

The Southern New England Telephone Company
New Haven, Connecticut

Specification No. 0184
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SPECIFICATION FOR NEW

355A STEP-BY-STEP DIAL OFFICE EQUIPMENT

WITH 11'-6" FRAMES

THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY

267 OFFICE - EAST HAMPTON, CONNECTICUT

LOCATED AT SOUTH MAIN STREET

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GENERAL - SECTION A

1. This specification covers the equipment for a new 355A dial office employing 11'-6" high frames and arranged for individual line, 2 party selective, 4 party semi-selective and 10 party terminal per station ringing.

2. At time of cutover the subscribers' loop ranges, per P.E.L. 4818, for this office will be as follows:

	<u>Conductor Loop</u>	<u>External Circuit Loop</u>
Coin Box	835 ohms	1000 ohms
Flat Rate		
With 6 or 7 type dials and associated with line circuits arranged for permanent signal lockout	1300 ohms	1500 ohms
All other lines	835 ohms	1000 ohms

3. This equipment will replace the present No. 10 manual office equipment serving the East Hampton exchange.

4. The No. 1 Step-by-Step Office located at Middletown, Connecticut will be the operator office for this unattended equipment after cutover and the No. 3CL toll switchboard at Middletown will serve this area.

5. Seven digit numbers will be assigned initially and ultimately in the 267-XXXX series with arrangement for local dialing on an optional 2-5 or 5 digit basis.

6. An office name, with the first two letters of the name corresponding to the first two digits of the present numerical designation for this office, will be assigned sufficiently in advance of the installation completion date to permit stenciling, etc. in accordance with the office name.

7. East Hampton is at present a single office area.

8. The substation dial hole markings shall be as follows:

Dial Hole																			
<u>Numbers</u>	1	-	2	-	3	-	4	-	5	-	6	-	7	-	8	-	9	-	0
<u>Letters</u>			ABC		DEF		GHI		JKL		MNO		PRS		TUV		WXY		Z

9. Codes shall be assigned to the various classes of desk and special services as follows:

Special Service Operator	0
Toll	0
Information	113
Repair Service	114
Test Desk	117 (Not Listed)
Reverting Calls, 4 Party Semiselective	119 X

10. Coin box service is required and will be operated on a dial prepay basis. Coin deposit is required before the central office equipment becomes effective and dial tone is heard.

11. Message rate service will be provided using auxiliary line circuits.

12. Subscribers will dial fire and police numbers as listed in the directory.

13. For official calls the subscriber will dial "Operator" and ask for the business office.

14. This office is required to operate with central desks as follows:

<u>Type</u>	<u>Location</u>
No. 7A Information Desk	Middletown
No. 2 Repair Service Desk	"
No. 14 Local Test Desk	"

15. Earthquake protection shall not be furnished.

16. Intercepted calls will not be completed.

17. Line finders with normal post springs and 4 wire first and service code selectors are being provided in anticipation of subscriber toll dialing.

18. No provision will be made for service observing in this office.

19. Dial ringer test equipment will not be provided. Ringer and dial testing will be handled over test trunks to the Middletown test desk.

20. No. extended local service will be provided initially in this office.

SUMMARY OF EQUIPMENT - SECTION B

	<u>Initial</u>	<u>Ultimate</u>
<u>Connector Terminals</u>	2400	3900
<u>Subscriber Line Relay Equipment</u>		
Flat rate, individual, P.B.X., 2,4 & 10 pty.	1400	2600
Message rate, individual	0	0
Coin box, dial prepay, multi-slot individual	100	200
Line Relays, Total	1500	2800

Line Finder Equipment

	<u>Units</u>	
Units - 200 line and 20, 3 wire line finder capacity, arranged for line lockout on 20% of the lines, for mounting on universal frame		
Flat rate	7	13
Coin box	1	1
Line Finder Units, Total	8	14

Line FindersTwo Class Service, 3 wire, 200 point

Flat rate	119	221
Coin box, dial prepay	15	16
Line Finders, Total	134	237

Selector EquipmentFirst Selector Equipment

Local 4 wire selectors arranged to absorb digits once only and/or repeatedly and to return overflow signal on specified levels	140	237
Local first selector bank assembly without D.T.A., 10-400 point	14	25
Local first selector shelves, 10 capacity	14	25

SUMMARY OF EQUIPMENT - SECTION B (CONT.)

<u>Selector Equipment (Cont'd.)</u>	<u>Initial</u>	<u>Ultimate</u>
<u>Local Fourth Selector Equipment</u>		
Incoming, 4 wire selectors arranged to absorb digits once only and/or repeatedly and to return overflow signal on specified levels	0	50
Incoming fourth selector bank assembly without D.T.A., 10-400 point	0	5
Incoming fourth selector shelves, 10 capacity	0	5
<u>Local Fifth Selector Equipment</u>		
Local, 3 wire selectors with or without restricted service	150	220
Local fifth selector bank assembly without D.T.A., 10-300 point	15	22
Local fifth selector shelves, 10 capacity	15	22
<u>Service Code Selector Equipment</u>		
Service code selector, 4-wire, arranged to absorb digits once or repeatedly and to restrict service on any specified level		
Flat Rate	7	7
Coin Box	3	3
Service code selector bank assembly without D.T.A., arranged for two types of service on one bank assembly, 10-400 point	1	1
Service code selector shelves, 10 capacity	1	1
<u>Toll Selector Equipment</u>		
Toll intermediate selectors, 4-wire	50	65
Toll transmission selectors, 4 wire for use in completing A-B toll calls, with or without digit absorbing on specified levels, with or without repeating coil cutout, with or without restriction feature	25	25
Toll transmission selectors, 4 wire, reverse battery supervision, simplex controlled ringing or temporary automatic start of ringing with coin control feature and with or without digit absorbing	10	10

SUMMARY OF EQUIPMENT - SECTION B (CONT.)Toll Selector Equipment (Cont.)

