

THE USE OF CONE PENETRATION TESTING  
TO INVESTIGATE SAND FILL SUBSIDENCE  
AT CROSS-DRAIN LOCATIONS

FINAL REPORT

VOLUME II

BY

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Research Report No. 170

Research Project No. 83-3S

Conducted By

GEOGULF, INC.

(Subsidiary of Fugro Inter, Inc.)

AND

LOUISIANA DEPARTMENT OF TRANSPORTATION  
AND DEVELOPMENT

Research and Development Section  
In Cooperation With

U. S. Department of Transportation  
FEDERAL HIGHWAY ADMINISTRATION

MARCH 1984

## DISCLAIMER

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## ACKNOWLEDGEMENT

The field cone penetrometer testing, analysis of test data and preparation of report was performed by Messrs Recep Yilmaz and Bert Lakeman of Geogulf, Inc. Mr. James L. Melancon of the Louisiana D.O.T.D. provided the liaison between the Louisiana D.O.T.D. and Geogulf and supervision of test site selection and preparation and the Department's laboratory and field testing programs. The efforts of Mr. Steve Bokun and other personnel of Louisiana D.O.T.D. is also acknowledged and appreciated.

METRIC CONVERSION FACTORS\*

| <u>To Convert from</u>     | <u>To</u>  | <u>Multiply by</u> |
|----------------------------|--|--------------------|
| <u>Length</u>              |  |                    |
| foot                       | meter (m)  | 0.3048             |
| inch                       | millimeter (mm)  | 25.4               |
| yard                       | meter (m)  | 0.9144             |
| mile (statute)             | kilometer (km)   | 1.609              |
| <u>Area</u>                |  |                    |
| square foot                | square meter (m <sup>2</sup> )                         | 0.0929             |
| square inch                | square centimeter (cm <sup>2</sup> )                   | 6.451              |
| square yard                | square meter (m <sup>2</sup> )                         | 0.8361             |
| <u>Volume (Capacity)</u>   |  |                    |
| cubic foot                 | cubic meter (m <sup>3</sup> )                          | 0.02832            |
| gallon (U.S. liquid)**     | cubic meter (m <sup>3</sup> )                          | 0.003785           |
| gallon (Can. liquid)**     | cubic meter (m <sup>3</sup> )                          | 0.004546           |
| ounce (U.S. liquid)        | cubic centimeter (cm <sup>3</sup> )                    | 29.57              |
| <u>Mass</u>                |  |                    |
| ounce-mass (avdp)          | gram (g)   | 28.35              |
| pound-mass (avdp)          | kilogram (kg)  | 0.4536             |
| ton (metric)               | kilogram (kg)  | 1000               |
| ton (short, 2000 lbs)      | kilogram (kg)  | 907.2              |
| <u>Mass per Volume</u>     |  |                    |
| pound-mass/cubic foot      | kilogram/cubic meter (kg/m <sup>3</sup> )              | 16.02              |
| pound-mass/cubic yard      | kilogram/cubic meter (kg/m <sup>3</sup> )              | 0.5933             |
| pound-mass/gallon (U.S.)** | kilogram/cubic meter (kg/m <sup>3</sup> )              | 119.8              |
| pound-mass/gallon (Can.)** | kilogram/cubic meter (kg/m <sup>3</sup> )              | 99.78              |
| <u>Pressure</u>            |  |                    |
| pounds per square inch     | kilograms per square centimeters (kg/cm <sup>2</sup> ) | 0.7030             |
| pounds per square inch     | mega pascal (MPa)                                      | 0.006894           |

\*The reference source for information on SI units and more exact conversion factors is "Metric Practice Guide" ASTM E 380.

\*\*One U.S. gallon equals 0.8327 Canadian gallon.

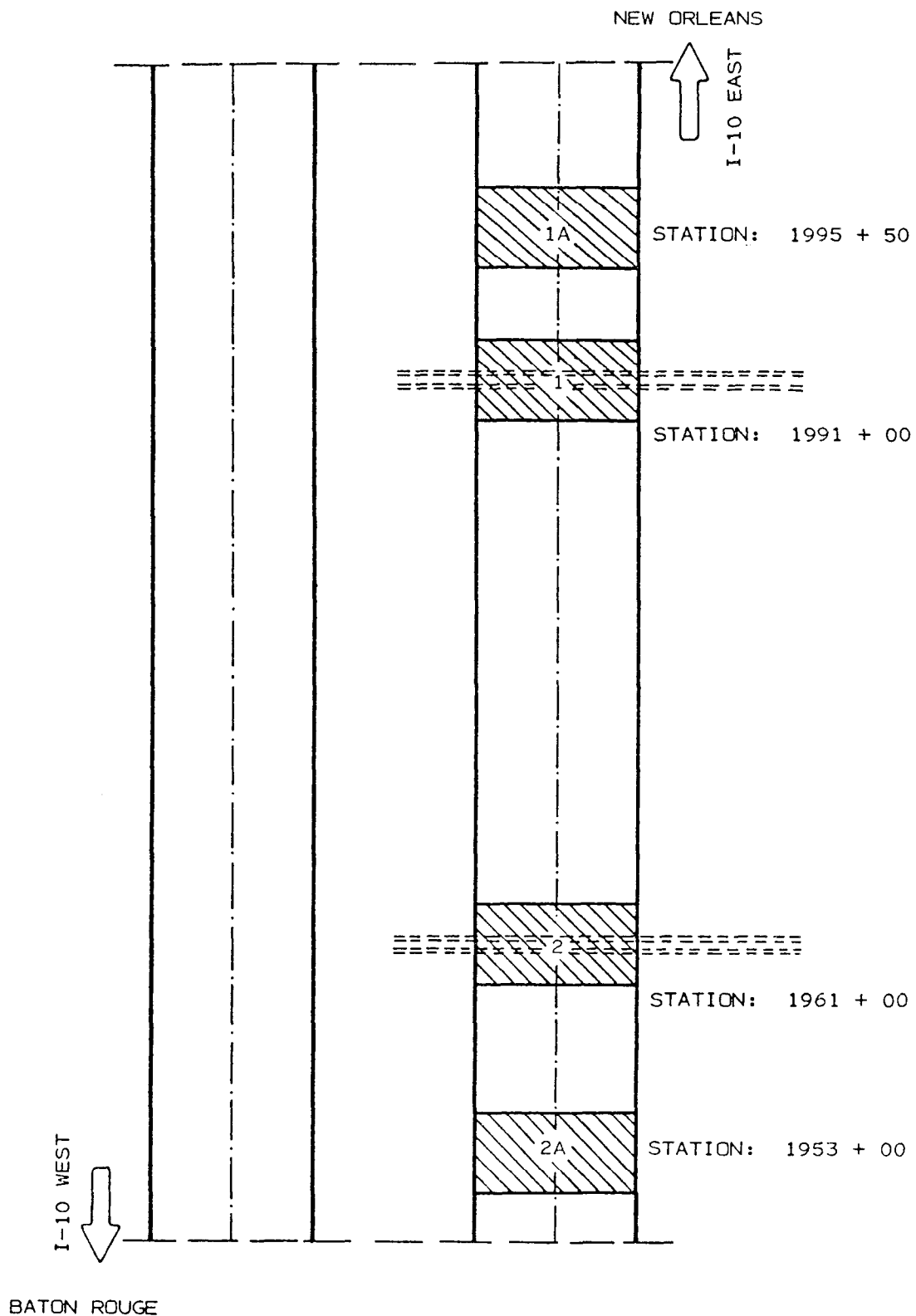


## ABSTRACT

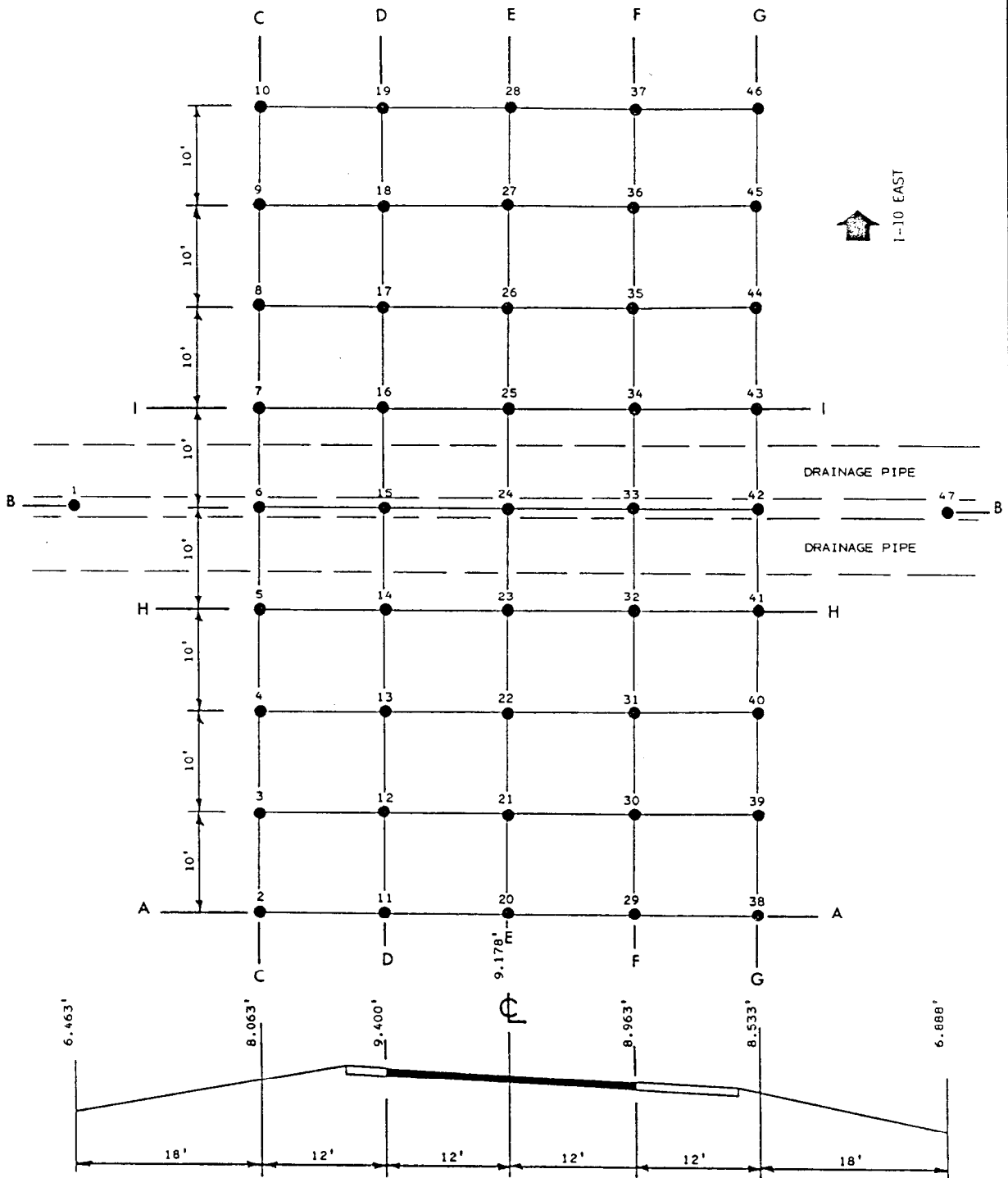
During construction of Interstate I-10 between Baton Rouge and LaPlace, Louisiana, highly organic swamp deposits were excavated and replaced with hydraulically pumped river sand. Recently, excessive settlement was encountered at numerous cross-drain and bridge end locations within the hydraulically placed sand fills.

The main objective of this study was to evaluate the subsurface conditions and investigate the reason(s) for sand fill subsidence at cross-drain locations and to determine the possibility of utilizing the electric cone penetration test for such investigation. Sounding data was collected at sites both with and without cross-drains in a grid pattern to a minimum depth of two feet in the Pleistocene clay beneath the hydraulically placed sand fill. All soundings were evaluated within each site location first, and subsequently compared with the representative average values from the other sites.

Numerous conclusions based on the study are presented although the major evidence for subsidence is loosely compacted sand at the cross-drain locations. It was also noted that the electric cone penetration test is a valuable tool and should be utilized both immediately after construction, as well as in checking time related effects in subsidence and compaction studies.



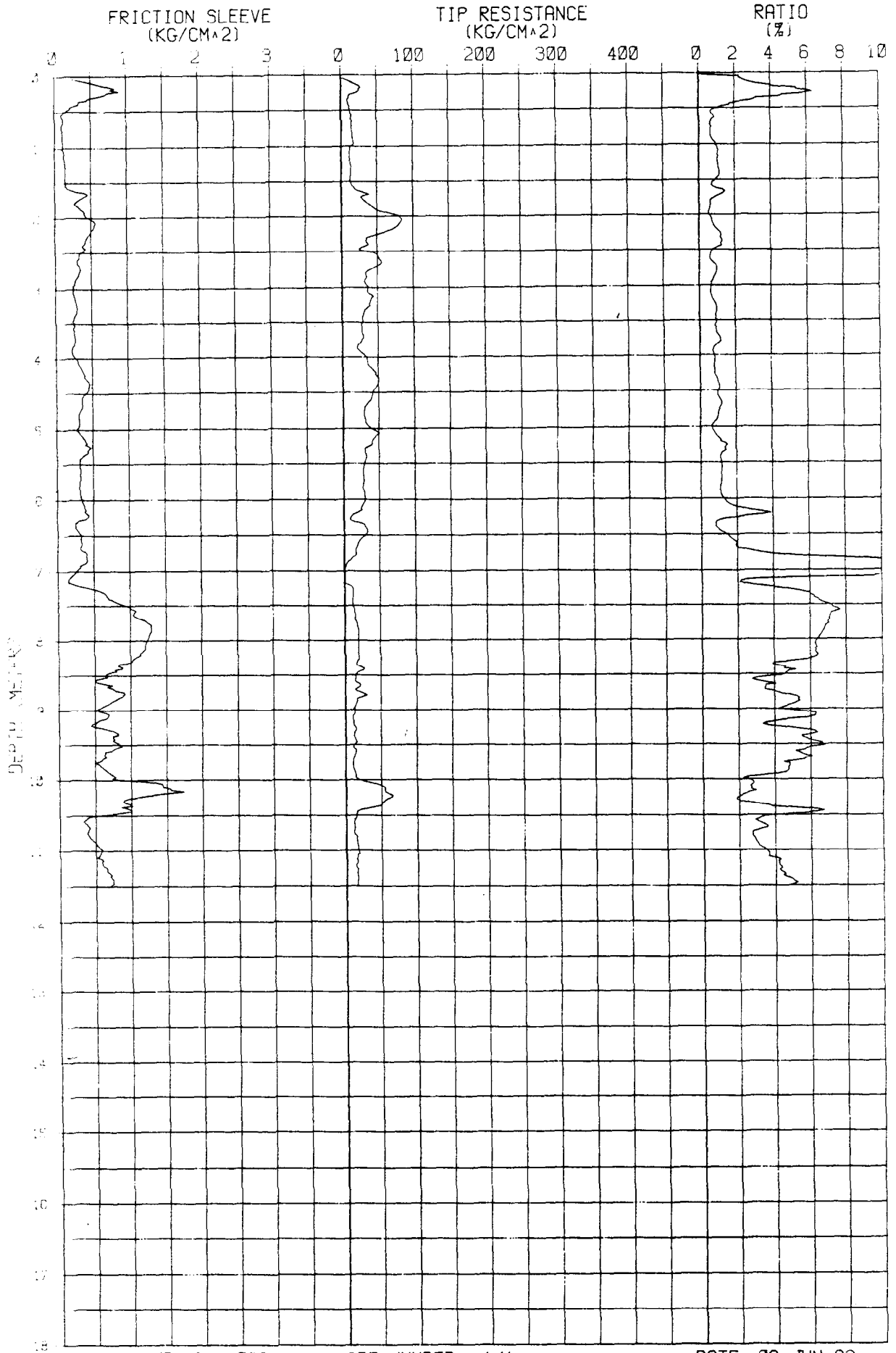
CONE PENETRATION TEST SITE PLAN



LOCATION: 1  
 STATION: 1991+00

● CPT LOCATION

CPT LAY OUT PLAN



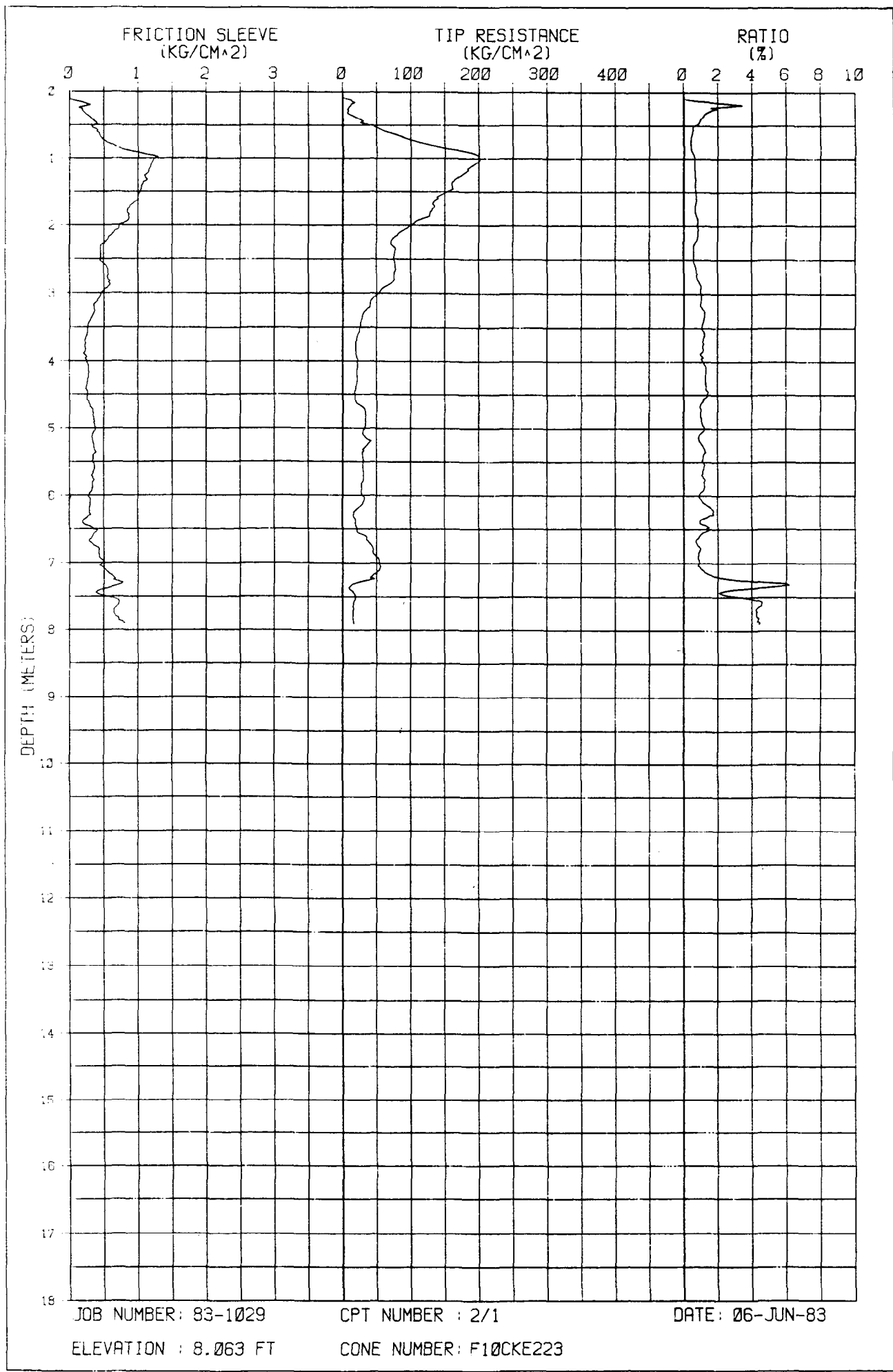
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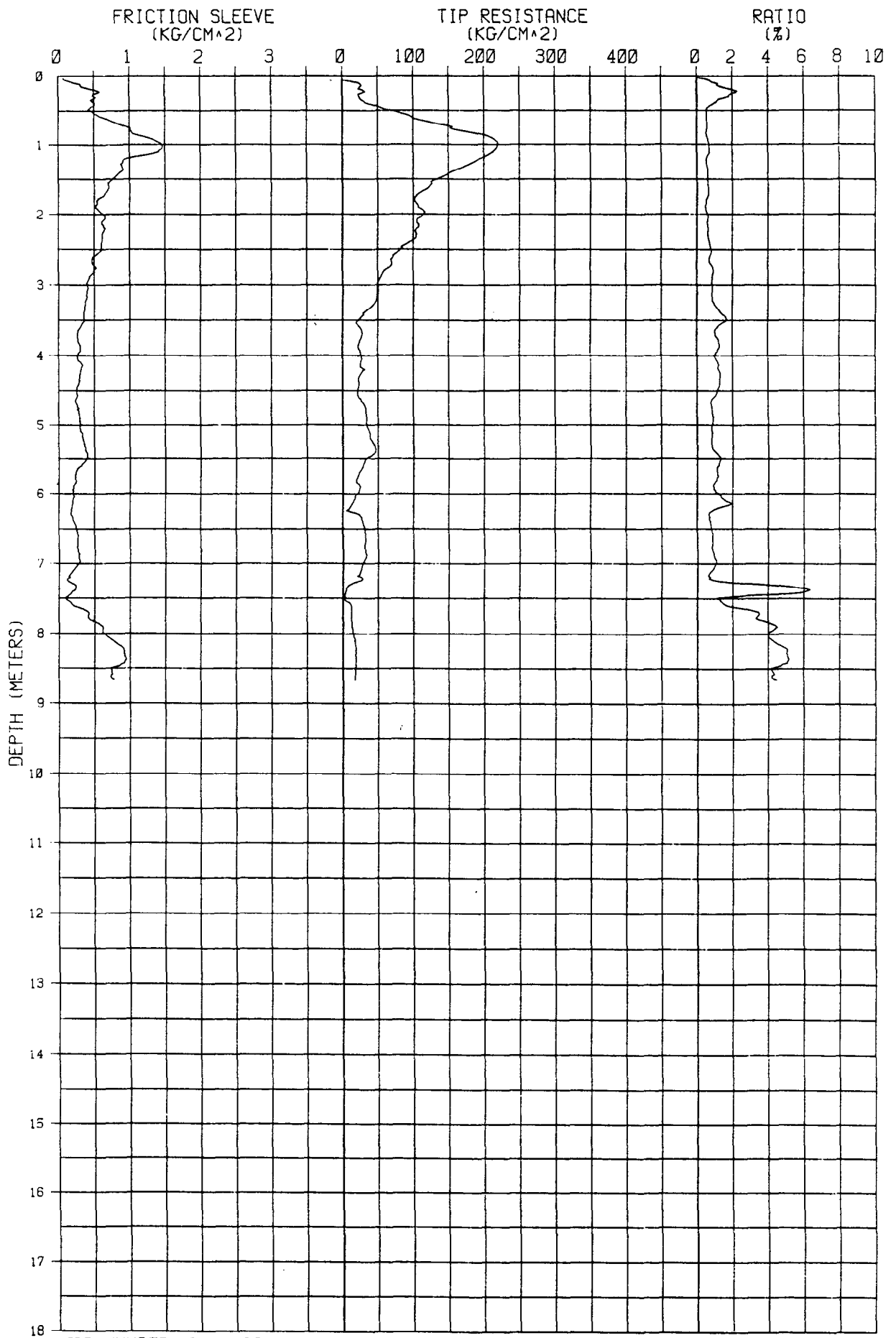
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DATE: 09-JUN-83

ELEVATION: 6.463 FT

CONE NUMBER: F10CKE223





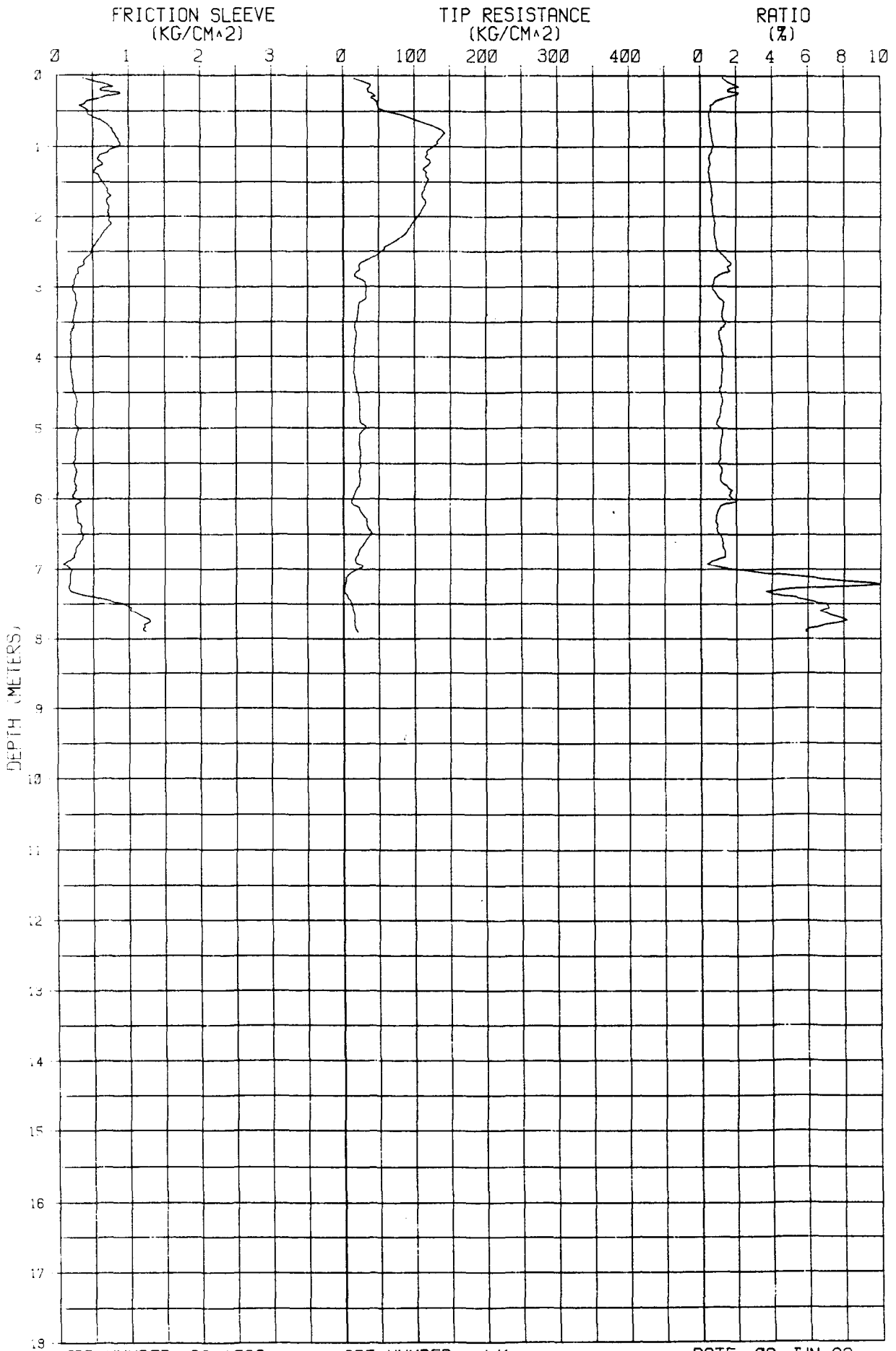
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CPT NUMBER : 3/1

DATE : 02-JUN-83

ELEVATION : 8.063 FT

CONE NUMBER : F10CKE301



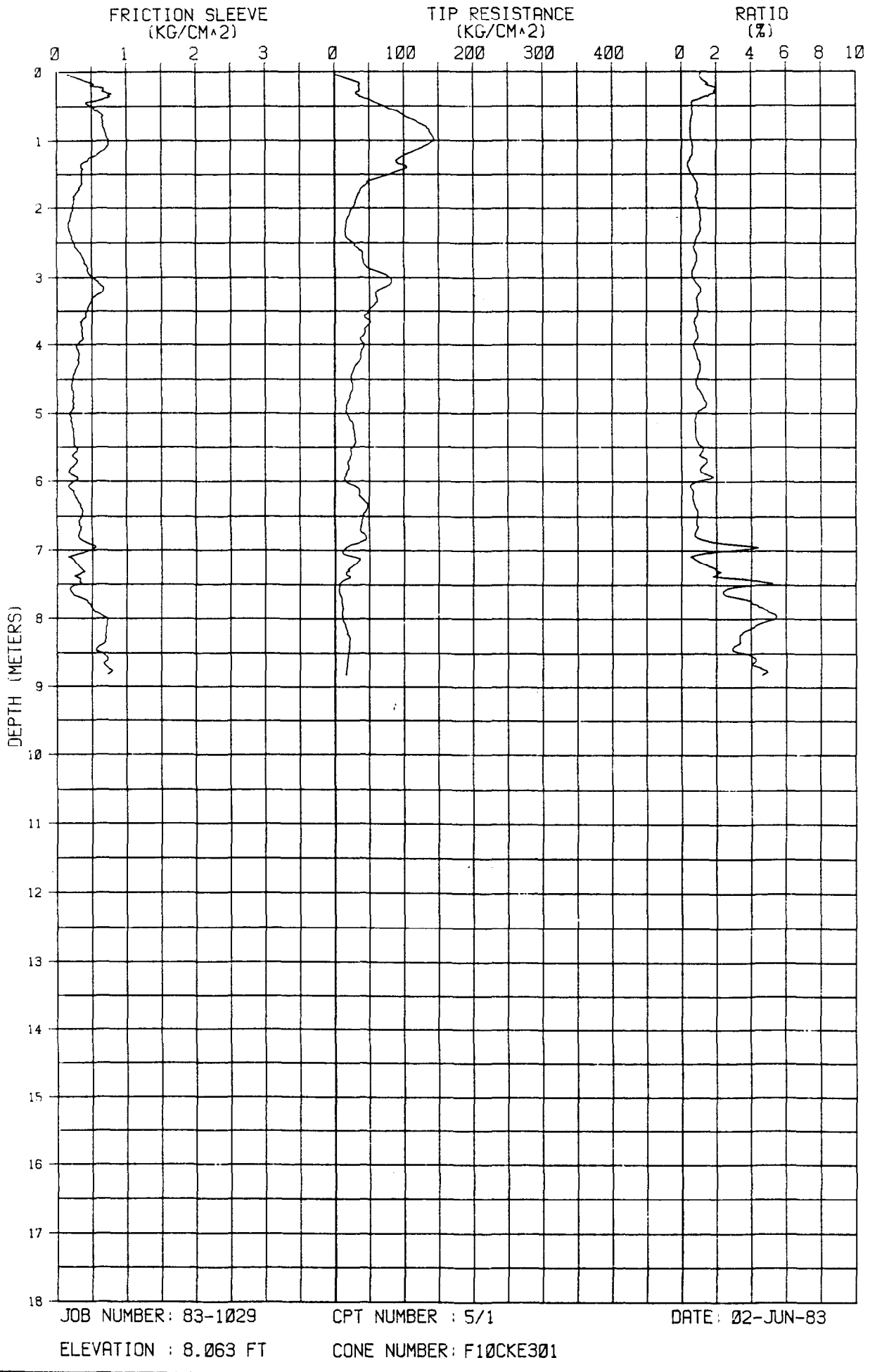
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CPT NUMBER : 4/1

DATE : 06-JUN-83

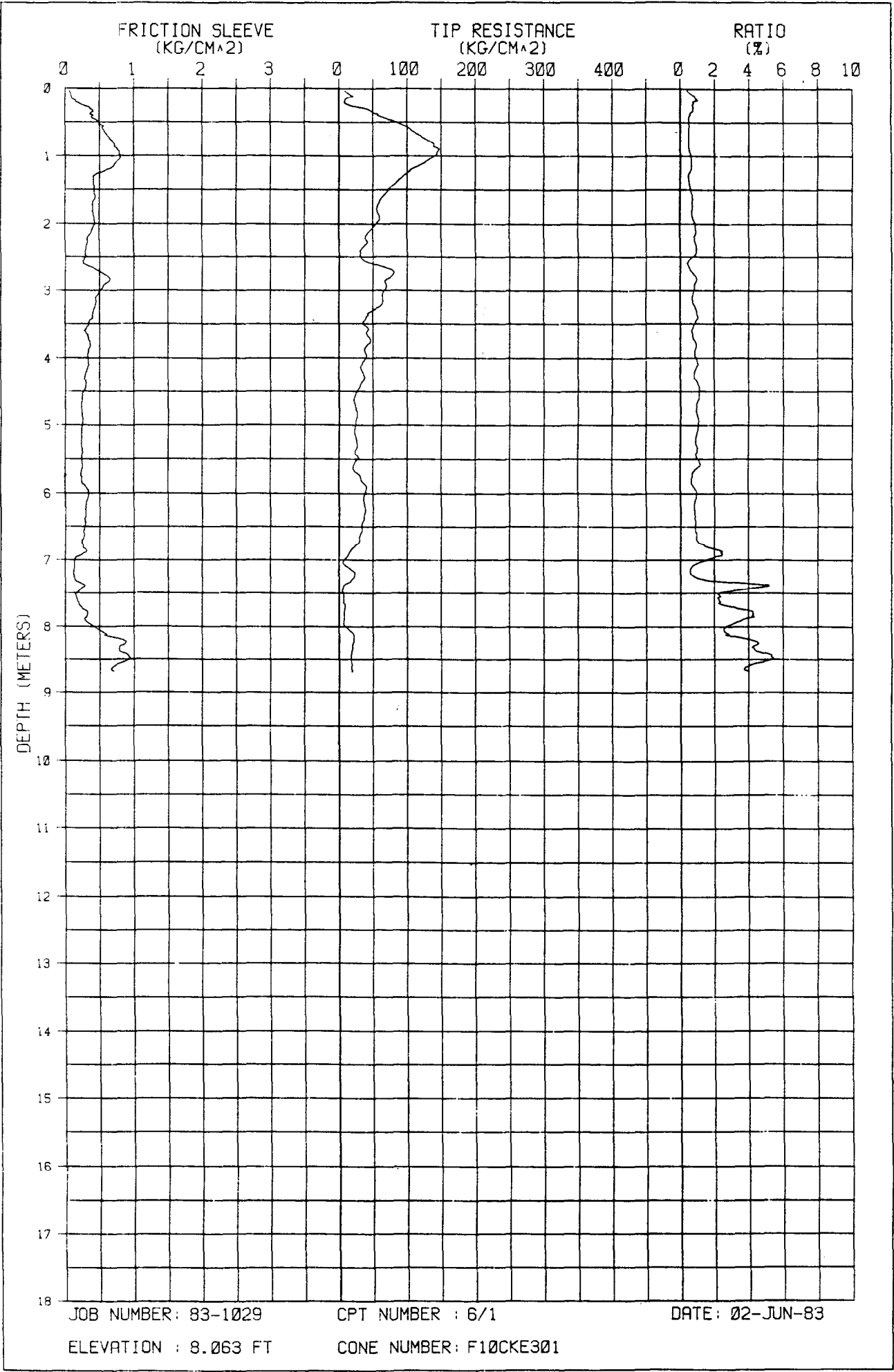
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CONE NUMBER : F10CKE223



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 ELEVATION : 8.063 FT      CONE NUMBER: F10CKE301





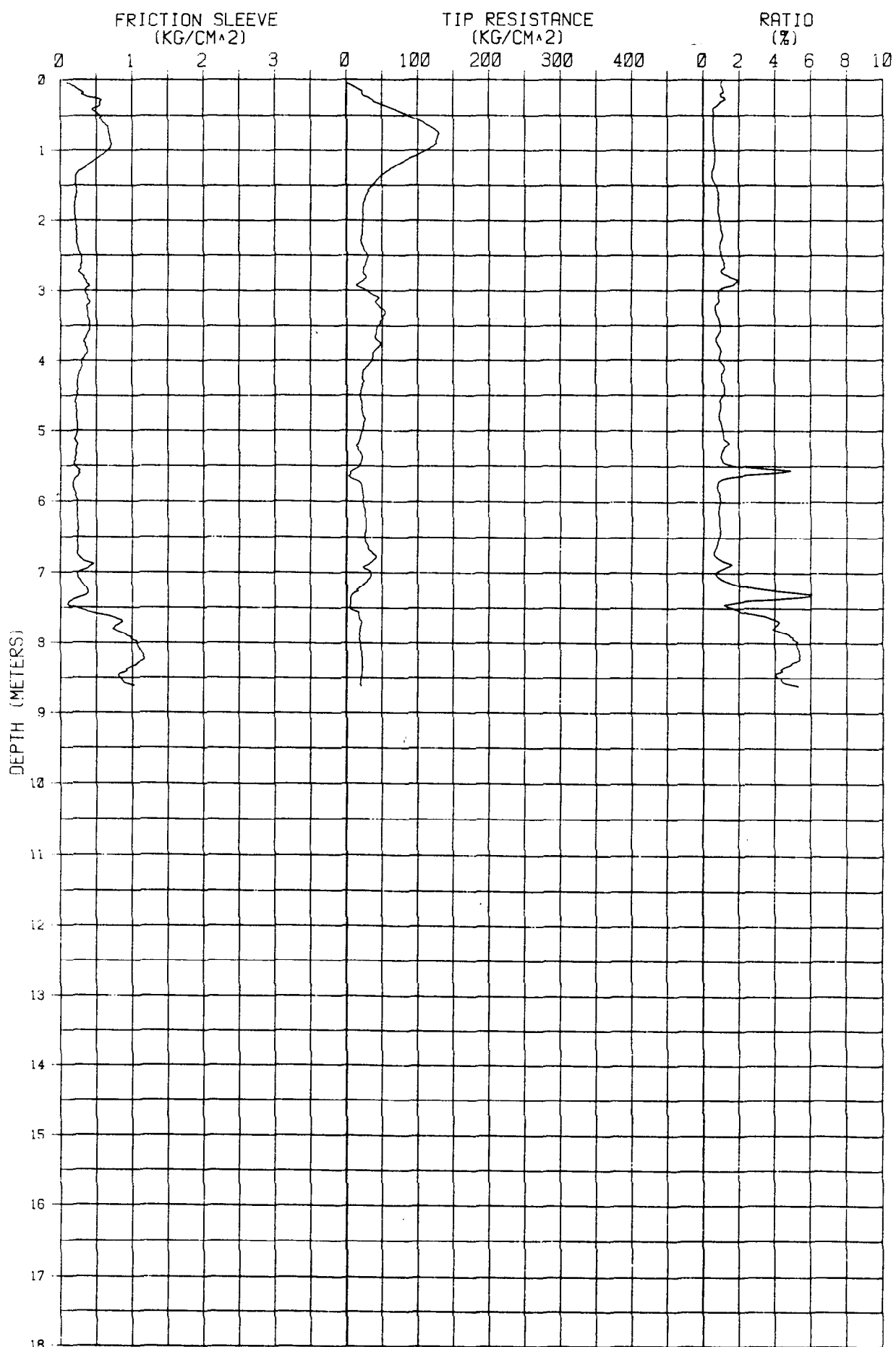
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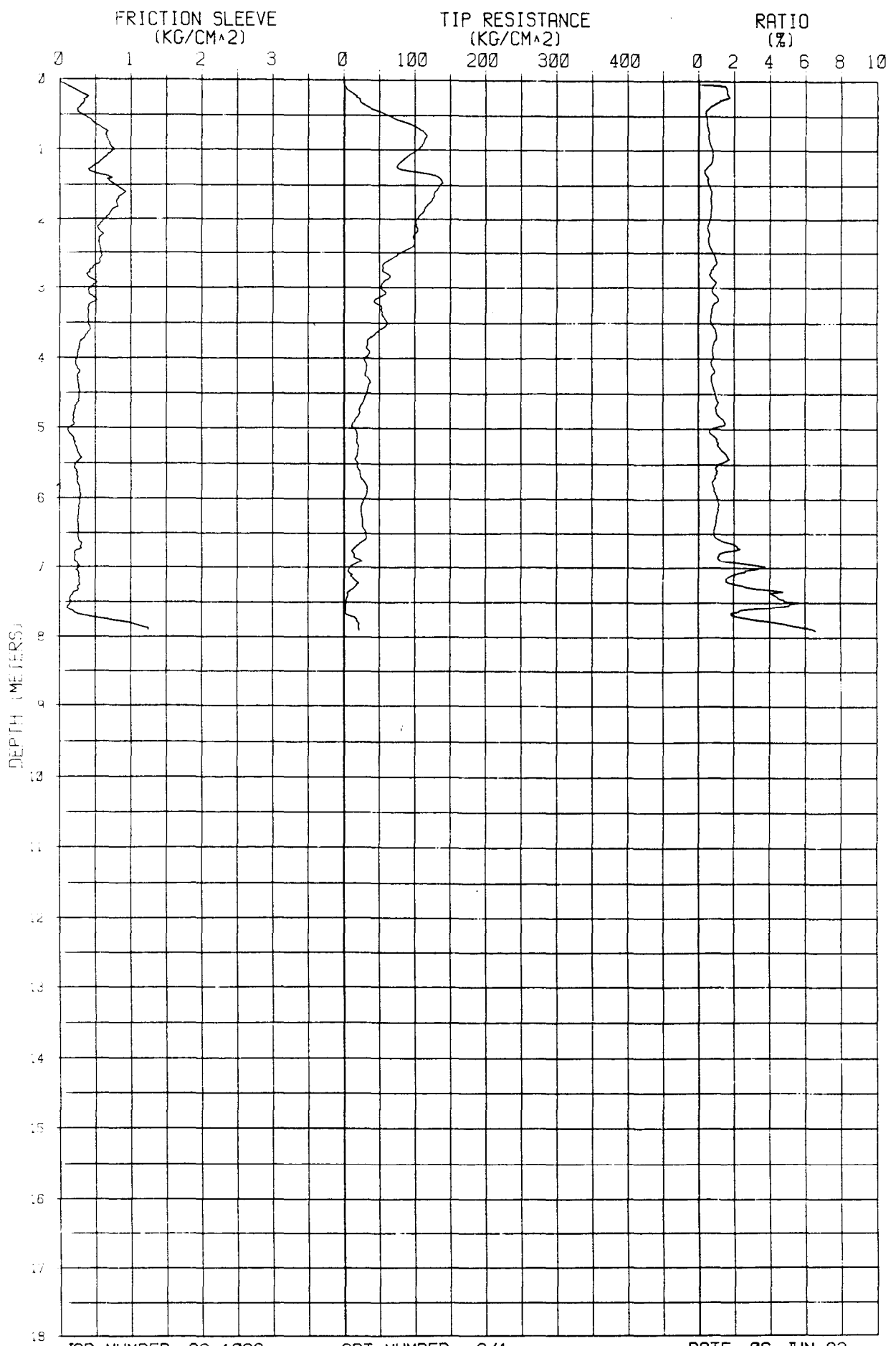
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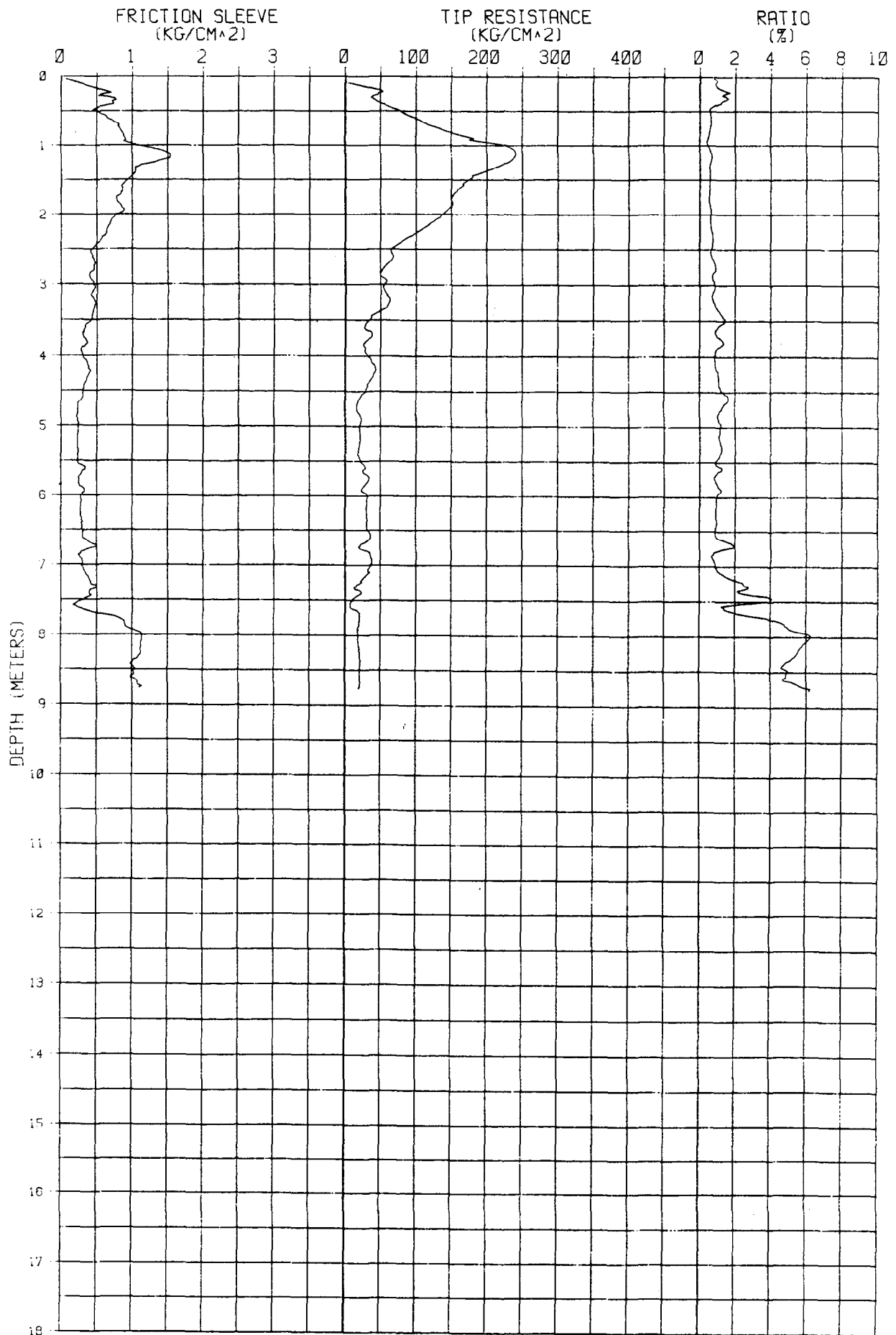
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CPT NUMBER : 8/1

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ELEVATION : 8.063 FT

CONE NUMBER : F10CKE223



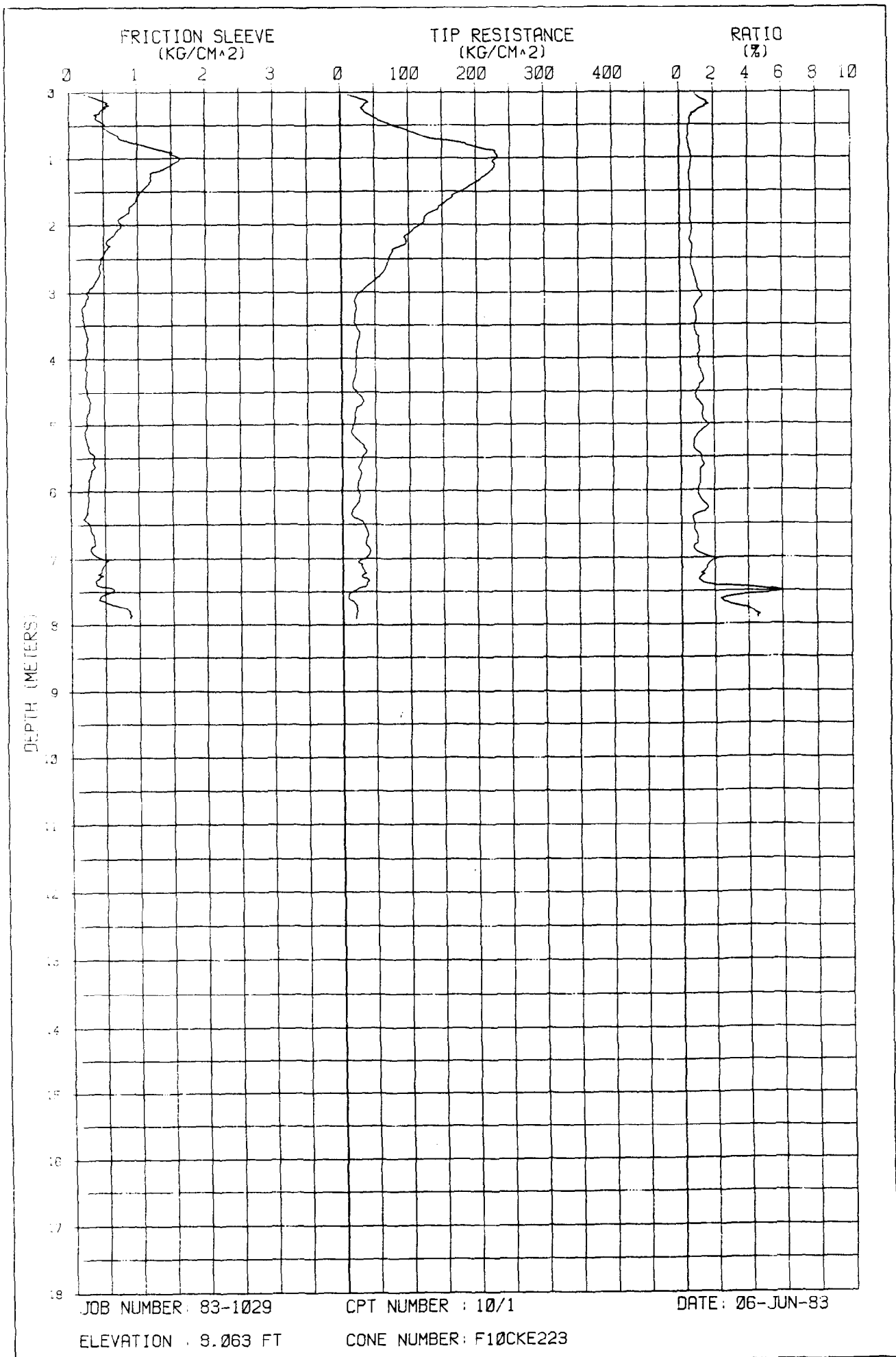
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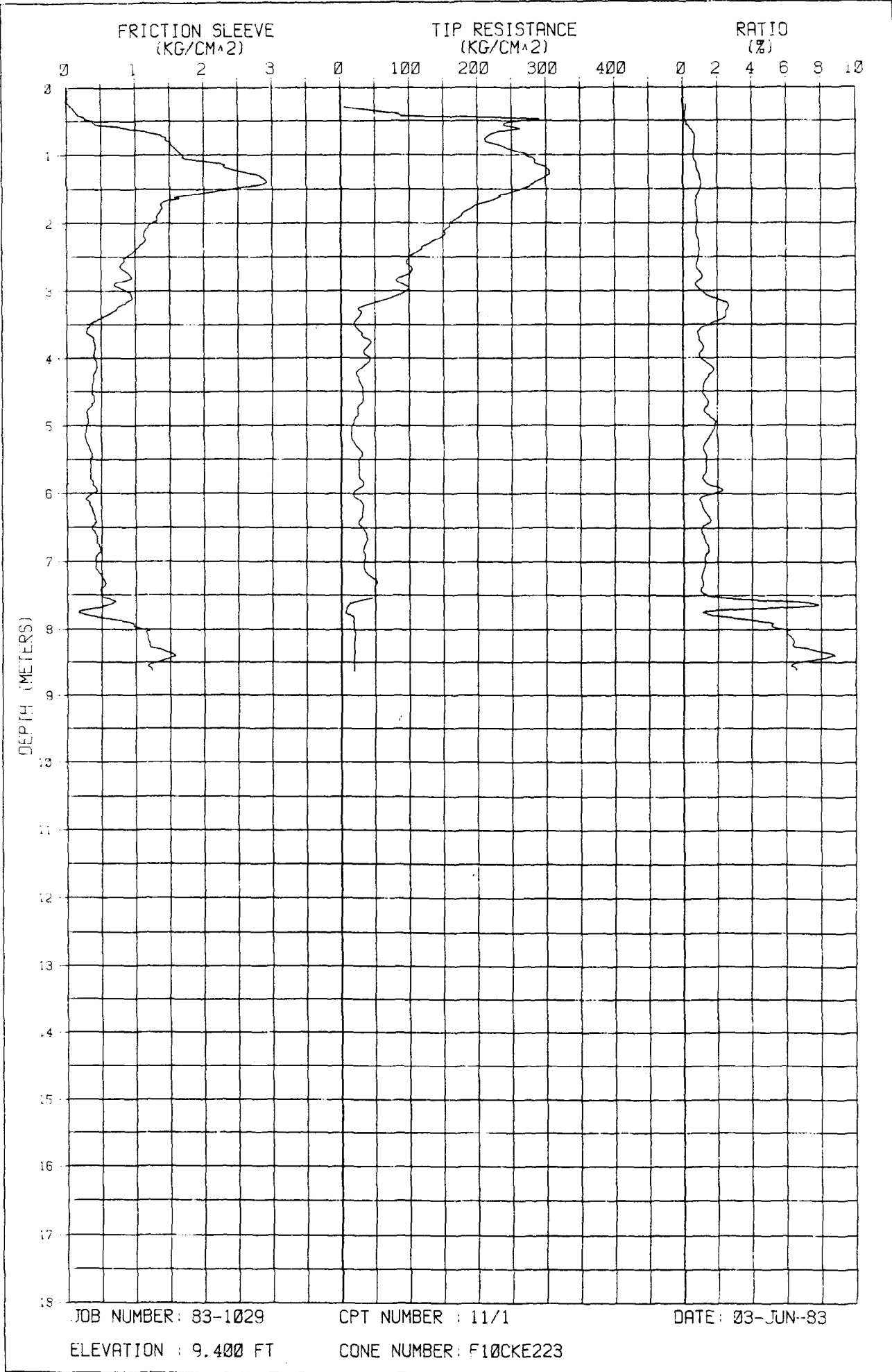
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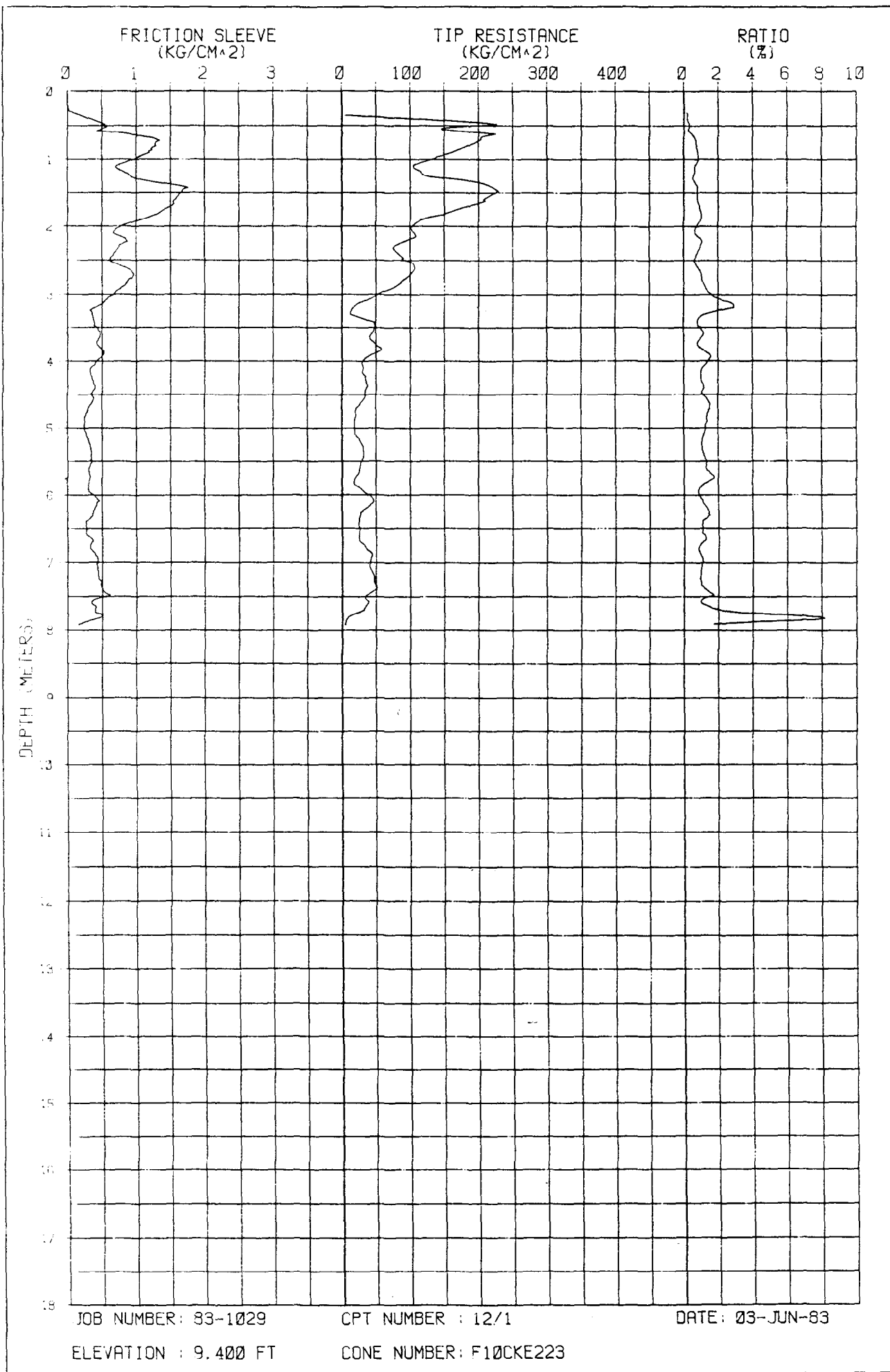
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CONE NUMBER : F10CKE301





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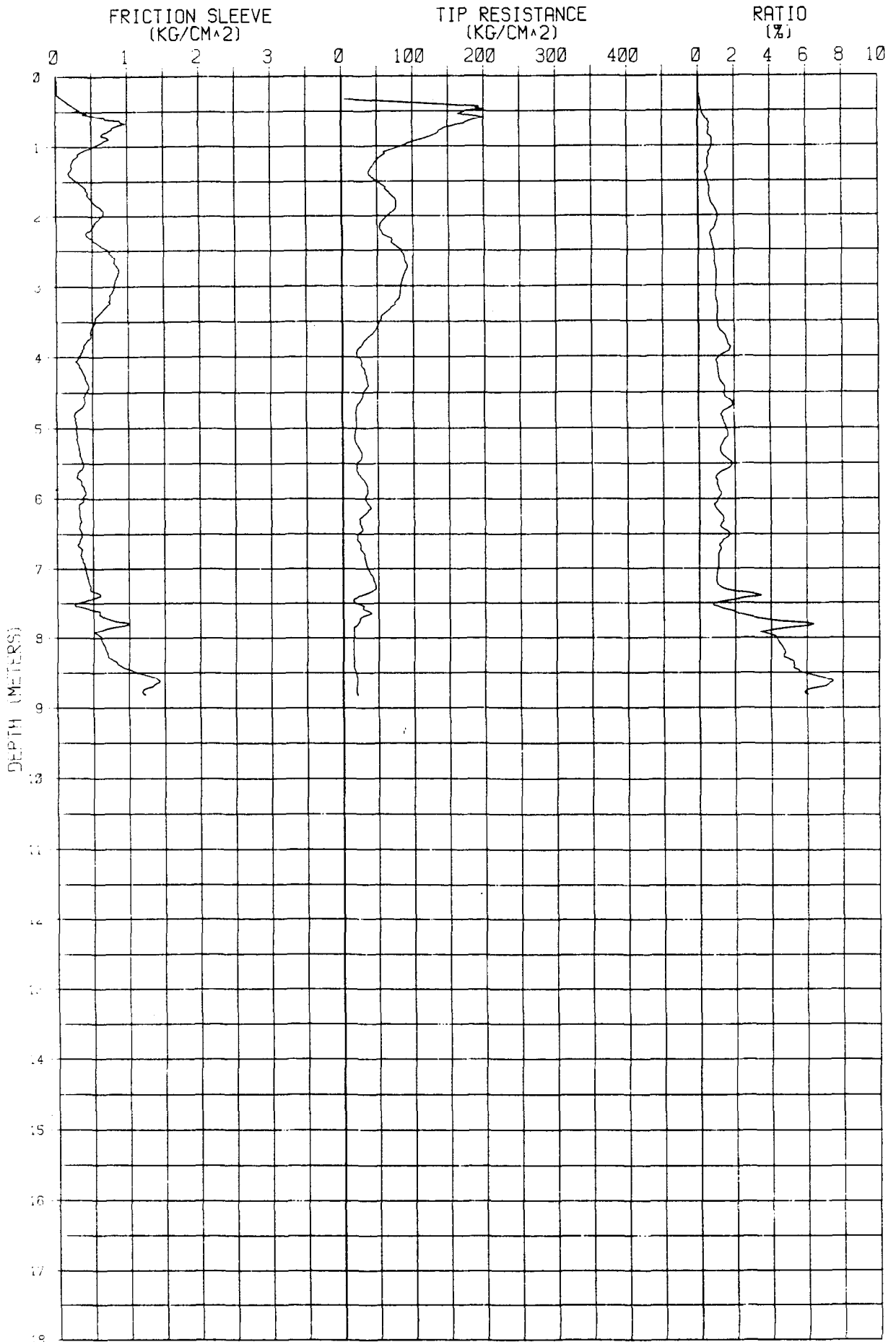
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DATE : 03-JUN-83

ELEVATION : 9.400 FT

CONE NUMBER : F10CKE223



JOB NUMBER: 83-1029

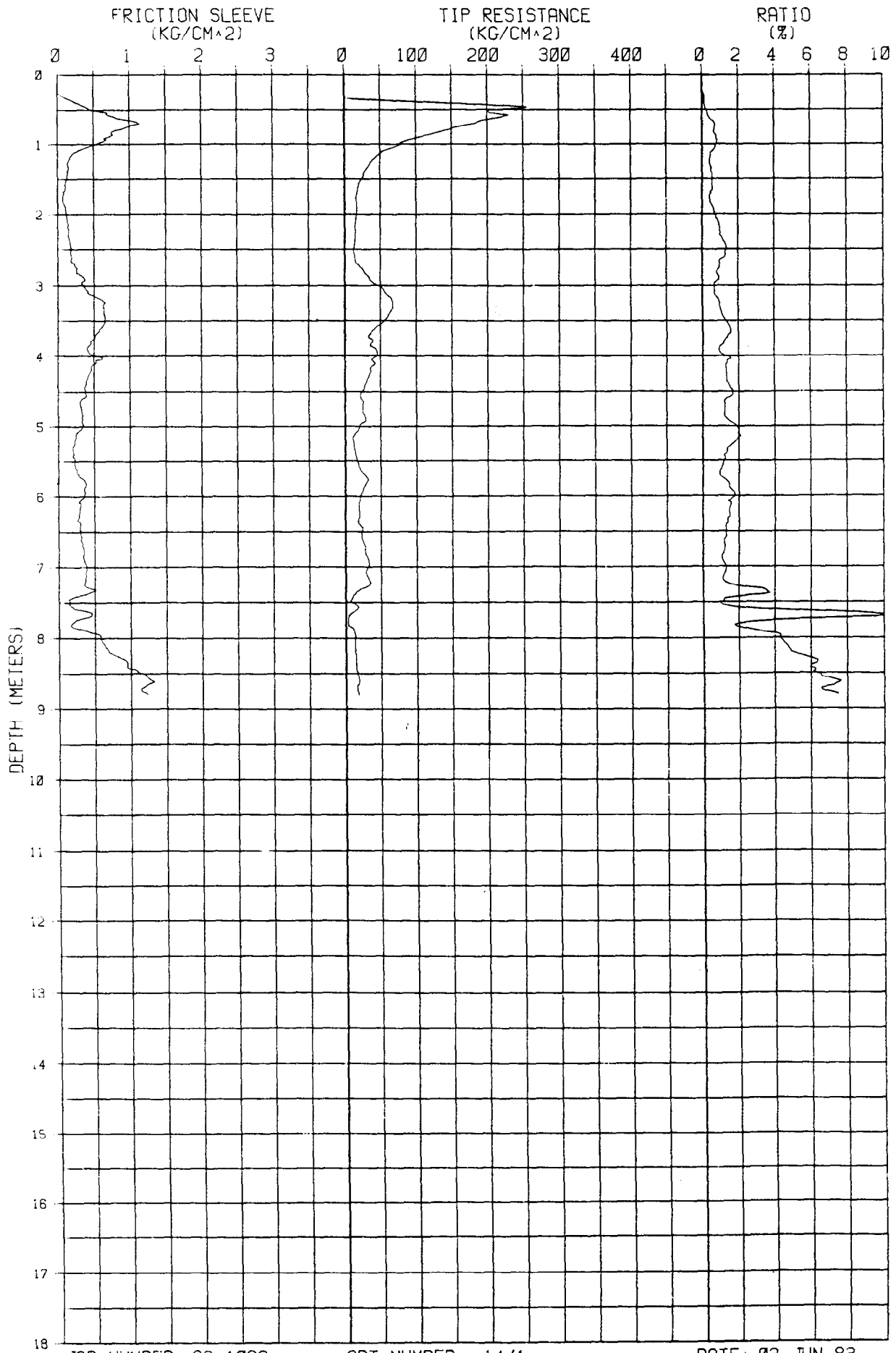
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DATE: 03-JUN-83

ELEVATION: 9.400 FT

CONE NUMBER: F10CKE223





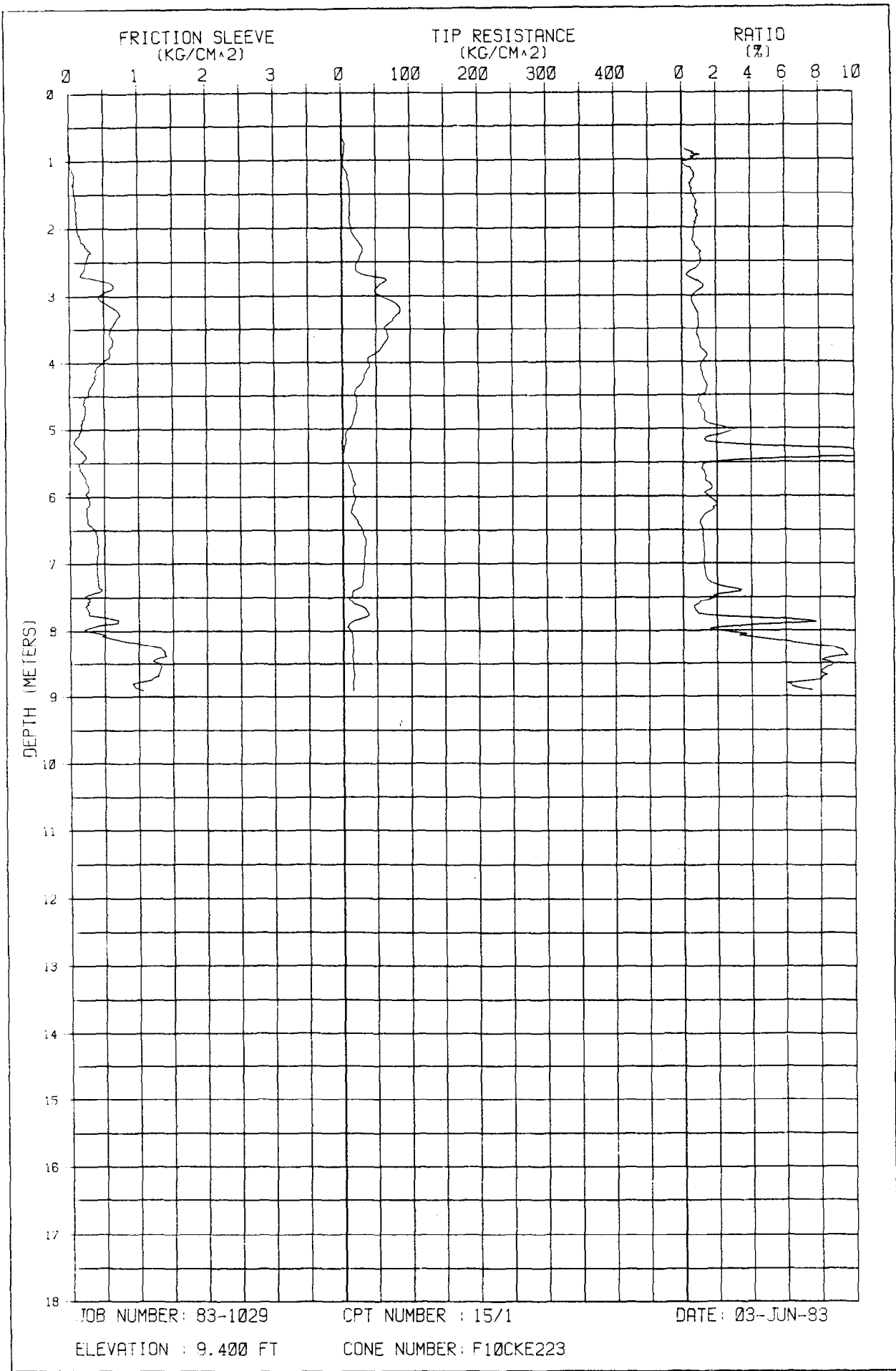
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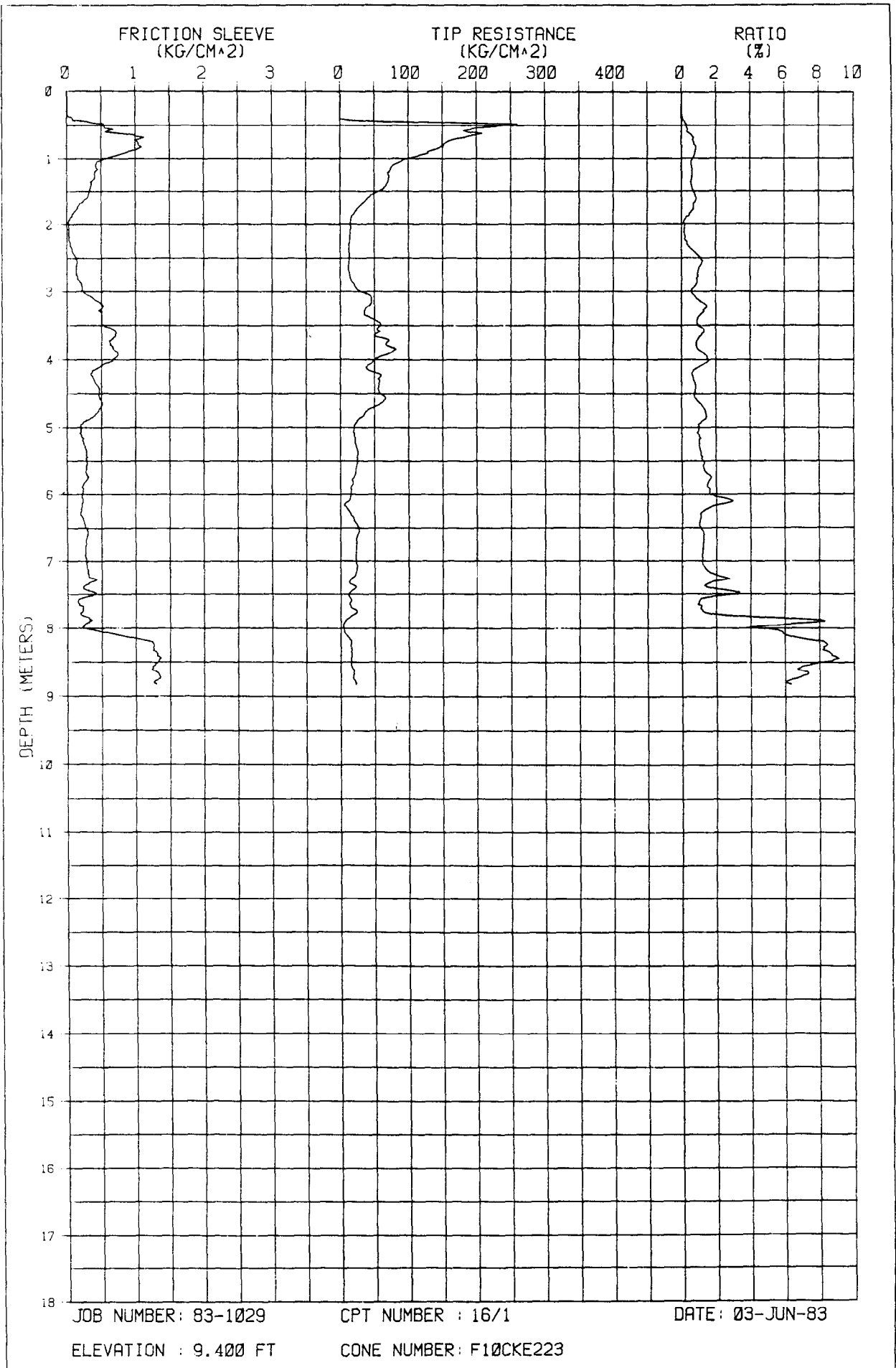
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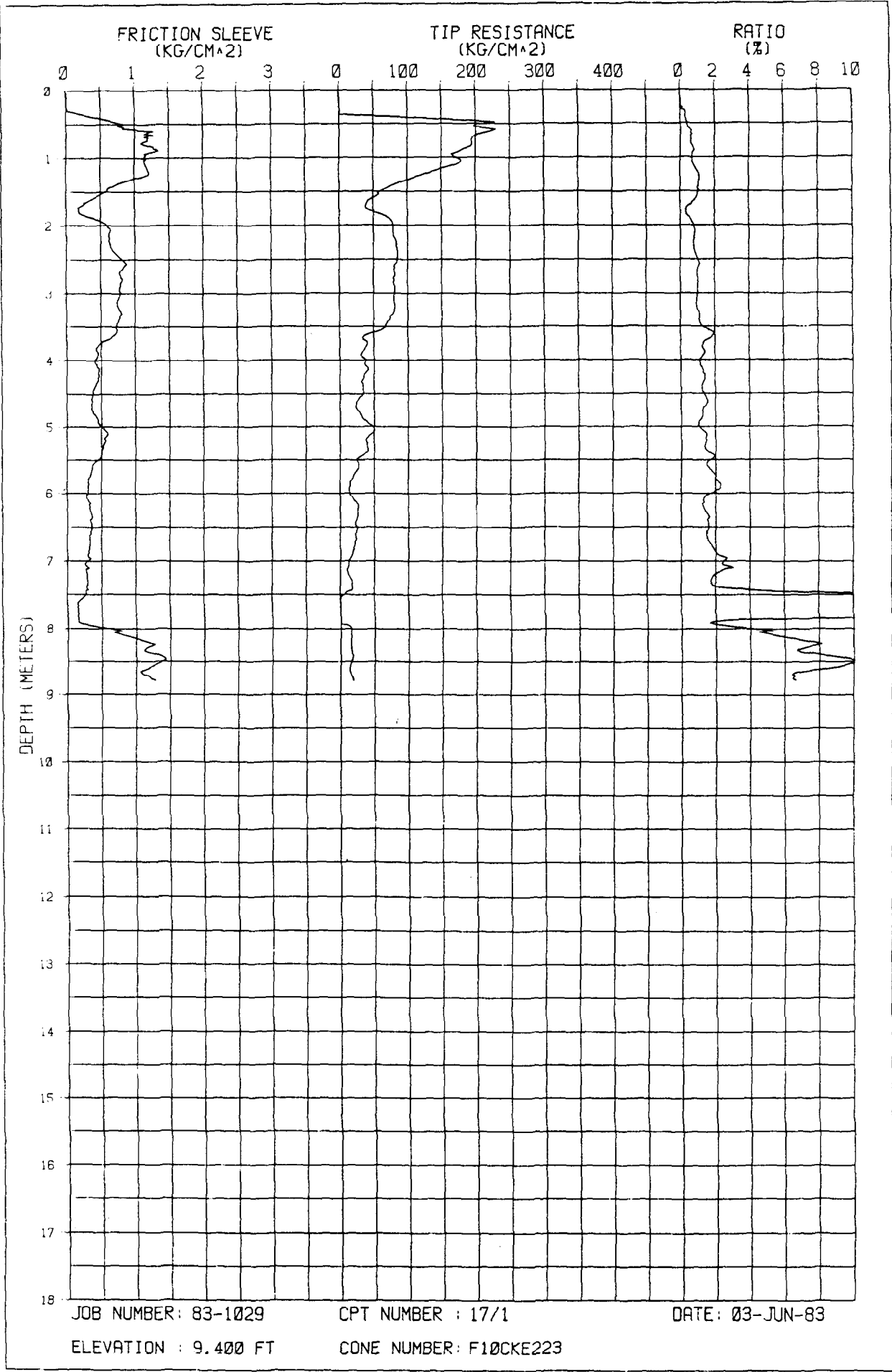
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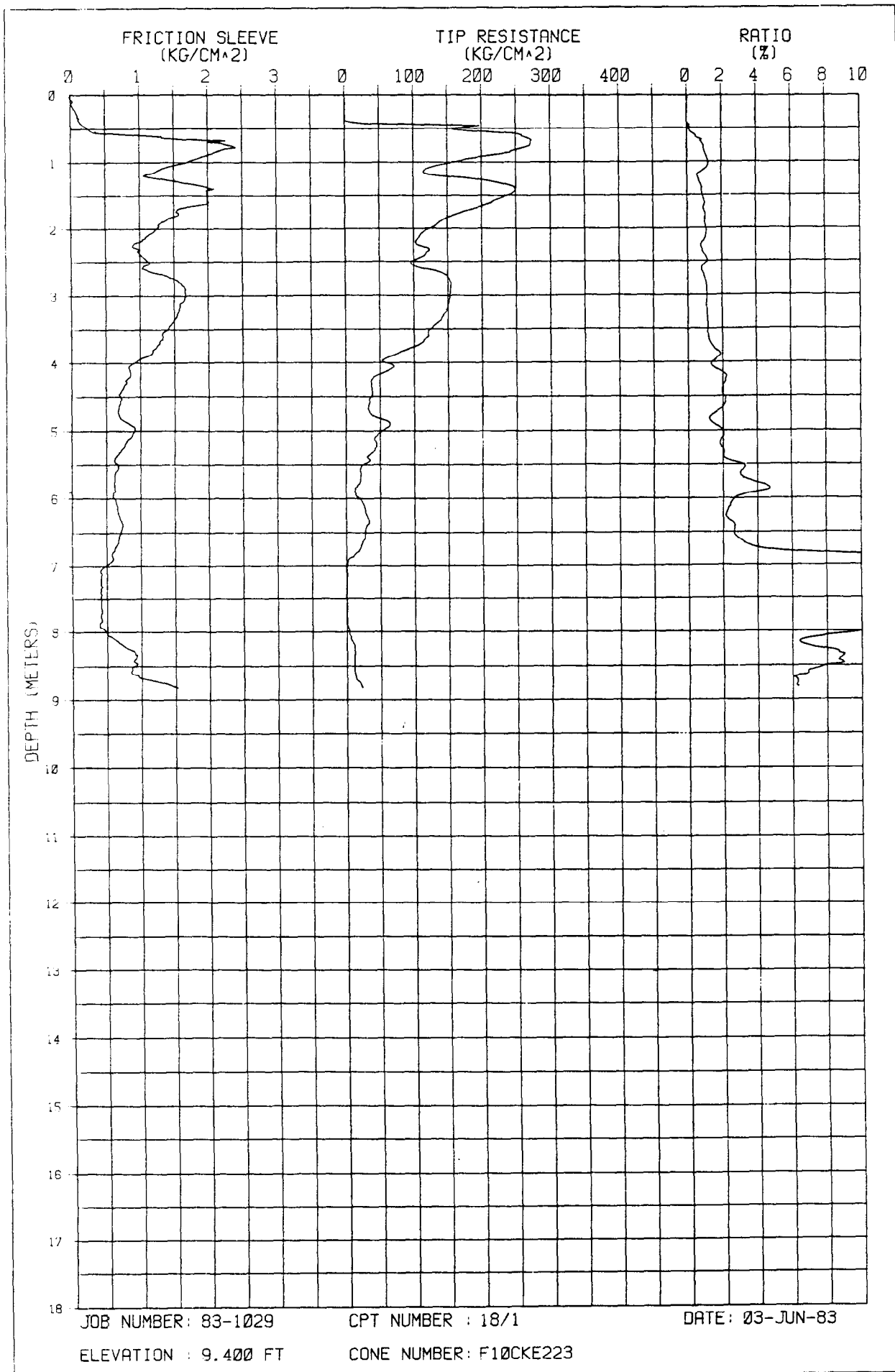
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ELEVATION : 9.400 FT

CONE NUMBER: F10CKE223



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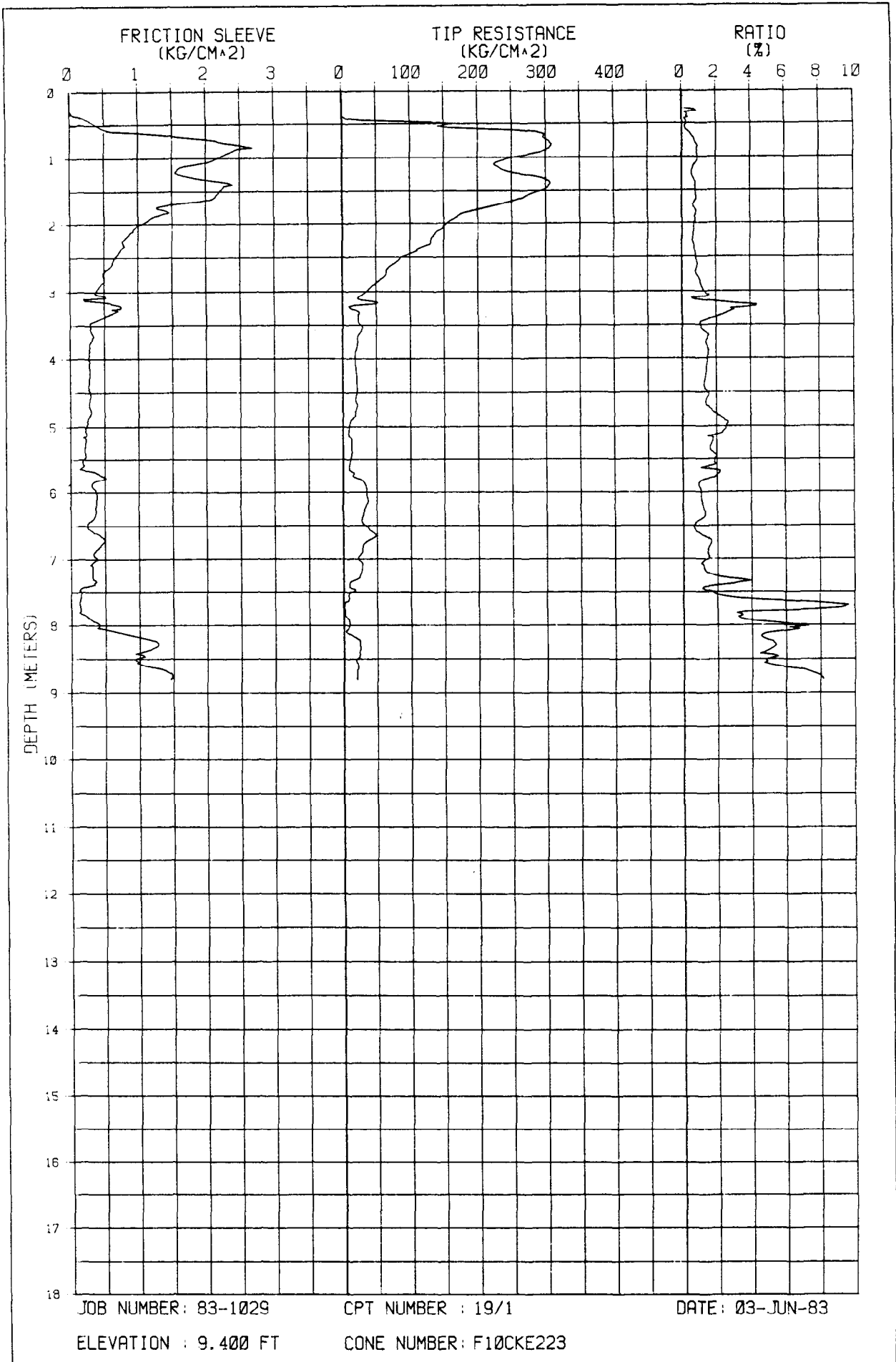
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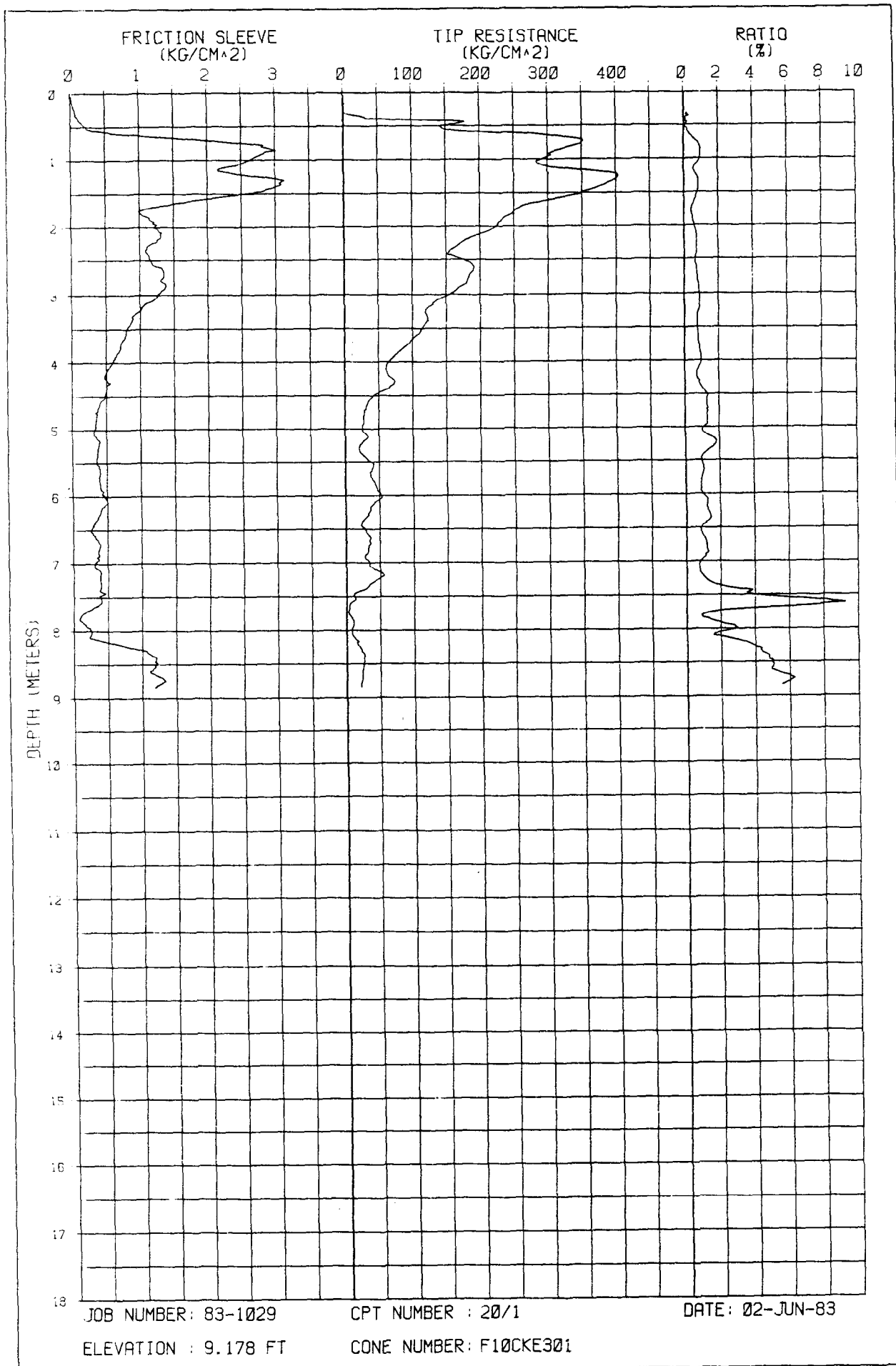
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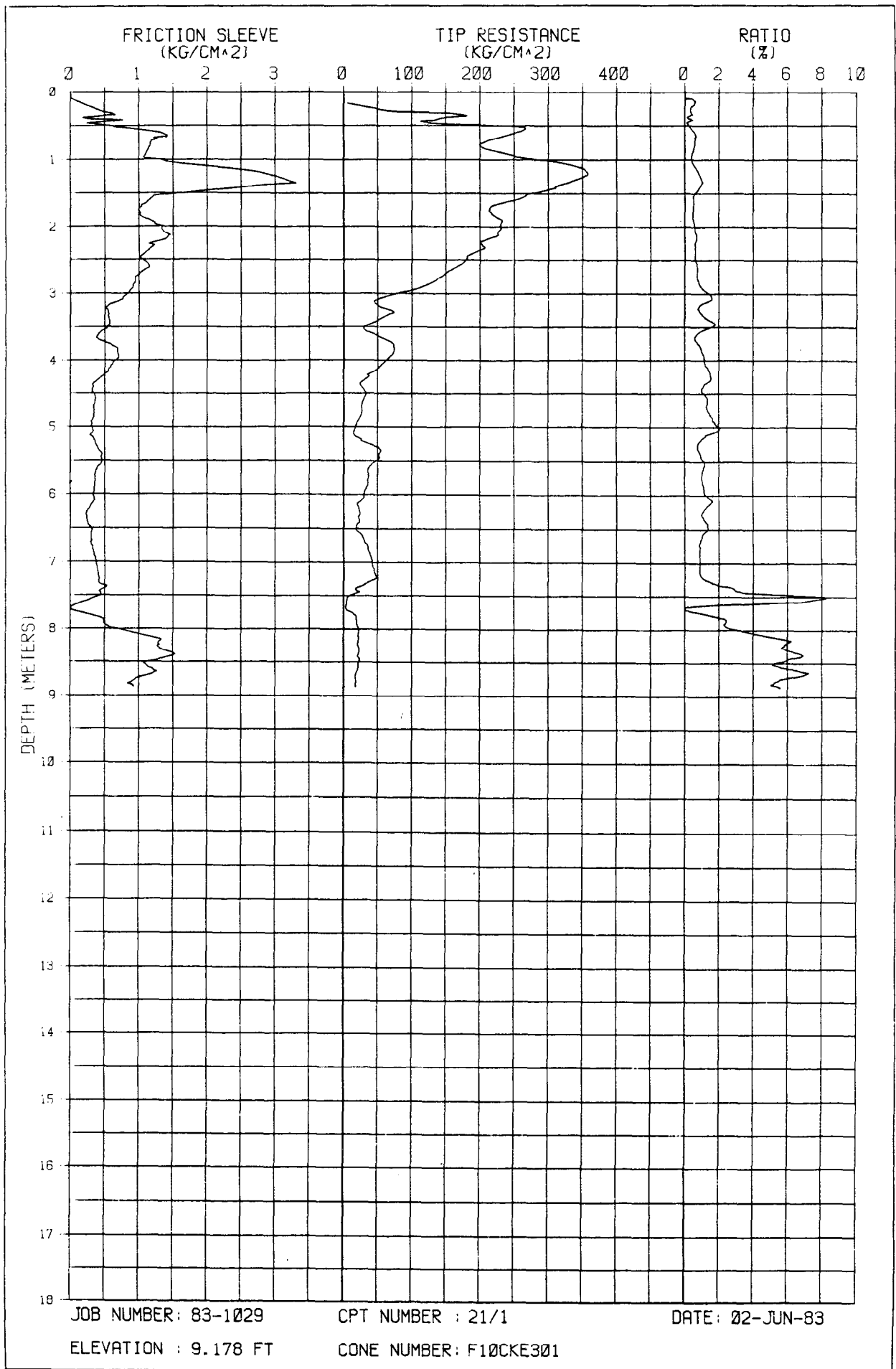
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DATE: 03-JUN-83

