

**CABLE RESTORATION**  
**DEDICATED PLANT**  
**IDENTIFYING PAPER INSULATED**  
**CABLE PAIRS**

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**1. GENERAL**

**1.01** This section describes procedures to be followed by cable restoration forces when damage occurs to a pulp- or paper-insulated cable in Dedicated Outside Plant.

**1.02** Most aspects of the cable restoration in dedicated plant are similar or identical to established procedures for nondedicated plant. There are, however, two important points that should be stated in the beginning.

(a) In dedicated plant, cable pairs in the field may appear as color coded conductors at control and access points as well as at distribution terminals.

(b) The information required by cable restoration forces must be obtained from new and revised records.

**1.03** This section is intended to acquaint cable restoration personnel with these new procedures and the new and revised records essential to the prompt restoration of service in cables operating under the Dedicated Plant Plan.

**2. RECORDS**

**2.01** Cable restoration forces must be provided with accurate information pertaining to the distribution of cable pairs.

**2.02** The examples of typical cable failures outlined in Part 5 emphasize that accurate, up-to-date records are essential to the prompt restoration of cable in dedicated plant. These examples also indicate that detailed analyses of records are required to determine the location from which pairs may be identified.

**2.03** Outside plant cable restoration forces must be provided with a Cable Restoration List giving the necessary information concerning the affected pairs.

CABLE RESTORATION LIST																
EXCHANGE <u>JUNCTION</u>		CABLE NO. <u>123A</u>		COUNT <u>1-300</u>		TRO. LOCATION <u>135 ANN</u>										
MDF ADDRESS	TEL./CIRCUIT NUMBER	ADDRESS		DEF. CABLE	ADDRESS		DISTRIBUTION TERMINAL ADDRESS								REMARKS	
		AP/CP	AP/CP		AP/CP	AP/CP	BG	CLR/BP	BG	CLR/BP	BG	CLR/BP	BG	CLR/BP		
①	②	③		④	⑤		⑥									
		123 ANN			301 ANN 401 ANN		R512 SECOND R536 SECOND									
CA.	PAIR	PIC SHEATH	PIC SHEATH	PAIR	PIC SHEATH	PIC SHEATH	BG	CLR/BP	BG	CLR/BP	BG	CLR/BP	BG	CLR/BP		
01	1	388-9696		1			1									
	2			2			2									
	3			3			3									
	4			4			4									
	5			5			5									
	6			6			6									
	7			7			7									
	8			8			8									
	9			9			9									
	10			10	51											
		1		1		201										
		2		2		202										
01	11			3				1	WBL							
	12			4					O							
	13			5					G							
	14			6					BR							
	15			7					SL							
	16			8					RBL							
	17			9					O							
	18			20					G							

NOTES:

1. ENTER MAIN FRAME CABLE AND PAIR NUMBER FOR PAIR IDENTIFICATION AT CENTRAL OFFICE.
2. ENTER TELEPHONE OR CIRCUIT NUMBER ON PLANT SERVICE CENTER COPY FOR TESTING.
3. ENTER ACCESS OR CONTROL POINT ADDRESS ON CENTRAL OFFICE SIDE OF CABLE DEFECT. IDENTIFY PAIRS BY PIC SHEATH COUNT.
4. ENTER DEFECTIVE CABLE PAIR COUNT.
5. ENTER ACCESS OR CONTROL POINT ADDRESS ON FIELD SIDE OF CABLE DEFECT. IDENTIFY PAIRS BY PIC SHEATH COUNT.
6. ENTER DISTRIBUTION TERMINAL ADDRESS. IDENTIFY PAIRS BY BINDING POST OR BINDER GROUP NUMBER AND PAIR COLOR.

Fig. 1 — Sample Cable Restoration List

**2.04** The Cable Restoration List should be prepared by Plant Service Center personnel. A sample Cable Restoration List is shown in Fig. 1. The following information should be included as required.

- (a) Main distribution frame address.
- (b) Telephone or circuit number of working pairs.
- (c) Access or control point address on office side of defect.
- (d) Defective pair count.
- (e) Access or control point address on field side of defect.
- (f) Distribution terminal address.

**2.05** The information in 2.04, together with the size and type cable involved and probable location of damage should be relayed to repair forces as quickly as possible. *Special circuits should be indicated on the restoration sheet and given special priority.*

**2.06** The Cable Restoration List is prepared using information obtained from one or more of the following records depending on the section of plant damaged. Records not illustrated in this part of the practice are shown in Part 5.

(a) *Exchange Customer Cable Record (ECCR)*: A standard assignment record for exchange cables (Fig. 8 and 9).

(b) *Control Point Interconnection Record (CIR)*: A record of pair connections at a control point that provides a complete record of OUT pairs at the control point (Fig. 7).

(c) *Dedicated Plant Assignment Card (DPAC)*: A new dedicated plant record that provides frame addresses, access point connections, and terminal locations formerly found in other assignment records. These cards are especially useful in verifying telephone numbers (Fig. 2).

(d) *Cable Location Record (CLR)*: A diagram of branch feeder and distribution cables, giving counts and locations of cables and associated control and access points (Fig. 10 and 12).

(e) *Route Layout Sheet (RLS)*: A record of pair counts in main feeder cables and lateral cables from the main frame to the point of connection with each branch feeder cable (Fig. 6).

(f) *Access or Control Point Work Sheet*: Instructions issued to the construction forces giving pair connections to be made in establishing an access or control point in existing cable plant (Fig. 3).



M 77 22 4		ACCESS OR CONTROL POINT WORK SHEET						Printed in U S A		E 5063 (6.63)	
			CENTRAL OFFICE _____		WORK ORDER _____		PRINT _____		SPLICE NO. _____		
			LOCATION OR DESCRIPTION OF WORK: _____								
			DATE FIELD WORK TO START _____		COMPLETE AFTER _____		SHEET NO. _____		OF _____ SHEETS		
			DATE PREPARED _____		BY _____		FOR ASSGT CALL _____		COPY _____		
			IN				OUT				REMARKS
CABLE DESIGNATION	IN	COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	
MAIN FEEDER CA-PAIR											
	01										
	02										
	03										
	04										
	05										
	06										
	07										
			IN				OUT				REMARKS
CABLE DESIGNATION	IN	COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	
MAIN FEEDER CA-PAIR											
	51										
	52										
	53										
	54										
	55										
	56										
	57										
			IN				OUT				REMARKS
CABLE DESIGNATION	IN	COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	
MAIN FEEDER CA-PAIR											
	48										
	49										
	50										
			IN				OUT				REMARKS
CABLE DESIGNATION	IN	COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	* B FEEDER	PIC SHEATH COUNT	* LD B FEEDER	PIC SHEATH COUNT	
MAIN FEEDER CA-PAIR											
	98										
	99										
	00										
* LINE OUT WORD NOT APPLICABLE B FEEDER — BRANCH FEEDER CABLE M FEEDER — MAIN FEEDER CABLE L.D. — LOCAL DISTRIBUTION CABLE			"—" INDICATES WORKING PAIRS. DO NOT CONNECT THROUGH ACCESS OR CONTROL POINT.								
			O.K. NUMBER _____		TIME _____		DATE COMPLETED _____		BY _____		
			ASSIGNMENT REC. POSTED BY _____		DATE _____						

