(6) Concrete Mixing Method

What is the most common concrete mixing method in Damascus

Is auto or semi-auto concrete mixing plant on site for the weight measuring available? *Auto mixing is available off-site.*

If available, how much is the capacity of the weight measuring auto or semi-auto concrete mixing plant on site? (at the present)

Avg. production capacity of mixing- plant is 75 m³/day.

(7) Building Construction *Finishing Materials and Method*

What is the most common materials and method for the Gymnasium in Vientiane?

Items	Materials	Method
① Floor	*tile*	
② Baseboard	*tile or ceramic*	
③ Wall	*Cement Layers and Painting*	
④ Ceiling	*as walls or false ceiling*	
⑤ Roof	*tile and insulation materials*	
⑥ Exterior Door	*Steel*	
⑦ Exterior Window	*Aluminum*	
⑧ Interior Door	*Wood*	
⑨ Interior Window	*Wood or Aluminum*	
⑩ Site Road Finish	*Asphalt*	
⑪ Parking Lot	=	
⑫ Drainage Ditch	*Cement*	

5. SITE CONDITIONS

Please submit reports about the following:

- City Map, Geographical Map
- Site Survey DWG
- Topographic Map of Site
- Existing Underground Utilities DWG *No existing underground utilities*
- Soil Investigation Reports
    1. Boring data including standard penetration test and groundwater level
    2. Soil bearing capacity
    3. Geo-technical tests
- Records of Floods in the Site

No floods have been recorded in the site.

If there are any restrictions to this Site from the city planning law or from the building law, please list them.

There is no restrictions with regard to city planing law or building law .

Soil Investigation Report

for

another site nearby

CONSULTATION

الإدارة الاستشارات الهندسية
قسم دراسة التربة

SOIL MECHANICS DEPARTEMENT
DÉPARTEMENT DE MÉCANIQUE DE S.IL

دراسة التربة العائدة الكلية . ج مبنى المتدرجين الجديد العائد لمركز الدراسات والبحوث العلمية بالمنطقة برزة مدينة محافظة دمشق

LOG OF BORING BOREHOLE Nº *B - 1*

المقطع الجيولوجي للسبر رقم ب - ١ .

LOG DU SONDAGE Nº.........

منسوب السبر بالمتر Depth m / Prof. en m	توضع طبقات التربة Log	أماكن أخذ العينات Level of samples	نوع التربة Description / Description du sol	منسوب المياه W.L / N.E	خواص التربة Properties of soil / Propriétés du sol	S P T	ملاحظات Remarks / Remarques
0 – 15			حصويات ضعيفة التدرج ذات تماسك ضعيف GP يتخللها طبقات من الكونغلوميرات ذات التماسك العالي وبسماكات تتراوح بين ١٠ - ٢٥ سم		Weak graduation Aggregate which has weak lond penetrated by layers of congglomerale which has high cohesion. Their thickness is between 10-25cm		
15 – 16					*End of boring* نهاية السبر		

التوقيع .... تاريخ السبر ١٩٨٢/٧/٨

DATE OF BORING *8/7/1982*

CONSULTATION
SOIL MECHANICS DEPARTEMENT
DEPARTEMENT DE MECANIQUE DE SOIL

[illegible]
قسم دراسة التربة

دراسة التربة العائدة للكتلة ب مبنى المزروعين الجديد والعائد لمركز الدراسات والبحوث العلمية في منطقة برزة — مدينة محافظة دمشق

LOG OF BORING BORFHOLE № B - 2
LOG DU SONDAGE № ________

المقطع الجيولوجي للسبر رقم ب - ٢

Depth (m)	Depth Profondeur	Log / موضع طبقات التربة	Niveau de l'eau / مستوى الماء	نوع التربة / Discription / Description du sol	منسوب الماء / W L / N E	خواص التربة / Properties of soil / Propriétés du sol		ملاحظات / Remarks / Remarques
0 – 15				حصويات ضعيفة التدرج وذات تماسك ضعيف GP يتخللها طبقات من الكونغلوميرات ذات التماسك العالي وبسماكات تتراوح بين ١٠ - ٢٥ سم		Weak graduation aggregate which has weak bond penetrated by layers of conglomerate which has high cohesion. Their thickness is between 10 - 25cm		
15						End of boring نهاية السبر		
16								

تاريخ السبر ٩/٧/١٩٨٢ نظم المقطع الجيولوجي: [illegible] التوقيع

DATE OF BORING 9 / 7 / 1982

الدار الاستشارات الهندسية
قسم دراسة التربة

CONSULTATION

SOIL MECHANICS DEPARTEMENT
DEPARTEMENT DE MECANIQUE DE S.IL.

دراسة التربة العائدة للكتلة ٢ مبنى المتزوجين الجديد والعائد لمركز الدراسات والبحوث العلمية الملحقة ببرزة مدينة محافظة دمشق

LOG OF BORING BOREHOLE Nº **B – 3** — المقطع الجيولوجي للسبر رقم ب – ٣

LOG DU SONDAGE Nº

Depth (m)	Description / Description du sol	Properties of soil / Propriétés du sol
0	حصويات ضعيفة التدرج ذات تماسك ضعيف	Weak graduation aggregate which has weak bond
3	GP	
5	يتخللها طبقات من الكونغلوميرات ذات التماسك العالي وسماكات تتراوح بين ١٠-٢٥ سم	penetrated by layers of congglomerate which has high cohesion. Their thickness are between 10 - 25cm
15		End of boring نهاية السبر

التوقيع — التاريخ ١٩٨٢/٧/١٠

DATE OF BORING 10/7/1982

CONSULTATION

SOIL MECHANICS DEPARTEMENT
DEPARTEMENT DE MECANIQUE DE SOIL

دار الاستشارات الهندسية
قسم دراسة التربة

دراسة التربة العائدة للكتلة ج مبنى التزوجيين الجديد والعائد لمركز الدراسات والبحوث العلمية بالمنطقة برزة مدينة محافظة دمشق

LOG OF BORING BOREHOLE Nº *B – 4*
LOG DU SONDAGE Nº........

المقطع الجيولوجي للسبر رقم ب – ٤

عمق السبر بالمتر Depth in m / Prof. en m	توضع طبقات التربة Log / Log	علاوات العينات Lieu de pré. / Emplacement d'échantillons	نوع التربة Discription / Description du sol	منسوب المياه W L / N E	خواص التربة Properties of soil / Propriétés du sol	S P T	ملاحظات Remarks / Remarques
0			حصويات ضعيفة التدرج وذات تماسك ضعيف		Weak graduation Aggregate which has weak lond		
1							
2							
3			GP				
4			يتخللها طبقات من الكونغلوميرات ذات التماسك العالي وسماكات تتراوح بين ١٠ – ٢٥ سم		penetrated by layers of congglomerale which has high cohesion. Their thickness is between 10-25cm		
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15					*End of boring* نهاية السبر		
15							

تاريخ السبر ١٩٨٢/٧/١١

DATE OF BORING *11 / 7 / 1982*

CONSULTATION
MECHANICS LABORATORY

I

دار الاستشارات الهندسية
مختبر ميكانيك التربة

جدول نتائج التجارب المختبرية المجراة في المختبر

TABLE OF THE RESULTS CARRIED OUT IN THE LAB.

LOCATION :..٢.مركز البحوث والدراسات العلمية - مبنى المختبر رقم ٢ - الموقع

CLIENT ...:.................................. .... والعائدة

DATE OF ARRIVAL : ....١٩٨٤/٧/١١ تاريخ الورود الى المختبر

№		1	2	3	4	5	6
1	Boring السبر	B-1	B-1	B-1	B-1	B-1	B-1
2	Depth العمق m.	1,5-2,0	3,5-4,0	5,5-6,0	7,5-8,0	10,0-10,5	14,5-15,
3	Water content % الرطوبة	2,88	3,26	4,61	2,89	2,10	0,98
4	Natural density t/m3 الوزن الحجمي	2,603	2,462	2,622	2,613	2,573	2,497
5	Specific gravity الوزن النوعي	2,632	2,630	2,633	2,673	2,638	2,614
6	Sieve analyses التحليل الحبي	المرفقة	[illegible]	—	—	—	الى
7	Angle of shearing resistance زاوية الاحتكاك	—	—	36	—	—	—
8	Cohesion Kg/cm2 التماسك	—	—	0,00	—	—	—
9	Liquid limit حد السيولة	—	—	—	—	—	—
10	Plastic limit حد اللدونة	—	—	—	—	—	—
11	Plasticity قرينة اللدونة	—	—	—	—	—	—
12	Dry density t/m3 الوزن الحجمي الجاف	2,530	2,384	2,506	2,539	2,520	2,472
13	Kg/cm2 Unconfined compression الضغط غير المحصور	—	—	—	—	—	—
14	Kg/cm2 Plasticity modulous عامل المرونة	—	—	—	—	—	—
15	m_v $\frac{cm^2}{Kg}$ الانضغاطية	—	—	—	—	—	—
16	Proctor بروكتور	—	—	—	—	—	—
17	C.B.R. نسبة تحمل كاليفورنيا	—	—	—	—	—	—

رئيس المختبر ....   القائم بالتجربة : ....

التاريخ : ١٩٨٤/٧/١٧..........

CONSULTATION
MECHANICS LABORATORY

II

الاستشارات الهندسية
مختبر ميكانيك التربة

جدول نتائج التجارب المخبرية المجراة في المختبر

TABLE OF THE RESULTS CARRIED OUT IN THE LAB.

LOCATION : الموقع شركة مركز البحوث والدراسات الفنية مبنى المترو حيين رقم ٢

CLIENT ... : ..... العائدة .....

DATE OF ARRIVAL : ..... تاريخ الورود الى المختبر ١١/٧/١٩٨٤

N°		1	2	3	4	5	6
1	Boring السبر	B-2	B-2	B-2	B-2		
2	Depth العمق m.	2,0-3,0	5,5-6,0	9,5-10,0	14,0-14,5		
3	Water content الرطوبة %	5,12	4,87	7,13	4,77		
4	Natural density الوزن الحجمي t/m³	2,304	2,626	2,572	2,546		
5	Specific gravity الوزن النوعي	2,634	2,676	2,688	2,623		
6	Sieve analyses التحليل الحبي	الرفت	رات	ستا	الا		
7	Angle of shearing resistance زاوية الاحتكاك	—	—	38	—		
8	Cohesion التماسك Kg/cm²	—	—	0,10	—		
9	Liquid limit حد السيولة	—	—	—	—		
10	Plastic limit حد اللدونة	—	—	—	—		
11	Plasticity قرينة اللدونة	—	—	—	—		
12	Dry density الوزن الحجمي الجاف t/m³	2,191	2,504	2,400	2,430		
13	Unconfined compression الضغط غير المحصور Kg/cm²	—	—	—	—		
14	Plasticity modulous عامل اللدونة Kg/cm²	—	—	—	—		
15	Mv $\frac{cm^2}{Kg}$ الانضغاطية	—	—	—	—		
16	Proctor بروكتور	—	—	—	—		
17	C.B.R. نسبة تحمل كاليفورنيا	—	—	—	—		

القائم بالتجربة : .....

التاريخ : ١٤/٧/١٩٨٤

رئيس المختبر م. محمد بكري

CONSULTATION
MECHANICS LABORATORY

III

دار الاستشارات الهندسية
مختبر ميكانيك التربة

جدول نتائج التجارب المختبرية المجراة في المختبر

TABLE OF THE RESULTS CARRIED OUT IN THE LAB.

LOCATION : الموقع - بغداد - مركز البحوث والدراسات العلمية - مبنى المنزرع ... رقم ٢

CLIENT ...: .... والعائدة ....

DATE OF ARRIVAL : .... تاريخ الورود إلى المختبر - ١٩٨٤/٧/١١ ....

№		1	2	3	4	5	6
1	Boring السبر	B-3	B-3	B-3	B-3		
2	Depth العمق m.	3,0-3,5	6,0-6,5	10,0-10,5	14,5-15,[illegible]		
3	Water content % الرطوبة	4,56	3,64	3,45	5,16		
4	Natural density t/m³ الوزن الحجمي	2,452	2,473	2,446	2,455		
5	Specific gravity الوزن النوعي	2,643	2,657	2,640	2,664		
6	Sieve analyses التحليل الحجمي	المرفقة	ات	ستمار	الا		
7	Angle of shearing resistance زاوية الاحتكاك	—	—	35	—		
8	Cohesion Kg/cm² التماسك	—	—	0,15	—		
9	Liquid limit حد السيولة	—	—	—	—		
10	Plastic limit حد اللدونة	—	—	—	—		
11	Plasticity قرينة اللدونة	—	—	—	—		
12	Dry density t/m³ الوزن الحجمي الجاف	2,345	2,386	2,364	2,335		
13	Kg/cm² Unconfined compression الضغط غير المحصور	—	—	—	—		
14	Kg/cm² Plasticity modulous عامل المرونة	—	—	—	—		
15	m_v $\frac{cm^2}{Kg}$ الانضغاطية	—	—	—	—		
16	Proctor بروكتور	—	—	—	—		
17	C.B.R. نسبة تحمل كاليفورنيا	—	—	—	—		

القائم بالتجربة : ....

التاريخ : ١٩٨٤/٧/١٧ ....

رئيس المختبر - د. م. محمد ...

CONSULTATION
MECHANICS LABORATORY

IV

الاستشارات الهندسية
مختبر ميكانيك التربة

جدول نتائج التجارب المختبرية المجراة في المختبر

TABLE OF THE RESULTS CARRIED OUT IN THE LAB.

LOCATION : بمنطقة ـ مركز البحوث والدراسات العلمية ـ مبنى المختبر رقم ٢ : الموقع

CLIENT ...: .... : العائدة

DATE OF ARRIVAL : .... ----٩٨٤/٧/١١---- : تاريخ الورود إلى المختبر

№		1	2	3	4	5	6
1	Boring السبر	B-4	B-4	B-4	B-4		
2	Depth العمق m.	3,5-4,0	6,5-7,0	10,5-11,0	14,5-15,0		
3	Water content % الرطوبة	2,78	3,36	2,94	2,28		
4	Natural density t/m3 الوزن الحجمي	2,441	2,377	2,571	2,507		
5	Specific gravity الوزن النوعي	2,657	2,643	2,643	2,623		
6	Sieve analyses التحليل الحبي	المرفقة	ـمات	ـــ	الرسـ		
7	Angle of shearing resistance زاوية الاحتكاك	—	—	—	39		
8	Cohesion Kg/cm2 التماسك	—	—	—	0,20		
9	Liquid limit حد السيولة	—	—	—	—		
10	Plastic limit حد اللدونة	—	—	—	—		
11	Plasticity قرينة اللدونة	—	—	—	—		
12	Dry density t/m3 الوزن الحجمي الجاف	2,374	2,300	2,497	2,451		
13	Kg/cm2 Unconfined compression الضغط غير المحصور	—	—	—	—		
14	Kg/cm2 Plasticity modulous عامل المرونة	—	—	—	—		
15	m_v $\frac{cm^2}{Kg}$ الانضغاطية	—	—	—	—		
16	Proctor بروكتور	—	—	—	—		
17	C.B.R. نسبة تحمل كاليفورنيا	—	—	—	—		

رئيس المختبر م. محمد ....

القائم بالتجربة : ....