ELEVATION: 9.400 FT

CONE NUMBER: F10CKE223





JOB NUMBER: 83-1029

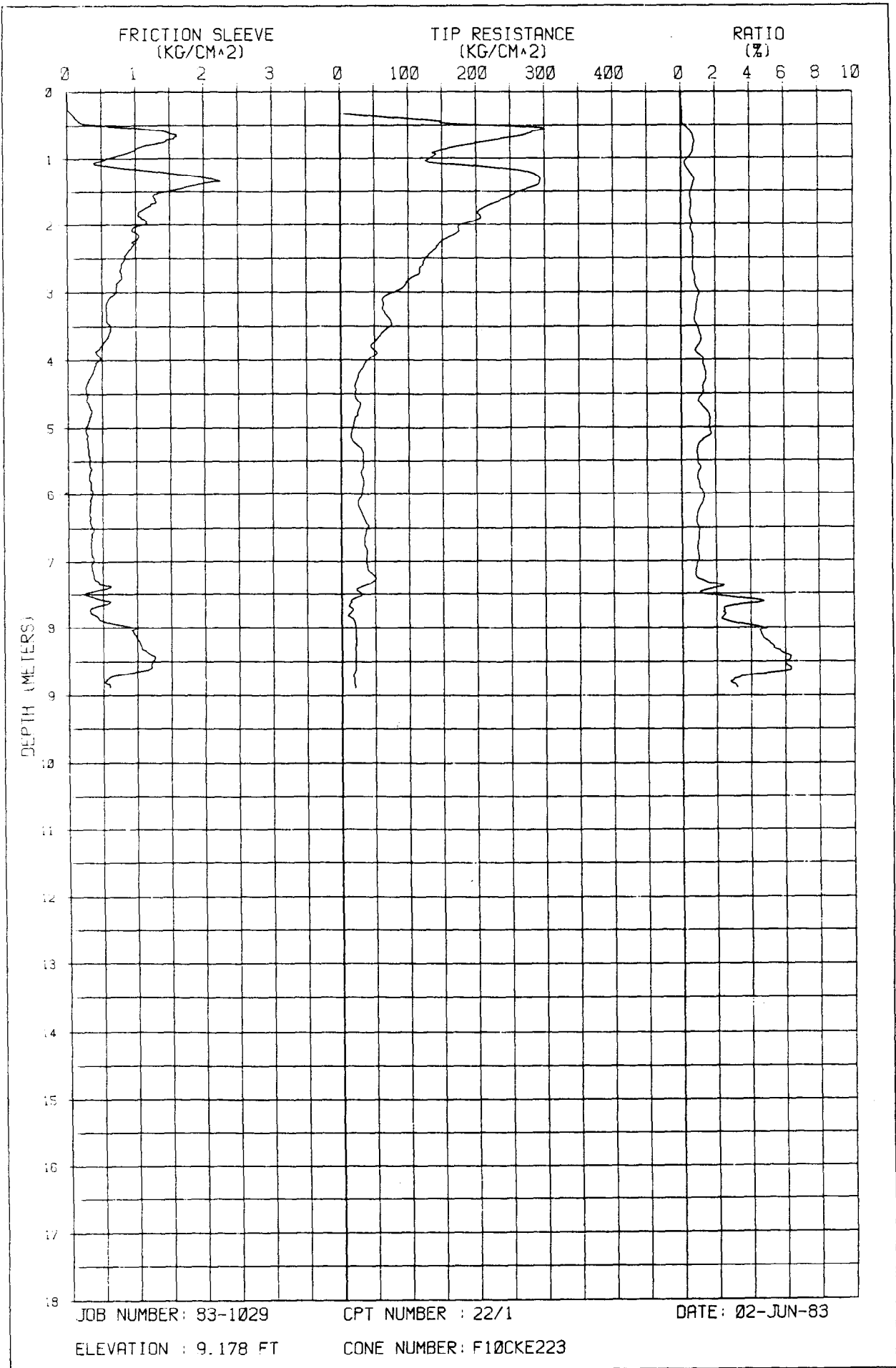
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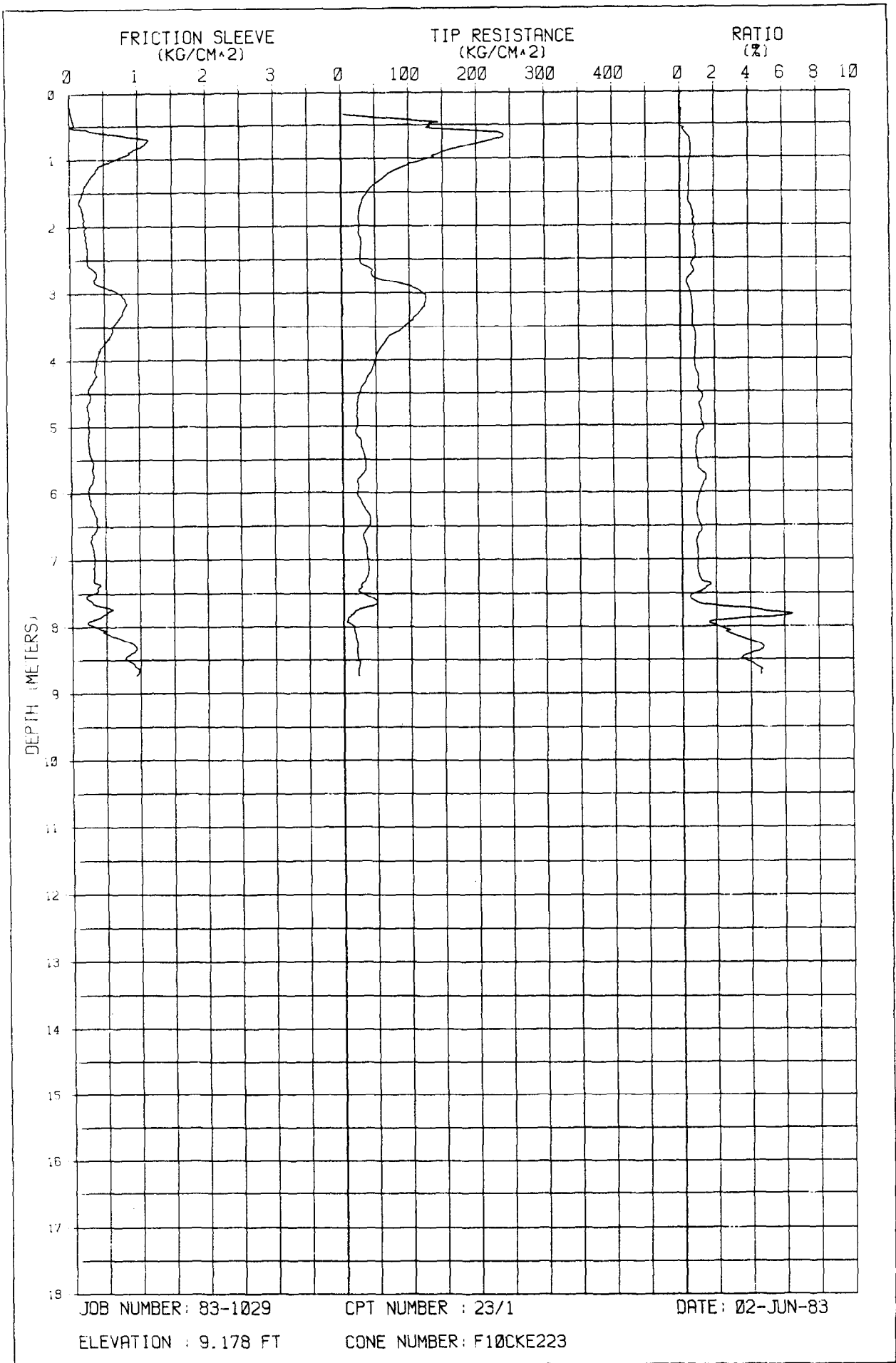
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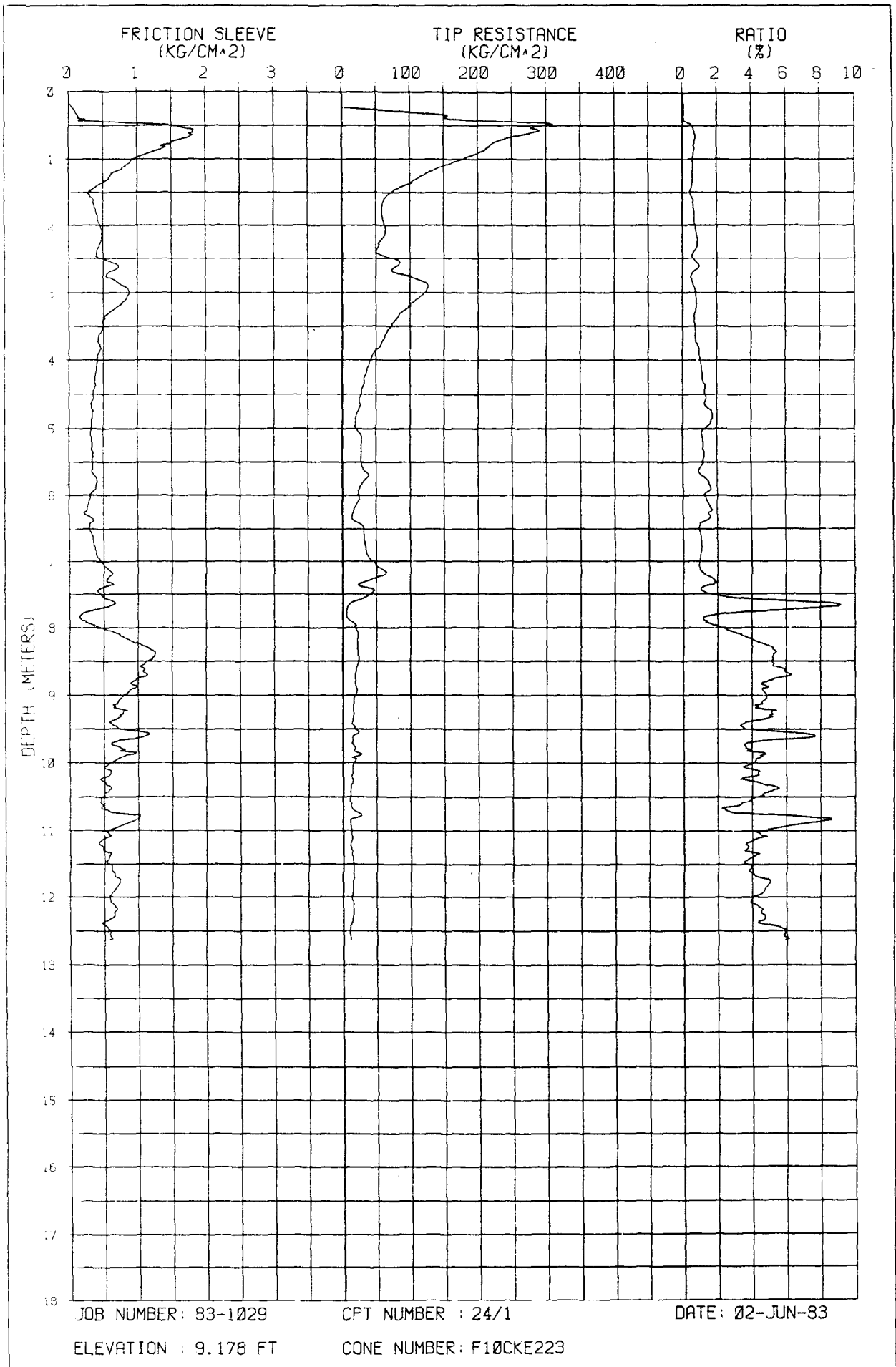
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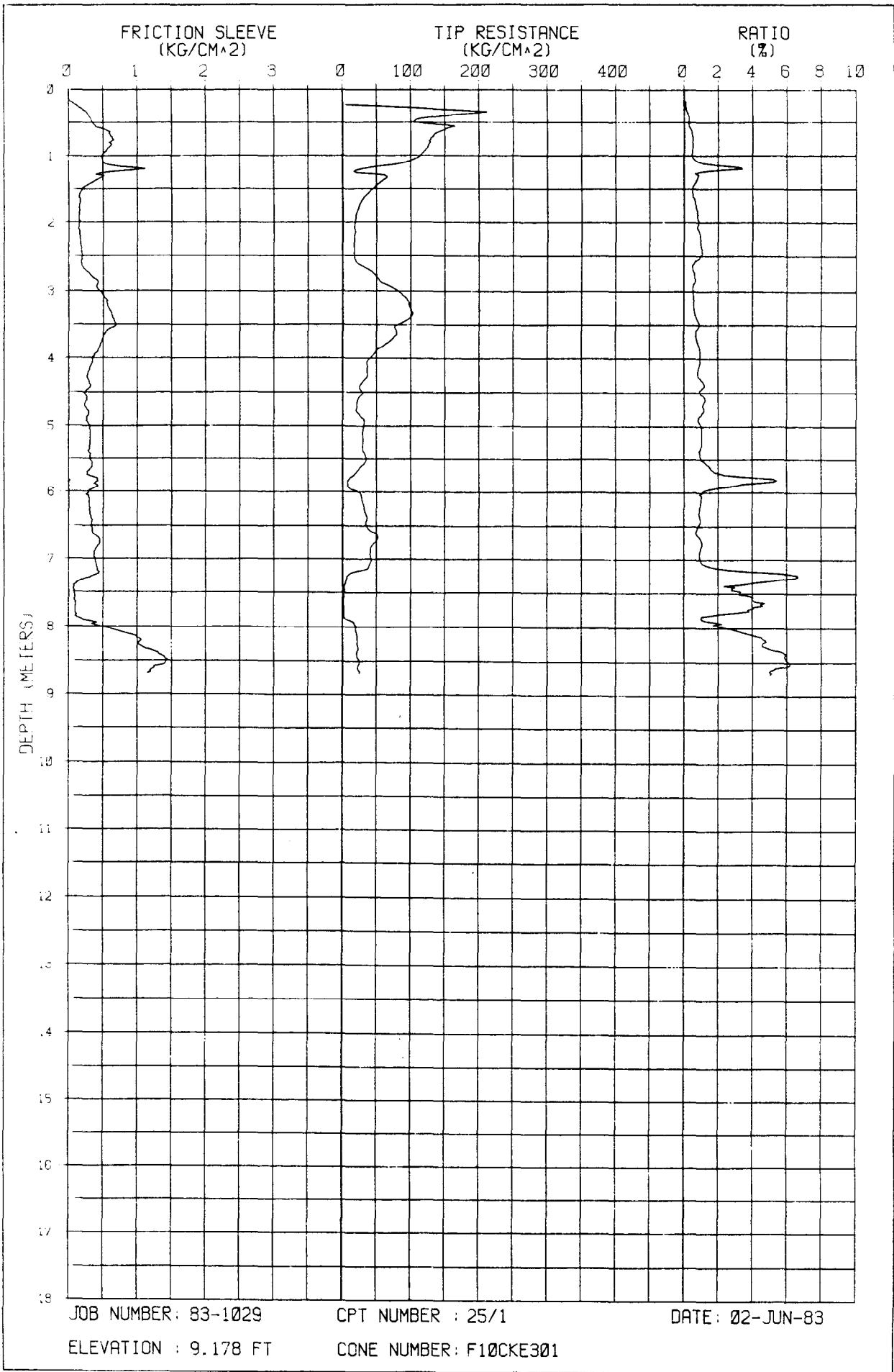
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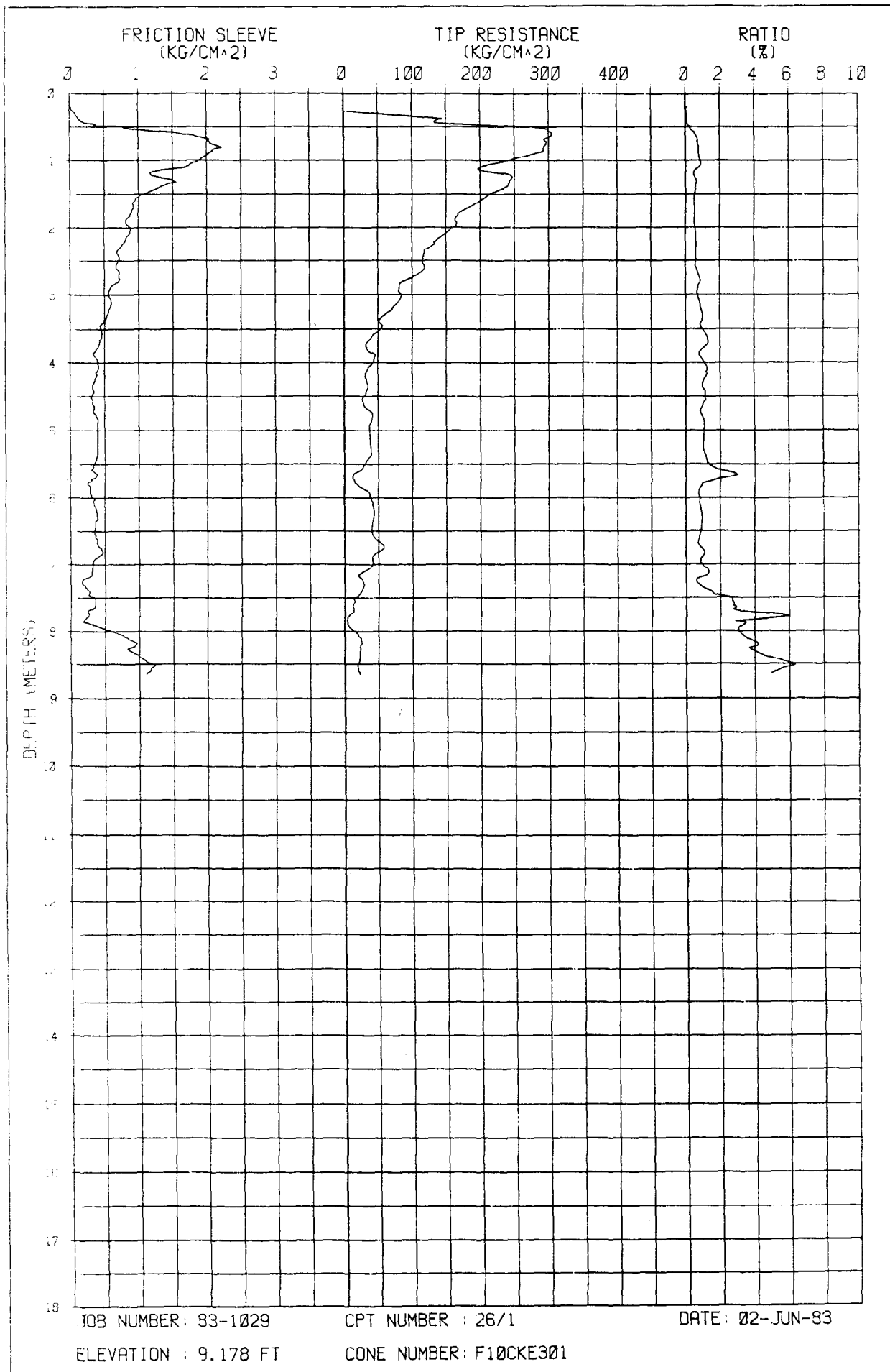
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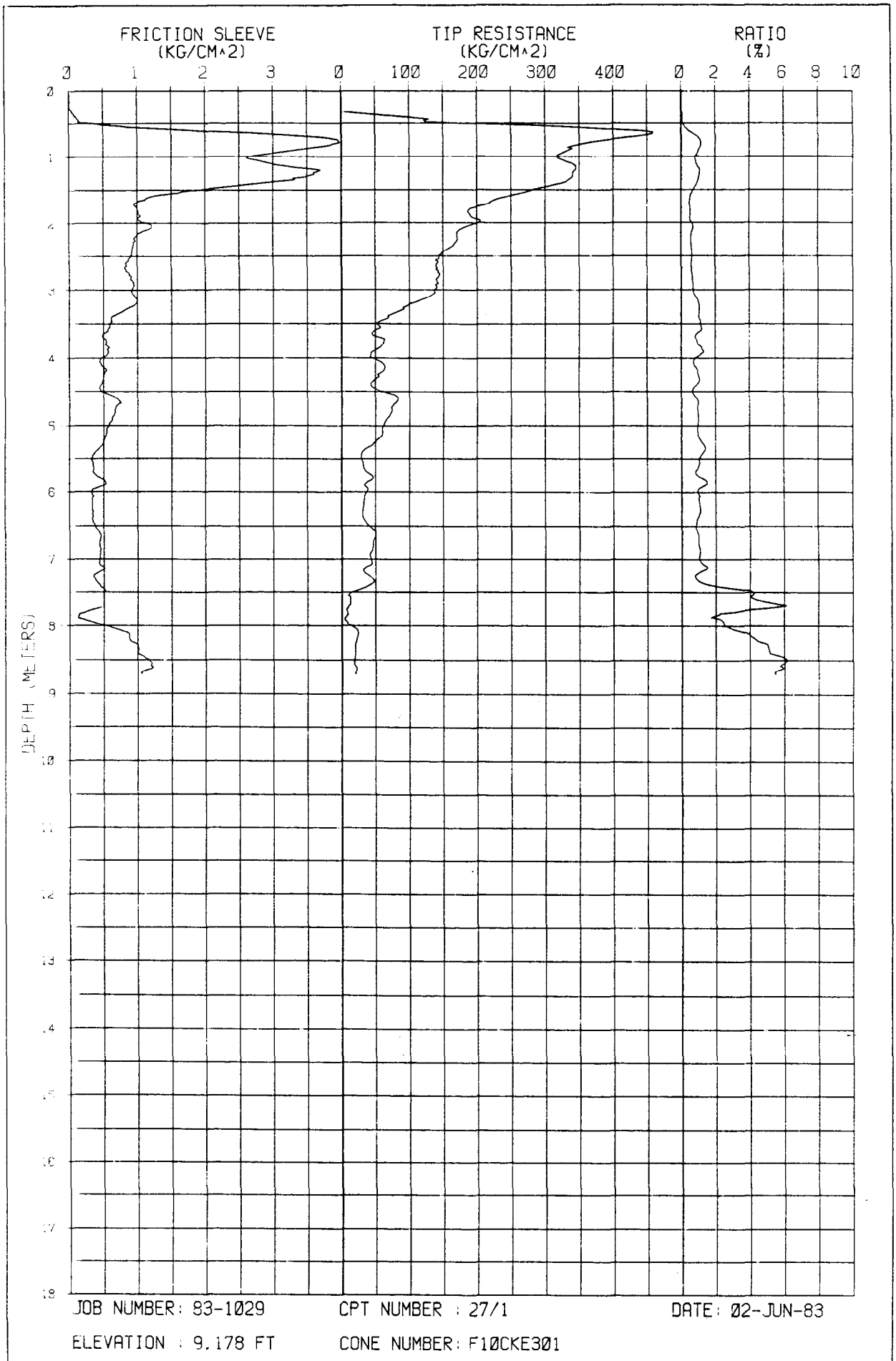
DATE : 02-JUN-83

ELEVATION : 9.178 FT

CONE NUMBER : F10CKE301



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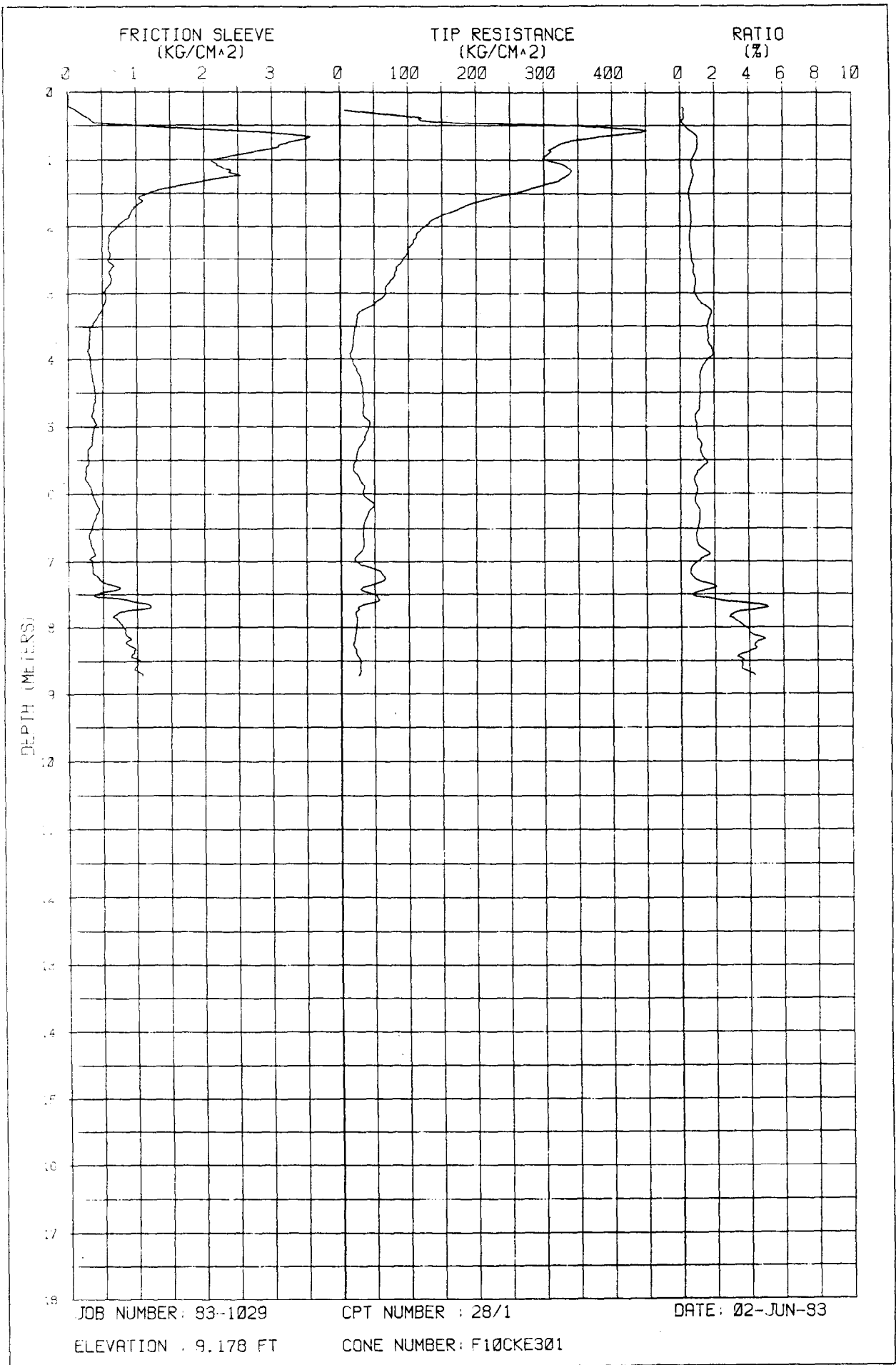
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DATE : 02-JUN-83

ELEVATION : 9.178 FT

CONE NUMBER : F10CKE301



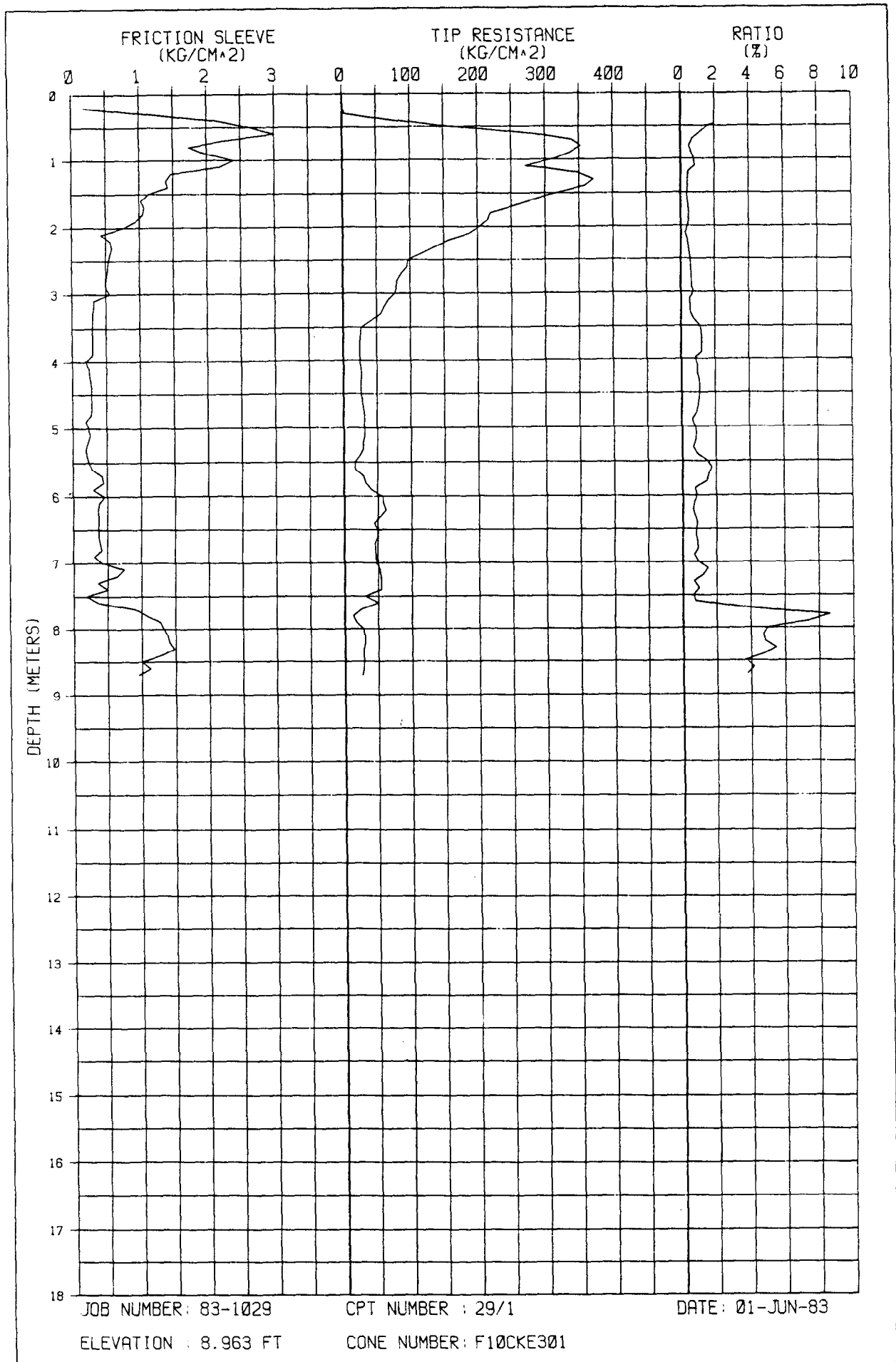
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DATE : 02-JUN-83

ELEVATION : 9.178 FT

CONE NUMBER : F10CKE301



JOB NUMBER : 83-1029

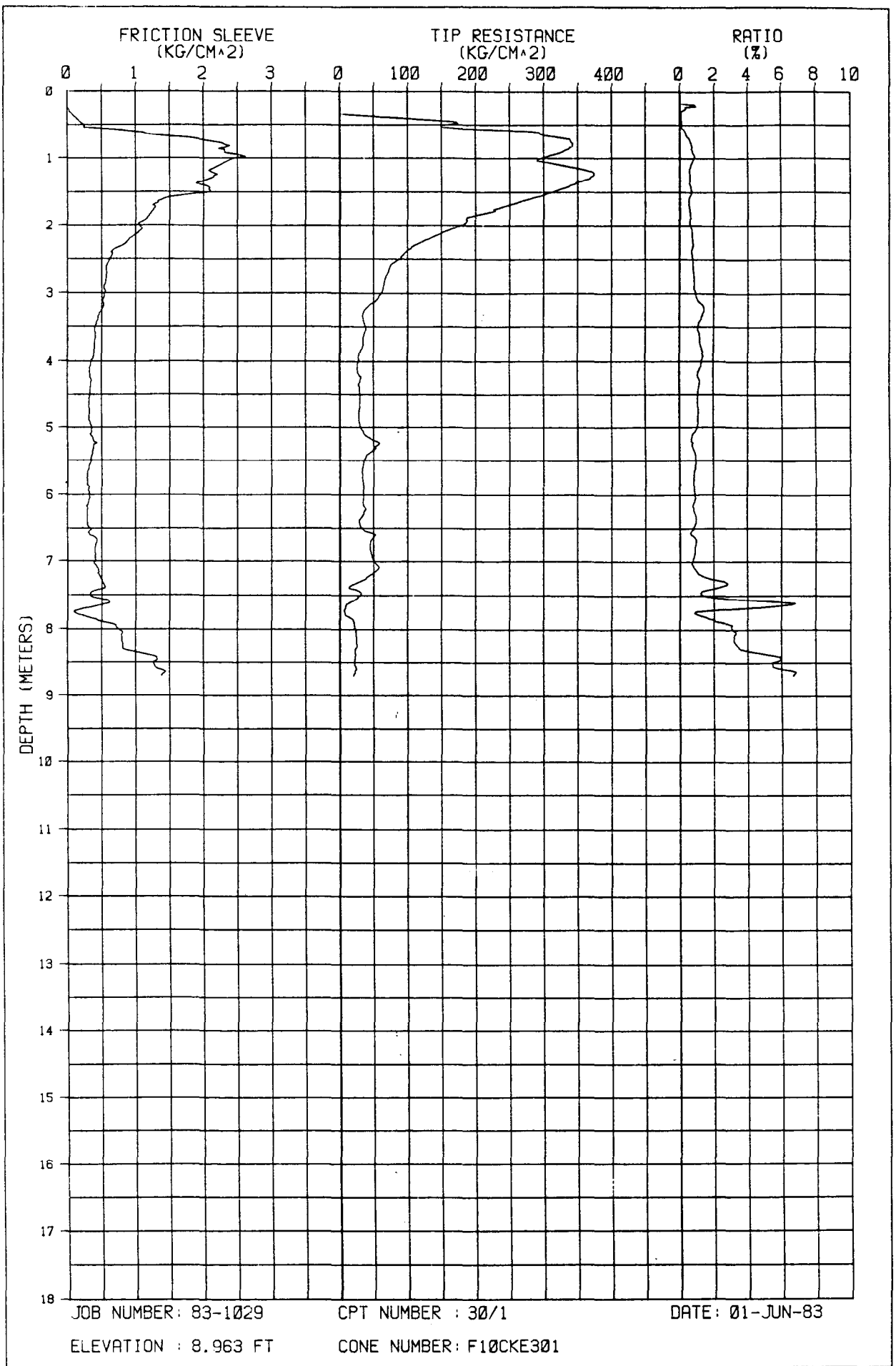
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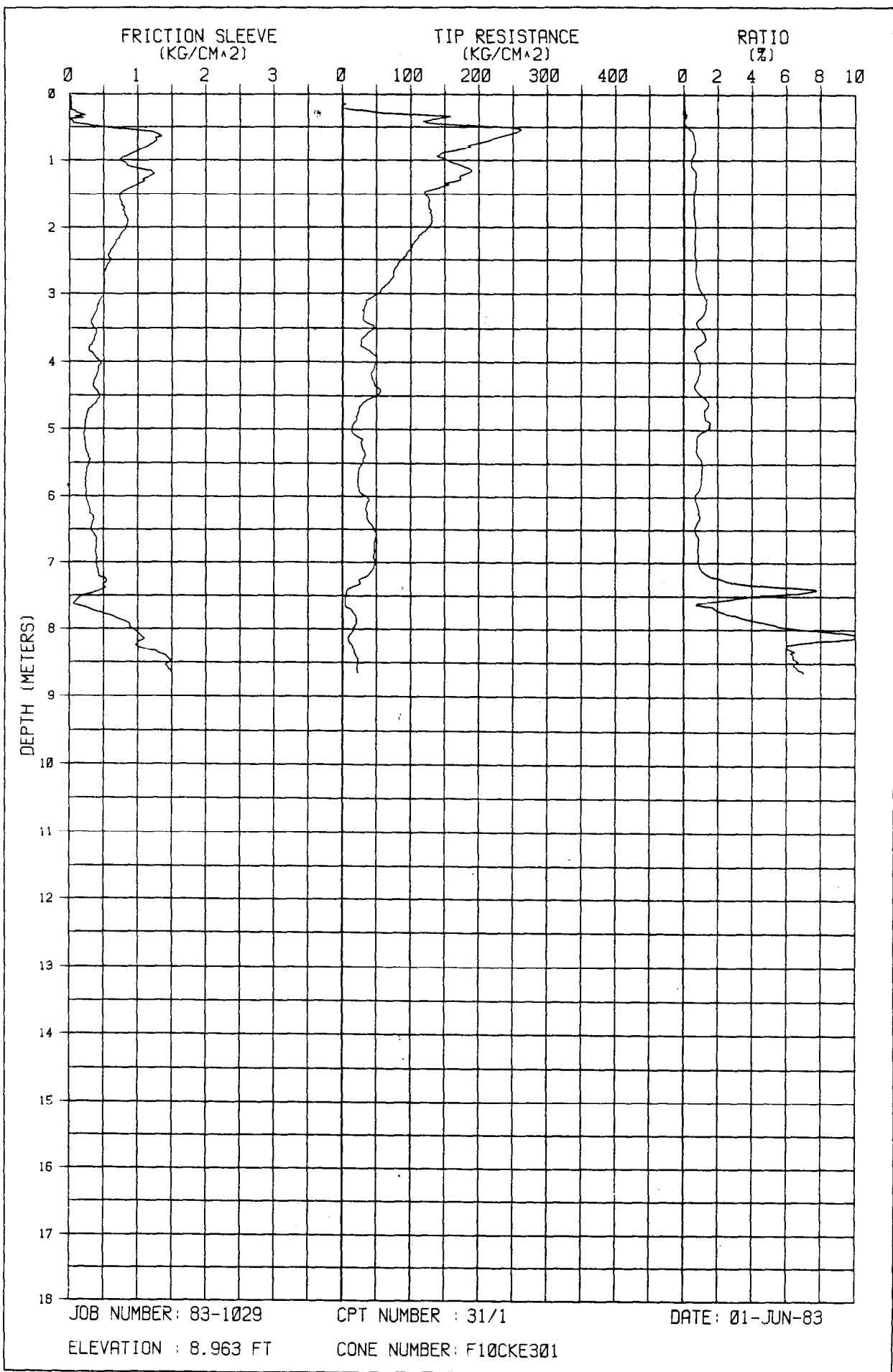
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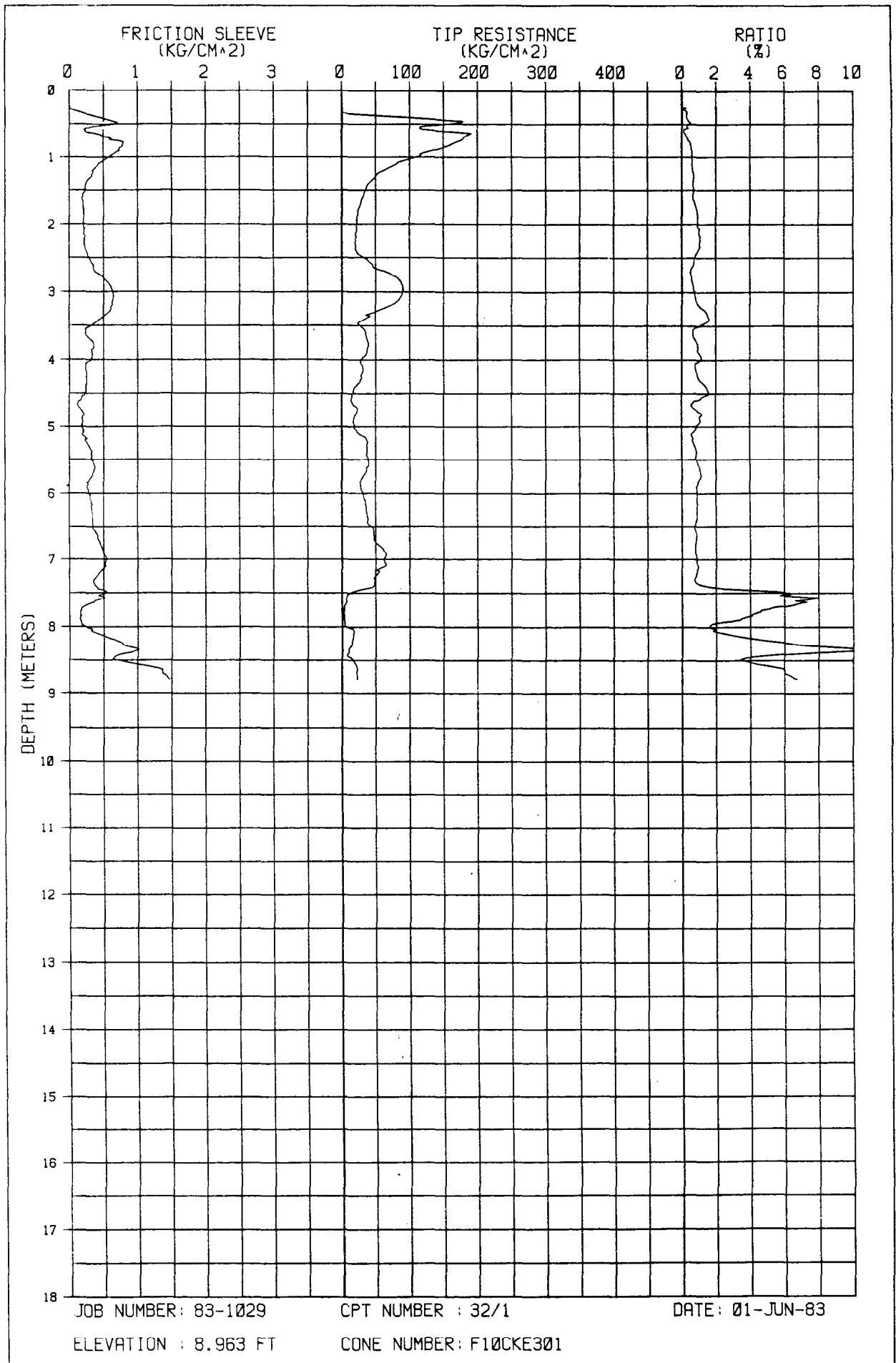
ELEVATION : 8.963 FT

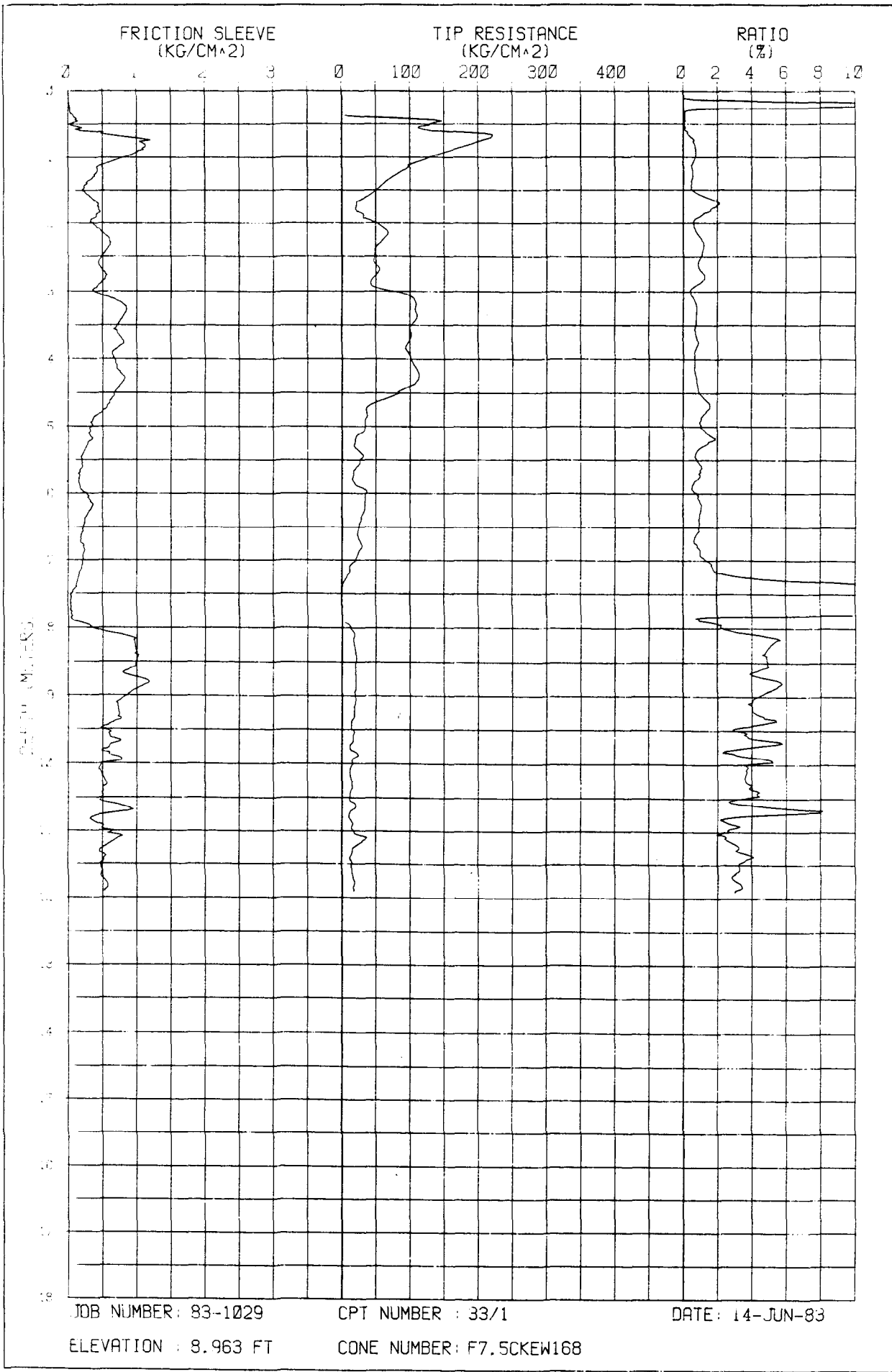
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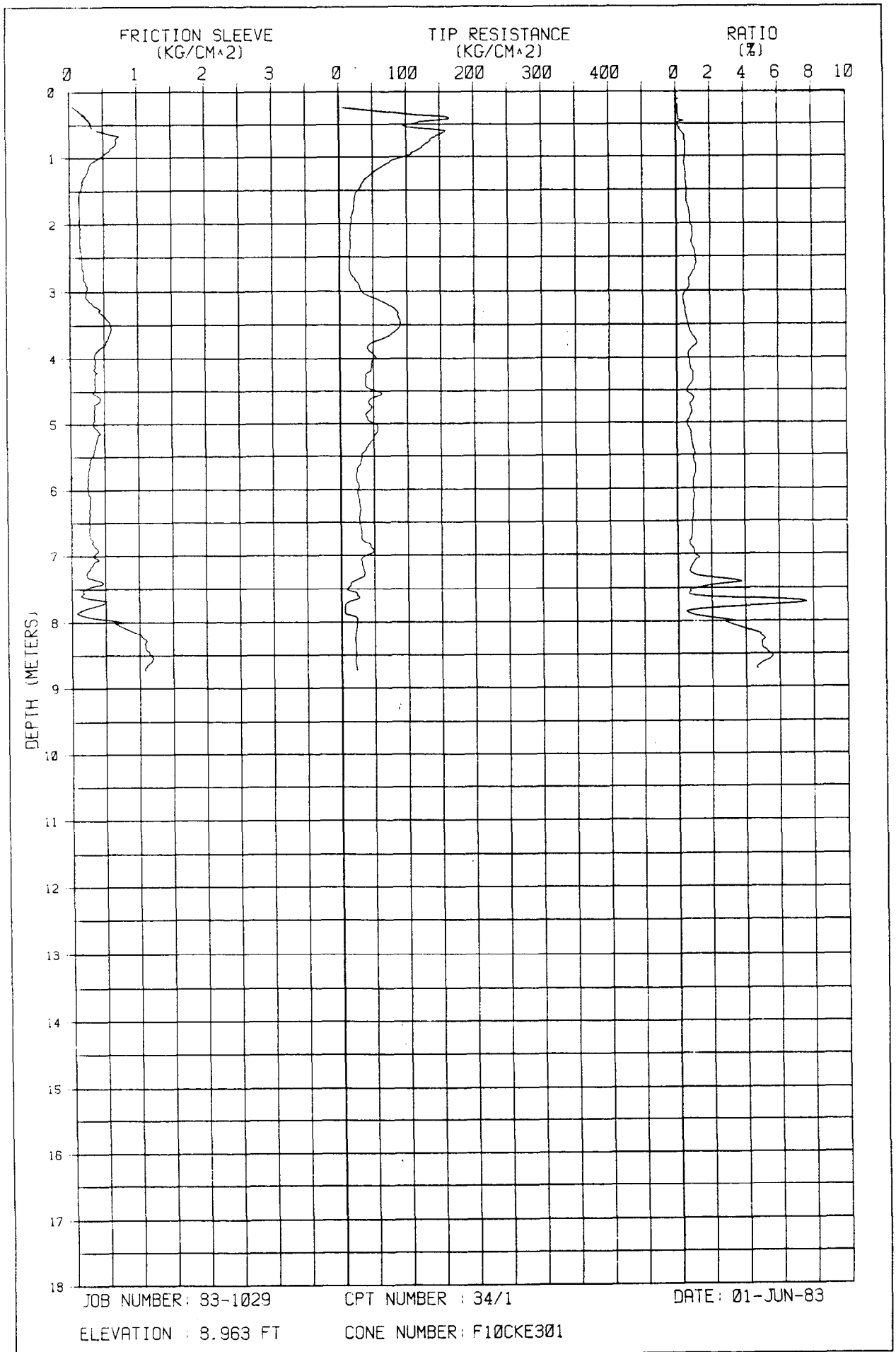
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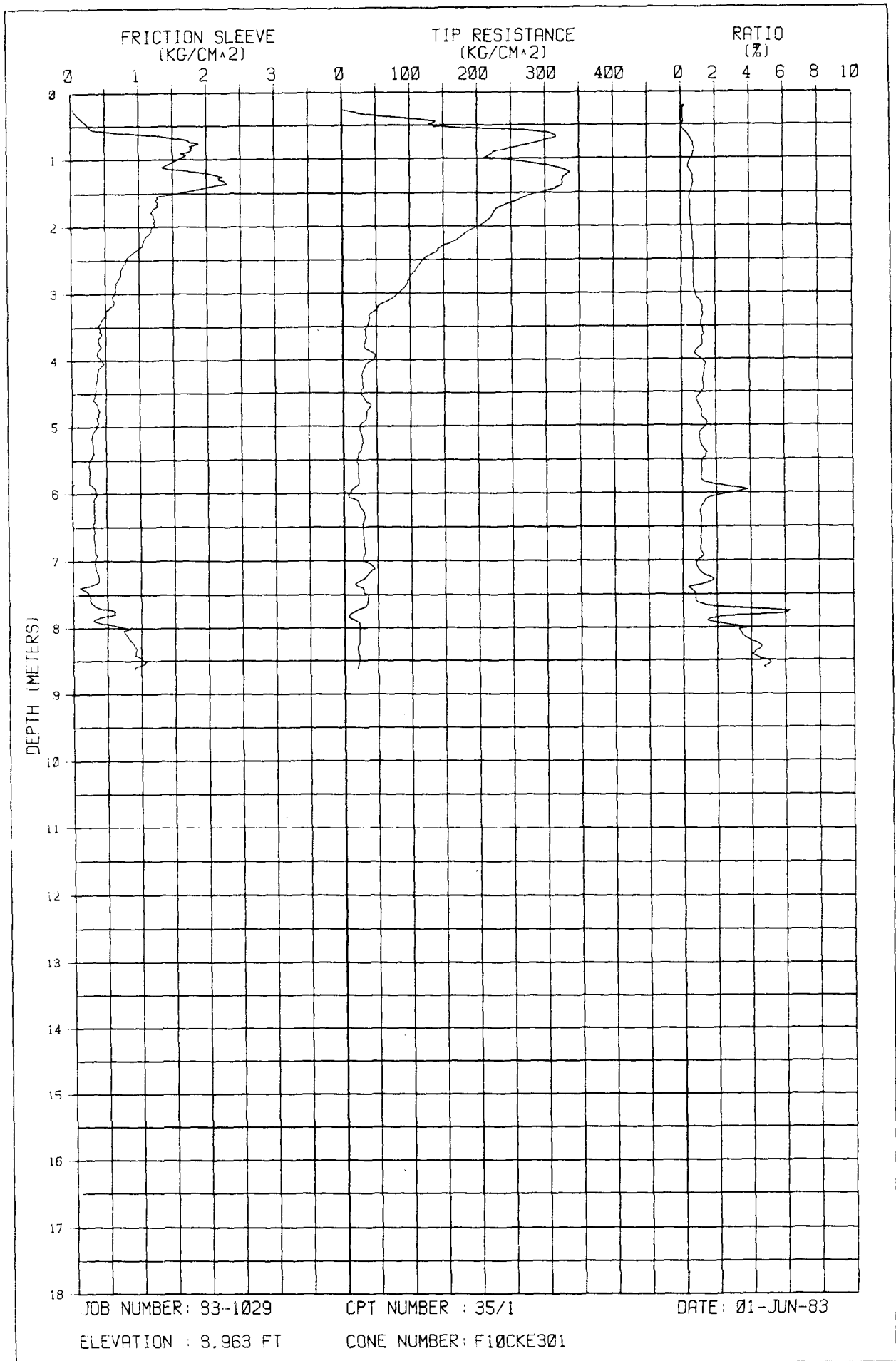
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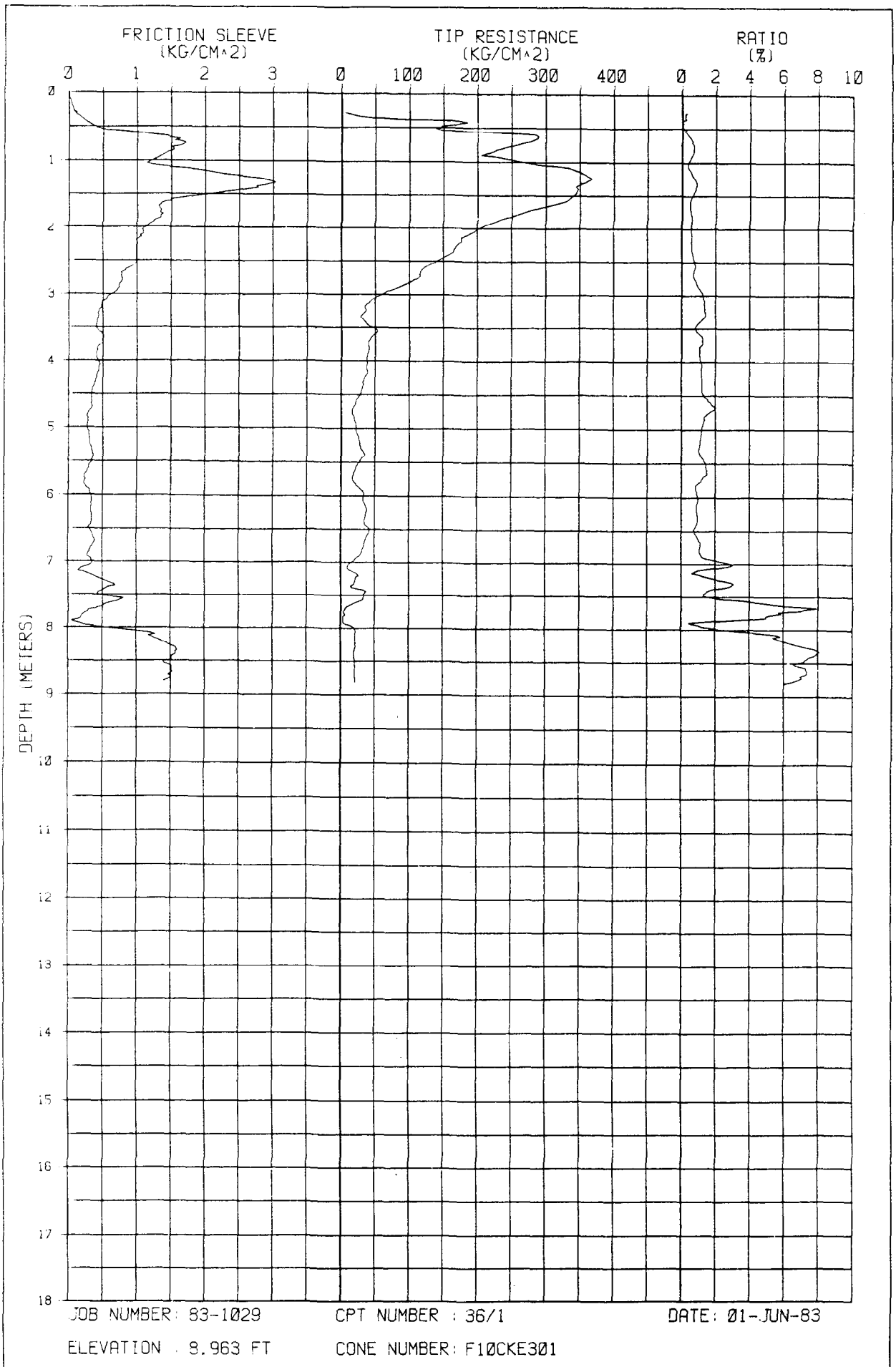
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ELEVATION : 8.963 FT

CONE NUMBER : F7.5CKEW168







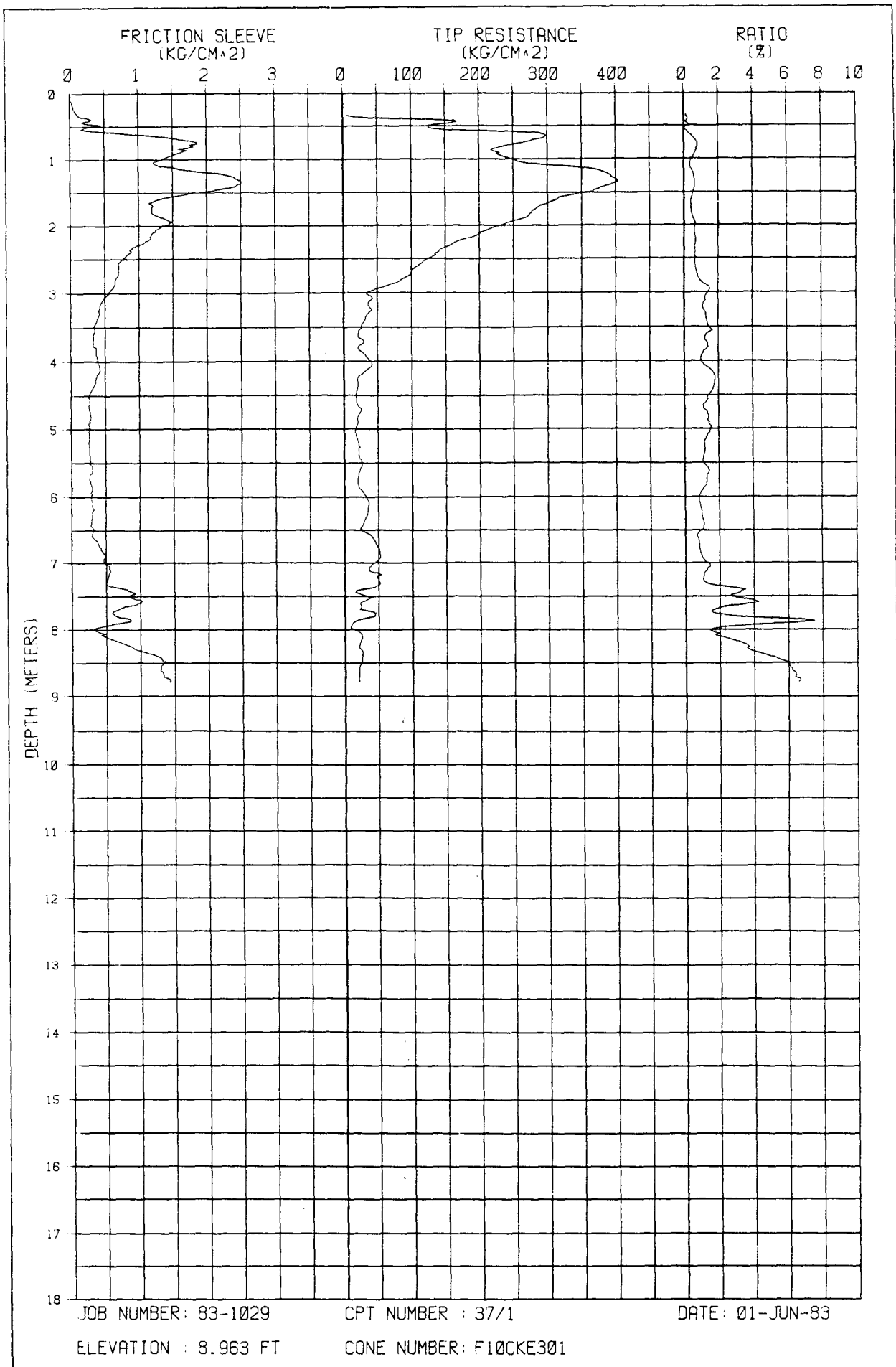
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CONE NUMBER: F10CKE301



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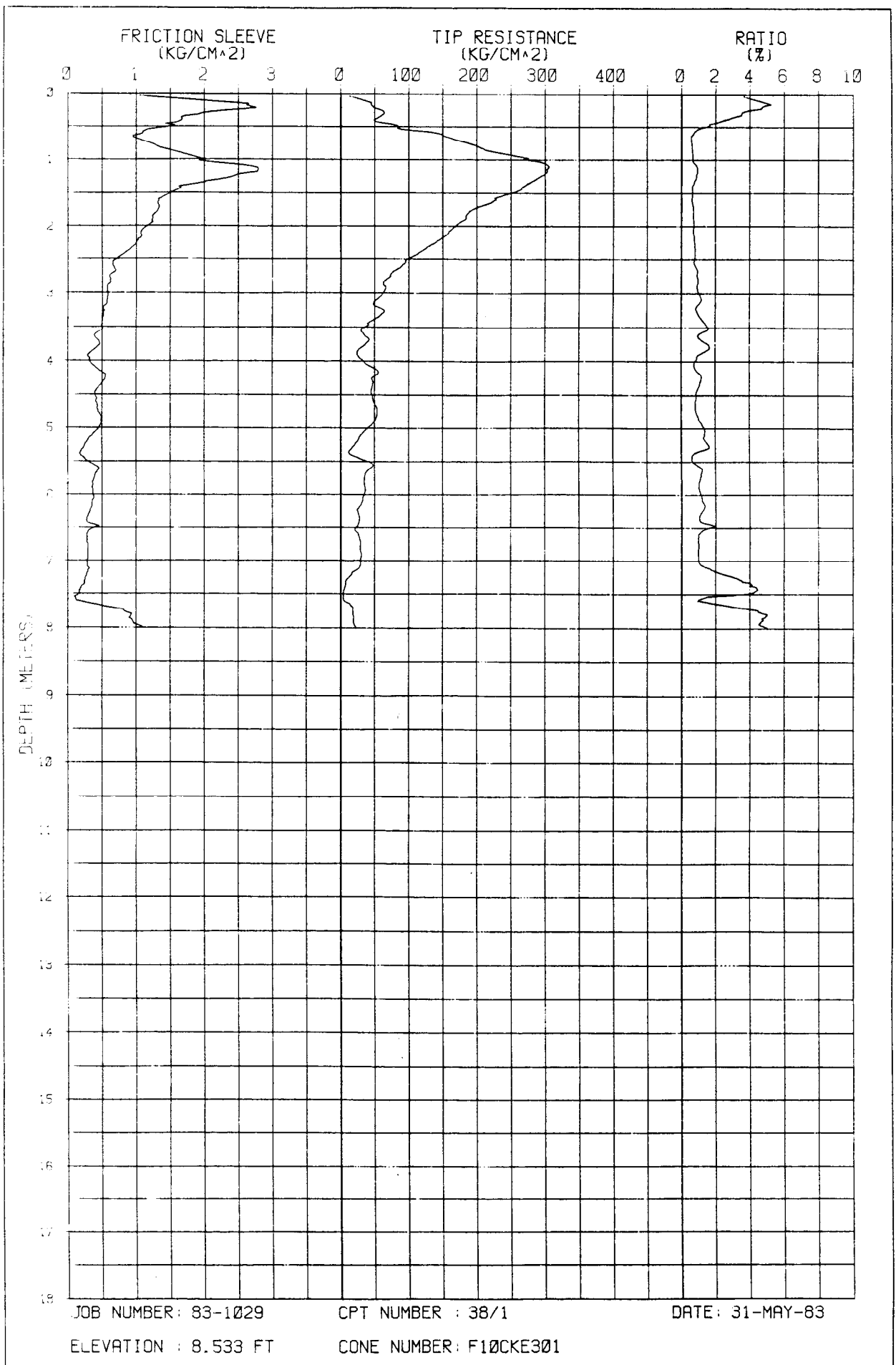
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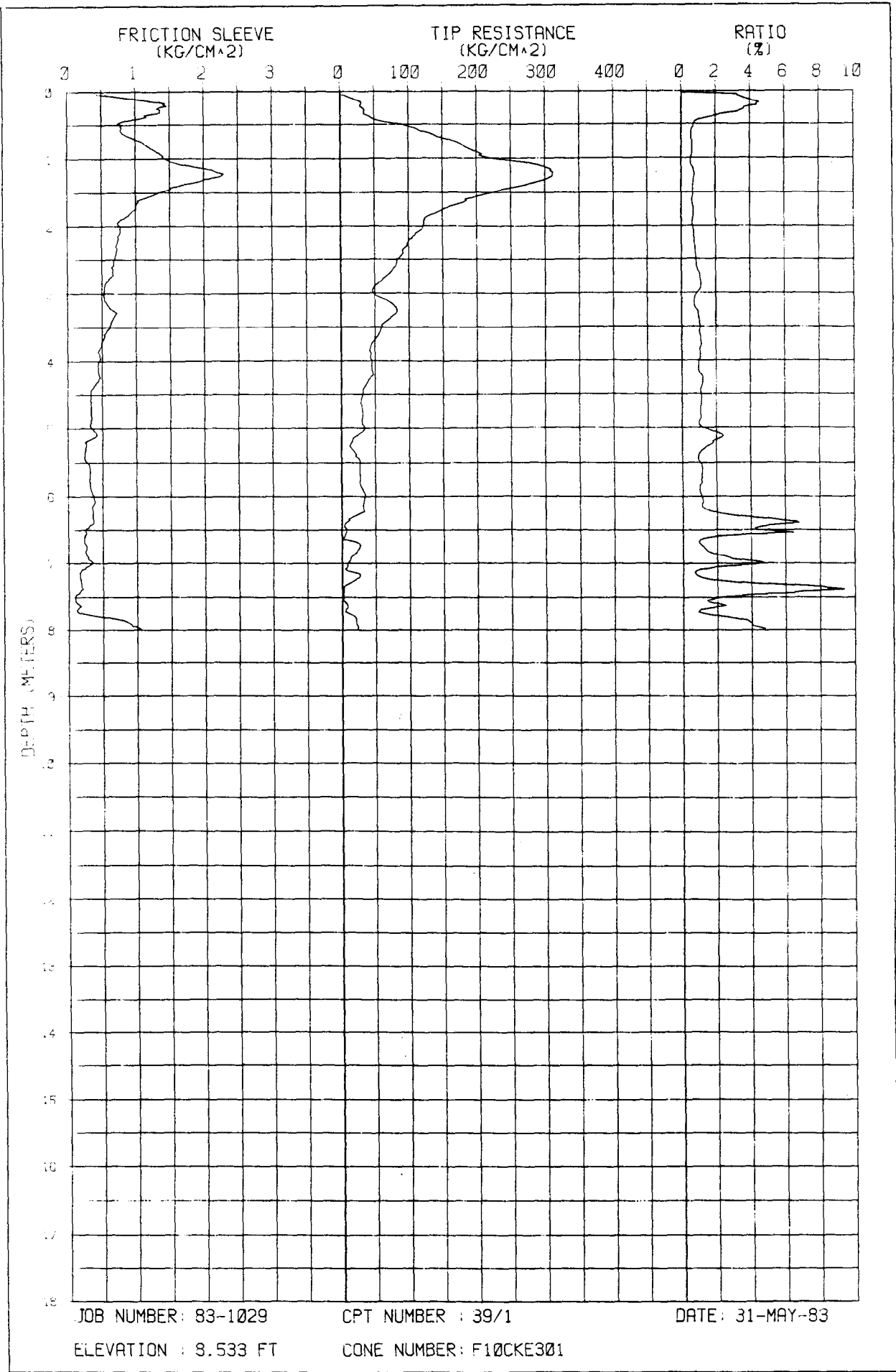
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ELEVATION : 8.963 FT

CONE NUMBER : F10CKE301







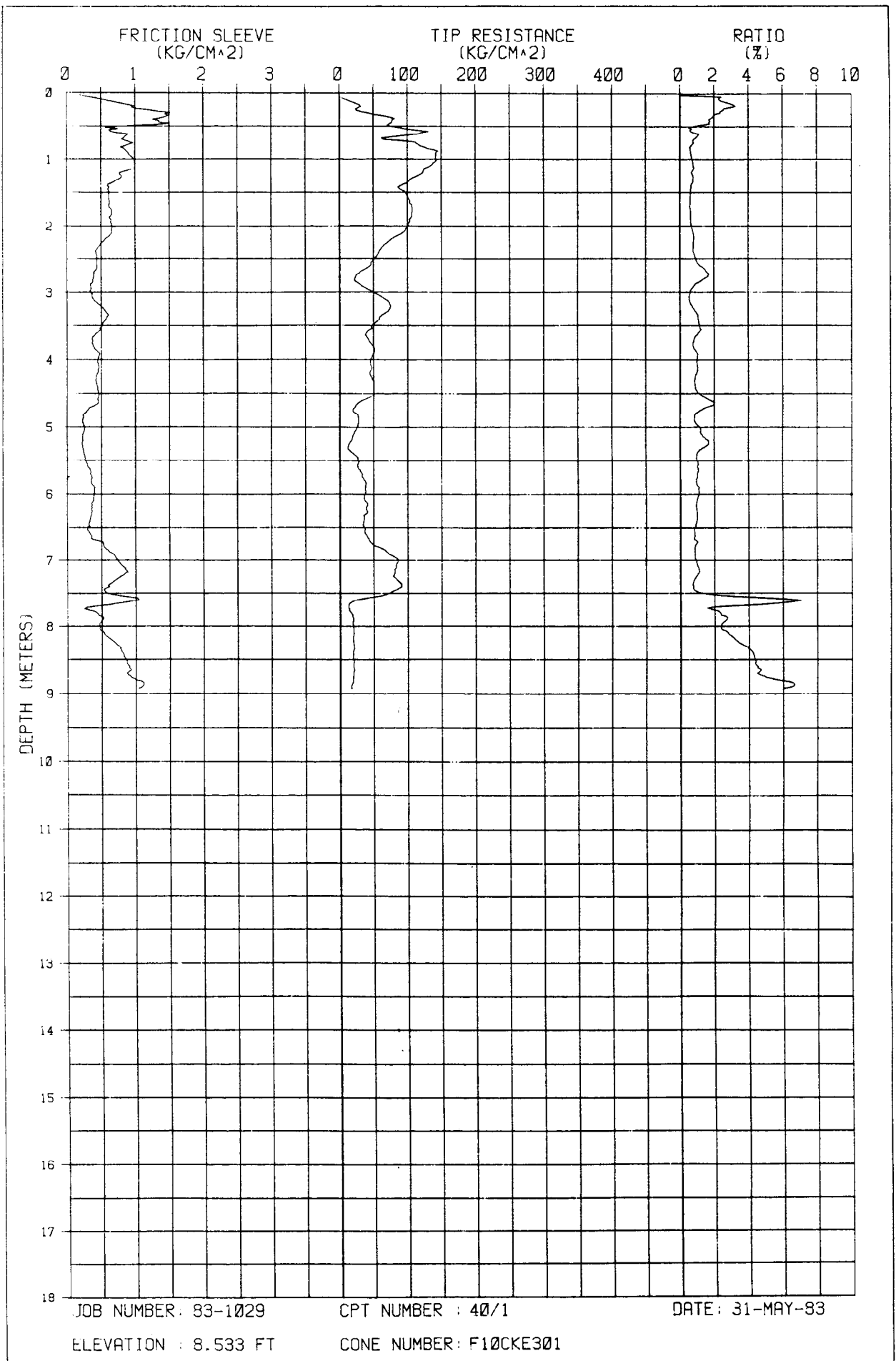
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CPT NUMBER : 39/1

DATE : 31-MAY-83

ELEVATION : 8.533 FT

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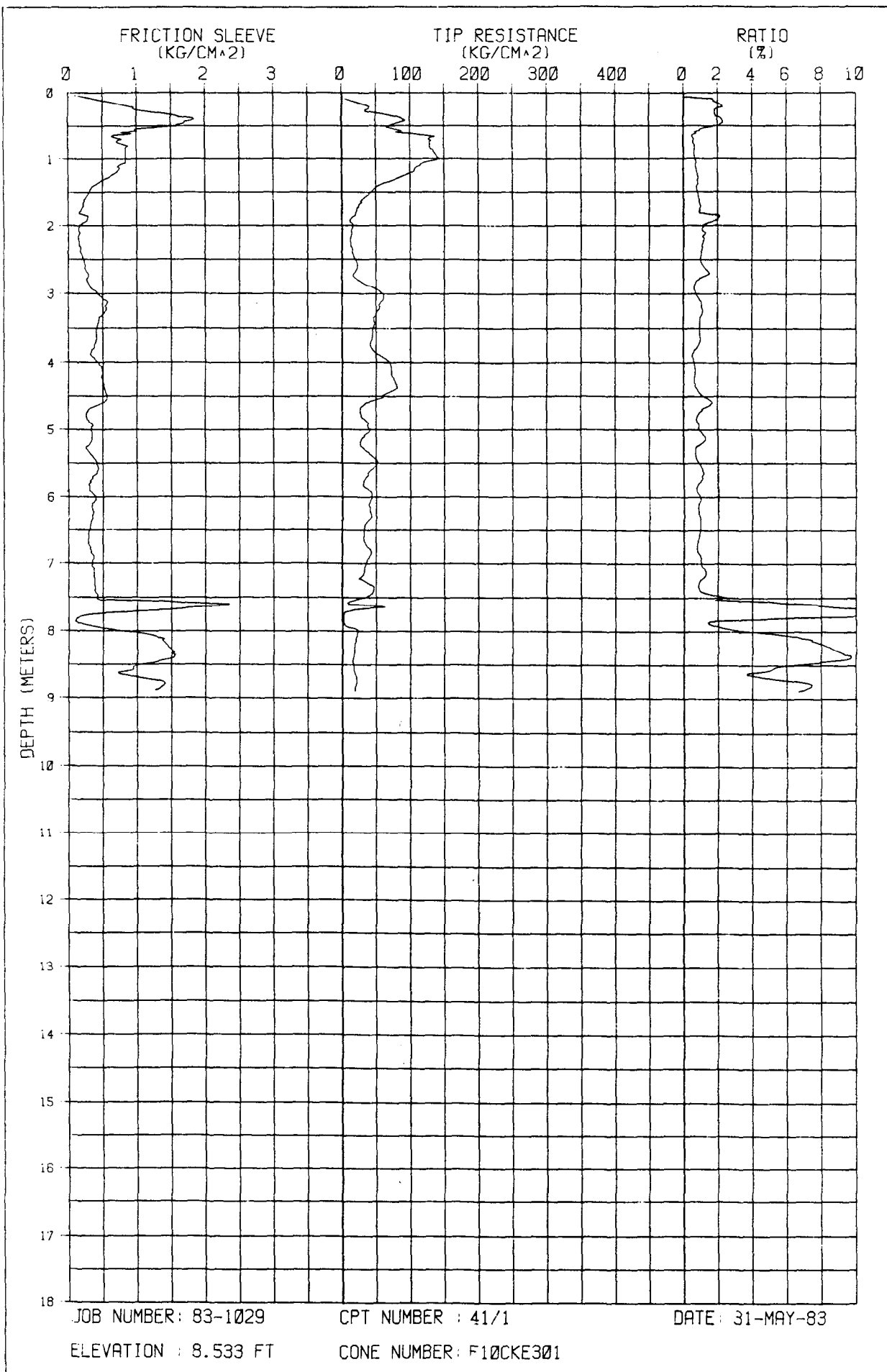
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DATE : 31-MAY-83