	<u>Initial</u>	<u>Ultimate</u>
Toll transmission selectors, 4 wire, reverse battery supervision, simplex controlled ringing or temporary automatic start of ringing without coin control feature and with or without digit absorbing	10	10
Total Toll Selectors	95	110
Toll transmission and toll intermediate selector bank assembly, 10-400 point	10	12
Toll intermediate selector shelves, 10 capacity, single	5	7
Toll transmission selector shelves, 10 capacity, double	5	5
Total Toll Selector Shelves	10	12

Connector EquipmentSwitches

Local rotary hunting connector, 1 ring	10	10
Local rotary hunting connector, reverse battery supervision on specified levels, 1 ring	10	10
Combination toll and local rotary hunting connector, 1 ring	10	10
Combination toll and local rotary hunting connector, reverse battery supervision on specified levels, 1 ring	10	10
Combination toll and local connector, 1 ring	55	128
Combination toll and local connector, 2 ring	18	81
Test Connectors	24	39
Combination toll and local connector, 5 code T.P.S. arranged for reverting calls	126	126
Total Connectors	263	414

Banks

Connector bank assemblies, rot. hunt., 11-400 pt.	2	2
Connector bank assemblies, rot. hunt., 10-400 pt.	2	2
Connector bank assemblies, non hunt., 11-300 pt.	8	23
Connector bank assemblies, 5 code T.P.S., 11-400 pt.	14	14
Total Connector Bank Assemblies	26	41

SUMMARY OF EQUIPMENT - SECTION B (CONT.)Connector Equipment (Cont'd.)

	<u>Initial</u>	<u>Ultimate</u>
<u>Shelves</u>		
Connector shelves, rot. hunt., 11 cap.	2	2
Connector shelves, rot. hunt., 10 cap.	2	2
Connector shelves, non hunt., 11 cap., 1 ring	6	14
Connector shelves, non hunt., 11 cap., 2 ring	2	9
Connector shelves, 5 code T.P.S., 11 cap.	14	14
Total Connector Shelves	26	41

Miscellaneous Switch EquipmentSwitch and Circuit Units

Reverting call selector, 4 party semi-selective	5	5
Test Distributor	2	2
Verification distributor	2	2

Banks

Test or verification distributor bank assembly, 5-600 point	1	1
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Shelves

Combined miscellaneous switch and trunk shelf, 12 capacity	2	2
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Repeater Equipment - Switch Base TypeRepeaters

Outgoing repeaters to step-by-step office, battery and ground pulsing, loop supervision, 2 ckts. per base		
Ckts.	0	46
Bases	0	23

Shelves

Repeater shelves, 14-28 capacity	0	2
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Intercepting Trunk Finder EquipmentInitialUltimateUnits

Intercepting trunk finder unit for
regular intercepting, 22 point and
3 trunk finder capacity

2

3

Trunk Finders

Trunk finders, 22 point

4

6

Switch Frames

Frames 6'-0-1/2" wide, universal type,
for line finder, selector, connector
and miscellaneous shelves

20

25

Miscellaneous Equipment

Combined distributing frame, verticals
Relay Rack

26

36

As Req'd

As Req'd

Miscellaneous circuits and equipment not covered herein but
necessary for the proper functioning of the various units of equipment
shall be furnished to agree with the standard arrangements.

STEP-BY-STEP FRAME EQUIPMENT - SECTION C

General

1. The frame equipments and multiple cabling arrangements shall be provided as covered in Section B and on charts in Section K. A suggested layout of equipment on the frames is shown on Telephone Company drawing Sketch 1417.

2. The numbering and location of all frames shall be as shown on the floor plan drawing.

Line Finder Equipment

1. Peg count and all finders busy registers for line finder units shall be located on relay rack bay.

2. Line load control equipment shall not be provided.

3. All line finders shall be furnished equipped with normal post springs and cams not adjusted to operate on any level.

4. The line finders in the prepay coin box group shall be provided per SD-32000-01 Fig. 1 & 6 with Q, R & Y wiring and U & Y apparatus.

5. Line groups shall be arranged for permanent signal lockout on 20 per cent of lines in order to obtain the longer range subscriber loop available with this feature. The permanent signal lockout feature in associated first selectors shall not be furnished.

6. The installer will not be required to modify any flat rate lines for operation with trunks from selector levels of 700 type P.B.X.'s.

7. Provide 10 WLM cords for use as make busy cords at line frames for clearing the switches tied up on a permanent signal. The cords shall be 3'-6" long and shall be equipped with suspender clips per KS-6780 and 108 cord tips on one end and 360A tools on the other end.

