

**TRAFFIC ORDER PREPARATION—ENGINEERING OF ADDITIONS
NETWORK SWITCHING ENGINEERING
NO. 3 ELECTRONIC SWITCHING SYSTEM**

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| GENERAL | 6 | 1.01 This section covers the engineering criteria, methods of procedure, and a general format for the preparation of a traffic order for an equipment addition in a No. 3 ESS office. The planning, scheduling, and acquisition of data to complete a traffic order are discussed herein. References to the interfacing responsibilities with | |
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NOTICE

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the network administrator and equipment engineer are also included.

1.02 Whenever this section is reissued, the reason for reissue will be given in this paragraph.

1.03 A No. 3 ESS equipment addition is required whenever the office hardware or software components no longer meet the established objectives for customer services. The office capacity is based on the number of customer main stations (telephones) that can be effectively served for a specific period of time. The number of main stations to be served at a future time will govern the size and scheduling of the proposed addition.

1.04 A growth traffic order for a No. 3 ESS office is included in this section. The suggested format of this traffic order (Fig. 1 through 10) is intended to provide the network administrator and equipment engineer detailed summaries of the office growth forecasts and associated equipment requirements and to complete for the equipment engineer the ordering forms for traffic sensitive equipment.

1.05 The Traffic Order Worksheets and their application for office additions are covered in Part 2. Data requirements covering collection, validation, and projections for the engineering process are covered in Part 3, Part 4 covers many of the items which must be considered prior to engineering an addition.

1.06 Measured office traffic data should always be used when engineering an office addition. This includes call rates, holding times, network and component usage, ratios and factors, and administrative and service protection margins.

1.07 The Traffic Order Worksheets, provided in the 233 -060-8ZZ sections, have been designed to utilize measured and projected office data. Two engineering methods are associated with No. 3 ESS offices; **Initial** and **Growth**. The term initial engineering is used to describe the calls times holding time method applicable for an initial office. The term growth engineering is used to describe usage per main station (CCS/MS) concepts used when engineering an addition to a working office.

1.08 The growth method is used for engineering an addition when **valid data** are available. This data may then be projected with some assurance

that the traffic characteristics will not change appreciably for the proposed engineering interval. When new services are to be included in an addition, ie, coin, custom calling, etc, which are not included in the data base, initial engineering methods should be used to provide the traffic sensitive components required for these services.

1.09 References in this section to methods, planning, data requirements, service levels, and equipment quantities are based on American Telephone and Telegraph Company recommendations.

2. SOURCE

GENERAL

2.01 The traffic engineer is responsible for documenting receipt of and verifying reasonableness of the office data used for sizing and scheduling growth additions to a No. 3 ESS office. The Traffic Order Worksheets are essential for computing main station and traffic data statements which establish office capacities and switching capabilities. These worksheets are designed for specific functions, ie, office characteristics, network and service circuit requirements and office capacity determination.

2.02 Two time periods are considered when engineering a growth addition; the **data base period** and **end of engineering period**. The data base period is the latest office busy season for which validated traffic data are available. The end of engineering period (EOP) represents that period in time when the most limiting portion of the switching system can no longer meet established service objectives or when the physical terminal capacities have been exceeded.

2.03 Occasionally, a growth job is scheduled and office busy season data are not available. If a special study cannot be arranged, the growth job may be engineered using the initial office engineering procedure covered in Section 233-060-110

WORKSHEET ARRANGEMENTS

2.04 Traffic Order Worksheets for No. 3 ESS, are used when preparing a traffic order for an office growth addition. The primary worksheets used are:

- (a) Office Characteristics - Section 233-060-812

- (b) Service Circuits - Section 233-060-820
- (c) Switching Network - Section 233-060-830
- (d) Capacity Determination - Section 233-060-845

All Traffic Order Worksheets for No. 3 ESS are maintained in Sections 233-060-800 through 233-060-899.

2.05 The capacity determination (CD) Traffic Order Worksheet of a working office is the most effective engineering tool the traffic engineer has for planning or engineering office additions. The CD worksheet provides a historical data file for each traffic sensitive hardware or software component. Validated data on these worksheets will provide the data base information used on the Office Characteristics (OC) Worksheets. The procedure for establishing and maintaining a capacity determination historical file is covered in Section 233-060-130.

2.06 The Office Characteristics Traffic Order Worksheet is used to identify the data base and end of period (EOP) for a proposed office addition. It is recommended that this worksheet be completed, in its entirety, prior to entering the equipment calculation worksheet. The completed OC Worksheets will cover most of the data required for engineering a growth addition. They include main station and line forecasts, component busy hour call and load data, and usage ratios and factors.

2.07 The Service Circuit and Switching Network Traffic Order Worksheets provide the calculations for the primary office capacity limiting items. Data entered on these worksheets are obtained from the office or CD worksheets.

3. PLANNING AND ORDER PREPARATION

GENERAL

3.01 The attached traffic order provides a suggested format for preparation of an equipment order for a central office equipment addition. Office capacities, main station requirements, and job schedules are identified with this type of order. Included in the order is detailed main station and trunk forecasts and the traffic order worksheets used to establish the office data base and the parameters for growth in the forecast period.

3.02 The following is a description of the attached traffic order:

- **Face Sheet**—A preprinted form on which an overview of the prepared equipment addition is summarized. Main station capacities and scheduling information are indicated on this page.
- **Index**—Identifies all sections and worksheets included in the order.
- **General Notes**—Highlights information for recipients of the traffic order. All special requirements or functions added or changed with this job are covered in these notes.
- **Central Office Forecast**—Two types of forecast documentation are covered in this example. The mechanized forecast form is the system standard used for five year office forecasts. The second forecast form is a locally designed detailed format utilizing forecast information from the mechanized output and updated to agree with the latest field surveys.
- **Trunk Forecast**—A forecast of growth or changes affecting originating and terminating interoffice trunk requirements in the engineering period.
- **Office Growth Analysis**—The growth analysis is a brief summary of the office limiting capacities developed on the capacity determination worksheets. The present and proposed office exhaust dates and most limiting capacity are covered in this document.
- **Demand and Facility Chart**—A system standard format for indicating the timing and sizing of a central office addition. Current main station capacity exhaust and capacity added are indicated on these charts.
- **Equipment Requirements**—This section of the order includes traffic order worksheets which support the final recommendation contained in filled-out pages of the equipment questionnaire. A listing of these worksheets is found on Fig. 2. The Summary Sheets are suggested for use to bring together the various component requirements as an aid in transcription to the questionnaire.

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3.03 The data used for planning and preparing an order for an equipment addition are provided on the Office Characteristics and Capacity Determination Worksheets. These data are combined with the main station and trunk forecasts for determining present office capacities and the proposed end of period capacities. These worksheets, included as part of the traffic order, are prepared in accordance with the methods discussed in Section 233-060-100, Order Preparation, General and Section 233-060-130, Capacity Determination. All worksheets normally provided for a growth order are included in the example traffic order.

DATA REQUIREMENTS

3.04 The responsibility for collecting and summarizing data resides with the network administrator. They may collect the data on the recommended Central Office Equipment Report (COER), manual records, or their own automated system. COER is an interactive traffic data management tool for use by the network administrator and the traffic engineer. The Engineering and Administration Data Acquisition System (EADAS) while not currently available is a planned arrangement for No. 3 ESS data collection.

3.05 The No. 3 ESS accumulates and stores individual items of traffic and plant counts in areas of the call store memory called traffic registers. A separate traffic register consisting of one or more counters is required for each item measured. Certain registers can be printed on request or are automatically printed in accordance with assigned time schedules.

3.06 The traffic data include peg count, overflow, and usage. These are described as follows:

- (a) Peg count (PC) is a cumulative count of the number of times a given event occurs during a fixed time interval, eg, a transmitter peg count register will tell the number of times a transmitter has been selected or seized.
- (b) Overflow (OVFL) is a cumulative count of the number of times an attempt to cause an event failed because of lack of facilities, eg, this register will count the number of times a component, while required, was not available for a customer call.

(c) Usage (U) is a cumulative count of the number of circuits or registers that are in a busy state during each periodic scan of a particular group of circuits or registers. From a component standpoint a usage register tells the amount of time in CCS the component was actively engaged in call processing for typically one hour.

3.07 In a No. 3 ESS office, most traffic registers are preassigned and dedicated to measure specific groups of traffic items. A limited number of traffic registers can be assigned to different items by recent change teletypewriter (TTY) input messages. The plant registers are preassigned to the measured plant items and cannot be reassigned. A complete description of load and traffic registers for No. 3 ESS is covered in Section 233-060-605, Traffic Measurements.

3.08 All traffic sensitive items of No. 3 ESS are engineered for the average busy season (ABS) or high day (HD) office busy hour. The **office busy hour** (OBH) is defined as the time-consistent 60-minute period with the highest **network usage** throughout the busy season. The 60-minute period may begin on either the hour, the half hour, or the quarter hour. It **must** be time consistent throughout the entire busy season, ie, the same clock hour in each month of the busy season.

3.09 Other busy hours used for engineering additions in No. 3 ESS offices, are as follows:

- (a) Trunk Busy Hour (TBM)—the selected hour in the busy season during which the average trunk circuit usage is at its maximum.
- (b) Component Busy Hour (CBH)—the hour the averaged usage for a traffic sensitive equipment component, ie, service circuits, is the highest for the average busy season (ABS). This may or may not be the same hour as the office busy hour. The CBH/OBH factor should be developed when engineering service circuits on office busy hour data.
- (c) Office Busy Hour Calls—that hour the sum of the total originating and incoming (O+I) calls average the highest for the busy season.

3.10 Office busy hour usage for a designated busy season is required for traffic engineering and should be monitored on a continuing basis.

Due to its effect on the costs for No. 3 ESS, network frame requirements must be determined as accurately as possible.

VALIDATION

A. General

3.11 All traffic data used to engineer additions to No. 3 ESS offices should be validated for reasonableness and accuracy. This validation is the responsibility of the network administrator and is reviewed by the traffic engineer prior to being used for engineering purposes.

3.12 Validation of traffic data may be done using a Traffic Graphic for the office to check for reasonableness. An example of comparing a peg count for line originations is as follows:

- Total line origination peg counts should be equal to or greater than the sum of the dial pulse and TOUCH-TONE® service customer digit receiver attempts.
- Similar checks may be made for holding times and usage for intraoffice, outgoing, and incoming traffic data.

3.13 The COER does a limited amount of traffic data validation. COER printouts provide busy hour peg count and usage data for each measured switching component. Holding times are also calculated and printed for each of the measured items. These holding times are compared with the established parameters for validation. Data falling outside the limits are suspect and should be subject to review prior to using for engineering purposes.

B. Maintenance

3.14 The maintenance busy counts may affect the validation of data. These registers count the number of circuits in a group that are maintenance busy at the time of the printout. There is no way to determine how long the circuit is maintenance busy during the hour. Service circuit usage data **does not** include maintenance usage, only traffic usage. Trunk group usage data **does** include maintenance usage. Examination of this data is useful when providing service protection margin.

C. Permanent Signals

3.15 Permanent signal requests occurring in a component busy hour will tend to inflate the traffic data for the item measured. Customer digit receivers and line and trunk ferroids are subject to permanent signals which could affect service circuit and O+I usage. Permanent signal requests should be analyzed when reviewing load measurements for reasonableness.

D. COER

3.16 A No. 3 ESS with COER requires specific items to be validated on the Office Description File (ODF). This validating should be done as soon as the initial data are received.

3.17 Errors usually occur in the monthly counts and the following checks should be made.

- (a) The correct quantity of main stations listed by class of service, ie, noncoin, multiparty, TOUCH-TONE or dial pulse, custom calling, etc.
- (b) Total main station counts, all classes, updated monthly.
- (c) Working terminals are accurate and reflect actual terminals generating a load. (In some instances main stations have been temporarily suspended, ie, resort communities which could dilute calls and usage per main station.)
- (d) Number of working trunks is accurate.

3.18 The items to check for service circuits are:

- (a) The number of installed circuits is accurate.
- (b) The correct circuits are assigned fast scan.
- (c) The CCS capacities used are those in the traffic order.
- (d) The holding time ranges are reasonable when compared to the tables in Section 233-060-220.

3.19 COER will “flag” data that falls outside the holding time ranges. Flagged data will appear as daily data on the monthly report, and will not be included in the monthly averages unless unflagged. This data can appear in the machine

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load service summary (MLSS) report if among the high 15 days. The network administrator has the responsibility of flagging invalid data. Invalid data can be eliminated by removing the total day which removes all data for the day.

3.20 The selection of the holding time ranges is important and should be determined jointly by the network administrator and the traffic engineer. They should be liberal enough to prevent unnecessary "flagging" of data, but stringent enough to identify invalid data.

3.21 COER does not provide component busy-hour data at this time. All data are normally entered for the **office usage busy-hour**. Since some office components will not have their highest usage in the office busy hour, component busy hour factors should be developed. The component data for the office busy hour would then be adjusted by this factor for component engineering. The component busy hour is derived from seasonal office busy studies.

PROJECTIONS

3.22 The following should be considered when projecting growth forecasts and associated office data:

- (a) A reliable historical data base. It is suggested that a minimum of five years of summarized busy season data be available when projecting growth forecasts.
- (b) **Do not project high day data.** Project average busy season data and apply the high day to busy season factor.
- (c) Trends will not be continuous. It is reasonable to expect a leveling off of load data as the office grows without a significant change in service offerings.
- (d) Changes in the service offering which will affect office characteristics, the data base, and the growth forecast, should always be identified.

3.23 Validated busy season COER traffic data that is entered and computed on the Capacity Determinations Worksheets should provide an adequate data base for forecasting growth. All growth projections, by the traffic engineer for the

current engineering interval, should be reviewed with the network administrator for capacities and the equipment engineer for required equipment.

4. ENGINEERING CONSIDERATIONS

GENERAL

4.01 A growth addition traffic order should be prepared using validated office and component traffic measurements. When a No. 3 ESS office is placed in service, traffic data are available on either a demand or scheduled basis. These data should be checked and compared with the initial office engineering calculations and any appropriate adjustments made to establish an engineering base for future growth.

4.02 A validated engineering data base is essential in determining the exhaust data of the present office and the preparation of a growth traffic order.

OFFICE CAPACITY

4.03 Office capacity is based on the traffic sensitive component with the lowest main station capacity as calculated on the Capacity Determination Worksheet. Capacity values will be stated in terms of main stations limited by calls, usage, or terminals whichever is applicable. Administration and maintenance service protection margins should be excluded when stating these capacities.

4.04 The most economical and efficient use of switching equipment is achieved by limiting office capacity on the highest cost load-carrying or call processing component of the office. In No. 3 ESS the network frame is the most costly growth component. The capacities of the network frame are adequate to accommodate many years growth of lines, trunks and service circuits for a typical small office serving area.

4.05 Based on current growth forecasts, job sizing and timing for a proposed engineering interval is the responsibility of the traffic engineer. Consultation with current planners and/or construction program planners is required to determine the appropriate interval. Typical planning periods for No. 3ESS applications range from two to four busy seasons.

4.06 The primary office limiting capacity component is the network frame. As the capacity of this frame may provide excessive capacity, ten years or more, for its serving area the following procedure is recommended:

- When the network frame capacity added provides an exhaust date within the current planning period, all other components, ie, trunks, service circuits, and memory should be provided to meet offered loads for the network frame exhaust. This procedure is also recommended for initial office engineering and is covered in Section 233-060-110.
- When the network frame capacity has an exhaust date beyond the current planning period, select and limit the main station capacity of the office on a component that will exhaust within the current planning period.

4.07 The design of the No. 3 ESS is appropriate for harmony engineering. For those offices that are limited by a selected component, other than the network frame, harmony is achieved by matching the exhaust of all other traffic sensitive components, to the extent possible due to breakage, with that of the limiting component.

TRAFFIC DATA

4.08 Network administration records and COER printouts are the two primary sources for traffic data used for engineering growth additions. The methods for computing and assembling these data to establish an office engineering base are detailed in Section 233-066-130. These worksheets will provide the traffic engineer a continuing record of each busy season which, when validated and summarized, will provide office capacities. If there are no data or the data are invalid for use when engineering an addition, the initial office engineering technique will have to be used. Measured holding times should be used whenever possible.

OFFICE CHARACTERISTICS

4.09 Introduction of new services, ie, coin, custom calling features, etc, or an area station transfer should be considered individually for impact on the existing office capacities. When engineering a growth addition, the calling characteristics, CCS loads and terminal requirements must be projected for the planning interval of the new services separately and then added to the current office projections.

NETWORK SWITCHING ENGINEERING
TRAFFIC ORDER

Office Code: 478 Traffic Order No.: 5017
 Office: RURALTOWN Inst. Start: 10-6-81
 Project No.: 94288 EOP: 6-01-84

This order provides for the installation of Central Office equipment at

RURALTOWN, MN

The capacity of the present central office equipment is expected to exhaust 10-01-81. This addition is scheduled to complete 11-13-81 and will care for main station growth through year end 1983

Trunk circuits are provided to meet the 1984 busy season forecasts.

Main Station Capacities:

| | Based On | | | |
|----------|-------------------------|-------|----------------------|------------|
| | TOUCH-TONE | LINES | TERMINALS OR NUMBERS | SWITCHES |
| Present | 284 | 1353 | 1360 | 1748 |
| Proposed | 715 | 1640 | 1700 | 2091 |
| Engineer | <u>R.H.D. Ext. XXXX</u> | | | Date _____ |
| Approved | <u>P.J.W</u> | | | Date _____ |

Fig. 1—Example Traffic Order—Cover Page

Traffic Order No.: 5017
 Office: Ruraltown
 Date: _____
 Rev. Date _____

INDEX

| <u>SECTION</u> | <u>DESCRIPTION</u> |
|----------------|--|
| A | General Notes |
| B | Central Office Forecast Trunk Forecast Office Growth Analysis Demand & Facility Charts |
| C | Traffic Order Worksheets Capacity Determination Office Characteristics Traffic Graphic (Initial jobs only) Service Circuits Trunks Scanner Field Verification Networks Miscellaneous Frames Main Store Modules Summary Sheets Equipment Questionnaire |

Fig. 2—Example Traffic Order—Index

TRAFFIC ORDER 5017
SECTION B

11-29-80

DETAILED CENTRAL OFFICE FORECAST

PREPARED BY
DES

DIVISION
West

DISTRICT
North

EXCHANGE
448

WIRE CENTER
Ruealtown

| DESCRIPTION | 1-1-81 | | 1-1-82 | | 1-1-83 | | 1-1-84 | | 1-1-85 | |
|----------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
| | M.T. LINES | % DEV |
| TOT. BUS M | 197 | 197 | 220 | 220 | 235 | 235 | 260 | 260 | 278 | 278 |
| 1FR (INC AUX) | 570 | 570 | 635 | 635 | 760 | 760 | 823 | 823 | 1045 | 1045 |
| 2FR | 350 | 350 | 322 | 322 | 292 | 292 | 262 | 262 | 236 | 236 |
| 4FR | 137 | 137 | 115 | 115 | 75 | 75 | 50 | 50 | 20 | 20 |
| 8FR - MULTI | | | | | | | | | | |
| TOT. RES M | 997 | 997 | 1072 | 1072 | 1127 | 1127 | 1185 | 1185 | 1271 | 1271 |
| 1FR | 571 | 571 | 592 | 592 | 674 | 674 | 737 | 737 | 799 | 799 |
| 2FR | 351 | 351 | 300 | 300 | 259 | 259 | 221 | 221 | 187 | 187 |
| 4FR | 138 | 138 | 108 | 108 | 66 | 66 | 42 | 42 | 15 | 15 |
| 8FR - MULTI | | | | | | | | | | |
| TOT. BUS RES M | 1194 | 1194 | 1269 | 1269 | 1309 | 1309 | 1370 | 1370 | 1465 | 1465 |
| SER STATIONS | | | | | | | | | | |
| PBX TK FLAT | 25 | 25 | 30 | 30 | 40 | 40 | 50 | 50 | 55 | 55 |
| PBX TK MSG | 15 | 15 | 15 | 15 | 20 | 20 | 25 | 25 | 35 | 35 |
| CENTX CO LINES | | | | | | | | | | |
| CENTX CU LINES | | | | | | | | | | |
| WATS LINES | 26 | 26 | 30 | 30 | 33 | 33 | 40 | 40 | 46 | 46 |
| WATS MR | 5 | 5 | 8 | 8 | 10 | 10 | 10 | 10 | 10 | 10 |
| TOT EQVT MAIN | 71 | 71 | 83 | 83 | 103 | 103 | 125 | 125 | 136 | 136 |
| TOT M - EQVTS | 1265 | 1265 | 1395 | 1395 | 1465 | 1465 | 1570 | 1570 | 1685 | 1685 |
| ROTARY TERM | | | | | | | | | | |
| T.T. LINES | | | | | | | | | | |
| MISC INFO | | | | | | | | | | |

