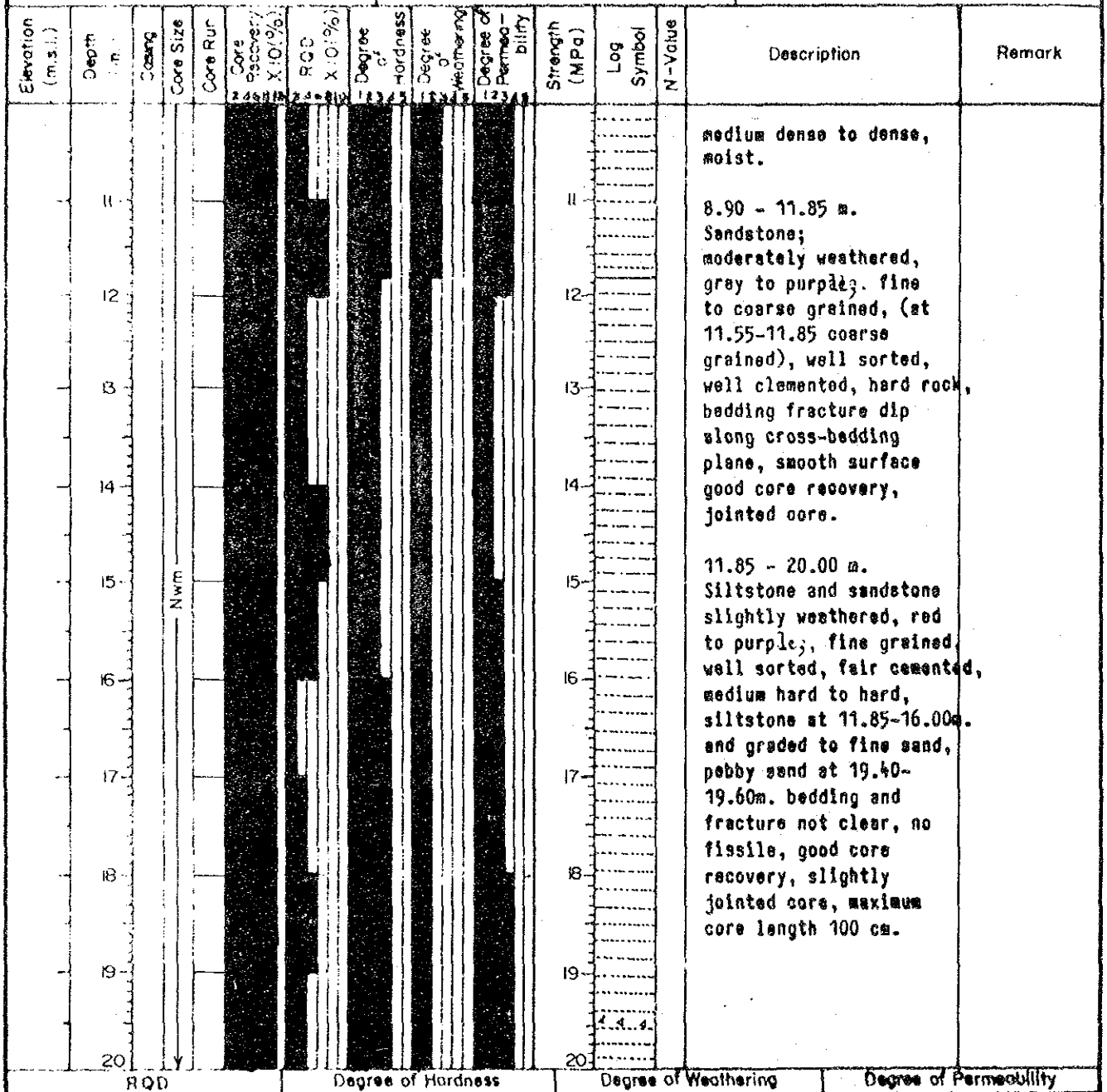
Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)	Logged By V. Nipong	Hole No. DH. 3
Changwat Ubonratchathani	Logged Date 28/11/34	Total Depth 20.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0°
Location Left bank	Drilling Started 23/11/34	Bearing of Angle Hole —
Elevation +131.89	Drilling Finished 27/11/34	Elevation of Groundwater +130.59



RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " 10^{-5} - 5×10^{-5} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " 5×10^{-5} - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - 5×10^{-4} "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 2 of 2

พิมพ์ที่ ฝ่ายโรงพิมพ์ กรมชลประทาน (ม.612-พ.ศ.2533-4,000.)

Geotechnics Division

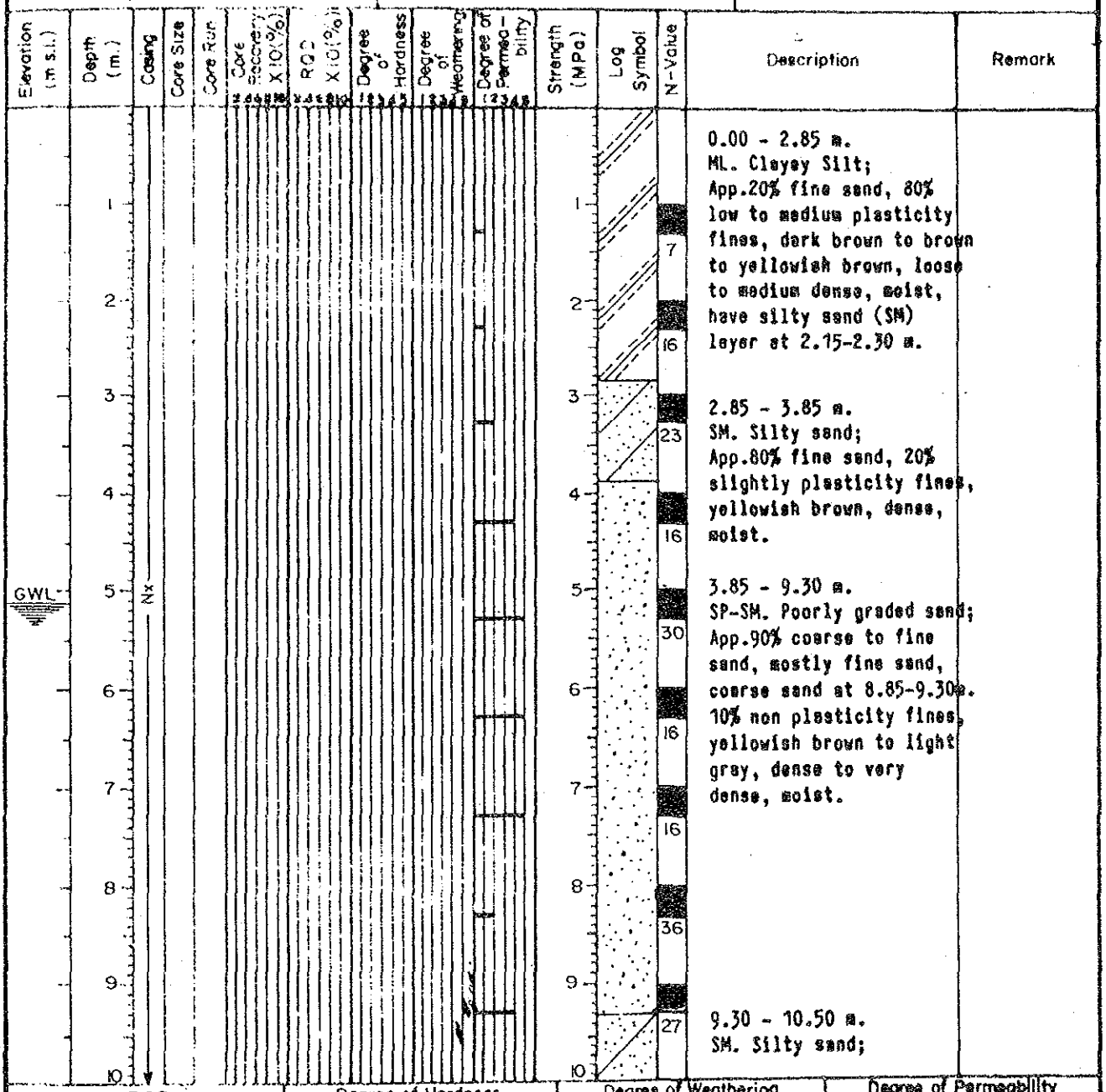
Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)
Changwat Ubonratchathani
Site ℄ Dam
Location Left bank
Elevation + 132.44

Logged By V. Nipong
Logged Date 7/12/34
Drilling Method Rotary
Drilling Started 28/11/34
Drilling Finished 4/12/34

Hole No. DH. 4
Total Depth 30.00 m.
Angle From Vertical 0°
Bearing of Angle Hole —
Elevation of Groundwater + 127.32



Description

0.00 - 2.85 m.
ML. Clayey Silt;
App.20% fine sand, 80% low to medium plasticity fines, dark brown to brown to yellowish brown, loose to medium dense, moist, have silty sand (SM) layer at 2.15-2.30 m.

2.85 - 3.85 m.
SM. Silty sand;
App.80% fine sand, 20% slightly plasticity fines, yellowish brown, dense, moist.

3.85 - 9.30 m.
SP-SM. Poorly graded sand;
App.90% coarse to fine sand, mostly fine sand, coarse sand at 8.85-9.30m. 10% non plasticity fines, yellowish brown to light gray, dense to very dense, moist.

9.30 - 10.50 m.
SM. Silty sand;

Remark

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " $10^{-5} \times 10^{-6}$ "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5 \times 10^{-5} - 10^{-4}$ "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " $10^{-4} - 5 \times 10^{-4}$ "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 1 of 3

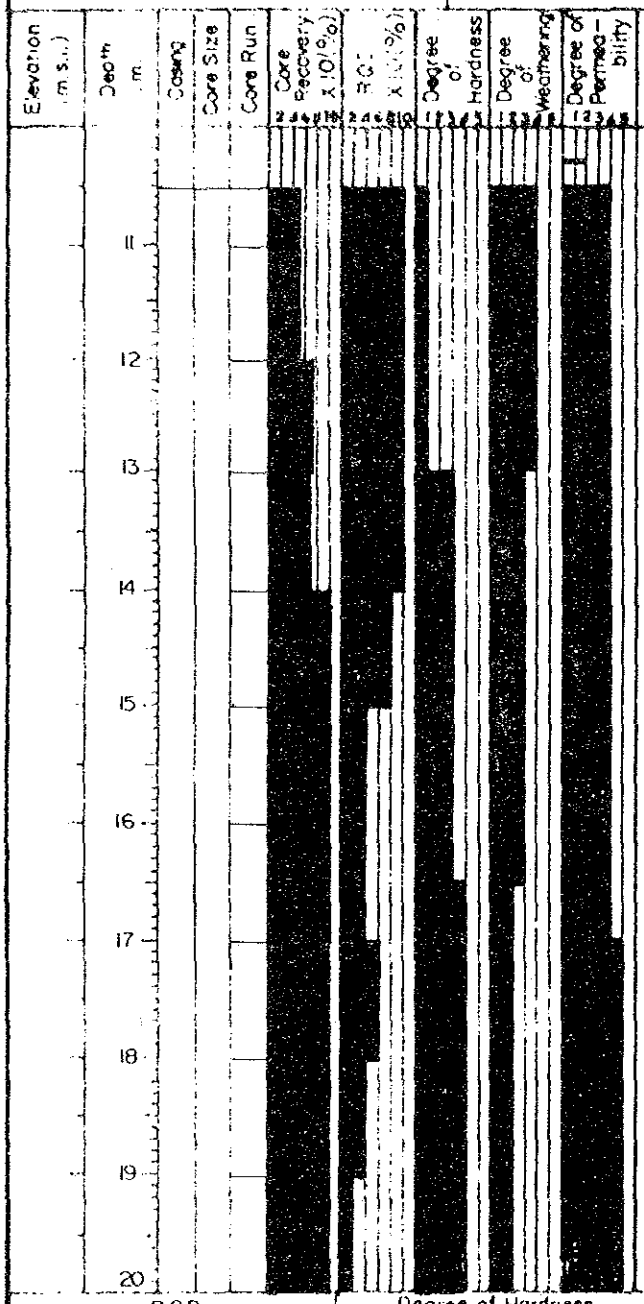
พิมพ์ที่ ฝ่ายโรงพิมพ์ กรมชลประทาน (ม.ค.2533-4,000.)

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)	Logged By V. Nipong	Hole No. DH. 4
Changwat Ubonratchatani	Logged Date 7/12/34	Total Depth 30.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0
Location Left abutment	Drilling Started 28/11/34	Bearing of Angle Hole —
Elevation +132.44	Drilling Finished 4/12/34	Elevation of Groundwater +127.32



Description

App.75% fine sand with some gravels, 25% low plasticity fines, purpale, very dense, moist, completely weathered of sandstone.

10.50 - 12.85 m.
Sandstone;
highly weathered, perplish gray, fine grained, well sorted, poor to fair cemented, very soft to soft rock, bedding and fractures not clear, poor to fair core recovery, very jointed core.

12.85 - 16.50 m.
Siltstone;
moderatly weathered, purple, fair sorted and cemented, medium hard rock, little fissile, sinking, fracture dip about 35°, calcite vein at depth 16.40m. about 2.5 cm. thickness, broken core at 12.85-14.50m.

16.50 - 30.00 m.
Siltstone and sandstone; sandstone; slightly weathered, purple, fine grained poor to fair sorted, well cemented,

Remark

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " 10^{-5} X 10^{-3} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5 X 10^{-5}$ - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - $5 X 10^{-4}$ "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > $5 X 10^{-4}$ "

Sheet 2 of 3

พิมพ์ ที่โรงพิมพ์ กรมชลประทาน (ม.612-ท,ก.2533-4,000.)

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

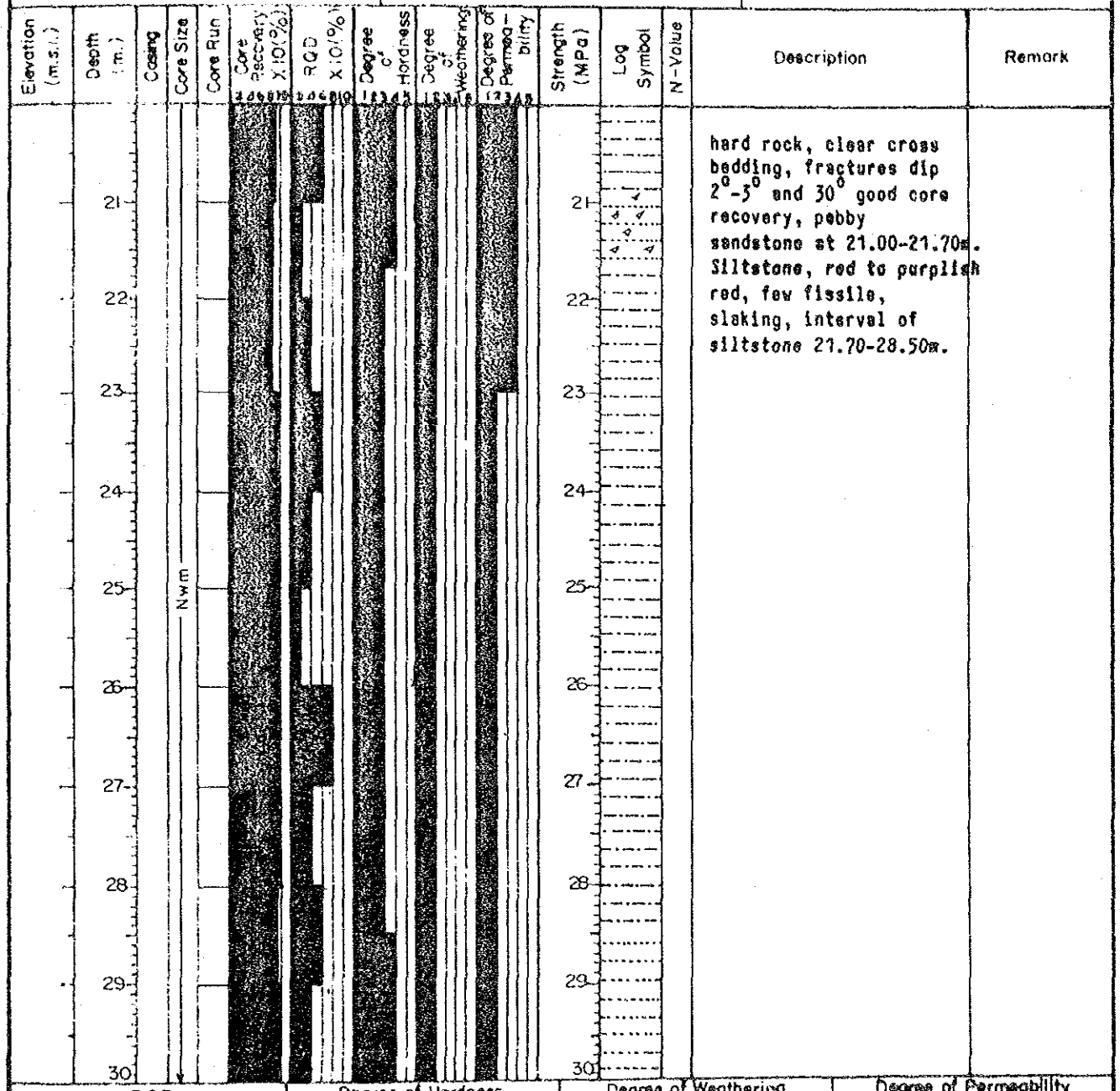
Project Lam Dom Yai (D28) | Logged By V. Nipong | Hole No. DH-4

Changwat Ubonratchathani | Logged Date 7/12/34 | Total Depth 30.00 m.

Site ℄ Dam | Drilling Method Rotary | Angle From Vertical 0

Location Left bank | Drilling Started 28/11/34 | Bearing of Angle Hole --

Elevation +132.44 | Drilling Finished 4/12/34 | Elevation of Groundwater +127.32



Description	Remark
hard rock, clear cross bedding, fractures dip 2^0-5^0 and 30^0 good core recovery, pebby sandstone at 21.00-21.70m. Siltstone, red to purplish red, few fissile, slaking, interval of siltstone 21.70-28.50m.	

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " 10^{-5} X 10^{-4} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5 X 10^{-4}$ - 10^{-3} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10-50 " 10^{-3} - $5 X 10^{-3}$ "
90-100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > $5 X 10^{-3}$ "

Sheet 3 of 3

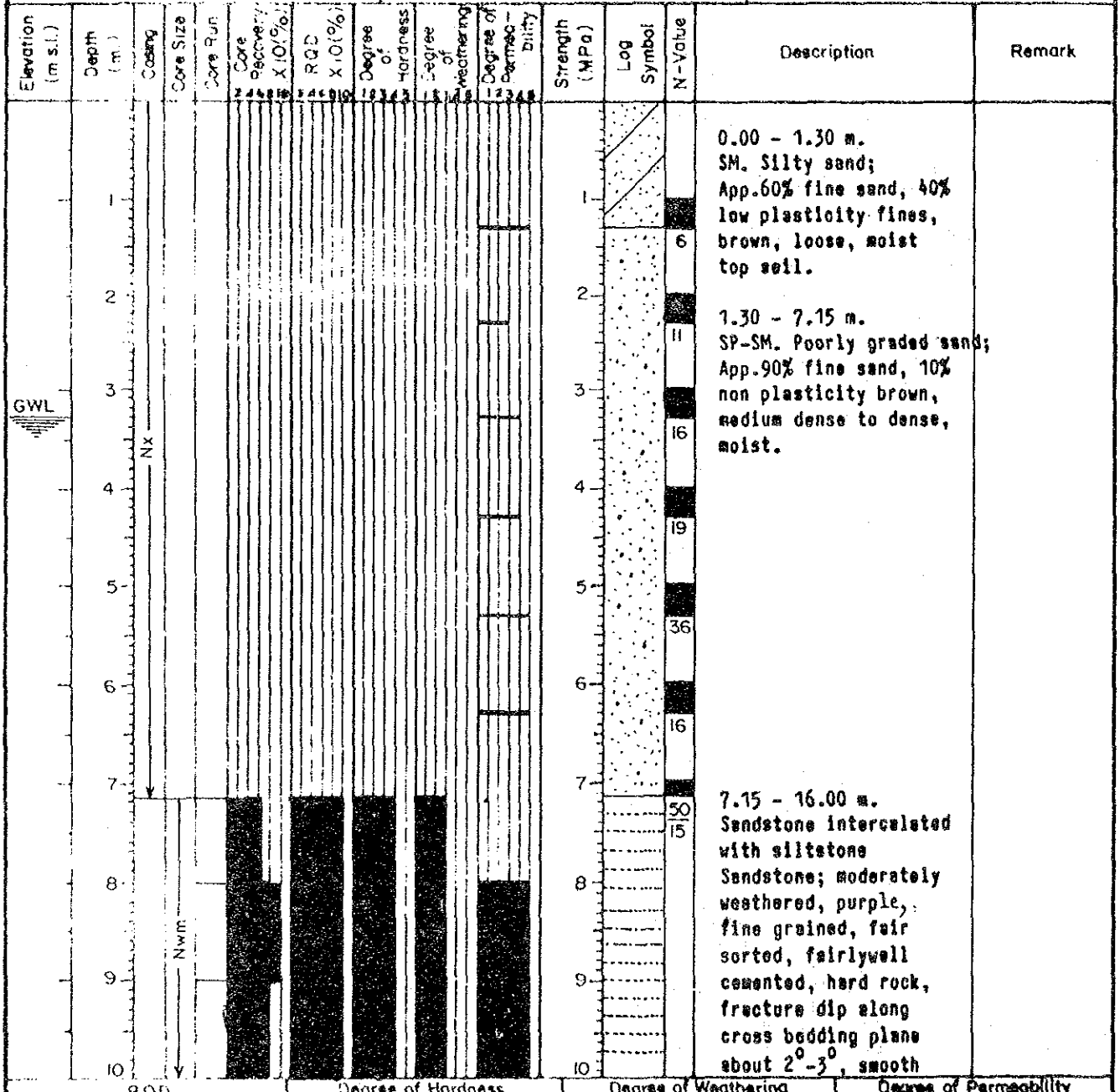
พิมพ์ที่ ห้างหุ้นส่วนจำกัด กรมชลประทาน (ม.612-พ.ศ.2533-4,000.)

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)	Logged By V. Nipong	Hole No. DH.5
Changwat Ubonratchathani	Logged Date 6/12/34	Total Depth 30.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0°
Location Right bank	Drilling Started 29/11/34	Bearing of Angle Hole --
Elevation +131.50	Drilling Finished 6/12/34	Elevation of Groundwater +128.20



RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
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50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " 5×10^{-5} - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - 5×10^{-4} "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 1 of 3

พิมพ์ที่ ห้างโรงพิมพ์ กรมชลประทาน (บ.612-พ.ท.2533-4,000.).

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D28)	Logged By V. Nipong	Hole No. D.H. 5
Changwat Ubonratchathani	Logged Date 6/12/34	Total Depth 30.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0°
Location Right bank	Drilling Started 29/11/34	Bearing of Angle Hole
Elevation ± 131.50	Drilling Finished 6/12/34	Elevation of Groundwater ± 128.20

Elevation (m.s.l.)	Depth (m.)	Casing	Core Size	Core Run	Core Recovery X 100%	RQD X 100%	Degree of Hardness	Degree of Weathering	Degree of Permeability	Strength (MPa)	Log Symbol	N-Value	Description	Remark
	11												surface and 70°-90° rought surface, very jointed core, pebby sandstone at 12.90-13.10m. Siltstone; purple, medium hard, intercalated at 8.50-8.70m., 10.20-10.30m. 13.10-15.70m.	
	12													
	13													
	14													
	15		Nwm											
	16												16.00 - 30.00 m. Sandstone intercalated with siltstone Sandstone; slightly weathered, purple, fine grained, fair sorted, well cemented, hard rock, fractures dip about 0°-5° smooth and clean surface, good core recovery, pebby sandstone at 20.60-21.50m. and 23.50-23.20m.	
	17													
	18													
	19													
	20													

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " $10^{-5} \times 10^{-5}$ "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5 \times 10^{-5} - 10^{-4}$ "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " $10^{-4} - 5 \times 10^{-4}$ "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 2 of 3

สิงหาคม โรงพิมพ์ กรมชลประทาน (บ.612-พ.ศ.2533-4,000).

Geotechnics Division

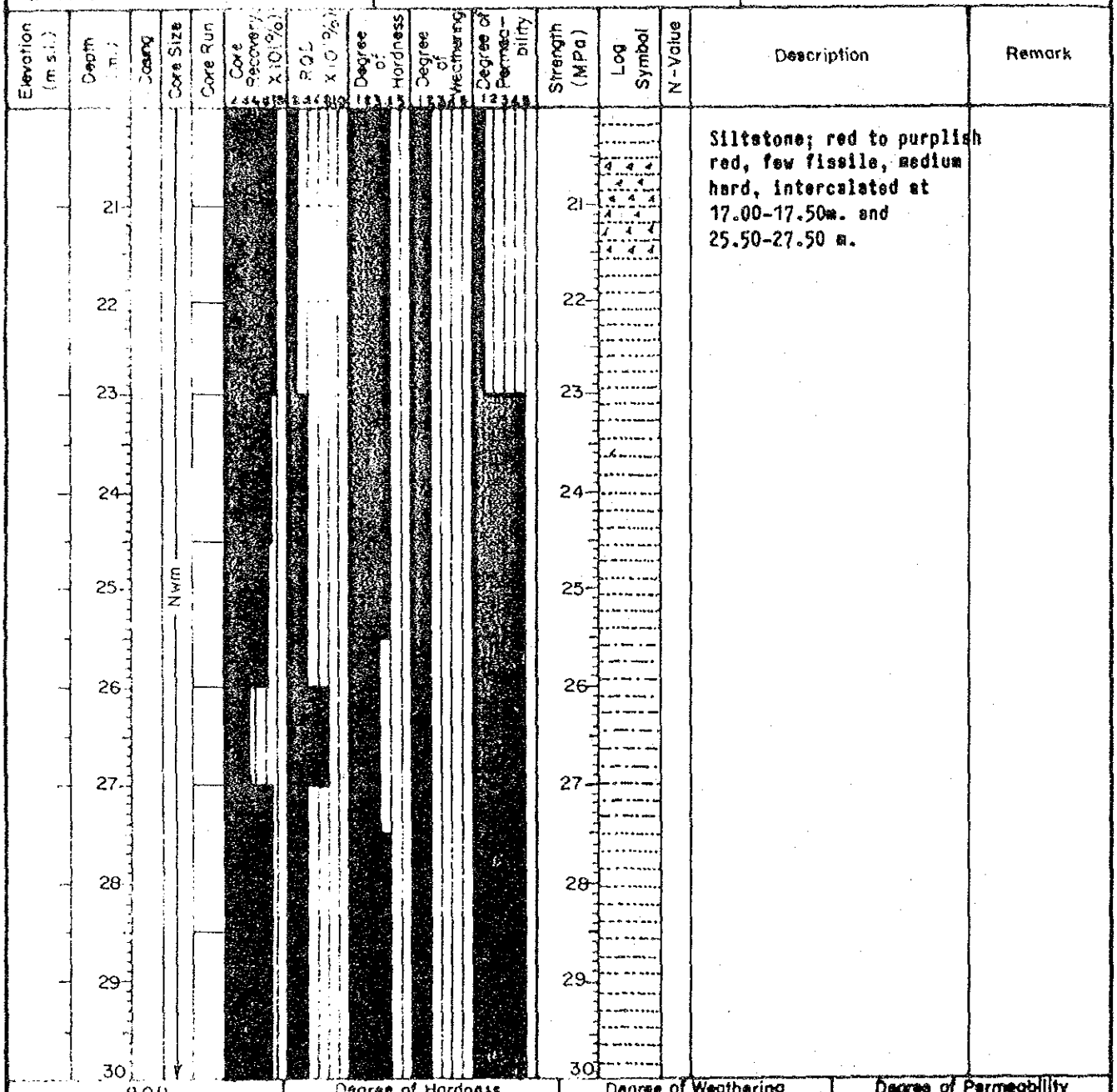
Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D28)
Changwat Ubonratchathani
Site ℄ Dam
Location Right abutment
Elevation +131.50

Logged By V. Nipong
Logged Date 6/12/34
Drilling Method Rotary
Drilling Started 29/11/34
Drilling Finished 6/12/34

Hole No. DH. 5
Total Depth 30.00 m
Angle From Vertical 0°
Bearing of Angle Hole —
Elevation of Groundwater +128.20



RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
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50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5 X 10^{-3}$ - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10-50 " 10^{-4} - $5 X 10^{-4}$ "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > $5 X 10^{-4}$ "

Sheet 3 of 3

พิมพ์ที่ ห้างหุ้นส่วนจำกัด โรงพิมพ์ กรมชลประทาน (ม.ค.2533-4,000.)

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D28)	Logged By V. Nipong	Hole No. DH. 6
Changwat Ubonratchathani	Logged Date 15/12/34	Total Depth 20.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0°
Location Right bank	Drilling Started 9/12/34	Bearing of Angle Hole -
Elevation +131.73	Drilling Finished 13/12/34	Elevation of Groundwater +128.63

Elevation (m.s.l.) | Depth (m.) | Casing | Core Size | Core Run | Core Recovery X 10 (%) | R.Q.D. X 10 (%) | Degree of Hardness | Degree of Weathering | Degree of Permeability | Strength (MPa) | Log Symbol | N-Value | Description | Remark

GWL

Casing: Nx; Core Size: Nwm

N-Value: 8, 18, 12, 8, 15, 29

0.00 - 1.30 m.
SM. Silty sand;
App.80% fine sand, 20% slightly plasticity fines, yellowish brown to brown, loose, moist, top soil.

1.30 - 6.30 m.
SP-SM. Poorly grades sand App.90% medium to fine sand, mostly fine sand, 10% non plasticity fines, yellowish brown to gray, medium dense to dense, moist, flood plane deposit.

6.30 - 6.70 m.
SM. Silty sand
App.80% fine sand, 20% slightly plasticity fines, reddish brown, moist, completely weathered of sandstone

6.70 - 10.00 m.
Sandstone
moderately weathered, reddish purple, fine grained, fair sorted,

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " 10^{-5} - 5 X 10^{-5} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " 5 X 10^{-5} - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - 5 X 10^{-4} "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5 X 10^{-4} "

Sheet 1 of 2

พิมพ์ที่ ฝ่ายโรงพิมพ์ กรมชลประทาน (น.612-พ.ศ.2533-4,000.)

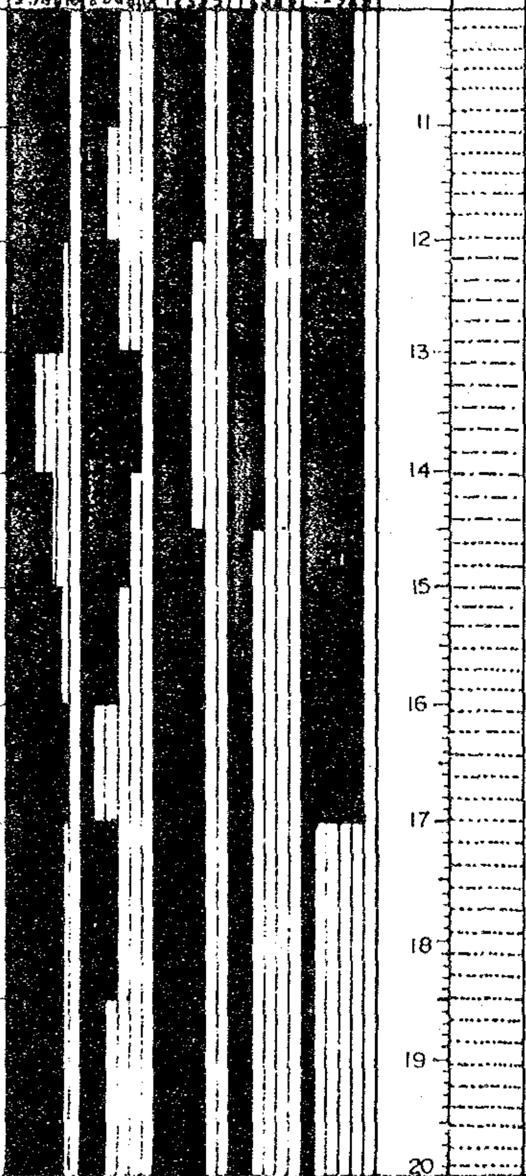
Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D28)	Logged By V. Nipong	Hole No. DH. 6
Changwat Ubonratchathani	Logged Date 15/12/34	Total Depth 20.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0°
Location Right bank	Drilling Started 9/12/34	Bearing of Angle Hole –
Elevation + 131.73	Drilling Finished 13/12/34	Elevation of Groundwater +128.63

Elevation (m.s.l.)	Depth (m)	Casing	Core Size	Core Run	Core Recovery X 10(%)	R.Q.D. X 10(%)	Degree of Hardness	Degree of Weathering	Degree of Permeability	Strength (MPa)	Log Symbol	N-Value	Description	Remark
	11–20		Nwm										fair to well cemented, medium hard to hard rock, clear cross-bedding, fracture dip about 3°-5° and 90° rought surface and stained with Fe-oxide, very jointed core. 10.00 - 20.00 m. Sandstone intercalated with siltstone moderately weathered (12.00-14.50m.) to slightly weathered, reddish purple, fine grained, well sorted and cemented, hard rock, bedding dip 3°, fracture dip about 3°-5°, very jointed core to jointed core, pebby sandstone at 11.85-12.00m. Siltstone; red, medium hard, intercalated at 12.00-14.50m. and 15.00-15.30 m.	