Selector Equipment

1. The local first selectors shall be provided per SD-30976-01 Fig. 3 with G,S,T,X, & Z options, with cams adjusted to operate normal post springs as follows:

- a. Left normal post springs on Levels 2,6,7
- b. Right normal post springs on Levels 4,7,9

2. The service code selectors shall be provided per SD-32077-01 Fig. 1 with F,H,J,N,T,V,X,Y & ZE options and arranged to absorb the digit "1" repeatedly and to prevent cut-thru on levels 2 to 9 until the digit "1" has been absorbed.

Selector Equipment (Cont'd)

3. The local fifth selectors shall not be arranged for restricted service. This assumes selectors per SD-31735-01 Fig. 1 with A, T & W options.

4. The AB toll transmission selectors shall be provided per SD-31723-01 Figs. 1, D, F & K with options B, D, F, H, K, S & ZA and with cams adjusted to operate normal post springs as follows:

- a. Left normal post springs on Levels 6 & 7
- b. Right normal post springs - cams not adjusted on any Level

5. The coin and non-coin toll transmission selectors shall be provided per SD-31841-01 Figs. 1 & A as follows:

<u>Selector</u>	<u>Options</u>
Coin	G, M, R, U, W, X, Y
Non-Coin	G, M, R, U, V, X, Y

6. Paths busy signal shall be 120 I.P.M. for toll selectors and 60 I.P.M. for all other selectors.

7. On the service code selector bank arranged for two types of service on the same bank, the selector bank multiple leads for Levels 1 and 0 shall be removed between bank positions 3 & 4.

8. On all working levels of local first, toll transmission and AB toll transmission selectors, the trunks shall be cross-connected to auxiliary terminal strips and then cabled to succeeding equipment.

9. Auxiliary terminal strips required for terminating selector trunk cables on selector frames shall be located on shelf "D" or "C" rather than on shelf "A" or "B".

10. Trunks from the zero level of the coin box service code selectors will be multiplied with trunks from the zero level of the coin box local first selectors respectively by cross-connection at the C.D.F.

11. Arrange selector level subgroups for LTB registration as follows:

<u>Type</u>	<u>Level</u>
Local First Selectors, Flat Rate & Coin Box	1
Local First Selectors, Coin Box	0
Service Code Selectors	3 & 9

12. Two sets of peg count register leads shall be furnished for the service code selector shelf arranged for two classes of service and for the AB toll transmission selector shelves.

Selector Equipment (Cont'd)

13. The following trunks shall be cabled on a 4 wire basis:

<u>From</u>	<u>Level</u>	<u>To</u>
Local 1st Sels.	1	Service Code Sels.
Local 1st Sels.	0	HCDF
Service Code Sels.	3,4,7 & 0	HCDF

Jumpers at bank multiple terminal strip shall be 4-wire for Levels 1 & 0 of first selectors and level 0 of service code selectors and 3-wire for all other levels of these selectors.

14. The coin control leads of the coin toll transmission selectors shall be cabled to the C.D.F.

15. The Western Electric Company shall furnish selector multiple designation cards per E-2139 as required.

Connector Equipment

1. The connector equipment shall be arranged to permit number assignments in the various hundred groups as follows:

	<u>Hundreds</u>	
	<u>Initial</u>	<u>Ultimate</u>
P.B.X. lines arranged for over	267-25	267-25
10 trunks per P.B.X.	267-44	267-44

All other connector hundred groups shall be arranged for single, 2 party selective, 4 party semi-selective and 10 party terminal per station service as shown on the charts in Section K.

2. Combination and local connectors shall be equipped for calling party control.

3. Station busy signal shall be 60 I.P.M.

4. Provide 4 WLM cords 3'-6" long equipped on one end with a 120 cord tip and on the other end with a 108 cord tip and KS-6780 connecting clip for use as an extension of overflow register to the rotary hundred connector group.

5. Jack panels for overflow registration on P.B.X. groups served by rotary hunting connectors shall not be furnished.

6. All one ring connector shelves shall be connected to Code 1 Gen. Br. 2 Connector shelves requiring Ring 2 shall be connected to Code 2 Gen.

7. The tripping battery for the connectors shall be 48 volts.

Connector Equipment (Cont'd.)

8. The connectors in the 267-2500 group shall be arranged to serve official lines but with normal post springs not adjusted to operate on any level. Cams shall be placed on the switches.

9. The combination toll and local connectors, 5 code T.P.S. arranged for reverting calls shall be provided with the reverting call feature.

Miscellaneous Switch Equipment

1. The test distributors shall be arranged for 2 digit operation only. The test distributors used for verification service will not be reached through circuits using battery and ground pulsing.

2. The combined miscellaneous switch and trunk shelves shall be equipped as shown on equipment drawing Sk. 1417.

3. The tripping battery for the reverting call selectors shall be 48 volts.

MISCELLANEOUS EQUIPMENT - SECTION DLine Message Register Equipment

1. Provide the following line message register equipment per SD-31777-01 Fig. 3 which shall be located on a bay of miscellaneous relay rack adjacent to the traffic register equipment.

	<u>Initial</u>	<u>Ultimate</u>
	<u>Wire</u>	<u>Equip.</u>
Message Registers	8	8

2. Message registers shall not be marked for photographically recording register readings.

3. Message registers shall be numbered 1 to 8.

Traffic Register Equipment

1. Provide the following traffic register equipment per SD-31109-01, SD-31922-01 & SD-31976-01 to be mounted on a bay of miscellaneous relay rack.