Fig. 3—Example Traffic Order—Central Office Forecast (Sheet 1 of 3)

| AREA MINNESOTA DIVISION WEST DISTRICT NORTH WIRE CENTER RURAL TOWN | WIRE CENTER FORECAST PROPRIETARY W. C. CODE 666 020201013001 | | | | | | | | | | | FORM 55061 DATE 11-01-80 PAGE 01 PROGRAM 37566 |
|---|---|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|---|
| | FOR USE AS A GUIDE ONLY | | | | | | | | | | | RURALTOWN EXCHANGE |
| | 1-1-80 | 1-1-81 | 1-1-82 | 1-1-83 | 1-1-84 | 1-1-85 | 1-1-86 | 1-1-87 | 1-1-91 | 1-1-96 | 1-1-01 | 1-1-06 |
| BUSINESS | | | | | | | | | | | | |
| 1FB OFF CO INC | 139 | 142 | 163 | 175 | 198 | 215 | 231 | 280 | 469 | 663 | 1010 | 0 |
| 1MB | 35 | 35 | 34 | 33 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2FB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4FB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8FB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DIAL MOBILE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL BUSINESS | 174 | 177 | 197 | 209 | 231 | 247 | 231 | 280 | 469 | 663 | 1010 | 0 |
| RESIDENCE | | | | | | | | | | | | |
| AFH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1FR | 441 | 514 | 635 | 760 | 873 | 1015 | 1180 | 1345 | 2005 | 2655 | 3265 | 0 |
| 1MR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2FR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2FR | 313 | 352 | 322 | 292 | 262 | 236 | 218 | 200 | 100 | 0 | 0 | 0 |
| 4FR-ZR | 128 | 139 | 115 | 75 | 50 | 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8FR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERVICE STATIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL RESIDENCE | 882 | 1005 | 1072 | 1127 | 1185 | 1271 | 1398 | 1545 | 2105 | 2655 | 3265 | 0 |
| COIN | | | | | | | | | | | | |
| PUB SEMI-PUB CN | 20 | 21 | 23 | 26 | 29 | 31 | 33 | 37 | 46 | 52 | 60 | 0 |
| PUB NON COIN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL COIN | 20 | 21 | 23 | 26 | 29 | 31 | 33 | 37 | 46 | 52 | 60 | 0 |
| TOTAL MAIN | 1076 | 1203 | 1292 | 1362 | 1445 | 1549 | 1662 | 1862 | 2620 | 3370 | 4335 | 0 |
| EQUIVALENTS | | | | | | | | | | | | |
| PBX FLAT | 23 | 25 | 30 | 40 | 50 | 55 | 57 | 58 | 65 | 78 | 110 | 0 |
| PBX MEAS | 13 | 15 | 15 | 20 | 25 | 25 | 25 | 25 | 27 | 29 | 30 | 0 |
| PBX CPE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BUS CPE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RES CPE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AUX LINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OUT-WATS SWCH | 31 | 32 | 38 | 43 | 50 | 56 | 56 | 57 | 58 | 59 | 60 | 0 |
| IN-WATS SWCH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2W-WATS SWCH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CENTREX CU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CENTREX CO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESSX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D-TWX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL EQUIV | 67 | 72 | 83 | 103 | 125 | 136 | 138 | 140 | 150 | 165 | 200 | 0 |
| TOTAL MN + EQUIV | 1143 | 1275 | 1375 | 1465 | 1570 | 1685 | 1800 | 2002 | 2770 | 3535 | 4535 | 0 |
| SUBSCRIBER LINES | | | | | | | | | | | | |
| 1 PARTY LINES | 635 | 712 | 855 | 995 | 1133 | 1293 | 1444 | 1662 | 2520 | 3370 | 4335 | 0 |
| 2 PARTY LINES | 265 | 304 | 272 | 217 | 182 | 153 | 141 | 133 | 65 | 0 | 0 | 0 |
| 4 PARTY LINES | 35 | 50 | 40 | 30 | 25 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| MULTI LINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EQUIV LINES | 67 | 72 | 83 | 103 | 125 | 136 | 138 | 140 | 150 | 165 | 200 | 0 |
| SERV STAT LINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CBR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL LINES | 1002 | 1138 | 1250 | 1345 | 1465 | 1590 | 1723 | 1935 | 2735 | 3535 | 4535 | 0 |
| ANNUAL GAIN OR LOSS | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 87-90 | 91-95 | 96-00 | 01-05 | |
| TOTAL MAIN + EQ | | | | | | | | | | | | |
| SUBSCRIBER LINES | | | | | | | | | | | | |

Fig. 3—Example Traffic Order—Central Office Forecast (Sheet 2 of 3)

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WIRE CENTER FORECAST

FORM 55061

AREA
DIVISION WEST
DISTRICT NORTH
WIRE CENTER RURALTOWN

PROPRIETARY
W. C. CODE 666
020201013001

DATE 11-01-80
PAGE 02
PROGRAM 37566

FOR USE AS A GUIDE ONLY

RURALTOWN EXCHANGE

| | 1-1-80 | 1-1-81 | 1-1-82 | 1-1-83 | 1-1-84 | 1-1-85 | 1-1-86 | 1-1-87 | 1-1-91 | 1-1-96 | 1-1-01 | 1-1-06 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| TOUCH TONE | | | | | | | | | | | | |
| BUS TT | 100 | 100 | 125 | 175 | 205 | 215 | 220 | 235 | 350 | 450 | 550 | 0 |
| RES TT | 150 | 150 | 222 | 275 | 359 | 404 | 467 | 518 | 625 | 750 | 1050 | 0 |
| COIN TT | 3 | 3 | 13 | 20 | 21 | 31 | 33 | 37 | 46 | 52 | 60 | 0 |
| EQUIV TT | 0 | 2 | 20 | 35 | 45 | 50 | 80 | 110 | 125 | 140 | 165 | 0 |
| TOTAL TT | 253 | 255 | 380 | 505 | 630 | 700 | 800 | 900 | 1150 | 1400 | 1825 | 0 |
| WATS LOCATED - | | | | | | | | | | | | |
| OUT-WATS | 31 | 32 | 38 | 43 | 50 | 56 | 56 | 57 | 58 | 58 | 60 | 0 |
| IN-WATS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2W-WATS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CUSTOM CALLING | | | | | | | | | | | | |
| 3 CODE POTS | 15 | 65 | 100 | 125 | 150 | 170 | 180 | 200 | 285 | 350 | 450 | 0 |
| 8 CODE EQUIV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 CODE POTS | 5 | 20 | 25 | 35 | 40 | 50 | 55 | 60 | 75 | 120 | 155 | 0 |
| 30 CODE EQUIV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 WAY POTS | 8 | 40 | 55 | 70 | 80 | 95 | 105 | 120 | 200 | 250 | 295 | 0 |
| 3 WAY EQUIV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CALL FWD POTS | 25 | 120 | 270 | 395 | 520 | 640 | 680 | 700 | 820 | 880 | 950 | 0 |
| CALL FWD EQUIV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CALL WAIT POTS | 10 | 70 | 150 | 290 | 400 | 495 | 605 | 800 | 1000 | 1200 | 1350 | 0 |
| CALL WAIT EQUIV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CALL PICK UP EQ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LINE FILL | | | | | | | | | | | | |
| 2 PTY | 1.18 | 1.16 | 1.18 | 1.34 | 1.44 | 1.54 | 1.5 | 1.53 | .00 | .00 | .00 | .00 |
| 4 PTY | 3.65 | 2.74 | 2.85 | 2.5 | 2.0 | 2.5 | .00 | .00 | .00 | .00 | .00 | .00 |
| MULTI | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| SERVICE STATIONS | | | | | | | | | | | | |
| TOTAL HOUSEHOLDS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RES MAIN/100 HH | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 87-90 | 91-95 | 96-00 | 01-05 | |
| ANNUAL GAIN OR LOSS | | | | | | | | | | | | |
| TOTAL BUSINESS | 0 | 3 | 20 | 12 | 22 | 16 | -16 | 49 | 189 | 194 | 347 | |
| TOTAL RESIDENCE | 0 | 123 | 67 | 55 | 58 | 86 | 127 | 147 | 560 | 550 | 610 | |
| TOTAL COIN | 0 | 1 | 2 | 3 | 3 | 2 | 2 | 4 | 9 | 6 | 8 | |
| TOTAL PBX | 0 | 4 | 5 | 15 | 15 | 5 | 2 | 1 | 9 | 15 | 33 | |
| TOTAL CPE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| AUX LINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CUT WATS SWCH | 0 | 1 | 6 | 5 | 7 | 6 | 0 | 1 | 1 | 0 | 0 | |
| IN WATS SWCH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2W WATS SWCH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CENTREX CU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CENTREX CO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ESSX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| D-TWX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TOTAL MAIN | 0 | 89 | 70 | 83 | 104 | 113 | 200 | 758 | 750 | 965 | — | |
| TOTAL EQUIV | 0 | 11 | 20 | 22 | 11 | 2 | 2 | 10 | 15 | 35 | — | |
| TOTAL MAIN + EQ | 0 | 100 | 90 | 105 | 115 | 115 | 202 | 768 | 765 | 1000 | — | |
| SUBSCRIBER LINES | 0 | 112 | 95 | 120 | 125 | 133 | 212 | 800 | 800 | 1000 | — | |

REMARKS:

Fig. 3—Example Traffic Order—Central Office Forecast (Sheet 3 of 3)

NORTHWESTERN BELL

TNDS - TRUNK FORECASTING
 ORIGINATING GENERAL TRUNK FORECAST

FORECAST RUN DATE 11 01 80
 PROCESS DATE ** 99 00
 BISP REPORT TW530
 RESP CODE ML10

RLTN MN HB 47E 3ES CLASS 5

| TO | TRUNK TYPE | | | | | | ORIG UNIT | PRCB ECCS | RQD MO | BASE TRKS | REQUIRED TRUNKS | | | | | RMKS CODE | SERIAL NUMBER | OTHER | CGID |
|-----------------------|------------|------|------|------|------|-------------|-----------|-----------|--------|-----------|-----------------|----|----|----|--|-----------|---------------|-------|------|
| | 1981 | 1982 | 1983 | 1984 | 1985 | | | | | | | | | | | | | | |
| CRYS | MN | CR | S3E | M- | PH | 55 IE | 08 | 09 | 4 | 4 | 4 | 4 | 4 | 4 | | | | | |
| GLVY | MN | OR | S4E | M- | PH | 55 IE | 08 | 04 | 4 | 5 | 7 | 7 | 7 | 7 | | | | | |
| HPKN | MN | HO | 93E | M- | PH | 55 IE | 09 | 09 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | |
| MPLS | MN | DT | 18T | M- | DF | 55 SP CN3-M | W010L | 05 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | |
| | | | 18T | M- | DF | 54 SP NC2-M | W010L | 05 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | |
| | | | 18T | M- | AF | 54 TOAF | W010L | 06 | | 33 | 39 | 41 | 43 | 43 | | | | | |
| PLMO | MN | PE | 55E | M- | PH | 55 IE | 04 | 09 | 4 | 5 | 5 | 6 | 6 | 6 | | | | | |
| STPL | MN | MK | 36T | M- | AF | 54 TO | W010L | 10 | 32 | 33 | 33 X | | | | | | | | |
| WYZT | MN | WA | CT3 | M- | DF | 5C IR | P010 | 10 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | |
| | | | 06T | M- | DF | 54 CA ANI | P010 | 05 | 7 | 9 | 10 | 10 | 11 | 11 | | | | | |
| | | | 47E | M- | PH | 55 IE | 05 | 03 | 8 | 8 | 8 | 9 | 9 | 10 | | | | | |
| TOTAL INTER BLDG TRKS | | | | | | | | | 70 | 75 | 78 | 86 | 89 | 92 | | | | | |

= = MANUALLY REVISED

X = GROUP ENDS DURING YEAR - NOT ADDED IN TOTALS

RLTN MN HB 47E
 PAGE 1 OF 1
 RESP CODE ML10
 PAGE 46

Fig. 4—Example Traffic Order—Originating Trunk Forecast

SECTION 233-060-120

NORTHWESTERN BELL

TNDS - TRUNK FORECASTING

FORECAST RUN DATE 11 01 80

TERMINATING GENERAL TRUNK FORECAST

PROCESS DATE ** 99 00

BISP REPORT TW531

RFSP CODE ML10

RLTN MN H347E 3ES CLASS 5

| FROM | | | TRUNK TYPE | | | TERM UNIT | PRCB RQD ECCS MO | BASE TRKS | REQUIRED TRUNKS | | | | | RMKS CODE | SERIAL NUMBER | OTHER | CGID |
|-----------------------|----|----|------------|----|--------------|-----------|------------------|-----------|-----------------|------|------|------|------|-----------|---------------|-------|------|
| | | | | | | | | | 1981 | 1982 | 1983 | 1984 | 1985 | | | | |
| CRYS | MN | CR | 53E | M- | PH 55 1E | 53E | 08 05 | 4 | 4 | 4 | 4 | 4 | 4 | | | | |
| EXCL | MN | EX | 474 | D- | DF 55 1E | | G0 10L 12 | 3 | 4 | 4 | 4 X | | | | | | |
| GLVY | NM | OR | 54E | M- | PH 55 1E | | 08 11 | 4 | 5 | 6 | 6 | 6 | 7 | | | | |
| HPKN | MN | HO | 93E | M- | PH 55 1E | | 09 05 | 3 | 3 | 3 | 3 | 3 | 4 | | | | |
| MPLS | MN | DT | 18T | M- | DF 45 TG LOC | | W0 10L 05 | | | 18 | 26# | 31# | 32# | | | | |
| | | | 34E | M- | PH 55 1E | | 11 08 | 3 | 3 | 3 | 3 | 3 | 3 | | | | |
| | | | 47T | D- | DF 45 TG | | R0 10L 01 | 20 | 18 | 20# | 14# | 11 | 8 | | | | |
| NVRR | MN | DA | 47I | D- | DF 55 1E | | G0 10L 10 | 3 | 3 | 3 | 3 X | | | | | | |
| PLMO | MN | PE | 55E | M- | PH 55 1E | | 04 09 | 4 | 5 | 7 | 7 | 7 | 8 | | | | |
| RCFR | MN | RO | 477 | D- | DF 55 1E | | G0 10L 07 | 5 | 5 | 5 X | | | | | | | |
| STPL | MN | MK | 47T | D- | DF 45 TG | | 0 10 01 | 13 | 14 | 14 X | | | | | | | |
| WYZ | MN | WA | 06T | M- | DF 45 TC | | P0 10 05 | 8 | 10 | 10 | 11 | 11 | 12 | | | | |
| | | | 47E | M- | PH 55 1F | | 04 03 | 9 | 8 | 8 | 9 | 9 | 9 | | | | |
| | | | 9MD | M- | HI CS VR | | 0 10 10 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| TOTAL INTER BLDG TRKS | | | | | | | | 80 | 83 | 87 | 84 | 86 | 88 | | | | |

= MANUALLY REVISED

X = GROUP ENDS DURING YEAR - NOT ADDED IN TOTALS

RLTN MN HB 47E
PAGE 1 OF 1
RESP CODE ML10
PAGE 43

Fig. 5—Example Traffic Order—Terminating Trunk Forecast

Office Code: 478
 Building: Ruraltown
 Project No: 94288

Traffic Order No: 5017
 Inst. Start: 10-06-81
 EOP: 6-01-84

Ruraltown OFFICE GROWTH ANALYSIS

1.0 This is the Office Growth Analysis for the Ruraltown(478) central office. This project will provide 384 lines and 400 numbers/terminals for growth.

2.0 Data:

| | | JAN 1 | | | | |
|-----------|--------------------|----------------|-------------|------------------|-------------|------------------|
| | YEAR | ABS OFC CCS | CCS/MS | MAIN STATIONS | LINES | RATIO MS/LINE |
| Actual | 19 <u>78</u> | <u>1075</u> | <u>1.10</u> | <u>978</u> | <u>829</u> | <u>1.18</u> |
| | 19 <u>79</u> | <u>1179</u> | <u>1.15</u> | <u>1025</u> | <u>867</u> | <u>1.18</u> |
| | * 19 <u>80</u> | <u>3566</u> | <u>3.12</u> | <u>1143</u> | <u>978</u> | <u>1.17</u> |
| | 11-30 19 <u>80</u> | <u>3921</u> | <u>3.10</u> | <u>1265</u> | <u>1130</u> | <u>1.12</u> |
| Estimated | 19 <u>81</u> | <u>3952</u> | <u>3.10</u> | <u>1275</u> | <u>1138</u> | <u>1.12</u> |
| | 19 <u>82</u> | <u>4331</u> | <u>3.15</u> | <u>1375</u> | <u>1250</u> | <u>1.10</u> |
| | 19 <u>83</u> | <u>4578</u> | <u>3.20</u> | <u>1465</u> | <u>1345</u> | <u>1.08</u> |
| | 19 <u>84</u> | <u>5086</u> | <u>3.24</u> | <u>1570</u> | <u>1465</u> | <u>1.07</u> |
| | 19 <u>85</u> | <u>5527</u> | <u>3.28</u> | <u>1685</u> | <u>1590</u> | <u>1.05</u> |

* Office converted to No.3 ESS, July 1979. Total ABS O+1 CCS/MA.STA. includes trunk and service circuit traffic data loads.

Fig. 6—Example Traffic Order—Office Growth Analysis (Sheet 1 of 4)

SECTION 233-060-120

3.0 Capacities:

| a. | <u>LINES</u> | <u>PRESENT</u> | <u>PROPOSED</u> |
|----|----------------------------------|----------------|--|
| | *16.3 ESS (4 X 384 =) | <u>1536</u> | <u>(5 X 384 =)</u> <u>1920</u> |
| | _____ (_____ X _____ =) | <u>_____</u> | <u>(_____ X _____ =)</u> <u>_____</u> |
| | Total Lines | <u>1536</u> | <u>1920</u> |
| | Reserved for Trunks/Serv Ckts | <u>264</u> | <u>329</u> |
| | Available Subscriber Lines | <u>1272</u> | <u>1591</u> |
| | Line Cap. @ _____ Derived % Fill | <u>1208</u> | <u>1511</u> |
| | Times Ratio Ma. Sta. to Lines | <u>1.12</u> | <u>1.07</u> |
| | Main Station Capacity/Lines | <u>1353</u> | <u>1616</u> |

*SXS; No. of Line Finder Groups X Group Size.

5XB; No. of Line Link Frames X Line Link Frame Size.

ESS; No. of Network Frames X Network Frame Size.

| b. | <u>NUMBERS</u> | <u>PRESENT</u> | <u>PROPOSED</u> |
|----|--------------------------|----------------|-----------------|
| | Installed | <u>1600</u> | <u>2000</u> |
| | Less Resvd for Trks, etc | <u>_____</u> | <u>_____</u> |
| | Available Numbers | <u>1600</u> | <u>2000</u> |
| | Times Derived % Fill | <u>.85</u> | <u>.85</u> |
| | Ma. Sta. Cap/Numbers | <u>1360</u> | <u>1700</u> |

Fig. 6—Example Traffic Order—Office Growth Analysis (Sheet 2 of 4)

| | | | | | |
|----|-------------------------|-----------------------------|----------------|-----------------------------|-----------------|
| c. | <u>SWITCHING</u> | | <u>PRESENT</u> | | <u>PROPOSED</u> |
| | * <u>10.3 ESS</u> | (<u>4</u> X <u>1355</u> =) | <u>5420</u> | (<u>5</u> X <u>1355</u> =) | <u>6775</u> |
| | Divided by CCS/Ma. Sta. | | <u>3.10</u> | | <u>3.24</u> |
| | Main Station Capacity | | <u>1748</u> | | <u>2091</u> |

*SXS; No. of Line Finder Groups X CCS per Group.

5XB; No. of Line Link Frames X CCS per Frame.

ESS; No. of Network Frames X CCS per Frame.

d. Main Station Capacity Limited by Other: Service Circuits, Trunk Facilities, etc

| | | | | | |
|--|-----------------|--|----------------|--|-----------------|
| | <u>LIMITING</u> | | <u>PRESENT</u> | | <u>PROPOSED</u> |
| | <u>CDR</u> | | <u>1334</u> | | <u>1765</u> |

Capacity limitations identified in Capacity Determination Studies for Office Busy Season.