R.Q.D.	Degree of Hardness	Degree of Weathering	Degree of Permeability
< -25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1-5 ,, 10^{-5}-5X10^{-5} ,,
50 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5-10 ,, 5X10^{-5}-10^{-4} ,,
75 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10-50 ,, 10^{-4}-5X10^{-4} ,,
90 -100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 ,, > 5X10^{-4} ,,

Sheet 2 of 2

พิมพ์ที่ ฝ่ายโรงพิมพ์ กรมชลประทาน (น.612-พ.ศ.2533-4,000.).

Geotechnics Division

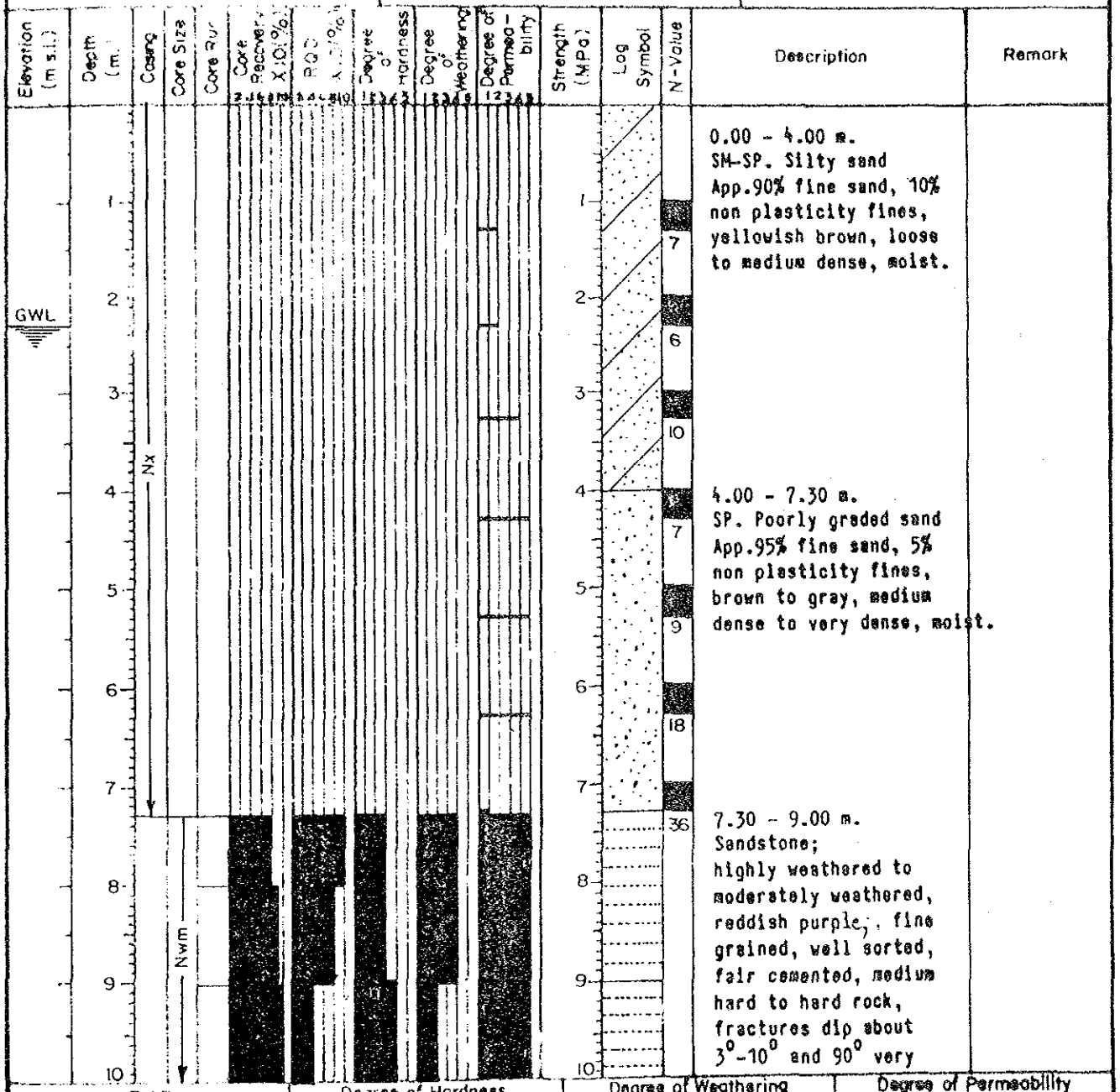
Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)
Changwat Ubonratchathani
Site ℄ Dam
Location Right abutment
Elevation +132.02

Logged By V. Nipong
Logged Date 20/12/34
Drilling Method Rotary
Drilling Started 14/12/34
Drilling Finished 18/12/34

Hole No. D.H. 7
Total Depth 20.00 m.
Angle From Vertical 0°
Bearing of Angle Hole —
Elevation of Groundwater +129.70



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50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " 5×10^{-5} - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - 5×10^{-4} "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 1 of 2

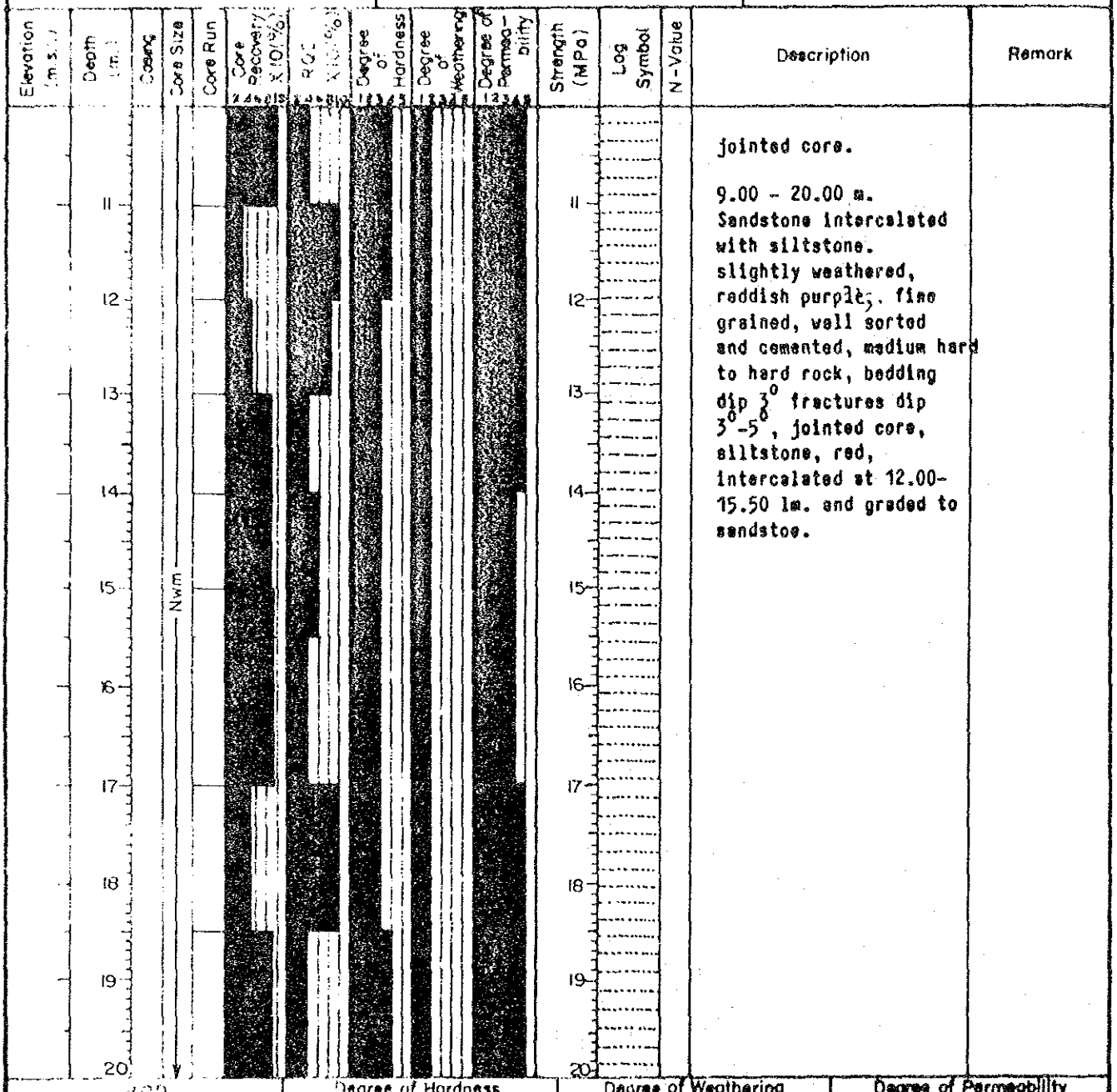
พิมพ์ ที่โรงพิมพ์ กรมตำรวจทหาร (ป.612-พ.ต.2533-4,000.)

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (028)	Logged By V. Nipong	Hole No. DH. 7
Changwat Ubonrat Chathani	Logged Date 20/12/34	Total Depth 20.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0°
Location Right abutment	Drilling Started 14/12/34	Bearing of Angle Hole —
Elevation ±131.02	Drilling Finished 18/12/34	Elevation of Groundwater ±129.70



(RQD)	Degree of Hardness	Degree of Weathering	Degree of Permeability
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50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5X10^{-3}$-10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10-50 " 10^{-4}- $5X10^{-4}$ "
90-100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > $5X10^{-4}$ "

Sheet 2 of 2

จำนวนพิมพ์ครั้งนี้ 4,000 เล่ม ราคาเล่มละ 40 บาท (ม.ค.๒๕๓๔-ธ.ค.๒๕๓๓-๔,๐๐๐ เล่ม)

Geotechnics Division

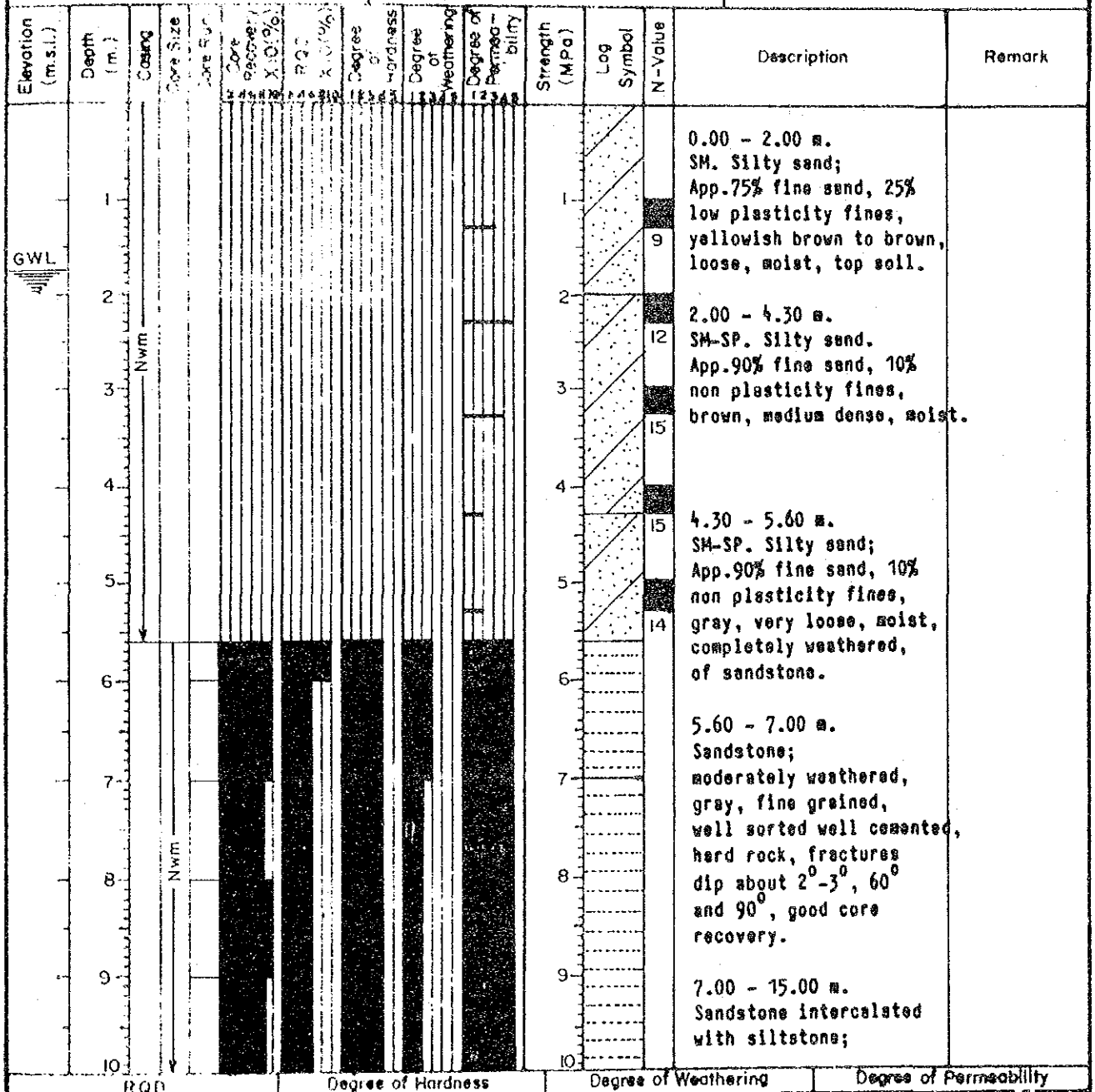
Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)
Changwat Ubonratchathani
Site ℄ Dam
Location Right abutment
Elevation +132.75

Logged By V. Nipong
Logged Date 24/12/34
Drilling Method Rotary
Drilling Started 19/12/34
Drilling Finished 20/12/34

Hole No. D.H. 8
Total Depth 15.00 m.
Angle From Vertical 0°
Bearing of Angle Hole —
Elevation of Groundwater +130.97



Description

0.00 - 2.00 m.
SM. Silty sand;
App.75% fine sand, 25% low plasticity fines, yellowish brown to brown, loose, moist, top soil.

2.00 - 4.30 m.
SM-SP. Silty sand.
App.90% fine sand, 10% non plasticity fines, brown, medium dense, moist.

4.30 - 5.60 m.
SM-SP. Silty sand;
App.90% fine sand, 10% non plasticity fines, gray, very loose, moist, completely weathered, of sandstone.

5.60 - 7.00 m.
Sandstone;
moderately weathered, gray, fine grained, well sorted well cemented, hard rock, fractures dip about 2°-3°, 60° and 90°, good core recovery.

7.00 - 15.00 m.
Sandstone intercalated with siltstone;

Remark

RQD

< 25%	= Very Poor Rock
25 - 50%	= Poor Rock
50 - 75%	= Fair Rock
75 - 90%	= Good Rock
90-100%	= Very Good Rock

Degree of Hardness

1	= Very Soft Rock
2	= Soft Rock
3	= Medium Hard Rock
4	= Hard Rock
5	= Very Hard Rock

Degree of Weathering

1	= Fresh rock
2	= Slightly Weathered Rock
3	= Moderately Weathered Rock
4	= Highly Weathered Rock
5	= Completely Weathered Rock

Degree of Permeability

1	= < 1 Lugeon or	< 10^{-5} cm/Sec
2	= 1 - 5 "	10^{-5} - 5×10^{-5} "
3	= 5 - 10 "	5×10^{-5} - 10^{-4} "
4	= 10-50 "	10^{-4} - 5×10^{-4} "
5	= > 50 "	> 5×10^{-4} "

Sheet 1 of 2

พิมพ์ที่ ห้างหุ้นส่วนจำกัด (บ.612-ห.ก.2533-4,000.)

Geotechnics Division

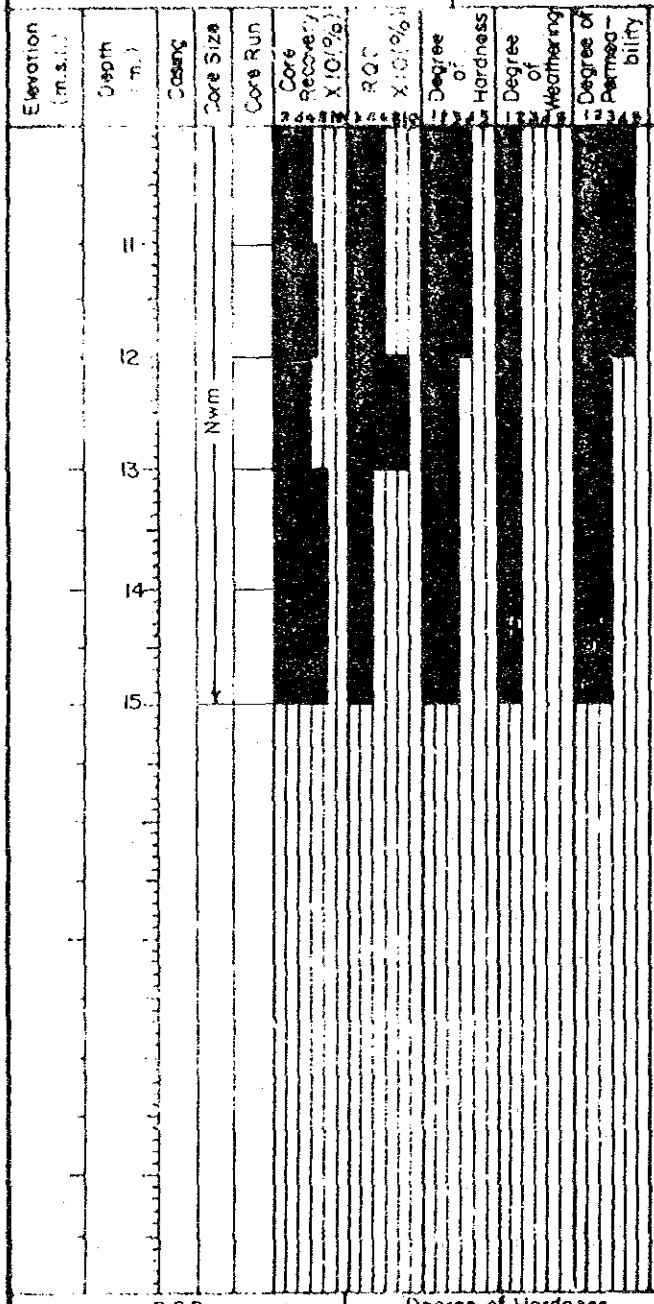
Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D28)
Changwat Ubonratchathani
Site ℄ Dam
Location Right abutment
Elevation +132.75

Logged By V. Nipong
Logged Date 24/12/34
Drilling Method Rotary
Drilling Started 19/12/34
Drilling Finished 20/12/34

Hole No. DH. 8
Total Depth 15.00 m.
Angle From Vertical 0°
Bearing of Angle Hole —
Elevation of Groundwater +130.97



Description

slightly weathered, purplish gray, fine grained, fair sorted, well cemented, hard rock, bedding dip 3°, fracture dip 2°-3° smooth and surface, good core recovery, jointed to slightly jointed core siltstone; red, no fissile, medium hard, interbedded at 12.00-15.00 m.

Remark

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " 10^{-5} - 5×10^{-5} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " 5×10^{-5} - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - 5×10^{-4} "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

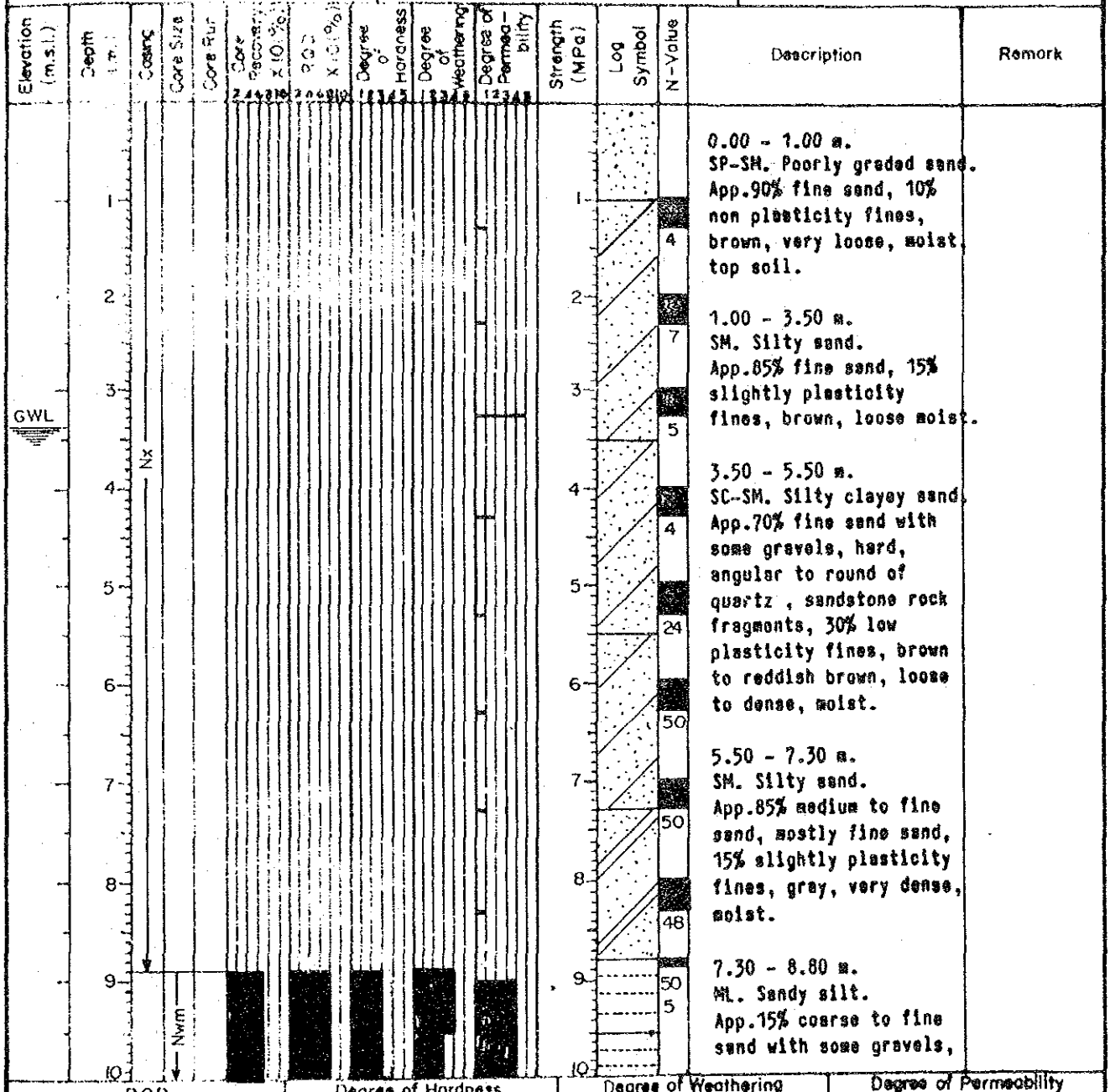
พิมพ์ ที่ โรงพิมพ์ กรมชลประทาน (ป.612-พ.ศ.2533-4,000).

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D28)	Logged By V. Nipong	Hole No. DH. 9
Changwat Ubonratchathani	Logged Date 28/11/34	Total Depth 15.00 m.
Site ℄ Dam	Drilling Method Rotary	Angle From Vertical 0°
Location Right abutment	Drilling Started 22/11/34	Bearing of Angle Hole —
Elevation +141.02	Drilling Finished 26/11/34	Elevation of Groundwater +137.62



Description	Remark
0.00 - 1.00 m. SP-SM. Poorly graded sand. App.90% fine sand, 10% non plasticity fines, brown, very loose, moist, top soil.	
1.00 - 3.50 m. SM. Silty sand. App.85% fine sand, 15% slightly plasticity fines, brown, loose moist.	
3.50 - 5.50 m. SC-SM. Silty clayey sand. App.70% fine sand with some gravels, hard, angular to round of quartz , sandstone rock fragments, 30% low plasticity fines, brown to reddish brown, loose to dense, moist.	
5.50 - 7.30 m. SM. Silty sand. App.85% medium to fine sand, mostly fine sand, 15% slightly plasticity fines, gray, very dense, moist.	
7.30 - 8.80 m. ML. Sandy silt. App.15% coarse to fine sand with some gravels,	

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25 % = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50 % = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " $10^{-5} - 5\times10^{-5}$ "
50 - 75 % = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5\times10^{-5} - 10^{-4}$ "
75 - 90 % = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " $10^{-4} - 5\times10^{-4}$ "
90 - 100 % = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 1 of 2

พิมพ์ที่ ฝ่ายโรงพิมพ์ กรมชลประทาน (ม.ค.12-พ.ศ.2533-4,000.)

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (028)
Changwat Ubonratchathani
Site ℄ Dam
Location Right abutment
Elevation +141.02

Logged By V. Nipong
Logged Date 28/11/34
Drilling Method Rotary
Drilling Started 22/11/34
Drilling Finished 26/11/34

Hole No. DH. 9
Total Depth 15.00 m.
Angle From Vertical 0°
Bearing of Angle Hole —
Elevation of Groundwater +137.62

Elevation (m.s.l.)	Depth (m.)	Casing	Core Size	Core Run	Core Recovery X 100%	RQD X 100%	Degree of Hardness 1 2 3 4 5	Degree of Weathering 1 2 3 4 5	Degree of Permeability 1 2 3 4 5	Strength (MPa)	Log Symbol	N-Value	Description	Remark
	11												angular to round of quartz, mostly sub-round maximum size=2x3 cm., 85% low plasticity fines, yellow to yellowish brown, hard, moist, completely weathered of siltstone.	
	12												8.80 - 9.50 m. Sandstone; highly weathered, purple, fine grained, well sorted, fair cemented (poor cemented at 8.80-8.90m.) medium hard rock, fractures dip about 2°-3° and 90° smooth and clean surface, very jointed core.	
	13													
	14													
	15		Nwm										9.50 - 15.00 m. Sandstone intercalated with siltstone; moderately weathered, purple, fine grained, fair sorted, fairlywell cemented, medium hard to hard rock, bedding dip 3°, fracture dip 70°,45°, rought surface, good core recovery, maximum core length=37cm. very jointed core, siltstone; red, fair cemented, medium hard, slaking interval:10.80-11.40 m., 12.00-12.10m. 12.80-13.00m., 13.60-13.80m.	

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or $< 10^{-5}$ cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " $10^{-5} - 5\times10^{-5}$ "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " $5\times10^{-5} - 10^{-4}$ "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " $10^{-4} - 5\times10^{-4}$ "
90-100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 2 of 2

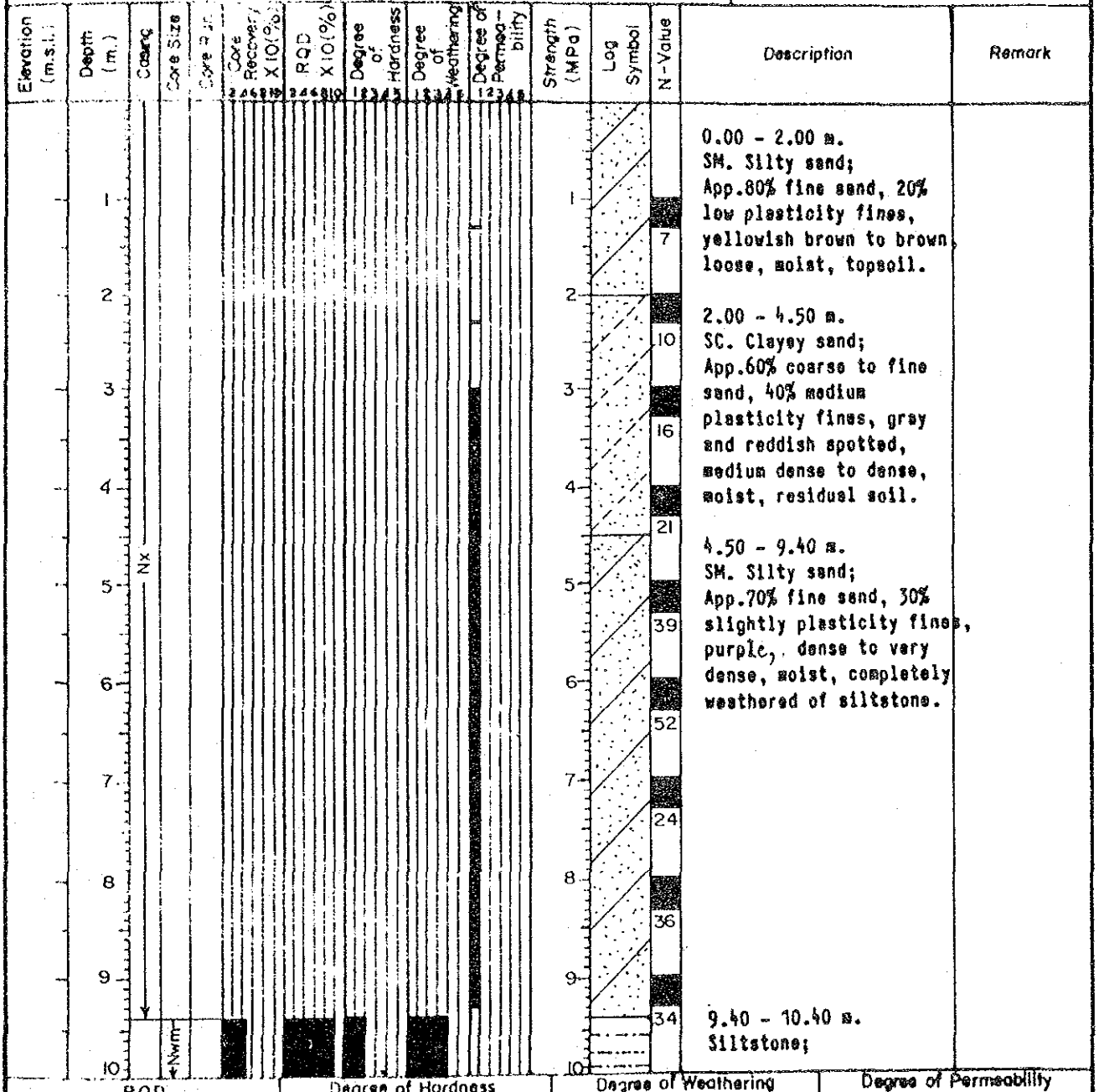
พิมพ์ที่ ห้างโรงพิมพ์ กรมชลประทาน (บ.612-พ.ศ.2533-4,000.).

