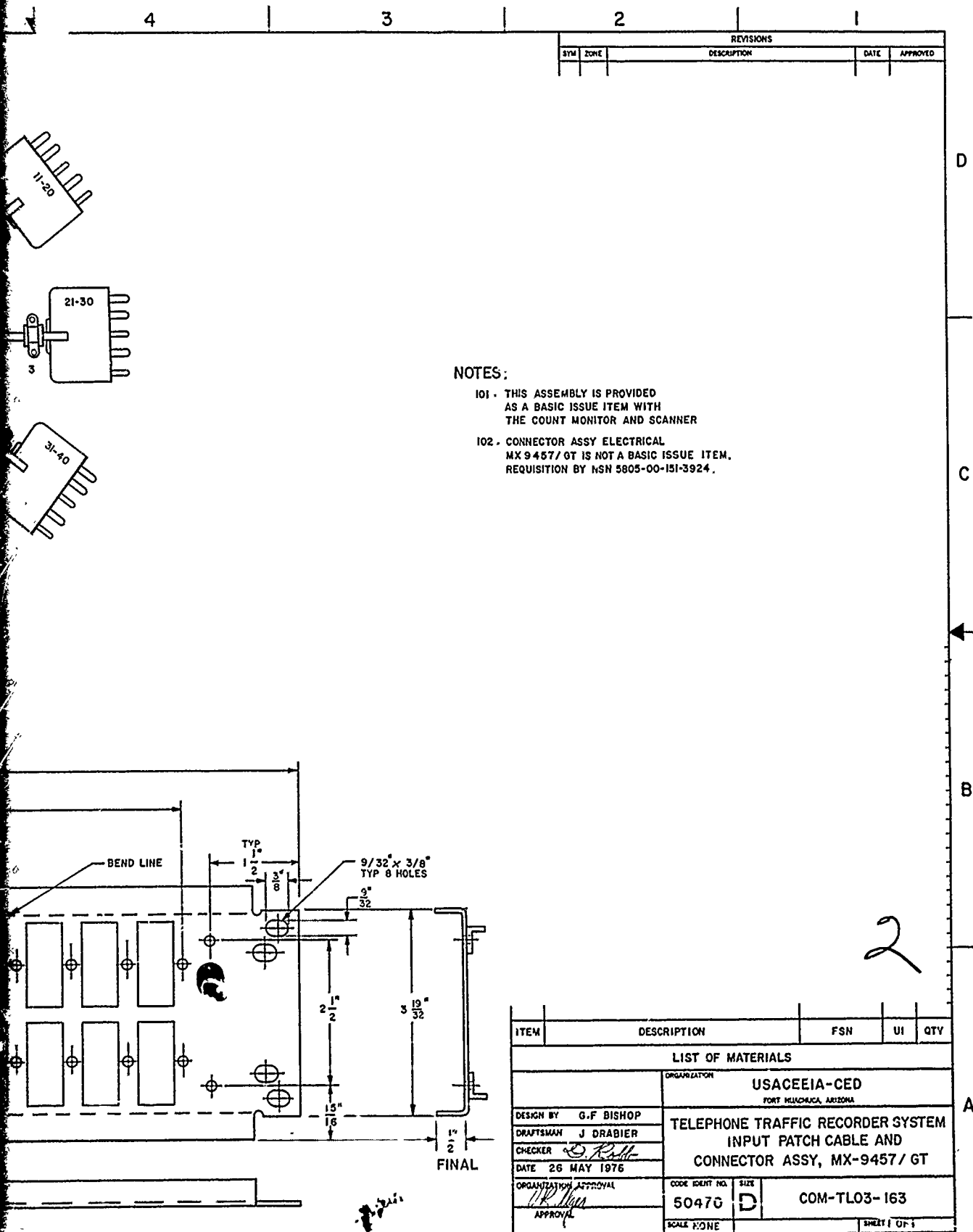
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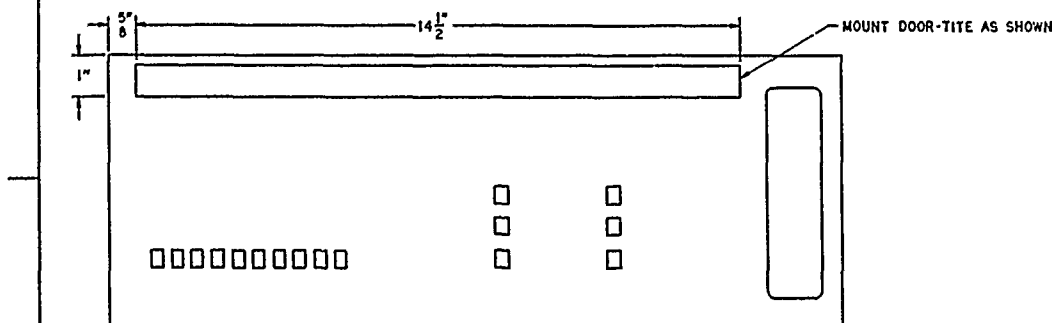
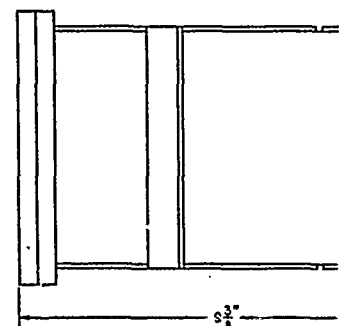
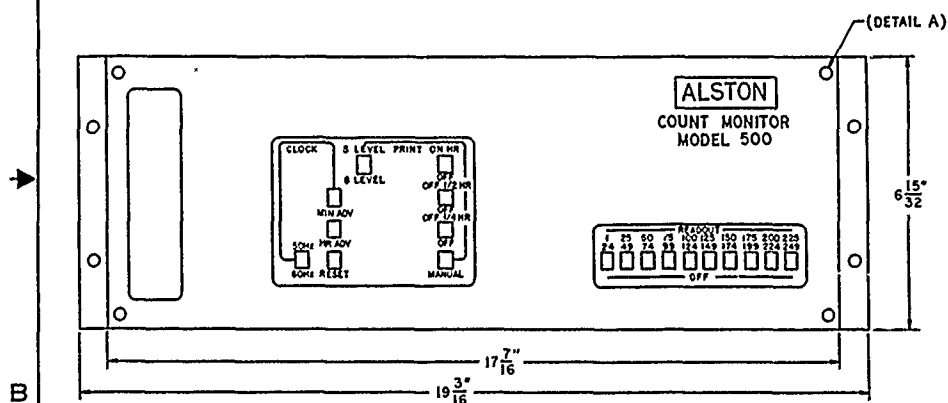
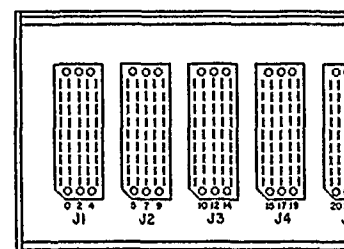
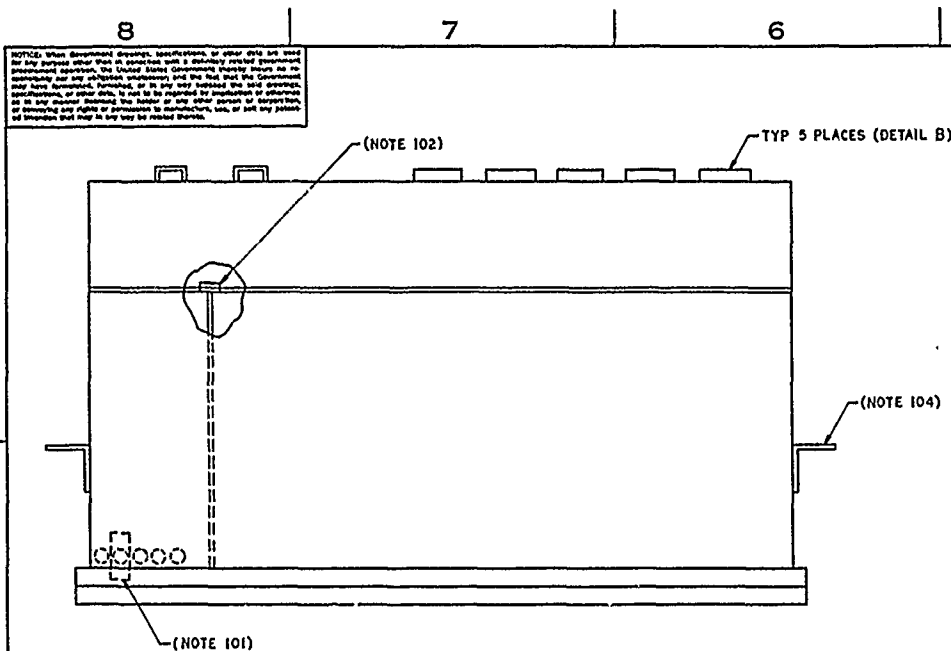
ITEM	DESCRIPTION	FSN	UI	QTY
LIST OF MATERIALS				
DESIGN BY G.F. BISHOP		USACEEIA-CED		
DRAFTSMAN G. OLSON		FORT HUachuCA, ARIZONA		
CHECKER <i>[Signature]</i>		TELEPHONE TRAFFIC RECORDER SYSTEM TYPICAL DISTRIBUTION PANEL ASSIGNMENTS AND STENCIL DATA		
DATE 27 MAY 78				
ORGANIZATION APPROVAL <i>[Signature]</i>		CODE IDENT NO.	SIZE	CCM-TL03-162
APPROVAL <i>[Signature]</i>		50470	D	
		SCALE NONE	SHEET 1 OF 1	

FORM 6487B

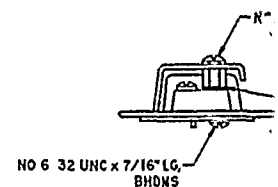
NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related government procurement, the use of such data by the United States Government thereby incurs no responsibility for any subsequent misapplication, and the fact that the Government may have furnished, furnished, or in any way supported the said drawings, specifications, or other data, is not to be regarded by implication as endorsement or as making the Government in any way responsible for the validity of any or all such data, or any rights of extension to manufacturers, vendors, or other persons of invention that they in any way may be entitled thereto.