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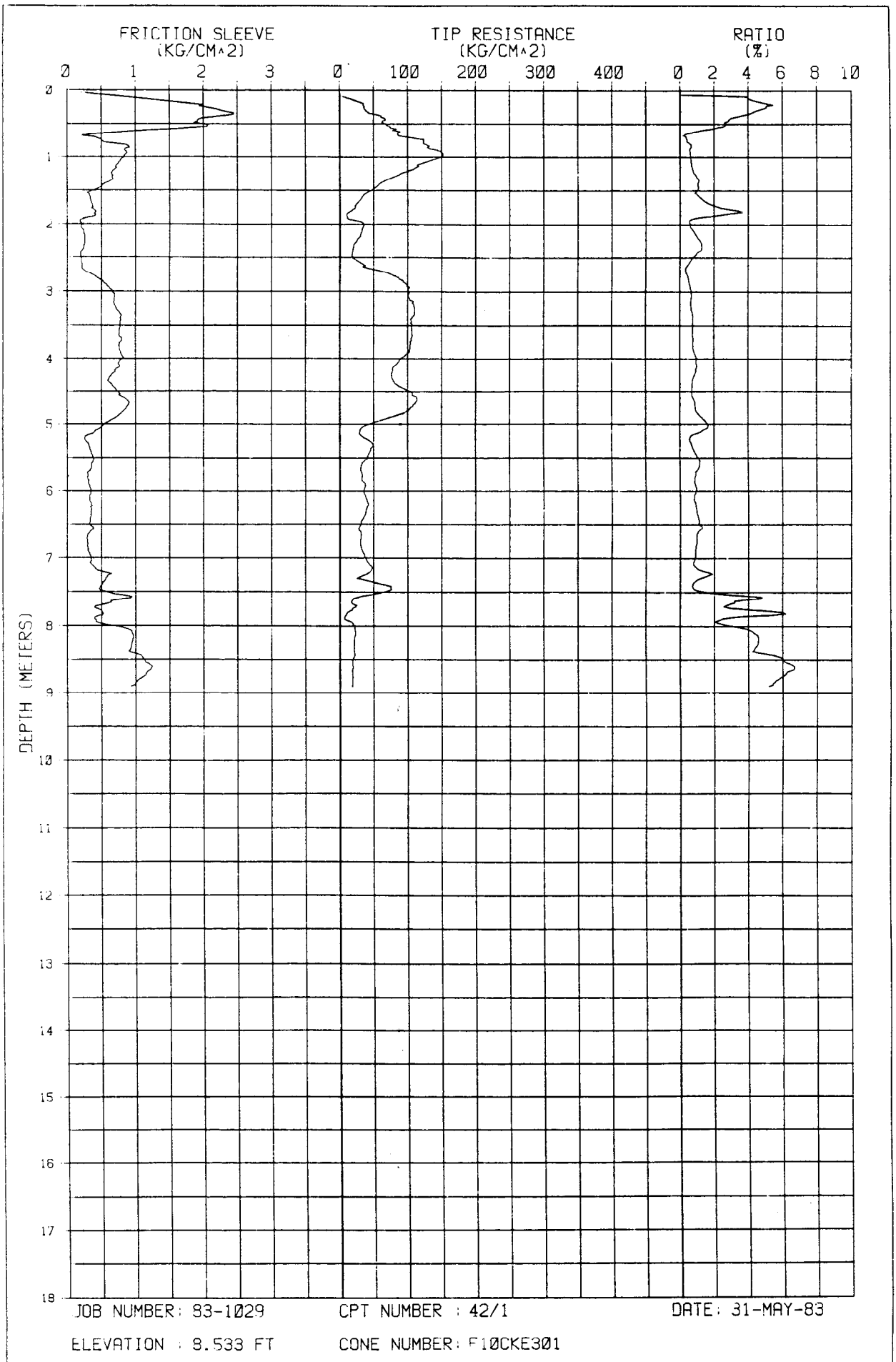
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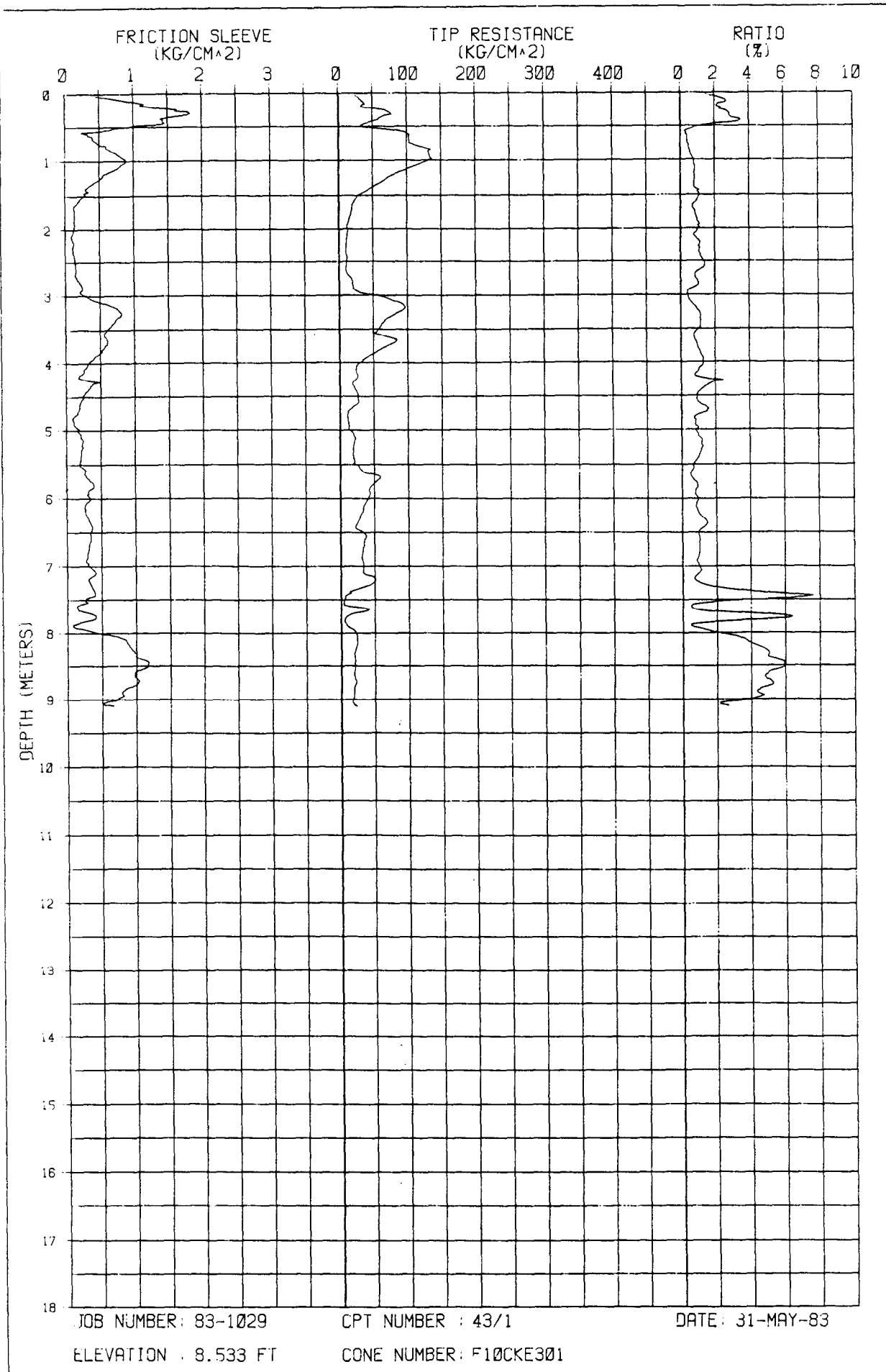
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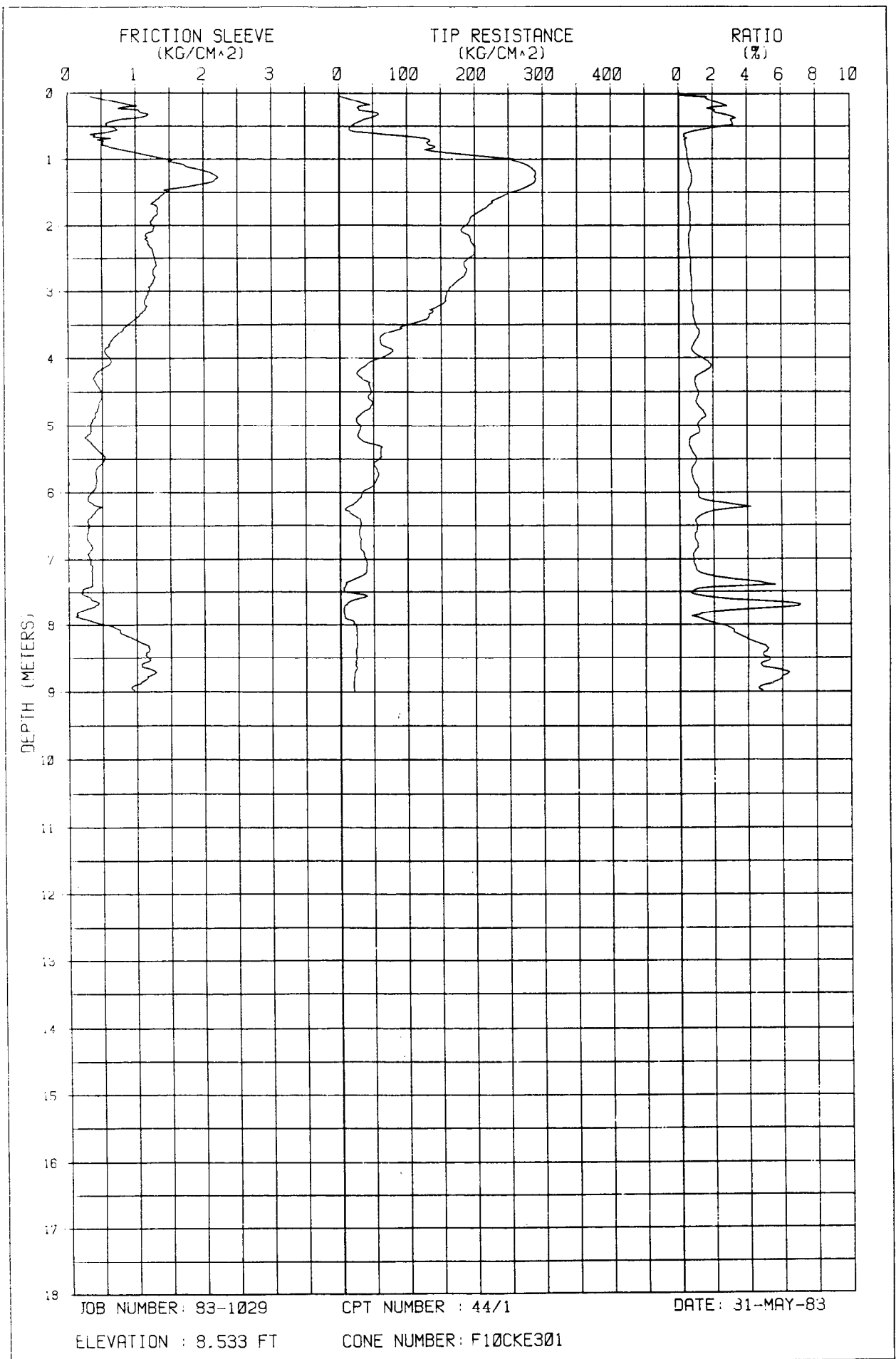
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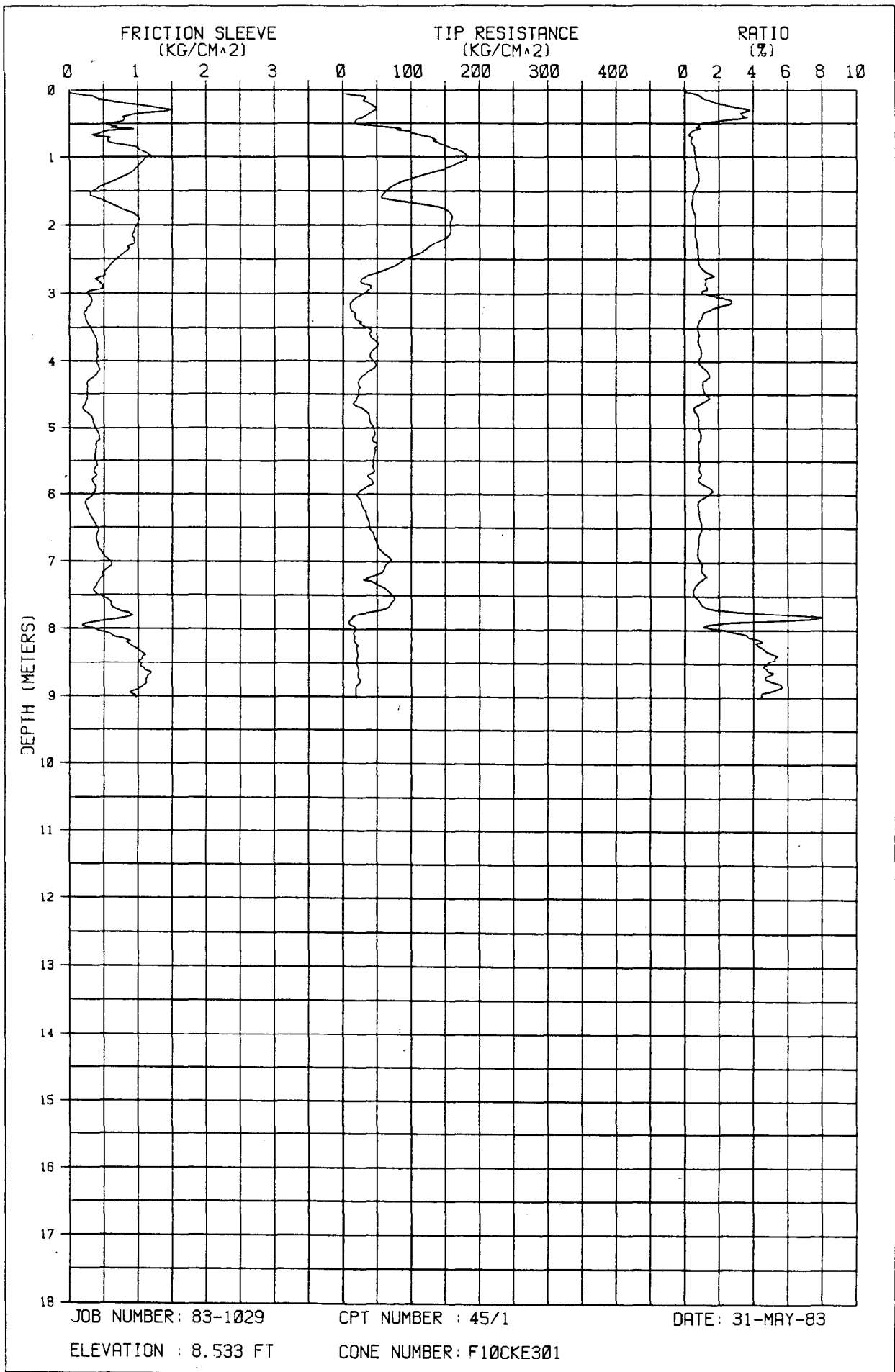
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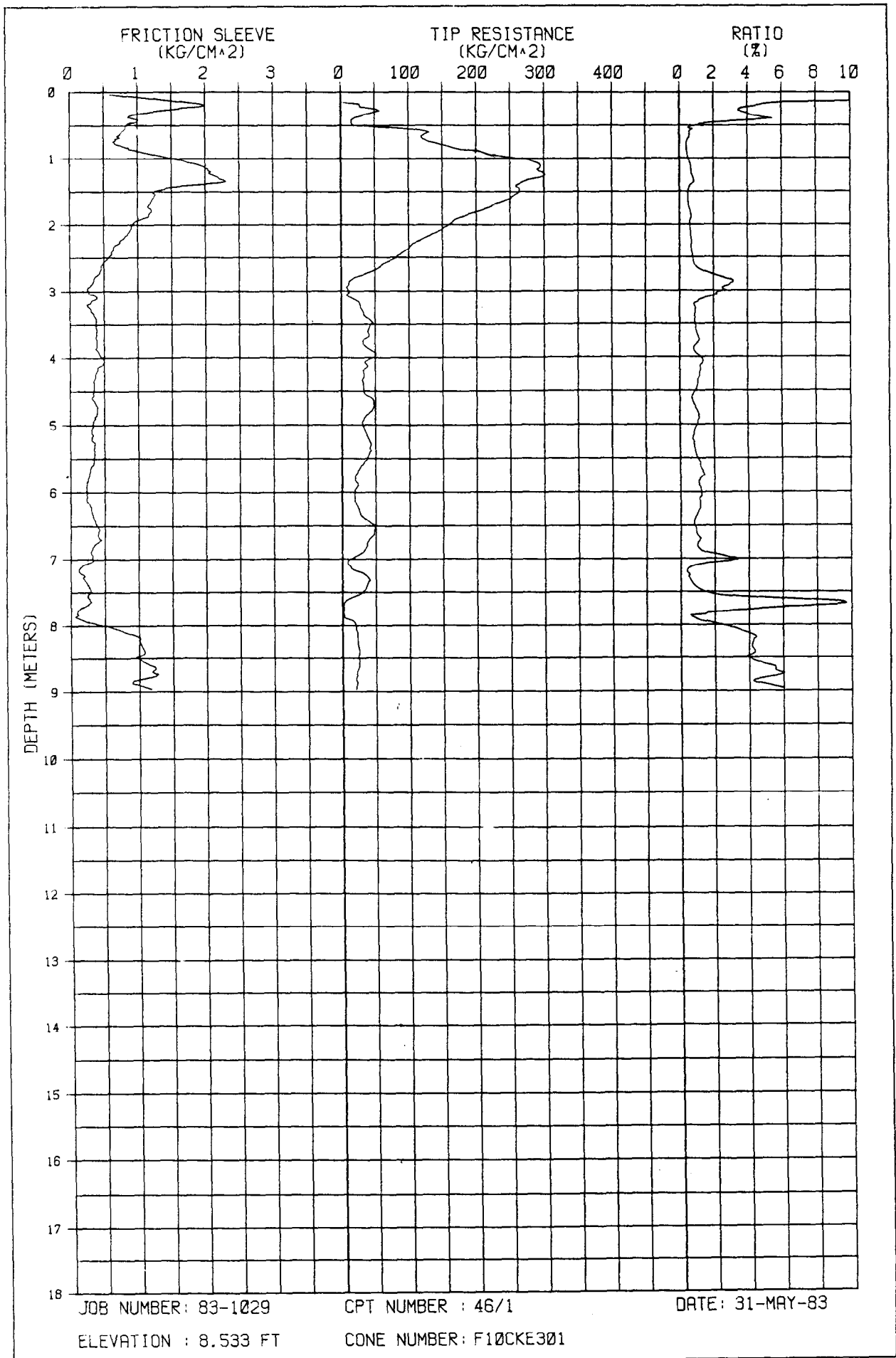
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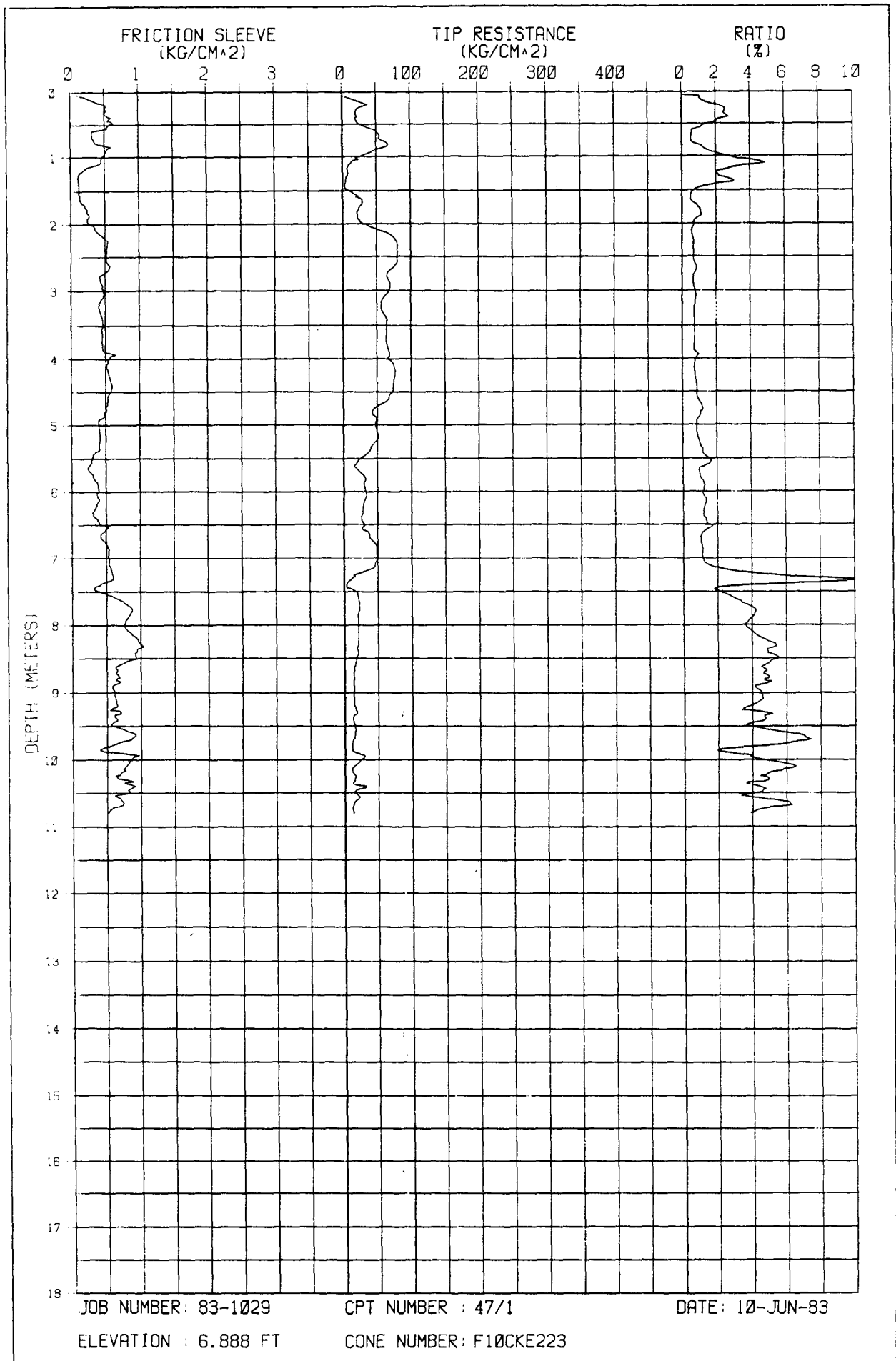
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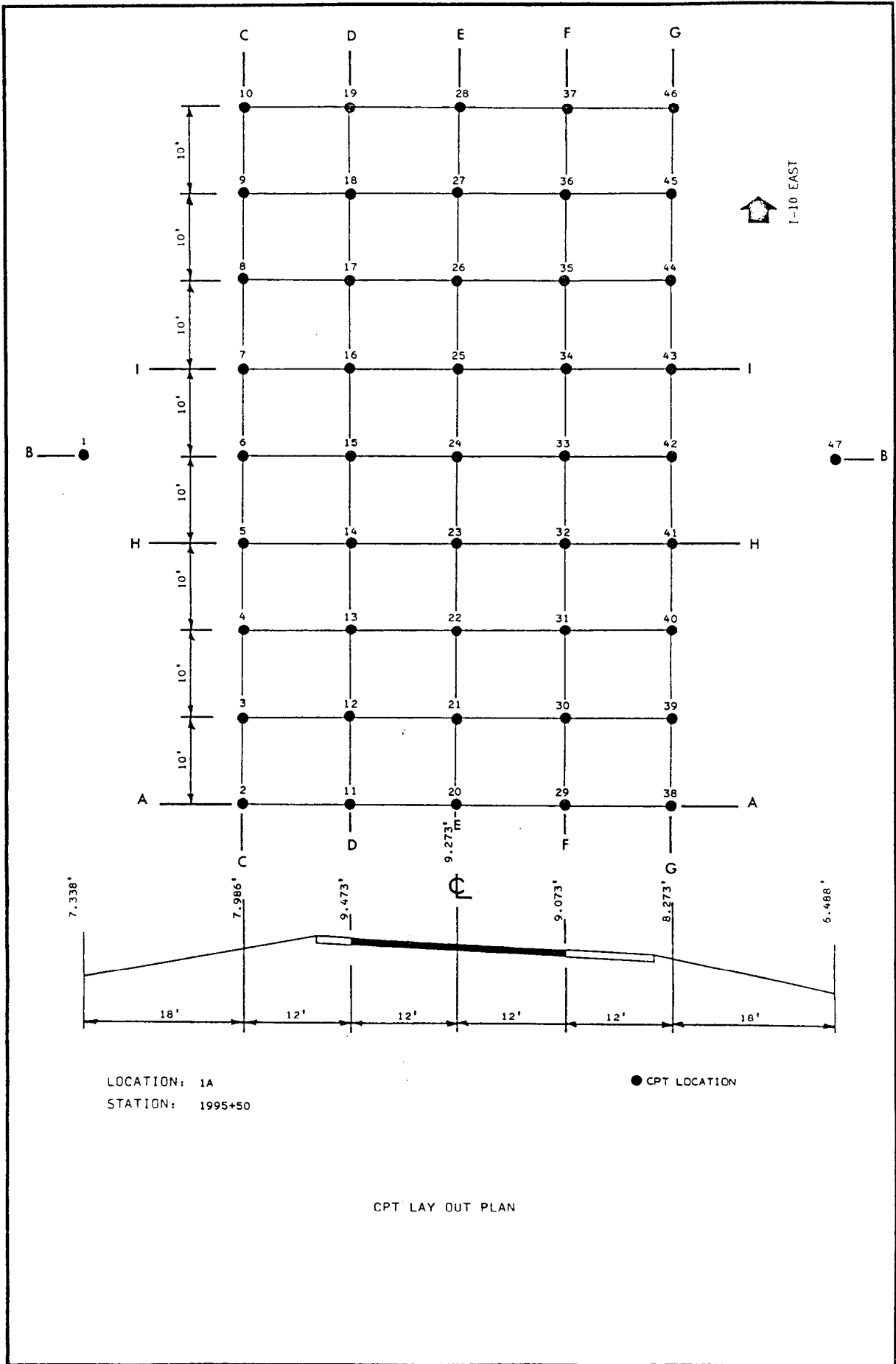
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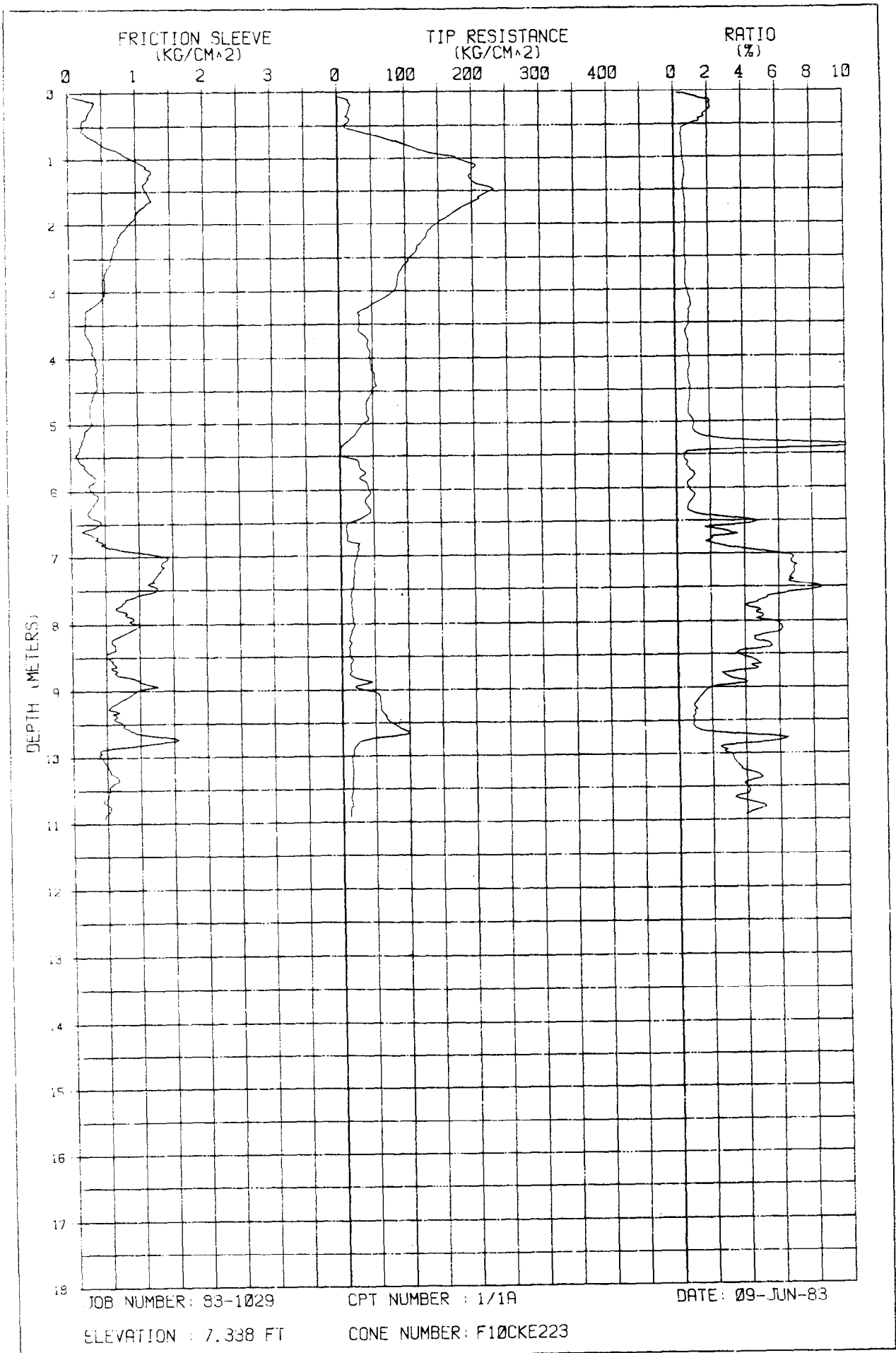
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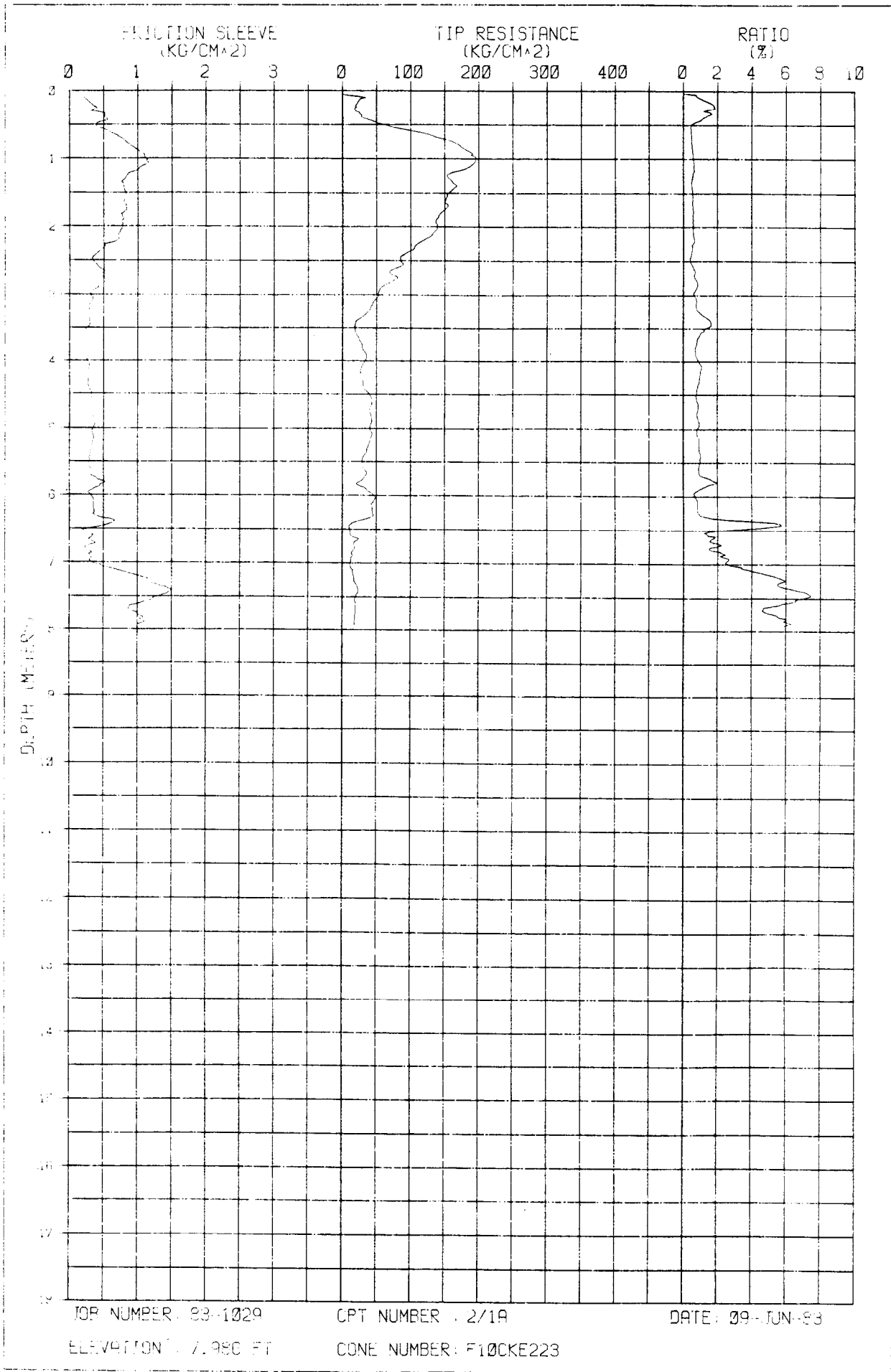
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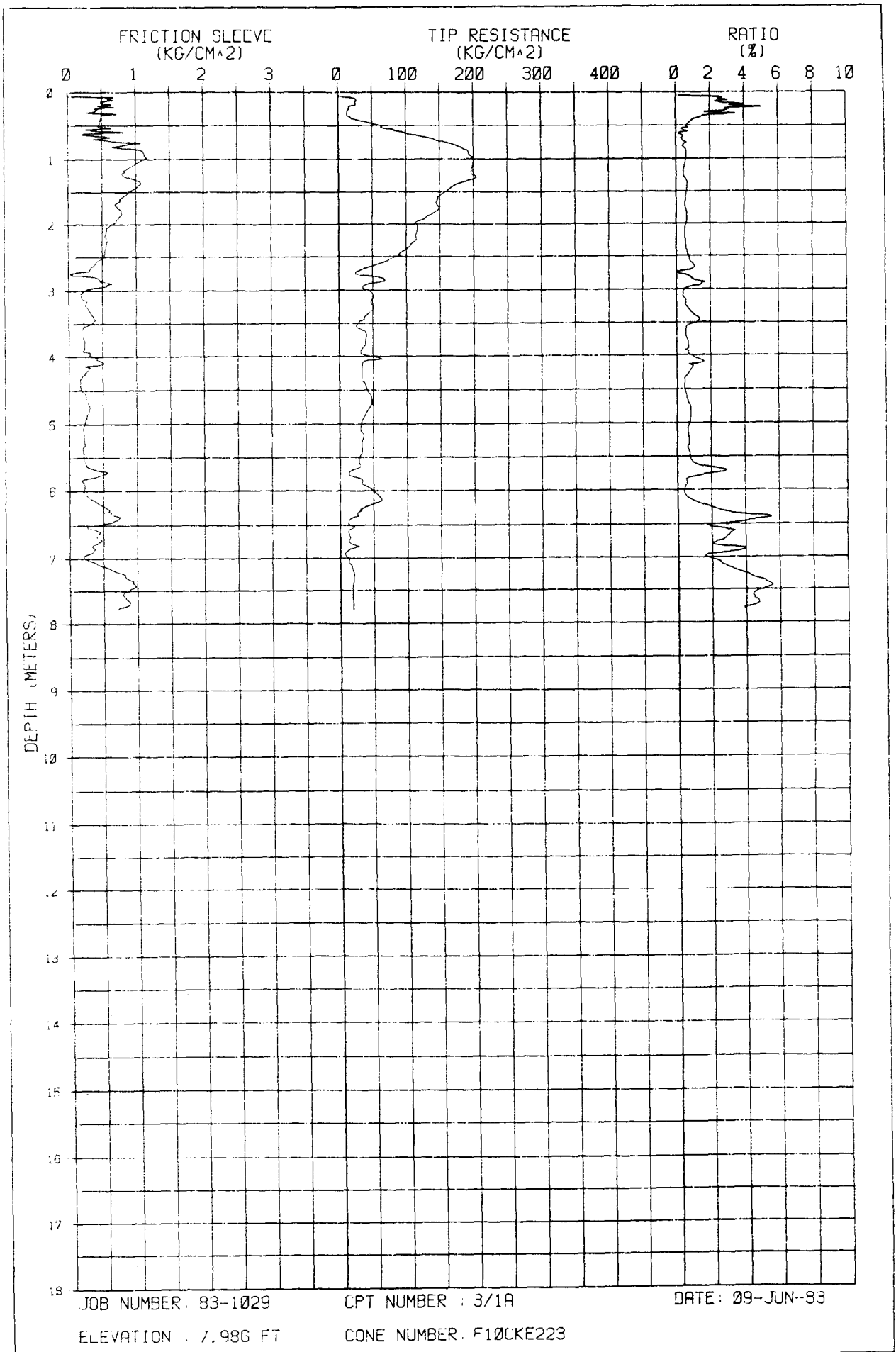
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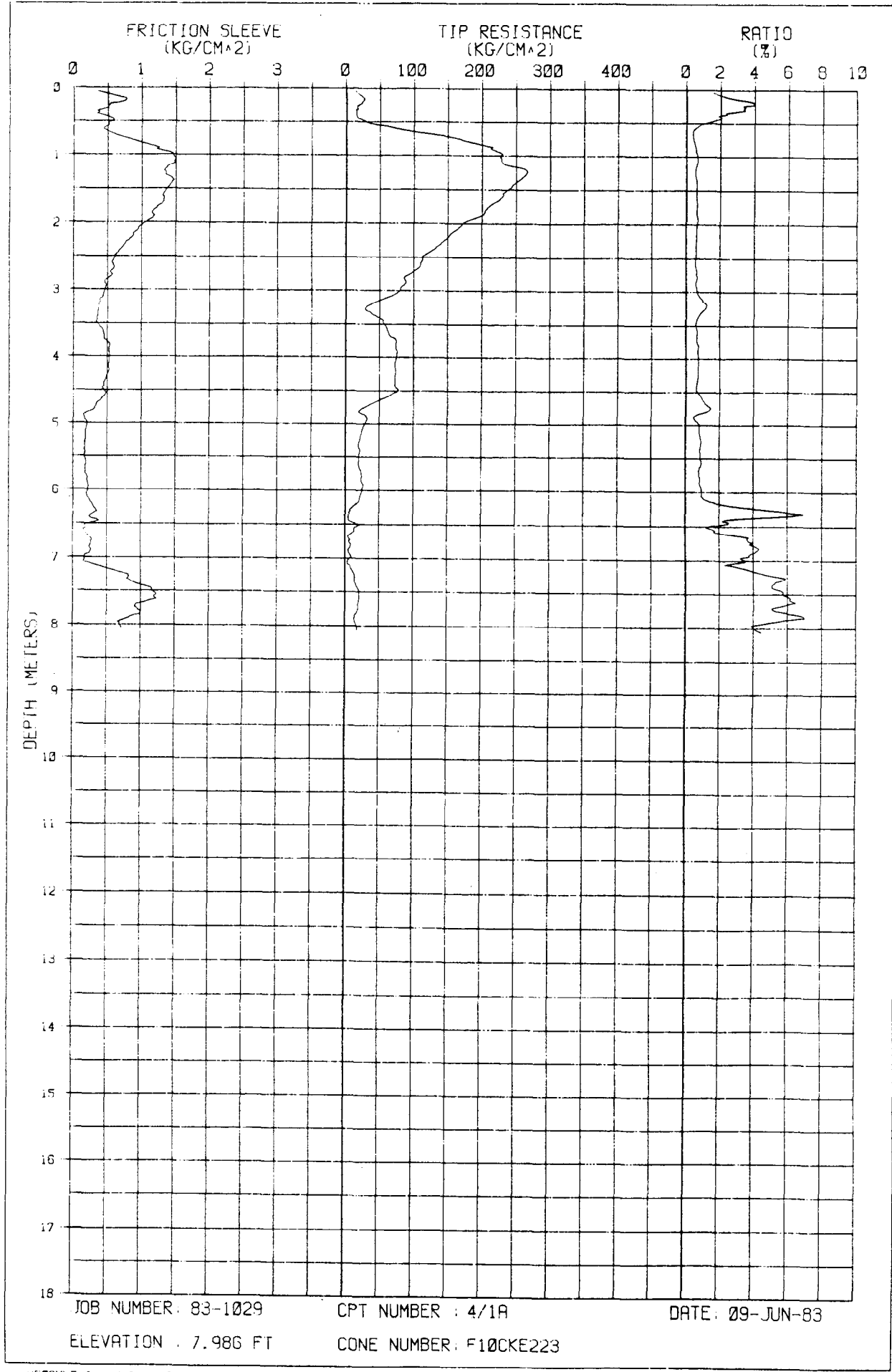
CONE PENETROMETER TEST LOCATION 1A











JOB NUMBER: 83-1029

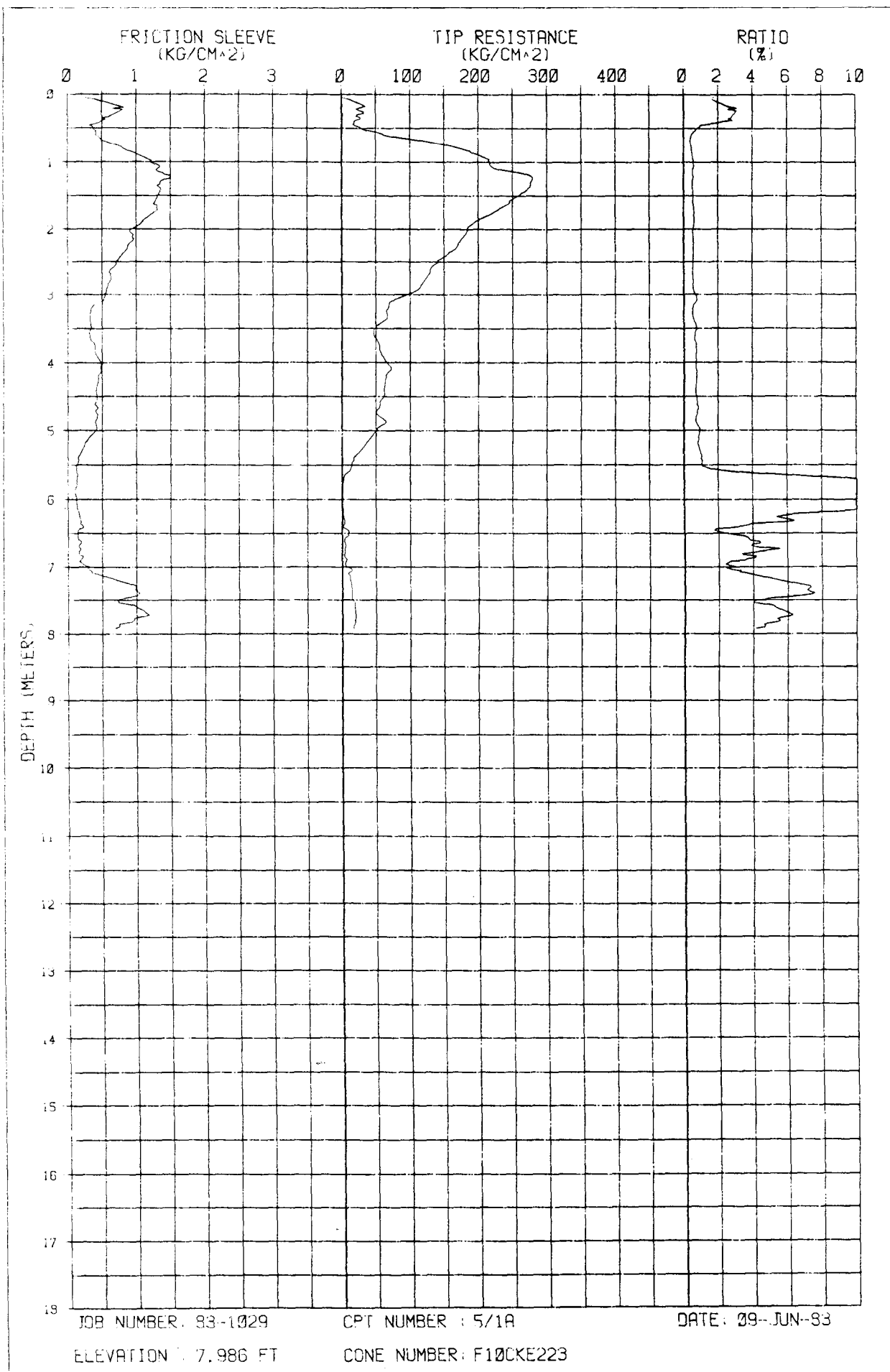
CPT NUMBER: 4/1A

DATE: 09-JUN-83

ELEVATION: 7.986 FT

CONE NUMBER: F10CKE223





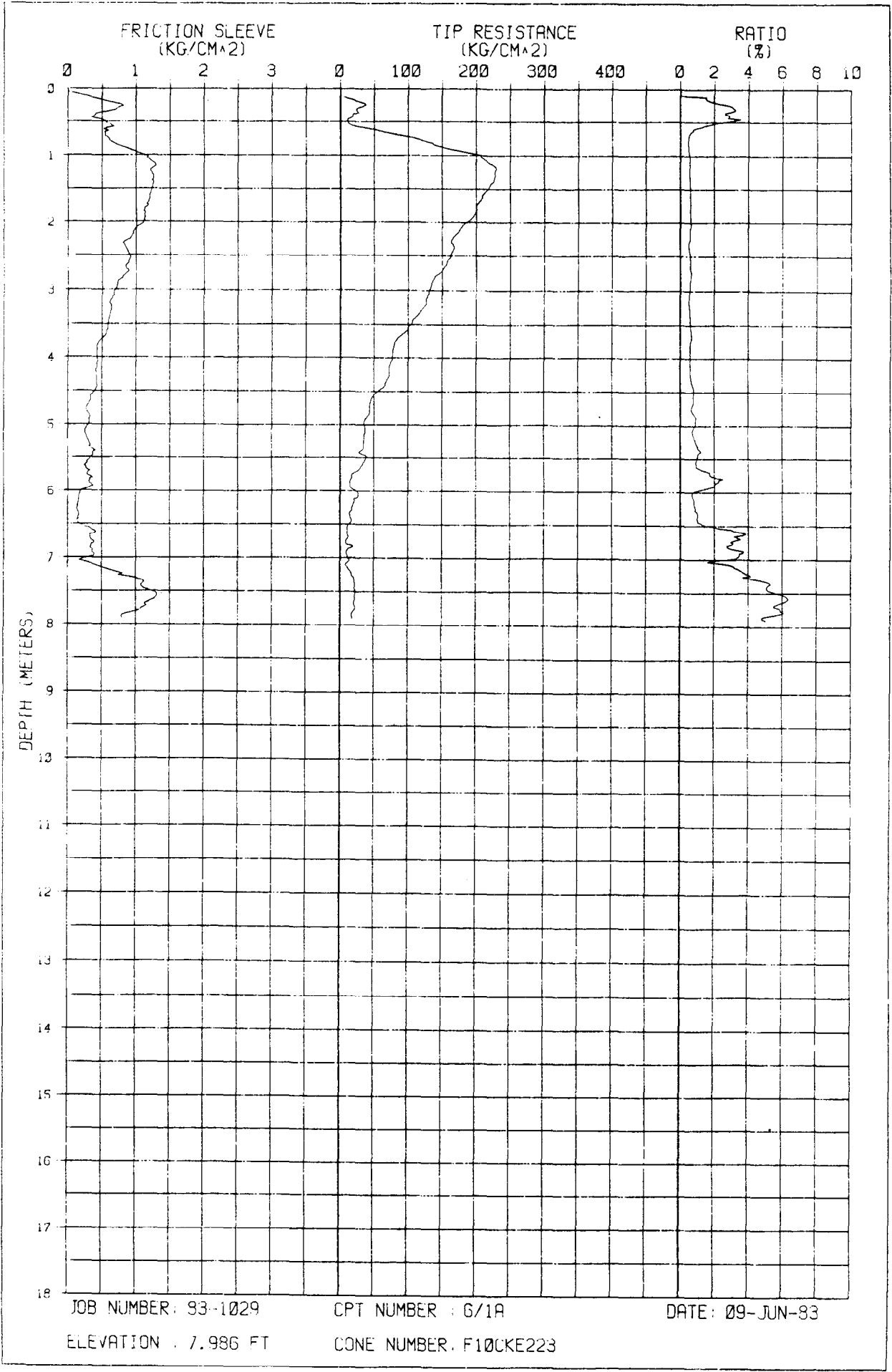
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CPT NUMBER: 5/1A

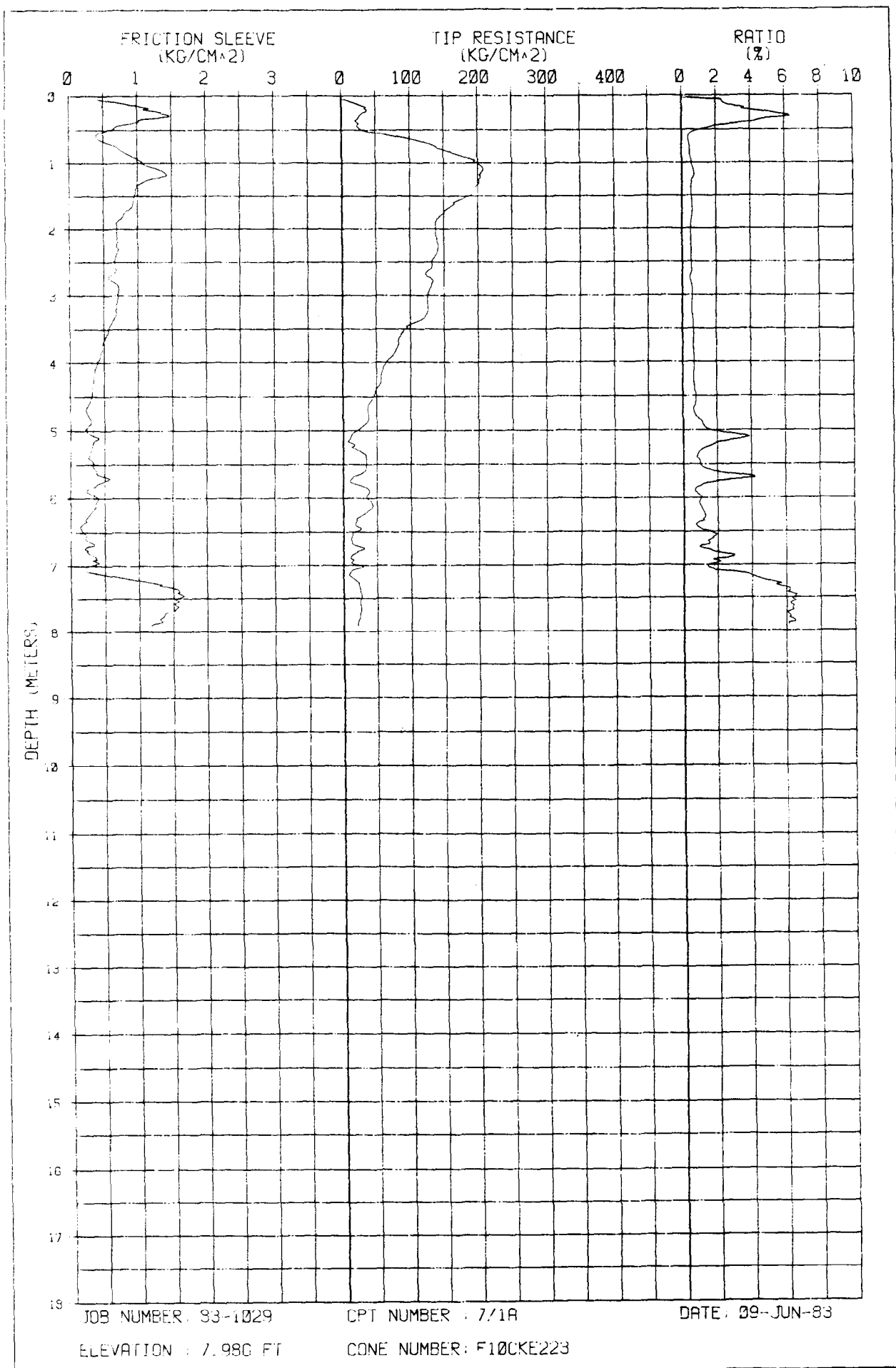
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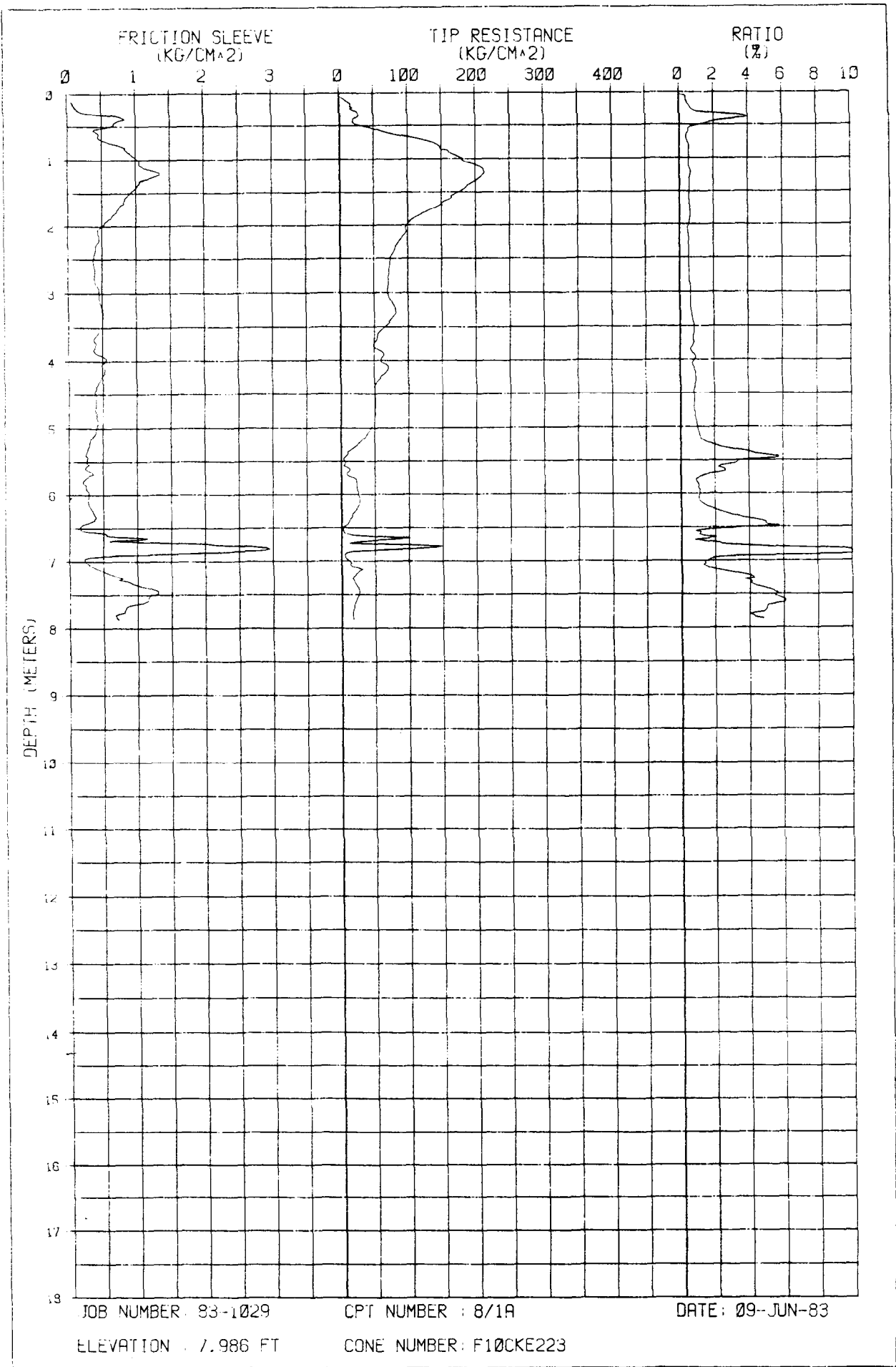
ELEVATION: 7.986 FT

