

CENTREX SERVICE
ATTENDANT FACILITIES
608A CORD SWITCHBOARD

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CENTREX SERVICE

ATTENDANT FACILITIES

608A CORD SWITCHBOARD

The 608A Cord Switchboard can be used as the attendant facility for both step-by-step and No. 5 Crossbar Centrex systems. The system under consideration will determine the operating features provided for the switchboard.

The operating features fall into two general categories:

1. Normal cord operations where the switchboard is retained in the connection for the duration of the call.
2. Combined normal cord and single cord operation. Normal cord operation will retain the connection through the board for the duration of the call. Single cord operation (release loop) will permit the release of the switchboard from the connection when the called station answers.

Details of these operating arrangements are covered below for their application with both step-by-step and No. 5 Crossbar Centrex systems.

APPLICATION WITH STEP-BY-STEP CENTREX

(a) Normal Cord Pair Operation

The step-by-step Centrex system using this arrangement of the 608A switchboard is described in Section 3-b of these Notes. Incoming calls are answered with the back cord and are completed with the front cord of a pair. Completion to stations can be on a dialing basis or through the station multiple if it is provided. For dial completion, rotary or DC pushbutton dials can be provided.

The 608A P.B.X. switchboard must operate on a normal basis when the positions are equipped with station multiple or rotary dials.

Dialing completion requires the addition of operator dial trunks. Station access is through the switch train. In general, the only visual cord supervisory indications received will be station answer, recalls

from toll operators and station flash. Audible supervisory signals will be heard by the attendant while she is still in the connection. When rotary dials are used, no modification in the cords or the position circuit is required. Standard arrangements presently available, apply. Figures 1 and 2-a illustrate the keyshelf equipment arrangements.

The 608A position circuit must be modified when equipped with a DC pushbutton dial. A new dial unit is provided, the PEG key is replaced by a release forward (RLS FWD) key, and the position circuit must be arranged to provide access to register sender circuits (incoming DC—outgoing DP). Details of the register sender and the associated linkage are described in Section 3-c of these Notes. Operation with the DC pushbutton dial is described under (b) "Normal Cord Pair and Single Cord Operation" below. Figures 1 and 2-b illustrate the keyshelf equipment layout for this method of operation.

(b) Normal Cord Pair and Single Cord Operation

The step-by-step Centrex arrangements described in Section 3-c of these Notes are designed to function with the 608A switchboard modified to provide single cord and normal cord pair operation. Dial completion to stations rather than station multiple completion should be provided since listed number and transfer request calls can be released from the position upon called station answer. The position can be equipped with either a rotary or a DC pushbutton dial. Figures 1, 2-c and 2-d illustrate the keyshelf equipment layouts available for this application.

The **cord circuits** have been modified to permit both single and normal cord pair operation. **Single cord operation** is used to complete listed number and transfer request calls routed to the switchboard over the attendant loops. The trunk lamp will be lighted steadily on incoming listed number calls, flashing at 120 IPM on transfer requests. An audible alarm is also activated. The attendant answers and completes the call using the back cord only. Visual supervisory signals of station ring, station busy,

station answer and switch train overflows can be received. Audible signals for the same conditions are also received if the attendant is still in the connection. All calls received on the attendant loops must be handled on a single cord basis. Completion to trunks which appear in the multiple must be on a dial selection basis as described under "Attendant Loops" in Section 3-c. The call cannot be extended by plugging the other cord of the pair into the trunk jack in the face equipment. The single cord connection can, however, be retained on the board as long as the attendant deems it necessary to complete the call satisfactorily. Splitting is possible with single cord operation. The release of the switch train for re-establishment of a connection to a different destination is controlled by the RLS FWD key when rotary dials are provided. The release of the switch train and the register sender equipment is controlled by this same key when DC pushbutton dials are provided.

Normal cord operation retains the connection through the switchboard for the duration of the call. All incoming calls on trunks other than the attendant loops are completed in a manner similar to normal 608A P.B.X. operation. Completion to stations will be over out-dial trunks. These trunks use the switch train for completion. Calls completed over these trunks will receive all the visual and audible supervisory signals obtained with single cord operation. Splitting is possible with normal cord pair operation. The release of the switchtrain for re-establishment of a connection to a different destination can be accomplished by the removal of the cord from the outgoing trunk jack when rotary dials are provided. The release of the dial equipment and the register sender is controlled by the RLS FWD key when DC pushbutton dials are provided.