4.0 Summary of Capacities:

| | <u>ESTIMATED AT RELIEF 11-01-81</u> | | | <u>WITH ADDITIONAL ESTIMATED EXHAUST 6-01-84</u> | | |
|-----------|-------------------------------------|----------------|---------------------------|--|----------------|---------------------------|
| | <u>LINES</u> | <u>NUMBERS</u> | <u>SWITCHING CAPACITY</u> | <u>LINES</u> | <u>NUMBERS</u> | <u>SWITCHING CAPACITY</u> |
| Installed | <u>1536</u> | <u>1600</u> | | <u>1920</u> | <u>2000</u> | |
| Working | <u>1222</u> | <u>1350</u> | | <u>1511</u> | <u>1626</u> | |
| *Capacity | <u>1208</u> | <u>1360</u> | <u>1748</u> | <u>1511</u> | <u>1700</u> | <u>2091</u> |

*Underlining Indicated Limiting Capacity

Main Station Capacity based on Physical Lines

| | |
|----------|-------------|
| PRESENT | <u>1353</u> |
| PROPOSED | <u>1616</u> |

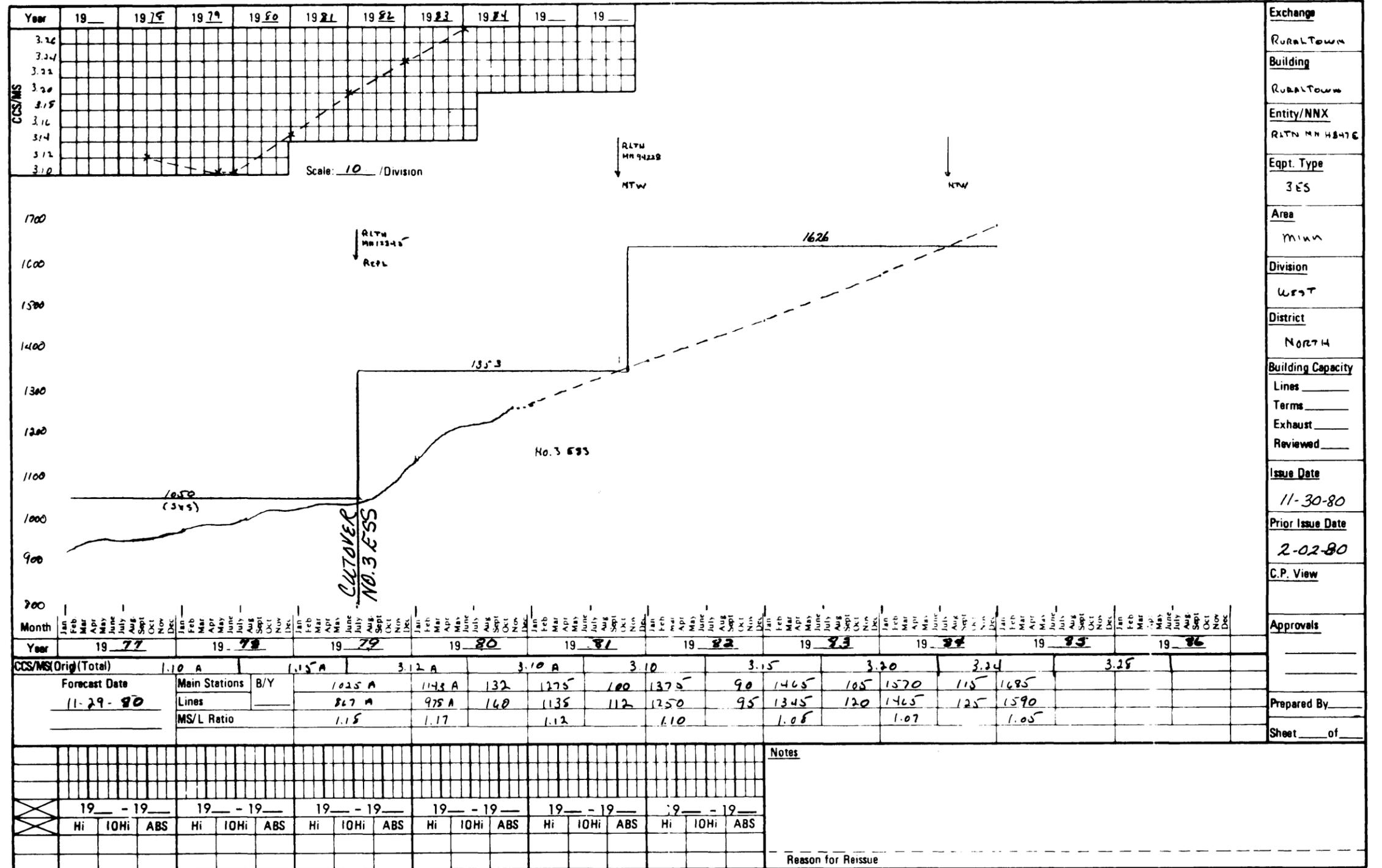
Fig. 6—Example Traffic Order—Office Growth Analysis (Sheet 3 of 4)

5.0 Custom Calling (Line Capacity):

| FEATURE | END OF PERIOD | | |
|------------------|---------------|------------|------------|
| | PRESENT | FORECAST | CAPACITY |
| TOUCH-TONE® | <u>253</u> | <u>630</u> | <u>715</u> |
| Call Forwarding | <u>120</u> | <u>150</u> | <u>150</u> |
| 3-way Calling | <u>40</u> | <u>60</u> | <u>90</u> |
| Speed Calling-8 | <u>65</u> | <u>150</u> | <u>150</u> |
| Speed Calling-30 | <u>20</u> | <u>45</u> | <u>45</u> |
| Call Waiting | <u>70</u> | <u>140</u> | <u>150</u> |

Fig. 6—Example Traffic Order—Office Growth Analysis (Sheet 4 of 4)

TRAFFIC ORDER 5017
SECTION B



DEMAND AND FACILITY CHART - PART A
NORTHWESTERN BELL TELEPHONE COMPANY
FORM 9504

Fig 7 SH41

Fig. 7—Example Traffic Order—Demand and Facility Chart (Sheet 1 of 2)

| DEMAND AND FACILITY CHART PART B PAGE 1 OF 1 11/30/79 | | | | | |
|---|----------|----------------------|---------|--------------|------------|
| BUILDING: RLTN MN 47B | | ENTITY: RLTN MNH847E | | EQ TYPE: 3ES | |
| JOB ADJ OR TRANSF | MN12345 | AT1 | ADJ1 | MN94228 | RLTNMNEXT1 |
| REQUIRED SVC DATE | 7/12/ 79 |/.. |/.. | 11/13/81 | 8/ 1/84 |
| READY SVC DATE | 7/12/79 |/.. |/.. | 11/13/81 | 8/ 1/84 |
| SHIP DATE | 4/20/ 79 |/.. |/.. | 7/ 3/ 81 |/.. |
| JOB DESCRIPTION | REPL | | | NTW GR. | |
| B.S. PRIOR EXHAUST | 80-81 | | | 81-83 | |
| MS TRANSFERRED | | | | | |
| TRANSF ENTITY | | | | | |
| CENTREX STATUS | | | | | |
| LIMITING SE ITEM | NTW | | | | |
| MS CAP ADD/TOT SE | 1748 | | | 343 2091 | |
| TC | 1334 | | | 431 1786 | |
| LINES | 1363 | | | 283 1616 | |
| NOS | 1360 | | | 340 1700 | |
| MOST LIM | 1353 | | | 283 1616 | |
| AT OR ADJ REASON | | | | | |
| CENTREX CAP ADDED | 0 | | | 0 0 | |
| CRCFU ML | | | | | |
| CRCFU TC | | | | | |
| NUMBERS INSTALLED | 1600 | | | 400 2000 | |
| UAV ASSGN | 0 | | | 0 | |
| % D FILL | 85.000 | | | 85.000 | |
| LINES INSTALLED | 1536 | | | 384 1920 | |
| UAV ASSGN | 264 | | | 329 | |
| % D FILL | 95.000 | | | 95.000 | |
| CAP IN LINES | 1208 | | | 30.3 1611 | |
| LLF/LLN | 4.000 | | | 5.000 | |
| LLF SZ/LCR | 6:01 | | | 6:01 | |
| TLF/TLN | | | | | |
| TLF SZ/TCR | | | | | |
| JCTR PT/GEN | SO-2 | | | SO-2 | |
| PROC CAP/CCS/LLF | | | | | |
| LOAD SVC RATIO | | | | | |
| COM FOR DATE | |/.. |/.. | 11/01/80 |/.. |
| TA/FM NUM | | | | 5017 | |
| ATO DATE | |/.. |/.. |/.. |/.. |
| TTCAP ADD/TOT | 253 | | | 462 715 | |

Fig. 7—Example Traffic Order—Demand and Facility Chart (Sheet 2 of 2)

SECTION 233-060-845, Issue 1
Page 2

Office: Recaltown (479)
Date: _____
Ofc. Busy Hour: 10A-11A
Reference: Section 233-060-130

**TRAFFIC ORDER 5017
SECTION C**

NO. 3 ESS
TRAFFIC DATA
SUMMARY (A)

BUSY SEASON
FROM 10-80 TO 2-81

| | |
|---|-----------------|
| 1. Main Stations | <u>1265</u> (C) |
| 2. Subscriber Lines | <u>1130</u> (C) |
| 3. Ratio Main Stations to Subscribers Lines | <u>1.12</u> |
| 4. Working/Assigned Network Terminals - Total | <u>1394</u> (C) |
| 5. Working/Assigned Service Circuits - Total | <u>114</u> (C) |
| 6. Working/Assigned Trunk Circuits - Total | <u>150</u> |
| 7. TOUCH-TONE® Main Stations (Including Coin Box) | <u>253</u> (C) |
| 8. Rotary Dial Main Stations (Including Coin Box) | <u>1012</u> (C) |
| 9. OBH O + I CCS Load - Average Busy Season | <u>3921</u> (C) |
| 10. OBH O + I CCS Load - High Day | <u>4510</u> (C) |
| 11. HD/AB S OBH Factor (10 ÷ 9) | <u>1.15</u> |
| 12. CCS Per Main Station (Average Busy Season) | <u>3.10</u> (C) |
| 13. Unduplicated Main Store Modules | <u>4</u> |
| 14. Past Design Main Station Capacity | <u>1352</u> |

Note: (C) items should be available in COER

Fig. 8—Worksheets for Example Traffic Order (Sheet 1 of 33)

SECTION 233-060-845, Issue 1
Page 3

Office: *RURAL TOWN (478)*
No. 3 ESS: Network Capacity
Reference: Section 233-060-130
TRAFFIC ORDER 5017
SECTION C

NO. 3 ESS
CAPACITY DETERMINATION WORKSHEET (B)

PART 1

| YEAR | MAIN STATION CAPACITY BASED ON NETWORK TERMINALS | | | | | | | | | | | REMARKS |
|--|--|--|---|---|----------------------|---|-------------------------------------|----------------------------------|---|--|--|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
| LAST AVERAGE BUSY SEASON (ABS) OR LATEST MAIN STATION FORECAST | NUMBER OF NETWORK FRAMES NOTE 1 | INSTALLED TERMINALS TOTAL (OENS) (COL. 1 x 384 =) | ASSIGNED CIRCUITS: — TRUNKS, SERVICE, AND MISCELLANEOUS | NETWORK TERMINALS AVAILABLE FOR SUB. LINES (COL. 2 - COL. 3 =) | DERIVED PERCENT FILL | NETWORK TERM. FOR SUB. LINE ASSIGNMENT (COL. 4 x COL. 5 =) | ABS/FORECAST SUBSCRIBER LINE DEMAND | ABS/FORECAST MAIN STATION DEMAND | RATIO MAIN STATIONS TO LINES (COL. 8 ÷ COL. 7 =) | MAIN STATION CAPACITY (COL. 6 x COL. 9 =) | % UTILIZATION (COL. 8 ÷ COL. 10 x 100 = %) | |
| 1980-81 | 4 | 1536 | 264 | 1272 | .95 | 1208 | 1130 | 1265 | 1.12 | 1352 | 91% | |
| JAN. 1, 1984 | 5 | 1920 | 329 | 1591 | .95 | 1511 | 1465 | 1570 | 1.07 | 1616 | 97.1% | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Note 1: Office record or latest traffic order.

PART 2

| YEAR | MAIN STATION CAPACITY BASED ON NETWORK LOAD (CCS) | | | | | | | REMARKS |
|--|---|--|-----------------------------|----------------------------------|------------------|--|---|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| LAST AVERAGE BUSY SEASON (ABS) OR LATEST MAIN STATION FORECAST | NUMBER OF NETWORK FRAMES | OFFICE CAPACITY — CCS (COL. 1 x 1355 =) | ABS BUSY HOUR LOAD (NOTE 2) | ABS/FORECAST MAIN STATION DEMAND | CCS PER MA. STA. | MAIN STATION CAPACITY (COL. 2 ÷ COL. 5 =) | % UTILIZATION (COL. 3 ÷ COL. 2) x 100 =) | |
| 1980-81 | 4 | 5420 | 3921 | 1265 | 3.10 | 1748 | 72.3% | |
| JAN. 1, 1984 | 5 | 6775 | 5086 | 1570 | 3.24 | 2091 | 75.0% | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Note 2: Busy hour loads (CCS) recorded on "B" link usage registers. Sum of registers BLK 01 and BLK 02 multiplied by 2 will produce total office busy hour load.

Fig. 8—Worksheets for Example Traffic Order (Sheet 2 of 33)

SECTION 233-060-146, Issue 1
Page 4

Office: *Royal Town (478)*
No. 3 ESS: Service Circuit Capacity
Reference: Section 233-060-130

NO. 3 ESS
CAPACITY DETERMINATION WORKSHEET (C-1)

| YEAR LAST AVERAGE BUSY SEASON OR LATEST MAIN STATION FORECAST | SERVICE CIRCUIT DATA FIELD AND GROUP NUMBER | ABS/ FORECAST MAIN STATION DEMAND | AVERAGE BUSY SEASON OFFICE BUSY HOUR | | | | OFFICE BUSY HOUR ABS/HD FACTOR | HIGH DAY (HD) BUSY HOUR | | | | HOLD. TIME (SECS.) | ENGRG. CRITERIA | SERVICE CIRCUITS REQUIRED/PROVIDED | | CCS CAPACITY ABS/HD | | MAIN STATION CAPACITY | % UTILI- ZATION | REMARKS |
|--|--|---|---|--------------------------|--------------|------------------------|--|----------------------------|--------------------------|--------------|------------------------|--------------------------|---|---------------------------------------|----------|------------------------|------------|-----------------------------|-----------------------|-----------------------------|
| | | | TOTAL CALLS | CALLS PER MA. STA. | TOTAL CCS | CCS PER MA. STA. | | TOTAL CALLS | CALLS PER MA. STA. | TOTAL CCS | CCS PER MA. STA. | | | TRAFFIC | TOTAL | TRAFFIC | TOTAL | | | |
| | | | 1 | 2 | 3 | 4 | | 5 | 6 | 7 | 8 | | | 9 | 10 | 11 | 12 | | | |
| 1980-81 Jan. 1, 1984 | Dial Pulse Customer Receiver (SVC 065) | 1012 940 | 981 | .97 | 121 | .12 | 1.17 | 1133 | 1.12 | 142 | .14 | 12.1 | ABS Table (P.01) High Day Table (P.05) | 9 9 | 12 10 | 126 126 | 195 149 | 1050 1050 | 96% - | Use ABS data Rem. 2 CDRs |
| 1980-81 Jan. 1, 1984 | TOUCH-TONE* Customer Digit Receiver (SVC 064) | 253 630 | 379 | 1.5 | 33 | .13 | 1.60 | 607 | 2.4 | 63 | .25 | 8.7 | ABS Table (P.01) High Day Table (P.05) | 5 8 | 7 8 | 71 143 | 118 143 | 284 715 | 89% 88% | Use HD data Use HD data |
| 1980-81 Jan. 1, 1984 | Dial Pulse Transmitter (SVC 068) | 1265 1570 | 420 | .33 | 38 | .03 | | | | | | 9.3 9.5 | ABS Table (P.001) | 6 6 | 9 7 | 71 40 | 88 88 | 2366 - | 55% - | Rem. 2 x MTRs |
| 1980-81 Jan. 1, 1984 | Multi- Frequency Transmitter (SVC 069) | 1265 1570 | 465 | .37 | 13 | .01 | | | | | | 3.5 3.3 | ABS Table (P.001) | 4 6 | 7 7 | 27 40 | 55 55 | - 2750 | 29% 57% | - |
| 1980-81 Jan. 1, 1984 | Multi- Frequency Receiver (SVC 066) | 1265 1570 | 480 | .38 | 16 | .012 | | | | | | | ABS Table (P.001) | 5 5 | 6 6 | 26.6 26.6 | 40 40 | 4000 | 39.2% | - |
| 1980-81 Jan. 1, 1984 | Busy Tone (SVC 093) | 1265 1570 | | | | | | 166 | .13 | 10.2 | .01 | 6.5 7.6 | High Day Table (P.001) | 4 5 | 6 6 | 15 27 | 40 40 | 2700 | - | S/B O.K. |
| 1980-81 Jan. 1, 1984 | Regular Ringing (SVC 061) | 1128 1505 | | | | | | 874 | .77 | 121 | .11 | 13.9 | High Day Table (P.001) | 11 13 | 14 14 | 126 166 | 187 187 | 1700 1870 | 66.3% 80.4% | S/B O.K. |
| 1980-81 Jan. 1, 1984 | Super- Imposed Ringing (SVC 070) | 137 70 | | | | | | 120 | .87 | 17.8 | .13 | 14.8 | High Day Table (P.001) | 5 4 | 7 7 | 27 15 | 55 55 | 423 | 32.3% 15.4% | O.K. |

Fig. 8—Worksheets for Example Traffic Order (Sheet 3 of 33)

SECTION 233-060-845, Issue 1
Page 8

NO. 3 ESS
CAPACITY DETERMINATION WORKSHEET (C-2)

Office: *Ruraltown (478)*
No. 3 ESS: Service Circuit Capacity
Reference: Section 233-060-130
TRAFFIC ORDER 5017
SECTION C

| LAST AVERAGE BUSY SEASON OR LATEST MAIN STATION FORECAST | SERVICE CIRCUIT DATA FIELD AND GROUP NUMBER | ABS/FORECAST MAIN STATION DEMAND | AVERAGE BUSY SEASON OFFICE BUSY HOUR | | | | OFFICE BUSY HOUR ABS/HD FACTOR | HIGH DAY (HD) BUSY HOUR | | | | HOLD. TIME (SECS.) | ENGRG. CRITERIA | SERVICE CIRCUITS REQUIRED/PROVIDED ABS/HD | | CCS CAPACITY ABS/HD | | MAIN STATION CAPACITY | % UTILIZATION | REMARKS |
|--|---|----------------------------------|--------------------------------------|--------------------|-----------|------------------|--------------------------------|-------------------------|--------------------|------------|------------------|--------------------|------------------------|---|--------|---------------------|----------|-----------------------|---------------|-----------------------------|
| | | | TOTAL CALLS | CALLS PER MA. STA. | TOTAL CCS | CCS PER MA. STA. | | TOTAL CALLS | CALLS PER MA. STA. | TOTAL CCS | CCS PER MA. STA. | | | TRAFFIC | TOTAL | TRAFFIC | TOTAL | | | |
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
| 1980-81 1-1-84 | Receiver Off. Hook (ROH) (SVC092) | 1265 1570 | | | | | | 20 | .016 | 6.5 | .005 | 26.5 | High Day Table (P.001) | 3 4 | 4 4 | 7 15 | 15 15 | 3000 | 52% | |
| 1980-81 1-1-84 | High Tone Circuits (SVC094) | 1265 1570 | | | | | | 1360 1680 | | | | | High Day Table (P.001) | | 4 | | 15 | | | No data O.K. per table E |
| 1980-81 1-1-84 | Low Tone Circuits (SVC095) | 1265 1570 | | | | | | 1360 1680 | | | | | High Day Table (P.001) | | 4 | | 15 | | | No data O.K. per table E |
| 1980-81 1-1-84 | Misc. Tone Call Waiting (SVC096) | 70 140 | | | | | | 18 35 | .25 .25 | 1.9 4.2 | .028 .030 | 2.73 | High Day Table (P.001) | 3 3 | 4 4 | 1.6 1.6 | 15 15 | | | O.K. |
| 1980-81 1-1-84 | Vacant Code (NSN) Ancmt. (SVC083) | 1265 1570 | 8 9 | .006 .006 | 3 3 | .002 .002 | | | | | | | ABS Table (P.01) | — — | 4 4 | — — | 15 15 | | | O.K. per growth |
| | Dial Tone First (DTF) Ancmt. (SVC ---) | | | | | | | | | | | | ABS Table (P.01) | | | | | | | |
| 1980-81 1-1-84 | Dialing Error Ancmt. (SVC091) | 1265 1570 | | | | | | | | | | | ABS Table (P.01) | | 2 2 | | | | | No data |
| 1980-81 1-1-84 | Custom Calling Error Ancmt. (SVC094) | 205 345 | | | | | | | | | | | ABS Table (P.01) | | 2 | | | | | No data |

Fig. 8—Worksheets for Example Traffic Order (Sheet 4 of 33)

SECTION 233-060-045, Issue 1
Page 6

Office: *RURALTOWN (478)*
No. 3 ESS: Service Circuit Capacity
Reference: Section 233-060-130
TRAFFIC ORDER 5017
SECTION C

NO. 3 ESS
CAPACITY DETERMINATION WORKSHEET (C-3)

| LAST AVERAGE BUSY SEASON OR LATEST MAIN STATION FORECAST | SERVICE CIRCUIT DATA FIELD AND GROUP NUMBER | ABS/FORECAST MAIN STATION DEMAND | AVERAGE BUSY SEASON OFFICE BUSY HOUR | | | | OFFICE BUSY HOUR ABS/HD FACTOR | HIGH DAY (HD) BUSY HOUR | | | | HOLD. TIME (SECS.) | ENGRG. CRITERIA | SERVICE CIRCUITS REQUIRED/PROVIDED ABS/HD | | CCS CAPACITY ABS/HD | | MAIN STATION CAPACITY | % UTILIZATION | REMARKS |
|--|---|----------------------------------|--------------------------------------|--------------------|-----------|------------------|--------------------------------|-------------------------|--------------------|-----------|------------------|-------------------------------|-----------------|---|-------|---------------------|-------|-----------------------|-----------------|---------|
| | | | TOTAL CALLS | CALLS PER MA. STA. | TOTAL CCS | CCS PER MA. STA. | | TOTAL CALLS | CALLS PER MA. STA. | TOTAL CCS | CCS PER MA. STA. | | | TRAFFIC | TOTAL | TRAFFIC | TOTAL | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | | |
| | Local Coin Overtime Ancmt. (SVC ___) | | | | | | | | | | | Max. 4 | | | | | | | Not Req'd. | |
| 1980-81 1-1-84 | Perm. Signal Ancmt. (SVC 079) | 1265 | 21 .016 | 12 | .009 | | | | | | 49.8 | ABS Table (P.01) | 3 | 4 | 15.7 | 29.6 | - | - | O.K. for growth | |
| 1980-81 1-1-84 | Partial Dial Ancmt. (SVC 080) | 1265 | 11 .008 | 5 | .004 | | | | | | 19.0 | ABS Table (P.01) | 2 | 6 | 5.4 | 64.4 | - | - | O.K. for growth | |
| 1980-81 1-1-84 | Coin Control Circuits (SVC 071) | 21 | | | | | | | | | | High Day Table (P.001) Max. 4 | | 4 | | | | | Invalid Data | |
| 1980-81 1-1-84 | Conference Circuits (3-way) (SVC 104) | 40 | 15 .37 | 24 | .6 | | | | | | 165 | ABS Table (P.001) | 5 | 5 | 26.6 | 26.6 | 44 | 91% | Add 2 CKTS. | |