2. Dialing traffic recorders talking line SD-31587-01 with hanging handset shall be provided. The traffic recorders desk end of the equipment will be provided by the telephone company.

<u>Initial</u>	<u>Location</u>	<u>Ultimate</u>
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Associated with Line Finder Equipment

Line Finder Groups			
Peg count	8	1-8	14
All finders busy	8	111-118	14

Associated with Selector Equipment

D.A. type local first selector, peg count			
Flat rate	6	94-99	11
Coin box	1	93	1
Local fifth selector, peg count	8	71-78	12
D.A. type incoming fourth selector, peg count	0	-	4
D.A. type service code selector, peg count			
Flat rate	1	91	1
Coin box	1	92	1
Toll transmission selector, peg count			
Flat rate	1	66	1
Coin box	1	67	1
AB toll transmission selector, peg count	1	68	1
Toll intermediate selector, peg count	3	86-88	4
Reverting call selector, peg count	1	65	1

Associated with Connector Equipment

Connector groups, regular and rotary, peg count	24	21-44	39
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<u>Traffic Register Equipment (Cont'd.)</u>	<u>Initial</u>	<u>Location</u>	<u>Ultimate</u>
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Associated with Intercepting Trunk Finder Equipment

Trunk finder			
Overflow	2	128,129	3

Miscellaneous Registers

Subscriber line or P.B.X. trunk group overflow for use with rotary hunting connectors	2	138,139	2
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Last trunk busy registers for:			
Recording completing trunks			
Coin box	1	141	1
Trunks to service code selectors	2	142,143	2
Trunks to information	1	144	1
Trunks to reverting call selector	1	145	1
Trunks to E.L.S.	0	-	3

All trunks busy registers for:			
Rotary out trunk switches	1	131	4

Clock peg count register	1	140	1
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Notes

1. Cable all registers to the C.D.F. for cross-connection to various units of equipment as required.

2. Space shall be reserved on relay rack for 40 addition registers beyond the ultimate requirements covered by this specification.

<u>Relay Rack Equipment</u>	<u>Initial</u>	<u>Ultimate</u>
	<u>Wire</u> <u>Equip.</u>	<u>Equip.</u>

Rotary Out Trunks

Rotary out trunk switch circuits -			
SD-30868-01	X	25	63

Outgoing Trunks

Outgoing trunks to Middletown Toll Office, loop signaling with Type "A" T.B. supply, arranged for fuse failure make busy feature and single class of service tone with direct ground giving steady tone to the operator			
SD-31925-01	X	26	32

<u>Relay Rack Equipment (Cont'd.)</u>	<u>Initial</u> <u>Wire</u>	<u>Equip.</u>	<u>Ultimate</u> <u>Equip.</u>
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Outgoing Trunks (Cont'd.)

Outgoing, 2 wire, recording completing trunks to Middletown Toll Office arranged for coin control and to recall subscriber, SD-32168-01	X	7	7
Outgoing trunks, 2 wire, from selector level to No. 7A Information Desk, arranged for make busy, without supervision, SD-32170-01	X	4	5

Intercepting Trunks

Intercepting trunks from connector multiple for use with 22-point trunk finders - SD-31337-01	X	35	56
Intercepting trunks from local selector banks for use without flashing and completion of intercepted calls, for use with trunk finders, for use with intercepting type outgoing trunk to operator - SD-31767-01	X	2	2
Intercepting trunks from toll selector banks for use with trunk finders, for use with intercepting type outgoing trunk to operator - SD-32163-01	X	2	2
Intercepting trunks outgoing from trunk finder without arrangement for completion of intercepted calls, without connection to make busy circuits, with flashing on toll calls, without flashing on local calls, without toll identification tone, without supervision on toll calls, used with regular intercept only, to Middletown office, SD-30990-01	X	4	6

Coin Box and Message Register Trunks

Dial prepay coin box trunks arranged for 10 cent initial coin deposit before dial tone without delayed charge. Associated line finder groups are not to be equipped with long line circuits - SD-31592-02	X	15	16
Coin trunk timed release circuits - SD-31861-01	X	2	2

<u>Relay Rack Equipment (Cont'd.)</u>	<u>Initial</u>		<u>Ultimate</u>
	<u>Wire</u>	<u>Equip.</u>	<u>Equip.</u>

Coin Box and Message Register Trunks (Cont'd.)

Auxiliary line circuits for operating subscriber registers with delayed charge interval for use with line finders, using 48V battery, SD-32082-01	X	8	8
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Long Lines and Trunks

Dial long station line for use when conductor loop to 550, 551, 600 or 700 type P.B.X. is 40 ohms or less, arranged for repeated ringing with option for by-pass ringing, with lamp protection, ratio of line impedance of loop terms. S-V to rep. coil terms. W-Z is 0.8 to 1.25 - SD-96034-01	X	4	12
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Dial long line circuit for use with 10 party terminal per station subscribers lines, lamp protection is required, ratio of long line impedance to office impedance is 0.8 to 1.25 - SD-31376-01	X	5	15
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Dial long line circuit, composite signaling, Type B - SD-96251-01	X	1	1
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Type B composite signaling circuit not arranged for phantom group operation - SD-95032-01	X	1	1
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Miscellaneous