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D28)	Logged By V. Nipong	Hole No. DH. 10
Changwat Ubonratchathani	Logged Date 18/12/34	Total Depth 10.40 m.
Site ℄ Spillway	Drilling Method Rotary	Angle From Vertical 0°
Location Right abutment	Drilling Started 16/12/34	Bearing of Angle Hole
Elevation + 141.49	Drilling Finished 16/12/34	Elevation of Groundwater



RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " 10^{-5} - 5×10^{-5} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " 5×10^{-5} - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - 5×10^{-4} "
90-100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 1 of 2

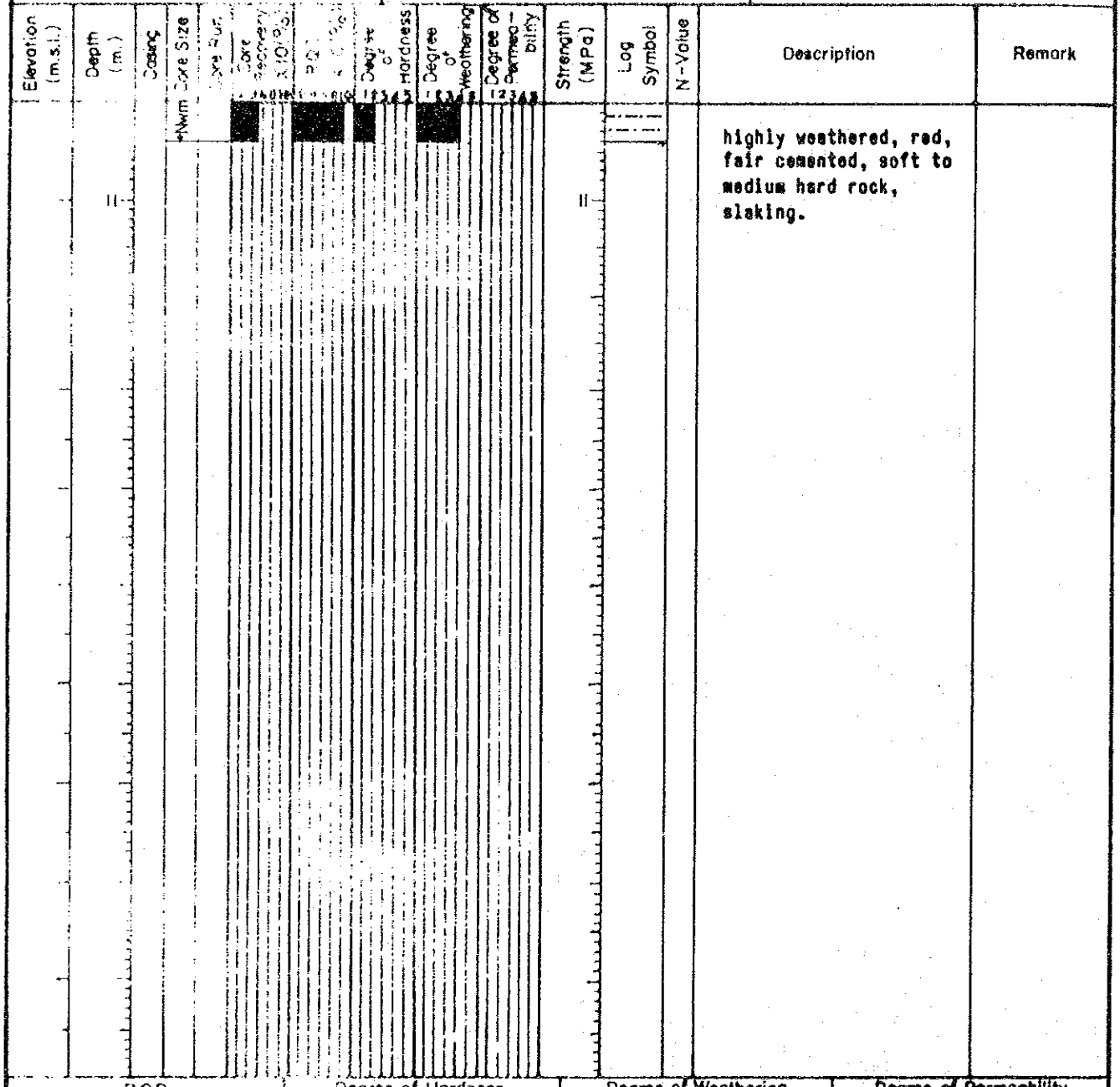
พิมพ์ ฝ่ายโรงพิมพ์ กรมชลประทาน (ม.ค.12-ม.ค.2533-4,000.).

Geotechnics Division

Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)	Logged By V. Nipong	Hole No. D.H. 10
Changwat Ubonratchathani	Logged Date 18/12/34	Total Depth 10.40 m.
Site ℄ Spillway	Drilling Method Rotary	Angle From Vertical 0
Location Right abutment	Drilling Started 16/12/34	Bearing of Angle Hole —
Elevation + 141.49	Drilling Finished 16/12/34	Elevation of Groundwater



RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1-5 " 10^{-5} X 10^{-5} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5-10 " $5 X 10^{-5}$-10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10-50 " 10^{-4}- $5 X 10^{-4}$ "
90-100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > $5 X 10^{-4}$ "

Sheet 2 of 2

พิมพ์ที่ ห้างหุ้นส่วนจำกัด โรงพิมพ์ กรมชลประทาน (บ.612-พ.ศ.2533-4,000.).

Geotechnics Division

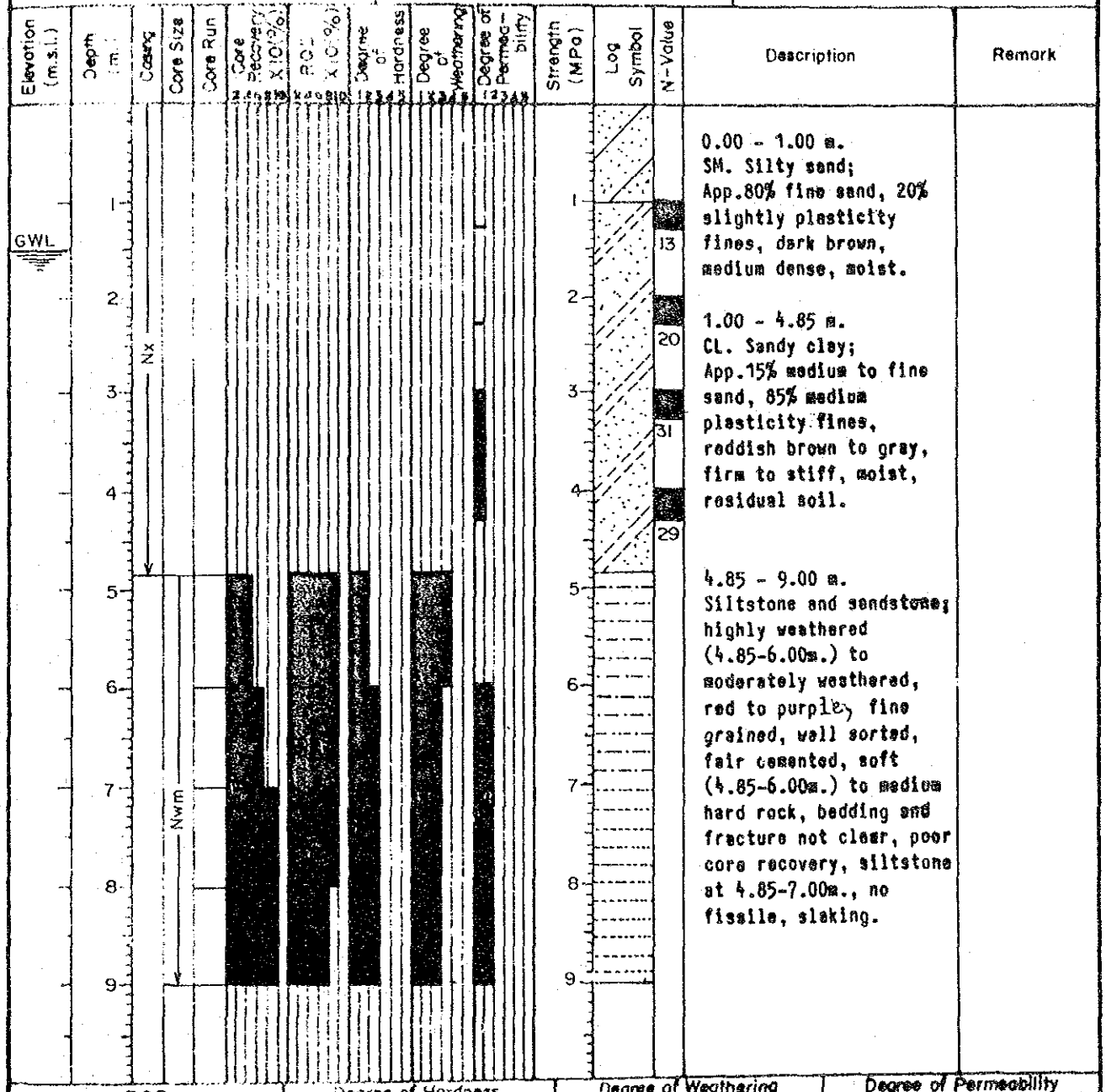
Royal Irrigation Department

GEOLOGIC LOG OF DRILL HOLE

Project Lam Dom Yai (D 28)
Changwat Ubonratchathani
Site ℄ Spillway
Location Right abutment
Elevation +138.87

Logged By V. Nipong
Logged Date 21/12/34
Drilling Method Rotary
Drilling Started 17/12/34
Drilling Finished 17/12/34

Hole No. DH. II
Total Depth 9.00 m.
Angle From Vertical 0
Bearing of Angle Hole —
Elevation of Groundwater +137.37



Description

0.00 - 1.00 m.
SM. Silty sand; App.80% fine sand, 20% slightly plasticity fines, dark brown, medium dense, moist.

1.00 - 4.85 m.
CL. Sandy clay; App.15% medium to fine sand, 85% medium plasticity fines, reddish brown to gray, firm to stiff, moist, residual soil.

4.85 - 9.00 m.
Siltstone and sandstone; highly weathered (4.85-6.00m.) to moderately weathered, red to purple, fine grained, well sorted, fair cemented, soft (4.85-6.00m.) to medium hard rock, bedding and fracture not clear, poor core recovery, siltstone at 4.85-7.00m., no fissile, slaking.

Remark

RQD	Degree of Hardness	Degree of Weathering	Degree of Permeability
< 25% = Very Poor Rock	1 = Very Soft Rock	1 = Fresh rock	1 = < 1 Lugeon or < 10^{-5} cm/Sec
25 - 50% = Poor Rock	2 = Soft Rock	2 = Slightly Weathered Rock	2 = 1 - 5 " 10^{-5} - 5×10^{-5} "
50 - 75% = Fair Rock	3 = Medium Hard Rock	3 = Moderately Weathered Rock	3 = 5 - 10 " 5×10^{-5} - 10^{-4} "
75 - 90% = Good Rock	4 = Hard Rock	4 = Highly Weathered Rock	4 = 10 - 50 " 10^{-4} - 5×10^{-4} "
90 - 100% = Very Good Rock	5 = Very Hard Rock	5 = Completely Weathered Rock	5 = > 50 " > 5×10^{-4} "

Sheet 1 of 1

พิมพ์ ที่กองโรงพิมพ์ กรมชลประทาน (ม.ค.12-พ.ศ.2533-4,000.).

FIG. D-18 SUMMERIZED GRADING CURVE

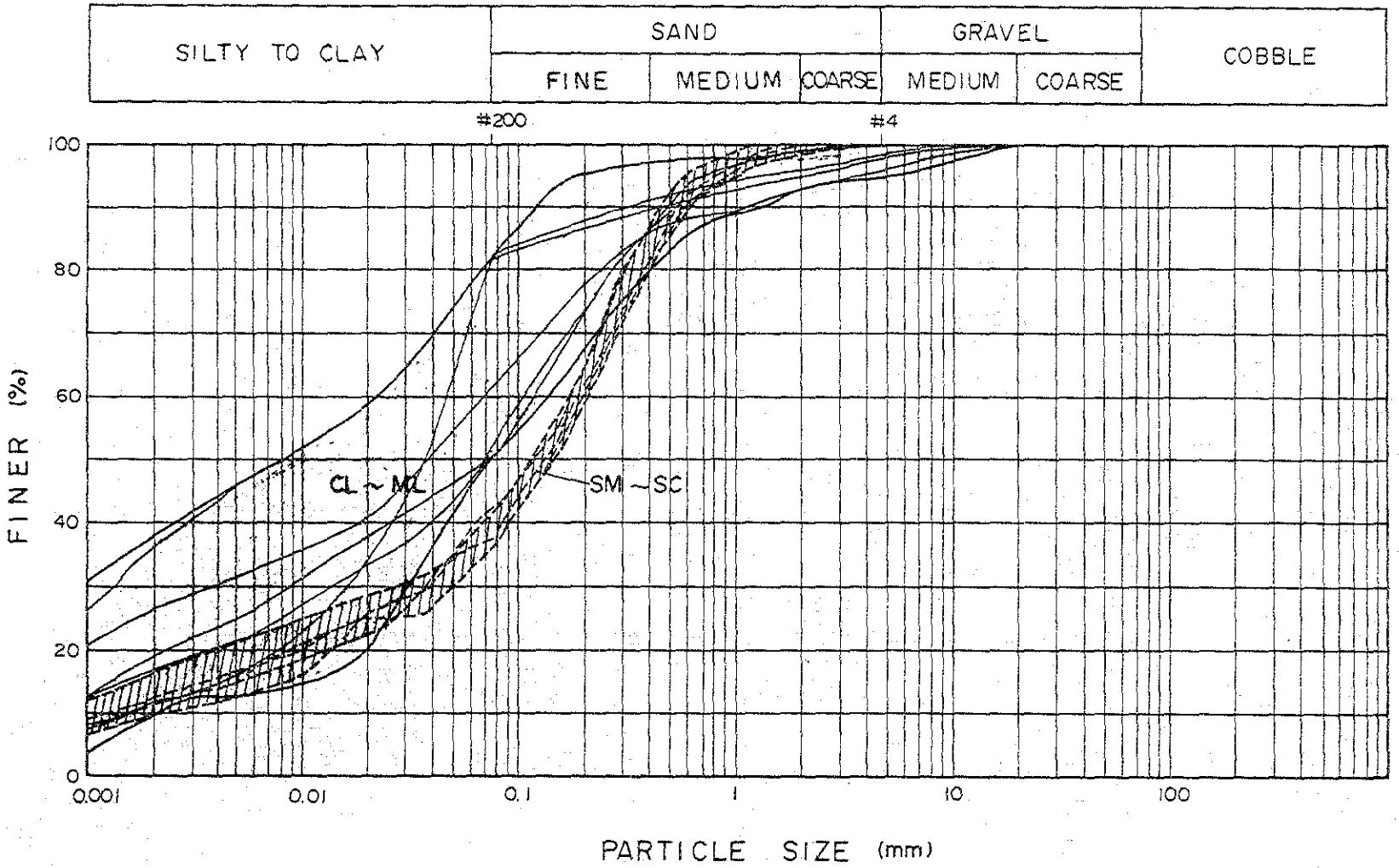


FIG. D-19 RESULT OF SOIL TEST

บันทึกข้อความ

ส่วนราชการ ฝ่ายดินด้านวิศวกรรม กองวิจัยและทดลอง กรมชลประทาน โทร 5836050 ต่อ 446

ที่ วท. 33/35 วันที่ 15 มิ.ค. 2535

เรื่อง รายงานผลการทดสอบ

(1) เรียน ผจท. ผ่าน ฝวท.

งานวิจัยดินด้านวิศวกรรม ฝ่ายดินด้านวิศวกรรม ขอรายงานผลการทดสอบ ตัวอย่างดิน โครงการพัฒนาลุ่มน้ำลำโคมใหญ่ (D-28) เป็นจำนวนรวมทั้งสิ้น 19 ตัวอย่าง ซึ่งได้จัดส่งมาโดย ฝ่ายสำรวจปฐพีวิทยา กองวิทยาการธรณี รายละเอียดผลการทดสอบ ได้แนบมาด้วยแล้ว ตามรายงาน Memo. 20/2535

จึงเรียนมาเพื่อโปรดพิจารณา

(นายไมตร พูลทรัพย์)
ผวค. 23 มิ.ค. 2535

(2) ผ่าน

15 มิ.ค. 2535
(นายมณเฑียร กังศศิเทียม)
ฝวท.

(3) เรียน ผอท.

(นายไพบูลย์ ศิริดำรงค์)
วจ.วท.

(4) ผ.ผ.ธ.

(นายวิทยา สมาหาร)
ผจท.
16 มิ.ค. 2535

(5) เรียน ผวค.

(ดร. สุทธ จิระพันธุ์) 23 มี.ค. 35

(6) ผวค.1

(นายไมตร พูลทรัพย์)
ผวค. 23 มิ.ค. 2535

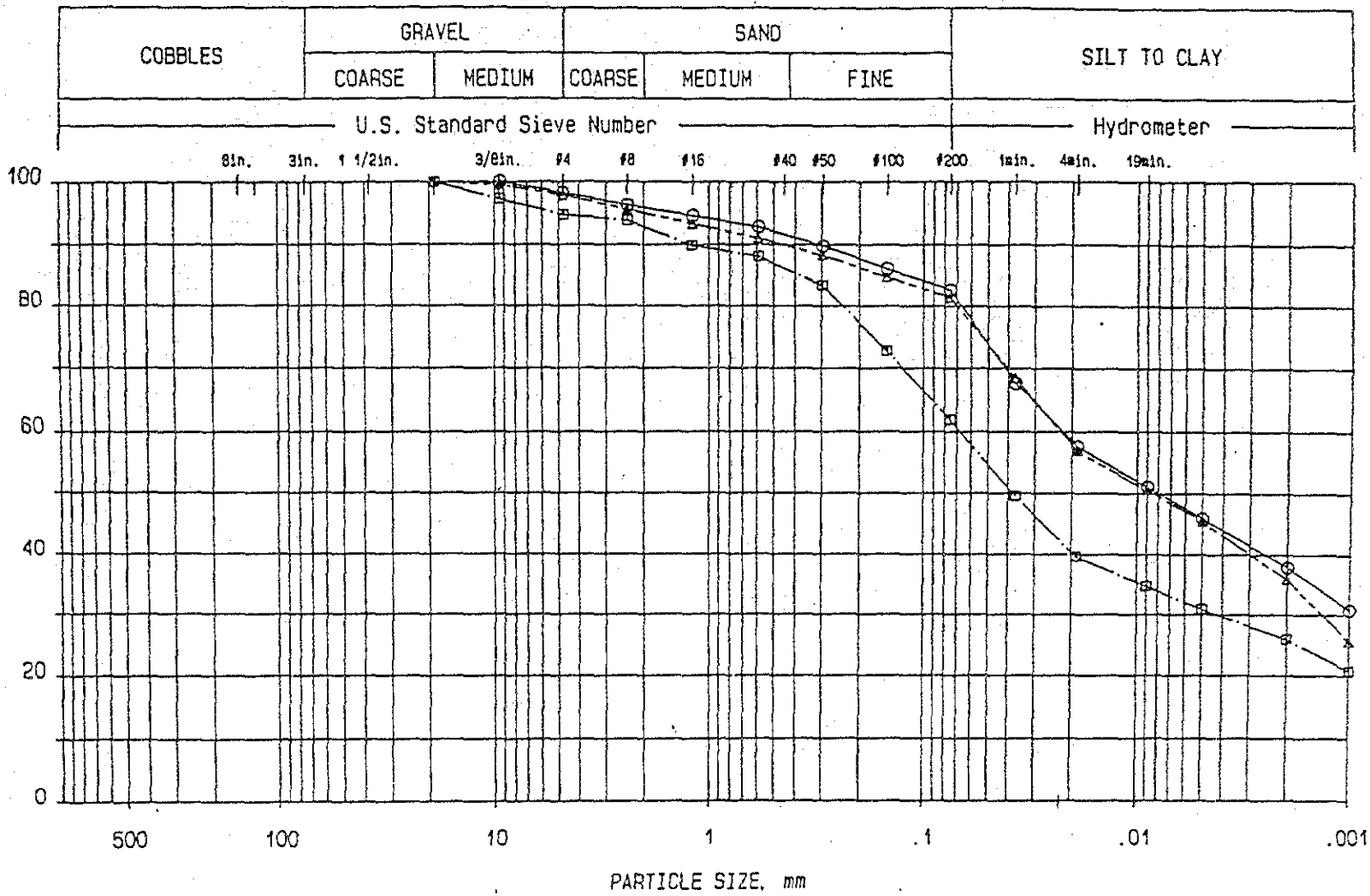
ต้นฉบับ - ผวธ.

สำเนา - ฝปธ.

ผวธ. ? ? มิ.ย. 2535

GRADATION TEST

Royal Irrigation Department
Reserch and Laboratory Division
Soil Engineering Branch



Project	DOM-YAI
Memo	20/35
Checked by	PAIBOON
Date:	13/12/34

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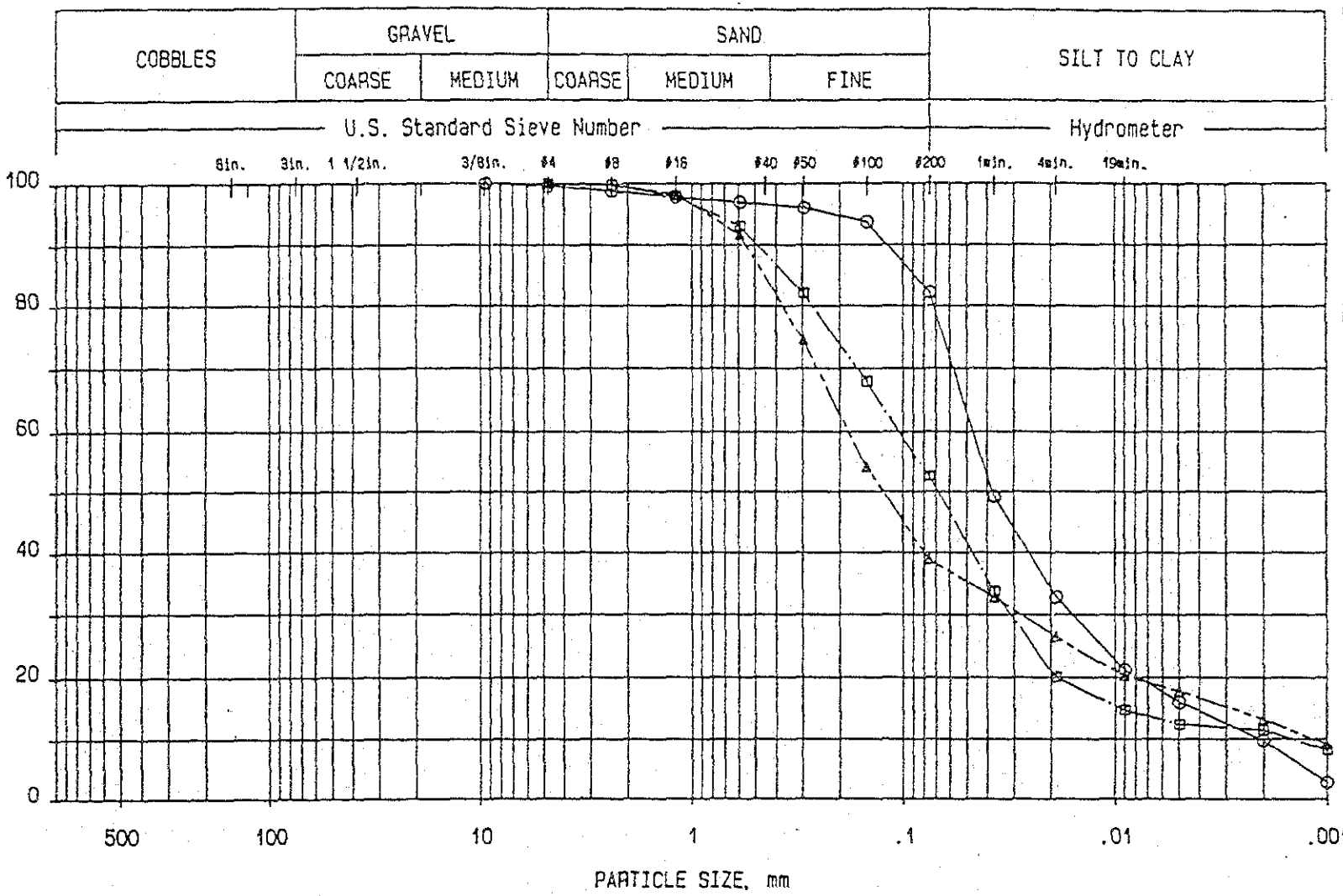
Sheet 1 of 39

Sample No.	Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	w_n, %	G_s	
⊙ 1	A ATP1	2.40-4.00	39.40	19.20	20.20	CL	18.7	2.74	
□ 2	A ATP2	1.10-4.00	39.40	19.20	20.20	CL	12.1	2.78	
△ 3	A ATP3	1.10-4.00	47.00	25.00	22.00	CL	20.3	2.77	

GRADATION TEST

Royal Irrigation Department
Reserch and Laboratory Division
Soil Engineering Branch



Project	DOM-YAI
Memo	20/35
Checked by	PAIBOON
Date:	13/12/34

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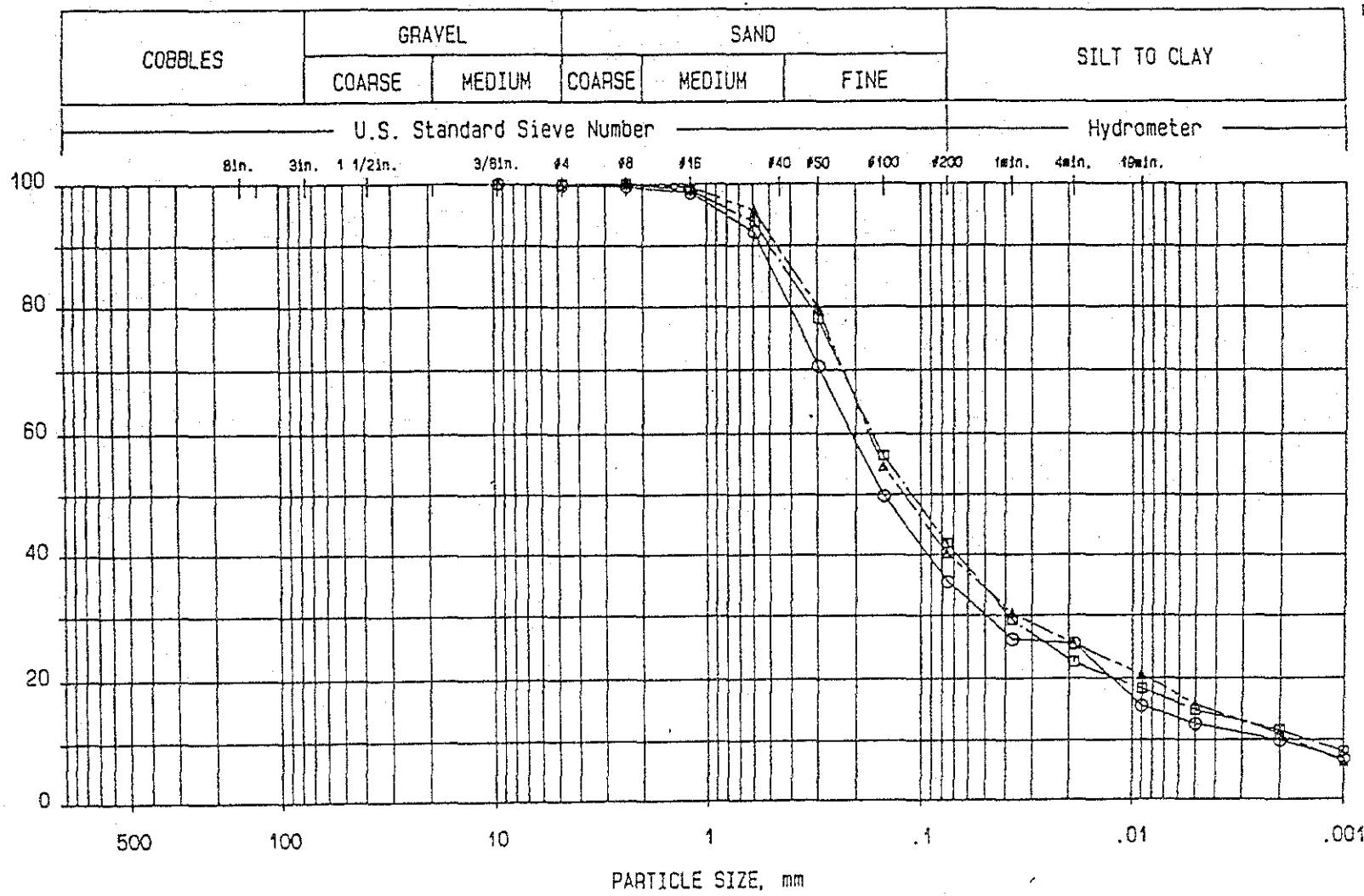
Sheet 4 of 39

Sample No.	Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	w_n %	Gs	
⊙ 1	A ATP4	2.30-4.00	28.80	22.20	6.60	CL-ML	19.8	2.75	
□ 2	C CTP1	2.10-4.00	24.60	15.00	9.60	CL	11.5	2.74	
△ 3	C CTP2	2.60-4.00	18.60	13.10	5.50	SM-SC	11.3	2.65	

GRADATION TEST

Royal Irrigation Department
Reserch and Laboratory Division
Soil Engineering Branch

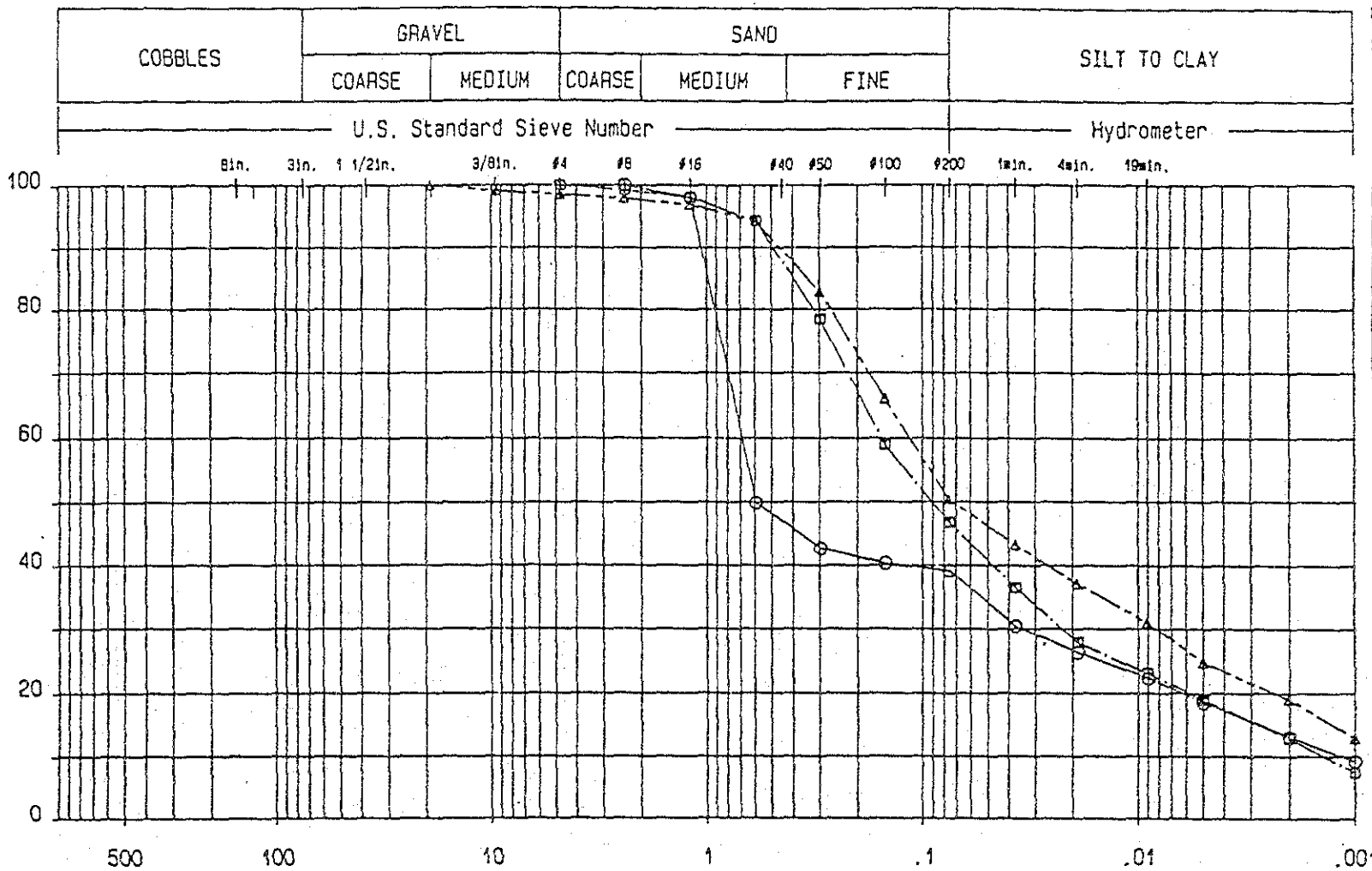


Project	DOM-YAI
Memo	20/35
Checked by	PAIBOON
Date:	13/12/34

Sample No.		Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	w_n,%	Gs	
⊙	1	C CTP3	1.60-4.00	17.70	13.10	4.60	SM-SC	10.6	2.68	
□	2	C CTP4	1.20-4.00	19.40	12.40	7.00	SM-SC	12.9	2.61	
△	3	C CTP5	1.00-2.80	18.80	12.80	6.00	SM-SC	11.5	2.73	