Fig. 8—Worksheets for Example Traffic Order (Sheet 5 of 33)

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Page 7

NO. 3 ESS
CAPACITY DETERMINATION WORKSHEET (D)

Office: RURAL TOWN (478)
No. 3 ESS: Temporary Store Capacity
Reference: Section 233-060-130
TRAFFIC ORDER 5017
SECTION C

| LAST AVERAGE BUSY SEASON (ABS) OR LATEST MAIN STATION FORECAST | | MAIN STATION CAPACITY BASED ON TEMPORARY STORE WORDS | | | | | | | | | | | | REMARKS | |
|--|--|---|---|--------------------------------------|--|--------------------------------------|-------------------------------------|--------------------------------------|---|-------------------------|---|-------------------------------|--|---------|--|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | |
| | | SOFTWARE MESSAGE REGISTERS 1 WORD/LINE MAX. 4096 WORDS (NOTE 1) | AMA BUFFER MIN. 2800 WORDS — FIXED (NOTE 1) | CALL FORWARDING CLASS LINES (NOTE 2) | COIN LINES (TOTAL LINES) 12 = CALL STORE WORDS MAX. 3072 | TRUNKS AND SERVICE CIRCUITS (NOTE 3) | 3-PORT CONFERENCE CIRCUITS (NOTE 4) | FIXED TEMPORARY STORE WORDS (NOTE 5) | TOTAL TEMPORARY STORE WORDS ASSIGNED (COL. 1 THRU 7) (NOTE 6) | ABS MAIN STATION DEMAND | TEMPORARY STORE WORDS PER MA. STA. (COL. 8 ÷ COL. 9 =) | TEMPORARY STORE WORD CAPACITY | MAIN STATION CAPACITY (COL. 11 ÷ COL. 10 =) | | |
| 1980-81 | Office Generic SO-2 Iss. 4A | 20 | — | 120x4 = 480 | 2 1/2 = 2 | 636 | 6 | 14,780 | 15,924 | 1265 | 12.59 | 20,480 | 1626 | - | |
| 1-1-84 | | 22 | — | 150x4 = 600 | 29/12 = 3 | 798 | 6 | 14,780 | 16,209 | 1570 | 10.32 | 20,480 | 1984 | - | |
| | | | | — | | | | | | | | | | | |
| | | | | — | | | | | | | | | | | |
| | | | | — | | | | | | | | | | | |
| | Office Generic 3 E 3 | | | | | | | 25,600 | | | | 32,768 | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Notes 1: Software message register words not available when AMARC (AMA Buffer) is provided.

2: Temporary Store Words: — Generic SO-2 4A = 4 Words/Line; Max. 1024 Words
— Generic 3E3 = 1 word/line; max 4096 words.

3: Temporary Store Words = Total Groups × $\left(4 + \frac{\text{Total Trks \& Svc. Ckts.}}{16} \right)$ $31 \times 20.5 = 635.5$ use 636
 $33 \times 24.2 = 798$

4: Temporary Store Words = $4 + \frac{\text{No. of Conf. Ckts.}}{4}$ (a maximum of 128 3-port conference circuits may be provided).

5: Fixed Temporary Store Words for Call Processing.

6: Round all calculations to next higher integer.

Fig. 8—Worksheets for Example Traffic Order (Sheet 6 of 33)

SECTION 233-060-845, Issue 1
Page 8

Office: RURALTOWN (478)

No. 3 ESS: Main Store Capacity
Reference: Section 233-060-130

TRAFFIC ORDER 5017
SECTION C

NO. 3 ESS

CAPACITY DETERMINATION WORKSHEET (E)

GENERIC PROGRAM ISSUE SO-2 Iss. 4A

| YEAR | MAIN STATION CAPACITY BASED ON MAIN STORE (MAS) MODULES | | | | | | | REMARKS |
|-----------|---|---|--|-----------------------------|--|--|--|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | TOTAL MAIN STORE MODULES (NOTE 1) | | TOTAL UNDUP. TRANSLATION WORDS REQUIRED (NOTE 1) | WORKING MAIN STATIONS (ABS) | TOTAL UNDUP. TRANSLATION WORDS PER MAIN STATION (COL. 3 ÷ COL. 4 =) | TOTAL UNDUP. TRANSLATION WORDS AVAILABLE (COL. 1 OR 2 AND TABLE A) | MAIN STATION CAPACITY (COL. 6 ÷ COL. 5 =) | |
| INSTALLED | REQUIRED | | | | | | | |
| 1980-81 | 4 | 4 | 15,975 | 1265 | 12.63 | 32,768 | 2594 | |
| 1-1-84 | 4 | 4 | 22,023 | 1570 | 14.03 | 32,768 | 2335 | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Note: Refer to Network Switching Engineering Worksheets in Section 233-060-450 or latest traffic order.

TABLE A

| GENERIC PROGRAM | UNDUPLICATED TRANSLATION WORDS | MAIN STORE MODULES/SYSTEM CONTROL |
|----------------------------|--------------------------------|-----------------------------------|
| 3 E 3 | 0 to 122,880 | 2 |
| SO-2 Issue 4 | 12,288 or less | 3 |
| | 12,289 to 47,500 | 4 |
| SO-2 Issue 4A (32K) | 0 | 3 |
| | 32,768 or less | 4 |
| | 32,769 to 53,248 | 5 |
| SO-2 Issue 4A (128K) | 0 | 1 |
| | 32,768 or less | 1 |
| | 32,767 to 53,248 | 2 |

Fig. 8—Worksheets for Example Traffic Order (Sheet 7 of 33)

SECTION 233-060-845, Issue 1
Page 9

Office: Royalton (478)

No. 3 ESS: Number Capacity
Reference: Section 233-060-130

TRAFFIC ORDER 507
SECTION C

NO. 3 ESS
CAPACITY DETERMINATION WORKSHEET (F)

| YEAR | MAIN STATION CAPACITY BASED ON NUMBER CAPACITY | | | | | | | | | |
|---|--|-------------------------|------------------------------------|--|--------------------------------|--|---|---|--|---------|
| | OFFICE CODES (NNX) | TOTAL NUMBERS INSTALLED | NUMBERS UNAVAILABLE FOR ASSIGNMENT | AVAILABLE NUMBERS (COL. 2 - COL. 3 =) | DEPRIVED PERCENT FILL (NOTE 1) | MAIN STATION CAPACITY (COL. 4 x COL. 5 =) | ABS NUMBERS WORKING OR ASSIGNED OR LATEST FORECAST (NOTE 2) | MAIN STATION CAPACITY FOR GROWTH (COL. 6 - COL. 7 =) | % UTILIZATION (COL. 7 ÷ COL. 6 x 100 =) | REMARKS |
| LAST AVERAGE BUSY SEASON (ABS)/LATEST MAIN STATION FORECAST | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 1980-81 | 1 (478) | 1600 | 25 | 1575 | .87 | 1370 | 1265 | 105 | 92.3 | |
| 1-1-84 | 1 | 2000 | 45 | 1955 | .85 | 1662 | 1570 | 92 | 94.4 | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Notes 1: Reserve percentage is determined and adjusted by the Network Administration in accordance with the movement of customers into and out of the office.

2: Test and miscellaneous numbers should be included. See office records.

Fig. 8—Worksheets for Example Traffic Order (Sheet 8 of 33)

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Page 10

Office: RURALTOWN (478)
No. 3 ESS Capacities _____
Reference: Section 233-060-130

TRAFFIC ORDER 5017
SECTION C

BUSY SEASON 1980-81

NO. 3 ESS
SUMMARY OF CAPACITIES (G)

| | MAIN STATION CAPACITY | NOTES | | | | | | | | | | | | |
|--|--|-----------------|------------|-----------|-----------|-----------|------------|-------------|--|--------------|-----------|--|-----------|--|
| Worksheet B — Networks | | | | | | | | | | | | | | |
| Part 1 — Terminals | <u>1352</u> | _____ | | | | | | | | | | | | |
| Part 2 — Load | <u>1748</u> | _____ | | | | | | | | | | | | |
| Worksheet C — Service Circuits | | | | | | | | | | | | | | |
| Dial Pulse CDRs | <u>1208</u> | _____ | | | | | | | | | | | | |
| TOUCH-TONE® CDRs | <u>284</u> | _____ | | | | | | | | | | | | |
| Total Customer Digit Receivers | <u>1492</u> | _____ | | | | | | | | | | | | |
| MF Receivers | <u>4000</u> | _____ | | | | | | | | | | | | |
| MF Transmitters | <u>2750</u> | _____ | | | | | | | | | | | | |
| DP Transmitters | <u>2366</u> | _____ | | | | | | | | | | | | |
| Ringing Circuit — Regular | <u>1700</u> | _____ | | | | | | | | | | | | |
| — Superimposed | <u>423</u> | _____ | | | | | | | | | | | | |
| Limiting Coin Control | <u>NA</u> | _____ | | | | | | | | | | | | |
| Limiting Tone Circuit | <u>3000</u> | <u>ROH</u> | | | | | | | | | | | | |
| Limiting Announcement Circuit | <u>-</u> | <u>-</u> | | | | | | | | | | | | |
| Worksheet D — Call Stores | | | | | | | | | | | | | | |
| Call Store Words | <u>1628</u> | _____ | | | | | | | | | | | | |
| Worksheet E — Main Stores | | | | | | | | | | | | | | |
| Unduplicated MAS Words | <u>2594</u> | _____ | | | | | | | | | | | | |
| Worksheet F — Numbers | | | | | | | | | | | | | | |
| Total Numbers Less Adm. Spare | <u>1370</u> | _____ | | | | | | | | | | | | |
| Main Station Capacities | | | | | | | | | | | | | | |
| Most Limiting — Past | <u>-</u> | _____ | | | | | | | | | | | | |
| — Present | <u>1352</u> | <u>Net Term</u> | | | | | | | | | | | | |
| Custom Calling Requirements Included in Main Station Capacities | <table border="0"> <tr> <td><u>CW</u></td> <td><u>THC</u></td> <td><u>CF</u></td> </tr> <tr> <td><u>70</u></td> <td><u>60</u></td> <td><u>120</u></td> </tr> <tr> <td><u>SPC8</u></td> <td></td> <td><u>SPC30</u></td> </tr> <tr> <td><u>65</u></td> <td></td> <td><u>20</u></td> </tr> </table> | <u>CW</u> | <u>THC</u> | <u>CF</u> | <u>70</u> | <u>60</u> | <u>120</u> | <u>SPC8</u> | | <u>SPC30</u> | <u>65</u> | | <u>20</u> | |
| <u>CW</u> | <u>THC</u> | <u>CF</u> | | | | | | | | | | | | |
| <u>70</u> | <u>60</u> | <u>120</u> | | | | | | | | | | | | |
| <u>SPC8</u> | | <u>SPC30</u> | | | | | | | | | | | | |
| <u>65</u> | | <u>20</u> | | | | | | | | | | | | |

Fig. 8—Worksheets for Example Traffic Order (Sheet 9 of 33)

NO. 3 ESS
TRAFFIC ORDER WORKSHEET

OFFICE CHARACTERISTICS

1.0 Station and Line Data

| | DATA BASE PERIOD | CUTOVER | EOP |
|--|------------------------|--------------|---------------|
| 1.1 Date | <u>1980-81</u> | _____ | <u>1-1-84</u> |
| 1.2 Main Stations (MS) | | | |
| a. Individual (FR) | <u>609</u> | <u>400</u> | <u>1009</u> |
| b. Individual (MR) | <u>35</u> | <u>(2)</u> | <u>33</u> |
| c. Coin | <u>21</u> | <u>8</u> | <u>29</u> |
| d. PBX Multiline Hunt | <u>82</u> | <u>46</u> | <u>128</u> |
| e. INWATS (Full Business Day) | <u>26</u> | <u>24</u> | <u>50</u> |
| f. INWATS (Measured) | <u>5</u> | <u>10</u> | <u>15</u> |
| g. 2-Party (FR) | <u>350</u> | <u>(114)</u> | <u>236</u> |
| h. 2-Party (MR) | _____ | _____ | _____ |
| i. 4-Party (Semi-Select) | _____ | _____ | _____ |
| j. 4-Party (Full-Select) | <u>137</u> | <u>(67)</u> | <u>70</u> |
| k. 8-Party (Semi-Select) | _____ | _____ | _____ |
| l. 8-Party (Coded) | _____ | _____ | _____ |
| m. Other | _____ | _____ | _____ |
| n. Total Main Stations | <u>1265</u> | <u>305</u> | <u>1570</u> |
| 1.3 Lines (Requiring Terminal Equipment) | | | |
| a. Individual (FR) | <u>609</u> | <u>400</u> | <u>1009</u> |
| b. Individual (MR) | <u>35</u> | <u>(2)</u> | <u>33</u> |
| c. Coin | <u>21</u> | <u>8</u> | <u>29</u> |
| d. PBX, Multiline Hunt | <u>82</u> | <u>46</u> | <u>128</u> |
| e. INWATS (Full Business Day) | <u>26</u> | <u>24</u> | <u>50</u> |
| f. INWATS (Measured) | <u>5</u> | <u>10</u> | <u>15</u> |
| g. 2-Party (FR) | <u>302</u> | <u>(126)</u> | <u>176</u> |
| h. 2-Party (MR) | _____ | _____ | _____ |
| i. 4-Party (Semi-Select) | _____ | _____ | _____ |
| j. 4-Party (Full-Select) | <u>50</u> | <u>(25)</u> | <u>25</u> |
| k. 8-Party (Semi-Select) | _____ | _____ | _____ |
| l. 8-Party (Coded) | _____ | _____ | _____ |
| m. Other | _____ | _____ | _____ |
| n. Total Lines | <u>1130</u> | <u>335</u> | <u>1465</u> |
| 1.4 MS/Line Ratio | <u>1.12</u> | _____ | <u>1.07</u> |

Fig. 8—Worksheets for Example Traffic Order (Sheet 10 of 33)

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Page 4

Order No. 5017
Section C Page _____
Office RURAL TOWN (478)
Date _____
Reference: SECTION 233-060-120
SECTION 233-060-110

NO. 3 ESS
TRAFFIC ORDER WORKSHEET

OFFICE CHARACTERISTICS

1.0 Station and Line Data (Cont)

| | DATA BASE PERIOD | CUTOVER | EOP |
|--------------------------------------|------------------------|------------|-------------|
| 1.5 <i>Included In Main Stations</i> | | | |
| a. TOUCH-TONE® | <u>253</u> | <u>377</u> | <u>630</u> |
| b. CUSTOM CALLING FEATURES | | | |
| Call Waiting | <u>70</u> | <u>70</u> | <u>140</u> |
| 3-Way Calling | <u>40</u> | <u>20</u> | <u>60</u> |
| Speed Calling-8 Code | <u>65</u> | <u>85</u> | <u>150</u> |
| Speed Calling-30 Code | <u>20</u> | <u>25</u> | <u>45</u> |
| Call Forwarding | <u>120</u> | <u>30</u> | <u>150</u> |
| 1.6 <i>Directory Numbers</i> | | | |
| a. Thousand's Groups | <u>2</u> | <u>-</u> | <u>2</u> |
| b. Hundred's Groups | <u>16</u> | <u>4</u> | <u>20</u> |
| c. Number of Office Codes (NXX's) | <u>1</u> | <u>-</u> | <u>1</u> |
| 2.0 <i>Office Usage Data</i> | | | |
| a. Originating CCS/MS | _____ | _____ | _____ |
| b. Incoming CCS/MS | _____ | _____ | _____ |
| c. Total O+I CCS/MS | <u>3.10</u> | _____ | <u>3.24</u> |
| d. Tandem CCS (In/Out)* | _____ | _____ | _____ |

* Included in Incoming CCS/MS

Fig. 8—Worksheets for Example Traffic Order (Sheet 11 of 33)

NO. 3 ESS
TRAFFIC ORDER WORKSHEET

A. SERVICE CIRCUITS

1.0 Customer Digit Receivers (Cont)

1.4 HD TOUCH-TONE CDR Requirements – Initial

- a. ABS TOUCH-TONE CDR CCS (A1.3e)
- b. HD to ABS factor (Suggest 1.3)
- c. HD TOUCH-TONE CDR CCS
- d. HD TOUCH-TONE CDR's required for service (Table 50 HD)

| | CUTOVER | EOP |
|---|---------|---------|
| X | _____ | X _____ |
| = | _____ | = _____ |
| | _____ | _____ |

1.5 ABS CDR Requirements – Growth

- a. Main stations EOP
- b. ABS busy hour CCS/MS – EOP
- c. ABS CDR CCS
- d. CDR's required for service (Table 10 ABS)
- e. CDR's required for service protection margin (suggest 1)
- f. ABS CDR's required

| | DIAL PULSE | TOUCH-TONE |
|---|--------------|--------------|
| X | <u>940</u> | X <u>630</u> |
| | <u>.12</u> | X <u>.10</u> |
| = | <u>112.8</u> | = <u>63</u> |
| | <u>9</u> | <u>6</u> |
| + | <u>1</u> | + <u>1</u> |
| = | <u>10</u> | = <u>7</u> |

1.6 HD CDR Requirements – Growth

- a. ABS CDR CCS (A1.5c)
- b. HD to ABS factor
- c. HD CDR CCS
- d. CDR's required for service (Table 50 HD)

| | | |
|---|--------------|--------------|
| X | <u>112.8</u> | X <u>63</u> |
| | <u>1.17</u> | X <u>2.0</u> |
| = | <u>131.9</u> | = <u>126</u> |
| | <u>8</u> | <u>8</u> |

Fig. 8—Worksheets for Example Traffic Order (Sheet 12 of 33)

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NO. 3 ESS
TRAFFIC ORDER WORKSHEET

A. SERVICE CIRCUITS

1.0 Customer Digit Receivers (Cont)

1.7 Summary of CDR and TOUCH-TONE Receiver Requirements

- a. Dial pulse CDR's required (Select larger of A1.1h, A1.2d, A1.5f or A1.6d)
- b. TOUCH-TONE CDR's required (Select larger of A1.3h, A1.4d, A1.5f or A1.6d)
- c. Total CDR's provided (SD-3H410-01)
- d. TOUCH-TONE receiver circuits provided (A1.7b) SD-3H401-01

| | CUTOVER | EOP |
|---|---------|----------|
| | _____ | _____ |
| + | _____* | + _____* |
| = | _____ | = _____ |
| | _____* | _____* |

1.8 CDR Capacity - EOP

- a. CCS capacity of circuits required for service
 - Table 10 ABS (A1.1f and A1.3f or A1.5d)
 - Table 50 HD (A1.2d and A1.4d or A1.6d)
- b. CCS capacity of circuits provided
 - Table 10 ABS (A1.1h and A1.3h or A1.5f)

| | DIAL PULSE | TOUCH-TONE |
|--|-------------|-------------|
| | _____ | _____ |
| | <u>126</u> | <u>64.4</u> |
| | <u>143</u> | <u>143</u> |
| | <u>195†</u> | <u>HD†</u> |

* Minimum of 2 required for test purposes with a maximum of 34 allowed.

† If CDR's are provided on a HD basis, this capacity is not applicable.

