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FEDERAL BUREAU OF INVESTIGATION

WASHINGTON, D.C.

TELEPHONE ROOM

MAIL ROOM

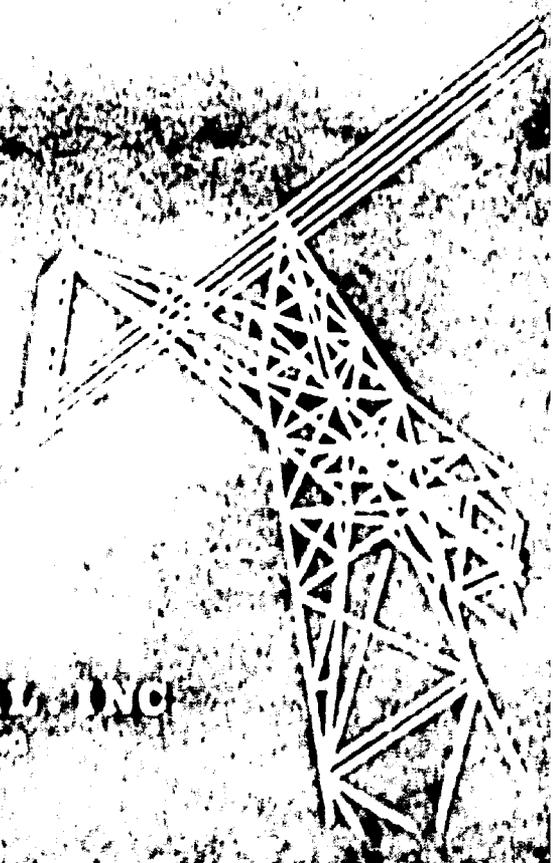
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ORABY MAIN INTERNATIONAL, INC.

10000 SUNDOWN BLVD. WAKARUSA, FLORIDA



PERUSAHAAN UMUM LISTRIK NEGARA
JAKARTA , INDONESIA

WEST JAVA
ELECTRIC TRANSMISSION PROJECT

MONTHLY REPORT

MARCH 1982

WEST JAVA I AND II PROJECTS
CONTRACTS
Pj. 013/PST/74 and Pj 023/PST/75
USAID LOANS 497-H-028 & 497-W-032



CHAR. T. MAIN INTERNATIONAL, INC.

BOSTON MASSACHUSETTS U S A.
BANDUNG , INDONESIA

MAIN

PERUSAHAAN UMUM LISTRIK NEGARA CONSULTANTS
CHAS. T. MAIN INTERNATIONAL, INC.
BANDUNG - Y P O M O L P O S 8 0, T E L. 5 6 8 8 8, J L. P R O G O 2 8
JAKARTA - P.O. BOX 100, KEBAYORAN TIMUR, TEL. 774041-8 EXT. 12, 778825 J.L. WIJAYA 1/81
SEMARANG - P.O. BOX 26, TEL. 312781-311782 J.L. BLAMET 8

10 April 1982

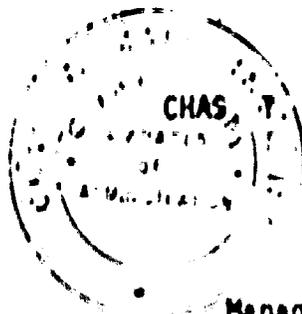
Letter No. J-5067

Ir. R. Semiawan
PERUSAHAAN UMUM LISTRIK NEGARA
Proyek Induk Jaringan Jawa Barat & Jakarta Raya
Jl. Cililitan Besar No. 1
Jakarta

**Subject: West Java I and II Projects
Monthly Report**

Dear Ir. Semiawan:

In accordance with Article 7.2 of the West Java I Contract No. Pj. 013/PST/74 and Appendix V of the West Java II Contract No. Pj. 023/PST/75, enclosed are six (6) copies of our Report for the month of March 1982.



Very truly yours,
CHAS. T. MAIN INTERNATIONAL, INC.

C. J. Whitby
C. J. Whitby

Manager of Administration

cc. : DIRBANG - PLN Pusat (Encl. 1)
USAID - Jakarta (Encl. 4)
MAIN - Boston (Encl. 1)
MAIN - CIA. (Encl. 1)

/swt

WEST JAVA I AND II PROJECTS

MONTHLY REPORT

MARCH 1982

A. PERSONNEL

1. ENGINEER

- a. Mr. C.J. Whitby, Manager of Administration for the West Java Projects, officially completed his assignment on 31 March and was transferred to another Project in Indonesia. He will, however, continue to work as required on West Java financial and administrative matters until the Projects are formally completed and turned over to PLN.
- b. End of the month strength was as follows :

<u>NAME</u>	<u>TITLE</u>	<u>ARRIVAL DATE</u>
J.C. Harkey	Substation Eng. / Constr. Mgr.	15 Oct. 1977

2. PLN

- a. As the Projects are nearing completion, a number of the local Staff continue to be re-assigned to PLN. Remaining Staff is as follows :

<u>JOB TITLE</u>	<u>NUMBER</u>
Secretaries	2
Draftsmen	4
Reproduction Personnel	2
Drivers	2

