

CONFORMANCE TESTING OF SUBSCRIBER CABLES
ADMINISTRATIVE PROCEDURES

<u>CONTENTS</u>	<u>PAGE</u>
1. GENERAL.....	1
2. RESPONSIBILITIES.....	2
3. PROCEDURES.....	3
4. COMPLEMENT DIAGRAMS.....	7
5. FORMS.....	8

1. GENERAL

1.01 This section describes the administrative responsibilities and procedures that are required to establish and maintain an effective subscriber cable conformance testing program.

1.02 This section is being reissued to:

- (a) Add information concerning the conformance testing of all new VF pairs behind remote terminals.
- (b) Add the pretest option of cable complements involved with cable throws or rearrangements in areas of known high defective pair concentrations.
- (c) Provide the procedures for the coordination between the Outside Plant Engineer (OPE) and the Maintenance Center Analyzer (MCA) in clearing defective pairs required for service orders.

(d) Change the closing approval Form (E6415) and management level of acceptance.

(e) Provide for the procedures for the clearing of defective pairs by construction or cable maintenance.

1.03 Successful implementation of these procedures demands a firm commitment at the Division Manager level. Construction, maintenance and engineering must accept their responsibilities and adhere to the procedures as outlined below.

1.04 After the splicing work on exchange feeder and/or distribution cable is completed, conformance tests (AC and DC) shall be made on:

- All new, extended, and/or rearranged loaded feeder and distribution cables, five pairs or more. Extensions less than 100 feet should not be tested.
- All new main frame terminated loaded and nonloaded cables, including support pairs for digital carrier.
- All feeder pairs to a new or existing interface (SAI, FDI, RAI, FX, etc.), including activation of alpha counts.

NOTICE

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- All newly energized alpha counts, five pairs or more.
- All new derived pairs behind new or existing remote terminals.
- All existing nonloaded cables when 2000 feet or more are added or 25 pairs or more are rearranged.
- All replacements of defective sections (DC only).
- Pre-testing on all existing exchange feeder pairs converted to support pairs for digital carrier. (See Addendum 915-710-110SW, Issue A, March 1981.)

NOTE: Rearranged is defined as any work operation where existing cable pairs are involved in splicing activities. (Cable pair transfers, loading or unloading cable pairs, energizing pairs, etc.)

1.05 It is intended that these tests be performed by a permanently assigned tester for a district, division, or area. The testing force level will depend on the geographic size of the entity, the amount of loaded cable, and the amount of construction activity. All work should be tested in a timely manner. If periodic fluctuations in the testing work load result in more work being on hand than can be tested in the required time frame, the loaded cable pairs and nonloaded support pairs for digital carrier must be tested first. The nonloaded cable pairs can be released for customer service prior to testing, service conditions controlling.

2. RESPONSIBILITIES

2.01 Paragraphs 2.02 through 2.06 outline the responsibilities of the various work groups associated with conformance testing.

2.02 Outside Plant Engineering (OPE) should design the cable facilities in accordance with standard engineering practices and issue construction work orders, construction drawings, plan changes, and Form E6410, Complement Diagram (Figure 1) which is described in detail in Part 4. They also will review the design of the entire facility from the wire center to the farthest distribution point in the complement when making any additions or rearrangements, and incorporate into the current work order any corrections that are necessary to eliminate existing design deviations. Engineering has responsibility for identifying if conformance testing is required, issuing the proper work authorization, and determining whether pre-testing or post-testing is necessary. Pre-testing for cable throws in areas of high known defective pair concentrations will be an engineering option. The OPE makes the final determination as to whether a job should be closed out or further attempts made to clear defects. OPE will issue an Engineering Authorization Change (EAC) within five working days when test results for a work order indicate design or loading irregularities.

2.03 Before the end of each scheduling period, the scheduling OPE along with the conformance testing coordinator will be responsible for reviewing all work authorization completions and service commitments to keep the conformance testing current. At this time key dates may be adjusted to balance the conformance testing work load with available resources.