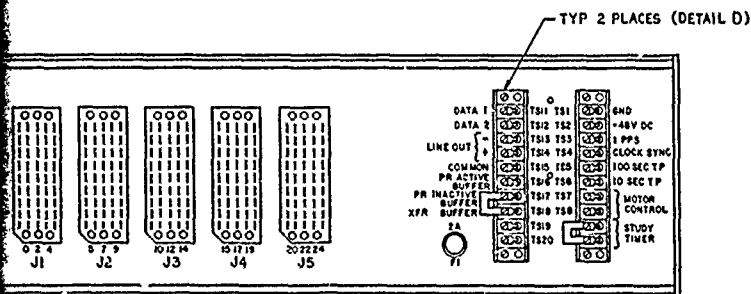
DETAIL C
FRONT COVER (REAR VIEW)



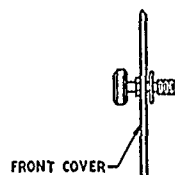
DETAIL D
TYPICAL BARRIER STRIP

5 4 3 2 1

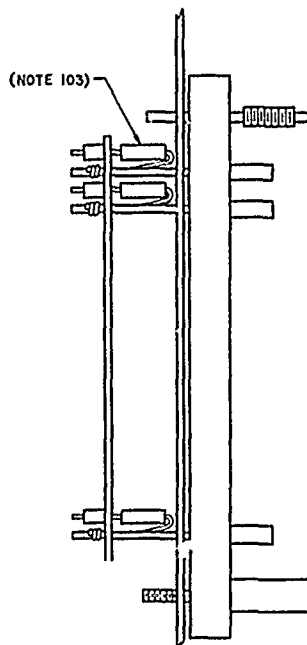
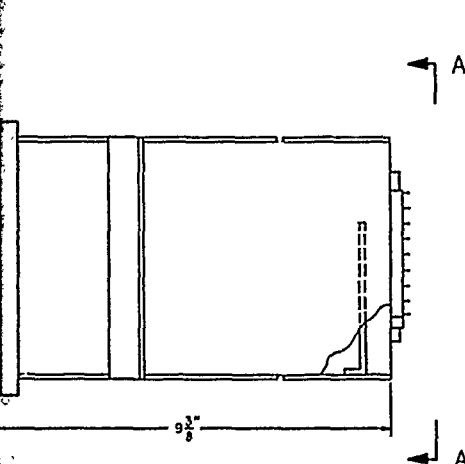
REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED



VIEW A-A



DETAIL A



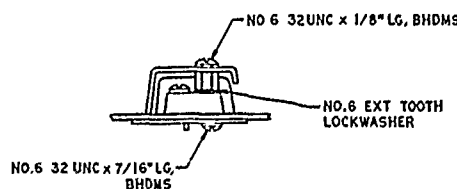
DETAIL B

POSITION	CONN ITEM	CIRCUIT BOARD
3	15	380406 CONTROL PANEL
6	15	330036 POWER SUPPLY
8	15	380407 PULSE GENERATOR
9	15	380408 MINUTE/HR CLOCK
10	16	380416 TTY OUTPUT
17	16	380441 HEADER GENERATOR
18	15	380405 LINE COUNTER
19	16	380411 OUTPUT CONTROL
20,21	15	380412 MEMORY
22	15	380413 INPUT CONTROL
23	17	380414 ADDRESS SCANNER
24,33	17	380415 INPUT

NOTES:

101. REMOVE SECOND RIVET AND ROLLER FROM LEFT, DRILL OUT HOLE TO 1/8". INSTALL MOUNTING BRACKET 210134, 2 PLACES. CARD FILE TOP AND BOTTOM.
102. TO BE MOUNTED IN CONNECTOR POSITION NO. 7.
103. SLEEVE RESISTORS WITH HT-105°C HEAT SHRINK TUBING 1/16" DIA x 3/8" LG.
104. MOUNT WITH NO. 8-32 UNC x 1/4" LG FHMS-RELIEVED HEAD.

2



DETAIL D
TYPICAL BARRIER STRIP MOUNTING

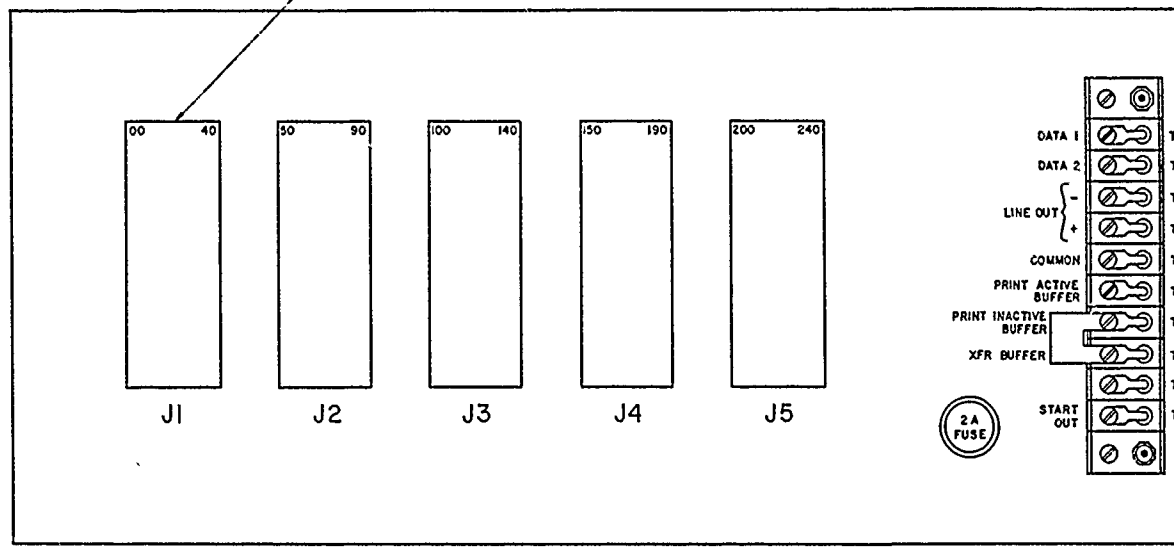
ITEM	DESCRIPTION	FSN	UI	QTY
LIST OF MATERIALS				
ORGANIZATION				
J5ACEEIA-CED				
FORT HUACHUCA, ARIZONA				
DESIGN BY	G. F. BISHOP	TELEPHONE TRAFFIC RECORDER SYSTEM DIGITAL READOUT ELECTRONIC COUNTER, CP-1147/GT		
DRAFTSMAN	G. OLSON			
CHECKER	<i>[Signature]</i>			
DATE	26 MAY 76			
ORGANIZATION APPROVAL		CODE IDENT NO.	SIZE	COM-TL03-164
<i>[Signature]</i>		50470	D	
APPROVAL		SCALE	NONE	SHEET 1 OF 2

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a specially related government procurement operation, the United States Government thereby incurs no responsibility for any damages whatsoever and the fact that the Government has furnished, furnished, or is only very limited the data does not constitute an acknowledgment of any right or permission to manufacture, use, or sell any patent or invention that may in any way be related thereto.

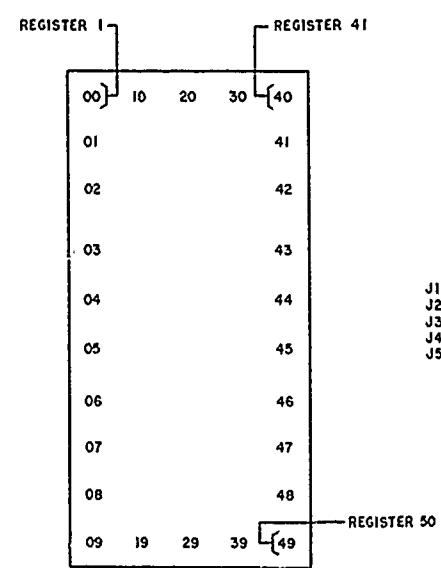
D
C
B
A

8 7 6 5

(DETAIL E)



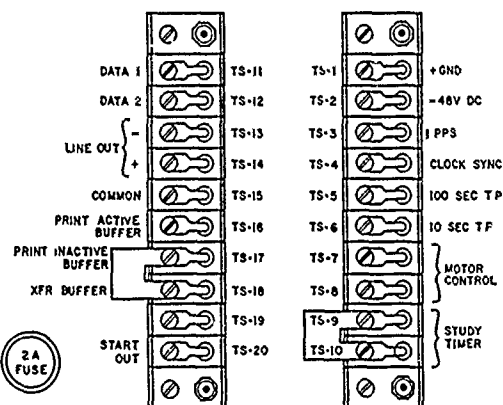
REAR VIEW



DETAIL E
50 PIN CONNECTOR

5 4 3 2 1

REVISIONS			
SYM	ZONE	DESCRIPTION	DATE



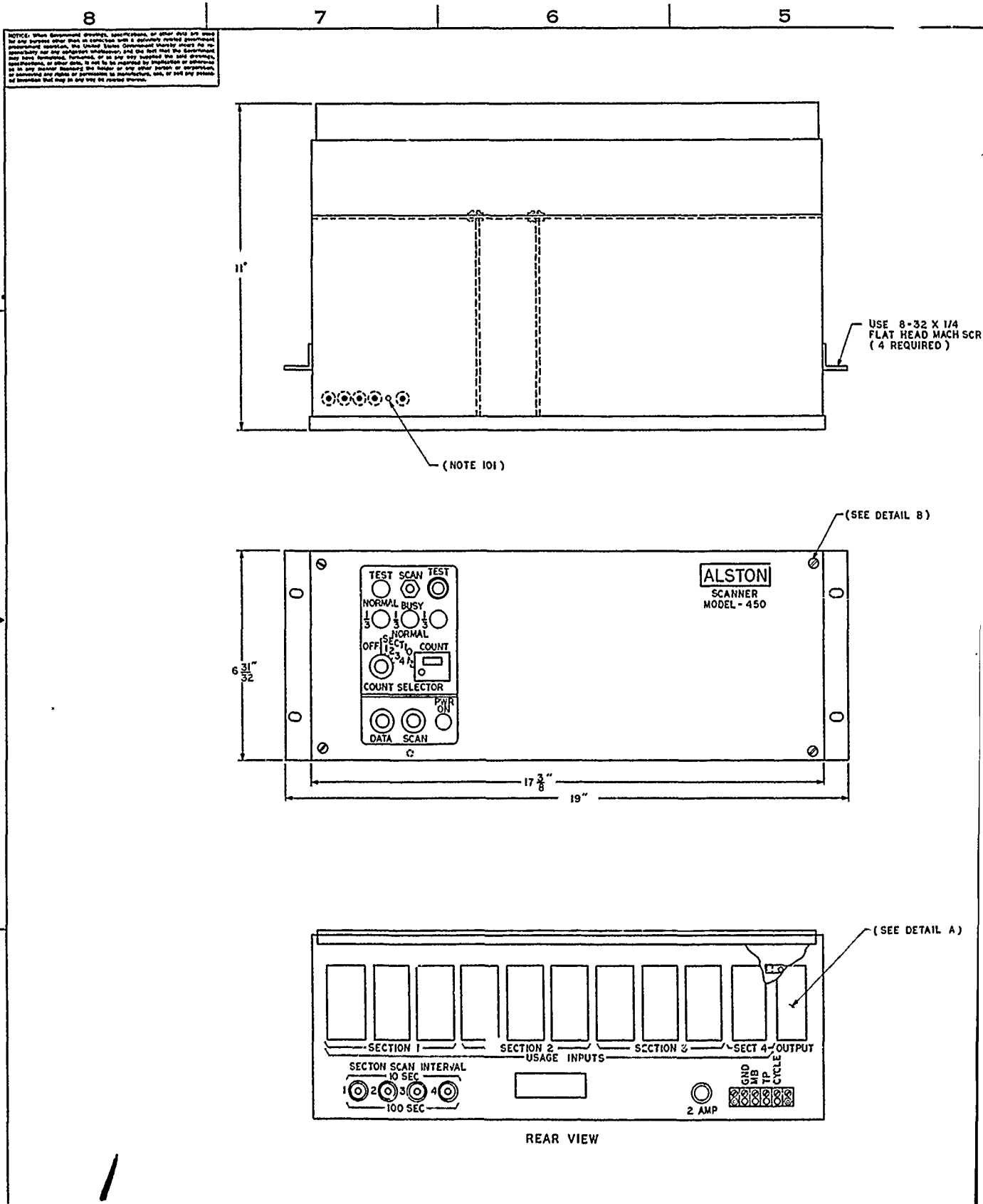
NOTES:

201. REFER TO THE COUNT MONITOR (OA-8745[V] I/GT) EQUIPMENT TECHNICAL MANUAL FOR DETAILED INSTALLATION AND WIRING INSTRUCTIONS.
202. MOUNT COUNT MONITOR IN THE 19" EQUIPMENT RACK AS SHOWN ON THE RELAY RACK EQUIPMENT LAYOUT DRAWING. FIXED COUNT MONITORS WILL NOT BE INSTALLED AT SITES USING PORTABLE PEG COUNT MONITORS.