(2)	No. Pj. 153/PST/77 Irby Construction Company Tower Steel, Insulators and Accessories	5 Sep. '77	US \$	2,902,946.03
(3)	No. Pj. 202/PST/77 Copperweld Industries Shieldwire	28 Nov. '77	US \$	294,739.06
(4)	No. Pj. 203/PST/77 Southwire Company Conductor	28 Nov. '77	US \$	1,991,843.83
(5)	No. Pj. 050/PST/78 Tension Stringing Equipment Co. Wire Stringing Equipment	10 Mar. '78	US \$	400,636.37
(6)	No. Pj. 051/PST/78 Ohio Brass Company Lightning Arresters	10 Mar. '78	US \$	87,852.00
(7)	No. Pj. 052/PST/78 Irby Construction Company Substation Equipment Maintenance Tools and Equipment	11 Mar. '78	US \$	4,547,414.46
(8)	No. Pj. 053/PST/78 General Electric Company Substation Equipment	11 Mar. '78	US \$	2,532,800.59
(9)	No. Pj. 007/PST/78 Motorola Radio Equipment	11 May '78	US \$	395,819.20
(10)	No. Spj. 022/PLN/PI RING/77 P.T. Tikon Abadi Foundations - Section I	24 Oct. '77	Rp.	199.278.000,-

- | | | | | |
|------|--|-------------|-----|---------------|
| (11) | No. Spj. 023/PLN/PI RING/77
P.T. Gunung Kencana
Foundations - Section IIA | 27 Oct. '77 | Rp. | 153.445.000,- |
| (12) | No. Spj. 024/PLN/PI RING/77
P.T. Dharma Niaga
Foundations - Section IIB | 27 Oct. '77 | Rp. | 164.789.000,- |
| (13) | No. Spj. 010/PLN/PI RING/78-79
P.T. Perfect Circle
Tower Erection | 8 Dec. '78 | Rp. | 132.894.300,- |
| (14) | No. Spj. 065A/SPP/PI RING JATENG/78-79
P.T. Santraco Raya
Tegal Substation Civil Work | 21 Apr. '79 | Rp. | 50.278.000,- |
| (15) | No. Spj. 072/SPP/PI RING JATENG/78-79
P.T. Sigma Tirta
Tegal Substation Structure Erection | 17 Oct. '79 | Rp. | 25.966.000,- |
| (16) | No. Spj. 017/PLN/PI RING/78-79
P.T. Silkar National
Conductor Stringing - Section I | 22 Jan. '80 | Rp. | 127.790.850,- |
| (17) | No. Spj. 019/PLN/PI RING/79-80
P.T. Citac Ltd.
Conductor Stringing - Section I | 2 Feb. '80 | Rp. | 164.364.000,- |
| (18) | No. Spj. 001/PLN/PI RING/80-81
P.T. Ersek
Ujungberung Substation Civil Work | 3 Apr. '80 | Rp. | 464.500.000,- |
| (19) | No. Spj. 002/PLN/PI RING/80-81
P.T. Ersek
Ujungberung Substation Control House | 3 Apr. '80 | Rp. | 199.989.000,- |

- | | | | |
|------|---|-------------|------------------|
| (20) | No. Spj. 013/PST/PI RING/80-81
P.T. Dharma Niaga
Ujungberung Substation Temporary 150 KV
Transmission Line By-Pass | 6 Jul. '80 | Rp. 18.860.000,- |
| (21) | No. Spj. 007/PLN/PI RING/80-81
P.T. Citacontrac
Caisson for Tower No. 278 | 3 Jun. '80 | Rp. 32.234.000,- |
| (22) | No. Spk. 003/PLN/PI RING/81
P.T. Citacontrac
Relocate Towers 317 and 319 | 26 Mar. '81 | Rp. 19.823.000,- |

c. West Java II Contract Data

- | | | | |
|-----|--|-------------|---|
| (1) | No. Pj. 023/PST/75

C.T. Main-Engineering Services | 25 Jan. '75 | US \$ 2,509,793.00
Rp. 718.743.035,- |
| (2) | No. Pj. 152/PST/77

Irby Construction Company
Transmission Line Supply and Construction | 5 Sep. '77 | US \$ 8,199,107.37
Rp. 774.481.343,- |
| (3) | No. Pj. 051/PST/78
Ohio Brass Company
Lightning Arresters | 10 Mar. '78 | US \$ 87,852.00 |
| (4) | No. Pj. 052/PST/78
Irby Construction Company
Substation Equipment | 11 Mar. '78 | US \$ 4,981,321.52
Rp. 135.227.727,- |

- | | | | |
|------|---|-------------|--------------------|
| (5) | No. Pj. 053/PST/78
General Electric Company
Substation Equipment | 11 Mar. '78 | US \$ 3,974,100.16 |
| (6) | No. Spj. 001/PLN/PI RING/77-78
P.T. Citac Ltd.
Foundations - Section II and III | 5 Jun. '78 | Rp. 329.553.000,- |
| (7) | No. Spj. 002/PLN/PI RING/78-79
P.T. Citac Ltd.
Foundations - Ujungberung - Cigereleg | 9 Aug. '79 | Rp. 175.128.000,- |
| (8) | No. Spj. 022/PLN/PI RING/79-80
P.T. Sahabat Agung
Cibinong - Gandul Stub Angles | 4 Dec. '79 | Rp. 10.618.000,- |
| (9) | No. Spj. 009/PLN/PI RING/79-80
P.T. Citac Ltd.
Foundations - Section IV A | 30 Nov. '79 | Rp. 62.441.000,- |
| (10) | No. Spj. 010/PLN/PI RING/79-80
P.T. Citac Ltd.
Foundations Section IV C | 30 Nov. '79 | Rp. 36.029.000,- |
| (11) | No. Spj. 018/PLN/PI RING/79-80
P.T. Amarta Karya
Foundations - Section IV B | 24 Jan. '80 | Rp. 64.630.000,- |
| (12) | No. Spj. 008/PLN/PI RING/80-81
P.T. Pembangunan Perumahan
Bandung Utara Substation Civil Work | 5 Jun. '80 | Rp. 334.619.000,- |