2.04 Cable facilities will be constructed in accordance with engineering plans, attempting to keep man-made troubles to a minimum. Construction forces will locate and, where possible, clear troubles that are due to construction activity in new plant. Existing defectives (not attributed to construction activity) required for rearrangements, activation of alpha counts and/or service order commitments will be cleared by maintenance to an acceptable level determined by the OPE. Work authorizations with conformance testing involved should not be closed until the proper approval is received on Form E6415 from the OPE. To assist in determining whether defects are in the new cable or existing portion of the cable facilities, the tester and Loop Assignment Center (LAC) will be provided with the results of all preliminary tests performed on respective complements, e.g., test of defective pairs listed on Form SW-6180 or its equivalent and/or construction completion tests E6254. (Note LAC to receive forms within five days.)

NOTE: Consideration should be given to closing overage work authorizations in lieu of testing on a one time basis to get current; however, this requires Division Manager level approval.

2.05 The Conformance testing coordinator reviews work orders, cable prints, and complement diagrams, assigns testing work to be done, receives and reviews test results, and acts as liaison between the tester, the OPE, and the construction forces. The coordinator takes necessary action to ensure the timely processing of test results and approved forms and issues reports as required.

2.06 The Loop Assignment Center forces will ensure that cable pairs identified as defective by conformance testing and/or construction forces are posted to all LAC records (manual and mechanized) and a copy of the test results forwarded to CAPER.

3. PROCEDURES

3.01 Paragraphs 3.02 through 3.17 describe step-by-step administrative procedures for conformance testing of subscriber cables. The flowchart in Figure 18 summarizes these steps.

3.02 The OPE should determine whether conformance testing is required for each routine order and/or estimate, using the criteria in paragraph 1.04. When testing is required, the engineer will:

- (a) Prepare a Complement Diagram for each design complement to be conformance tested. (See Part 4.)

(b) Review the design of the facility from the wire center to the farthest distribution point in the complement, incorporating any design corrections on the new work order.

(c) For long loaded cables, more than six load coils, calculate the expected return loss, insertion loss, and resistance to the field test point and post these values on the complement diagram. (See paragraph 4.03.) The preferred method for obtaining these values is by using the Universal Cable Circuit Analysis Program (UNICCAP). When using UNICCAP, specify the type of termination to be used by the tester (115-type network or 4066 precision network) for making return loss measurements. The type of return loss measuring set (54C or KS-20501) also must be specified. The calculated value will vary with the type hardware used.

(d) For nonloaded or short loaded cables, six or less load coils, calculate the total length and cable resistance and post these values on the Complement Diagram.

(e) Indicate on the construction work print "Conformance testing required," identifying the cable and count the number of pairs. Issue the work print with the Complement Diagrams in the normal manner, indicating that copies are to be sent to the coordinator in addition to the copies normally sent to construction and assignment forces.

3.03 Upon issuance of the work authorization, the OPE will provide the proper complement diagram to the Maintenance Center Analyzer (MCA). The scheduling OPE will coordinate the clearing of defective pairs for the completion of work authorization or service requirements by cooperating with the MCA to correlate with TRIM and other routine projects. Defective pairs should be cleared in no more than 30 days. The scheduling OPE, along with the conformance testing coordinator, should adjust the date monthly in order to balance the conformance testing work load.

3.04 The Conformance testing coordinator will record the order number and date of receipt of the Complement Diagram on Form E6411, or mechanized equivalent, Log Sheet (Figure 2). He/she should review the Complement Diagram in order to make preliminary plans for testing. If, in the course of reviewing the Complement Diagram, design problems are discovered, the coordinator should query the engineer. The coordinator will provide the tester with a copy of the construction work print and Complement Diagram at the time testing is to be performed.

3.05 Construction, upon receipt of the work print, will complete the work as designed and scheduled.

3.06 The Loop Assignment Center on receipt of the construction work print, will perform the normal assignment functions associated with the order and take additional steps to ensure that:

- (a) The coordinator is notified when service orders are being delayed pending completion of the test.

(b) Where appropriate, a release is obtained from the OPE to assign in properly tested complements when the final approval is being delayed because of defects in other complements.

3.07 The Construction Management Center (CMC) will notify the coordinator when the splicing work has been completed and the job is ready for testing, using Form E6412, Test Notification and Status Report (Figure 3).

3.08 The coordinator will dispatch the required number of testers to accomplish the tests as specified in Section 330-300-527. Testing must be carried out as soon as possible, with initial testing being completed within ten working days of notification a job is ready for testing. Upon completion of the initial test, a retest (if required) or closing approval must be received within 30 days. (This allows adequate time for corrective action or approval, if required.)

