



الهيئة العامة
للطرق والكباري

(المنطقة الخامسة - غرب الدلتا)

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة.. وبعد،،

بالإحالة إلى مشروع القطار الكهربائي فائق السرعة (فوكة - مطروح) (القطاع السابع)
نتشرف بأن نرفق لسيادتكم طيه المقاييسات المعدلة للقطاعات الآتية:

مستسل	اسم الشركة	بداية القطاع (كم)	نهاية القطاع (كم)	الاتجاه
1	منصور علي حسن منصور	540+000	541+000	النوبارية

برجاء من سيادتكم التفضل بالأحاطه والتوجيه بالازم

وتفضلوا بقبول فائق الاحترام والتقدير،،

رئيس الإدارة المركزية

المنطقة الخامسة- غرب الدلتا

عميد مهندس/

"هاني محمد محمود طه"

قائمة كميات بالمستخلص جارى 1

مشروع : القطار الكهربائي السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع فوكة - مطروح في
المسافة من الكم 540+000 الى الكم 541+000 بطول 1 كيلو متر اتجاه النوبارية

رقم البند و بيانه : (3-1) رسوم الكارثة والموازن طبقاً للمادة (36) من الشروط العامة والمواصفات طبقاً لما جاء بالقائمة الموحدة
لاسعار الطرق لاعمال طبقة الأتربة

الكارثات والموازن

تنفيذ : شركة منصور علي حسن منصور

مقدار العمل السابق :		0.00	3م
بيان الاعمال	الكمية		
الكميات طبقاً لقوائم الكميات	14,839.33		
اجمالي الكميات خلال فترة المستخلص الحالية (3م)		14839.33	
الاجمالي الكلي (م ³)		14,839.33	

مهندس الهيئة العامة
للطرق والكباري
م / إبراهيم الحناوي

مهندس الاستشاري
مكتب د/خالد قنديل
م / خالد فوزي

مهندس الاستشاري
(xyz)
م / محمد خليل

مهندس الشركة
م / محمود مندي

قائمة كميات بالمستخلص جارى 1

مشروع : القطار الكهربائي السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع فوكة - مطروح في
المسافة من الكم 540+000 الى الكم 541+000 بطول 1 كيلو متر اتجاه النوبارية

رقم البند و بيانه : (3-1) علاوة مسافة النقل 319 كم

علاوة مسافة النقل

تنفيذ : شركة منصور علي حسن منصور

مقدار العمل السابق :		0.00	3م
بيان الاعمال	الكمية		
الكميات طبقا لقوائم الكميات	14,839.33		
اجمالي الكميات خلال فترة المستخلص الحالية (3م)		14839.33	
الاجمالي الكلي (م ³)		14,839.33	

مهندس الهيئة العامة
للطرق والكباري
م / اياد عبد الحادي

مهندس الاستشاري
مكتب د/خالد قنديل
م / خالد فوزي

مهندس الاستشاري
(xyz)

م / محمد خليل

مهندس الشركة
م / محمود مندي

قائمة الكميات الواردة بالمستخلص جارى 1

مشروع : القطار الكهربائي السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع فوكة - مطروح في
المسافة من الكم 540+000 الى الكم 541+000 بطول 1 كيلو متر اتجاه النوبارية

رقم البند و بيانه : (3-1-1) أعمال توريد وتشغيل اترية صالحة للردم ومطابقة للمواصفات
الكميات المنفذة خلال شهر فبراير 2023

تنفيذ :شركة منصور علي حسن منصور

مقدار العمل السابق :		0.00	3م
بيان الاعمال	الكمية		
الكميات طبقاً لقوائم الكميات	4,797.47		
اجمالي الكميات خلال فترة المستخلص الحالية (م ³)		4797.47	
الاجمالي الكلي (م ³)		4,797.47	

مهندس الهيئة العامة للطرق
والكباري
م / ايمن محمد الحناوي

مهندس الإستشاري
مكتب د/خالد قنديل
م / خالد فوزي

م / خالد فوزي

مهندس الإستشاري (xyz)
م / محمد خليل

مهندس الشركة
م / محمود مندي

قائمة الكميات الواردة بالمستخلص جارى 1

مشروع : القطار الكهربائي السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع فوكة - مطروح في
المسافة من الكم 540+000 الى الكم 541+000 بطول 1 كيلو متر اتجاه النوبارية

رقم البند و بيانه : (3-1-2) أعمال توريد وتشغيل اترية صالحة للردم ومطابقة للمواصفات
الكميات المنفذة خلال شهر مارس 2023