CONE NUMBER: F10CKE223

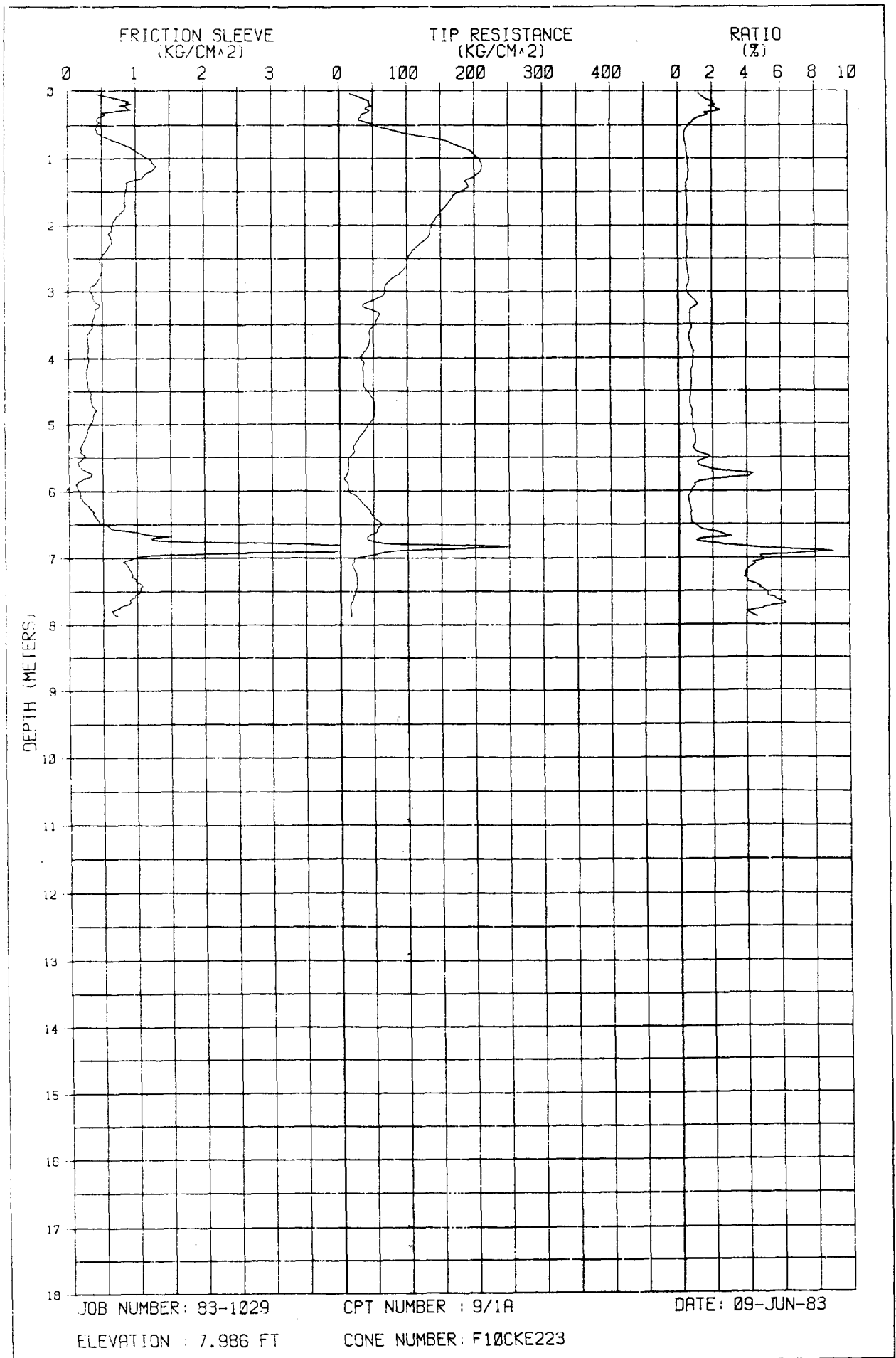


JOB NUMBER : 93-1029      CPT NUMBER : G/1A      DATE : 09-JUN-83  
 ELEVATION : 7.986 FT      CONE NUMBER : F10CKE223





JOB NUMBER : 83-1029      CPT NUMBER : 8/1A      DATE : 09-JUN-83  
 ELEVATION : 7.986 FT      CONE NUMBER : F10CKE223



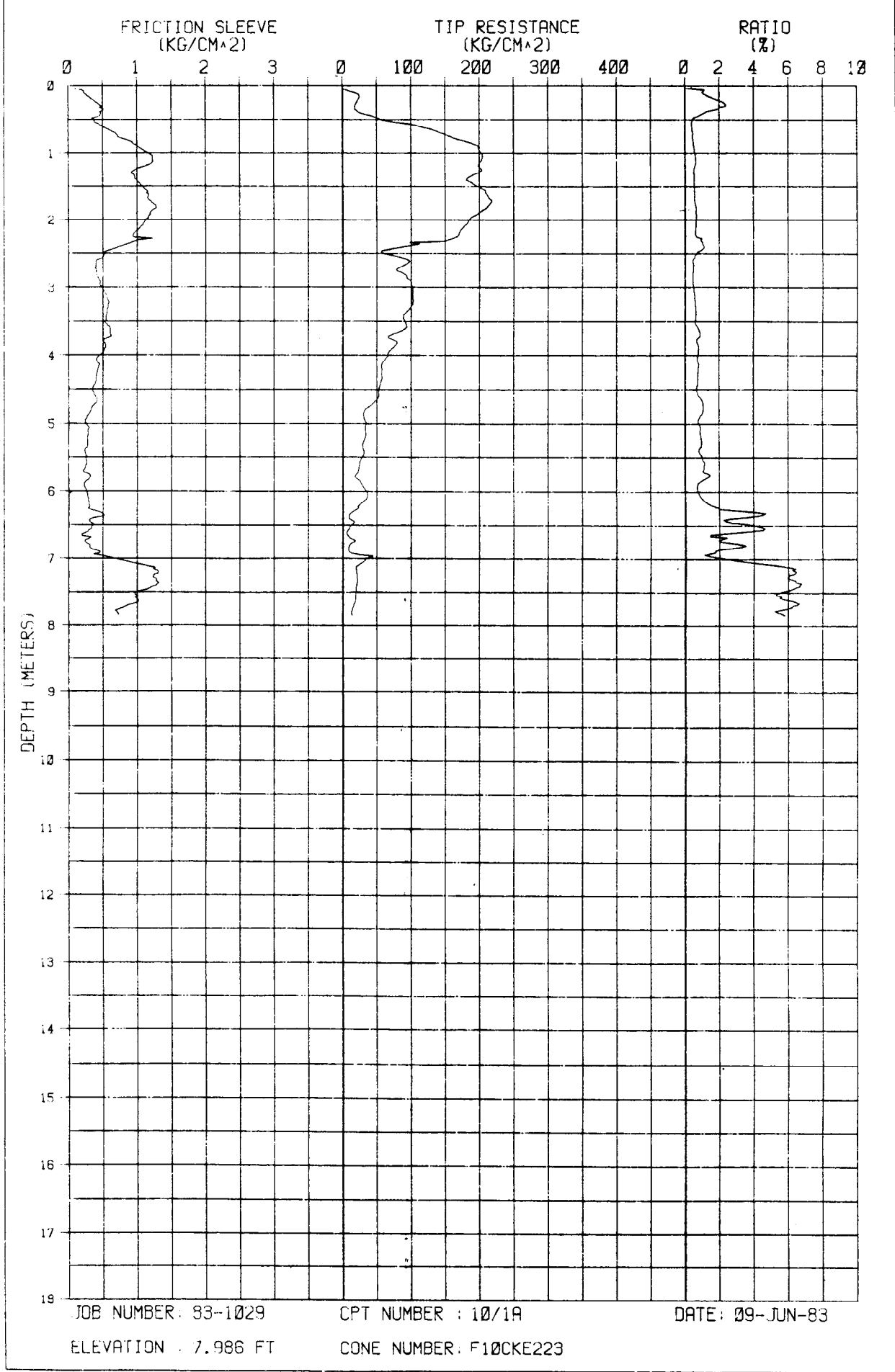
JOB NUMBER : 83-1029

CPT NUMBER : 9/1A

DATE : 09-JUN-83

ELEVATION : 7.986 FT

CONE NUMBER : F10CKE223



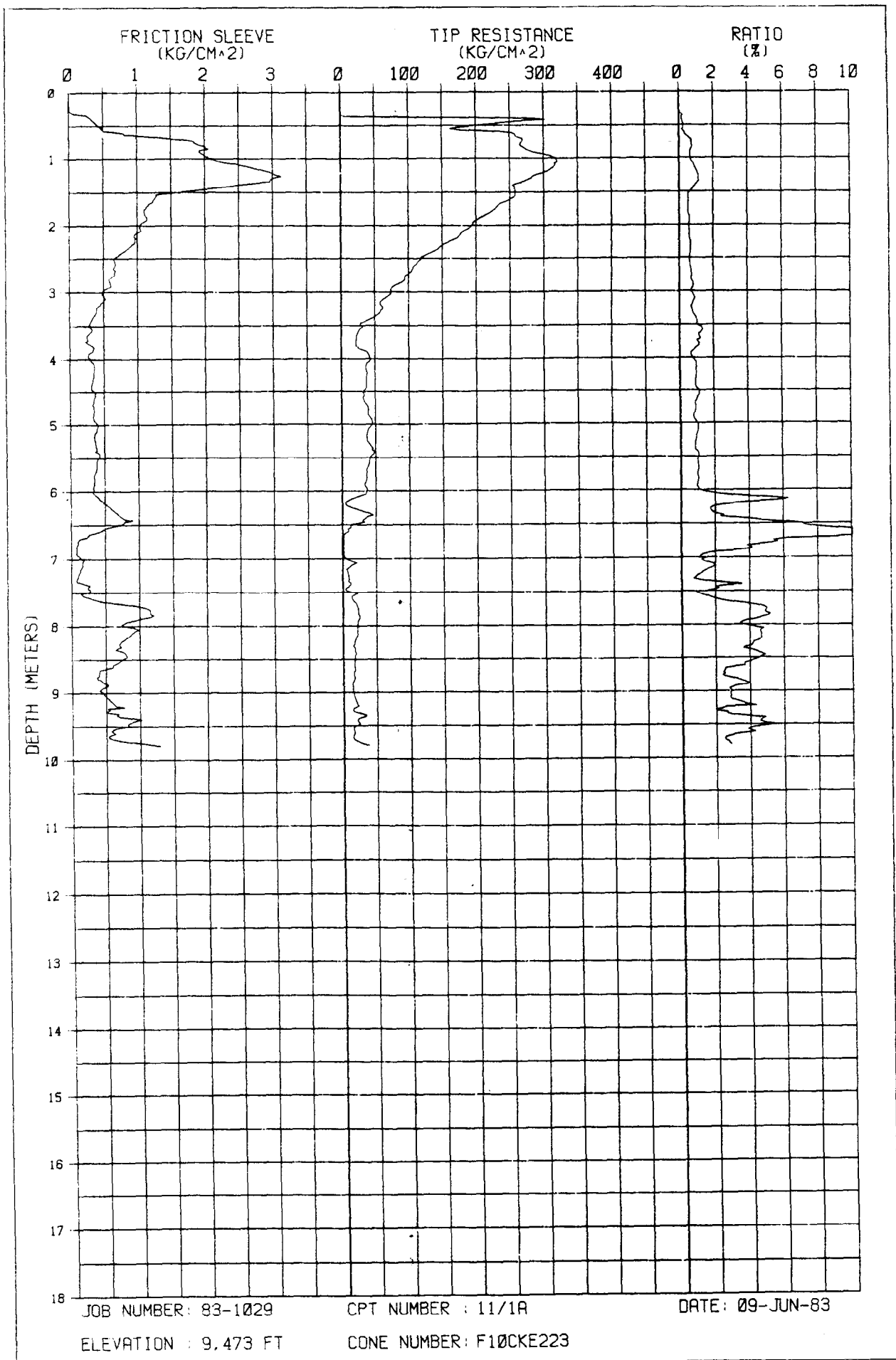
JOB NUMBER: 83-1029

CPT NUMBER: 10/1A

DATE: 09-JUN-83

ELEVATION: 7.986 FT

CONE NUMBER: F10CKE223



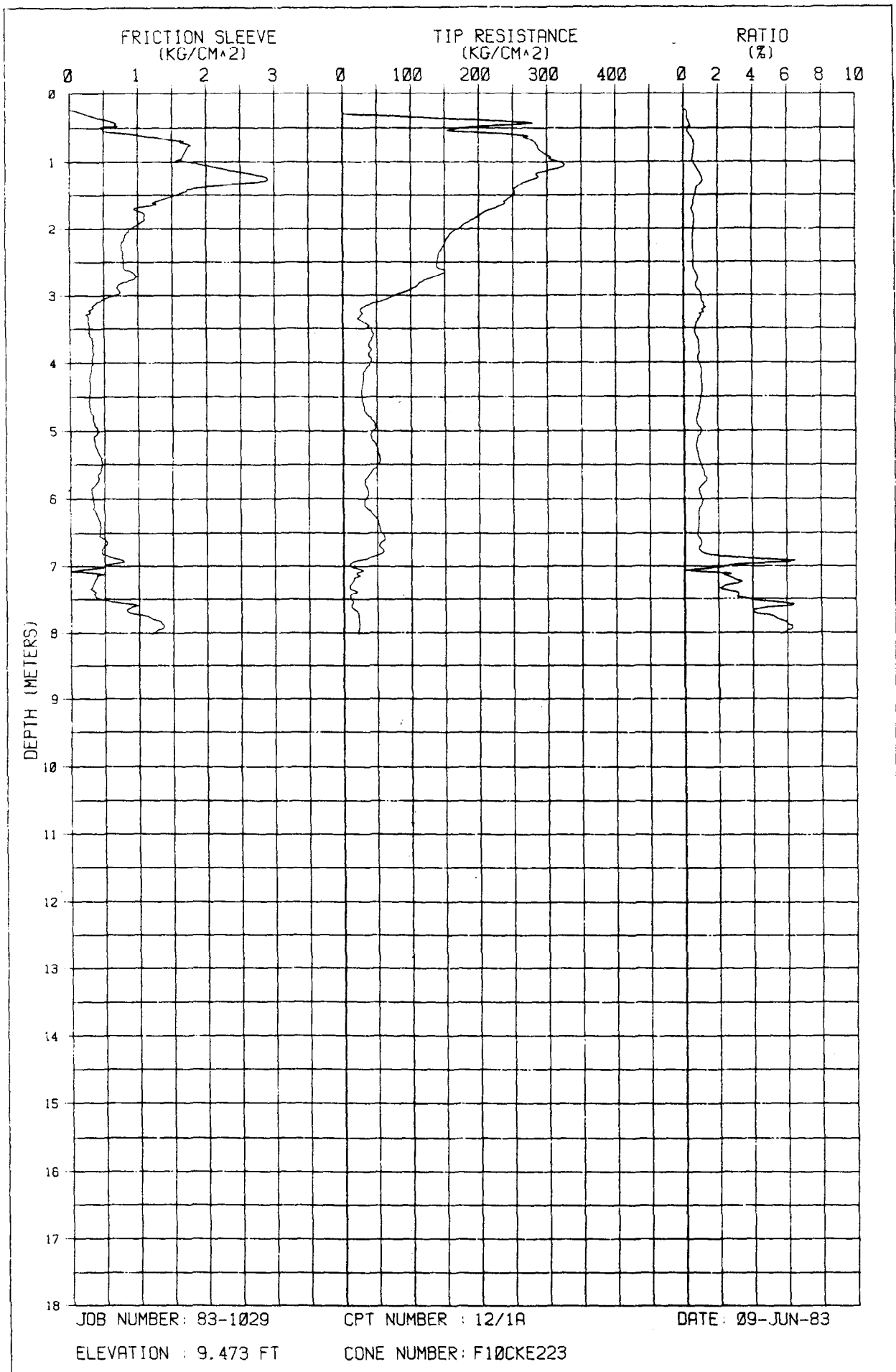
JOB NUMBER: 83-1029

CPT NUMBER: 11/1A

DATE: 09-JUN-83

ELEVATION: 9.473 FT

CONE NUMBER: F10CKE223



JOB NUMBER: 83-1029

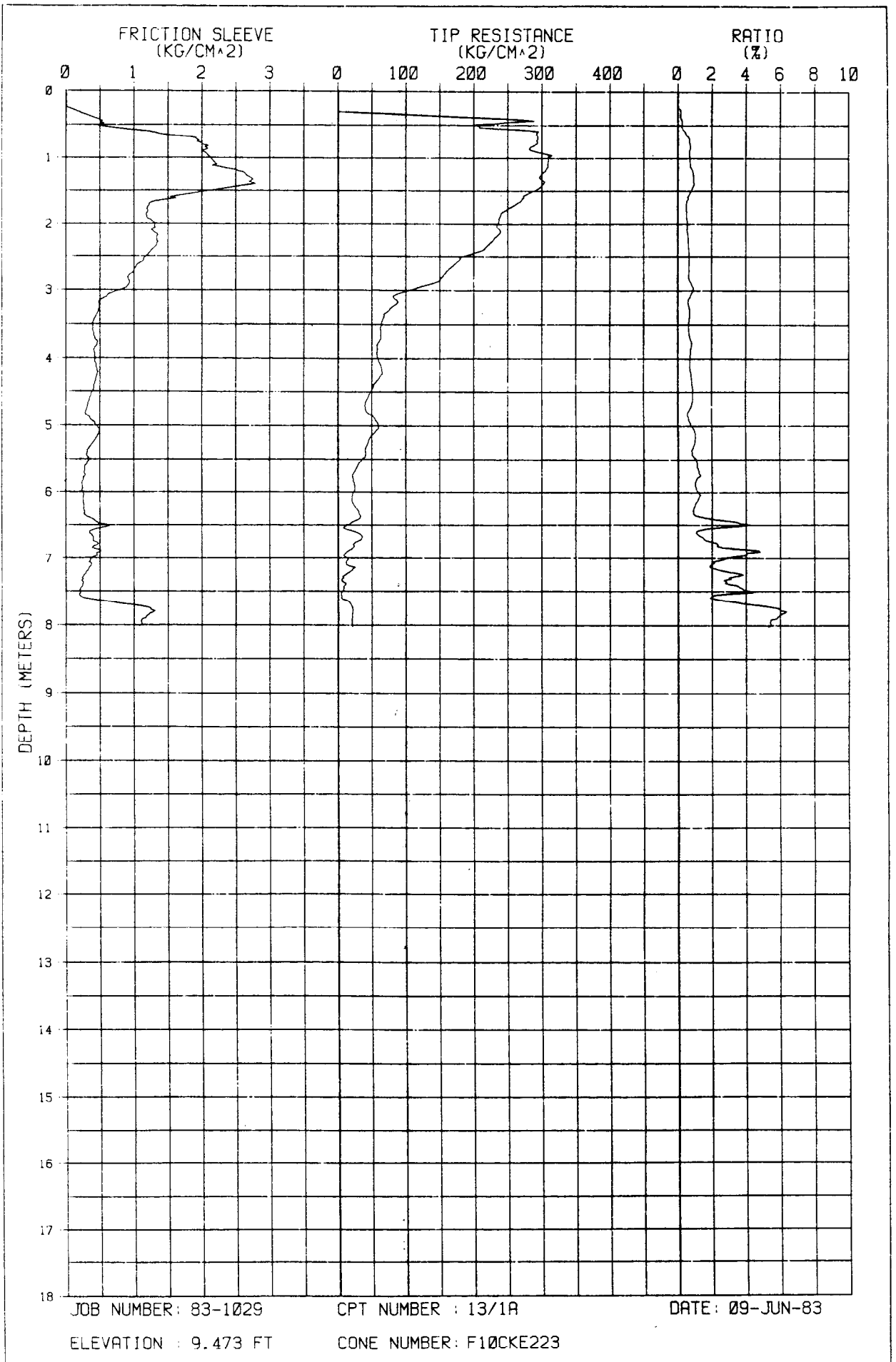
CPT NUMBER: 12/1A

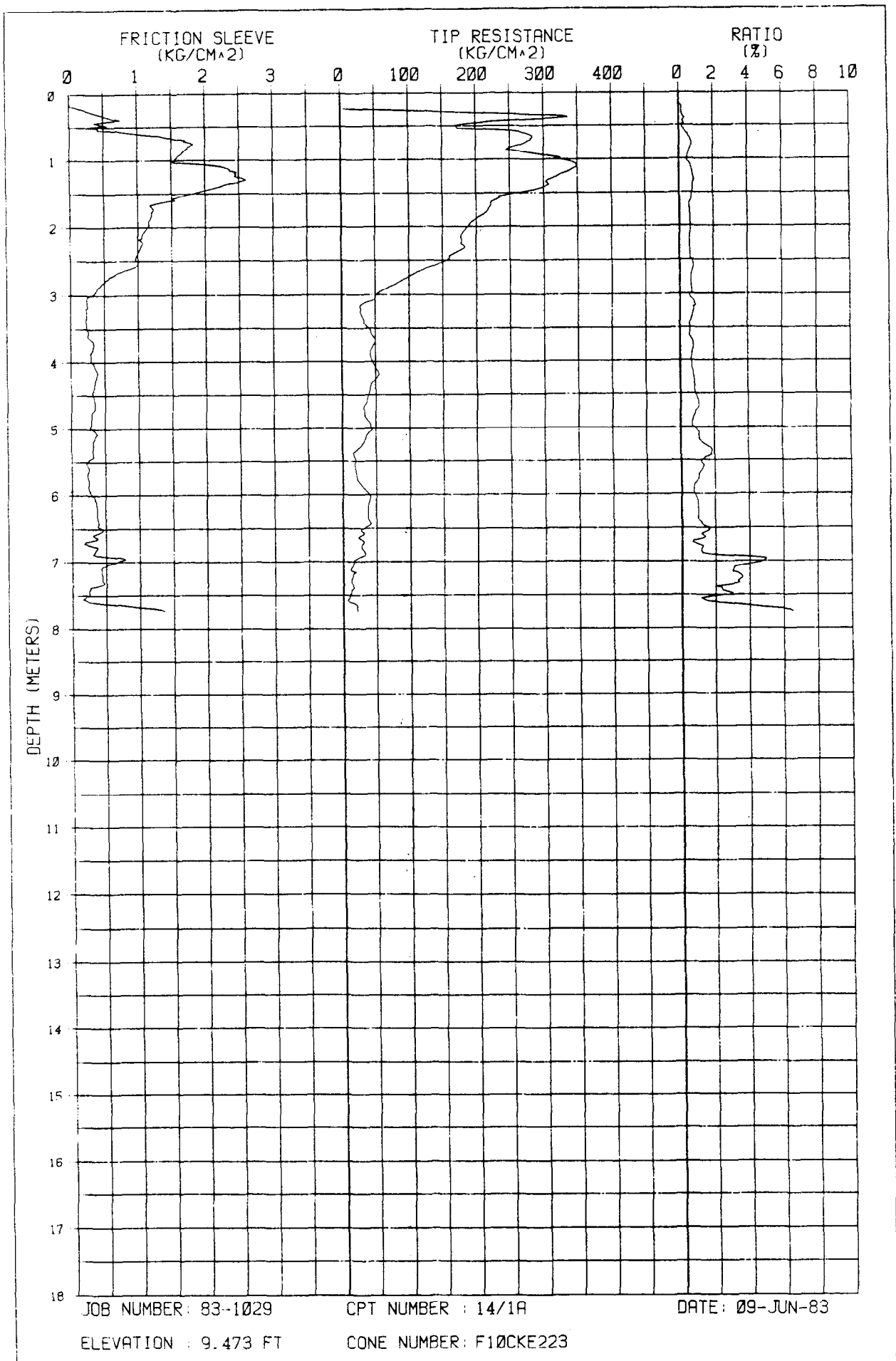
DATE: 09-JUN-83

ELEVATION: 9.473 FT

CONE NUMBER: F10CKE223







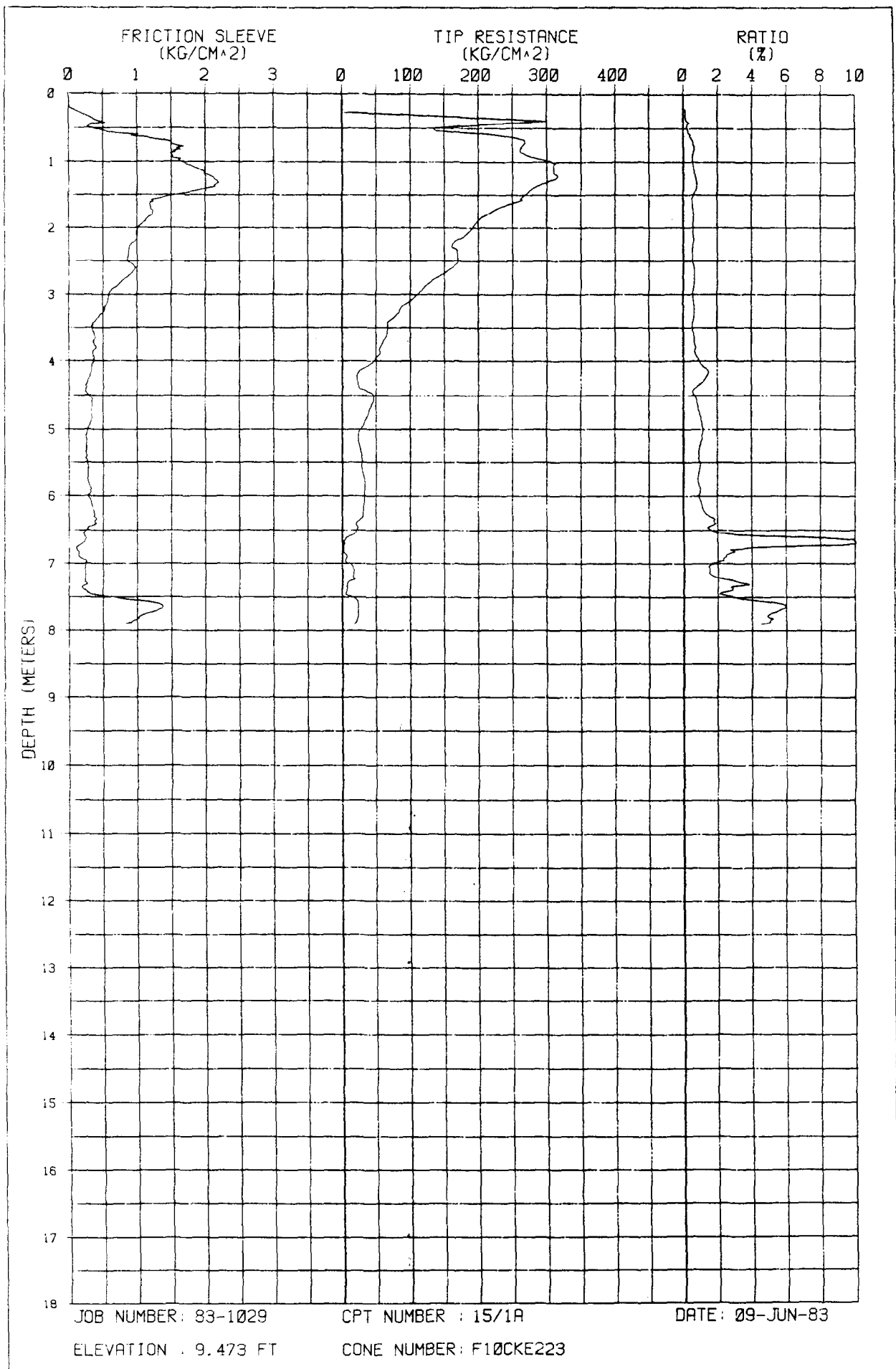
JOB NUMBER: 83-1029

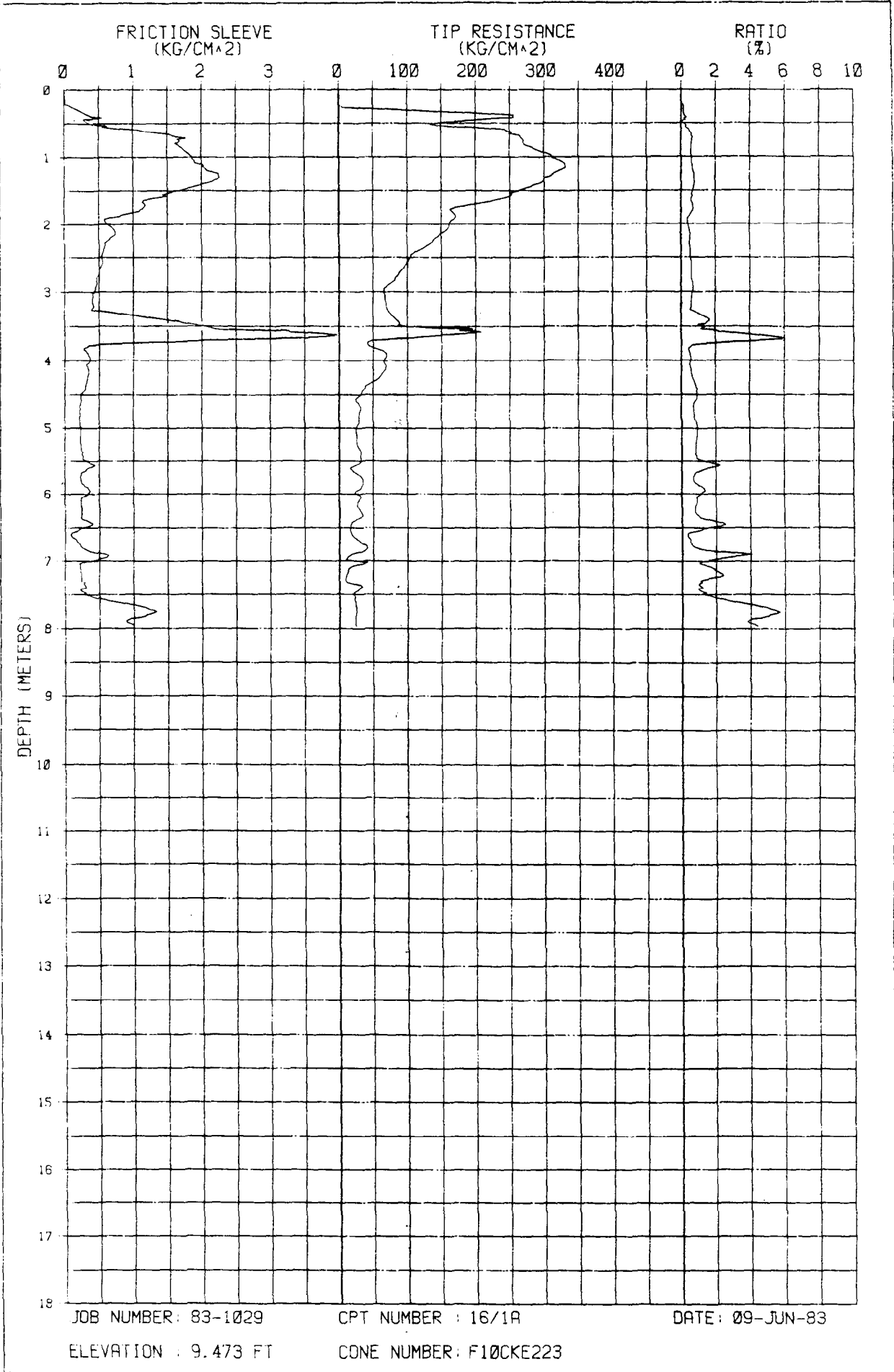
CPT NUMBER: 14/1A

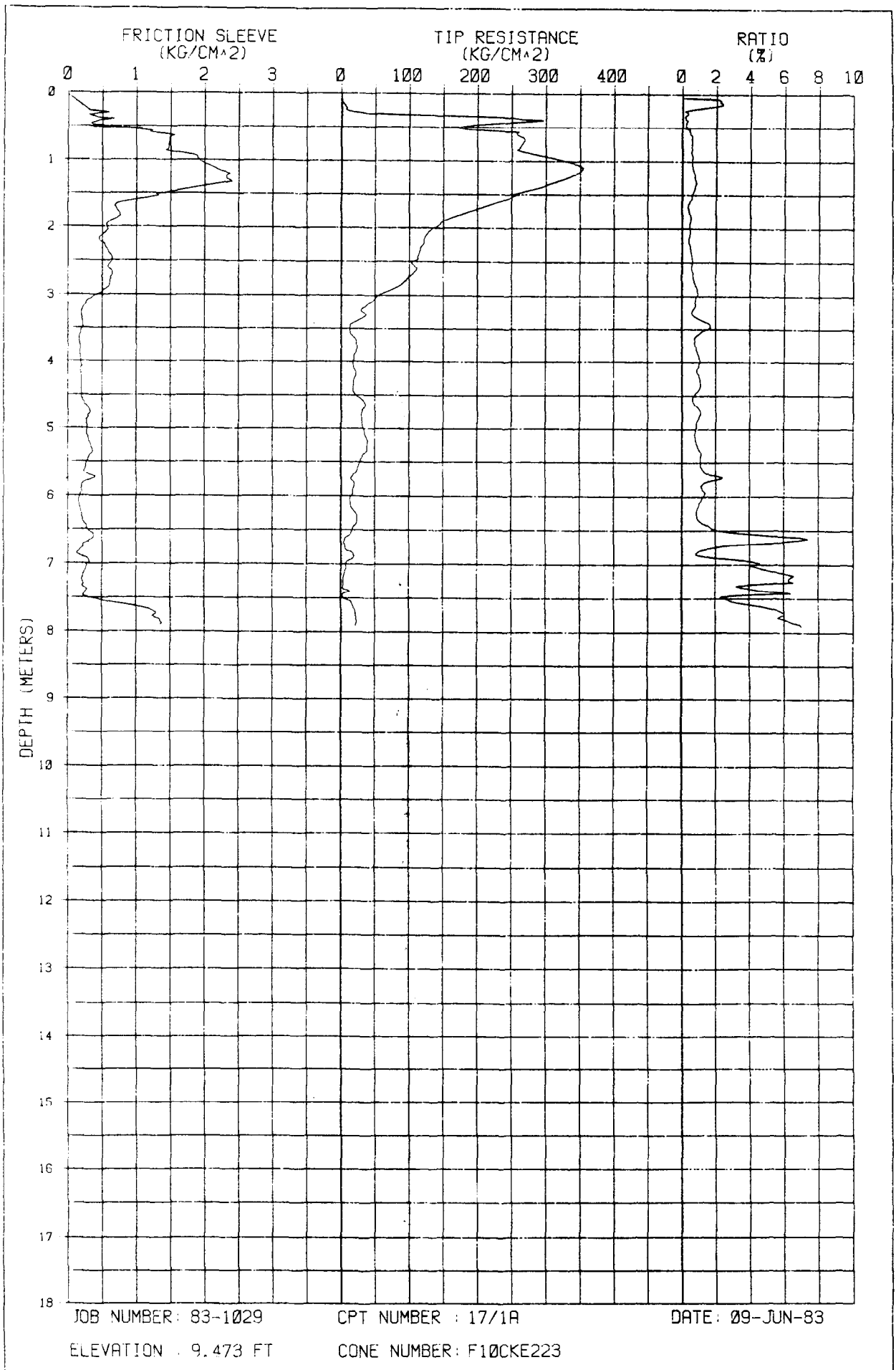
DATE: 09-JUN-83

ELEVATION: 9.473 FT

CONE NUMBER: F10CKE223







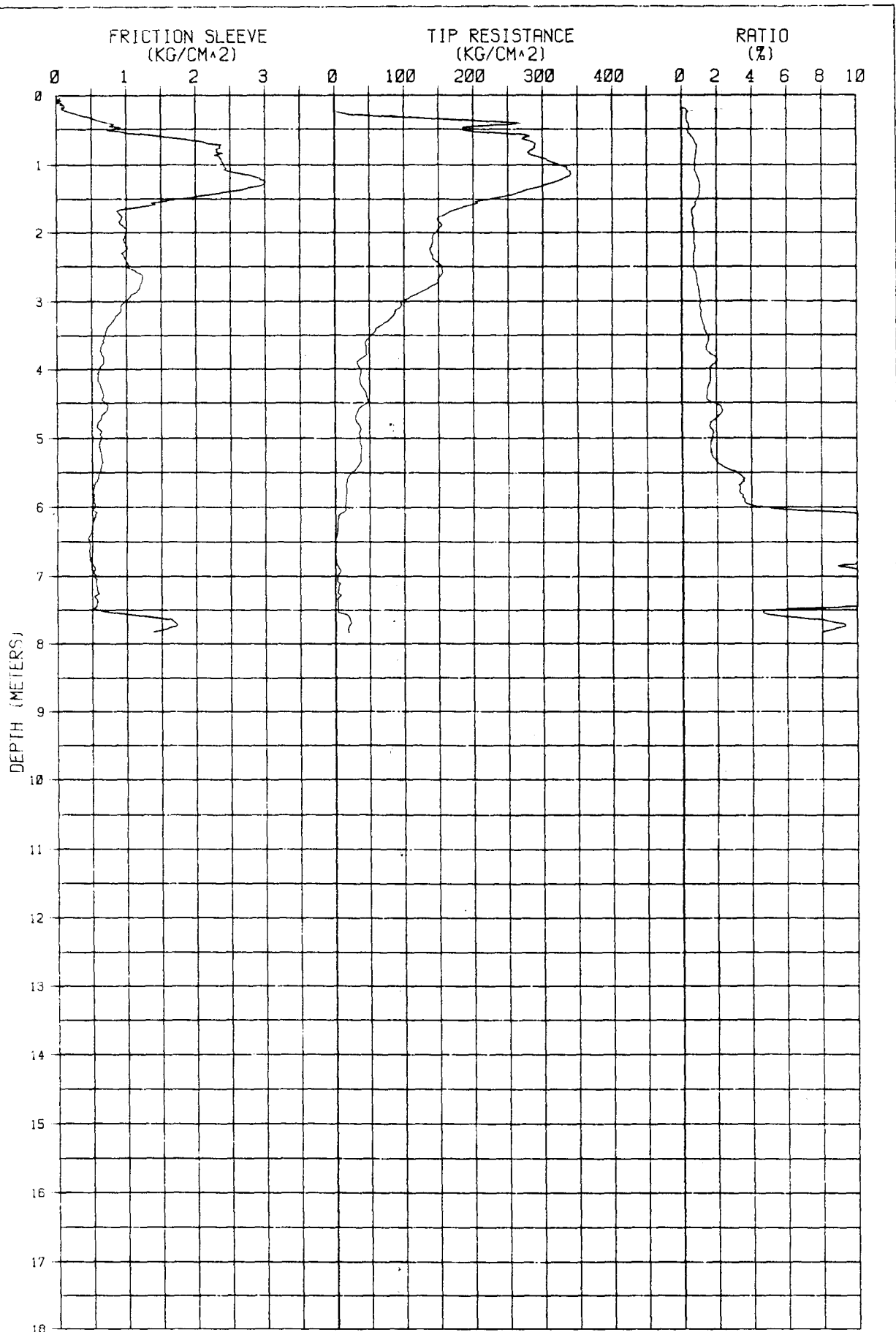
JOB NUMBER: 83-1029

CPT NUMBER: 17/1A

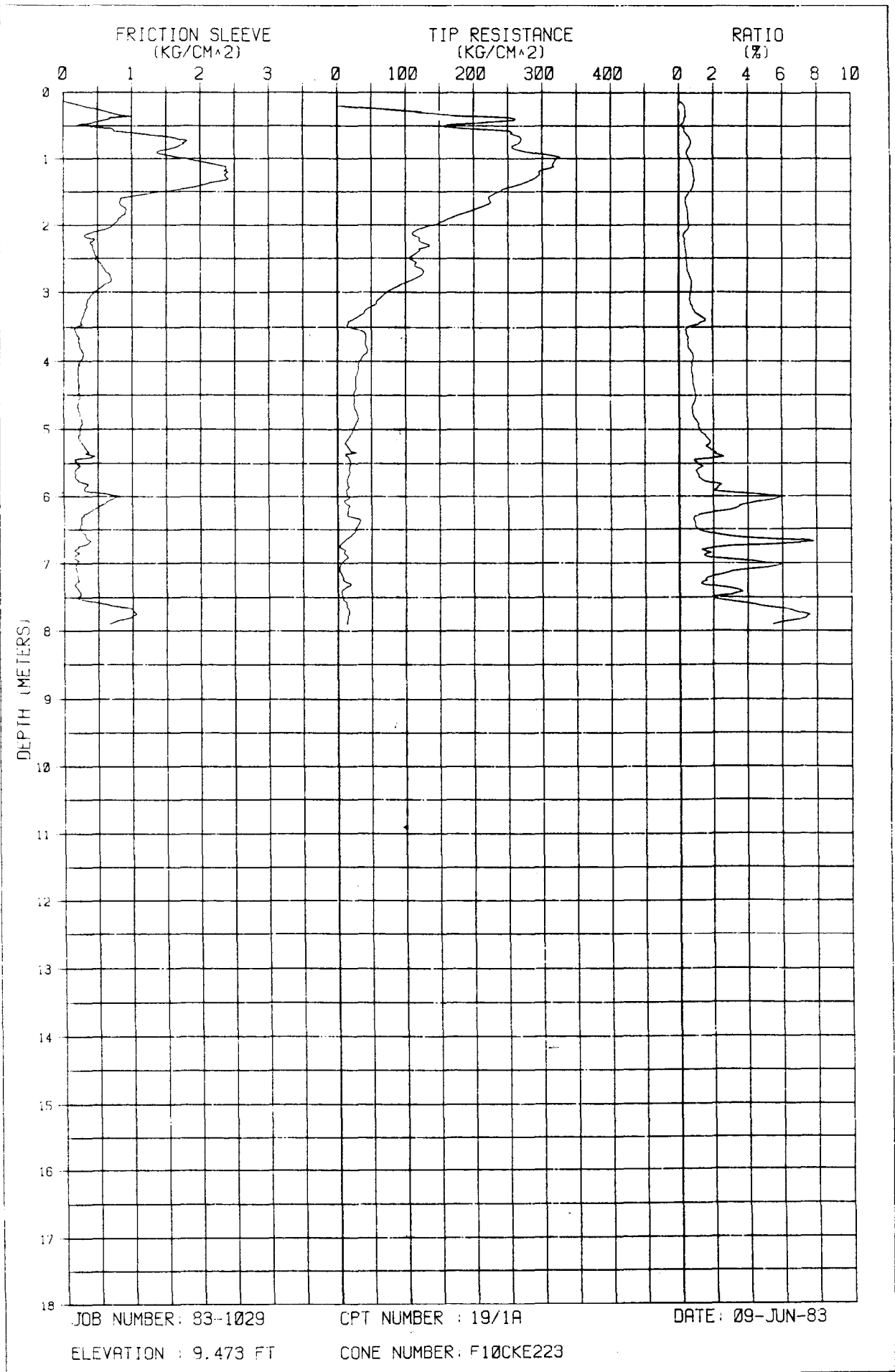
DATE: 09-JUN-83

ELEVATION: 9.473 FT

CONE NUMBER: F10CKE223



JOB NUMBER : 83-1029      CPT NUMBER : 18/1A      DATE : 09-JUN-83  
 ELEVATION : 9.473 FT      CONE NUMBER : F10CKE223



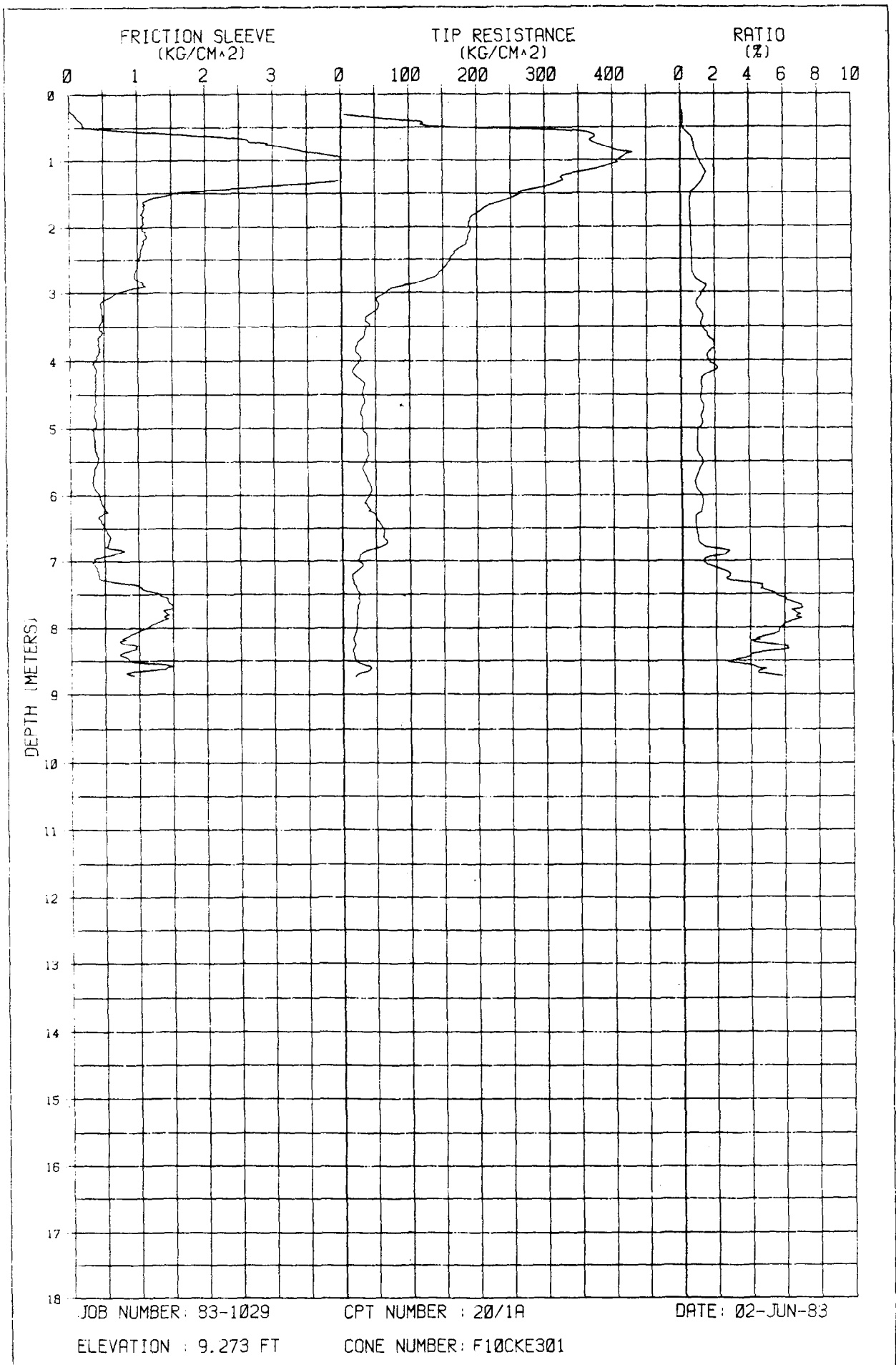
JOB NUMBER : 83-1029

CPT NUMBER : 19/1A

DATE : 09-JUN-83

ELEVATION : 9.473 FT

CONE NUMBER : F10CKE223



JOB NUMBER: 83-1029

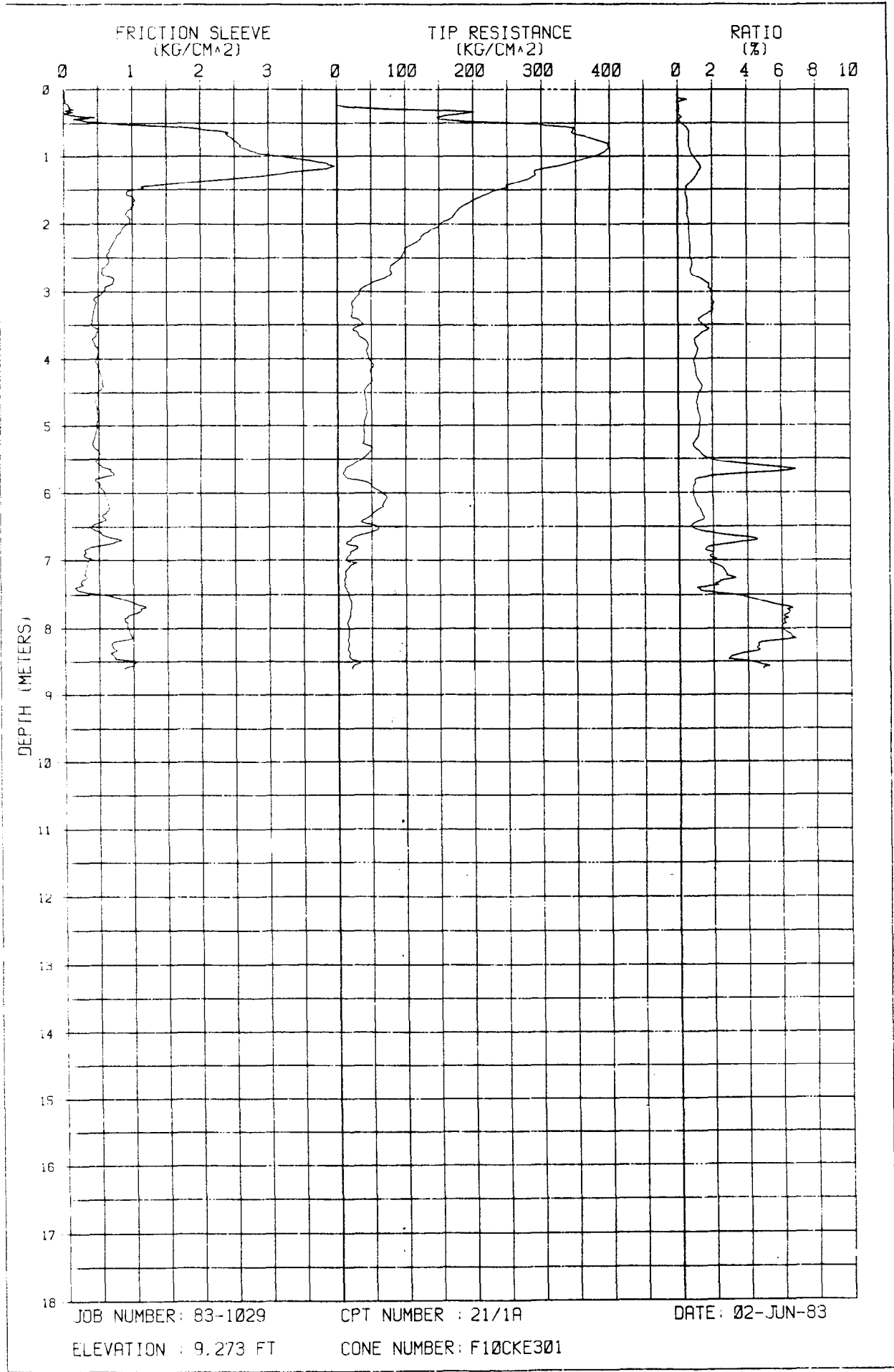
CPT NUMBER: 20/1A

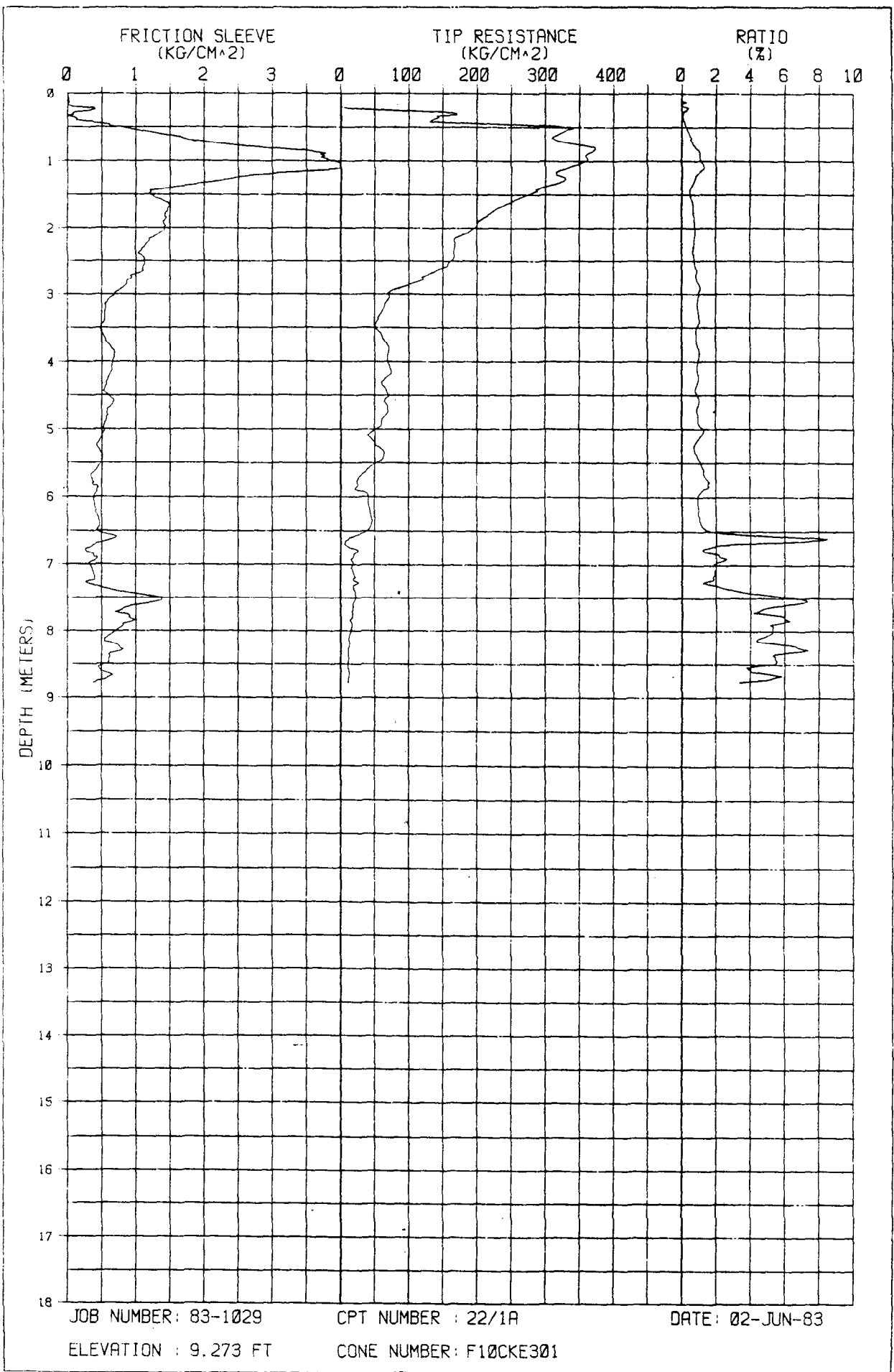
DATE: 02-JUN-83

ELEVATION: 9.273 FT

CONE NUMBER: F10CKE301







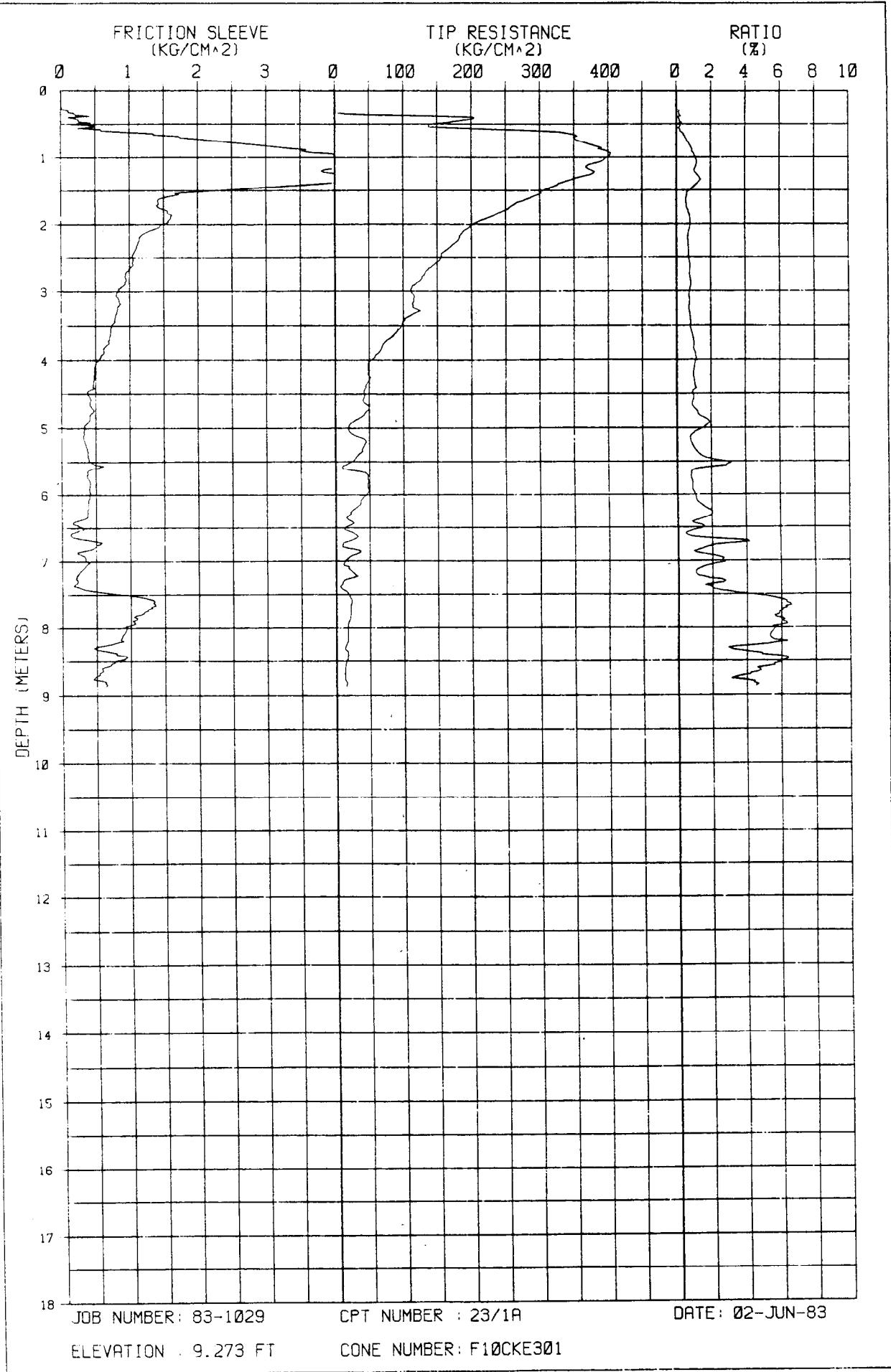
JOB NUMBER : 83-1029

CPT NUMBER : 22/1A

DATE : 02-JUN-83

ELEVATION : 9.273 FT

CONE NUMBER : F10CKE301



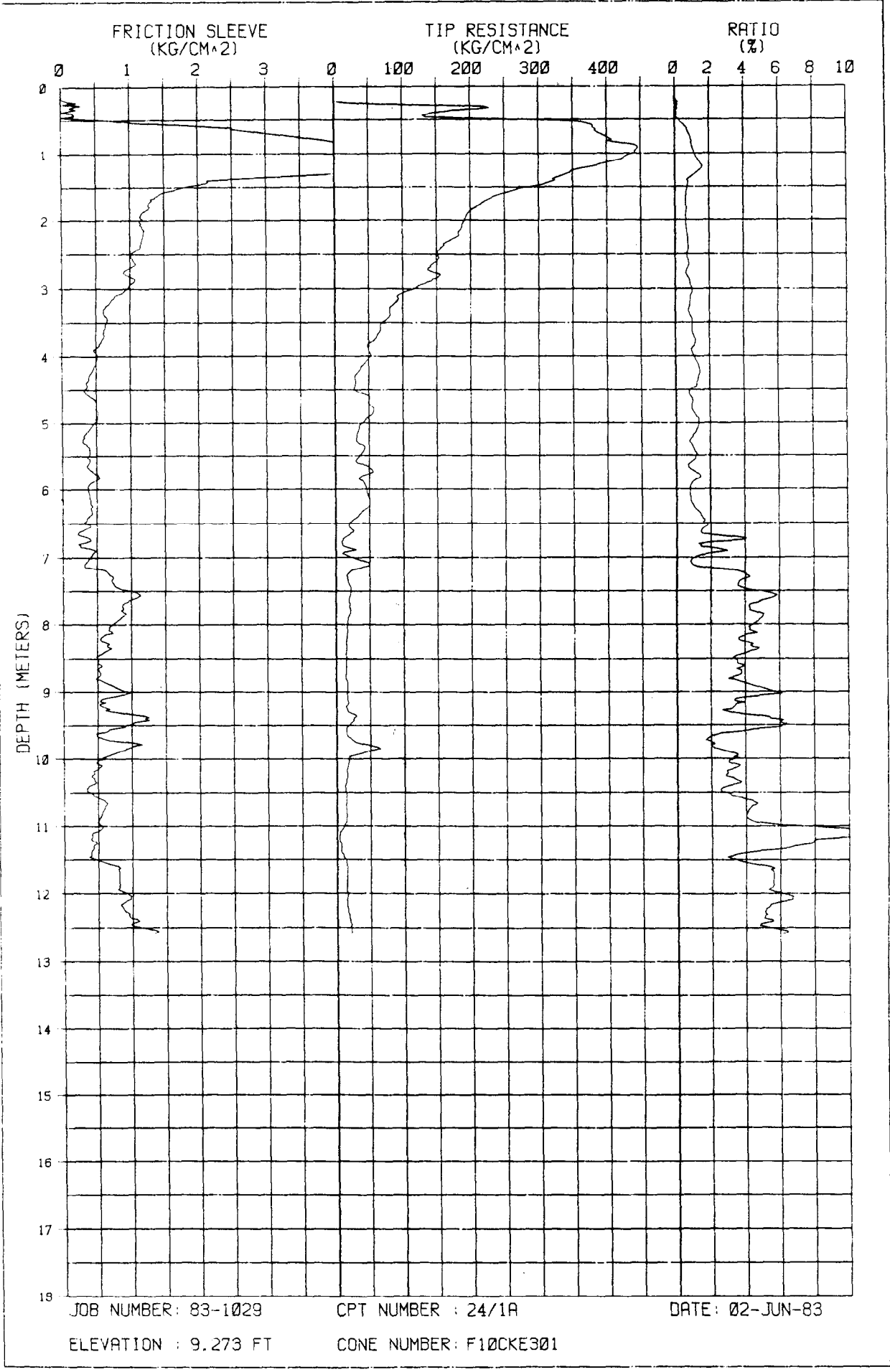
JOB NUMBER: 83-1029

CPT NUMBER : 23/1A

DATE: 02-JUN-83

ELEVATION : 9.273 FT

CONE NUMBER: F10CKE301



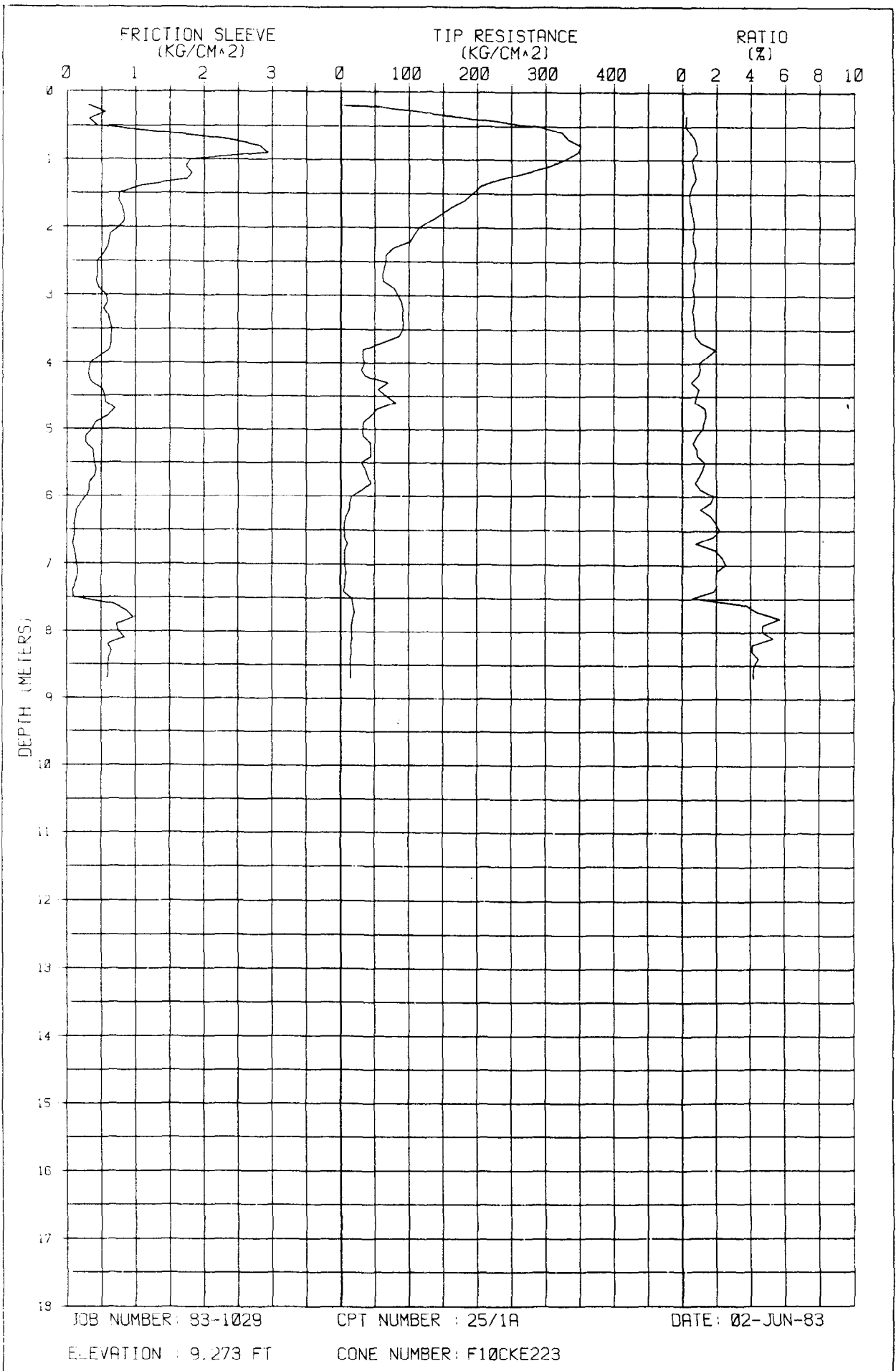
JOB NUMBER : 83-1029

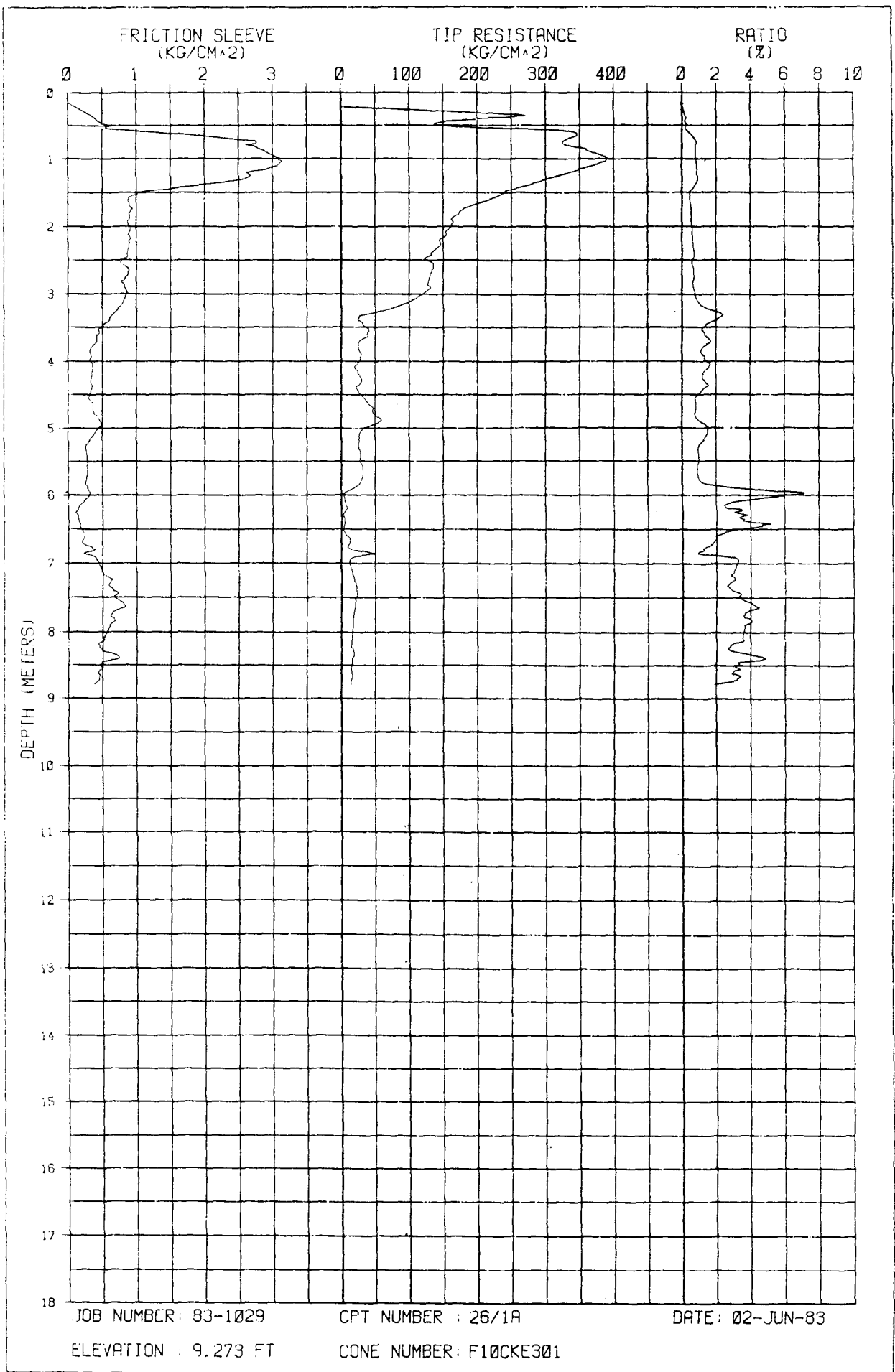
CPT NUMBER : 24/1A

DATE : 02-JUN-83

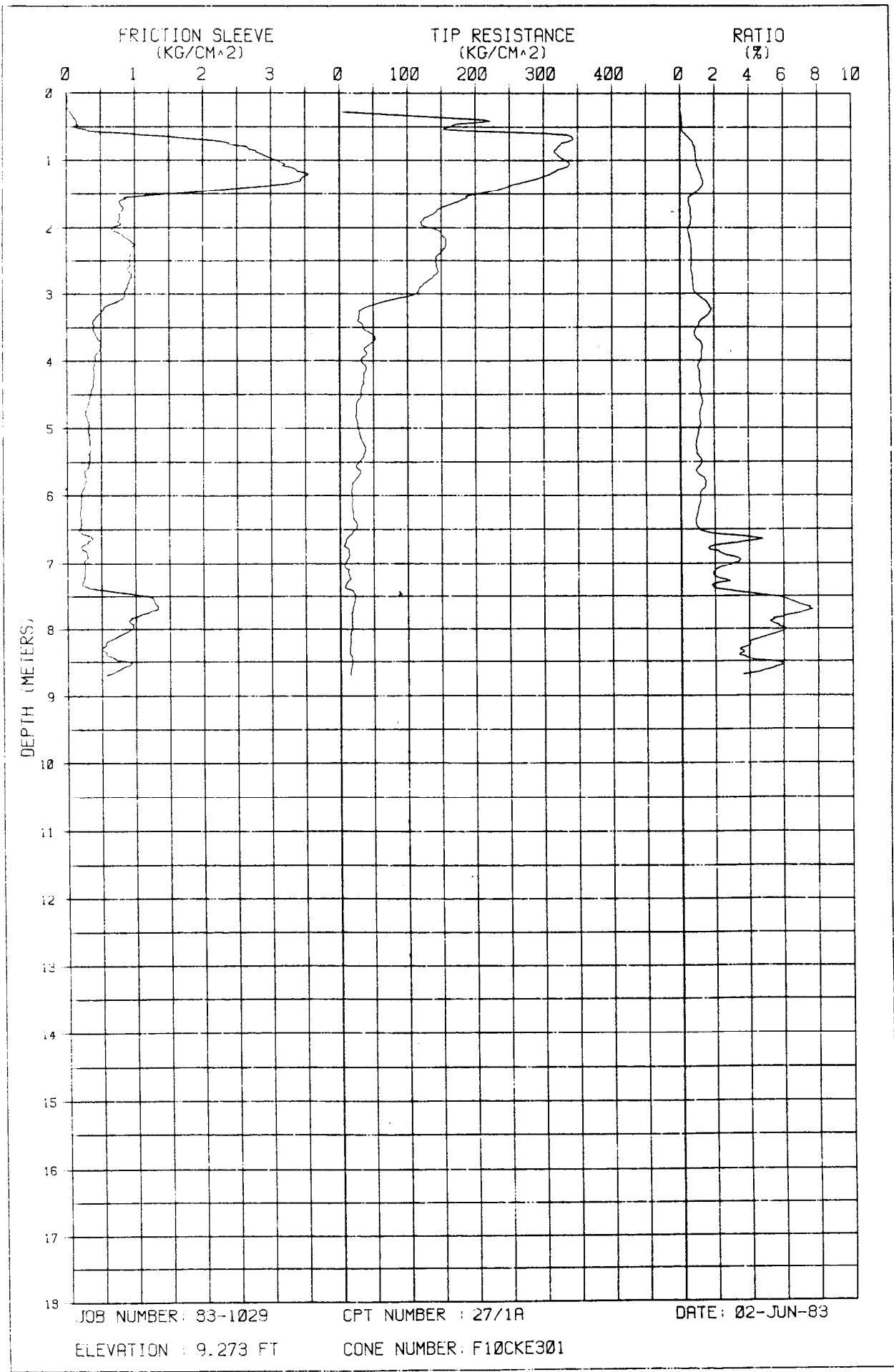
ELEVATION : 9.273 FT

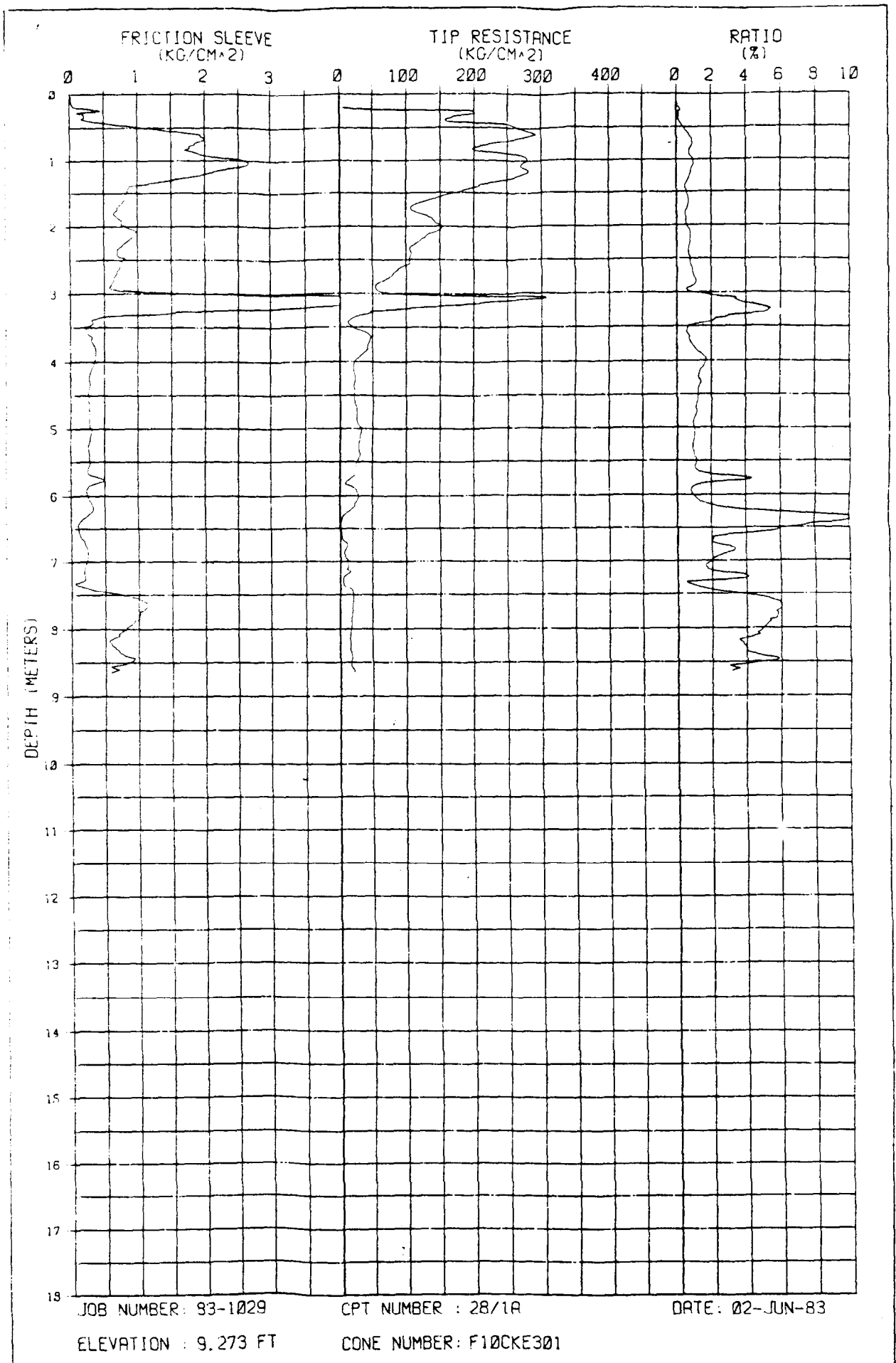
CONE NUMBER : F10CKE301



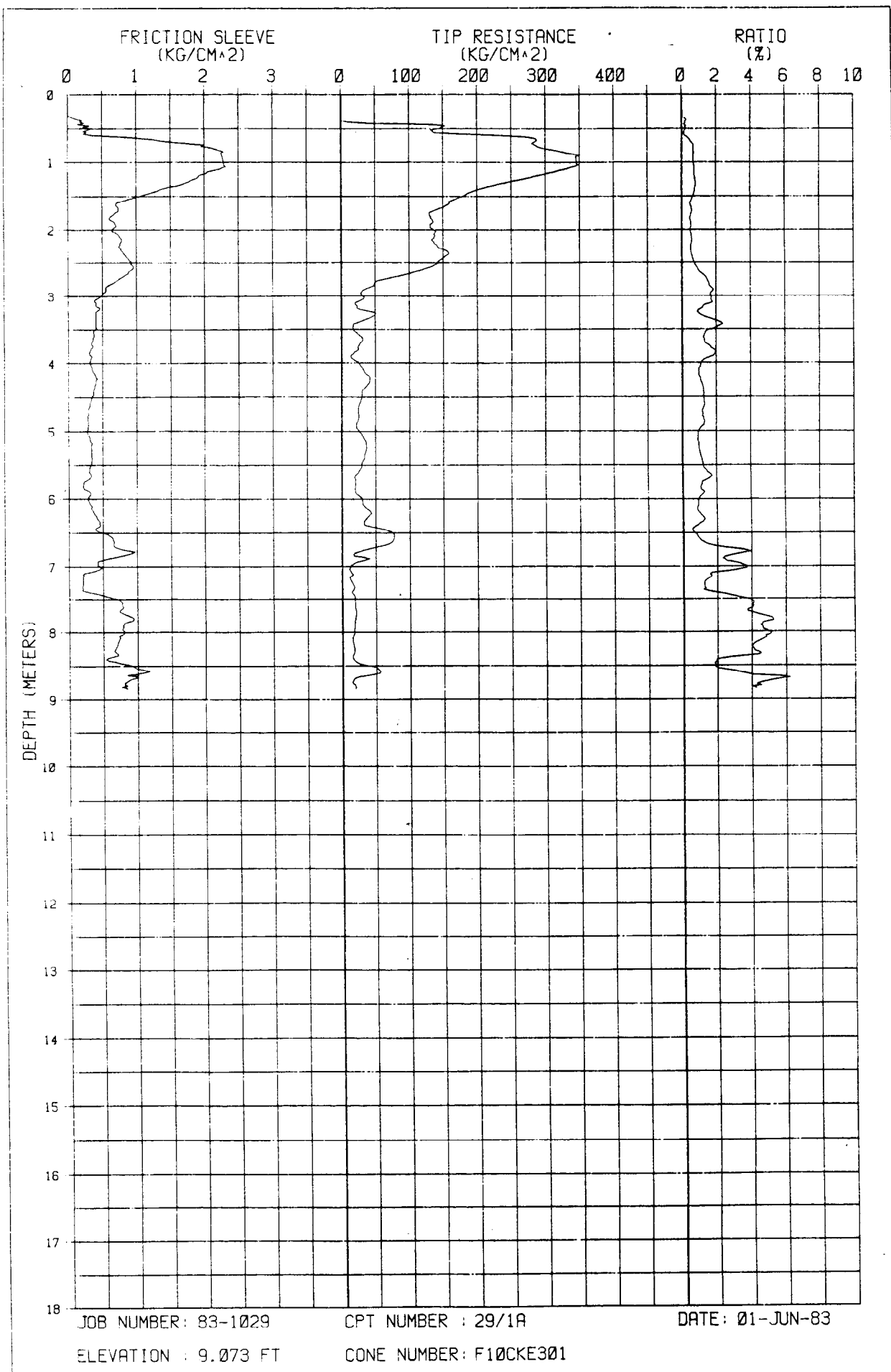


JOB NUMBER : 83-1029      CPT NUMBER : 26/1A      DATE : 02-JUN-83  
 ELEVATION : 9.273 FT      CONE NUMBER : F10CKE301









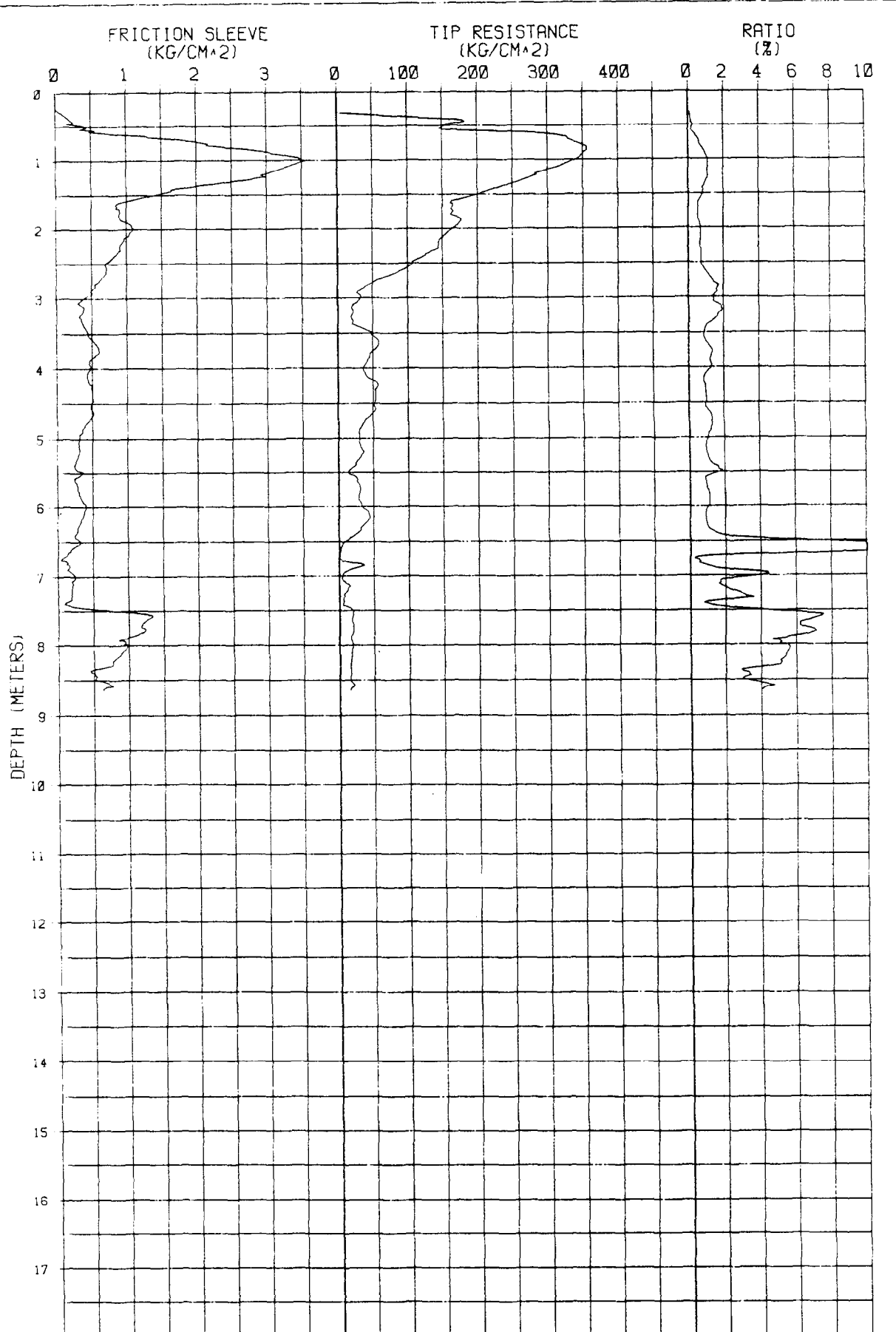
JOB NUMBER: 83-1029

CPT NUMBER: 29/1A

DATE: 01-JUN-83

ELEVATION: 9.073 FT

CONE NUMBER: F10CKE301



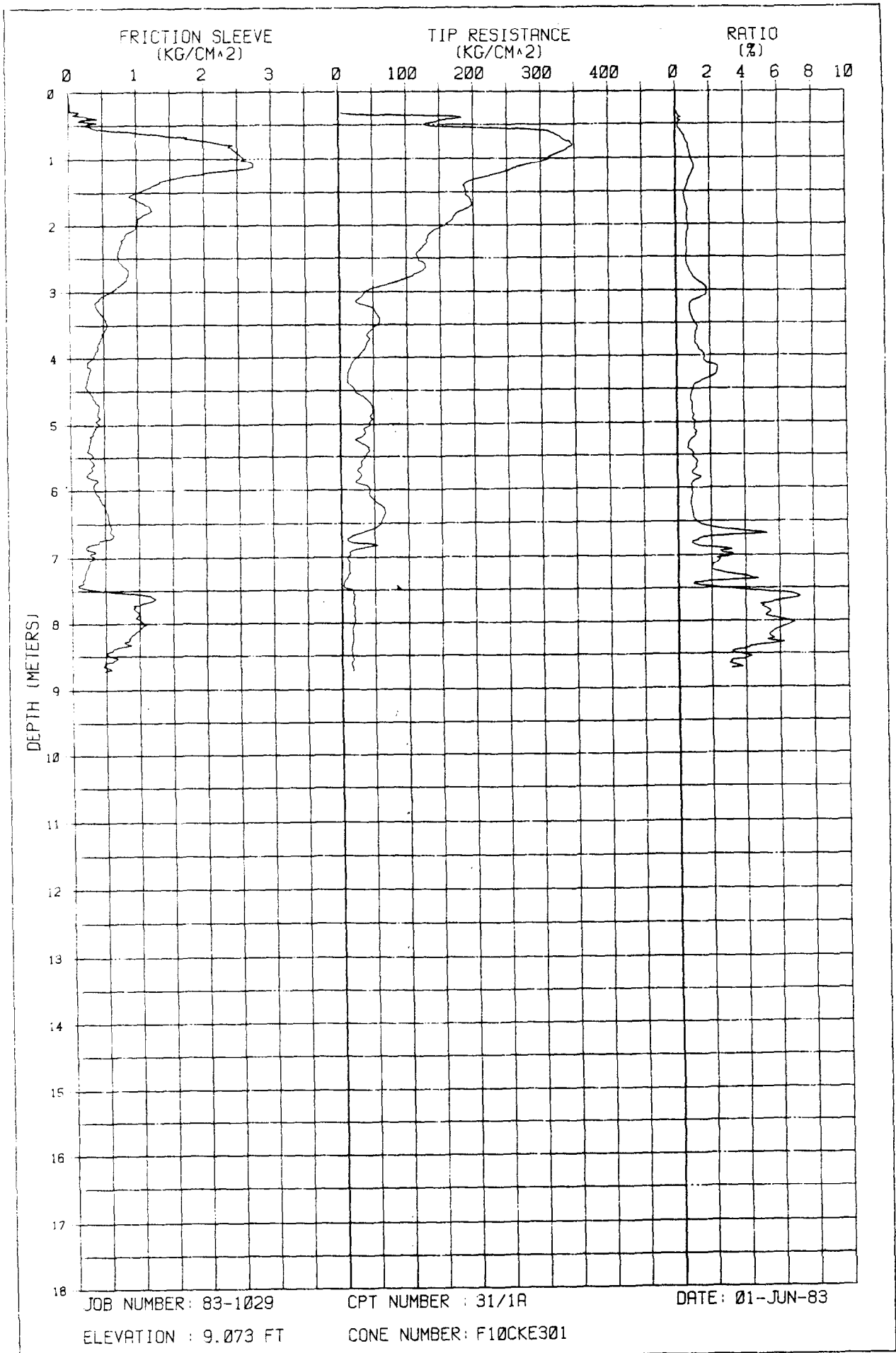
JOB NUMBER : 83-1029

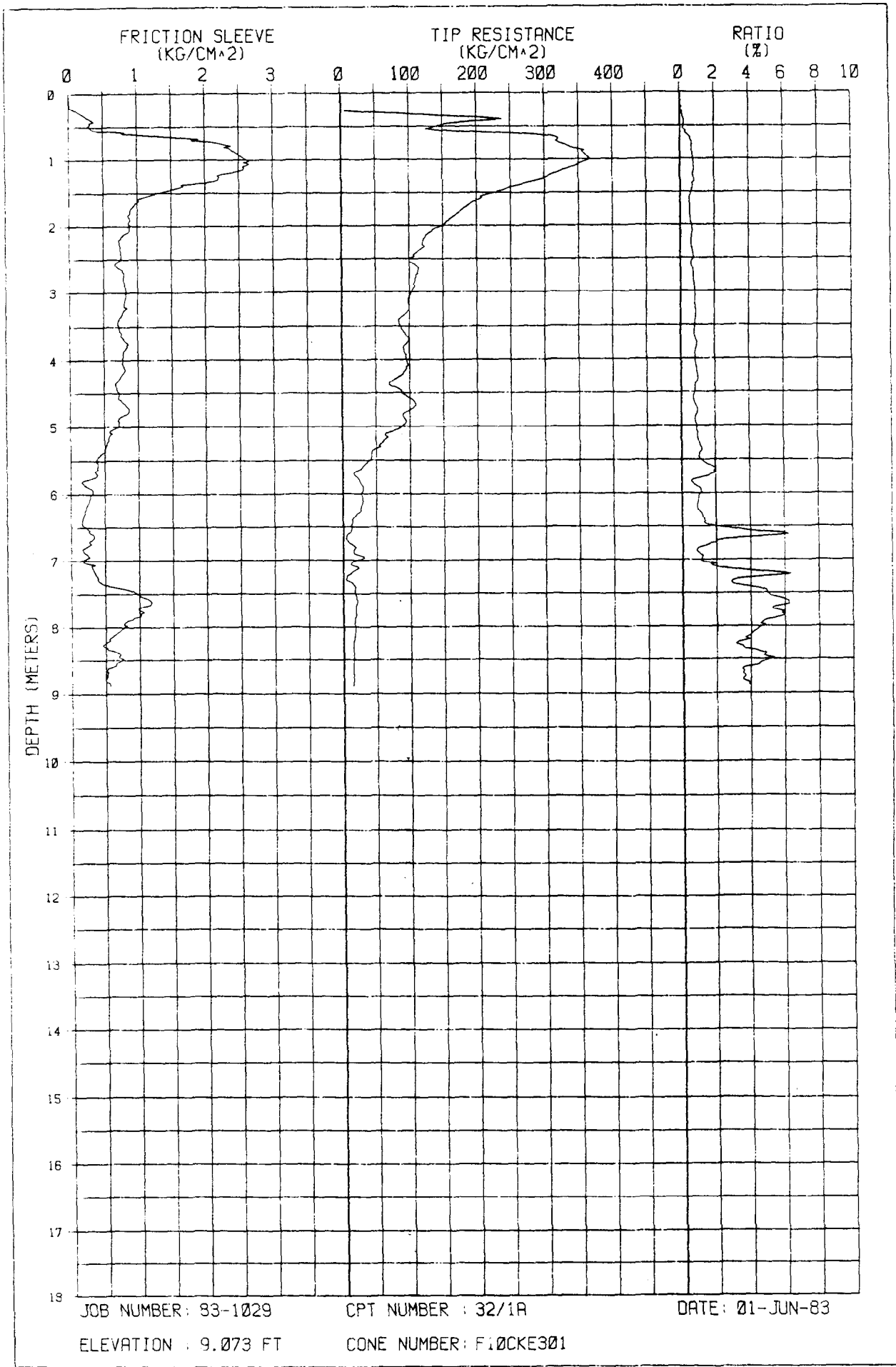
CPT NUMBER : 30/1A

DATE : 01-JUN-83

ELEVATION : 9.073 FT

CONE NUMBER : F10CKE301