(13)	No. Spj. 006/PLN/PI RING/80 P.T. Perfect Circle Bandung Utara Substation Control House	1 May '80	Rp. 230.501.000,-
(14)	No. Spj. 009/PLN/PI RING/80-81 P.T. Perfect Circle Bogor Substation Civil Work	31 May '80	Rp. 475.428.000,-
(15)	No. Spj. 007/PLN/PI RING/80-81 P.T. Perfect Circle Bogor Substation Control House	31 May '80	Rp. 212.915.000,-
(16)	No. Spj. 020/PLN/PI RING/79-80 P.T. Hutama Karya Bandung Utara Substation Access Road	16 Feb. '80	Rp. 31.967.000,-
(17)	No. Spj. 009B/PLN/PI RING/81-82 P.T. Buana Power Bogor Substation Access Road	29 May '81	Rp. 64.700.000,-
(18)	No. Spj. 013/PLN/PI RING/80-81 P.T. Dharma Niaga Bogor Substation Temporary 150 KV Transmission Line By-Pass	6 Jul. '80	Rp. 10.608.000,-
(19)	No. Spj. 001j/PLN/PI RING/80-81 P.T. Samapta Nusantara Transportation of Power Transformers to Bogor	6 May '81	Rp. 89.843.000,-

d. West Java I and II Contract Data

(1)	No. Spj. 016/PLN/PI RING/77 P.T. Sumber Jaya Grounding Material	4 Jul. '77	Rp. 54.245.000,-
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- | | | |
|---|--------------------|--------------------------|
| <p>(2) No. Spj. 017/PLN/PI RING/77
P.T. Arcon
Stub Angles</p> | <p>13 Aug. '77</p> | <p>Rp. 40.100.000,-</p> |
| <p>(3) No. Spj. 001j/OP LOG/79
P.T. Keluarga Pradeni Veem
Transportation of Power Transformers to Bandung</p> | <p>7 Feb. '79</p> | <p>Rp. 128.999.492,-</p> |

2. GENERAL

- a. Extension of the Terminal Disbursement Date - (Last day that payments can be made from USAID Loan Funds) - and for two (2) Letters of Commitment has been requested. Because of a relatively recent Contract Amendment and unavoidable delay in supplying and shipping, the PLN/Irby Substation Contract cannot be completed by the existing expiration date of 31 March 1982. MAIN is hopeful that the extensions will be granted.

C. CONFERENCES AND EVENTS

1. None to Report.

D. PROBLEM AREAS AND TENTATIVE SOLUTIONS

1. Failure of the LTC for the 60 MVA, 150/70 KV transformer at Ujungberung will cause delay in final acceptance of the Substation. Replacement parts are on order and it is hoped that the transformer will be energized again next month.
2. During erection of the electrical equipment, material shortages were discovered. Immediately upon discovery, replacement parts were ordered for air shipment. However, all missing parts have not arrived but it is hoped that delivery will be completed next month. The Bandung Utara Substation is the only one affected.

E. TRANSMISSION - WEST JAVA I

- a. Tower Site Procurement. All tower sites have been procured.
- b. Foundations. All foundations have been installed.
- c. Tower Erection. All towers are erected and accepted.
- d. ROW Procurement and Clearing. All ROW procurement and clearing are completed.
- e. Conductor and Shieldwire. Phase conductor and shieldwire have been installed.
- f. Tower Movement. Towers No. 317 and 319 were originally installed in areas which proved unstable. These towers were relocated. The new locations appear stable but it is recommended that the sites be monitored on a periodic basis.

F. TRANSMISSION - WEST JAVA II

1. Construction

- a. Tower Site Procurement. All tower sites have been procured.
- b. Foundations. All foundations have been installed.
- c. Tower Erection. All towers are erected and accepted.
- d. ROW Procurement and Clearing. All ROW procurement and Clearing are completed.
- e. Conductor and Shieldwire. Phase conductor and shieldwire have been installed.

G. SUBSTATIONS

1. Construction

a. Tegal Substation

All work is completed and the addition has been energized.

b. Ujungberung Substation

(1) Switchyard Civil Work

The only work remaining is installation of the switchyard stone covering. It is not known when this will be done.

(2) Control House

The Control House is complete.

(3) Erection, Wiring and Testing

The Load Tap Changer (LTC) on the 60 MVA, 150/70 KV transformer failed on 12 February during manual operation. The unit should be repaired in April. All replacement parts have been ordered.

c. Bandung Utara Substation

(1) Switchyard

Minor work remains to be completed.

(2) Control House

The Control House is complete.

(3) Access Road

The road is complete.

(4) Erection, Wiring and Testing

Still remaining to be received are one complete trip coil, one anti-pump relay and lift rod. One OCB on the future Padalarang Line will not be ready for operation until all parts are received.

Several 20 KV circuit breakers cannot be energized until various parts are received.

All these parts are on order but it may be next month before they are received.

d. Bogor Substation

(1) Switchyard Civil Work

The Switchyard Civil Work is complete.

(2) Control House

The Control House is complete.

(3) Access Road

The road is complete.

(4) Erection, Wiring and Testing

This work is complete.

Some small transformer leaks still need repairing.

2. Material Supply

All material is presently in Indonesia except for replacement and spare parts. The need for replacement parts for the 150 KV OCB's and 20 KV Switchgear will delay acceptance of the Bandung Utara Substation.

H. MOBILE RADIO

1. Installation of the mobile radio system is complete and the system is operating.

I. SCHEDULES

1. Current Shipping Schedules

This schedule is on pages 14 and 15 . Based on the present supply contracts only two (2) shipments are pending.

