2nd on A/c Bill

Sch. XLV-Form No. 134

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
N/W - Construction of H.L Bridge in					
Toa To Mak Sd on P 47					
Aggrement No - 05/NABARD/BRIDGE/23-24					
Date of Commencement - 27/1/2/23					
Time of completion - 26/12/25					
Agency - M/S Laxman Kumar (Laxman)					
	Abstract of cost				

1/1 E/W in Excavation for structure					
....etc					
ICUP - 1/1 - MBNO - 571 → 608.26m3					
QUP - 1/5 - MBNO - 571 → 119.76m3					
				→ 728.02m3	
Cost @ Rs 427.09m3				→ 310930.00	
2/6 P/V & constructing temporary Earth					
Island...etc					
QUP - 2/1 - MBNO - 571 → 4NO					
Cost @ Rs 38426.78NO				→ 153707.00	
3/6 P/V Steel liner 10mm thick....etc					
QUP - 3/2 - MBNO 571 - 17.04MT					
QUP - 2/5 - MBNO - 571 - 4.26MT					
				21.3 MT	

464637.00

Continuation

Sch. XLV-Form No. 134

4646372

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
Cost@B 10148.70 MT →					2160857:40
415 Supplying fitting and placing HYSD bars Foundation ... etc					
OUP-414-MBNo.571-62.378 MT					
OUP-12(i)/14 MBNo-571-37.605 MT					
			→ 99.983 MT		
Cost@B 80140.27 MT →					8012659:00
514 Bored cast in situ M-35 ... etc					
OUP-514-MBNo-571-696 M					
OUP-417-MBNo-571-144 M					
			→ 840 M		
Cost@B 25975.38 M →					21819319:20
7/12) PCC M15 Pile cap ... etc					
OUP-517-MBNo-571-36.41 m3					
Cost@B 7970.45 m3 →					290204:00
7/13) Pile cap in RCC M-30 ... etc					
OUP-8/10-MBNo-571-159.74 m3					
OUP-11/12-MBNo-571-319.46 m3					
			→ 479.20 m3		
Cost@B 8112.74 m3 →					3887625:00
819 Supplying fitting and placing HYSD bars Substructure ... etc					
OUP-12(ii)/14-MBNo-571-14.57 MT					
Cost@B 80363.75 MT →					1170899:00
917(i) RCC M30 in Substructure ... etc					
OUP-13/14-MBNo-571-94.795 m3					
Cost@B 8477.07 m3 →					803583:00
					→ 38609783:00

Continuation

Sch. XLV-Form No. 134

Particulars	Details of actual measurement No.	L.	B.	D.	Contents of area
	.		B.F	→	38609783=00
Gst18%+L.cost1%→19%→					7335858=00
				→	45945641=00
	Less	below15%		→	6891846=00
				→	39053795=00
		S.Fee		→	89388=00
				→	39143183=00
Less paid vs bill page No(3) →					25000000=00
				→	14143183=00
					141,43,183

Uptodate S.Fee					
Basic Rate with Royality					
PCC M15 – 36.41 × 177.715 →					6470
pilecap – 479.20 × 58.642 →					28101
pilling – 840 × 58.642 →					49259
RCC M-30 545.524 + 451 – 94.795 × 58.642 –					5558
				→	89388=00

LOW STRAIN INTEGRITY TEST REPORT ON PILES

(ASTM D 5882 &IS: 14893:2001)

REPORT FOR
M/s LAXMAN KUMAR

MAIN CLIENT
RURAL WORKS DEPARTMENT, WORKS DIVISION, BALIA

LOCATION
A1 (6 PILES), P1 (6 PILES), P2 (6 PILES), P3 (6 PILES), P4 (6 PILES), P5 (6 PILES), A2 (6 PILES)

NAME OF PROJECT
CONSTRUCTION OF HL BRIDGE IN T02 TO MAKSUDANPUR IN DISTRICT OF BEGUSARAI

D.O.T –18.03.2024, 29.03.2024 & 01.04.2024

GLOBAL TESTING & RESEARCH LABORATORY
(An ISO 9001:2015 & ISO 17025:2017/NABL certified Laboratory)

House No 322/2, Ward No.-15, Near RPS More,

Next to Capital Suzuki, Dist.-Patna,(Bihar)-(801503)

Office No.: Ph.:9798697785/9334254100/9608008051

E-mail: *gtrlpatna@gtrl.org.in, Visit us: www.gtrl.org.in*

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E-mail: gtrlpatna@gtrl.org.in, Visit us: www.gtrl.org.in

TEST REPORT

Name of Work	CONSTRUCTION OF HL BRIDGE IN T02 TO MAKSUDANPUR IN DISTRICT OF BEGUSARAI		
Name of Client	RURAL WORKS DEPARTMENT, WORKS DIVISION, BALIA		
Name of Contractor	M/S LAXMAN KUMAR		
Name of Testing Agency	GLOBAL TESTING AND RESEARCH LABORATORY		
Name of Test	LOW STRAIN PILE INTEGRITY TEST		
Date of Pile Testing	18.03.2024, 29.03.2024 & 01.04.2024	**Ref. Code.:**	ASTM D5882-00 & IS 14893:2001
JOB SL. No.	GTRL/180324/10877	Report Date:	02.04.2024
Report No.:	020424/civ/10942	ULR NO.	TC510224000001196F

NOTE:

(i) The results indicated above are based on the tests carried out on the items shown by the client

(ii) This test report should not be reproduced except in full, without written approval of GTRL

(iii) Any correction invalidates this report

For Global Testing and Research Laboratory

Authorized Signature

CONTENT

SR. NO.	PARTICULARS	PAGES

Global Testing & Research Laboratory Patna *

Low Strain Integrity Test Report on Piles

Name of Project

CONSTRUCTION OF HL BRIDGE IN T02 TO MAKSUDANPUR IN DISTRICT OF BEGUSARAI

Report for Pile Integrity Testing on Group No.: A1 (6 PILES), P1 (6 PILES), P2 (6 PILES), P3 (6 PILES), P4 (6 PILES), P5 (6 PILES), A2 (6 PILES)

Introduction:

Global Testing And Research Laboratory, House No 322/2, Ward No.-15 Near RPS More, Next to Capital Suzuki, Distt.-Patna (Bihar) has been authorized by **M/s LAXMAN KUMAR** to conduct low strain integrity testing on Piles installed at the above mentioned project site. The low strain integrity testing is a Non-Destructive integrity test method of foundation piles for the assessment of potential problems like cross sectional changes, honeycombing, physical dimensions, continuity of pile and concrete quality. The integrity testing of pile is a qualitative evaluation of the physical dimensions, continuity of pile & consistency of pile material. The integrity testing of pile will furnish the data on structural element tested which assists in evaluation of pile integrity and pile physical dimensions which includes cross sectional area and length of pile.

Purpose:

Pile integrity testing is a quick and inexpensive method to check the continuity of installed foundation piles. Piles can have defects such as cracks, soil incursions, and diameter change in precast concrete piles and cast-in-Situ piles.The method is also called low-strain testing. Pile testing provides quick and inexpensive results compared to core drilling, inspection by excavation, and load tests, which are time-consuming and costly. Pile testing response is displayed immediately on screen and can be printed or stored on hard disk for further analysis.

Method:

Prior to testing the pile head should be exposed and cut back to sound concrete, with a reasonably level surface, free from standing water and pile cap reinforcing steel. It is recommended that the shaft concrete is allowed to cure for at least seven days before testing.The pile head is struck with a hand-held hammer, which sends a compression wave down the shaft of the pile. Pile discontinuities and the pile toe reflect upward travelling stress wave. The movement of the pile head caused by the hammer impact stress wave and subsequent reflection is measured by a sensitive accelerometer attached to the pile toe. The acceleration signal is converted to velocity and presented on screen as a function of time. All results are easily stored for use in reports. The velocity graph of an undamaged pile typically consists of a very large peak at impact. A smaller peak, corresponding to the pile toe can of ten distinguish. Soil changes will show immediate reflections.

Patna

Pile Details:

Pile Integrity was conducted on CONSTRUCTION OF HL BRIDGE IN T02 TO MAKSUDANPUR IN DISTRICT OF BEGUSARAI , Location A1 (6 PILES), P1 (6 PILES), P2 (6 PILES), P3 (6 PILES), P4 (6 PILES), P5 (6 PILES), A2 (6 PILES), Diameter 1200 mm, Concrete Grade M 35 & range of pile depth from cut off level is 22.00 m & 24.00 M .

Integrity Testing Instrument:

The equipment used for integrity (PDI-Pile Dynamics) included a *PILE INTEGRITY TESTER MODEL PIT-QFV (Force and Velocity)* (wired): Standard system also includes: Main unit, 1-traditional PIT accelerometers (*Specify top or side mount*), 1-non-instrumentedhammers (2 inch/3lb), 3 inch 8lb instrumented hammer, measures force with instrumented hammer, PIT-W standard software, rechargeable battery, battery charger, wax, USB memory stick FFT software license and 1 transit case. Typically six hammer blows were delivered at these impact locations around the pile top surface (Head) and the pile response was measured with an accelerometer located on a different prepared surface. Records from each series of blows with non-instrumented hammer were then averaged and the averaged record was stored in the PIT collector for later data processing.

In summary, the method involves including a low strain stress wave into the pile by striking the top of the pile with a small hand held hammer and measuring the pile top response with an accelerometer. Records of several hammer impacts are averaged, filtered and exponentially amplified to enhance record features. The processed records are the measured pile top velocity versus time curves. These curves are evaluated for indications of stress wave reflections which, based on arrival time and magnitude, can indicate impedance increases, or the pile toe.

The low strain integrity test on pile is conducted as per ASTM D 5882 to 00 to standard test method for low strain integrity testing of pile.

Analysis and Interpretations:

This testing required the attachment of the highly sensitive accelerometer to the pile top with viscous material. Accelerometer is connected to PIT Collector – computer with special purpose signal conditioning and A/D converter. After hammer impact downward compressive wave is generated traveling with wave speed "c". when this initial wave encounters a cross section change or concrete quality change at depth x, it generates an upward travelling wave which is observed at the pile top divided by the wave speed c (2x/c). The rest of the initial wave travels down to the pile toe and reflects. It is observed at the pile toe at time twice the pile length divided by wave speed (2L/C, L = Pile length). Reductions in pile cross and concrete quality section generate tension upward travelling waves, while soil resistance and bigger pile cross section generates compression upward travelling waves. Records were transferred from the PIT Collector to a computer through software. After verifying and, in case necessary, adjusting the field parameters for amplification, filtering, etc., the processed velocity curves were plotted. These records were evaluated for reflections from the pile toe and for reflections from variations in the pile impedance above the toe. The records were processed using the reported lengths with the wave speed adjusted based on the toe reflection observed in the records. Measured pile head velocity is analyzed as a function of time with the Pulse Echo Method (PEM).

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Remarks:

Impedance is defined with *Z=EA/c*, where E is elastic modulus, A is cross section area and c is wave speed "c". When this initial wave encounters a cross section change or concrete quality change at depth x, it generates an upward travelling wave which is observed at the pile top at the time equal to twice the distance of the cross section change from the top divided by the wave speed c (2x/c). The rest of the initial wave travels down to the pile toe and reflects. It is observed at the pile toe at time twice the pile length divided by wave speed (2L/C, L= pile length). Reductions in pile cross and concrete quality section generate tension upward travelling waves, while soil resistance and bigger pile cross section generates compression upward travelling waves. Records were transferred from the PIT Collector to a computer through software. After verifying and, in case necessary, adjusting the field input parameters for amplification, filtering, etc., the processed velocity curves were plotted. These records were evaluated for reflections from the pile toe and for reflections from variations in the pile impedance above the toe. The records were processed using the reported lengths with the wave speed adjusted based on the toe reflection observed in the records. Measured pile head velocity is analyzed as a function of time with the Pulse Echo Method (PEM).

Impedance is defined with *Z=EA/c*, where E is elastic modulus, A is cross section area and c is wave speed.