3.09 The testers will prepare Form E6414, Test Report and will forward this form to the coordinator. The DC trouble codes will be limited to:

- (a) SHT (show footage to fault)
- (b) GND (show footage to fault)
- (c) OPN (show footage to fault)
- (d) CRS and what pair it is crossed with, if the information is available.
- (e) WSY

(f) TMS-Transmission (missing load, bridge tap between loads, load spacing, etc.). (Indicate what load is missing, bridge tap between what load, etc.)

3.10 The coordinator will note the receipt of the Test Notes (E6413) and Test Report (E6414) on the Log Sheet (E6411) or mechanized equivalent, review the test results, and make appropriate notations concerning defects. A copy of the Test Report (E6414) attached to the Test Notification and Status Report (E6412) will be forwarded to the OPE and the LAC by the coordinator, indicating that it is either an initial test, retest, or final test. The coordinator then files copies of the Test Notes and Test Results with the Complement Diagram pending further action. In cases where there are no defects, the report will have the same distribution but will be noted as a final test.

3.11 The OPE, on receipt of the Test Report (E6414) with the attached Test Notification and Status Report (E6412) from the coordinator, will review the defects listed to determine the cause of the defects. (If existing design deviations or record errors are causing defects, the engineer should correct this on the existing work order before the job is closed.) If the engineer concludes that the defects are due to construction activity connected with a current work authorization, the Test Report (E6414) attached to Form 6412 (Test Notification and Status Report), identifying the defective pairs to be corrected, will be forwarded to the Construction Management Center. If there are no defects on the current work order, the OPE will approve the closing of the work order and follow the procedures in paragraph 3.17.

3.12 Existing defective pairs needed to work the routine order should be sent to the MCA and correlated with TRIM and other routine projects. Upon completion of clearing the defective pairs, a retest will be made and data supplied back to engineering and a copy will also be sent to LAC for posting their records. Normal turnaround should be no more than 30 days. Existing defects not needed to work the routine order should be left alone. Time and effort to test/clear these pairs should not be expended until they are needed. The LAC will post all DC defects listed on the initial and/or final copy of the Test Report (E6414) to all LAC records and a copy forwarded to CAPER for updating of the LMOS data base.

3.13 Construction forces will correct all construction defects which are determined to have been caused by work performed on the current order. Construction, upon receipt of the Engineering Authorization Change (EAC) from the engineer, will perform the work necessary to correct design defects determined in the testing process.

3.14 The CMC will notify the coordinator, using the Test Notification and Status Report (E6412), when corrective work has been completed. This work should be done as soon as possible to allow the final testing to be completed and approved 30 days after the initial testing. The form will list the pairs that have been corrected but not necessarily the work that was done to clear the defects.

3.15 Testers will retest the pairs, update the Test Report (E6414), and resubmit to the coordinator, Form E6412, Test Notification and Status Report, as corrected.

3.16 The coordinator will review the report and follow the procedures in paragraph 3.09.

3.17 Upon completion of all splice operations, individual pairs in the new cable will be tested by the conformance tester and results given to Engineering. All pairs should be usable except for factory defects and those should not exceed 1 percent.

There should not be any design defects in the new cable:

NOTE: Existing pair defects will be addressed using TRIM and other programmable routine type tools. Existing design defects will already have been corrected by the OPE on the authorization in question and eliminated in conjunction with the ongoing work on the order.

The first level OPE may approve the closing of a work authorization if he or she feels that a reasonable effort has been made to clear defectives or feels that further action is not economical. Defective pairs in existing cable plant should only be cleared if required for completion of a work order or for service orders. The OPE will have the responsibility for providing the MCA with a defective pair priority list.

3.18 When all defects are cleared or the level of defects caused by the work performed on the current work authorization are less than one percent factory defects, the OPE will forward copies of the closing approval Form (E6415) with the Test Report (E6414) to the test coordinator LAC and MCA.

3.19 The LAC will post all the defects listed on the initial and/or final copy of the test report (E6414) from OPE to all appropriate LAC records and forward a copy to CAPER for updating of the LMOS data base.

3.20 The coordinator on receipt of the Closing Approval Form (E6415) and the final Test Report, completes the entries on the Log Sheet (E6411) or mechanized equivalent and files them with the associated Complement Diagram. Monthly, the coordinator will prepare a report Form E6416, Results-Conformance Testing (Figure 7), which will reflect the testing activity of the previous month. The coordinator will forward the report to the appropriate staff or in accordance with local practice.