التاريخ : ----١٩٨٤/٧/٢٢--------

CONSULTATION

استشارات الهندسية
ميكانيكا التربة

SOIL MECHANICS DEPARTEMENT

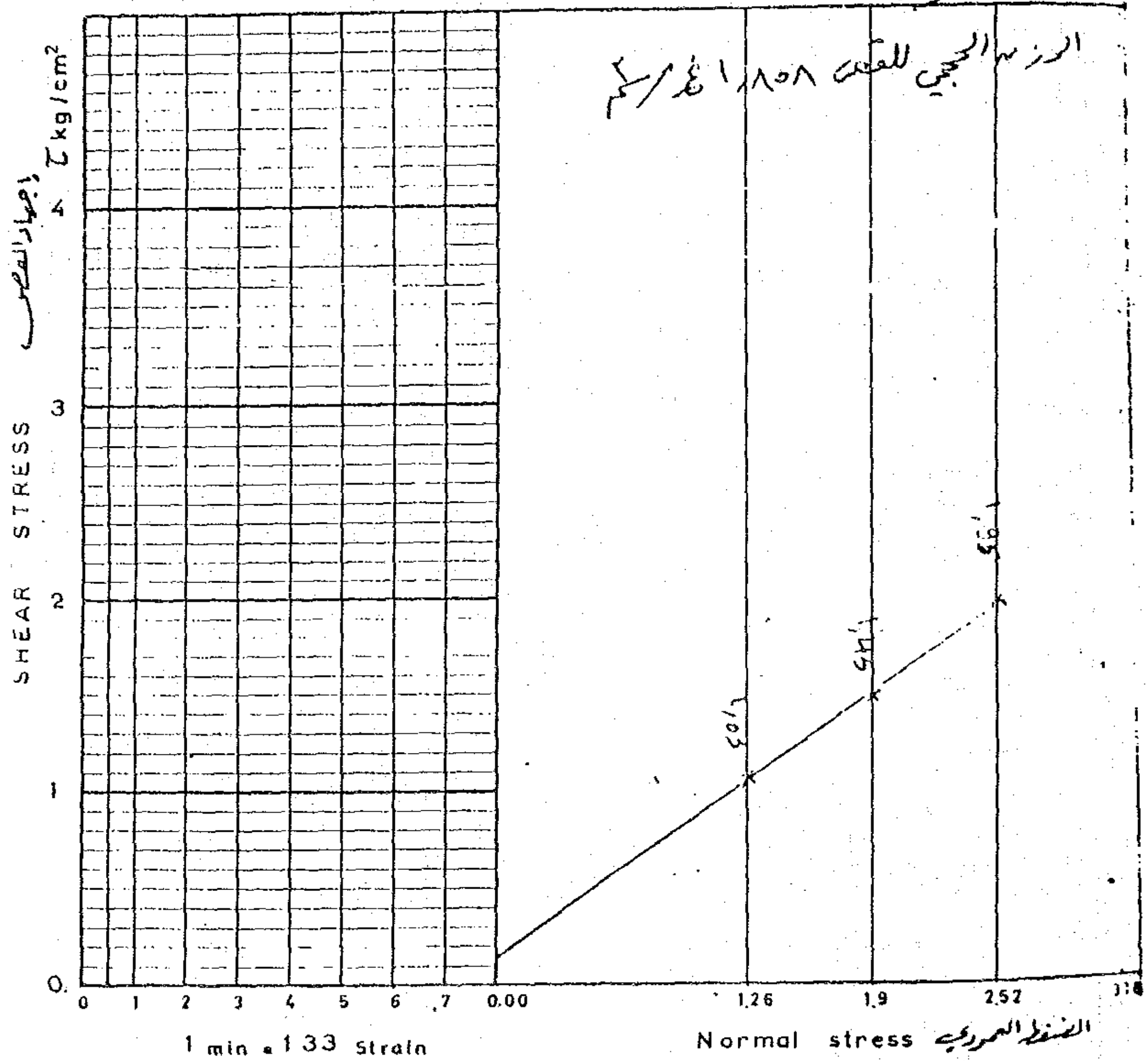
تجربة القص المباشر
DIRECT SHEAR TEST

LOCATION الموقع مبنى مركز البحوث والدراسات العلمية - مبنى المتزوجين رقم ٢

BORE HOLE Nº .... البئر B-3

DEPTH .... العمق ١,١٠ - ١,٥٠ م

عينة مضطربة



1 min = 1 33 strain

Normal stress الضغط العمودي

Angle int. friction ϕ ..... = 35° . . . ٣٥° = زاوية الاحتكاك الداخلي

Cohesion C .... = 0,15 Kg/cm² . . ٠,١٥ كغ/سم² = التماسك

CONSULTATION

SOIL MECHANICS DEPARTEMENT

استشارات الهندسية
قسم التربة

تجربة القص المباشر

DIRECT SHEAR TEST

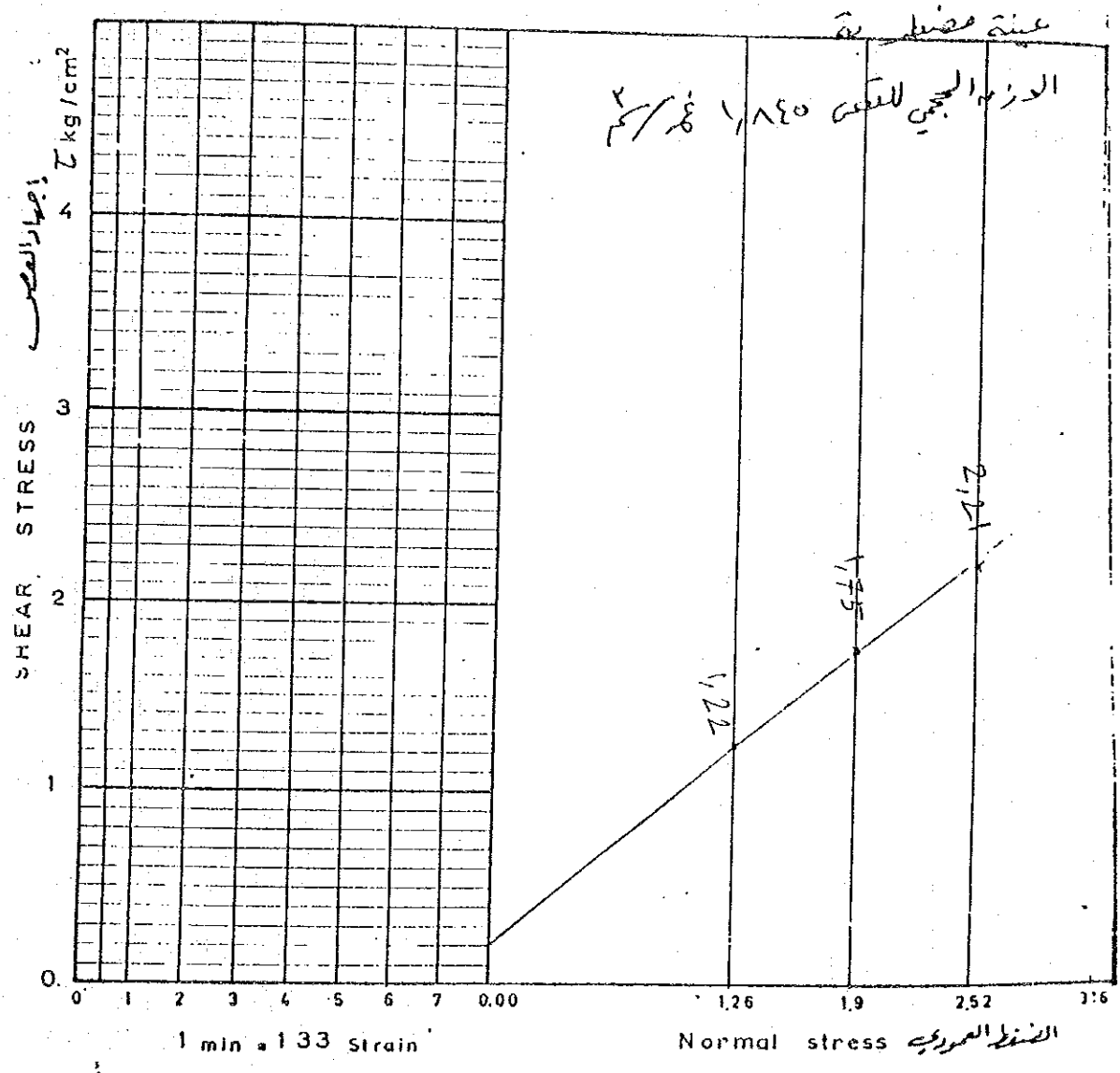
LOCATION مدرسة - مركز البحوث والدراسات البلدية - مبنى المذدوجين رقم ٢

BORE HOLE N° B-4

DEPTH ..... ١٤,٥ - ١٥,٠ م

عينة مضطربة

الوزن الحجمي للعينة ١,٨٤٥ غم/سم٣



Angle int. friction ϕ ..... = 39°

زاوية الاحتكاك الداخلي ..... = ٣٩°

Cohesion C ..... = 0,20 kg/cm²

تماسك ..... = ٠,٢٠ كغ/سم٢

CONSULTATION

استشارات الهندسية

SOIL MECHANICS DEPARTEMENT

إدارة التربة

تجربة القص المباشر

DIRECT SHEAR TEST

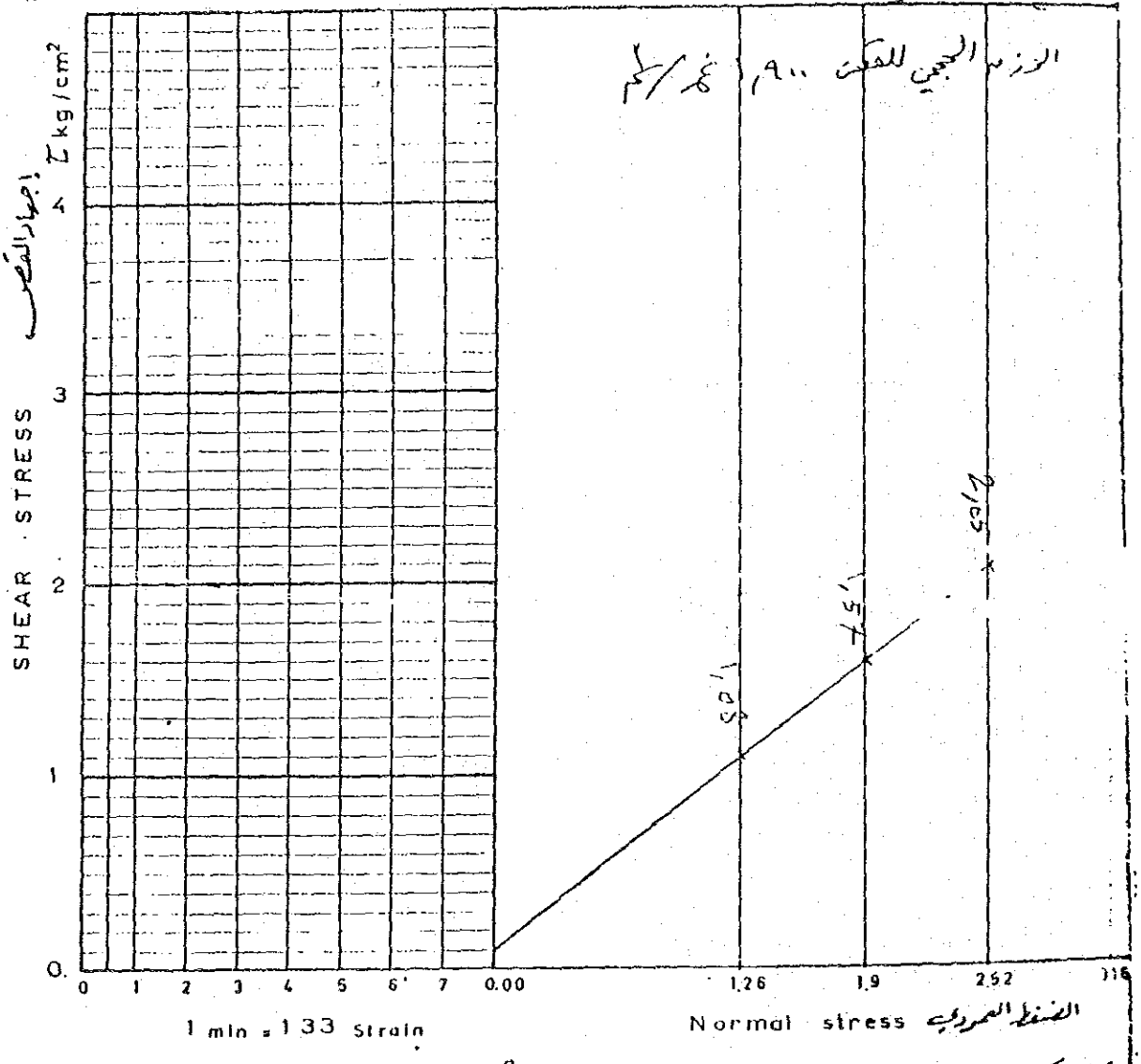
LOCATION S. موقع بيرزة - مركز البحوث والدراسات العلمية - جبل المنزه جبين رقم

BORE HOLE Nº ..... B-2 ..... البئر

DEPTH ..... ٩/٥ - ٢١/٠٠ م العمق

عينة مضطربة

الوزن الحجمي للعينة ١٫٩٠ غم/سم٣



Angle int. friction ϕ ..... = 38°

زاوية الاحتكاك الداخلي = ٣٨°

Cohesion C ..... = 0,10 kg/cm²

تماسك = ٠٫١٠ كغ/سم٢

CONSULTATION ...ارات الهندسية

SOIL MECHANICS DEPARTEMENT ...ة التربة

تجربة القص المباشر

DIRECT SHEAR TEST

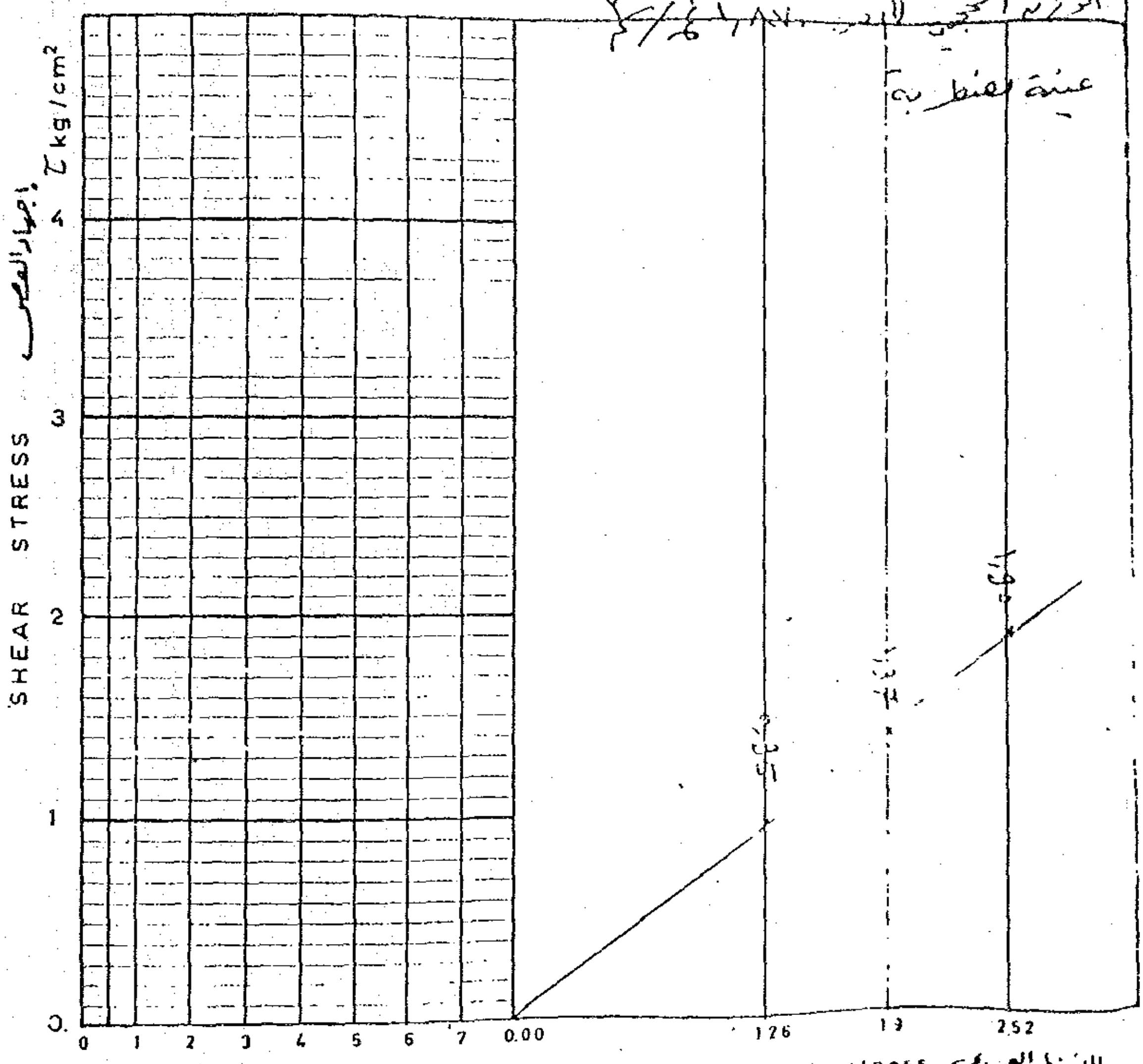
LOCATION ... برزة ـ مركز الابحاث والدراسات العلمية ـ مبنى المتزوجين رقم ٢

BORE HOLE Nº .... B-1 ....

DEPTH .... ٥/٠ - ٦/٠ م

الوزن الحجمي للتربة ١,٨٧ غ/سم٣

عينة مضطربة



Angle int. friction φ = 36°

الاحتكاك الداخلي = ٣٦°

Cohesion C 0,00

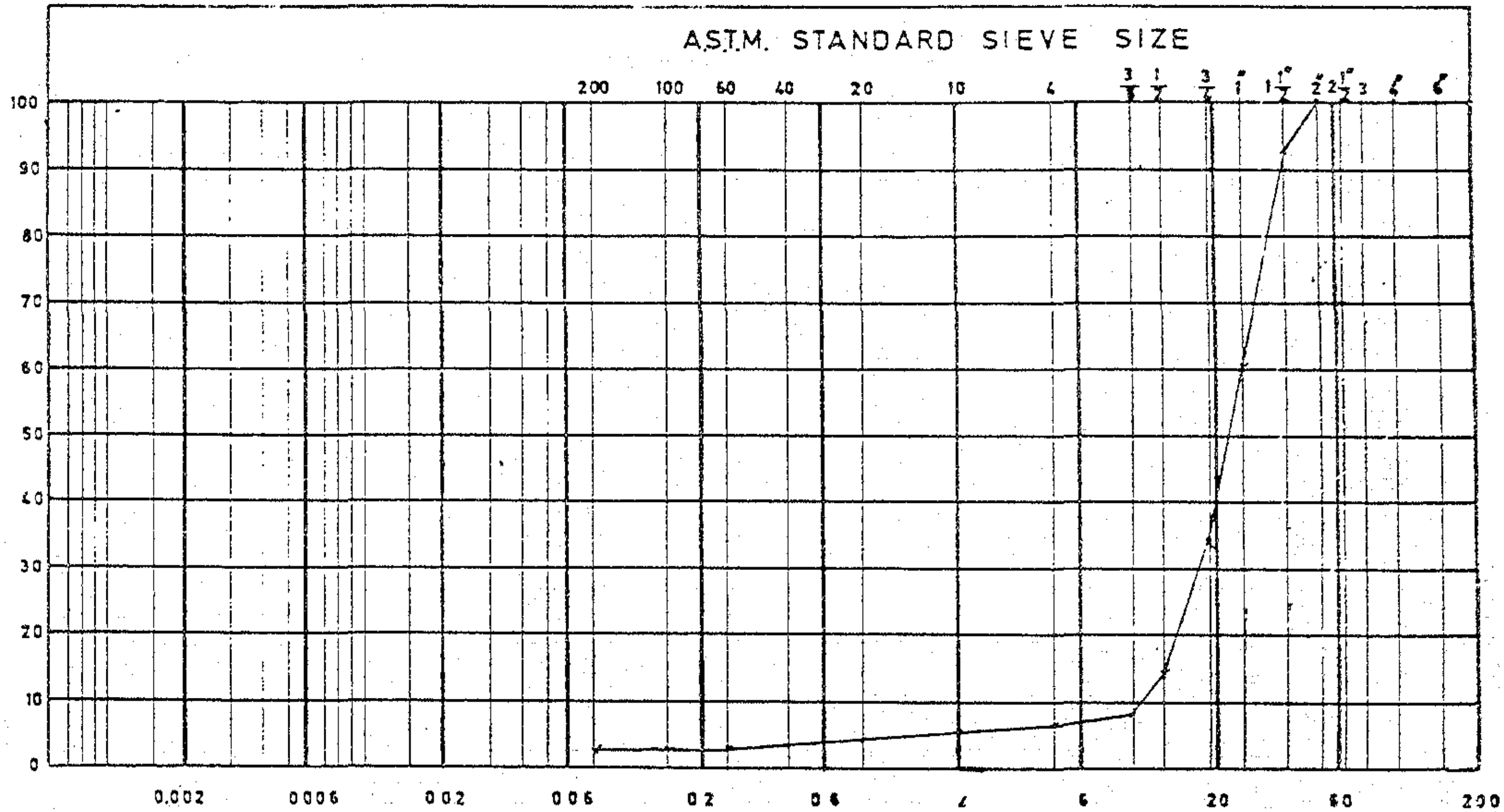
تماسك = صفر

S.M. & C.D. مركز البحوث والدراسات العالية

PARTICLE SIZE DISTRIBUTION

LOCATION N° مبنى المتزوجين رقم ٣ BORE HOLE N° B-1 DEPTH 1,5–2,0 M PRETREATMENT DETAILS.......

DATE OF TEST 18/7/1982 DESCRIPTION GP Gravel Sand mixture LOSS ON PRETREATMENT.......



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

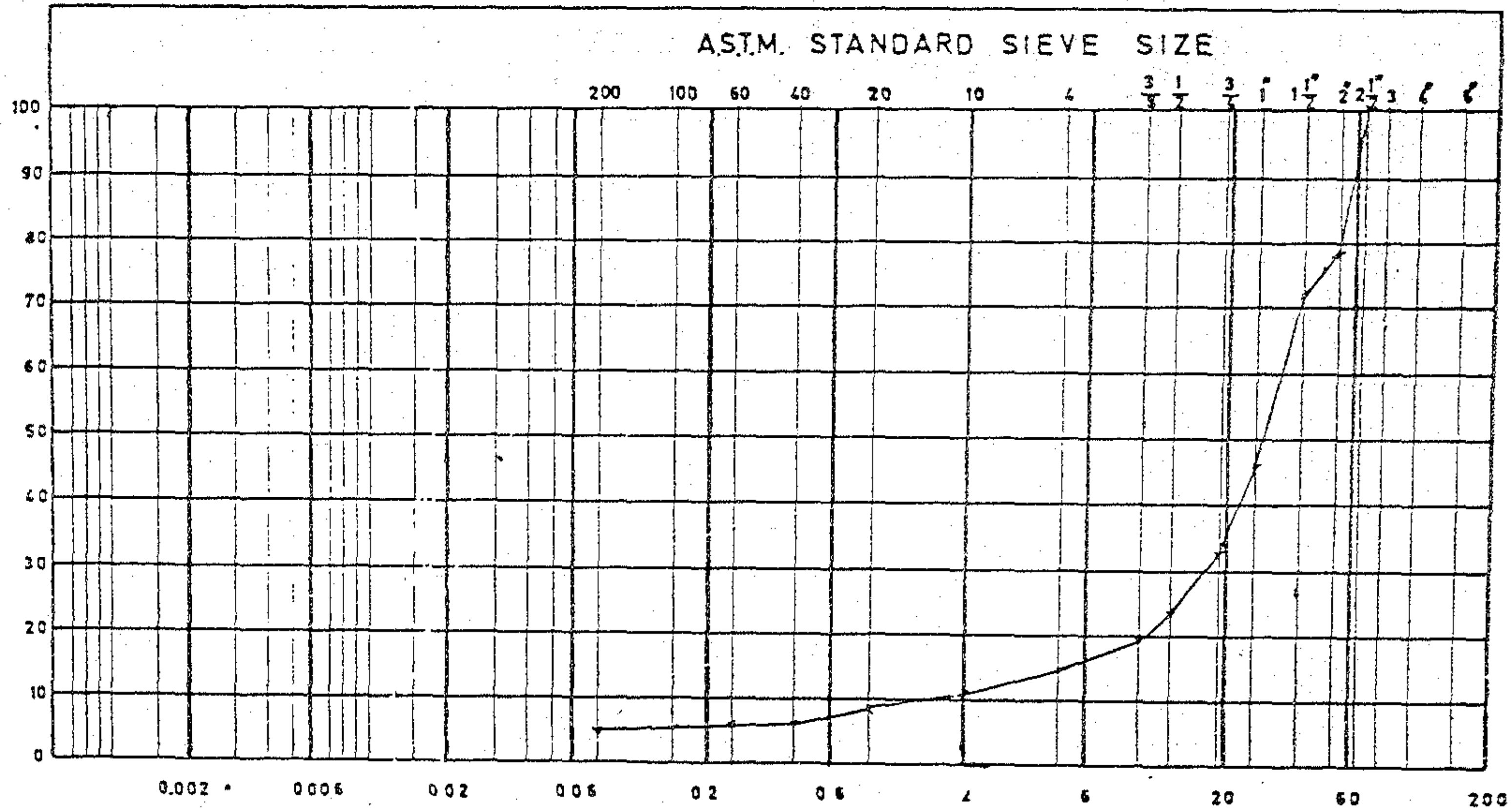
L.L. × % P.L. × % P.I. ....