J1-REGISTERS (1-50)
J2-REGISTERS (51-100)
J3-REGISTERS (101-150)
J4-REGISTERS (151-200)
J5-REGISTERS (201-250)

ITEM	DESCRIPTION	FSN	UI	QTY
LIST OF MATERIALS				
ORGANIZATION USACEEIA-CED PORT HUACHUCA, ARIZONA				
DESIGN BY G.F. BISHOP	TELEPHONE TRAFFIC RECORDER SYSTEM DIGITAL READOUT ELECTRONIC COUNTER, CP-1147/GT			
DRAFTSMAN G. OLSON				
CHECKER <i>[Signature]</i>				
DATE 27 MAY 76				
ORGANIZATION APPROVAL <i>[Signature]</i>	CODE IDENT NO. 50470	SIZE D	COM-TL03-164	
APPROVAL <i>[Signature]</i>	SCALE NONE	SHEET 2 OF 2		

2



5

4

3

2

1

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED

USE 8-32 X 1/4
FLAT HEAD MACH SCREW
(4 REQUIRED)

(NOTE 101)

NOTES:

(UNLESS OTHERWISE SPECIFIED)

101. REMOVE FIFTH RIVET AND ROLLER FROM LEFT.
RIVET MOUNTING BRACKET 210133 (2 PLACES)
TO CARD FILE TOP AND BOTTOM

(SEE DETAIL B)

SLEEVE CAPTIVE STUD
WITH 1/16" DIA SHRINK
TUBING (11 CONNECTORS)

FRONT
COVER

DETAIL A

DETAIL B

2

(SEE DETAIL A)

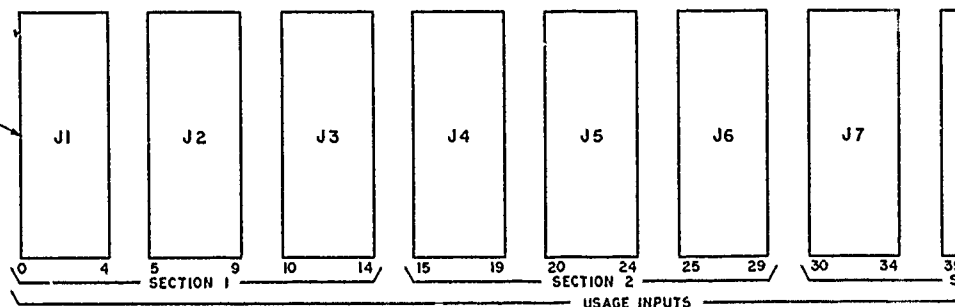
ITEM	DESCRIPTION	FSN	UI	QTY
LIST OF MATERIALS				
ORGANIZATION				
USACEEIA-CED				
FORT HUachuca, ARIZONA				
DESIGN BY	G. BISHOP	TELEPHONE TRAFFIC RECORDER SYSTEM TELEPHONE TRAFFIC SCANNER TA-917/GT		
DRAFTSMAN	J. KALLEBERG			
CHECKER	<i>[Signature]</i>			
DATE	26 MAY 76			
ORGANIZATION APPROVAL	<i>[Signature]</i>	CODE IDENT NO.	SIZE	COM-TL03-165
APPROVAL	<i>[Signature]</i>	50470	D	
SCALES NONE		SHEET 1 OF 2		

FORM 244797

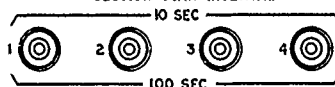
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D

(SEE DETAIL C)



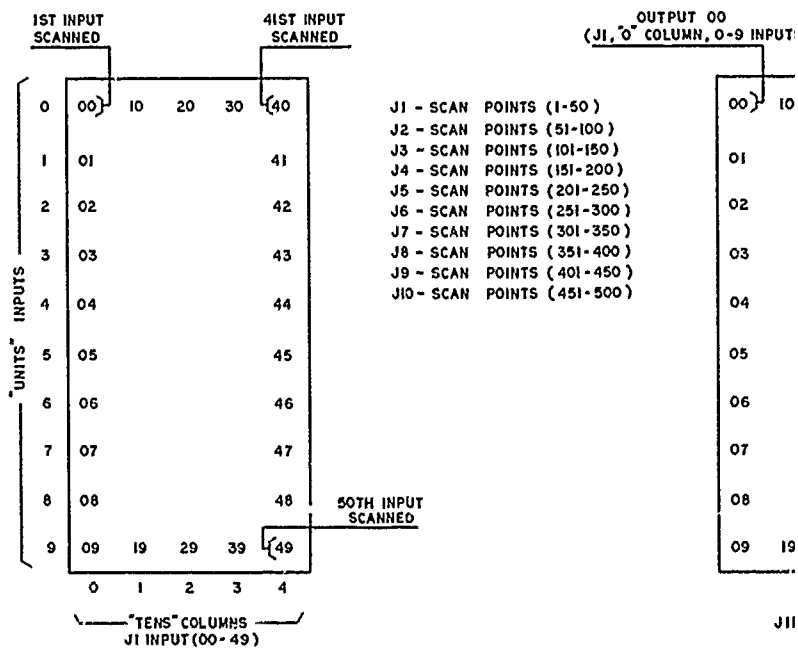
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C

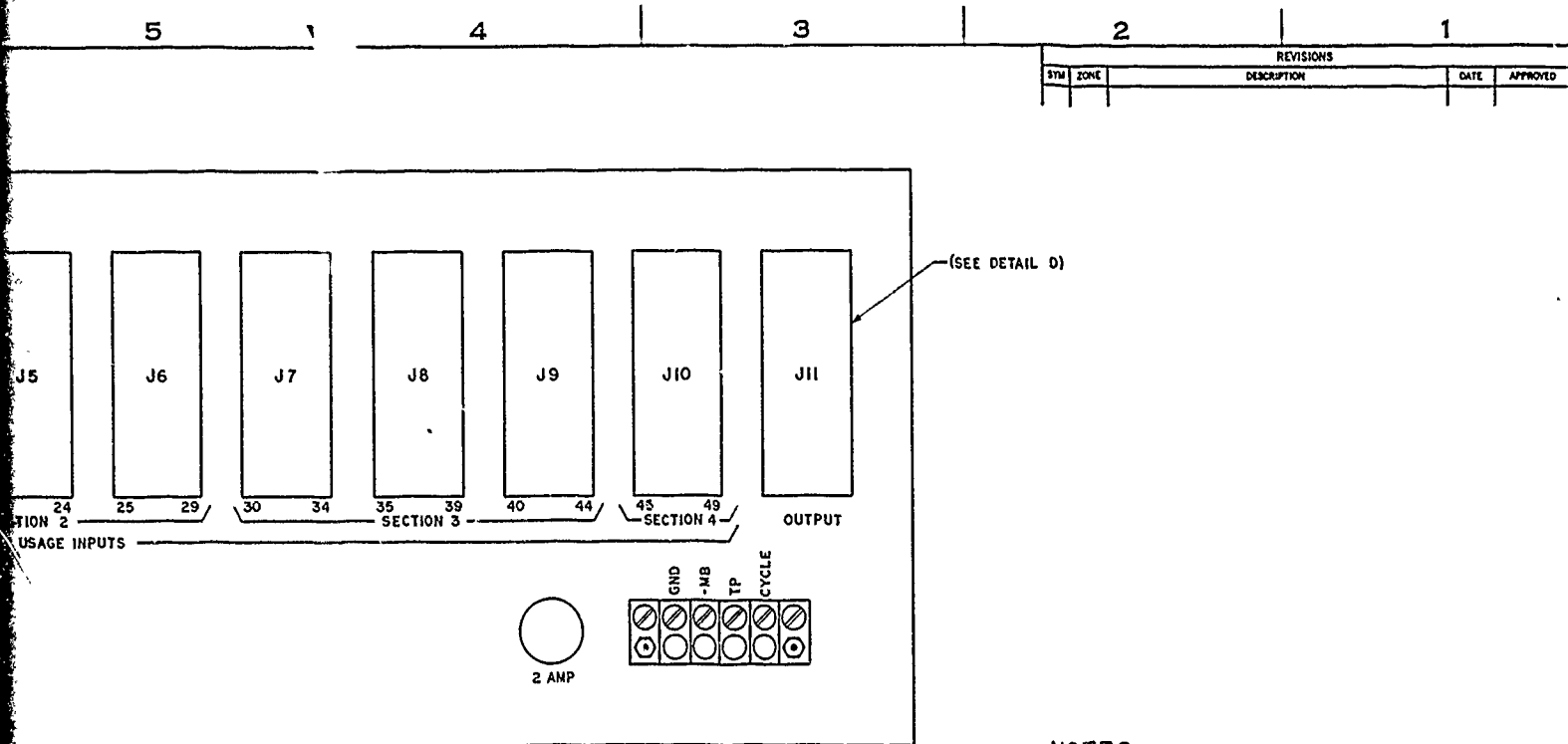
REAR VIEW

B

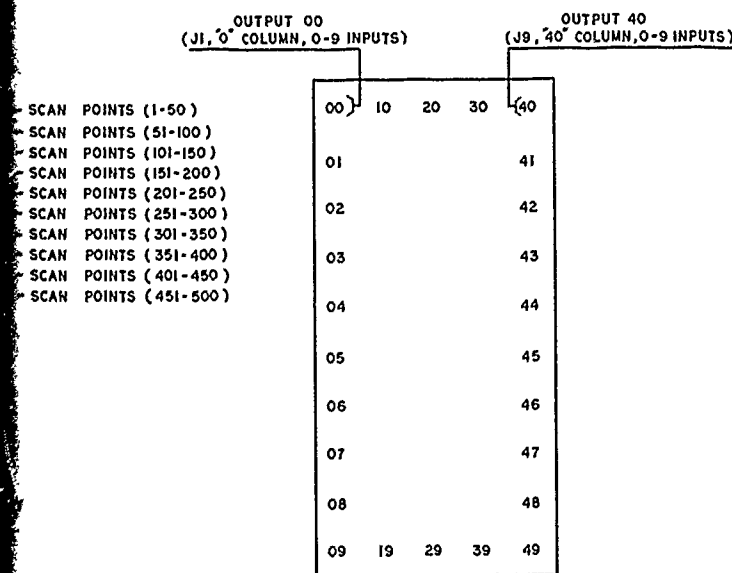


A

DETAIL C



REAR VIEW



J11 OUTPUT (1-50)

DETAIL D

NOTES:

- REFER TO THE TRAFFIC SCANNER EQUIPMENT TECHNICAL MANUAL FOR DETAILED INSTALLATION AND WIRING INSTRUCTIONS.
- MOUNT TRAFFIC SCANNER IN THE 19 INCH EQUIPMENT RACK AS SHOWN ON THE RELAY RACK EQUIPMENT LAYOUT DRAWING.