GRADATION TEST

Royal Irrigation Department
Reserch and Laboratory Division
Soil Engineering Branch



Project	DOM-YAI
Memo	20/35
Checked by	PAIBOON
Date:	13/12/34

	Sample No.	Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	w_n, %	G_s	
⊙	1	C CTP6	1.10-2.90	21.90	14.30	7.60	SC	11.7	2.63	
□	2	C CTP7	1.10-3.10	26.10	16.30	9.80	SC	12.8	2.72	
△	3	C CTP8	1.10-2.10	22.30	13.90	8.40	CL	15.8	—	

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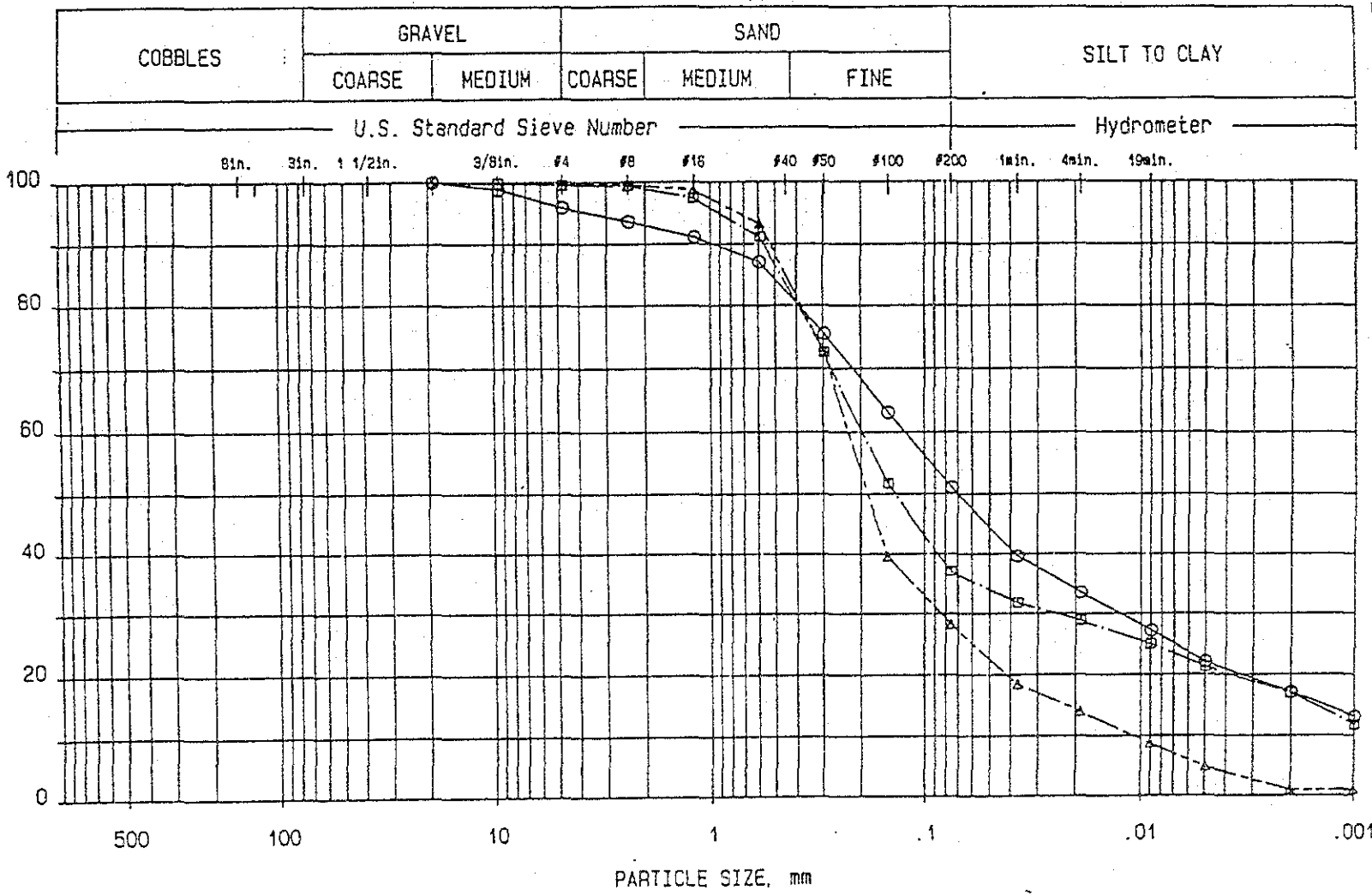
Sheet 4 of 39

GRADATION TEST

Royal Irrigation Department
Reserch and Laboratory Division
Soil Engineering Branch



Project	DOM-YAI
Memo	20/35
Checked by	PAIBOON
Date:	13/12/34

Sample No.	Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	w_n %	G_s	
⊙ 1	D DTP1	1.50-4.00	38.90	19.50	19.40	CL	17.7	2.76	
□ 2	D DTP2	1.70-4.00	19.10	13.00	6.10	SM-SC	10.6	2.68	
△ 3	D DTP3	0.00-3.00	----------	Non-Plastic	----------	SM	5.8	2.68	

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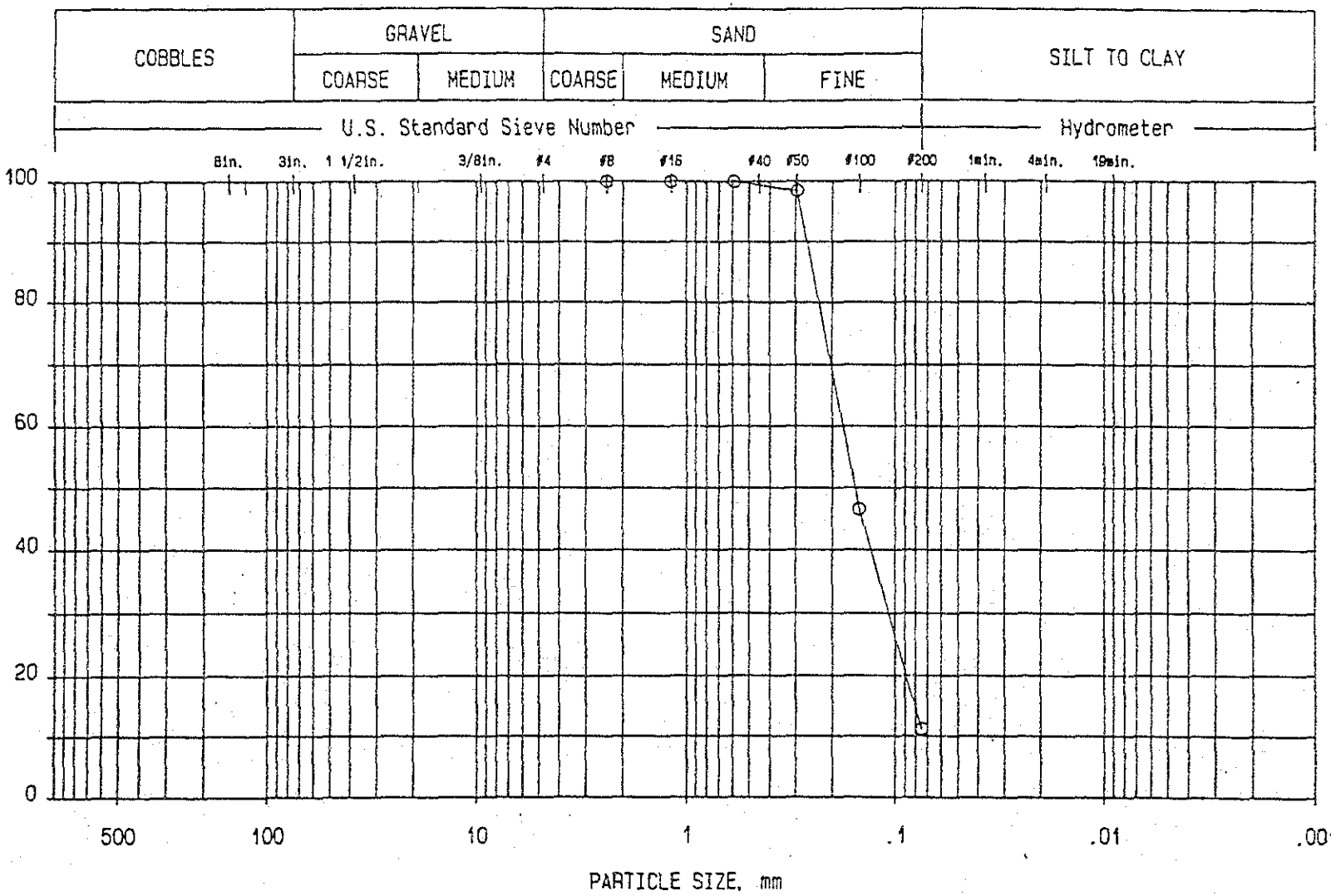
Sheet 5 of 9

GRADATION TEST

Royal Irrigation Department
Reserch and Laboratory Division
Soil Engineering Branch



Project	DOM-YAI
Memo	20/35
Checked by	PAIBOON
Date:	13/12/34

Sample No.	Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	w_n, %	G_s	
⊙ 1	AL-9	3.70-4.50	----------	Non-Plastic	----------	SP-SM	25.9	2.61	

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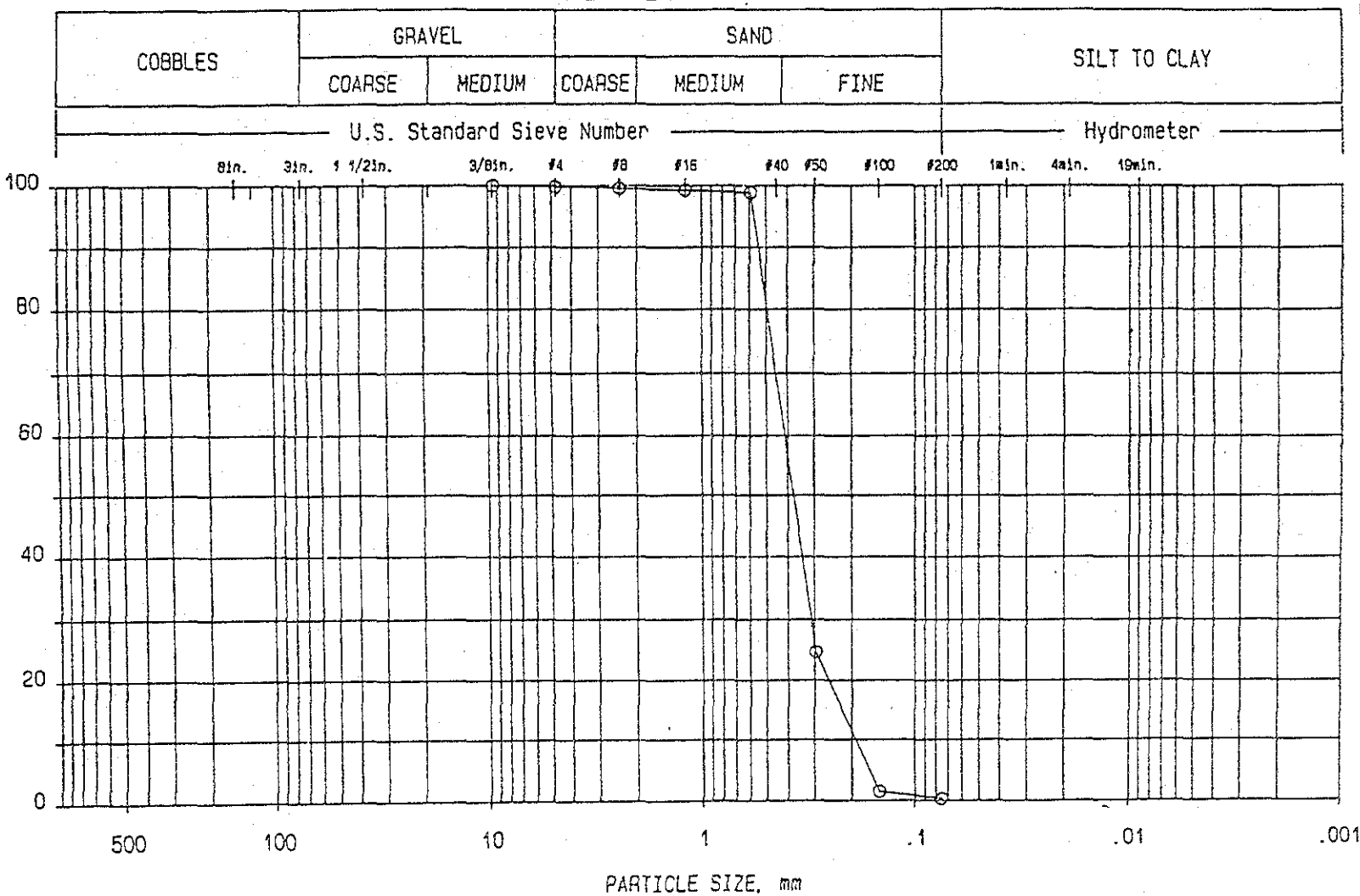
Sheet 6 of 15

GRADATION TEST

Royal Irrigation Department
Reserch and Laboratory Division
Soil Engineering Branch



Project	DOM-YAI
Memo	20/35
Checked by	PAIBOON
Date:	13/12/34

Sample No.	Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	w_n, %	G_s	
⊙ 1	MUMR		-	-	-	-	2.5	2.67	

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Sheet 7 of 39

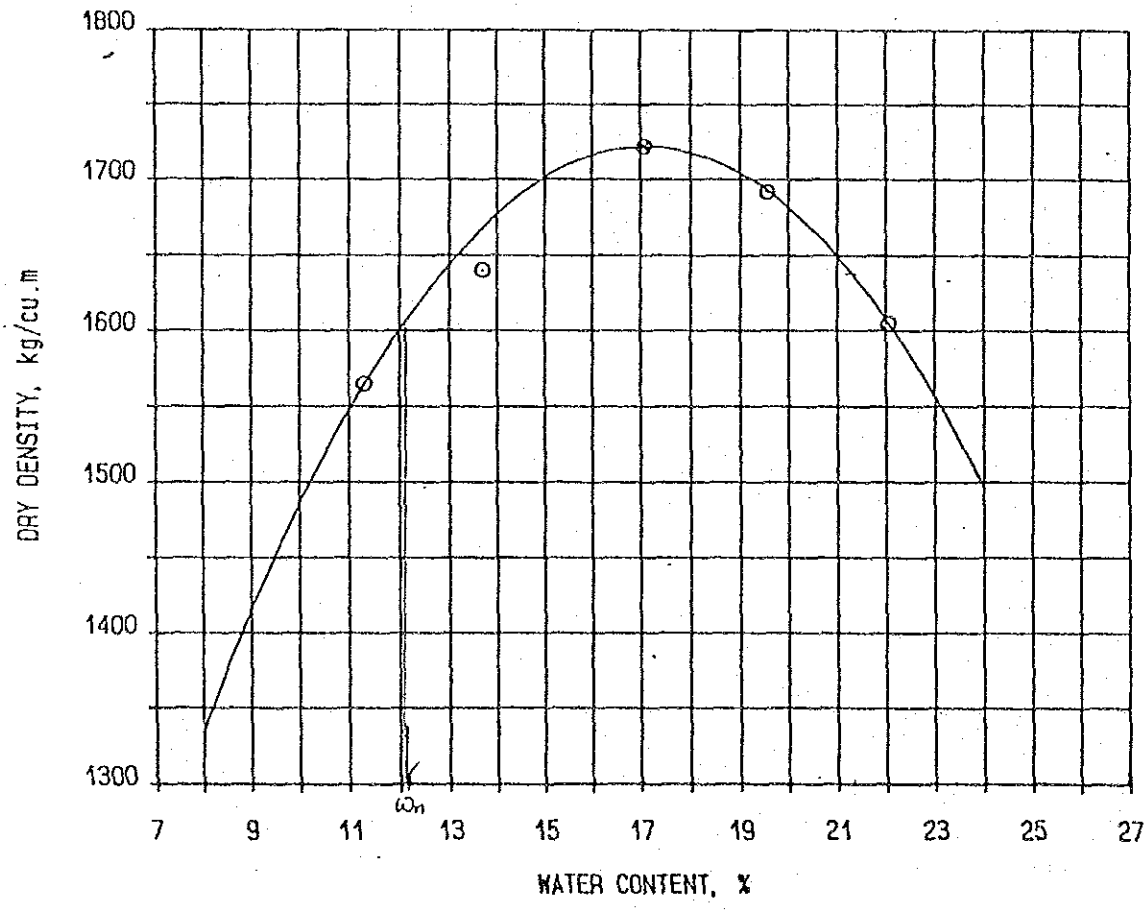
ROYAL IRRIGATION DEPARTMENT

RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

COMPACTION TEST

PROJECT	DOM-YAI	MEMO	20/35
LOCATION			
BORING	A ATP2	TEST NO.	
SOIL DESCRIPTION		DEPTH	1.10-4.00
TESTED BY	SALA-SUVIT	DATE	13/12/34
CHECKED BY	PAIBOON B	DATE	13/12/34



Max. Dry Density 1722 kg/cu.m Optimum Water Content 17.1 %

Sheet 8 of 9

ROYAL IRRIGATION DEPARTMENT

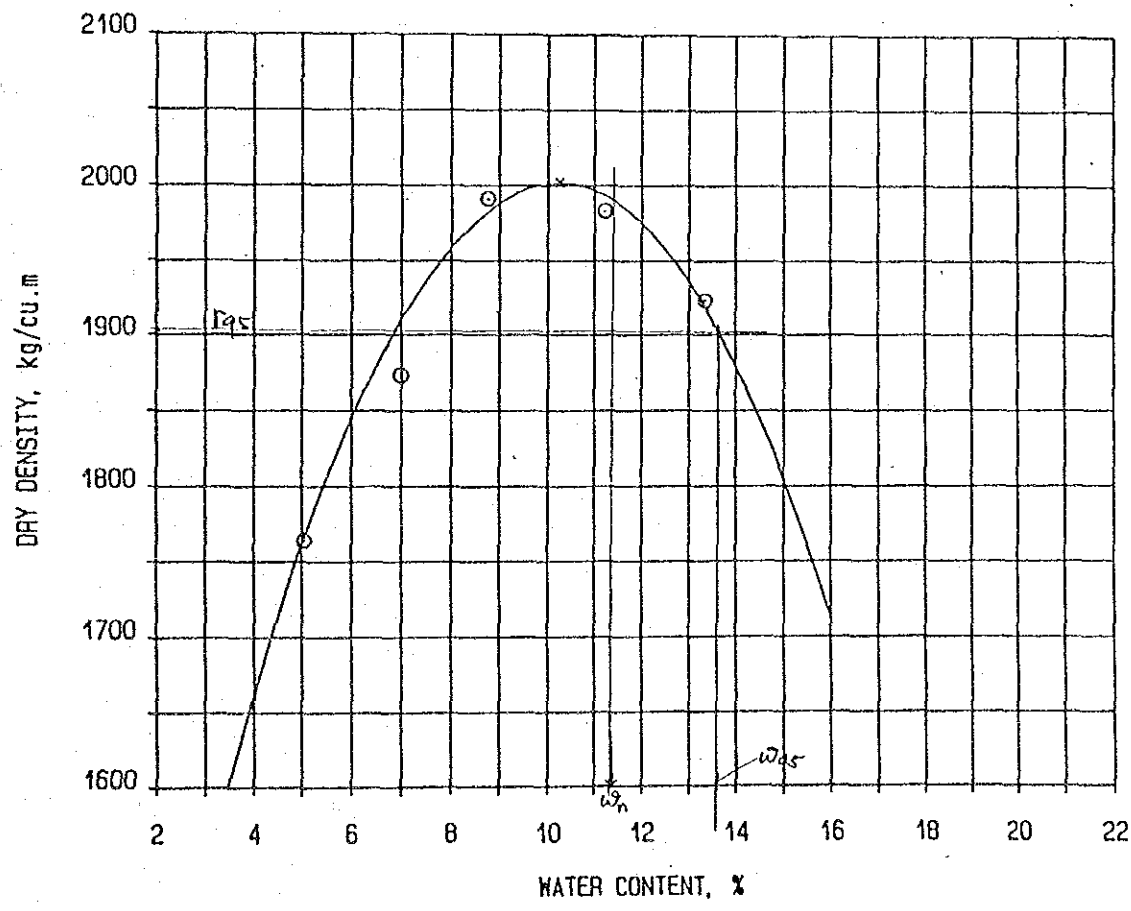
RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

COMPACTION TEST

PROJECT	DOM-YAI	MEMO	20/35
LOCATION			
BORING	C C TP2	TEST NO.	
SOIL DESCRIPTION		DEPTH	2.60-4.00
TESTED BY	SALA	DATE	13/12/34
CHECKED BY	PAIBOON	DATE	13/12/34

G G



Max. Dry Density 2002 kg/cu.m Optimum Water Content 10.2 %

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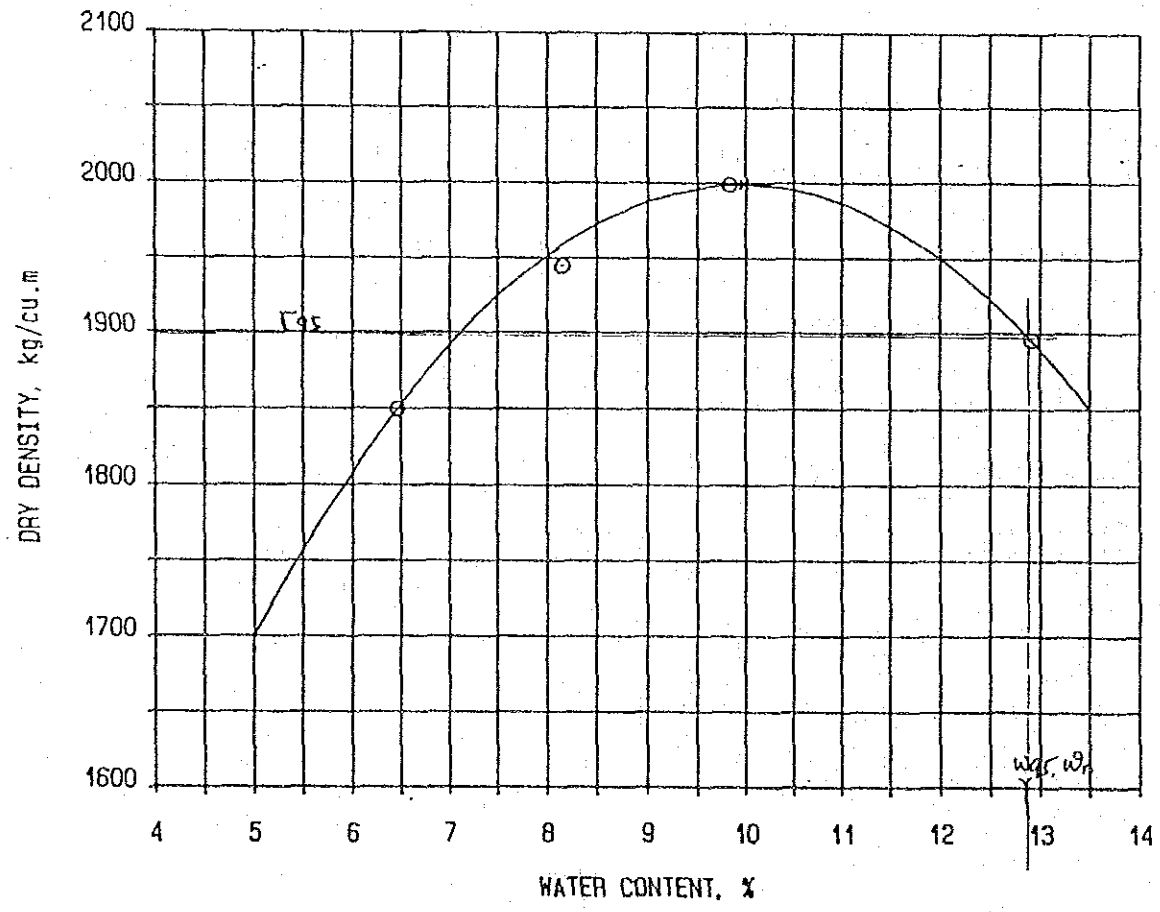
ROYAL IRRIGATION DEPARTMENT

RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

COMPACTION TEST

PROJECT	DOM-YAI	MEMO	
LOCATION			
BORING	C CTP4	TEST NO.	
SOIL DESCRIPTION		DEPTH	1.20-4.00
TESTED BY	SUVIT	DATE	17/12/34
CHECKED BY	PAIBOON	DATE	17/12/34



Max. Dry Density 1999 kg/cu.m Optimum Water Content 10.0 %

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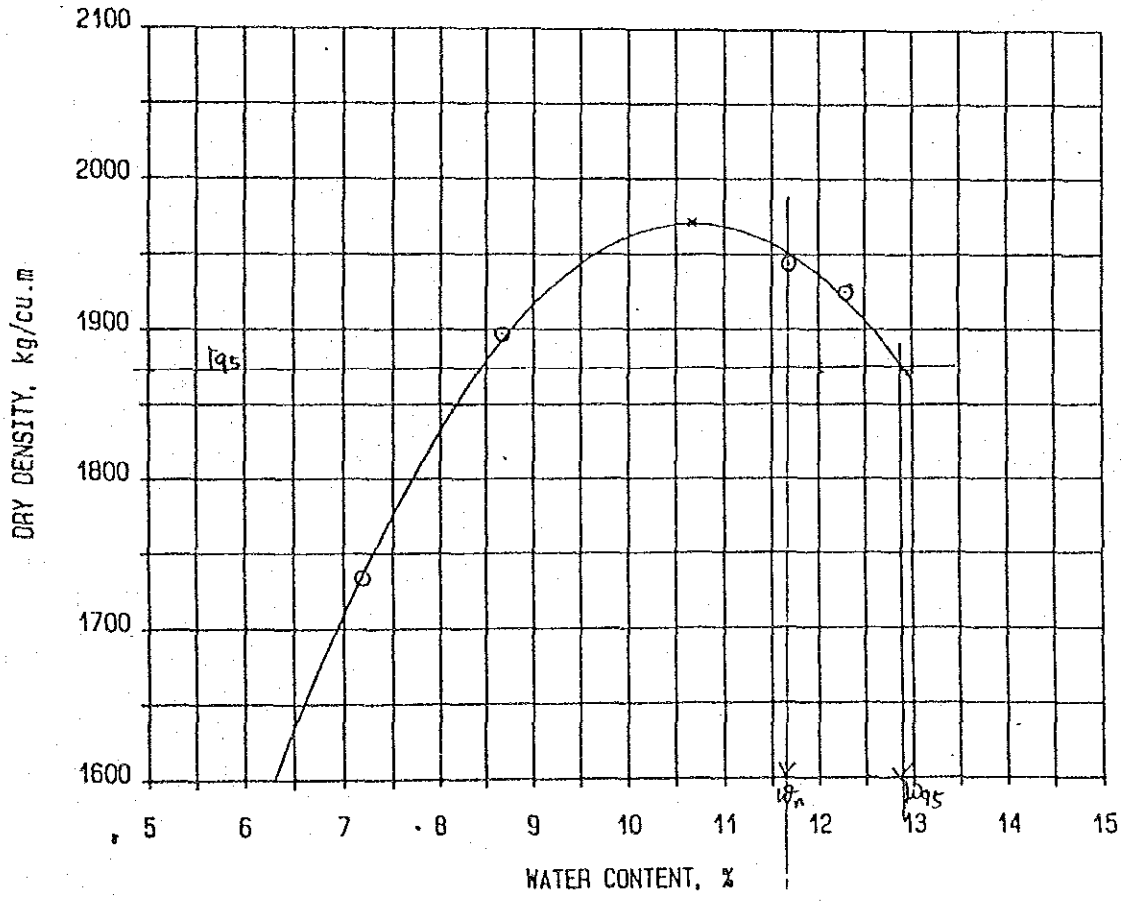
ROYAL IRRIGATION DEPARTMENT

RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

COMPACTION TEST

PROJECT	DOM-YAI	MEMO	20/35
LOCATION			
BORING	C CTP6	TEST NO.	
SOIL DESCRIPTION		DEPTH	1.10-2.90
TESTED BY	SALA	DATE	13/12/34
CHECKED BY	PAIBOON	DATE	13/12/34



Max. Dry Density 1971 kg/cu.m Optimum Water Content 10.7 %

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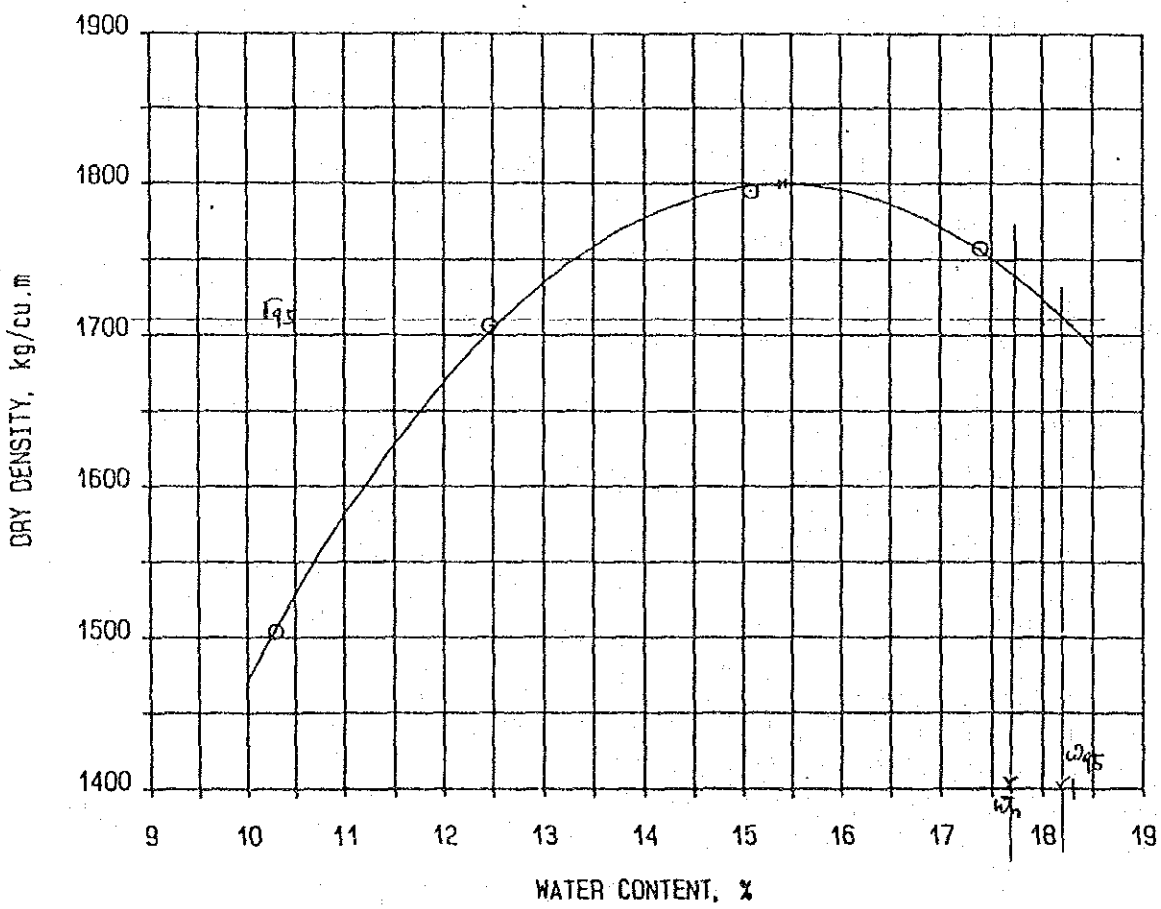
ROYAL IRRIGATION DEPARTMENT

RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

COMPACTION TEST

PROJECT	DOM-YAI	MEMO	20/35
LOCATION			
BORING	D DTP1	TEST NO.	
SOIL DESCRIPTION		DEPTH	1.50-4.00
TESTED BY	SALA-SUVIT	DATE	13/12/34
CHECKED BY	PAIBOON	DATE	13/12/34



Max. Dry Density 1800 kg/cu.m Optimum Water Content 15.4 %

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ROYAL IRRIGATION DEPARTMENT

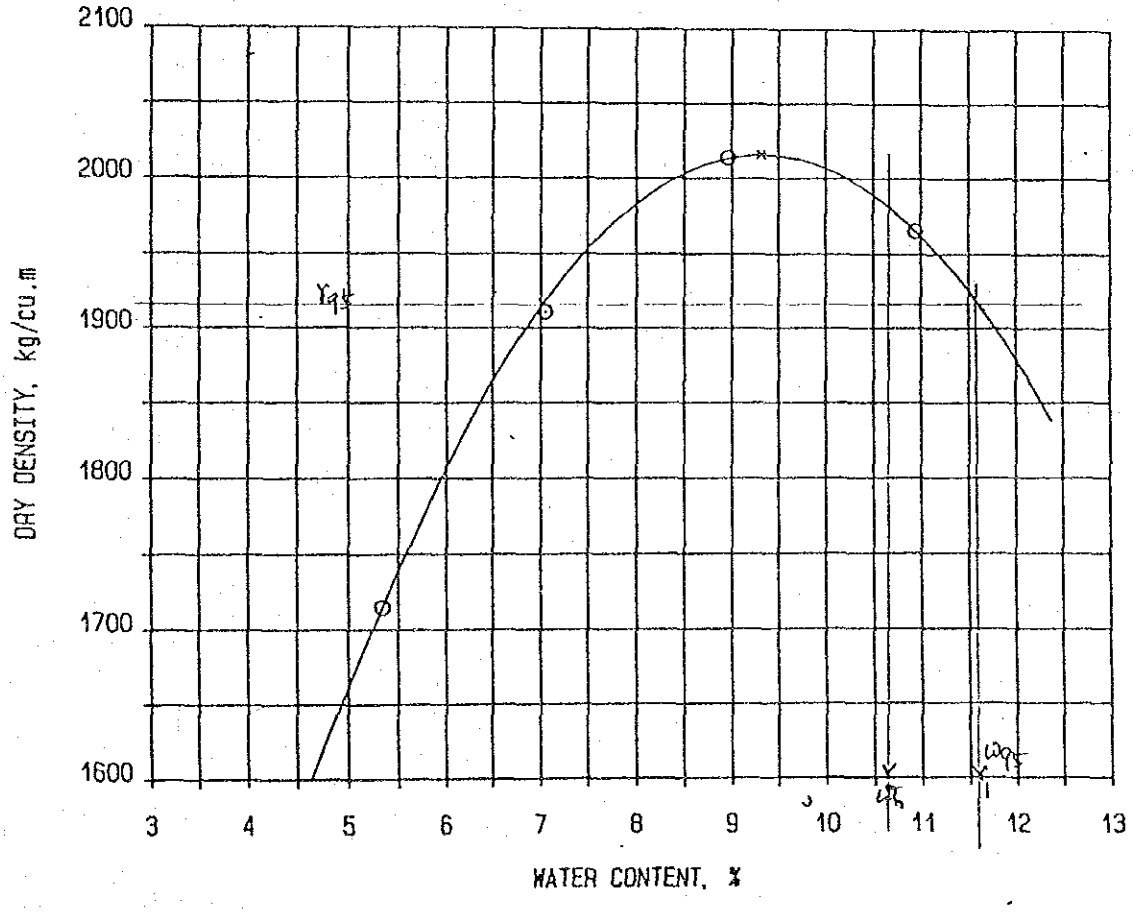
RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

COMPACTION TEST

PROJECT	DON-YAI	MEMO	20/35
LOCATION			
BORING	D DTP2	TEST NO.	
SOIL DESCRIPTION		DEPTH	1.70-4.00
TESTED BY	SALA-SUVIT	DATE	13/12/34
CHECKED BY	PAIBOON	DATE	13/12/34

3



Max. Dry Density 2016 kg/cu.m Optimum Water Content 9.3 %

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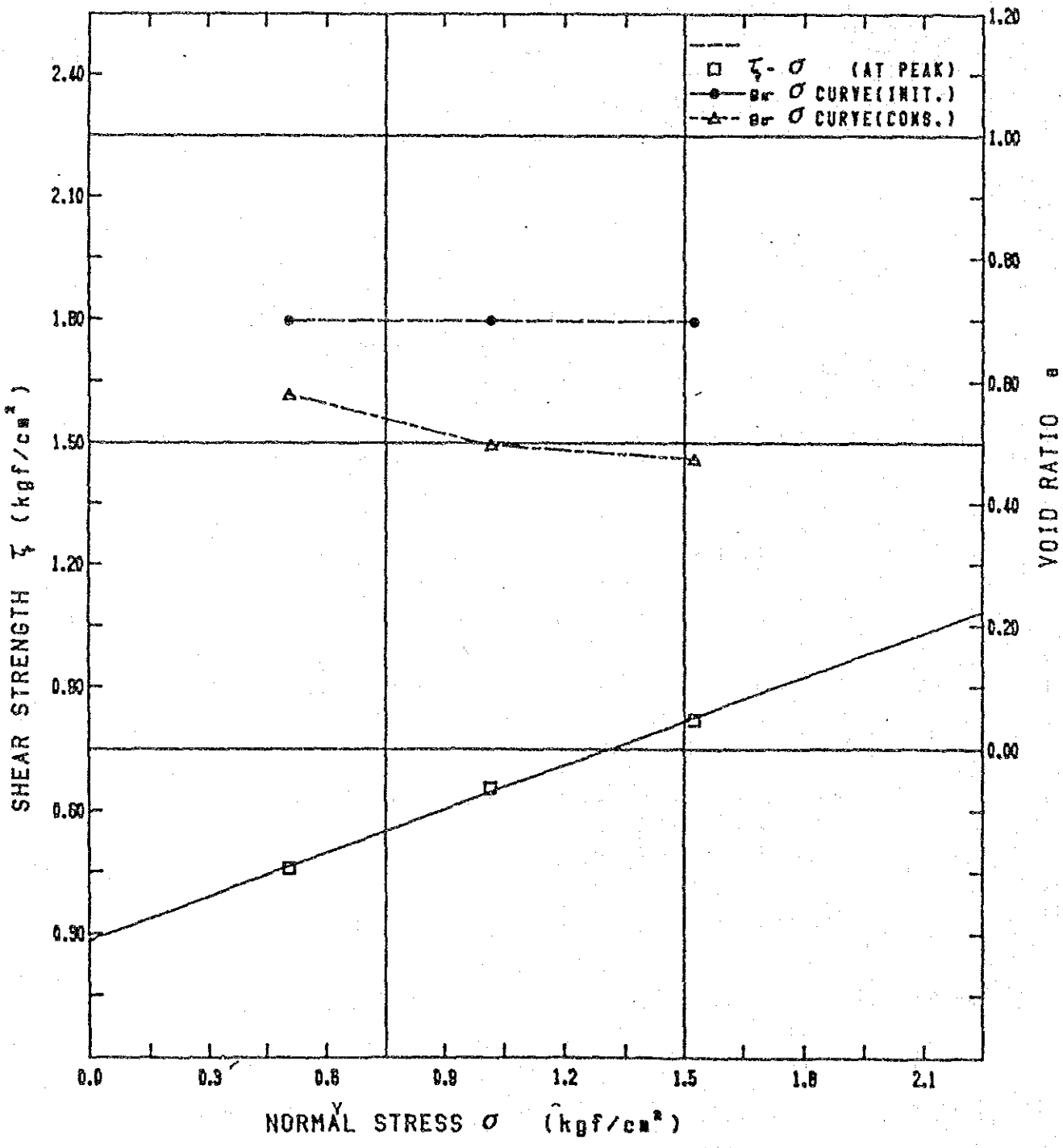
DIRECT SHEAR TEST (CU)	NORMAL STRESS — SHEAR STRENGTH VOID RATIO	FOR REPORTING

NAME OF SURVEY & LOCALITY/ LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO. AND DEPTH No. A ATP2 1.1m ~ 4.0m

STRENGTH PARAMETER		C(kgf/cm²)	ϕ DEGREE	tan ϕ	C'(kgf/cm²)	ϕ' DEGREE
SCOPE OF STRESS	NORMAL CONSOLIDATED REGION	0.28	19.61	0.356		
	OVER CONSOLIDATED REGION					



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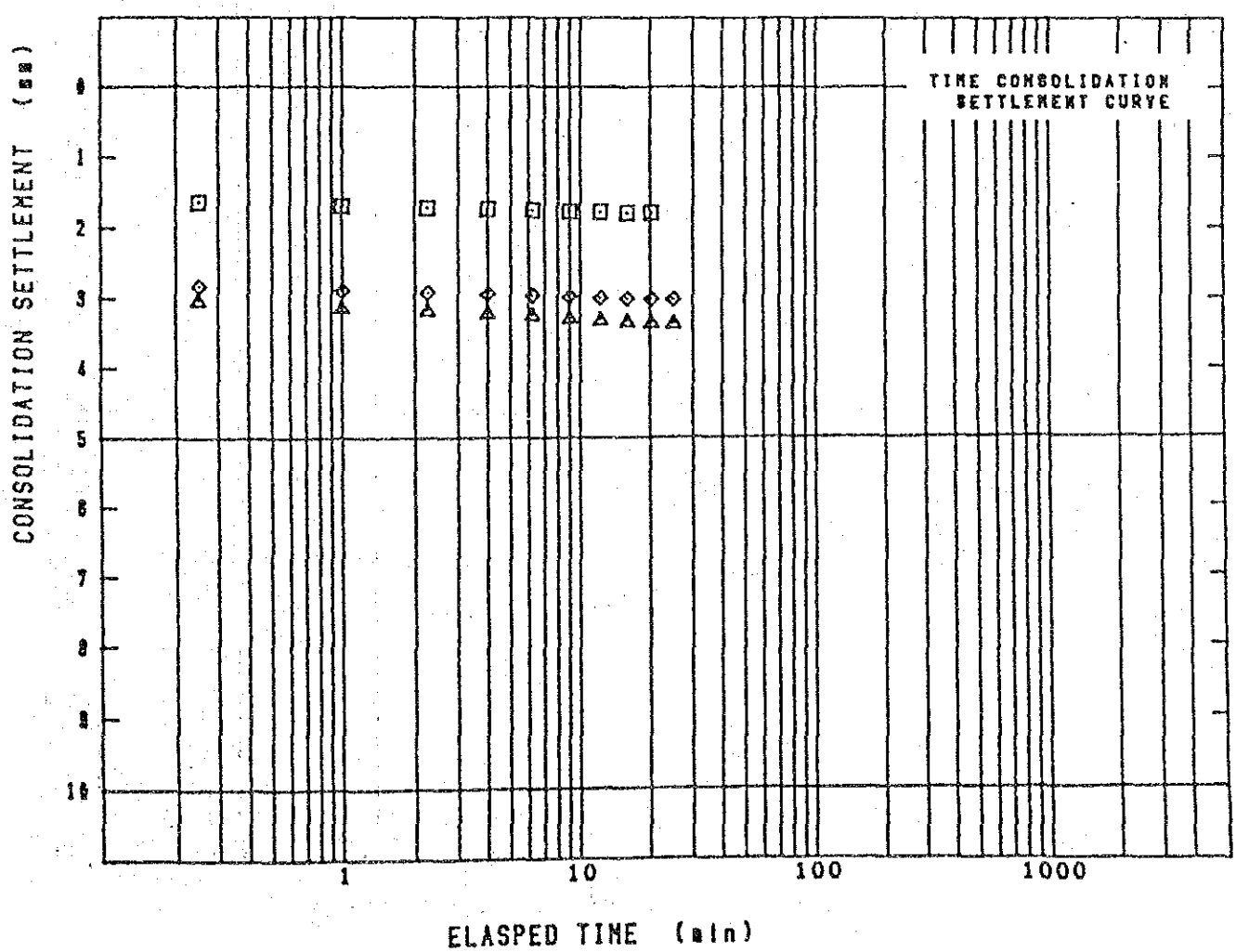
	DIRECT SHEAR TEST (CU)	INITIAL CONDITION	FOR REPORTING

NAME OF SURVEY & LOCALITY: LAM-DON-YAI

DATE 23-12-2534

SAMPLE NO. & DEPTH No. A ATP2 1.1m - 4.0m

	SPECIMEN NO.	No.1 ⊡	No.2 ◇	No.3 △	No.	No.
	VERTICAL LOAD $\bar{\sigma}_3$ kgf/cm²	0.51	1.02	1.53		
INITIAL CONDITION	HEIGHT h_0 cm	2.54	2.54	2.54		
	DRY WEIGHT W_d g	130.87	130.85	130.95		
	SUBSTANCE HEIGHT h_s cm	1.496	1.496	1.497		
	VOID RATIO e_0	0.698	0.698	0.697		
	WATER CONTENT W_0	21.3	21.2	21.3		
	DEGREE OF SATURATION S_{r0} %	84.7	84.4	84.8		
CONSOLIDATION PROCESS	CONSOLIDATION TIME t_0 min	20	25	25		
	POST CONSOLIDATION HEIGHT h_0 cm	2.381	2.298	2.204		
	POST CONSOLIDATION VOID RATIO e_0	0.578	0.486	0.473		



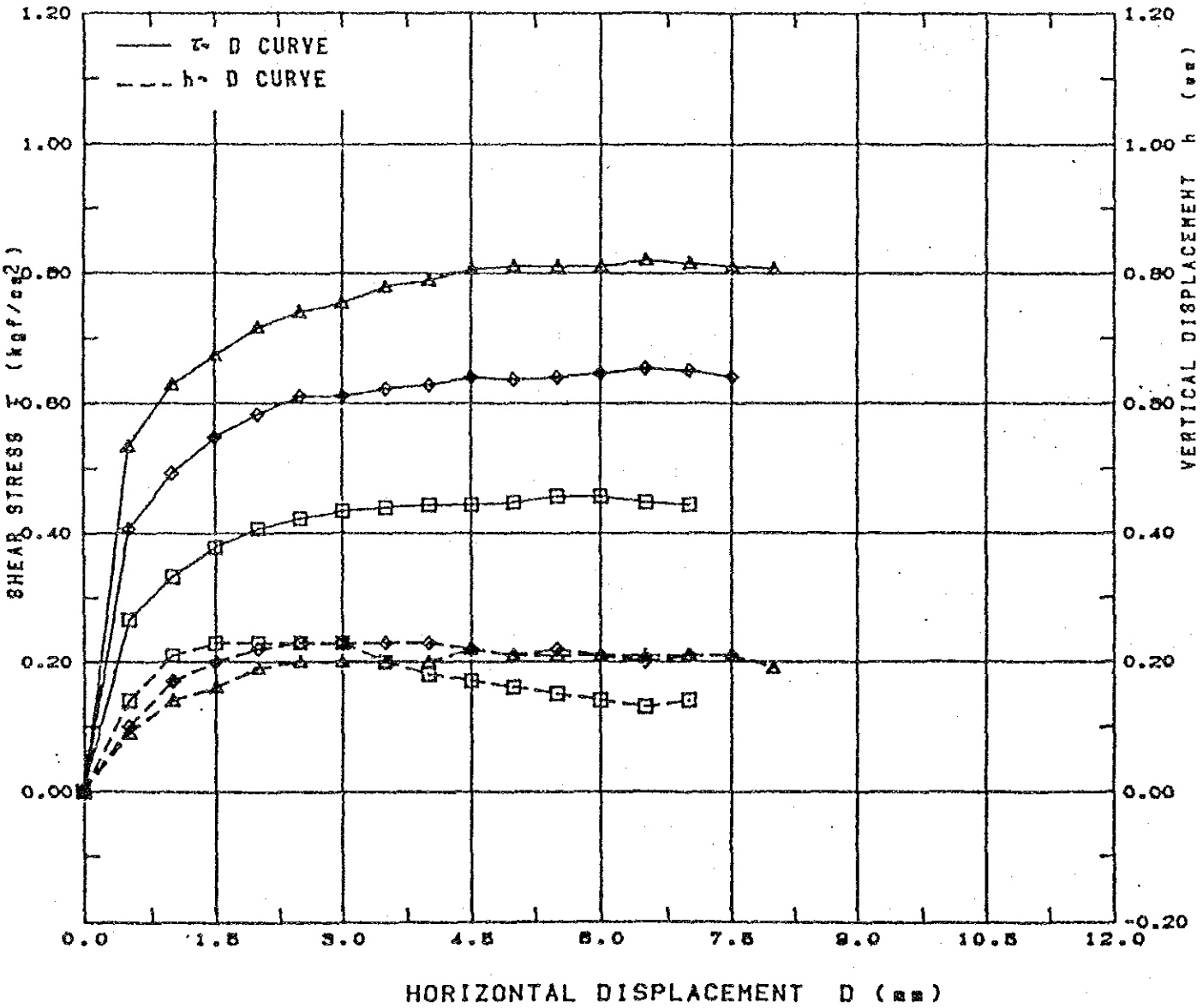
	DIRECT SHEAR TEST (CU)	(SHEAR PROCESS)	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO AND DEPTH No.A ATP2 1.1m~ 4.0m

SPECIMEN NO. / VERTICAL LOAD σ kgf/cm^2		No.1 □ 0.51	No.2 ◇ 1.02	No.3 △ 1.53	No.	No.
ROOM TEMPARETURE C		25.0	25.0	25.0		
AT PEAK	τ_f kgf/cm^2	0.458	0.654	0.821		
	σ_f	0.568	0.483	0.458		
	VERTICAL DISPLACEMENT h mm	0.15	0.20	0.21		
	HORIZONTAL DISPLACEMENT D mm	5.50	6.50	6.50		
	σ_v kgf/cm^2	———	———	———		



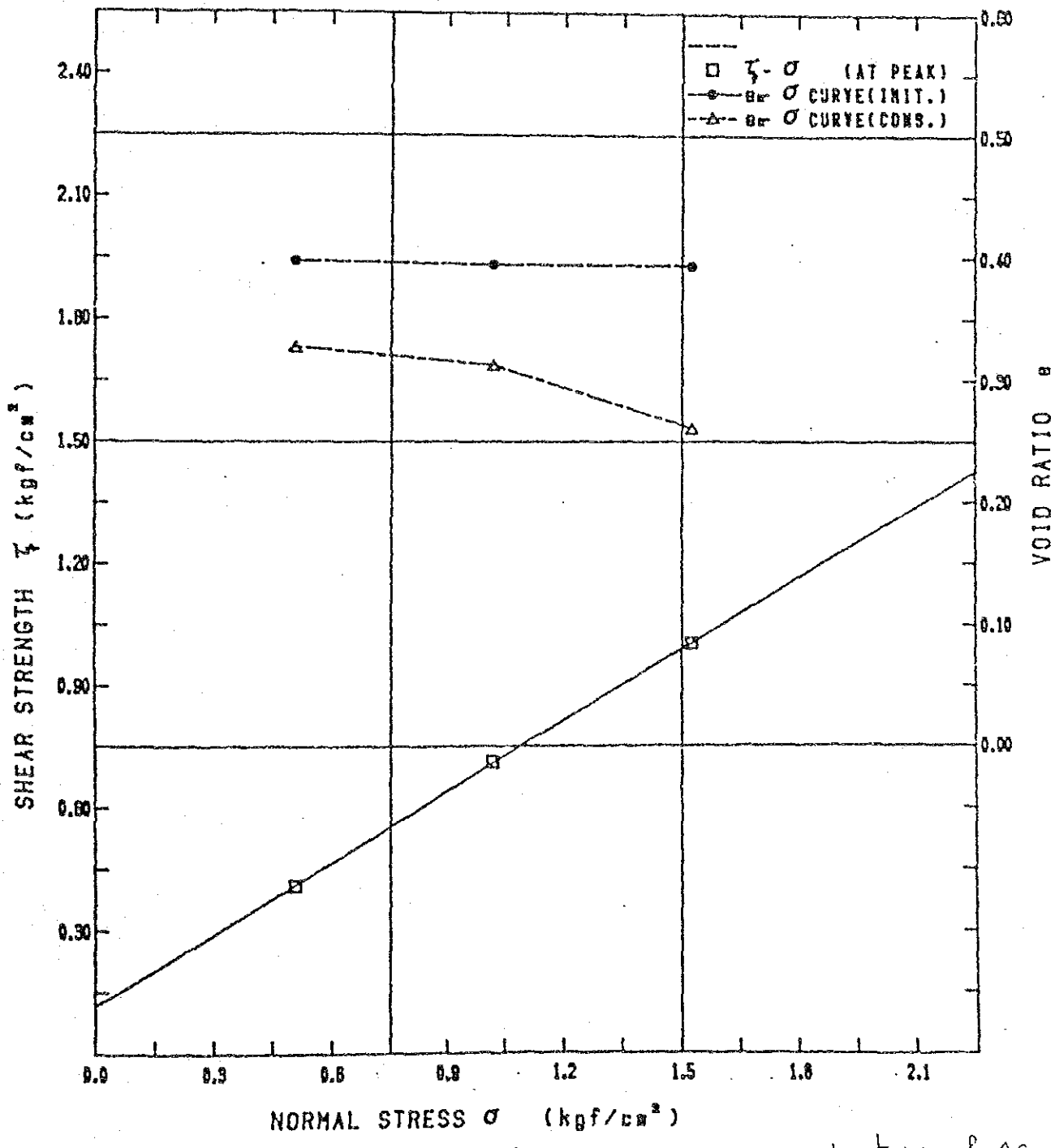
	DIRECT SHEAR TEST (CU)	NORMAL STRESS __ SHEAR STRENGTH VOID RATIO	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO. AND DEPTH No.C CTP2 2.6m ~ 4.0m

STRENGTH PARAMETER		C (kgf/cm²)	ϕ DEGREE	tan ϕ	C (kgf/cm²)	ϕ' DEGREE
SCOPE OF STRESS	NORMAL CONSOLIDATED REGION	0.12	30.18	0.582		
	OVER CONSOLIDATED REGION					



	DIRECT SHEAR TEST	(CU)	INITIAL CONDITION	FOR REPORTING

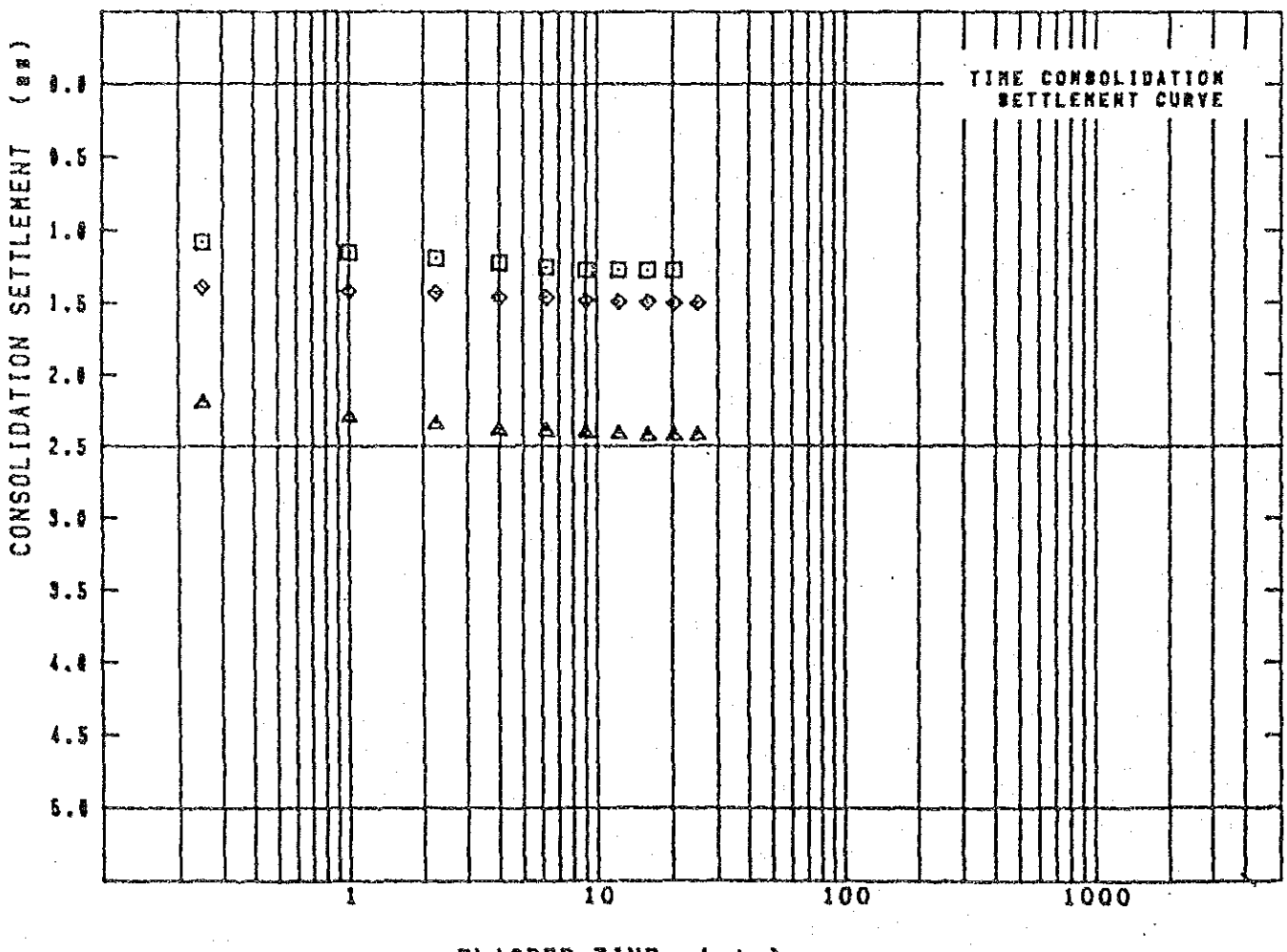
NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE 29-12-2534

SAMPLE NO. & DEPTH No. C C TP2 2.6m - 4.0m

E

	SPECIMEN NO.	No.1 ⊡	No.2 ◇	No.3 △	No.	No.
	VERTICAL LOAD $\bar{\sigma}_3$ kgf/cm²	0.51	1.02	1.53		
INITIAL CONDITION	HEIGHT h_o cm	2.54	2.54	2.54		
	DRY WEIGHT W_d g	151.61	151.99	152.00		
	SUBSTANCE HEIGHT h_s cm	1.818	1.822	1.823		
	VOID RATIO e_o	0.397	0.394	0.394		
	WATER CONTENT W_o	19.8	19.5	19.8	7 7	
	DEGREE OF SATURATION S_{ro} %	80.8	81.0	81.2		
CONSOLIDATION PROCESS	CONSOLIDATION TIME t_o min	20	25	25		
	POST CONSOLIDATION HEIGHT h_o cm	2.413	2.390	2.288		
	POST CONSOLIDATION VIOD RATIO e_o	0.927	0.912	0.281		



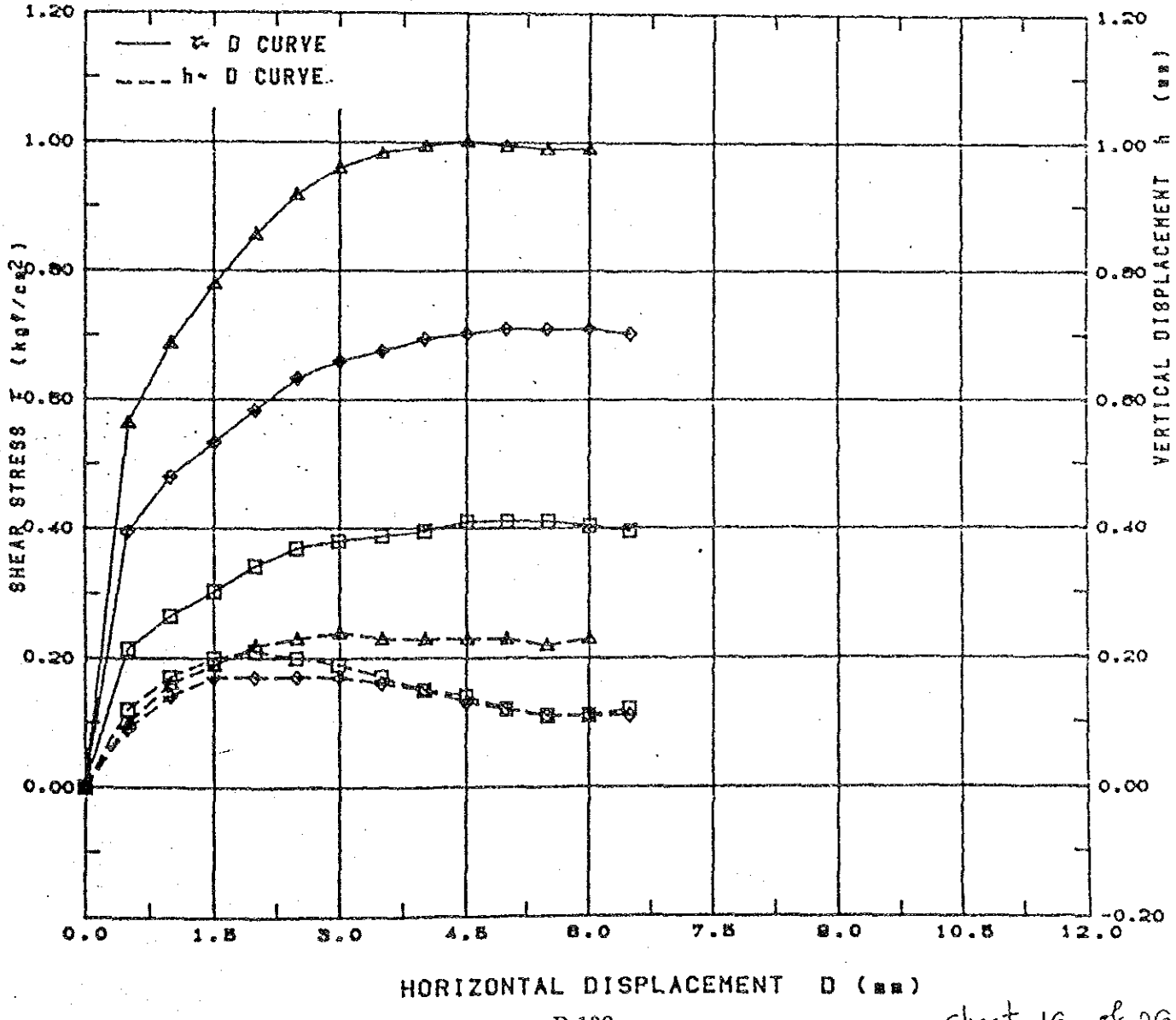
	DIRECT SHEAR TEST (CU) (SHEAR PROCESS)	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO AND DEPTH No C CTP2 2.6m ~ 4.0m