S.M. & C.D.

مركز البحوث والدراسات الملحية PARTICLE SIZE DISTRIBUTION

LOCATION N°. سن المتروحين رقم ٢ BORE HOLE N°. B – 1 DEPTH 3,5 ... M PRETREATMENT DETAILS

DATE OF TEST. 18/7/1982 DESCRIPTION GP Gravel Sand mixture LOSS ON PRETREATMENT



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

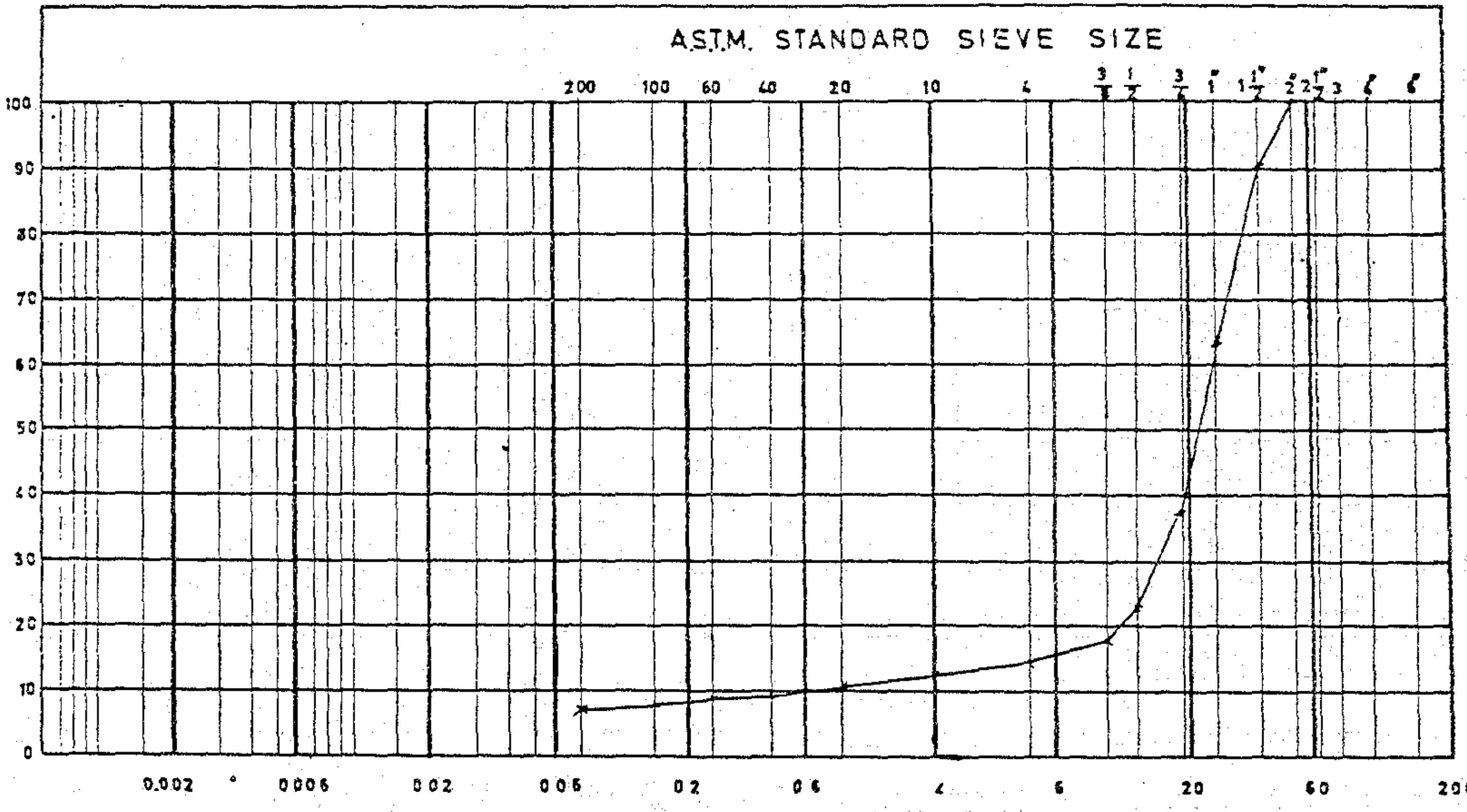
LL Y % PI % PL

S.M. & C.D.

مركز البحوث والدراسات المائية PARTICLE SIZE DISTRIBUTION

LOCATION N°. مبنى المنتزه وجبي رقم ٢ BORE HOLE N°. B-1 DEPTH 5,5 - 6,0 M PRETREATMENT DETAILS.......

DATE OF TEST 18/7/1982 DESCRIPTION GP Gravel Sand mixture LOSS ON PRETREATMENT......



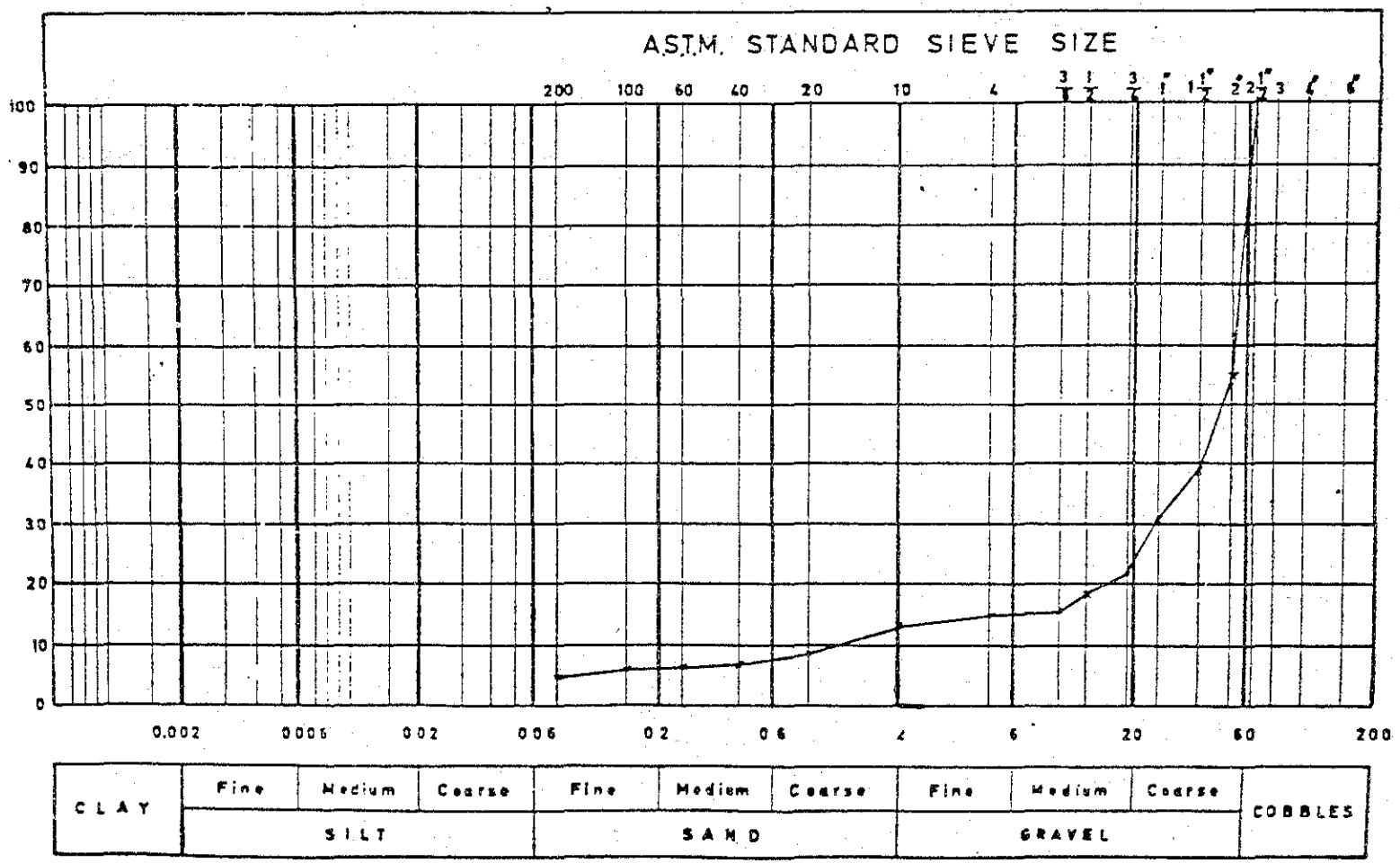
CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	

S.M. & C.D.

مركز البحوث والدراسات الفنية PARTICLE SIZE DISTRIBUTION

LOCATION N° مبنى المدرجين رقم ٢ BORE HOLE N° B-1 DEPTH 7.5-8.0 M PRETREATMENT DETAILS

DATE OF TEST 18/7/1982 DESCRIPTION GP Gravel Sand mixture LOSS ON PRETREATMENT

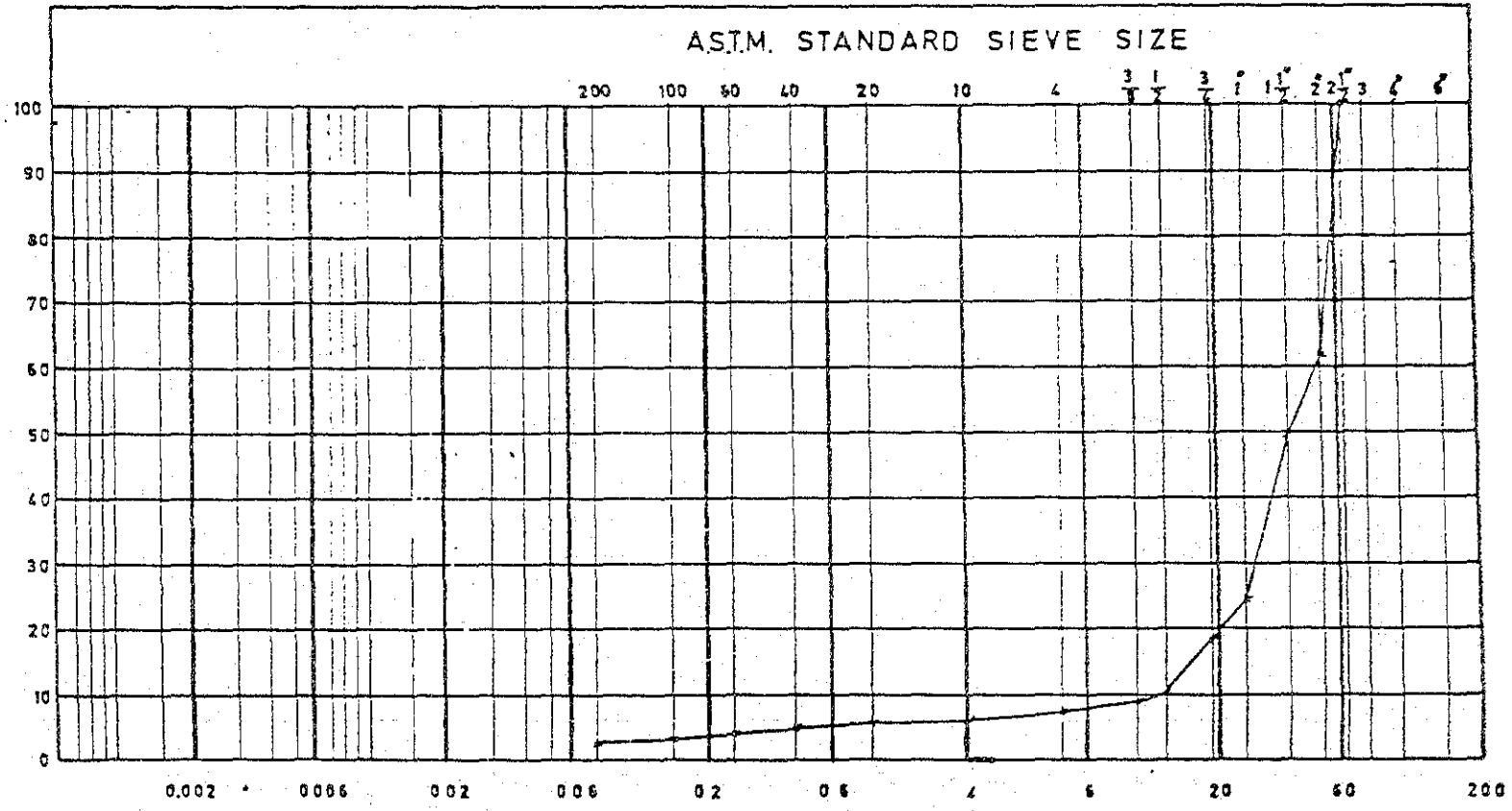


S.M. & C.D.

PARTICLE SIZE DISTRIBUTION

LOCATION No. مبنى المترجمين رقم ٢ BORE HOLE No. B-1 DEPTH 1,0 - 1,5 M PRETREATMENT DETAILS

DATE OF TEST 18/7/1982. DESCRIPTION GP Gravel Sand mixture LOSS ON PRETREATMENT



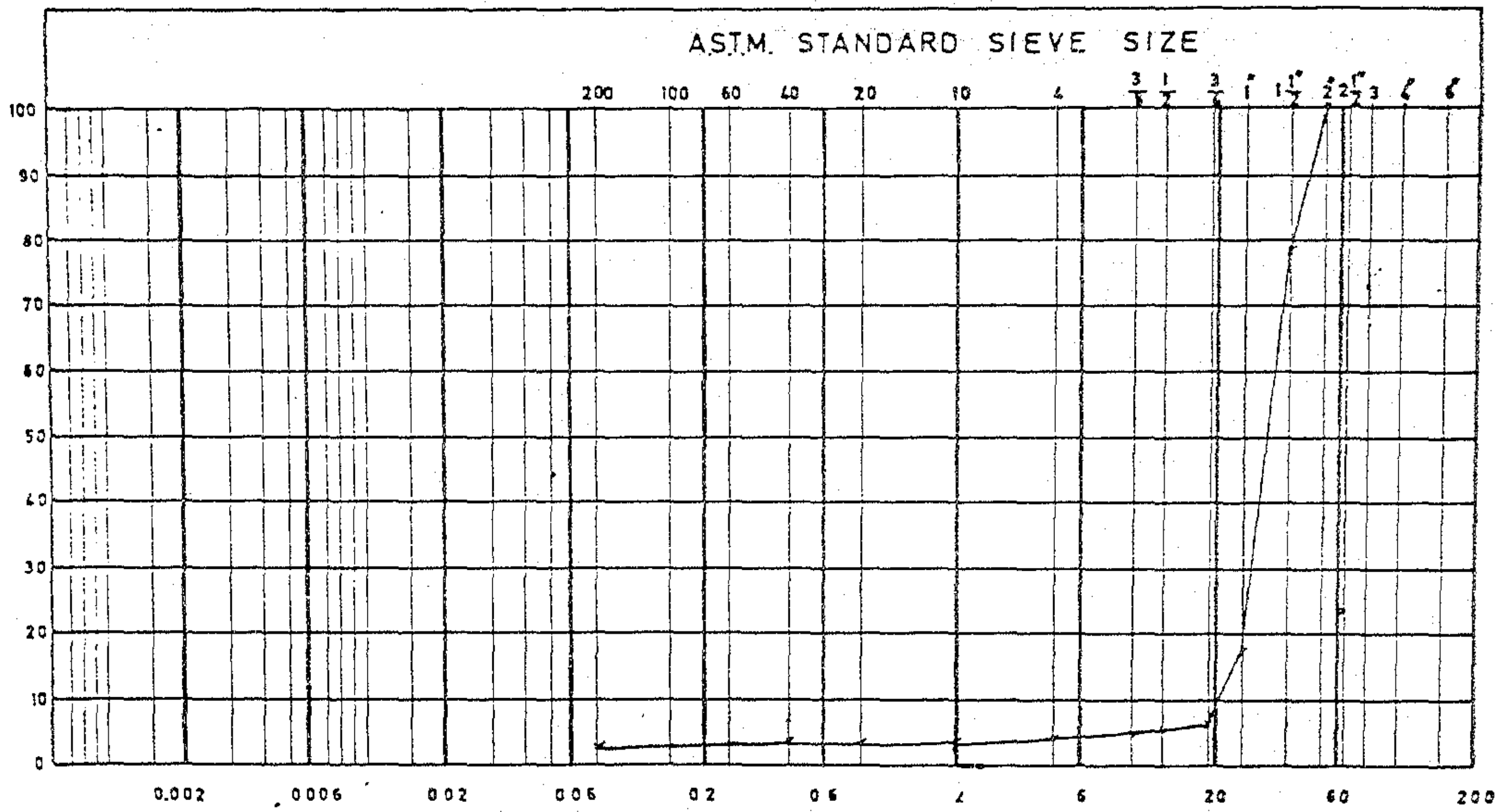
LL % PI % PI

S.M. & C.D.

[illegible] PARTICLE SIZE DISTRIBUTION

LOCATION N°. [illegible] ٢ BORE HOLE N°. B-1 ..... DEPTH 14,5 - 15,0 M PRETREATMENT DETAILS .....

DATE OF TEST 18/7/1982 DESCRIPTION GP Poorly graded gravel LOSS ON PRETREATMENT ......



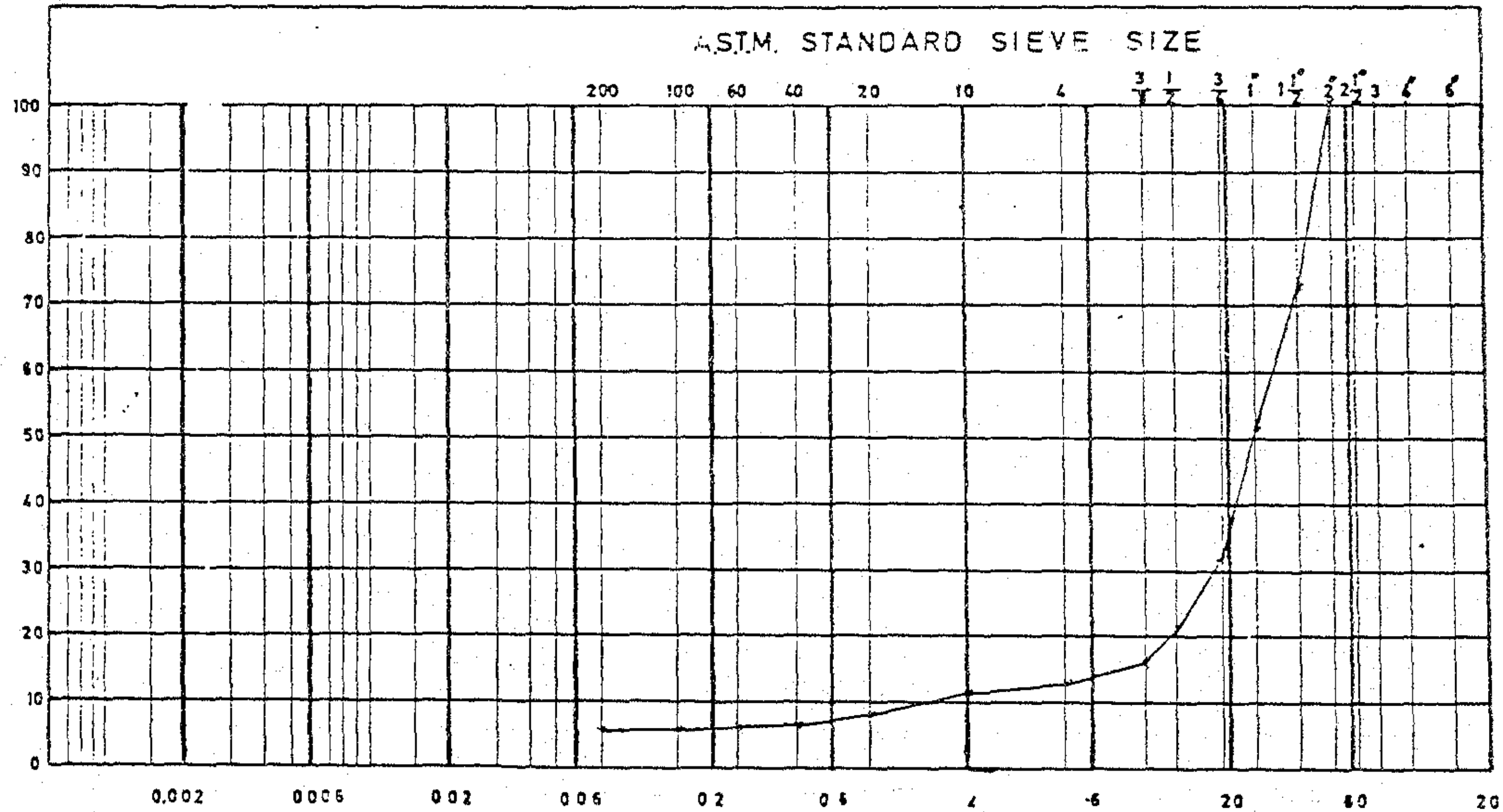
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine.	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

LL .... % P.L .... % P.I. ....