2. West Java I and II Projects Completion

The tables which are on pages 16 and 17 give the scheduled and actual completion of the various phases of the Projects. Engineering as well as physical completion are included in the percentage figures.

The page following is the Project Completion graph based on these tables and in addition shows the monthly scheduled percentage completion to the end of the Project. The scheduled completion is based on the estimated schedule at the time Amendment No. 4 of the Engineering Services Contract was signed and does not necessarily reflect the Schedules provided by the various Construction Contractors.

3. Construction Progress

The pages following the Project Completion graph are Project schedules showing the relationship between the actual physical construction and Contractor or PLN scheduled progress.

J. TRAINING

1. A training course in Substation maintenance was held in the Bogor Substation in March. Some 15 PLN employees were in attendance.
2. A training course in Substation operation was started in late March at the Ujungberung Substation. Over 20 PLN employees are in attendance.

WEST JAVA I AND II
TRANSMISSION AND SUBSTATION PROJECTS
CURRENT SHIPPING SCHEDULE

<u>Item</u>	<u>Shipping Date</u>	<u>ETA in PLN Warehouse</u>	<u>Comments</u>
A. Contract Pj. 152/PST/77, Shipment Complete	Irby Construction Company, Transmission Line Materials - WJ II		
B. Contract Pj. 153/PST/77, Shipment Complete	Irby Construction Company, Transmission Line Materials - WJ I		
C. Contract Pj. 203/PST/77, Shipment Complete	Southwire Company, Conductor - WJ I		
D. Contract Pj. 202/PST/77, Shipment Complete	Copperweld Industries, Alumoweld Shieldwire - WJ I		
E. Contract Pj. 050/PST/78, Shipment Complete	Tension Stringing Equipment, Inc. Wire Stringing Equipment - WJ I		
F. Contract Pj. 051/PST/78, Shipment Complete	Ohio Brass Company, Surge Arresters, WJ I & II		
G. Contract Pj. 053/PST/78, Shipment Complete	General Electric Company, Substation Equipment - WJ I & II		
H. Contract Pj. 087/PST/78, Shipment Complete	Motorola Company, Mobile Radio Equipment - WJ I		

<u>Item</u>	<u>Shipping Date</u>	<u>ETA in PLN Warehouse</u>	<u>Comments</u>
I. Contract Pj. 052/PST/78,	Irby Construction Company, Substation Equipment and Maintenance Tools and Equipment - WJ I & II		
1. Flammable Liquid	28 March 1982	15 April 1982	Air Freight
2. Spare Parts for Controls and Relays	28 March 1982	15 April 1982	Air Freight

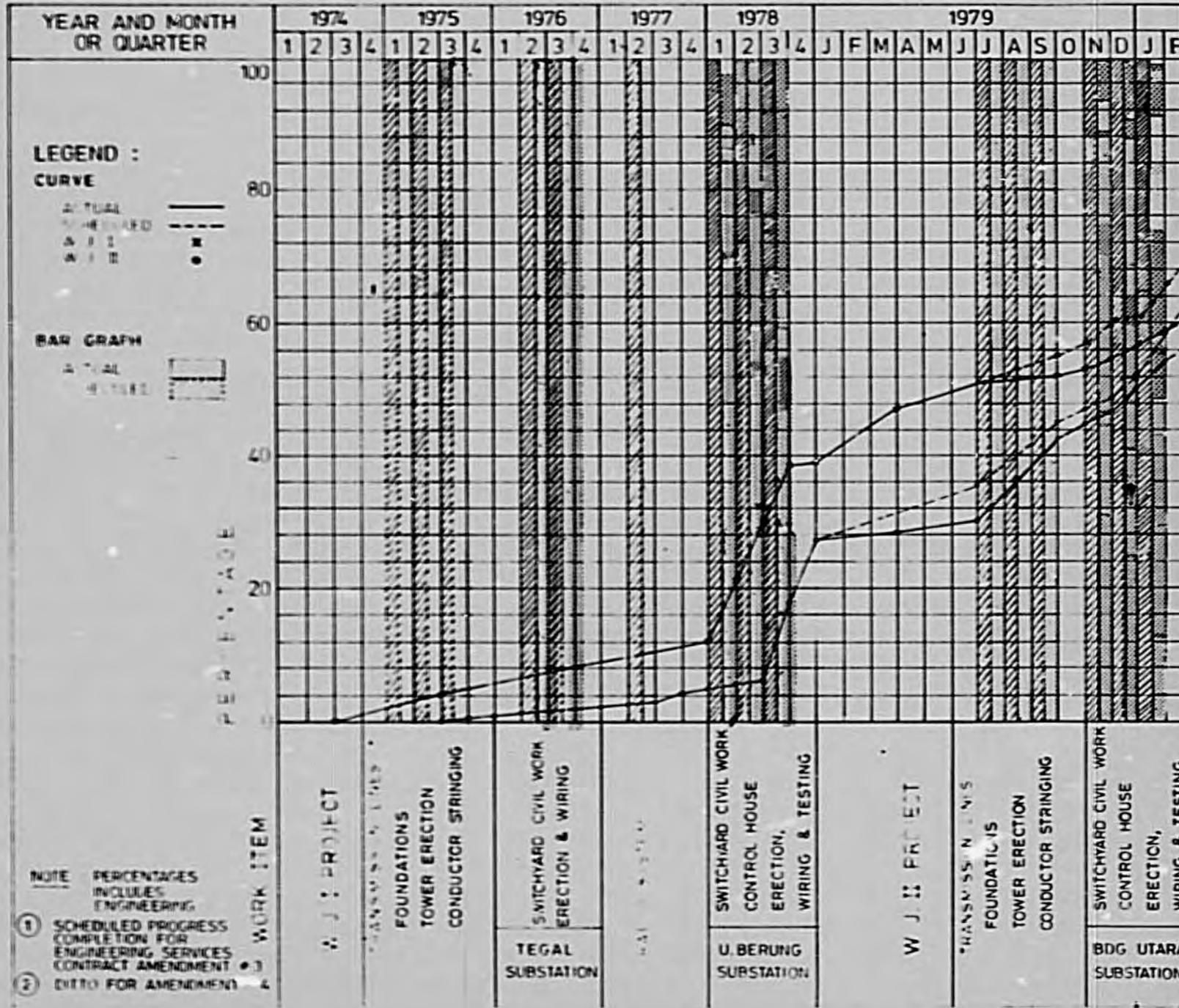
West Java I Project
Project Completion
(Includes Engineering and Design)
as of 31 March 1982