SPECIMEN NO. / VERTICAL LOAD σ kgf/cm^2		No.1 □ 0.51	No.2 ◇ 1.02	No.3 △ 1.53	No.	No.
ROOM TEMPARETURE C		25.0	25.0	25.0		
AT PEAK	τ_f kgf/cm^2	0.411	0.710	1.002		
	σ_f	0.328	0.306	0.249		
	VERTICAL DISPLACEMENT h mm	0.14	0.12	0.23		
	HORIZONTAL DISPLACEMENT D mm	4.50	4.99	4.51		
	σ_v kgf/cm^2	———	———	———		



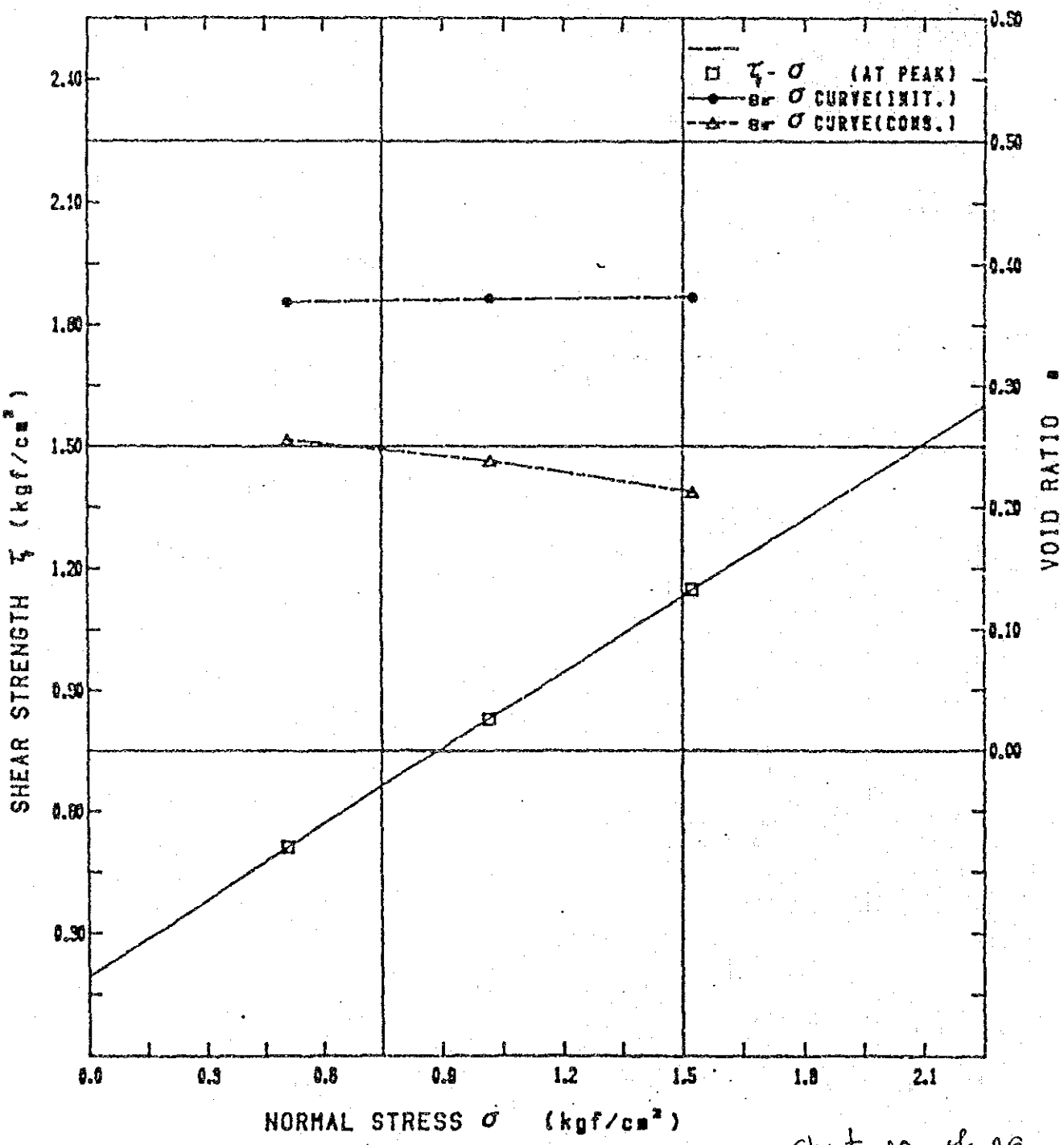
	DIRECT SHEAR TEST (CU)	NORMAL STRESS — SHEAR STRENGTH VOID RATIO	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO. AND DEPTH NO. C CTP4 1.2m ~ 4.0m

STRENGTH PARAMETER		C(kgf/cm²)	ϕ DEGREE	tan ϕ	C'(kgf/cm²)	ϕ' DEGREE
SCOPE OF STRESS	NORMAL CONSOLIDATED REGION	0.19	32.04	0.626		
	OVER CONSOLIDATED REGION					



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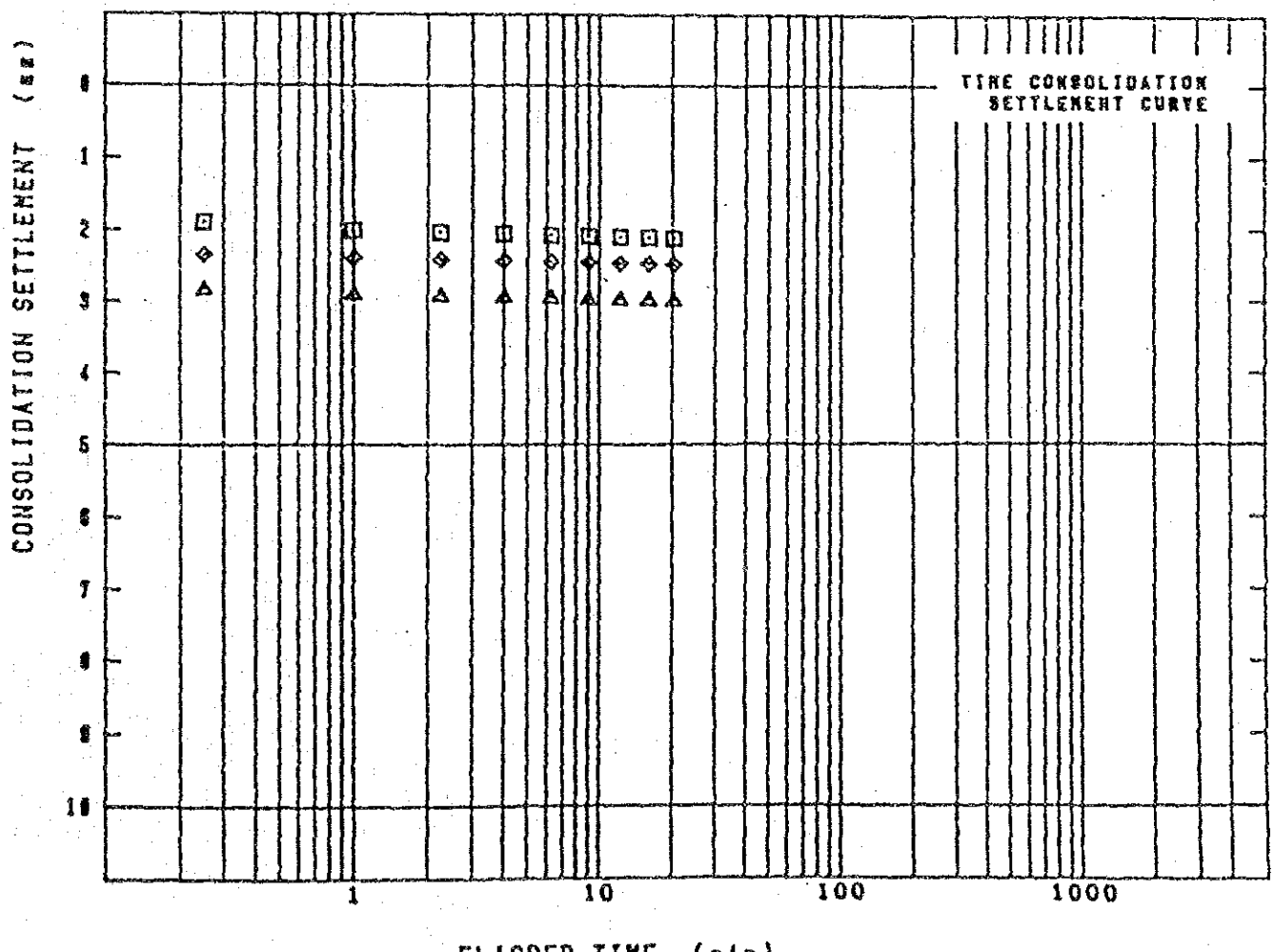
	DIRECT SHEAR TEST (CU)	INITIAL CONDITION	FOR REPORTING

NAME OF SURVEY & LOCALITY: LAM-DOM-YAI

DATE 29-12-2534

SAMPLE NO. & DEPTH No.C CTP4 1.2m - 4.0m

	SPECIMEN NO.	No.1 ⊡	No.2 ◇	No.3 △	No.	No.
	VERTICAL LOAD σ kgf/cm²	0.51	1.02	1.53		
INITIAL CONDITION	HEIGHT ho cm	2.54	2.54	2.54		
	DRY WEIGHT Wd g	152.98	152.07	151.92		
	SUBSTANCE HEIGHT hs cm	1.855	1.851	1.850		
	VOID RATIO eo	0.969	0.972	0.979		
	WATER CONTENT Wo	12.4	12.8	12.7		
	DEGREE OF SATURATION Sro %	87.8	88.3	88.7		
CONSOLIDATION PROCESS	CONSOLIDATION TIME to min	20	20	20		
	POST CONSOLIDATION HEIGHT hc cm	2.929	2.292	2.242		
	POST CONSOLIDATION VOID RATIO ec	0.255	0.298	0.212		



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	DIRECT SHEAR TEST (CU) (SHEAR PROCESS)	FOR REPORTING

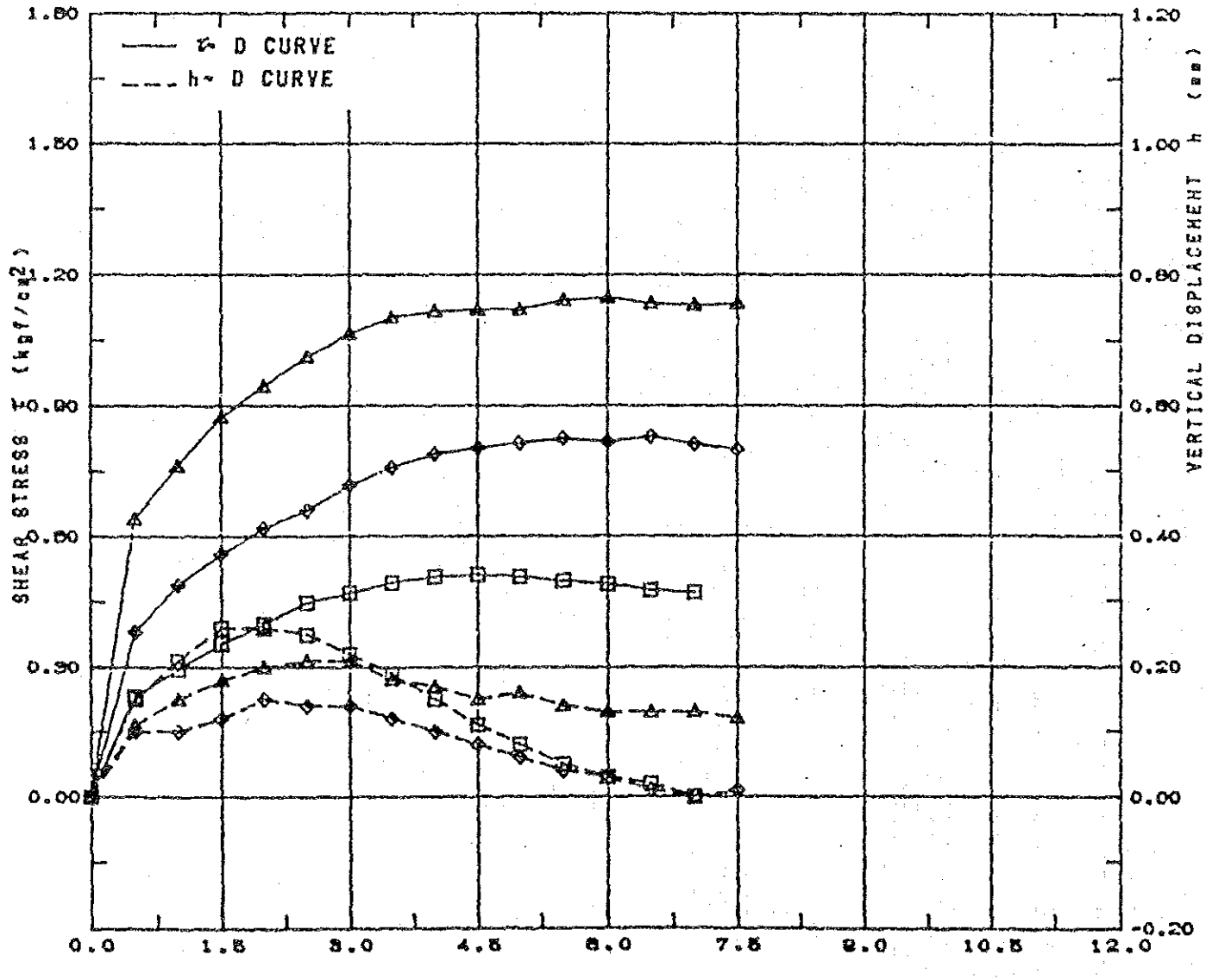
NAME OF SURVEY & LOCALITY: LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO AND DEPTH: No. C CTP4 1.2m ~ 4.0m

SPECIMEN NO. / VERTICAL LOAD σ kgf/cm^2		No.1 □ 0.51	No.2 ◇ 1.02	No.3 △ 1.53	No.	No.
ROOM TEMPARETURE C		25.0	25.0	25.0		
AT PEAK	τ_f kgf/cm^2	0.511	0.829	1.148		
	α_f	0.249	0.237	0.205		
	VERTICAL DISPLACEMENT h mm	0.11	0.01	0.13		
	HORIZONTAL DISPLACEMENT D mm	4.50	6.50	6.00		
	α_r kgf/cm^2	———	———	———		

S



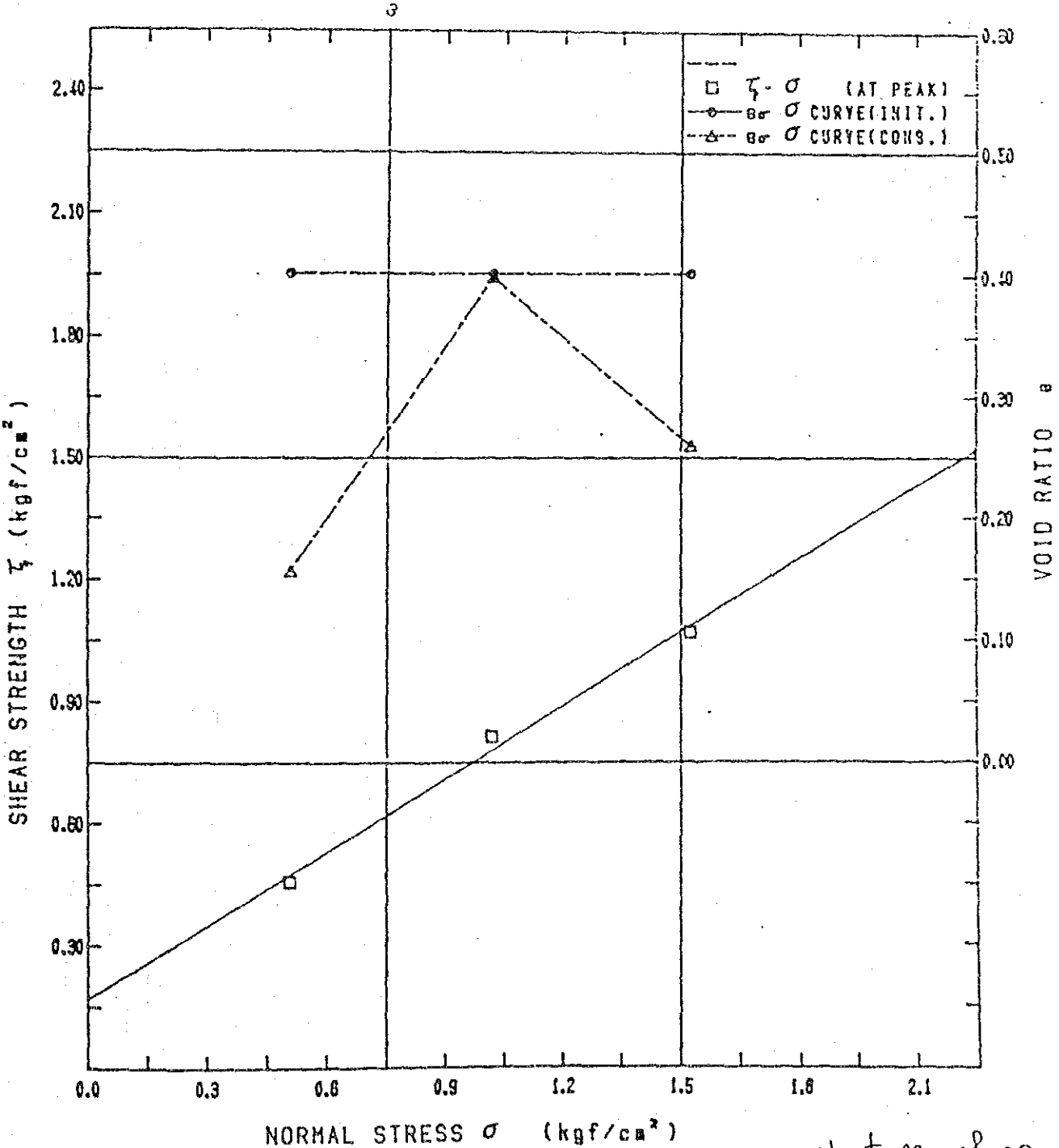
	DIRECT SHEAR TEST (CU)	NORMAL STRESS — SHEAR STRENGTH / VOID RATIO	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO. AND DEPTH No. C CTP6 1.1m ~ 2.9m

STRENGTH PARAMETER		C (kgf/cm²)	φ DEGREE	tan φ	C (kgf/cm²)	φ' DEGREE
SCOPE OF STRESS	NORMAL CONSOLIDATED REGION	0.17	30.98	0.600		
	OVER CONSOLIDATED REGION					



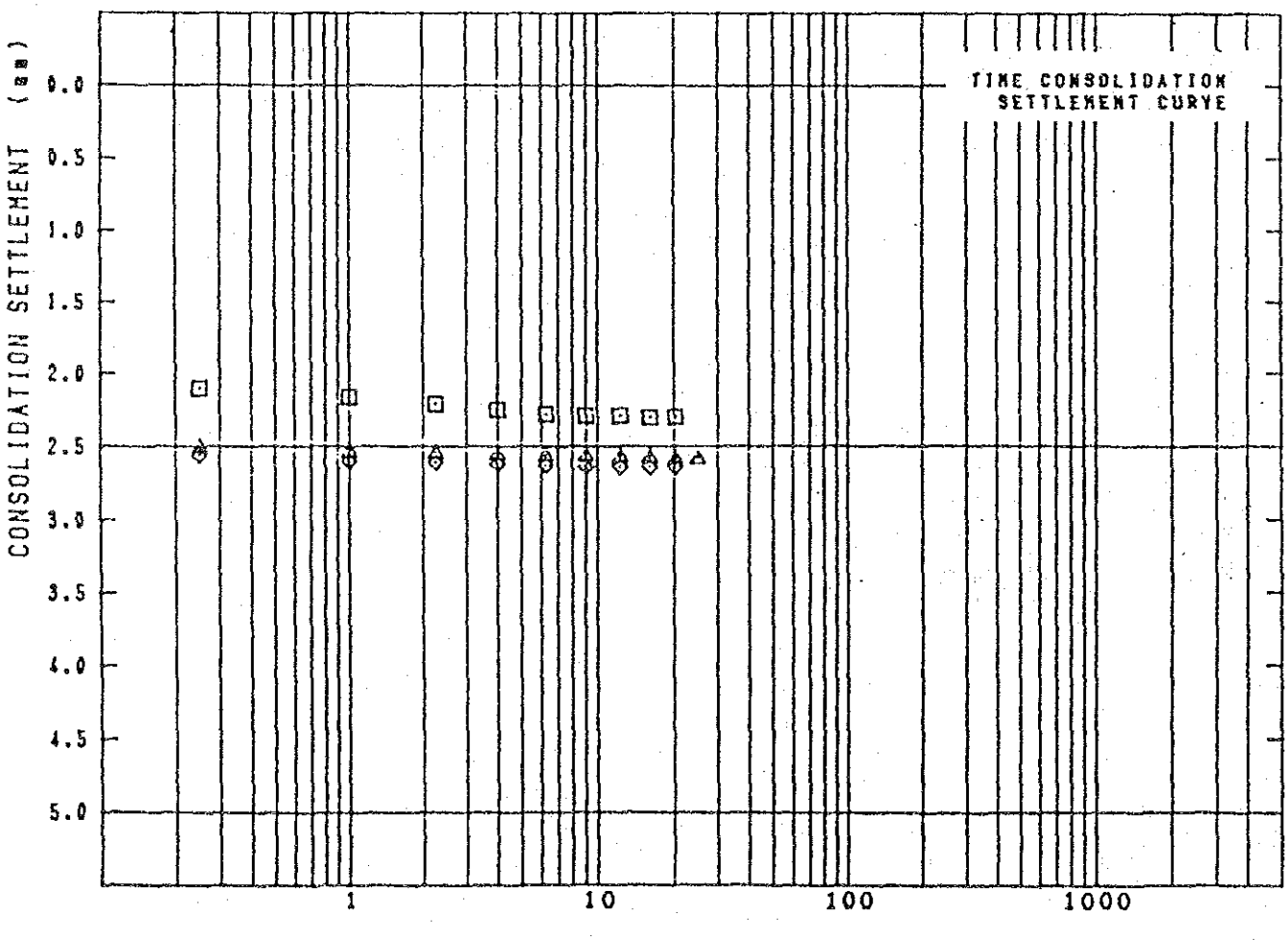
	DIRECT SHEAR TEST (CU)	INITIAL CONDITION	FOR REPORTING

NAME OF SURVEY & LOCALITY: LAM-DOM-YAI

DATE : 23-12-2534

SAMPLE NO. & DEPTH: No.CCTP6 1.1m - 2.9m

	SPECIMEN NO.	No.1 ⊡	No.2 ◇	No.3 △	No.	No.
	VERTICAL LOAD $\bar{\sigma}_c$ kgf/cm²	0.51	1.02	1.53		
INITIAL CONDITION	HEIGHT h_o cm	2.54	2.54	2.54		
	DRY WEIGHT W_d g	150.00	150.00	149.91		
	SUBSTANCE HEIGHT h_s cm	1.812	1.812	1.811		
	VOID RATIO e_o	0.402	0.402	0.402		
	WATER CONTENT W_o	12.7	12.9	12.8		
	DEGREE OF SATURATION S_{ro} %	83.0	84.3	83.7		
CONSOLIDATION PROCESS	CONSOLIDATION TIME t_c min	20	20	25		
	POST CONSOLIDATION HEIGHT h_c cm	2.310	2.276	2.282		
	POST CONSOLIDATION VIOD RATIO e_c	0.275	0.256	0.260		



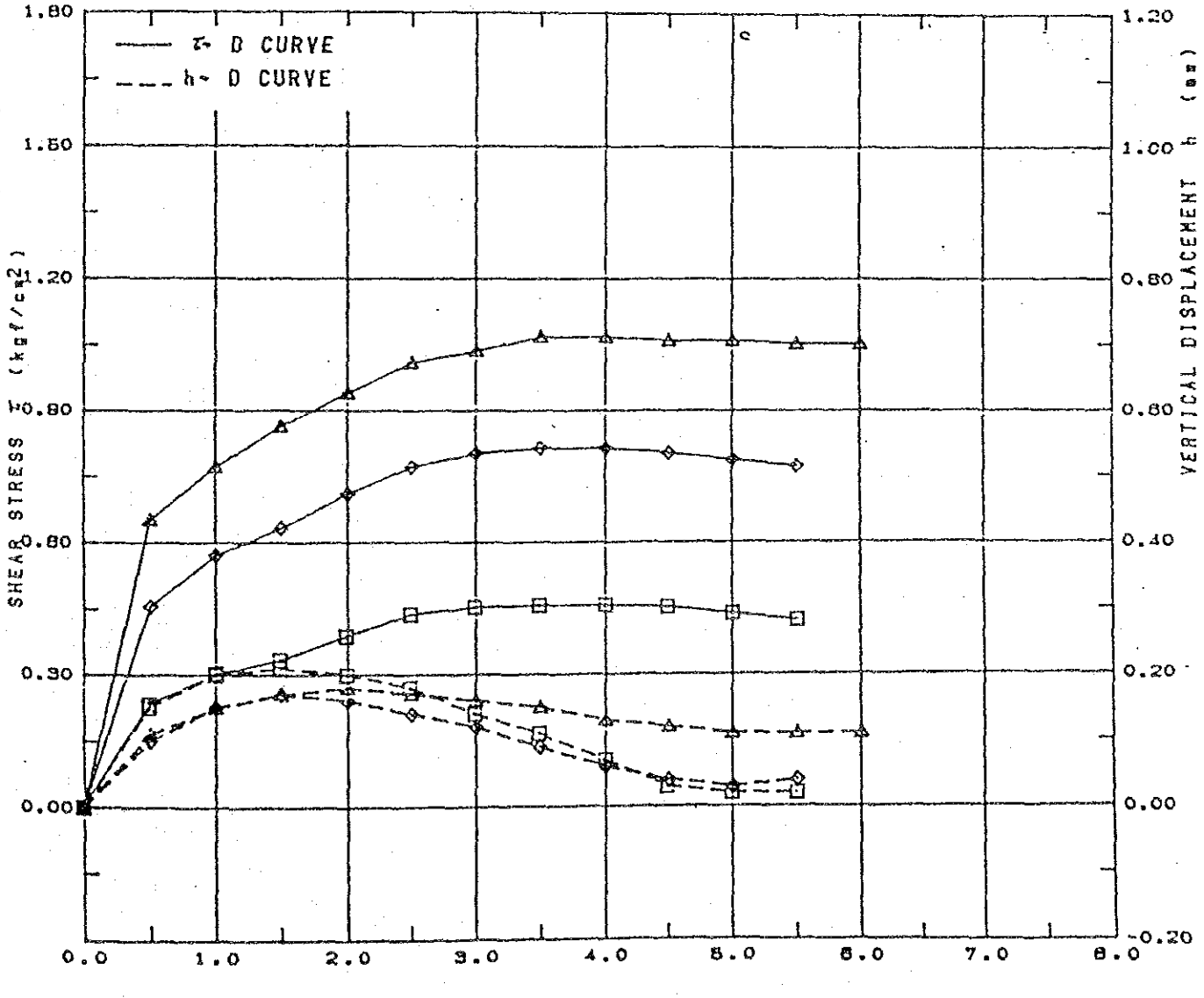
	DIRECT SHEAR TEST (CU)	(SHEAR PROCESS)	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO AND DEPTH No C CTP6 1.1m~ 2.9m

SPECIMEN NO. / VERTICAL LOAD σ kgf/cm^2		No.1 □ 0.51	No.2 ◇ 1.02	No.3 △ 1.53	No.	No.
ROOM TEMPARETURE C		25.0	25.0	25.0		
AT PEAK	τ_f kgf/cm^2	0.457	0.914	1.068		
	ε_f	0.150	0.394	0.252		
	VERTICAL DISPLACEMENT h mm	0.11	0.09	0.15		
	HORIZONTAL DISPLACEMENT D mm	3.49	3.50	3.50		
	σ_y kgf/cm^2	———	———	———		



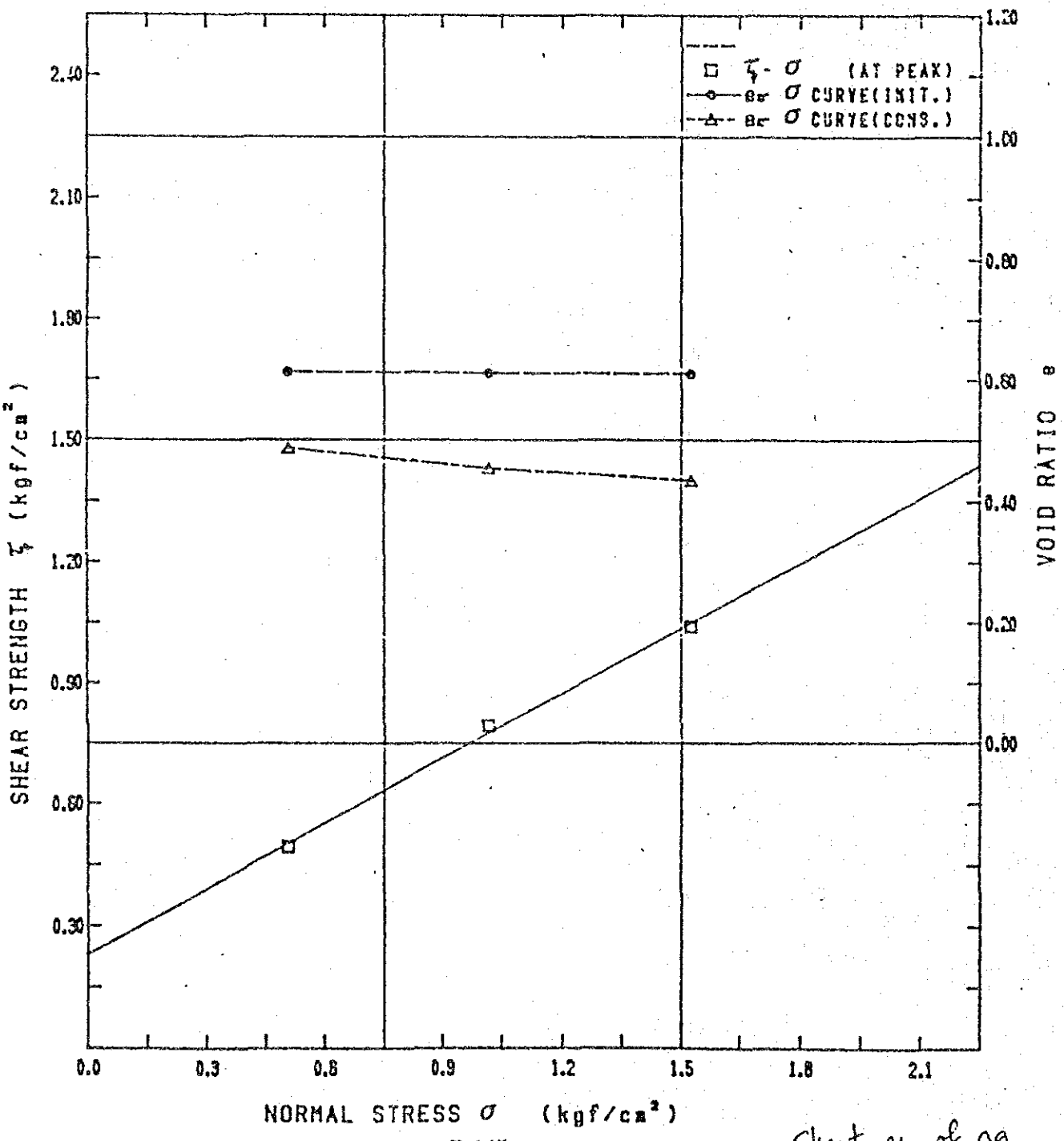
	DIRECT SHEAR TEST (CU)	NORMAL STRESS — SHEAR STRENGTH / VOID RATIO	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO. AND DEPTH No.D DTP1 1.5m ~ 4.0m

STRENGTH PARAMETER		C(kgf/cm²)	ϕ DEGREE	tan ϕ	C'(kgf/cm²)	ϕ' DEGREE
SCOPE OF STRESS	NORMAL CONSOLIDATED REGION	0.23	28.25	0.537		
	OVER CONSOLIDATED REGION					