Fig. 3 — Access or Control Point Work Sheet

**3. GENERAL CONSIDERATIONS**

**3.01** As previously stated, damaged cable in dedicated plant is restored to service in essentially the same manner as nondedicated plant. Some aspects which differ or require special consideration are as follows:

- (a) Methods used to determine the *nature of damage* to cable in dedicated plant are the same as for nondedicated plant.
- (b) Test equipment used to test and identify pairs is the same as for nondedicated plant and is covered in the 106 Division of the Plant Series Practices.
- (c) A damaged section of color coded (PIC) cable is restored to service by splicing the conductors color-to-color using standard procedures.
- (d) All testing should be coordinated with the test desk. When large numbers of pairs are involved, sufficient preliminary in-

formation should be given to repair forces to enable them to start restoring service on some working pairs while additional information is being obtained.

- (e) Identifying, tagging, and splicing procedures are the same as established procedures for nondedicated plant. Tone is sent to the damage point from the central office where working pairs are more readily identified. When identifying working pairs from the field toward the damage point, tone should be placed on the pairs at the access and control points where they are readily identified by color code, or at terminals, as required. The pairs are detected at the damage point with an amplifier and probe.
- (f) Bridge lifters (1574A or B Inductors) are normally used on party lines that are bridged at the central office. Consideration should be given to isolating the companion party by removal of heat coils from the pair in trouble before applying tone.

(g) Cable pairs are connected through control and access points only as required. Therefore, pairs and groups of pairs may appear at these points but not be connected through.

(h) Branch feeder cable pairs may be dead beyond the point at which they are connected to distribution cable pairs.

(i) A control or access point may be housed in a cabinet, splice closure, or terminal section and may be mounted on a strand, pole, wall, pedestal, or inside a building.

(j) When a pulp or paper insulated main feeder cable is damaged between the central office and the first control point, the pairs toward the central office are identified from the main frame in accordance with established procedure.

(k) Special circuits are marked on the main frame with special circuit guards. In control and access points special circuits are designated by a red marker taped around the associated B Wire Connectors.

(l) In existing pulp or paper insulated cable, PIC cable stubs are used to establish control and access points. In these cases pairs working at the time of dedication are not normally spliced to the stub and, therefore, will not appear in the control or access point. These pairs will be identified in the usual manner.

(m) The maintenance of correct cable and assignment records is vital, therefore, all errors in existing records should be noted during testing procedures and the necessary corrections made as soon as cable service is restored.

#### 4. PROCEDURES

**4.01** A cable failure is usually indicated by subscriber reports, a large number of permanent signals, the lighting of alarm lamps, the sounding of a major audible alarm, or a report from a person who has observed the damage.

**4.02** Cable restoration forces should be notified immediately to enable them to begin preparation for restoration of service. Excavat-

ing or clearing away debris is often required at the point of damage. Telephone forces and private contractors necessary for this work should be alerted and organized as soon as possible.

**4.03** *All restoration work should be coordinated through the test desk.* The affected pairs should be noted and preliminary tests made to determine the extent and approximate location of the damage. This preliminary information should be relayed to the repair forces immediately.

*Note:* In common control offices the affected pairs should be opened immediately. When the damaged section of the plant has been determined, the CIR is referred to and the central office forces notified of the counts affected.

**4.04** Restoration should begin as soon as possible after the actual location of the damage is determined. A talking circuit between the office side of the damaged section and the test desk or frame should be established as soon as possible. Working pairs should then be identified from the frame and tagged at the damage location. In some cases, especially in the event of extensive damage, outside plant personnel may aid in identifying the pairs at the main frame. Test desk or Plant Service Center personnel should prepare the Cable Restoration List necessary for identification from the field side of the damage as soon as possible.

**4.05** *Every effort should be made to restore special circuits immediately.* Special service customers should be notified of damage to their circuits as soon as possible. Special circuits should be restored as soon as possible; then verified from the test center.

**4.06** The sequence in which pairs on the field side of the damage are identified will depend on the extent of damage, number and type of pairs affected, and the particular situation. In some cases it may be more convenient to identify both working and nonworking pairs during a single visit to a terminal or access point. However, the sequence in which pairs are restored to service should be as follows:

- (1) Essential service and special circuits.

- (2) Balance of working pairs, including assigned and committed pairs.
- (3) Nonworking identifiable pairs, spliced pair for pair.
- (4) Nonworking unidentifiable pairs, spliced at random.