Limitation of Integrity Test:

- The test method can generally evaluate for piles up to an L/D ratio, however, this also depends on the soil resistance that may attenuate the signals.
- For piles with greatly varying cross-sectional area especially in layered soils, it may be difficult to distinguish relevant reflections due to construction method and those due to localized discontinuities.
- Although the test system can be used to evaluate length of piles, the determination of pile length is approximate within a range of ±5% to 10% due to variation in concrete density.

Global Testing and Research Laboratory Patna

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E-mail: gtrlpatna@gtrl.org.in, Visit us: www.gtrl.org.in

Conclusion on Integrity Test:

The no. of piles tested is 36 and have been attached in Appendix A and Appendix B of the report.

Appendix A contains details of the tested piles

Appendix B contains detailed test graph

Below is the conclusions derived from the test conducted at site.

a) Total of 36 piles were tested at one locations
b) Group No.: A1 (6 PILES), P1 (6 PILES), P2 (6 PILES), P3 (6 PILES), P4 (6 PILES), P5 (6 PILES), A2 (6 PILES) are classified as OK
c) Minor impedance reduction at the bottom of some Pile is shown but the associated changes are not of serious concern to the integrity of the shaft. Hence these piles are classified as OK.
d) For tested pile concrete quality in relationship with impact wave velocity is in between 3600 to 4200 m/sec.

NOTE: Pile integrity for the remaining tested piles is classified as OK or DOUBTFUL based on low strain test records. However, the final decision on pile acceptance is also based on installation records, site conditions and other such relevant site information apart from low strain test records and hence shall be decided by the contractors/ consultants/ clients and engineers to the project.

For Global Testing And Research Laboratory

Authorized Signatory

APPENDIX A

Sl. No.	Location/ Pile Group	Pile No.	Pile Dia (mm)	Pile Length (m)	Measured Pile Length (m)	Wave Speed	Date of Casting	Date of Testing	Shaft Cross-Section and Soil Changes (From test level)	Pile Integrity
1	A1	P1	1200	22.00	22.05	3800	29.01.2024	18.03.2024	Fairly uniform pile shaft	OK
2	A1	P2	1200	22.00	22.00	4100	31.01.2024	18.03.2024	Fairly uniform pile shaft	OK
3	A1	P3	1200	22.00	22.01	4150	30.01.2024	18.03.2024	. Fairly uniform pile shaft	OK
4	A1	P4	1200	22.00	22.07	4200	02.02.2024	18.03.2024	Fairly uniform pile shaft	OK
5	A1	P5	1200	22.00	22.02	4000	01.02.2024	18.03.2024	Fairly uniform pile shaft	OK
6	A1	P6	1200	22.00	22.02	4106	03.03.2024	18.03.2024	Fairly uniform pile shaft	OK
7	P4	P1	1200	24.00	24.07	3985	29.01.2024	18.03.2024	Fairly uniform pile shaft	OK
8	P4	P2	1200	24.00	23.97	4000	31.01.2024	18.03.2024	Fairly uniform pile shaft	OK
9	P4	P3	1200	24.00	24.08	4000	30.01.2024	18.03.2024	Fairly uniform pile shaft	OK
10	P4	P4	1200	24.00	24.04	4050	02.02.2024	18.03.2024	Fairly uniform pile shaft	OK
11	P4	P5	1200	24.00	24.05	3960	01.02.2024	18.03.2024	Fairly uniform pile shaft	OK
12	P4	P6	1200	24.00	24.05	3920	03.03.2024	18.03.2024	Fairly uniform pile shaft	OK
13	A2	P1	1200	22.00	22.05	3985	05.03.2024	29.03.2024	Fairly uniform pile shaft	OK
14	A2	P2	1200	22.00	22.06	4100	12.03.2024	29.03.2024	Fairly uniform pile shaft	OK
15	A2	P3	1200	22.00	22.04	3708	07.03.2024	29.03.2024	Fairly uniform pile shaft	OK
16	A2	P4	1200	22.00	22.05	4000	10.03.2024	29.03.2024	Fairly uniform pile shaft	OK
17	A2	P5	1200	22.00	22.04	3627	08.03.2024	29.03.2024	Fairly uniform pile shaft	OK
18	A2	P6	1200	22.00	22.08	3950	14.03.2024	29.03.2024	Fairly uniform pile shaft	OK
19	P1	P1	1200	22.00	24.06	4100	07.03.2024	29.03.2024	Fairly uniform pile shaft	OK
20	P1	P2	1200	22.00	24.02	4040	13.03.2024	29.03.2024	Fairly uniform pile shaft	OK
21	P1	P3	1200	22.00	24.03	4065	09.03.2024	29.03.2024	Fairly uniform pile shaft	OK
22	P1	P4	1200	22.00	24.08	4039	12.03.2024	29.03.2024	Fairly uniform pile shaft	OK
23	P1	P5	1200	22.00	24.06	3944	11.03.2024	29.03.2024	Fairly uniform pile shaft	OK
24	P1	P6	1200	22.00	24.07	3920	03.03.2024	29.03.2024	Fairly uniform pile shaft	OK
25	P2	P1	1200	24.00	24.06	4025	29.01.2024	29.03.2024	Fairly uniform pile shaft	OK

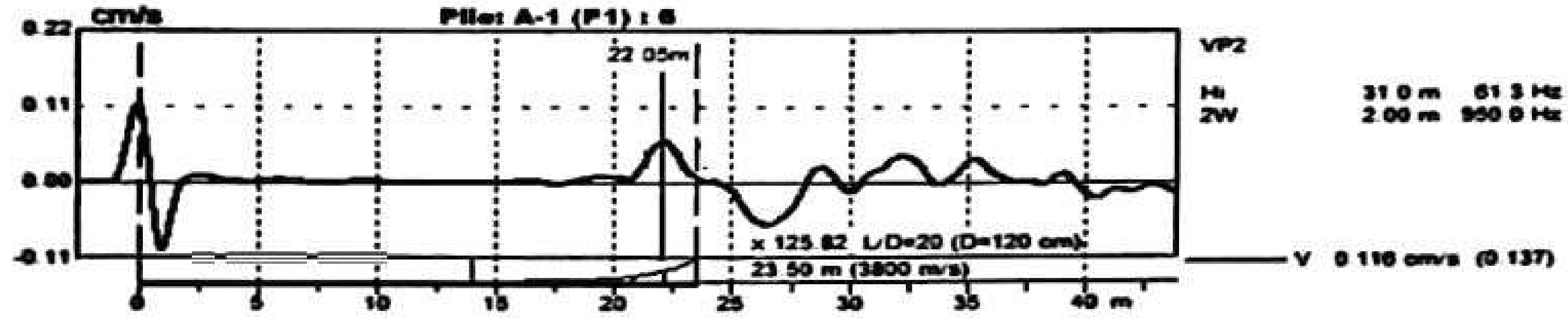
26	P2	P2	1200	24.00	24.01	3950	31.01.2024	29.03.2024	Fairly uniform pile shaft	OK
27	P2	P3	1200	24.00	24.12	3960	30.01.2024	29.03.2024	Fairly uniform pile shaft	OK
28	P2	P4	1200	24.00	24.07	3931	02.02.2024	29.03.2024	Fairly uniform pile shaft	OK
29	P2	P5	1200	24.00	24.01	3972	01.02.2024	29.03.2024	Fairly uniform pile shaft	OK
30	P2	P6	1200	24.00	24.01	3860	15.03.2024	29.03.2024	Fairly uniform pile shaft	OK
31	P3	P1	1200	24.00	24.02	3907	09.03.2024	01.04.2024	Fairly uniform pile shaft	OK
32	P3	P2	1200	24.00	24.07	4000	14.03.2024	01.04.2024	Fairly uniform pile shaft	OK
33	P3	P3	1200	24.00	24.01	4090	11.03.2024	01.04.2024	Fairly uniform pile shaft	OK
34	P3	P4	1200	24.00	24.04	3930	13.03.2024	01.04.2024	Fairly uniform pile shaft	OK
35	P3	P5	1200	24.00	24.05	3960	12.03.2024	01.04.2024	Fairly uniform pile shaft	OK
36	P3	P6	1200	24.00	2400	4010	17.03.2024	01.04.2024	Fairly uniform pile shaft	OK

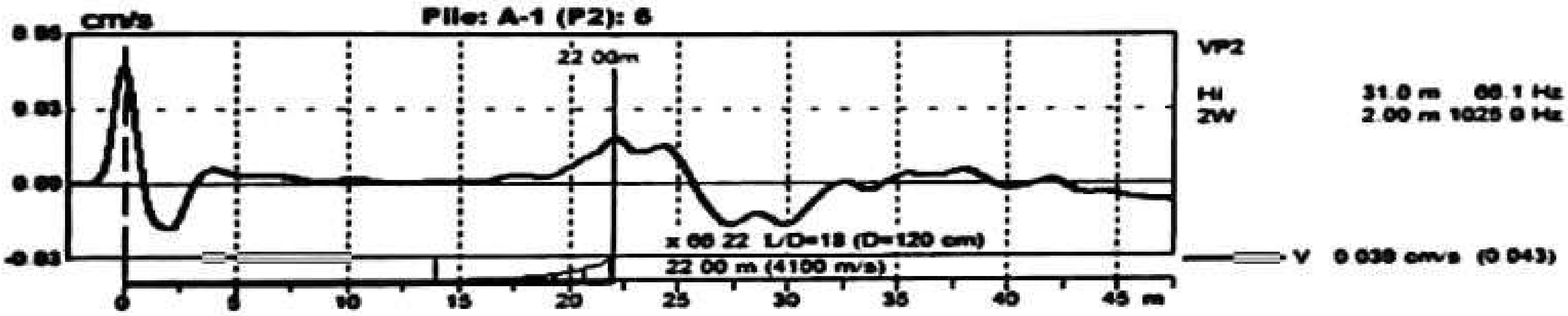
APPENDIX B

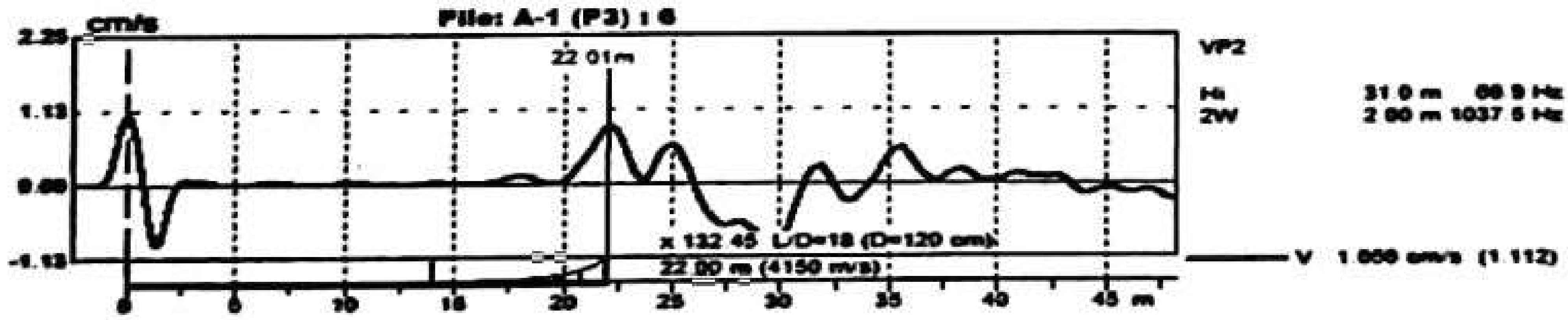
Global Testing and Research Laboratory

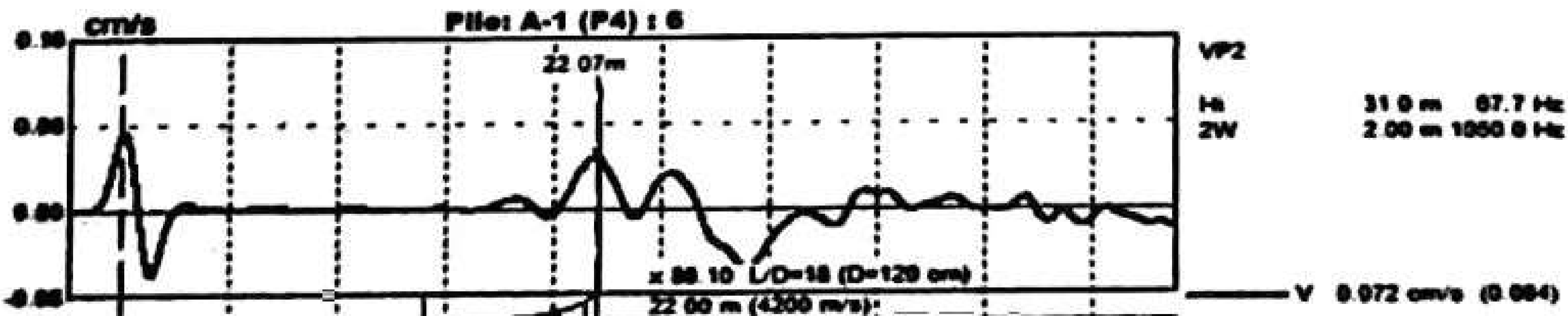
T02 to Maksudanpur, Begusarai 18.03.2024