ITEM	DESCRIPTION	FSN	UI	QTY
LIST OF MATERIALS				
DESIGN BY G BISHOP		USACEEIA-CED		
DRAFTSMAN J KALLBERG		FORT HUACHUCA, ARIZONA		
CHECKER <i>[Signature]</i>		TELEPHONE TRAFFIC RECORDER SYSTEM		
DATE 27 MAY 76		TELEPHONE TRAFFIC SCANNER		
ORGANIZATION APPROVAL <i>[Signature]</i>		TA-917 / GT		
APPROVAL <i>[Signature]</i>		CODE IDENT NO. 50470	SIZE D	COM-TL03-165
SCALE NONE		SHEET 2 OF 2		

9 August 1976

SEIP 015

SECTION 5. BILL OF MATERIALS

5.1 GENERAL. This section contains the Bill of Materials (BOM) for a traffic recorder system. It lists all major items of equipment and most commonly used installation material. In some cases, e.g., equipment relay racks, items are separated by an "or" to provide the identification of the item or items to be selected after a site survey has been completed.

5.2 BILL OF MATERIALS. The attached sample BOM also contains items which may not be required at every installation. Engineers should select only those items which are appropriate and wherever possible they should standardize to the greatest possible extent. The quantity of each item of material does not appear in the BOM (DA Form 3071R) in this SEIP. It is the responsibility of the engineer for each site to determine his quantitative requirements.

SEIP 015

9 August 1976

TELECOMMUNICATIONS DEVELOPMENT PROJECT - BILL OF MATERIALS						
For use of this form, see AR 105-22, proponent agency is USACC.						
LOCATION					UNIT/TEST CODE	
PROJECT NUMBER				DATE	PAGE NO	NO. OF PAGES
ITEM NO	STOCK NUMBER	NOMENCLATURE	UNIT	TOTAL REQUIRED FOR PROJECT	AVAILABLE IN COMMAND	REQUIRED FROM CONUS
1	6145-00-557-3844	Cable, SWBD, 101 pr	ft			
2	6145-00-557-3845	Cable, SWBD, 76 pr	ft			
3	6145-00-557-3846	Cable, SWBD, 41 pr	ft			
4	6145-00-557-3841	Cable, SWBD, 40 pr	ft			
5	6145-00-557-3848	Cable, SWBD, 30 pr	ft			
6	6145-00-557-7293	Cable, SWBD, 20 pr	ft			
7	6145-00-557-7297	Cable, SWBD, 6 pr	ft			
8	6145-00-557-7296	Cable, SWBD, 4 pr	ft			
9	6145-00-834-8744	Cable, Pwr, 3/c	ft			
10	6145-00-964-7466	Cable, Shielded, 1 pr	ft			
11	5805-00-151-3924	Connector Assy, Electrical, MX 9457/GT	ea			
12	5805-00-151-3996	Counter Electrical Digital Readout CP 1147/GT	ea			
13	5920-00-356-2181	Fuse Indicator Alarm	ea			
14	5805-00-219-7035	Installation Kit	ea			
15	6130-00-823-2729	Power Supply, PP-1209c/FG	ea			
16	5805-00-913-0237	Relay Rack, 7'6"H, AECO	ea			
17	5805-00-012-7713	Relay Rack, 9'0"H, AECO	ea			
18	5805-00-913-0659	Relay Rack, 11'8"H, AECO	ea			
19	5805-00-151-3925	Scanner, Telephone Traffic TA 917/GT	ea			
20	3439-00-273-2536	Solder, Tin Alloy (60-40)	lb			
21	5815-00-543-1353	Table, Teletypewriter FN 108/GGC	ea			
22	5815-00-892-1097	Teletypewriter, Reperforator TT 345/FG	ea			

DA FORM 3071 R, 1 Aug 72 REPLACES PREVIOUS EDITION, WHICH IS OBSOLETE.

9 August 1976

SEIP 015

TELECOMMUNICATIONS DEVELOPMENT PROJECT - BILL OF MATERIALS						
For use of this form, see AR 105-22, proponent agency is USACC						
LOCATION				DATE		
PROJECT NUMBER				PAGE		
ITEM NO	STOCK NUMBER	NOMENCLATURE	UNIT	TOTAL REQ. QUANTITY FOR PROJECT	AVAILABLE QUANTITY	REQ. RE. QUANTITY
23	4020-00-247-1737	Twine	lb			
24	6145-00-630-0906	Wire, SWDD 3/c, 22 AWG	ft			
25	6145-00-630-0905	Wire, X-conn 2/c, 22 AWG	ft			
26	6145-00-629-4413	Wire, X-conn 4/c, 22 AWG	ft			

DA FORM 3071 R, 1 Aug 72 REPLACES PREVIOUS EDITION, WHICH IS OBSOLETE.

SECTION 6. QUALITY ASSURANCE

6.1 GENERAL. Quality assurance (QA) inspections are used to:

- a. Apply the quality control (QC) and QA requirements of CCR 702-1-2 to this installation or upgrade of equipment.
- b. Identify and evaluate discrepancies at critical points, and recommend corrective action.
- c. Provide QA information, with comment and recommendation, to cognizant engineering and installation elements.

6.2 INSPECTION RESPONSIBILITIES. The on-site QA actions are performed by qualified personnel from organizations designated by HQ, USACEEIA. The activity responsible for installation and tests (up to acceptance tests) will:

- a. Maintain sufficient QC to assure compliance with the required work effort.
- b. Establish QA monitorship of the effectiveness of the QA effort.
- c. Identify critical points for QA inspections.
- d. Conduct periodic QA inspections on a continuing basis.

6.3 QUALITY ASSURANCE INSPECTION. Quality assurance inspections of this installation are performed in five phases.

6.3.1 Phase I. Preinstallation Quality Assurance.

6.3.1.1 The following checklists are prepared as permanent QA records:

- a. Cognizant Agency, Command, and Facility Points of Contact. Figure 6-1 shows a typical format for this checklist.

- b. Preinstallation Quality Assurance Site Inspection. Figure 6-2 shows a typical format for inspection.

6.3.1.2 Prior to visual, mechanical, electrical, and operational QA inspections, obtain copies of as-built diagrams and drawings and verify them for accuracy and completeness. Verify that deletions are in green and additions are in red.

9 August 1976

6.3.1.3 Administrative support to QA personnel is furnished by the USACEEIA installation activity to include, but not limited to, the preparation of QA correspondence, and reports.

6.3.2 Phase II. Installation Quality Assurance.

6.3.2.1 The engineering installation package (EIP) is the primary reference document used during QA inspections.

6.3.2.2 Quality assurance inspections consist of a thorough review of existing related QC and QA inspection records, including related data, prior to beginning any visual examination of equipment, installation practices, condition of the facility, and ancillary elements such as:

- a. Power systems (prime and backup).
- b. Environmental systems (prime and backup).
- c. Space availability for the operations areas.
- d. Space availability for maintenance areas and entrances and exits to these areas.
- e. Installation and locations of ducting, conduit, circuit breaker panels, security alarm systems, building crawl spaces, raised floors, and air-handling discharge and return registers.
- f. Placement of equipment in the facility, and the location and appearance of all fixed test, measuring, alarm, and system status equipment and indicators.
- g. Supporting structures.

6.3.2.3 Record installation QA data using the typical format, Installation Quality Assurance Inspection checklist as shown in figure 6-3. The data obtained from installation inspections are used to support the final QA evaluation.

6.3.2.4 The QA inspector will categorize deficiencies in accordance with MIL-STD-105 as follows:

- a. Critical Defect. A defect that judgment and experience indicate is likely to result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the products; or a defect that judgment and experience indicate is likely to prevent performance of the tactical function of a major end item such as aircraft, communications system, land vehicle, missile, ship, space vehicle, surveillance system, or major part thereof.

9 August 1976

SEIP 015

b. Major Defect. A defect other than critical that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

c. Minor Defect. A defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

6.3.2.5 Installation QC inspections may be verified by an external QA organization or element. Signatures on QA checklists do not signify acceptance of the items under inspection. Formal recommendations are made and reported separately by the QA inspector.

6.3.2.6 The QA inspector will issue periodic QA status reports during the conduct of his inspections. Upon completion of all inspections, he shall prepare and issue a final QA inspection report. Quality assurance information will be furnished through the area USACEEIA commander to the operating activity.

6.3.2.7 The data obtained from the installation QC and QA inspections will be used to evaluate the overall quality of the completed installation, using the typical format Installation Quality Assurance Inspection checklist as shown in figure 6-3.

6.3.3 Phase III. Final Installation Inspection. A final installation inspection shall be conducted in accordance with Final Installation Inspection checklist as shown in figure 6-4.

6.3.4 Phase IV. Equipment Shakedown Quality Assurance Inspection.

6.3.4.1 This inspection is conducted and reported in accordance with shakedown test procedures and Equipment Shakedown Quality Assurance Inspection checklist. Figure 6-5 shows a typical format for is checklist.

6.3.4.2 This QA inspection is normally performed after the installation has been completed and all circuits have been checked out.

6.3.4.3 During the shakedown period the equipment will be aligned and tested by the local activity maintenance personnel.

6.3.4.4 Special testing provisions:

a. QA inspections are interruptible at any point if disrupted by a hardware malfunction, or may be interrupted at a suitable breaking point by the QA inspector to permit scheduled duty breaks. Any inspection that is interrupted because of a hardware malfunction shall be restarted at a point agreed upon by the QA inspector and the installation team leader.