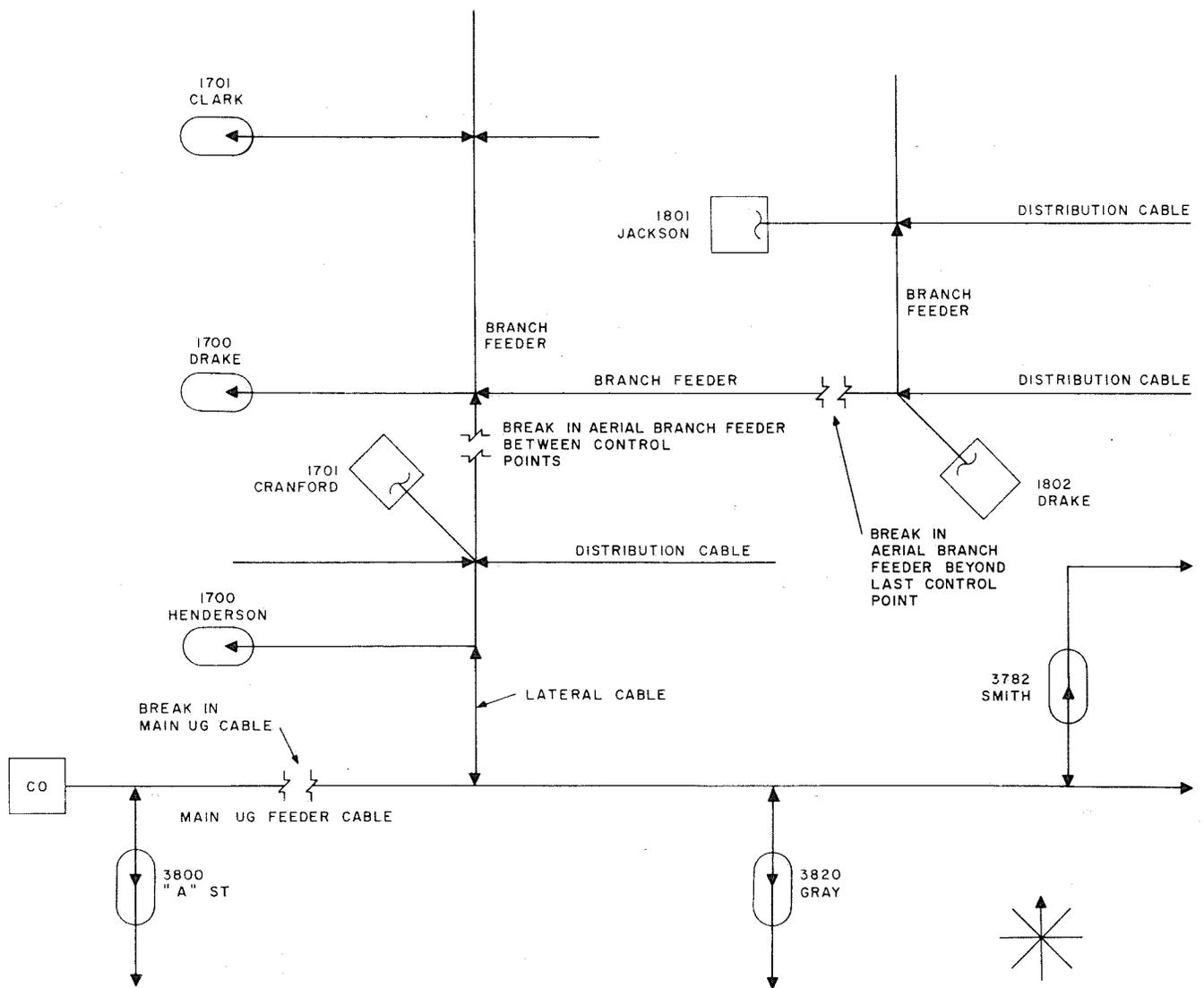
**4.07** When it has been determined that a break has occurred in a section of noncolor coded cable in dedicated plant, the initial steps to be taken are as follows:

- (1) Determine the location of the break from the Cable Location Record.

- (2) Check with the assignment center to determine if construction of access or control points for the affected counts is currently in progress.
- (3) Notify the cable repair forces of the break location as soon as possible.

**5. TYPICAL CABLE FAILURES**

**5.01** Three different cable failures, each in a different section of dedicated plant, are discussed in detail in the following paragraphs. Where practical, applicable records and diagrams are shown. Fig. 4 illustrates the relative locations of these three failures.



**Fig. 4 — Examples of Three Different Cable Failures**

**BREAK IN MAIN FEEDER CABLE**

**5.02** Assume a failure has occurred in a section of main feeder cable as illustrated in Fig. 5.

**5.03** To determine where the pairs may be identified refer to the Route Layout Sheet illustrated in Fig. 6.

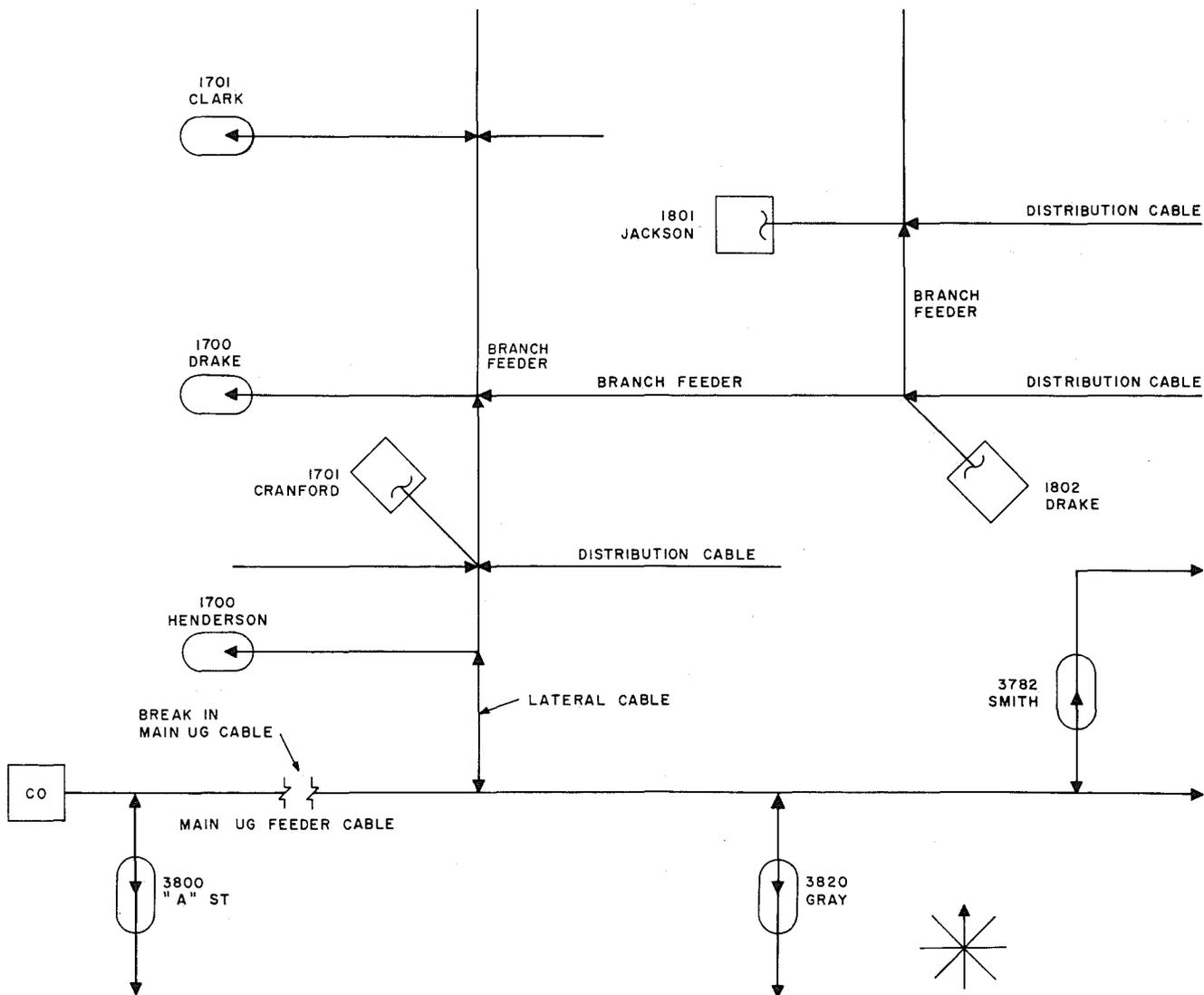
**A. Identification of Pairs on Central Office Side of Break**

(a) This record shows that the count at the central office is 1-1800 and that all pairs except pairs 1551-1600 can be identified at the break by testing from the central office.