S.M. & C.D. مركز البحوث والدراسات الدولية PARTICLE SIZE DISTRIBUTION

LOCATION N°. مبنى المتروجين رقم BORE HOLE N°. B-2 DEPTH 2,0-3,0 M PRETREATMENT DETAILS......

DATE OF TEST. 8/7/1982 DESCRIPTION GP poorly graded gravel LOSS ON PRETREATMENT.......



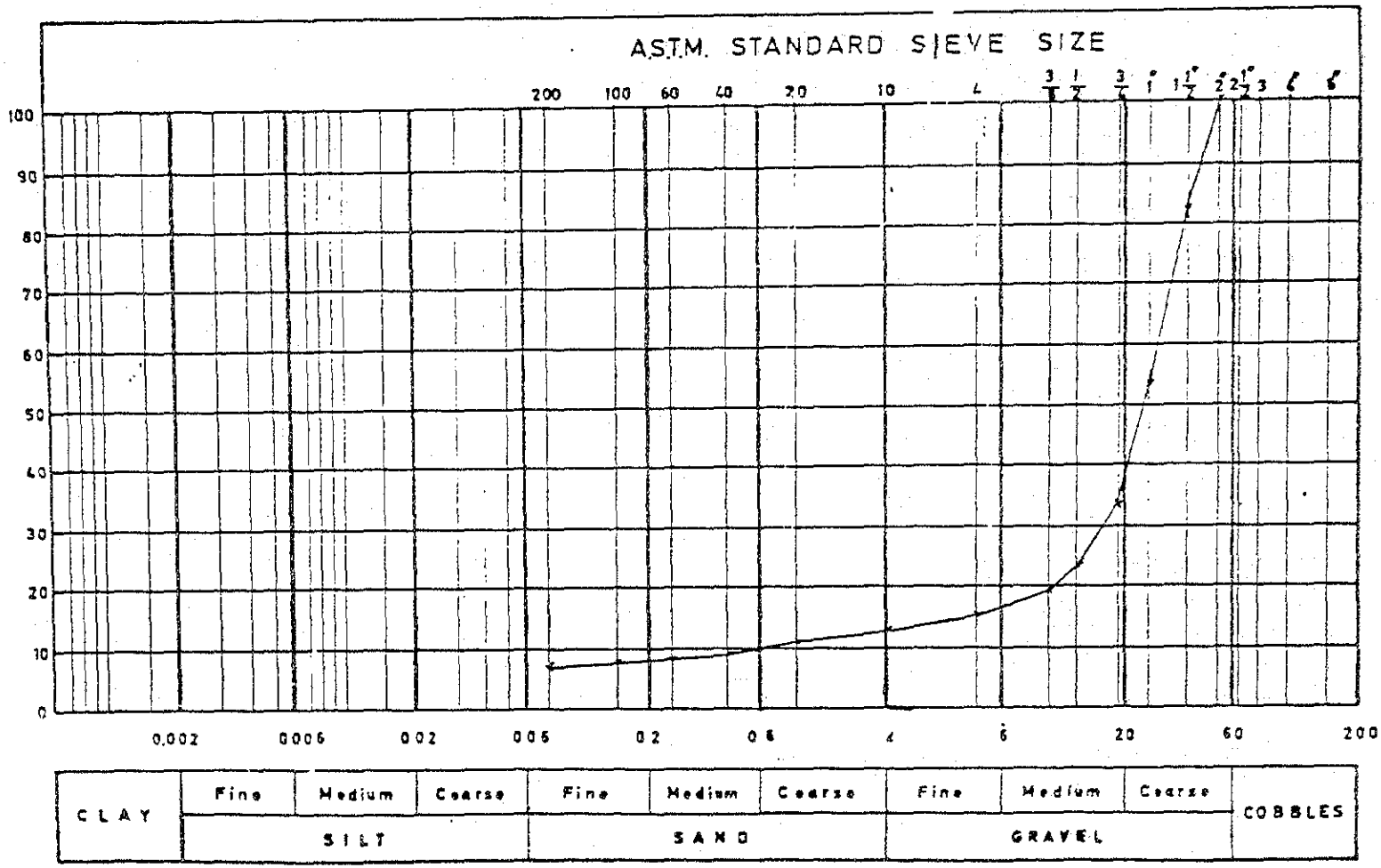
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

S.M. & C.D.

مركز التربة والدراسات الزلزالية PARTICLE SIZE DISTRIBUTION

LOCATION N°. مبنى المتزوجين رقم ٢ BORE HOLE N°. B-2 DEPTH 5,5-6,0 M PRETREATMENT DETAILS. ....

DATE OF TEST. 13/7/1982 DESCRIPTION GP poorly gradid gravel LOSS ON PRETREATMENT.....

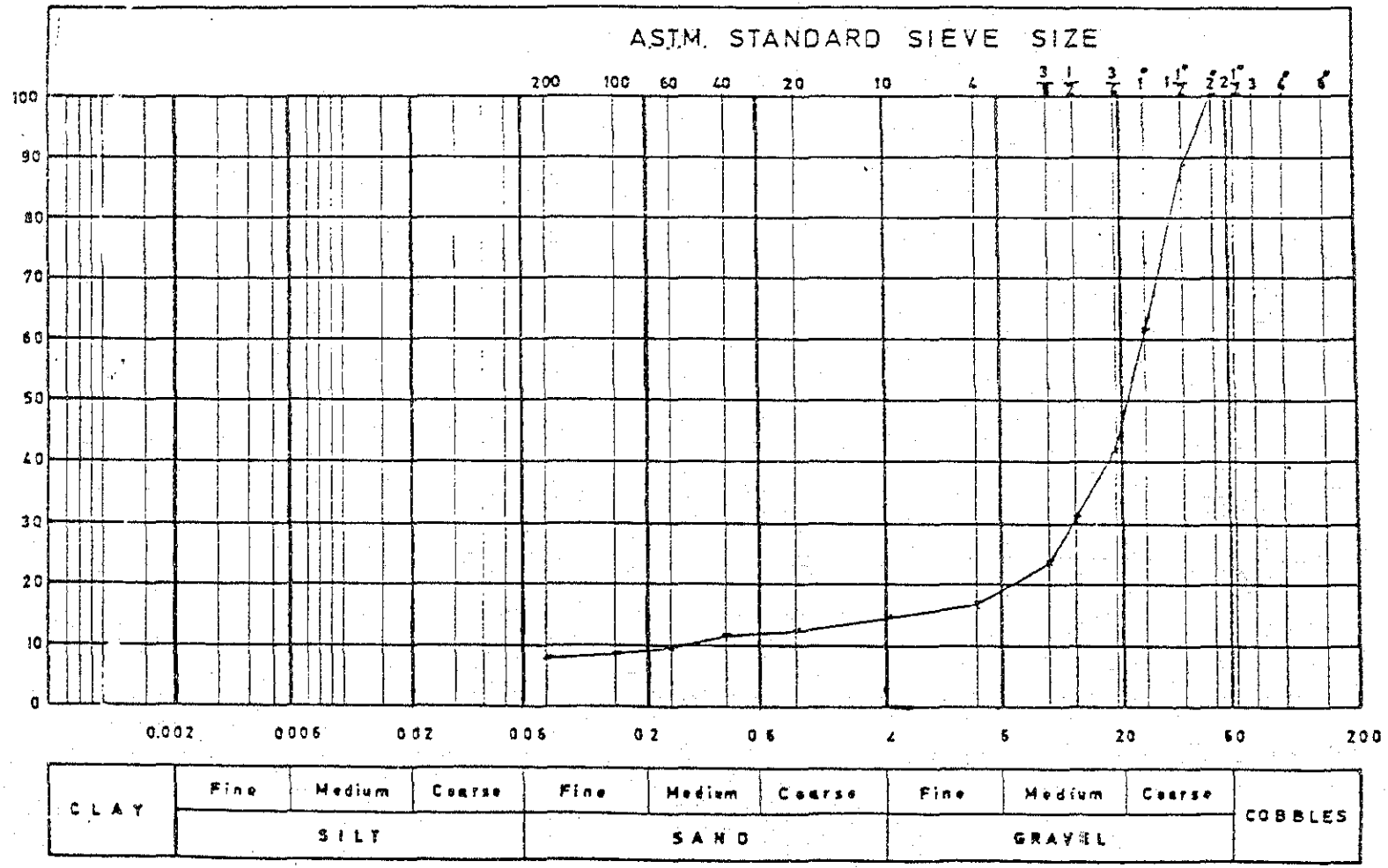


S.M. & C.D.

مركز البحوث والدراسات الأرضية PARTICLE SIZE DISTRIBUTION

LOCATION N°. ٢ مبنى المتزوجين رقم BORE HOLE N°. B-2 DEPTH 9.5-10.0 M PRETREATMENT DETAILS.....

DATE OF TEST 13/7/1982 DESCRIPTION GP poorly graded gravel LOSS ON PRETREATMENT.....

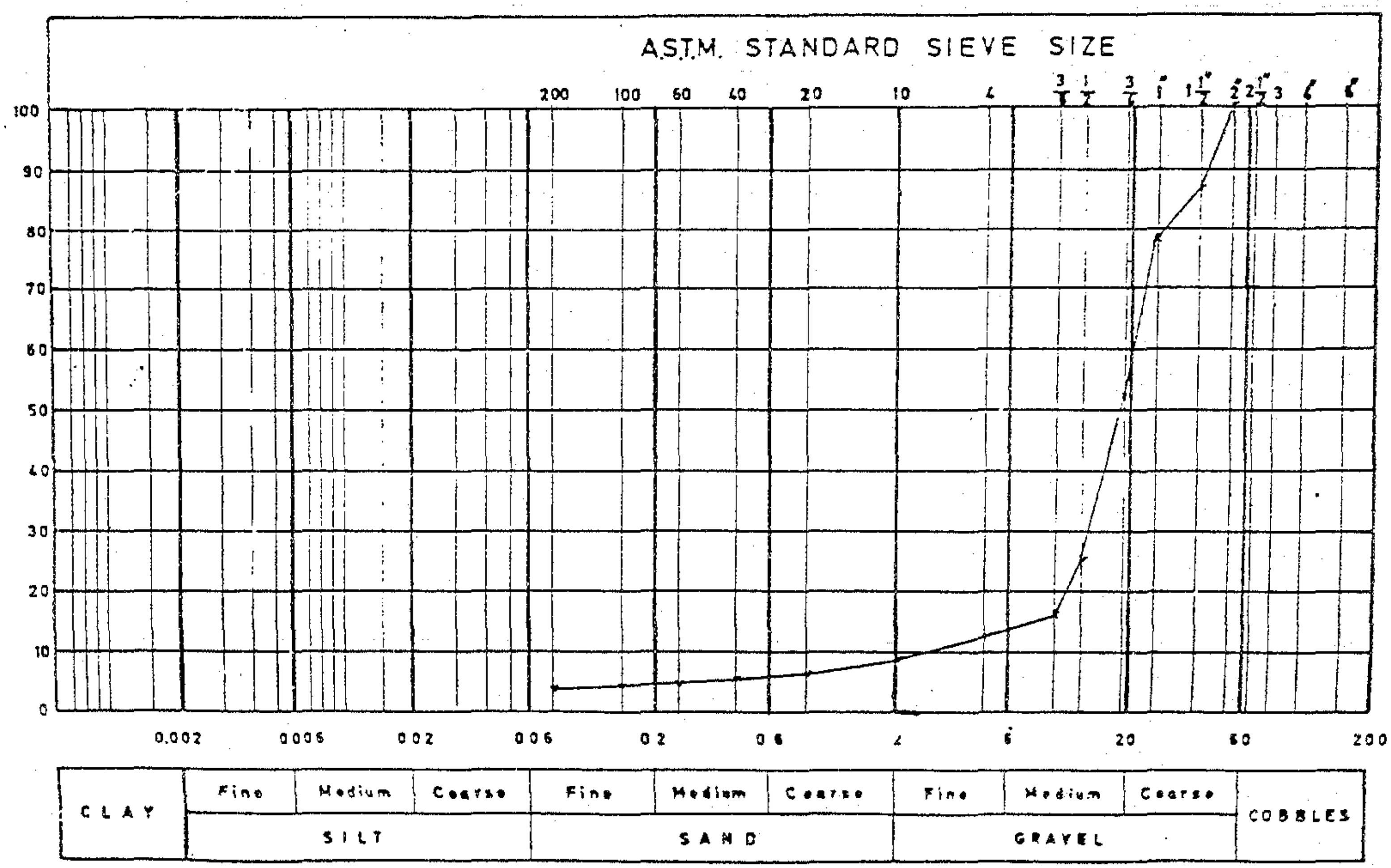


S.M. & C.D.

مركز البحوث والدراسات الانشائية PARTICLE SIZE DISTRIBUTION

LOCATION N°. مبنى المنزجيين رقم [illegible] BORE HOLE N°. B – 2 DEPTH 11,0 – 11,5 M PRETREATMENT DETAILS ______

DATE OF TEST 18/7/1982 DESCRIPTION GP poorly graded gravel LOSS ON PRETREATMENT ______

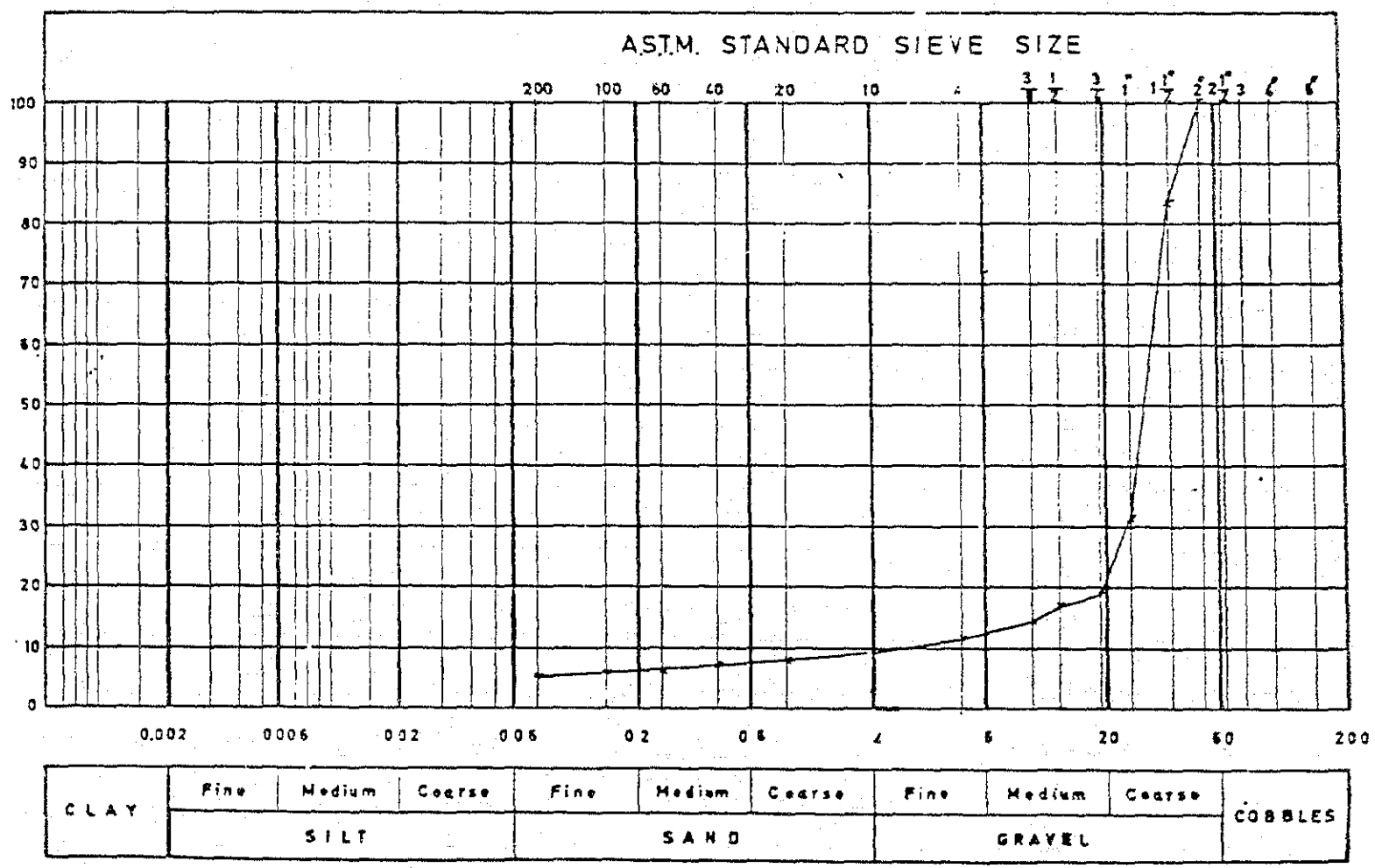


S.M. & C.D.

مركز البحوث والدراسات الفنية PARTICLE SIZE DISTRIBUTION

LOCATION N°. مبنى المدرجين رقم ٢ BOREHOLE N°. B-3 DEPTH 3,0-3,5 M PRETREATMENT DETAILS ...

DATE OF TEST. 13/7/1982 DESCRIPTION GP poorly graded gravel LOSS ON PRETREATMENT.....

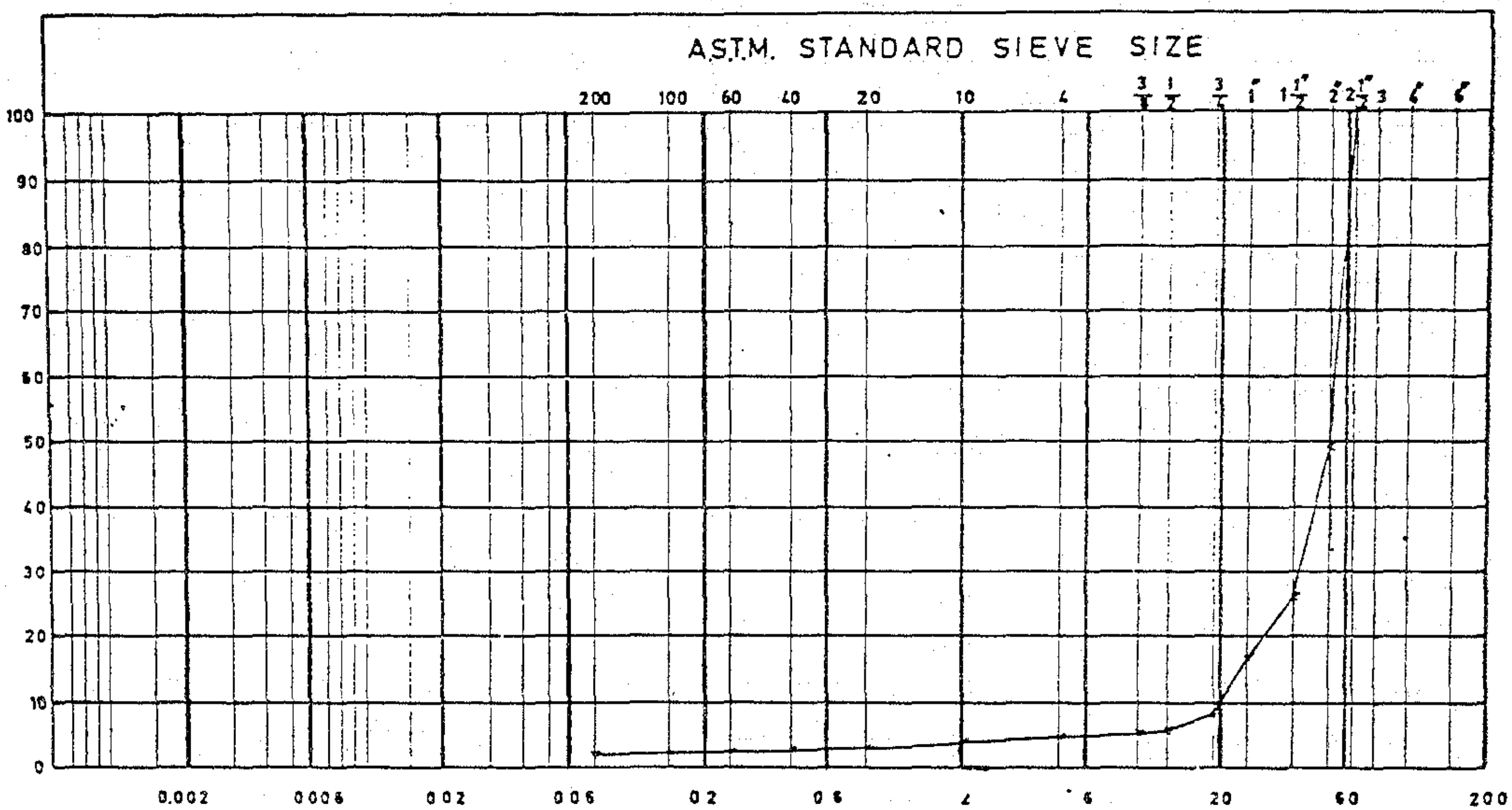


مركز البحوث والدراسات العلمية PARTICLE SIZE DISTRIBUTION

S.M. & C.D.