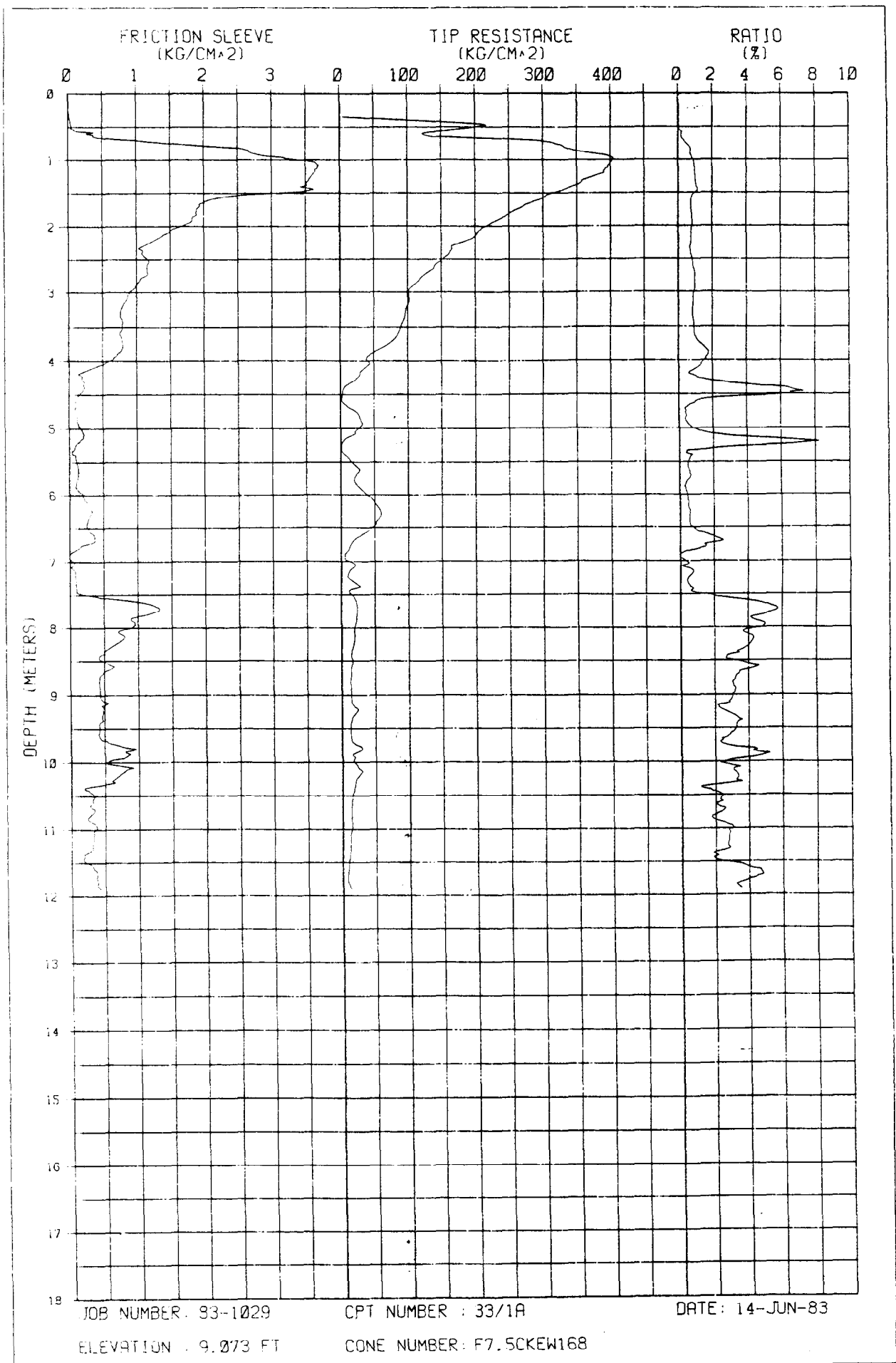
JOB NUMBER: 83-1029

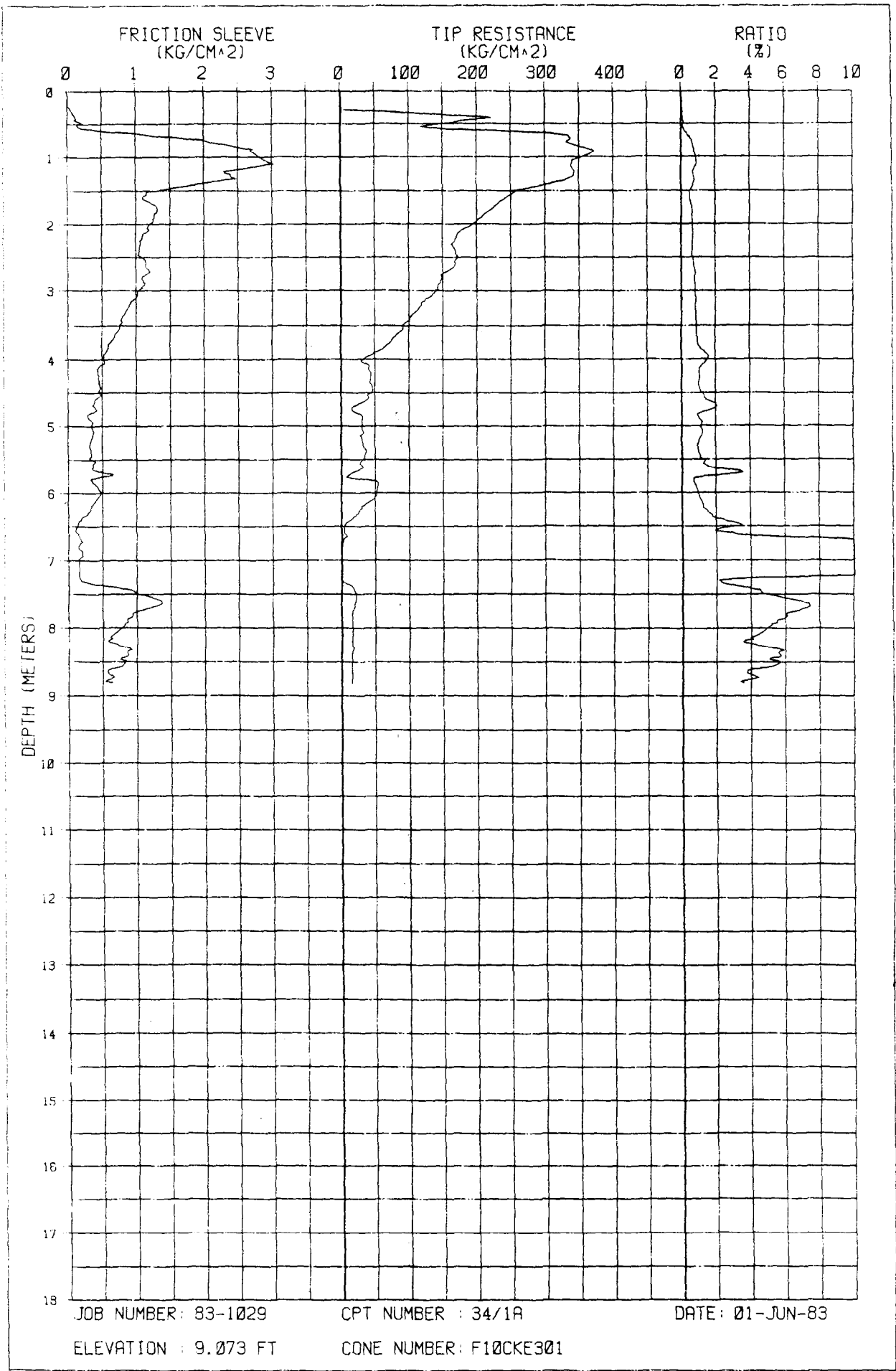
CPT NUMBER: 32/1A

DATE: 01-JUN-83

ELEVATION: 9.073 FT

CONE NUMBER: F10CKE301





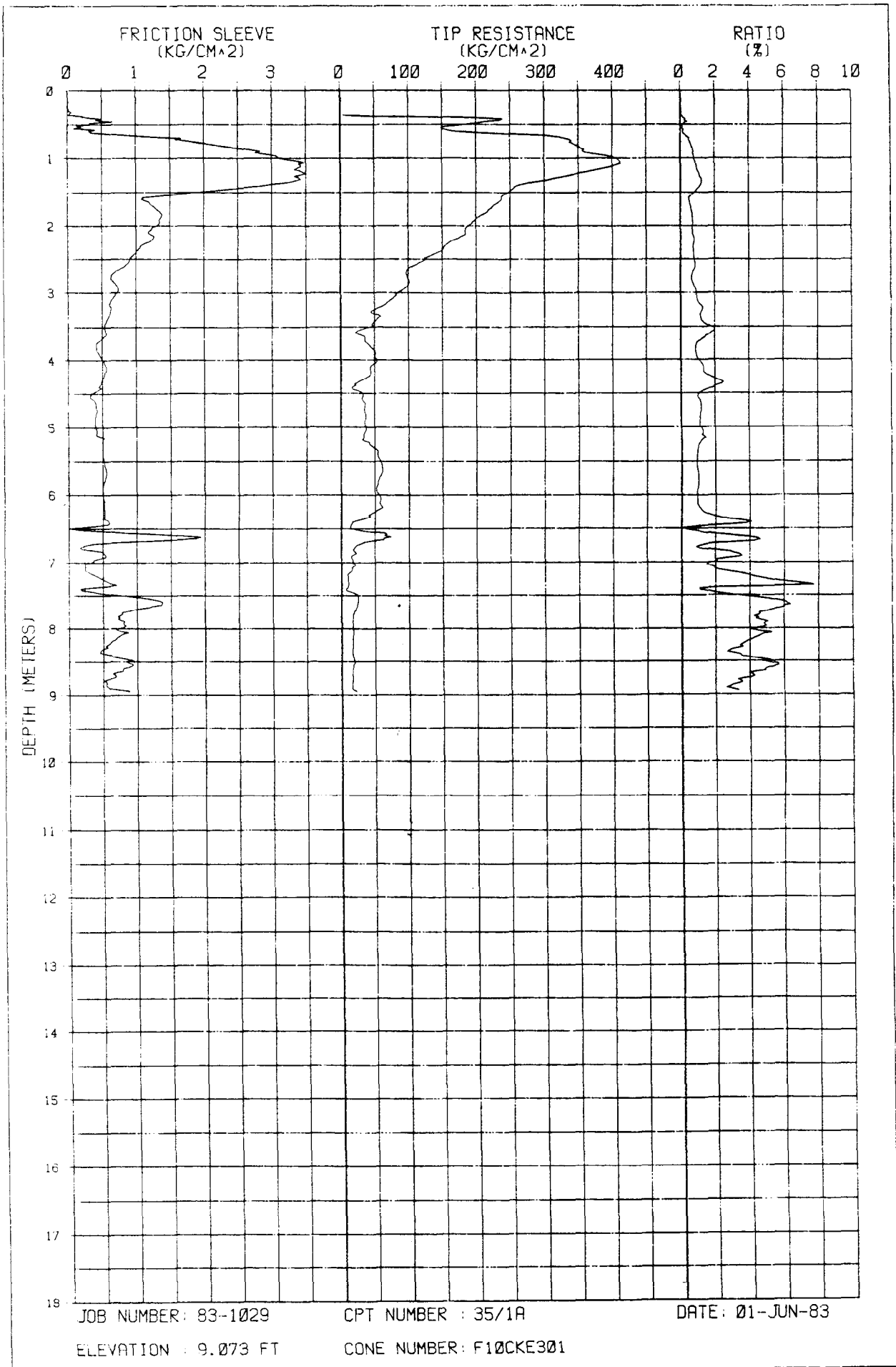
JOB NUMBER : 83-1029

CPT NUMBER : 34/1A

DATE : 01-JUN-83

ELEVATION : 9.073 FT

CONE NUMBER : F10CKE301



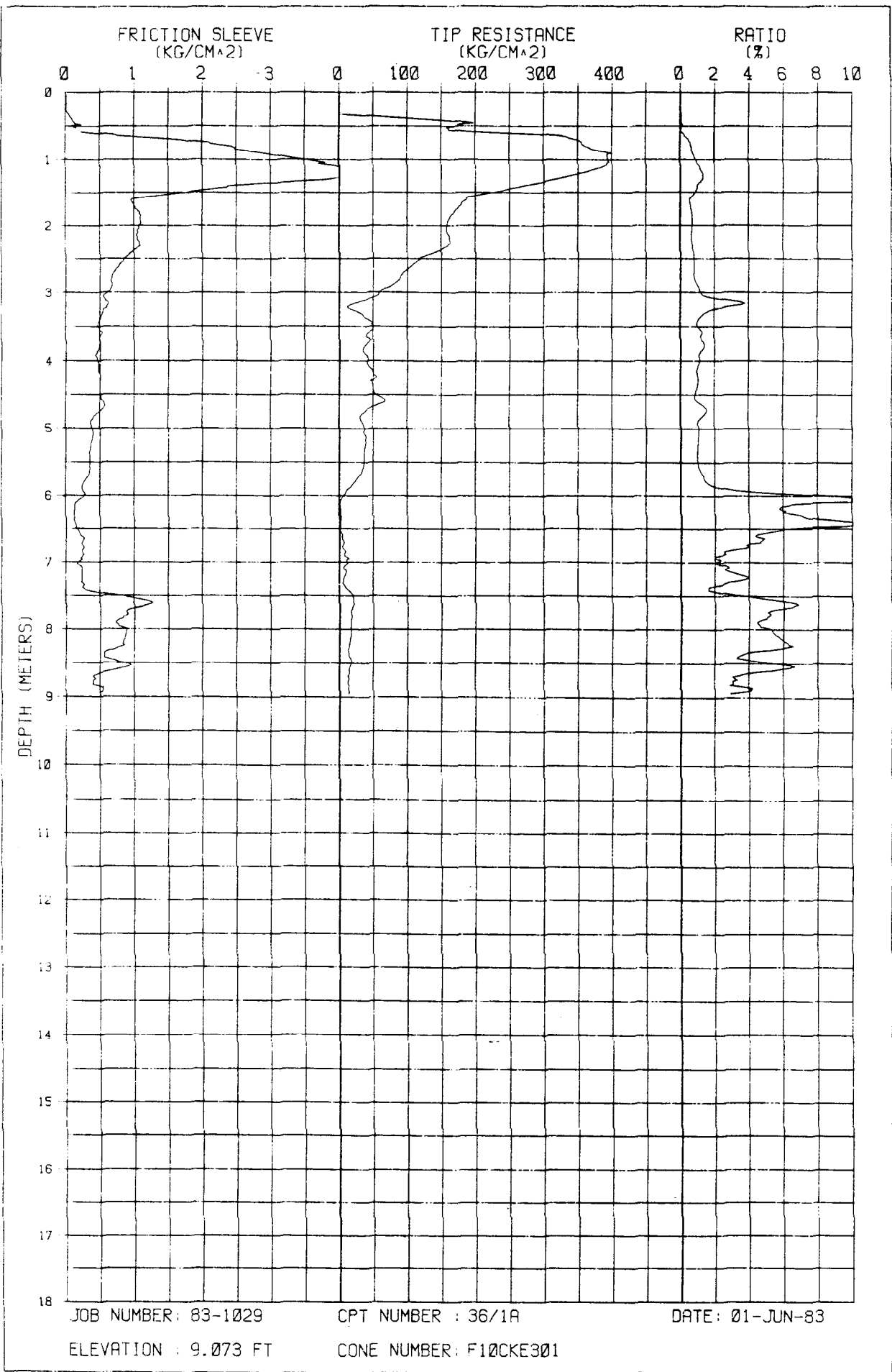
JOB NUMBER : 83-1029

CPT NUMBER : 35/1A

DATE : 01-JUN-83

ELEVATION : 9.073 FT

CONE NUMBER : F10CKE301



JOB NUMBER: 83-1029

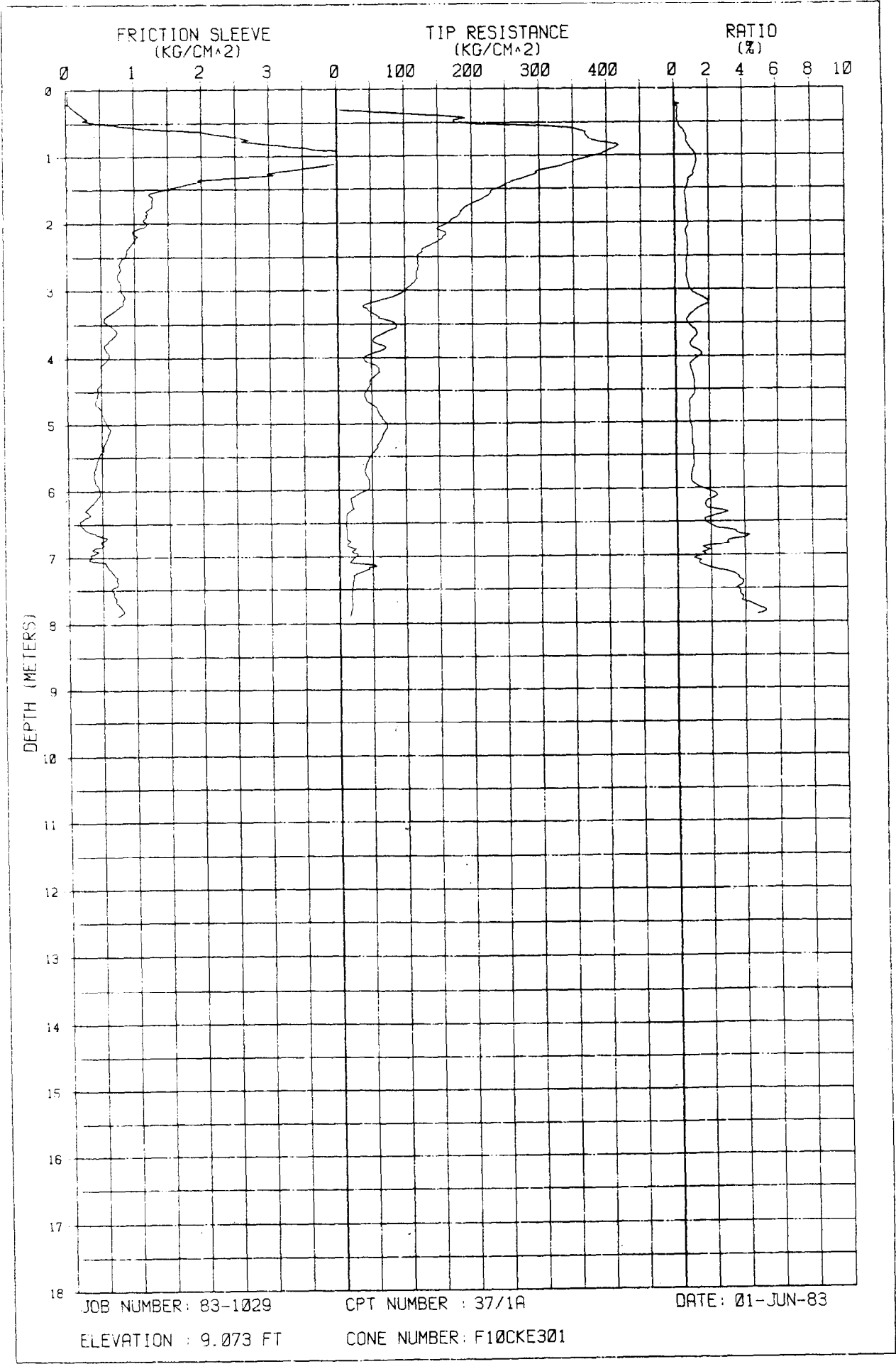
CPT NUMBER : 36/1A

DATE: 01-JUN-83

ELEVATION : 9.073 FT

CONE NUMBER: F10CKE301





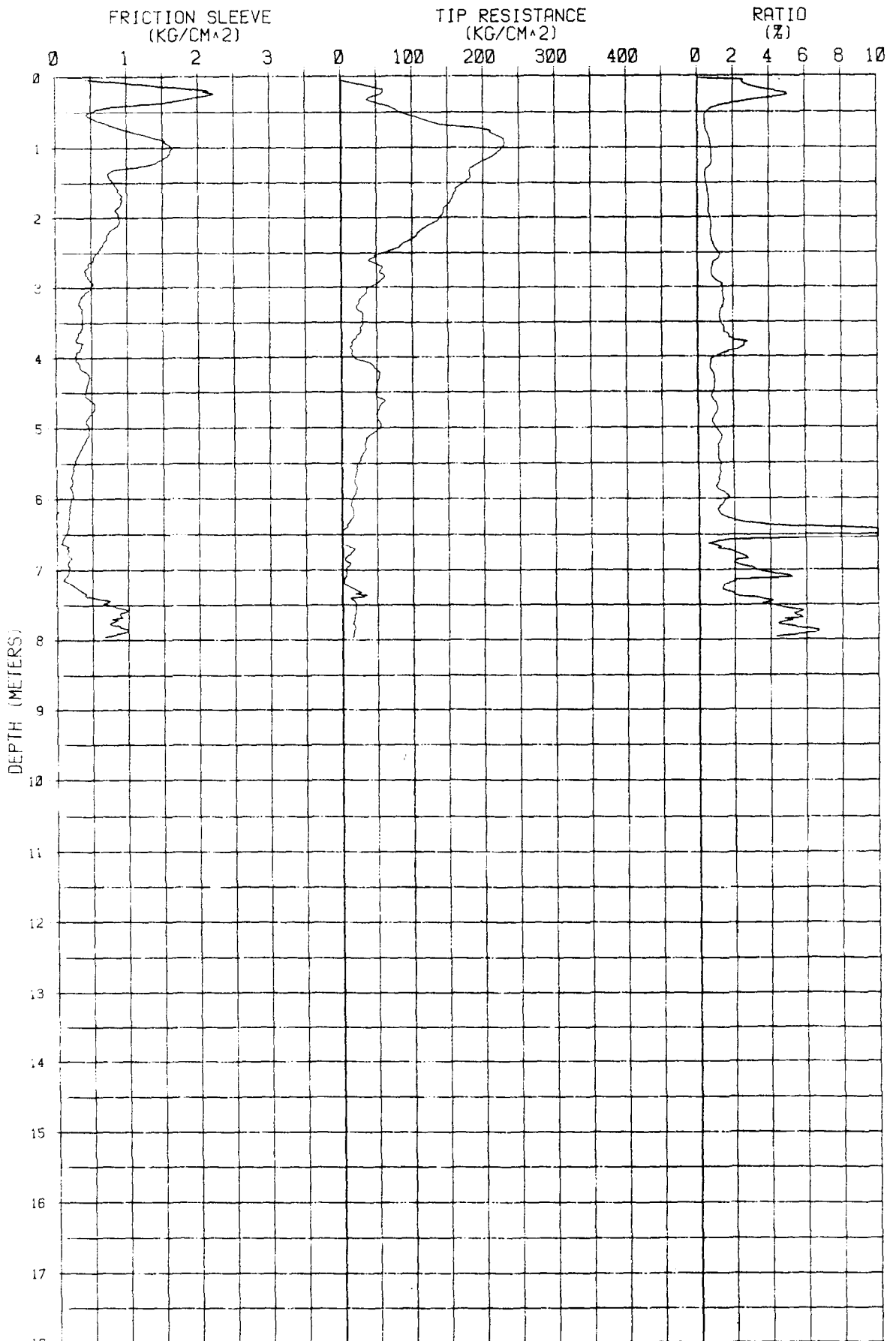
JOB NUMBER: 83-1029

CPT NUMBER: 37/1A

DATE: 01-JUN-83

ELEVATION: 9.073 FT

CONE NUMBER: F10CKE301



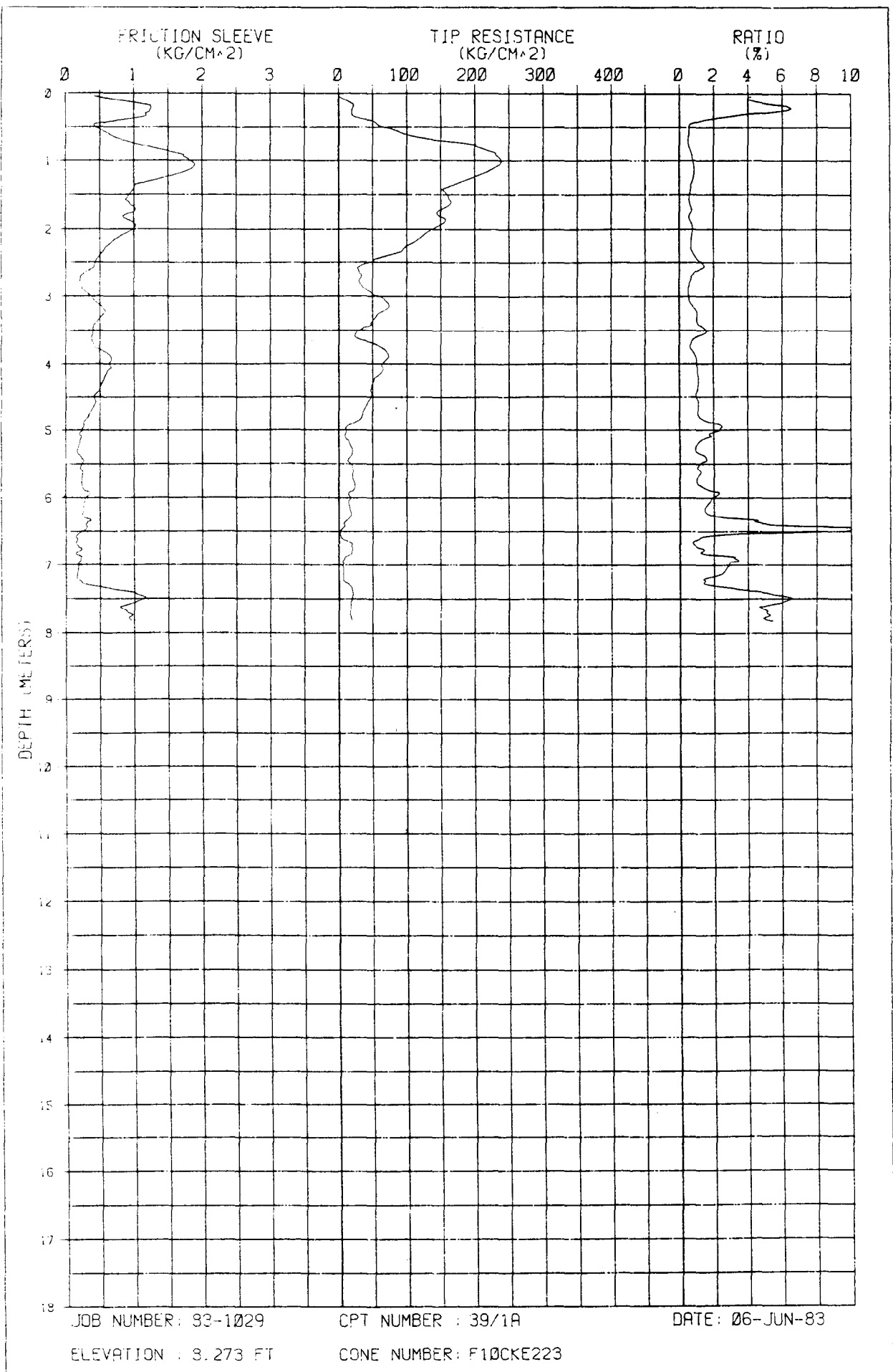
JOB NUMBER : 83-1029

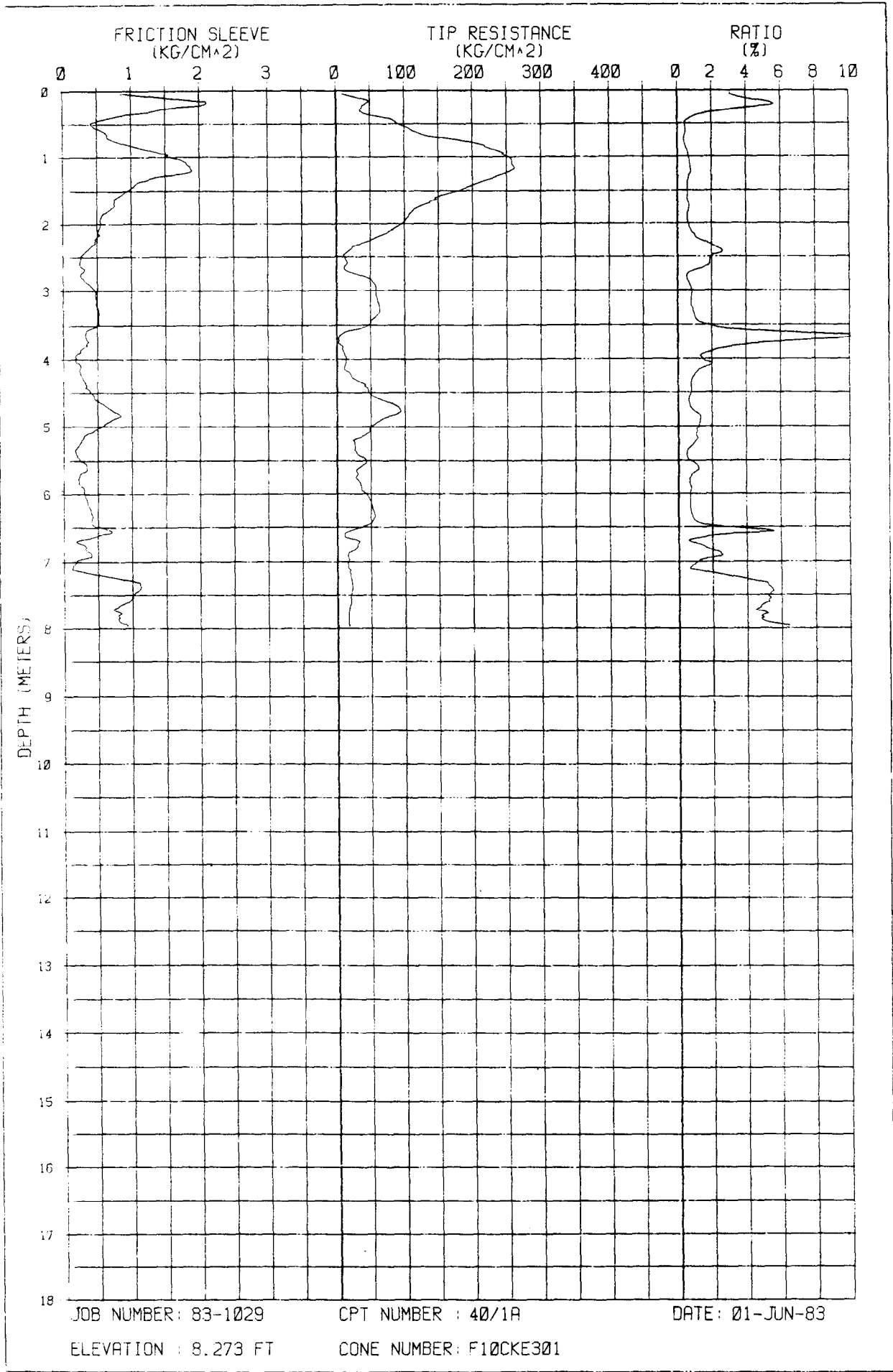
CPT NUMBER : 38/1A

DATE : 01-JUN-83

ELEVATION : 9.273 FT

CONE NUMBER : F10CKE301





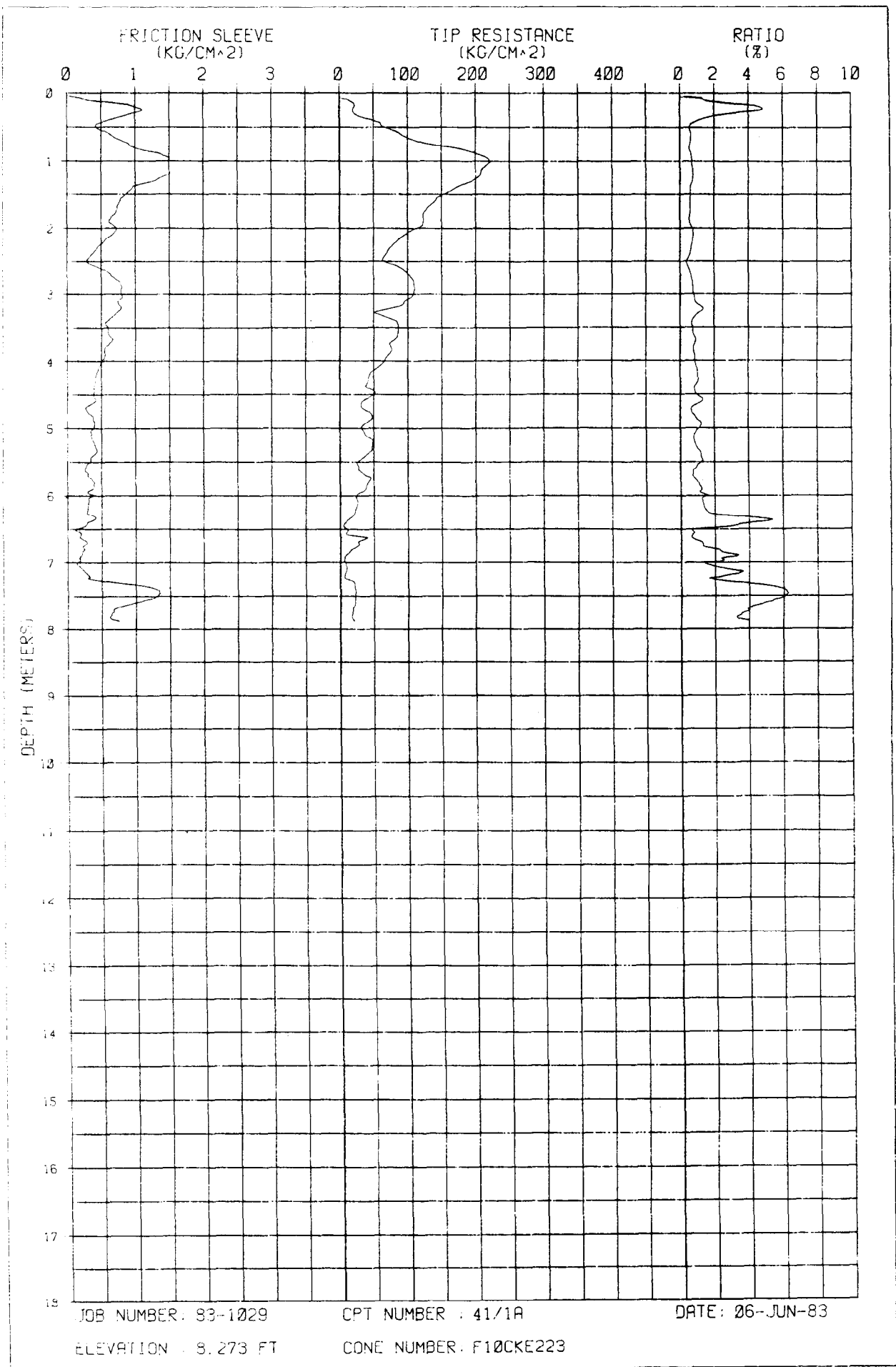
JOB NUMBER: 83-1029

CPT NUMBER : 40/1A

DATE: 01-JUN-83

ELEVATION : 8.273 FT

CONE NUMBER: F10CKE301



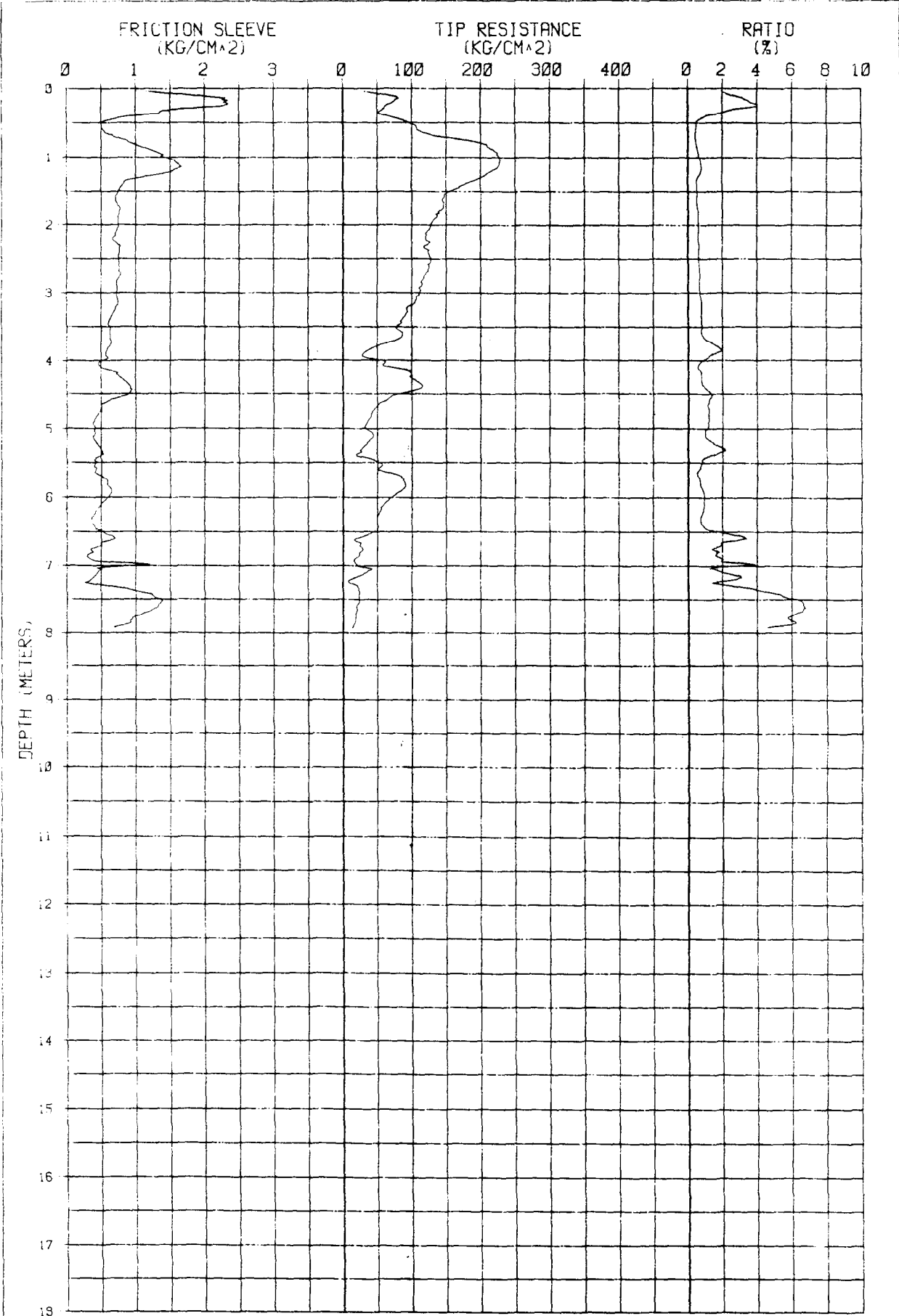
JOB NUMBER : 93-1029

CPT NUMBER : 41/1A

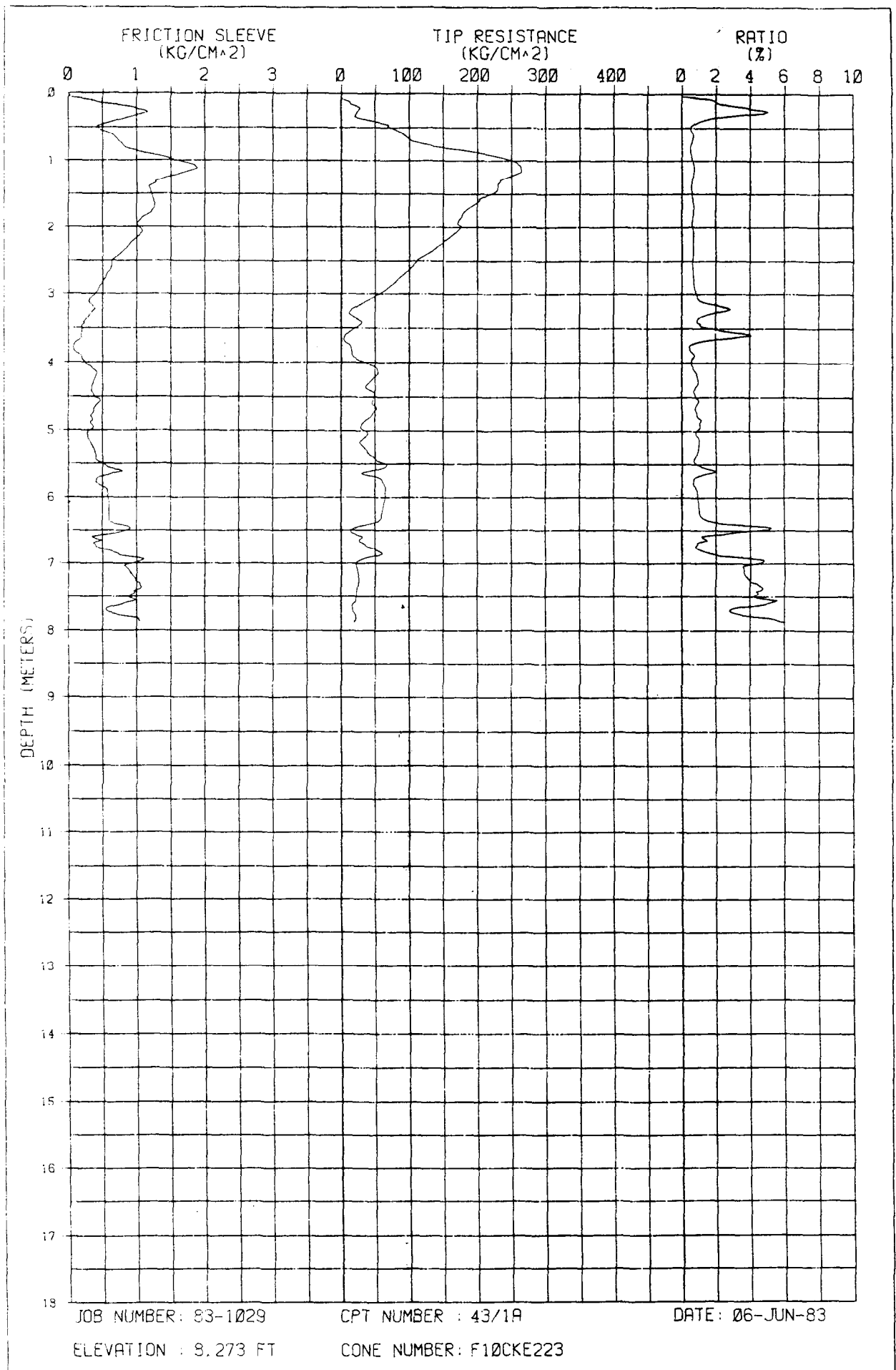
DATE : 06-JUN-83

ELEVATION : 8.273 FT

CONE NUMBER : F10CKE223



JOB NUMBER : 83-1029      CPT NUMBER : 42/1A      DATE : 01-JUN-83  
 ELEVATION : 8.273 FT      CONE NUMBER : F10CKE223



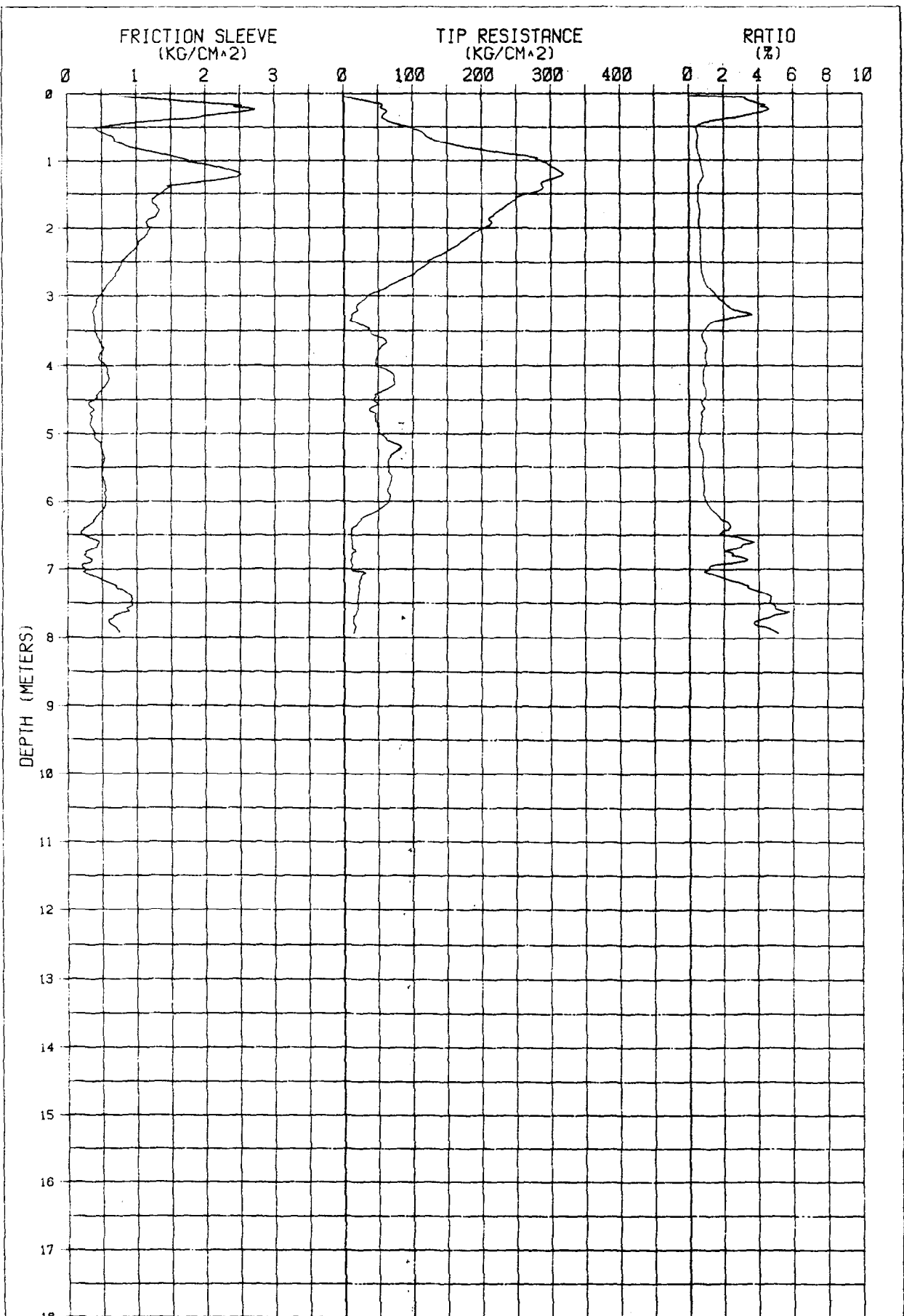
JOB NUMBER : 83-1029

CPT NUMBER : 43/1A

DATE : 06-JUN-83

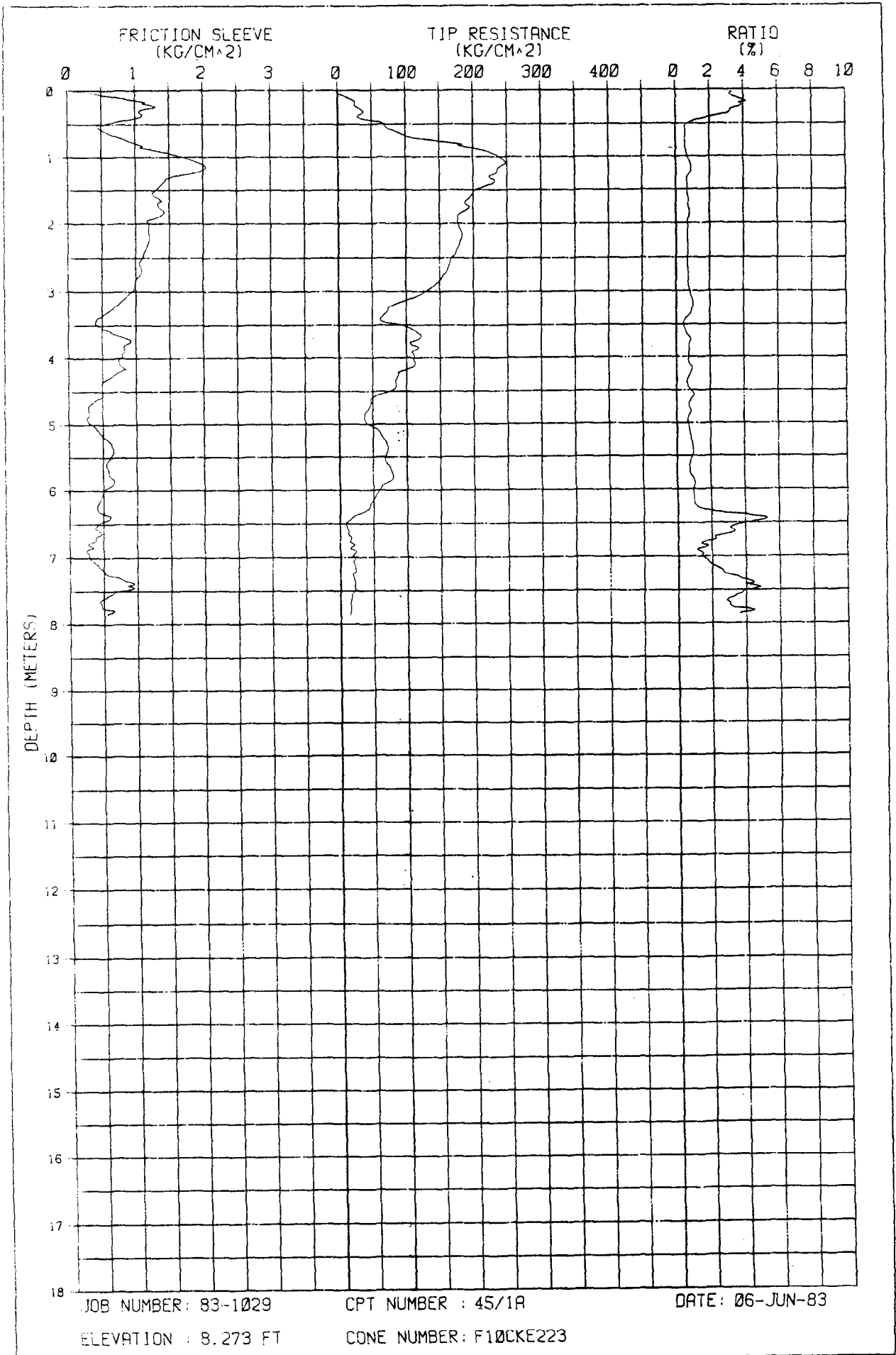
ELEVATION : 8.273 FT

CONE NUMBER : F10CKE223



JOB NUMBER : 83-1029      CPT NUMBER : 44/1A      DATE : 01-JUN-83  
 ELEVATION : 8.273 FT      CONE NUMBER : F10CKE301





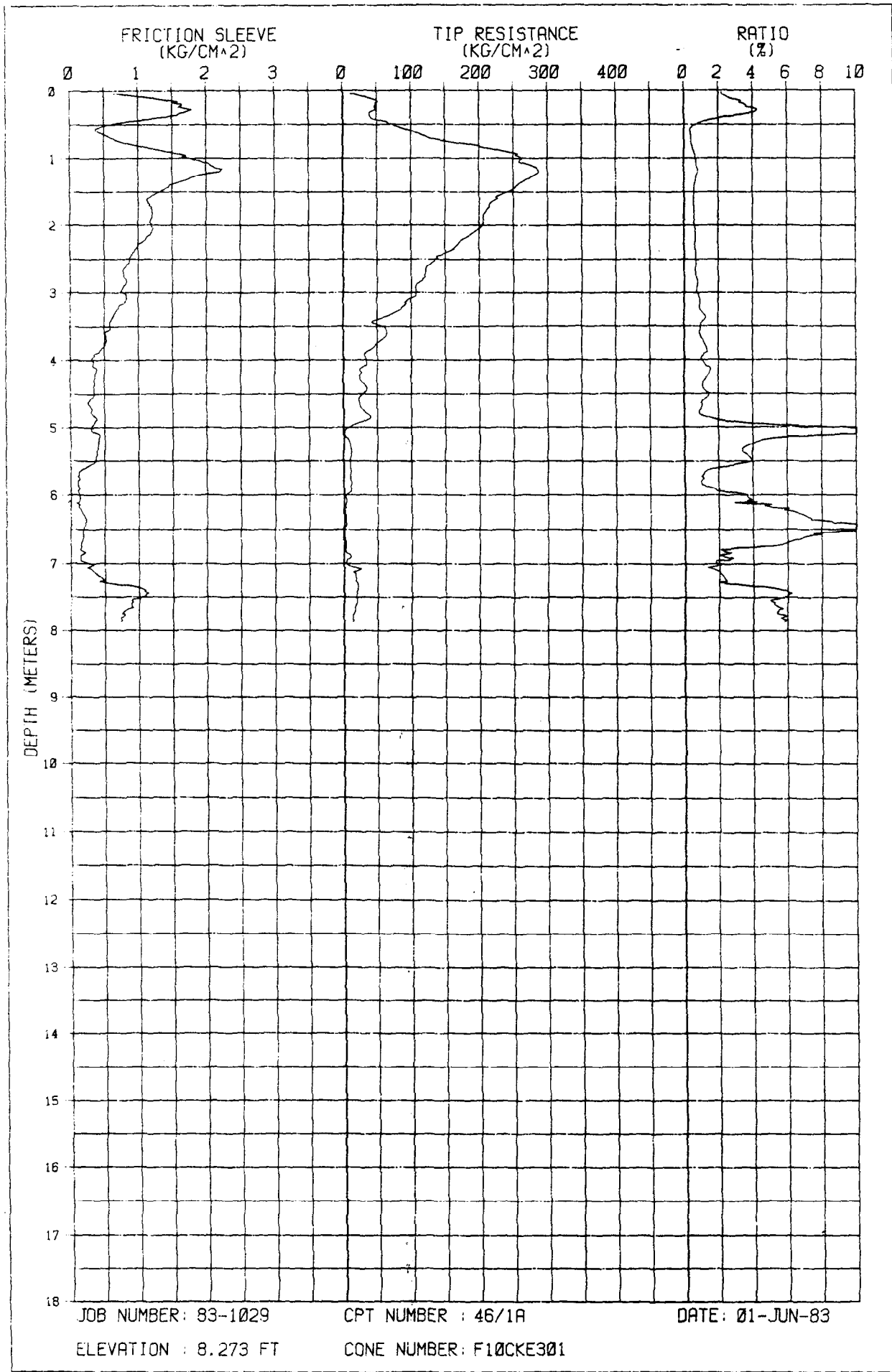
JOB NUMBER : 83-1029

CPT NUMBER : 45/1A

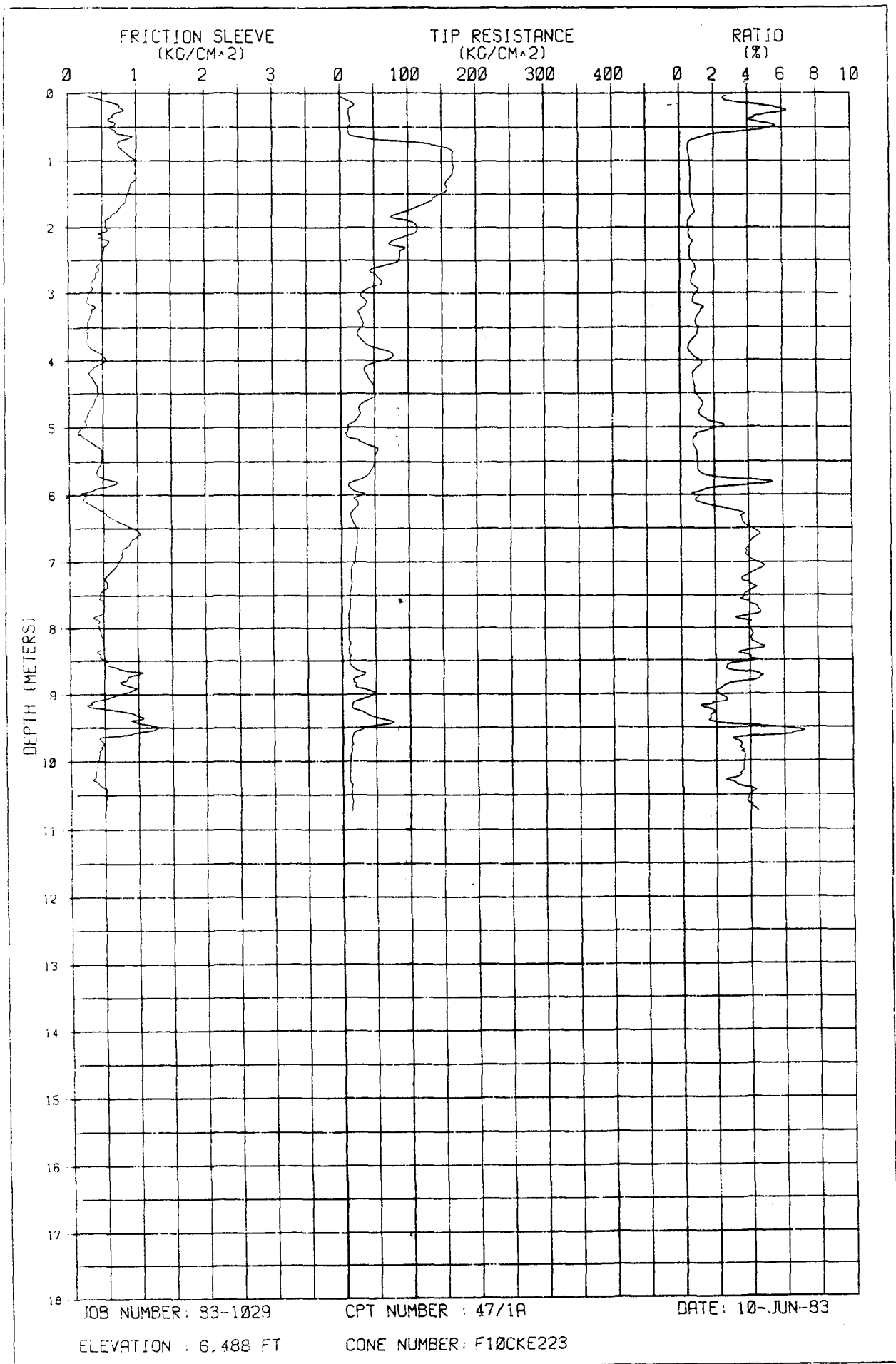
DATE : 06-JUN-83

ELEVATION : 8.273 FT

CONE NUMBER : F10CKE223



JOB NUMBER: 83-1029      CPT NUMBER: 46/1A      DATE: 01-JUN-83  
 ELEVATION: 8.273 FT      CONE NUMBER: F10CKE301



JOB NUMBER : 83-1029

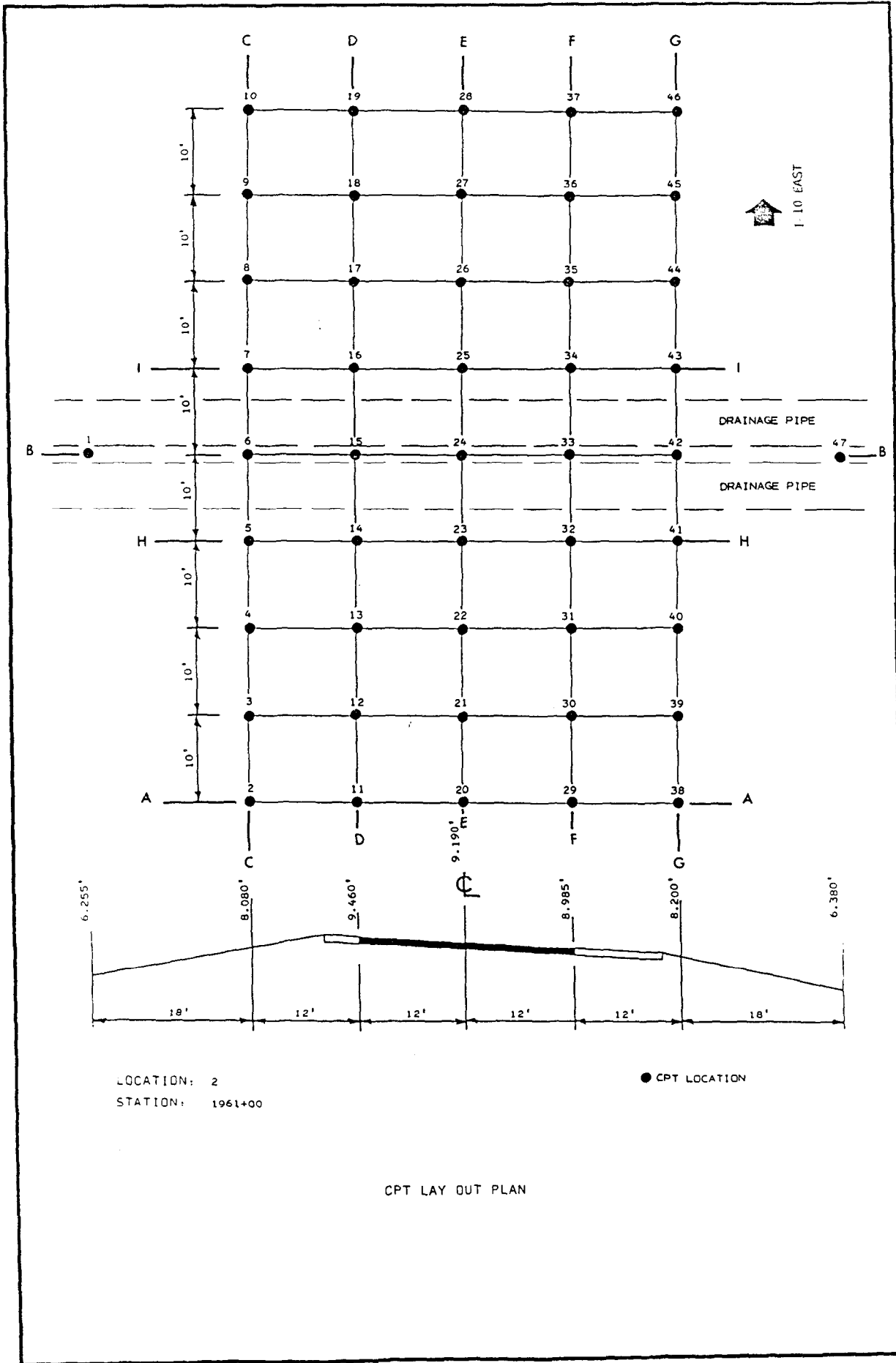
CPT NUMBER : 47/1A

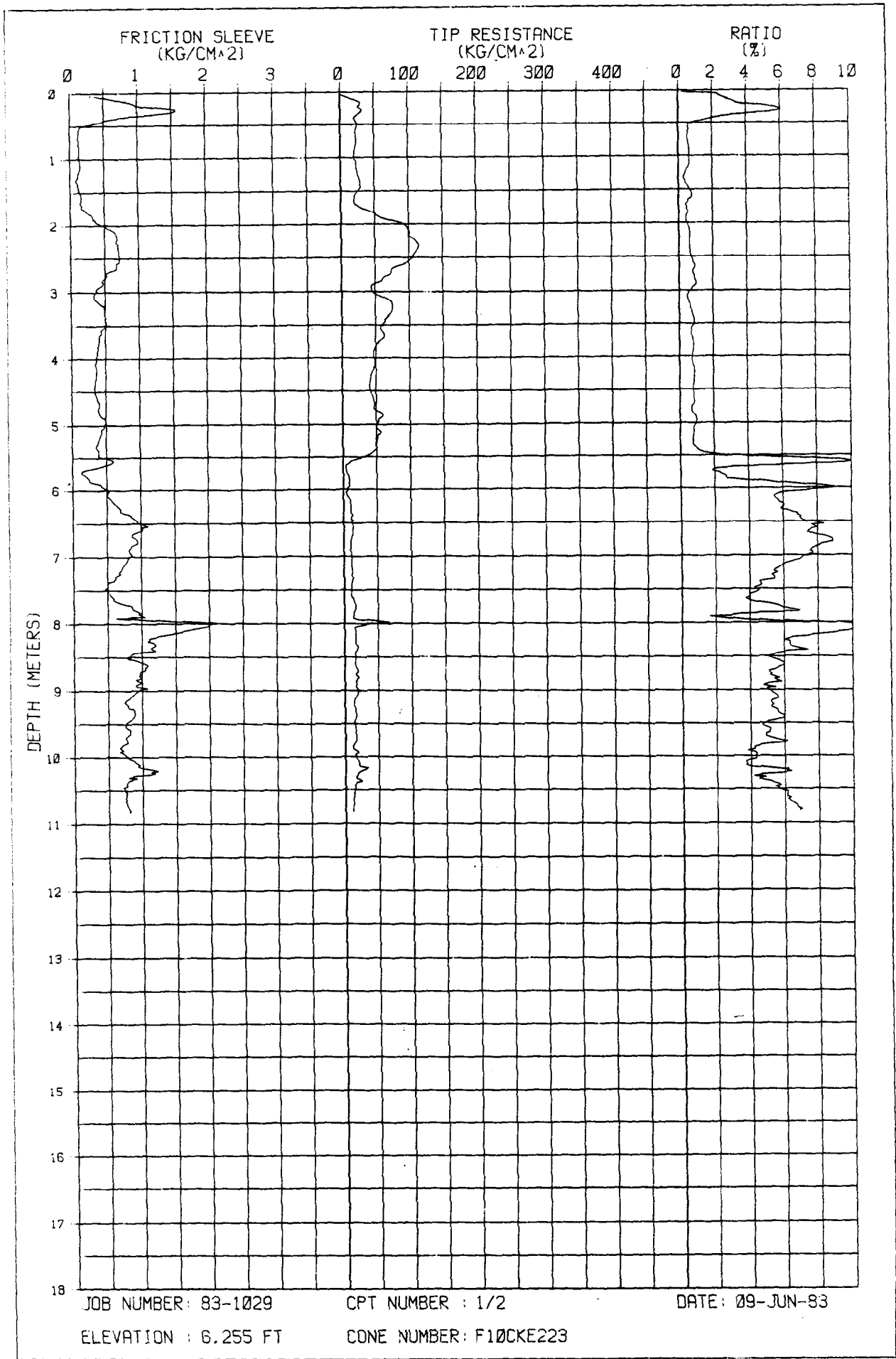
DATE : 10-JUN-83

ELEVATION : 6.488 FT

CONE NUMBER : F10CKE223

CONE PENETROMETER TEST LOCATION 2





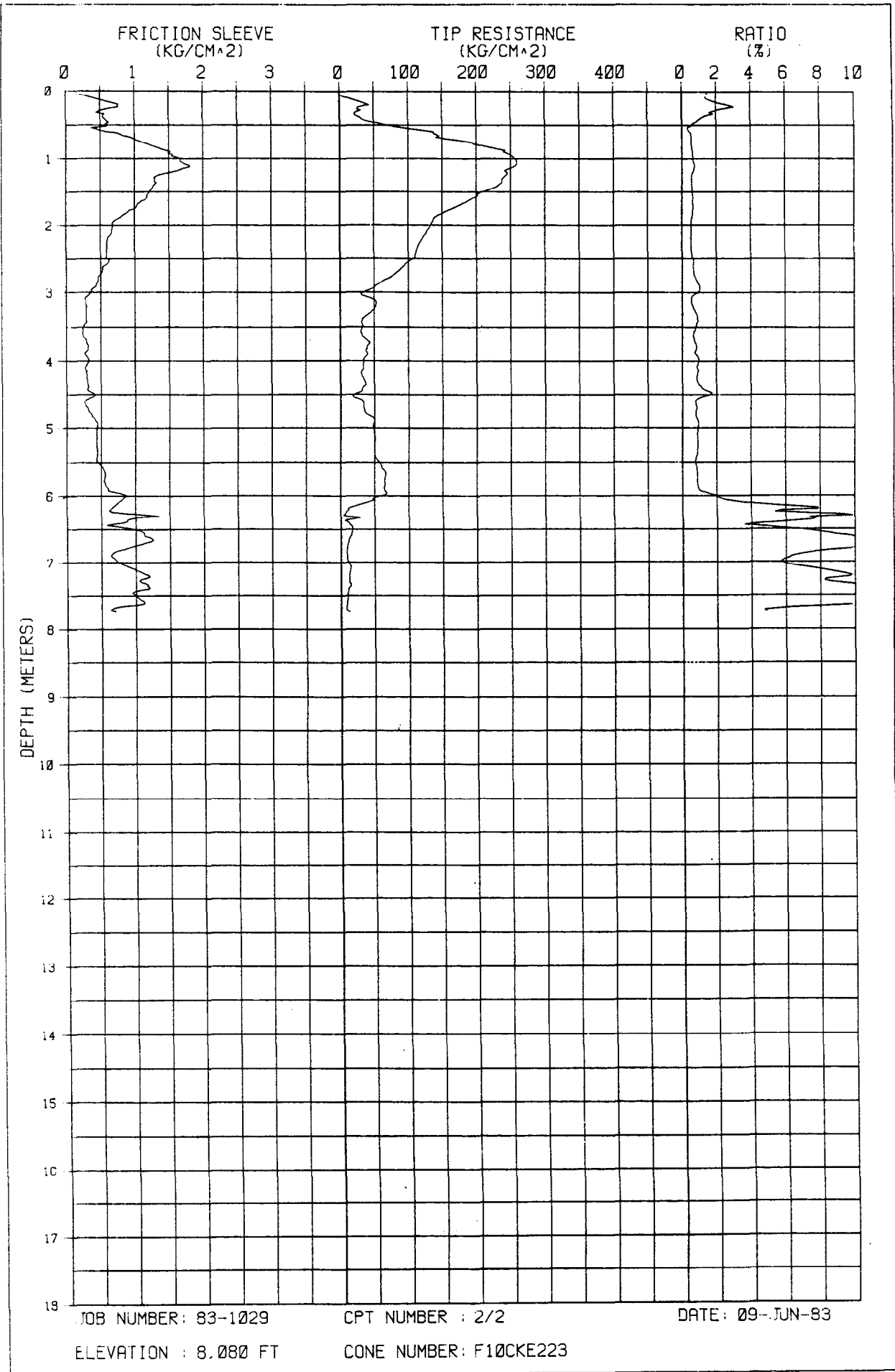
JOB NUMBER : 83-1029

CPT NUMBER : 1/2

DATE : 09-JUN-83

ELEVATION : 6.255 FT

CONE NUMBER : F10CKE223



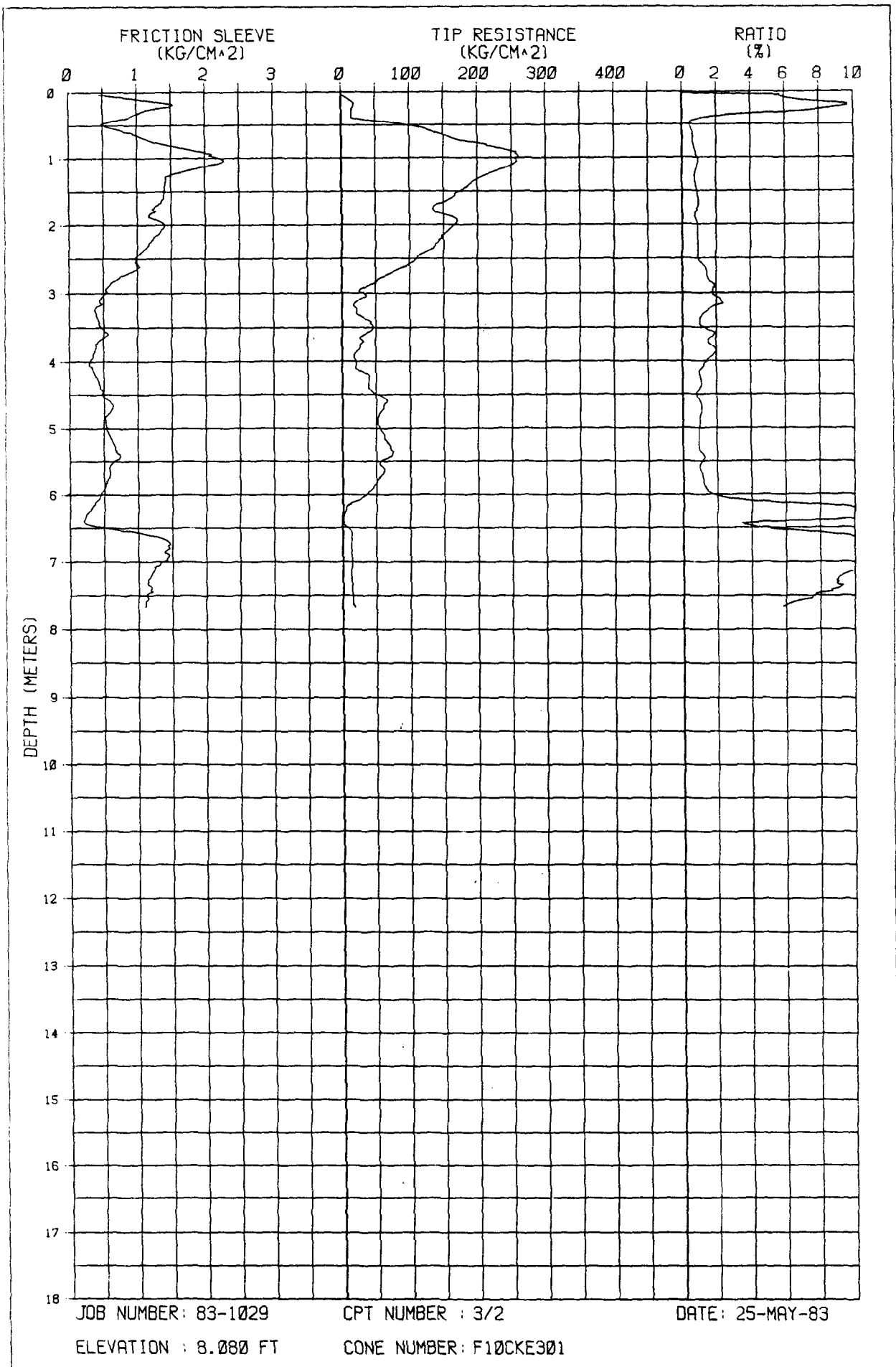
JOB NUMBER : 83-1029

CPT NUMBER : 2/2

DATE : 09-JUN-83

ELEVATION : 8.080 FT

CONE NUMBER : F10CKE223



JOB NUMBER : 83-1029

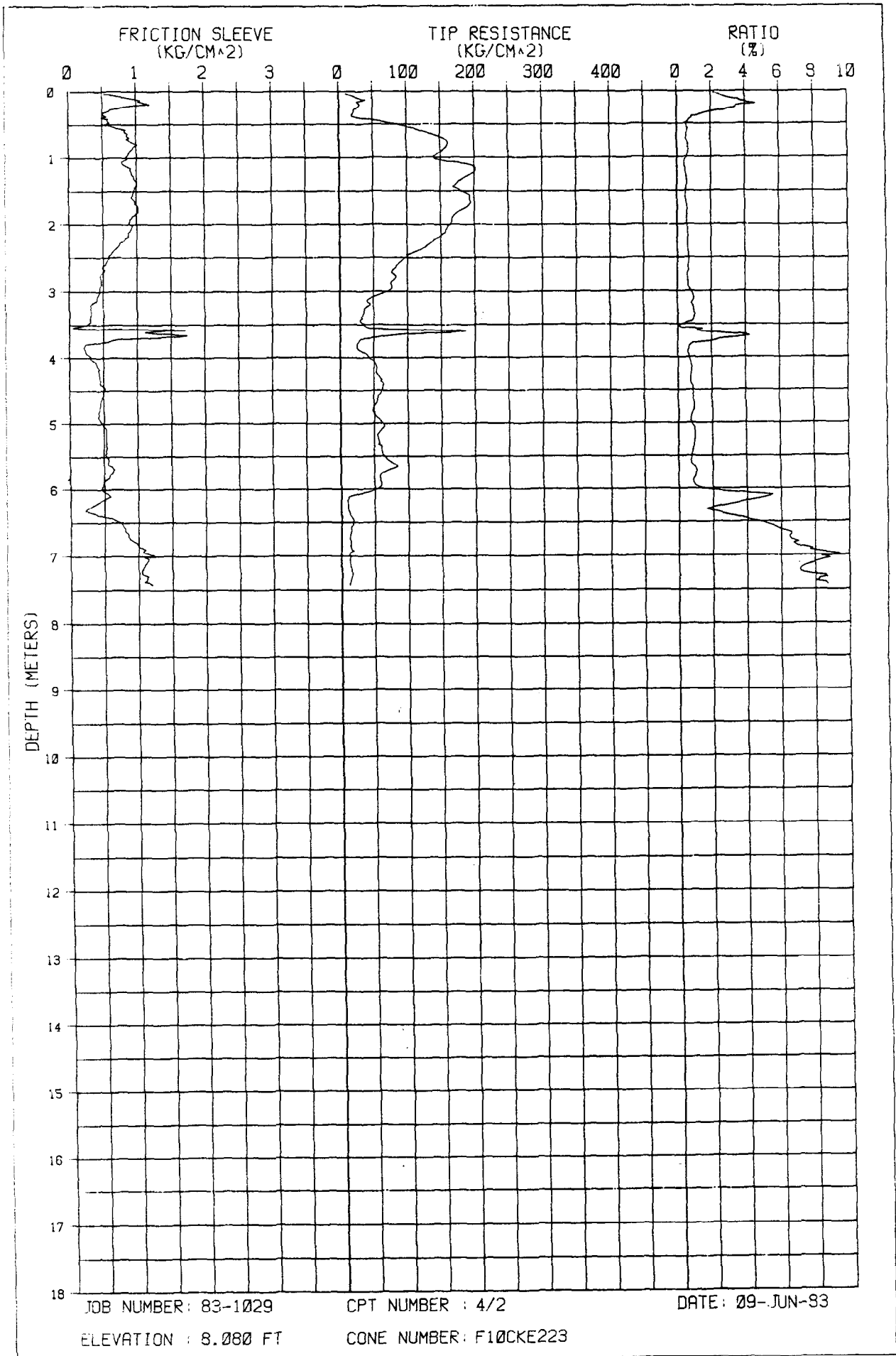
CPT NUMBER : 3/2

DATE : 25-MAY-83

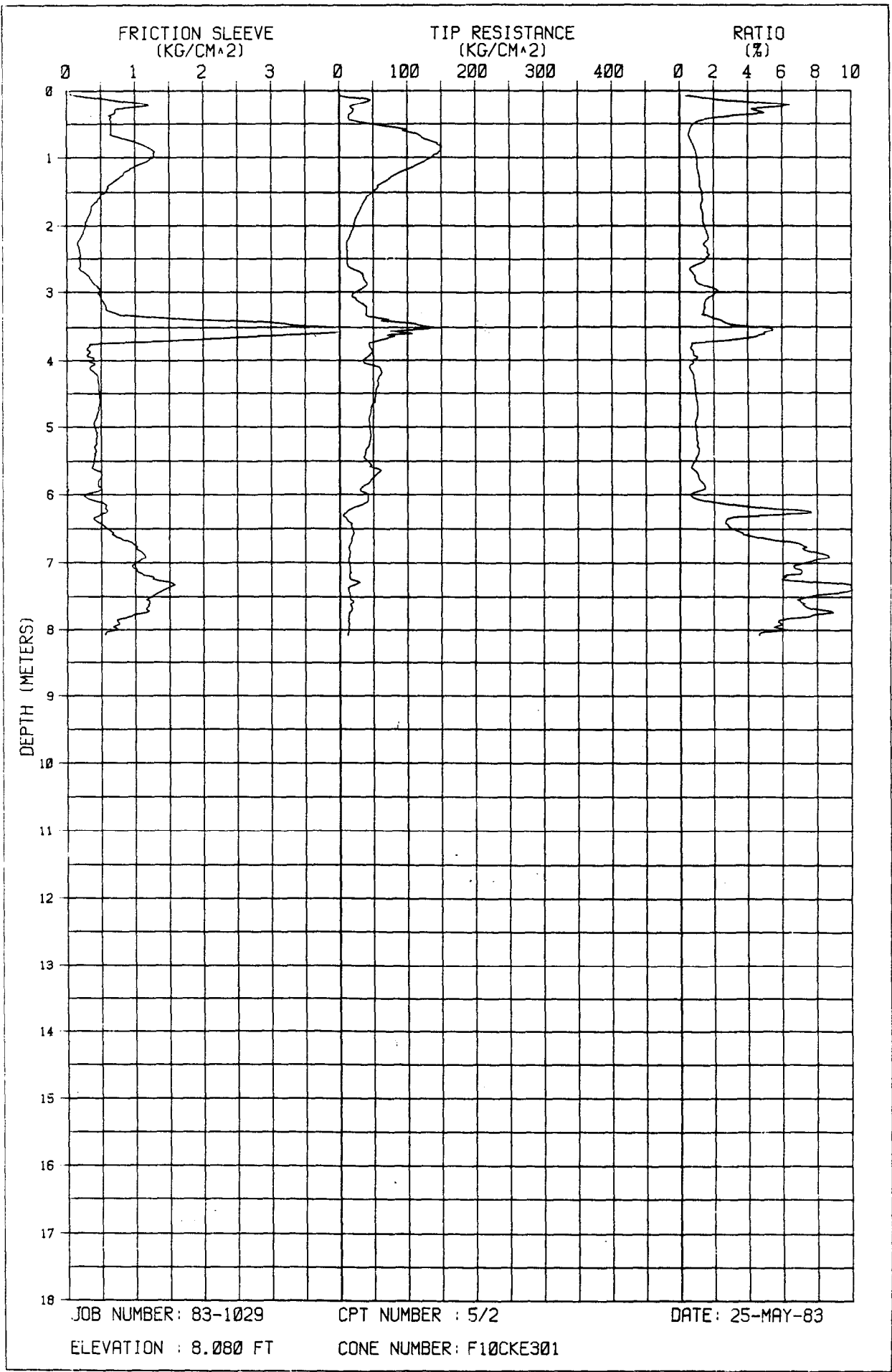
ELEVATION : 8.080 FT

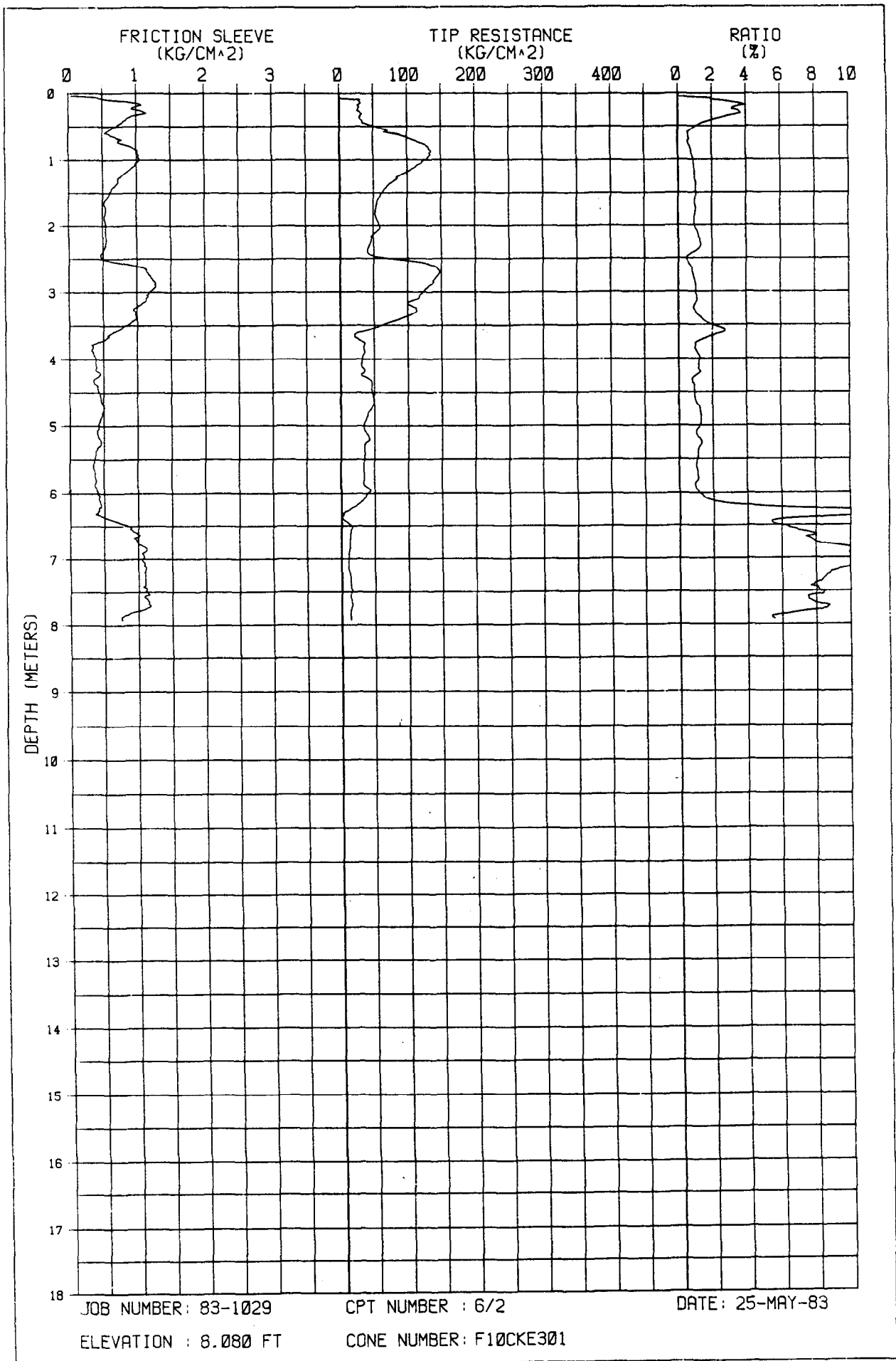
CONE NUMBER : F10CKE301

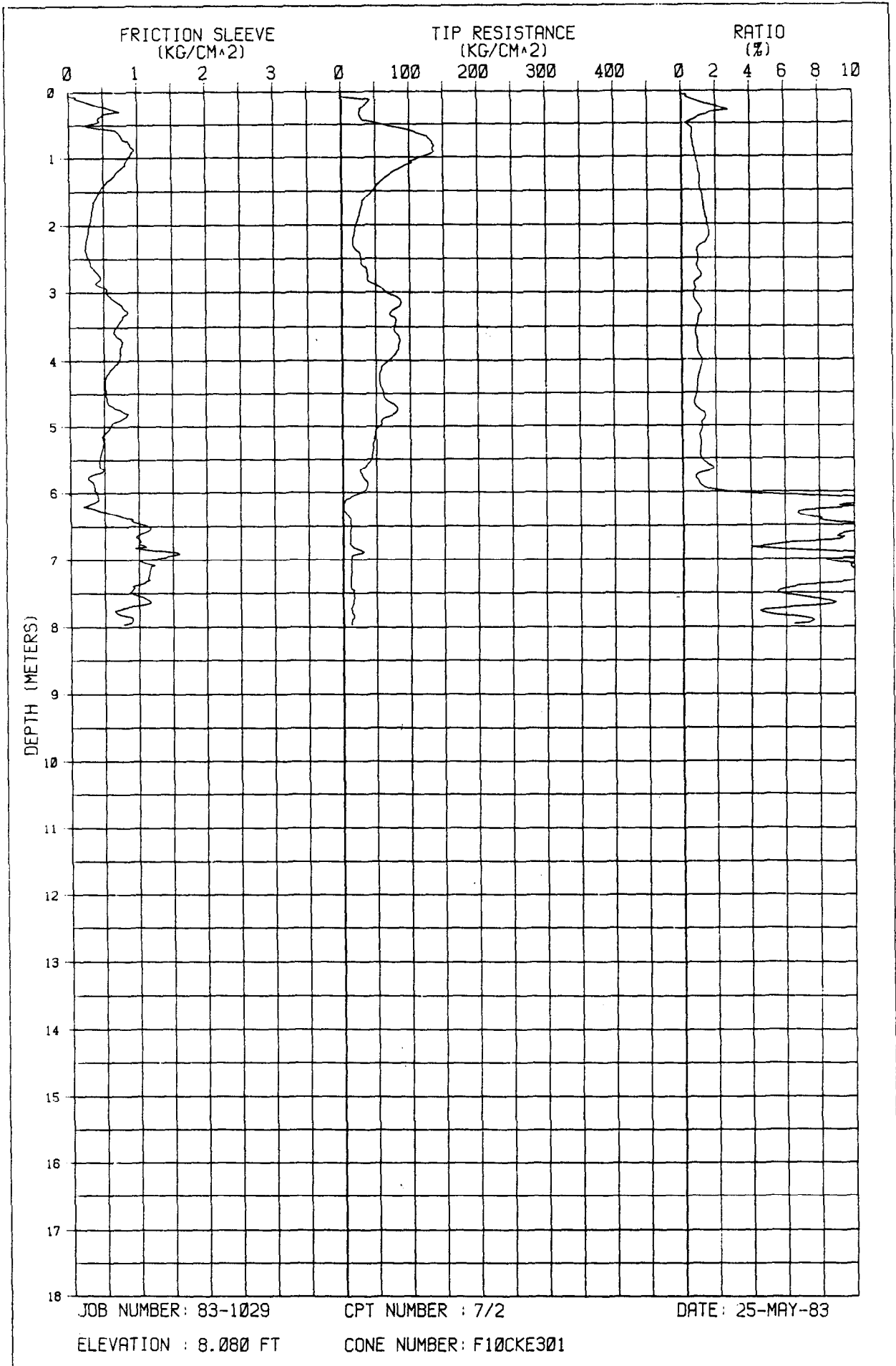




JOB NUMBER: 83-1029      CPT NUMBER : 4/2      DATE: 09-JUN-93  