4. COMPLEMENT DIAGRAMS

4.01 Complement Diagrams (E6410) are straight-line circuit illustrations of the cable complements that are to be conformance tested. These diagrams provide:

- (a) A simple, uncluttered presentation of the cable makeup to be used to evaluate the complement with respect to the rules of the design strategy used.

- (b) An aid to the tester in performing instrument tests.

- (c) An aid in the analysis of conformance testing results.

A sample Complement Design form is provided in Figure 1.

4.02 A set of Complement Diagrams is required on every construction job that requires testing. See paragraph 1.04 for the selection criteria. A separate diagram is required for each design complement, i.e., one diagram will suffice for all pairs having the same physical makeup. A complement is not to be thought of as any specific number of pairs such as 25, 50, or 100. The Complement Diagram is used for all types of plant design, including Resistance Design, Uniguage, Long Route, and Unified Loop Design. It must show the makeup of the facility from the wire center to the farthest distribution point in the complement plus identify the point of rearrangement. The point of rearrangement is defined as the location where cable pairs are involved in splicing operations such as cable pair transfers, pairs energized, loading or unloading cable pairs, etc.

4.03 The Complement Diagram form will accommodate seven Complement Diagrams per sheet. Figures 8 through 10 show Complement Diagrams prepared for three types of facility -- nonloaded, short loaded, and long loaded cables, respectively. For long loaded cables, the OPE must post expected transmission

values and network building-out capacitor settings to the right-hand side of the form. (See Figure 10.) The preferred method for obtaining this data is via UNICAPP. (See Section 856-100-100, Appendix 3, Tables H, J and K). Based on the computed expected values for loop resistance, insertion loss, and return loss, the OPE will know in advance if the facility meets transmission requirements. If the expected values are marginal or unacceptable, the OPE can modify the design consistent with the prevailing rules and resubmit the circuit to UNICCAP for reappraisal. When accessing UNICCAP for an estimate of return loss, care must be taken to enter the exact length after the last load coil to the test point. The test point must be between 3000 and 6000 feet after the last coil and should be a pedestal, cross box, ready-access terminal, or any other arrangement where the pairs can be accessed and that portion of the loop beyond the test point can be isolated. If a test point (terminal) is not provided by the OPE, return loss measurements cannot be made and the effectiveness of the conformance testing program will be severely reduced. This is illustrated in Figure 10, where a test point is not located between 3 and 6 kilofeet after the last load coil for the 426 through 475 count. For these cases, an additional insertion loss measurement is taken at 3 kHz so the slope can be evaluated. The network settings are for a 4066A-type network and 4066C BOC or a 115-type network.

4.04 After the Complement Diagrams have been prepared, the OPE must evaluate them with respect to the rules for the design strategy. These are to be noted on the form in the column under Design Rule-Limit (Ohm or Zone).

5. FORMS

5.01 The following is a listing of the forms (other than the Complement Diagram, Figure 1) recommended for use in the conformance testing program:

- (a) Log Sheet, Form E6411
(Figure 2) - Maintained by the coordinator as an aid in organizing the instrument testing job. It contains data used in preparing the monthly and quarterly results reports. Figure 11 shows a log sheet with typical entries.
- (b) Test Notification and Status Report, Form E6412 (Figure 3) - Issued by the construction management center and used by the coordinator and the OPE to note test results. It is designed to eliminate the need for verbal communications. Figure 12 shows a Test Notification and Status Report form with typical entries.
- (c) Test Notes, Form E6413 (Fig. 4) - Used by the tester as a work sheet to post test results. Figures 13 through 15 illustrate typical entries on the Test Notes forms for the various types of cables tested.

(d) Test Report, Form E6414
(Figure 5) - This report is issued to summarize the defects from the Test Notes (E6413). It is attached to the Test Notification and Status Report (E6412) to identify the status of the defective pairs. Figure 16 shows a Test Report form with typical entries.

(e) Closing Approval, Form E6415
(Figure 6) - Prepared by an engineer to indicate approval of the final test results. Figure 17 shows a Closing Approval form with typical entries.

(f) Results-Conformance Testing,
Form E6416 (Figure 7) - A report issued monthly, quarterly, and annually showing conformance testing results. Figure 18 shows a results form with typical entries.