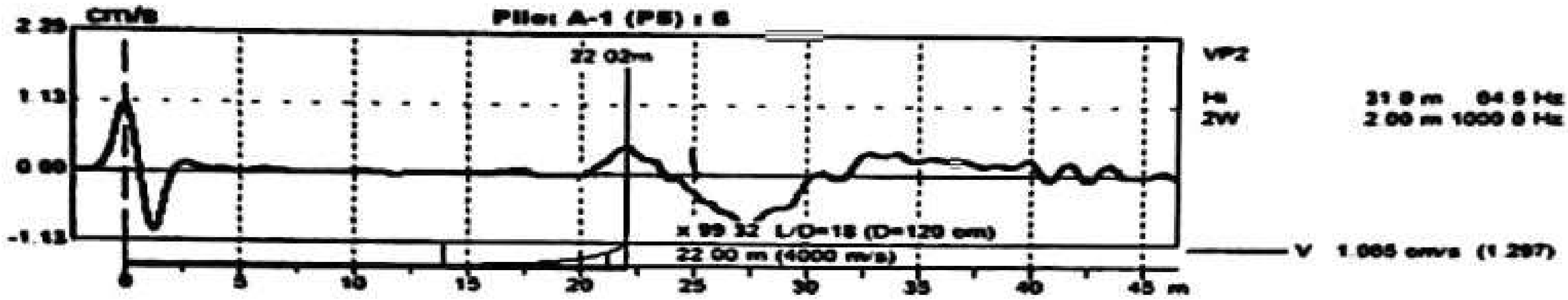
PIT-W 2009-4

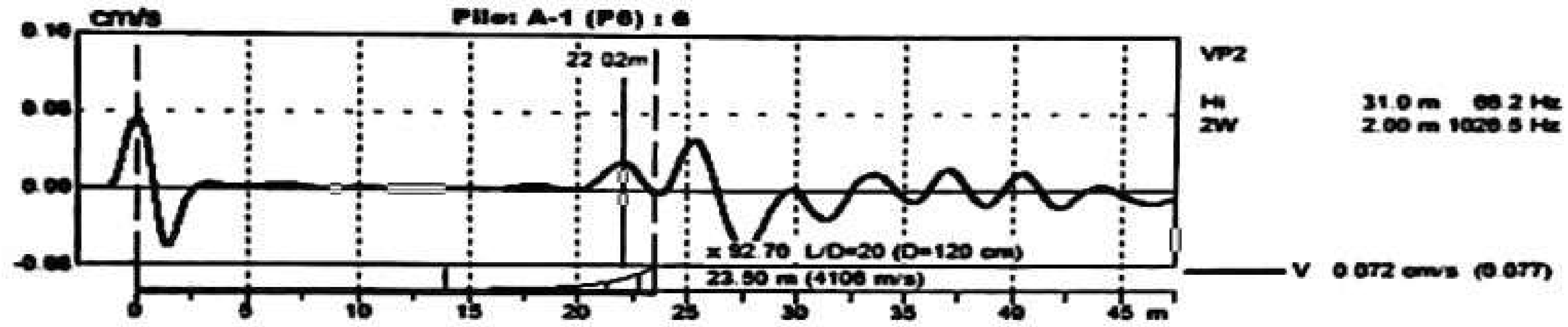


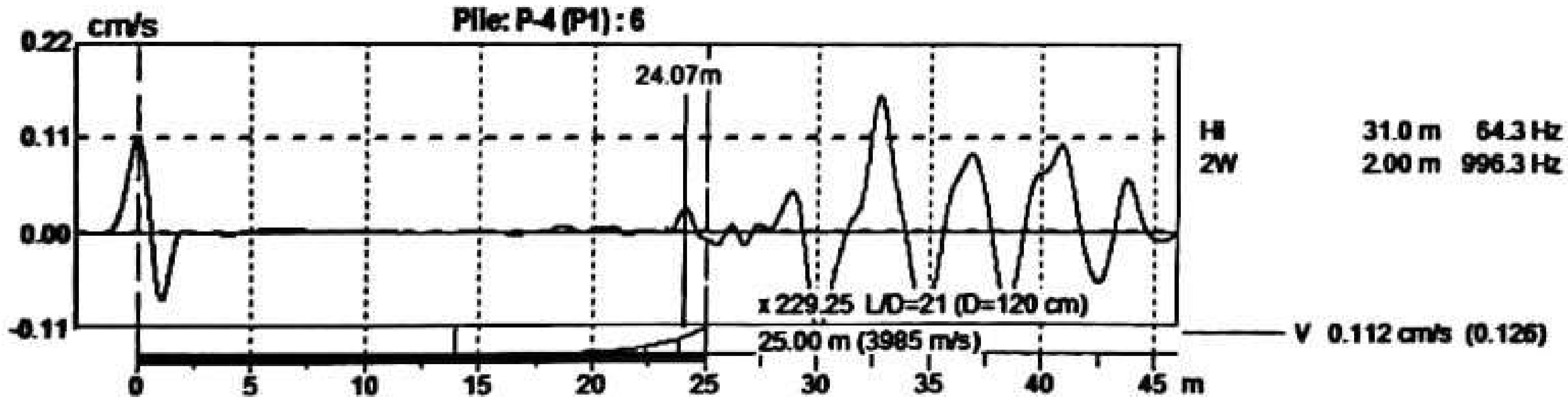


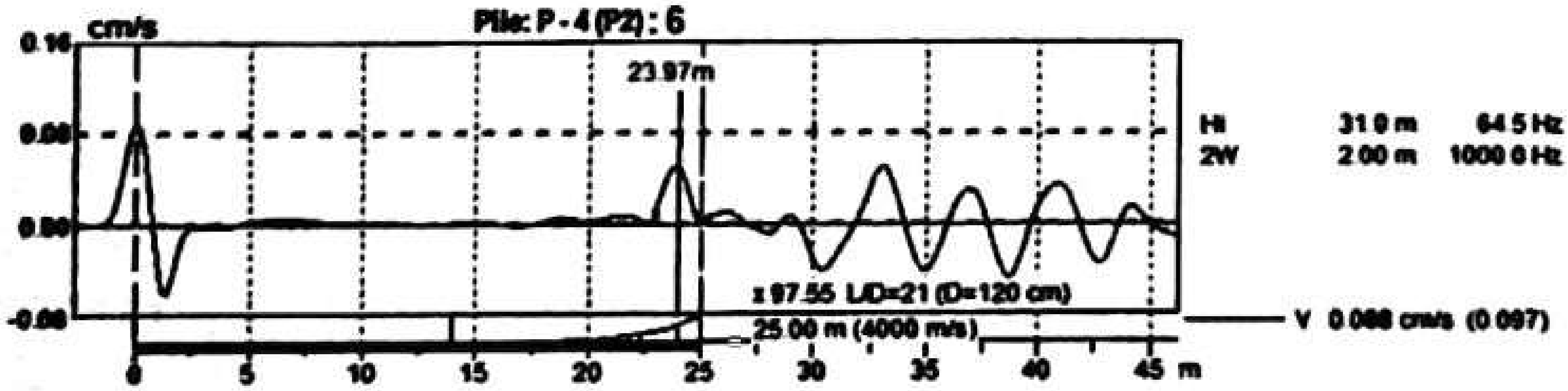





cm/s
22.02m
VP2
Hi
2W
31.0 m
2.00 m
0.00
V
0


cm/s
Pile: A-1 (P6) : 6
22.02m
VP2
Hi
2W
31.0 m
2.00 m
0.00
V
0


cm/s
Pile: P-4 (P1) : 6
24.07m
0.22
0.11
0.00
-0.11
Hi
2W
31.0 m 64.3 Hz
2.00 m 996.3 Hz
x 229.25 L/D=21 (D=120 cm)
25.00 m (3985 m/s)
V 0.112 cm/s (0.126)
0 5 10 15 20 25 30 35 40 45 m


cm/s
Pile: P-4 (P2) : 6
23.97m
Hi
2W
31.0 m 64.5 Hz
2.00 m 1000.0 Hz
x 97.55 L/D=21 (D=120 cm)
25.00 m (4000 m/s)
V 0.088 cm/s (0.097)
0 5 10 15 20 25 30 35 40 45 m

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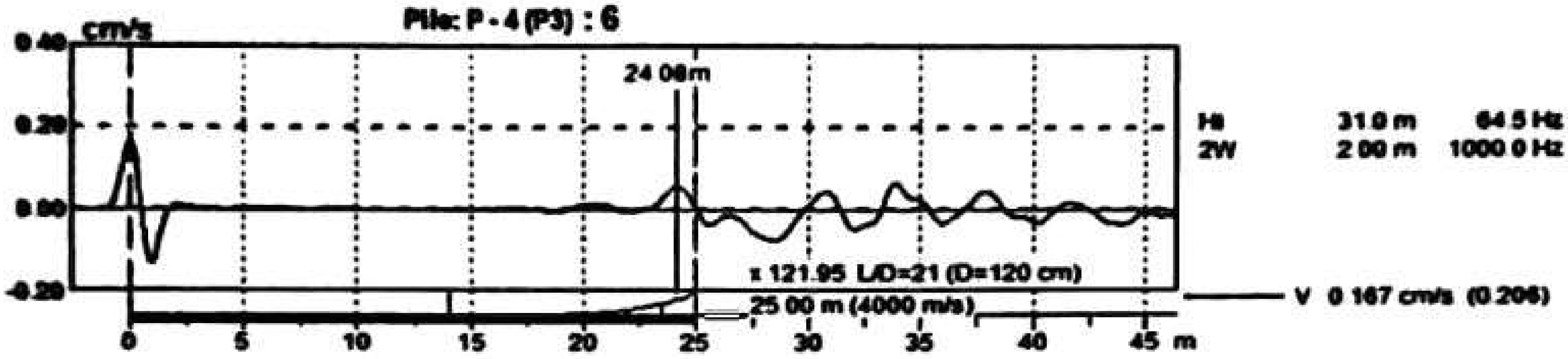
Pile: P - 4 (P3) : 6