LOCATION N° مبنى المتزوجين رقم BORE HOLE N°. B-3..... DEPTH 6,0 – 6,5 M PRETREATMENT DETAILS .....

DATE OF TEST.. .. .. DESCRIPTION GP Poorly graded gravel LOSS ON PRETREATMENT......



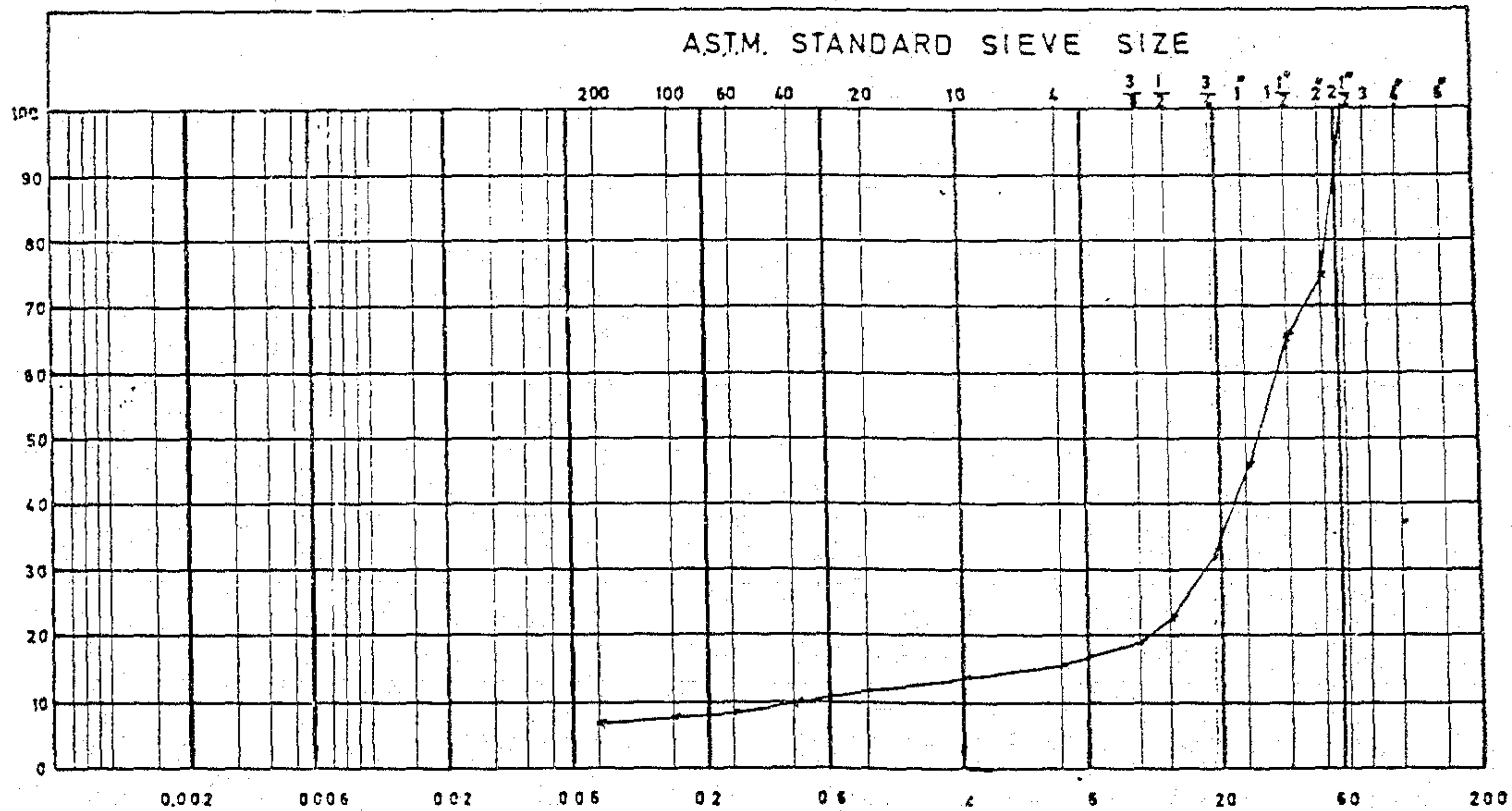
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

S.M. & C.D.

[illegible] PARTICLE SIZE DISTRIBUTION

LOCATION N°. [illegible] BORE HOLE N°. B-3 DEPTH 10.0-10.5 M PRETREATMENT DETAILS

DATE OF TEST. 18/7/1982 DESCRIPTION G.P. Poorly graded gravel LOSS ON PRETREATMENT

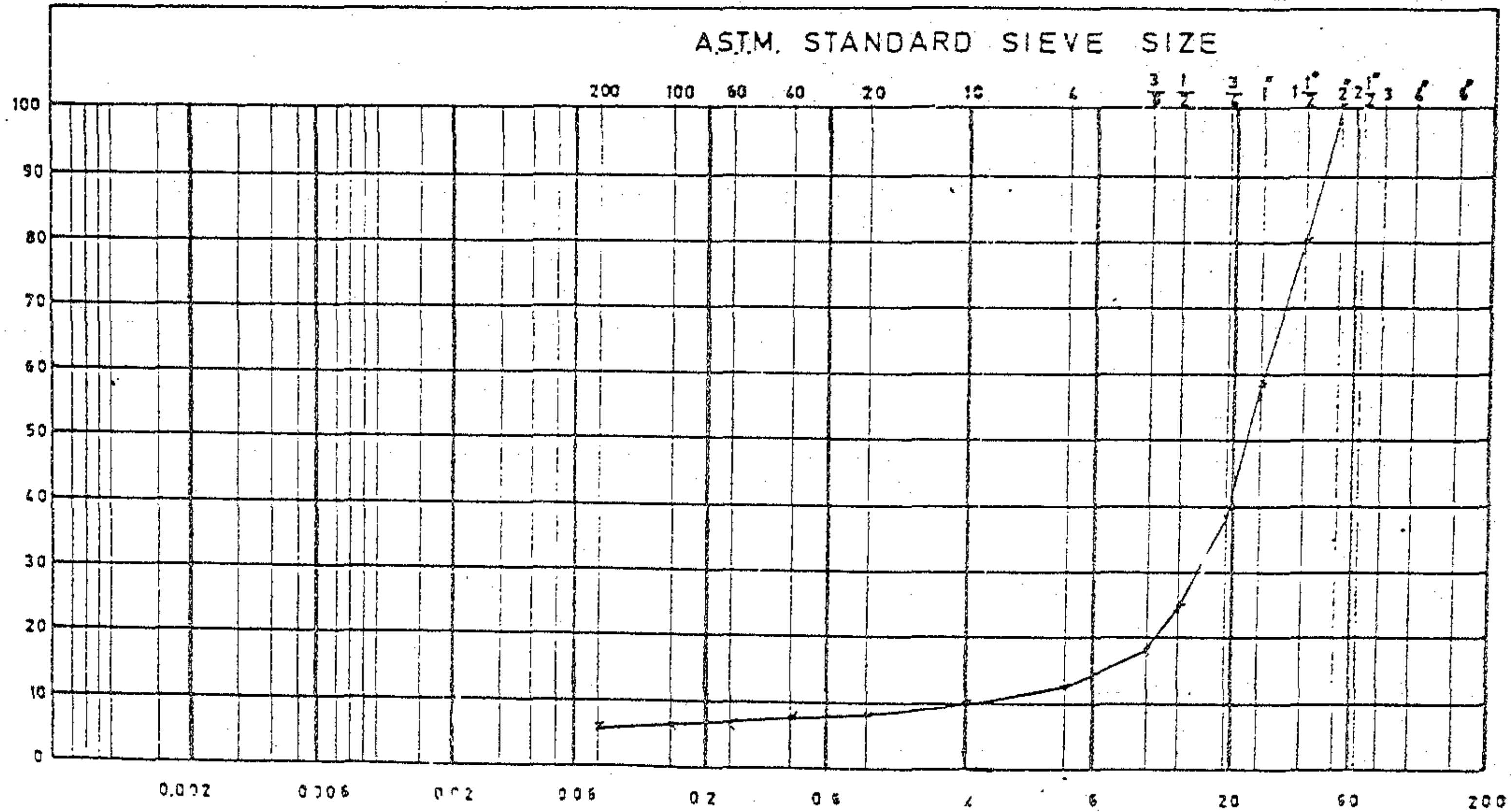


CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

S.M. & C.D. [illegible] PARTICLE SIZE DISTRIBUTION

LOCATION N° [illegible] BOREHOLE N° B-3 DEPTH 14,5–15,0 M PRETREATMENT DETAILS ......

DATE OF TEST 13/7/1982 DESCRIPTION GP poorly graded gravel LOSS ON PRETREATMENT ......



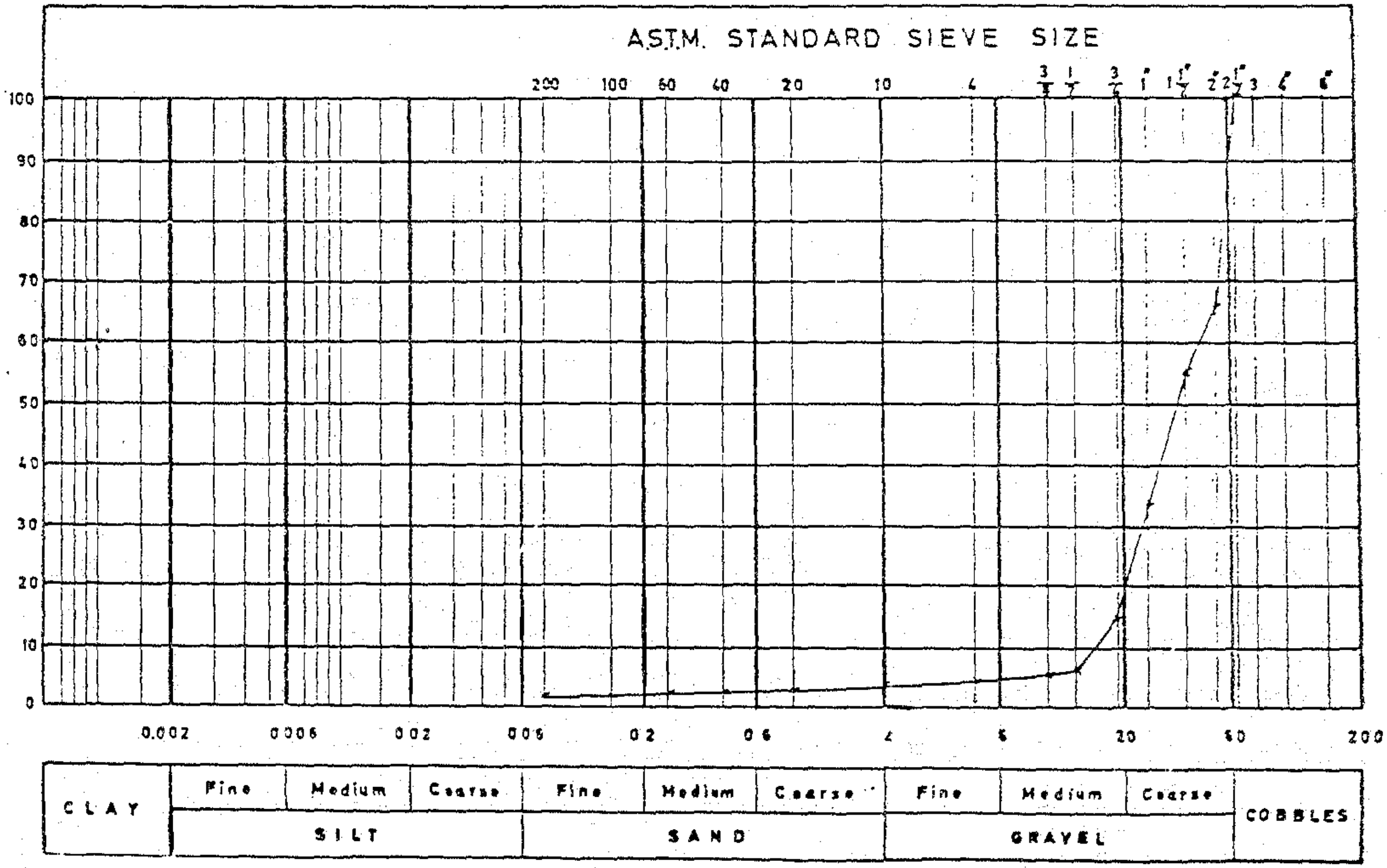
CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	

S.M. & C.D.

مركز البحوث والدراسات الوطنية PARTICLE SIZE DISTRIBUTION

LOCATION N° مبنى المتروجيه رقم ٢ BORE HOLE N° B-4 DEPTH 3,5-4,0 M PRETREATMENT DETAILS ....

DATE OF TEST 18/7/1982 DESCRIPTION G.P. poorly graded gravel LOSS ON PRETREATMENT ......

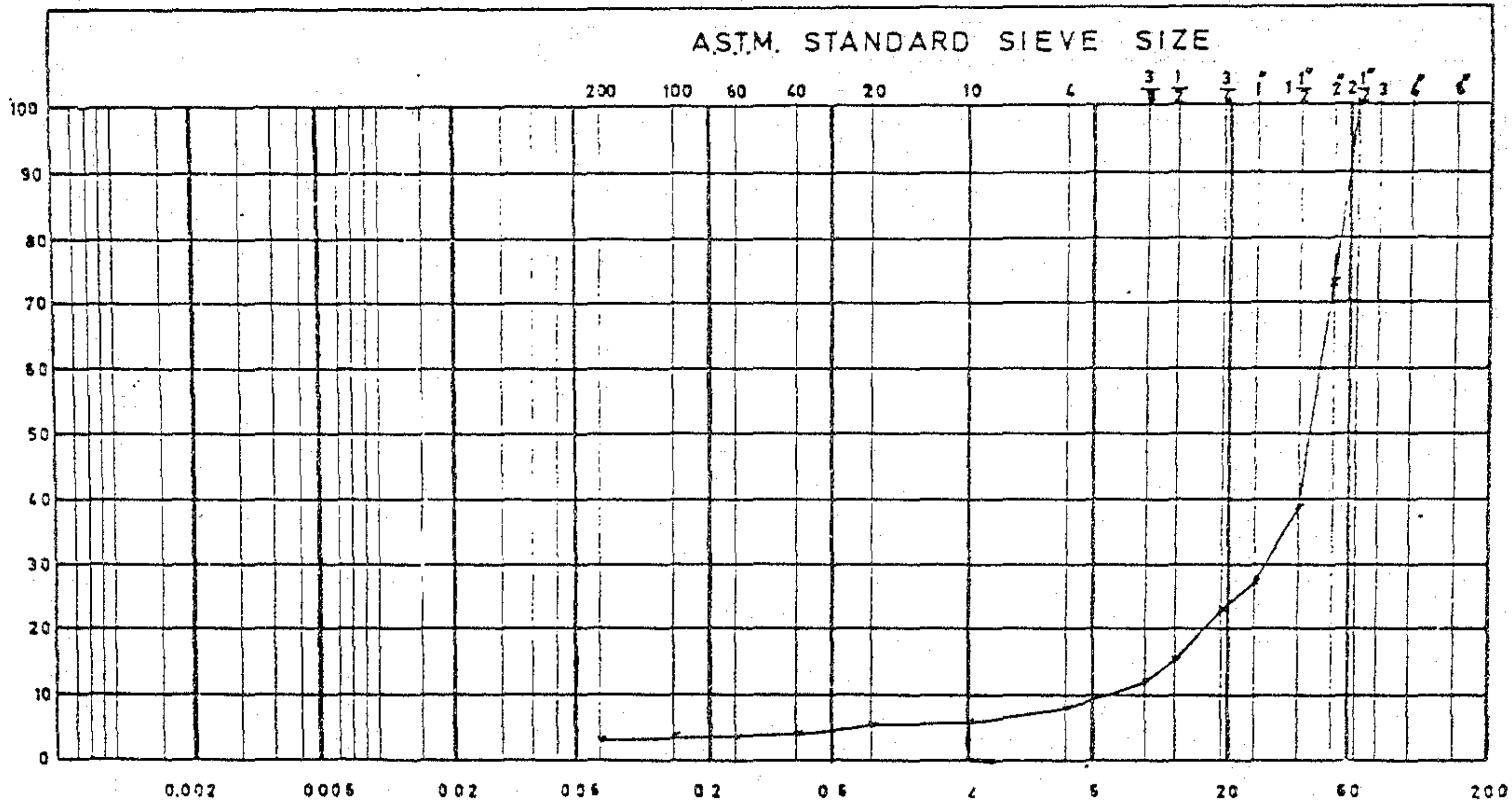


S.M. & C.D.

PARTICLE SIZE DISTRIBUTION

LOCATION No. .... BORE HOLE No. B – 4 ...... DEPTH .... — 11.2 M PRETREATMENT DETAILS ......

DATE OF TEST 18/7/1982 DESCRIPTION G.P. Poorly graded gravel LOSS ON PRETREATMENT ....