The **position circuit** has been modified to permit the activation of the camp-on feature in the incoming connectors on calls encountering busy stations. Other modifications include the removal of PAGE and PEG features, the transfer of the attendant telephone set to **either** the right or the left position only, and the connection of a register sender when a DC pushbutton dial is provided.

With **DC pushbutton dialing**, the attendant requests a register sender by the operation of the START key. The position is connected to the register sender through a register sender link frame (See Sec. 3-c). The START lamp will light when this occurs. Digits are keyed into the register sender

which outpulses them through the cord circuit to advance the dial equipment. The END key must always be operated to indicate end of pulsing. The attendant must stay in the connection until the register sender has completed outpulsing before she can be available to handle other calls. The completion of the register sender functions and its release are indicated by the START lamp going dark. If a mistake in pulsing occurs, the attendant restores the dial equipment and releases the register sender by the operator of the RLS FWD key.

APPLICATION WITH NO. 5 CROSSBAR CENTREX

(a) Normal Cord Pair Operation Only

This arrangement is provided with the No. 5 crossbar Centrex systems described in Section 2-b of these Notes. Incoming calls are answered on the back cord and are completed on the front cord of a pair. The position has been modified to use an MF pushbutton dial. Plugging a cord into a trunk jack calls for a register. The START lamp will light when the register is connected and will remain lighted until the register releases. The END key must always be operated when pulsing is completed. Both 4 x 4 and 2 x 6 MF pulsing are included. Selection of the required pulsing will be automatically controlled by the sleeve of the trunk used. Two types of completing trunks are available—(1) an Operator Local Completion trunk used to complete to stations, and (2) an OGT to Central Office trunk used to complete all other calls. Figures 1 and 3-a illustrate the keyshelf equipment layout used with these arrangements.

Tie lines, conference circuits, etc., can be terminated in the multiple. Outward completion on dial type tie trunks is possible by extending the call through the switching system on a dial selection basis. Completion forward on foreign exchange lines terminated on distant central office line facilities is not possible unless—(1) the distant CO is arranged to receive 4 x 4 MF pulsing, or (2) a position in the operating team is equipped with a rotary dial.

Some Telephone Companies have provided the 608A with normal cord operation and have also included a transfer feature. The equipment details of the No. 5 crossbar office arrangement are described in Section 2-b of these Notes. The termination of the transfer attendant trunk at the switchboard requires an answering and a

completing jack for each trunk. The attendant answers a transfer call by plugging the back cord into the answering jack. She releases the transferring station and establishes a connection to the new station over the front cord plugged into the completing jack. She releases the front cord when the new station is rung. She releases the back cord when the station answers. This releases the transfer connection from the switchboard.

The transfer arrangement described above and in Section 2-b is non-standard at this time, and, as of now, is not expected to be a standard offering.

(b) Normal Cord Pair and Single Cord Operation

The development of the circuitry required for this arrangement is still in progress. The information contained herein is subject to change as the design progresses but minor variations only are expected. The associated No. 5 crossbar Centrex is described in Section 2-b of these notes.

Both single cord and normal cord pair operation will be provided. All cords are arranged to operate in either manner. The MF pushbutton dial will be provided in the position. Selection of the required MF pulsing will be controlled by the sleeve of the trunk. A release forward key (RLS FWD) will replace the PEG button in the dial unit. No change will be made in the transfer key operation now available with non-Centrex 608A switchboards. No camp-on feature will be available when the switchboard is used with this system. Figures 1 and 3-b illustrate the keyshelf layout for this method of operation.

Single cord operation will be associated with the attendant loops only. The back cord is used with this method of operation. While the attendant is in the connection, audible supervisory indications of station busy, or switchtrain overflow will be received. With the attendant cut out of the connection, visual supervisory signals for these conditions plus called station answer supervision will be received. A single cord connection can be released from the switchboard on called station answer by removing the cord from the jack. The RLS FWD key must be used to release any connection toward the destination of the call if a change is required while processing that call. Splitting of the connection on single cord operation is not possible.

Single cord operation will apply on listed number calls and DID transfer requests to stations within the Centrex. Incoming signals on listed number calls will light the trunk lamp with a steady signal; the transfer request will flash the lamp at 120 IPM. In both cases, an audible alarm will also be provided. The lamp and the alarm are retired by attendant answer.