<u>Work Item</u>	<u>Weighted Percent of Project</u>	<u>Percent of Item Completed to Date</u>		<u>Percent of Project Completed to Date</u>	
		<u>Scheduled</u>	<u>Actual</u>	<u>Scheduled</u>	<u>Actual</u>
Transmission Line					
Foundations	28.9	100.0	100.0	28.9	28.9
Tower Erection	13.5	100.0	100.0	13.5	13.5
Conductor Stringing	11.7	100.0	100.0	11.7	11.7
Tegal Substation					
Switchyard	2.0	100.0	100.0	2.0	2.0
Erection and Wiring	1.2	100.0	100.0	1.2	1.2
Ujungbering Substation					
Switchyard Civil Work	15.2	100.0	97.5	15.2	14.8
Control House	11.5	100.0	100.0	11.5	11.5
Equipment Erection, Wiring and Testing	10.3	100.0	100.0	10.3	10.3
Radio System	5.7	100.0	100.0	5.7	5.7
Total	100.0			100.0	99.6
	*****			*****	*****

West Java II Project
 Project Completion
 (Includes Engineering and Design)
 as of 31 March 1982

<u>Work Item</u>	<u>Weighted Percent of Project</u>	<u>Percent of Item Completed to Date</u>		<u>Percent of Project Completed to Date</u>	
		<u>Scheduled</u>	<u>Actual</u>	<u>Scheduled</u>	<u>Actual</u>
Transmission Line					
Foundations	28.1	100.0	100.0	28.1	28.1
Tower Erection	13.1	100.0	100.0	13.1	13.1
Conductor Stringing	11.1	100.0	100.0	11.1	11.1
Bandung Utara Substation					
Switchyard	7.3	100.0	100.0	7.3	7.3
Control House	6.1	100.0	100.0	6.1	6.1
Equipment Erection, Wiring and Testing	4.9	100.0	99.0	4.9	4.8
Bogor Substation					
Switchyard Civil Work	10.6	100.0	100.0	10.6	10.6
Control House	5.8	100.0	100.0	5.8	5.8
Equipment Erection, Wiring and Testing	7.0	100.0	100.0	7.0	7.0
Radio System	6.0	100.0	100.0	6.0	6.0
Total	100.0			100.0	99.9
	*****			*****	*****