Sleeve repeating trunks, SD-31421-01	20	6	6
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Vacant code trunks for local and incoming selector levels for use with no such number tone supply, SD-31937-01	X	5	5
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Trunk coin control circuits for use with toll connecting trunks where potential between ground at coin box and ground at coin battery supply is within ± 8 volts and tone signals are not to be sent to toll operator - SD-95031-01, Total	X	17	17
For Recording Completing Trunks	X	7	7
For Toll Switch Trunks	X	10	10

Auxiliary line circuit for use on prepayment coin lines arranged for 10 cent initial charge and to repeat the sleeve ground - SD-32166-01	100	100	200
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Notes

1. Provide 10 I.P.M. interrupter circuits SD-96343-01 as required for supplying 10 I.P.M. to miscellaneous circuits.
2. The coin trunk timed release feature SD-31861-01 in connection with coin box trunks shall not be arranged to give "stuck coin" alarm indications.
3. Provide no-such-number tone supply equipment SD-96357-01 to furnish no-such-number tone to vacant code trunks.
4. The coin control leads from the trunk coin control circuits and the coin recording completing trunks shall be cabled to the C.D.F.
5. Arrange coin box trunks for future use with ten cent initial coin operation.
6. The local selector, toll selector and connector intercept trunks shall be connected to intercepting trunk finder bank multiple as follows:

<u>Group 1</u>	<u>Group 2</u>	
1,2	-	Vacant local selector level
3,4	-	Vacant toll selector level
5 to 22	1 to 17	Connector intercept (Ckts. 1 to 35)

7. The message rate auxiliary line circuits shall be provided in accordance with SD-32082-01 Figs. 1 & B with "X" and "Z" wiring. The leads in Fig. B shall be terminated on the H.C.D.F. for cross-connecting to line finder and connector terminals and to message registers.

8. Dial long line circuits per SD-96251-01 shall be furnished in accordance with Fig. 1 with H,J,T & U options. The Telephone Company will provide L,M or N straps as required.

9. Composite signaling circuits shall be furnished in accordance with SD-95032-01 Figs. 1,6,7,8 & 10 with B,K,M,R,V & Y option and ZG apparatus. Only side 1 will be required initially.

<u>P.B.X. Battery and Ringing Feeders</u>	<u>Initial</u> <u>Wire</u>	<u>Ultimate</u> <u>Equip.</u>	<u>Equip.</u>
P.B.X. 48 volt battery supply circuits with metallic return, SD-90232-011 Figs. 1 & 1K	2	2	5
P.B.X. 48 volt battery supply circuits with metallic return, SD-90232-011 Figs. 3 & 3K	2	2	5
P.B.X. continuous ringing 105 volt $\pm$ supply circuits consisting of three resistance lamps and one 1-1/3 ampere fuse per circuit 5-J-180 Fig. 1	1	1	2

P.B.X. Battery and Ringing Feeders (Cont'd.)

	<u>Initial</u>	<u>Ultimate</u>
<u>Wire</u>	<u>Equip.</u>	<u>Equip.</u>

P.B.X. machine ringing R1 supply
circuits consisting of three
resistance lamps and one 1-1/3
ampere fuse per circuit - SD-90230-011
Fig. 1 & SD-90230-012 Fig. 1K

1	1	4
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Vacuum Tubes

1. Provide 2 spares of each type of vacuum tube being furnished on this order.

TESTING, MAINTENANCE AND ALARM EQUIPMENT - SECTION E

The following testing equipment shall be furnished:

<u>Box Type Test Sets</u>	<u>Quantity</u>
355A Dial Office Test Set - SD-31858-01	1
35F Test Set - SD-95410-01	1
Local Test Cabinet No. 2, SD-96002-01	1
<u>Relay Rack Mounted and Miscellaneous Test Equipment</u>	
Test line from connector multiple for local or toll train test - SD-31932-01	1
<u>Test Set Accessories</u>	
Table type wagons for supporting box type portable test sets:	
With 12" x 24" trays	1

Notes

1. Furnish standard cords for the 35F Test Set and the 355A Dial Office test set.
2. A cover shall be provided for the 35F Test Set.
3. Test line jacks and circuits shall be provided on the various frames in accordance with standard arrangements as covered on ED-30664-01.
4. Test battery for the Local Test Cabinet No. 2 shall be obtained from 48 volt central office supply.
5. Furnish one 4W6A patching cord for use at the C.D.F. with the No. 2 Local Test Cabinet.
6. The No. 2 Local Test Cabinet shall be permanently mounted on the growth end of the V.C.D.F. at eye level as shown on Telephone Company floor plan drawing Sketch 1416 and shall be arranged for connection to battery via a permanently wired connection through the cable hole in the end panel.

Local Test Center Equipment for No. 14
Test Desk and No. 2 Repair Service Desk

Provide the following equipment for operation with the local test center located at the Middletown Office:

	<u>Initial</u> <u>Wire</u>	<u>Equip.</u>	<u>Ultimate</u> <u>Equip.</u>
Terminating Wheatstone Bridge test trunks arranged for manual Verley 3 test with subset, SD-90403-01	1	1	1
Test distributor control circuits arranged for permanent signal tests - SD-31401-01	X	2	2
Permanent signal test circuit - SD-31402-01	X	1	1
Test trunk ringing circuit - SD-31236-01	X	2	2

Notes

1. The subset associated with the Wheatstone bridge test trunk shall be located on the originating end of the C.D.F. and mounted on a board to be made up by the installer.