(b) Pairs 1551-1600 are not connected in the main feeder cable beyond lateral A. Therefore, no individual identification of pairs in this group is necessary and they may be spliced at the break at random.

**B. Identification of Pairs on Field Side of Break**

(a) Pairs 1-300 do not appear in any laterals shown on this Route Layout Sheet. It will be necessary to obtain this information from the succeeding Route Layout Sheet (not shown) and proceed in the same manner as the following.



**Fig. 5 — Break in Main Feeder Cable**

(b) Pairs 301-600 appear in the control point at 3800 Howard Street and may be identified at that location as continuous PIC sheath pairs 1-300 in BKTA9 lateral G feeding this control point.

(c) Pairs 601-800 appear in the control point at 3808 Frank Street and may be identified at that location as continuous PIC sheath pairs 1-200 in BKTA9 lateral F feeding this control point.

(d) Pairs 801-1200 appear in the control point at 3782 Smith Street and may be identified at this location as continuous PIC sheath pairs 1-400 in BKTA9 lateral D which feeds this control point.

(e) Pairs 1201-1350 and 1601-1800 appear in the control point at 3820 Gray Street and may be identified at this location as PIC sheath pairs 1-150 and 151-350, respectively, in BKTA9 lateral C feeding this control point.

(f) Pairs 1351-1550 appear in BKTA9 lateral B as PIC sheath pairs 1-200. However, since the 1700H control point was constructed in existing plant by splicing in a color-coded stub, some of the pairs do not appear in the control point. Therefore, it will be necessary to refer to the IN Control Point Interconnection Record (CIR) for 1700 Henderson shown in Fig. 7.

(g) Pairs 1356-1359 of the 01 cable appear in the 1700H control point as continuous PIC SHEATH COUNT pairs 1-4. Pairs 1411-

1414 appear as continuous PIC SHEATH COUNT, pairs 5-8.

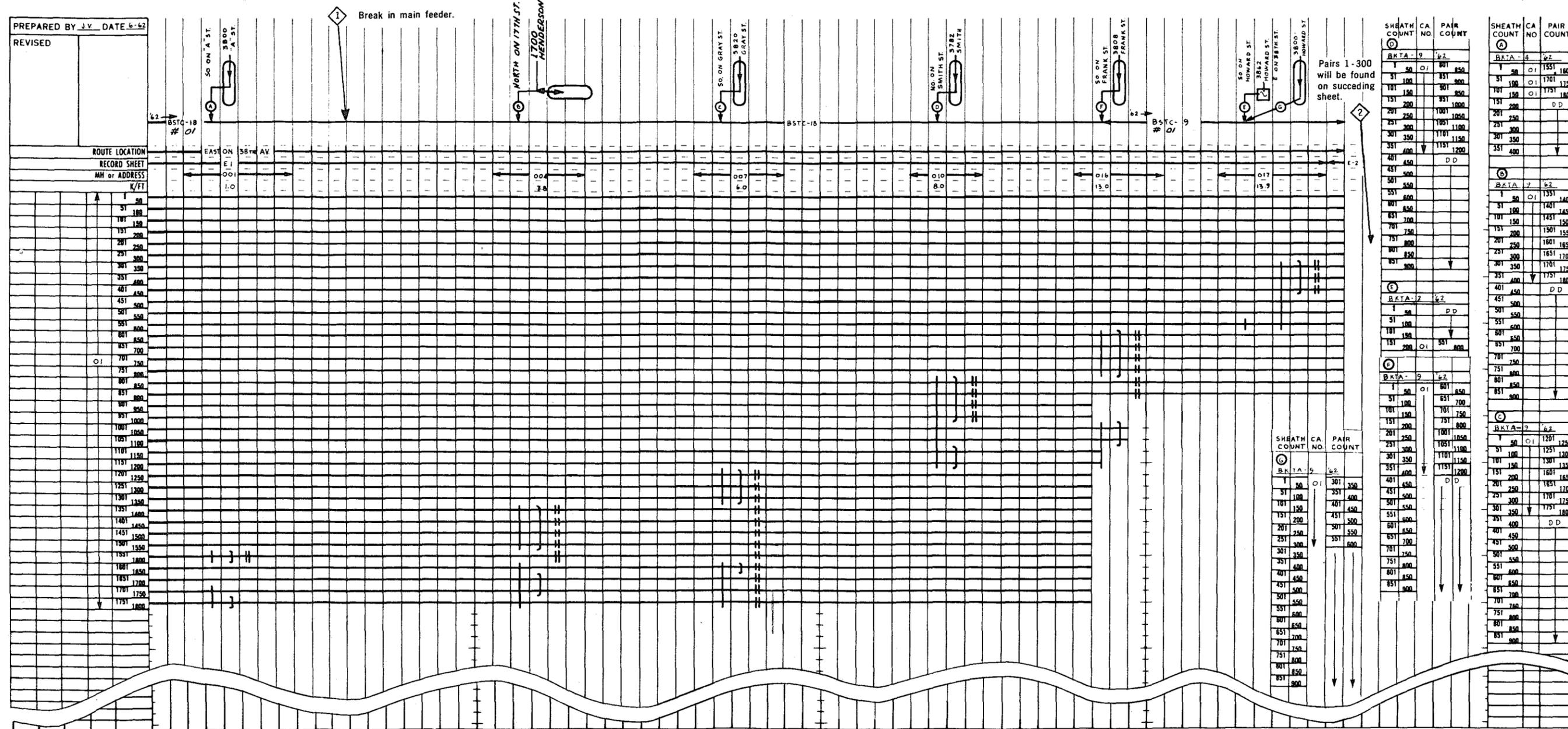
(h) Similarly, all pairs having an identity in the PIC SHEATH COUNT column can be identified from 1700 Henderson.

(i) C.O. CABLE pairs 1351-1355, 1360-1375, 1501-1532, and other pairs not showing an IN PIC SHEATH COUNT do not appear in the 1700H control point. To determine where these pairs may be identified, it is necessary to refer to the Exchange Customer Cable Record (ECCR) for the 600 pair main feeder cable. For example, the above mentioned pairs 1501-1532 are found on the 1501-1550 sheet of the ECCR for cable 01, shown in Fig. 8.