WEST JAVA I AND II PROJECTS
PROJECT COMPLETION AS OF MARCH 27, 1982



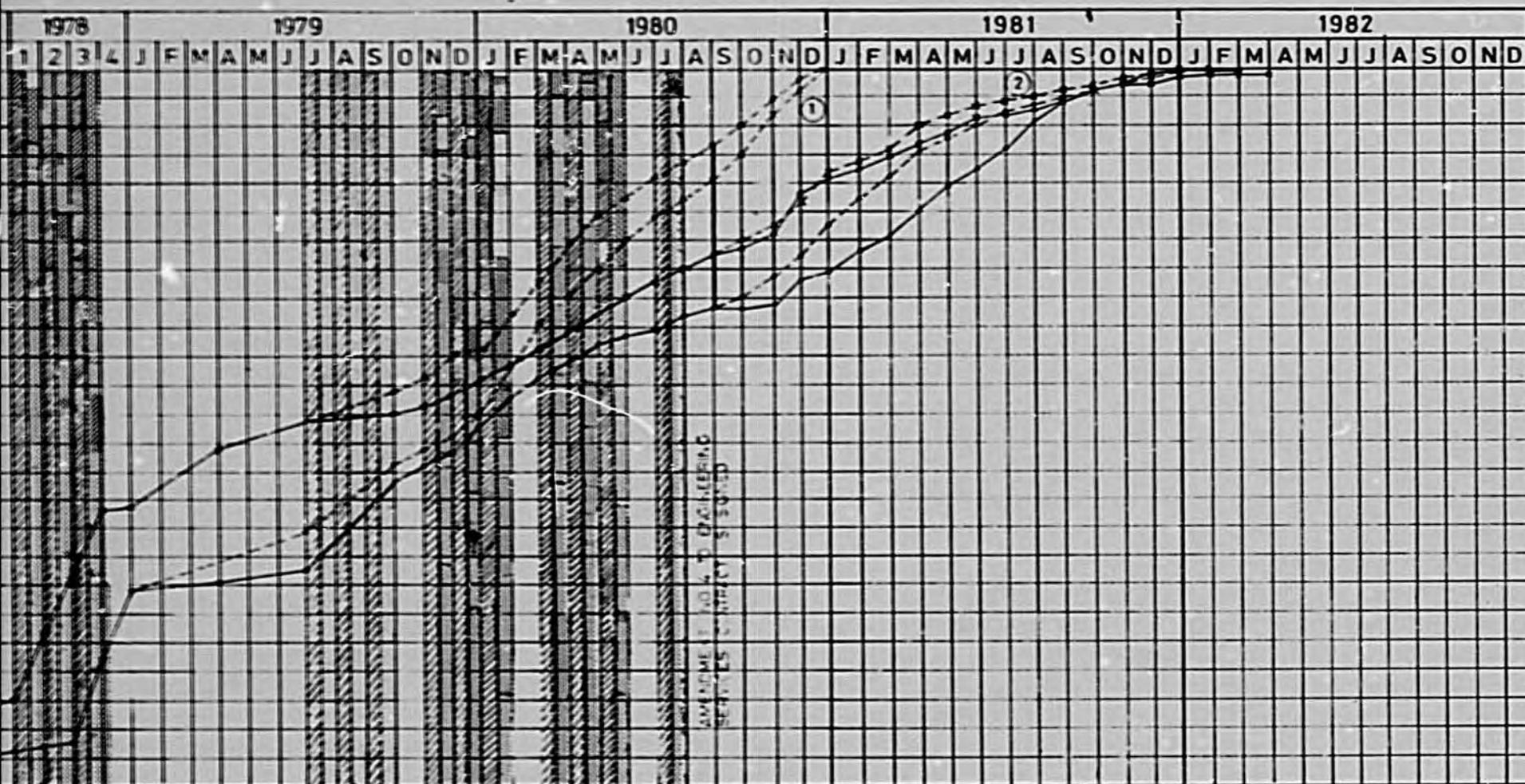
NOTE PERCENTAGES INCLUDES ENGINEERING

① SCHEDULED PROGRESS COMPLETION FOR ENGINEERING SERVICES CONTRACT AMENDMENT #3

② DITTO FOR AMENDMENT #4

BEST AVAILABLE DOCUMENT

AND II PROJECTS
 AS OF MARCH 27, 1982



SWITCHYARD CIVIL WORK
 CONTROL HOUSE
 ERECTION,
 WIRING & TESTING