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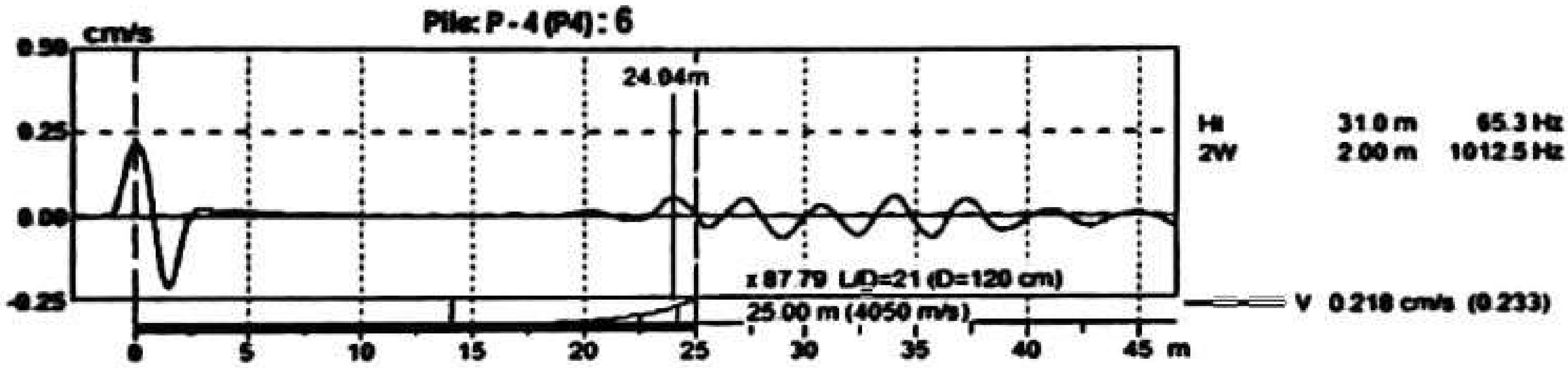

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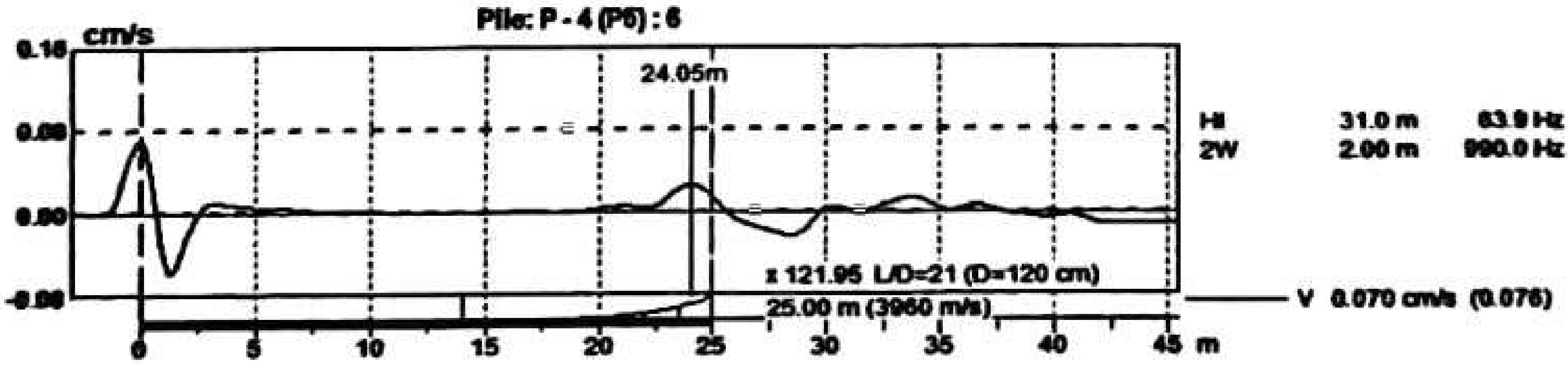

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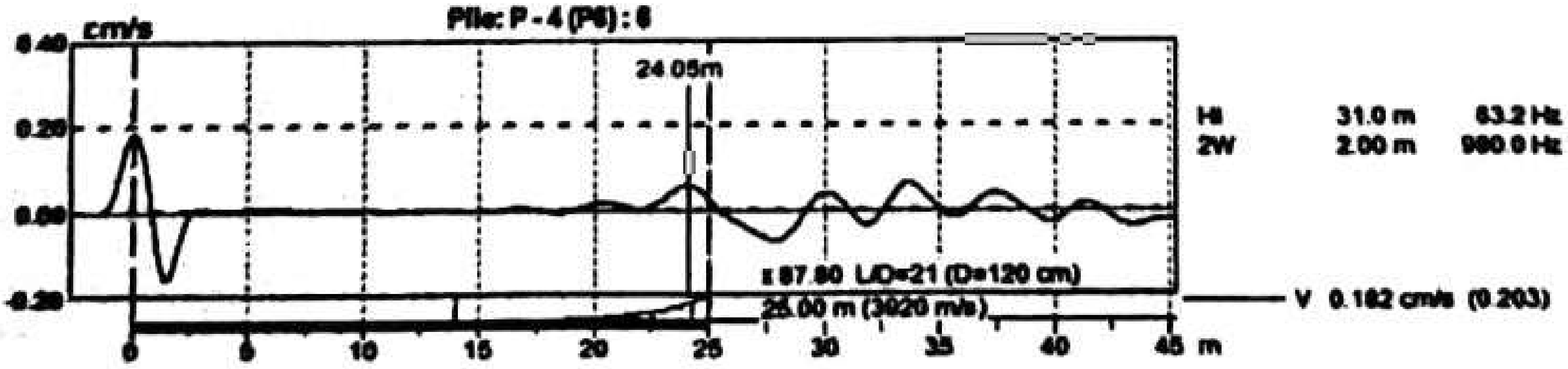