(j) This record indicates that pairs 1501-1507 of the 01 cable connect to pairs 551-557 in cable 1700D. Similarly, pairs 1508-1510 connect to cable 1701C, pairs 358-360; pairs 1511-1518 connect to cable 1700D, pairs 561-568; pairs 1519-1525 connect to cable 1701C, pairs 369-375; pairs 1526-1532 connect to cable 1700D, pairs 576-582; and pairs 1544-1550 connect to cable 1701C, pairs 394-400.

(k) Now refer to the Exchange Customer Cable Record for 1700D pairs 551-600 (Fig. 9) to determine the location at which these pairs are accessible.

(l) Fig. 9 shows pairs 1501-1507 in the CONN. TO PAIR column are connected to cable 1700D, pairs 551-557, respectively, in the PAIR column and can be tested from 1805 Jackson and 1810 Drake as indicated. Other pairs in the 1700D cable are found in a similar manner.



PREPARED BY J.V. DATE 6-62  
REVISED

ROUTE LOCATION  
RECORD SHEET  
MH or ADDRESS  
K/FT

51	50
101	100
151	150
201	200
251	250
301	300
351	350
401	400
451	450
501	500
551	550
601	600
651	650
701	700
751	750
801	800
851	850
901	900
951	1000
1001	1050
1051	1100
1101	1150
1151	1200
1201	1250
1251	1300
1301	1350
1351	1400
1401	1450
1451	1500
1501	1550
1551	1600
1601	1650
1651	1700
1701	1750
1751	1800

SHEATH COUNT	CA NO.	PAIR COUNT
1	50	801
51	100	851
101	150	901
151	200	951
201	250	1001
251	300	1051
301	350	1101
351	400	1151
401	450	1201
451	500	DD
501	550	
551	600	
601	650	
651	700	
701	750	
751	800	
801	850	
851	900	
901	950	
951	1000	
1001	1050	
1051	1100	
1101	1150	
1151	1200	
1201	1250	
1251	1300	
1301	1350	
1351	1400	
1401	1450	
1451	1500	
1501	1550	
1551	1600	
1601	1650	
1651	1700	
1701	1750	
1751	1800	
1801	1850	
1851	1900	
1901	1950	
1951	2000	
2001	2050	
2051	2100	
2101	2150	
2151	2200	
2201	2250	
2251	2300	
2301	2350	
2351	2400	
2401	2450	
2451	2500	
2501	2550	
2551	2600	
2601	2650	
2651	2700	
2701	2750	
2751	2800	
2801	2850	
2851	2900	
2901	2950	
2951	3000	
3001	3050	
3051	3100	
3101	3150	
3151	3200	
3201	3250	
3251	3300	
3301	3350	
3351	3400	
3401	3450	
3451	3500	
3501	3550	
3551	3600	
3601	3650	
3651	3700	
3701	3750	
3751	3800	
3801	3850	
3851	3900	
3901	3950	
3951	4000	
4001	4050	
4051	4100	
4101	4150	
4151	4200	
4201	4250	
4251	4300	
4301	4350	
4351	4400	
4401	4450	
4451	4500	
4501	4550	
4551	4600	
4601	4650	
4651	4700	
4701	4750	
4751	4800	
4801	4850	
4851	4900	
4901	4950	
4951	5000	

SYMBOLS FOR MULTIPLE PLANT → } X CONN EXP } } X CONN UNEXP  
STR CONN EXP || STR CONN UNEXP

SYMBOLS FOR MULTIPLE AND DEDICATED PLANT → } }  
● DIST TERM ● LOAD COIL AND COUNT INDICATED

SYMBOLS FOR DEDICATED PLANT → } }  
PAIRS MADE AVAILABLE TO CONTROL POINT EXP } PAIRS ALLOCATED TO AND CONNECTED THROUGH CONTROL POINT  
PAIRS MADE AVAILABLE TO CONTROL POINT UNEXP

C.O. BETA ROUTE 1A SHEET 1  
ROUTE LAYOUT SHEET  
Printed in U.S.A.

Fig. 6 — Route Layout Sheet







**BREAK IN BRANCH FEEDER CABLE BETWEEN CONTROL POINTS**

**5.04** Assume a failure has occurred in the section of branch feeder cable as illustrated in Fig. 10.

**5.05** Refer to the Aerial Cable Location Record (Fig. 10) to find the address and location of the control point from which the cable originates. This is found to be 1700 Henderson.

**5.06** Refer to the Control Point Interconnection Record (CIR) for 1700 Henderson (Fig. 11).

**A. Identification of Pairs on Central Office Side of Break**

(a) This CIR for 1700H indicates that OUT CABLE PAIRS 1-600 are either connected through to the central office or have not been connected through the 1700H control point and appear as dead pairs at the break location. For example, OUT CABLE PAIRS 1-200 connect to C.O. CABLE NO. 01, PAIRS 1351-1550 and can be identified from the central office.

(b) In the 201-300 complement, OUT CABLE PAIRS 201-216, 222-250, 260-273, and 275-300 are connected to C.O. CABLE NO. 01, PAIRS 1601-1616, 1622-1650, 1660-1673, and 1675-1700, respectively, and are identified from the central office. In the 301-600 count, OUT CABLE PAIRS 543-550 are connected to C.O. CABLE NO. 01, 1743-1750, and can be identified from the central office.

(c) OUT CABLE PAIRS 501-516, 521-542, 551-569, 581-590, and 592-600, although connected to pairs in C.O. CABLE NO. 01, cannot be identified from the central office at the break since they have been used or committed for local distribution A, as shown in the LD column, and were cut in the branch feeder cable beyond the access point. These pairs should be random spliced at the break.

(d) OUT CABLE PAIRS 217-221, 251-259, 274, 301-500, 517-520, 570-580, and pair 591 have not been connected through the control point and appear as dead pairs in the 1700H, 1-600 cable. They must, therefore, be identified from the 1700H control point. For example, OUT CABLE PAIRS 217-221 can be

identified as OUT CABLE continuous PIC SHEATH COUNT 36-40 in the 1700H control point. Similarly, OUT CABLE PAIRS 251-259, 274, 301-500, 517-520, 570-580, and 591 can be identified in the closure as OUT CABLE continuous PIC SHEATH count 51-59, 60, 71-270, 271-274, 283-293, and 294, respectively.

(e) Note that all pairs which have a central office identity should be tested from the central office even though they may have a PIC sheath identity in the control point.

**B. Identification of Pairs on Field Side of Break**

**5.07** Refer to Aerial Cable Location Record (Fig. 10) to find the address and location of the control and access points in which the 1700H cable pairs 1-600 terminate. In this case the 1700H, 1-600 cable terminates in the 1700 Drake control point.