9 August 1976

b. The QA inspections and procedures in the QA checklist have been sequenced in an orderly controlled manner. However, unforeseen problems may require an inspection or procedure to be resequenced. Resequencing of any inspection or procedure shall be subject to agreement between the QA inspector and the installation team leader.

c. Spare equipment may be substituted for malfunctioning equipment upon agreement between the QA inspector and the installation team leader. Any equipment which has been replaced by a substitute shall be repaired and retested at a point and time agreed to by the QA inspector and the installation team leader.

d. No changes or adjustments to the installed equipment shall be permitted without the approval of the QA inspector pending completion of all scheduled inspections.

e. Once QA inspections have been completed on any installed equipment, no changes or adjustments shall be performed without the approval of the QA inspector prior to operational acceptance testing.

6.3.5 Phase V. Operational Tests. Quality assurance is completed upon conclusion of shakedown testing. Operational tests are then performed in accordance with the approved test plan and section 7 of this SEIP. Upon completion of the operational tests, the test director will complete a Quality Assurance Inspection Certificate as suggested in figure 6-6, and a Technical Acceptance Certificate as suggested in figure 7-1.

6.4 QUALITY ASSURANCE ACCEPTANCE OR REJECTION.

6.4.1 Evaluations. Recommendations for acceptance or rejection of the system are based upon a detailed analysis of all QA data obtained from the detailed inspections and the operational acceptance test.

6.4.2 Reevaluation. Based upon the results of the detailed analysis, the QA inspector may repeat any inspection to verify compliance with stated requirements and objectives.

6.4.3 Recommendations. The QA inspector should avoid recommending system acceptance with exceptions. However, if such action is necessary, these exceptions must be documented and are to be made only under conditions which permit use of the system, with timely follow-up action to assure permanent resolution.

9 August 1976

SEIP 015

6.5 EVIDENCE OF QUALITY ASSURANCE INSPECTIONS. All inspection data and QA checklists must be signed by the USACEEIA QA/acceptance test representative. Signatures on the QA checklists do not signify formal acceptance of the items under inspection. Formal recommendations are reported separately by the QA inspector.

6.6 APPLICABILITY. Quality assurance inspections and procedures are standardized and apply generally to communications systems and sites. In the event that any checklist item does not apply, mark it NA (not applicable).

6.7 REVISIONS TO THE QA CHECKLIST.

6.7.1 Revisions. When necessary, the QA checklist may be revised to satisfy QA inspection requirements for a specific function as a result of unusual situations. A revision is considered to be any change to an inspection requirement or procedure through the addition, deletion, or modification of any part of the stated QA inspection or procedure.

6.7.2 Authorization. Revisions to this checklist may be authorized by the onsite QA inspector. All such revisions will be documented and forwarded to Commander, US Army Communications-Electronics Engineering Installation Agency, ATTN: CCC-TED, Fort Huachuca, Arizona 85613.

SEIP 015

9 August 1976

COGNIZANT AGENCY, COMMAND, AND
FACILITY POINTS OF CONTACT

COGNIZANT AGENCY:

Mailing Address _____

Electrical Address _____

Commander _____ Phone No. _____ Bldg. No. _____

Deputy/
Exec Off _____ Phone No. _____ Bldg. No. _____

COMMAND:

Mailing Address _____

Electrical Address _____

Commander _____ Phone No. _____ Bldg. No. _____

Deputy/
Exec Off _____ Phone No. _____ Bldg. No. _____

FACILITY:

Commander/
OIC _____ Phone No. _____ Bldg. No. _____

Deputy _____ Phone No. _____ Bldg. No. _____

Figure 6-1. Sample of Cognizant Agency, Command,
and Facility Points of Contact (sheet 1 of 3).

9 August 1976

SEIP 015

	<u>Phone No.</u>	<u>Bldg No.</u>	<u>Rm No.</u>
Operations Officer _____	_____	_____	_____
Operations NCO _____	_____	_____	_____
Maintenance Officer _____	_____	_____	_____
Maintenance NCO _____	_____	_____	_____
COMSEC Officer _____	_____	_____	_____
COMSEC NCO _____	_____	_____	_____
<u>BASE SUPPORT ACTIVITIES:</u>			
<u>Telephone:</u>			
Base Telephone Exchange Officer _____	_____	_____	_____
Chief NCO/ Operator _____	_____	_____	_____
<u>Security:</u>			
Base Security Officer _____	_____	_____	_____
Base Security NCO _____	_____	_____	_____
Provost Marshall _____	_____	_____	_____

Figure 6-1. Sample of Cognizant Agency, Command,
and Facility Points of Contact (sheet 2 of 3).

SEIP 015

9 August 1976

	<u>Phone No.</u>	<u>Bldg No.</u>	<u>Rm No.</u>
<u>Logistics/Supply:</u>			
Logistics Officer _____	_____	_____	_____
Logistics NCO _____	_____	_____	_____
<u>Base Engineer/Civil Engineer:</u>			
Electrical Shop _____	_____	_____	_____
Plumbing Shop _____	_____	_____	_____
Machine Shop _____	_____	_____	_____
Building/Grounds Shop _____	_____	_____	_____
<u>INSTALLATION</u>			
Team Leader _____	_____	_____	_____
Assistant Leader _____	_____	_____	_____
<u>QUALITY ASSURANCE</u>			
Coordinator _____	_____	_____	_____
Alternate Coordinator _____	_____	_____	_____

Figure 6-1. Sample of Cognizant Agency, Command,
and Facility Points of Contact (sheet 3 of 3).

9 August 1976

SEIP 015

PREINSTALLATION QUALITY ASSURANCE SITE INSPECTION

Name of Site: _____ Sheet No. _____

Location: _____

Equipment/System: _____

Date/Time Inspection Performed: _____

	<u>Inspection</u>	<u>Requirement</u>	<u>Yes</u>	<u>No</u>
1.	Site ready?	Per project coordination letter	___	___
2.	Site preparation completed?	Specifications and instructions	___	___
3.	Bill of Materials (BOM) filled completely?	Statement of work (SOW)	___	___
3.1	GFE?	SOW	___	___
3.2	CFE?	SOW	___	___
3.3	LPR?	SOW	___	___
3.4	Funding identified?	SOW	___	___
3.5	Leased facilities?	SOW	___	___
4.	Are specifications and drawings on site?	Test plan	___	___
5.	Is test equipment available on site?	Test plan	___	___
6.	Has installation team been assigned?	Test plan	___	___

Figure 6-2. Sample of Preinstallation Quality Assurance Site Inspection (sheet 1 of 2).

SEIP 015

9 August 1976

<u>Inspection</u>	<u>Requirement</u>	<u>Yes</u>	<u>No</u>
7. Has the QA Representative been assigned?	Test plan	—	—
8. Remarks:			

Signature of USACE/IA QA/Acceptance Test Representative Date

Figure 6-2. Sample of Preinstallation Quality Assurance Site Inspection (sheet 2 of 2).

9 August 1976

SEIP 015

INSTALLATION QUALITY ASSURANCE INSPECTION

Name of Site: _____ Sheet No: _____

Location: _____

Equipment/System: _____

Test No. and Name: _____

Date/Time Test Performed: _____

<u>Inspection</u>	<u>Requirement</u>	<u>Accept</u>	<u>Reject</u>
	CCTM 105-50-21, para number.		
1. General safety practice.	4-1	_____	_____
2. Floor plan layout.	3-7	_____	_____
3. Erecting and mounting.	3-9	_____	_____
4. Cable racks.	3-10	_____	_____
5. Cable practices.	3-11	_____	_____
6. Securing cable.	3-13	_____	_____
7. Sewed forms.	3-14	_____	_____
8. Butting and stripping.	3-15	_____	_____
9. Fanned forms.	3-16	_____	_____
10. Stenciling.	3-17	_____	_____
11. Strapping.	3-18	_____	_____
12. Connecting and soldering.	3-19	_____	_____

Figure 6-3. Sample of Installation Quality Assurance Inspection (sheet 1 of 2).

DEIP 015

9 August 1976

<u>Inspection</u>	<u>Requirement</u>	<u>Accept</u>	<u>Reject</u>
13. Wrapped connections.	3-20	_____	_____
14. Cross connections.	3-21	_____	_____
15. Equipment and signal ground.	3-23	_____	_____
16. Conduit.	3-24	_____	_____
17. Ducts.	3-25	_____	_____
18. Coaxial cable.	3-26	_____	_____
19. Waveguides.	3-26	_____	_____
20. Obstruction lighting and marking for antennas and towers.	3-28 and TM 5-823-4	_____	_____
21. Outside Plant, Telephone.	FM 11-486-5	_____	_____
22. Lightning protection for antennas and towers.	National Electrical Code, Article 810, and COM-AF-613 and 614	_____	_____
23. External transmission lines.	CCTM 105-50-2	_____	_____

Remarks:

Signature of USACEEIA QA/Acceptance Test Representative

Date

Figure 6-3. Sample of Installation Quality Assurance Inspection (sheet 2 of 2).

9 August 1976

SEIP 015

FINAL INSTALLATION INSPECTION CHECKLIST

Name of Site: _____ Sheet No: _____

Location: _____

Equipment/System: _____

Test No. and Name: _____

Date/Time Test Performed: _____

<u>Inspection</u>	<u>Accept</u>	<u>Reject</u>	<u>Certified by (Signature)</u>
1. Site adequately prepared.	_____	_____	_____
2. Specifications and drawings adequate.	_____	_____	_____
3. Logistic support adequate.	_____	_____	_____
4. New equipment compatible with existing system.	_____	_____	_____
5. Equipment configuration as specified.	_____	_____	_____
6. Equipment properly mounted.	_____	_____	_____
7. Racks properly installed.	_____	_____	_____
8. Power drawings, IAW drawings, and specifications.	_____	_____	_____
9. Ductwork and electrical conduit installed.	_____	_____	_____
10. Proper wiring techniques.	_____	_____	_____
11. Proper soldering and connections.	_____	_____	_____

Figure 6-4. Sample of Final Installation Inspection (sheet 1 of 3).

SEIP 015

9 August 1976

	<u>Inspection</u>	<u>Accept</u>	<u>Reject</u>	<u>Certified by (Signature)</u>
12.	Electrical connections and modifications conform to drawings.	_____	_____	_____
13.	Wiring installed as specified in drawings.	_____	_____	_____
14.	Grounding as specified IAW drawings and specifications.	_____	_____	_____
15.	Required equipment and mechanical performance tests.	_____	_____	_____
16.	Test equipment meets certification requirement.	_____	_____	_____
17.	Equipment meets specified operational performance requirements.	_____	_____	_____
18.	Safety checklist:			
	a. Warning markings.	_____	_____	_____
	b. Sharp edges.	_____	_____	_____
	c. Loose or protruding trim.	_____	_____	_____
	d. Sharp corners.	_____	_____	_____
	e. Secure mountings.	_____	_____	_____
	f. Electrical hazards.	_____	_____	_____
	g. High voltage safety.	_____	_____	_____
	h. High voltage protection guards.	_____	_____	_____
	i. Adequate grounding.	_____	_____	_____
	j. Toxic hazards.	_____	_____	_____

Figure 6-4. Sample of Final Installation Inspection (sheet 2 of 3).