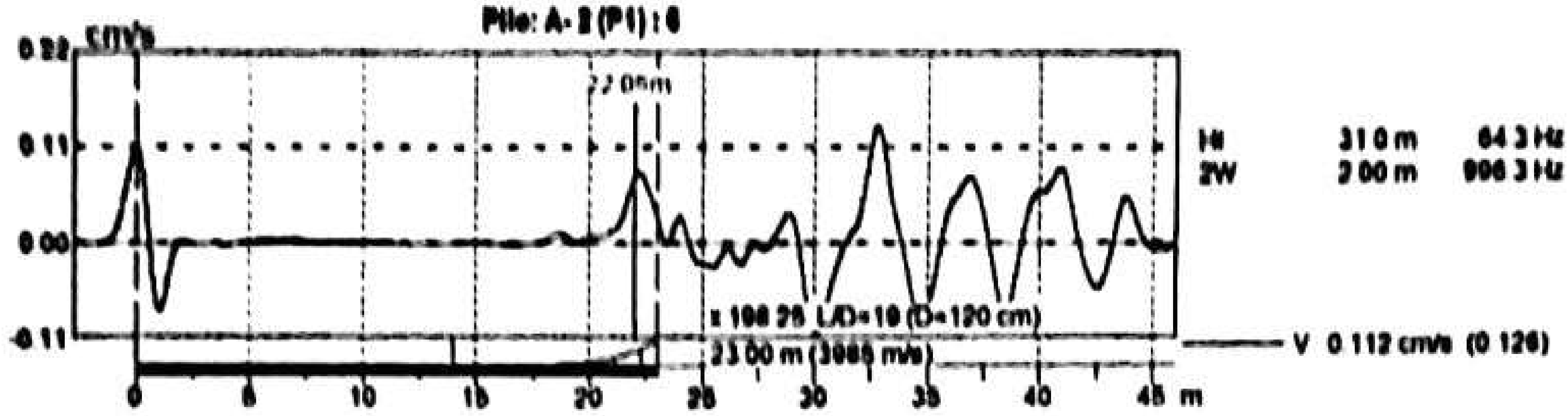

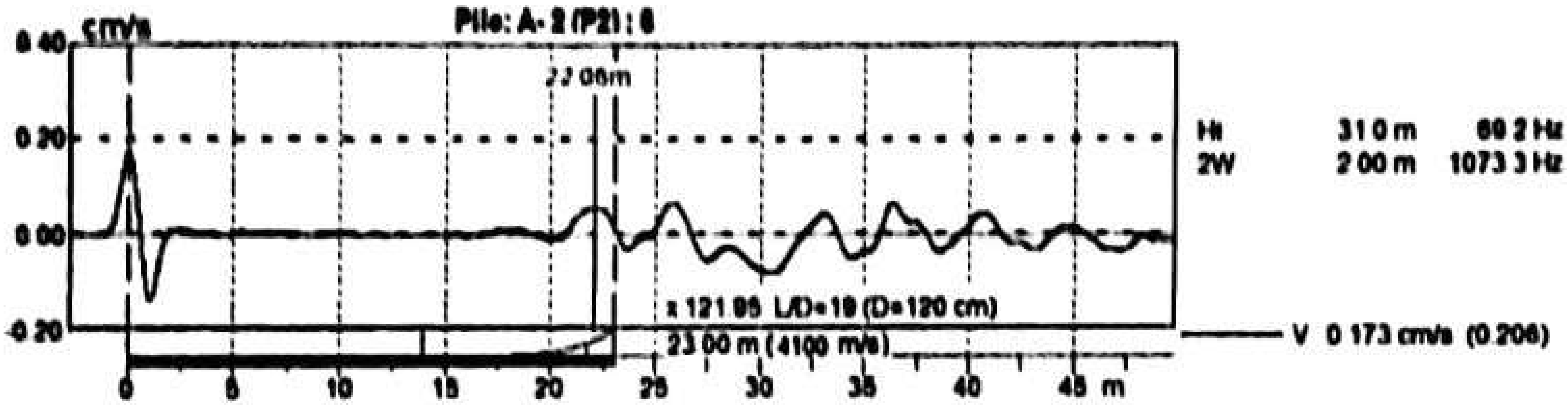

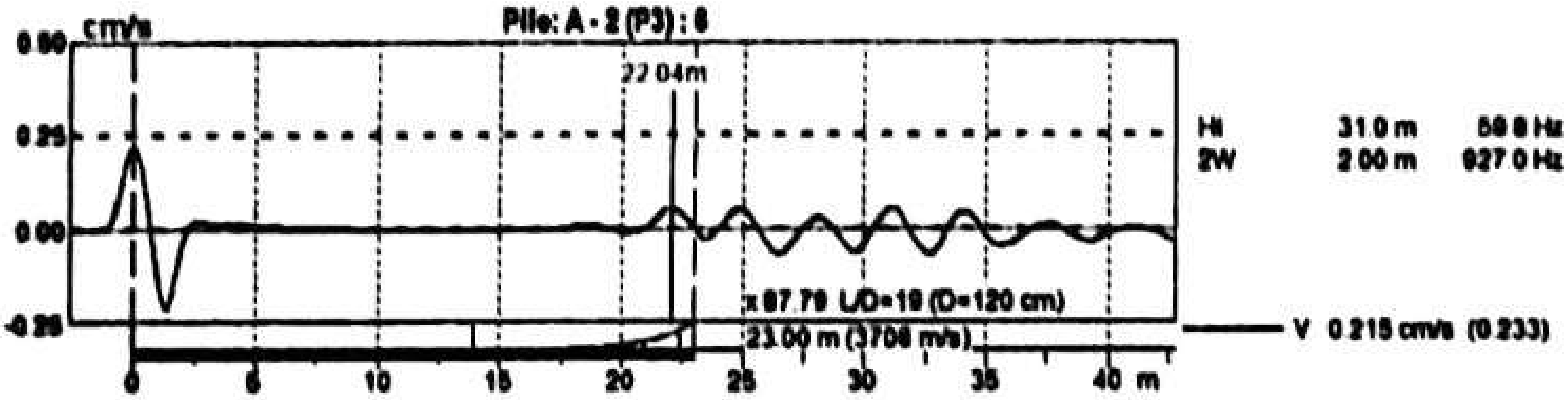

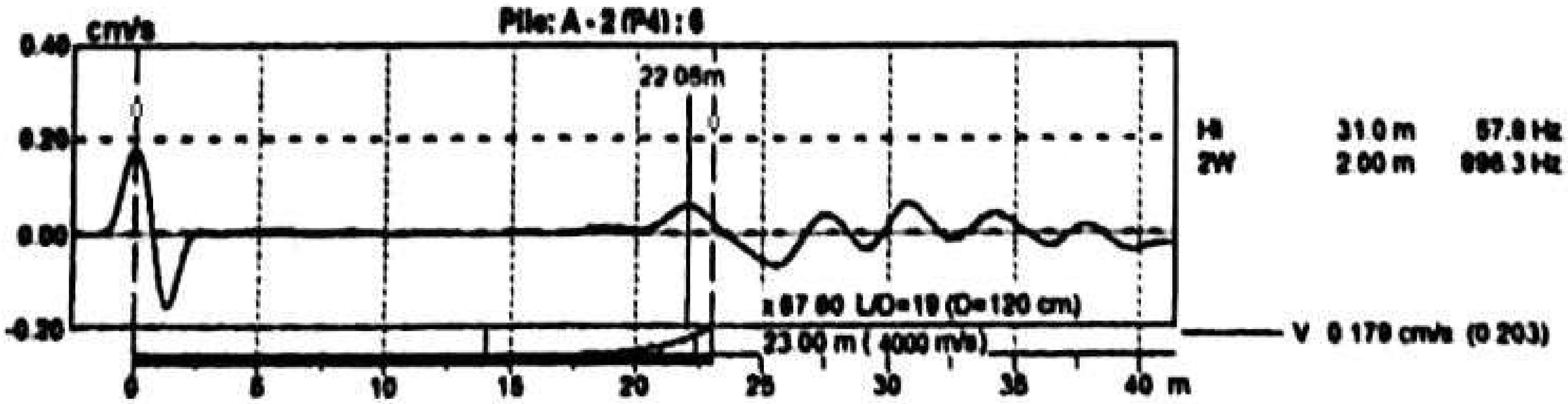

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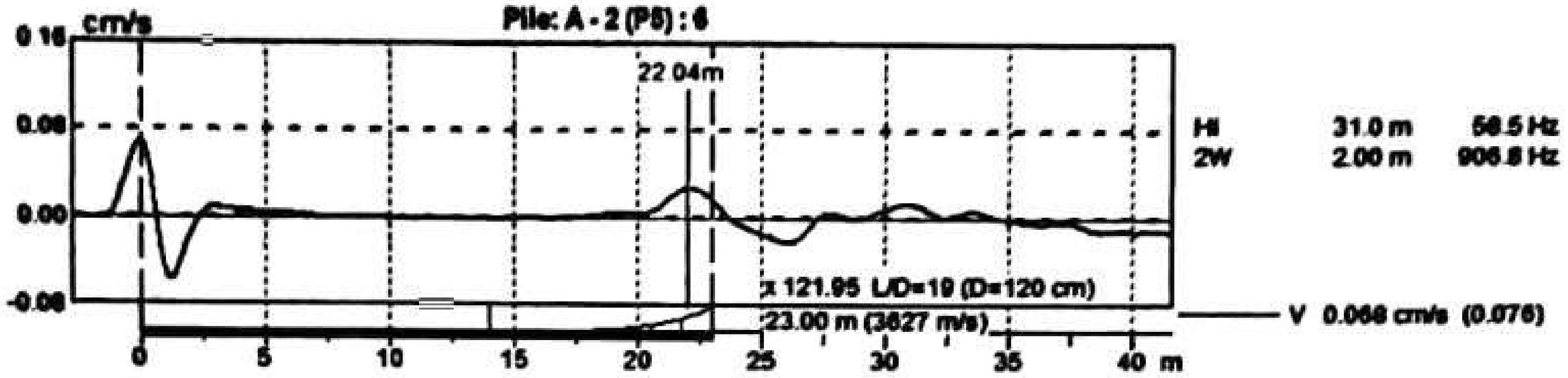
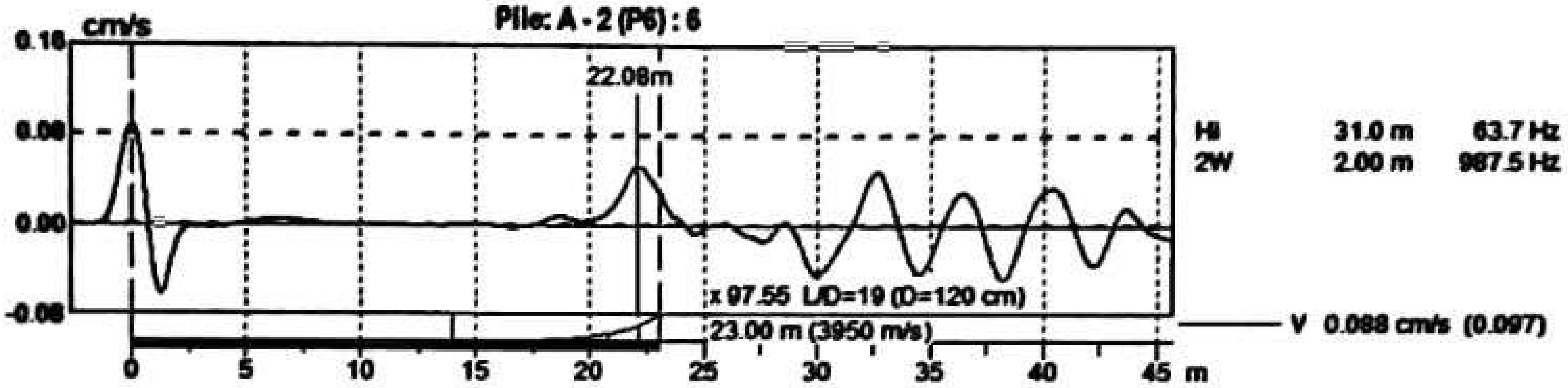
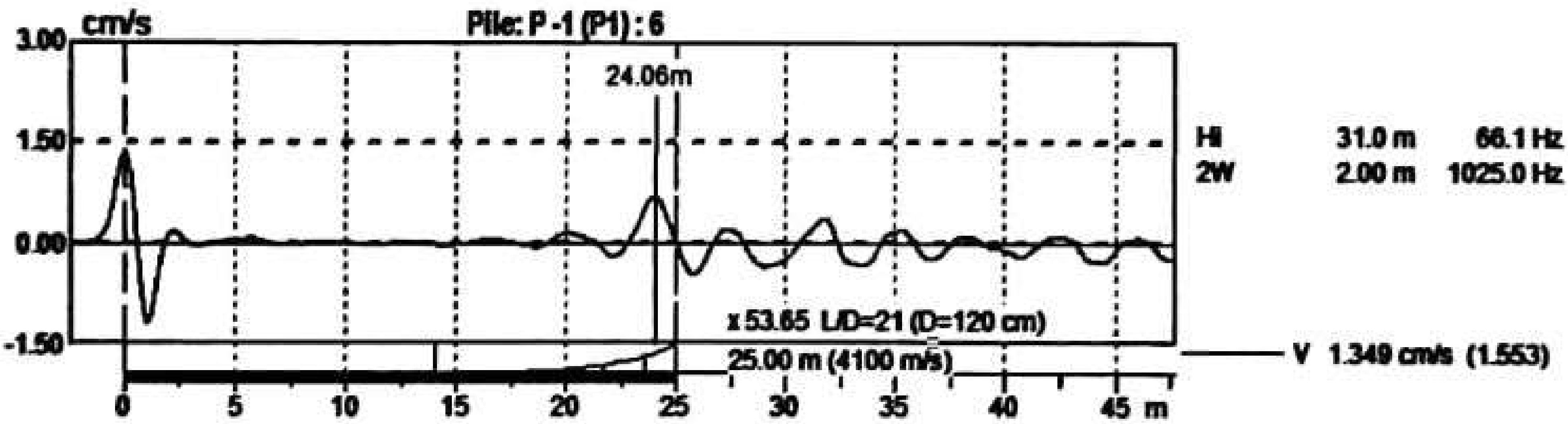


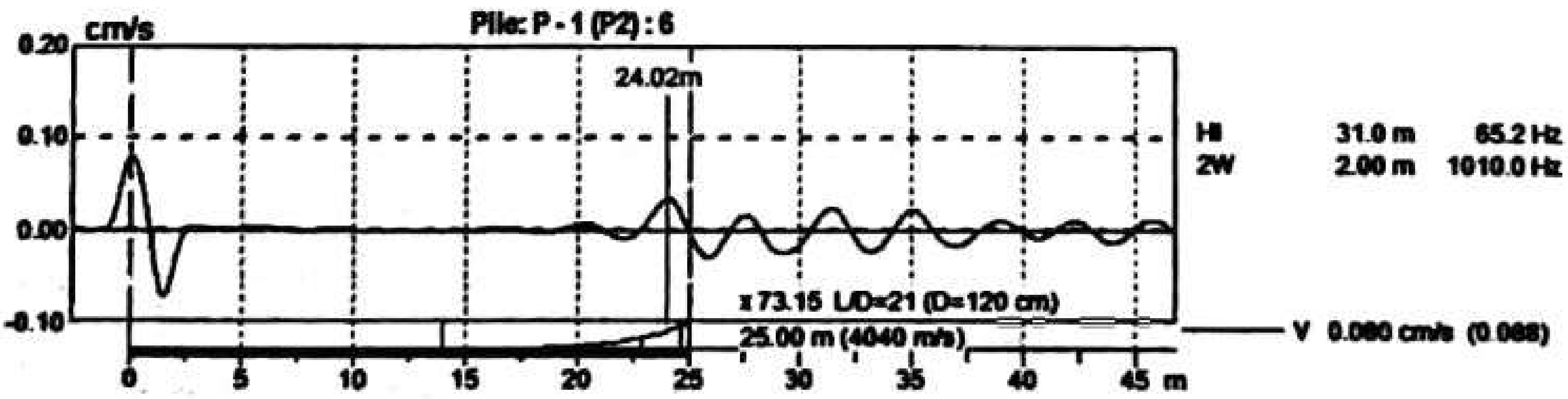
Pile: A - 2 (P5) : 6
cm/s
22.04m
Hi 31.0 m 58.5 Hz
2W 2.00 m 906.8 Hz
x 121.95 L/D=19 (D=120 cm)
23.00 m (3827 m/s)
V 0.068 cm/s (0.076)



Pile: A - 2 (P6) : 6
cm/s
22.08m
Hi 31.0 m 63.7 Hz
2W 2.00 m 987.5 Hz
x 97.55 L/D=19 (D=120 cm)
23.00 m (3950 m/s)
V 0.088 cm/s (0.097)



Pile: P - 1 (P1) : 6
cm/s
24.06m
Hi 31.0 m 66.1 Hz
2W 2.00 m 1025.0 Hz
x 53.65 L/D=21 (D=120 cm)
25.00 m (4100 m/s)
V 1.349 cm/s (1.553)



Pile: P - 1 (P2) : 6
cm/s
24.02m
Hi 31.0 m 65.2 Hz
2W 2.00 m 1010.0 Hz
x 73.15 L/D=21 (D=120 cm)
25.00 m (4040 m/s)
V 0.080 cm/s (0.088)