2. The earth potential difference to the No. 14 test desk is not more than ± 15 volts.

3. The AC ringing voltage at the No. 14 test desk has a frequency of 20 cycles and a voltage range of 85 to 88 volts.

Office Ringing and Alarm Equipment

Initial &
Ultimate

Provide ringing and alarm shelf with additional wiring and equipment as required to provide: one extension alarm without cut-off key; one 120 I.P.M. broadcast circuit and one 60 and 120 I.P.M. filter circuit; one code circuit when more than 100, 5-code 10 party T.P.S. connector terminals are connected to code lead; no aisle pilot lamps; audible alarm bell operated on all major or minor signals

1

Notes

1. Ringing machine and auxiliary equipment requirements are listed in Section H.

2. Cable insulation alarm circuit and permanent signal SD-31912-01 shall be furnished. Permanent signal alarm shall be arranged to bring in an alarm after 2 selector permanents have occurred. Cable insulation feature shall not be equipped.

3. Tone is not required for the 120 I.P.M.

4. Provide the following code leads at the V.C.D.F: 1000 C-1, 1000 C-2, 600 C-3, 100 C-4 and 100 C-5.

5. Arrange prepay coin box trunk alarm for use with coin box trunks arranged for ten cent initial coin operation.

Emergency Alarm System

1. Provide a 48 volt emergency alarm system SD-96052-01.
2. The automatic fire detection feature shall be furnished for all frames including both sides of the distributing frame. Line Finder, selector and miscellaneous frames shall be provided with protection on each shelf.
3. The locations of station boxes, fire detection relay casings and bell are indicated on the floor plan drawings.
4. Provide additional equipment for extending the emergency alarm to the Middletown Office.

DISTRIBUTING FRAME, RELAY RACKS, FUSE BOARD, LADDERS, ETC. -
SECTION F

The location of all frames covered in this section are shown on floor plan drawing Sketch 1416.

General

1. The Western Electric Company shall terminate all outside cables on the protectors and shall number all protectors in accordance with information to be furnished by the Telephone Company.
2. Distributing frame terminal strips shall be furnished as required.
3. Vacant connector terminal intercept straps of the "wrapped" type shall be provided and installed by the Western Electric Company for all of the unused connector terminals. Furnish 1000 P-450295 strap wire, 24 gauge.

Distributing Frame Jumper Wire

1. The Western Electric Company shall furnish all jumper wire required including the following for use on subscriber lines:

	<u>No. of Feet</u>	<u>Type</u>
Single conductor	8,000	L20S (Do not substitute)
2 conductor	20,000	L22P " " "
3 conductor	36,000	L22T " " "

2. The Western Electric Company shall run all cross-connections for trunks, subscriber lines and miscellaneous circuits.

Combined Distributing Frame

Furnish narrow type double sided combination frame equipment of 11'-6" height as follows:

	<u>Initial</u>	<u>Ultimate</u>
Verticals, arranged for 2- C52A and 4- C50A protectors per vertical	10	20
Verticals, arranged for 14'-8" terminal strips per vertical	16	16
C50A Protectors	32	-
C52A Protectors	16	-
12A Distributing Rings	40	-
12B " "	40	-
12C " "	32	-

Notes

1. Jack boxes shall be furnished as required for the Wheatstone bridge test trunks.
2. The connector multiple terminal strips shall have three rows of terminals strapped for intercepting trunk connections.
3. Ultimately, the 2 party flat rate lines will constitute more than 10% of the total lines. Cross-connections at the C.D.F. shall be made in accordance with ED-30334-02 Figs. 1,3,7,11,18,C & F and SD-32166-01 Fig. 53.
4. Provide 30 No. 150A terminal strips on the V.C.D.F. for use as bunching blocks for 4 party lines. Locate on Verticals 9,10 & 17.
5. Provide 70 No. 150G terminal strips on the V.C.D.F. for use as bunching blocks for 10 party lines. Locate on Verticals 11,12,13,18 & 19 and number circuits from 1001 up.
6. Provide 14 No. 150H terminal strips on the H.C.D.F. for the "A" leads of the 10 party terminal per station lines and locate on the 12th & 13th shelves from the bottom on bays 1 to 7.
7. 48 volt battery and ground connecting blocks shall be provided on both sides of the C.D.F. per SD-90122-01.
8. The subscriber lines group terminations shall start on bay 1 the seventh shelf from the bottom and shall extend five shelves high.
9. The subscribers connector terminals shall start on bay 1 the first shelf from the bottom and shall extend six shelves high.
10. Verticals 1 to 13 & 17 to 19 shall be arranged for mounting terminal strips and verticals 14 to 16 & 20 to 26 for mounting protectors.
11. Terminate 10 party T.P.S. Code ring leads on V.C.D.F. as follows:

<u>Code</u>	<u>Verticals</u>	<u>Term. Strip</u>
1	2 to 6	A,B
2	2 to 6	C,D
3	2 to 4	E,F
4	2	G
5	2	H

12. The top shelf shall not be used unless no other space is available on the frame.

Relay Rack

1. Provide bays of miscellaneous relay racks 11'-6" high as required for mounting the equipment ordered in the various sections of the specification.