Dial "O" traffic is also handled on the attendant loop. The incoming signal will be a 120 IPM flash on the trunk lamp plus the audible alarm. Completion of this call will require normal cord pair operation. The completion of listed number calls and DID transfer requests to a tie trunk termination in the multiple is also possible with normal cord pair operation.

Normal cord pair operation is similar to that of a normal cord switchboard. In general, the only visual cord supervisory indications will be station answer, recalls from toll operators and station flash. Audible signals can be heard by the attendant while she is still in the connection. Splitting is possible with normal cord pair operation.

The foreign exchange, dial repeating and automatic tie trunks terminated on this board are arranged for MF pushbutton dial operation. They are the trunk circuits described in the No. 5 Centrex system using consoles as the attendant facilities.—Section 2-a of these Notes. When terminated on the switchboard, separate IN and OUT jacks are required. Ringdown tie trunks are those available today.

Normal cord operation also requires the provision of Operator Local Completion trunks and OGT to Central Office trunks with this arrangement.

FACE EQUIPMENT ARRANGEMENTS

Recommended face equipment arrangements have been described in T.E.P., Division I, Section 2-n. A copy of the suggested face equipment is included with these notes as Figure 4.

OPERATING ROOM ARRANGEMENTS

The operating room arrangements will be similar to that provided for a normal P.B.X. when cord switchboards are provided as the attendant facilities.

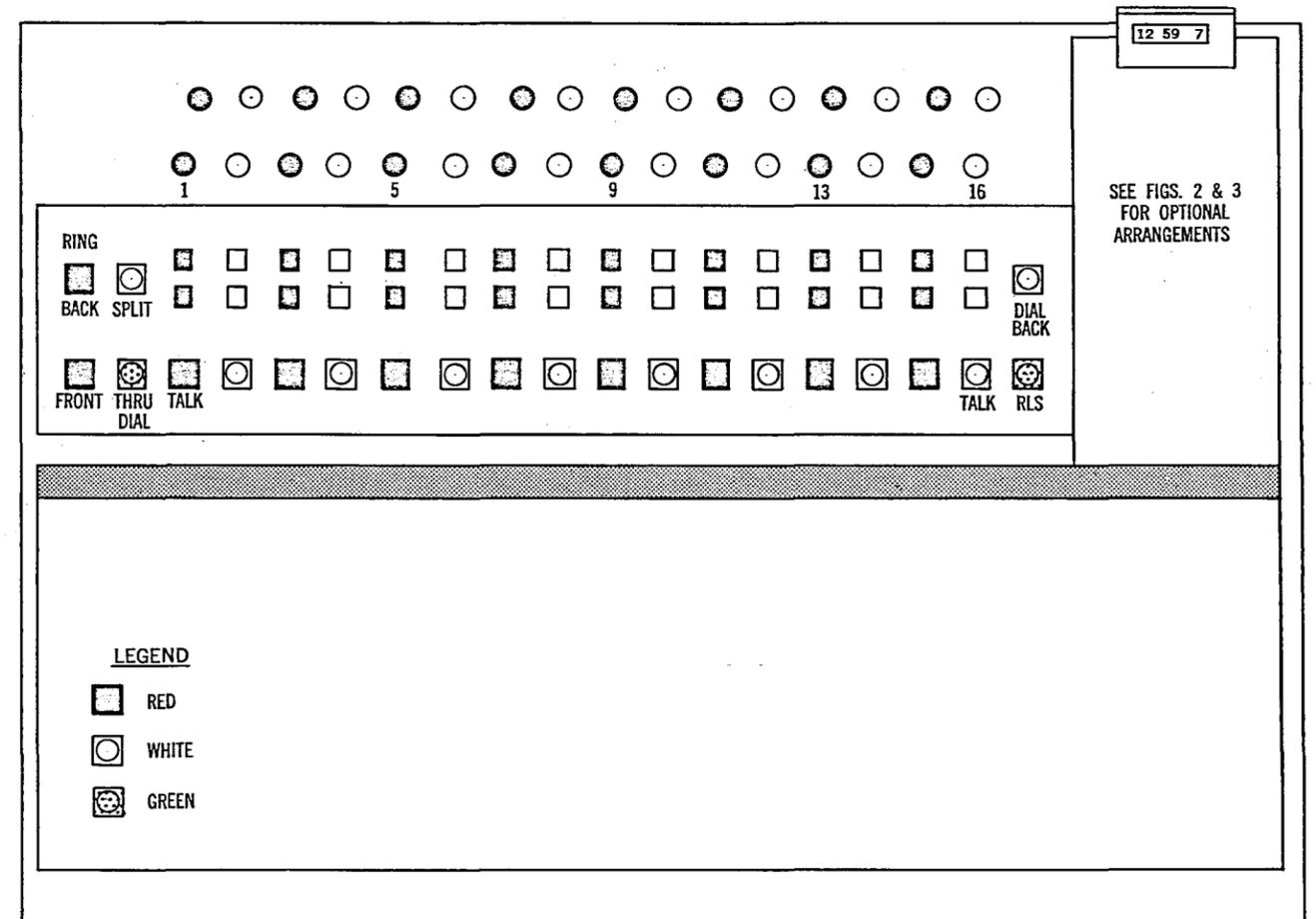
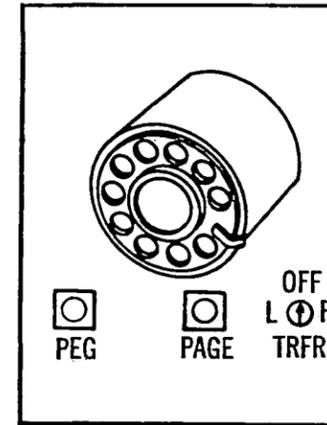