(g) Construction Cable Completion
Test Report Form E6254 prepared by construction indicating defective pairs, and is sent to LAC at the completion of a work authorization.

5.02 All forms can be ordered from the local Copy Bureau Center.

COMPLEMENT DIAGRAMS										OVER 6 LOAD COILS		
WIRE CENTER	ORDER NUMBER	DATE ISSUED	ORIGINATOR	TELEPHONE NO.		DESIGN RULE LIMIT (OHMS OR ZONE)		ALL LOOPS MAKE UP		EXPECTED RETURN LOSS (DB)	EXPECTED INSERTION LOSS (DB)	PRECISION AND 80C SETTINGS 4066 or 115
CABLE NUMBER	PAIR COUNT			RES.	ULD	UNIGAUGE	LONG RT.	KFT	RES.			MOD FIELD
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	19				
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	22				
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	24				
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	26				
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	T				
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LEGEND:

Cable Gauge Change →

Existing Cable [LG] Load [BOC] Capacitor [BOC]

New Cable [LC] Terminal [BOC]

L Loop W-Branch X Cross-Connect O/W Open Wire

R-rural Wire U-Urban Wire

▲ Rearrangement Point

Fig. 1 — Complement Diagram

Test Notification And Status Report-Conformance Testing

E-6412
(7/84)

Work Order Number	Date	
Construction Management Center	Tel. No. ()	
<input type="checkbox"/> Splicing Work Has Been Completed And The Work Is Ready For Testing	By	Date
Coordinator	Tel. No. ()	
<input type="checkbox"/> Testing Has Been Completed. Attached Is A List Of Defects (E-6414).	By	Date
Outside Plant Engineer	Tel. No. ()	
<input type="checkbox"/> Defects To Be Corrected By Construction Identified On Attached E-6414.	By	Date
Construction Management Center	Tel. No. ()	
<input type="checkbox"/> Corrective Work Has Been Completed. Attached E-6414.	By	Date
Coordinator	Tel. No. ()	
<input type="checkbox"/> Retesting Has Been Completed. Attached Is A List Of Defects (E-6414).	By	Date
Outside Plant Engineer	Tel. No. ()	
<input type="checkbox"/> Ready For Approval. Attached E-6414.	By	Date
<input type="checkbox"/> E-6415 Completed.	By	Date
Remarks:		

Fig. 3-Test Notification and Status Report Form

E 6413.3
7/79

TEST NOTES - CONFORMANCE TESTING

Wire Center	Est./Job #	Cable: Count	Initial Test <input type="checkbox"/> Retest <input type="checkbox"/> Final Test <input type="checkbox"/>	Testing Hours	Tester	Date	AC Defects									
							Loaded					Long Load/Ret			All Loops	
Pair #	V Or W	DC Defects			Cap UNB (T) (R)	Length (KF)	Level Tracer Analysis	Ret Loss (dB)	Loss (dB)			Ckt	P.I.	Bal	Res °F	#
		Nonloaded & All Loaded	Grnd	O/S					1	2	3					
		T	R													
51																1
52																2
53																3
54																4
55																5
56																6
57																7
58																8
59																9
60																10
61																11
62																12
63																13
64																14
65																15
66																16
67																17
68																18
69																19
70																20
71																21
72																22
73																23
74																24
75																25

Fig. 4—Test Notes Form (Sheet 3 of 4)

TEST NOTES - CONFORMANCE TESTING

Wire Center	Est./Job #	Cable: Count	Initial Test <input type="checkbox"/> Retest <input type="checkbox"/> Final Test <input type="checkbox"/>			Testing Hours	Tester	Date						
			Loaded	AC Defects	All Loops									
Pair #	DC Defects			Level Tracer Analysis	Ret Loss (dB)	Long Loaded			All Loops			Remarks		
	Nonloaded & All Loaded		Cap UNB (T) (R)			Loss (dB)	Freq. (KHz)	Noise (dBmC)	Ckt P.I.	Bal	Res °F			
V Or W	Grnd	Length (KF)		1	2							3	1	2
76														
77														
78														
79														
80														
81														
82														
83														
84														
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99														
100														

Fig. 4—Test Notes Form (Sheet 4 of 4)

CLOSING APPROVAL FORM - CONFORMANCE TESTING

Construction Work On Order Number _____ Has Been Completed
And Conformance Tests Have Been Performed.