9 August 1976

SEIP 015

<u>Inspection</u>	<u>Accept</u>	<u>Reject</u>	<u>Certified by (Signature)</u>
19. As-built drawings furnished to site.	_____	_____	_____
20. Maintenance spare parts:			
a. Available.	_____	_____	_____
b. Adequate.	_____	_____	_____
c. Technical manuals with equipment.	_____	_____	_____
21. Equipment's preshakedown and shakedown inspections complete.	_____	_____	_____

Remarks:

Signature of USACEEIA QA/Acceptance Test Representative Date

Figure 6-4. Sample of Final Installation Inspection (sheet 3 of 3).

SEIP 015

9 August 1976

EQUIPMENT SHAKEDOWN QUALITY ASSURANCE INSPECTION

Name of Site: _____ Sheet No: _____

Location: _____

Equipment/System: _____

Test No. and Name: _____

Date/Time Test Performed: _____

	<u>Inspection</u>	<u>Requirement</u>	<u>Accept</u>	<u>Reject</u>
1.				
	(Nomenclature) _____	_____	_____	_____
2.				
	(Nomenclature) _____	_____	_____	_____

Remarks: _____

Signature of USACEEIA QA/Acceptance Test Representative _____ Date _____

Figure 6-5. Sample of Equipment Shakedown Quality Assurance Inspection.

9 August 1976

SEIP 015

QUALITY ASSURANCE INSPECTION CERTIFICATE

Name of Site: _____

Location: _____

Equipment/System: _____

User Organization: _____

CERTIFICATION

The undersigned certify that the required QA inspections were performed at the designated sites, the deficiencies observed were duly recorded and reported, and the inspection results are as indicated on completed data sheets submitted to the Test Director, Test and Evaluation Directorate, USACEEIA.

Remarks: _____

Signature of USACEEIA QA/Acceptance Test Representative Date

Signature of USACC Representative Date

Figure 6-6. Sample of Quality Assurance Inspection Certificate.

SECTION 7. OPERATIONAL TEST PLAN AND CHECKOUT PROCEDURES

7.1 GENERAL. This section contains operational test and checkout procedures for on-site test and acceptance of the installed material. On-site tests are performed to determine whether the material has been correctly installed and performs in accordance with the requirements and specifications contained in this SEIP. Any deviations from this SEIP will be analyzed for compatibility and validity. A test plan and checkout procedure for installed material will be prepared by USACEEIA subcommands and field activities and will be approved by the Commander, USACEEIA, or his designated representative prior to implementation.

7.2 STATIC CABLE TESTS. Static tests will be performed on all newly installed circuits to ensure that the equipment will function satisfactorily and in accordance with the equipment technical manuals when placed into operational service.

7.2.1 Cable continuity testing is normally performed by a buzzing technique which is conducted twice during installation.

7.2.1.1 The first test is performed after the cable is run and before butting and strapping operations begin. Its purpose is to verify correct cable location in accordance with cable tags and the equipment layout drawings. The continuity testing procedures in CCTM 105-50-21 are to be followed.

7.2.1.2 Final continuity testing is performed after the cables have been terminated but before power leads are connected. Each conductor must be verified for proper continuity and correct point-to-point termination. This will normally be performed before any jumper or straps are installed on terminal blocks or patch panels. Continuity testing will include not only testing for opens but continuity to ground shorts as well.

7.3 SYSTEMS EQUIPMENT TESTS. Operational tests of major items (i.e., scanner and counter) are given in the applicable technical manuals listed in paragraph 1.6 of this SEIP. Since most systems require many scanners and often two counters, precautions must be taken to assure the operability of each equipment by serial number.

7.4 TROUBLESHOOTING PROCEDURES. Detailed procedure in servicing defective equipment requires sectionalizing, localizing and isolating a defective component whereby PCB substitution may be invoked. Troubleshooting charts giving malfunctions, probable causes, and corrective action are contained in section III of TM 11-5805-640-13 and TM 11-5805-642-13.

9 August 1976

7.5 TESTING ACCEPTANCE. Testing will start after the installation chief has provided a written statement of readiness (unless otherwise specified in the work order) to the US Army Communications-Electronics Engineering Installation Agency, ATTN: CCC-TED, Fort Huachuca, Arizona 85613, no less than 10 days before offering the installation for testing and checkout.

7.5.1 Acceptance Test Sequence. The following sequence is recommended:

a. The test director will review QA inspection reports of installed equipment for required corrective actions and enter a description of exceptions on the Technical Acceptance Certificate, Part 2 Inspection (fig. 7-1).

b. The test director will conduct operational test and checkout procedures.

c. Operational test and checkout procedures will be performed using personnel from the local command wherever possible and records of the test results will appear on a Technical Acceptance Test Record. (See table 7-1 for a typical sequential test record.)

d. The test director will make all pertinent data from the reperforator or optional page printer which verifies systems operability a permanent part of the test record.

e. It is acknowledged that the test director and QA inspector may or may not be the same person dependent upon the size of the facility and manpower constraints. In the event an organization other than USACEEIA-TED conducts the QA inspections and test and acceptance of installed equipment, other checklists may be used provided prior approval by HQ, USACEEIA has been obtained.

9 August 1976

SEIP 015

Table 7-1. Telephone Traffic Recorder (To 2300 Lines)
Test Data Sheet

Reg No	Type	CCS or PC	Equip Quant	Status	Remarks
000	Scanner Ck #1	PC			
001	Scanner Ck #2	PC			
002	Scanner Ck #3	PC			
003	Scanner Ck #4	PC			
004	Scanner Ck #5	PC			
005	Scanner Ck #6	PC			
006	Scanner Ck #7	PC			
007	Scanner Ck #8	PC			
008	Scanner Ck #9	PC			
009	Scanner Ck #10	PC			
010	VON MLP IN	CCS			1st Trunk Only
011	VON MLP IN	PC			
012	VON MLP OUT	CCS			1st Trunk Only
013	VON MLP OUT	PC			
014	VON IN ONLY	CCS			1st Trunk Only
015	VON IN ONLY	PC			
016	VON 2/W IN	CCS			
017	VON 2/W TOT	CCS			1st Trunk Only
018	VON 2/W IN/OUT	PC			
019	VON OUT ONLY	CCS			
020	VON OUT ONLY	PC			
021	VON MCA	CCS			1st Trunk Only
022	VON MCA	PC			
023	VON OP ASST	CCS			1st Trunk Only
024	VON OP ASST	PC			
025	CITY LOC IN	CCS			1st Trunk Only
026	CITY LOC IN	PC			
027	CITY LOC OUT	CCS			1st Trunk Only
028	CITY LOC OUT	PC			
029	CITY LOC 2/W TOT	CCS			
030	CITY LOC 2/W IN/OUT	CCS			1st Trunk Only
031	CITY LOC 2/W IN/OUT	PC			
032	LD TOLL IN	CCS			1st Trunk Only
033	LD TOLL IN	PC			
034	LD TOLL OUT	CCS			1st Trunk Only
035	LD TOLL OUT	PC			
036	CITY LISTED NO	CCS			1st Trunk Only
037	CITY LISTED NO	PC			
038	WATTS OUT BAND 1	CCS			1st Trunk Only
039	WATTS OUT BAND 1	PC			
040	WATTS OUT BAND 2	CCS			

SEIP 015

9 August 1976

Table 7-1. Telephone Traffic Recorder (To 2300 Lines)
Test Data Sheet--continued

Reg No	Type	CCS or PC	Equip Quant	Status	Remarks
041	WATTS OUT BAND 2	PC			1st Trunk Only
042	WATTS OUT BAND 3	CCS			
043	WATTS OUT BAND 3	PC			1st Trunk Only
044	WATTS OUT BAND 4	CCS			
045	WATTS OUT BAND 4	PC			1st Trunk Only
046	WATTS OUT BAND 5	CCS			
047	WATTS OUT BAND 5	PC			1st Trunk Only
048	WATTS OUT BAND 6	CCS			
049	WATTS OUT BAND 6	PC			1st Trunk Only
050	WATTS OUT INTRA 1	CCS			
051	WATTS OUT INTRA 1	PC			1st Trunk Only
052	WATTS OUT INTRA 2	CCS			
053	WATTS OUT INTRA 2	PC			1st Trunk Only
054	FTS IN ONLY	CCS			
055	FTS IN ONLY	PC			1st Trunk Only
056	FTS OUT ONLY	CCS			
057	FTS OUT ONLY	PC			1st Trunk Only
058	FTS 2/W TOT	CCS			
059	FTS 2/W IN/OUT	CCS			
060	FTS 2/W TOT	PC			1st Trunk Only
061	FX IN	CCS			
062	FX IN	PC			1st Trunk Only
063	FX IN	CCS			
064	FX IN	PC			1st Trunk Only
065	FX IN	CCS			
066	FX IN	PC			1st Trunk Only
067	FX IN	CCS			
068	FX IN	PC			1st Trunk Only
069	FX IN	CCS			
070	FX IN	PC			1st Trunk Only
071	FX IN	CCS			
072	FX IN	PC			1st Trunk Only
073	FX IN	CCS			
074	FX IN	PC			1st Trunk Only
075	FX IN	CCS			
076	FX IN	PC			1st Trunk Only
077	FX IN	CCS			
078	FX IN	PC			1st Trunk Only
079	FX IN	CCS			1st Trunk Only
080	FX IN	PC			1st Trunk Only
081	FX OUT	CCS			

9 August 1976

SEIP 015

Table 7-1. Telephone Traffic Recorder (To 2300 Lines)
Test Data Sheet--continued

Reg No	Type	CCS or PC	Equip Quant	Status	Remarks
082	FX OUT	PC			1st Trunk Only
083	FX OUT	CCS			
084	FX OUT	PC			1st Trunk Only
085	FX OUT	CCS			
086	FX OUT	PC			1st Trunk Only
087	FX OUT	CCS			1st Trunk Only
088	FX OUT	PC			1st Trunk Only
089	FX OUT	CCS			
090	FX OUT	PC			1st Trunk Only
091	FX OUT	CCS			
092	FX OUT	PC			1st Trunk Only
093	FX OUT	CCS			
094	FX OUT	PC			1st Trunk Only
095	FX OUT	CCS			
096	FX OUT	PC			1st Trunk Only
097	FX OUT	CCS			
098	FX OUT	PC			1st Trunk Only
099	FX OUT	CCS			
100	FX OUT	PC			1st Trunk Only
101	FX 2/W TOT	CCS			
102	FX 2/W IN/OUT	CCS			
103	FX 2/W IN/OUT	PC			1st Trunk Only
104	FX 2/W TOT	CCS			
105	FX 2/W IN/OUT	CCS			
106	FX 2/W IN/OUT	PC			1st Trunk Only
107	FX 2/W TOT	CCS			
108	FX 2/W IN/OUT	CCS			
109	FX 2/W IN/OUT	PC			1st Trunk Only
110	FX 2/W TOT	CCS			
111	FX 2/W IN/OUT	CCS			
112	FX 2/W IN/OUT	PC			1st Trunk Only
113	FX 2/W TOT	CCS			
114	FX 2/W IN/OUT	CCS			
115	FX 2/W IN/OUT	PC			1st Trunk Only
138	MISC TRK (CB-MAG)	PC			1st Trunk Only
139	MISC TRK (CB-MAG)	CCS			
140	MISC TRK (CB-MAG)	PC			1st Trunk Only
141	MISC TRK (CB-MAG)	CCS			
142	MISC TRK (CB-MAG)	PC			1st Trunk Only
143	MISC TRK (CB-MAG)	CCS			
144	MISC TRK (CB-MAG)	PC			1st Trunk Only