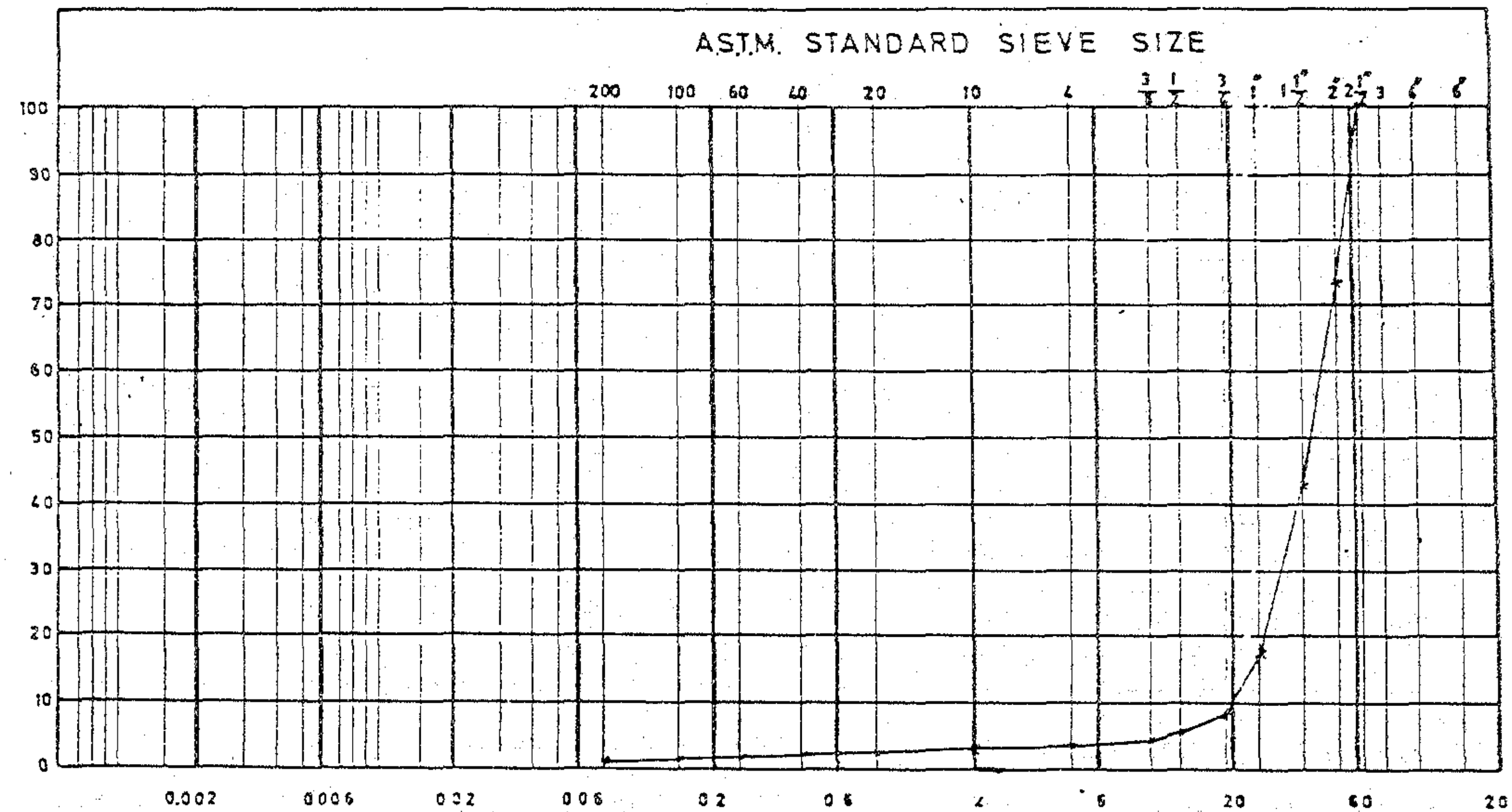
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

S.M. & C.D.

مركز البحوث والدراسات الانشائية PARTICLE SIZE DISTRIBUTION

LOCATION N°. ٢ بنى الكردجين رقم BORE HOLE N°. B-4 DEPTH 5.5-7.0 M PRETREATMENT DETAILS......

DATE OF TEST 18/7/1982 DESCRIPTION GP - poorly graded gravel LOSS ON PRETREATMENT.......



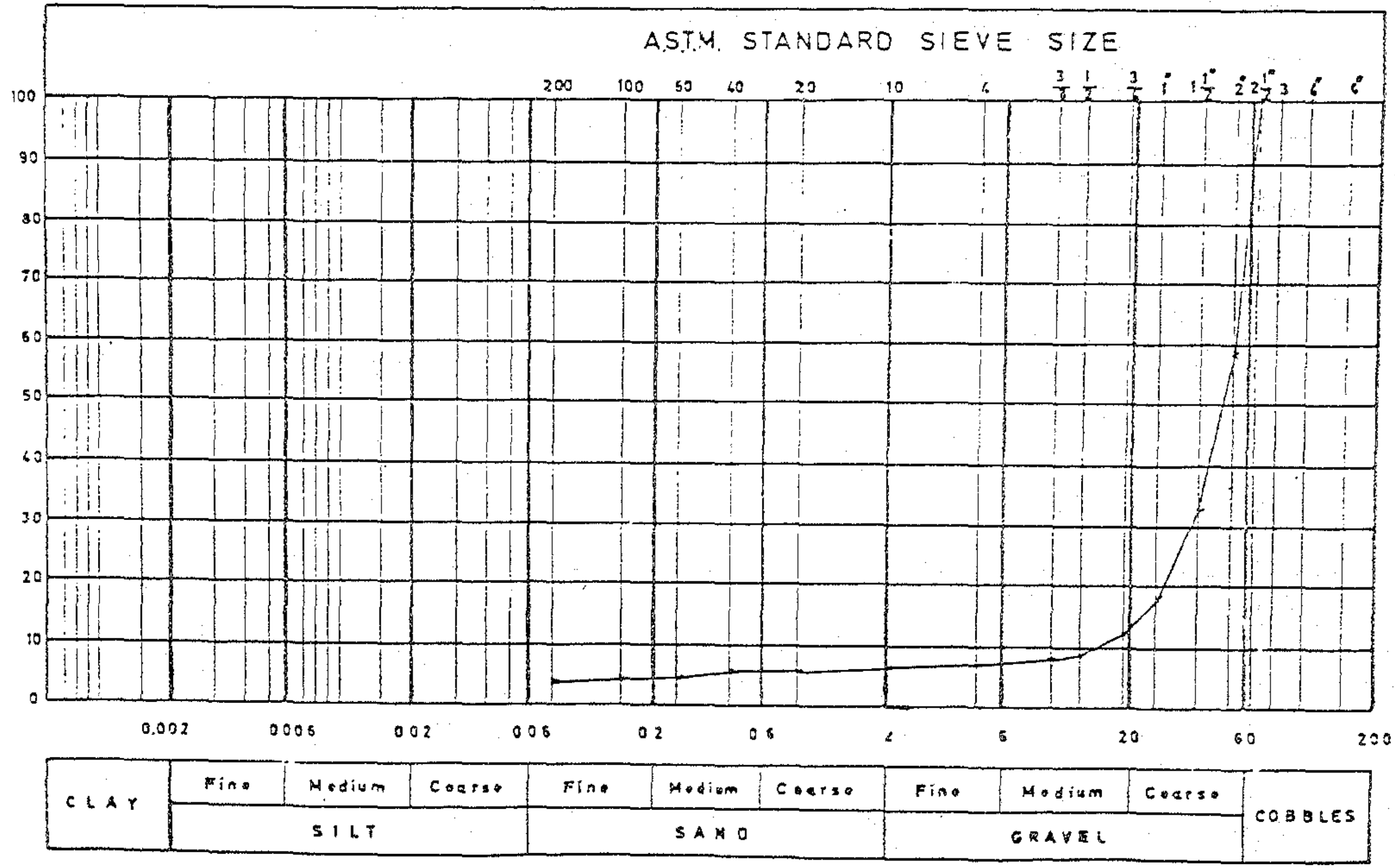
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

S.M. & C.D.

PARTICLE SIZE DISTRIBUTION

LOCATION N° [illegible] BORE HOLE N° B-4 DEPTH 14.5 - 15.0 M PRETREATMENT DETAILS

DATE OF TEST. 18/7/1982 DESCRIPTION GP Poorly graded gravel LOSS ON PRETREATMENT . . .



10 - (4)

1 - City network voltage and frequency

NSCL will be fed by the mains through a step down transformer of 20 KV/0.4 KV 50 Hz - P = 630 KVA
The rated output voltage 220/380 V.A.C. which is three - phase with neutral.
Rated output frequency 50 Hz 5%

2 - Stand by sets:

The alternators has a rating based on 400 volts - (three phase with neutral) and the rated output frequency is 50 Hz
The standard voltage range within which the alternator can be adjusted is 380 to 420 volts, which, under certain condition, can be extended upwards to 440 volts.
The stand-by power is P = 500 KVA - output voltage symetry at p.f 0.7 Lag to 0.9 Lead.

3 - Output voltage tolerance of city mains: 220 Volts at 50 Hz

The voltage tolerance is + 10% , -15%, and frequency tolerance 5% by mains.

4 - Average number of transient surges is 6 times a day...; and the average mains failure is once a day.

10 - 7) City water

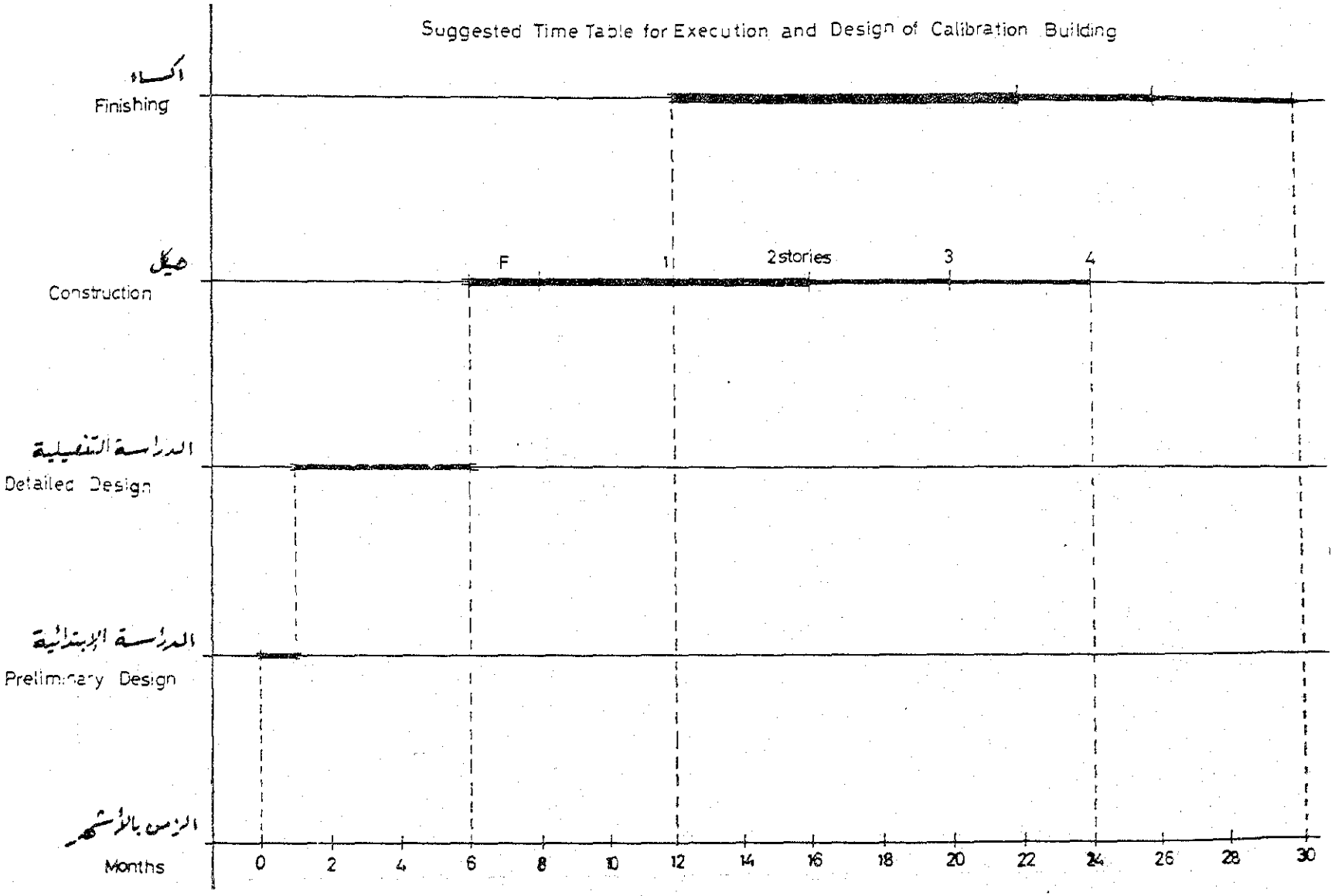
10 - 8) - (1) The need 400 Hz power is 2KVA at 115 and 220 Volts.
10 - 8) - (2) The underground water level is at app. 50 - 60 meter.
10 - 8) - (3) Seperate power supply as a ups is needed.
10 - 8) - (4) Both are available.
10 - 8) - (5) No high EMF and EMI in the chosen site, is experienced-several computer centers exist in the nearby site.
10 - 8) - (6) Good water quality - dust exists in the area. (existing report is enclosed).
10 - 8) - (7) Packing and transportation is taken into acount.
10 - 8) - (8) Telephone will be used.
10 - 8) - (9) Anti-electro static measures are needed.

11 - 1) 4500 S.P. /m
3500 S.P. /m
11 - 2) 2 - storey 16 months
3 - = 20 months
4 - = 24 months
11 - 3) No aircondition monufacturers in Syria.

الجمهورية العربية السورية
مركز الدراسات والبحوث العلمية

unit

الرقم	عنصر التحليل		القيمة	الوحدة	ملاحظات	VALUE
١	درجة الحرارة	TEMPERATURE	°C	درجة مئوية	قياس حقلي	
٢	اللون الحقيقي	COLOR	Color Unit	وحدة لون		
٣	اللون الواضح	APPAIGNT COLOR	٪	=		
٤	العكـــر	TURBIDITY				
٥	الناقلية	CONDUCTIVITY	µs/cm	ميكرو اوم/سم	قياس حقلي	7:00
٦	الجوامد المعلقة	SUSPENDED SOLIDS	mg/l	مغ/لتر		
٧	الجوامد المعلقة الطيارة	VOLATIL S.S.	٪	=		
٨	درجة الحموضة	PH	٨,٢٨		قياس حقلي	8,28
٩	الاكسجين المنحل	DISSOLVED OXYGENE	mg/l	مغ/لتر		
١٠	الحمـوضـة	ACIDITY METHYL ORANGE	٪	=		
١١	الحموضية	ACIDITY PHENOL PHTALEINE	٪	=		
١٢	القلوية	ALKALIGITY	٪ ٢١٠	=		310
١٣	ثاني اكسيد الكربون	CO_2 DISSOLVED	٪	CO_2 =		
١٤	الاكسجين الحيوي الممتص	BOD	٪	O_2 =		
١٥	الاكسجين الكيميائي	COD	٪	O_2 =		
١٦	ازوت النشـادر	AMMONIA	٪ ٠,٢٩٠٥	N =		0,0375
١٧	ازوت النترات	NITRATE,	٪ ١٠,٨	N =		10,8
١٨	ازوت النتريت	NITRITE	٪ ٠,٠٠١٥	N =		0,0015
١٩	الاورتوفوسفات	PHOSPHATE ORTHO	٪ ٠,٠٢٦٧	P_2O_4 =		0,0267
٢٠	الزيت في الماء	OIL	٪	=		
٢١	المنظفات الكيميائية	DETERGENT ANION		$LaHSO_4$ =		
٢٢	الكلوريد	CHLORIDE	٪ ٢١٣,٥	Cl =		37,5
٢٣	الكلوريـــن	CHLORINE	٪	Cl_2 =		
٢٤	البرومين	BROMINE		Br_2 =		
٢٥	الفلوريـــد	FLUORIDE		F =		
٢٦	الســيانيد	CYANIDE		CN =		
٢٧	حمض السيانوريك	CYANURIC ACID		=		
٢٨	الكبريتـــات	SULFATE	٪ ٠,٠٢٥	So_4 =		25,75
٢٩	كبريت الهيدروجين	HYDROGEN SULFITE		H_2S =		
٣٠	القساوة الكالسيوم	HARDNESS , Ca	٪ ٢٢٥	$CaCO_3$ =		225
٣١	القساوة الكلية	TOTAL HYRDNESS	٪ ٣٦٠	$CaCO_3$ = درجة فرنسية		360
٣٢	قساوة المغنزيـوم	HARDNESS Mg	٪ ١٣٥	$CaCO_3$ مغ/لتر درجة فرنسية		135
٣٣	الســيليكا	SILICA	٪ ١٦,٠٧١٤	SiO_2 مغ/لتر		16,0714


Suggested Time Table for Execution and Design of Calibration Building
اكساء
Finishing
هيكل
Construction
F
1
2 stories
3
4
الدراسة التفصيلية
Detailed Design
الدراسة الإبتدائية
Preliminary Design
الزمن بالأشهر
Months
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30

Annex 3

Level: Primary Function: Cells and Resistors Standards

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	DC Voltage Std	Std cells(4)	9154D	1	G.L	1.018 Volt, ± 1 ppm/year (Stab)
2		Transit Case	91541	1	G.L	Transit Case for Item 1
3	DC Voltage Std	Transvolt-shipp-able Std Cells Cell(4)	9152-4	1	G.L	1,018 volt, ± 1 ppm/year (Stab)
4	Std Resistor	Std. Resistor	9330-1	2	G.L	1Ω , ± 5ppm
5	"	"	9330-10	2	G.L	10Ω, ACC ± 5ppm
6	"	"	9330-100	2	G.L	100Ω, ACC± 5ppm
7	"	"	9330-1K	2	G.L	1 kΩ, ACC ± 5ppm
8	"	"	9330-10K	2	G.L	10Ωk , ACC ± 10ppm
9	"	"	9330-100K	2	G.L	100 kΩ, ACC ± 10ppm
10	"	"	9330-1M	2	G.L	1MΩ, ACC ± 20ppm
11	"	"	9330-10M	2	G.L	10MΩ, ACC ± 30ppm
12	"	Oil Bath	9730 CR	1	G.L	Temp control± 0.001 °C, Temp Groclient to ± 0.003 °C Temp Rang 0°C to 65 °C

LEVEL : Primary FUNCTION: Resistance Measurement

Level: Primary Function: Resistance Measurement

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
13	Resistance Measurement	Decode Resistor	(1433-9700) Type 1433-U	1	G.R	0.01Ω to 111,1Ω, ACC ± 0.01%
14	"	"	(1433-9702)	2	G.R	0.1Ω to 11Ω , ACC ± 0.01%
15	"	"	(1433-9706) Type 1433-L	2	G.R	10Ω to 111,100[illegible] , ACC± 0.01%
16	DC Voltage Measure	DC Transfere STD	731B	1	J.F	10V, 1V, 1.018+DE & 1,019+4E ACC ±15ppm
17	"	DC Calibration System	7105A	1	J.F	
17-a	"	DC Voltage STD/ and Noll Detector	335D	1	J.F	0 to 111,111V(1rV,10 V & 100 VS Stabl (0.0005 +7)1 Month for 10V Range Stabl (0.0005+30)1 Month for 200V Range
17-b	"	High Impedance Voltecter & Nulh Detector	845AR	1	J.F	1 rV Full Scale Sensitivity
17-c	"	Reference Divider	750A	1	J.F	IlP Voltage 1.1 to 1100V, Stable ± 10ppm
17-d	"	Kelvin Varky Divider	720A	1	J.F	Ratio: 0 to 1.0 & 0 to 1,1, Stable ± 1ppm
17-e	"	Lead Compensator	721A	1	J.F	Max Ratio ÷ 4000:1
17-f	"	Cabinet for 7105A	7105A-502K	1	J.F	Cabinet, with leads and accessories
18-	DCVIACVIOCA and Resistance	Degital Multimeter 6 1/2 degit	8505 A add opt-02A,03	1	J.F	

LEVEL : Primary FUNCTION: Resistance Measurement

Level: Primary Function: Resistance Measurement

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	Resistance Mesurement	Resistar Transfer for STD	SR1010/1K	1	ESI	1 k , (decode step) ± 5 to ± 30ppm
2	"	"	SR1010/100k	1	ESI	100k , (decode step) ± 5 to ± 30ppm
3	"	"	SR1050/10M	1	ESI	10M , (decode step) ± 5 to ± 20ppm
4	"	Parbel compensation network (for ESI SR1010)	SPC 101	1	ESI	
5	"	Series compensation network)for ESI SR1010)	SPC 102	1	ESI	
6	"	Shorting bars (for ESI, SR 1010)	SP 103	1	ESI	
7	Frequency STD	Stand by power supply	5089A	1	M.P	15A Hour Capacity

LEVEL : Primary FUNCTION: Capacitance and Induction Measurement

Level: Primary Function: Capacitance and Inductance Meas.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	Capacitance Measurements	Capacitance Measuring Assembly	1620-AP	1	G.R	10PF to 1,1 R.F, acc ± 0.01% at 50 Hz to 10 kHz
2	"	Range Extension	1615-P1	1	G.R	1.1R.F to 11,1 RF
3	"	Coaxial Adapter GR900/B.P	1615-P2	1	G.R	
4	"	Coaxial Capacitance STD	1404A	1	G.R	1000P.F., Stable ± 20ppm/Year at 1 kHz
5	"	Coaxial Capacitance STD	1404B	1	G.R	100 P.F. Stabl ± 20ppm /Year at 1 kHz
6	"	Coaxial Capacitance STD	1404C	1	G.R	10 P.F, Stabl ± 20ppm/Year at 1 kHz
7	Inductance Measurements	LCR Meters Frequency 100 Hz to 11 Spots	4274A	1	H.P	L:100 nH to 10 KH, ACC ± 0.1% C: 1P.F to 1 F, Acc ± 0.1% R: 100m to 10M , Acc ± 0.1% : °T ± 180°