W J II PROJECT

FOUNDATIONS
 TOWER ERECTION
 CONDUCTOR STRINGING

SWITCHYARD CIVIL WORK
 CONTROL HOUSE
 ERECTION,
 WIRING & TESTING

BDG UTARA
 SUBSTATION

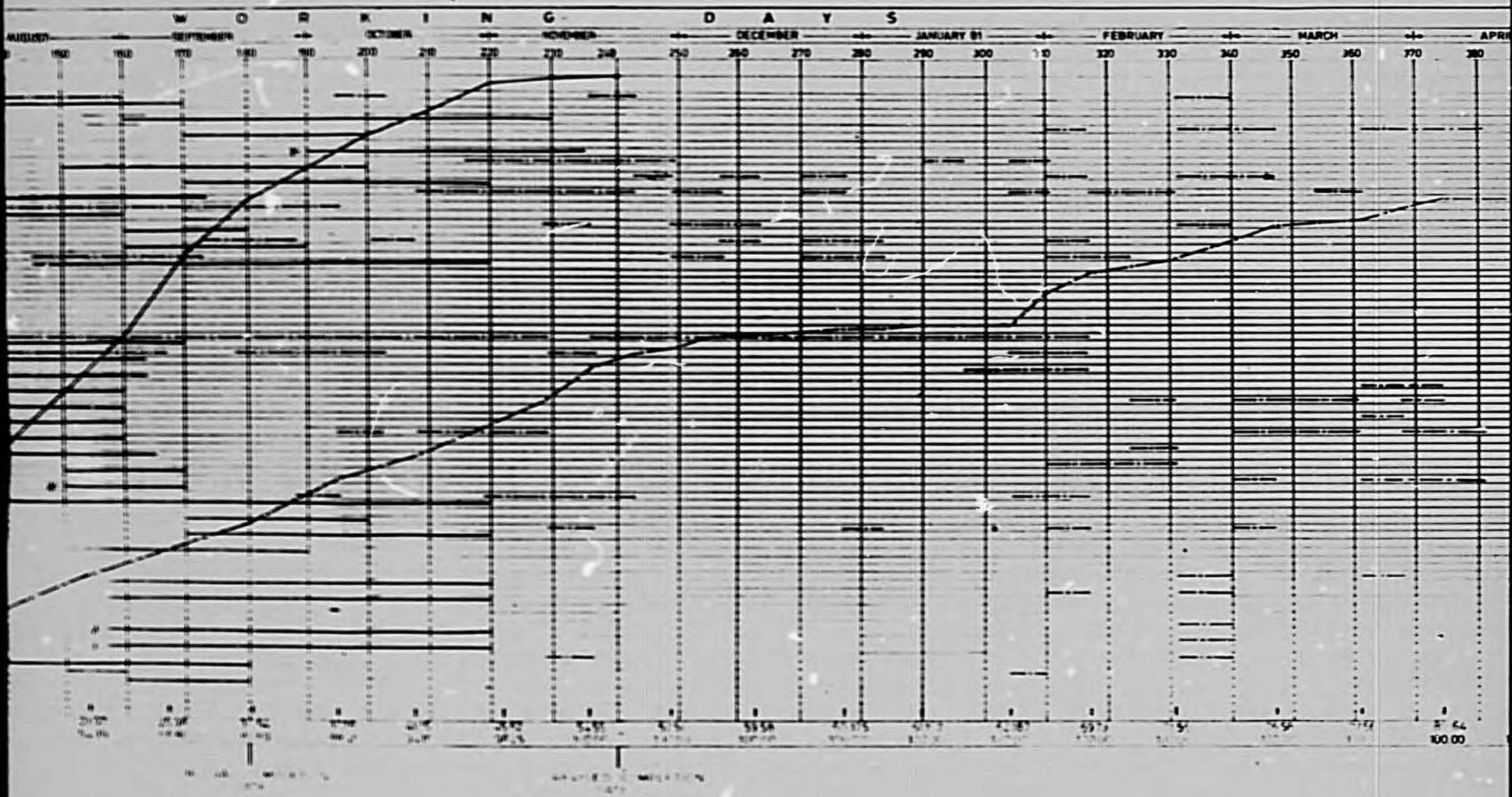
SWITCHYARD CIVIL WORK
 CONTROL HOUSE
 ERECTION,
 WIRING & TESTING

RADIO SYSTEM

BOGOR
 SUBSTATION

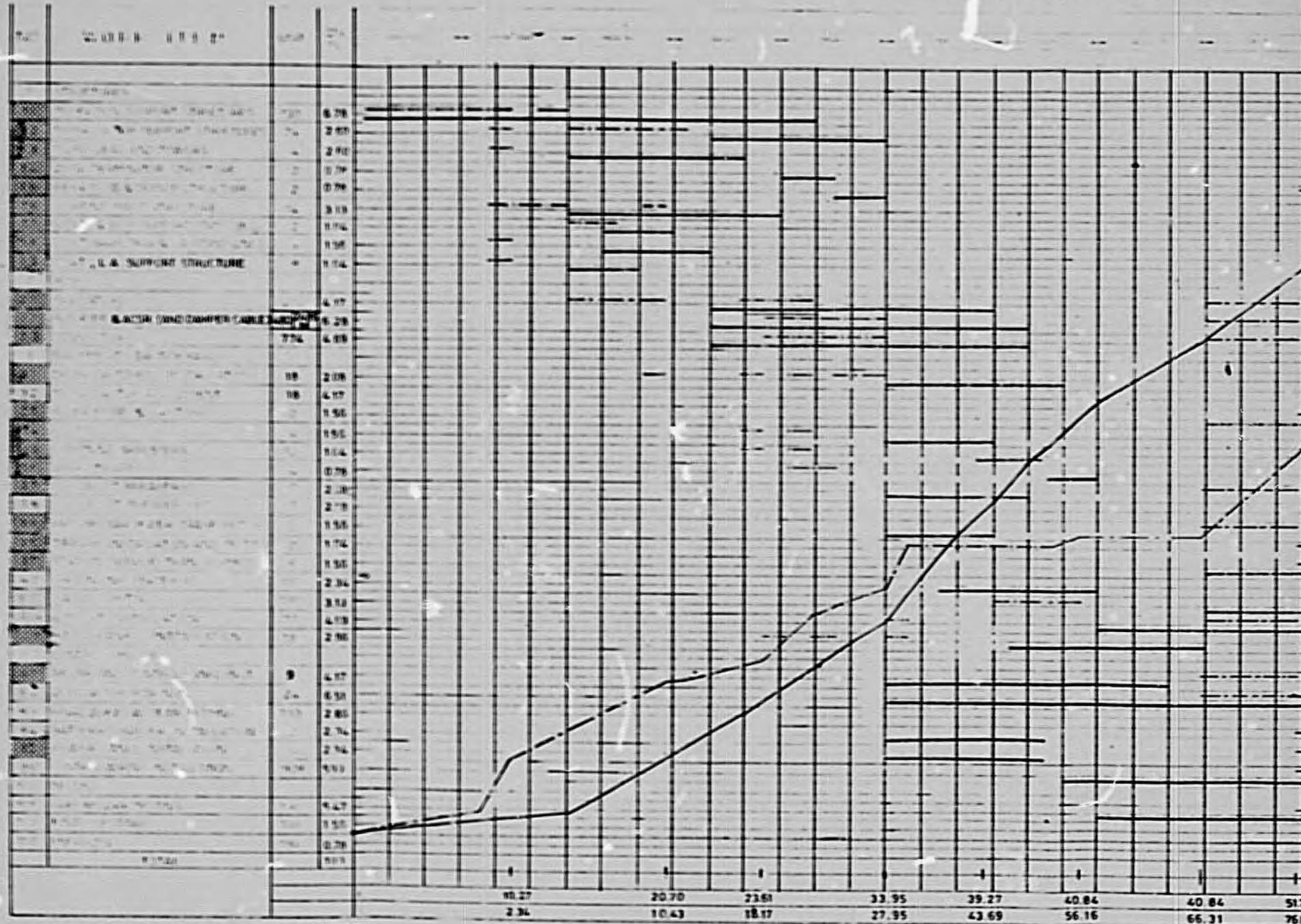
AMNDME 11004.0 ENGINEERING
 SERVICES CONTRACT SCHEDULED