**5.08** Refer to the Control Point Interconnection Record for 1700 Henderson (Fig. 11).

(a) This record indicates that under the OUT CABLE column, pairs 6-9 are connected to pairs 1-4 in the PIC SHEATH COUNT. These pairs can be identified in the 1700 Drake control point closure where they appear as continuous PIC sheath pairs 1-4 as indicated in the LD column under 1700 Drake. This is also true for all other counts listed under 1700 Drake LD column.

(b) The balance of the 600 pairs in 1700H does not physically appear in the control point closure at 1700 Drake and must be identified from control points, access points, and distribution terminals beyond 1700 Drake. To determine where these pairs actually appear, it is necessary to refer to the ECCR for the main feeder cable. For example, referring to Fig. 11, pairs 151-182 in the OUT CABLE PAIRS column are connected to C.O. CABLE NO. 01, PAIRS 1501-1532. The PAIR column on the main feeder ECCR (Fig. 8) for cable 01 indicates that pairs 1501-1550 are connected to branch feeder cables 1701C and 1700D as indicated in the CONN. TO PAIR column. These pairs can be identified in the same manner as previously described for a break in the main feeder cable [5.03, B. (i)].

1 of 2

CABLE COUNT AVAILABLE

1700 HENDERSON LOCATION OF CONTROL POINT PAIRS 1-475 CABLE NO. 1700.H

CONNECT ORDER	"IN CABLE" CONNECTS TO							"OUT CABLE"							LD	LOCAL DISTRIBUTION
	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE		PAIRS	PIC SHEATH COUNT	C.O. CABLE		PAIRS	PIC SHEATH COUNT	LD	LOCAL DISTRIBUTION			
				NO.	PAIRS			NO.	PAIRS							
		SAME AS		01	1351	1355	1	5								
①	4	C.O. COUNT			1356	1359	6	9		1	4					
					1360	1375	10	25								
					1376	1400	26	50								
					1401	1410	51	60								
①	5	8			1411	1414	61	64		5	8					
					1415	1422	63	72								
①	9				1423	1424	73	74								
					1430	1431	80	81								
①	10	11			1432	1433	82	83		10	11					
					1441	1442	91	92								
①	12	14			1444	1445	94	95		12	14					
					1450	1451	100	101								
					1480	1481	130	131								
①	15	24			1490	1491	140	141		15	24					
					1500	1501	150	151								
					1532	1533	182	183								
①	25	35			1543	1544	193	194		25	35					
					1550	1601	200	201								
					1616	1622	216	217								
					1640	1641	221	222								
①	41	50			1650	1660	241	240		41	50					
					1673	1675	251	250								
					1691	1690	259	260								
					1700	1700	273	274								
					1700	1700	290	291								
					1700	1700	300	301								
					1700	1700	325	326								
					1700	1700	350	351								
					1700	1700	375	376								
					1700	1700	400	401								
					1700	1700	425	426								
					1700	1700	450	451								
					1700	1700	475	475								

C.I.R. - CONTROL POINT INTERCONNECTION RECORD FORM E-5015 (12-62) PRINTED IN U.S.A.

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CABLE COUNT AVAILABLE

1700 HENDERSON LOCATION OF CONTROL POINT PAIRS 476-600 CABLE NO. 1700.H

CONNECT ORDER	"IN CABLE" CONNECTS TO							"OUT CABLE"							LD	LOCAL DISTRIBUTION
	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE		PAIRS	PIC SHEATH COUNT	C.O. CABLE		PAIRS	PIC SHEATH COUNT	LD	LOCAL DISTRIBUTION			
				NO.	PAIRS			NO.	PAIRS							
A	501-600															
		SAME AS		01	1701	1716	476	500		246	270					
		C.O. COUNT			1721	1742	501	516								
					1743	1750	517	520		271	274					
①	75	92			1751	1769	521	542		275	282					
					1781	1790	543	550		283	282					
					1792	1800	551	569		283	283					
					1792	1800	570	580		293	294					
					1792	1800	581	590								
					1792	1800	591	592								
					1792	1800	592	600								

C.I.R. - CONTROL POINT INTERCONNECTION RECORD FORM E-5015 (12-62) PRINTED IN U.S.A.