Fusing Equipment

1. Furnish fuse ~~in~~ ~~to~~ ~~be~~ ~~used~~ ~~in~~ ~~the~~ ~~miscellaneous~~ ~~relay~~ ~~rack~~ ~~as~~ ~~required~~.

Ladders and Benches

Provide ladders and benches as follows:

	<u>Quantity</u>
14" straight type rolling ladders with brakes	4
14" straight type rolling ladders with brakes and appliance outlets	2
Portable rolling ladders ED-91739-70 G1	1
Portable benches KS-5104	1
Foot Stool KS-5174	1
Rolling ladder seat attachment ED-91792-70 G1	2

Notes

1. Track and fixtures shall be provided to locate rolling ladders as shown on the floor plan drawing.
2. Ladders shall slant as shown on the floor plan drawing.
3. The rolling ladders with appliance outlets shall be located at the combined distributing frame.

Tarpaulins

1. Furnish 2 tarpaulins 6'-0" x 12'-0".
2. Furnish 1 tarpaulin holder to be located as shown on the Telephone Company's floor Plan.

CABLING, CABLE HOLES AND SHEATHING - SECTION G

1. The locations of all cable holes and slots are shown on the floor plan drawing.
2. Complete sheathing of all cable holes and the used portion of the slot under the C.D.F. shall be provided by the Western Electric Company.
3. The D.P.T.S. multiple cabling shall be extended to include the three spare switch frames SW 11, 12 and 24.

POWER PLANT - SECTION HGeneral

1. The power plant equipment shall be designed for the following conditions and shall be located as shown on floor plan drawing Sketch 1416.
2. Miscellaneous circuits and equipments not covered herein but necessary for the proper functioning of the various units of equipment shall be furnished to agree with the standard arrangement.
3. Estimated 48 Volt busy hour drains are as follows:

	<u>To 1955</u>	<u>To 1969</u>	<u>To 1983</u>
Amperes	70	110	175

4. This is a 355A office will 11'-6" frames.

Power Service

1. The electric service is 120/240 volts, 60 cycles, single phase, 3 wire with grounded neutral.
2. The voltage and frequency will remain within the limits of plus and minus 5% and 2% respectively.
3. A power protection panel shall not be furnished.
4. A 60 ampere equipment power switch fused at 60 amperes will be provided by the Telephone Company.
5. A 1" conduit with 2- #6 and 1- #10 leads between the service switch and the power service cabinet will be provided by the Telephone Company. The conduit terminates with an elbow turned down at the ceiling and shall be extended to the cabinet by the Installer.

6. ^{service} Furnish a power cabinet to be mounted on the wall as shown on Sketch 1416. This cabinet shall be equipped with a neutral bus bar and both 240 volt and 120 volt fuse circuits. All miscellaneous telephone equipment circuits requiring 120 volt AC shall be fed from this cabinet.

48 Volt Power Plant - 110A - J86572

1. Furnish three 7'-0" floor supported relay rack type power board frameworks with 3- 30 ampere metallic type rectifiers per J86263A.
2. Furnish 24 cells KS-15544 List 503 (1080 A.H.).

48 Volt Power Plant - 110A - J86572 (Cont'd)

3. Furnish 3 C.E.M.F. cells per KS-5170 List 106 (100 Ampere).
4. Furnish a 2 tier, 1 row battery stand.
5. Furnish 60 ampere discharge and alarm fuse panels as required for distribution to the frames. Mount these panels on the upper part of Bay 2 similar to J86572H-2 Fig. G. The regular 110A power plant discharge fuses shall be used for small miscellaneous supplies.

Ringling Power Plant - J86212T

1. The ringling equipment shall be mounted on the ringling and alarm shelf covered in Section E of this Specification.
2. Furnish ringling equipment per J86212T with assembly wiring and equipment for two, 5 code, 0.25 amp. ringling machines with automatic and dialing transfer equipment, high tone supply and filter equipment and with wiring to provide for 60 IPM busy tone and for continuous operation of the machines.
3. As covered in Section C, Connector Equipment, Note 6 of this specification, all connector shelves requiring Ring 1 GEN. are to be connected to "Code 1 GEN. BR. 2" and all connector shelves requiring Ring 2 GEN. are to be connected to "Code 2 GEN." Connecting the ringling leads in this manner will reduce the load on the ringling generator (See Table 1 on SD-80780-01).
4. Furnish VHF Interference Suppression Filter Units for the ringling machines.
5. Furnish the following spare tone coils: 98A Rept. Coil (LT1A) 98B Rept. Coil (LT1B) and 364A Trans. (LT2). Furnish blank wood panels to mount these coils with the power plant spare fuses. The Installer shall stencil these panels.

Coin Control Power Plant

1. Furnish 1- J86212F List 2 coin control dry battery supply with 9 KS-6948 dry cells. Locate on a miscellaneous relay rack bay and place on the lower portion of the bay to facilitate maintenance.

Conduit and Power Wiring

1. Leads from the power board to the frames shall be run on cable rack.

Grounds and Ground Leads

1. The water supply for this office will be from a new driven well. The ground electrode will be the two 1-1/4" copper tubes 35 feet long, which run from the pump in the building to the well.
2. The Telephone Company will provide a #0 ground lead in a 1" conduit from the water pipe entrance to the C.D.F. At the C.D.F. this conduit will be terminated with a metal bushing 4" above the floor with four feet of slack in the lead.