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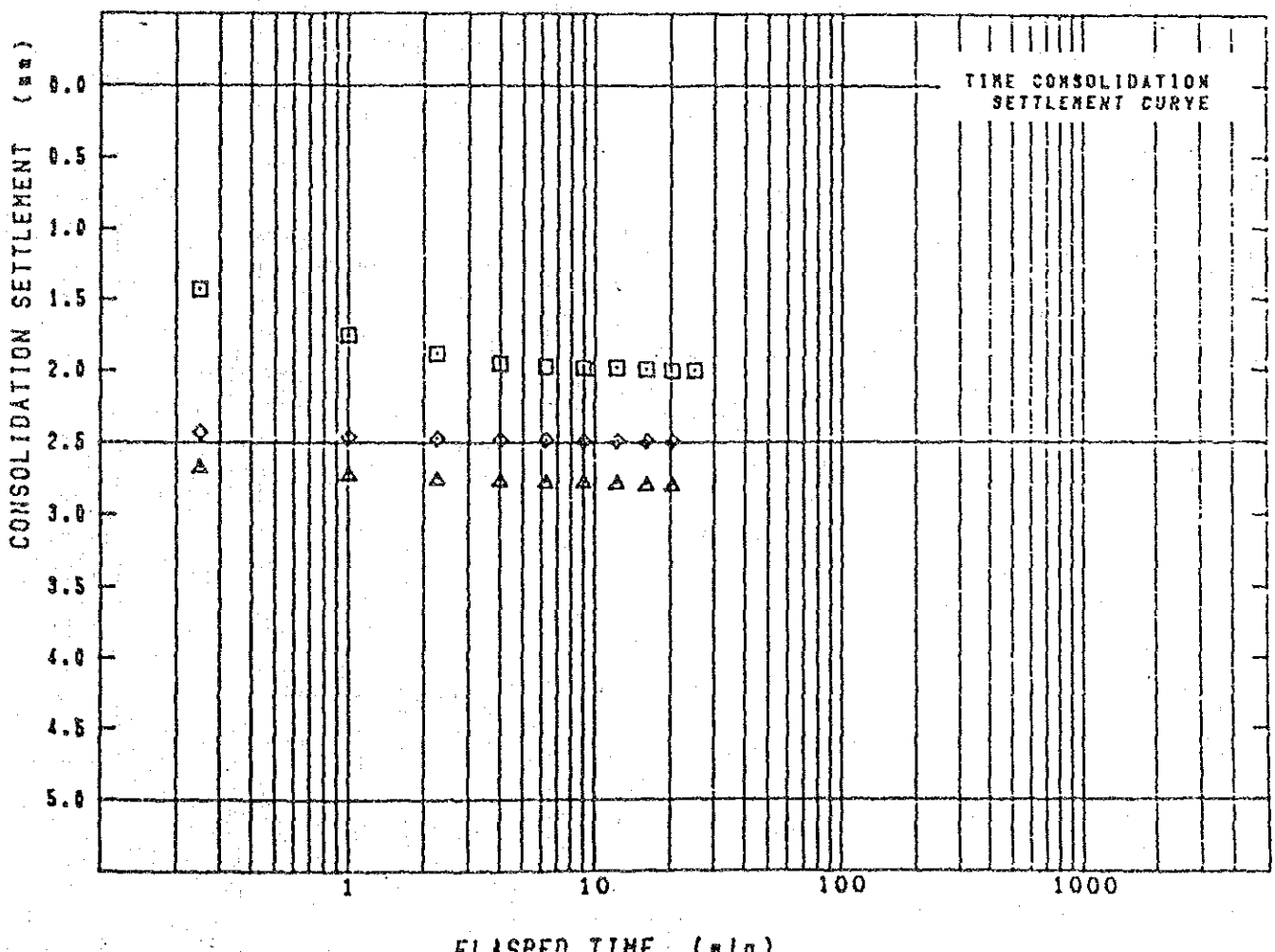
	DIRECT SHEAR TEST	(CU)	INITIAL CONDITION	FOR REPORTING

NAME OF SURVEY & LOCALITY: LAM-DOH-YAI

DATE 23-12-2534

SAMPLE NO. & DEPTH No.D DTP1 1.5m ~ 4.0m

SPECIMEN NO.		No.1 □	No.2 ◇	No.3 △	No.	No.
VERTICAL LOAD σ_c kgf/cm²		0.51	1.02	1.53		
INITIAL CONDITION	HEIGHT h_o cm	2.54	2.54	2.54		
	DRY WEIGHT W_d g	138.76	136.84	138.99		
	SUBSTANCE HEIGHT h_s cm	1.574	1.577	1.577		
	VOID RATIO e_o	0.613	0.611	0.610		
	WATER CONTENT W_o	18.2	18.2	18.1		
	DEGREE OF SATURATION S_{ro} %	82.1	82.3	81.9		
CONSOLIDATION PROCESS	CONSOLIDATION TIME t_c min	25	20	20		
	POST CONSOLIDATION HEIGHT h_c cm	2.340	2.291	2.281		
	POST CONSOLIDATION VOID RATIO e_c	0.486	0.453	0.434		



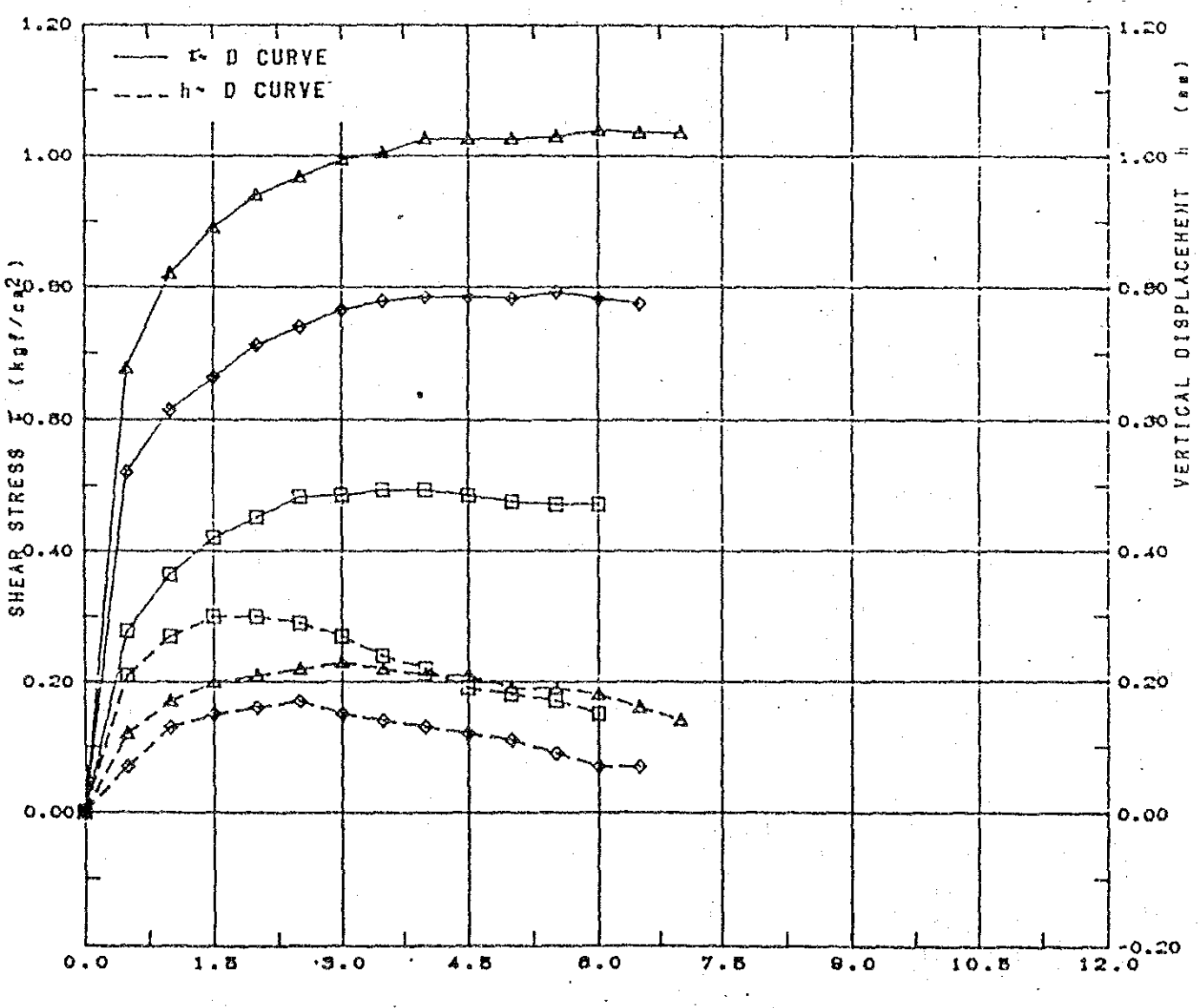
	DIRECT SHEAR TEST (CU) (SHEAR PROCESS)	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DCM-YAI

DATE: 23-12-2534

SAMPLE NO AND DEPTH No.D DT P1 1.5m ~ 4.0m

SPECIMEN NO. / VERTICAL LOAD σ kgf/cm²		No.1 □ 0.51	No.2 ◇ 1.02	No.3 △ 1.53	No.	No.
ROOM TEMPARETURE C		25.0	25.0	25.0		
AT PEAK	τ_f kgf/cm²	0.494	0.793	1.040		
	σ_f	0.471	0.447	0.422		
	VERTICAL DISPLACEMENT h mm	0.24	0.08	0.18		
	HORIZONTAL DISPLACEMENT D mm	3.50	5.50	6.00		
	σ_f kgf/cm²	———	———	———		



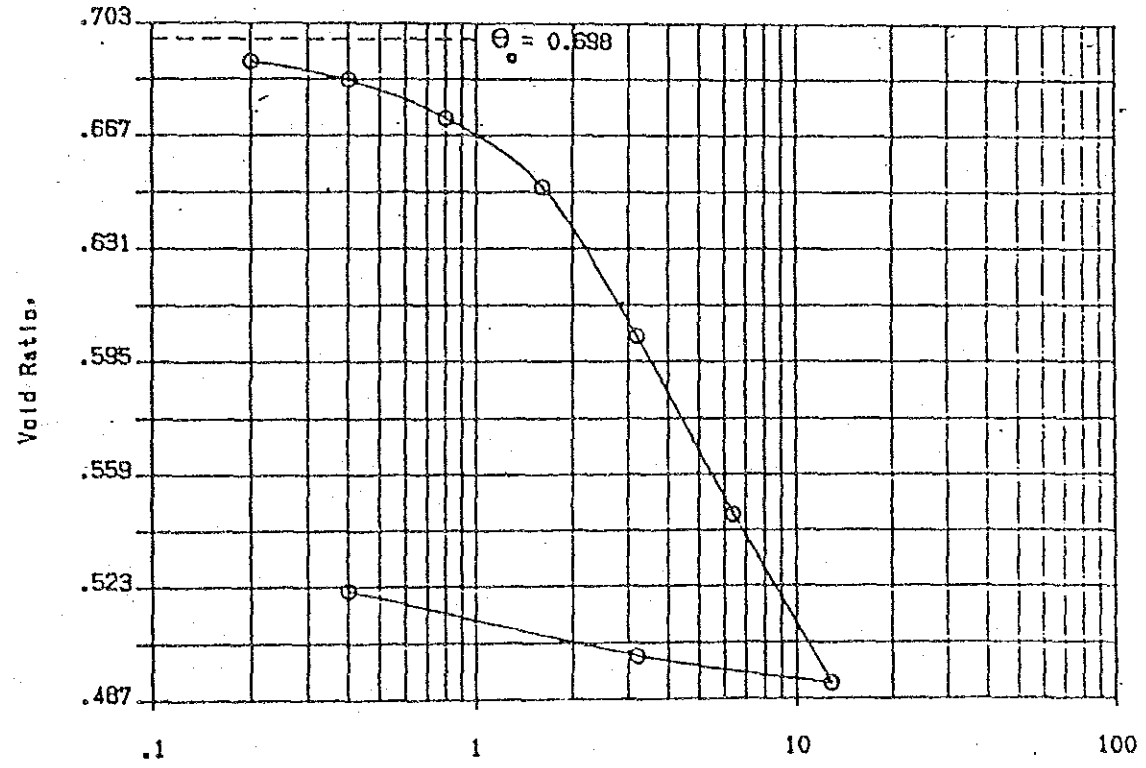
ROYAL IRRIGATION DEPARTMENT

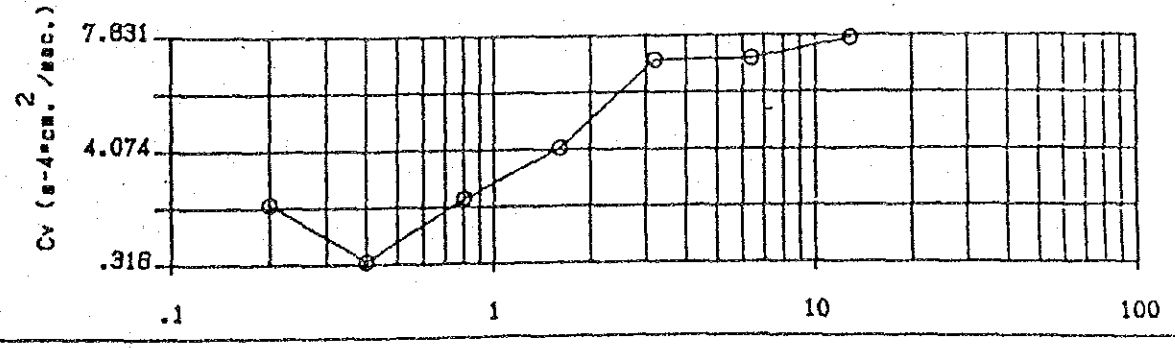
RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

CONSOLIDATION TEST

PROJECT	LAM-DOM-YAI...A ATP2(1.10-4.00)	MEMO	20/2535
HEIGHT(initial)	2.00 cm.	HEIGHT(final)	1.73 cm.
MOISTURE CONTENT(initial)	21.20 %	MOISTURE CONTENT(final)	18.30 %
DRY DENSITY(initial)	1.637 gm./cc.	DRY DENSITY(final)	1.826 gm./cc.
VOID RATIO(initial)	.698	VOID RATIO(final)	.522
DEGREE OF SATURATION(initial)	84.44 %	DEGREE OF SATURATION(final)	97.39 %





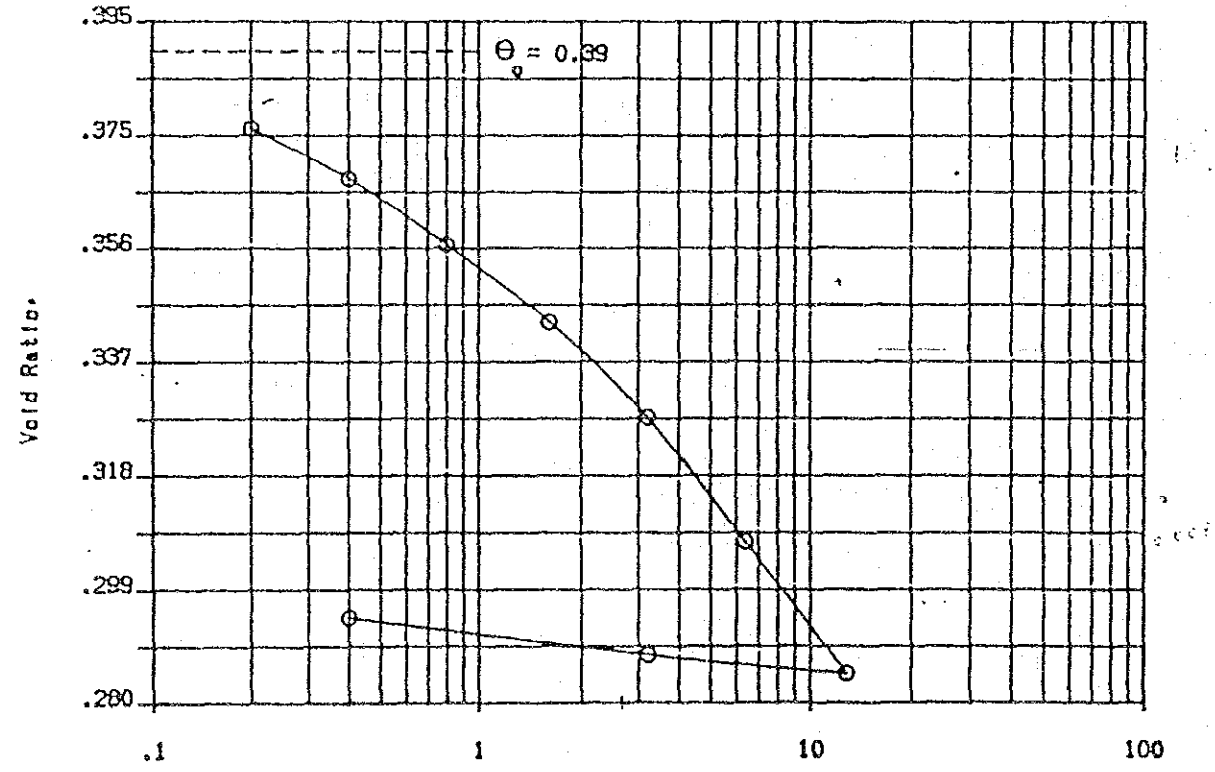
ROYAL IRRIGATION DEPARTMENT

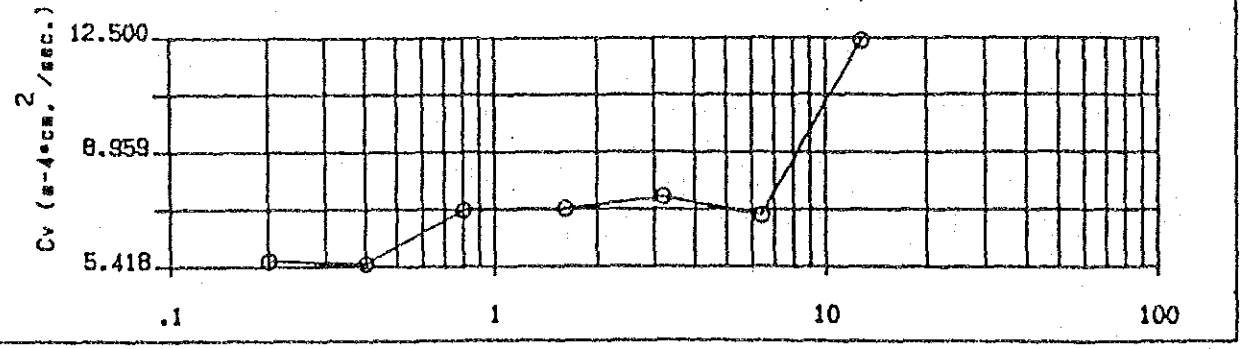
RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

CONSOLIDATION TEST

PROJECT	LAM-DON-YAI...CCTP2(2.60-4.00)	MEMO	20/2535
HEIGHT(initial)	2.00 cm.	HEIGHT(final)	1.85 cm.
MOISTURE CONTENT(initial)	13.20 %	MOISTURE CONTENT(final)	10.56 %
DRY DENSITY(initial)	1.907 gm./cc.	DRY DENSITY(final)	2.048 gm./cc.
VOID RATIO(initial)	.39	VOID RATIO(final)	.294
DEGREE OF SATURATION(initial)	89.69 %	DEGREE OF SATURATION(final)	95.2 %





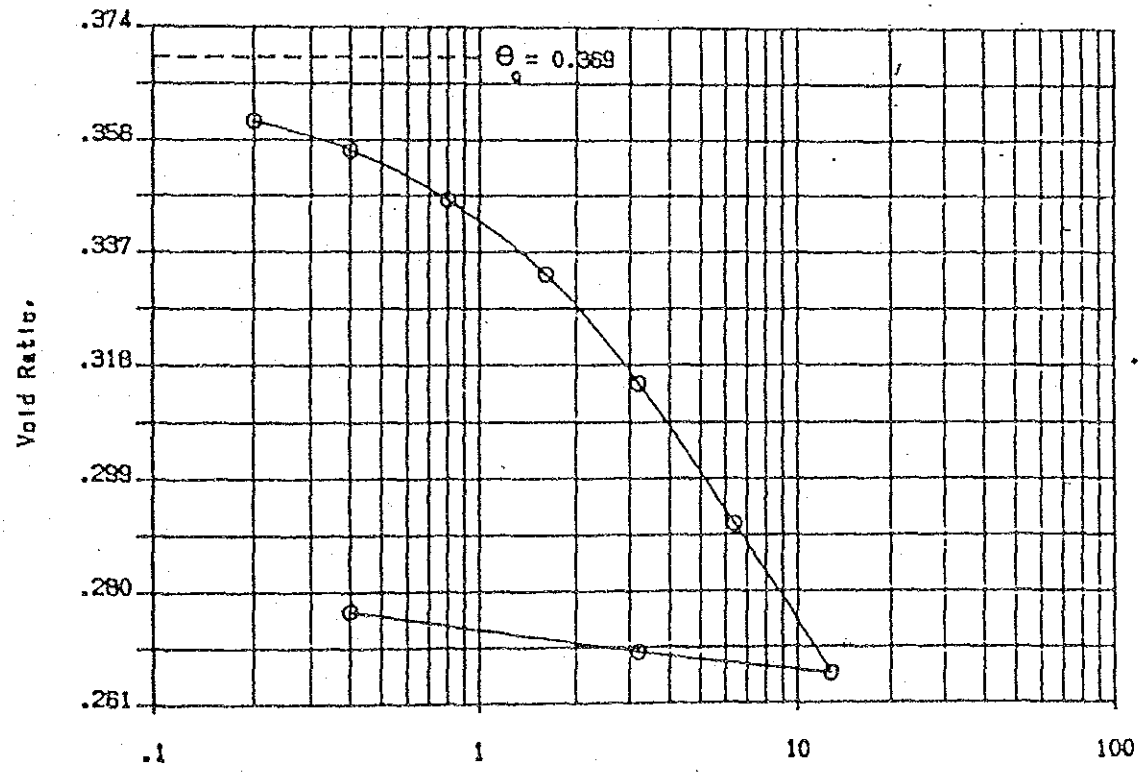
ROYAL IRRIGATION DEPARTMENT

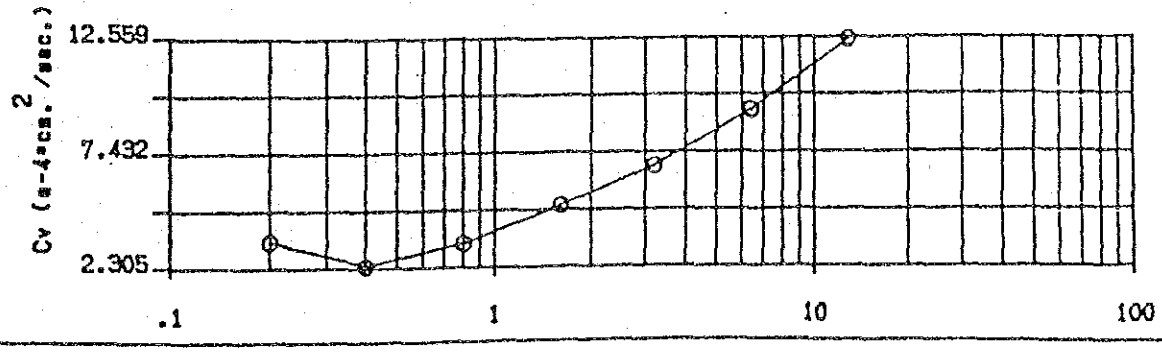
RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

CONSOLIDATION TEST

PROJECT	LAM-DOM-YAI...C CTP4(1.20-4.00)	MEMO	20/2535
HEIGHT(initial)	2.00 cm.	HEIGHT(final)	1.87 cm.
MOISTURE CONTENT(initial)	12.36 %	MOISTURE CONTENT(final)	10.90 %
DRY DENSITY(initial)	1.906 gm./cc.	DRY DENSITY(final)	2.044 gm./cc.
VOID RATIO(initial)	.369	VOID RATIO(final)	.277
DEGREE OF SATURATION(initial)	87.42 %	DEGREE OF SATURATION(final)	100 %





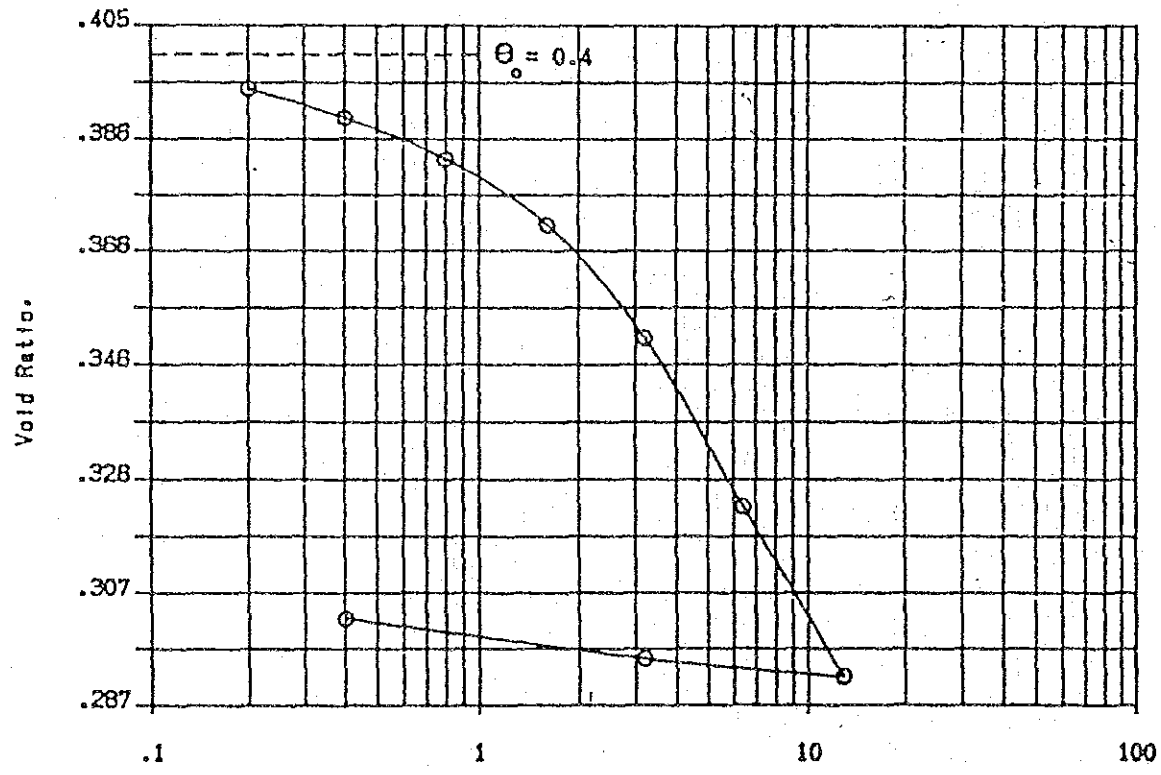
ROYAL IRRIGATION DEPARTMENT

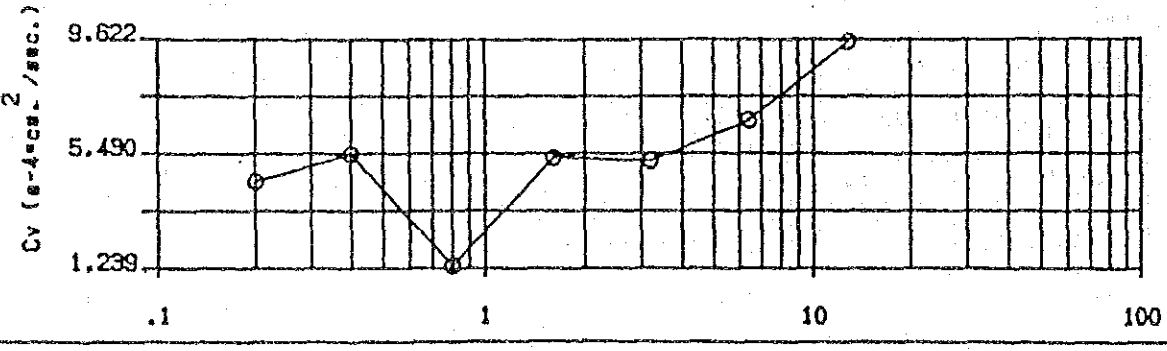
RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

CONSOLIDATION TEST

PROJECT	LAM-DOM-YAI..C CTP6(1.10-2.90)	MEMO	20/2535
HEIGHT(initial)	2.00 cm.	HEIGHT(final)	1.86 cm.
MOISTURE CONTENT(initial)	12.56 %	MOISTURE CONTENT(final)	11.51 %
DRY DENSITY(initial)	1.878 gm./cc.	DRY DENSITY(final)	2.02 gm./cc.
VOID RATIO(initial)	.401	VOID RATIO(final)	.302
DEGREE OF SATURATION(initial)	82.39 %	DEGREE OF SATURATION(final)	100 %





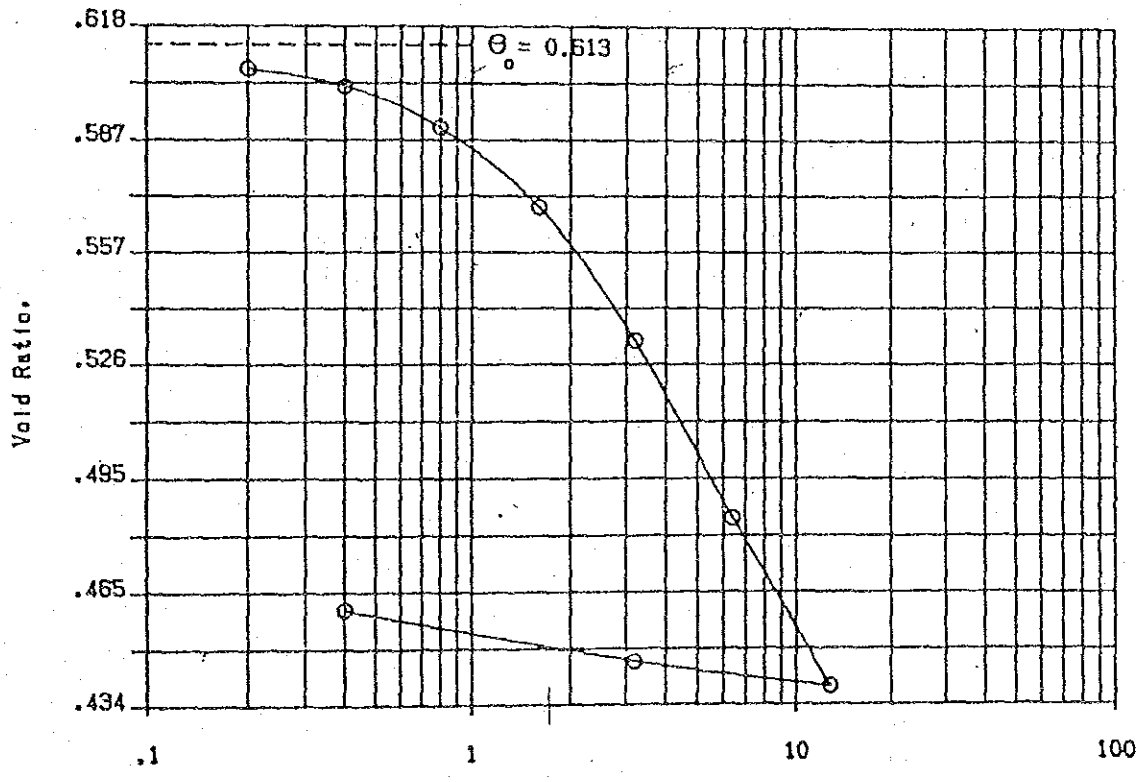
ROYAL IRRIGATION DEPARTMENT

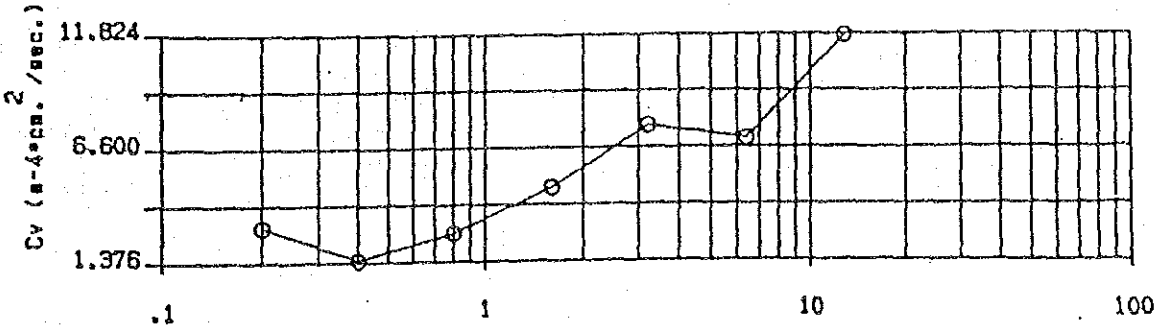
RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