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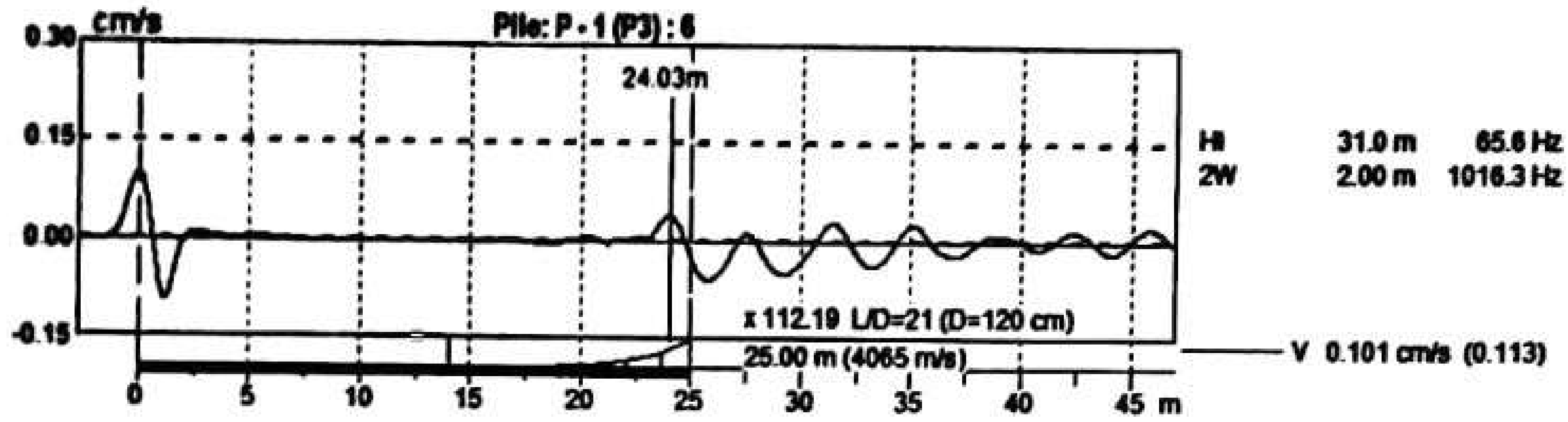
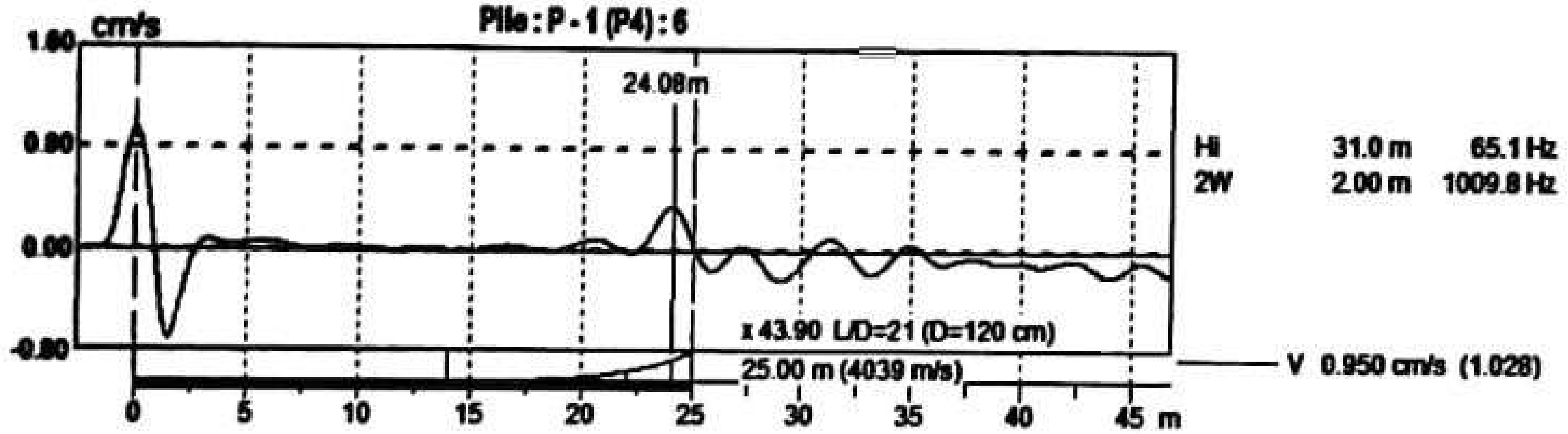
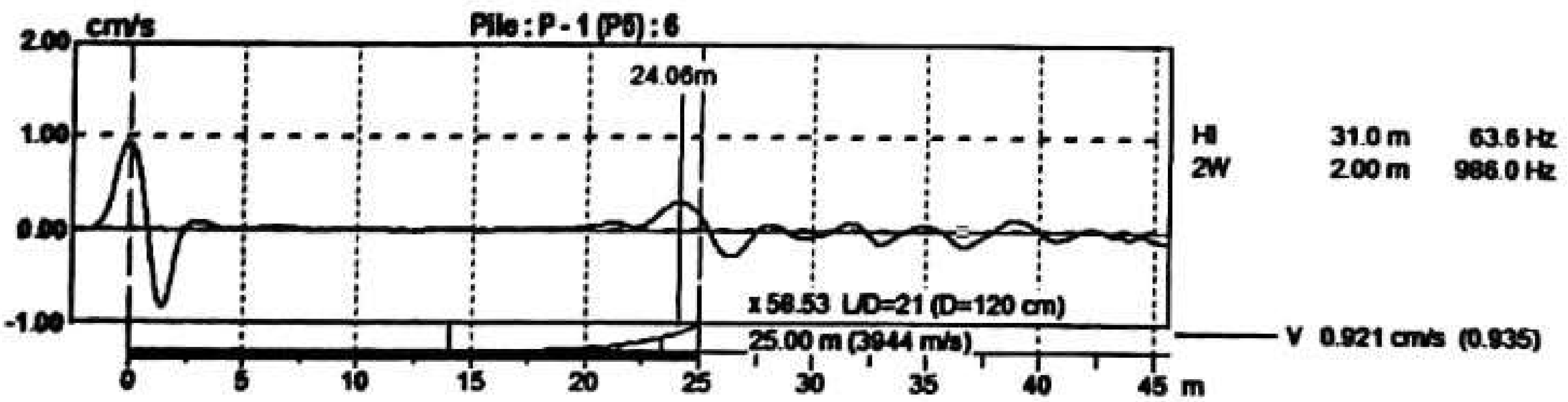
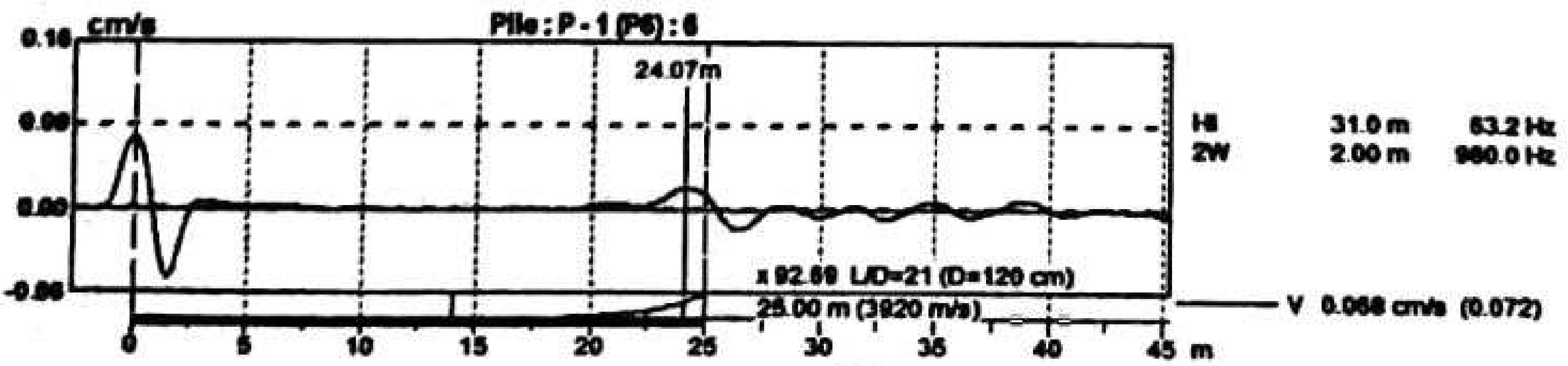
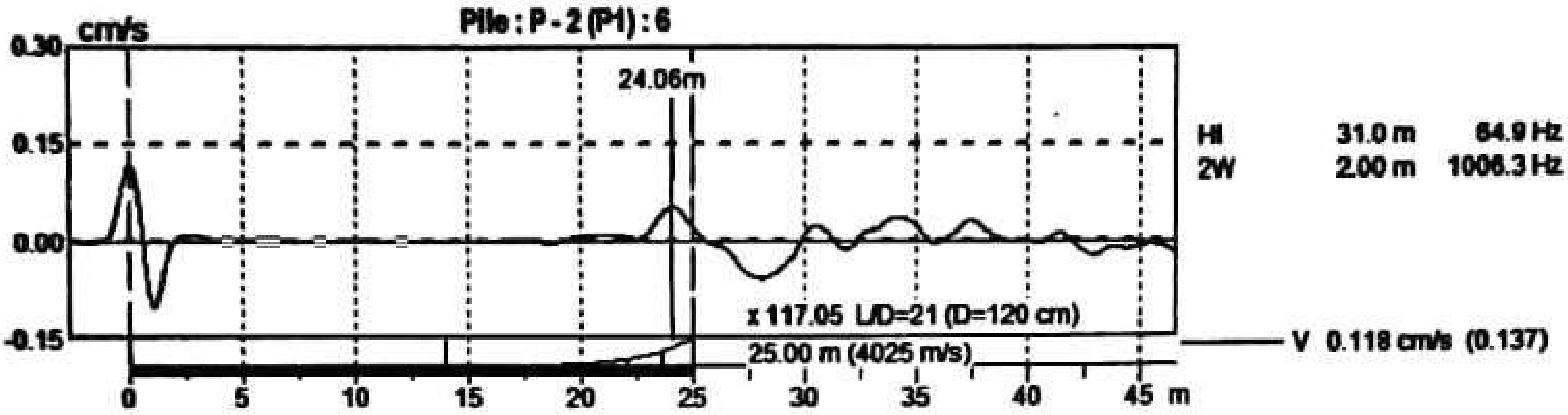
E-mail: *gtrlpatna@gtrl.org.in*, *Visit us: www.gtrl.org.in*