 ELEVATION : 8.080 FT      CONE NUMBER: F10CKE223







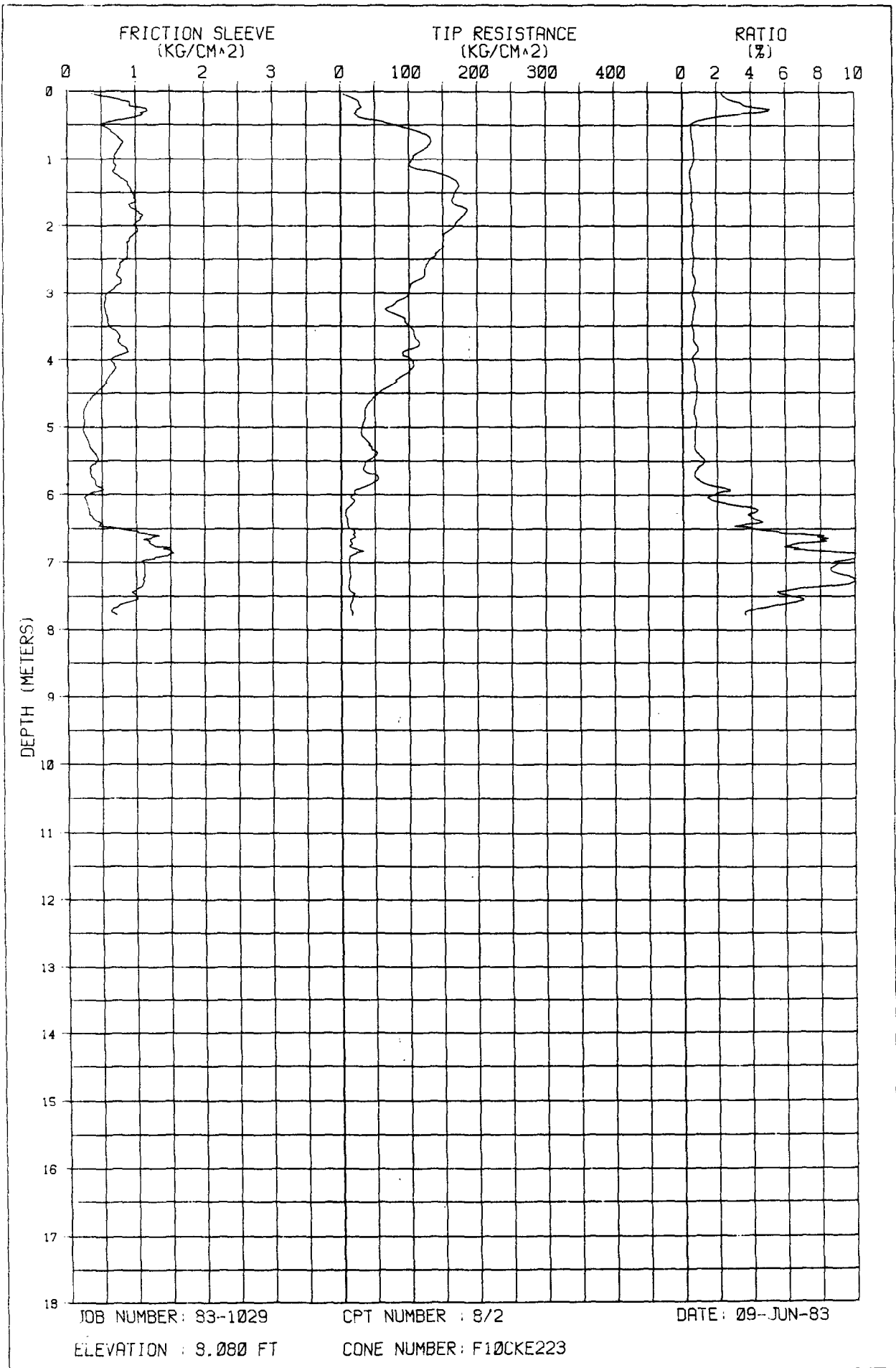
JOB NUMBER : 83-1029

CPT NUMBER : 7/2

DATE : 25-MAY-83

ELEVATION : 8.080 FT

CONE NUMBER : F10CKE301



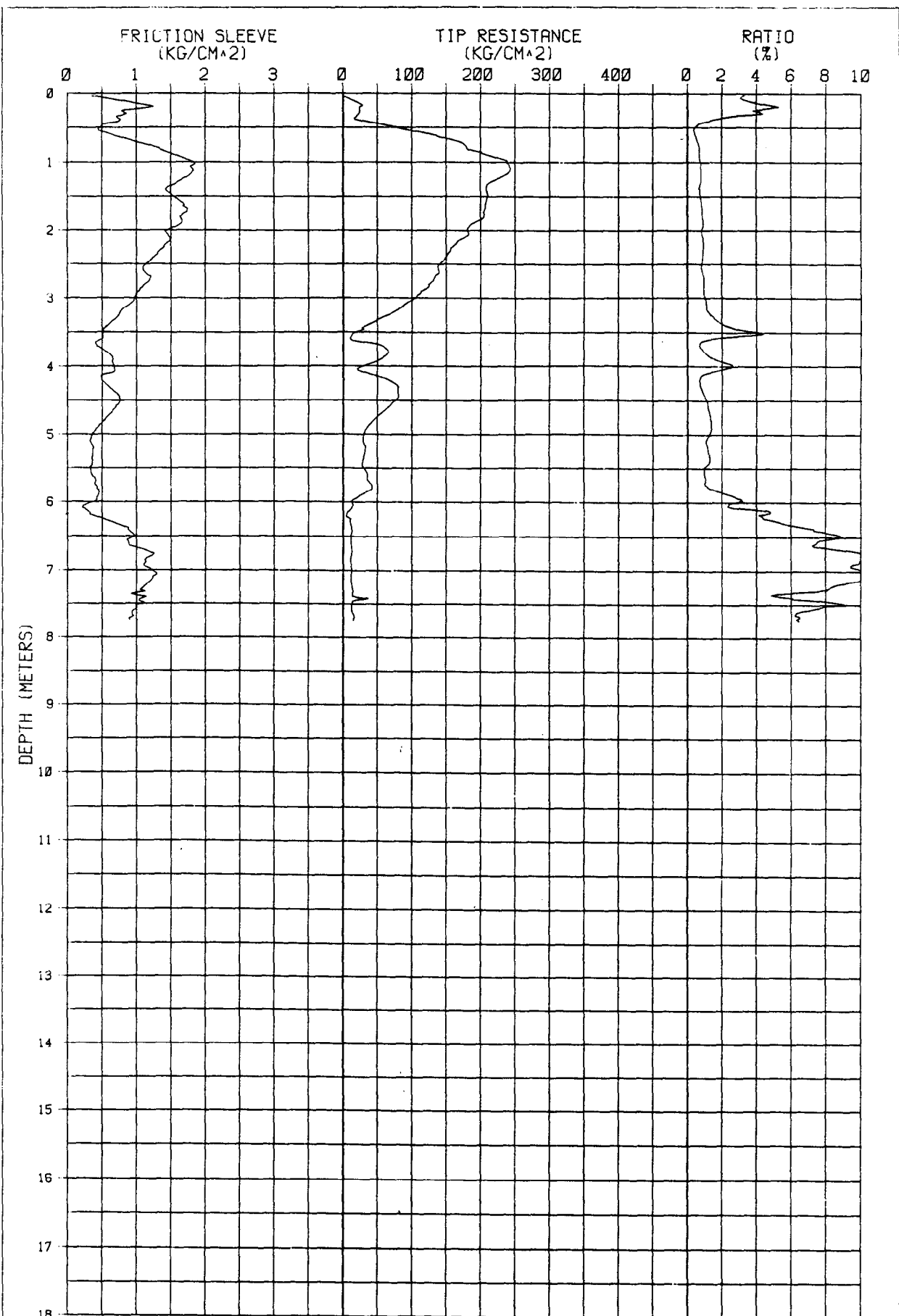
JOB NUMBER: 83-1029

CPT NUMBER: 8/2

DATE: 09-JUN-83

ELEVATION: 8.080 FT

CONE NUMBER: F10CKE223



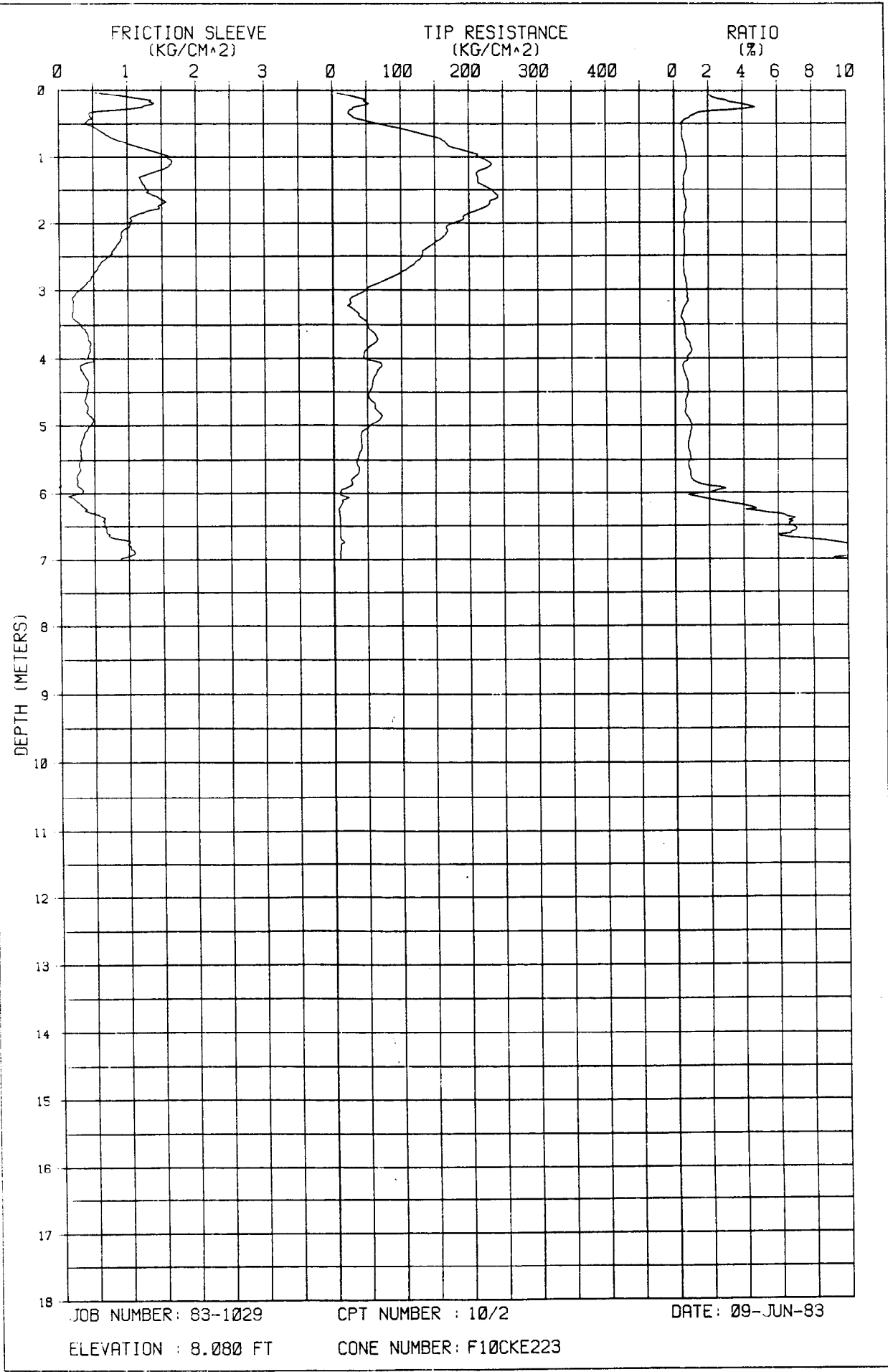
JOB NUMBER: 83-1029

CPT NUMBER: 9/2

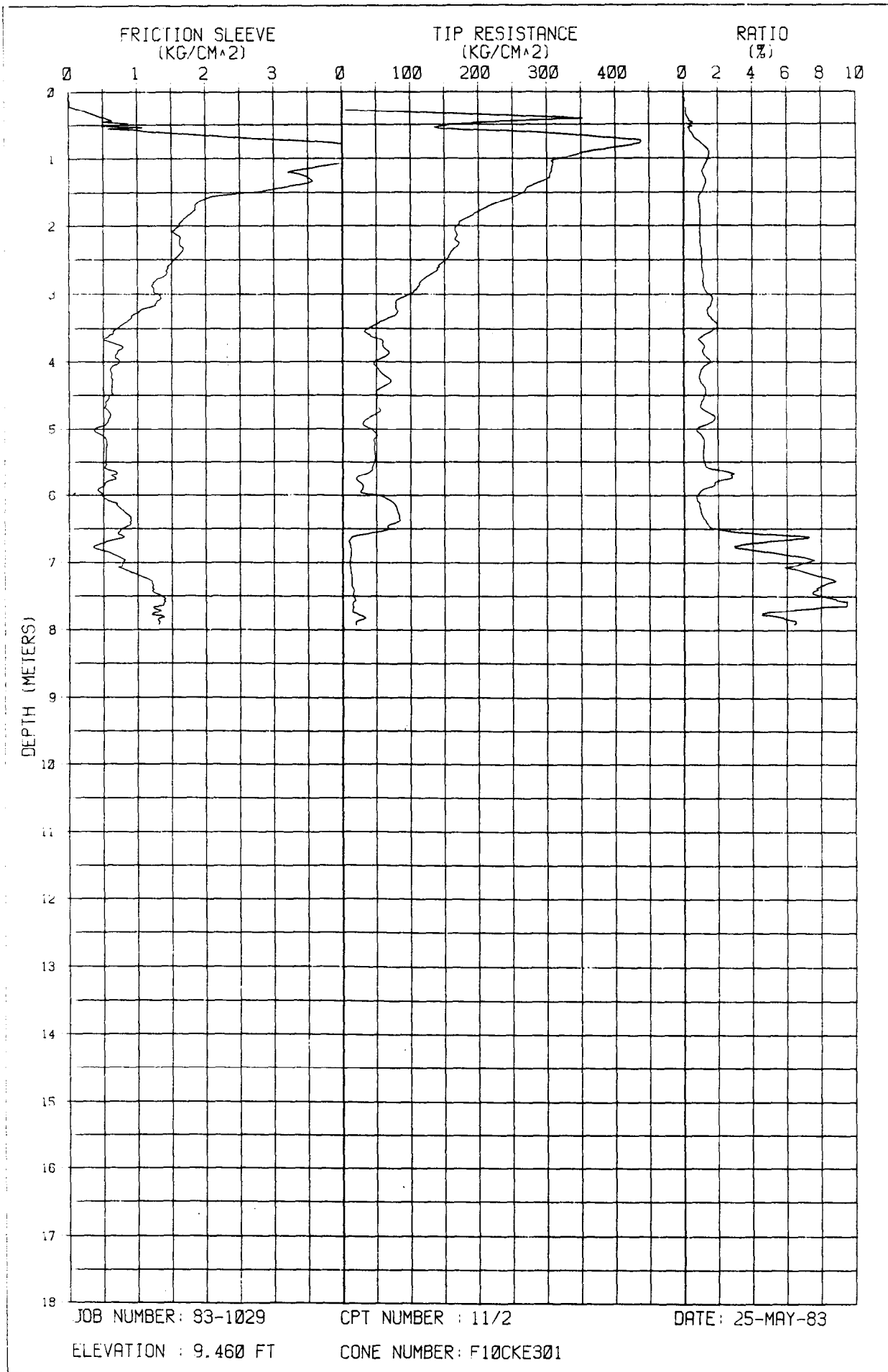
DATE: 25-MAY-83

ELEVATION: 8.080 FT

CONE NUMBER: F10CKE301



JOB NUMBER: 83-1029      CPT NUMBER: 10/2      DATE: 09-JUN-83  
 ELEVATION: 8.080 FT      CONE NUMBER: F10CKE223



JOB NUMBER: 83-1029

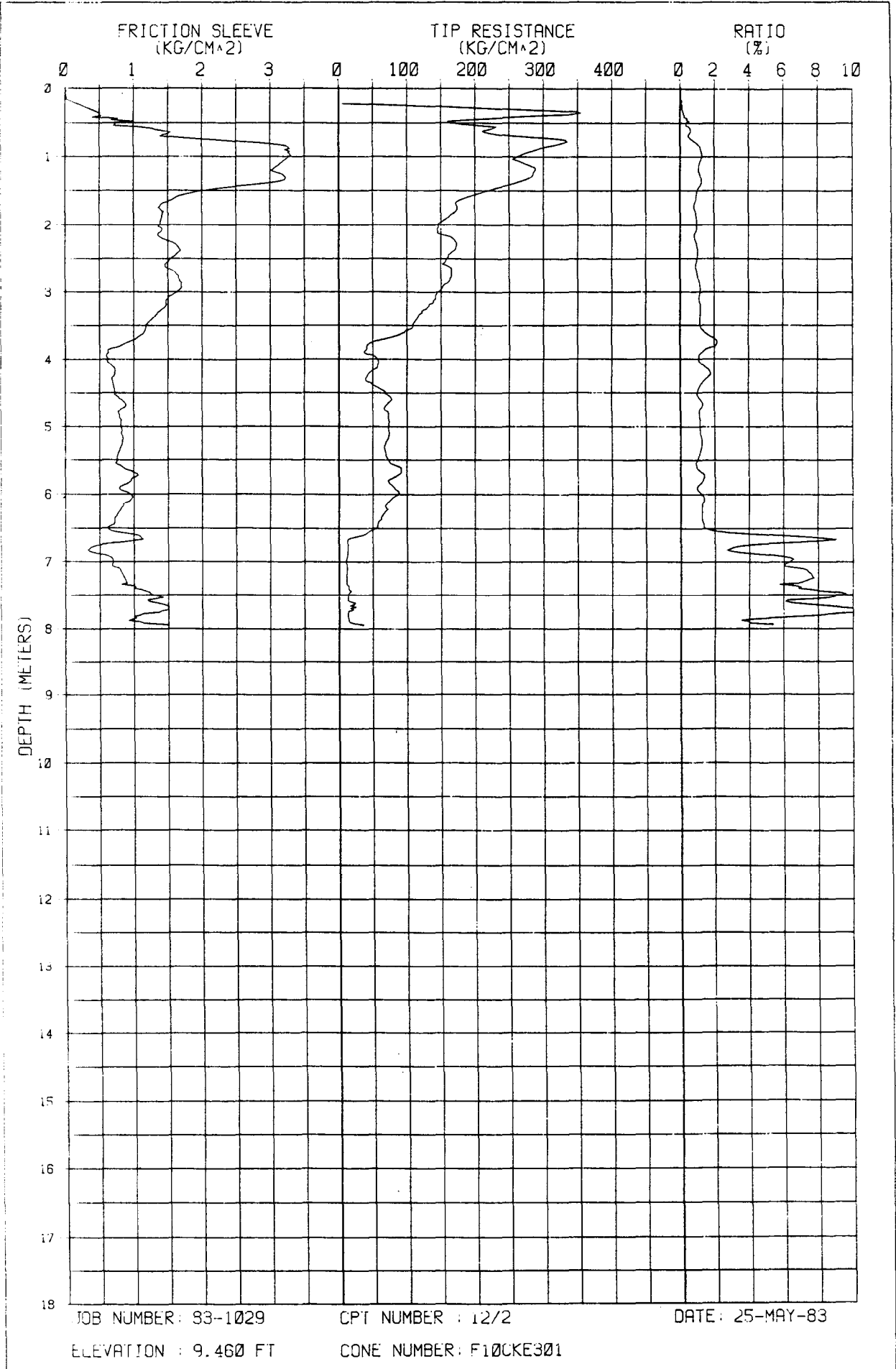
CPT NUMBER: 11/2

DATE: 25-MAY-83

ELEVATION: 9.460 FT

CONE NUMBER: F10CKE301





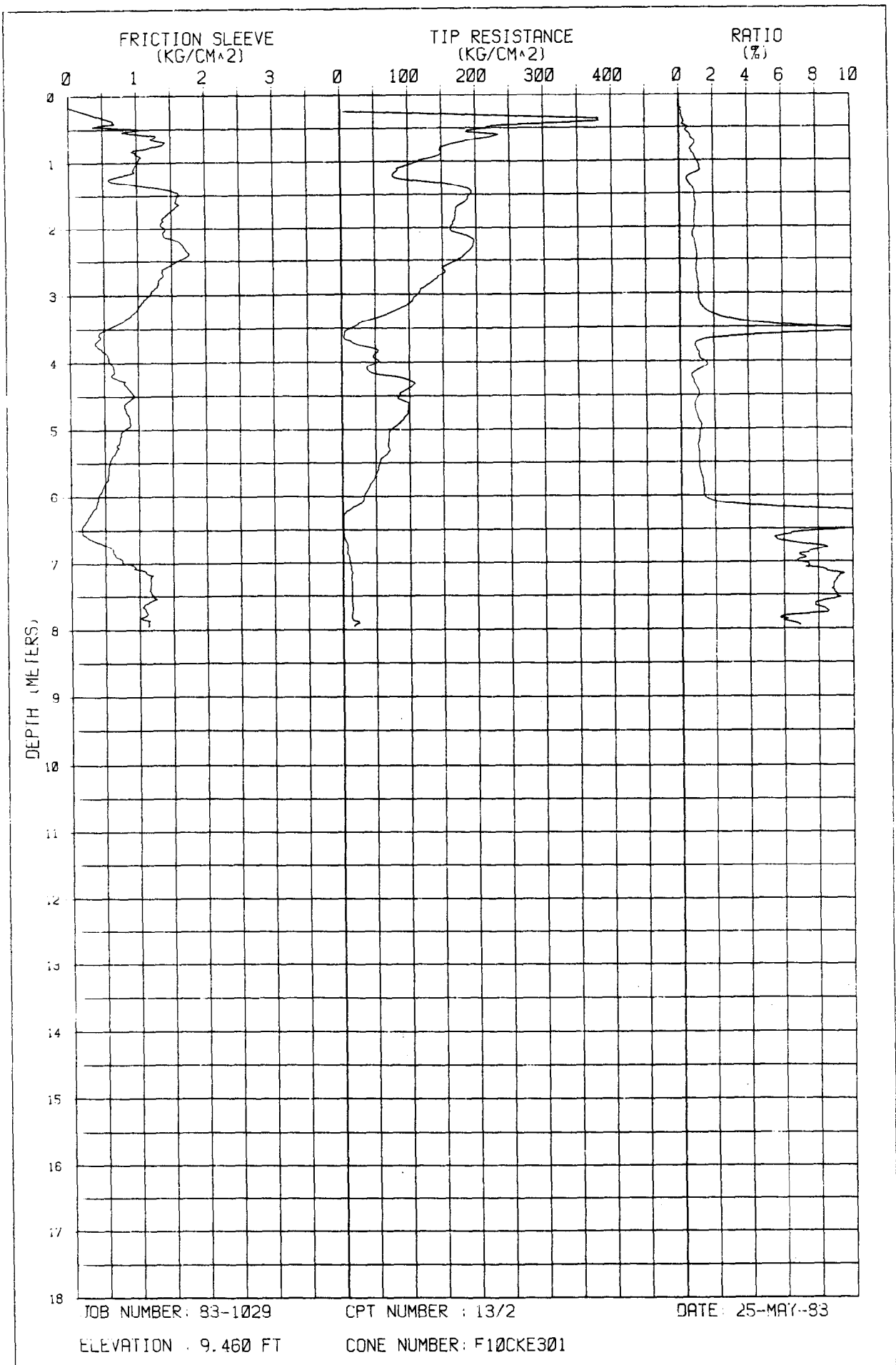
JOB NUMBER: 83-1029

CPT NUMBER: 12/2

DATE: 25-MAY-83

ELEVATION: 9.460 FT

CONE NUMBER: F10CKE301



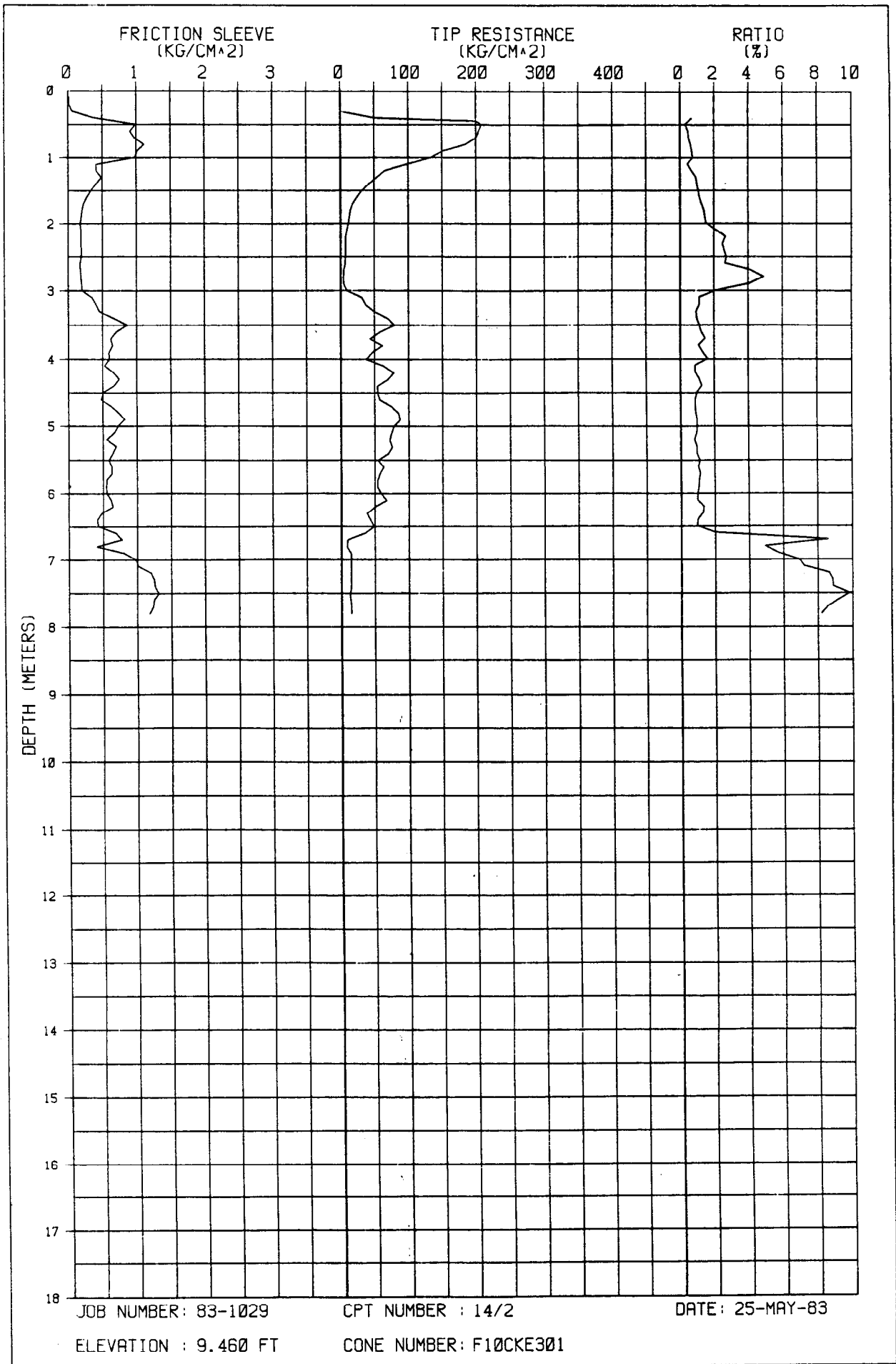
JOB NUMBER: 83-1029

CPT NUMBER : 13/2

DATE: 25-MAY--83

ELEVATION : 9.460 FT

CONE NUMBER: F10CKE301



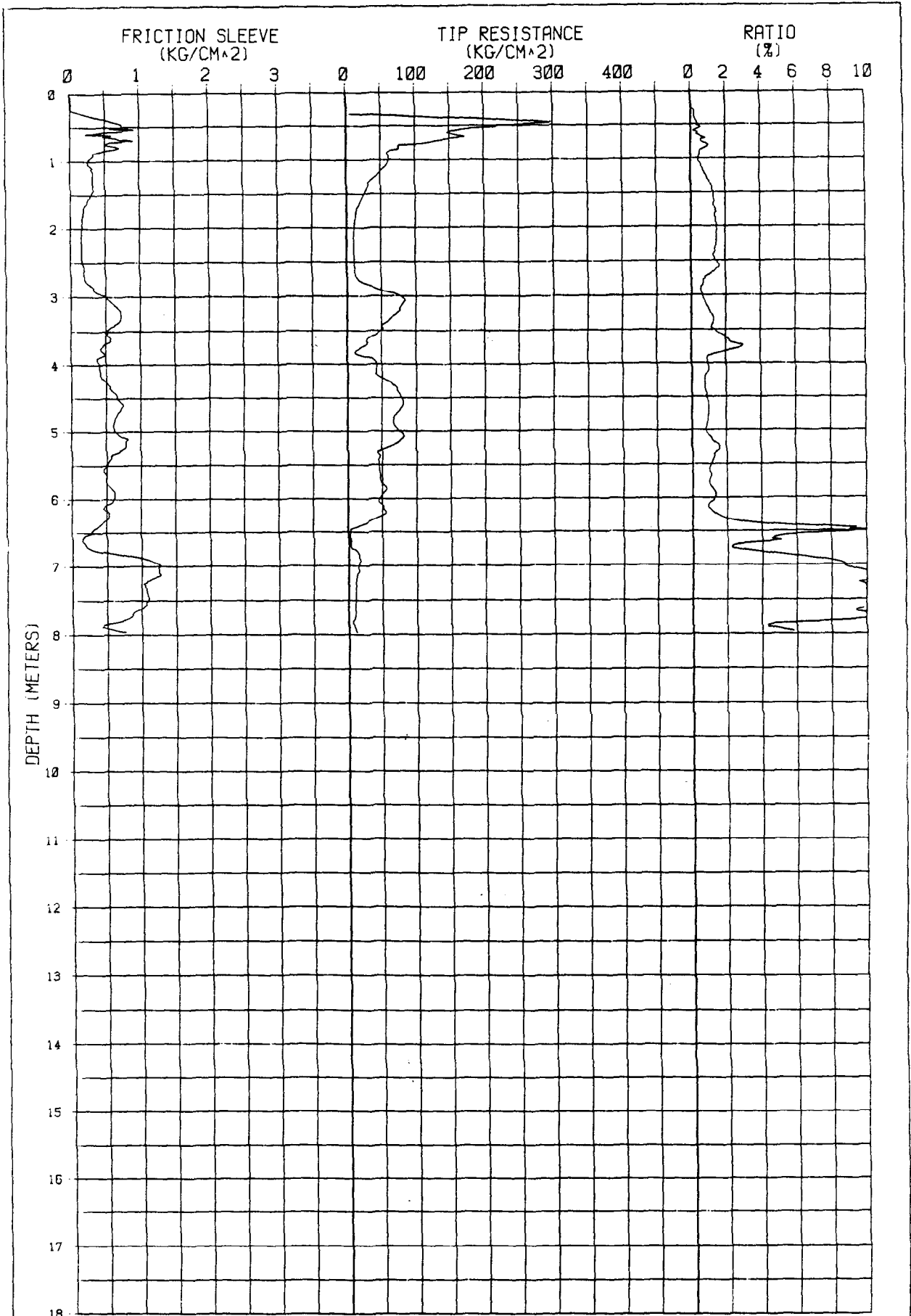
JOB NUMBER: 83-1029

CPT NUMBER : 14/2

DATE: 25-MAY-83

ELEVATION : 9.460 FT

CONE NUMBER: F10CKE301



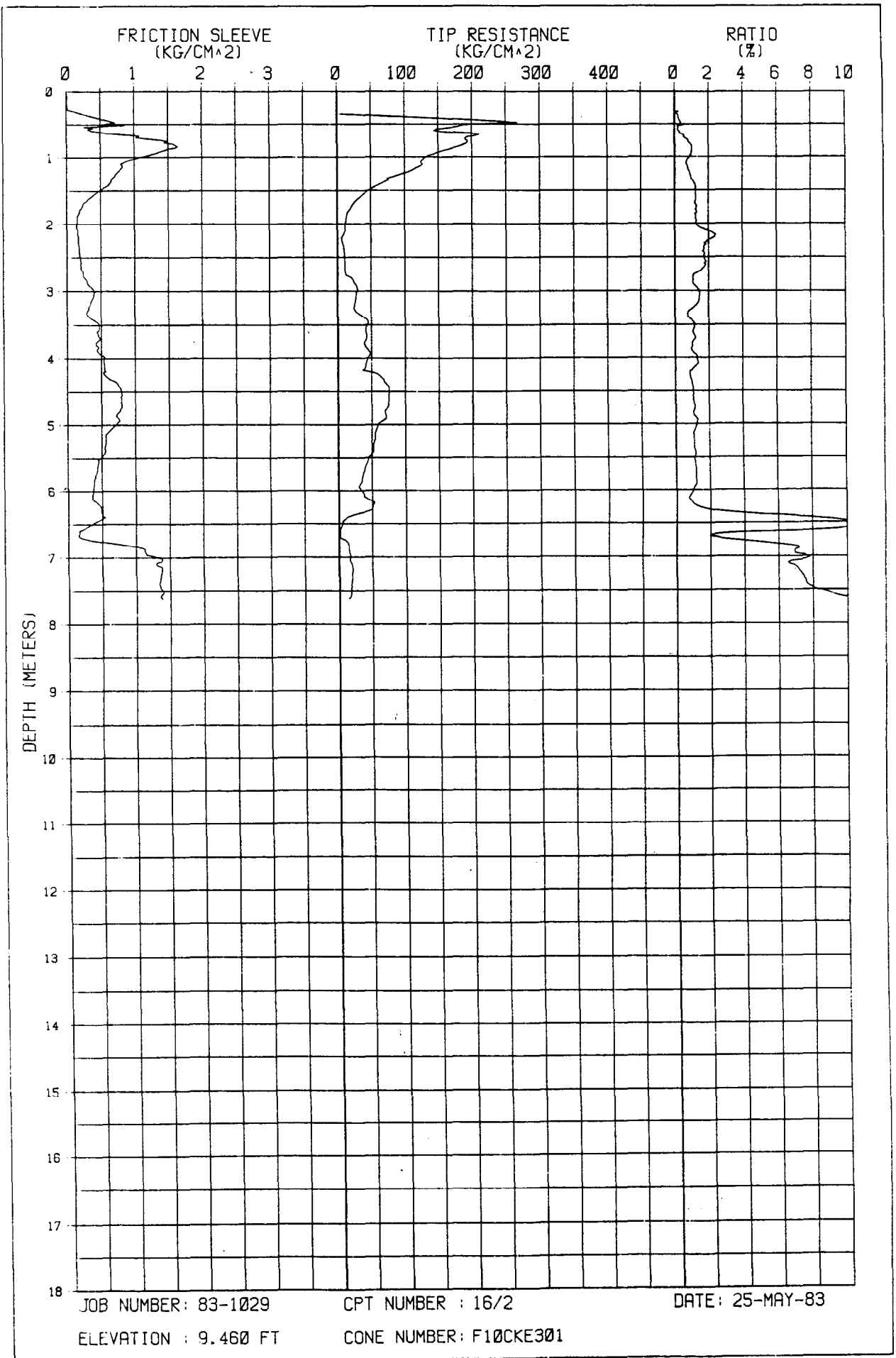
JOB NUMBER : 83-1029

CPT NUMBER : 15/2

DATE : 25-MAY-83

ELEVATION : 9.460 FT

CONE NUMBER : F10CKE301



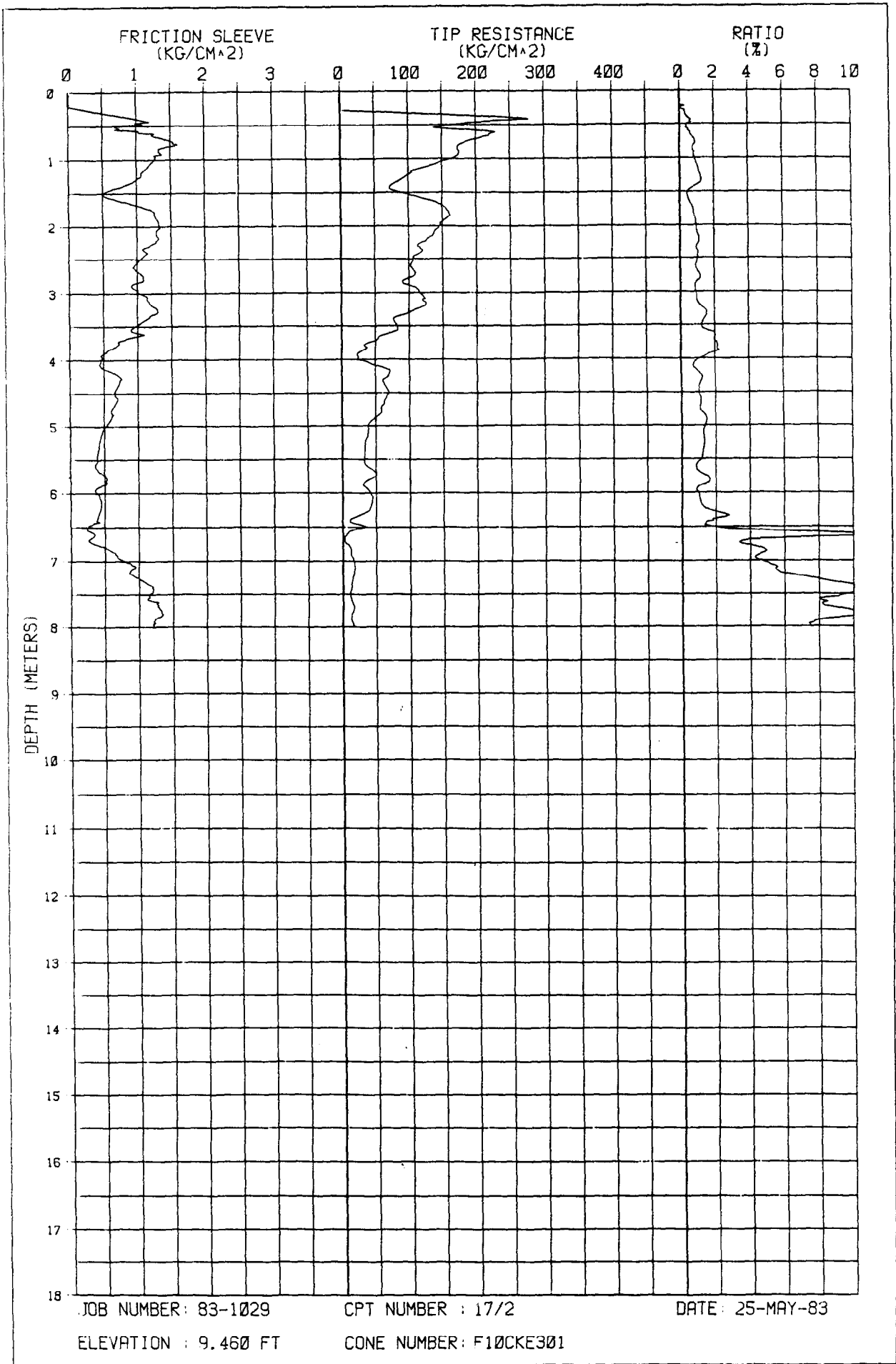
JOB NUMBER: 83-1029

CPT NUMBER : 16/2

DATE: 25-MAY-83

ELEVATION : 9.460 FT

CONE NUMBER: F10CKE301



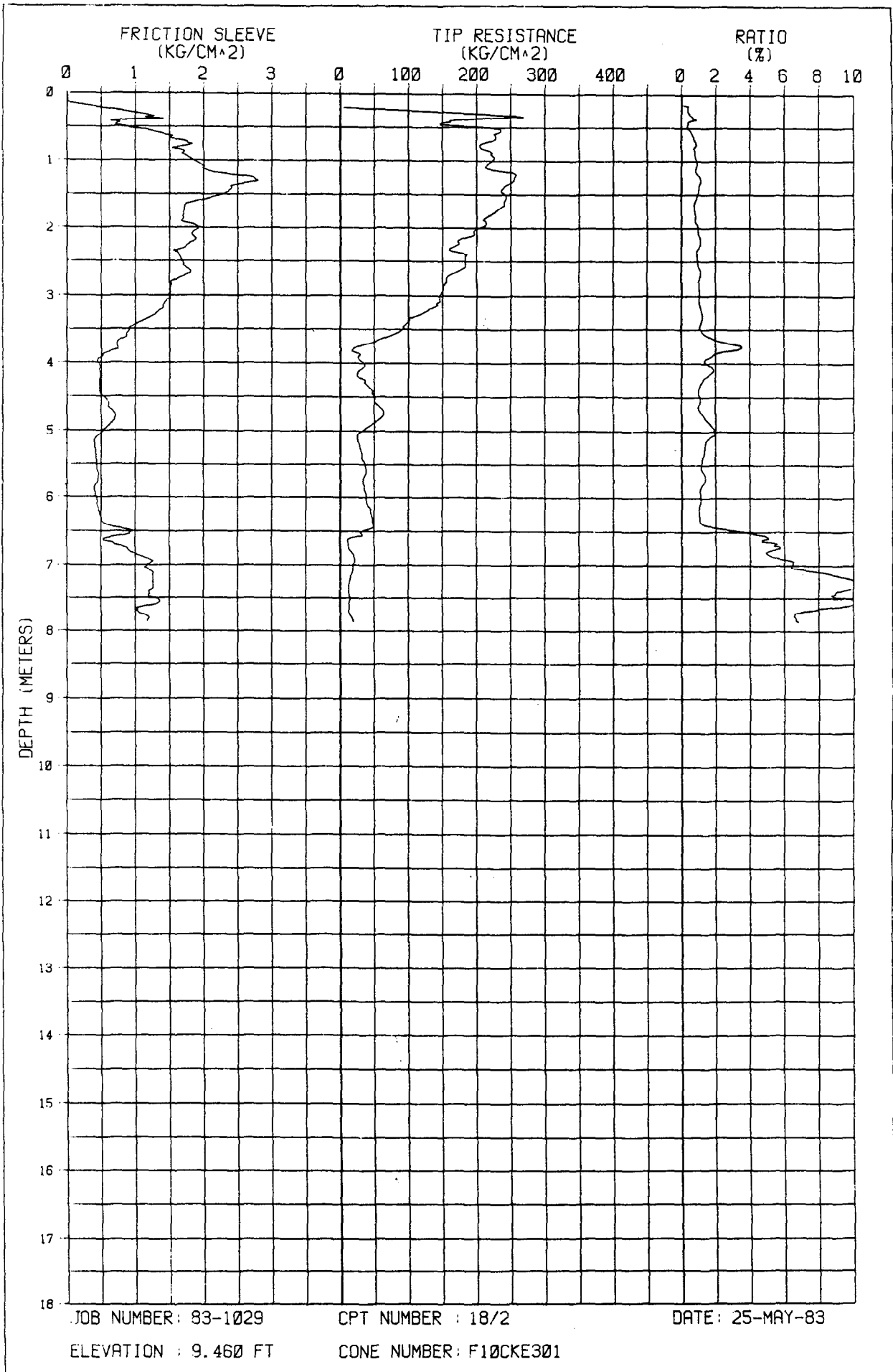
JOB NUMBER : 83-1029

CPT NUMBER : 17/2

DATE : 25-MAY-83

ELEVATION : 9.460 FT

CONE NUMBER : F10CKE301



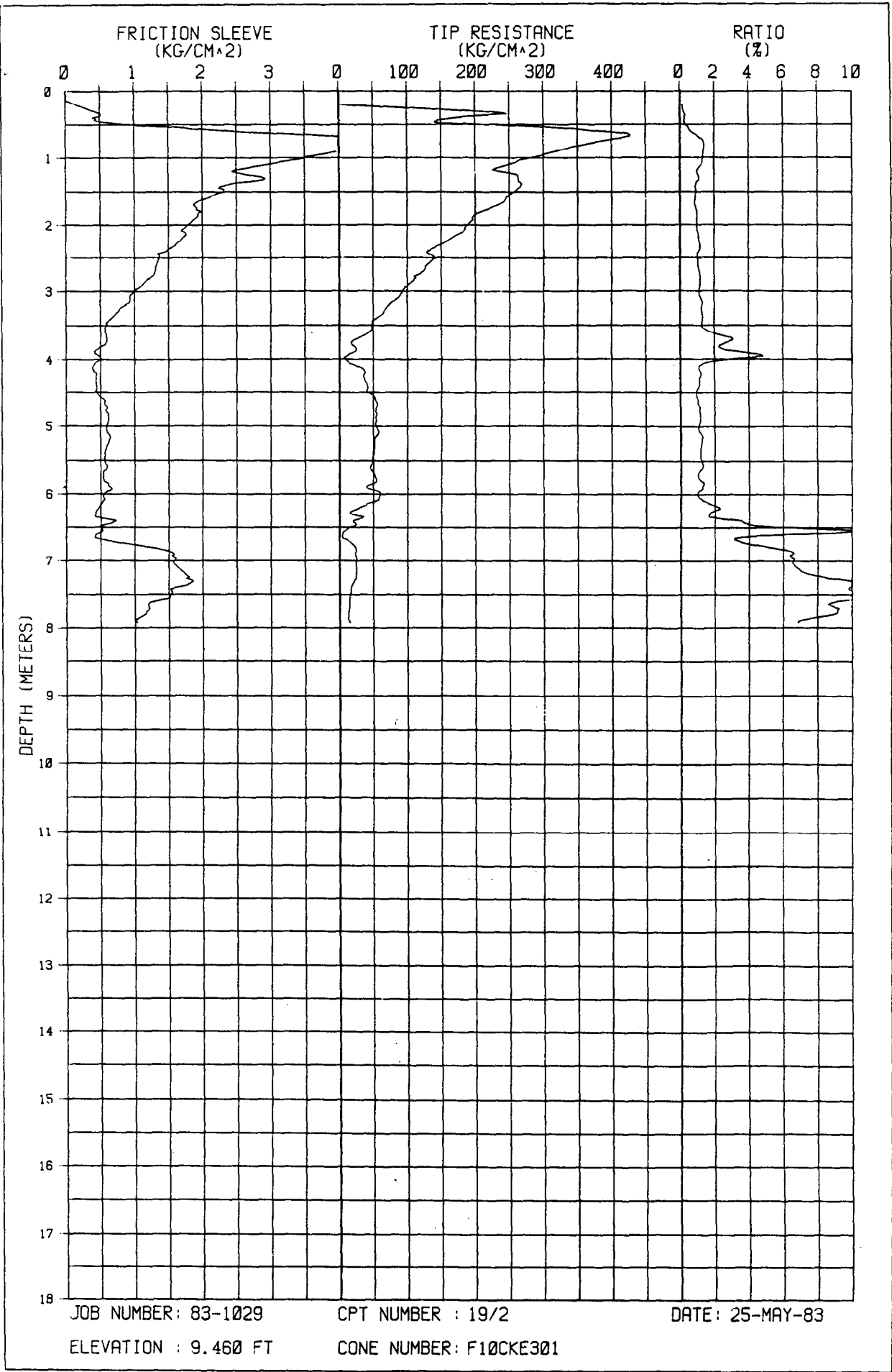
JOB NUMBER : 83-1029

CPT NUMBER : 18/2

DATE : 25-MAY-83

ELEVATION : 9.460 FT

CONE NUMBER : F10CKE301



JOB NUMBER: 83-1029

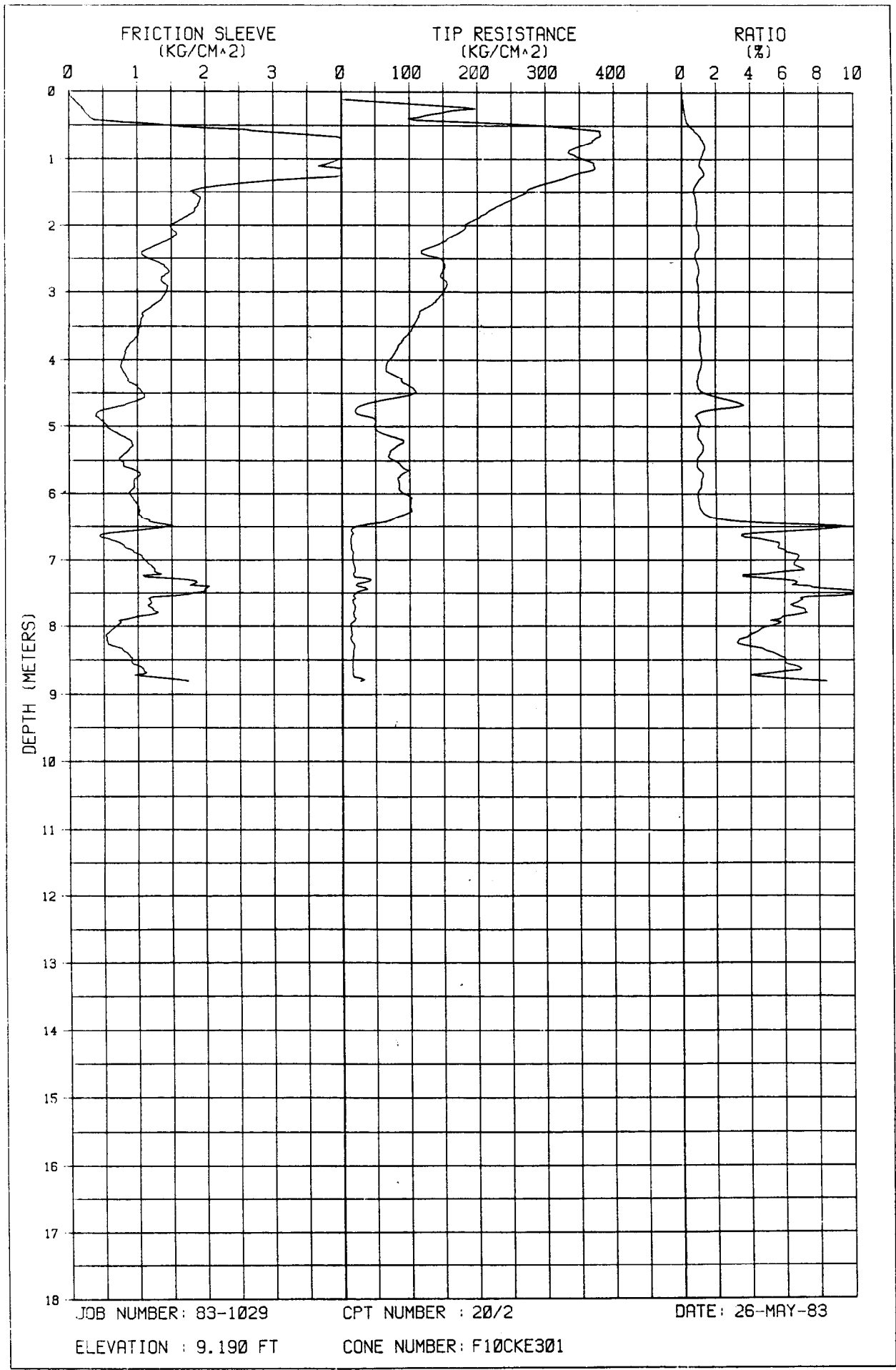
CPT NUMBER: 19/2

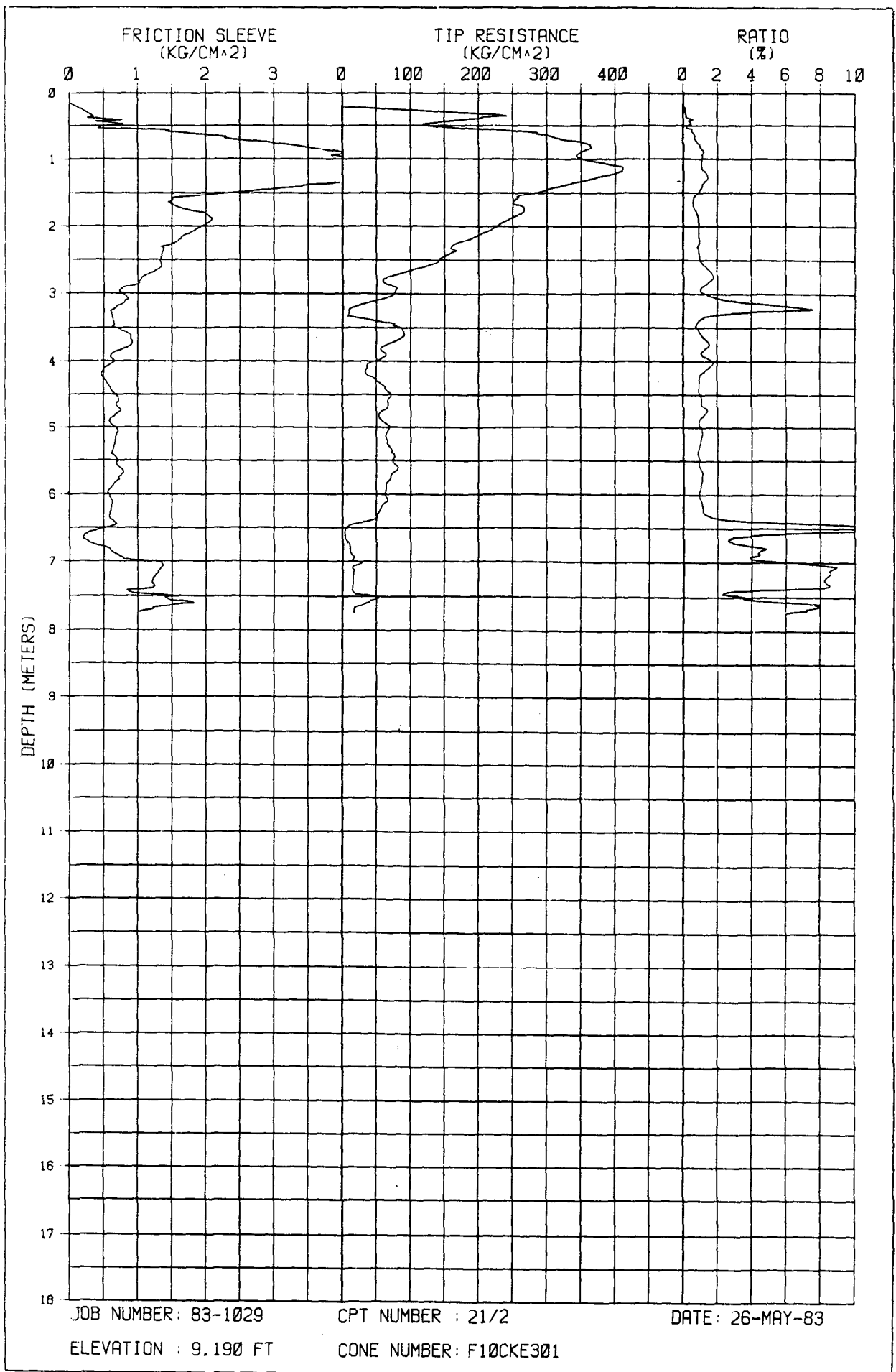
DATE: 25-MAY-83

ELEVATION: 9.460 FT

CONE NUMBER: F10CKE301







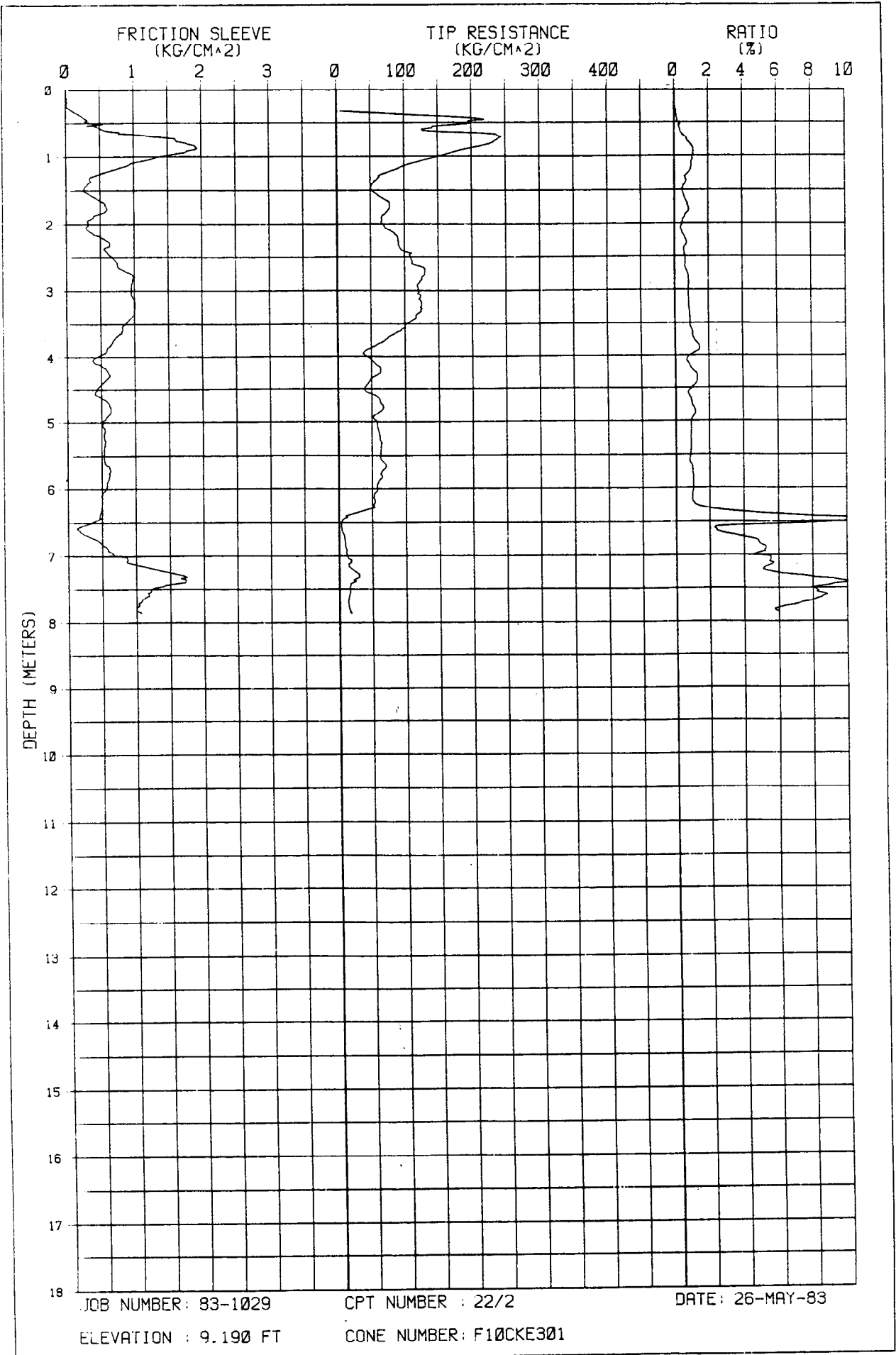
JOB NUMBER : 83-1029

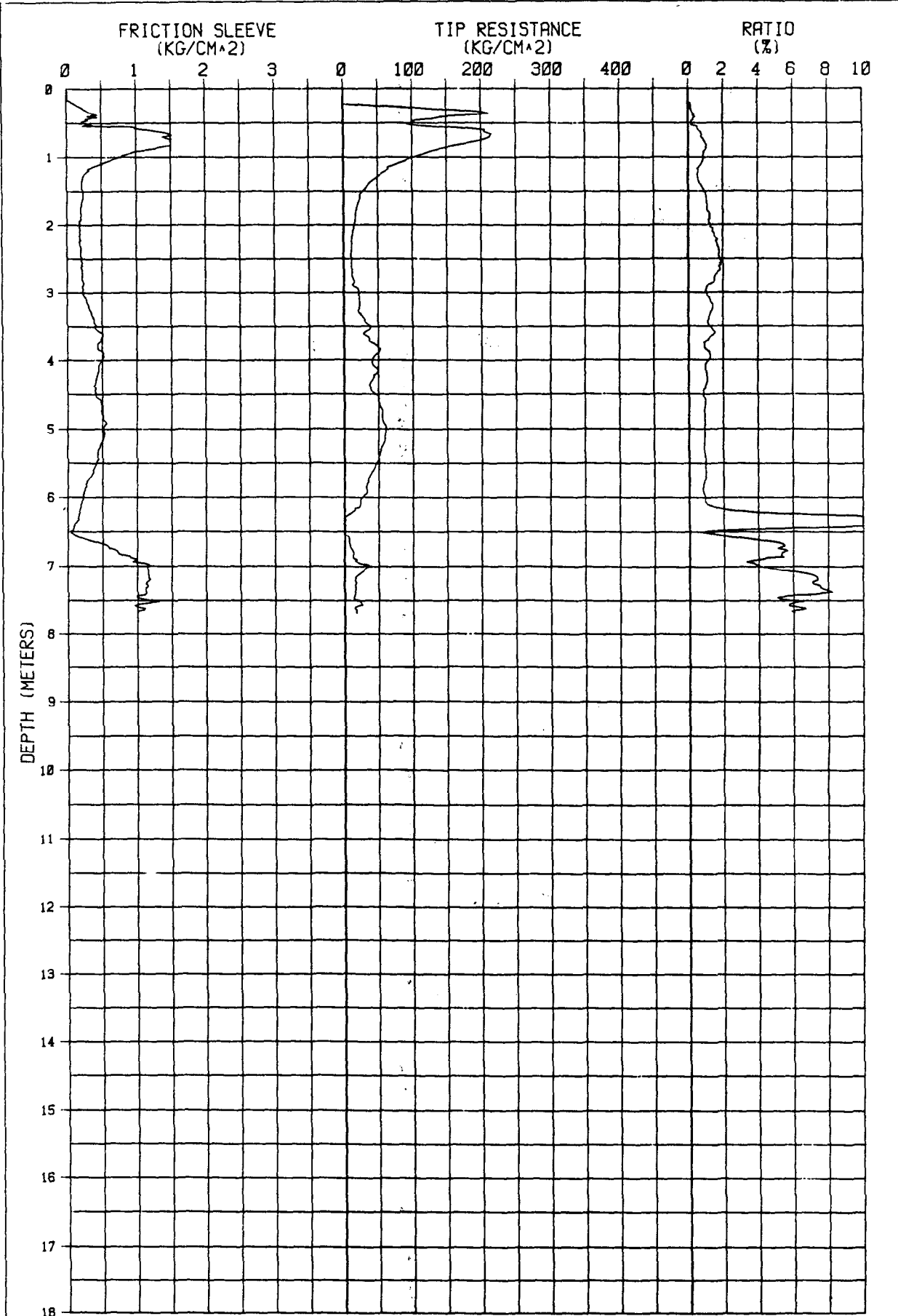
CPT NUMBER : 21/2

DATE : 26-MAY-83

ELEVATION : 9.190 FT

CONE NUMBER : F10CKE301





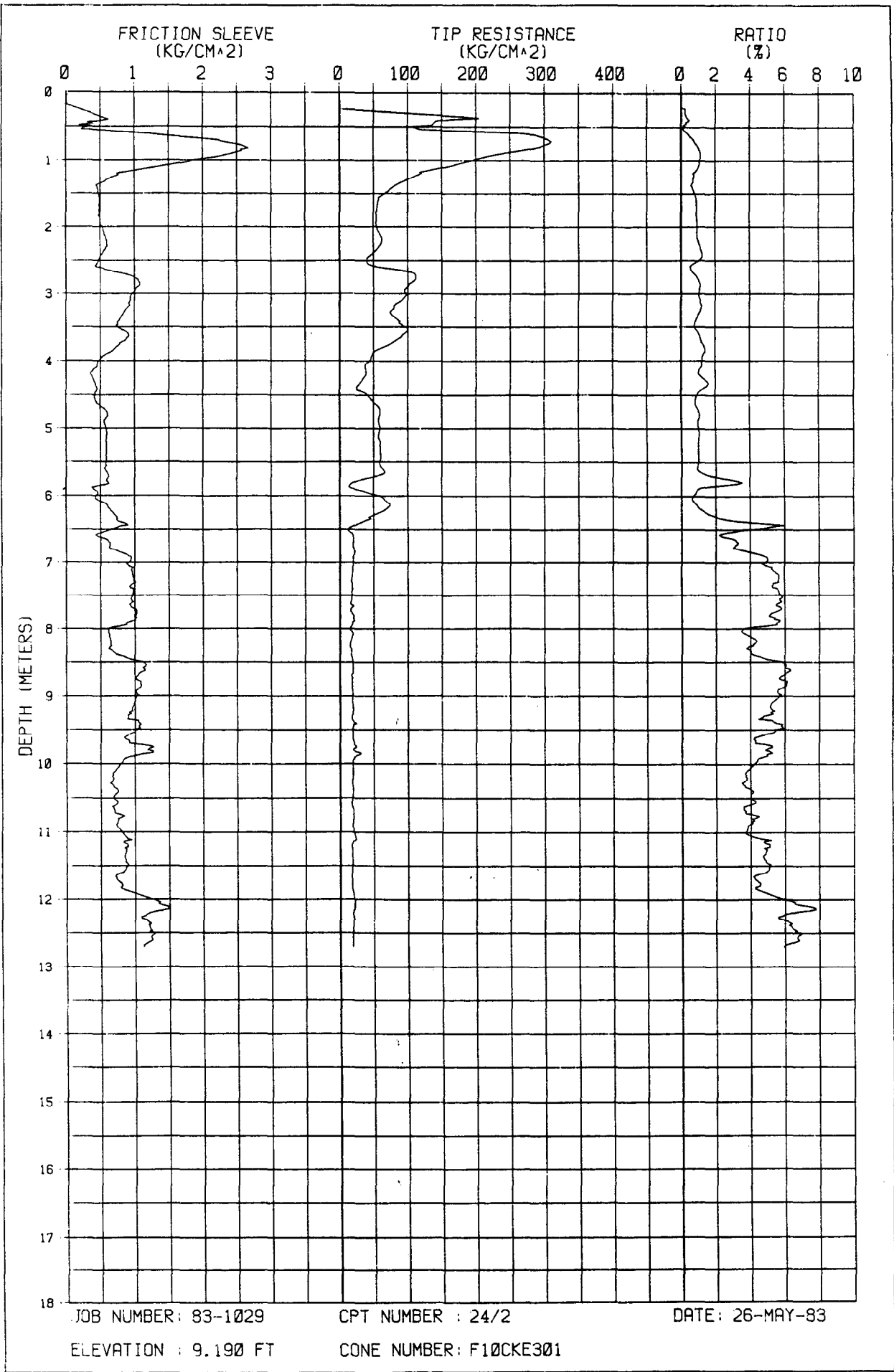
JOB NUMBER: 83-1029

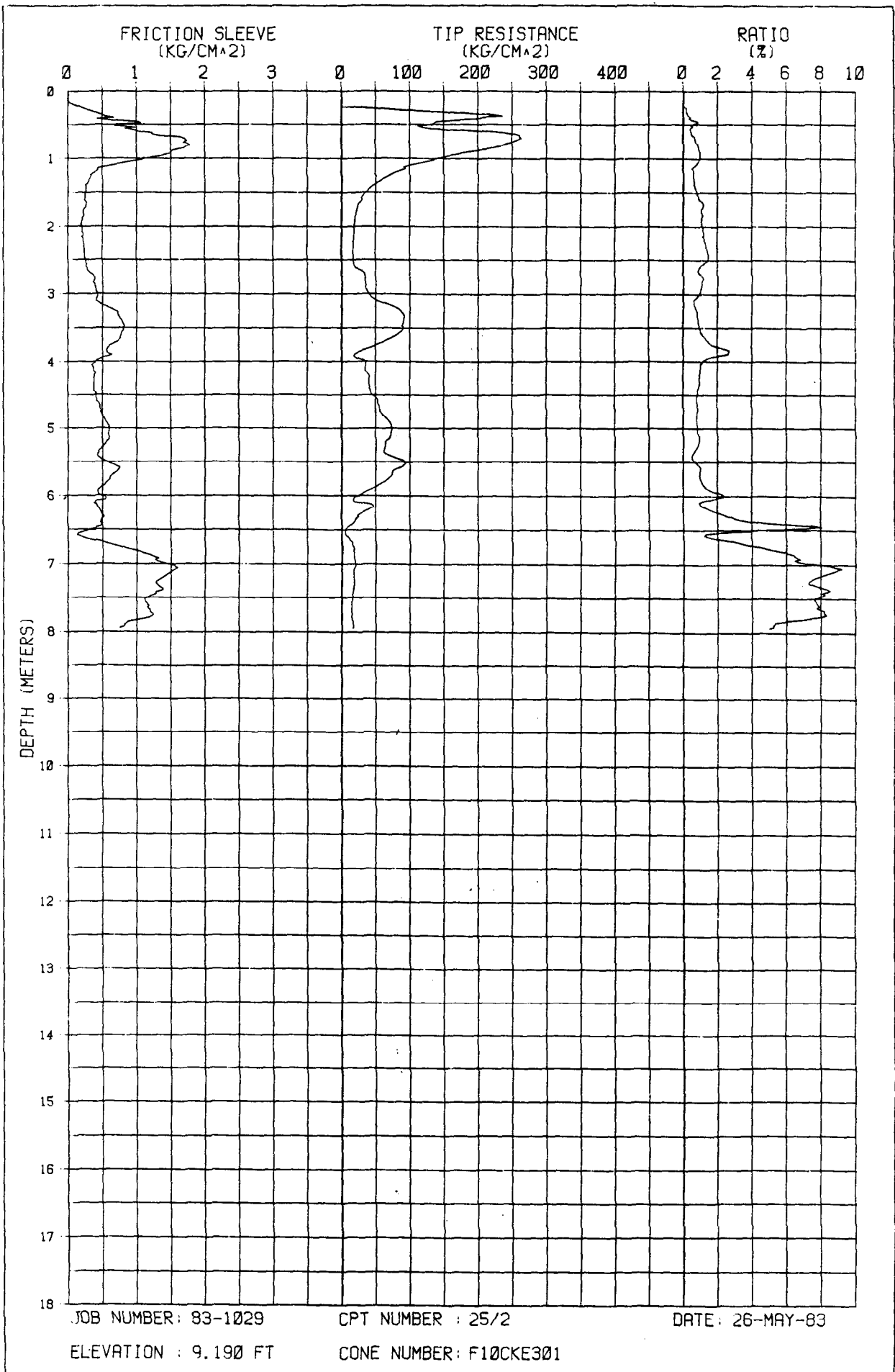
CPT NUMBER: 23/2

DATE: 26-MAY-83

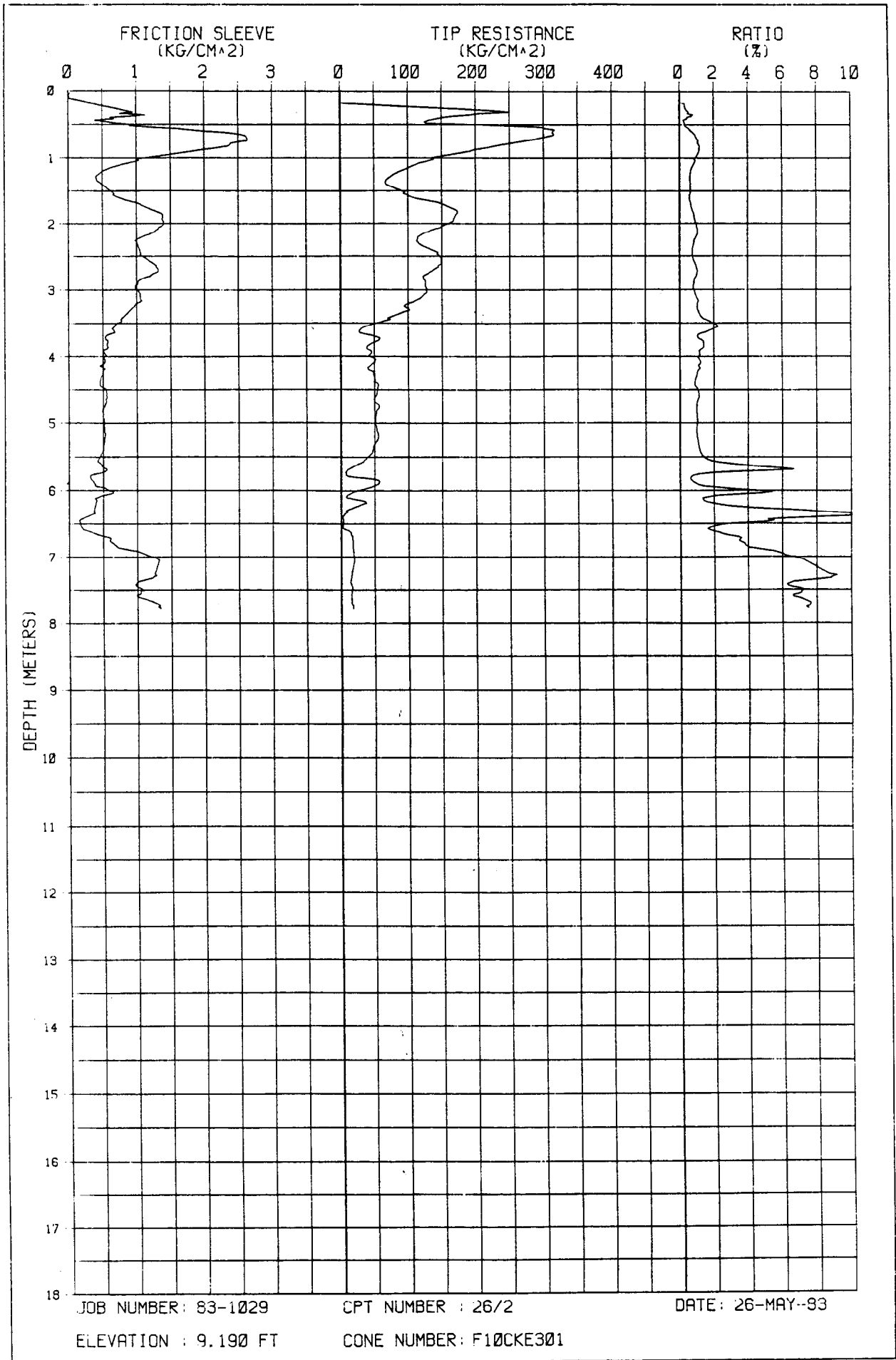
ELEVATION: 9.190 FT

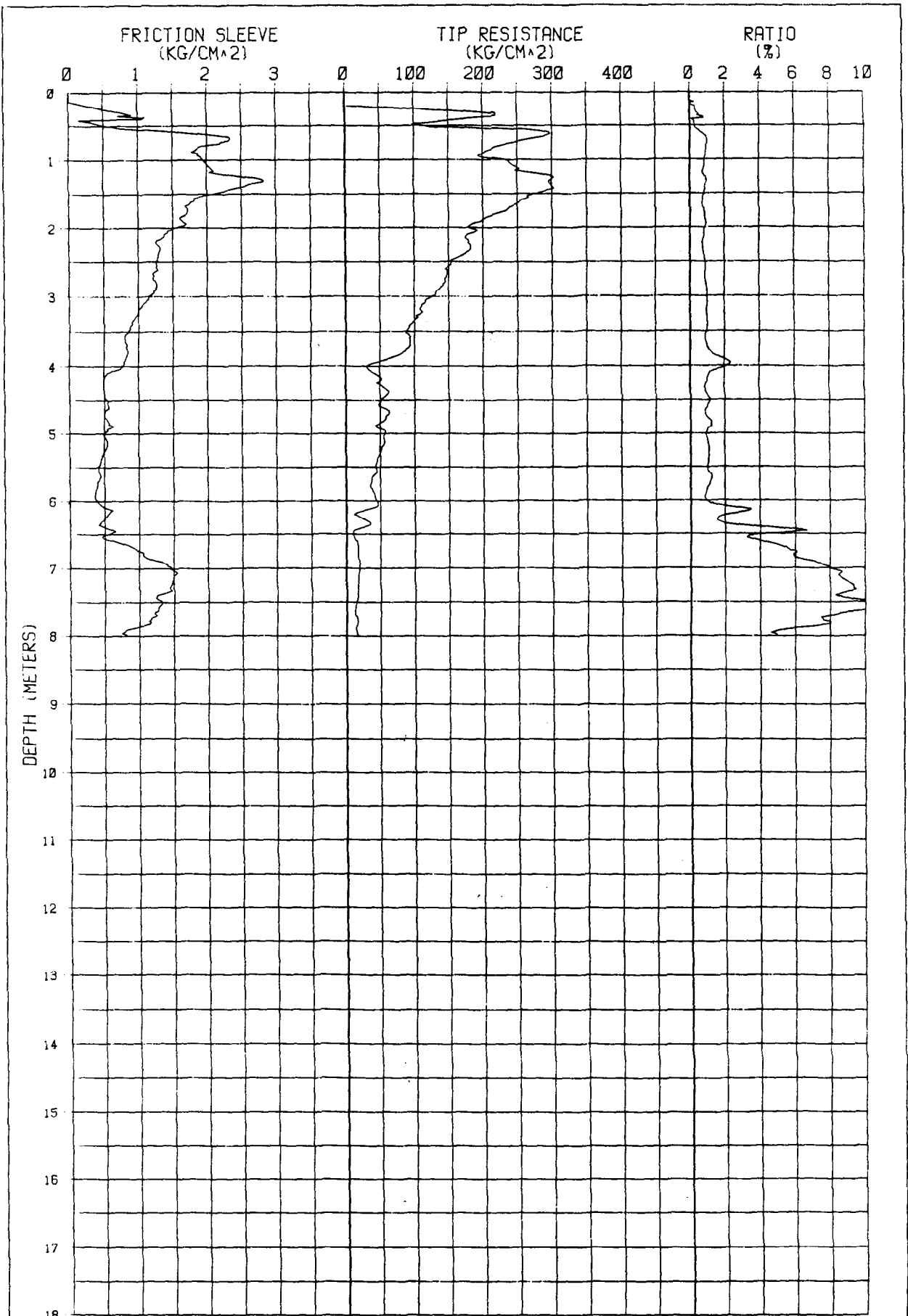
CONE NUMBER: F10CKE301





JOB NUMBER : 83-1029      CPT NUMBER : 25/2      DATE : 26-MAY-83  
 ELEVATION : 9.190 FT      CONE NUMBER : F10CKE301





JOB NUMBER: 83-1029

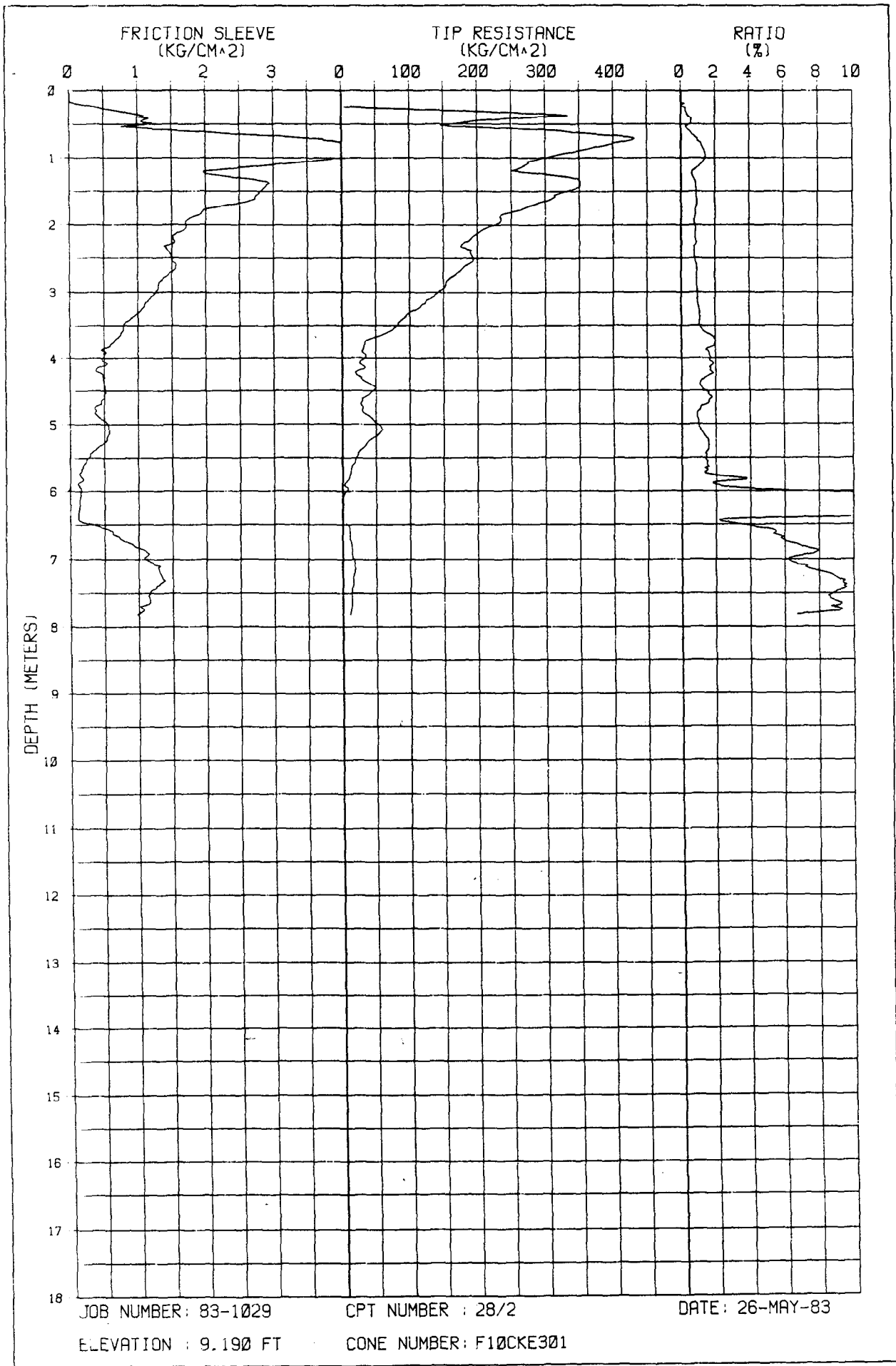
CPT NUMBER : 27/2

DATE: 26-MAY-83

ELEVATION : 9.190 FT

CONE NUMBER: F10CKE301

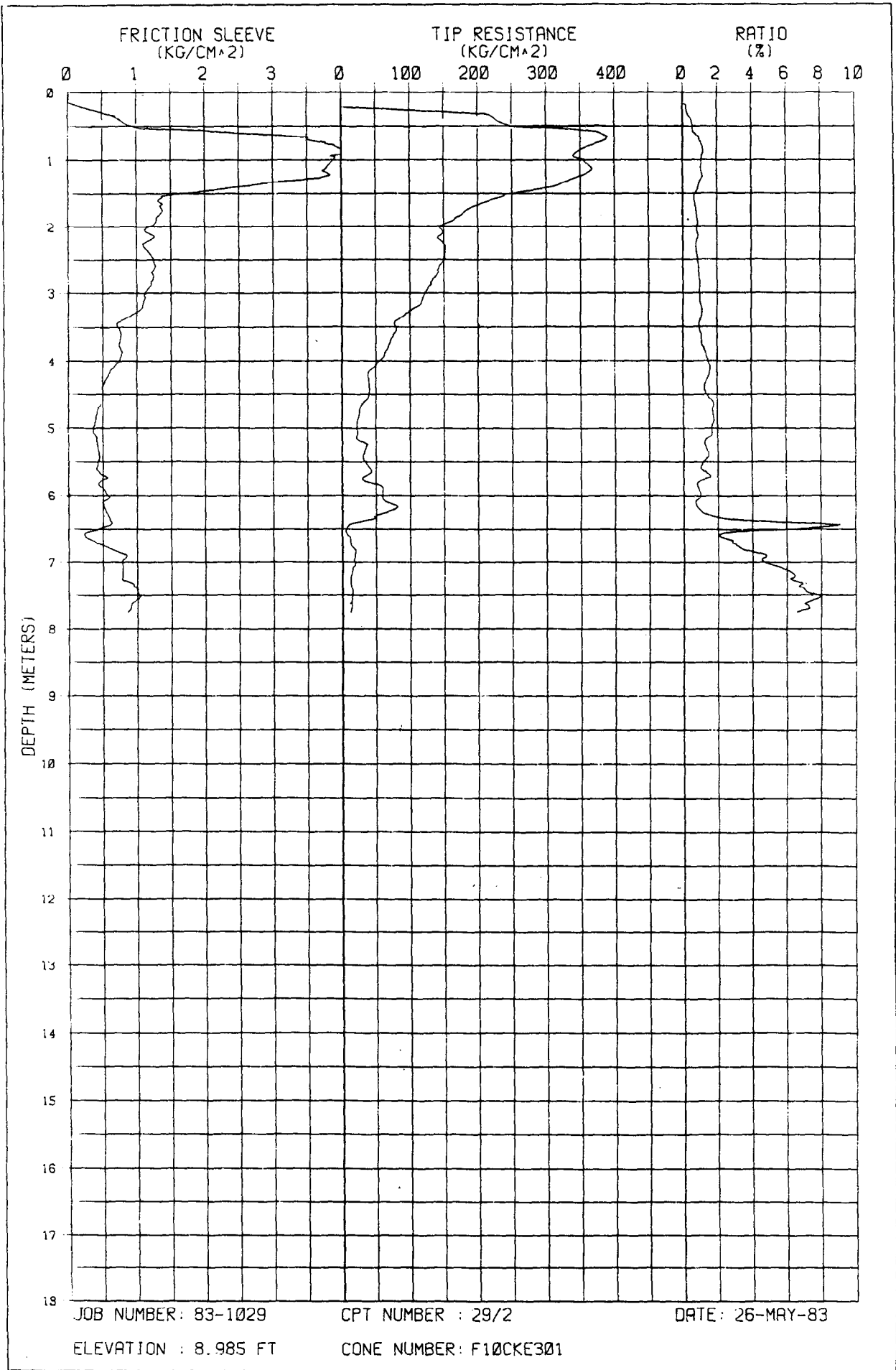


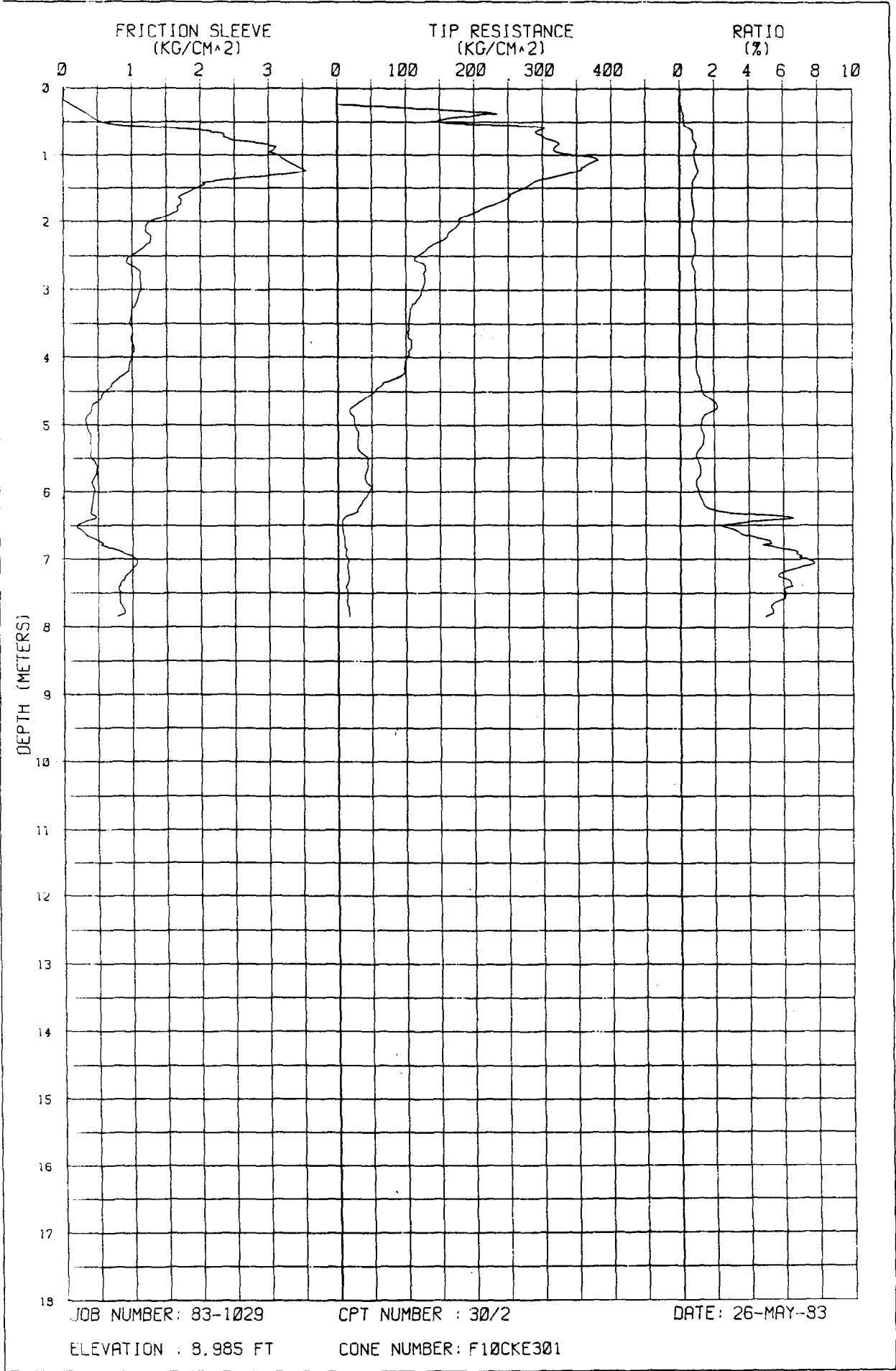


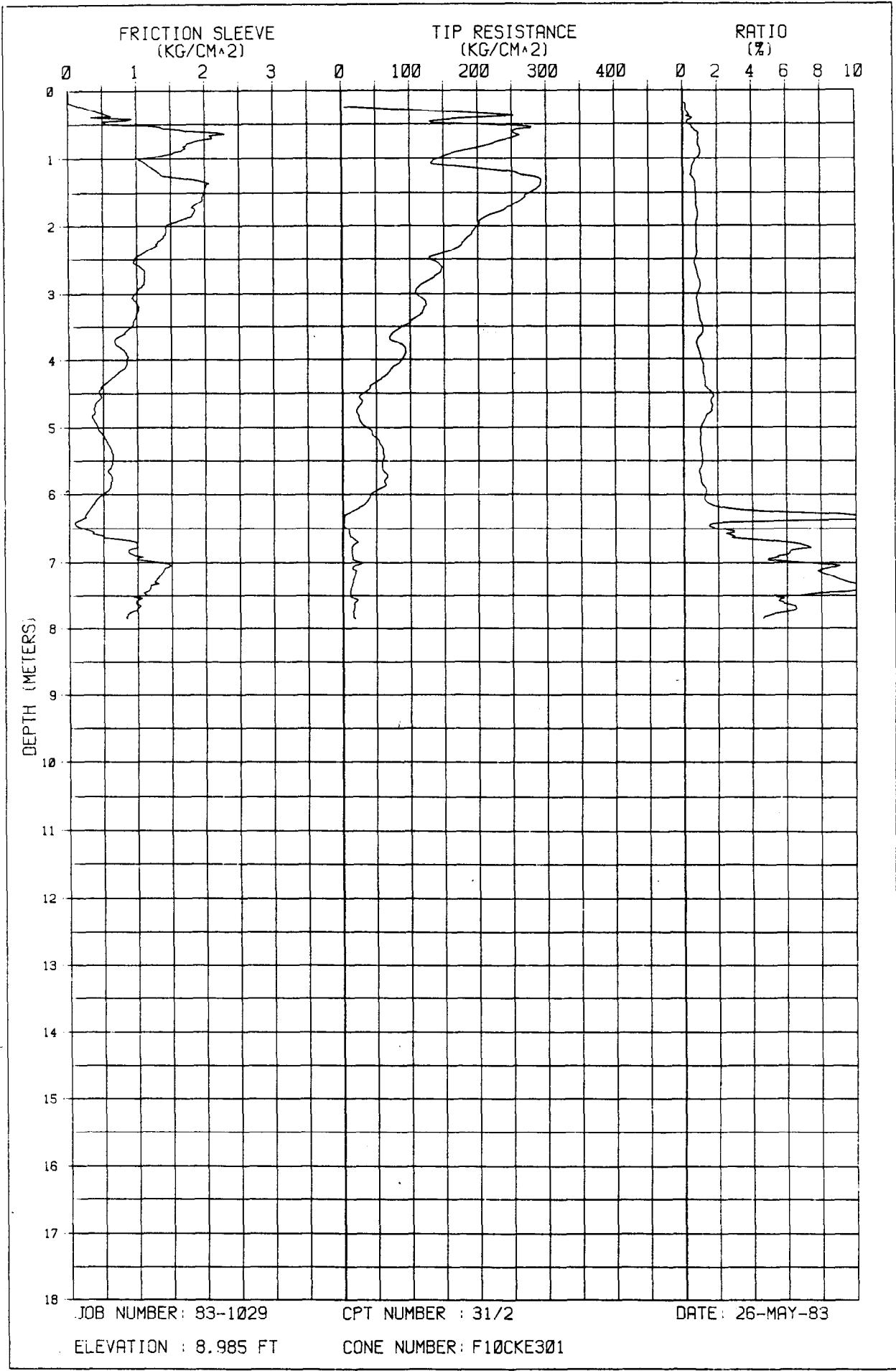
JOB NUMBER: 83-1029  
 ELEVATION: 9.190 FT