SEIP 015

9 August 1976

Table 7-1. Telephone Traffic Recorder (To 2300 Lines)
Test Data Sheet--continued

Reg No	Type	CCS or PC	Equip Quant	Status	Remarks
145	MISC TRK (CB-MAG)	CCS			
146	MISC TRK (CB-MAG)	PC			1st Trunk Only
147	MISC TRK	CCS			
148	MISC TRK	PC			1st Trunk Only
149	SPARE				
150	LF GP	1	CCS		
151	LF GP	2	CCS		
152	LF GP	3	CCS		
153	LF GP	4	CCS		
154	LF GP	5	CCS		
155	LF GP	6	CCS		
156	LF GP	7	CCS		
157	LF GP	8	CCS		
158	LF GP	9	CCS		
159	LF GP	10	CCS		
160	LF GP	11	CCS		
161	LF GP	12	CCS		
162	LF GP	13	CCS		
163	LF GP	14	CCS		
164	LF GP	15	CCS		
165	LF GP	16	CCS		
166	LF GP	17	CCS		
167	LF GP	18	CCS		
168	LF GP	19	CCS		
169	LF GP	20	CCS		
170	LF GP	21	CCS		
171	LF GP	22	CCS		
172	LF GP	23	CCS		
173	LF GP	1	PC		
174	LF GP	2	PC		
175	LF GP	3	PC		
176	LF GP	4	PC		
177	LF GP	5	PC		
178	LF GP	6	PC		
179	LF GP	7	PC		
180	LF GP	8	PC		
181	LF GP	9	PC		
182	LF GP	10	PC		
183	LF GP	11	PC		
184	LF GP	12	PC		
185	LF GP	13	PC		

9 August 1976

SEIP 015

Table 7-1. Telephone Traffic Recorder (To 2300 Lines)
Test Data Sheet--continued

Reg No	Type		CCS or PC	Equip Quant	Status	Remarks
186	LF GP	14	PC			
187	LF GP	15	PC			
188	LF GP	16	PC			
189	LF GP	17	PC			
190	LF GP	18	PC			
191	LF GP	19	PC			
192	LF GP	20	PC			
193	LF GP	21	PC			
194	LF GP	22	PC			
195	LF GP	23	PC			
196	CONN GP	1	CCS			
197	CONN GP	2	CCS			
198	CONN GP	3	CCS			
199	CONN GP	4	CCS			
200	CONN GP	5	CCS			
201	CONN GP	6	CCS			
202	CONN GP	7	CCS			
203	CONN GP	8	CCS			
204	CONN GP	9	CCS			
205	CONN GP	10	CCS			
206	CONN GP	11	CCS			
207	CONN GP	12	CCS			
208	CONN GP	13	CCS			
209	CONN GP	14	CCS			
210	CONN GP	15	CCS			
211	CONN GP	16	CCS			
212	CONN GP	17	CCS			
213	CONN GP	18	CCS			
214	CONN GP	19	CCS			
215	CONN GP	20	CCS			
216	CONN GP	21	CCS			
217	CONN GP	22	CCS			
218	CONN GP	23	CCS			
219	CONN GP	1	PC			
220	CONN GP	2	PC			
221	CONN GP	3	PC			
222	CONN GP	4	PC			
223	CONN GP	5	PC			
224	CONN GP	6	PC			
225	CONN GP	7	PC			
226	CONN GP	8	PC			

SEIP 015

9 August 1976

Table 7-1. Telephone Traffic Recorder (To 2300 Lines)
Test Data Sheet--continued

Reg No	Type		CCS or PC	Equip Quant	Status	Remarks
227	CONN GP	9	PC			
228	CONN GP	10	PC			
229	CONN GP	11	PC			
230	CONN GP	12	PC			
231	CONN GP	13	PC			
232	CONN GP	14	PC			
233	CONN GP	15	PC			
234	CONN GP	16	PC			
235	CONN GP	17	PC			
236	CONN GP	18	PC			
237	CONN GP	19	PC			
238	CONN GP	20	PC			
239	CONN GP	21	PC			
240	CONN GP	22	PC			
241	CONN GP	23	PC			
242	SEL LEV		CCS			
243	SEL LEV		CCS			
244	SEL LEV		CCS			
245	SEL LEV		CCS			
246	SEL LEV		CCS			
247						
248						
249						

9 August 1976

SEIP 015

TECHNICAL ACCEPTANCE CERTIFICATE

Project Description: _____

Site: _____

Geographic Location: _____

PART 1. CERTIFICATION

1. The traffic recorder system equipment has been tested in accordance with an approved test plan. The undersigned verify that tests were conducted as prescribed in the test plan and the results are as indicated in Part 2.
2. The scope of this acceptance test was limited to inspections and measurements of the C-E equipment and other facilities and conditions which could adversely impact on their operation. It included inspections for compliance of the equipment with applicable technical manuals. It did not include a review of the availability of operating and maintenance personnel, spare parts, tools, and expendable supplies.
3. This facility was installed in accordance with the site engineering package, project coordination letter (PCL), installation and implementation plan (IIP), applicable USACC standard engineering installation package (SEIP), and quality assurance standards. Deficiencies in the installation are listed in Part 2 of this certificate and will be corrected by the suggested agency at the earliest possible date.
4. The operating organization is responsible for the operational maintenance of the equipment installed by USACC/USACEEIA as specified in the IIP and PCL, except those deficiencies listed in Part 2 below designated as the responsibility of the installing organization for completion or correction.
5. Completion of this certificate terminates USACEEIA responsibility for installed equipment except for deficiencies stated in Part 2 of this certificate.

*Figure 7-1. Sample of Technical Acceptance Certificate
(sheet 1 of 3).*

SEIP 015

9 August 1976

PART 2. INSPECTION

Equipment installed or relocated (type and serial no.): _____

Equipment modified or repaired: _____

Description of Exceptions

Suggested Agency
For Correction

Engineering:

Installation:

Other:

Figure 7-1. Sample of Technical Acceptance Certificate
(sheet 2 of 3).

9 August 1976

SEIP 015

Description of Exceptions Not Part of C-E Upgrade

Remarks:

USACEEIA Test Representative:

Signature Date

Name/Title

O&M Commander:

Signature Date

Name/Title

O&M Agency Designation:

Contracting Number/Tasking Document(s):

Figure 7-1. Sample of Technical Acceptance Certificate
(sheet 3 of 3).

SEIP 015

9 August 1976

TECHNICAL ACCEPTANCE TEST

Nomenclature: _____

Serial No.: _____

Name of Site: _____

Location: _____

<u>Test</u>	<u>Results</u>
1. Traffic Recorder Test Data Sheet, Plan A	_____ _____ _____
2. Traffic Recorder Test Data Sheet, Plan B	_____ _____ _____

Signature of USACEEIA Acceptance Test Representative _____ Date _____

Figure 7-2. Sample of Technical Acceptance Test.

9 August 1976

SEIP 015

SECTION 8. PROJECT COORDINATION LETTER

8.1 GENERAL. This section contains the project coordination letter (PCL) to secure commitments from agencies controlling facilities and sites and other agencies participating in the project. The PCL is issued after a site survey is performed. It documents the actions necessary to install or provide facilities, systems, and equipment to meet project requirements. It identifies resources required for the project.

8.2 USACEEIA SURVEY/SITE CONCURRENCE RESPONSIBILITIES. USACEEIA has complete responsibility for site survey and project coordination.

8.3 AGREEMENTS DURING SITE SURVEYS. Agreements reached during the site survey will be formalized as soon as possible and documented. During coordination, prime consideration is given to resources having long term stability. Resources found unnecessary are released immediately by official correspondence. This release is not part of the PCL.

8.4 PROJECT COORDINATION DOCUMENTATION. A sample PCL is shown in figures 8-1 through 8-8. On-site project coordination information required by USACEEIA Regulation 34-2 will be included in the completed PCL by USACEEIA subcommand personnel.

SEIP 015

9 August 1976

(Office symbol)

(date)

SUBJECT: Project Coordination for Installation of _____
(name)

THRU: Commander

ATTN: _____

(appropriate command with full address)

TO: Commander

ATTN: _____

(appropriate installation with full address)

1. This letter will document your concurrence with the actions required for installation of (name and location), as specified in inclosures 1 through _____. It outlines the responsibilities of _____ headquarters and identifies the necessary support actions required of your organization for accomplishment of this project.
2. A project concurrence meeting was held on (date). A list of attendees is attached as Inclosure 1.
3. Inclosures 2 through _____ provide detailed requirements and narrative information to define the actions required and the area of responsibility necessary for site preparation and installation of (name and location).
 - a. Inclosure 2, "Telephone Exchange Description," identifies the facilities by project number, location, and responsible agency. It refers to the overall scheme of work and establishes proposed installation dates.
 - b. Inclosure 3, "Special Requirements," refers to considerations such as interference, radiation hazards, safety, and restrictions to future build-up.

SEIP 015

c. Inclosure 4, "DCO Operating Unit Responsibilities," specifies those requirements such as site preparation alternate, communications, logistical support, etc., which the host command has the responsibility to provide.

e. Inclosure 6, "Test Equipment Required," specifies any test equipment to be provided by supported command during installation and testing.

4. Request you review all inclosures, fulfill preinstallation requirements and notify this headquarters when those tasks are completed. Your facility is scheduled for installation (month and year) .

6. Your point of contact within this headquarters for this project is _____, telephone number _____.

 Incls
as

SIGNATURE BLOCK

8-3

9 August 1976

ATTENDEES AT PROJECT COORDINATION MEETING

Headquarters, _____ (name) _____, letter, subject: Project
Coordination for Installation of _____ (name) _____,
dated _____.

1. A project coordination meeting was held at _____ (name) _____
_____ on _____ (date) _____. The purpose of this meeting
was to discuss the results of the engineering site survey conducted
at _____ (DCO name) _____.

2. Following is a list of attendees:

NameAddress

9 August 1976

SEIP 015

TELEPHONE EXCHANGE DESCRIPTION

Headquarters, _____ (name) _____, letter, subject:
Project Coordination for Installation of _____ (name) _____,
dated _____.