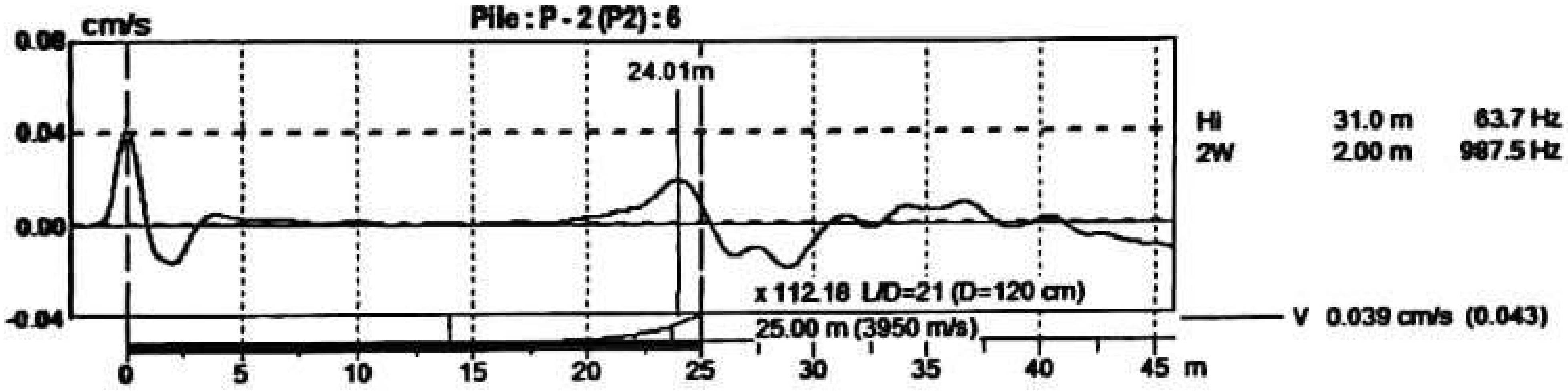




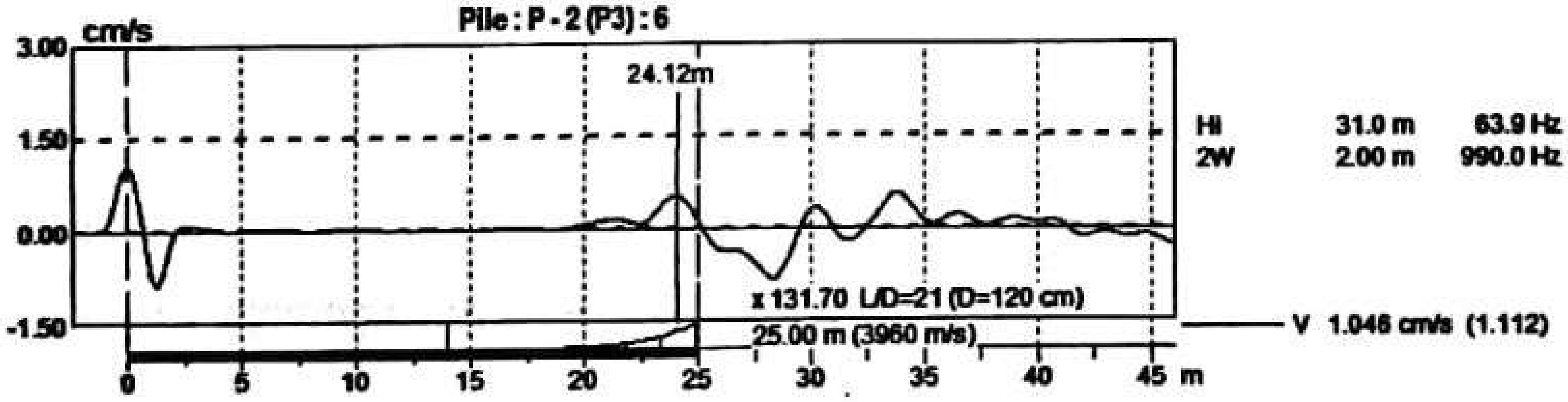




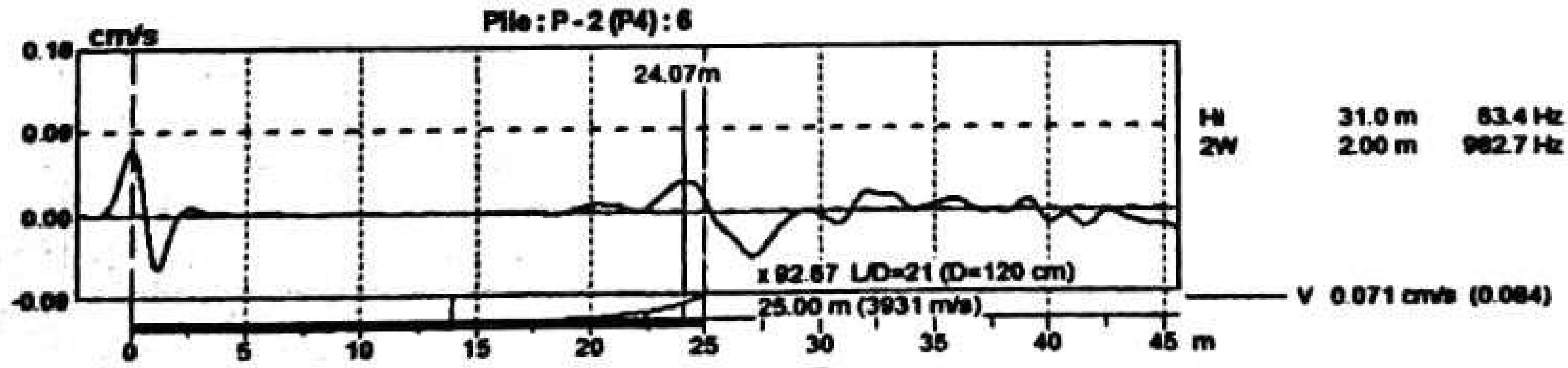
Pile : P - 2 (P1) : 6
cm/s
0.30
0.15
0.00
-0.15
24.06m
Hi 31.0 m 64.9 Hz
2W 2.00 m 1006.3 Hz
x 117.05 L/D=21 (D=120 cm)
25.00 m (4025 m/s)
V 0.118 cm/s (0.137)
0 5 10 15 20 25 30 35 40 45 m



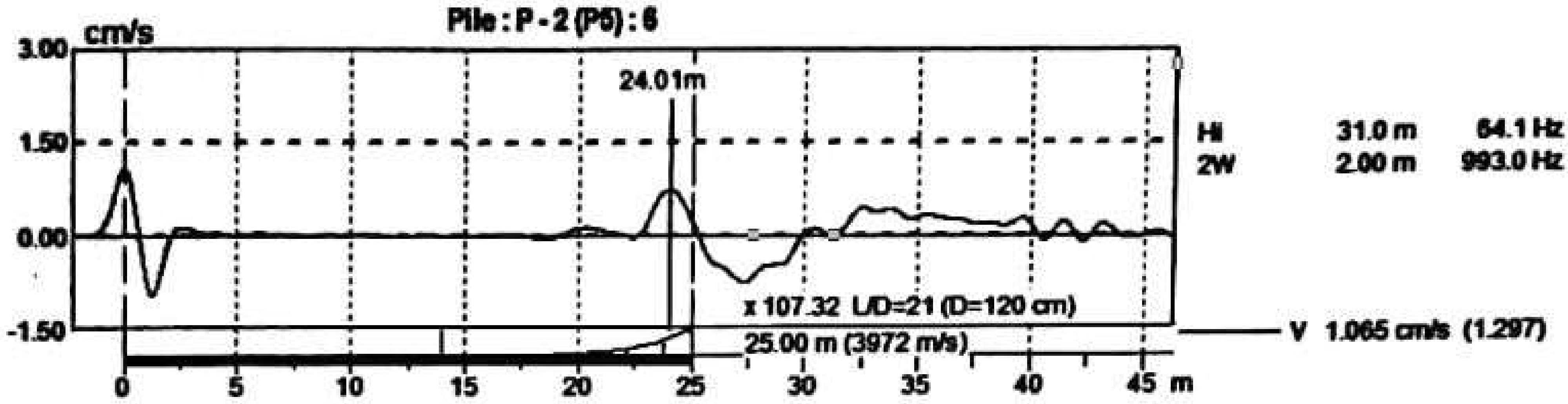
Pile : P - 2 (P2) : 6
cm/s
0.08
0.04
0.00
-0.04
24.01m
Hi 31.0 m 63.7 Hz
2W 2.00 m 987.5 Hz
x 112.18 L/D=21 (D=120 cm)
25.00 m (3950 m/s)
V 0.039 cm/s (0.043)
0 5 10 15 20 25 30 35 40 45 m

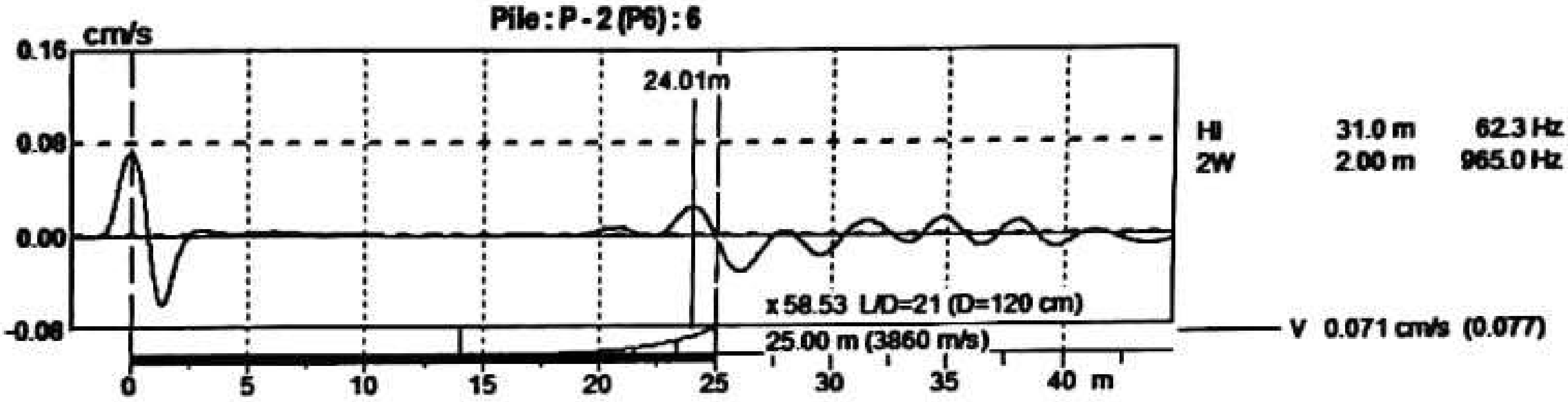


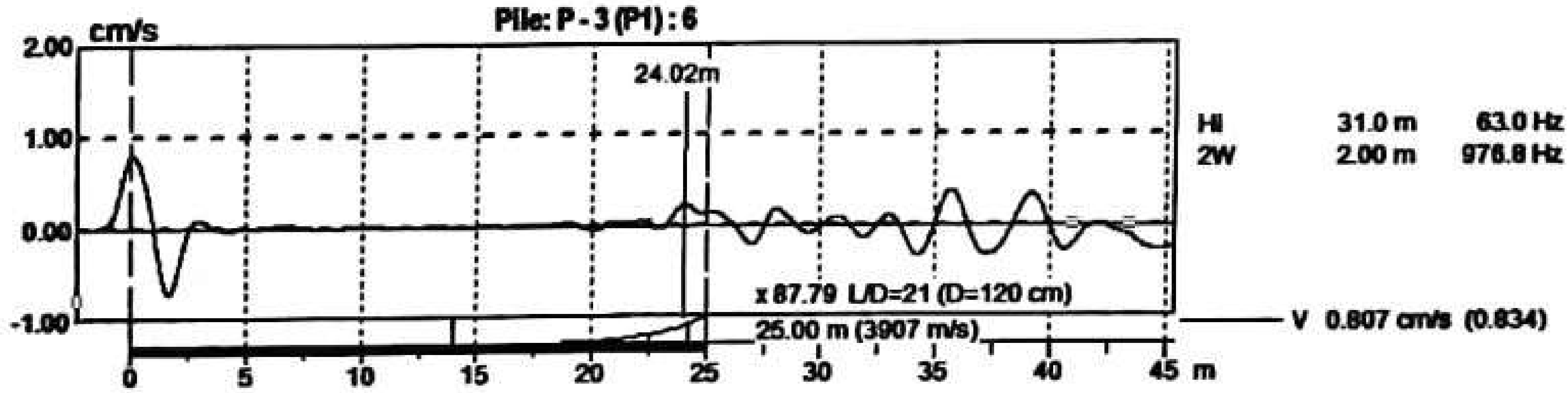
Pile : P - 2 (P3) : 6
cm/s
3.00
1.50
0.00
-1.50
24.12m
Hi 31.0 m 63.9 Hz
2W 2.00 m 990.0 Hz
x 131.70 L/D=21 (D=120 cm)
25.00 m (3960 m/s)
V 1.046 cm/s (1.112)
0 5 10 15 20 25 30 35 40 45 m