LEVEL : Primary FUNCTION: Inductance Measurement

Level: Primary Function: Inductance Measurement

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
8	Inductance Measurements	DPt: Internal DC Bais	Opt,001	1	M.P	0to 35, Max Resof 1 mv step
9	"	STD Inductor	1482-L	1	G.R.	100 mH, Stabl ± 0.01%/Year
10	"	Decade Inductor Meter 4274	1491-G	1	M.P	Test Fixture with asfety Cover
11	"	Opt. for LCR Meter 4274A	16047B	1	H.P	Test Fixture for High frequency
12	"	"	16047C	1	H.P	Test Fixture for High frequency
13	"	"	16048A	1	H.P	Test Leads, BNC
14	"	"	16048C	1	H.P	Test Leads with Alligator Clip

LEVEL : Primary FUNCTION: AC Voltage and current

Level: Primary Function: AC Voltage and current

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	AC Voltage STD Measurments	Thermal Tranfer STD	540B	1	J.F	5Hz to 100 kHs, AsV to 1000V 0.01% to ± 0.05%
2	"	High Frg thermal Convector	A55(.5,1,2,3, 5,10,20,30,50)	1 each	J.F.	Frg up to 50 MHc Voltage: 1,2,3,5,10,20,30 & 50V,
3	"	Accessory kit	A55-110	1	J.F	Accessory kit
4	"	Case	C55	1	J.F	Case
5	AC Current STD Measurement	Current Shunts	A40(10,20,30, 50,100,200,300 and 500 m.A) AaW (1,2,3 & SA)	1 each	J.F.	Frg 5Hz to 100 kHz Current (10,20,30,50,100,200,300 500 ma) and (1,2,3 and 5A)
6	"	"	A40A(10 and 20A) SA)		J.F.	Current (10 and 20A)
7	"	Input Cable for A40A	A40A (10 & 20A)	2	J.F	Input cable
8	"	Output Cable	A45-4004	2	J.F	Output cable
9	"	Case	C 41	1	J.F	Case
10	"	Test Lead Kit	Y8133	1	J.F	Test Lead Kit for A40's
11	"	Thermal RMS	8506A	1	J.F	120ppm ac ACC from 40Hz To 2kH 25ppm short term stabl DC Voltage up 1200V

LEVEL : Primary FUNCTION: Frequency

Level: Primary Function: Frequency

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	Frequency and Time	Cesium beam Frequency	5061A	1	Hp	0.1 - 1.0 - 5.0 MHZ, ACC 410-12 reprod.± 310 Stab ± 320 (with Opt. 004)
2	"	(lock and standby power for 5 dolp	Opr 003	1	Hp	
3	"	High performance	Opr 004	1	Hp	
4	"	Distribution amplif.	5087A Opt 031	1	Hp	Imput upto 3BNC, , 5MHz 1 MHz, 100 kHz; level 0.3 to 3.0 V Inpust Upto 12 BNC, , 5MHz 1 MHz, 100KHz; level 0 to 3 vrms, 50 SL
5	"	Tracking receiver	599K	1	Tracor	ACC
6	"	Oscilloscope	1741A	1	Hp	Dual cham. 5mv/div to WOHAz çms rise time storage.
7	"	Vert. pen recorder	3056-21	1	Yew	2 pens, ranges (5 v to 5/cm)
8	"	Freqeuncy diff. meter	527E	1	Tracor	Acc of Fr. to" of phase 10^{-12}

LEVEL: Secondary FUNCTION: DC Measurement and Gener

Level: Secondary Function: DC Meas. and Gener.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	DC Voltage & Current Generating STD	DC Voltage & Currrent Calibrator	33330B	1	J.F	Voltage 0-1111,111V, Acc ± 30ppm, Current 0-111,1111mA,ACC ± 60ppm,
2	Voltage, Currrent Reasistance	Digital Multimeter 6 1/2 digit	8505A	1	J.F.	Voltage 30mv - 1000V, ACC ± 10 25 DC current 10 mA - 1A,Acc ± 300 To 500ppm
2-a		Ohms Converter	Opt - 02A	1		AC voltage 100mV - 5 freq up to 1 Mh
2-b		Current Converter	Opt - 03	1		ACC 0.016% to 1% at fM 200 kHz
2-c		IEEE- 488 Intefac	Opt - 05	1		Resistance Rang 10 to 100 M , Acc ± 30ppm 500ppm
2-d		Rms Convertor	Opt - 09A	1		
2-e		CAL Memory	Opt - 04	G		
3	DCV/DCA/ACV AC A& Reistance Generating	Meter Calibrator	5100 B	1	J.F	DC voltary: 20mV to 1100V, ACC I± 60ppm AC voltage range 10mC to 1100V, ± 0.1 at to 10 r, ACC 500ppm, Rang 1mV RCV Freq up to 50 kH Range 20V to 110V at Freq 20 kHz Range 110V to 1110V at Freq up 1kHz DC Current Range 200 MA to 2A, Ace ± 25 A Current Range 200 MA to 2A, ACC ± 700
3-a	"	Wide Band AC voltage	5100A-03	1		Resistance Range 1 to 10M , ACC ± 50
3-6	"	IEEE 422 Intefa	5100A-05	1		

LEVEL: Secondary FUNCTION: DC Measurement and Gener

Level: Secondary Function: DC Meas. and Gener.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
3-c	"	Extendor Kir	5100A-7005K	1		
3-d	"	Interfear Buffer	Y5000	1		

LEVEL: Secondary FUNCTION: DC Measurement and Gener

Level: Secondary Function: DC Meas. and Gener.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
4	DCYAC Current Generating	Trans Conductance Amplipier	5220A	1	J.F	DE/AC 10 - 20 A, DC Current ACC ± 250ppm AC acc Current 100ppm, Frq up to 5 kHz
5	DC/AC Current Measurement	Current Shunt	Y5020	1	J.F	DC/AC current to 20A, Resistance Value 0.01Ω , DC current ACC ± 100 ppm AC Current ACC ± 120ppm to± 350 ppm
6		Decade Resistor	1433-9720W	1	G.R	Freq up to SKHz Value 0.1 to 111,1Ω ACC ± 0.01%
7		Decade Resistor	1433-9726Z	1	G.R	Value 10 to 11111100Ω ACC ± 0.01%
8		DC Clip on	428B	1	H.P	Rang 1mA to 10A, ACC ± 3%
9		DC Power Supply	6024A	1	H.P	60V/10A, voltage ACC ± 0.01% +3
9-a		Extra Programming	opt - 002	1	H.P	Current ACC ± 0.01% + 3mA
9-b		Monitoring	ppt - 910	1	H.P	
10		DC Dual Tracking Power Supply	6255A	1	H.P	40V/1.5A voltage lead effect 0.01% + 2mV Current Load effect 0.01% + 250MA
10-a		Internal over Voltage Protection	opt - 011	1	H.P	
10-b		230 OCV 10%	opt - 028	1	H.P	

LEVEL: Secondary FUNCTION: DC Measurement and Gener

Level: Secondary Function: DC Meas. and Gener.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
11	Automation of Instrumentetic	Instrument Control	1722A	1	J.F	136 K - RAM Memory Basic Language,
11-a		512K-Byte RAM	1722A-007	1	J.F	
11-b		Assembly Language software De System	1722A-201	1	J.F	
11-c		Compiled Basic Software DeVel System	1722A-203	1	J.F	
12		Thermal Printer	9876A	1	H.P	
13	DC V/A Vol DC Current Measur-ment	Electronic Load	E1750B	1	ACDC	60V/200A
14	"	Electronic Load		1	ACDC	300V/10A
15		Oscilloscope	2215A	1	Tek	Dual Trace oscilloscope, DC to 60 MHz Bandwidth, 2mV Sensitivity

LEVEL: Secondary FUNCTION: DC Measurement and Gener

Level: Secondary Function: Capacitance Meas.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	Capacitance	STD Capacitor Set	16380A	1	H.P	1rF, 10 P.F, 100 P F and 1000 P.F Frq: to 10 MHz , ACC 0.01%
2	"	Decade Capacitor	4440B	1	H.P	40 P.F to 1.2 F, step of 100 P.F ACC 0.25% + 3 P.F. at 1 kHz for 3 terminals connection

LEVEL: Secondary FUNCTION: AC V/A generating, oscilloscope

Level: Secondary Function: A/C generating, oscilloscope

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	AC Voltage and Current Generating	AC Calibration System	5200A/5215A	1	J.F	Frq: 10Hz to 1.2 MHz ± 0.02% Voltage 0 - 1000V Frq: 10Hz to 100kHz, ± 0.04% Voltage 100 - 1000V
2	Oscilloscope Calibration System	Calibration Current Oscilloscope	CG 5001	1	Tek	Voltage from 40 V to 200V, Acc ± 0.25% Current from 1mA to 100mA, ACC ± 0.25% Markers Range 10ns to 5 Sec., ACC 0.25% Opt: TCXO ACC ± 0.0003% Highedge Amply Range 1.2V to 100V Rvc Time < 100 ns
2-a	"	Main Frame for CG 5001	TM5003	1	Tek	Slewed Edge Timing Mode Range 0.4 ns to 100 ACC ± 0.02 to (pot TCXO ± 0.0003%)
2-b	"	Higacc Time Base	opt - 01	1	Tek	
2-c	"	Comparator Mood	015-0310-01	1	Tek	
2-d	"	Rigid Accuit Board	067-0975-00	1	Tek	
2-e	"	Flexible cicuit Board Extract	067-0974-00	1	Tek	
3	"	Signal Generator	SG 502	1	Tek	FM: 5Hz to 500 kHz, 5V RMS 010-600 Sax Harmonic Distortion < 0.0035% fM20 and< 0.15 % Freq. 50 kHz to

Level: Secondary Function: Oscilloscope, Freqauncy meas. and gener.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
4	Oscilloscope Calibration System	Signal Generator	SF503	1	Tek	Frq: 250 kHz to 250 MHz, Acc ± 0.7 Amplitude Range Smr to 5.5V p-p " ACC 3%
5	"	Main Frame	TM503	1	Tek	
6		X-Y Recorder	7035 B opt - 001	1 1	H.P H.P.	0.4 mv/cm to 4V/cm Metric
7	Frequency Measurement and Generating	Pulse/Function Generator	8116A	1	H.P	Frq: 1m Hg to 50 MHz Acc ± 3% Amplitude 10 mV to 16 V p-p, ACC ± 5%
7-a		Budstand Lag Sweel	opt - 001	1	H.P	Functions: Sine, Triangle, ramp, square Naversine and Pulse, Stable 2%/j
7-b		Extra Service Manual	opt - 910	1	H.P	
8	"	Pulse/Function Generator	8111A	1	H.P	Freq. 1 Hz to 2D MHz Acc± 5% Amplitude; 1.6mV to 16 Vp-p,Acc± 5%
8-a		Extra Service Manual	opt - 910	1	H.P	Functions: Sine, Triangle, ramp, Square, pulseard haver functions
9	"	Synthesizer Function Generator	3325A	1	H.P	Freq 1MHz to 21 MHz Resolution 1 mrk 100 kHz and 1mHz , 100 kHz against 5 x 10 /year Amplitued 1mV to 10 vp-p in 8 amplitude

LEVEL: Secondary FUNCTION: Frequency Meas.

Level: Secondary Function: Frequency Meas. & Gener.eas.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
9	Frequency Measurements and Generating	Synthesizer Function Generator				Amphlitude ACC for Sin ± 0.1 to ± 0.6 dB Square wave Ampli. AC Currency 1mHz to 100kHz, 1% > 3Vpp, 2, 21 3V 100 kHz, to 10MHx, 11,1% > 3V pp 13.6 % <3 Sinwave Harmonic Distortion fo - 65 dBTo-2 for Frq range 0.1 Hz to 20MHz.
9-a		High Stability Frq Reference	opt - 002	1	H.P	Functions, Sine, Square, Triangle, and Positive Ram Ps
10	"	Synthesizer/ Level Generator	3335A	1	H.P	Freq. 200 Hz to 81 MHz. Rescl 4001 Hz. Stable ± 10 7/month Harmonic Distortion < - 45 dB To - 40dB Phase noise 70dB to - 58 dB Amplitude Range (50Ω 1 + 12.01 dBm to - 86,98 dBm, Resole 0.01 dB
10-a	"	High Stability Reference	opt - 001	1	H.P	Stability 5×10^{-10}/day
11	"	Synthesized Signal Generator	8662A	1	H.P	Freq. 10 kHz to 1280 MHz, Resol 0.1 Hz Stable 5×10^{-10}/day Harmonics < - 30 dBc Output + 13 to - 139.9 dBm , Resol 0.1 AM Depth 0 to 95%, Rescol 19 and 0.1 FM Deviation: 25 to 200 kHz ACC ± 8%
11-a	"	Extra Service Manual	opt - 910	1	H.P	FM Resaluts 100 Mz< 10 KHz and 1 kHz
11-b	"	Service Support Kit	11714A	1	H.P	

LEVEL: Secondary FUNCTION: Frequency and power meas.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
12	Frequency Measurement and Generating	Universal Counter	5335 A		H.P	Frq. 1200 MHz /2n Sec. Resal Period A range: 10 n sec to 10 ± 7 Sec. Time Interval A→ B Range: On Sec. to 10 7 Sec.
12-a	"	High Stability Time Base	opt - 010	1	H.P	Freq. 10 MHz, againg rate 5 x 10^{-10}/day
12-b	"	1.3 GHz C Channel	opt - 030	1	H.P	Freq. 15MHz to 1, 3 GHz
12-c	"	Expanded HP-IB	opt - 040	1	H.P	
13	Power Measurement	Power Meter	438A	1	H.P.	Freq. 100 kHz to 26.4 GHz Power Range - 70 dBm to + 44 dBm
13-a	"	Sensor Cable	11730A	2	H.P.	
13-b	"	Sensor Cable	11703B	2	H.P	
14	"	Range Calibrator	11683A	1	H.P	Frq 100kHz to 2656 Hz
14-a	"	Extra Service Manual	opt - 910	1	H.P	Calibration Unartainty ± 0.25% in all range
15	"	Power Sensor	8482A	1	H.P	Power output 100mW, ACC ± 1.2%
16	"	Power Sensor	8484A	1	H.P	10MHz to 18 GHz- /0.1 mW to 10 W
17	"	Power Splitter	11667A	1	H.P	Freq. 0-18GHz/50 OHMs
18	"	Dual-Ditectional coupling	778D	1	H.P	Freq. 0.1 - 2GHz, Coupling 20dB

Level: Secondary Function: Frequency and power meas.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
19	"	Covering Crystal		1	H.P	Freq. 0.01 to 186 Hz

Level: Secondary Function: Frequency and power meas.

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
20	Frequency & Power Measurements	Crystal detector	8471A	1	H.P	100 kHz/1.2 G Hz - BNC Connector
21	"	Coaxial Fixed Termination	908A	4	H.P	Frq. dc to 4 GHz/50 /Swr 1.05
22	"	SWR Mete	415 E	1	H.P	Fo = 1 KHz, A Henuator Range 70 d
23	"	Step Attenuator	355C	1	H.P	Freq. dc to 1 GHz /Increment Attenuator
23-a	"	opt - N (f) Connector	opt - 001	1	H.P	0-12dB (1dB Steps)
24	"	Step Attenuator	355D	1	H.P	Frq. dc-1GHz/Increment Attenuator
25	"	opt - N(f) Connector	opt - 001	1	H.P	0-120 dB (1 od B steps) /50
26		Low pass Filter K	10856A	1	H.P	Freq. Cutoff 5/50/500 kHz/15mHz
27		Low pass Filter	360A	1	H.P	Freq. Cutoff 700 MHz
28		Low pass Filter	360B	1	H.P	Freq. Cutoff 1200 MMz
29		Low pass Filter	360D	1	H.P	" " 4100 MHz
30		Low pass Filter	360C	1	H.P	" " 2200 MHz
31		Feed througth	011-0049	1	Tek	50

LEVEL: Secondary FUNCTION: AC/RF

Level: Secondary Function: AC/RF

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	R.F. Measurement	Rubidium Frequency Std	5065A	1	H.P	Frq. 1, 1 and 5MHz Stablez 10^{-11}/month
2	"	Clock of Standby Power Supply	opt - 003	1	H.P	Clock and Standby Power Supply 1 to 5%
3	"	RMS Voltmeter	3400A	1	H.P	Freq. 10 Hz to 10 MHx, 1 mV to 30mV 1 to 5%
4	"	R.F. Voltmeter	3406A	1	H.P	Freq: 10kHz to 1 GH2 Acc 3 to 13% Voltage 1 mV to 3V
5	"	Spectrum Analizer	3585A opt - 910	1	H.P	Freq. 2CH to 40 Hz, 3 Hz B.W.
6	"	Spectrum Analizer	8566B	1	H. P	Freq. 100 Hz to 22G Hz
7	"	Extra Manual	opt - 910	1	H.P	Extra Manual
8	"	Audio Analyzer	8903B	1	H.P	Frq. 20Hx to 100 kHz Resol 0.3% THD 0.001%
9	"	Extra Manual	opt-910	1	H.P	Exra Manual
10	"	Modulation Analyzer	8901B	1	H.P	RF I/P Frg. 150Hz To 1300 MHz
11	"	Internal Refei	opt-002	1	H.P	FM,AM and phase Mod, Freq. Counter

LEVEL: Secondary FUNCTION: AC/RF

Level: Secondary Function: AC/RF

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
12	"	Connection for Local	opt -003	1	H.P	
13	"	High Selectivity	opt - 030	1	H.P	
14	"	Carrier noise Filter	opt - 037	1	H.P	

Level: Secondary Function: AC Voltage and Current

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	AC Voltage STD Measurement	Thermal Transfer STD	540B	1	J.F	
2		High Freq. Thermal	A55(1V, 10V)	1 each	J.F	
3		Current Shunts	A40 (100 MA 1A)	1 each	J.F	
4		Thermal Converter	11049A	1	H.P	3V/50Ω/100 MHz
4-a		opt-003	opt-003	1	H.P	
5		Thermal Converter	11050A	1	H.P	1V/50Ω /100MHz
5-a		opt -003	opt-003	1	H.P	
6		Thermal Converter	11051A	1	H.P	0.5V/50Ω/100MHz

Level: Secondary

Function: AC Voltage and Current

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
1	Microwave Measurements	Automatic Microwave Counter	5343A	1	H.P	Freq. 500 MHz to 26.5 GHz on I/P Sensitivity - 23 to 28 dBm, Automatic Mode: Narrow FM 200m sec. Normal FM 530 m sec. Wide Fm 2.34 sec. Manual Mode: 80 m sec. after freq entera I/P 2 = Frq. 1CHz to 520 MHz Sensitivity 25mv, rms. Time Base Freq 10 Mrb Stabel 1×10^{-7} /Month
1-a	"	High stability Time Base	opt-001	1	H.P	Frq 10 MHz, Stability< 5×10^{-10}/day
1-b	"	D/A Convertor	opt-004	1	H.P	D/A Convertor
1-c	"	Limiter I/P Protection	opt-006	1	H.P	
1-d	"	Extender Board Kit	10842A	1	H.P	
2	"	SwceP Oscillator Main Frame	8350B	1	H.P	
2-a	"	Broad Banol RF Plug in	83595A	1	H.P	Frq/ 0.01 to 26.5 GHz Impedance 50Ω , VSWR< 1.9:1

Level: Secondary Function: Microwave

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf.	Technical Specifications
12	Microwave	Low Pass Filter	11678A	1		
2-b	"	SCHS to P Attenuator	opt- 002	1	H.P.	Power Seep : 0 dB, ACC 1.5 dB Resolu 0.1 dB
2-c	"	Extra Manual for 2350B	opt-910	1	H.P	

LEVEL: Secondary FUNCTION: Microwave

Level: Secondary Function: Microwave

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf	Technical Specifications
3	Microwave Measurements	Power Sensor	8481B	1	H.P	Frq. 10MHz. to 18GHz Power: 1mW to 25W/50
4	"	Power Sensor	8481H	1	H.P	Frq. 10MHz to 18GHz Power: 100 W to 3W/50
5	"	Power Sensor	8485A	1	H.P	Frq.: 50MHz to 26.56 Hz Power: 1 W to 100 mW/50
6	"	Attenuator Set	11583C	1	H.P	3,6,10 and 20 dB Hp Z493C set
6a	"	Calibration Data	opt890	1	H.P	
7	"	High Power Attenuator	8498AG	G	H.P	Frq: dc to 18GHz
7a	"	opt030 (30dB Attenuator	opt030	1		
8	"	Step Attenuator	8494H	1	H.P	Frq:do to 18GHz/011 dB/1dB set
8a	"	CALData	opt890	1	H.P	
9	"	Step Attenuator	8496H	1	H.P	
9a	"	N(Femal)	opt001	1	H.P	
9b	"	CALData	opt890	1	H.P	

10	"	Interconnection Kit	11716A	1	H.P	
11	"	Attenuator/Switch Driver	11713A	1	H.P	

LEVEL: Secondary FUNCTION: Microwave

Level: Secondary Function: Microwave

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf	Technical Specifications
12	Microwave Measurements	Low pass Filter Kit	11678A	1	H.P	Cuttoff Freq. 4.4/6.8/9.5/13.0 GHb
13	"	Coaxial Fixed Load	909A	2	H.P	50 / Freq DC to 18 GHz N(f) Connector
14	"	Coaxial Fixed Load	908A	2	H.P	50 / Freq. DC to 4 GHz
15	"	Coaxial Fixed Load	909D	1	H.P	5 /Frq. DC to 26.5 GHz

LEVEL: Secondary FUNCTION: R.F. Power and Attenuation

Level: Secondary Function: RF Power and attenuation

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf	Technical Specifications
1	Power Sensor and Attenuators Measurements	Synthesized Signal Generator	8672A	1	H.P	
1-a		Rear Panel RF output	opt-004	1	HP	Rear Panel R. F. output
1-b		+8 dBm out Ret Level	opt-008	1	H.P	+8 dBm output level
1-c		Support kit	11712A	1	H.P	
1-d		Extra Service Manual	opt-910	1	H.P	
2		Power Meter	436A	3	H.P	
2-a		Digital I/O Interface	opt-022	3	H.P.	
3		Dual Directional Coupler	11692D	1	H.P	Frq.: 2-18GHz
4		Power Sensors	8484A	2	H.P	High Sensitivity Frq 20MHz-18GHz
5		STD Power Sensors	8481A	1	H.P	
6		Attenuators Set	11583A	1 set	H.P	3/6/10/20 dB, HP 8492A
6-a		Calibration Data	opt - 890	1	H.P.	