Fig. 8—Worksheets for Example Traffic Order (Sheet 13 of 33)

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TRAFFIC ORDER WORKSHEET

A. SERVICE CIRCUITS

2.0 Interoffice Transmitters

2.1 MF Transmitters Required - Initial

| | CUTOVER | EOP |
|---|---------|---------|
| a. Outgoing (include tandem) MF ABS busy hour calls | | |
| b. HT/call (Table C) ÷ 100 | X _____ | X _____ |
| c. ABS MF Transmitter CCS | = _____ | = _____ |
| d. MF transmitters required for service (Table 1 ABS) | _____ | _____ |
| e. MF transmitters required for service protection margin (suggest 1) | + _____ | + _____ |
| f. MF transmitters provided (SD-3H404-01) | = _____ | = _____ |

2.2 DP Transmitters Required - Initial

| | | |
|---|---------|---------|
| a. Outgoing (include tandem) DP ABS busy hour calls | | |
| b. HT/call (Table C) ÷ 100 | X _____ | X _____ |
| c. ABS DP Transmitter CCS | = _____ | = _____ |
| d. DP transmitters required for service (Table 1 ABS) | _____ | _____ |
| e. DP transmitters required for service protection margin (suggest 1) | + _____ | + _____ |
| f. DP transmitters provided (SD-3H403-01) | = _____ | = _____ |

2.3 MF Transmitters Required - Growth

| | | |
|---|---|------|
| a. ABS busy hour CCS for MF transmitters | | 16 |
| b. ABS busy hour tandem CCS for MF transmitters (estimate) | - | - |
| c. MF transmitter CCS for originating outgoing calls | = | 16 |
| d. Current ABS main stations | ÷ | 1265 |
| e. Current CCS/MS | = | .012 |
| f. Growth factor (if applicable) | X | 1.6 |
| g. Projected CCS/MS | = | .02 |
| h. Main stations EOP | X | 1570 |
| i. MF transmitter CCS for originating outgoing calls | = | 31.4 |
| j. MF transmitter CCS for tandem calls at EOP (estimate) | + | - |
| k. ABS MF transmitter CCS | = | 31.4 |
| l. MF transmitters required for service (Table 1 ABS) | | 6 |
| m. MF transmitters required for service protection margin (suggest 1) | + | 1 |
| n. MF transmitters provided (SD-3H404-01) | = | 7 |

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TRAFFIC ORDER WORKSHEET

A. SERVICE CIRCUITS

2.0 Interoffice Transmitters (Cont)

2.4 DP Transmitters Required - Growth

| | | |
|---|---|-------------|
| a. ABS busy hour CCS for DP transmitters | — | <u>39</u> |
| b. ABS busy hour tandem CCS for DP transmitters (estimate) | — | <u>—</u> |
| c. DP transmitter CCS for originating outgoing calls | = | <u>39</u> |
| d. Current ABS main stations | ÷ | <u>1265</u> |
| e. Current CCS/MS | = | <u>.03</u> |
| f. Growth factor (if applicable) | X | <u>—</u> |
| g. Projected CCS/MS (ESTIMATE) | = | <u>.02</u> |
| h. Main stations EOP | X | <u>1570</u> |
| i. DP transmitter CCS for originating outgoing calls | = | <u>31.4</u> |
| j. DP transmitter CCS for tandem calls at EOP (estimate) | + | <u>—</u> |
| k. ABS DP transmitter CCS | = | <u>31.4</u> |
| l. DP transmitters required for service (Table 1 ABS) | = | <u>6</u> |
| m. DP transmitters required for service protection margin (suggest 1) | + | <u>1</u> |
| n. DP transmitters provided (SD-3H403-01) | = | <u>7</u> |

2.5 Interoffice Transmitter Capacity - EOP

| | MF | DP |
|--|--------------------|--------------------|
| a. Capacity table used | <u>Table 1 ABS</u> | <u>Table 1 ABS</u> |
| b. ABS CCS capacity of circuits required for service | <u>40.0</u> | <u>40.0</u> |
| c. ABS CCS capacity of circuits provided | <u>54.7</u> | <u>54.7</u> |

Fig. 8—Worksheets for Example Traffic Order (Sheet 15 of 33)

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TRAFFIC ORDER WORKSHEET

A. SERVICE CIRCUITS

3.0 Intraoffice Receivers

3.1 MF Receivers Required – Initial

| | CUTOVER | EOP |
|--|----------|----------|
| a. Incoming (include tandem) MF ABS busy hour calls | x _____* | x _____* |
| b. HT/call (Table D) ÷ 100 | = _____ | = _____ |
| c. ABS MF receiver CCS | = _____ | = _____ |
| d. MF receivers required for service (Table 1 ABS) | + _____ | + _____ |
| e. MF receivers required for service protection margin (suggest 1) | = _____† | = _____† |
| f. MF receivers to be provided (SD-3H402-01) | | |

3.2 MF Receivers Required – Growth

| | |
|--|--------|
| a. ABS busy hour CCS for MF receivers | 16 |
| b. ABS busy hour tandem CCS for MF receivers (estimate) | - |
| c. MF receiver CCS for terminating incoming calls | = 16 |
| d. Current ABS main stations | ÷ 1265 |
| e. Current CCS/MS | = .012 |
| f. Growth factor (If applicable) | x - |
| g. Projected CCS/MS | = .012 |
| h. Main stations EOP | x 1570 |
| i. MF receiver CCS for terminating incoming calls | = 18.8 |
| j. MF receiver CCS for tandem calls at EOP (estimate) | + - |
| k. ABS MF receiver CCS | = 18.8 |
| l. MF receivers required for service (Table 1 ABS) | 5 |
| m. MF receivers required for service protection margin (suggest 1) | + 1 |
| n. MF receivers to be provided (SD-3H402-01) | = 6 † |

3.3 MF Receiver Capacity – EOP

| | |
|---|-------------|
| a. Capacity table used | Table 1 ABS |
| b. ABS CCS capacity for circuits required for service | 26.6 |
| c. ABS CCS capacity of circuits provided | 40.0 |

* Local tandem must be considered in developing holding time
† Maximum of 12

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TRAFFIC ORDER WORKSHEET

A. SERVICE CIRCUITS

4.0 Ringing Circuits (Cont)

4.3 Regular Ringing Circuits Required - Growth

| | | |
|--|---|-------------|
| a. EOP main stations requiring regular ringing | | <u>1500</u> |
| b. ABS busy hour CCS/MS for regular ringing circuits - EOP | X | <u>-</u> |
| c. ABS regular ringing circuit CCS | = | <u>-</u> |
| d. HD to ABS factor | X | <u>-</u> |
| e. HD regular ringing circuit CCS (From CD Worksheet) | = | <u>150</u> |
| f. Regular ringing circuits required for service (Table 1 HD) | | <u>13</u> |
| g. Regular ringing circuits required for service protection margin (suggest 1) | + | <u>1</u> |
| h. Regular ringing circuits to be provided | = | <u>14</u> |

4.4 Superimposed Ringing Circuits Required - Growth

| | | |
|---|---|------------|
| a. EOP main stations requiring superimposed ringing | | <u>70</u> |
| b. ABS busy hour CCS/MS for superimposed ringing circuits - EOP | X | <u>-</u> |
| c. ABS superimposed ringing circuit CCS | = | <u>-</u> |
| d. HD to ABS factor | X | <u>-</u> |
| e. HD superimposed ringing circuit CCS (From CD Worksheet) | = | <u>9.1</u> |
| f. Superimposed ringing circuits required for service (Table 1 HD) | | <u>4</u> |
| g. Superimposed ringing circuits required for service protection margin (suggest 1) | + | <u>1</u> |
| h. Superimposed ringing circuits to be provided | = | <u>5</u> |

4.5 Ringing Circuit Capacity - EOP

| | REGULAR | SUPERIMPOSED |
|---|------------|--------------|
| a. Capacity table used | Table 1 HD | Table 1 HD |
| b. HD CCS capacity of circuits required for service | <u>166</u> | <u>15.4</u> |
| c. HD CCS capacity of circuits provided | <u>187</u> | <u>26.6</u> |

Fig. 8—Worksheets for Example Traffic Order (Sheet 17 of 33)

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A. SERVICE CIRCUITS

5.0 Tone and Announcement Circuits (Cont)

5.11 Busy Tone (60 IPM) Circuits Required - Growth

| | | | |
|----|---|---|-------------|
| a. | Main stations EOP | | <u>1570</u> |
| b. | ABS CCS/MS for busy tone circuits - EOP | X | <u>-</u> |
| c. | ABS busy tone circuit CCS | = | <u>-</u> |
| d. | HD to ABS factor | X | <u>-</u> |
| e. | HD busy tone circuit CCS (From CD Worksheets) | = | <u>15.7</u> |
| f. | Busy tone circuits required for service (Table 1 HD) | | <u>5</u> |
| g. | Busy tone circuits required for service protection margin (suggest 1) | + | <u>1</u> |
| h. | Busy tone circuits to be provided | = | <u>6 *</u> |

5.12 Receiver Off Hook (ROH) Tone Circuits Required - Growth

| | | | |
|----|---|---|-------------|
| a. | Main stations EOP | | <u>1570</u> |
| b. | ABS busy hour CCS/MS for ROH Tone - EOP | X | <u>-</u> |
| c. | ABS ROH tone circuit CCS | = | <u>-</u> |
| d. | HD to ABS factor | X | <u>-</u> |
| e. | HD ROH tone circuit CCS (From CD Worksheets) | = | <u>7.8</u> |
| f. | ROH tone circuits required for service (Table 1 HD) | | <u>4 *</u> |

5.13 High Tone Circuits Required - Growth

| | | | |
|----|--|---|----------------|
| a. | Main stations EOP | | <u>1570</u> |
| b. | ABS busy hour CCS/MS for high tone - EOP | X | <u>-</u> |
| c. | ABS high tone CCS | = | <u>-</u> |
| d. | HD to ABS factor | X | <u>No data</u> |
| e. | HD high tone CCS | = | <u>-</u> |
| f. | High tone circuits required for service (Table 1 HD) | | <u>4 *</u> |

5.14 Low Tone Circuits Required - Growth

| | | | |
|----|---|---|----------------|
| a. | Main stations EOP | | <u>1570</u> |
| b. | ABS busy hour CCS/MS for low tone - EOP | X | <u>-</u> |
| c. | ABS low tone CCS | = | <u>-</u> |
| d. | HD to ABS factor | X | <u>No Data</u> |
| e. | HD low tone CCS | = | <u>-</u> |
| f. | Low tone circuits required for service (Table 1 HD) | | <u>4 *</u> |

5.15 Miscellaneous Tone (Call Waiting) Circuits Required - Growth

| | | | |
|----|---|---|------------|
| a. | Call Waiting main stations EOP | | <u>140</u> |
| b. | ABS busy hour CCS/MS for miscellaneous tone - EOP | X | <u>-</u> |
| c. | ABS miscellaneous tone CCS | = | <u>-</u> |
| d. | HD to ABS factor | X | <u>-</u> |
| e. | HD miscellaneous tone CCS (From CD Worksheets) | = | <u>4.2</u> |
| f. | Miscellaneous tone circuits required for service (Table 1 HD) (maximum of 4) | | <u>3 *</u> |

* Provide in even quantities

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5.0 Tone and Announcement Circuits (Cont)

5.16 Vacant Code and No Such Number Announcement Circuits Required – Growth

- a. Main stations EOP 1570
- b. ABS busy hour CCS/MS for vacant code and no such number announcement – EOP
- c. ABS announcement circuit CCS (From CD Worksheets) X _____
- d. Announcement circuits required for service (Table 10 ABS) (Provided) = 3.1
_____ *
4 *

5.17 Dial Tone First (DTF) Announcement Circuits Required – Growth

- a. Coin main stations EOP Not Required
- b. ABS busy hour CCS/coin MS for DTF announcement – EOP X _____
- c. ABS DTF announcement circuit CCS = _____
- d. Announcement circuits required for service (Table 10 ABS) _____ *

5.18 1+ Dialing Error Announcement Circuits Required – Growth

- a. Main stations EOP No Data
- b. ABS busy hour CCS/MS for 1+ omitted announcement – EOP X _____
- c. ABS 1+ omitted announcement circuit CCS = _____
- d. 1+ omitted announcement circuits required for service (Table 10 ABS) _____ *
- e. Main stations EOP _____
- f. ABS busy hour CCS/MS for 1+ in error announcement – EOP X _____
- g. ABS 1+ in error announcement circuit CCS = _____
- h. 1+ in error announcement circuits required for service (Table 10 ABS) (Provided) 2 *

5.19 Custom Calling Error Announcement Circuits Required – Growth

- a. Custom calling main stations EOP (speed calling and call forwarding) No Data
- b. ABS busy hour CCS/MS for custom calling error announcement – EOP X _____
- c. ABS custom calling error announcement CCS = _____
- d. Announcement circuits required for service (Table 10 ABS) (Provided) _____ *
2 *

* Provide in even quantities

Fig. 8—Worksheets for Example Traffic Order (Sheet 19 of 33)

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A. SERVICE CIRCUITS

5.0 Tone and Announcement Circuits (Cont)

5.20 Local Coin Overtime Circuits Required - Growth

- | | |
|--|---------------------|
| a. Coin main stations EOP | |
| b. ABS busy hour CCS/MS for local coin overtime announcement - EOP | <i>Not Required</i> |
| c. ABS local coin overtime announcement CCS | X _____ |
| d. Announcement circuits required for service (maximum of 4) | = _____ * |

5.21 Permanent Signal Announcement Circuits Required - Growth †

- | | |
|---|---------------|
| a. Main stations EOP | |
| b. ABS busy hour CCS/MS for permanent signal - EOP | X <u>1570</u> |
| c. ABS permanent signal CCS (From CD Worksheets) | = <u>14</u> |
| d. Permanent signal announcement circuits required (Table 10 ABS) | <u>3</u> * |

5.22 Partial Dial Announcement Circuits Required - Growth †

- | | |
|---|---------------|
| a. Main stations EOP | |
| b. ABS busy hour CCS/MS for partial dial - EOP | X <u>1570</u> |
| c. ABS partial dial CCS (From CD Worksheets) | = <u>8</u> |
| d. Partial dial announcement circuits required (Table 10 ABS) | <u>3</u> * |

5.23 Combined Permanent Signal/Partial Dial Announcement Circuits Required - Growth †

- | | |
|--|---------|
| a. Main stations EOP | |
| b. ABS busy hour CCS/MS for combined permanent signal/partial dial - EOP | X _____ |
| c. ABS combined permanent signal/partial dial CCS | = _____ |
| d. Combined permanent signal/partial dial circuits required (Table 10 ABS) | _____ * |

* Provide in even quantities

† Provide either separate permanent signal and partial dial announcement groups or the combined group - not both

Fig. 8—Worksheets for Example Traffic Order (Sheet 20 of 33)

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A. SERVICE CIRCUITS

5.0 Tone and Announcement Circuits (Cont)

5.24 Tone and Announcement Circuits – Summation and Capacity

| | CUTOVER CKTS | EOP CKTS | CAP TABLE | EOP CAP |
|--|-----------------|-------------|--------------|------------|
| a. Busy tone (A5.1H or A5.11h) | _____ | <u>6</u> | Table 1 HD | <u>40</u> |
| b. ROH tone (A5.2b or A5.12f) | _____ | <u>4</u> | Table 1 HD | <u>15</u> |
| c. High tone (A5.3b or A5.13f) | _____ | <u>4</u> | Table 1 HD | <u>15</u> |
| d. Low tone (A5.3c or A5.14f) | _____ | <u>4</u> | Table 1HD | <u>15</u> |
| e. Misc. tone (A5.4a or A5.15f) | _____ | <u>3</u> | Table 1 HD | <u>7</u> |
| f. Total tone circuits required (A5.24a to A5.24e) | _____ | <u>21</u> | | |
| g. Vacant code and no such number A5.5b or A5.16d) | _____ | <u>4</u> | Table 10 ABS | <u>29</u> |
| h. DTF (A5.6b or A5.17d) | _____ | <u>-</u> | Table 10 ABS | <u>-</u> |
| i. 1 + omitted (A5.7b or A5.18d) | _____ | <u>-</u> | Table 10 ABS | <u>-</u> |
| j. 1 + in error (A5.7c or A5.18h) | _____ | <u>2</u> | Table 10 ABS | <u>5</u> |
| k. Custom calling error (A5.8b or A5.19d) | _____ | <u>2</u> | Table 10 ABS | <u>5</u> |
| l. Local coin overtime (A5.9b or A5.20d) | _____ | <u>-</u> | Table 10 ABS | <u>-</u> |
| m. Permanent signal (A5.10b or A5.21d) | _____ | <u>3</u> | Table 10 ABS | <u>15</u> |
| n. Partial dial (A5.10c or A5.22d) | _____ | <u>3</u> | Table 10 ABS | <u>15</u> |
| o. Combined permanent signal/partial dial (A5.10d or A5.23d) | _____ | <u>-</u> | Table 10 ABS | <u>-</u> |
| p. Total announcements circuits required (A5.24g to A5.24o) | _____ | <u>14</u> | | |
| q. Total tone and announce- ment circuits required (A5.24f + A5.24p) | _____ | <u>35</u> | | |

6.0 7-A Announcement Machines

6.1 7-A Announcement Machines Required – EOP

| | |
|---|----------|
| a. Number of announcements for which circuits are provided | <u>5</u> |
| b. Overload announcement with remote recording (maximum of 1 if provided) + | <u>-</u> |
| c. Total 7-A announcement machines required | <u>5</u> |

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TRAFFIC ORDER WORKSHEET

A. SERVICE CIRCUITS

7.0 Coin Control Circuits

7.1 Coin Control Circuits Required – Initial

| | CUTOVER | EOP |
|---|---------|-------|
| a. Total originating coin ABS busy hour calls | _____ | _____ |
| b. Coin control circuits without local coin overtime to be provided (Table H) | _____ | _____ |
| c. Coin control circuits with local coin overtime to be provided (Table H) | _____ | _____ |

7.2 Coin Control Circuits Required – Growth

| | |
|---|--------------|
| a. Coin main stations EOP | Invalid Data |
| b. ABS busy hour CCS/coin station – EOP | X _____ |
| c. ABS coin control CCS | = _____ |
| d. HD to ABS factor | X _____ |
| e. HD coin control circuit CCS | = _____ |
| f. Coin control circuits required for service (Table 1 HD) | _____ |
| g. Coin control circuits required for service protection margin (suggest 1) | + _____ |
| h. Coin control circuits to be provided (maximum of 4) (Provided) | = <u>4</u> |

7.3 Coin Control Circuit Capacity – EOP

| | |
|---|---------------|
| a. Capacity table used | Table 1 HD |
| b. HD CCS capacity of circuits required for service | _____ |
| c. HD CCS capacity of circuits provided | = <u>15.4</u> |

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A. SERVICE CIRCUITS

8.0 Conference Circuits

8.1 Conference Circuits Required – Initial

| | CUTOVER | EOP |
|---|---------|---------|
| a. Customer lines with 3-way calling feature | × _____ | × _____ |
| b. ABS CCS/line (suggest 0.4*) | = _____ | = _____ |
| c. ABS 3-way calling CCS | _____ | _____ |
| d. Conference circuits required for service (Table 1 ABS) | _____ | _____ |
| e. Conference circuits required for service protection margin (suggest 1) | + _____ | + _____ |
| f. Conference circuits to be provided | = _____ | = _____ |

8.2 Conference Circuits Required – Growth

| | | |
|---|---|----|
| a. 3-way calling main stations EOP | | 60 |
| b. ABS busy hour CCS/3-way calling main station – EOP | × | .8 |
| c. ABS 3-way calling CCS | = | 48 |
| d. Conference circuits required for service (Table 1 ABS) | | 7 |
| e. Conference circuits required for service protection margin (suggest 1) | + | 1 |
| f. Conference circuits to be provided | = | 8 |

8.3 Conference Circuit Capacity – EOP

| | |
|--|-------------|
| a. Capacity table used | Table 1 ABS |
| b. ABS CCS capacity of circuits required for service | <u>54.7</u> |
| c. ABS CCS capacity of circuits provided | <u>70.9</u> |

* Based on a 2.0 originating + incoming calling rate for lines with 3-way calling feature, 10% of those originating + incoming calls being 3-way calls, and a 200 sec holding time per 3-way call.

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NO. 3 ESS
NETWORK SWITCHING ENGINEERING WORKSHEETS

B. TRUNKS
2.0 Service Circuits - EOP/Growth

| A SERVICE CIRCUITS | B ORDER CODE | C UNIT SD | D CKTS PROVIDED | E NET TERM/ CKT | F NET TERM REQD | G CKTS/ UNIT | H UNITS REQD | I SCAN PTS/ UNIT | J SCAN POINT FIELDS | | | | |
|--|-----------------|--------------|--------------------|--------------------|--------------------|-----------------|-----------------|---------------------|------------------------|-----|----|----|-----|
| | | | | | | | | | H X I | | | | |
| | | | | | | | | | D | D/T | RS | SS | RCS |
| Custom Digit Receiver | | 3H410 | 19 | 1 | 19 | 4 | *5 | 4 | | | 20 | | |
| Regular Ringing | | 3H410 | 14 | 1 | 14 | 3 | *5 | 3-3 | 15 | | | | 15 |
| Interoffice Transmitter - MF | | 3H404 | 7 | 1 | 7 | 4 | 2 | 8-4 | 16 | | | 8 | |
| Interoffice Transmitter - DP | | 3H403 | 9 | 1 | 9 | 12 | 1 | 12-12 | 12 | | | 12 | |
| Interoffice Receiver - MF | | 3H402 | 6 | 1 | 6 | 1 | 6 | 6 | | 36 | | | |
| TOUCH TONE Receiver | | 3H401 | 8 | 0 | 0 | 2 | 4 | 16-2 | | 64 | 8 | | |
| Superimposed Ringing | | 3H406 | 7 | 1 | 7 | 6 | 2 | 6-6 | 12 | | | | 12 |
| Combination Unit | | 3H411 | | | | | † | | | | | | |
| Tone and Announcement | | 3H411 | 34 | 1 | 34 | | | | | | | | |
| Remote Recording of Announcement (max 1) | | 3H411 | 1 | 1 | 1 | | | | | | | | |
| Coin Control (max 8) (See Note) | | 3H411 | 4 | 1 | 4 | | | | | | | 4 | |
| Conference Circuit | | 3H411 | 8 | 3 | 24 | | | | | | | | |
| TOTAL SERVICE CIRCUITS | | | 118 | | 135 | | | | 55 | 100 | 28 | 24 | 27 |

Note: Four additional coin control circuits mounted on the miscellaneous frame may be provided on a custom engineered basis. Indicate service supervisory scan points for added circuits only.

* CDR/RR unit - provide units based on the larger of the CDR and RR units required - whichever is larger.