The Initial Tests Indicate That _____ % Of The Existing Pairs
Are Defective. I Recommend That The Job Be Closed Without
Attempting To Clear The Defects.

The Initial Tests Indicate That _____ % Of The New Pairs Were
Defective. Construction Has Made _____ Attempt(s) To Clear
The Faults But _____ % Are Still Defective. I Recommend That
No Further Attempts Be Made To Clear The Remaining Defects.

A Total Of _____ Pairs Were Conformance Tested And _____ Pairs Are Classified
Defective As Follows:

	Initial Defects	Final Defects	Percent Final Defects
Design	_____	_____	_____
Construction	_____	_____	_____
Existing	_____	_____	_____
Total	_____	_____	_____

The Complements Tested Are Recommended For Acceptance With The Final Remaining
Defects As Indicated Above.

Rationale: _____

Approved By _____ Signature*

*Approval

1st Level Outside Plant Engineer

Note 1: All Design Defects Must Be Corrected Prior To Closing (See Paragraph 3.17)

Fig. 6-Closing Approval Form

COMPLEMENT DIAGRAMS										OVER 6 LOAD COILS		
WIRE CENTER	ORDER NUMBER	DATE ISSUED	ORIGINATOR	DESIGN RULE-LIMIT (OHMS OR ZONE)		ALL LOOPS MAKE UP		EXPECTED RETURN LOSS (DB)	EXPECTED INSERTION LOSS (DB)	PRECISION AND BOC SETTINGS 4066 or 115		
MADISON	53728	10-21-84	R. BAILEY	RES. ULD	UNIGAUGE	LONG RT.	KFT	RES.				
CABLE NUMBER	PAIR COUNT	TELEPHONE NO.		1300								
14	1-600	555-2121										
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	19					
1-600 MDF	26			X			22					
	15KF						24					
							26	15	1250			
							T	15	1250			
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	19					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	19					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	22					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	24					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	26					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	T					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	19					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	22					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	24					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	26					
Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	T					
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Count	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	22					
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Fig. 8—Complement Diagram for Nonloaded Facility

COMPLEMENT DIAGRAMS										OVER 6 LOAD COILS		
WIRE CENTER	ORDER NUMBER	DATE ISSUED	ORIGINATOR	DESIGN RULE-LIMIT (OHMS OR ZONE)		ALL LOOPS MAKE UP		EXPECTED RETURN LOSS (db)	EXPECTED INSERTION LOSS (db)	PRECISION AND BOC SETTINGS	MOF	FIELD
Remote	57525	7/20/84	R. Elmore	RES. ULD	UNIGAUGE	LONG RT.	KFT	RES.				
CABLE NUMBER	PAIR COUNT	TELEPHONE NO.		1900			19	31	350			
15	1-100 401-600	555-2121					22	12	625			
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SECTION 330-300-526SW

E-6411

8/12/79

LOG SHEET - CONFORMANCE TESTING

Year 1984

Loc. MADISON

Order Number	Wire Center	No. Pairs To Test	Type Test N.S.L.	Dates Received				Number Of Defects				Total Test Hrs.		No. Of Def. Pairs Issued To Recover The Pairs	Remarks	
				Complement Diagram	Notification Form	Test Report	Retest Notification Form	Final Test Report	Initial	Final	Existing	Initial	Retest			
53728	MAD	600	N	5/23	7/1	7/5	-	0	4	2	0	4	2	6	0	no attempt to clear
51662	MAIN	200	S	5/27	7/5	7/8	7/15	0	34	2	0	0	2	12	3	
55208	REMOTE	300	S	6/3	7/8	7/10	7/18	0	37	10	0	3	10	15	3	make 3 level off
50111	MAD	500	S	5/15	7/10	7/12	7/16	0	60	2	0	3	2	24	5	make 2 level off
52217	MAIN	100	L	6/6	7/5	7/17	7/23	0	12	2	0	0	2	9	1	
58812	MAIN	400	S	6/7	7/17	7/18	7/23	75	57	4	75	2	4	28	3	75
53613	MAD	100	L	5/7	7/19	7/22	7/26	0	31	0	0	2	0	6	2	0
56689	REMOTE	100	L	6/18	7/19	7/22	7/26	0	25	1	0	0	1	8	2	0
58303	MAIN	200	S	6/14	7/22	7/23	-	0	0	3	0	0	3	9	0	0
57525	REMOTE	300	S	6/7	7/24	7/25	7/29	0	83	3	0	3	3	14	7	0
56789	MAIN	300	L	6/11	7/29											
56959	MAD	200	S	7/2	7/31											
56425	REMOTE	800	S	7/3												
				TOTAL FOR EGAIN IN MONTH OF JULY												