Fig. 11 — Control Point Interconnection Record for 1700 Henderson

SECTION 634-215-500

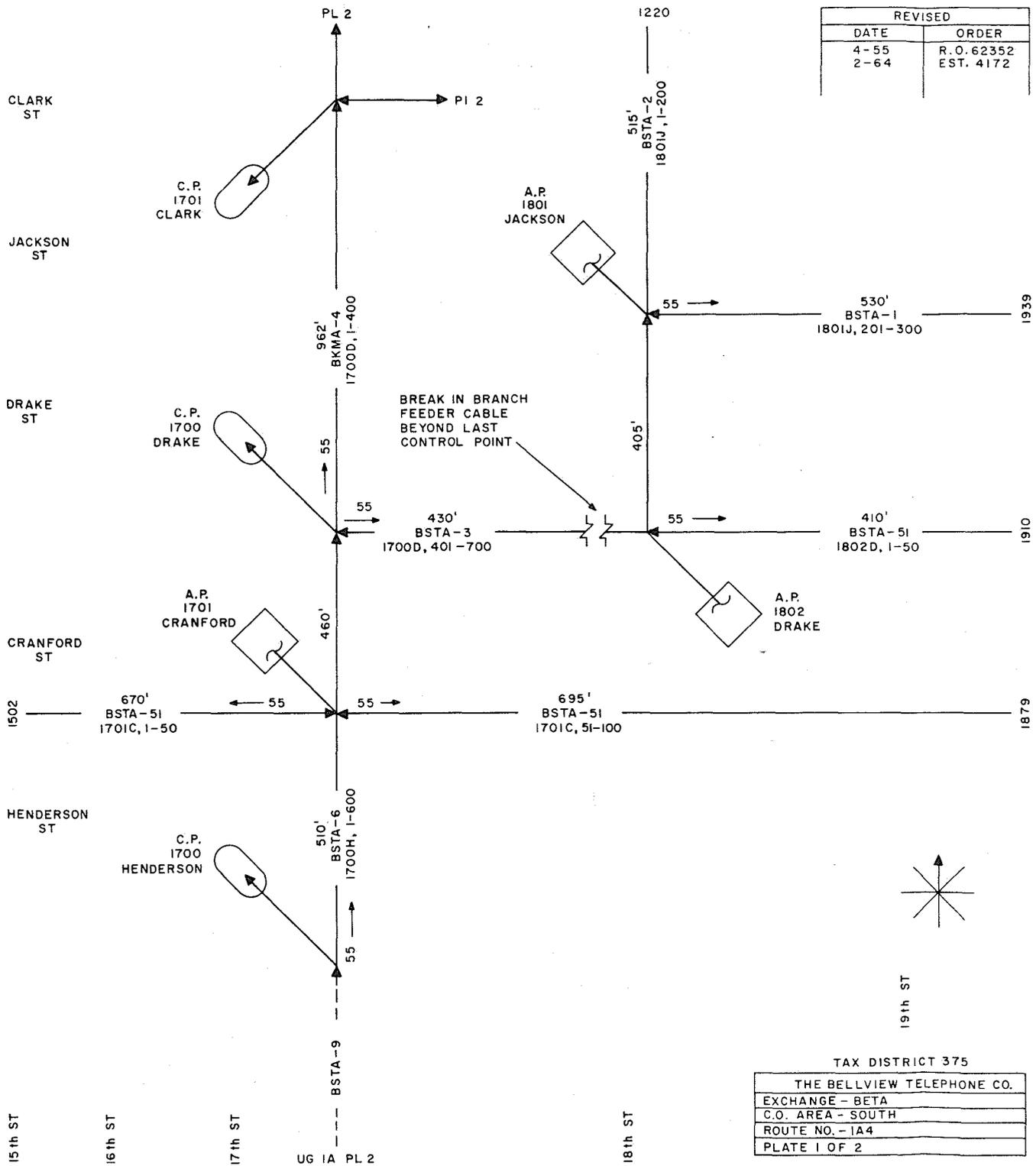


Fig. 12 — Aerial Cable Location Record (Indicating Break in Branch Feeder Cable Beyond Last Control Point)

**BREAK IN BRANCH FEEDER CABLE BEYOND LAST CONTROL POINT**

**5.09** Assume a cable failure has occurred in a section of cable beyond the last control point as illustrated in Fig. 12.

**5.10** Refer to Fig. 12 to find the address and location of the control point from which the cable originates. This is found to be 1700 Drake.

**A. Identification of Pairs on Central Office Side of Break**

**5.11** Refer to the CIR for 1700 Drake shown in Fig. 13.

(a) This record indicates that OUT CABLE PAIRS 401-700 in the 1700D cable are either connected through to the central office or have not been connected through the 1700 Drake control point and appear as dead pairs at the break location. For example, OUT CABLE PAIRS 429-440 connect to C.O. CABLE NO. 01, PAIRS 1379-1390 and can be identified from the central office. All other pairs at this location with central office identity are handled in the same manner.

(b) OUT CABLE PAIRS 401-428 appear in the 1700 Drake control point as continuous PIC SHEATH COUNT 308-335, have no central office identity, and must be identified from this control point. The remaining pairs in the PIC SHEATH COUNT column are identified in the same manner.

**B. Identification of Pairs on Field Side of Break**

**5.12** Pairs 401-700 in cable 1700D do not appear as IN pairs in a control point and must be identified from distribution terminals or access points. Refer to the ECCR for 1700D (Fig. 9).

(a) The ECCR will indicate whether the pairs feed distribution terminals or have been made available as IN pairs to access points. For example, Fig. 9 indicates that pairs 551, 553, 554, and 555 in the PAIR column are now assigned in the 1805 Jackson terminal (column 5) and were working at the time the 1801 Jackson point (column 4) was established. They do not appear in the access point. It will be necessary to identify such pairs from the 1805 Jackson terminal.

(b) Pair 558 has been assigned to the 1832 Drake terminal and is available for testing at this terminal or at the 1810 Drake terminal. While the pair also appears in the access point closure, it should be identified from the terminal.

(c) Pairs 559 and 560 have been connected to C.O. pairs 1642 and 1643 in CONN. TO PAIR column and have been made available for use as IN pairs in the access points at 1801 Jackson and 1802 Drake. These pairs may be identified from either of the access points as in PIC SHEATH COUNT pairs 50 and 51.

(d) Pairs 583-600 appear in the access point closure as IN pairs but are not available for assignment since they have no central office identity. These pairs must be identified from the access points.

**6. CONCLUSIONS**

**6.01** Restoration techniques in plant operating under the Dedicated Plant Plan are very similar or identical to procedures for non-dedicated plant.

**6.02** Although the analysis of records may be somewhat more complex, the identification of pairs may be, in many cases, simplified. This is due to the introduction of control and access points where certain pairs may be identified by color. The number of visits to terminals for identification may be greatly reduced.

1 of 3  
1700 DRAKE 1-312 1700 D

CABLE COUNT AVAILABLE										1700 DRAKE 1-312 1700 D									
LOCATION OF CONTROL POINT										LOCATION OF CONTROL POINT									
LD = LOCAL DISTRIBUTION										LD = LOCAL DISTRIBUTION									
CONNECT ORDER	"IN CABLE" CONNECTS TO					"OUT CABLE"					A	B	D	CABLE NO.					
	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE NO.	PAIRS	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE NO.	PAIRS									
①	1700H	1	5	01	1351	1855	101	105	—	—	—	—	—	—	—	—	—	—	—
①	1700H	6	9	01	1356	1359	106	109	—	—	—	—	—	—	—	—	—	—	—
①	1700H	10	28	01	1360	1378	110	122	—	—	—	—	—	—	—	—	—	—	—
①	1700H	41	45	01	1391	1395	141	145	—	—	—	—	—	—	—	—	—	—	—
①	1700H	131	135	01	1481	1485	146	150	—	—	—	—	—	—	—	—	—	—	—
①	1700H	45	70	01	1415	1420	165	170	—	—	—	—	—	—	—	—	—	—	—
①	1700H	136	140	01	1486	1490	171	175	—	—	—	—	—	—	—	—	—	—	—
①	1700H	78	79	01	1428	1429	178	179	—	—	—	—	—	—	—	—	—	—	—
①	1700H	92	94	01	1442	1444	180	182	—	—	—	—	—	—	—	—	—	—	—
①	1700H	83	84	01	1433	1434	183	184	—	—	—	—	—	—	—	—	—	—	—
①	1700H	61	64	01	1441	1414	185	188	—	—	—	—	—	—	—	—	—	—	—
①	1700H	89	90	01	1439	1440	189	190	—	—	—	—	—	—	—	—	—	—	—
①	1700H	183	186	01	1533	1536	191	194	—	—	—	—	—	—	—	—	—	—	—
①	1700H	95	100	01	1445	1450	195	—	—	—	—	—	—	—	—	—	—	—	—
①	1700H	116	122	01	1466	1472	216	222	—	—	—	—	—	—	—	—	—	—	—
①	1700H	144	147	01	1494	1497	244	247	—	—	—	—	—	—	—	—	—	—	—
①	1700H	187	193	01	1537	1543	251	257	—	—	—	—	—	—	—	—	—	—	—
①	1700H	158	160	01	1508	1510	258	260	—	—	—	—	—	—	—	—	—	—	—
①	1700H	169	175	01	1519	1525	269	275	—	—	—	—	—	—	—	—	—	—	—
①	1700H	194	200	01	1544	1550	294	300	—	—	—	—	—	—	—	—	—	—	—
①	1700H	201	207	01	1601	1607	301	307	—	—	—	—	—	—	—	—	—	—	—
①	1700H	308	312	01	—	—	308	312	—	—	—	—	—	—	—	—	—	—	—
SPICE CREDIT										SPICE CREDIT									
JOB NUMBER										JOB NUMBER									
PRINT NO.										PRINT NO.									
ENGR.										ENGR.									
DATE										DATE									
AREA STATE										AREA STATE									
DISTRICT BETA										DISTRICT BETA									
EXCHANGE BETA										EXCHANGE BETA									
C.O. AREA SOUTH										C.O. AREA SOUTH									