1. Identification:
 - a. Project number:
 - b. Location: (if different from the above address)
 - c. Command/Agency Responsible for Telephone Exchange (DCO):
2. Exchange description: (purpose and scope of project)
3. Inventory of major equipment at the site prior to beginning of installation which may be used and result in a cost savings.
 - a. Existing racks.
 - b. Existing traffic recorder equipment (list all major items of equipment).
 - c. Optional power source.
4. List additional major equipment to be installed and authorization document.
5. Give a brief description of any exceptions (equipment not normally installed in the area), relocations, and/or removal of the equipment listed in 3 and 4 above:
6. Proposed schedule:
 - a. Installation start date:
 - b. Installation completion date:
 - c. Final test start date:

Figure 8-3. Sample Inclosure 2 to Project Coordination Letter.

9 August 1976

SPECIAL REQUIREMENTS

Headquarters, _____ (name) _____, letter, subject: Project
Coordination for Installation of _____ (name) _____,
dated _____.

(Each item specified in this inclosure shall identify the command responsibility for satisfying that requirement. Sample entries are shown below.)

1. Waivers: (waivers to sections of this SEIP, see 9.3).
2. Site restrictions: (physical security/interference to other communications or operations).
3. Signal circuits: (protection, routing, and installation).
4. Safety: (the installation team shall coordinate with the ground safety officer prior to installation start for current information on safety hazards that may exist in the work area involved).
5. Others:

Figure 8-4. Sample Inclosure 3 to Project Coordination Letter.

9 August 1976

SEIP 015

DCO OPERATING UNIT RESPONSIBILITIES

Headquarters, _____ (name) _____, letter, subject: Project
Coordination for Installation of _____ (name) _____,
dated _____.

1. List all responsibilities of the operating unit as determined
by the Site Survey Checklist (section 2 of this SEIP).

(This inclosure will refer to the responsibilities of the unit, organ-
ization, or command providing the signatory to this project coordi-
nation letter. Sample entries are shown below.)

2. Items to be considered are:

- a. Buildings and building space.
- b. Lightning protection and grounds.
- c. Electrical power to include emergency power.
- d. Environmental control.
- e. Conduit/duct runs.
- f. Access roads.

9 August 1976

USACEEIA RESPONSIBILITIES

Headquarters, _____ (name) _____, letter, subject: Project
Coordination for Installation of _____ (name) _____,
dated _____.

(Documents such as drawings, studies, etc., should be attached as additional inclosures. A description of such documents and their reference should be noted in the appropriate paragraph. Sample entries are shown below.)

1. Engineering Installation Package.
2. Bill of Materials (BOM) a list only).
3. Installation.
4. Test.
5. Other.

9 August 1976

SEIP 015

TEST EQUIPMENT REQUIRED

Headquarters, _____ (name) _____, letter, subject: Project
Coordination for Installation of _____ (name) _____,
dated _____.

(List specific nomenclature of all test equipment required for the
testing of this installation. Sample entries are shown below.)

<u>Nomenclature</u>	<u>Type No.</u>
1. Circuit verifier (continuity tester)	_____
2. Oscilloscope	_____
3. Volt-ohmmeter	_____

Figure 8-7. Sample Inclosure 6 to Project Coordination Letter.

SEIP 015

9 August 1976

DRAWING LIST

Headquarters, _____ (name) _____, letter, subject: Project
Coordination for Installation of _____ (name) _____,
dated _____.

(List all drawings by number and title used in the replacement,
upgrade, or initial installation.)

Figure 8-8. Sample Inclosure 7 to Project Coordination Letter.

9 August 1976

SEIP 015

SECTION 9. COMPLETION CERTIFICATION

9.1 GENERAL. The Materiel Acceptance Record, Appendix C of USACEEIA Regulation 702-2, is used to certify that the project has met all the test criteria. It shall contain a list of discrepancies and is signed to record concurrence of the O&M organization and the installation agency. A sample Materiel Acceptance Record is shown in figure 9-1.

9.2 DISTRIBUTION. The distribution lists for completion documents are given in the tasking document, QA test plan, or contractual document.

9.3 WAIVERS. Waivers, with approvals, for individual installations may be included in this section to clarify deviations from TB 95-1 and this SEIP.

MATERIEL ACCEPTANCE RECORD

1. PROJECT(S): List project numbers and short titles. If this is a subproject, or part of a subproject, then provide all necessary information, i.e., IIP milestone numbers, subproject numbers as well as subdivisions to same.

2. FACILITY:

3. LOCATI...

4. OPERATING UNIT:

5. PROJECT DESCRIPTION:

6. MAJOR ITEMS INSTALLED:

<u>NSN</u>	<u>Description</u>	<u>Qty</u>	<u>Source</u>
------------	--------------------	------------	---------------

a. Source should identify project number (if more than one project is involved), BOM line item number, etc. If the item was not on the BOM, identify source.

b. Additional pages may be added, numbered in sequence.

7. MATERIEL EXCESS.

<u>NSN</u>	<u>Description</u>	<u>Qty</u>	<u>Source</u>
------------	--------------------	------------	---------------

a. Source should identify project number (if more than one project is involved), BOM line item number, etc. If the item was not on the BOM, identify source.

b. Additional pages may be added, numbered in sequence.

8. DRAWINGS: One set of the following corrected blue-line installation drawings have been provided to the operating unit:

(List each drawing by number and title.)

9. CUTOVER: (If test director not present for cutover, insert "Not Used.")

Figure 9-1. Sample Materiel Acceptance Record (Sheet 1 of 4).

9 August 1976

SEIP 015

MATERIEL ACCEPTANCE RECORD (Continued)

a. Contains statement describing cutover including start and completion times and dates.

b. Also includes statement to the effect that installation agency representative was available on-site during 48-hour period subsequent to the cutover to resolve any problem attributable to the installation. If no troubles arise, so state.

c. Identify significant problem areas during cutover and shakedown, if any, and their resolution.

10. EXCEPTIONS:

a. Identify only exceptions to the installed project, such as materiel that has not arrived and which must be installed. Include complete identification of each missing item and identification of agency responsible for installation.

b. For facilities that are becoming partially operational identify installation agency actions remaining for project completion. In this type of situation, the Materiel Acceptance Record will show the tests that have been made but will be identified as a partial record. A final Materiel Acceptance Record will be prepared after installation and testing of all remaining project equipment.

11. REMARKS: Records of installation/facility inspections and equipment operational tests are contained in inclosures 1 through _____.

a. Identify items of support that have not been accomplished, if any, and describe activity in progress by the operating agency to satisfy the requirement (engineering work order number, etc.).

b. Describe results of tests. Identify agency performing tests and date accomplished.

c. Describe ac power system including identification of source and backup capability.

9 August 1976

MATERIEL ACCEPTANCE RECORD (Continued)

d. Include statement to the effect that the installation agency will forward final as-built drawings when completed.

e. The operating agency and the installation agency may enter any remarks pertinent to the project. Comments concerning commendations, criticism, and recommendations should be entered here.

f. Include disposition instructions for excess materiel when applicable.

12. AUTHENTICATION: The project(s) listed in paragraph 1 of the record have been completed and are now accepted:

Test and Evaluation

Without exception.

With exception noted in paragraph 10. _____

Quality Assurance

Without exception.

With exception noted in paragraph 10. _____

Signatures

a. Installation Agency Representation

(Signed) _____

(Title) _____

(Organization) _____

b. O&M Command Test Representation

(Signed) _____

(Title) _____

(Organization) _____

9 August 1976

SEIP 015

MATERIEL ACCEPTANCE RECORD (Continued)

c. USACEEIA-TED Test Representative

(Signed) _____
(Title) _____
(Organization) _____

d. USACEEIA-TED Quality Assurance Representative

(Signed) _____
(Title) _____
(Organization) _____

e. O&M Representative (Operating Agency)

(Signed) _____
(Title) _____
(Organization) _____
(Date) _____

Figure 9-1. Sample Materiel Acceptance Record (sheet 4 of 4).

SEIP 015

9 August 1976

(CC-OPS)

FOR THE COMMANDER:

OFFICIAL:

C. E. McKNIGHT, Jr.
Colonel, GS
Chief of Staff

M. K. Labar
M. K. LABAR
Colonel, AGC
Adjutant General

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- 10 - USACEEIA-CONUS, ATTN: CCCN-TR, Fort Ritchie, MD 21719
- 10 - USACEEIA-EUR, APO New York 09056
- 10 - USACEEIA-PAC, APO San Francisco 96557
- 10 - US Army Signal School, ATTN: ATSN-CD-MS, Fort Gordon, GA 31905
- 2 - US Army Materiel Development and Readiness Command, ATTN: CCN-PI-P, Washington, D.C. 20315
- 5 - 5th Signal Command, APO New York 09056
- 5 - 6th Signal Command, APO San Francisco 96558
- 5 - 7th Signal Command, Fort Ritchie, MD 21719
- 2 - US Army Communications Command, ATTN: CC-OPS-SM, Fort Huachuca, AZ 85613
- 2 - US Army Training and Doctrine Command, ATTN: ATCE, Fort Monroe, VA 23351
- 2 - US Army Forces Command, ATTN: AFCE, Fort McPherson, GA 30330
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Fort Huachuca, Arizona 85613

This standard engineering installation package is based on the most current thinking at US Army Communications Command. Your experience and help can improve our responsiveness in this area. Please send us your comments. Thanks.

Comments on SEIP ____ (please give number)

How can we contact you?

Rank	Name	Duty position	Duty station	AUTOVON number
------	------	---------------	--------------	----------------

This standard engineering installation package is based on the most current thinking at US Army Communications Command. Your experience and help can improve our responsiveness in this area. Please send us your comments. Thanks.

Comments on SEIP ____ (please give number)

How can we contact you?

SUPPLEMENTARY

INFORMATION

Cl, SEIP 015

DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY COMMUNICATIONS COMMAND
Fort Huachuca, Arizona 85613

Change 1
USACC SEIP
No. 015

25 July 1977

Standard Engineering Installation Package

TELEPHONE TRAFFIC RECORDER SYSTEM

SEIP 015, 9 August 1976, is changed as follows:

1. Page 3-1, paragraph 3.3.2.3, is superseded as follows:

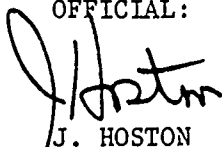
3.3.2.3 For permanent system installations, run 24-gauge cables from the wire wrap side of the 50-point jones plug mating connector (CONARC #211-50-01-108) at the monitor/scanner equipment directly to the designated block locations on the appropriate CMDF/IDF frame. Run and connect jumper wires between the monitor and scanner inputs/outputs. Run and connect jumper wires from scanner inputs to the respective control 'C' leads of switching equipment to be monitored for traffic load. For portable/temporary type systems retain patch panel assembly, MX 9457, and run cable to appropriate frame in accordance with figure 1-2.

2. After posting, file this change sheet in front of the basic publication.

(CC-OPS)

FOR THE COMMANDER:

OFFICIAL:



J. HOSTON
LTC, AGC
Adjutant General

BILLY J. THRASHER
Colonel, GS
Chief of Staff