† Units required for combination tone and announcement, remote recording of announcement, coin control and conference circuits - SD-3H411.

| CIRCUIT | CIRCUITS PROVIDED | CKTS. CKT. PACK | CIRCUIT PACKS REQD |
|-----------------------|-------------------|-----------------|--------------------|
| Tone and Announcement | _____ | 2 | _____ |
| Remote Recording | _____ | 1 | _____ |
| Coin Control | 4 | 1 | 4 |
| Conference | _____ | 1 | _____ |
| Total | _____ | = | _____ |

(Only coin control circuits can mount in these slots.)

÷ 12 = _____ units reqd

Fig. 8—Worksheets for Example Traffic Order (Sheet 24 of 33)

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NO. 3 ESS
NETWORK SWITCHING ENGINEERING WORKSHEETS

B. TRUNKS

3.0 Universal Trunks - EOP/Growth

| A | B | C | D | E | F | G | H | I | J | | | | |
|---|------------|---------|---------------|---------------|---------------|------------|------------|----------------|-------------------|-----|----|----|-----|
| | | | | | | | | | H X I | | | | |
| | | | | | D X E | | D ÷ G | | SCAN POINT FIELDS | | | | |
| UNIVERSAL TRUNKS | ORDER CODE | UNIT SD | CKTS PROVIDED | NET TERM/ CKT | NET TERM REQD | CKTS/ UNIT | UNITS REQD | SCAN PTS/ UNIT | D | D/T | RS | SS | RCS |
| Two-Way E&M Lead | | 3H220 | | 1 | | | | | | | | | |
| Incoming Reverse Battery (Delay Dial) | | 3H220 | | 1 | | | | | | | | | |
| Incoming Reverse Battery (Wink or Immediate-Bylink) | | 3H220 | 45 | 1 | 45 | | | | | | | | |
| Two-Way E&M Lead With Type 2 Interface | | 3H220 | 25 | 1 | 25 | | | | | | | | |
| Two-Way E&M Lead With Type 3 Interface | | 3H220 | | 1 | | | | | | | | | |
| Outgoing Reverse Battery High-Low | | 3H220 | 62 | 1 | 62 | | | | | | | | |
| TOTAL UNIVERSAL TRUNKS | | | 132 | | 132 | 24 | † 6 | 24 | | 144 | | | |
| Direct Interface D4 Channel Unit | | 3C328 | 48 | 1 | 48 | | * | *48 | | 48 | | | |
| TOTAL TRUNKS | | | 186 | | 186 | | | | | 192 | | | |

* Direct interface circuit requires one scan point per channel unit.

† Units must be ≥ number of networks provided.

Fig. 8—Worksheets for Example Traffic Order (Sheet 25 of 33)

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NO. 3 ESS
NETWORK SWITCHING ENGINEERING WORKSHEETS

B. TRUNKS

4.0 Line and Miscellaneous Circuits - EOP/Growth

| A LINE AND MISCELLANEOUS CKTS | B ORDER CODE | C SD | D CKTS PROVIDED | E NET TERM/ CKT | F NET TERM REQD | G CKTS/ UNIT | H UNITS REQD | I SCAN PTS/ UNIT | J SCAN POINT FIELDS | | | | | |
|---|--------------------|---------|-----------------------|-----------------------|-----------------------|--------------------|--------------------|------------------------|------------------------|-----|----|----|-----|--|
| | | | | | | | | | H X I | | | | | |
| | | | | | | | | | D | D/T | RS | SS | RCS | |
| Noise Immunity Line Ckt - Ground Start | | 3H208 | 8 | 0 | 0 | 16 | 1 | | | | | | | |
| Dial Tone First Coin Line Ckt | | 3H205 | - | 0 | 0 | 16 | - | | | | | | | |
| Distribute Point Applique | | 3H911 | 15 | 0 | 0 | 4 | 4 | | | | | | | |
| Remote Master Scanner Applique - Alarms | | 1A210 | 10 | 0 | 0 | 8 | 2 | | | | | | | |
| Remote Master Scanner Applique - Nonalarms | | 1A210 | 20 | 0 | 0 | 8 | 3 | 8 | 24 | | | | | |
| Peripheral Test Ckt Unit* | | 3H520 | | | | | | | | | | | | |
| Continuity and Polarity Test | | 3H520 | 1 | 1 | 1 | | | | | | | | | |
| Dial Pulse Receiver - Test | | 3H520 | 1 | 1 | 1 | | | | | | | | | |
| Transmission Test Termination | | 3H520 | 1 | 1 | 1 | | | | | | | | | |
| MW and Transmission Environment Test | | 3H520 | 1 | 2 | 2 | | | | | | | | | |
| Loop Environment Test | | 3H520 | 1 | 1 | 1 | | | | | | | | | |
| Trunk and Line Test Panel | | 3H520 | 1 | 3 | 3 | | | | | | | | | |
| TPD Amplifier and Timer | | 3H520 | 1 | 1 | 1 | | | | | | | | | |
| Station Ringer Test | | 3H520 | 1 | 2 | 2 | | | | | | | | | |
| Line Insulation Test | | 3H520 | 1 | 1 | 1 | | | | | | | | | |
| TOUCH-TONE Receiver Test | | 3H520 | 1 | 1 | 1 | | | | | | | | | |
| Incoming LTD (max 2) | | 3H520 | 2 | 1 | 2 | | | | | | | | | |
| TTY Line Ckt (Autoconnect) (max 4) | | 3H520 | 2 | 1 | 2 | | | | | | | | | |
| TOTAL | | | | | | 18 | | | 24 | | | | | |

* The peripheral test circuit unit, SD-3H520 is mounted on the test frame.

Fig. 8—Worksheets for Example Traffic Order (Sheet 26 of 33)

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NO. 3 ESS
TRAFFIC ORDER WORKSHEET

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E. MISCELLANEOUS FRAME AND PERIPHERAL DECODER PACKS

1.0 Miscellaneous Frame

1.1 Miscellaneous Frame Units

| A | B | C | D | E | F | G | H | I | J | K |
|---------------------------------------|------------|--------------------------------|-----------------------|-----------------------|----------------------------|------------------|-----------------------------|----------------------|-------------------------------|-------------------------------|
| | | NO. NETWORKS X 1 | | | C+D+E | B-F | | GXH | | GXJ |
| UNIT (SD) | UNITS REQD | UNITS PROVIDED ON NETWORK FR'S | UNITS PROVIDED ON CFO | UNITS PROVIDED ON CF1 | TOTAL UNITS ON NET. & CF'S | MISC FRAME UNITS | MOUNTING PLATES SPACES/UNIT | MOUNTING PLATES REQD | PERIPHERAL DECODER PACKS/UNIT | PERIPHERAL DECODER PACKS REQD |
| CDPR/RR (3H410) | 5 | 5 | — † | | 5 § | | | | | |
| TT Receiver (3H401) | 4 | | | | | 4 | 3 | 12 | 0 | 0 |
| MF Transmitter (3H404) | 2 | | 1 | 1 | 1 | 1 | 2 | 2 | 1 1/2 | 1.5 |
| DP Transmitter (3H403) | 1 | | | | | 1 | 2 | 2 | 1 1/2 | 1.5 |
| MF Receiver (3H402) | 6 | | | | | 6 | 2 | 12 | 1/8 | 1 |
| Superimposed Ringing (3H406) | 2 | | | | | 2 | 2 | 4 | 1 1/2 | 3 |
| Combination Unit (3H411) * | | | 1 | 1 | | | 2 | | 0 | 0 |
| Universal Trks (3H220) | 6 | 3 | 1 † | † | 2 | 2 | 4 | 8 | 3 | 6 |
| Noise Immunity Line Ckt (3H208) | 1 | | | | | 1 | 2 | 2 | 2 | 2 |
| DTF Line Ckt (3H205) | | | | | | | 2 | | 3/4 | |
| Distribute Point Applique Ckt (3H911) | 4 | | | | | 4 | 1 | 4 | 1/2 | 2 |
| Scanner Applique (1A210) | 4 | | | | | 4 | 1 | 4 | 0 | 0 |
| 7-A Announcement Machines | 5 | | | | | 5 | 5 1/2 | 28 | 0 | 0 |
| 13-A Announcement Machines | | | | | | | 5 | | 0 | |
| Mini-ROTL | | | | | | | 4 | | 0 | |
| TTY Controller | | | | | | | 4 | | 0 | |
| High Tone | | | | | | | 1 | | 1 | |
| 100-Type Test Line | | | | | | | 2 | | 0 | |
| 103-Type Test Line | | | | | | | 2 | | 0 | |
| Power Alarm | | | | | | | 1 | | 0 | |
| Data Interface Unit | | | | | | | 4 | | 0 | |
| TOTAL | | | | | | | | 78 | | 17 |

* This unit contains tone and announcement, coin control, conference, and remote recording of announcement circuits.

† CFO - In addition to the standard units, CFO can have the following units mounted:

1. One universal trunk unit and one one CDPR/RR unit, or
2. A total of three CDPR/RR units.

‡ CF1 - In addition to the standard units, CF1 can have one universal trunk unit mounted.

§ The CDPR/RR unit cannot be mounted on the miscellaneous frame. The total CDPR/RR units provided on the network frame and control frame are greater than or equal to the CDPR/RR units required.

Fig. 8—Worksheets for Example Traffic Order (Sheet 29 of 33)

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NO. 3 ESS
TRAFFIC ORDER WORKSHEET

D. MAIN STORE MODULES

1.0 Translation Words (Unduplicated)

| ITEM | QUANTITY | FACTOR | WORDS |
|--|----------------------------|----------------|-----------------------------|
| 1.1 Fixed (SO-2-Iss. 4A Generic) (3E3 Generic) | <u>1700</u> <u>2000</u> | X 1 X 1 | <u>1700</u> <u>2000</u> |
| 1.2 Directory Numbers | | | |
| a. Office codes (max. 8) | <u>1</u> | X 10 | = <u>10</u> |
| b. Blocks of 1000 directory numbers | <u>2</u> | X 10 | = <u>20</u> |
| c. Hundreds groups (SO-2, Iss. 4A Generic) (3E3 Generic) | <u>20</u> | X 200 X 300 | = <u>4000</u> |
| 1.3 Network Frames | <u>5</u> | X 928 | = <u>4640</u> |
| 1.4 Lines | | | |
| a. 2-Party | <u>182</u> | X 4 | = <u>728</u> |
| b. 4-Party | <u>25</u> | X 4 | = <u>100</u> |
| c. 8-Party | <u>-</u> | X 10 | = <u>-</u> |
| d. Coin | <u>29</u> | X 1 | = <u>29</u> |
| e. Number of PBX and MLH groups | <u>12</u> | X 9 | = <u>108</u> |
| f. Number of PBX and MLH group members | <u>75</u> | X 1 | = <u>75</u> |
| g. WATS <u>3E3 Generic Only</u> | <u>50</u> | X 2 | = <u>100</u> |
| h. Hot line | <u>-</u> | X 4 | = <u>-</u> |
| i. Auto connect | <u>-</u> | X 17 | = <u>-</u> |
| j. Line class codes | <u>-</u> | X 3 | = <u>-</u> |
| 1.5 Memory Expansion Words | | | |
| a. Call forwarding (SO-2, Iss. 4A Generic) (3E3 Generic) | <u>640</u> <u>-</u> | X 0 X 2 | = <u>640</u> = <u>-</u> |
| b. 8-Code speed calling lists (SO-2, Iss. 4A Generic) (3E3 Generic) | <u>170</u> <u>-</u> | X 25 X 18 | = <u>4250</u> = <u>-</u> |
| c. 30-Code speed calling lists (SO-2, Iss. 4A Generic) (3E3 Generic) | <u>50</u> <u>-</u> | X 91 X 67 | = <u>4550</u> = <u>-</u> |

Fig. 8—Worksheets for Example Traffic Order (Sheet 30 of 33)

NO. 3 ESS
TRAFFIC ORDER WORKSHEET

D. MAIN STORE MODULES

1.5 Memory Expansion Words (Contd)

| EXPANSIONS | QUANTITY | FACTOR | WORDS |
|---|------------|--------------|--------------|
| d. Total lines equipped with one or more of the items listed in (e) below | <u>934</u> | X 1 | = <u>934</u> |
| e. Additional expansions: Lines equipped with: | | | |
| | QUANTITY | FACTOR | WORDS |
| + Call forwarding | <u>640</u> | X 1 | <u>640</u> |
| + 8 CODE SPEED CALLING | <u>170</u> | X 1 | <u>170</u> |
| + 30 CODE SPEED CALLING | <u>50</u> | X 1 | <u>50</u> |
| + COIN TRIPLET | <u>29</u> | X 1 | <u>29</u> |
| + HOT Line | <u>-</u> | X 1 | <u>-</u> |
| Software Message Register | <u>35</u> | X 1 | <u>35</u> |
| Hardware Message Register | <u>-</u> | X 1 | <u>-</u> |
| SLEEVE LEAD | <u>2</u> | X 1 | <u>2</u> |
| NOISE Immunity Line ckt. | <u>1</u> | X 1 | <u>1</u> |
| Inhibit ROH/prohibit ALIT | <u>-</u> | X 1 | <u>-</u> |
| Additional Expansions - Total (+ not allowed or 2-, 4-, 8-Party Lines) | | | <u>934</u> |
| f. Total lines with one or more of the following: - series completion directory number - key sean point | | <u>5</u> X 1 | <u>5</u> |
| g. Margin for Miscellaneous and Unforeseen Total words item d ÷ 0.95 = | | | <u>983</u> |
| Total Expansion Words | | | <u>2956</u> |

Note: Sum of Words in item d must not exceed 4096 words.

Fig. 8—Worksheets for Example Traffic Order (Sheet 31 of 33)

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NO. 3 ESS
TRAFFIC ORDER WORKSHEET

D. MAIN STORE MODULES

1.0 Translation Words (Contd)

| | QUANTITY | | FACTOR | | WORDS |
|---|------------|---|--------|---|---------------|
| 1.6 Trunks and Service Circuits | | | | | |
| a. Trunk groups (universal and miscellaneous) | <u>21</u> | X | 9 | = | <u>189</u> |
| b. Total trunks (universal and miscellaneous) | <u>132</u> | X | 2 | = | <u>264</u> |
| c. Trunk groups - direct interface | <u>4</u> | X | 9 | = | <u>36</u> |
| d. Direct interface channel units | <u>48</u> | X | 6 | = | <u>288</u> |
| e. Service circuit groups (See Note) | <u>7</u> | X | 5 | = | <u>35</u> |
| f. Total service circuits (See Note) | <u>70</u> | X | 1.5 | = | <u>105</u> |
| g. Conference, tone and announcements groups | <u>3</u> | X | 5 | = | <u>15</u> |
| h. Tone and announcement circuits | <u>3.5</u> | X | 1 | = | <u>3.5</u> |
| i. Three-port conference circuit (max 128) | <u>8</u> | X | 1 | = | <u>8</u> |
| <i>Note: Do not include Conference, Tone, and Announcement Circuits.</i> | | | | | |
| 1.7 3- and 6-Digit Translators (Max. 4) | | | | | |
| a. Number of complete index translators | <u>1</u> | X | 400 | = | <u>400</u> |
| b. Search type translator (max. 128 codes/trans.) Σ all codes + default values | <u>3</u> | X | 2 | = | <u>6</u> |
| c. Country code tables - 3E3 generic only | <u>27</u> | X | 10 | = | <u>270</u> |
| 1.8 Miscellaneous | | | | | |
| a. Total screening tables <u>10</u> x total screening classes <u>17</u> | | | | | <u>170</u> |
| b. No. Route indexes <u>16</u> x 2.5 = <u>40</u> - 4 = | | | | | <u>36</u> |
| 1.9 Translation Words | | | | | |
| a. Total translation words for service (Total D1.1 through D1.8) | | | | | <u>25,663</u> |
| b. Administration margin | | | | | <u>0.95</u> |
| c. Total translation word requirement (unduplicated) | | | | | <u>27,013</u> |

Fig. 8—Worksheets for Example Traffic Order (Sheet 32 of 33)

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TRAFFIC ORDER WORKSHEET

D. MAIN STORE MODULES

2.0 Main Store Module Requirements (See Table Below)

- a. Main store modules provided
- b. Generic program provided (SO-2, Iss. 4A or 3E3)
- c. Issue of generic program provided.

4
SO-2
4A

| ISSUE OF GENERIC PROGRAM | UNDUPLICATED TRANSLATION WORDS | MAIN STORE MODULES/ SYSTEM CONTROL |
|-----------------------------|-----------------------------------|---------------------------------------|
| SO-2 Issue 4A (32K)* | 8,192 | 3 |
| | 8,193 to 40,960 | 4 |
| | 40,961 to 53,248 | 5 |
| SO-2 Issue 4A (128K)* | 8,192 | 1 |
| | 8,193 to 40,960 | 1 |
| | 40,961 to 53,248 | 2 |
| 3E3 Issue 1 (32K)* | 0 to 24,576 | 5 |
| | 24,577 to 57,344 | 6 |
| | 57,345 to 90,112 | 7 |
| | 90,113 to 122,880 | 8 |
| 3E3 Issue 1 (128K)* | 0 to 122,880 | 2 |

*Size of memory modules.

Fig. 8—Worksheets for Example Traffic Order (Sheet 33 of 33)

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NO. 3 ESS
TRAFFIC ORDER SUMMARY SHEET

| | UNIT SD NO. | PRES | ADDL | PROP |
|--|----------------|-----------|-----------|-----------|
| 1. SERVICE CIRCUITS (A1.0 – A8.3) | | | | |
| Customer Digit Receiver – DP | 3H410 | <u>12</u> | <u>-2</u> | <u>10</u> |
| Customer Digit Receiver – DP/TT | 3H410 | <u>7</u> | <u>2</u> | <u>9</u> |
| TOUCH-TONE Receiver | 3H401 | <u>7</u> | <u>2</u> | <u>9</u> |
| Interoffice Transmitter – MF | 3H404 | <u>7</u> | <u>-</u> | <u>7</u> |
| Interoffice Transmitter – DP | 3H403 | <u>9</u> | <u>-</u> | <u>9</u> |
| Interoffice Receiver – MF | 3H402 | <u>6</u> | <u>-</u> | <u>6</u> |
| Regular Ringing Circuit | 3H410 | <u>14</u> | <u>-</u> | <u>14</u> |
| Superimposed Ringing Circuit | 3H406 | <u>7</u> | <u>-</u> | <u>7</u> |
| Busy Tone Circuit | 3H411 | | | <u>6</u> |
| Receiver-Off-Hook Tone Circuit | 3H411 | | | <u>4</u> |
| High Tone Circuit | 3H411 | | | <u>4</u> |
| Low Tone Circuit | 3H411 | | | <u>4</u> |
| Misc. Tone Circuit | 3H411 | | | <u>4</u> |
| TOTAL TONE CIRCUITS | 3H411 | | | <u>22</u> |
| Vacant Code and No Such No. Annc | 3H411 | | | <u>4</u> |
| DTF Annc | 3H411 | | | <u>-</u> |
| 1+ Omitted Annc | 3H411 | | | <u>-</u> |
| 1+ In Error Annc | 3H411 | | | <u>2</u> |
| Custom Calling Error Annc | 3H411 | | | <u>2</u> |
| Local Coin Overtime Annc | 3H411 | | | <u>-</u> |
| Permanent Signal Annc | 3H411 | | | <u>4</u> |
| Partial Dial Annc | 3H411 | | | <u>6</u> |
| Combined Permanent Signal/ Partial Dial Annc | 3H411 | | | <u>-</u> |
| TOTAL ANNOUNCEMENT CIRCUITS | 3H411 | | | <u>18</u> |
| TOTAL TONE AND ANNOUNCEMENT CIRCUITS | 3H411 | | | <u>40</u> |

Fig. 9—Summary Sheets for Example Traffic Order (Sheet 1 of 6)

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SECTION 233-100-220NO. 3 ESS
TRAFFIC ORDER SUMMARY SHEET

| | UNIT SD NO. | PRES | ADDL | PROP |
|--|----------------|-----------|------------|-----------|
| 1. SERVICE CIRCUITS (Contd) | | | | |
| Coin Control Circuits | 3H411 | <u>4</u> | <u>-</u> | <u>4</u> |
| Conference Circuit | 3H230 | <u>5</u> | <u>3</u> | <u>8</u> |
| Remote Recording of Ann Circuit | 3H411 | <u>-</u> | <u>-</u> | <u>-</u> |
| 2. UNIVERSAL TRUNKS (B3.0) | | | | |
| 2-Way E&M Lead | 3H220 | <u>-</u> | <u>-</u> | <u>-</u> |
| Incoming Reverse Battery (Delay Dial) | 3H220 | <u>-</u> | <u>-</u> | <u>-</u> |
| Incoming Reverse Battery (Wink or Immediate-Bylink) | 3H220 | <u>58</u> | <u>-13</u> | <u>45</u> |
| 2-Way E&M Lead with Type 2 Interface | 3H220 | <u>25</u> | <u>-</u> | <u>25</u> |
| 2-Way E&M Lead with Type 3 Interface | 3H220 | <u>-</u> | <u>-</u> | <u>-</u> |
| Outgoing Reverse Battery High-Low | 3H220 | <u>67</u> | <u>-5</u> | <u>62</u> |
| Direct Interface D4 Channel Unit | 3C328 | <u>-</u> | <u>48</u> | <u>48</u> |
| 3. LINE AND MISCELLANEOUS CIRCUITS (B4.0) | | | | |
| Noise Immunity Line Circuit Loop Start | 3H208 | <u>5</u> | <u>3</u> | <u>8</u> |
| Noise Immunity Line Circuit Ground Start | 3H208 | <u>-</u> | <u>-</u> | <u>-</u> |
| DTF Coin Line Circuit | 3H205 | <u>10</u> | <u>5</u> | <u>15</u> |
| Distribute Point Applique | 3H911 | <u>20</u> | <u>-</u> | <u>20</u> |
| Remote Master Scanner Applique | 1A210 | <u>1</u> | <u>-</u> | <u>1</u> |
| Continuity and Polarity Test | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| Dial Pulse Receiver Test | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| Transmission Test Termination | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| MW and Transmission Environment Test | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| Loop Environment Test | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |

Fig. 9—Summary Sheets for Example Traffic Order (Sheet 2 of 6)

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NO. 3 ESS
TRAFFIC ORDER SUMMARY SHEET

| | UNIT SD NO. | PRES | ADDL | PROP |
|--|----------------|-------------|------------|-------------|
| 3. LINE AND MISCELLANEOUS CIRCUITS (Contd) | | | | |
| Trunk and Line Test Panel | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| TPD Amplifier and Timer | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| Station Ringer Test | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| Line Insulation Test | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| TOUCH-TONE Receiver Test | 3H520 | <u>1</u> | <u>-</u> | <u>1</u> |
| Incoming LTD No. 14 | 3H520 | <u>2</u> | <u>-</u> | <u>2</u> |
| Incoming LTD No. 16 | 3H520 | <u>-</u> | <u>-</u> | <u>-</u> |
| TTY Line Circuit (Auto-connect) | 3H520 | <u>2</u> | <u>-</u> | <u>2</u> |
| 4. SUMMARY OF TRUNK REQUIREMENTS | | | | |
| Total Network Terminations Required (Lines and Trunks) | | <u>1486</u> | <u>354</u> | <u>1840</u> |
| Total Variable Scan Points to be Assigned | | | | |
| Directed Field | | | | <u>79</u> |
| Directed/Trunk Field | | | | <u>292</u> |
| Receiver Supervisory Field | | | | <u>28</u> |
| Service Supervisory Field | | | | <u>24</u> |
| Ringing Circuit Supervisory Field | | | | <u>27</u> |
| 5. FRAME REQUIREMENTS | | | | |
| Network Frames | | <u>4</u> | <u>1</u> | <u>5</u> |
| Control Frames | | <u>1</u> | <u>-</u> | <u>1</u> |
| Miscellaneous Frames | | <u>3</u> | <u>-</u> | <u>3</u> |
| 6. MAIN STORE MODULE REQUIREMENTS | | | | |
| Main Store Modules (Unduplicated) | | <u>4</u> | <u>-</u> | <u>4</u> |
| System Program | | <u>50-2</u> | | <u>50-2</u> |

Fig. 9—Summary Sheets for Example Traffic Order (Sheet 3 of 6)

SECTION 233-060-890, Issue 1
Page 5

Order No. 5017
Section _____ Page _____
Office RURAL TOWN
Date _____
Reference: SECTION 233-060-100
SECTION 233-060-130

NO. 3 ESS
TRAFFIC ORDER SUMMARY SHEET

| | PRES | ADDL | PROP |
|------------------------------------|-------------|------------|-------------|
| 7. MISCELLANEOUS | | | |
| Teletypewriter Channels | <u>2</u> | <u>-</u> | <u>2</u> |
| 7-A Announcement System | <u>5</u> | <u>-</u> | <u>5</u> |
| 13-A Announcement System | <u>-</u> | <u>-</u> | <u>-</u> |
| Message Registers (Hardware) | <u>10</u> | <u>3</u> | <u>13</u> |
| 8. TRAFFIC ORDER CAPACITIES | | | |
| Main Station | <u>1353</u> | <u>263</u> | <u>1616</u> |
| Line | <u>1208</u> | <u>303</u> | <u>1511</u> |
| TOUCH-TONE | <u>284</u> | <u>431</u> | <u>715</u> |
| Call Forwarding | <u>120</u> | <u>30</u> | <u>150</u> |
| 3-Way Calling | <u>40</u> | <u>20</u> | <u>60</u> |
| Call Waiting | <u>70</u> | <u>70</u> | <u>140</u> |
| 8-Code Speed Calling | <u>65</u> | <u>85</u> | <u>150</u> |
| 30-Code Speed Calling | <u>20</u> | <u>25</u> | <u>45</u> |
| Limiting Item | <u>NTW</u> | <u>NTW</u> | <u>NTW</u> |

Fig. 9—Summary Sheets for Example Traffic Order (Sheet 4 of 6)

SECTION 233-060-890, Issue 1
Page 6

Order No. 5017
Section _____ Page _____
Office AMSTERDAM
Date _____
Reference: SECTION 233-060-130
SECTION 233-060-100

NO. 3 ESS
TRAFFIC ORDER SUMMARY SHEET

9. MAIN STATION CAPACITY OF SERVICE CIRCUITS

| A | B | C | D | E |
|---------------------------------|-----------------------------|---------------|--------------|-----------------------|
| | | | | C:D |
| CIRCUIT | CKTS. PROVIDED FOR SERVICE* | CCS CAPACITY* | ABS CCS/MS † | MAIN STATION CAPACITY |
| Customer Digit Receiver — DP | 9 | 126 | .12 | 1050 |
| Customer Digit Receiver — DP/TT | 8 | 143 | .10 | 1430 |
| MF Transmitter | 6 | 40 | .02 | 2000 |
| DP Transmitter | 6 | 40 | .02 | 2000 |
| MF Receiver | 5 | 26.6 | .012 | 2216 |
| Regular Ringing | 13 | 166 | .10 ‡ | 1660 |
| Superimposed Ringing | 4 | 15 | .13 ‡ | 115 |
| Coin Control | 4 | 15 | NA ‡ | — |

* Do not include circuits provided for service protection margin.

† For initial offices, the CCS/MS can be derived by dividing the calculated traffic load (ABS CCS) by the EOP main stations.

‡ These circuits are engineered on a HD basis and the ABS CCS/MS must be adjusted by the HD to ABS factor before computing main station capacity.

Fig. 9—Summary Sheets for Example Traffic Order (Sheet 5 of 6)

SECTION 233-060-890, Issue 1
Page 6

Order No. 5017
Section _____ Page _____
Office Royalton
Date _____
Reference: SECTION 233-060-130
SECTION 233-060-100

NO. 3 ESS
TRAFFIC ORDER SUMMARY SHEET

10. SPARE UNIT CAPACITY (CIRCUITS)

| A | B | C | D | E | F |
|---|---------------------|-----------------|-------------------|-----------------------|-----------------------|
| | | | | CXD | E - B |
| CIRCUIT | TOTAL CKTS PROVIDED | UNITS PROVIDED* | CIRCUITS/UNIT | UNIT CAP (CIRCUITS) † | SPARE UNIT CAP (CKTS) |
| Customer Digit Receiver (DP + DP/TT) | 19 | 5 | 4 | 19 | - |
| Regular Ringing | 14 | 5 | 3 | 14 | - |
| MF Transmitter | 7 | 2 | 4 | 7 | - |
| DP Transmitter | 9 | 1 | 12 | 9 | - |
| Superimposed Ringing | 7 | 2 | 6 | 7 | - |
| Combination Tone, Announcement, Remote Recording, Coin Control and Conference | - ‡ | | 12 Ckt Packs ‡ | ‡ | ‡ |
| Universal Trunks | 132 | 6 | 24 | 132 | - |

* See Network Design Worksheets B2.0 and B3.0 for units provided.

† Unit capacity should not include slots for which scan points have not been wired.

‡ See Network Design Worksheet B2.0 for capacities and explanation of this combination unit. Total circuits provided and unit capacity (Column F) should be given in circuit packs rather than circuits.

Fig. 9—Summary Sheets for Example Traffic Order (Sheet 6 of 6)

Factory Order
Table of Contents

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| TTY Controllers | B2 |
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| Unequipped Framework | F1 |

TELEPHONE COMPANY ORDER NO. 99666 PAGE 1
TRAFFIC ORDER NO. 5017
DATE _____

Specification for (New) (Additional)
2 Wire No. 3 Electronic Switching System Equipment

Factory Order

Telephone Company

| | | |
|------------------|------------------|------------|
| <u>WEST</u> | <u>RURALTOWN</u> | <u>478</u> |
| Area or Division | Building | Exchange |

RURALTOWN _____
Office Address

CITY STATE ZIP CODE

PROGRAM OUTPUT MAILING ADDRESS

NAME _____
STREET _____
CITY _____
STATE _____ ZIP CODE _____

TELEPHONE COMPANY ORDER NO. 99666 PAGE 2

General - Section A

| REF NBR | | PRESENT | PROPOSED |
|------------|--|---------|-----------|
| 1 | Is this an initial order for a No. 3 ESS office? | | <u>NO</u> |
| 2 | On additions, specify the assigned control group number | | <u>01</u> |
| 3 | Is the initial No. 3 ESS being installed in an existing building? | | _____ |
| 4 | Will the existing Distq Frame be used? | | _____ |
| 5 | Where a new CDF is being ordered, is its location in accordance with standard approved distance locations? | | _____ |
| 6 | Is this a direct switching office replacement? | | _____ |
| 7 | Specify the distance between the new & old office | | _____ |
| 8 | Is this a new wire center? | | _____ |
| 9 | Shall the system ship to its site using the unitized technique? | | _____ |

TELEPHONE COMPANY ORDER NO. 99666 PAGE 3General - Section A Cont'd

| <u>REP</u> <u>NBR</u> | | <u>PRESENT</u> | <u>PROPOSED</u> |
|--------------------------|---|----------------|-----------------|
| 1 | Generic Program Identification | <u>SO-2 4A</u> | <u>SO-2 4A</u> |
| 2 | Shall additional magnetized tape cartridges be furnished | | <u>NO</u> |
| 3 | If so, specify total quantity to be ordered | _____ | _____ |
| 4 | Quantity of working lines at the end of the engineering interval | <u>1222</u> | <u>1520</u> |
| 5 | Quantity of lines that office will serve ultimately | | <u>4500</u> |
| 6 | Quantity of Networks | <u>4</u> | <u>5</u> |
| 7 | Quan to be arranged for Direct Interface with T-carrier | <u>-</u> | <u>2</u> |
| 8 | The ANC codes in this office are | _____ | <u>478</u> |

TELEPHONE COMPANY ORDER NO. 99666 PAGE 4General - Section A Cont'd

| <u>REF</u> <u>NBR</u> | | <u>PRESENT</u> | <u>PROPOSED</u> |
|--------------------------|---|----------------|-----------------|
| 1 | Is office to be arranged for dial tone first? | _____ | <u>NO</u> |
| 2 | Coin return potential is _____ | | |
| 3 | Are customers lines equipped with tube type subsets? | _____ | _____ |
| 4 | Specify a 1 to 14 digit identification number for TTY printouts _____ | | |
| 5 | Shall TTY traffic reporting arrangement to be non-dedicated? | _____ | <u>YES</u> |
| 6 | Is office to be arranged for AMARC? | _____ | <u>NO</u> |
| 7 | Is office to be arranged for Service Observing? | _____ | <u>YES</u> |

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ISSUE 2 E-8122 FACTORY ORDER - PAGE A3

Fig. 10—Questionnaire—E8122 (Sheet 5 of 19)

TELEPHONE COMPANY ORDER NO. 99666 PAGE 5Summary of Equipment - Section B

| <u>REF</u> <u>NR</u> | | <u>PRES</u> | <u>ADDL</u> | <u>TOTAL</u> |
|-------------------------|---|-------------|-------------|--------------|
| 1 | Processor frame E/W one I/O Channel | | | <u>1</u> |
| | <u>Memory Modules</u> | | | |
| 2 | 128K Modules/Control Unit | | | |
| 3 | 32K Modules/Control Unit (A&M Only) | <u>4</u> | <u>-</u> | <u>4</u> |
| | <u>Maintenance Center Equipment</u> | | | |
| 4 | Maintenance Frame | | | <u>1</u> |
| 5 | Shall E2A Telemetry Unit be furnished? | | | <u>---</u> |
| | Shall wiring option be provided to prevent disabling of the remote access function? | | | <u>---</u> |
| 6 | Shall Keyboard blind feature be provided for the local maintenance TTY? | | | <u>---</u> |
| 7 | | | | <u>---</u> |
| 8 | MTC frame shall be arranged for mounting a _____ type teletypewriter | | | <u>---</u> |
| 9 | Shall TTY be equipped with a paper winder? | | | <u>---</u> |

TELEPHONE COMPANY ORDER NO. 99666 PAGE 6Summary of Equipment - Section B Cont'd

| <u>REF</u> | <u>Maintenance Center Equipment - Cont'd</u> | | | <u>TOTAL</u> |
|------------|---|------------------|---------------------|---------------|
| <u>NBR</u> | <u>Controller</u> | <u>TTY Ports</u> | <u>TTY Function</u> | |
| 1 | TTY Controller Unit 0 (Mounted on MTC Frame) | | | <u>1</u> |
| 2 | 0 | 0 | Local MTC | <u>1</u> |
| 3 | 0 | 1 | Remote MTC | <u> </u> |
| 4 | 0 | 2 | Remote MTC (RO) | <u> </u> |
| 5 | 0 | 3 | Remote MTC (RO) | <u> </u> |
| 6 | 2 | 4 | Local | <u> </u> |
| 7 | 2 | 5 | Remote | <u> </u> |
| 8 | 2 | 6 | Remote (RO) | <u> </u> |
| 9 | 2 | 7 | Remote (RO) | <u> </u> |
| 10 | TTY Controller Unit 1 (Mounted on MTC Frame) | | | <u>1</u> |
| | <u>Controller</u> | <u>TTY Ports</u> | <u>TTY Function</u> | |
| 11 | 1 | 0 | Local MTC (Back-Up) | <u> </u> |
| 12 | 1 | 1 | Remote | <u> </u> |
| 13 | 1 | 2 | Remote (RO) | <u> </u> |
| 14 | 1 | 3 | Remote (RO) | <u> </u> |
| 15 | 3 | 4 | Local | <u> </u> |
| 16 | 3 | 5 | Remote | <u> </u> |
| 17 | 3 | 6 | Remote (RO) | <u> </u> |
| 18 | 3 | 7 | Remote (RO) | <u> </u> |
| 19 | TTY Controller Unit 2 (Mounted on Miscellaneous FR) | | | <u> </u> |
| | <u>Controller</u> | <u>TTY Ports</u> | <u>TTY Function</u> | |
| 20 | 4 | 0 | Local | <u> </u> |
| 21 | 4 | 1 | Remote | <u> </u> |
| 22 | 4 | 2 | Remote (RO) | <u> </u> |
| 23 | 4 | 3 | Remote (RO) | <u> </u> |
| 24 | 6 | 4 | Local | <u> </u> |
| 25 | 6 | 5 | Remote | <u> </u> |
| 26 | 6 | 6 | Remote (RO) | <u> </u> |
| 27 | 6 | 7 | Remote (RO) | <u> </u> |

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ISSUE 2 E-8122 FACTORY ORDER - PAGE B2

Fig. 10—Questionnaire—E8122 (Sheet 7 of 19)

TELEPHONE COMPANY ORDER NO. 99666 PAGE 7Summary of Equipment - Section B Cont'd

| REP NBR | <u>Maintenance Center Equipment Cont'd</u> | <u>PRES</u> | <u>ADDL</u> | <u>TOTAL</u> |
|------------|---|--------------|-------------|--------------|
| 1 | Test Frame | | | <u>1</u> |
| 2 | Shall Transmission Measuring set be furnished? | | | <u> </u> |
| | | <u>TRUNK</u> | | |
| | | <u>ORDER</u> | | |
| | | <u>CODE</u> | | |
| 3 | Incoming LTD Trunk | <u>31025</u> | <u> </u> | <u> </u> |
| 4 | Continuity & Polarity Test | <u>71016</u> | | <u>1</u> |
| 5 | Dial Pulse Receiver Test | <u>71017</u> | | <u>1</u> |
| 6 | Transmission Test Termination | <u>71018</u> | | <u>1</u> |
| 7 | MW & XMSM Environment Test | <u>71019</u> | | <u>1</u> |
| 8 | Loop Environment Test | <u>71020</u> | | <u>1</u> |
| 9 | Tone Presence Detector Test | <u>71021</u> | | <u>1</u> |
| 10 | Station Ringer Test | <u>71022</u> | | <u>1</u> |
| 11 | Line Insulation Test | <u>71023</u> | | <u>1</u> |
| 12 | Touch Tone Receiver Test | <u>71024</u> | | <u>1</u> |
| 13 | TTY Line Circuit | <u>81026</u> | | <u>4</u> |

TELEPHONE COMPANY ORDER NO. 99666 PAGE 8Summary of Equipment - Section B Cont'd

| <u>REF</u> <u>NBR</u> | | <u>PRES</u> | <u>ADDL</u> | <u>TOTAL</u> |
|--------------------------|---|-------------|-------------|--------------|
| 1 | Network Frame Where non-sequential network arrangement is requested, specify network frames to be furnished | <u>4</u> | <u>1</u> | <u>5</u> |
| 2 | <u>N-</u> | | | |
| 3 | Where direct interface with T-carrier is required, specify the quantity of Network frames to be arranged for this feature | <u>0</u> | <u>2</u> | <u>2</u> |
| 4 | Control Frame | <u>1</u> | <u>-</u> | <u>1</u> |
| 5 | Miscellaneous Frame | <u>3</u> | <u>-</u> | <u>3</u> |
| 6 | Miscellaneous Power Frame | <u>---</u> | <u>---</u> | <u>---</u> |

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ISSUE 2 E-8122 FACTORY ORDER - PAGE B4

Fig. 10—Questionnaire—E8122 (Sheet 9 of 19)

TELEPHONE COMPANY ORDER NO. 99666 PAGE 9

Summary of Equipment - Section B Cont'd

REF
NBR

| | | | | |
|---|------------------------------------|-------|-------|-------|
| 1 | Combined Distributing Frame Module | ----- | ----- | ----- |
| | shall CDF module be 24 or 30 | | | |
| 2 | inches deep? _____ | | | |

POWER PLANT

| | | | | |
|---|---|-------|-------|----------|
| 3 | Quantity of single phase 100 amp rectifiers | ----- | ----- | ----- |
| 4 | Power Frame | | | <u>1</u> |
| 5 | Supl Power Frame | ----- | ----- | ----- |

TELEPHONE COMPANY ORDER NO. 99666 PAGE 10Miscellaneous Equipment - Section C

| REF NBR | UNIVERSAL TRUNK CIRCUITS FOR MOUNTING ON NETWORK, CONTROL AND/OR MISCELLANECUS FRAMES | TRUNK ORDER CODE | QUAN OF CIRCUITS | | |
|---|---|------------------------|------------------|------|-------|
| | | | PRES | ADDL | TOTAL |
| <u>Circuits per SD-3H220-01</u> | | | | | |
| 1 | Outgoing, RB HILO Supv | 00206 | 67 | -5 | 62 |
| 2 | Inc, RB Supv, MF Sig, Delay Dial | 10202 | | | |
| 3 | Incoming, EB Supv, DP or MF Sig, Immed or Wink Start | 10203 | 58 | -13 | 45 |
| 4 | Two Way, E&M Lead Supv, Immed or wink start - type II signaling | 50204 | 25 | - | 25 |
| 5 | Two Way, E&M Lead Supv, Immed or wink start - type III signaling | 50205 | | | |
| <u>SERVICE CIRCUITS FOR MOUNTING ON NETWORK AND/OR CONTROL FRAMES</u> | | | | | |
| <u>Circuits per SD-3H410-01</u> | | | | | |
| 6 | Regular Ringing | 60807 | 14 | - | 14 |
| 7 | Customer DP Receiver | 60808/09 | 19 | - | 19 |
| <u>SERVICE CIRCUITS FOR MOUNTING ON CONTROL AND/OR MISCELLANEOUS FRAMES</u> | | | | | |
| 8 | MF Transmitter SD-3H404-01 | 60600 | 7 | - | 7 |
| 9 | Tone & Recorded Ann SD-3H411-01 | 60910 | 40 | - | 40 |
| 10 | Coin Control SD-3H411-01 | 60911 | 4 | - | 4 |
| 11 | Remote Recorded Ann SD-3H411-01 | 60912 | | | |
| 12 | Conference SD-3H411-01 | 60913 | 5 | 3 | 8 |

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ISSUE 2 E-8122 FACTORY ORDER - PAGE C1

Fig. 10—Questionnaire—E8122 (Sheet 11 of 19)