C.I.P. - CONTROL POINT INTERCONNECTION RECORD FORM E-5015 (12-62) PRINTED IN U.S.A.

2 of 3  
1700 DRAKE 313-543 1700 D

CABLE COUNT AVAILABLE										1700 DRAKE 313-543 1700 D									
LOCATION OF CONTROL POINT										LOCATION OF CONTROL POINT									
LD = LOCAL DISTRIBUTION										LD = LOCAL DISTRIBUTION									
CONNECT ORDER	"IN CABLE" CONNECTS TO					"OUT CABLE"					A	B	D	CABLE NO.					
	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE NO.	PAIRS	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE NO.	PAIRS									
①	1700H	213	214	01	1613	1614	313	314	—	—	—	—	—	—	—	—	—	—	—
①	1700H	221	225	01	1631	1635	331	335	—	—	—	—	—	—	—	—	—	—	—
①	1700H	81	82	01	1431	1432	336	337	—	—	—	—	—	—	—	—	—	—	—
①	1700H	238	239	01	1639	1637	338	339	—	—	—	—	—	—	—	—	—	—	—
①	1700H	260	263	01	1660	1663	360	363	—	—	—	—	—	—	—	—	—	—	—
①	1700H	271	273	01	1671	1673	371	373	—	—	—	—	—	—	—	—	—	—	—
①	1700H	285	290	01	1685	1690	385	390	—	—	—	—	—	—	—	—	—	—	—
①	1700H	46	50	01	1396	1400	446	450	—	—	—	—	—	—	—	—	—	—	—
①	1700H	51	60	01	1401	1410	451	460	—	—	—	—	—	—	—	—	—	—	—
①	1700H	291	300	01	1691	1700	461	470	—	—	—	—	—	—	—	—	—	—	—
①	1700H	71	77	01	1421	1427	471	477	—	—	—	—	—	—	—	—	—	—	—
①	1700H	80	01	1430	—	—	480	—	—	—	—	—	—	—	—	—	—	—	—
①	1700H	85	88	01	1435	1438	485	488	—	—	—	—	—	—	—	—	—	—	—
①	1700H	91	01	1441	—	—	491	—	—	—	—	—	—	—	—	—	—	—	—
①	1700H	101	115	01	1451	1465	501	515	—	—	—	—	—	—	—	—	—	—	—
①	1700H	123	130	01	1473	1480	523	530	—	—	—	—	—	—	—	—	—	—	—
①	1700H	141	143	01	1491	1493	541	543	—	—	—	—	—	—	—	—	—	—	—
SPICE CREDIT										SPICE CREDIT									
JOB NUMBER										JOB NUMBER									
PRINT NO.										PRINT NO.									
ENGR.										ENGR.									
DATE										DATE									
AREA STATE										AREA STATE									
DISTRICT BETA										DISTRICT BETA									
EXCHANGE BETA										EXCHANGE BETA									
C.O. AREA SOUTH										C.O. AREA SOUTH									

C.I.P. - CONTROL POINT INTERCONNECTION RECORD FORM E-5015 (12-62) PRINTED IN U.S.A.

3 of 3  
1700 DRAKE 544-700 1700 D

CABLE COUNT AVAILABLE										1700 DRAKE 544-700 1700 D									
LOCATION OF CONTROL POINT										LOCATION OF CONTROL POINT									
LD = LOCAL DISTRIBUTION										LD = LOCAL DISTRIBUTION									
CONNECT ORDER	"IN CABLE" CONNECTS TO					"OUT CABLE"					A	B	D	CABLE NO.					
	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE NO.	PAIRS	PIC SHEATH COUNT	CABLE NUMBER	PAIRS	C.O. CABLE NO.	PAIRS									
①	1700H	148	150	01	1498	1500	544	547	—	—	—	—	—	—	—	—	—	—	—
①	1700H	151	157	01	1501	1507	551	557	—	—	—	—	—	—	—	—	—	—	—
①	1700H	241	243	01	1641	1643	558	560	—	—	—	—	—	—	—	—	—	—	—
①	1700H	161	168	01	1511	1518	561	568	—	—	—	—	—	—	—	—	—	—	—
①	1700H	244	250	01	1644	1650	569	575	—	—	—	—	—	—	—	—	—	—	—
①	1700H	176	182	01	1526	1532	576	582	—	—	—	—	—	—	—	—	—	—	—
①	1700H	210	212	01	1610	1612	610	612	—	—	—	—	—	—	—	—	—	—	—
①	1700H	215	216	01	1615	1616	615	616	—	—	—	—	—	—	—	—	—	—	—
①	1700H	222	230	01	1622	1630	622	630	—	—	—	—	—	—	—	—	—	—	—
①	1700H	236	237	01	1636	1637	636	637	—	—	—	—	—	—	—	—	—	—	—
①	1700H	240	01	1640	—	—	640	—	—	—	—	—	—	—	—	—	—	—	—
①	1700H	264	270	01	1664	1670	664	670	—	—	—	—	—	—	—	—	—	—	—
①	1700H	275	285	01	1675	1684	675	684	—	—	—	—	—	—	—	—	—	—	—
①	1700H	308	312	01	—	—	308	312	—	—	—	—	—	—	—	—	—	—	—
SPICE CREDIT										SPICE CREDIT									
JOB NUMBER										JOB NUMBER									
PRINT NO.										PRINT NO.									
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C.O. AREA SOUTH										C.O. AREA SOUTH									

C.I.P. - CONTROL POINT INTERCONNECTION RECORD FORM E-5015 (12-62) PRINTED IN U.S.A.

Fig. 13 — Control Point Interconnection Record for 1700 Drake