CONSOLIDATION TEST

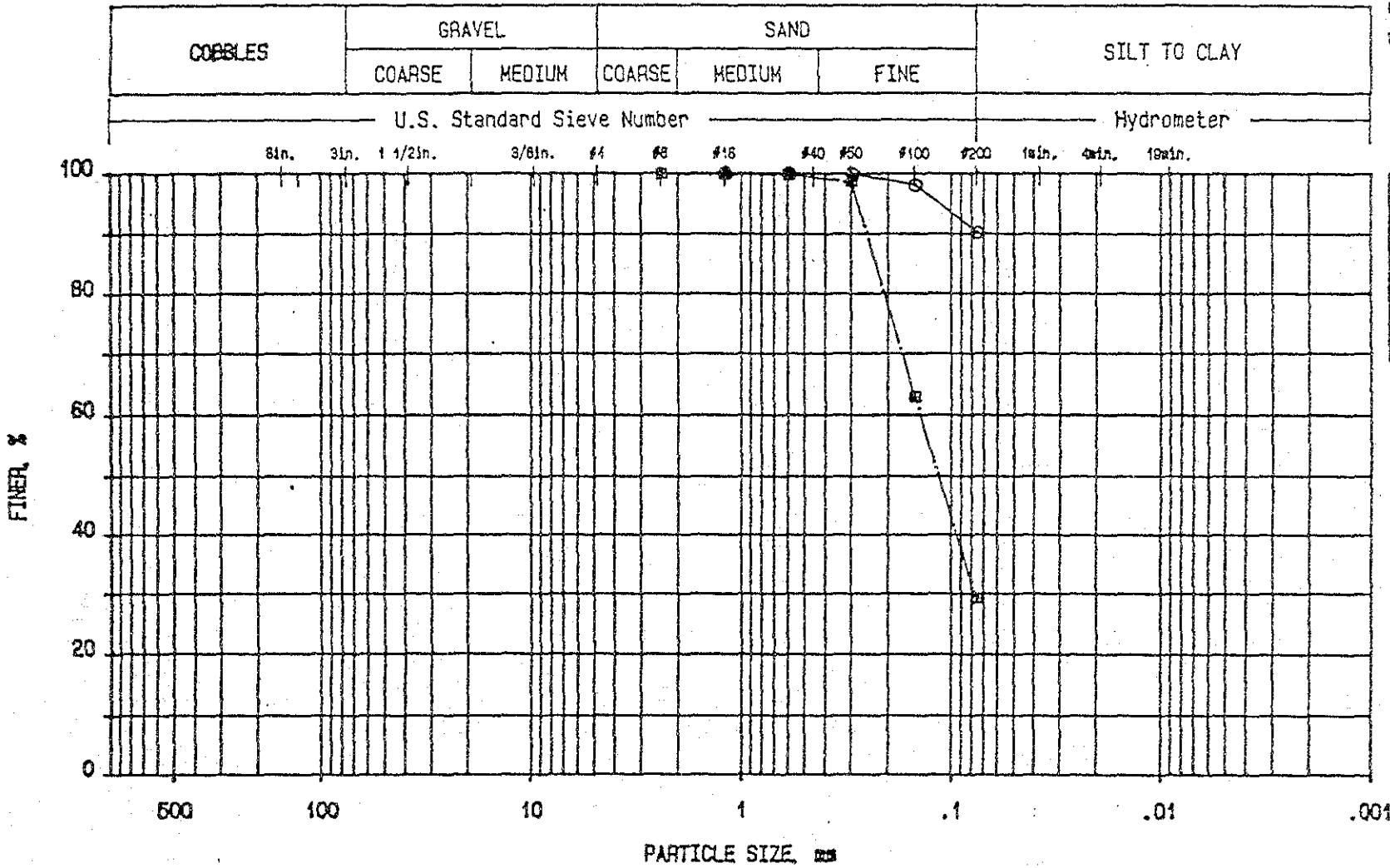
PROJECT	LAM-DOM-YAI...D DTP1(1.50-4.00)	MEMO	20/2535
HEIGHT(initial)	2.00 cm.	HEIGHT(final)	1.81 cm.
MOISTURE CONTENT(initial)	18.22 %	MOISTURE CONTENT(final)	15.95 %
DRY DENSITY(initial)	1.711 gm./cc.	DRY DENSITY(final)	1.891 gm./cc.
VOID RATIO(initial)	.613	VOID RATIO(final)	.46
DEGREE OF SATURATION(initial)	82.03 %	DEGREE OF SATURATION(final)	95.79 %





GRADATION TEST

Royal Irrigation Department
Research and Laboratory Division
Soil Engineering Branch



Project	DON-YAI
Memo	20/35
Checked by	PAIBOON
Date:	25/11/34

Sample No.	Boring No.	Depth (m.)	L.L.	P.L.	P.I.	CLASS	G_s	W_n.	
⊙ 1	U-AL-9		24.60	18.60	6.00	CL-ML	2.72	21.5	
■ 2	D-DH-3		———	Non-Plastic	———	SM	2.68	24.1	

Sheet 24 of 29

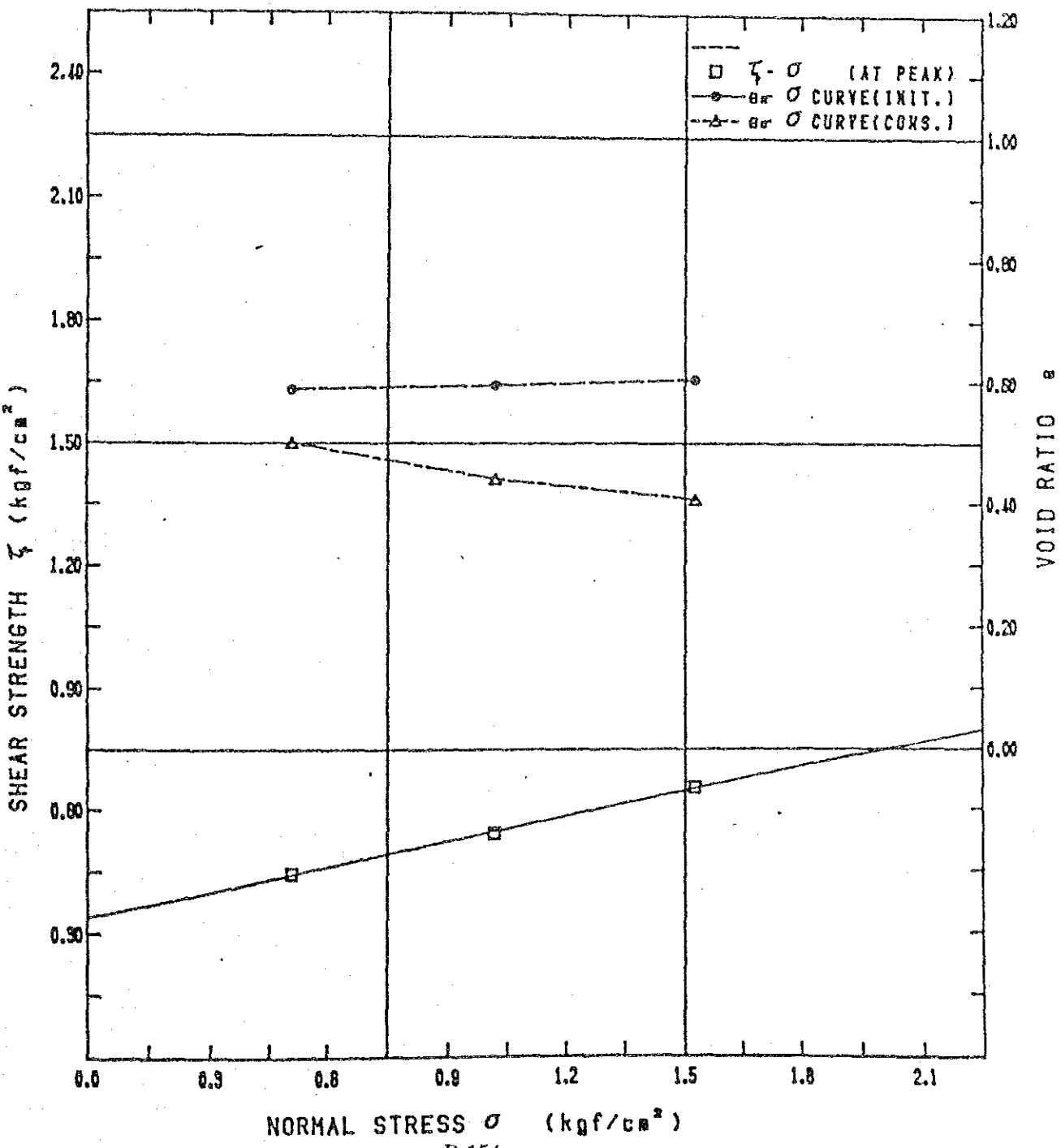
	DIRECT SHEAR TEST (CU)	NORMAL STRESS — SHEAR STRENGTH VOID RATIO	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO. AND DEPTH No.U-AL-8 1.2m ~ 1.9m

STRENGTH PARAMETER		C (kgf/cm²)	ϕ DEGREE	tan ϕ	C' (kgf/cm²)	ϕ' DEGREE
SCOPE OF STRESS	NORMAL CONSOLIDATED REGION	0.34	11.53	0.204		
	OVER CONSOLIDATED REGION					



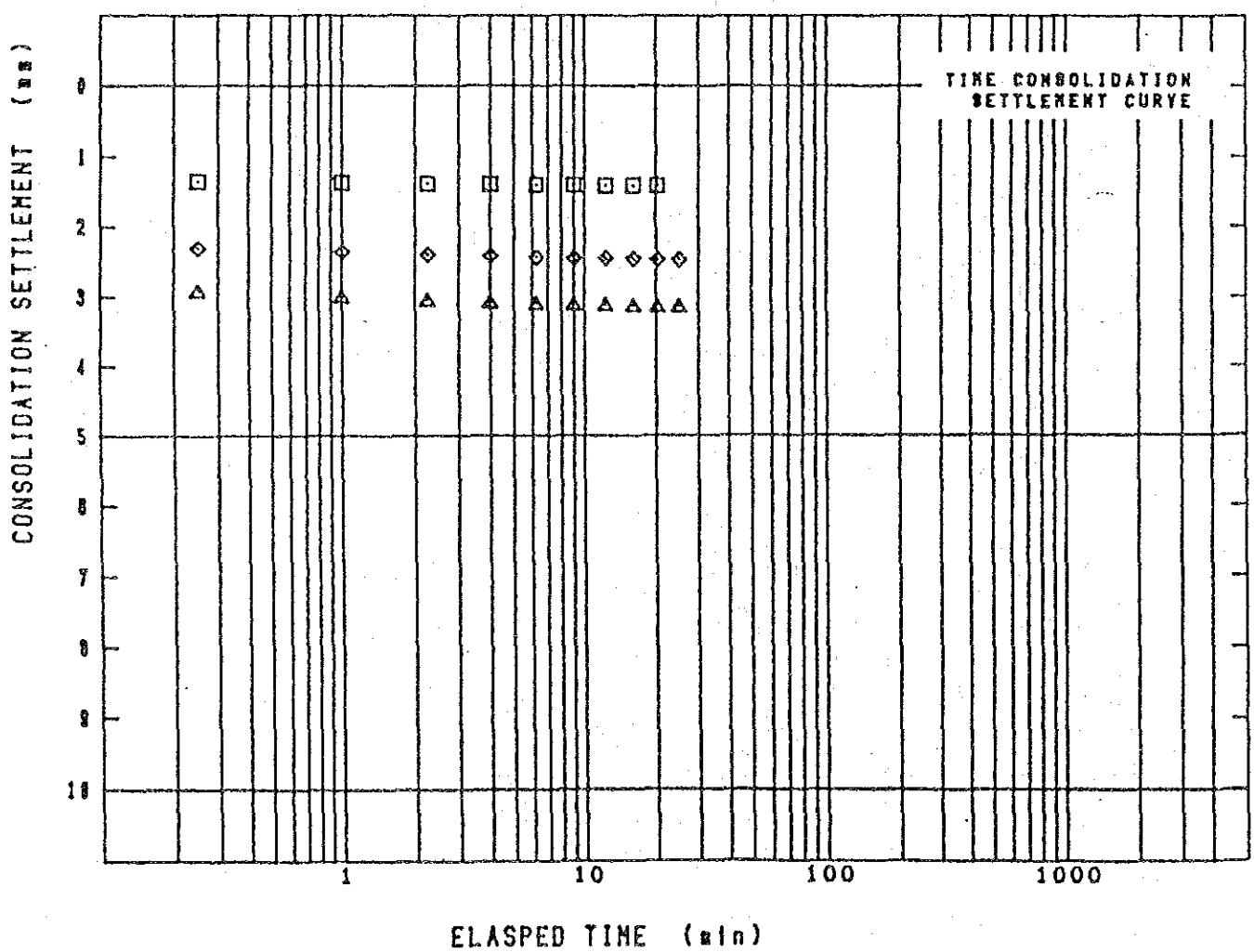
	DIRECT SHEAR TEST	(CU)	INITIAL CONDITION	FOR REPORTING

NAME OF SURVEY & LOCALITY: LAM-DOH-YAI

DATE 23-12-2534

SAMPLE NO. & DEPTH No. U-AL-9 1.2m ~ 1.9m

SPECIMEN NO.		No.1 □	No.2 ◇	No.3 △	No.	No.
VERTICAL LOAD $\bar{\sigma}_c$ kgf/cm²		0.51	1.02	1.53		
INITIAL CONDITION	HEIGHT h_o cm	2.54	2.54	2.54		
	DRY WEIGHT W_d g	136.85	136.29	135.41		
	SUBSTANCE HEIGHT h_s cm	1.599	1.592	1.582		
	VOID RATIO e_o	0.589	0.595	0.606		
	WATER CONTENT W_o	20.5	18.6	19.3		
	DEGREE OF SATURATION S_{ro} %	94.7	89.6	88.9		
CONSOLIDATION PROCESS	CONSOLIDATION TIME t_c min	20	25	25		
	POST CONSOLIDATION HEIGHT h_c cm	2.399	2.293	2.226		
	POST CONSOLIDATION VIOD RATIO e_c	0.501	0.440	0.407		



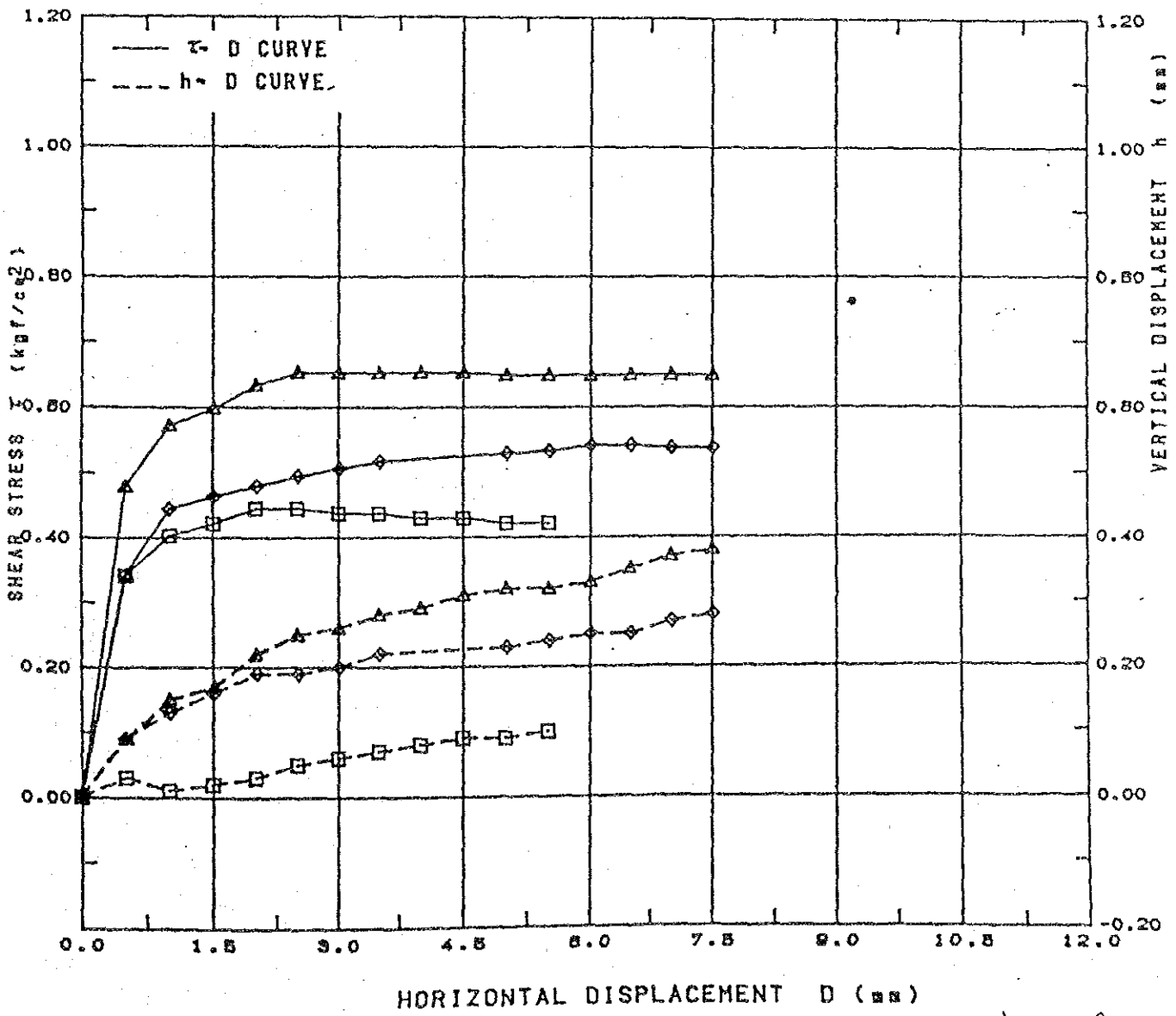
	DIRECT SHEAR TEST (CU)	(SHEAR PROCESS)	FOR REPORTING

NAME OF SURVEY & LOCALITY LAM-DOM-YAI

DATE: 23-12-2534

SAMPLE NO AND DEPTH No.U-AL-9 1.2m~ 1.9m

SPECIMEN NO. VERTICAL LOAD σ kgf/cm^2		No.1 □ 0.51	No.2 ◇ 1.02	No.3 △ 1.53	No.	No.
ROOM TEMPARETURE C		25.0	25.0	25.0		
AT PEAK	τ_f kgf/cm^2	0.445	0.542	0.653		
	ε_f					
	VERTICAL DISPLACEMENT h mm	0.03	0.25	0.25		
	HORIZONTAL DISPLACEMENT D mm	2.00	6.01	2.50		
	σ_y kgf/cm^2	———	———	———		



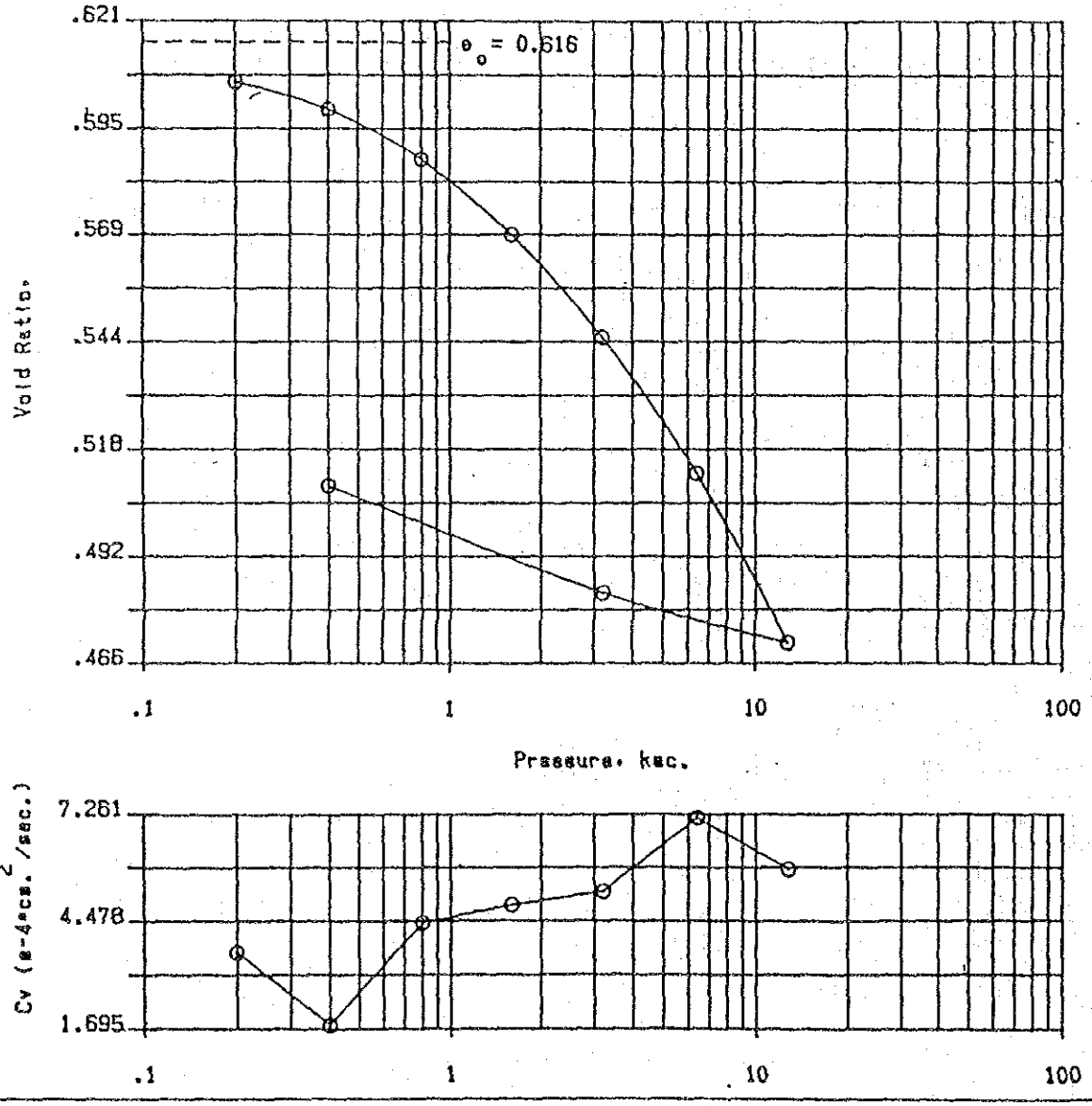
ROYAL IRRIGATION DEPARTMENT

RESEARCH AND LABORATORY DIVISION

SOIL ENGINEERING BRANCH

CONSOLIDATION TEST

PROJECT	LAM-DOM-YAI...U-AL-9(1.20-1.90)	MEMO	20/2535
HEIGHT(initial)	2.00 cm.	HEIGHT(final)	1.87 cm.
MOISTURE CONTENT(initial)	20.41 %	MOISTURE CONTENT(final)	18.32 %
DRY DENSITY(initial)	1.683 gm./cc.	DRY DENSITY(final)	1.802 gm./cc.
VOID RATIO(initial)	.616	VOID RATIO(final)	.509
DEGREE OF SATURATION(initial)	90.12 %	DEGREE OF SATURATION(final)	97.82 %



ROYAL IRRGATION DEPARTMENT
DIVISION OF RESEARCH AND LABORATORY

PERMEABILITY TEST RESULT

Project : อ่างฯ ลำโคมใหญ่
Location จ.อุบลราชธานี
MEMO 20/2535
Date 10 มิถ. 2535
Checked PS

TEST NO.	SAMPLE NO.	DEPTH m	METHOD OF COMPACTED	INITIAL TEST: DRY DENSITY t/m²	INITIAL TEST: WATER CONTENT %	INITIAL TEST: VOID RATIO	INITIAL TEST: SATURATION %	FINAL WATER CONTENT %	SOIL GROUP	VALUES OF PERMEABILITY K cm/sec
1.	A ATP2	1.10-4.00	95% max	1.636	21.3	0.699	84.7	22.3	CL	1.869×10^{-8}
2.	C CTP2	2.60-4.00	"	1.900	13.6	0.395	91.2	14.8	SM-SC	5.419×10^{-8}
3.	C CTP4	1.20-4.00	"	1.899	12.8	0.374	89.3	14.9	SM-SC	4.898×10^{-8}
4.	C CTP6	1.10-2.90	"	1.872	12.9	0.405	83.8	14.2	SC	1.399×10^{-7}
5.	D DTPT	1.50-4.00	"	1.710	18.3	0.614	82.3	19.8	CL	7.520×10^{-8}
6.	MUNR	-	-	1.620	-	-	-	25.1	SAND	4.024×10^{-2}
7.	AL-9	-	UNDISTURBED	1.612	24.1	0.619	100.0	25.6	CL-ML	2.137×10^{-7}

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ANNEX E. WATER RESOURCES PLANNING

ANNEX E. WATER RESOURCES PLANNING

Page

PART - I (OVERALL BASIN STUDY)

LIST OF TABLES

PART-1 (OVERALL BASIN STUDY)

CHAPTER I. Water Resources Development Plan by Sub-basins

1.1 Reservoir Plan in Lam Dom Yai Sub-Basin

In Lam Dom Yai sub-basin, six smaller medium-scale reservoirs are planned on the tributaries at the mountainous upper-basin, D-7 reservoir on the main stream at the mountainous upper-basin and D-28 reservoir on large-scale on the main stream at the middle-basin.

Smaller Medium-Scale Reservoirs

The smaller medium-scale reservoirs are planned for tributaries that don't have reservoirs constructed on them or plan for construction by RID. The benefited areas are situated just downstream of the reservoirs, so gravity irrigation can be applied.

D-28 Large-Scale Reservoir

There are only two possible smaller medium-scale reservoir sites on both the banks at the middle and lower-basins of the Lam Dom Yai sub-basin. But, rainfed paddy fields of about 80,000 ha (500.0 thousand rai) are developed in this area. It is ideal to construct a large-scale reservoir at the site of D-28, so as to irrigate the above-stated agricultural land. On the site of D-28 with a direct catchment area of 767 sq.km, a river runoff of about 488 MCM can be expected by water amounts flowing over six medium scale-reservoirs at the mountainous upper-basin, and running off the direct catchment area.

There are such problems for the development, however, as compensation against agricultural lands and villages to be submerged in the reservoir area of D-28, and necessity of pumping up irrigation water 10 to 15 m high, because of the reservoir water level lower than the benefited area level.

Since the right bank area of D-28 reservoir is included in an

agricultural land reform project area conducted by ALRO, the agricultural land and villages to be submerged by dam construction will be able to resettle in this project area. The water pumped up from the reservoir can be irrigated by gravity through the canals being set along higher portions of the benefited area on both the banks. The construction cost of the canals will be comparatively low due to flat terrace topography. Accordingly, the development of large-scale reservoir of D-28 will be the center of the overall river basin water resources development.

D-7 and D-23 Large-Scale Reservoirs

D-7 site located at the mountainous upmost basin of the Lam Dom Yai main stream occupying a large catchment area of 262 sq.km, has abundant runoff discharge of about 104 MCM a year on an average. The dam-site forming a ravine, high dam construction will be capable of making a large reservoir with a storage capacity of about 100 MCM. This dam-site, however, bordering upon Cambodia and being under unstable public peace and order, and difficult of access, the construction works will also be unable to be implemented soon at present. it can be thought, however, that this dam-site is most advantageous for the further development after peace treaty with Cambodia.

Because there being no benefited area just downstream of the dam-site of D-7, the water stored by the reservoir will be directly released into the river, and be caught again by the above-mentioned dam-site of D-28. As a result, the available water in the reservoir of D-28 can be remarkably increaced owing to the regulation of the reservoir of D-7. This increased available water will be conveyed to the agricultural lands at the middle-basin of the Lam Som sub-basin and in Huai Khao San sub-basin, located on the left bank of the Lam Dom Yai.

If the reservoir of D-7 can not be realized for some reasons or other, the reservoir site of D-23 situated downstream, will be planned as the alternative large-scale reservoir site. Although D-23 site can develop as much irrigation water as the D-7 site, the dam construction cost would be high due to flat topography requiring considerably long dam length. Besides, there are a lot of compensation

problems due to submersion in the reservoir area. Consequently, D-7 site condition is much better than the D-23 site one, and so D-7 site was selected for the overall river basin development study.

1.2 Reservoir Plan in Lam Som Sub-Basin

The Lam Som sub-basin has a catchment area of 1,140 sq.km and large water resources amount of an annual mean run-off discharge of 463 MCM. There are two medium-scale reservoir construction plans in the upper-reaches of the sub-basin made by RID. In this study, ten smaller medium-scale reservoirs are newly planned. As a larger medium-scale reservoir, D-24 reservoir is planned too somewhat downstream of the middle-reaches.

Smaller Medium-Scale Reservoir

The smaller medium-scale reservoir can irrigate all the benefited areas just downstream of the reservoirs by gravity.

D-24 Larger Medium-Scale Reservoir

Because the topography of D-24 site is flat, a large reservoir with high dam and large storage capacity can not be expected. The runoff discharge in this site, however, reaching to 276 MCM in 1/5 probable drought year, therefore fairly large irrigable area can be developed. There are mostly forest and small paddy areas within the reservoir areas

The agricultural land along the Lam Som, just downstream of the reservoir of D-24 will be developed as the benefited area of the reservoir of D-28, the rainfed paddy fields, which stretch on both banks of the upper-basin of this reservoir will become the benefited area. According, the irrigation using the reservoir of D-24 will also be pumping irrigation.

There is high possibility that the D-24 site act as an intermediate reservoir, in case the available water developed by the said D-7 and sent through D-28 is conveyed to the agricultural land in Huai

Khao San sub-basin, because D-24 site located west of D-28 site, it nealy has the same elevation as that of D-28 site, and the irrigation water supply from D-7 to D-28 and to D-24 is easily obtained.

1.3 Reservoir Plan in Huai Ari Sub-Basin

The Huai Ari sub-basin consisting of quite flat topography, is occupied by large rainfed paddy field areas. As the water resources for this sub-basin, D-25 reservoir is planned.

The run-off discharge in a 1/5 probable drought year at this reservoir site is fairly abundant, amounting to about 89 MCM. Owing to good topography at the site, a medium-scale reservoir with a large storage capacity of about 20 MCM can be technically constructed. However the reservoir area, however, being occupied mostly by paddy fields, will be a problem on dam construction due to the land compensation.

The benefited area of this reservoir is not situated just downstream of the reservoir. Namely, since the agricultural land along the river just downstream of the reservoir of D-25 is planned to be benefited by the reservoir of D-28, the benefited area of D-25 must be rainfed farm land with a higher portion on the left bank of the Lam Dom Yai main stream in the lower-basin of the reservoir of D-28. Consequently, this irrigation, using the storage water, will be of a pumping irrigation system.

1.4 Reservoir Plan in Huai Khao San Sub-Basin

The Huai Khao San sub-basin is located in the westmost part of the Lam Dom Yai basin and is of flat topography occupied by rainfed paddy fields. Although five medium-scale reservoirs are planned at the upper-reaches of the sub-basin, the storage capacity is not enough to irrigate vast agricultural land stretching in the sub-basin. As stated above, therefore, the water developed in the reservoir of D-7 will be distributed to this area by way of D-28 and D-24. Also in this case, a pumping irrigation system from the reservoir of D-24 will be needed.