Grounds and Ground Leads (Cont'd)

3. The Western Electric Company shall order ground clamps of the proper size for both of the water pipes. The Installer shall connect the #0 lead from the C.D.F. to one of the pipes and bond to the other pipe.

4. The power board ground lead shall be run on cable rack to the C.D.F. ground bar.

Reserve Power Plant

1. No reserve power plant shall be furnished.

2. The Telephone Company is providing a room for a future diesel engine alternator set. For the present time a transfer switch will connect the complete building service to a receptacle located in the rear of the building for a portable emergency alternator.

Miscellaneous

1. Furnish a model 280 portable voltmeter (or an approved equivalent), scale 0-150, 0-60, 0-3 with locking key and 3'-0" cables and a portable voltmeter tray per KS-2901.

2. Reserve a 10 ampere, 48 volt discharge fuse and ground terminal for supplying manually controlled emergency lights and complete the connection of the supply leads which the Telephone Company will terminate in a wall outlet at the end of the battery rack near power Bay 1.

LIGHTING - SECTION I

General

1. All lighting equipment required for general illumination will be furnished by the Telephone Company.

2. Information covering the locations of lights for general illumination and electrical outlets for use in supplying frame and aisle lighting and appliance outlets is covered on architect's electrical plans.

Frames and Racks

1. Furnish frame and aisle lighting for all frames and racks including the power board and battery rack. All lighting shall be fluorescent type with high power factor ballasts. At the C.D.F. the fixtures shall be two lamp "Daybrite". At the switch frames the fixtures shall be single lamp "Curtis". All of the single lamp fixtures shall be equipped with lamp guards.

2. Connect the cross-aisle lights at the front and rear of the switchroom to Ckt. #14 so they will be controlled by the 3-way switches at the entrances.

3. Furnish appliance outlets for all frames and racks including the power board.

4. Furnish "Trol-E-Duct" appliance outlets on the ladders at the C.D.F. The ducts on both sides of the C.D.F. shall be connected to one AC circuit with one control switch and pilot light. Appliance outlets at the bottom of the C.D.F. shall not be furnished.

5. At the end of the C.D.F. one single conduit drop shall be furnished. This conduit shall contain the control leads for the frame lighting and for the "Trol-E-Ducts". The control switches shall be mounted one above another in this run.

Engine Room

1. All lighting and appliance outlets in the future engine room will be furnished by the Telephone Co.

Emergency Lighting

1. Emergency lighting will be provided by the Telephone Company. The locations of the emergency lighting fixtures and switch shall be indicated on the Western Electric Company lighting plan.

SUPPLEMENTARY INFORMATION - SECTION JTelephone Company's Drawings for Reference

The following drawings form a part of this specification:

<u>Title</u>	<u>Drawing No.</u>	<u>Issue</u>
Floor Plan, First Floor	Sketch 1416	1
Switch Frame Layout	" 1417	1
Traffic Schematic	" 1418	1

Notes

1. The Telephone Company's Drawing 5-J-180 Issue 7 which is referred to in this specification, is not being furnished as it is available in the Western Electric Company's files.

Architect's Drawings

<u>Title</u>	<u>Drawing No.</u>
Basement Plan and Details	102
First Floor Plan and Details	103
Elevation and Details	104
Electrical Plan	1303-100
Heating & Plumbing Plan	1303-200

Loop Resistance and Loading

The loop resistances and characteristic impedance at 1000 cycles for use between the C.D.F. of this office and C.D.F. or M.D.F. of connecting offices are as follows:

<u>Connecting Office</u>	<u>Loop in Ohms</u>	<u>Characteristic Impedance At 1000 Cycles</u>	<u>Max. Earth Potential Diff.-Volts</u>	<u>Circuits</u>
Middletown	652	1130	-	Recording, Toll Sw. & Intertoll
Middletown	1077	1952	-	Recording, Toll Sw. & Intertoll
Middletown	1077	1952	-	Information, Intercept, Repair Serv. & Verification
Middletown	982	-	+0 -1.2	Test and Alarms

General Notes

1. Modifications necessary to arrange P.B.X.'s, order boards, attended pay stations and similar equipment to be operative with this step-by-step equipment, are not required under this specification.
2. The climatic conditions at this office are not such as to require that precautions be taken against damage by excessive moisture.
3. Reproduced tracings are not required.
4. Adequate openings will be provided for taking the equipment into the building.
5. Storage space will be available in the building.
6. Transmission tests shall be made by the Western Electric Company on the toll and AB toll transmission selectors and outgoing trunks to toll office.
7. The Western Electric Company shall make up and install safety guard rails on Switch Frames SW-9, SW-11, SW-12, SW-19 & SW-24. Guard rails shall consist of an auxiliary framing bar located between the frame uprights and fastened with bolts in existing drillings at a height of about 4'-0" above the floor.
8. Routine and supplementary tests similar to those used in No. 1 SxS dial central offices shall be applied in this office. Additional test sets if required will be furnished by the Telephone Company for the performance of these tests.
9. Ceiling inserts are not being provided in the building. Framework and ladder tracks shall be braced to wall at originating end of lineups as required.