CPT NUMBER: 28/2  
 CONE NUMBER: F10CKE301

DATE: 26-MAY-83







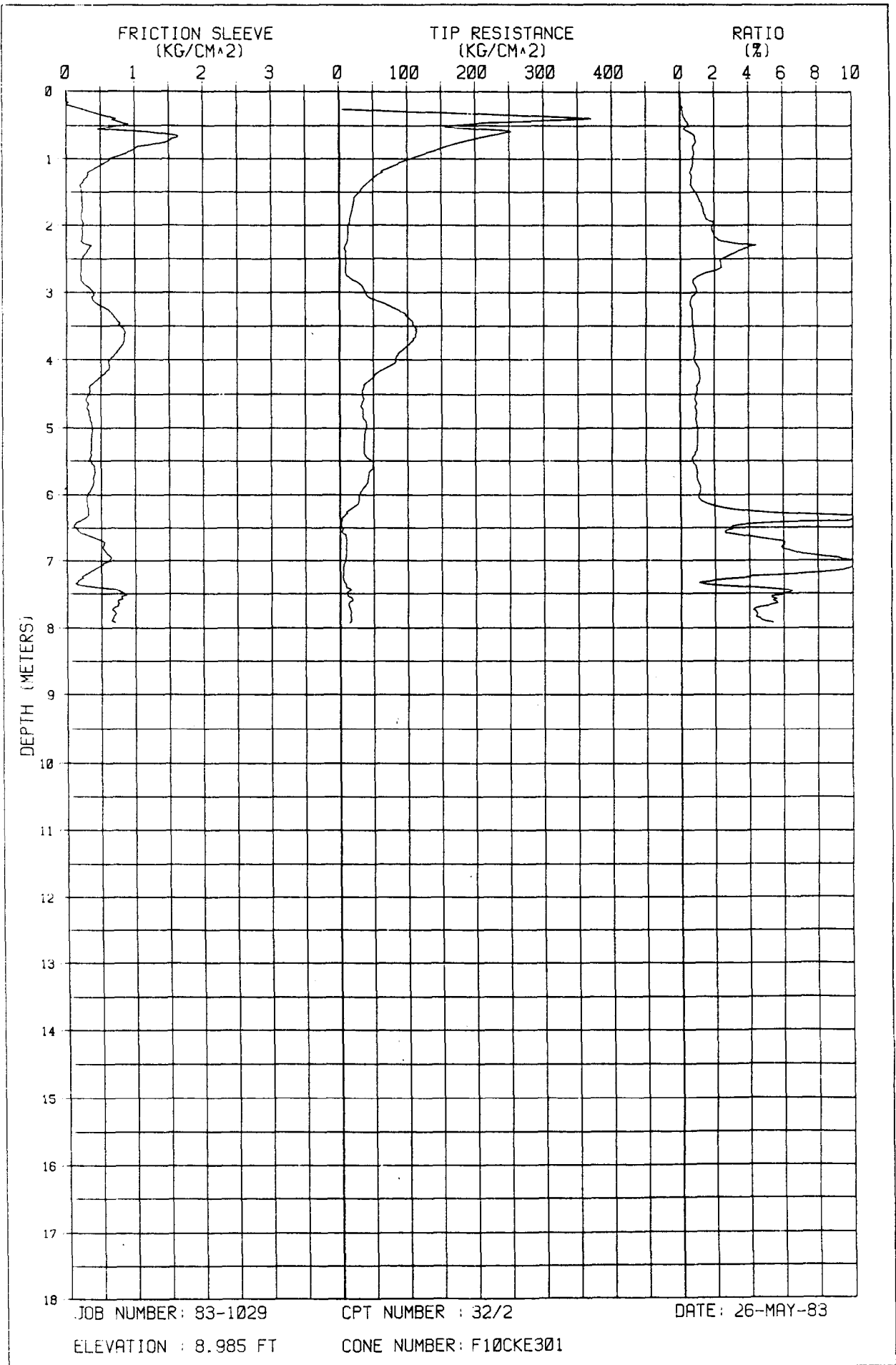
JOB NUMBER: 83-1029

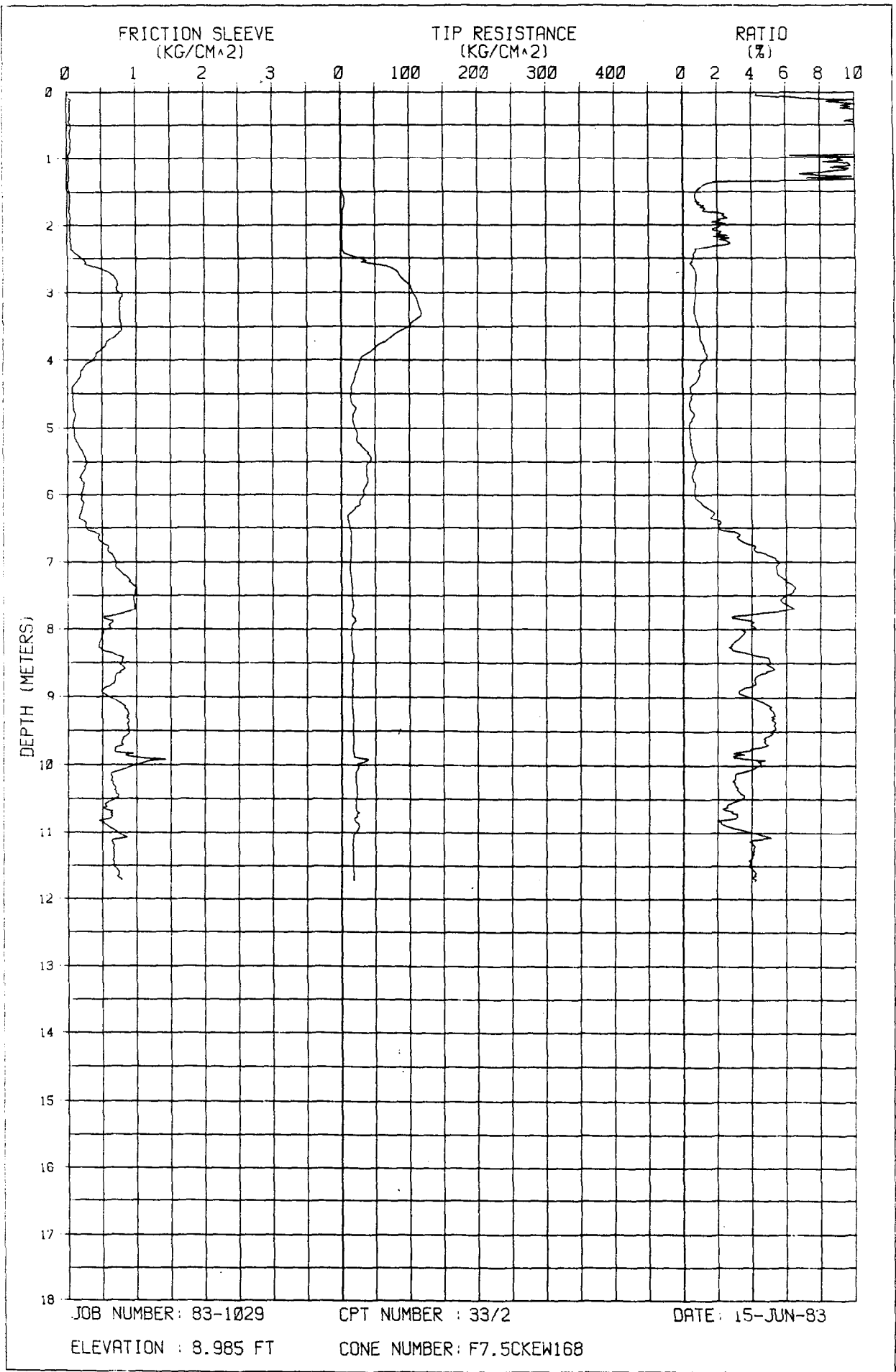
CPT NUMBER : 31/2

DATE: 26-MAY-83

ELEVATION : 8.985 FT

CONE NUMBER: F10CKE301





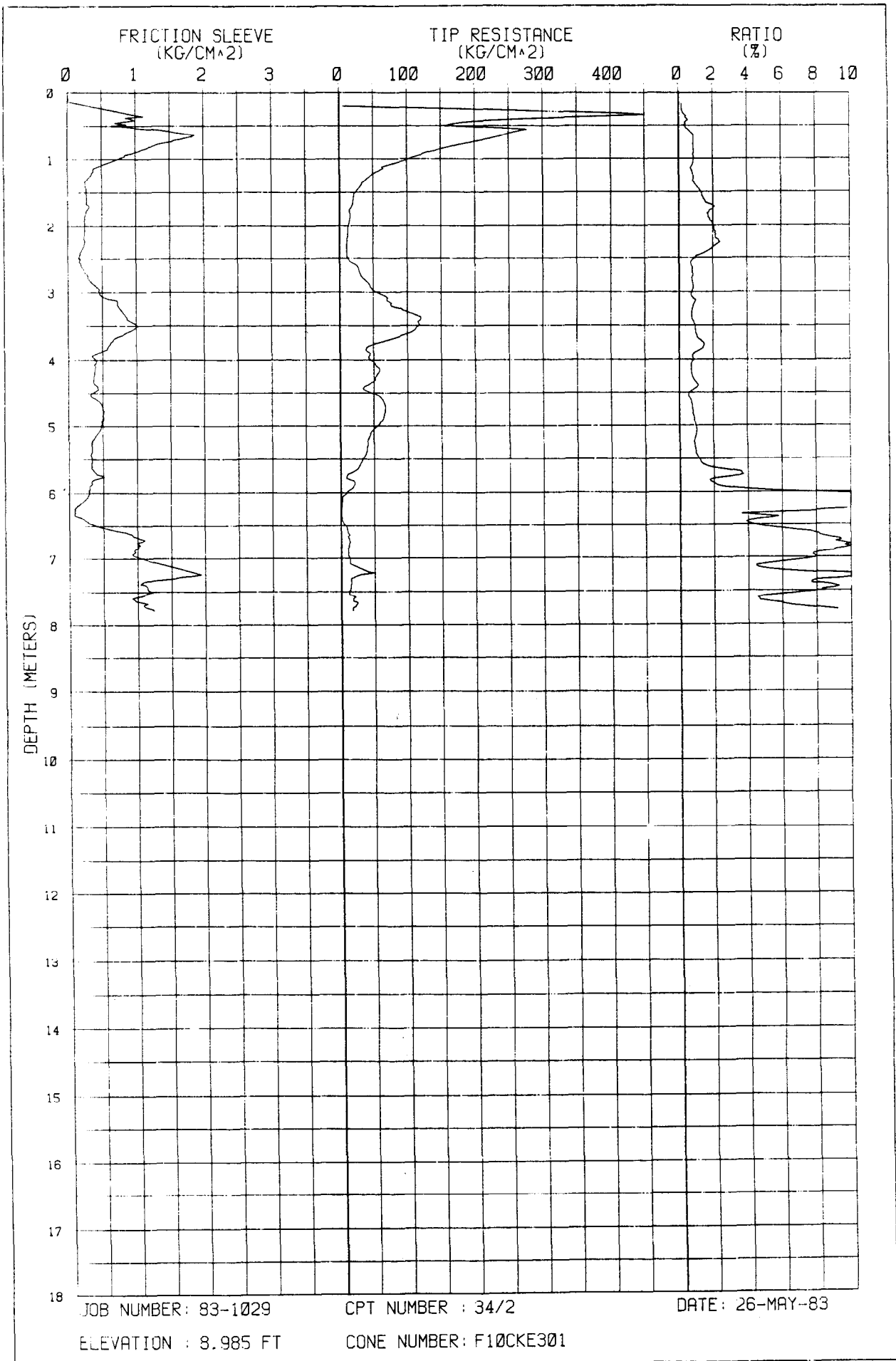
JOB NUMBER : 83-1029

CPT NUMBER : 33/2

DATE : 15-JUN-83

ELEVATION : 8.985 FT

CONE NUMBER : F7.5CKEW168



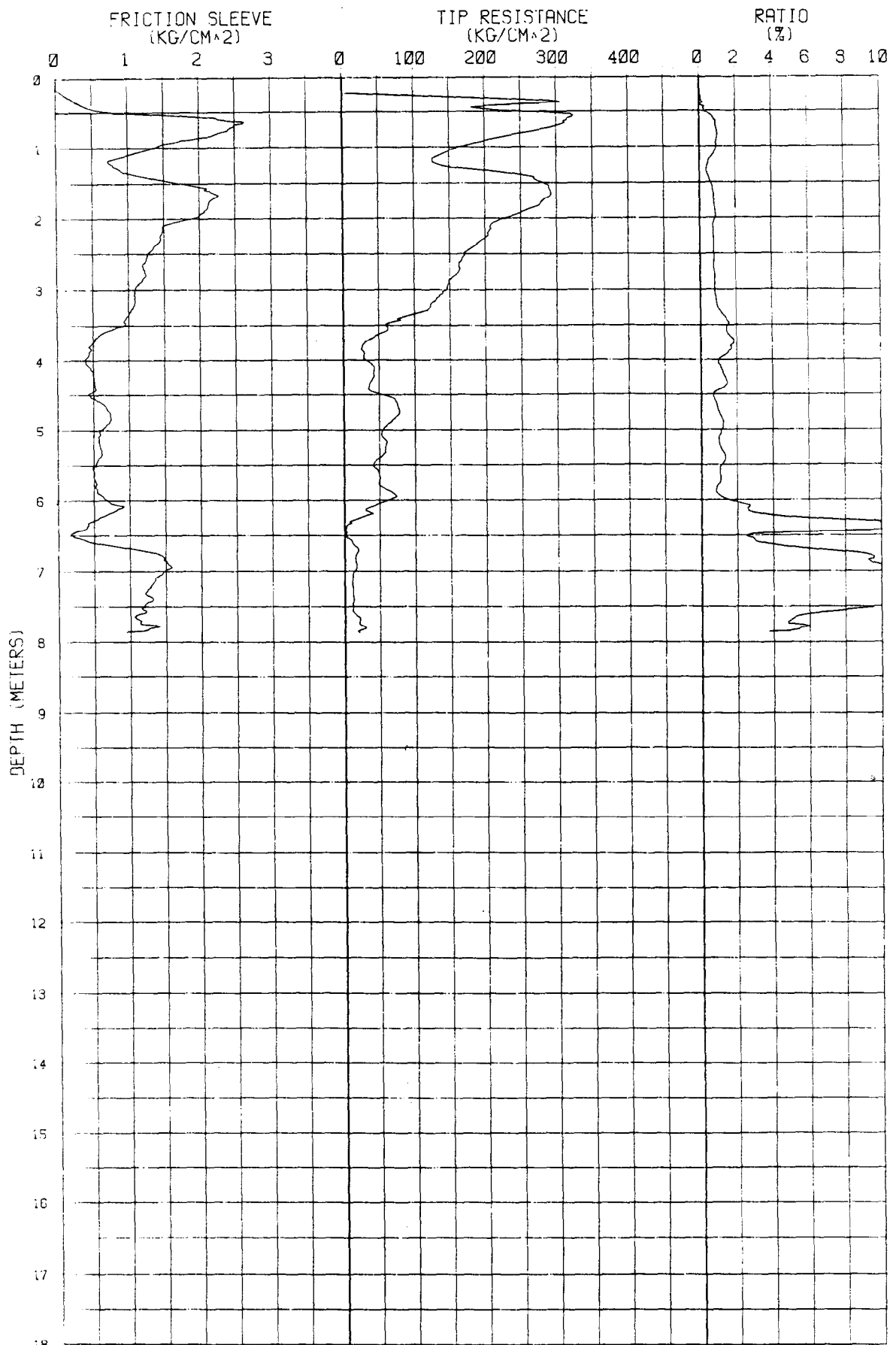
JOB NUMBER: 83-1029

CPT NUMBER : 34/2

DATE: 26-MAY-83

ELEVATION : 8.985 FT

CONE NUMBER: F10CKE301



JOB NUMBER : 83-1029

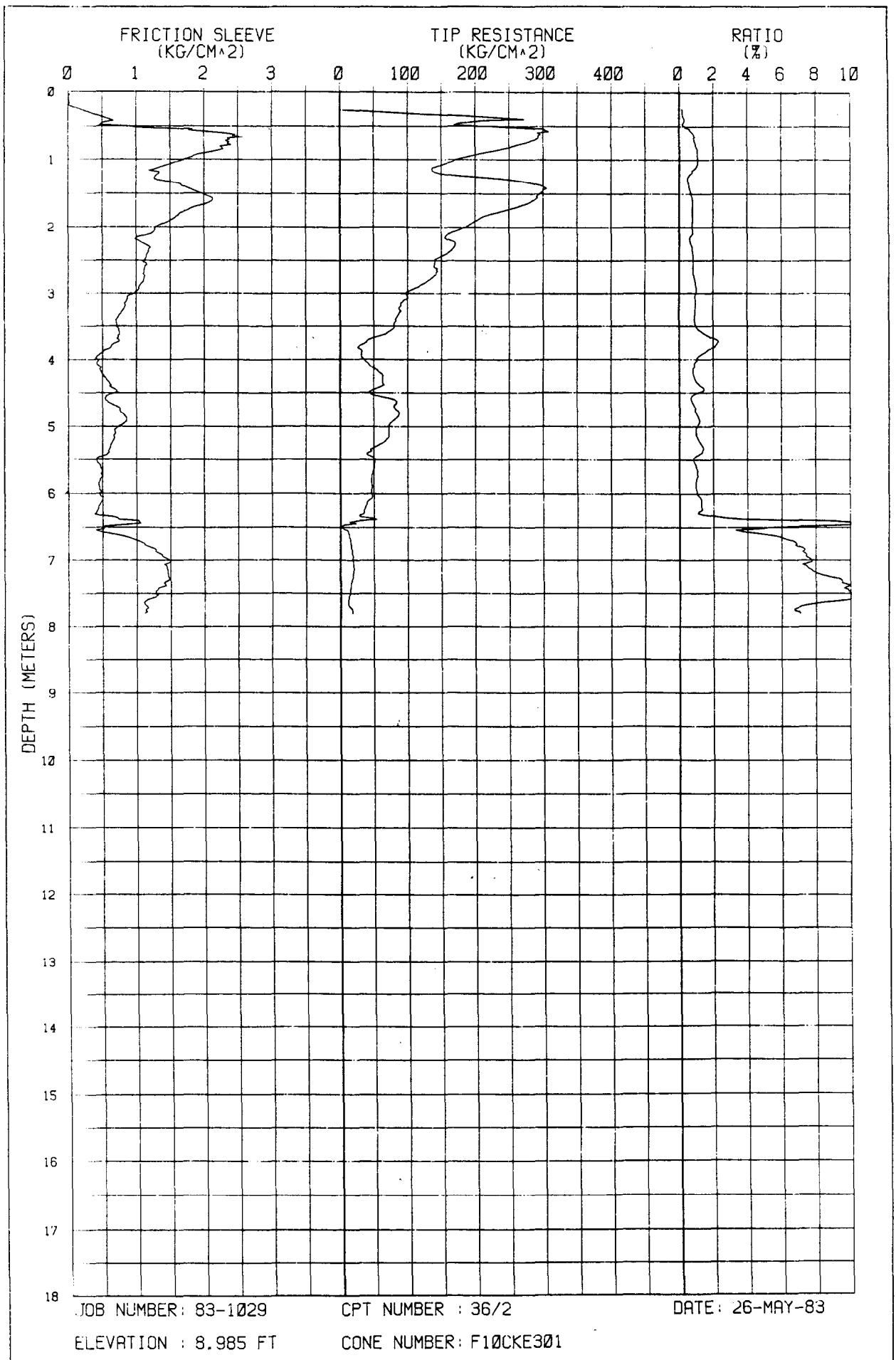
CPT NUMBER : 35/2

DATE : 26-MAY-83

ELEVATION : 8.985 FT

CONE NUMBER : F10CKE301





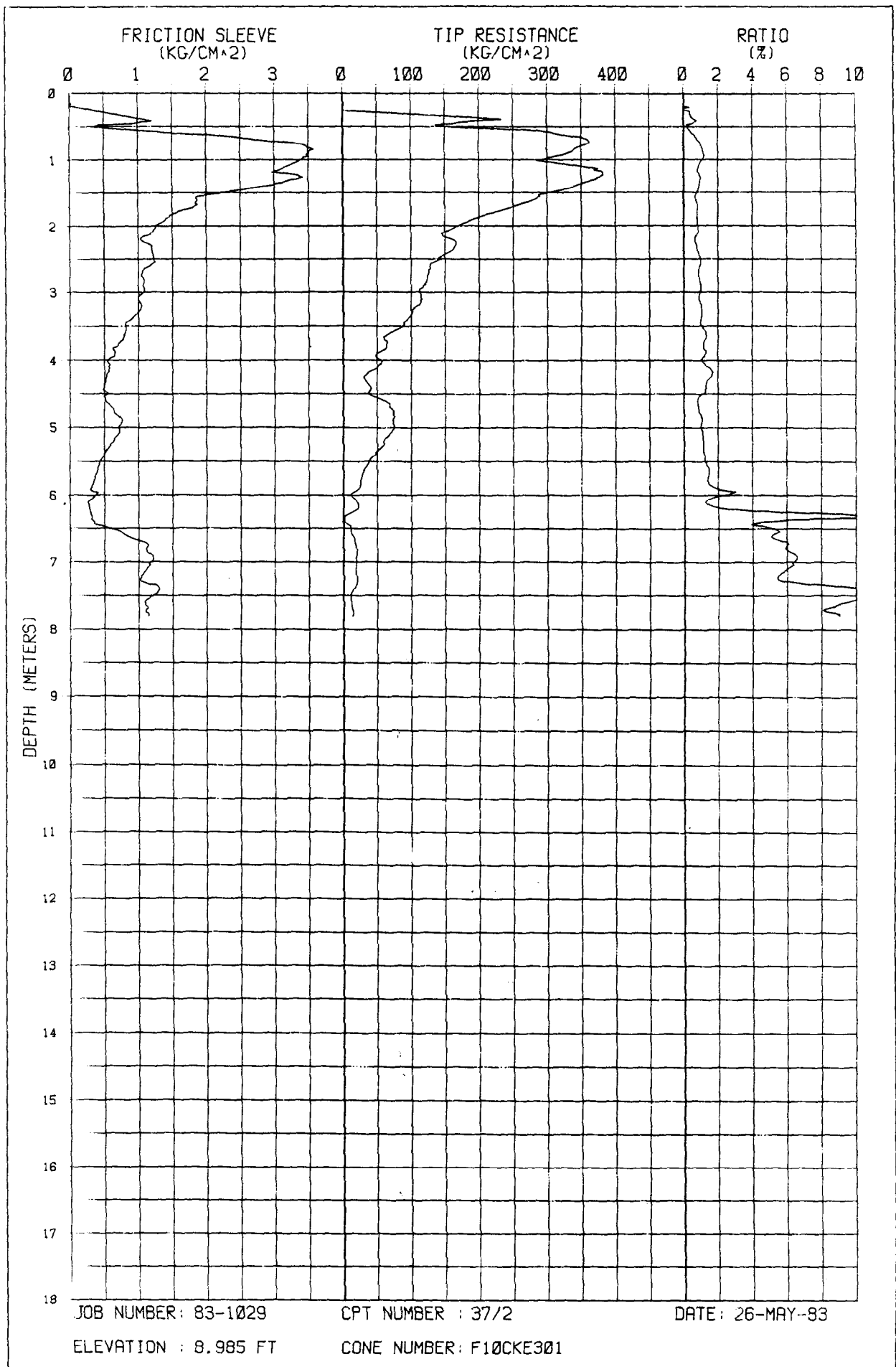
JOB NUMBER: 83-1029

CPT NUMBER : 36/2

DATE: 26-MAY-83

ELEVATION : 8.985 FT

CONE NUMBER: F10CKE301



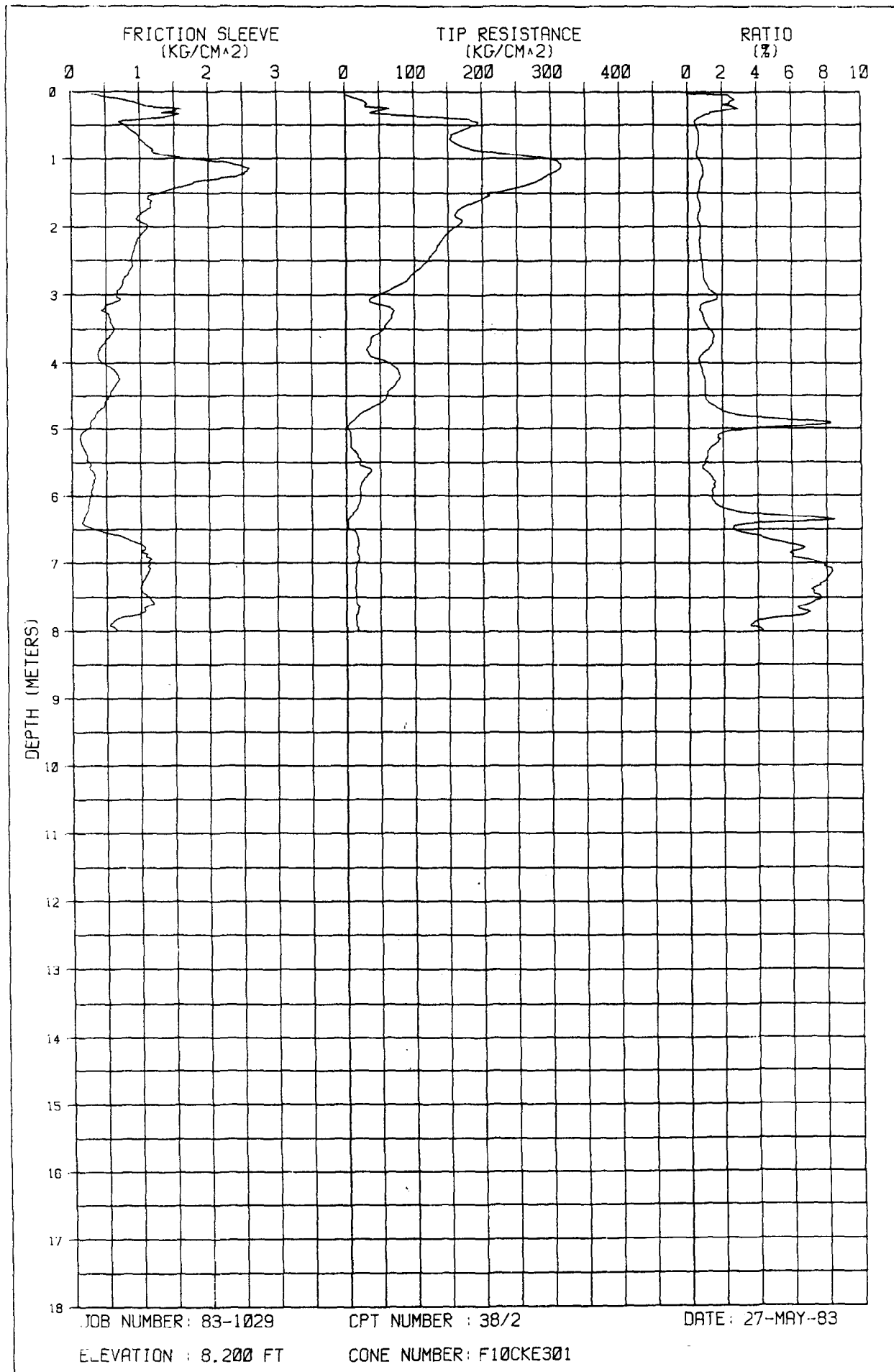
JOB NUMBER : 83-1029

CPT NUMBER : 37/2

DATE : 26-MAY-83

ELEVATION : 8.985 FT

CONE NUMBER : F10CKE301



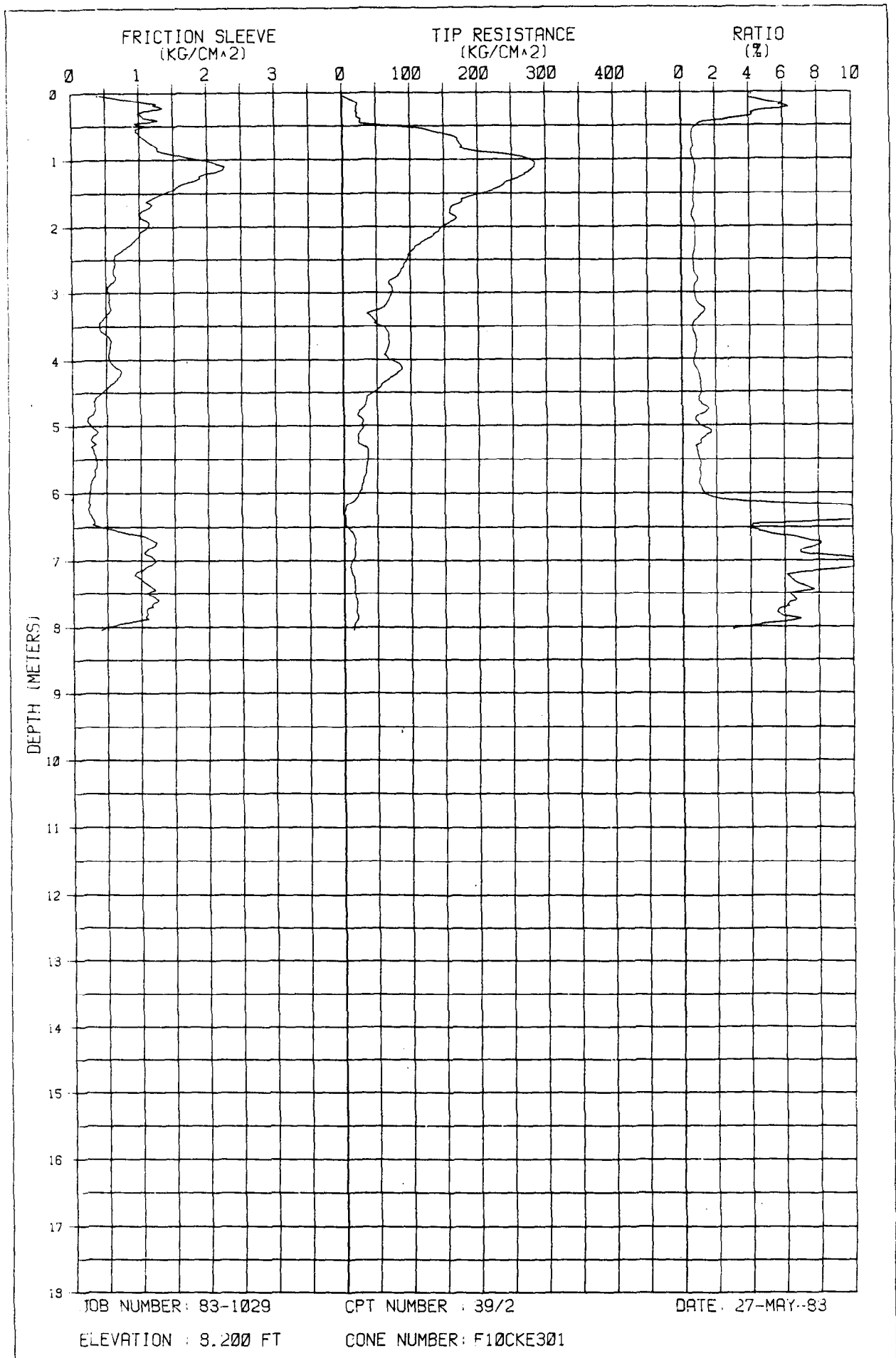
JOB NUMBER: 83-1029

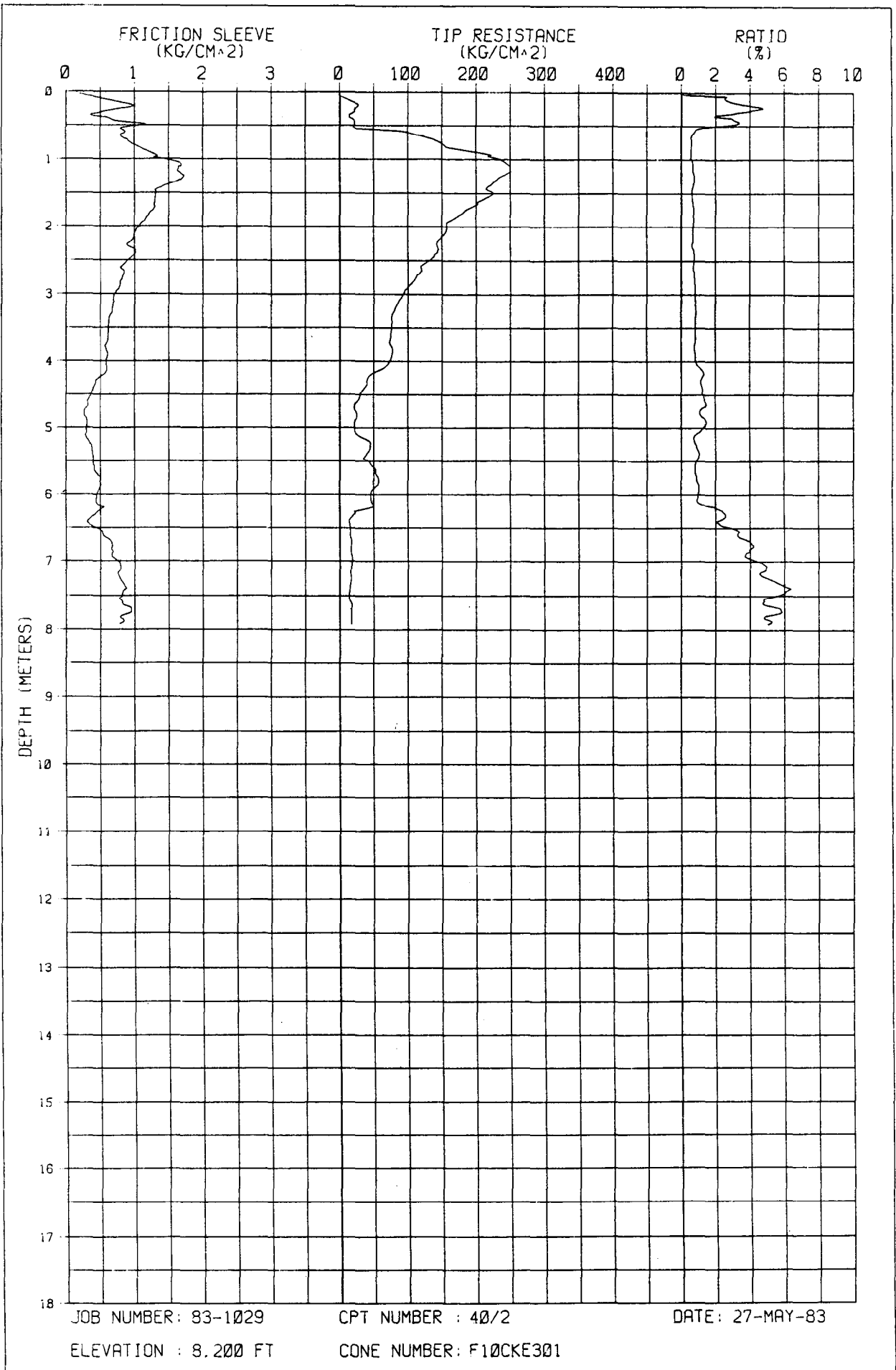
CPT NUMBER: 38/2

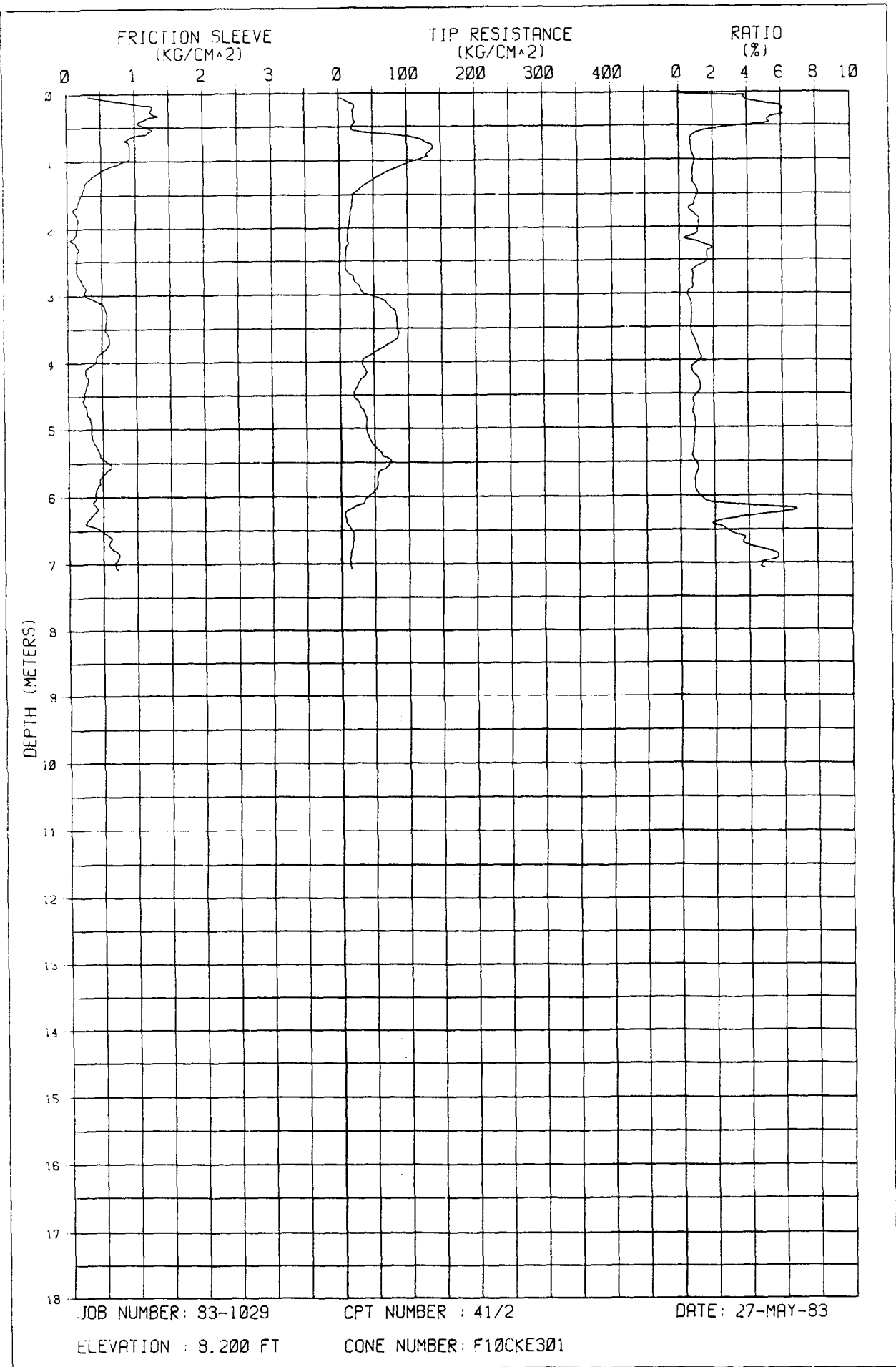
DATE: 27-MAY-83

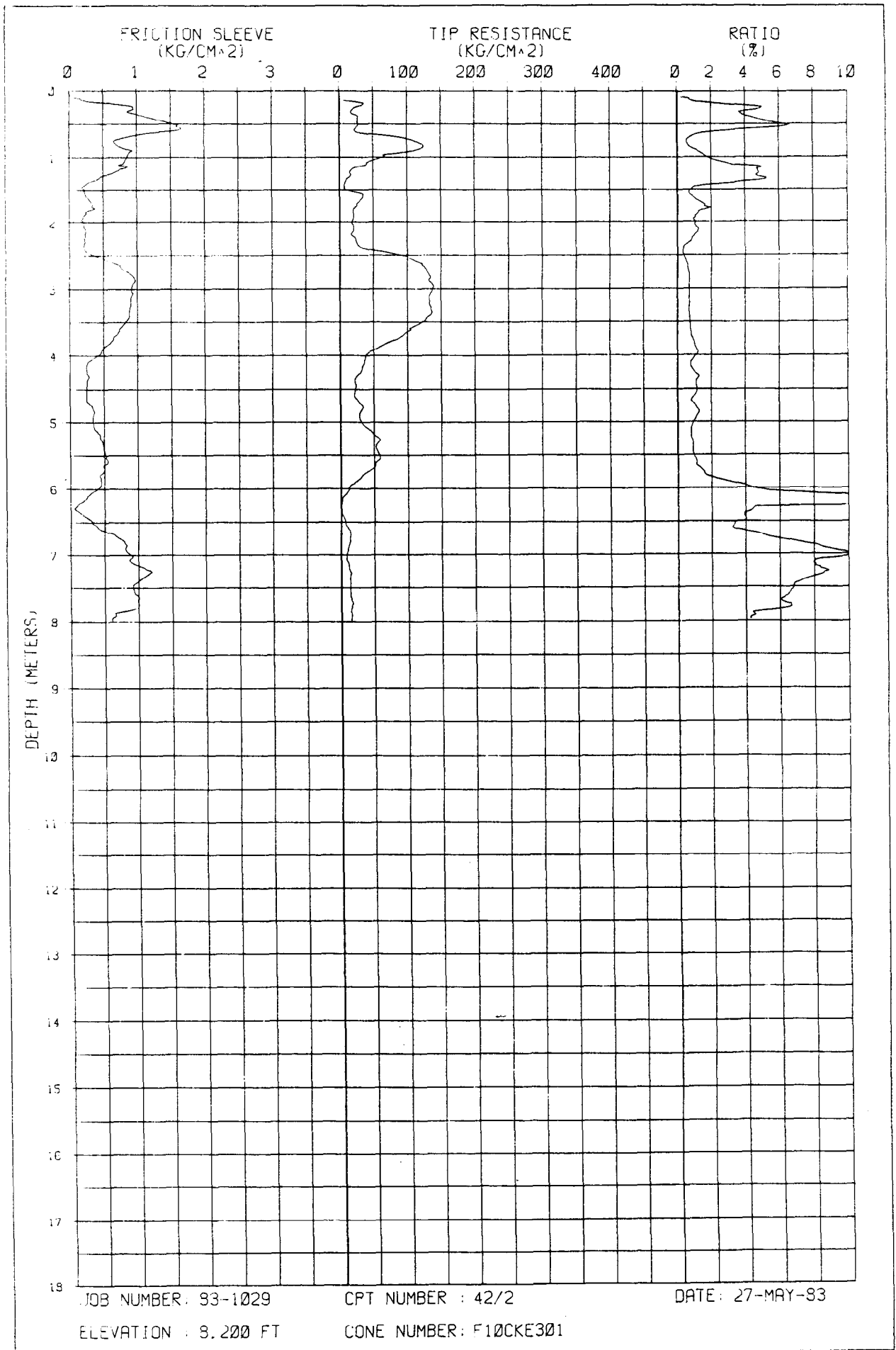
ELEVATION: 8.200 FT

CONE NUMBER: F10CKE301









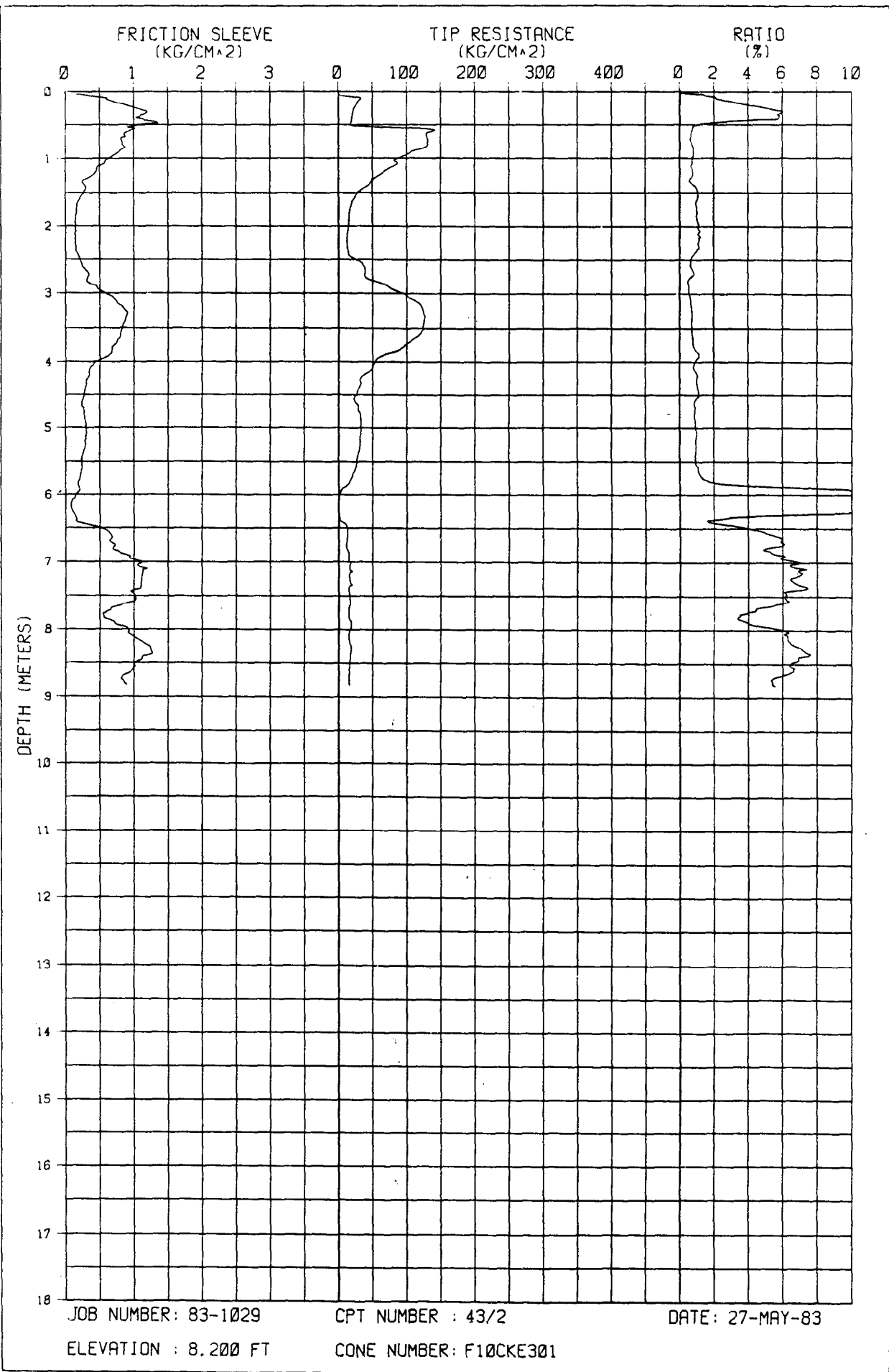
JOB NUMBER : 93-1029

CPT NUMBER : 42/2

DATE : 27-MAY-83

ELEVATION : 8.200 FT

CONE NUMBER : F10CKE301



JOB NUMBER: 83-1029

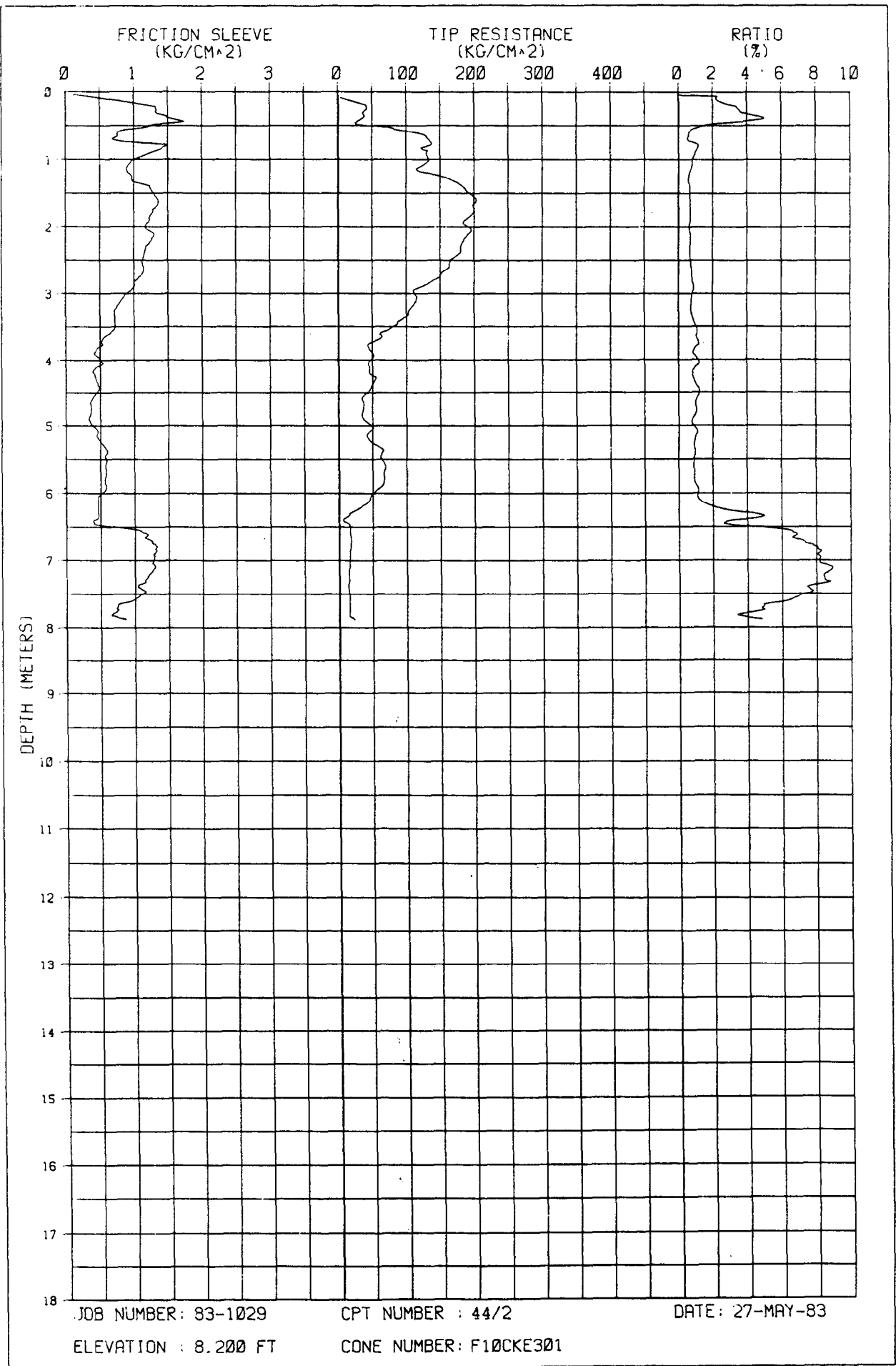
CPT NUMBER : 43/2

DATE: 27-MAY-83

ELEVATION : 8.200 FT

CONE NUMBER: F10CKE301





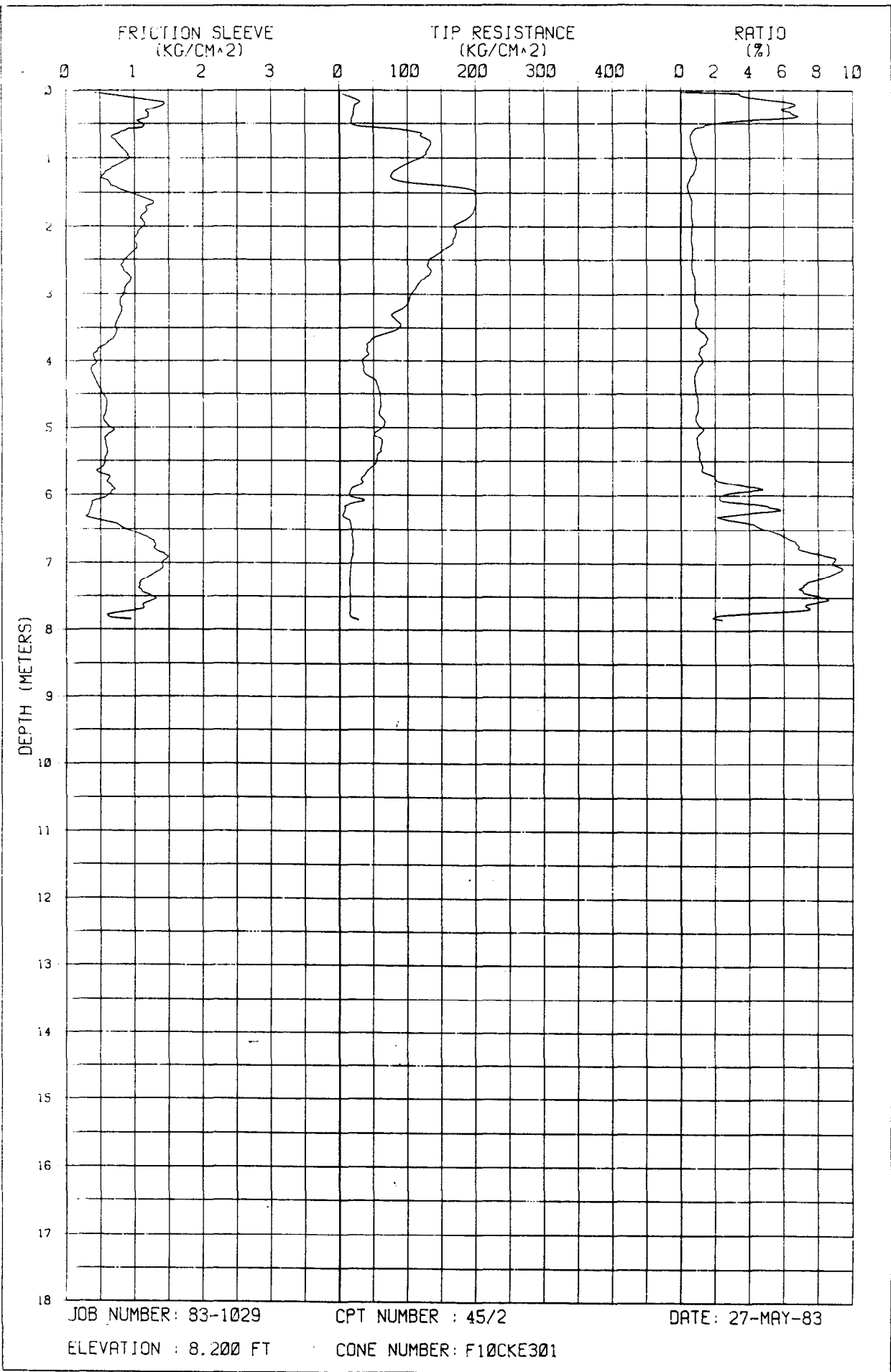
JOB NUMBER : 83-1029

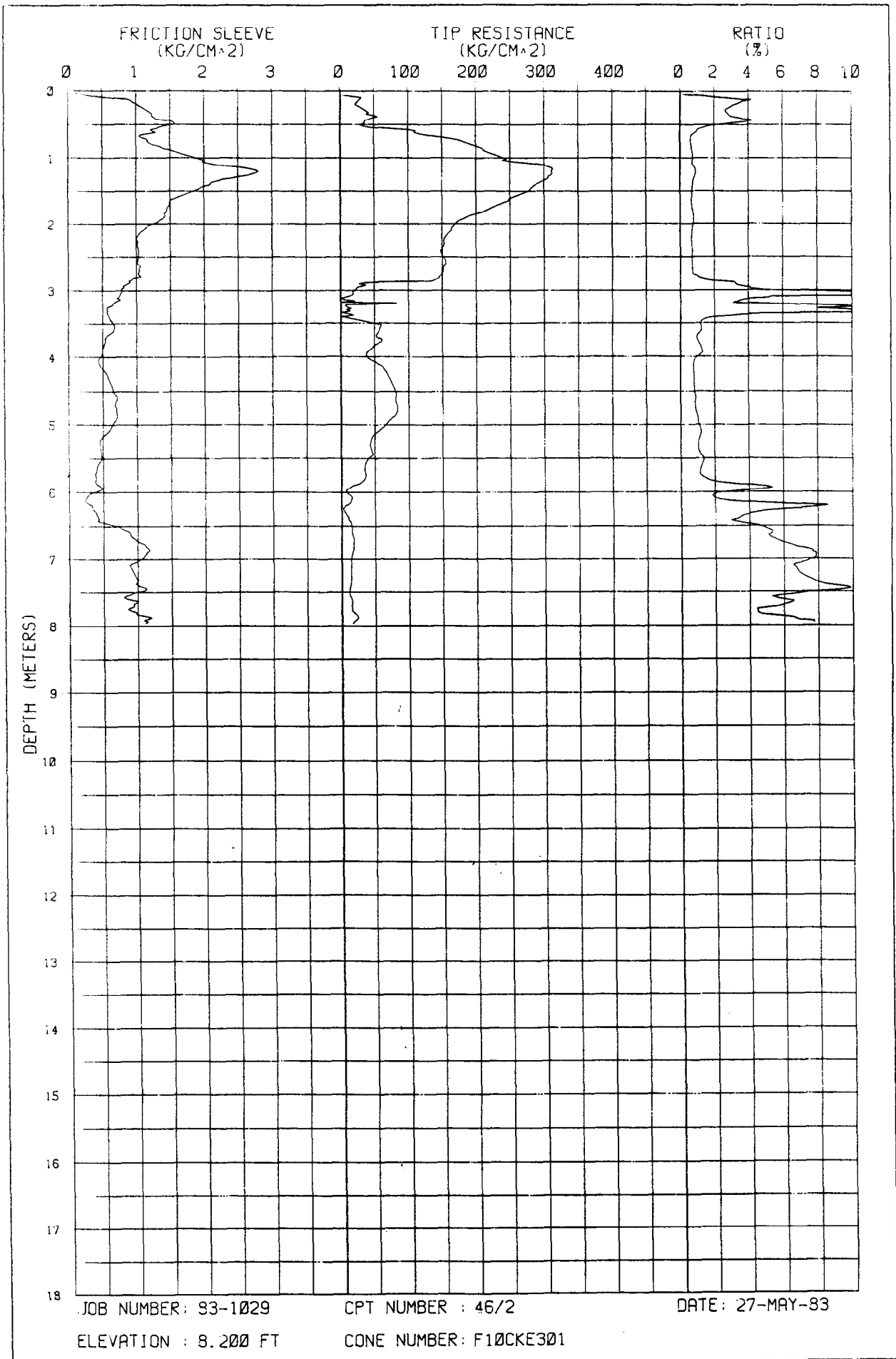
CPT NUMBER : 44/2

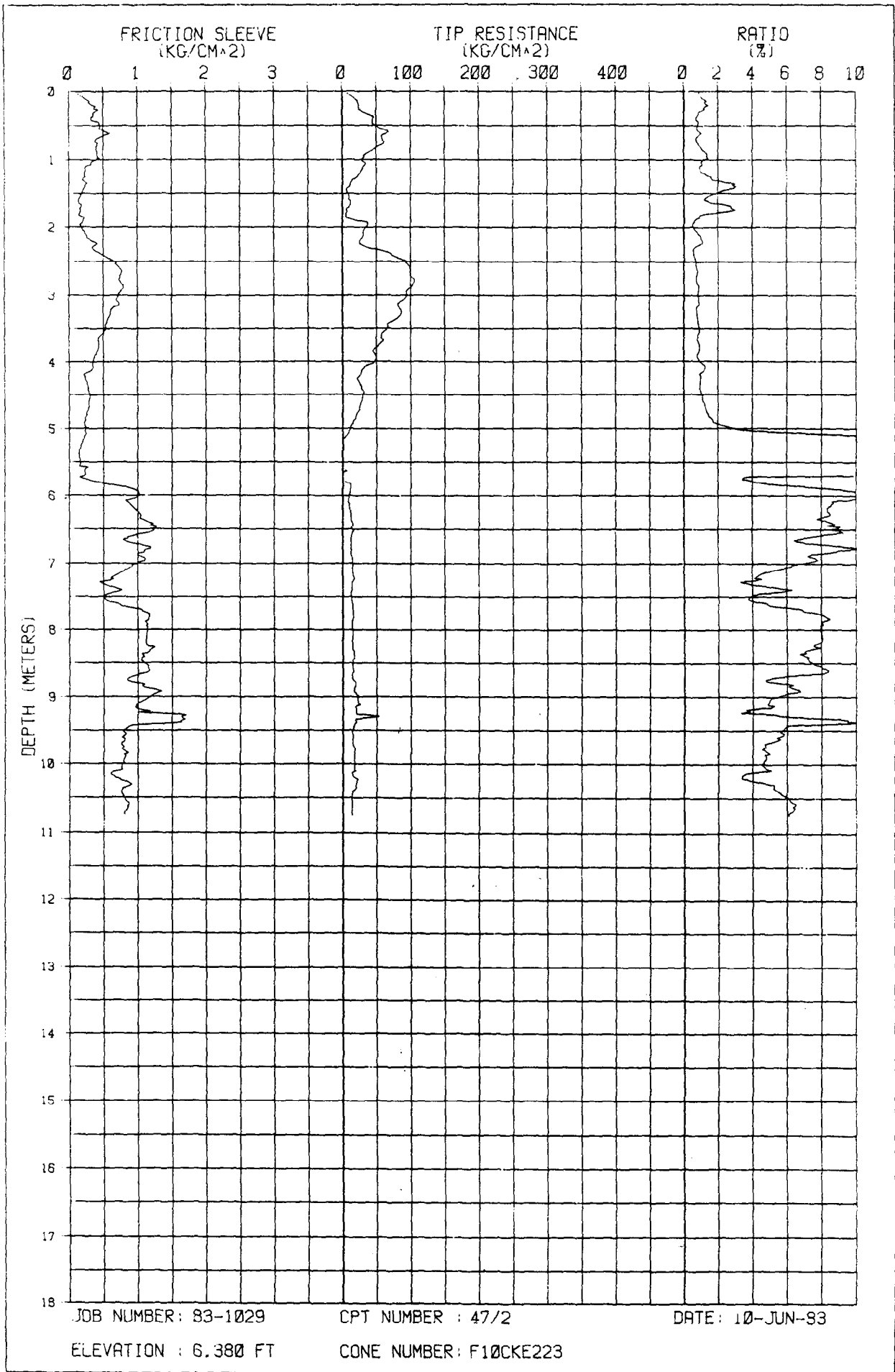
DATE : 27-MAY-83

ELEVATION : 8.200 FT

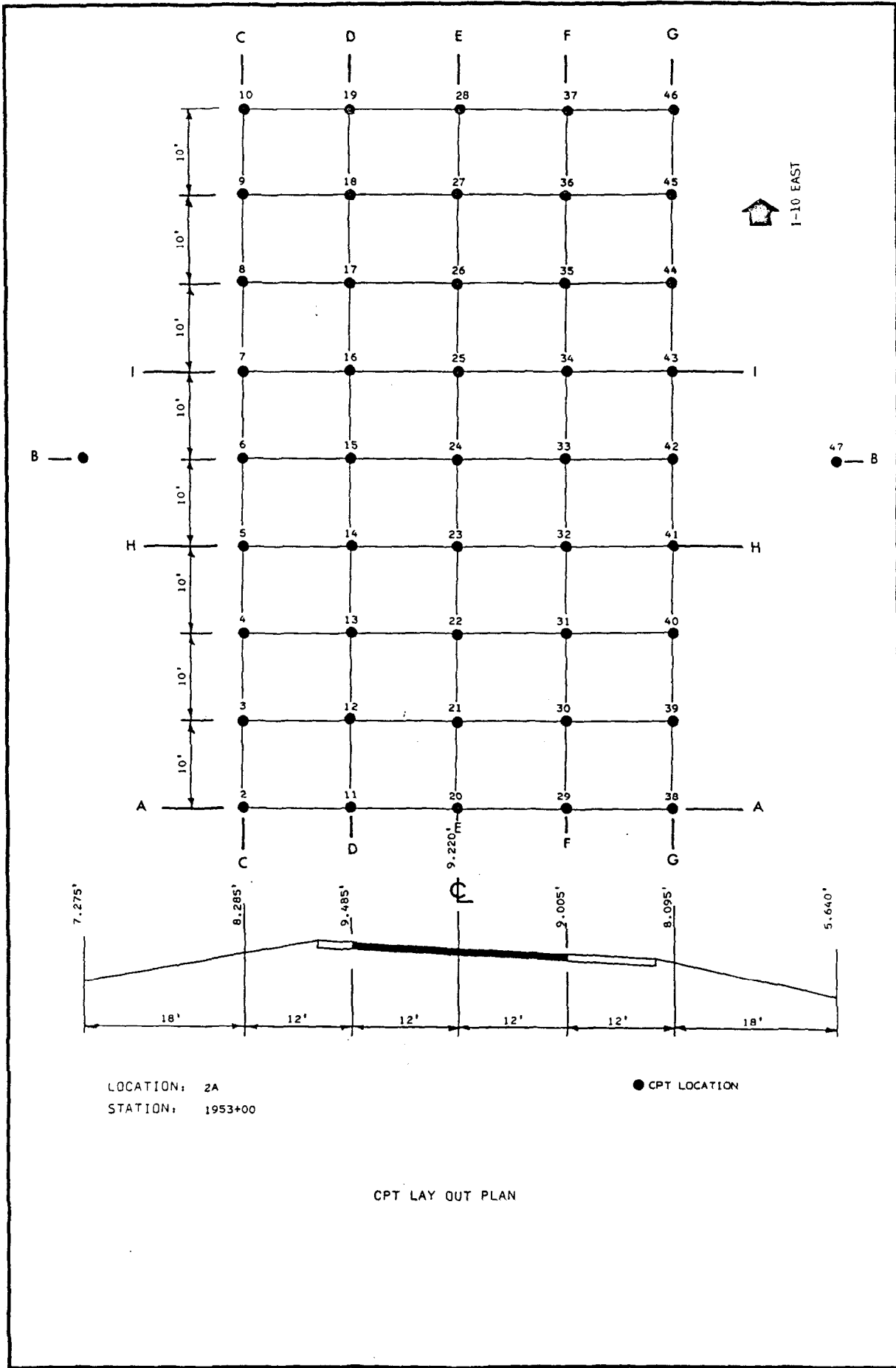
CONE NUMBER : F10CKE301

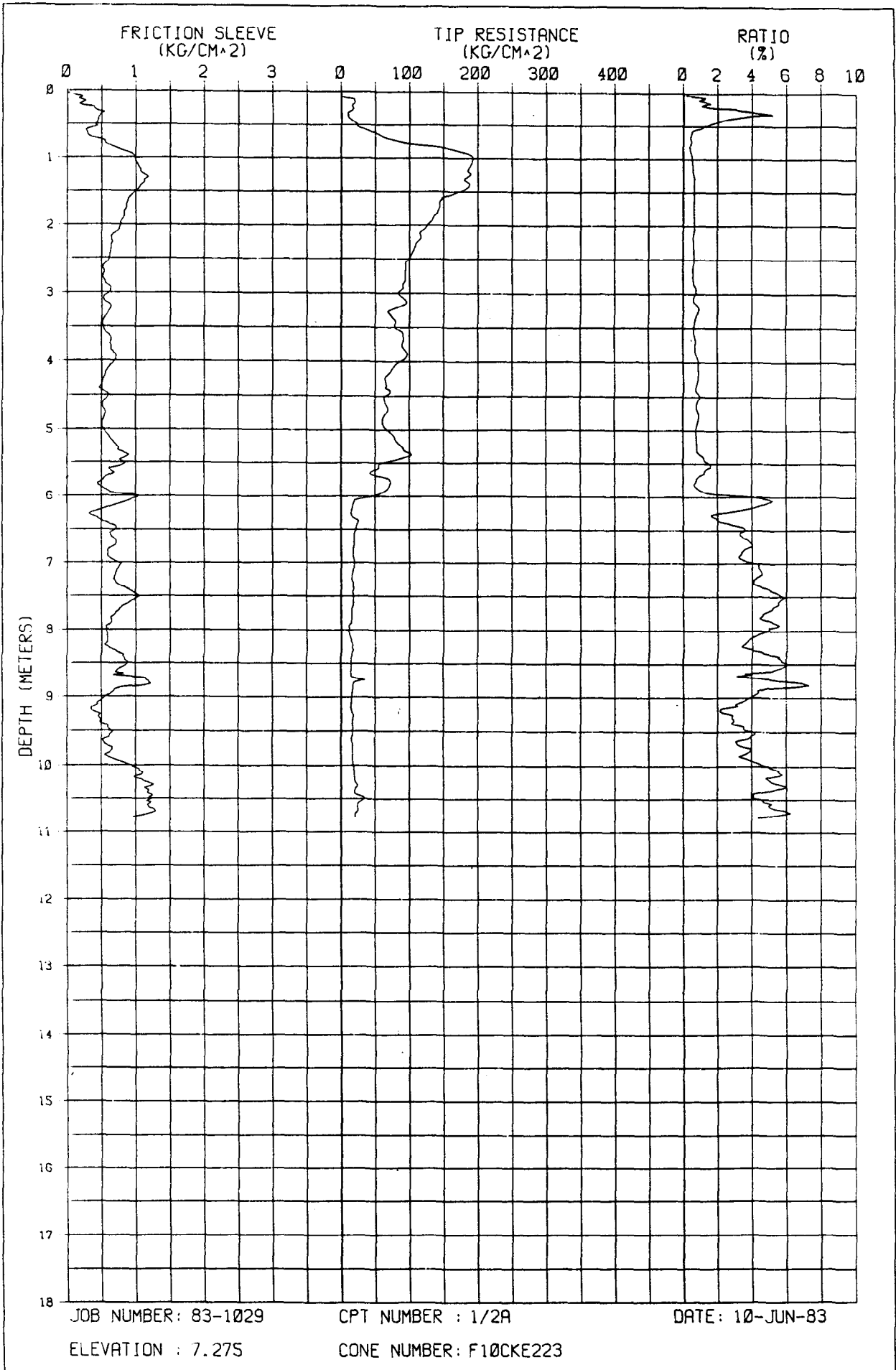


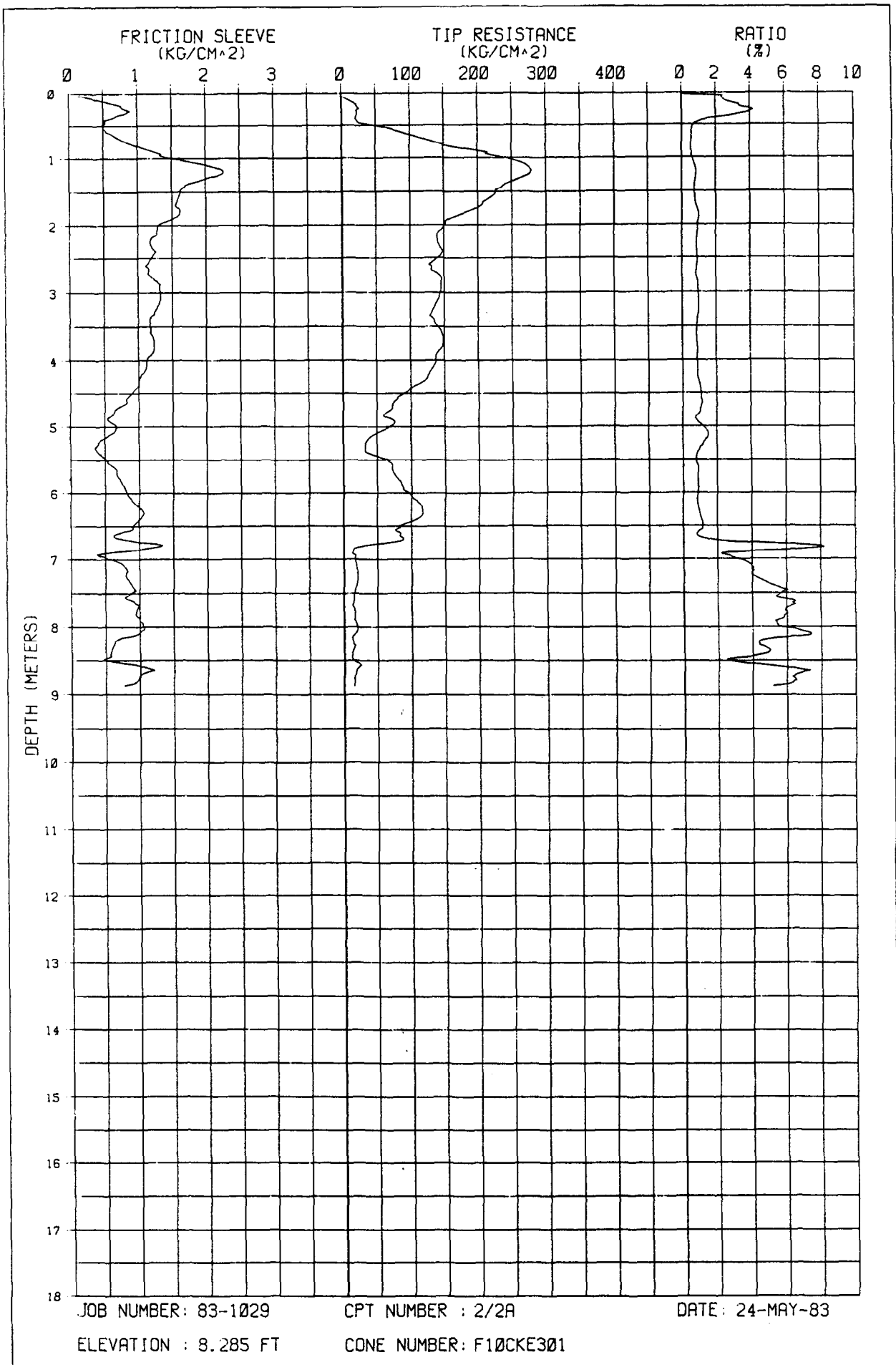




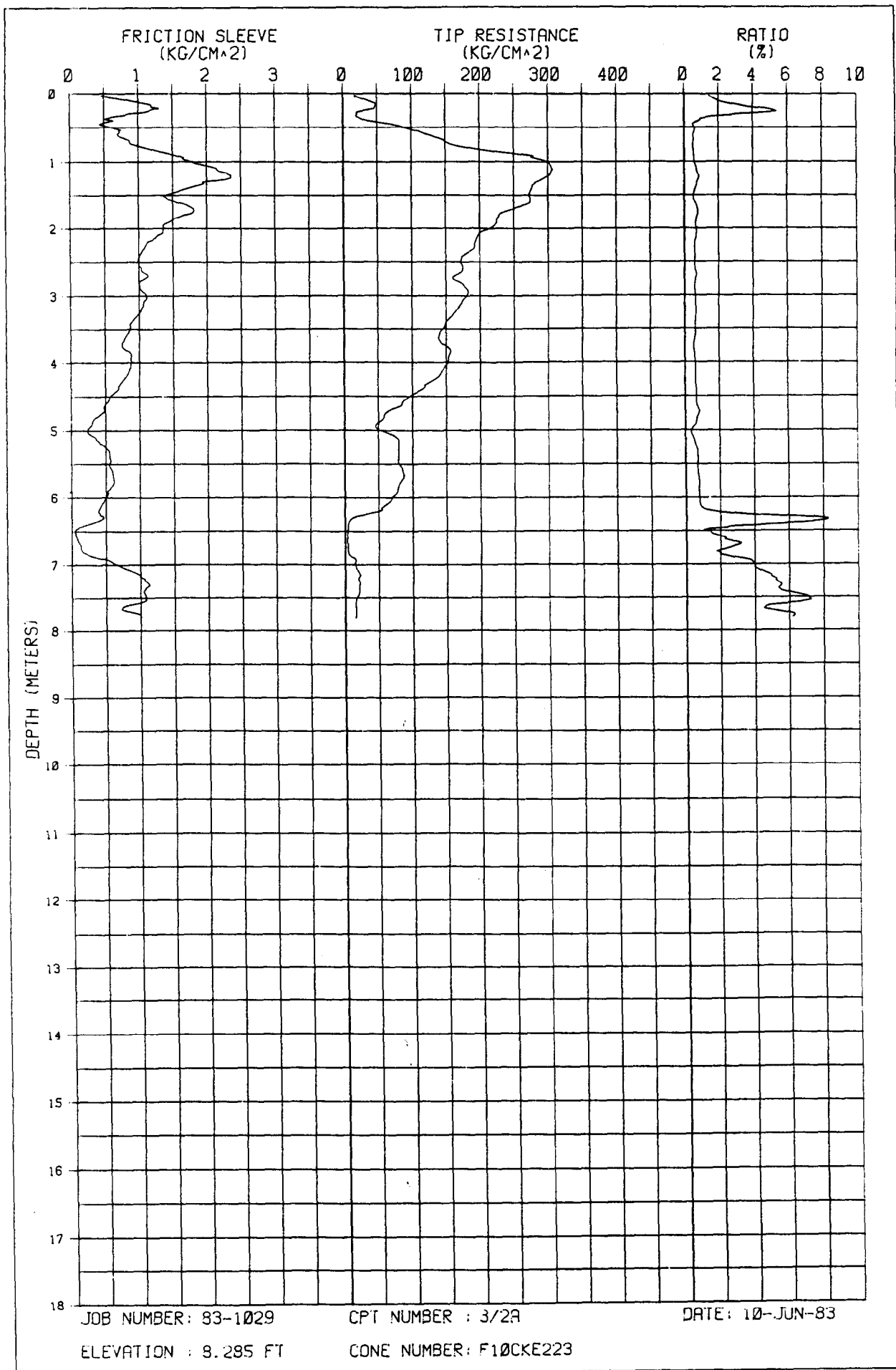
CONE PENETROMETER TEST LOCATION 2A

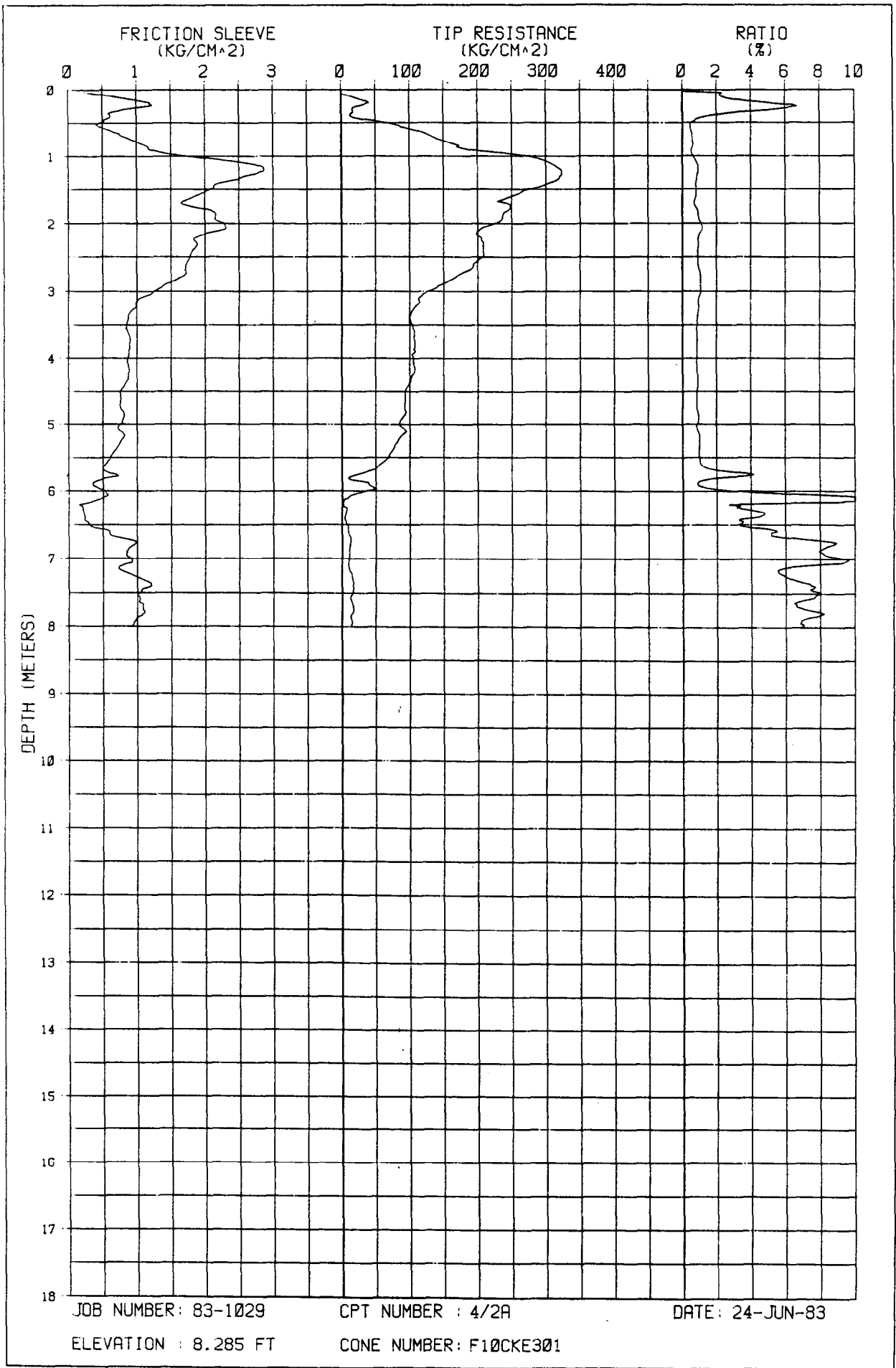


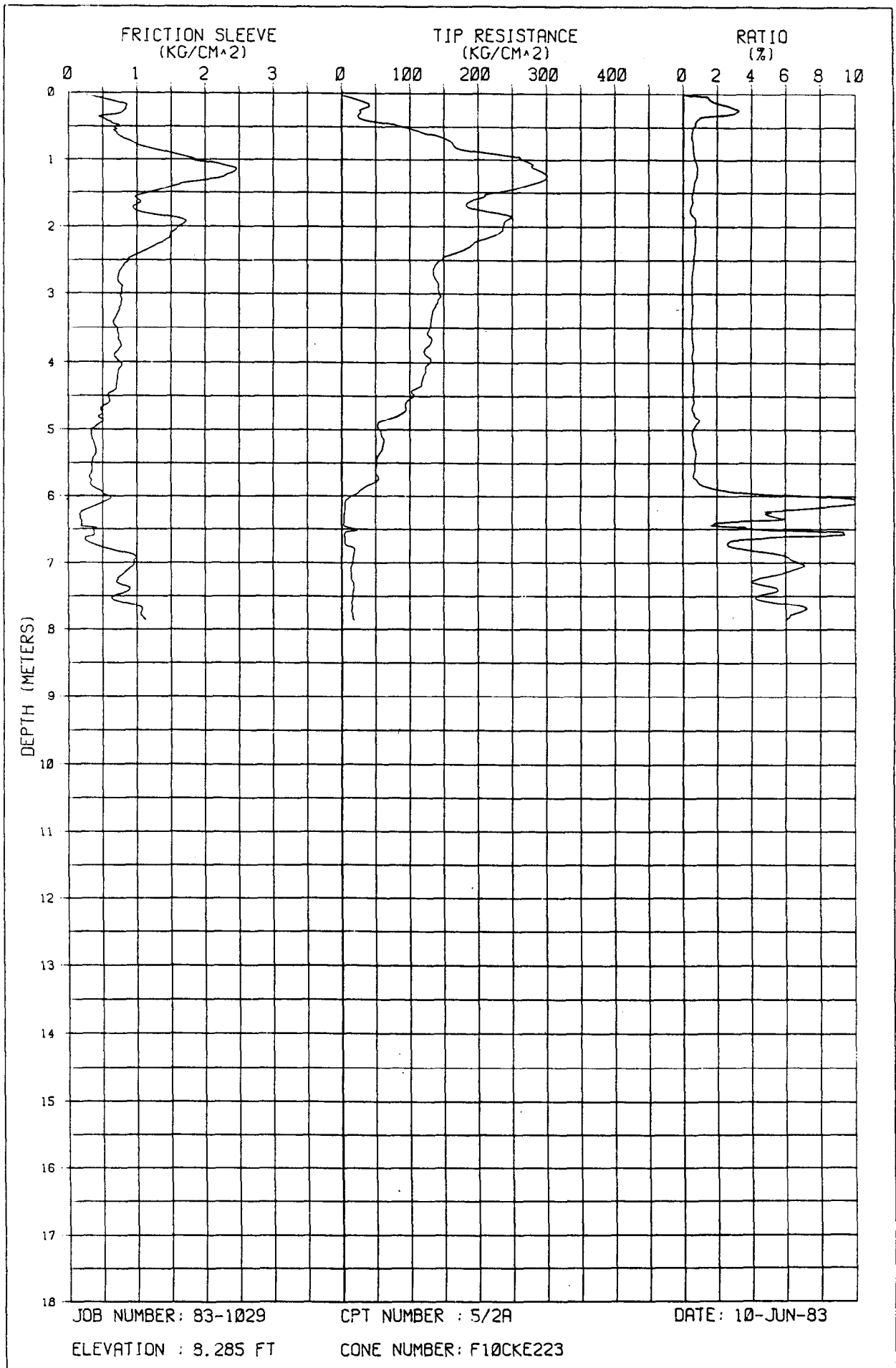












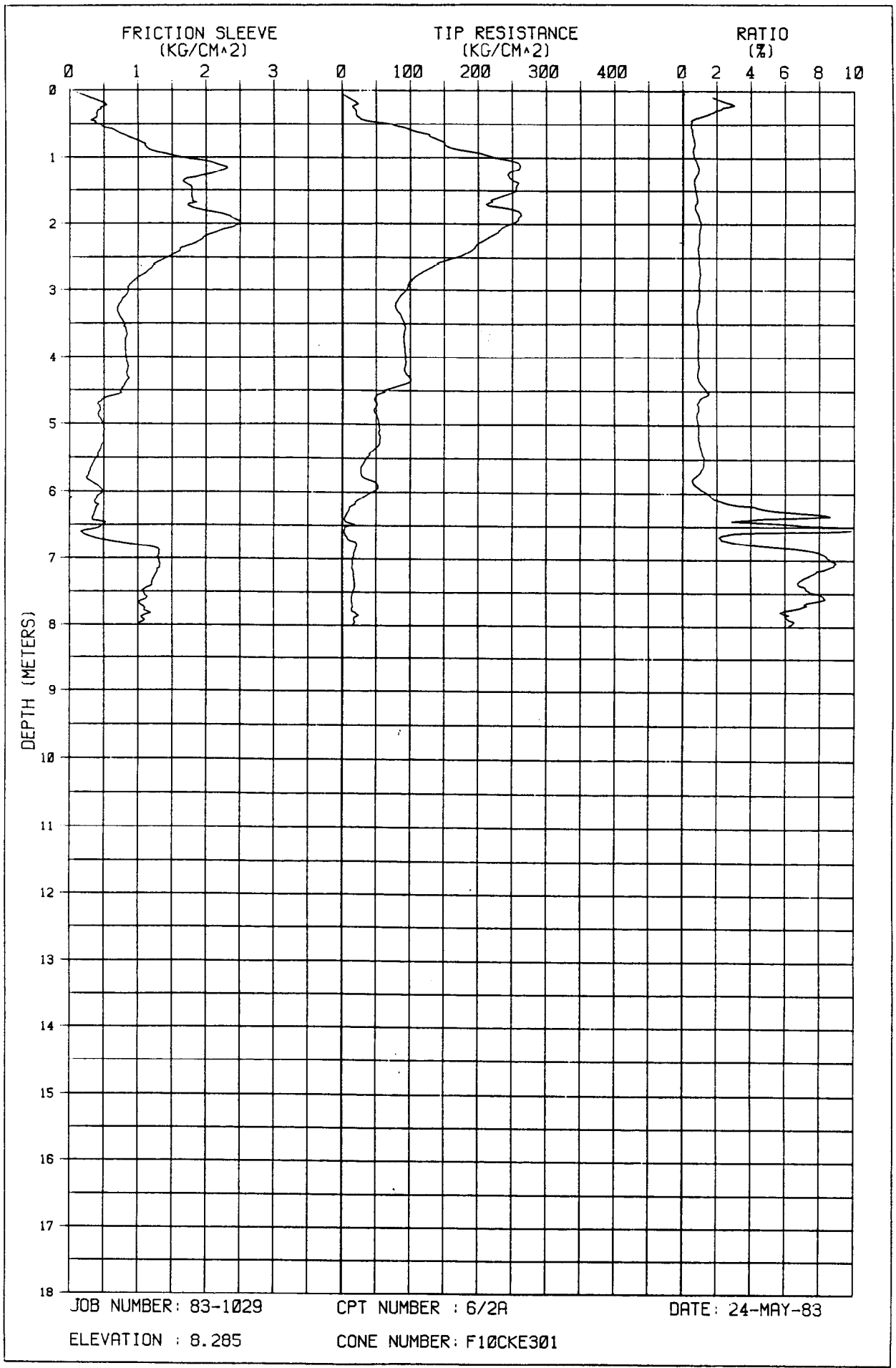
JOB NUMBER : 83-1029

CPT NUMBER : 5/2A

DATE : 10-JUN-83

ELEVATION : 8.285 FT

CONE NUMBER : F10CKE223



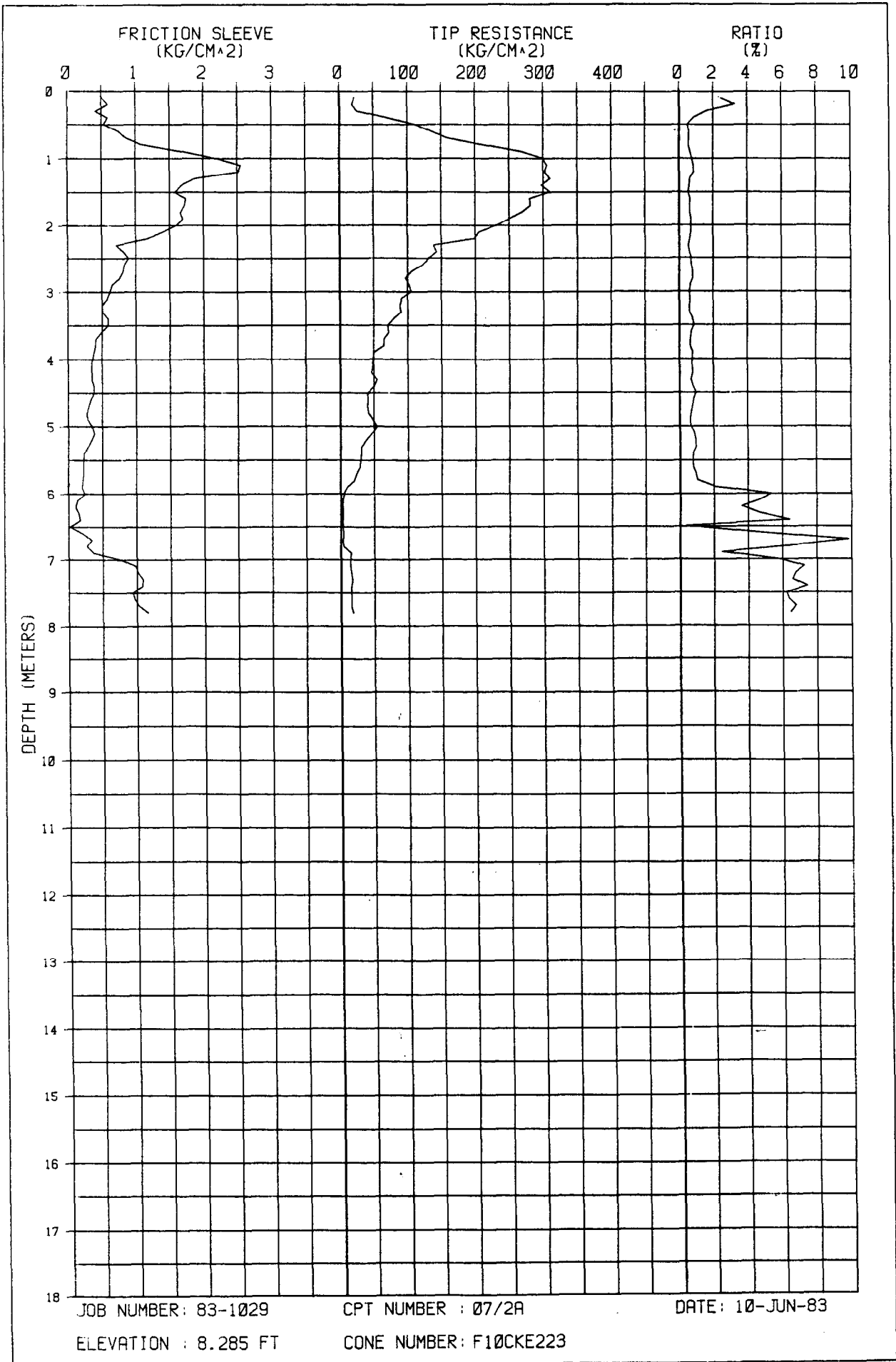
JOB NUMBER : 83-1029

CPT NUMBER : 6/2A

DATE : 24-MAY-83

ELEVATION : 8.285

CONE NUMBER : F10CKE301



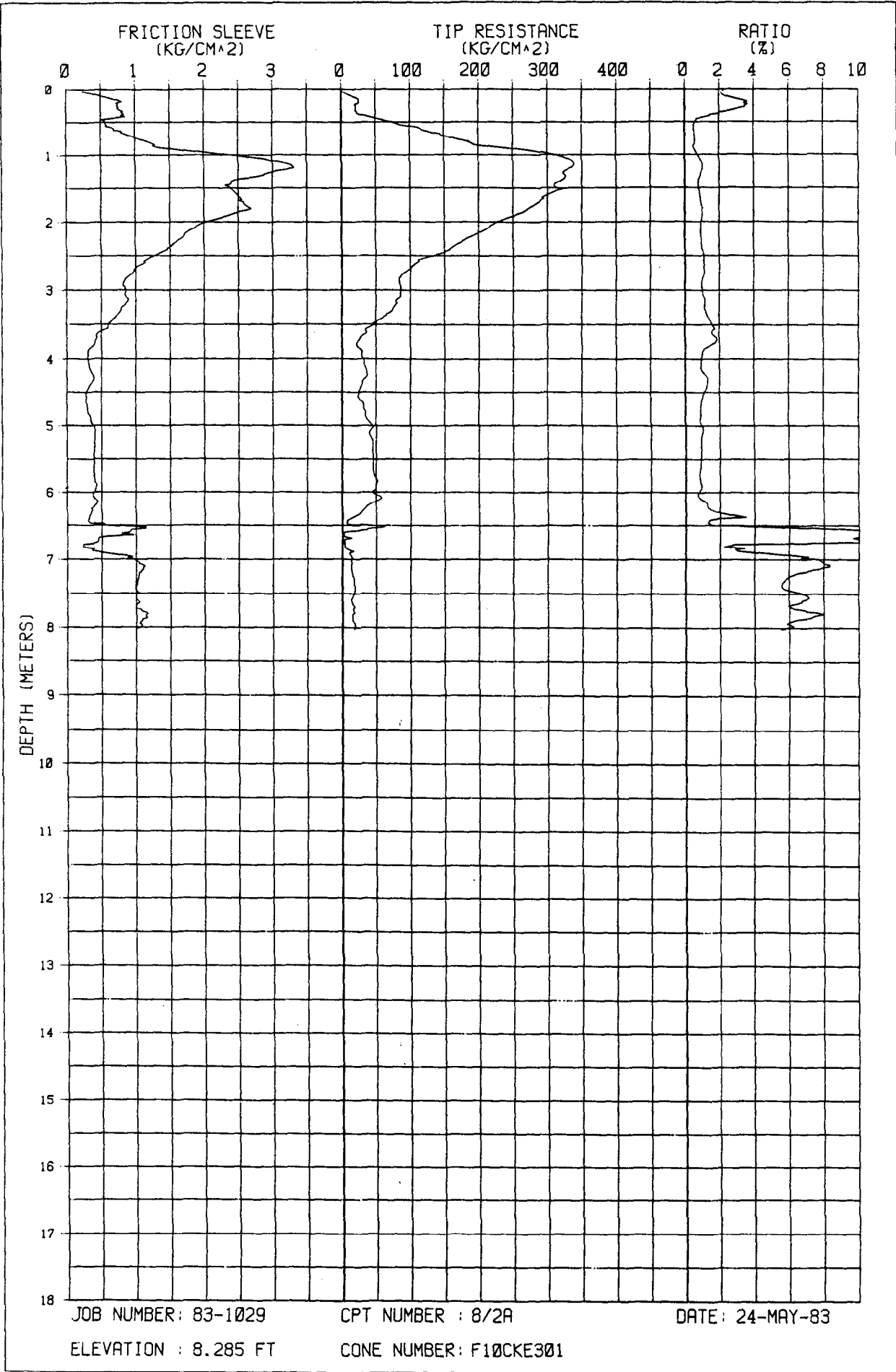
JOB NUMBER: 83-1029

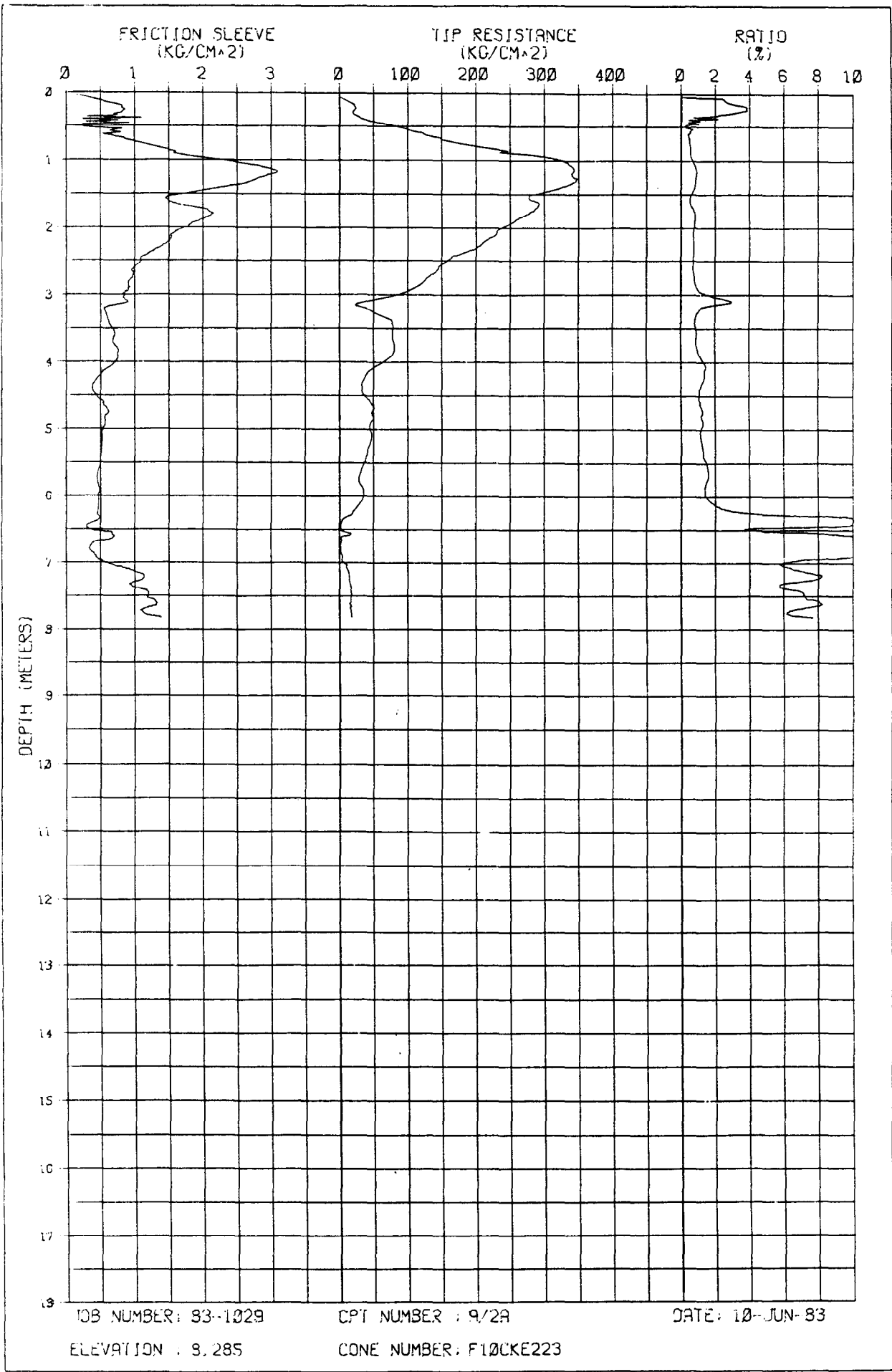
CPT NUMBER : 07/2A

DATE: 10-JUN-83

ELEVATION : 8.285 FT

CONE NUMBER: F10CKE223





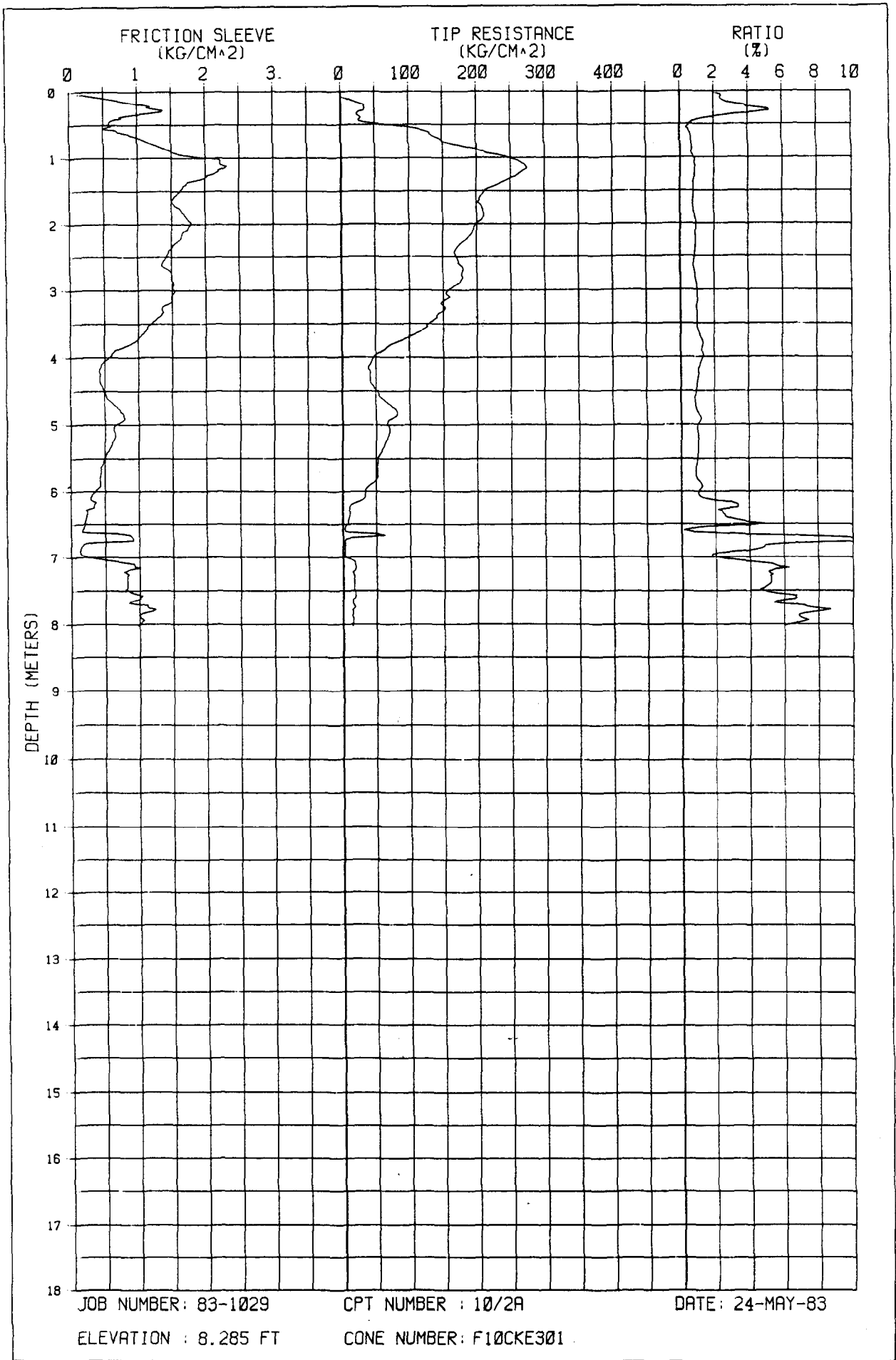
JOB NUMBER: 83-1029

CPT NUMBER: 9/2A

DATE: 10-JUN-83

ELEVATION: 9.285

CONE NUMBER: F10CKE223



JOB NUMBER: 83-1029

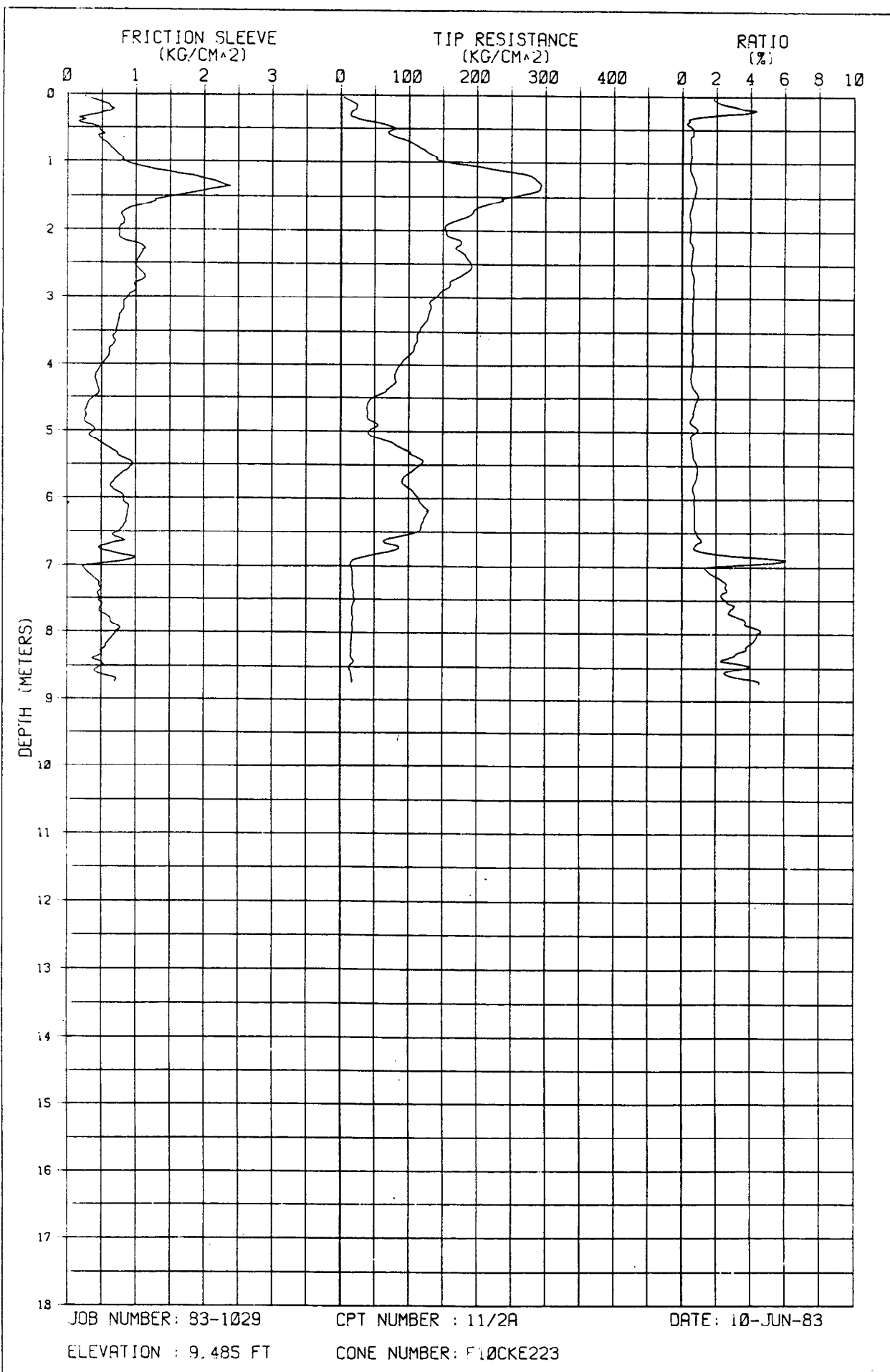
CPT NUMBER: 10/2A

DATE: 24-MAY-83

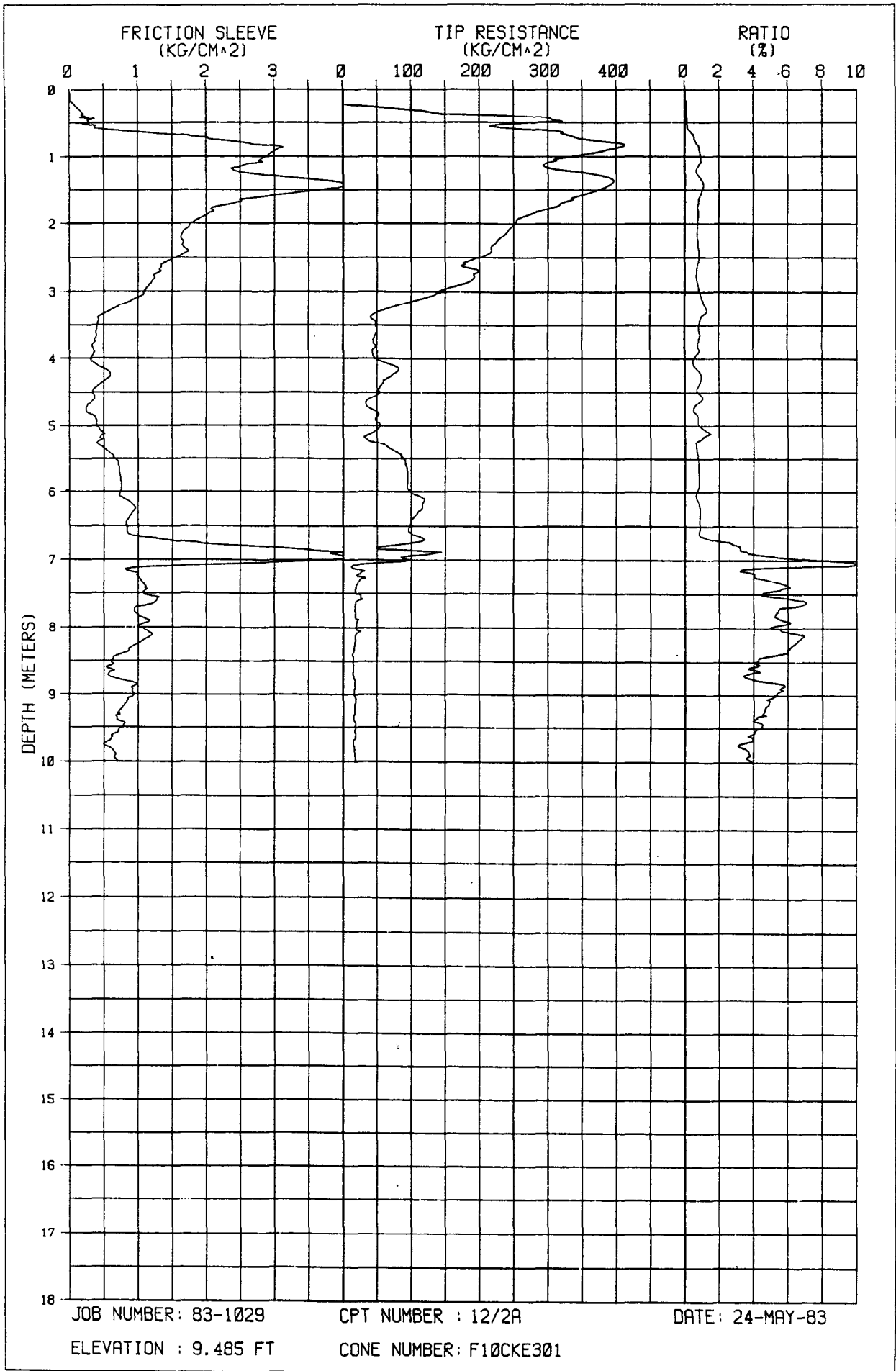
ELEVATION: 8.285 FT

CONE NUMBER: F10CKE301

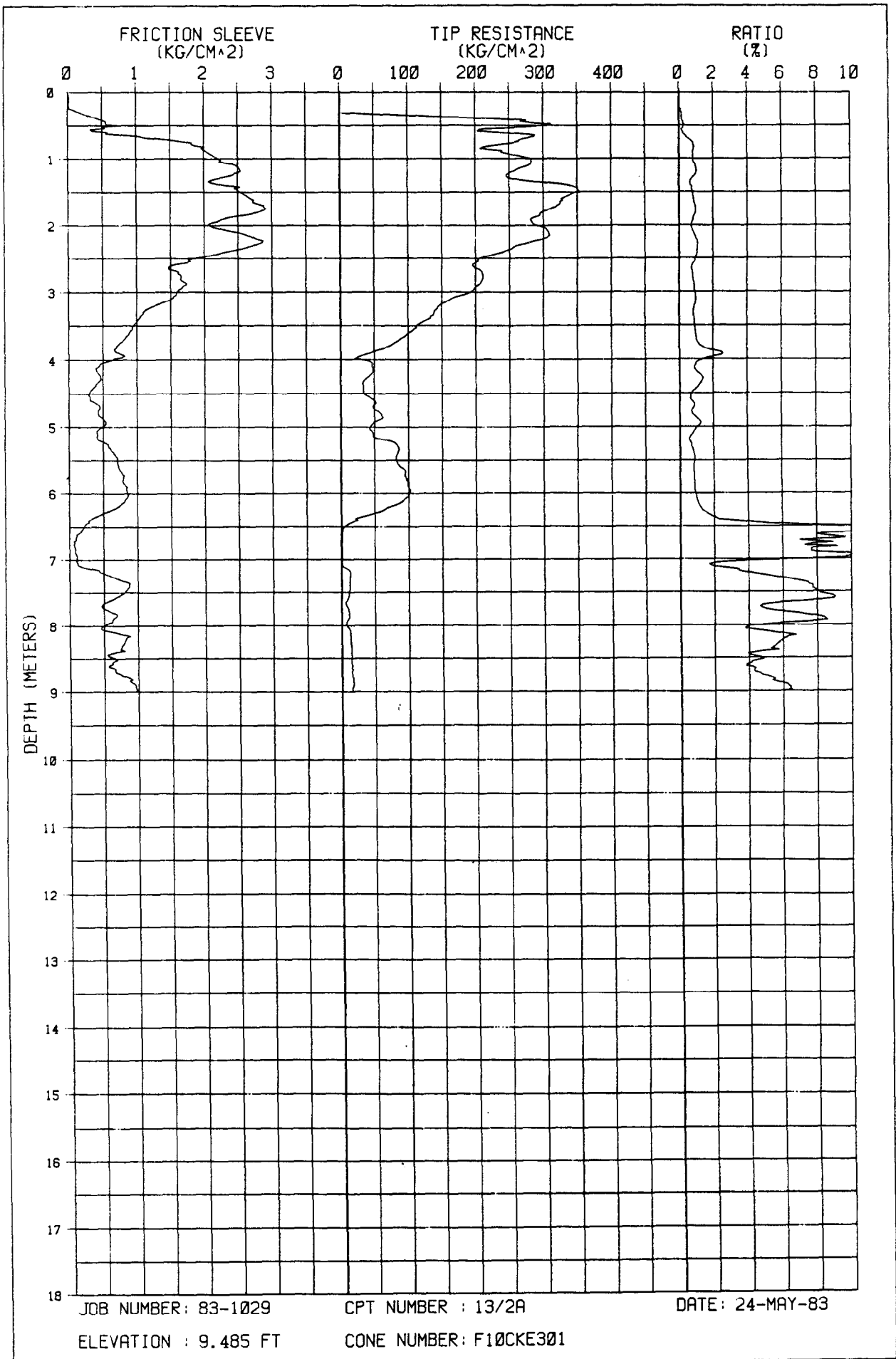




JOB NUMBER: 83-1029      CPT NUMBER: 11/2A      DATE: 10-JUN-83  
 ELEVATION: 9.485 FT      CONE NUMBER: F10CKE223



JOB NUMBER : 83-1029      CPT NUMBER : 12/2A      DATE : 24-MAY-83  
 ELEVATION : 9.485 FT      CONE NUMBER : F10CKE301



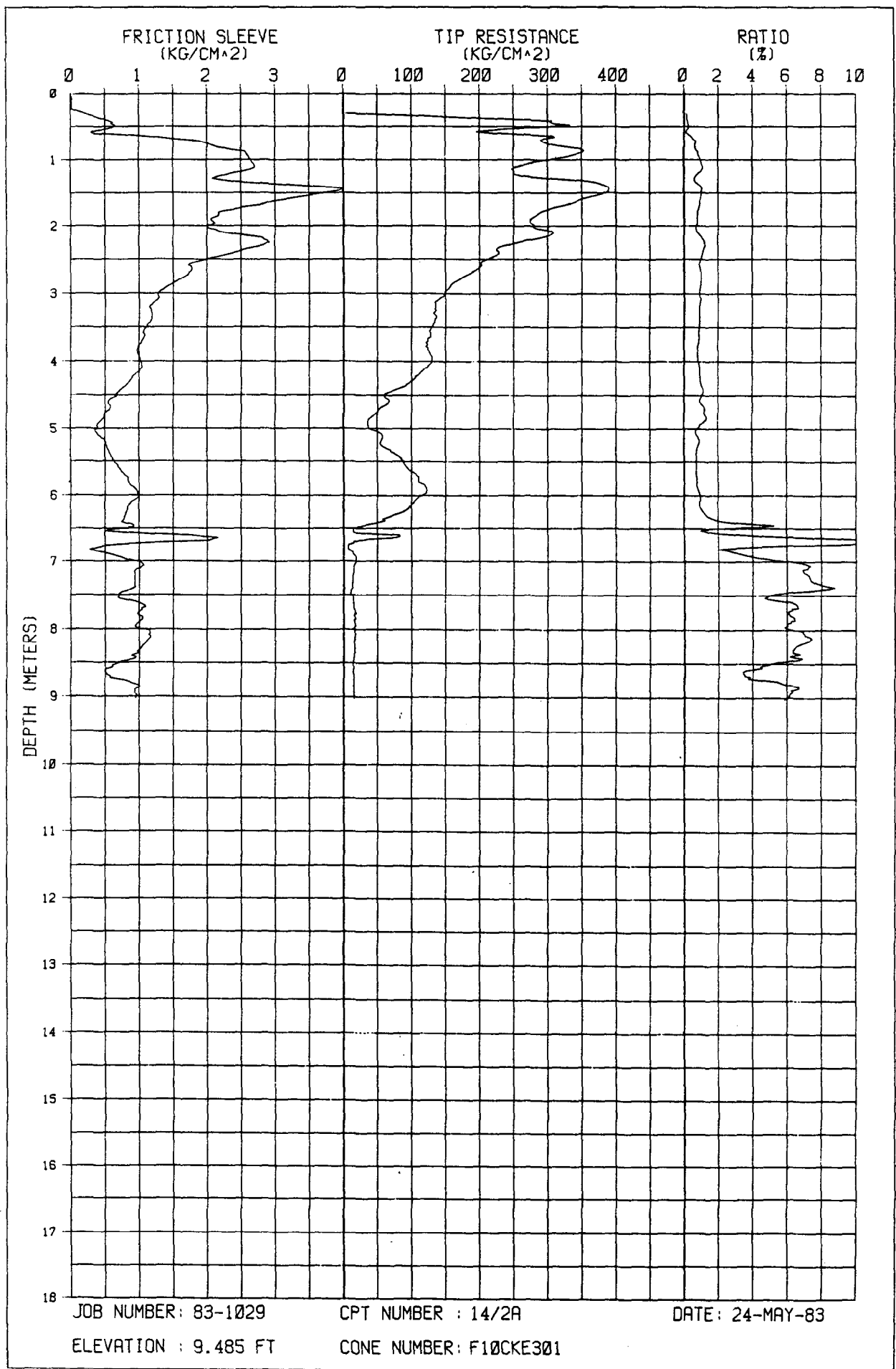
JOB NUMBER: 83-1029

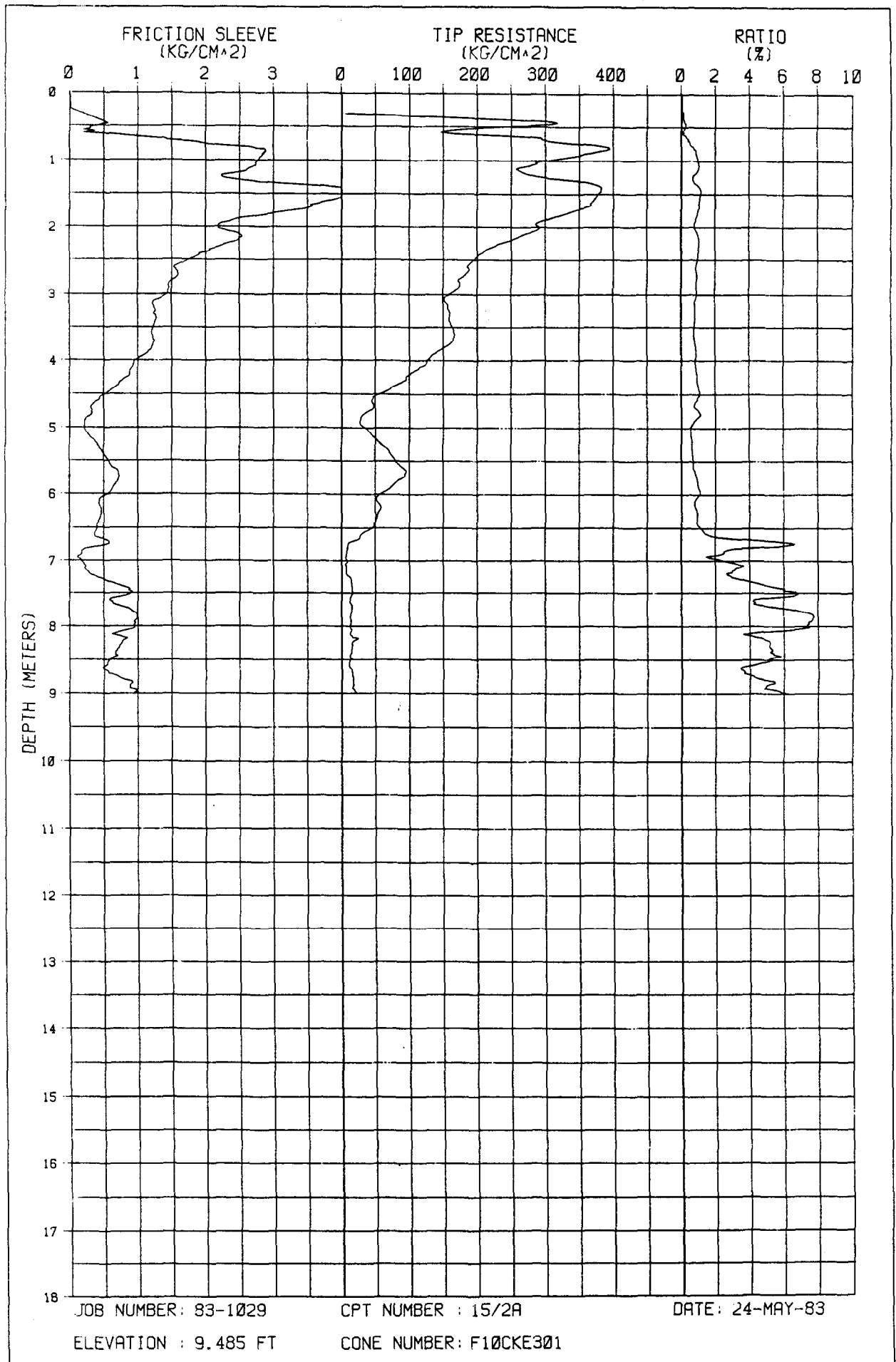
CPT NUMBER: 13/2A

DATE: 24-MAY-83

ELEVATION: 9.485 FT

CONE NUMBER: F10CKE301





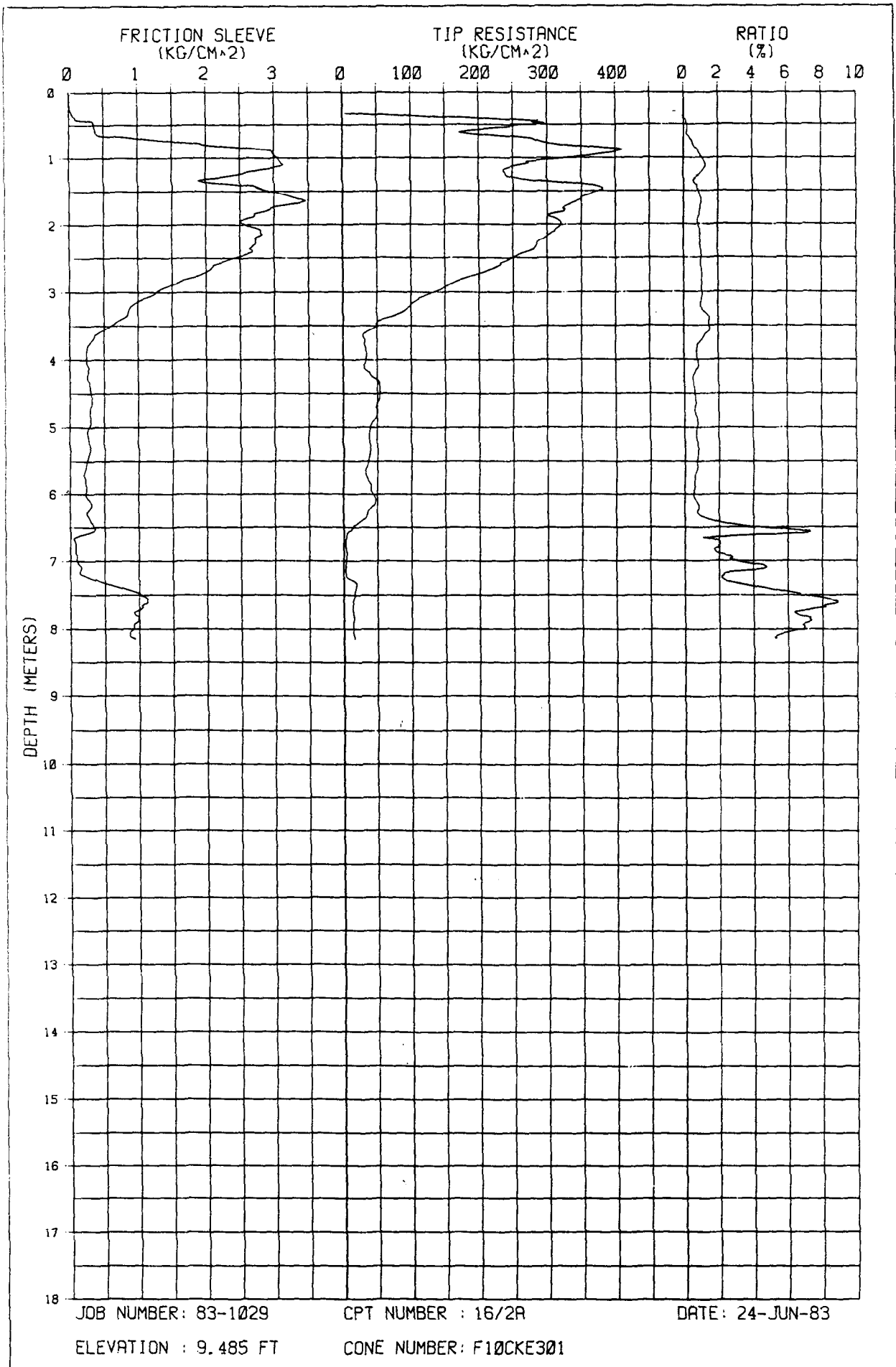
JOB NUMBER: 83-1029

CPT NUMBER: 15/2A

DATE: 24-MAY-83

ELEVATION: 9.485 FT

CONE NUMBER: F10CKE301



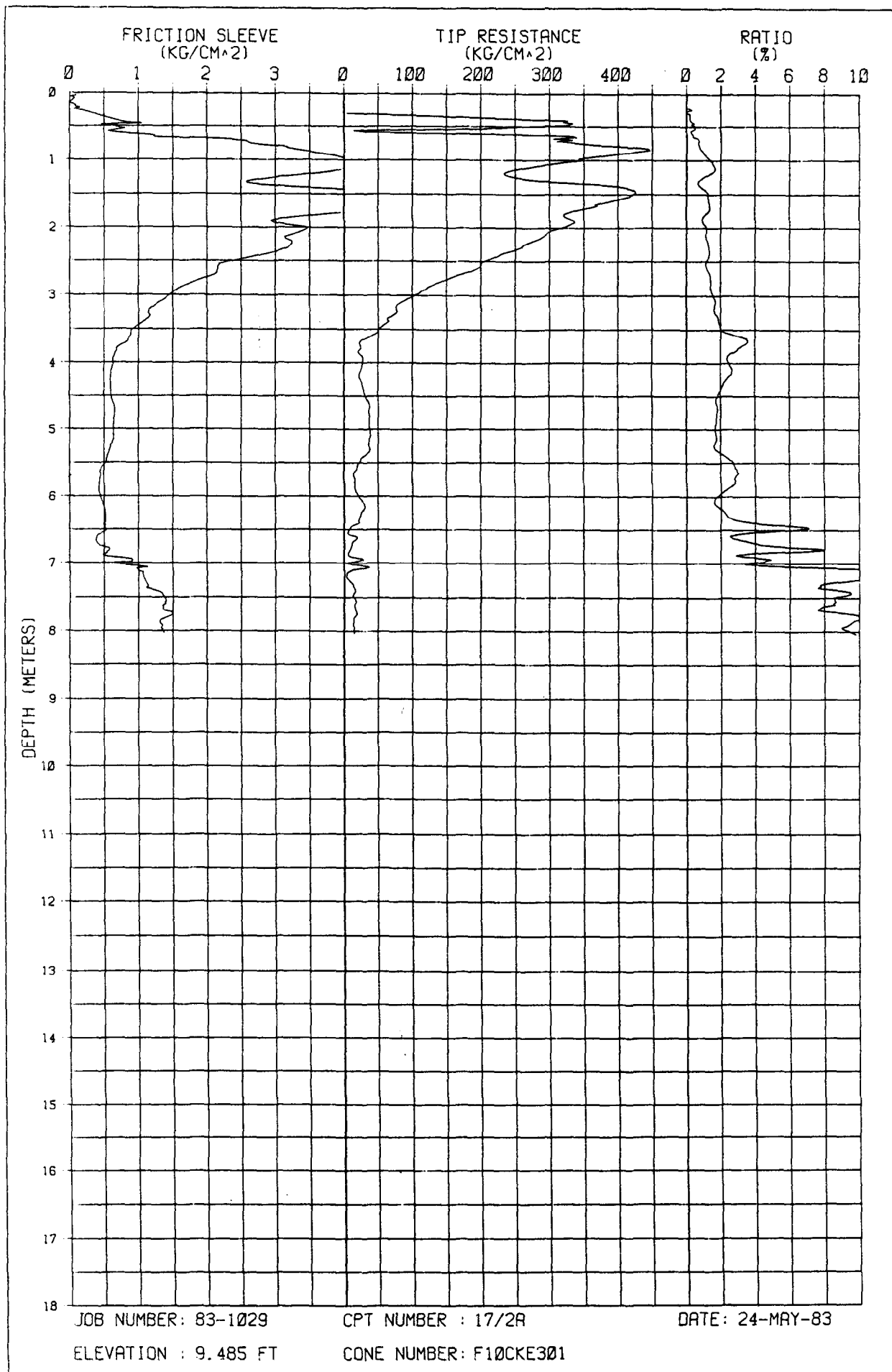
JOB NUMBER: 83-1029

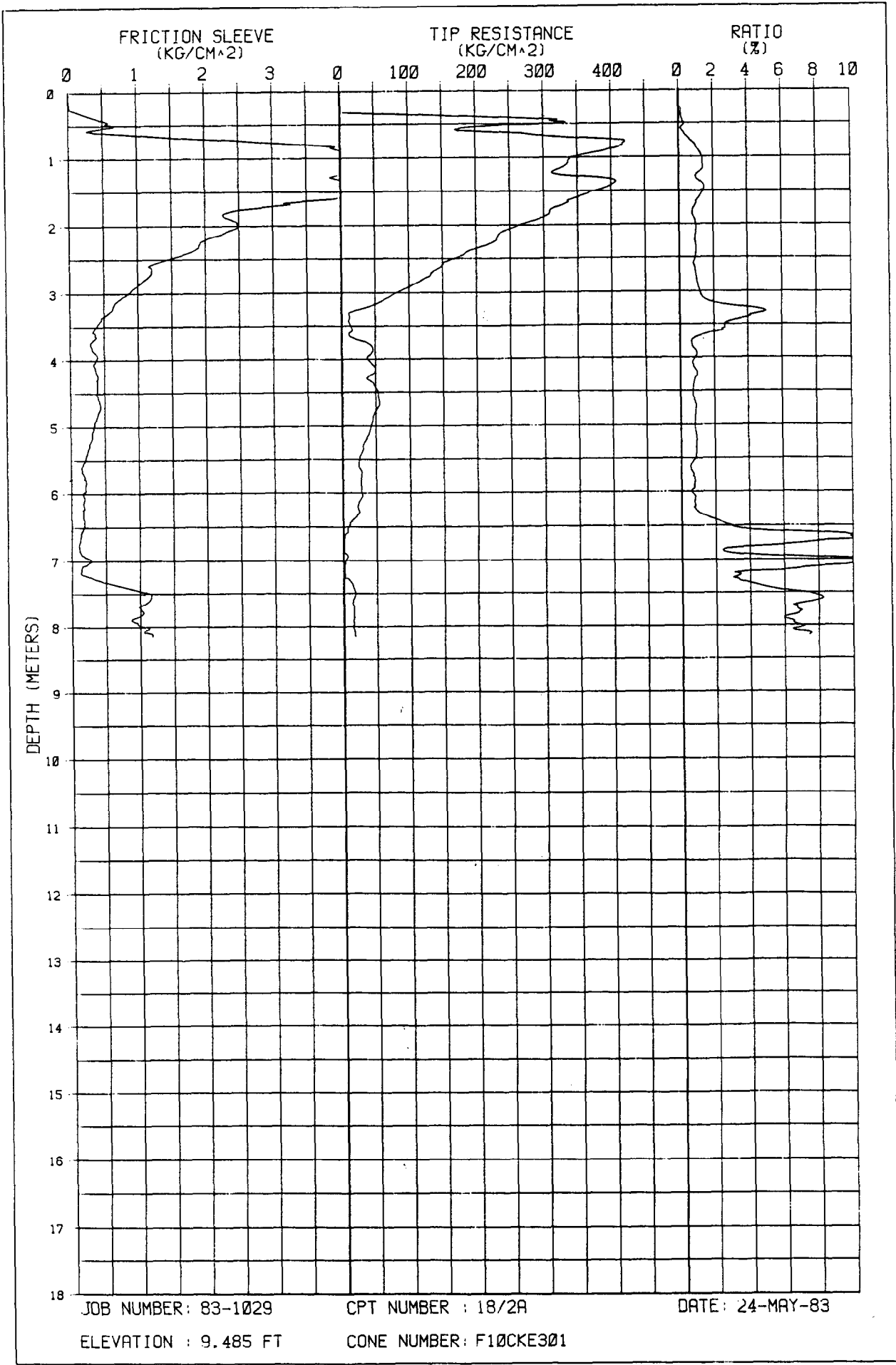