Fig. 11 - Typical Log Sheet

Test Notification And Status Report-Conformance Testing

E-6412
7/84

Work Order Number 56789	Date 7/19/84	
Construction Management Center	Tel. No. () 555-2120	
<input checked="" type="checkbox"/> Splicing Work Has Been Completed And The Work Is Ready For Testing	By J.N.A	Date 7-19-84
Coordinator	Tel. No. () 555-2119	
<input checked="" type="checkbox"/> Testing Has Been Completed. Attached Is A List Of Defects (E-6414).	By K. K.	Date 7-22-84
Outside Plant Engineer	Tel. No. () 555-2121	
<input checked="" type="checkbox"/> Defects To Be Corrected By Construction Identified On Attached E-6414.	By J.L.	Date 7-23-84
Construction Management Center	Tel. No. () 555-2120	
<input checked="" type="checkbox"/> Corrective Work Has Been Completed. Attached E-6414.	By J m	Date 7-26-84
Coordinator	Tel. No. () 555-2119	
<input checked="" type="checkbox"/> Retesting Has Been Completed. Attached Is A List Of Defects (E-6414).	By J.N.A	Date 7-30-84
Outside Plant Engineer	Tel. No. () 555-2121	
<input checked="" type="checkbox"/> Ready For Approval. Attached E-6414.	By J.L.	Date 7-30-84
<input checked="" type="checkbox"/> E-6415 Completed.	By J.L.	Date 7-31-84
Remarks: less than 1% defects, Verbal okay John Killich OPE manager.		

TEST REPORT - CONFORMANCE TESTING

Order No. 52725		Wire Center MADISON		Cable 22	Count 1-200				
Tester KWE	Date 5/20/84	Total Pairs Tested Nonloaded <u>Loaded</u> 200		Test Initial Retest Final					
Note Defective Pairs Needed to work Routine Order									
PR No.	New		Existing		Description/Location	Cleared By *			Date Cleared
	DC	AC	DC	AC		Design	Const.	Maints.	
5				✓	MISSING 1ST LOAD COIL		✓		
11			✓		SHT 133[~]			✓	
21				✓	MISSING 1ST LOAD COIL		✓		
46			✓		OPN TIP RING 12,500'			✓	
49			✓		GTS 450[~]			✓	
88			✓		SHT 100,000[~]			✓	
126			✓		OPN 12,500'			✓	
177			✓		SHT 455[~]			✓	
151					Missing 3rd Load Coil		✓		
↓					print 2, operation 4		✓		
↓							✓		
200							✓		

* = To be completed by engineer.

Fig. 16—Typical Test Report

CLOSING APPROVAL FORM - CONFORMANCE TESTING

Construction Work On Order Number 55208 Has Been Completed
And Conformance Tests Have Been Performed.

The Initial Tests Indicate That 5 % Of The Existing Pairs
Are Defective. I Recommend That The Job Be Closed Without
Attempting To Clear The Defects.

The Initial Tests Indicate That 2 % Of The New Pairs Were
Defective. Construction Has Made 1 Attempt(s) To Clear
The Faults But 1 % Are Still Defective. I Recommend That
No Further Attempts Be Made To Clear The Remaining Defects.

A Total Of 1100 Pairs Were Conformance Tested And 19 Pairs Are Classified
Defective As Follows:

	Initial Defects	Final Defects	Percent Final Defects
Design	<u>0</u>	<u>0</u>	<u>0</u>
Construction	<u>18</u>	<u>9</u>	<u>1</u>
Existing	<u>10</u>	<u>10</u>	<u>5</u>
Total	<u>28</u>	<u>19</u>	<u>1.7</u>

The Complements Tested Are Recommended For Acceptance With The Final Remaining
Defects As Indicated Above.