TIME SCHEDULE UJUNG BERUNG SWITCH YARD



BEST AVAILABLE DOCUMENT

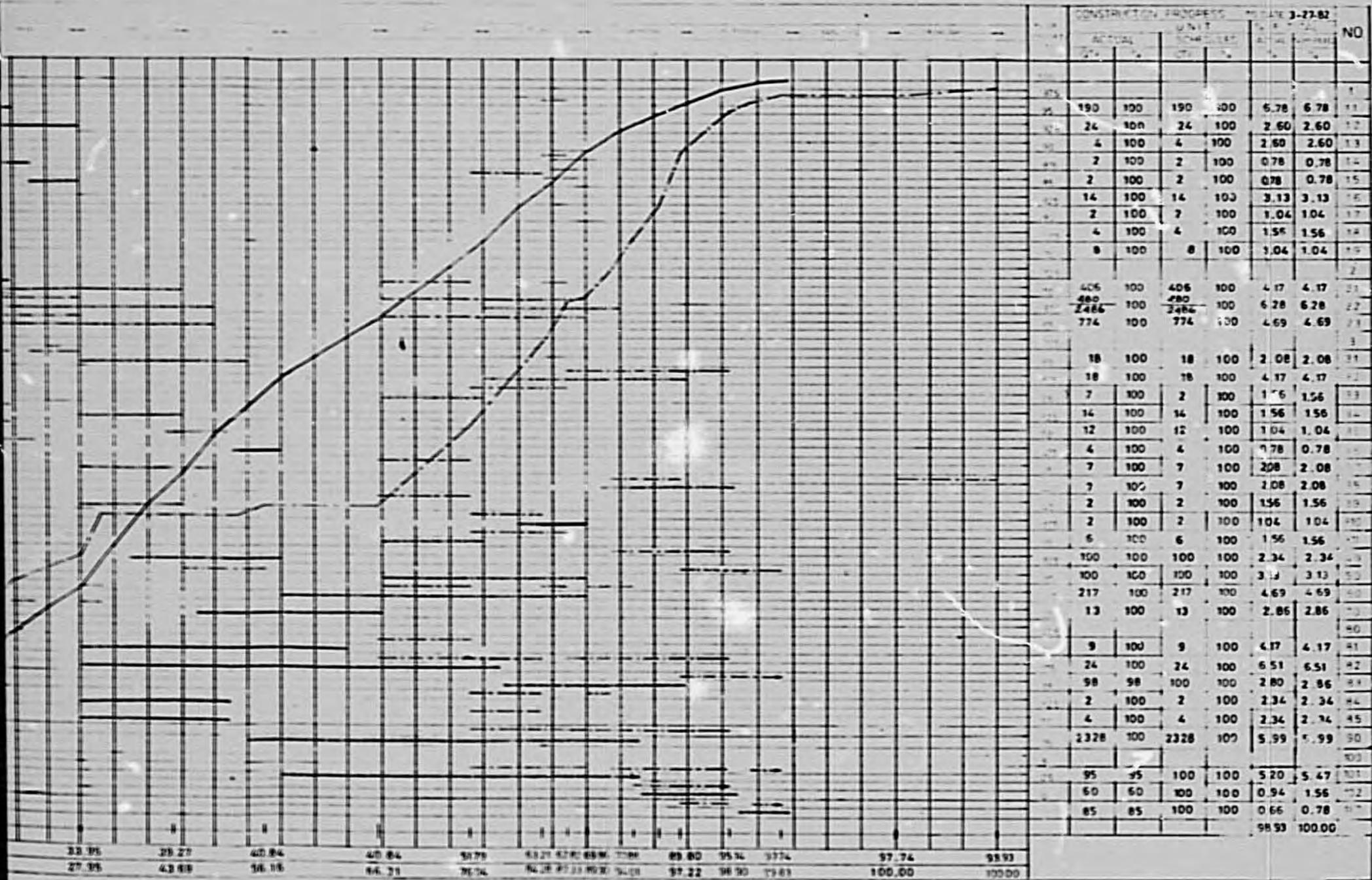
TIME SCHEDULE
BANDUNG UTARA ERECTION



BEST AVAILABLE DOCUMENT

NOTES:
 ● WORK NOT STARTED
 — WORK NOT COMPLETE AS OF DATE
 1. WORK CAN NOT BE COMPLETED DUE TO MATERIAL PROBLEM

TIME SCHEDULE BANDUNG UTARA ERECTION



NO	CONSTRUCTION PROGRESS				DATE 3-27-82	
	ACTUAL		SCHEDULED		DATE	PERCENT
	QTY	%	QTY	%		
1						
2	190	100	190	100	6.78	6.78
3	24	100	24	100	2.60	2.60
4	4	100	4	100	2.60	2.60
5	2	100	2	100	0.78	0.78
6	2	100	2	100	0.78	0.78
7	14	100	14	100	3.13	3.13
8	2	100	2	100	1.04	1.04
9	4	100	4	100	1.56	1.56
10	8	100	8	100	1.04	1.04
11						
12	406	100	406	100	4.17	4.17
13	480	100	480	100	6.28	6.28
14	774	100	774	100	4.69	4.69
15						
16	18	100	18	100	2.08	2.08
17	18	100	18	100	4.17	4.17
18	7	100	2	100	1.56	1.56
19	14	100	14	100	1.56	1.56
20	12	100	12	100	1.04	1.04
21	4	100	4	100	0.78	0.78
22	7	100	7	100	2.08	2.08
23	7	100	7	100	2.08	2.08
24	2	100	2	100	1.56	1.56
25	2	100	2	100	1.04	1.04
26	6	100	6	100	1.56	1.56
27	100	100	100	100	2.34	2.34
28	100	100	100	100	3.13	3.13
29	217	100	217	100	4.69	4.69
30	13	100	13	100	2.85	2.85
31						
32	9	100	9	100	4.17	4.17
33	24	100	24	100	6.51	6.51
34	98	98	100	100	2.80	2.86
35	2	100	2	100	2.34	2.34
36	4	100	4	100	2.34	2.34
37	2328	100	2328	100	5.99	5.99
38						
39	95	95	100	100	5.20	5.47
40	60	60	100	100	0.94	1.56
41	85	85	100	100	0.66	0.78
					98.93	100.00

33.95 29.27 40.84 40.84 51.79 63.21 67.80 68.96 70.88 83.80 95.34 97.74 98.93
 27.95 43.89 56.18 66.31 76.34 84.28 87.33 89.30 94.08 97.22 98.90 99.83 100.00

COMPLETED
 WORK