CPT NUMBER: 16/2A

DATE: 24-JUN-83

ELEVATION: 9.485 FT

CONE NUMBER: F10CKE301





JOB NUMBER: 83-1029

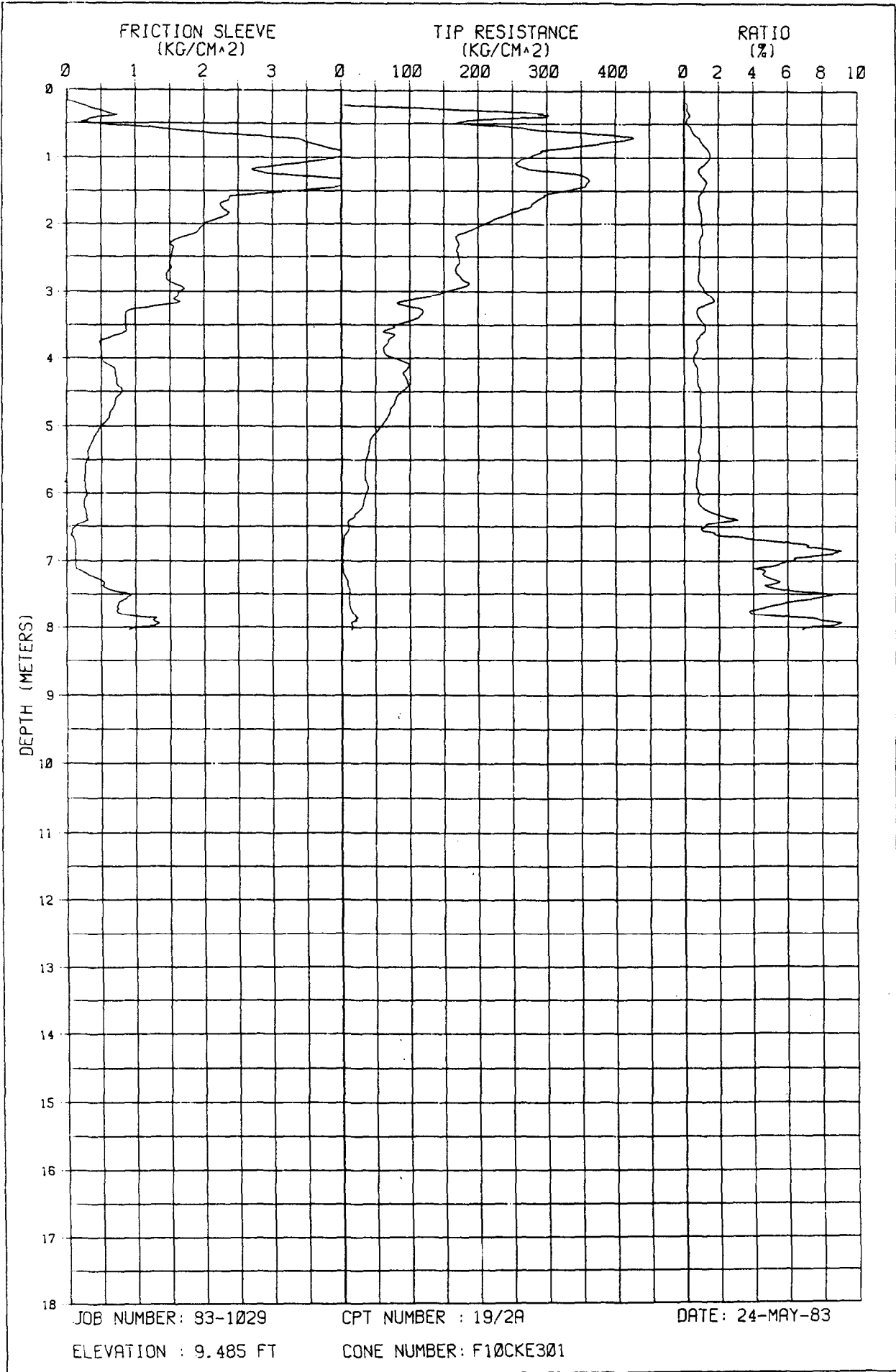
CPT NUMBER: 18/2A

DATE: 24-MAY-83

ELEVATION: 9.485 FT

CONE NUMBER: F10CKE301





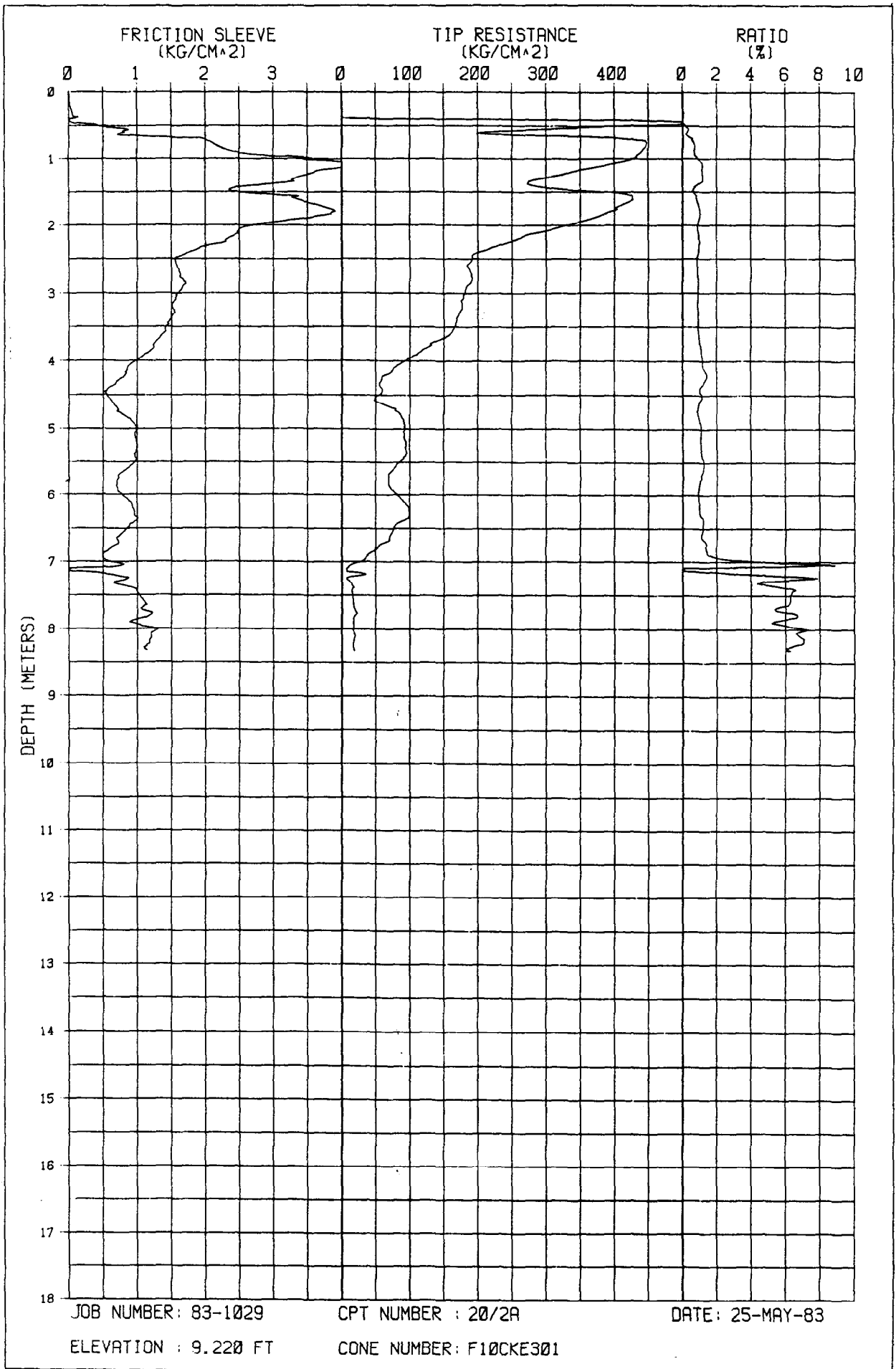
JOB NUMBER: 93-1029

CPT NUMBER: 19/2A

DATE: 24-MAY-83

ELEVATION: 9.485 FT

CONE NUMBER: F10CKE301



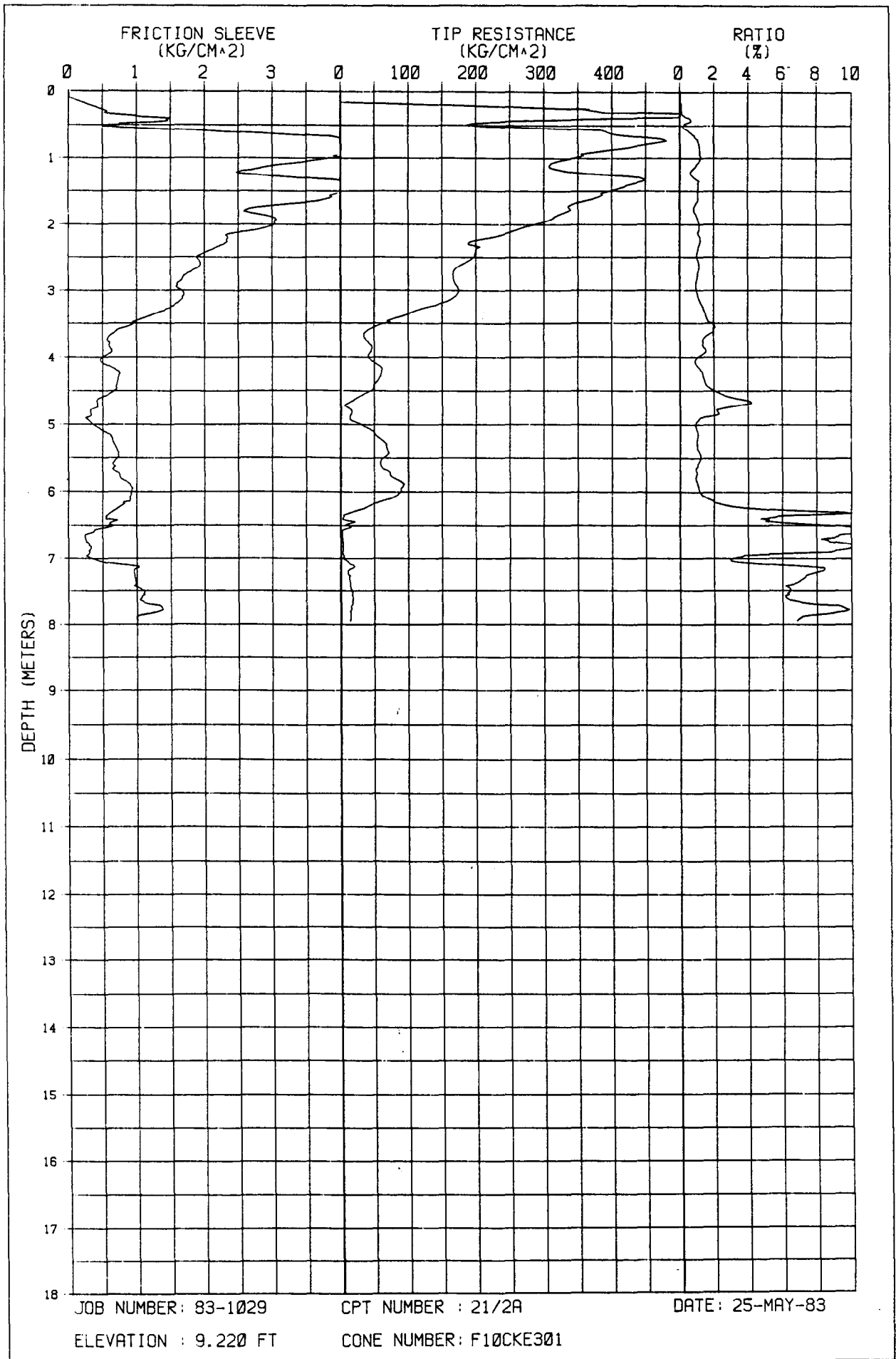
JOB NUMBER: 83-1029

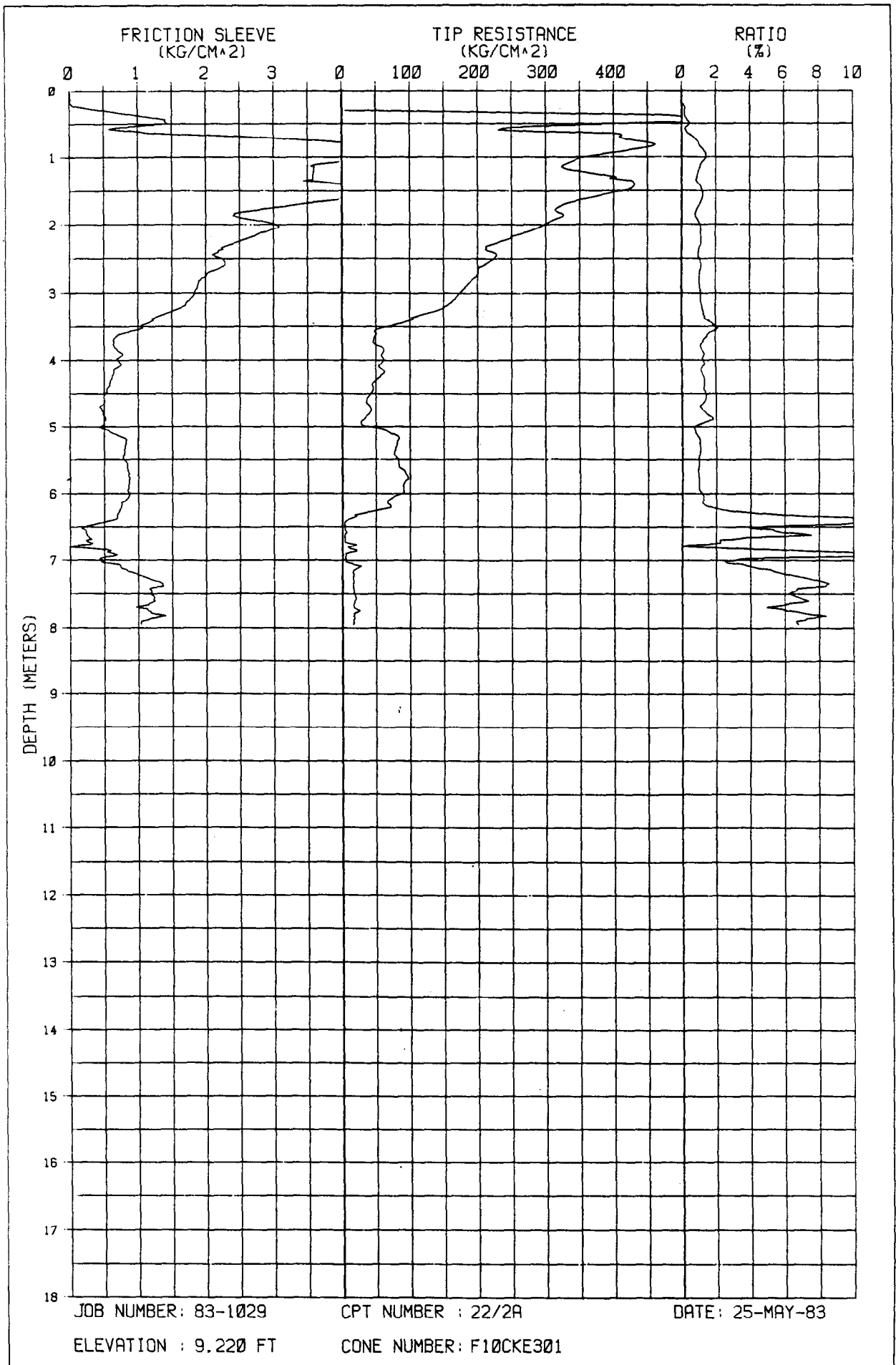
CPT NUMBER: 20/2A

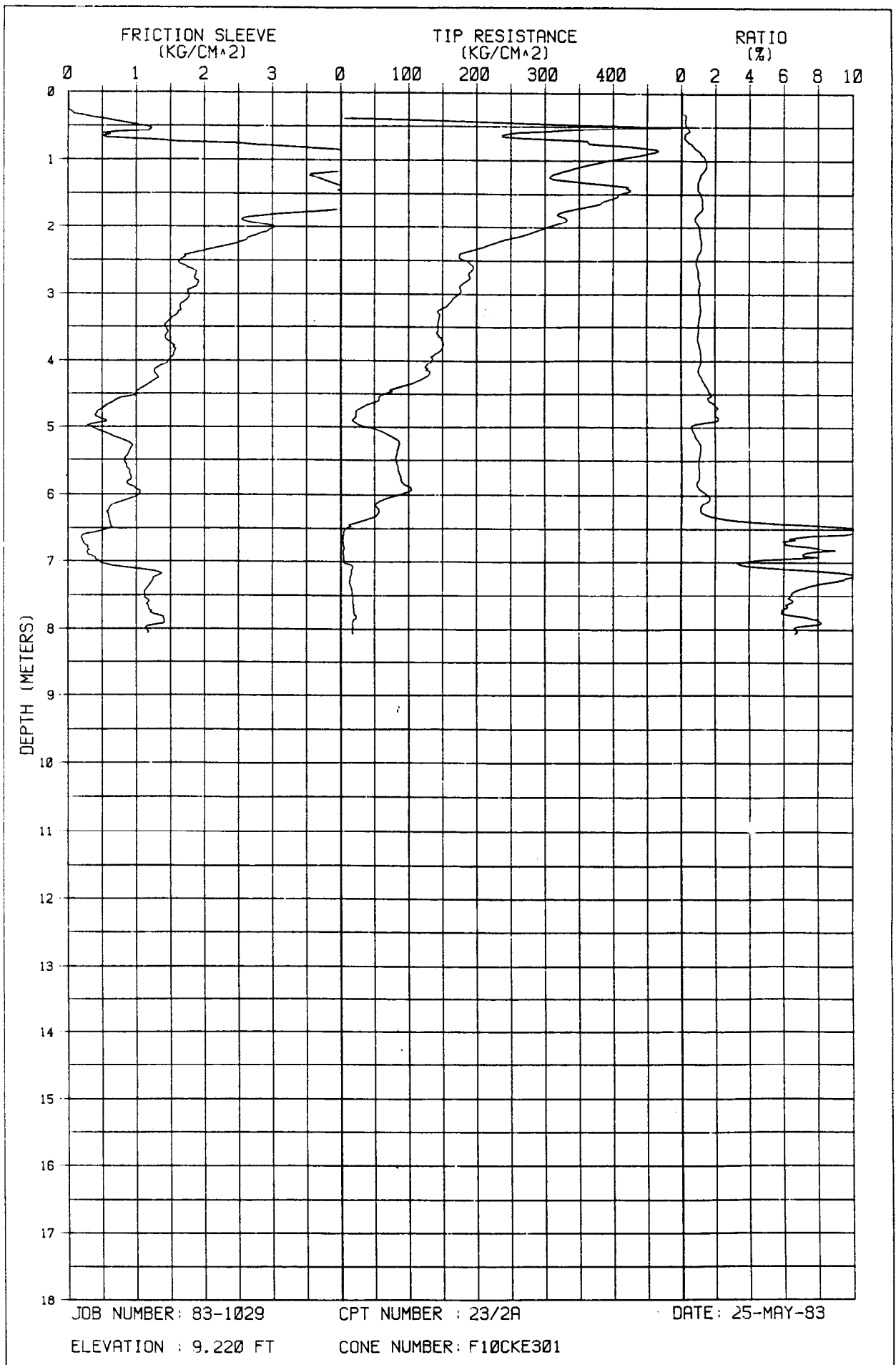
DATE: 25-MAY-83

ELEVATION: 9.220 FT

CONE NUMBER: F10CKE301







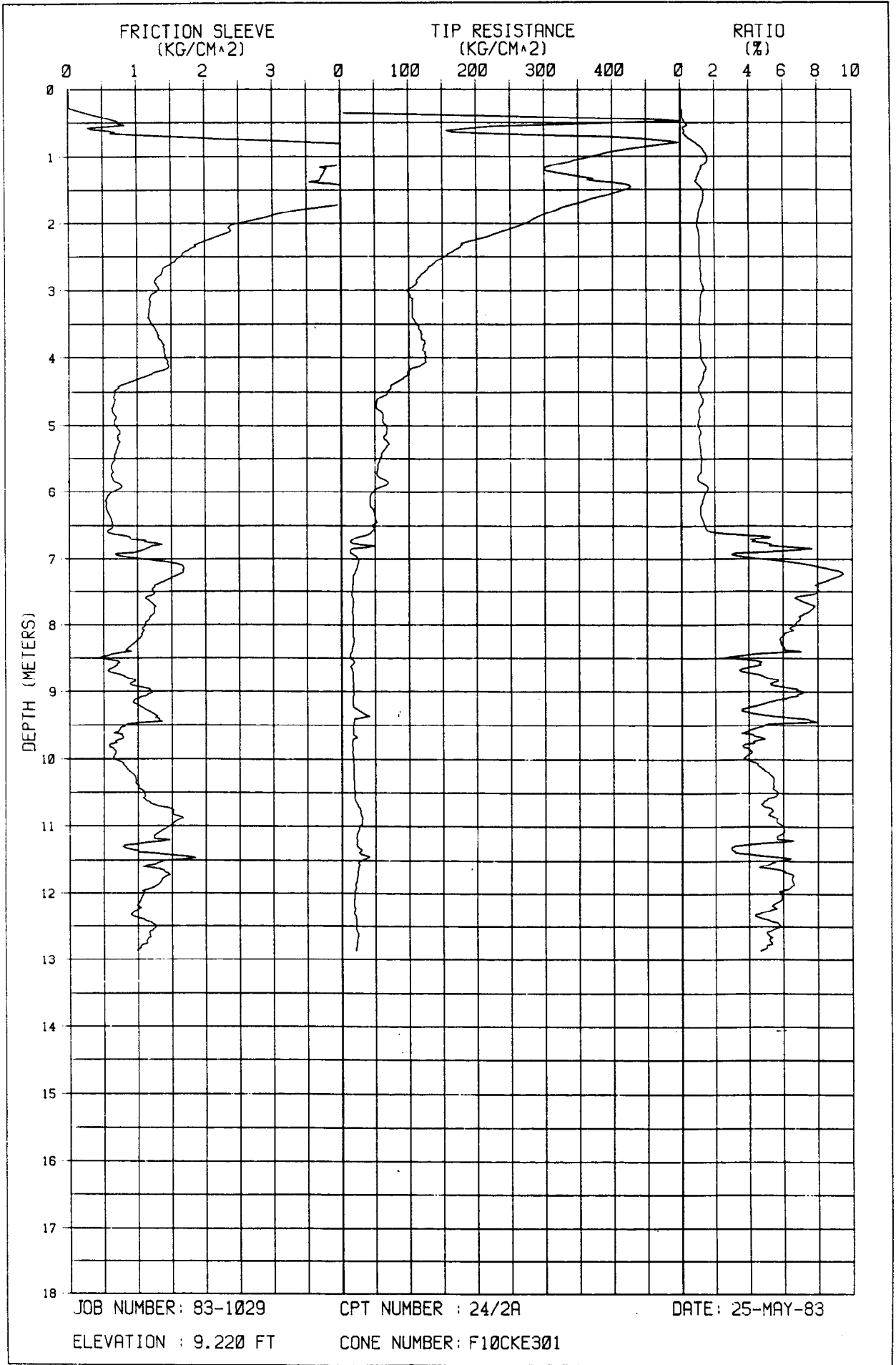
JOB NUMBER: 83-1029

CPT NUMBER : 23/2A

DATE: 25-MAY-83

ELEVATION : 9.220 FT

CONE NUMBER: F10CKE301



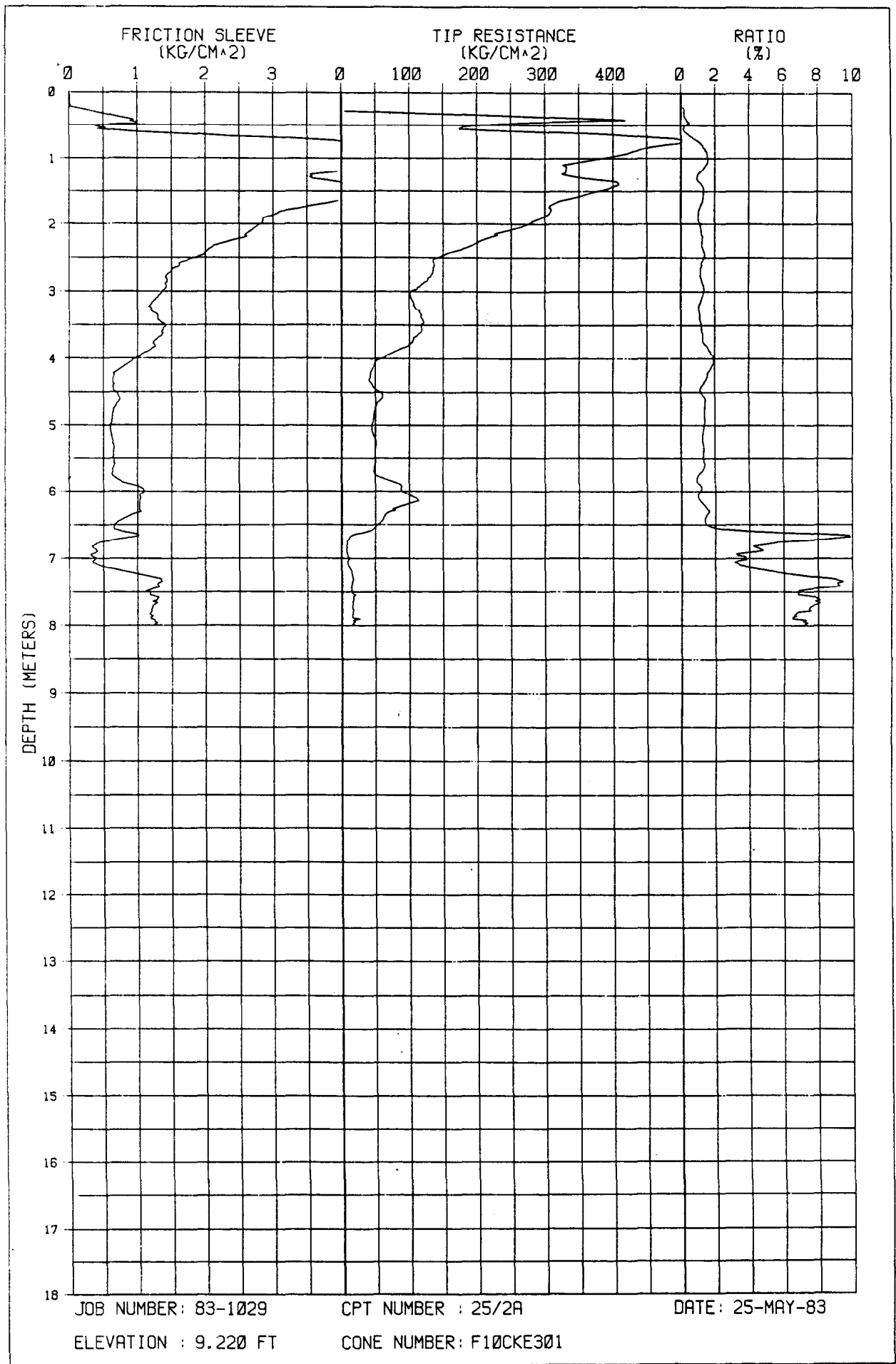
JOB NUMBER : 83-1029

CPT NUMBER : 24/2A

DATE : 25-MAY-83

ELEVATION : 9.220 FT

CONE NUMBER : F10CKE301



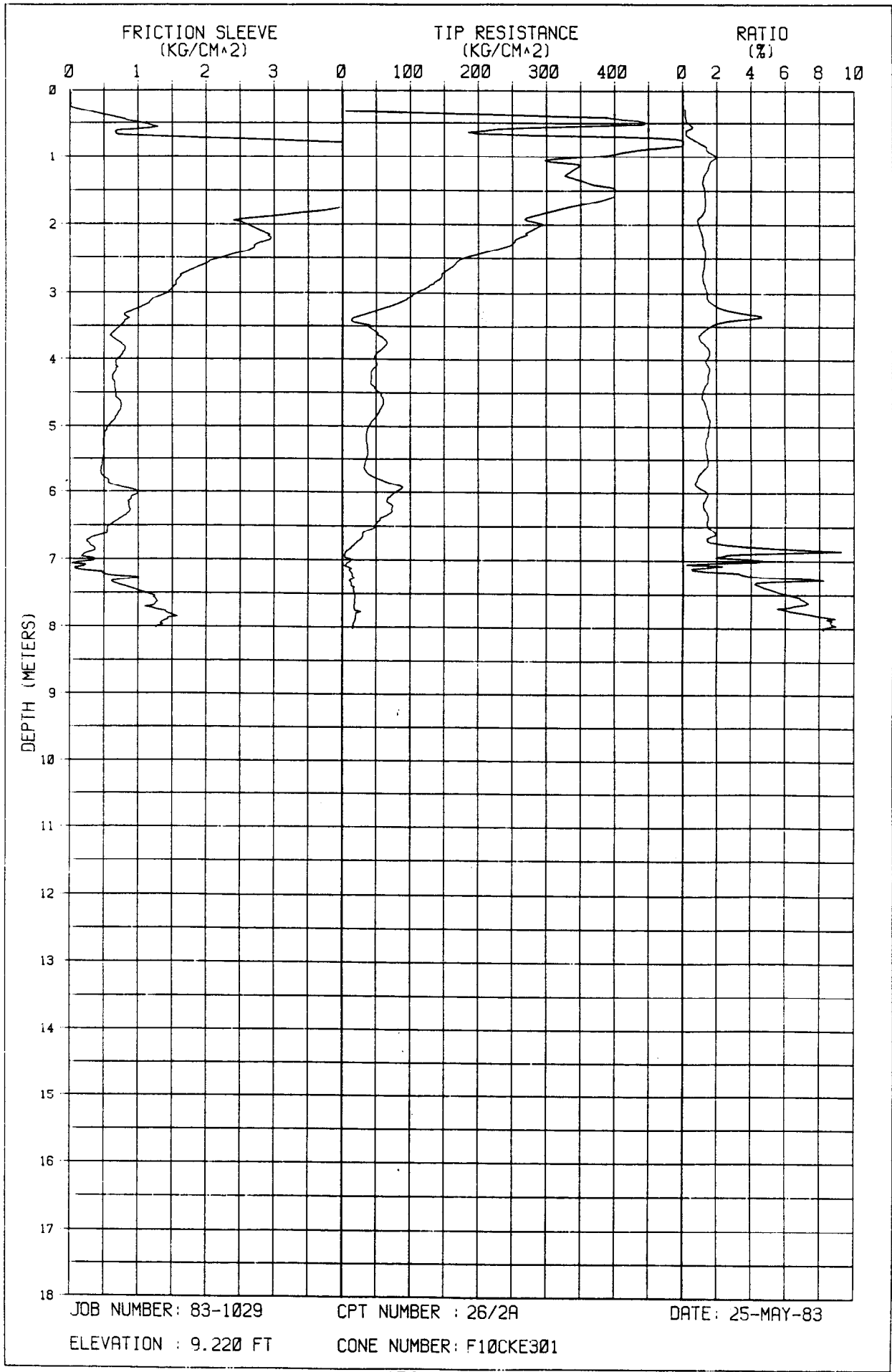
JOB NUMBER: 83-1029

CPT NUMBER : 25/2A

DATE: 25-MAY-83

ELEVATION : 9.220 FT

CONE NUMBER: F10CKE301



JOB NUMBER : 83-1029

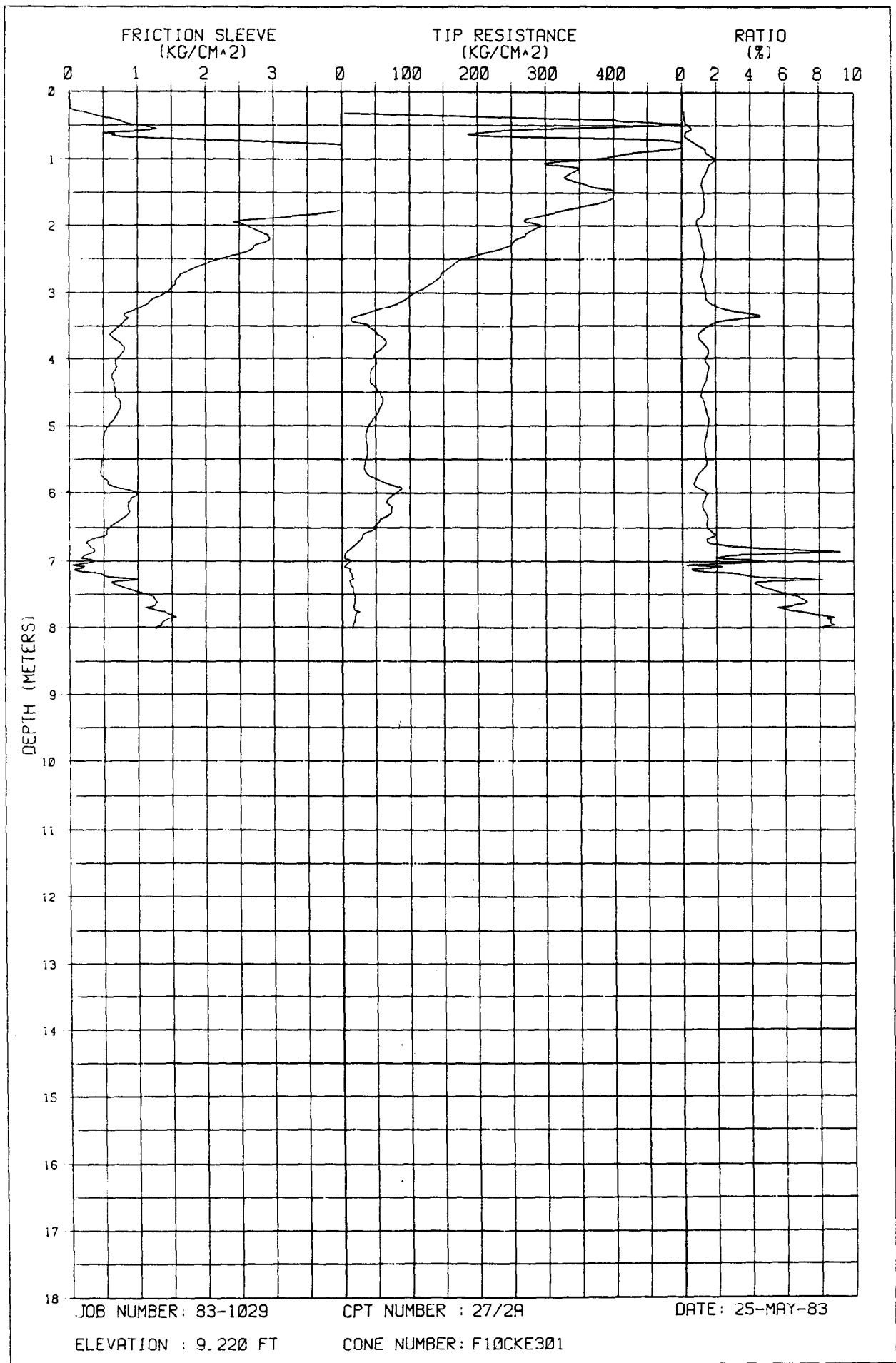
CPT NUMBER : 26/2A

DATE : 25-MAY-83

ELEVATION : 9.220 FT

CONE NUMBER : F10CKE301





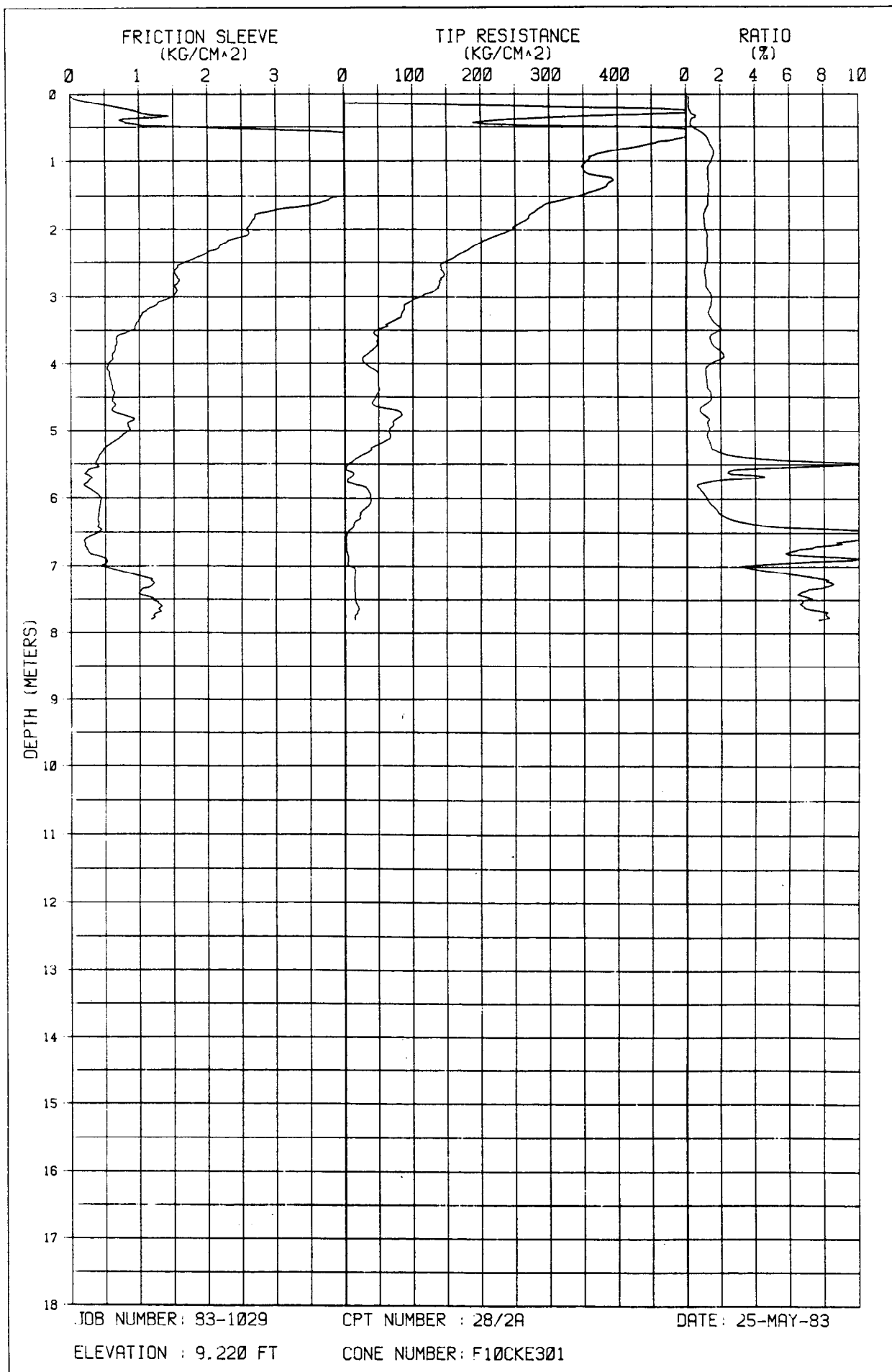
JOB NUMBER: 83-1029

CPT NUMBER: 27/2A

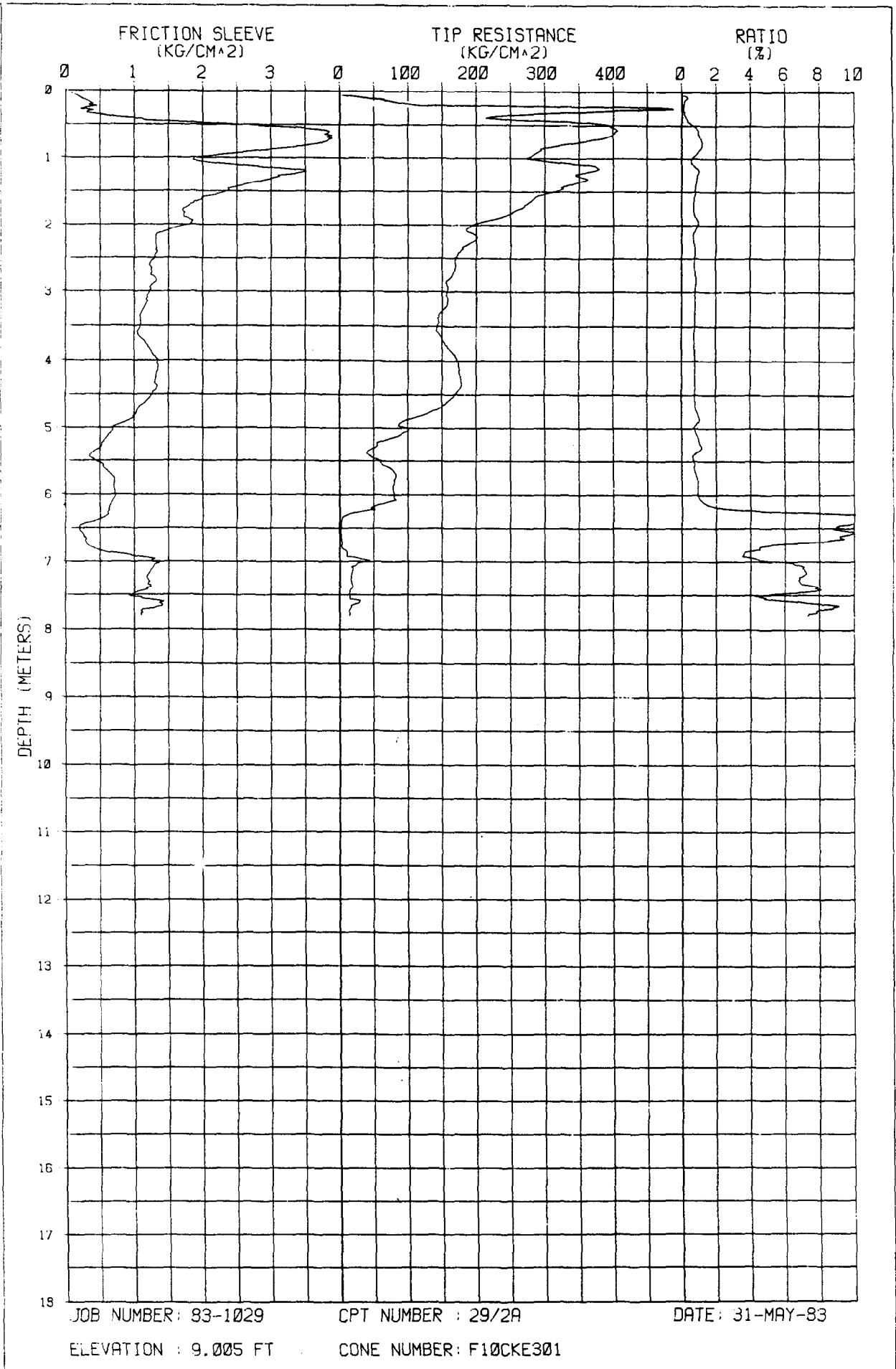
DATE: 25-MAY-83

ELEVATION: 9.220 FT

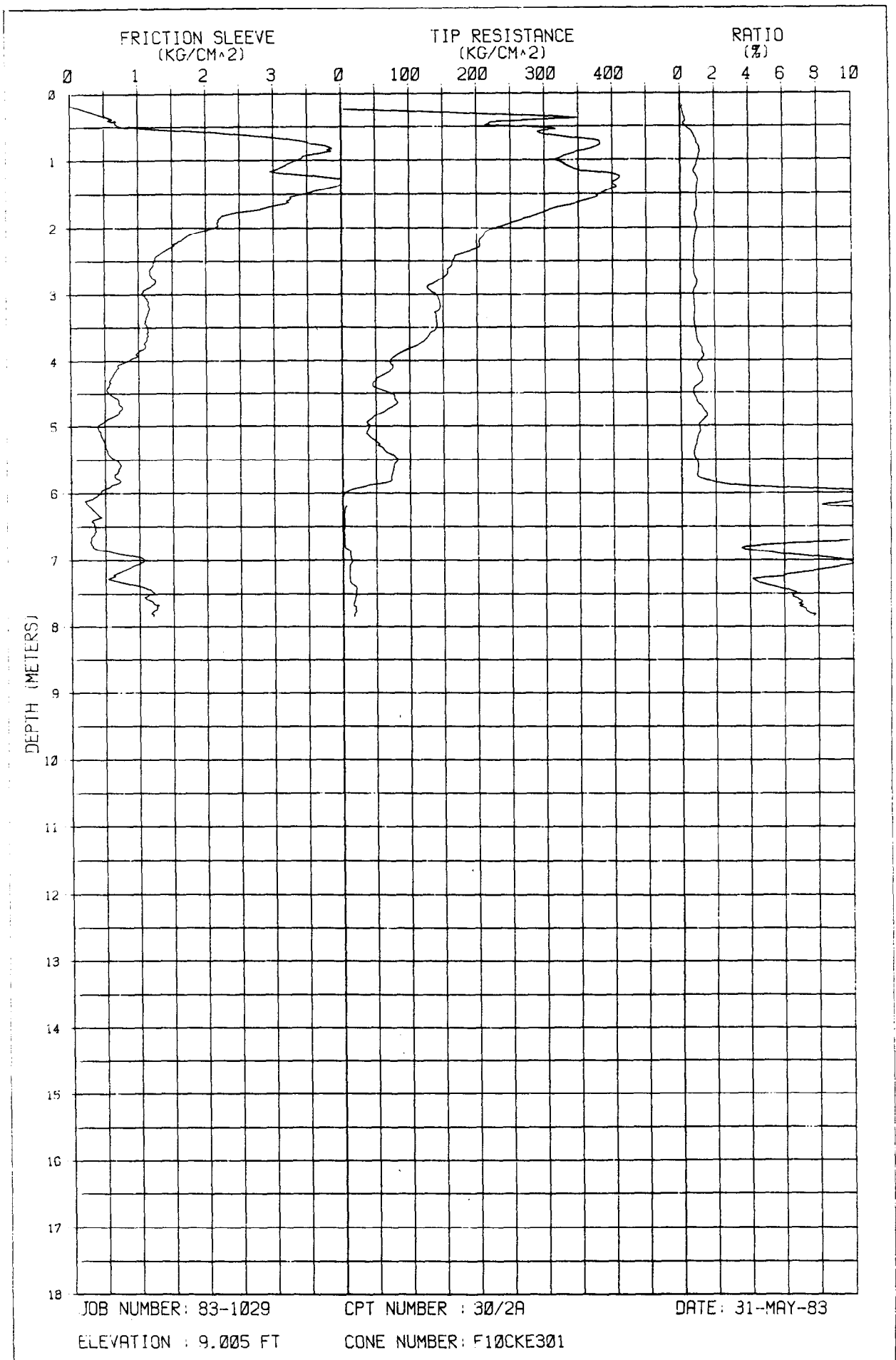
CONE NUMBER: F10CKE301



JOB NUMBER: 83-1029      CPT NUMBER: 28/2A      DATE: 25-MAY-83  
 ELEVATION: 9.220 FT      CONE NUMBER: F10CKE301



JOB NUMBER : 83-1029      CPT NUMBER : 29/2A      DATE : 31-MAY-83  
 ELEVATION : 9.005 FT      CONE NUMBER : F10CKE301



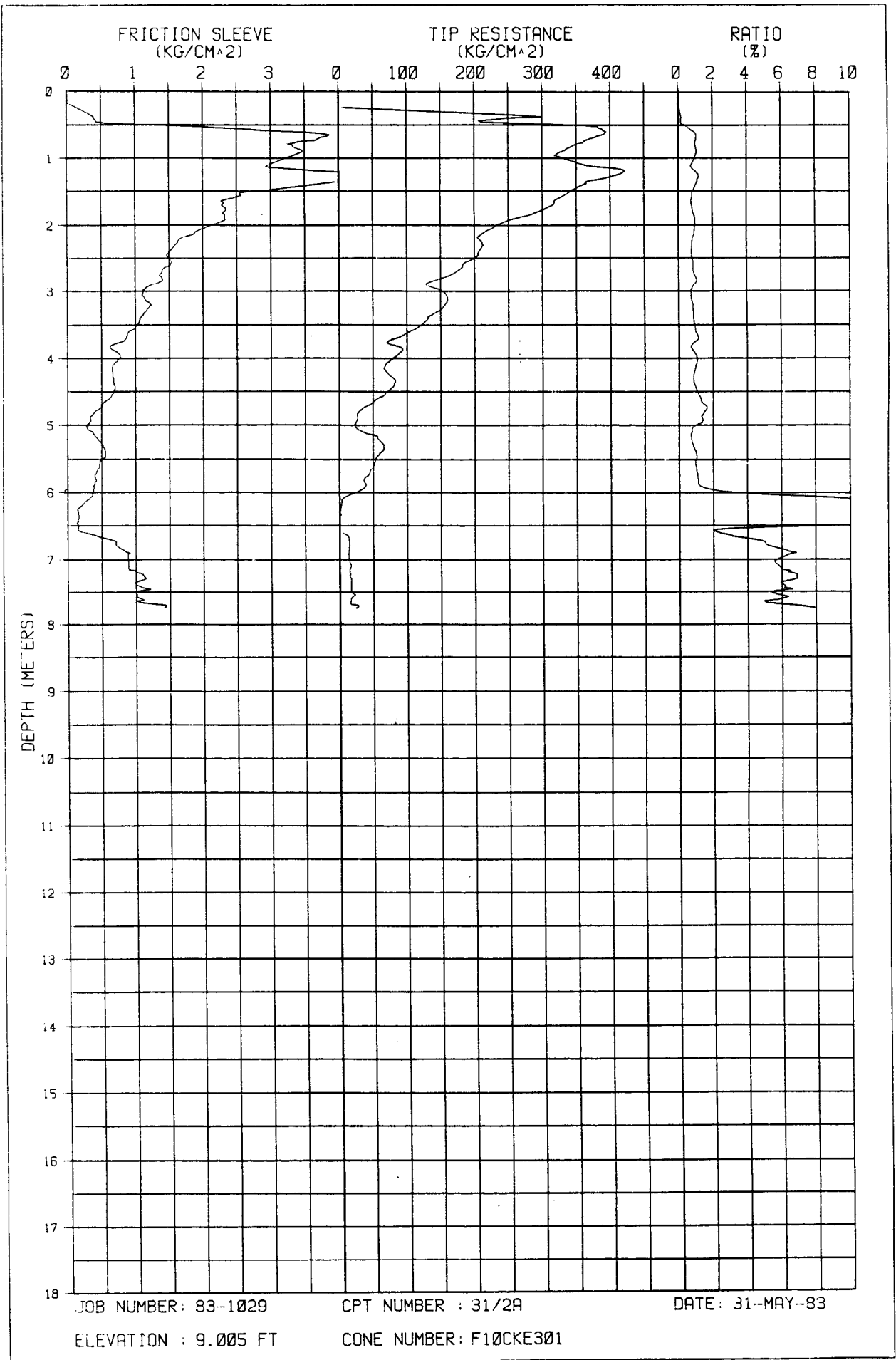
JOB NUMBER: 83-1029

CPT NUMBER: 30/2A

DATE: 31-MAY-83

ELEVATION: 9.005 FT

CONE NUMBER: F10CKE301



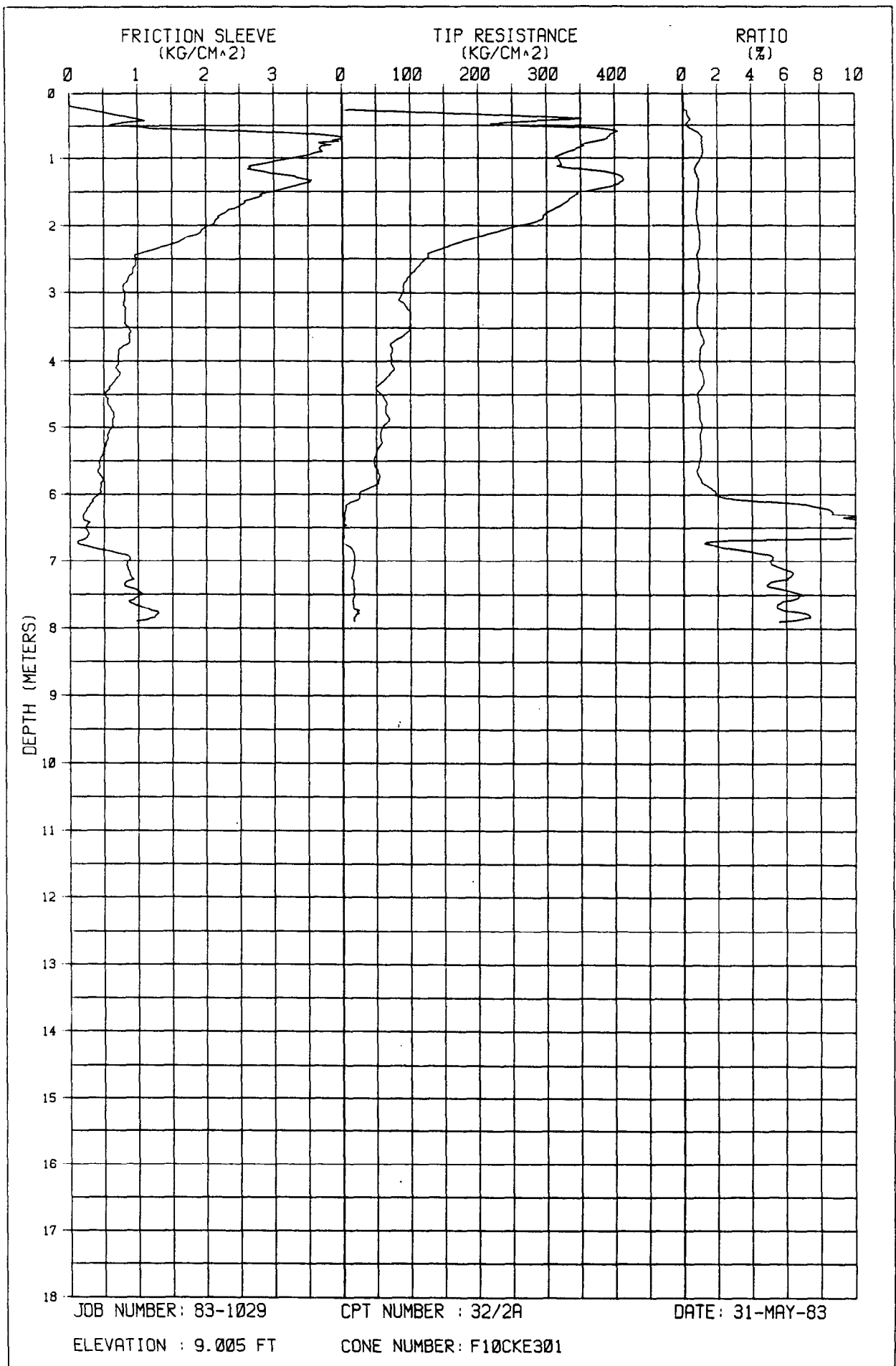
JOB NUMBER: 83-1029

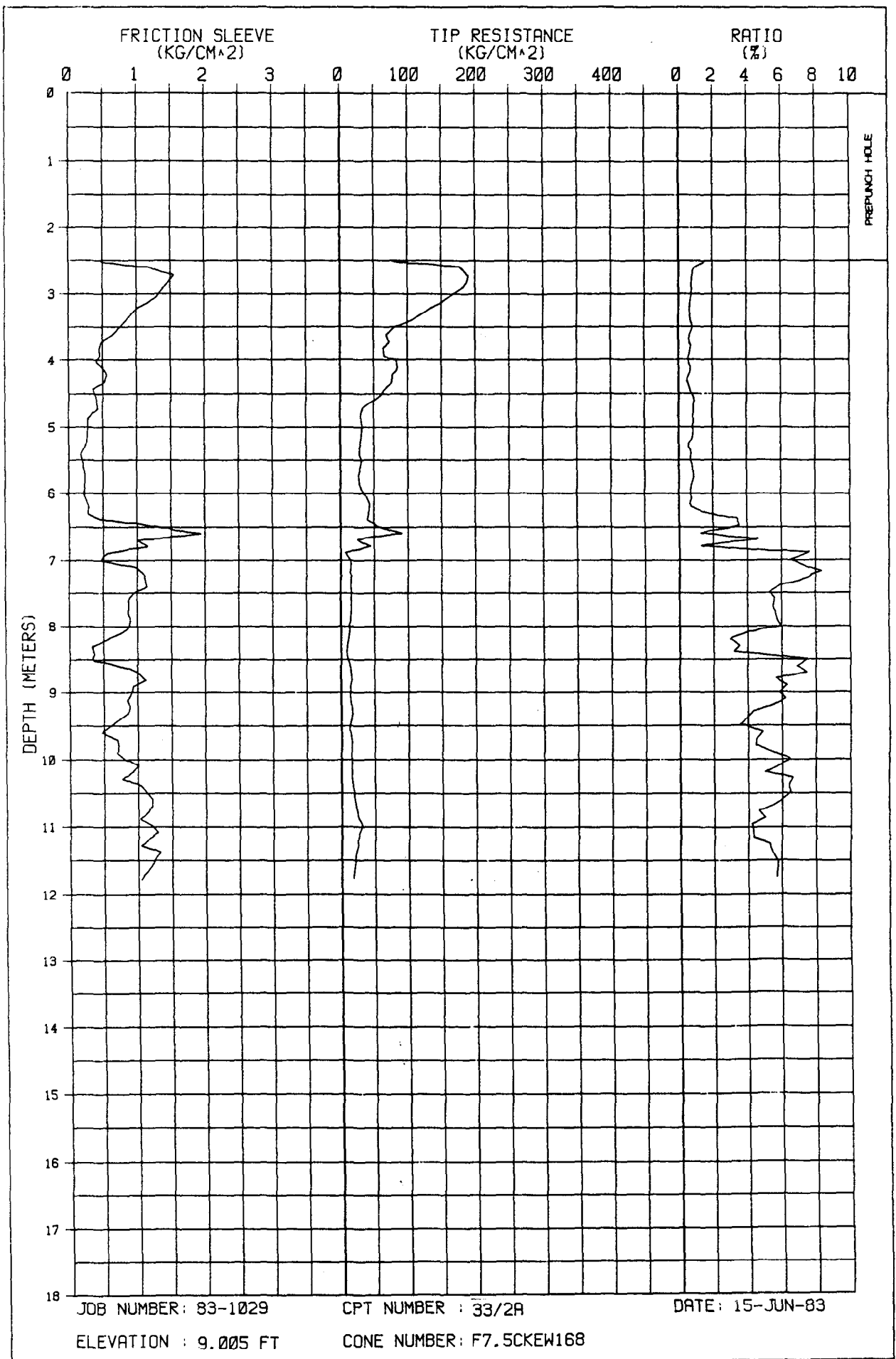
CPT NUMBER: 31/2A

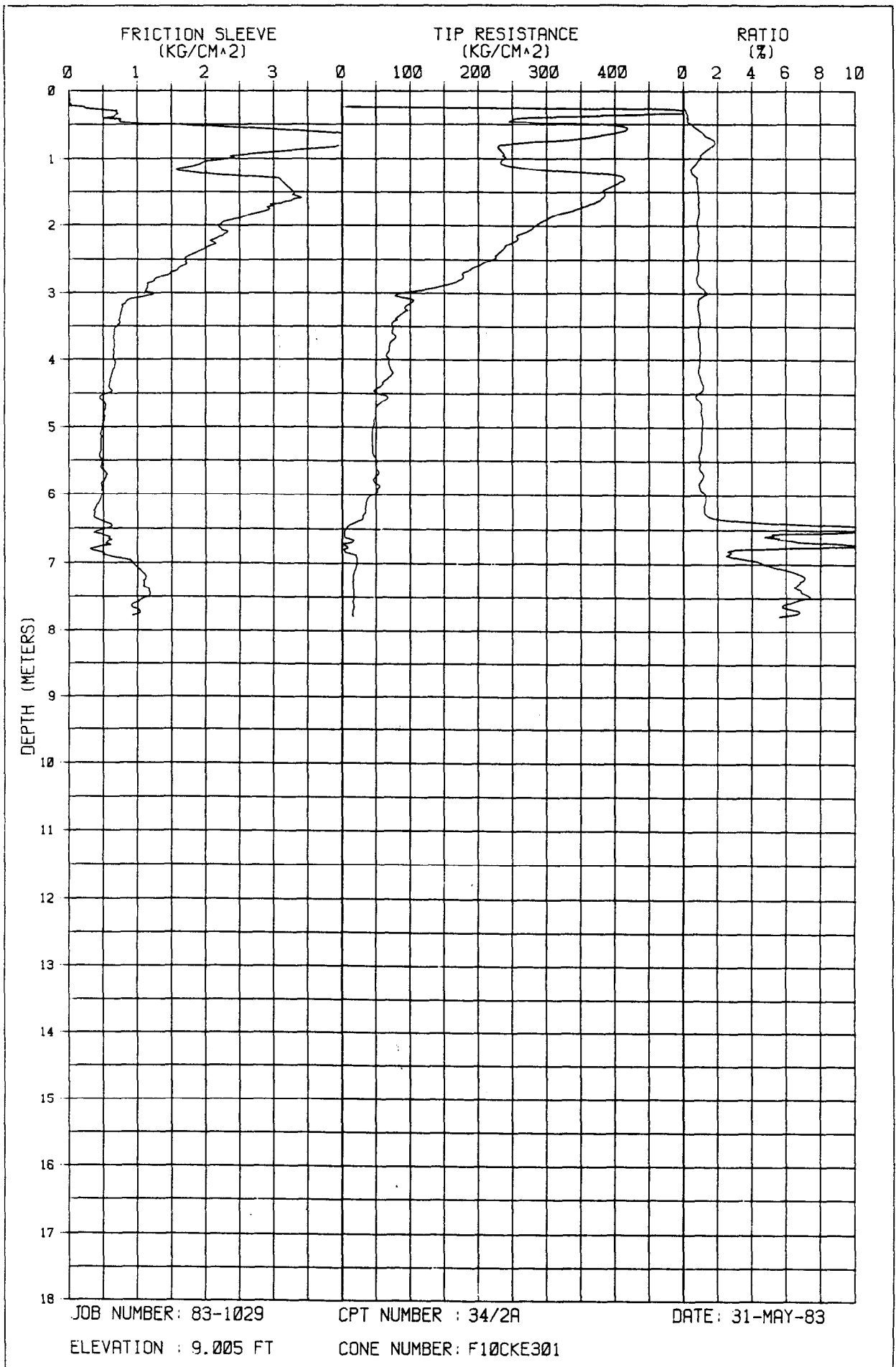
DATE: 31-MAY-83

ELEVATION: 9.005 FT

CONE NUMBER: F10CKE301







JOB NUMBER : 83-1029

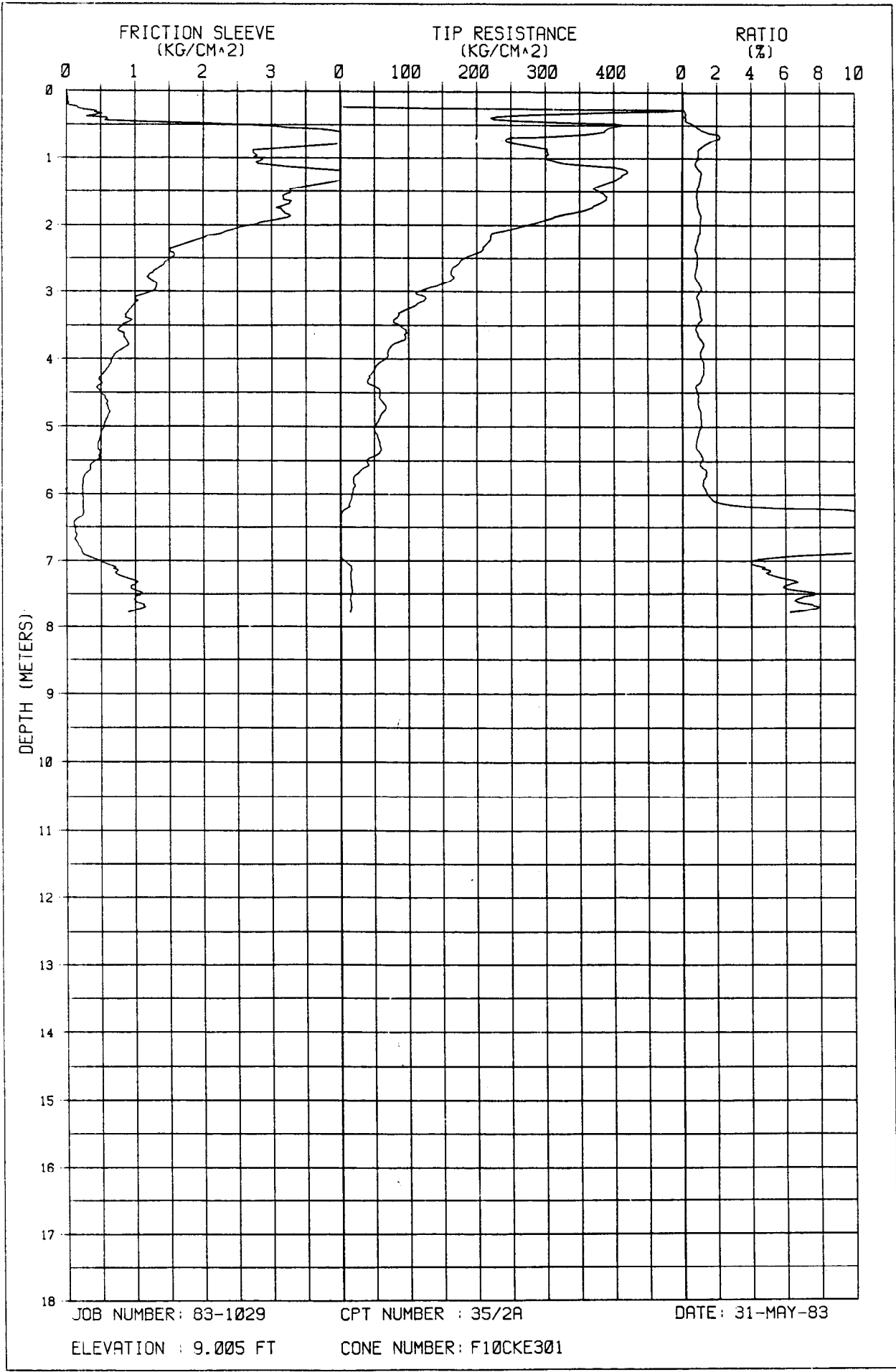
CPT NUMBER : 34/2A

DATE : 31-MAY-83

ELEVATION : 9.005 FT

CONE NUMBER : F10CKE301





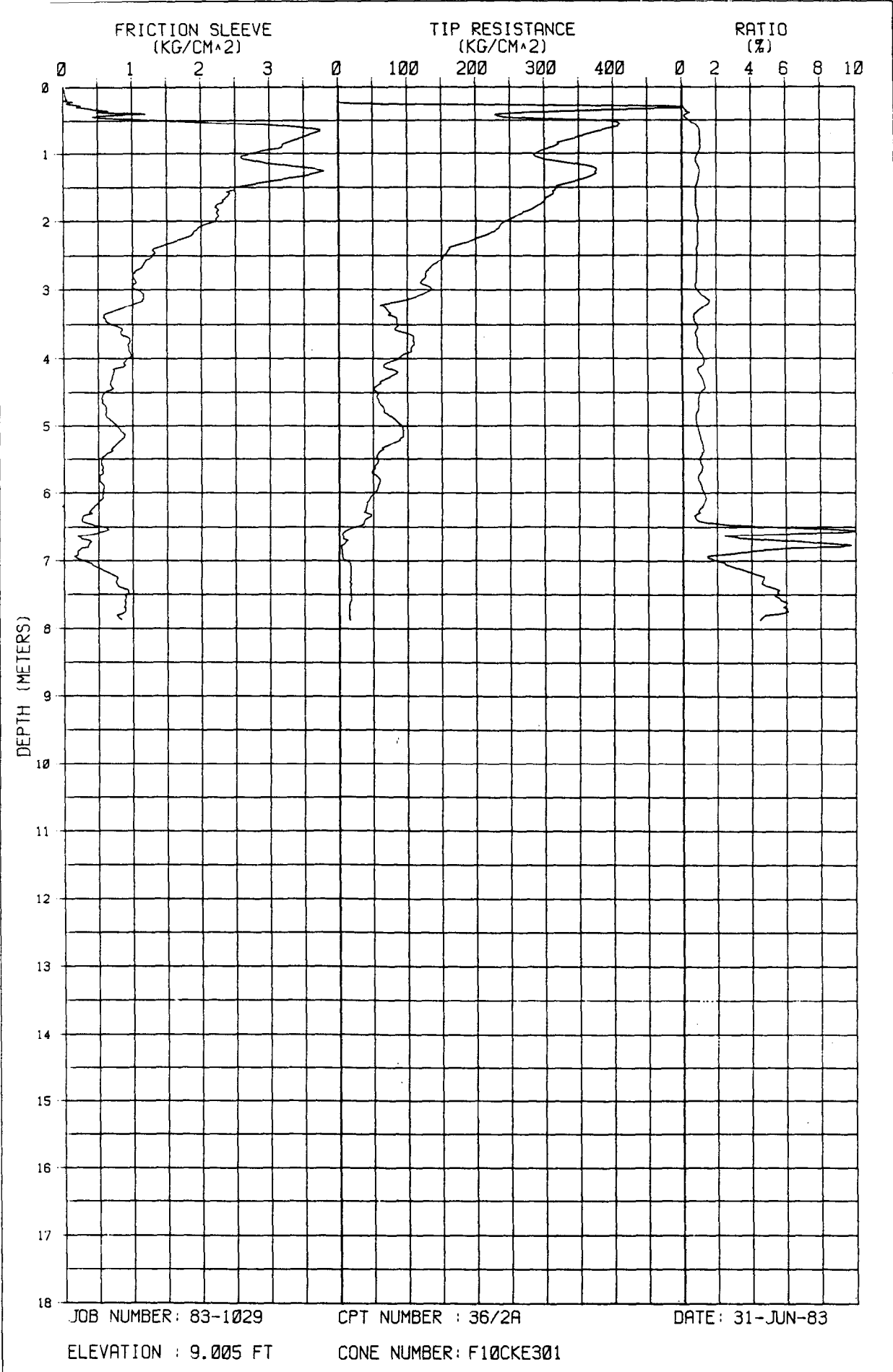
JOB NUMBER: 83-1029

CPT NUMBER : 35/2A

DATE: 31-MAY-83

ELEVATION : 9.005 FT

CONE NUMBER: F10CKE301



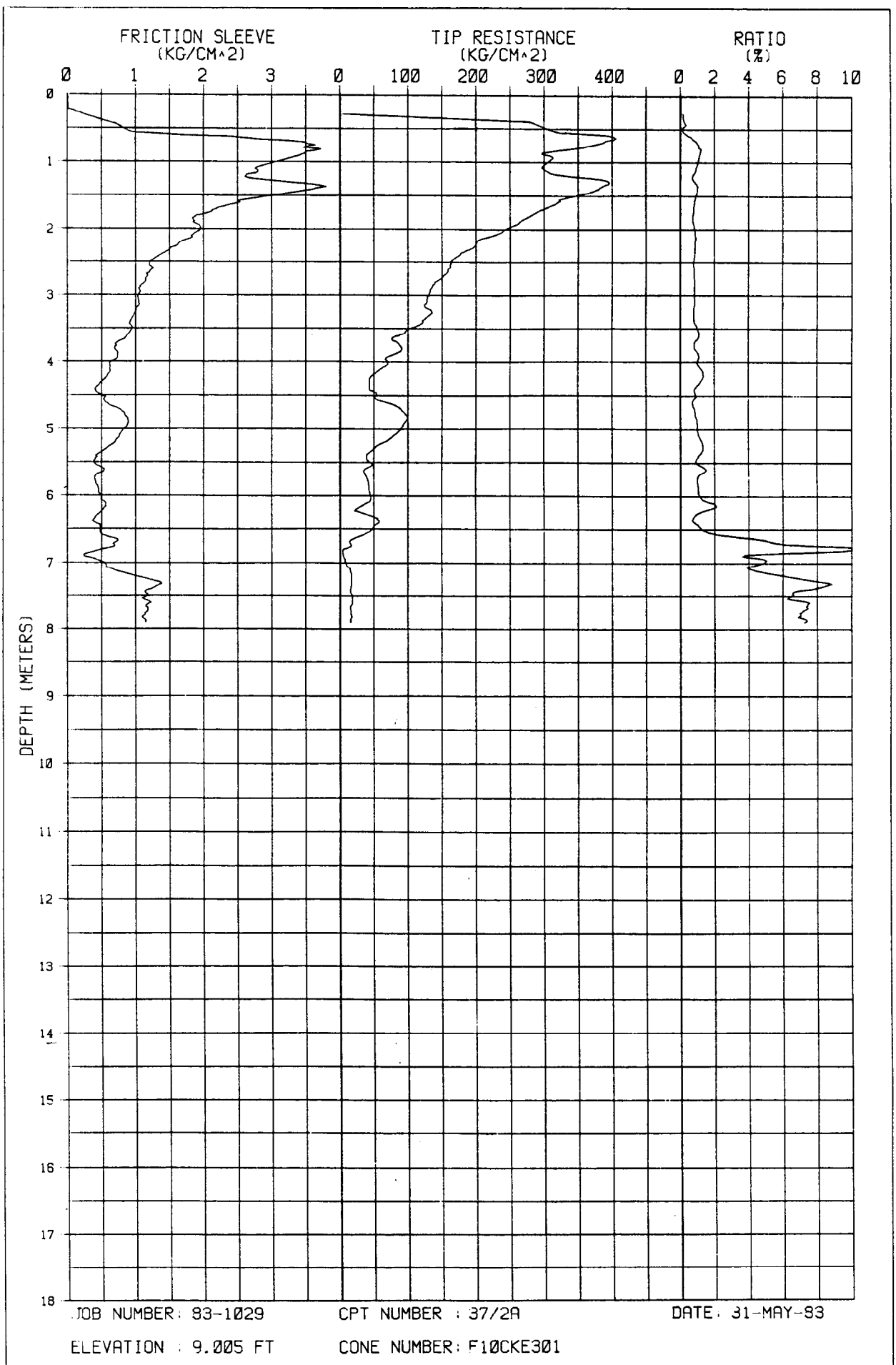
JOB NUMBER: 83-1029

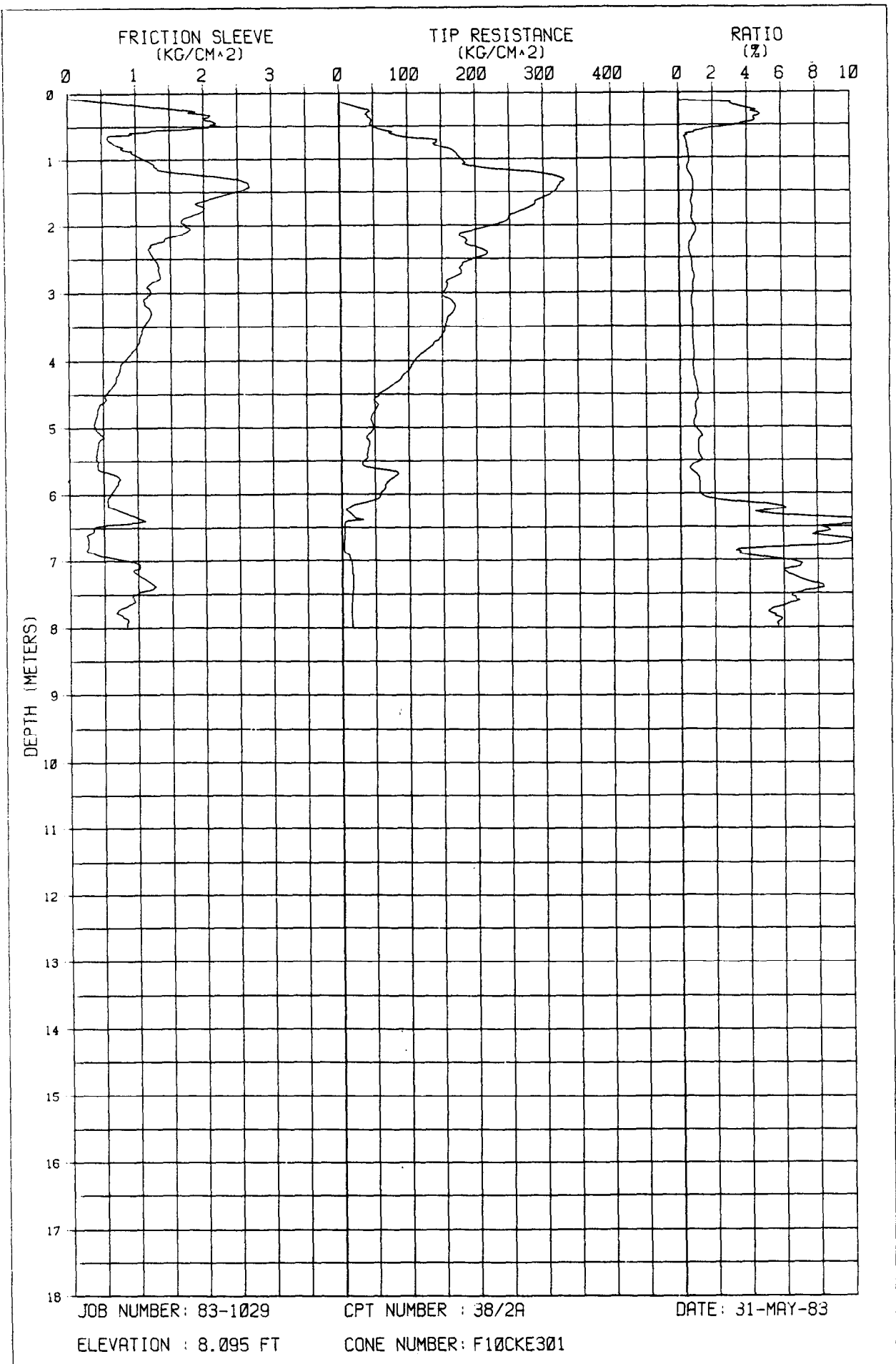
CPT NUMBER: 36/2A

DATE: 31-JUN-83

ELEVATION: 9.005 FT

CONE NUMBER: F10CKE301





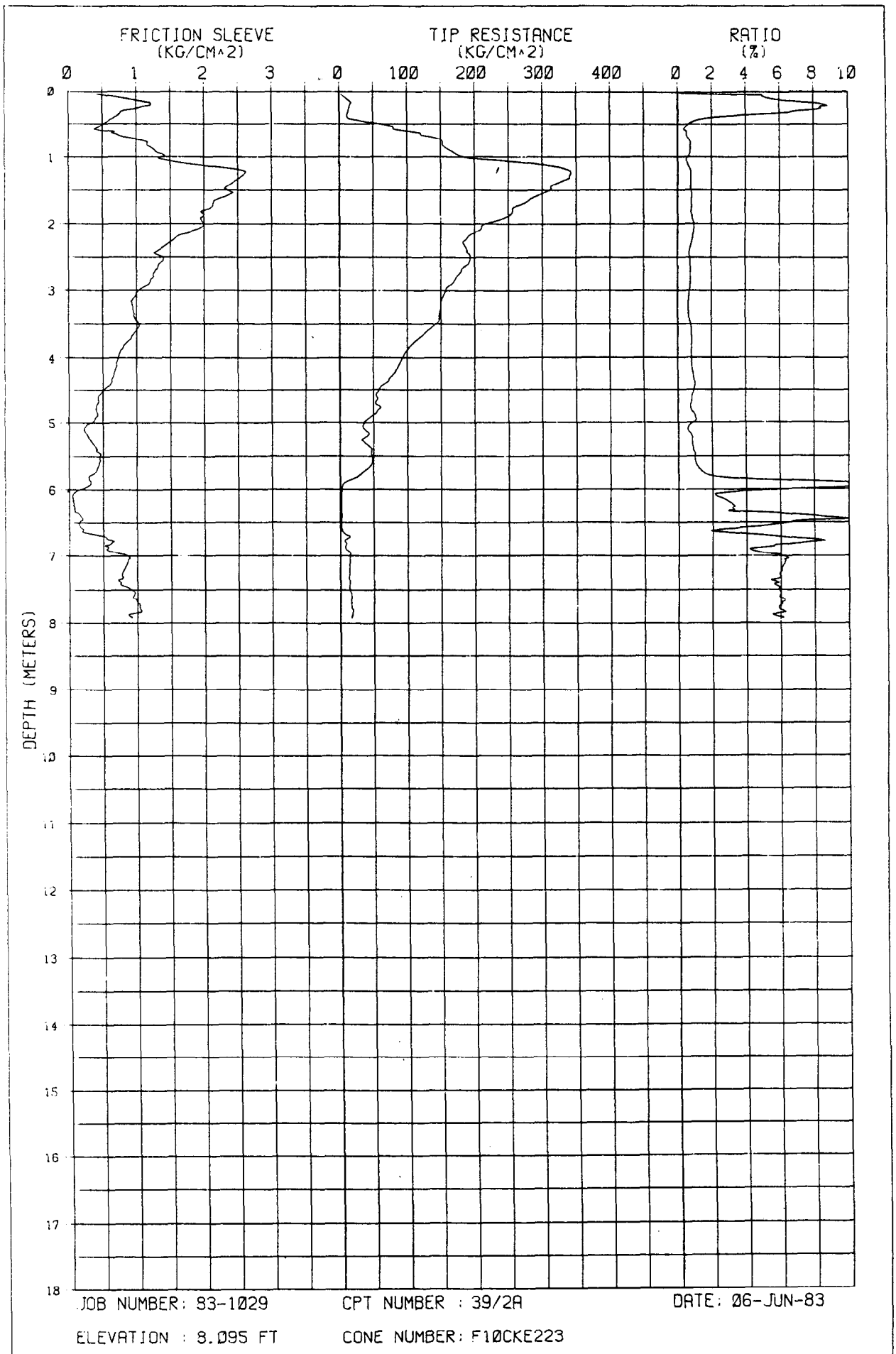
JOB NUMBER: 83-1029

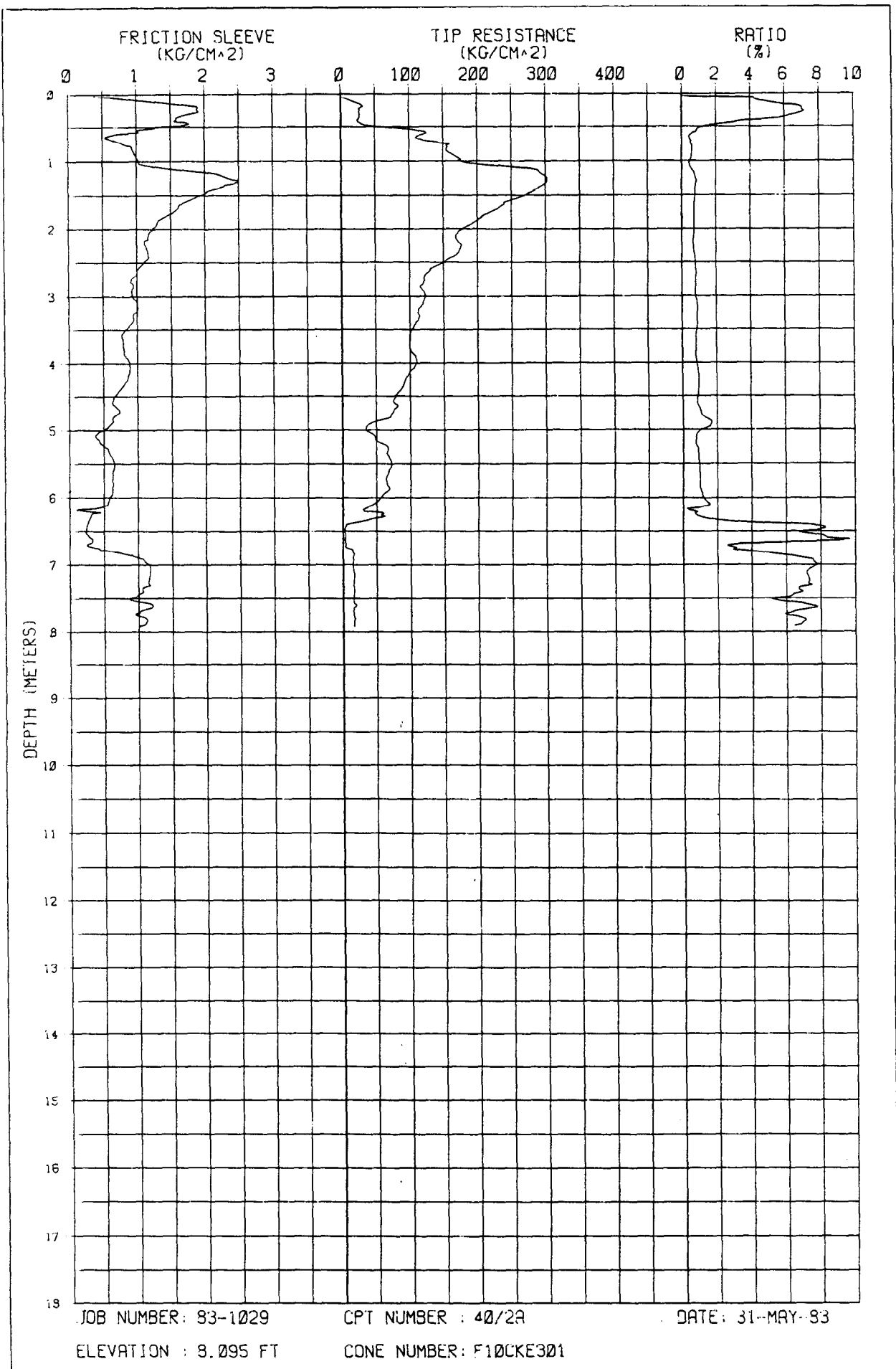
CPT NUMBER: 38/2A

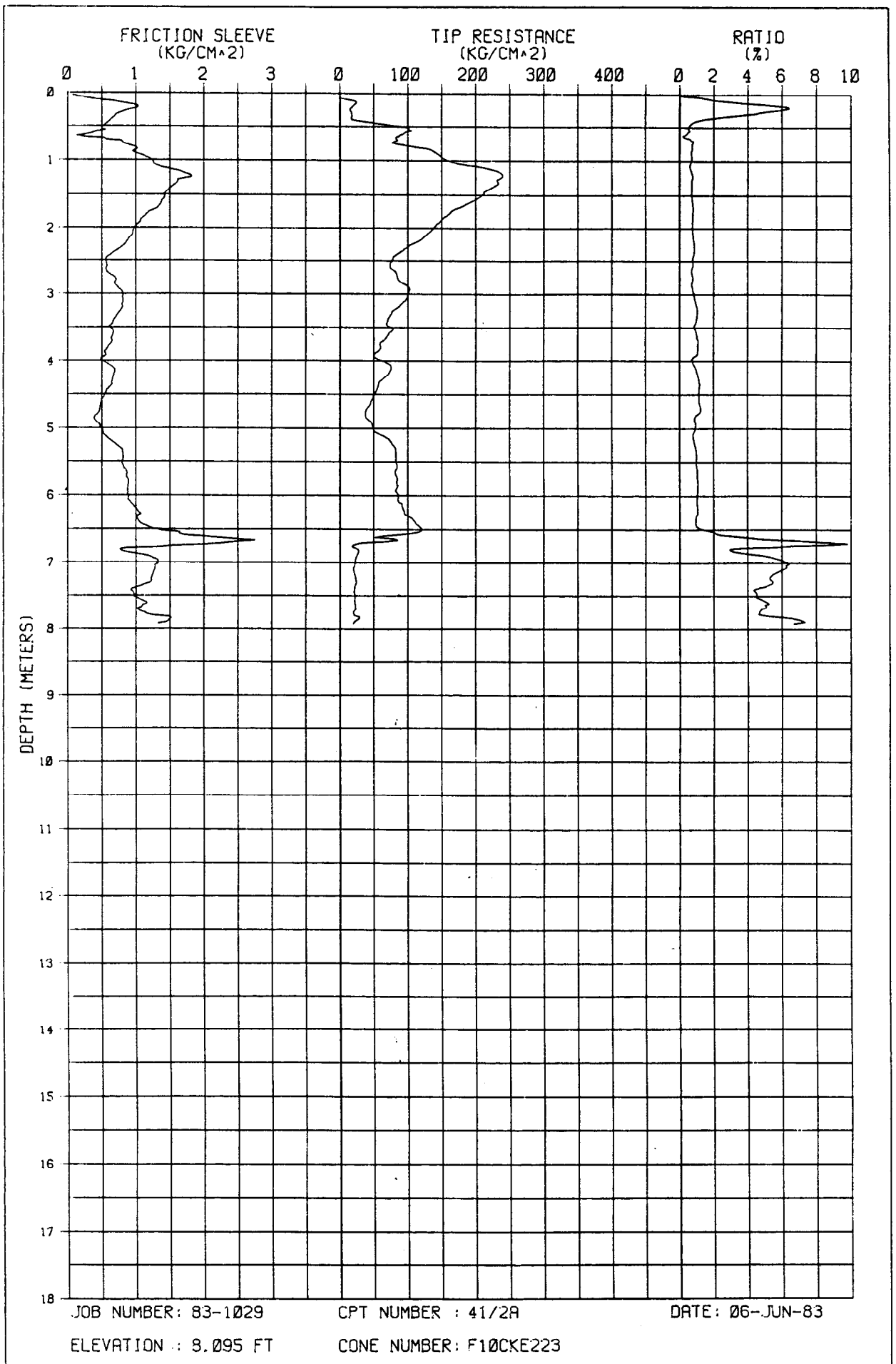
DATE: 31-MAY-83

ELEVATION: 8.095 FT

CONE NUMBER: F10CKE301







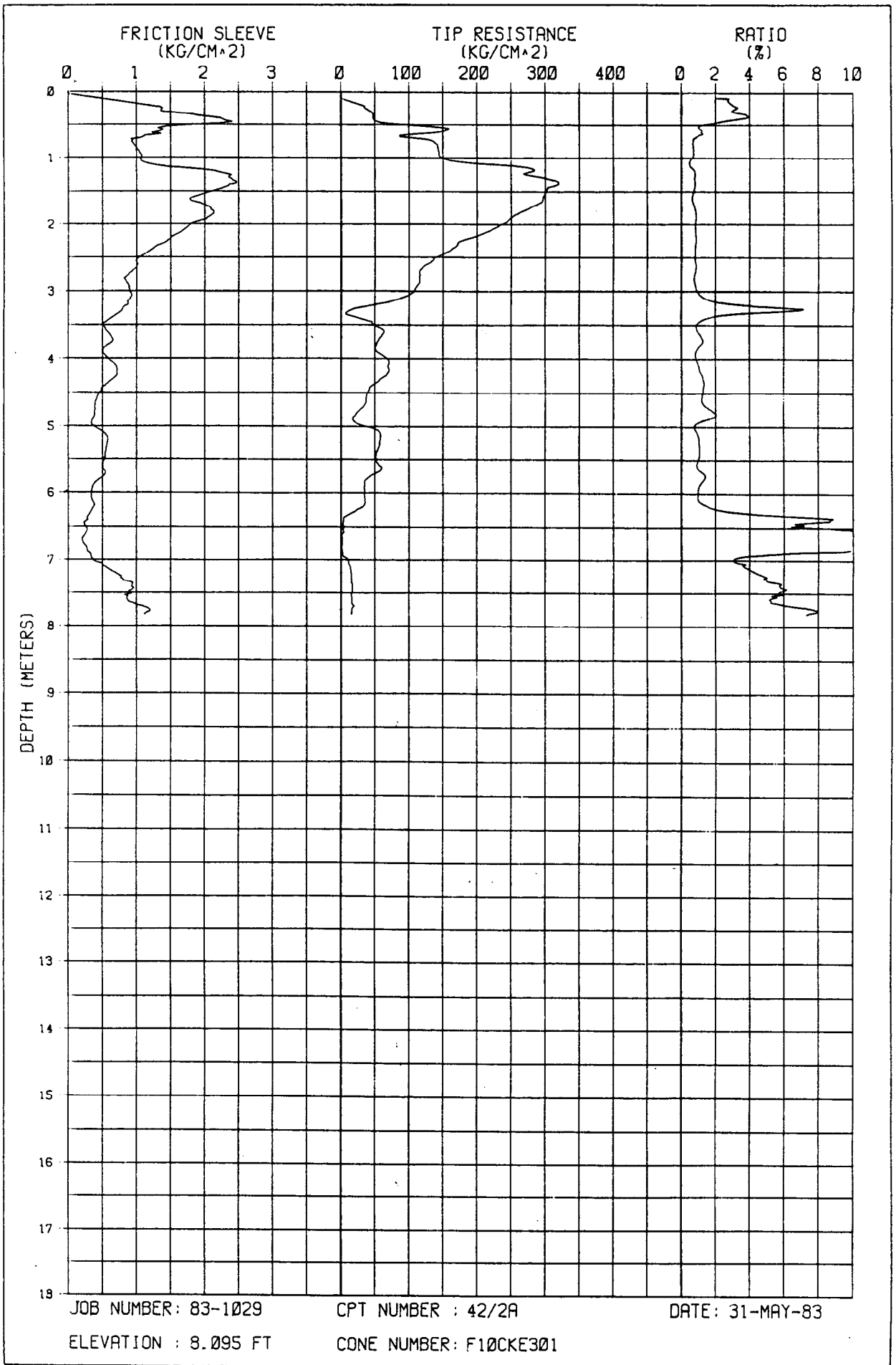
JOB NUMBER: 83-1029

CPT NUMBER : 41/2A

DATE: 06-JUN-83

ELEVATION : 8.095 FT

CONE NUMBER: F10CKE223



JOB NUMBER : 83-1029

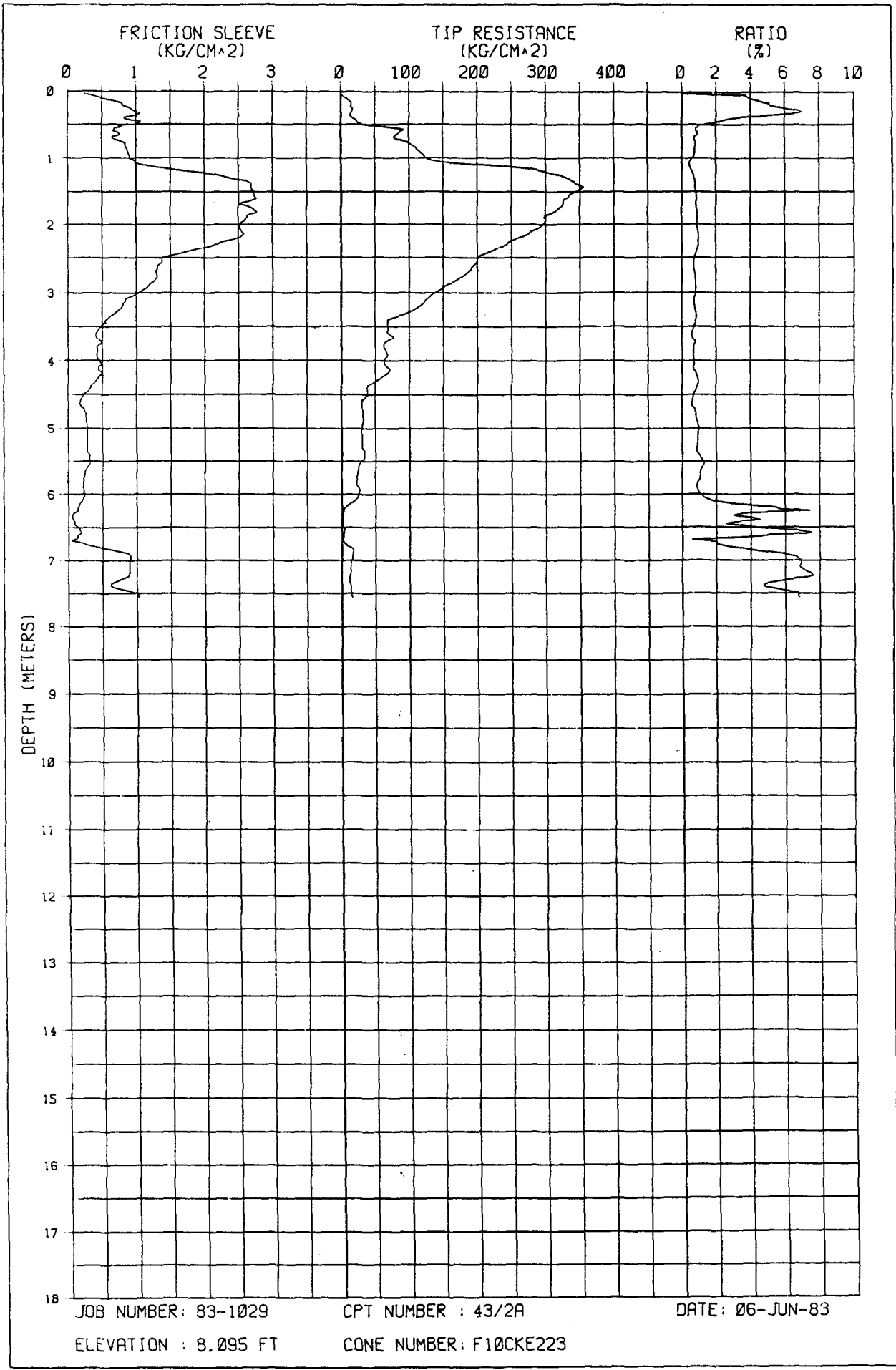
CPT NUMBER : 42/2A

DATE : 31-MAY-83

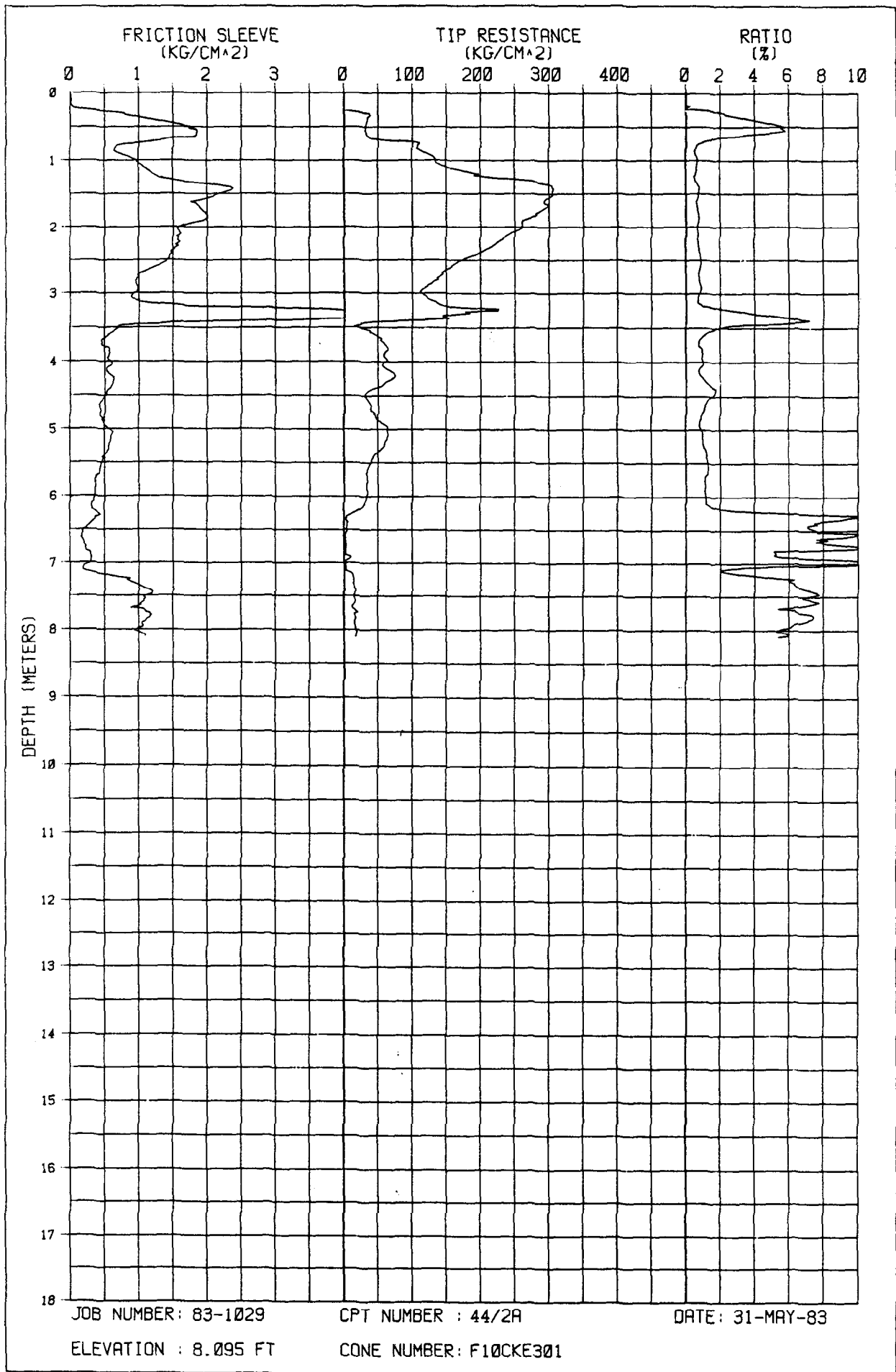
ELEVATION : 8.095 FT

CONE NUMBER : F10CKE301





JOB NUMBER : 83-1029      CPT NUMBER : 43/2A      DATE : 06-JUN-83  
 ELEVATION : 8.095 FT      CONE NUMBER : F10CKE223



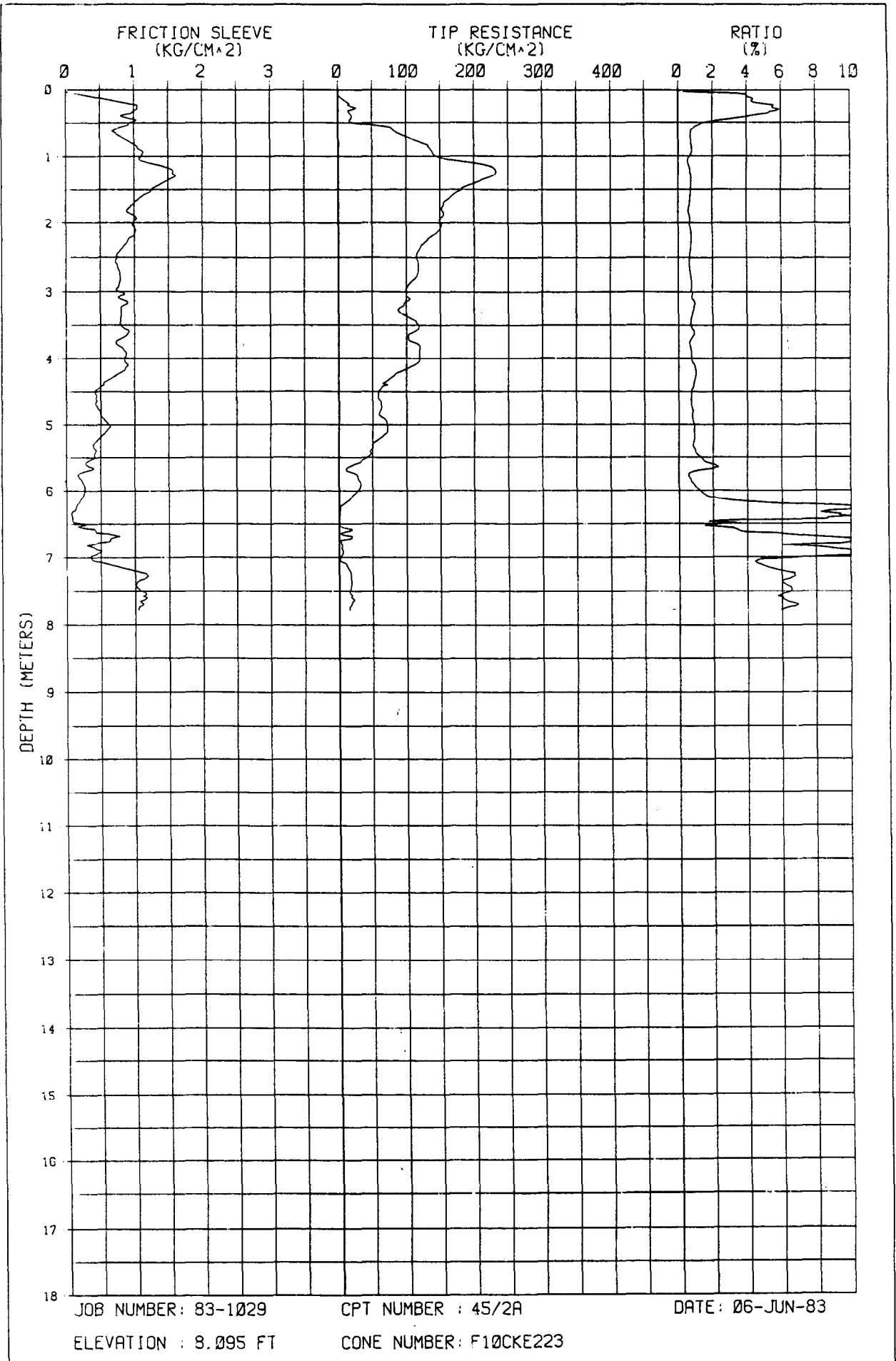
JOB NUMBER: 83-1029

CPT NUMBER : 44/2A

DATE: 31-MAY-83

ELEVATION : 8.095 FT

CONE NUMBER: F10CKE301



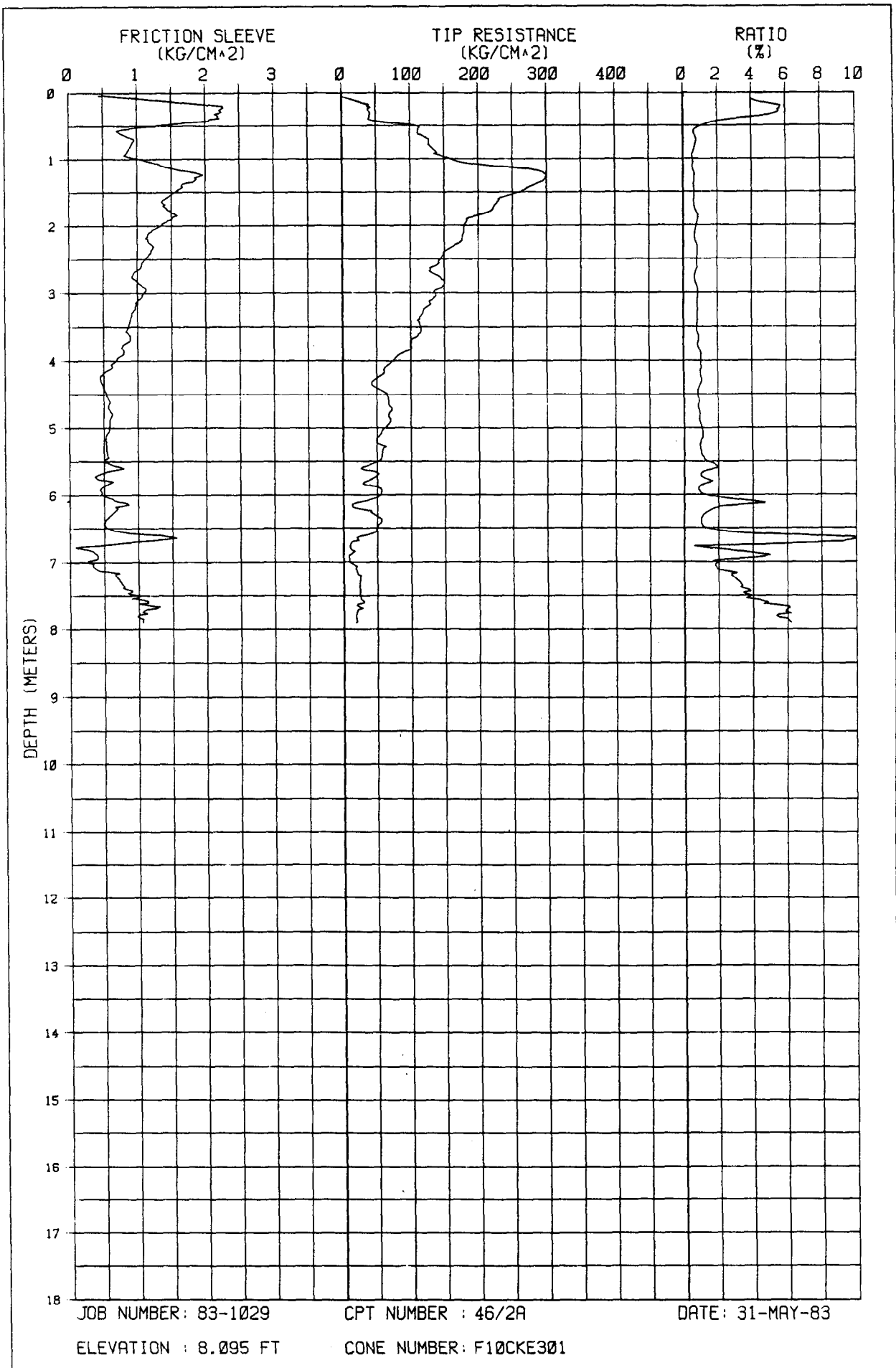
JOB NUMBER: 83-1029

CPT NUMBER: 45/2A

DATE: 06-JUN-83

ELEVATION: 8.095 FT

CONE NUMBER: F10CKE223



JOB NUMBER: 83-1029

CPT NUMBER : 46/2A

DATE: 31-MAY-83

ELEVATION : 8.095 FT

CONE NUMBER: F10CKE301