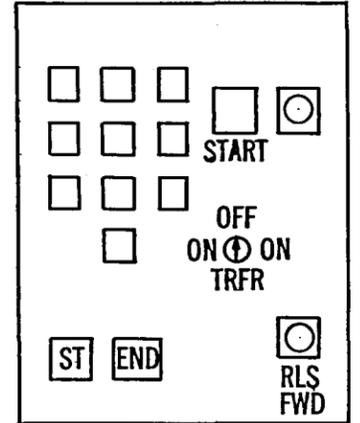
FIG. 1
608A KEY SHELF EQUIPMENT

S x S CENTREX APPLICATION - NORMAL CORD PAIR OPERATION

A) ROTARY DIAL UNIT

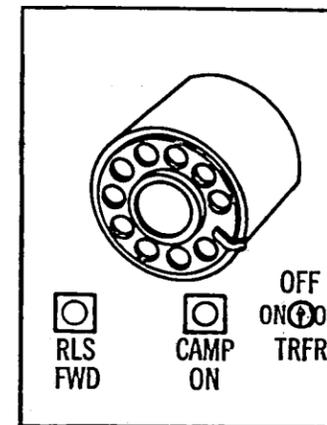


B) DC PUSHBUTTON DIAL UNIT



S x S CENTREX APPLICATION - SINGLE CORD AND NORMAL CORD PAIR OPERATION

C) ROTARY DIAL UNIT



D) DC PUSHBUTTON DIAL UNIT

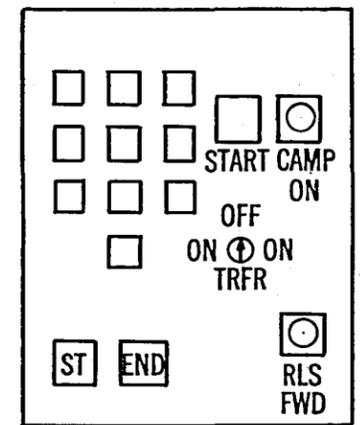
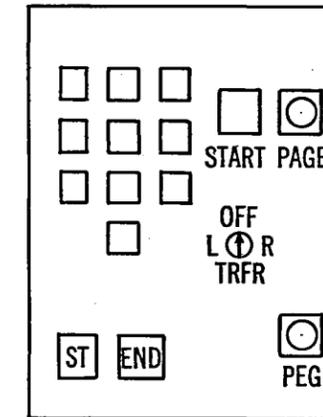