LEVEL: Secondary FUNCTION: Microwave

Level: Secondary Function: Microwave

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf	Technical Specifications
1		Scalar Network Analyzer	8757A	1	H.P	
1-a		Fourth detector Input	opt -001	1	H.P	
2		Swce P Ocillator Mainframce	8350B	1	H.P	
3		R. F. Plug in	83595A	1	H.P	
4		Directional Bridge	85027B	1	H.P	Frq. 0.01 -26.5 GHz, APC-3.5 P cmal 50
5		Directional Bridge	85027C	1	H.P	Frq. 0.01 - 18Grh, N femal, 50Ω
6		Directional Bridge	85020B	1	H.P	Frq. 0.01 - 2.4 GHz, N. Femal, 75Ω
7		Detector	11664A	1	H.P	Frq. 001 - 26.5 GHq. N. Male
8		Detector	11664E	1	H.P	Frq. 0.01 - 26.5GMz, APC-3.5 male
9		System Verification kit	85023C	1	H.P	Type - N, 50Ω
10		"	85023D	1	H.P	Type - N, 75Ω
11		"	85023B	1	H.P	APC - 3.5, 50Ω
12		Systan Cable kit	85022A	1	H.P	
13		Modulator	11665B	1	H.P	

Level: Secondary Function: Microwave

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf	Technical Specifications
14		Power Splitter	11667B	1	H.P	Freq. DC to 2GHz
15		Power Divider	11636B	1	H.P	Freq. DC to 26.5 Hz

LEVEL: Secondary FUNCTION: Microwave

Level: Secondary Function: Microwave

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf	Technical Specifications
16		Min Loss Pad	11852A	2	H.P	50 to 75 ohm Min Loss Pad
17		Software	85015B	1	H.P	System software for 87575
17-a		opt	opt-655q	1	H.P	DC/100 MHz
18		oscilloscope	1741A	1	H.P	DC/100 MHz
19		Low pass Filter	11678A	1	H.P	Freq 2.8/4.4/7.8/9.5/13 GHz
20		Low pass Filter	11668A	1	H.P	Freq. 50MMz 60 18 GHz
21		Vector Voltmeter	8405 A	1	H.P	Frq. : 1MHz to 1 GHz
21-a		Accessory kit	11570A	1	H.P	Voltage Range: Channel A: 300 pr to 1V up 1 GHz Channel B:< 100mv to 1V Up 1GHz Voltage Acc from 0.2 to 1.5 dB Phase Range, 36.0° persoluk 0.1°

LEVEL: Secondary FUNCTION: Automation

Level: Secondary Function: Automation

Item No.	Basic Utility	Name of Equipment	Type of Equipment	Qty	Mnf	Technical Specifications
1	Computer Automation		9836A	1	H.P	2 pen
2		Plotter	7470A	1	H.P	
2-a		Interfacing and Programming Manual	07470-9000	1	H.P	
2-b		Operatings Manual	07470-90003	1	H.P	
2-c		Interconnection Guide	07470-90003	1	H.P	
2-d		Reference Guide	07470-90004	1		

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
1	DCV/DCA/ACV AC A and Resist-ance Generating	Meter Calibrator	5200B	1	J.F	DCV: 20mr to 1100V, Acc 60ppm ACV: 10mr to 1100V, at Frq. Up to 5% DCA: 200μ A to 2A, ACA: 200μ A to 2A
1-a		Wide Band AC	5100A-03	1	J.F	Resistance 1 to 10 MΩ
1-b		IEE E-488 Interface	5100A-05	1	J.F	
1-c		Interface Buffer	Y5000	1	J.F	
1-d	DC/AC Current Generating	Trans Conductane Amplifier	5220A	1	J.F	DC/AC 1020A Freq. up to 5kHz
3	DC/AC Current Measurements	Current Shunt Measurements	Y5020	1	J.F.	DC/AC Current to 20A, Resistance Value 0.01
4	DC "	DC Clip on milli Am per Mete	428B	1	H.P	Range 1 mA to 10 A, ACC± 3
5	"	Electronic Load	EL750 B	1	ACDC	60V/200A
6	"	Oscilloscope	2215A	1	Tek	Dual Race oscilloscope DC to 60 MHz Bandwidth
7	"	Auto Transformer		1	Tek	
8	"	Digital Multimeter	3468B	2	H.P	3 R to 5 degit, DC V:300mv to ACV 300 mv to 300 V Resistance

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
8-a	"	AC Power 220V, 50 Hz	opt-335	2	H.P	300Ω to 30 Me, Current DC
8-b	"	Recharged Battery	opt-001	2	H.P	AC current 300 mm to 3A
9		DC Power Supply	6024A	1	H.P	60V/10A, voltage ACC 0.01 %
9-a		Extra Programming Monitoring	opt-002	1	H.P	
10		DC Dual Tracking Power Supply	6255A	1	H.P	40V/1.5A
10-a		Internal over voltage	opt-011	1	H.P	
10-b		230 accV 10%	opt-028	1	H.P	
11		AC Mains Voltage	228	1	Energie	220V/12kVA, ± 20%
12		Decada Resistor	1433-9720W	1	G.R	Value 0.1Ω to 1111.1 Ω
13		Decada Resistor	1433-9726Z	1	G.R	Test Frq. 120Hz and 1kHe, C range 10 PF to 100 F
14		LCR Meter	4261A	1	H.P	
14-a		Test Fixture	16061A	1	H.P	L Range 20 H to 1000H,
14-b		Test Lead, 3-wire	16062A	1	H.P	R. Range 1000m to 10,000 MΩ

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
14-c	Test Lead, 4-wire	16063A	1	H.P		
14-d	Test Frq. 100Hz	opt-010	1	H.P		
14-e	Extra Manual	opt-910	1	H.P		

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
1	Frequency Generating	R.F Signal Generator Generator	8640B	1	H.P	Frq: 500 KHz to 512MHz)to 1024 with option 002) Resalut : 1,10,100 Hz, 1kHz
1-a		Internal Double 512-1024 MHz	opt-002	1	H.P	Output range: + 19 to 145 dBm Modulation Am, FM and Rn's
1-b		Reverse Power Protction	opt-003	1	H.P	
1-c		Extra Service Manual	opt-910	1	H.P	
2	"	Funetion Generator	8111A	1	H.P.	Frq: 1 Hz to 20 MHz ACC 5% Amplitude: 1.6mV to 16 Vpp ACC 5% Function Sine, Triangle/RanP, Sq
3	"	Frequency Counter	5385A	1	H.P	Fre.Range A: 10Hz 100 MHz, B. got Sensitivity: 10mV to 1.5mV P
3-a		High Stability	opt-004	1	H.P	
3-b		Time Base				
3-c		Battery Pack	opt-005	1	H.P	
4	"	Digital Multimeter	3466A	2	H.P	4 H2 digit, DC range 20 mV to 1200V ACC 0 35%, AC range ACC mv Resistance Current DC : 200 MA to 2A AC : 200 KA to 2A

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
5	"	RMS voltmeter	3400A	1	H.P	Frq.: 10Hz to 10 MMz Voltage 1mV to 300V
6	"	R.F. Voltmeter	3406A	1	H.P	Freq.: 10 KMz to 1 GHz Acc 3 to 13%

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
		Level: Tertiary		Functon: DC/AC/ Meas. and Genes.		
7	Frequency Measurements and generating	Destortion Analizer	334A	1	H.P	I/P Level 0.3 Vrms (for 100% Set Frq: 5Hq to 6000 kHz and 3 MHz Harmonic ACC from 3% to ± 6% Range 100%∿ 0.5% and 0.1% at
7-a		VU characteristics and L.P. F 30kHz	opt-003	1	H.P	Freq up to 3MHz
8		Oscilloscope				
9	Oscilloscope Calibration system	Calibration Cenctator Oscilloscope	CG5001	1	Tek	Voltage from 40 V to 2CC VA Current from 1 mA to 1ccMA. ACC Mortress Range 10 n
9-a		Main Frame	TM5003	1	Tek	
9-b		Highace time base	opt-01	1	Tek	
9-c		Comparator Head	015-0310-01	1	Tek	
10		Signal Generator	SG502	1	Tek	Frq: 5Hz to 500 KHz 5V RMS c/c THD < 0.035% Frq 2cHz to 50 KHz and < 0.15% Frq 5ck Hz to
11		Signal Generator	SF503	1	Tek	Frq: 250kHz to 250 MHz ACC 50
11-a		Main frame for SG502 and SG503	TM 503	1	Tek	Amplitude Range 5 Mc to 5.5 pp. acc 3%

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
12		Auto Transfor		1		

LEVEL: Tertiary FUNCTION: DC/AC/ Meas. and Genes.

Level: Tertiary Functon: DC/AC/ Meas. and Genes.

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
1	Frequency Measurements	Spectrom Analyzer	8568B	1	H.P	Frq.: 100 Hz to 1500 MHz Frq. span NCC 1 MHz 2% + 0.5% ppm 1 MHz 5% + 5% cppm Amplitudes 135 dBm to + 20dBm Bonduidth 1 cHz to BMHz
Note:	Accessories, Adapters and Connectors for all leads arenot encluded in these lists					

LEVEL: Repair FUNCTION: (General Equipments)

Level: Repair Function: (General Equipments)

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
1	Logic Trouble Shooting	IC Trouble Shooting	5023AKit	1	H.P	Encluds: 545A TTLK Mos Probe 546A TTLKCMLS pulser 547A TTLICMCS current Tra 548A TTLICMCS Clip 20529A TT Compriator
1-a		External References	6006	1	H.P	
1-b		blank Reference boards for	10541A	1	h.P	
1-c		20 Pre-Programm Reference boards for 10529H	10541B	1	H.P	
2		Logic Lab	5035T	1	H.P	
3		Signature Analytic (M mek)	5005B	1	H.P	4 digits, characters 09A Fault detection atturey 100 of detecting single kit errors Clock timing Frq 25MHz
4	LCR Measurements	LCR Meter	4261A	1	H.P	Test Frq. 220 Hz to Hz,
4-a		Test Fixture	16061A	1	H.P	C Range 10 P.F. to 200 P.F
4-b		Test Lend-3 wire	16062A	1	H.P.	C _Range d10PF to 100 M.F.
4-c		Test Lend - 4 wire	16063A	1	H.P	L Range 10 H to 1000H

Level: Repair Function: (General Equipments)

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
4-d		Test Frq. 100Hz	opt-010	1	H.P	R Range 1000 m to 1000 M

LEVEL: Repair FUNCTION: (General Equipments)

Level: Repair Function: (General Equipments)

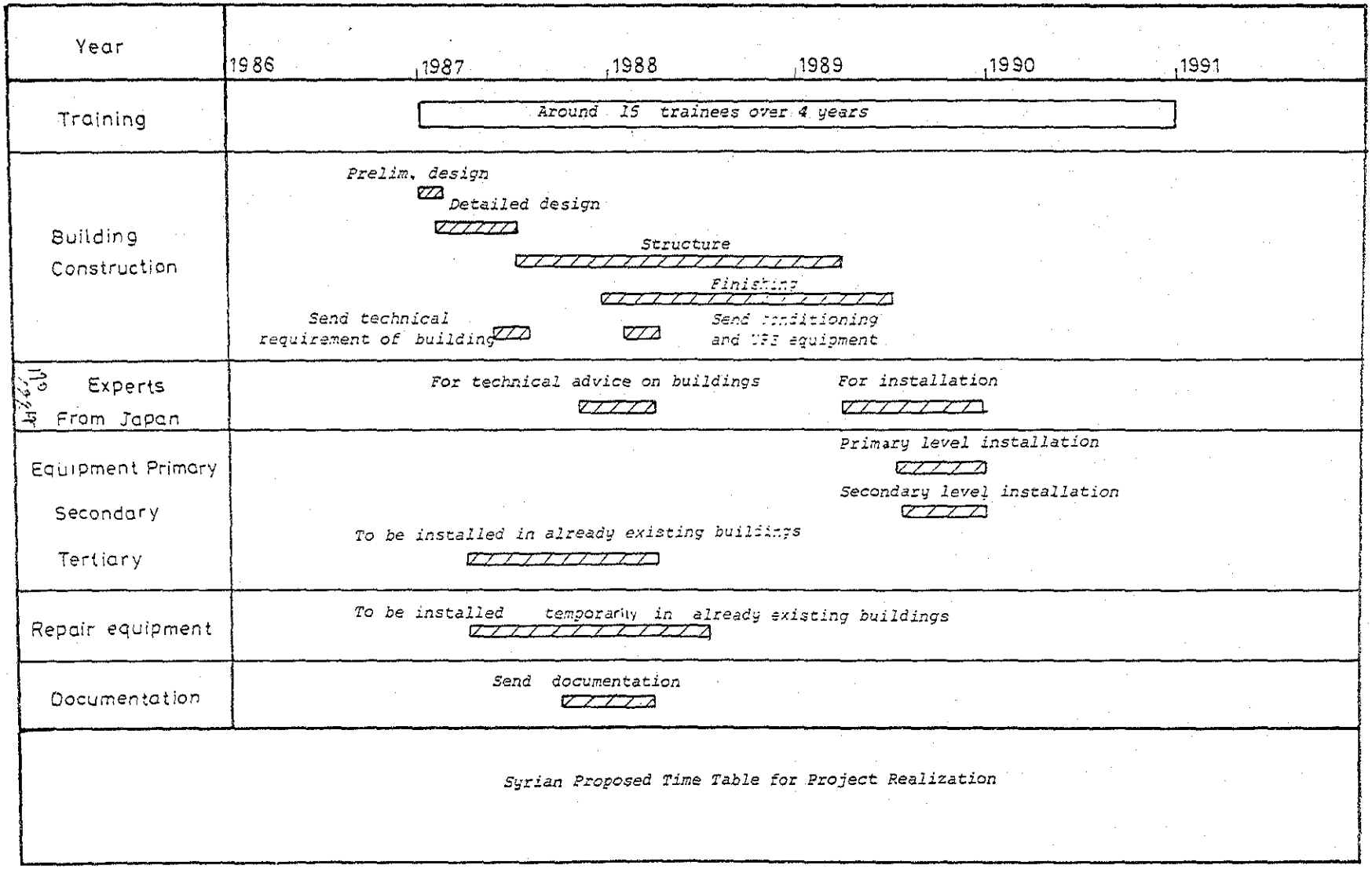
No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
5		R.F Signal Generator	8640B	1	H.P	Frq 500 KHz to 512 MHz)to 1020HMz with option 002)
5-a		Internce (Doubler 512-1024 MHz	opt-002	1	H.P	Resolution 1.10 12000Hzx 1 Khz and
5-6		Reverse Protection	opt-003	1	H.P	output range + 195 145 dBm MOD : AM, FM and Pulse
6		Function Generator	8111A	1	H.P	Freq. 1Hz to 2 0MHz ACC 45% Amplitutor 12.6mV to 16 Vp Acc = 5% Function with
7		Frequency Correcter	5315H	2	H.P	Freq. Channel A and B up to 100 MHz
7-a		TCCO Time Bars	opt-001	2	H.P	Channel P± tp 1 GHz
7-b		Battery Pack	opt-002	2	H.P	
7-c		Channel (1 GH)	opt-003	2	H.P	
7-d		High Stability Oven	opt-004	2	H.P	
8		Multi-Function	410C	1	H.P	DCV 15mC to 1500V FS 11 Ranges ACV 0.5V to 300V F3 F Ranges Freq. 20Hz to 700 MHz Resistance 10 Ω to 10 MΩ, F Range DCA: 1.5 A to 150 mH F.S.

Level: Repair Function: (General Equipments)

No.	Utility	Equipment	Equipment	Qty	Mnf	Technical Specifications
9		Multi-Function Meter	427A	2	H.P	DCV 100 mV to 1000 V F.S. Range ACV 10 mV to 300V F.S. 10 Range Frq. 10Hz to 1 MHz Resistance 10 to 10 M
10		RMS Voltmeter	3400A	1	H.P	1 mV to 300V
11		Electronic Level	EL750B	1	ACDC	
12		Auto Transferred (Variae)				
13		Digital Storage oscilloscope	1			
14		Curve Trear	1			
15		Logic Analyzer	1			
Note:						Audio and Vedio work stations have not been mentioned in these lists, we are looking for your advice.
16		Transistor Tester	1			
16		DC Power Supply	6200B	9	H.P	0-20 V 1.0 - 1.5 Load effect 0.017 + 4mV
17		Digital Moltimater	3435A	9	H.P	3 1/2 digit, DCV 200mV to 1200V

17-a		190-233V option	opt-210			ACV 200mV to 1200
17-b		High Frequency Broke up to 500 MHz	11096B	4	H.P	DCA 200 pM to 2A ACA 200rA to 2A
17-c		DCHT-voltage Probe	34111A	4	H.P	DC HI voltage probe 1000: 1 divi will accept up to 40 kV
17-d		Touch-Hold	34112A	4	H.P	
17-e		Test Lead Kit	3411ZA	9	H.P	
18		Oscilloscope	2215	9	Tek	60 MHz oscilloscope
19		Function Generates	3312A	6	H.P	Frq. 0.1Hz to 13MHz, Dual ACC I 5 Output 20V p-p into OK MOD: AM,FM scope gate,
20		Soldring Iron,		9		
21		Mechanical Tools and CAL s		9		

Annex 4


Year
1986
1987
1988
1989
1990
1991
Training
Around 15 trainees over 4 years
Building Construction
Prelim. design
Detailed design
Structure
Finishing
Send technical requirement of building
Send conditioning and VFF equipment
Experts From Japan
For technical advice on buildings
For installation
Equipment Primary
Secondary
Tertiary
Primary level installation
Secondary level installation
To be installed in already existing buildings
Repair equipment
To be installed temporarily in already existing buildings
Documentation
Send documentation
Syrian Proposed Time Table for Project Realization

Annex 5

Tentative Allocation of Budget

1 -	* Study of technical requirement of buildings * Conditioning equipment * Power regulation and UPS	14%
2 -	* Calibration equipment and spare parts.	63%
3 -	* Documentation	3%
4 -	* Repair and maintenance equipment	10%
5 -	* Training and experts	10%
		100%