TELEPHONE COMPANY ORDER NO. 99666 PAGE 11Miscellaneous Equipment - Section C Cont'd

| REF NBR | <u>UNIVERSAL TRUNK CIRCUITS FOR MOUNTING ON NETWORK, CONTROL AND/OR MISCELLANEOUS FRAMES</u> | | <u>TRUNK ORDER CODE</u> | <u>QUAN OF CIRCUITS</u> | | |
|--|--|-------------|---------------------------------|-------------------------|-------------|--------------|
| | | | | <u>PRE</u> | <u>ADDL</u> | <u>TOTAL</u> |
| <u>SERVICE CIRCUITS FOR MOUNTING ON MISCELLANEOUS FRAMES</u> | | | | | | |
| 1 | TT Calling Detector | SD-3H401-01 | <u>60300</u> | <u>7</u> | <u>2</u> | <u>9</u> |
| 2 | MF Receiver | SD-3H402-01 | <u>60400</u> | <u>6</u> | <u>-</u> | <u>6</u> |
| 3 | DP Transmitter | SD-3H403-01 | <u>60500</u> | <u>9</u> | <u>-</u> | <u>9</u> |
| 4 | Superimposed Ringing | SD-3H406-01 | <u>60700</u> | <u>7</u> | <u>-</u> | <u>7</u> |
| 5 | Distribute Point Applique | SD-3H911-01 | <u>81100</u> | <u>20</u> | <u>-</u> | <u>20</u> |
| 6 | Remote MS Applique | SD-1A210-01 | <u>81200</u> | <u>1</u> | <u>-</u> | <u>1</u> |
| <u>LINE CIRCUITS FOR MOUNTING ON MISCELLANEOUS FRAMES</u> | | | | | | |
| 7 | Dial Tone First Line | SD-3H205-01 | <u>80000</u> | <u>10</u> | <u>5</u> | <u>15</u> |
| 8 | Noise Immunity Line-Grd Start | SD-3H208-01 | <u>80115</u> | <u>5</u> | <u>3</u> | <u>8</u> |

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ISSUE 2 E-8122 FACTORY ORDER - PAGE C2

Fig. 10—Questionnaire—E8122 (Sheet 12 of 19)

TELEPHONE COMPANY ORDER NO. 99446 PAGE 12Miscellaneous Equipment - Section C Cont'd

| <u>REF</u> | <u>MISCELLANEOUS UNITS FOR MOUNTING</u> | | <u>PRES</u> | <u>ADDL</u> | <u>TOTAL</u> |
|------------|--|--|-------------|-------------|--------------|
| <u>REF</u> | <u>MISCELLANEOUS FRAMES</u> | | | | |
| 1 | Data Interface Unit SD-3H914-01 E/W two 202T L1A/2 data sets | | --- | --- | --- |
| 2 | Alarm Reset Unit SD-1C944-01 | | --- | --- | --- |
| 3 | +48V & ± 130V Converter Unit SD-3H908-01 | | --- | --- | --- |
| 4 | Announcement Set - 13A SD-97753-01 Quantity of variable length channels | | --- | --- | --- |
| 5 | 3-12 second message | | --- | --- | --- |
| 6 | 3-24 second message | | --- | --- | --- |
| 7 | Quantity of fixed message length channels | | --- | --- | --- |
| | <u>Announcement Set - 7A KS-16765 L2,7,8</u> <u>UNIT DESIG</u> | | | | |
| 8 | Local Coin Overtime RA1 | | --- | --- | --- |
| 9 | Dial Tone First RA2 | | --- | --- | --- |
| 10 | Permanent Signal RA3 | | 1 | 1 | 1 |
| 11 | Partial Dial RA4 | | 1 | 1 | 1 |
| 12 | 1+ Omitted BA5 | | --- | --- | --- |
| 13 | 1+ in Error RA6 | | 1 | 1 | 1 |
| 14 | Vacant Code BA7 | | 1 | 1 | 1 |
| 15 | Custom Calling Error RA8 | | 1 | 1 | 1 |
| 16 | *Overload with Remote Recording REM REC | | --- | --- | --- |
| 17 | Overload W/O Remote Recording OVLD | | --- | --- | --- |

*=-This feature will be tentatively available by 3Q/79

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ISSUE 2 E-8122 FACTORY ORDER - PAGE C3

Fig. 10—Questionnaire—E8122 (Sheet 13 of 19)

TELEPHONE COMPANY ORDER NO. 99666 PAGE 13Miscellaneous Equipment - Section C Cont'd

| <u>REF</u> | | | <u>PEES</u> | <u>ADDL</u> | <u>TOTAL</u> |
|------------|---|-------------|-------------|-------------|--------------|
| | <u>Distributing Frame Mounted Units</u> | | | | |
| | <u>For CDF Module 0 Only</u> | | | | |
| 1 | Bridge Lifters | ED-3H156-30 | _____ | _____ | _____ |
| 2 | Protector Test Set | KS-20100,L2 | | | <u>1</u> |
| 3 | Test Talk Unit | KS-21316,L4 | | | <u>2</u> |
| | <u>MISCELLANEOUS</u> | | | | |
| 4 | Ringer S1B-63 | | | | <u>1</u> |

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ISSUE 2 E-8122 FACTORY ORDER - PAGE C4

Fig. 10—Questionnaire—E8122 (Sheet 14 of 19)

TELEPHONE COMPANY ORDER NO. 99666 PAGE 13

Equipment Assignments - Section D

| REF | <u>Remote Master Scanner Applique Assignments</u> | REES | ADDL | TOTAL |
|-----|---|-------|-------|-------|
| NBR | <u>SD-1A210-01</u> | | | |
| | <u>Building Alarms</u> | | | |
| 1 | Fire, Smoke & Fire Alarm Failure | _____ | _____ | _____ |
| 2 | High Water | _____ | _____ | _____ |
| 3 | High or Low Temperature & Air Conditioning | _____ | _____ | _____ |
| 4 | High or Low Humidity | _____ | _____ | _____ |
| 5 | Intrusion, Door Request, Door Open | _____ | _____ | _____ |
| 6 | Miscellaneous - Minor | _____ | _____ | _____ |
| 7 | Miscellaneous - Major | _____ | _____ | _____ |
| | <u>Miscellaneous Alarms</u> | | | |
| 8 | Remote Testing (LTD Night Transfer) | _____ | _____ | _____ |
| 9 | Power Dist Unit For Toll Circuits | _____ | _____ | _____ |
| 10 | Toll (Saturated to Unsaturated) | _____ | _____ | _____ |
| 11 | Toll (Unsaturated to Saturated) | _____ | _____ | _____ |
| 12 | Carrier | _____ | _____ | _____ |
| 13 | Carrier Group | _____ | _____ | _____ |

Equipment Assignments - Section D Cont'd

| REF NBR | <u>Remote Master Scanner Applique Assignments</u> <u>SD-1A210-01</u> | PRES | ADDL | TOTAL |
|------------------------|---|-------|-------|-------|
| 1 | Misc. Special Alarm - Major (Saturated to Unsaturated) | ----- | ----- | ----- |
| 2 | Misc. Special Alarm - Major (Unsaturated to Saturated) | ----- | ----- | ----- |
| 3 | Misc. Special Alarm - Minor (Saturated to Unsaturated) | ----- | ----- | ----- |
| 4 | Misc. Special alarm - Minor (Unsaturated to Saturated) | ----- | ----- | ----- |
| 5 | Subscriber Line Multiplexer | ----- | ----- | ----- |
| <u>PBX Keys</u> | | | | |
| 6 | Night Stop | ----- | ----- | ----- |
| 7 | Stop Hunt | ----- | ----- | ----- |
| 8 | Remote Make Busy | ----- | ----- | ----- |
| <u>Other - Specify</u> | | | | |
| 9 | ----- | ----- | ----- | ----- |
| 10 | ----- | ----- | ----- | ----- |
| 11 | ----- | ----- | ----- | ----- |

TELEPHONE COMPANY ORDER NO. 99666 PAGE 16

Equipment Assignments - Section D Cont'd

| REF NBR | <u>DISTRIBUTE POINT APPLIQUE ASSIGNMENTS</u> <u>SD-3H911-01</u> | PREP | ADDL | TOTAL |
|------------|--|------|------|-------|
| 1 | Local Message Registers | --- | --- | --- |
| 2 | Hotel-Motel Message Registers | --- | --- | --- |
| 3 | Foreign Exchange (Sleeve Lead) | --- | --- | --- |
| 4 | Dial Long Lines (Sleeve Lead) | --- | --- | --- |
| 5 | Remote Overflow Register | --- | --- | --- |
| 6 | Remote PBX Overflow Register | --- | --- | --- |
| 7 | Lines with Group Alerting | --- | --- | --- |
| 8 | Subscriber Line Multiplexer (Sleeve Lead) | --- | --- | --- |

Other - Specify

| | | | | |
|----|-------|-----|-----|-----|
| 9 | _____ | --- | --- | --- |
| 10 | _____ | --- | --- | --- |
| 11 | _____ | --- | --- | --- |

The Following Quantities of Announcements from
The Announcement Sets Shall be Provided for Use
With the Tone & RA Circuit per SD-3H411-01

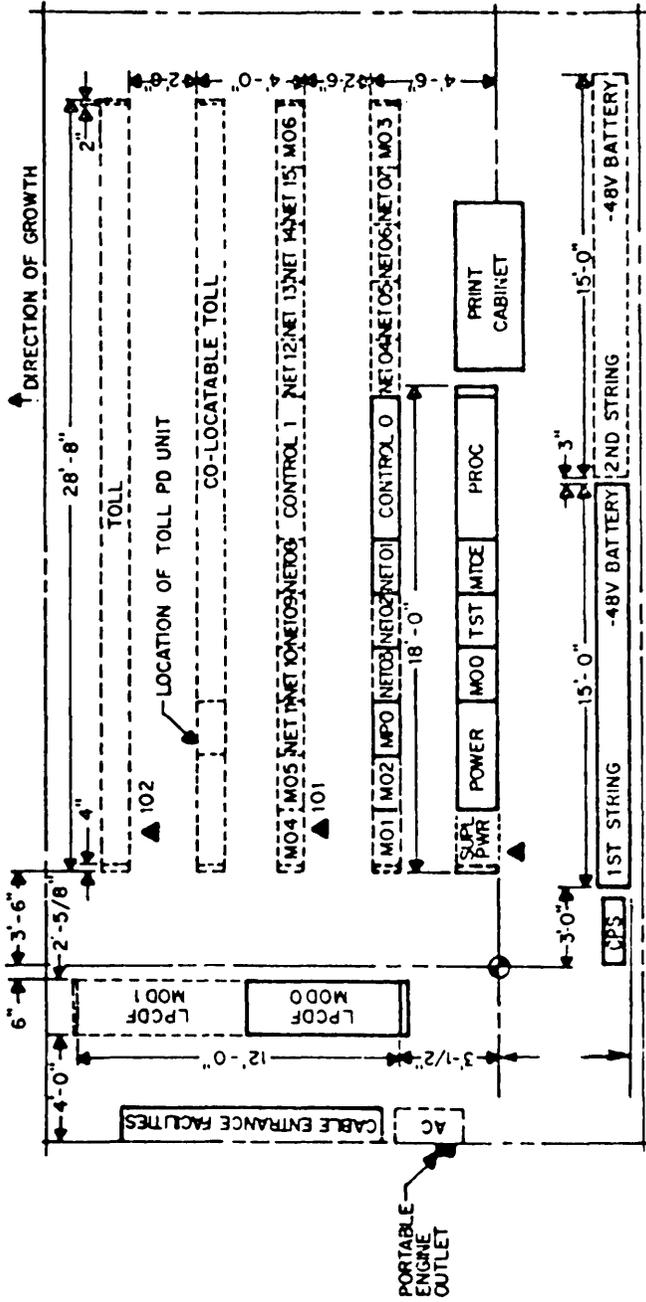
| | | | | |
|----|---------------------------------|-----|-----|-----|
| 12 | Local Coin Overtime | --- | --- | --- |
| 13 | Dial Tone First | --- | --- | --- |
| 14 | Permanent Signal | 4 | - | 4 |
| 15 | Partial Dial | 6 | - | 6 |
| 16 | 1+ Omitted | --- | --- | --- |
| 17 | 1+ in Error | 2 | - | 2 |
| 18 | Vacant Code | 4 | - | 4 |
| 19 | Custom Calling Error | 2 | - | 2 |
| 20 | *Overload with Remote Recording | --- | --- | --- |
| 21 | Overload W/O Remote Recording | --- | --- | --- |

The Following Quantities of Tones From the
The Announcement Sets Shall be Provided for Use
RT Plant Shall be Provided for Use With
Tone & RA Circuit per SD-3H411-01

| | | | | |
|----|--------------------------|-----|-----|-----|
| 22 | Receiver Off-Hook | 4 | - | 4 |
| 23 | Busy Tone | 6 | - | 6 |
| 24 | Misc Tone (Call Waiting) | 4 | - | 4 |
| 25 | High Tone | 4 | - | 4 |
| 26 | Low Tone | 4 | - | 4 |
| 27 | Tone & Ann Test | --- | --- | --- |
| 28 | Loop Chk Generator | --- | --- | --- |

*=This feature will be tentatively available by 3Q/79

FLOOR PLAN



- BENCH MARK
- ▲ DENOTES MAINTENANCE AISLE
- BLK DENOTES EMPTY FRAMEWORK ORDERED FOR UNITIZED SHIPMENT REQUIREMENTS

ISSUE 2

E8122

FACTORY ORDER PAGE E1

Fig. 10—Questionnaire—E8122 (Sheet 18 of 19)

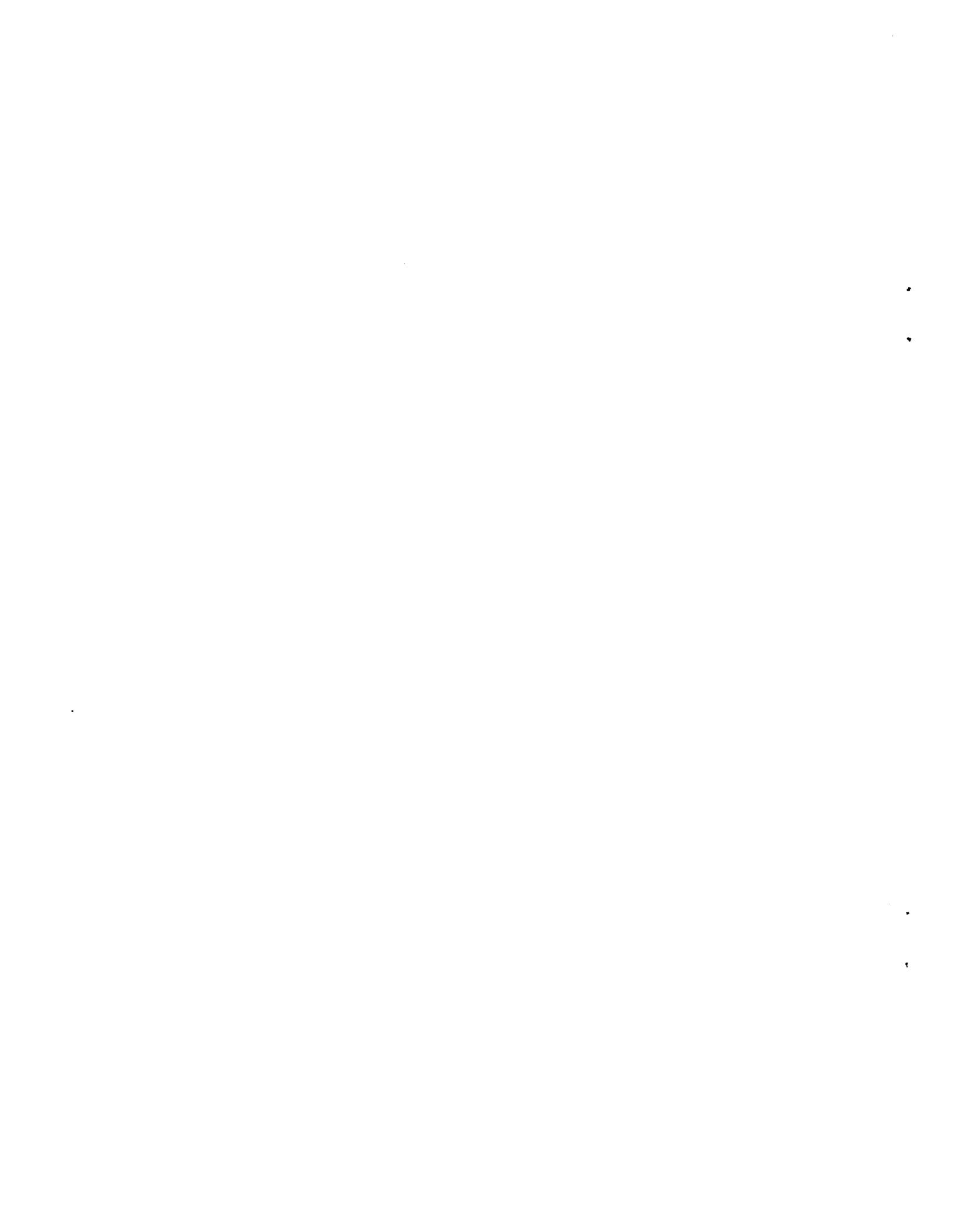
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T.O 5017

TELEPHONE COMPANY ORDER NO. 99666 PAGE 18

Unequipped Framework - Section F

| <u>REF</u> | <u>NBR</u> | <u>Single Bay Framework 1'-0" Wide</u> | <u>Quantity</u> |
|------------|------------|--|-----------------|
| | | Used in unequipped location for: | |
| | 1 | Network Frames | _____ |
| | 2 | Miscellaneous Frames | _____ |
| | | <u>Single Bay Framework 1'-6" Wide</u> | |
| | | Used in unequipped location for: | |
| | 3 | Supl Power Frame | _____ |



SECTION 233-060-865, Issue 2
Page 2

Order No. 5017
Section C Page _____
Office RURALTOWN (478)
Data _____
Reference: SECTION 233-060-220

NO. 3 ESS
TRAFFIC ORDER WORKSHEET

F. SCAN POINT FIELD VERIFICATION (Variable Scan Points)

1.0 Directed Field (D)

| | |
|--|-------------|
| a. Total Master Scanner D scan points | <u>40</u> |
| b. Less dedicated D scan points for MF transmitters (CF-0) | <u>4</u> |
| c. Assignable D scan points | <u>36</u> |
| d. Total D scan points required (B2.0 and B4.0) | <u>79</u> |
| e. D scan points to be assigned to D/T field (F1.0d - F1.0c) | <u>43 *</u> |

*If ≤ 0 enter 0.

2.0 Directed/Trunk Field (D/T)

2.1 Directed/Trunk Field (D/T) - Assignable Scan Points

| | |
|--|------------|
| a. Master scanner D/T scan points | <u>64</u> |
| b. Universal scanner D/T scan points (No. of networks <u>5</u> × 64) | <u>320</u> |
| c. Total D/T scan points (F2.1a + F2.1b) | <u>384</u> |
| d. Less dedicated Peripheral Test scan points (Master Scanner) | <u>-24</u> |
| e. Less dedicated D/T scan points for networks equipped with Regular Ringing (No. equipped networks <u>5</u> × 3) | <u>-15</u> |
| f. Assignable D/T scan points (F2.1c - [F2.1d + F2.1e]) | <u>345</u> |

2.2 D/T Scan Points Required

| | |
|--|-------------|
| a. D/T scan points required for universal trunks (B3.0) | <u>144</u> |
| b. D/T scan points required for D4 direct interface trunks (B3.0) | <u>48</u> |
| c. D/T scan points required for TOUCH-TONE® dialing receivers (B2.0) | <u>64</u> |
| d. D/T scan points required for MF receivers (B2.0) | <u>36</u> |
| e. D scan points to be assigned in D/T field (F1.0e) | <u>43</u> |
| f. D/T scan points to be assigned (F2.2a to F2.2e) | <u>335†</u> |

† If F2.2g > F2.1f, the D/T scan point requirements must be reduced. This is accomplished by either reducing the number of circuits requiring D/T or D scan points or reducing the number of scan point leads. The scan point leads may be reduced by having only the scan points wired for the service circuits being provided rather than the entire unit. As a last resort, an additional network frame may be provided for universal scan points.

Fig. 8—Worksheets for Example Traffic Order (Sheet 27 of 33)

NO. 3 ESS
TRAFFIC ORDER WORKSHEET

F. SCANNER FIELD VERIFICATION (Variable Scan Points)

3.0 Receiver Supervisory Field (RS)

| | |
|--|-------------|
| a. Total assignable RS scan points | <u>70</u> |
| b. RS scan points required for CDRs (B2.0) | <u>20</u> |
| c. RS scan points required for TOUCH-TONE dialing receivers (B2.0) (max. 34) | <u>8</u> |
| d. Total RS scan points to be assigned (F3.0b + F3.0c) | <u>28</u> * |

4.0 Service Supervisory Field (SS)

| | |
|---|-------------|
| a. Total assignable SS scan points | <u>40</u> |
| b. MF transmitter SS scan points required (B2.0) | <u>8</u> |
| c. SS scan points required for DP transmitters (B2.0) | <u>12</u> |
| d. SS scan points required for added coin control circuits (B2.0) | <u>4</u> |
| e. Total SS scan points to be assigned (F4.0b + F4.0c + F4.0d) | <u>24</u> † |

5.0 Ringing Circuit Supervisory Field (RCS)

| | |
|---|-------------|
| a. Total assignable RCS scan points | <u>58</u> |
| b. RCS scan points required for regular ringing (B2.0) | <u>15</u> |
| c. RCS scan points required for superimposed ringing (B2.0) | <u>12</u> |
| d. Total RCS scan points to be assigned (F5.0b + F5.0c) | <u>27</u> ‡ |

* If F3.0d > F3.0a, then use CDR requirement A1.7C in F3.0b. If F3.0d is still > 70, then CDR and/or TOUCH-TONE dialing receiver circuits must be reduced.

† If F4.0e > F4.0a, circuits requiring SS scan points must be reduced.

‡ If F5.0d > F5.0a, circuits requiring RCS scan points must be reduced.

Fig. 8—Worksheets for Example Traffic Order (Sheet 28 of 33)