Rationale: Defective pairs locate to M. H 165
this manhole is very congested and wet,
2-4" pumps are required to keep water down.
The splice is located at the bottom of the
manhole and there is risk of getting the
splice wet.

Approved By R. Coinceant Signature*
1st Level Outside Plant Engineer

*Approval

Note 1: All Design Defects Must Be Corrected Prior To Closing (See Paragraph 3.17)

Fig. 17-Typical Closing Approval

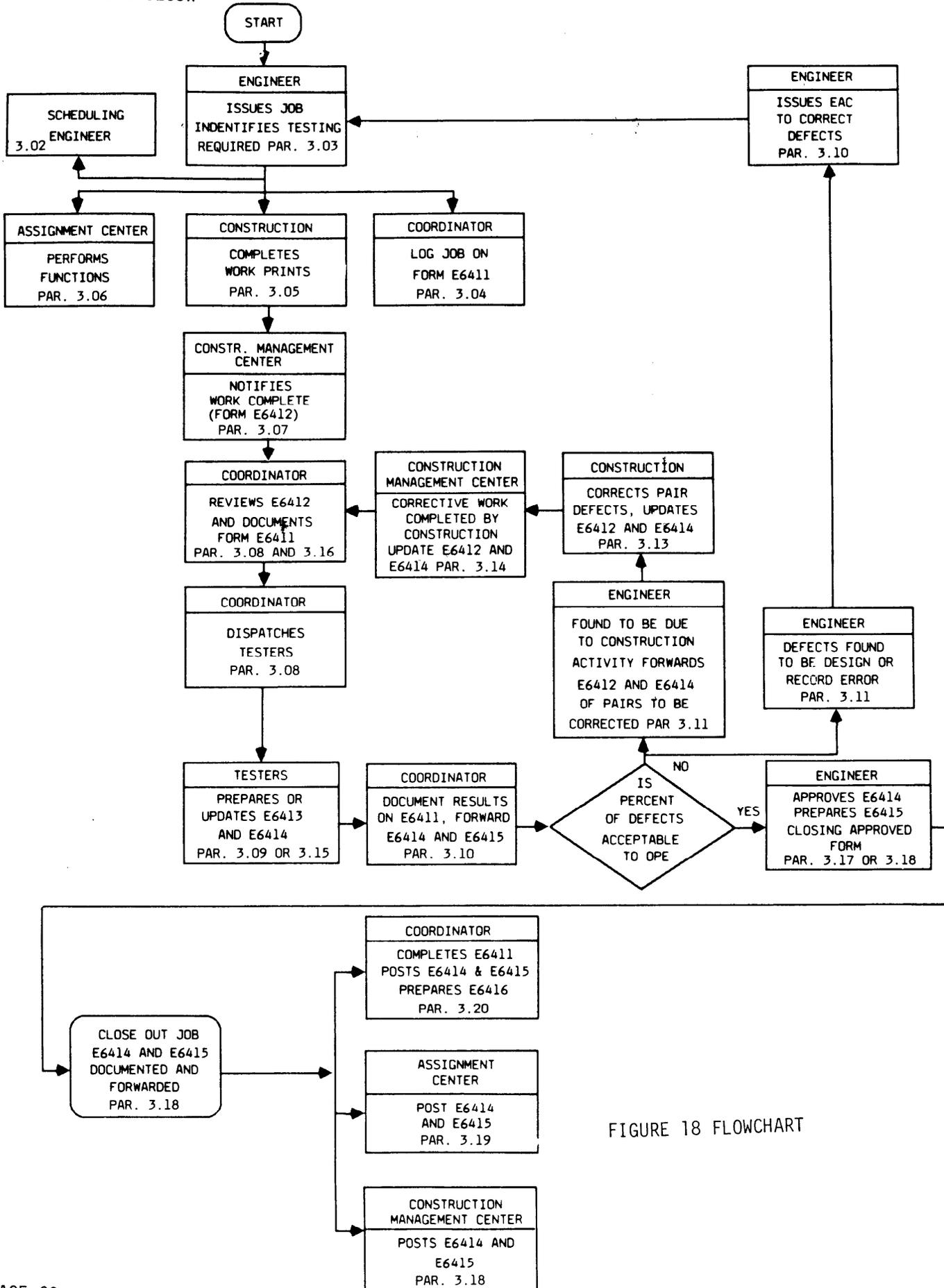


FIGURE 18 FLOWCHART