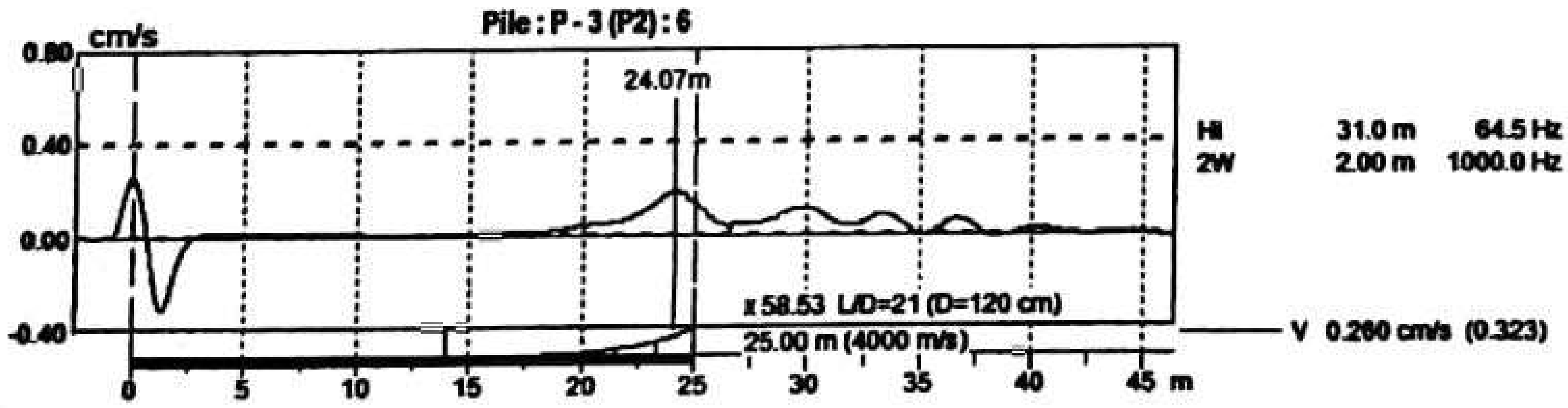


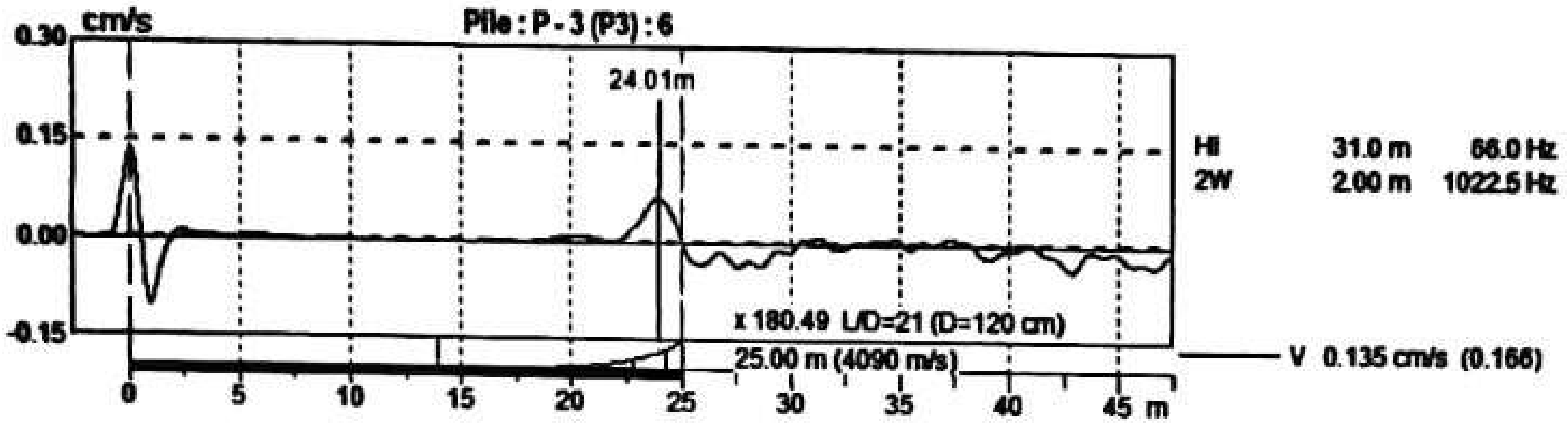
Pile : P - 2 (P4) : 6
cm/s
0.16
0.08
0.00
-0.08
24.07m
Hi 31.0 m 63.4 Hz
2W 2.00 m 982.7 Hz
x 92.67 L/D=21 (D=120 cm)
25.00 m (3931 m/s)
V 0.071 cm/s (0.084)
0 5 10 15 20 25 30 35 40 45 m

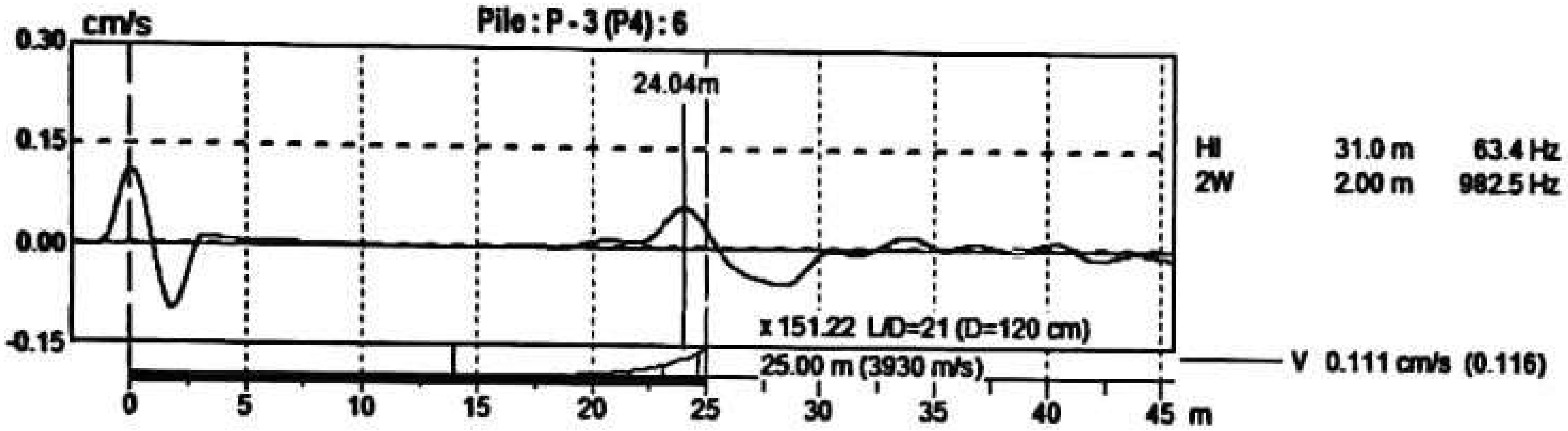

Pile : P - 2 (P5) : 6
cm/s
3.00
1.50
0.00
-1.50
24.01m
HI 31.0 m 64.1 Hz
2W 2.00 m 993.0 Hz
x 107.32 L/D=21 (D=120 cm)
25.00 m (3972 m/s)
V 1.065 cm/s (1.297)
0 5 10 15 20 25 30 35 40 45 m

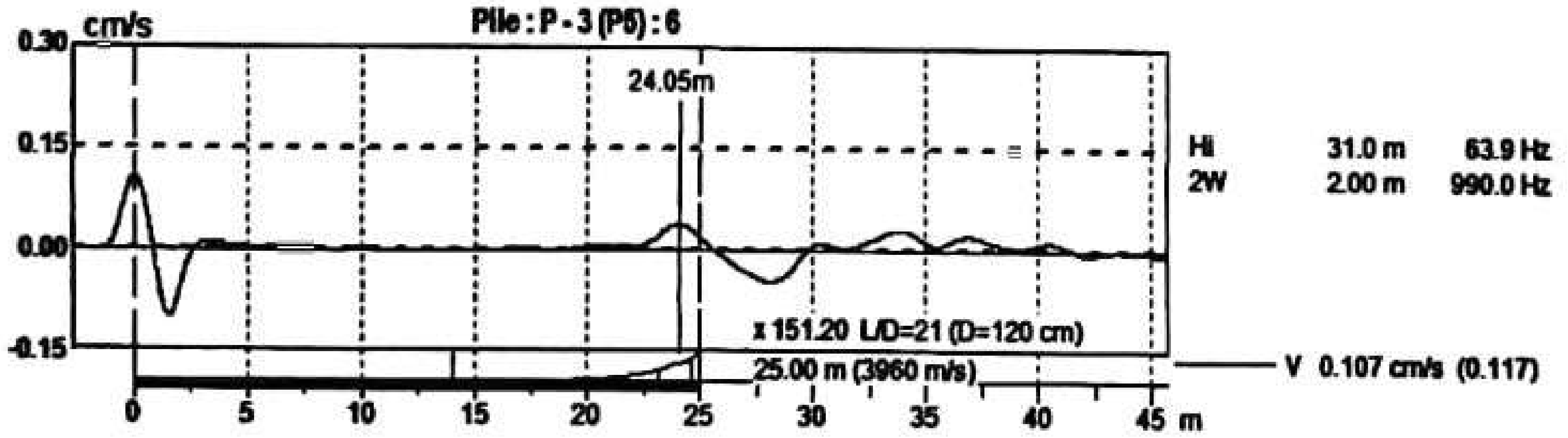

Pile : P - 2 (P6) : 6
cm/s
0.16
0.08
0.00
-0.08
24.01m
HI 31.0 m 62.3 Hz
2W 2.00 m 965.0 Hz
x 58.53 L/D=21 (D=120 cm)
25.00 m (3860 m/s)
V 0.071 cm/s (0.077)
0 5 10 15 20 25 30 35 40 m

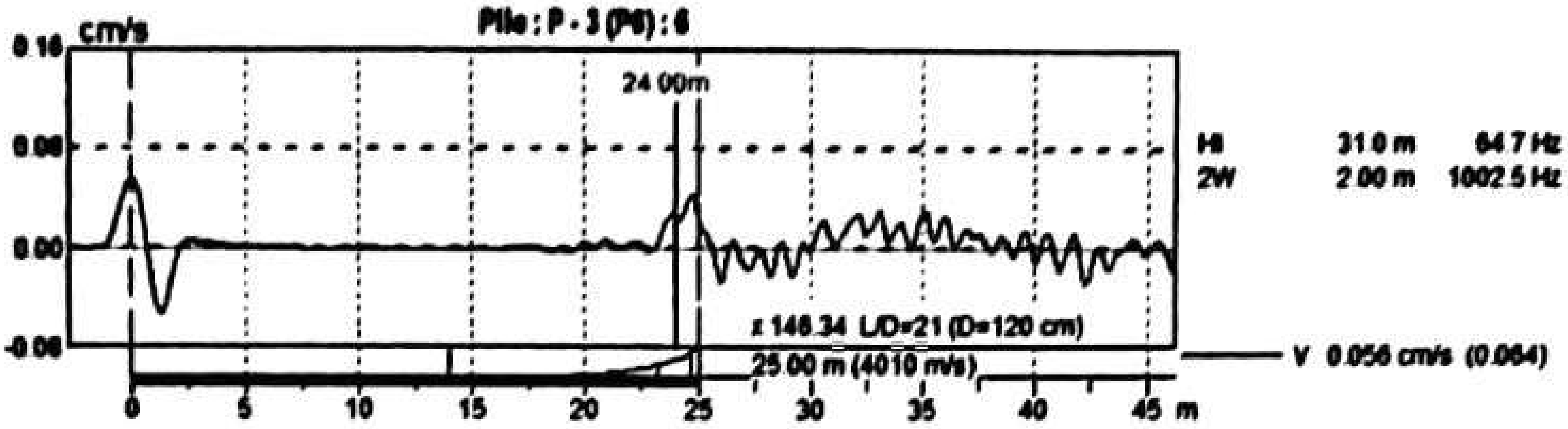

Pile: P - 3 (P1) : 6
cm/s
2.00
1.00
0.00
-1.00
24.02m
HI 31.0 m 63.0 Hz
2W 2.00 m 976.8 Hz
x 87.79 L/D=21 (D=120 cm)
25.00 m (3907 m/s)
V 0.807 cm/s (0.834)
0 5 10 15 20 25 30 35 40 45 m


Pile : P - 3 (P2) : 6
cm/s
0.80
0.40
0.00
-0.40
24.07m
HI 31.0 m 64.5 Hz
2W 2.00 m 1000.0 Hz
x 58.53 L/D=21 (D=120 cm)
25.00 m (4000 m/s)
V 0.260 cm/s (0.323)
0 5 10 15 20 25 30 35 40 45 m


Pile : P - 3 (P3) : 6
cm/s
0.30
0.15
0.00
-0.15
24.01m
Hi 31.0 m 66.0 Hz
2W 2.00 m 1022.5 Hz
x 180.49 L/D=21 (D=120 cm)
25.00 m (4090 m/s)
V 0.135 cm/s (0.166)
0 5 10 15 20 25 30 35 40 45 m


Pile : P - 3 (P4) : 6
cm/s
0.30
0.15
0.00
-0.15
24.04m
Hi 31.0 m 63.4 Hz
2W 2.00 m 982.5 Hz
x 151.22 L/D=21 (D=120 cm)
25.00 m (3930 m/s)
V 0.111 cm/s (0.116)
0 5 10 15 20 25 30 35 40 45 m


Pile : P - 3 (P5) : 6
cm/s
0.30
0.15
0.00
-0.15
24.05m
Hi 31.0 m 63.9 Hz
2W 2.00 m 990.0 Hz
x 151.20 L/D=21 (D=120 cm)
25.00 m (3960 m/s)
V 0.107 cm/s (0.117)
0 5 10 15 20 25 30 35 40 45 m



End of Report