FIG. 2
OPTIONAL KEY SHELF EQUIPMENT ARRANGEMENTS
608A SWITCHBOARD

No. 5 CROSSBAR CENTREX APPLICATION - NORMAL CORD PAIR OPERATION

A) MF PUSHBUTTON DIAL UNIT



No. 5 CROSSBAR CENTREX APPLICATION - SINGLE CORD AND NORMAL CORD PAIR OPERATION

B) MF PUSHBUTTON DIAL UNIT

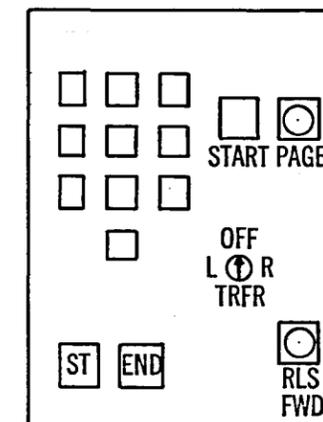


FIG. 3
OPTIONAL KEY SHELF EQUIPMENT ARRANGEMENTS
608A SWITCHBOARD

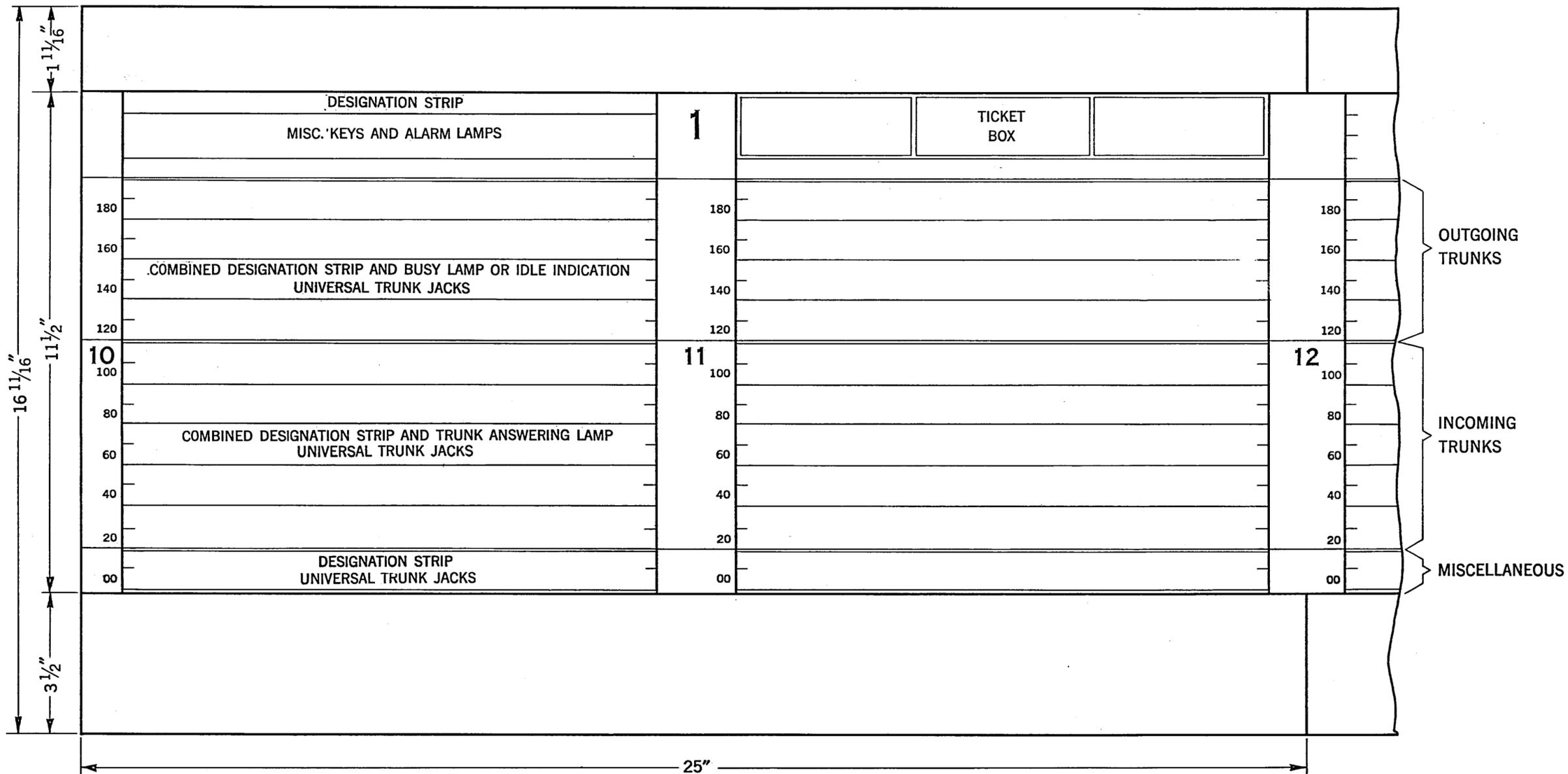


FIG. 4
TYPICAL IN - DIALING FRONT EQUIPMENT DRAWING
3 PANEL MULTIPLE - LOWER UNIT