تنفيذ : شركة منصور علي حسن منصور

مقدار العمل السابق :		0.00	3م
بيان الاعمال	الكمية		
الكميات طبقاً لقوائم الكميات	8,650.02		
اجمالي الكميات خلال فترة المستخلص الحالية (م ³)		8650.02	
الاجمالي الكلي (م ³)		8,650.02	

مهندس الهيئة العامة للطرق
والكباري
م / احمد الحناوي

مهندس الاستشاري
مكتب د/خالد فنديل
م / خالد فوزي

م / خالد فوزي

مهندس الاستشاري (xyz)
م / محمد خليل

م / محمد خليل

مهندس الشركة
م / محمود مندى

قائمة الكميات الواردة بالمستخلص جارى 1

مشروع : القطار الكهربائي السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع فوكة - مطروح في
المسافة من الكم 540+000 الى الكم 541+000 بطول 1 كيلو متر اتجاه النوبارية

رقم البند و بيانه : (3-1-3) أعمال توريد وتشغيل التربة صالحة للردم ومطابقة للمواصفات
الكميات المنفذة خلال شهر ابريل 2023

تنفيذ :شركة منصور علي حسن منصور

مقدار العمل السابق :		0.00	3م
بيان الاعمال	الكمية		
الكميات طبقاً لقوائم الكميات	1,391.84		
اجمالي الكميات خلال فترة المستخلص الحالية (م ³)		1391.84	
الاجمالي الكلي (م ³)		1,391.84	

مهندس الهيئة العامة للطرق
والكباري
م / إبراهيم الحناوي

مهندس الاستشاري
مكتب د/خالد قنديل
م / خالد فوزي

مهندس الاستشاري (xyz)
م / محمد فايز

مهندس الشركة
م / محمود مندى



قائمة الكميات الواردة بالمستخلص جاری 1

مشروع : القطار الكهربائي السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع فوكة - مطروح في المسافة من الكم 540+000 الى الكم 541+000 بطول 1 كيلو متر اتجاه النوبارية

رقم البند و بيانه : (1-1-5) أعمال توريد وصب خرسانة عادية سمك 15 سم لحماية الأكتاف والميول الجانبية الكميات المنفذة خلال شهر سبتمبر 2023

تنفيذ: شركة منصور علي حسن منصور

مقدار العمل السابق :

0.00

2μ

بيان الاعمال	الكمية
الكميات طبقاً لقوائم الكميات	4,145.10
اجمالي الكميات خلال فترة المستخلص الحالية (م ²)	4145.10
الاجمالي الكلي (م ²)	4,145.10

مهندس الهيئة العامة للطرق والكباري
م / إبراهيم الحناوي

مهندس الاستشاري
مكتب د/ خالد فهد
د / خالد فوزي
٢٠١٤ م

مهندس الاستشاري (xyz)
م / محمد خليل

م / محمود منلى
مهندسين الشركة

قائمة الكميات الواردة بالمستخلص جارى 1

مشروع : القطار الكهربائي السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع فوكة - مطروح في
المسافة من الكم 540+000 الى الكم 541+000 بطول 1 كيلو متر اتجاه النوبارية

رقم البند و بيانه : (5-2-1) أعمال توريد وصب خرسانة عادية لقدمات الحماية والميول الجانبية
الكميات المنفذة خلال شهر سبتمبر 2023

تنفيذ : شركة منصور علي حسن منصور

مقدار العمل السابق :		0.00	3م
بيان الاعمال	الكمية		
الكميات طبقاً لقوائم الكميات	59.00		
اجمالي الكميات خلال فترة المستخلص الحالية (م ³)		59.00	
الاجمالي الكلي (م ³)		59.00	

مهندس الهيئة العامة للطرق
والكباري
/ / / / /

مهندس الاستشاري
مكتب د/خالد قنديل
م / خالد فوزي
/ / / / /

مهندسين الاستشاري (xyz)
م / محمد خليل
/ / / / /

مهندس الشركة
م / محمود مندى

محضر استلام موقع

مشروع: أعمال الجسر الترابي لمشروع القطار الكهربائي السريع قطاع فوكة
- مطروح في المسافة من كم 540+000 الى 541+000 كم بطول 1 كم
النوبارية.

تنفيذ: شركة منصور علي حسن منصور

إشراف : المنطقة الخامسة – منطقة غرب الدلتا

طبقاً للعقد رقم (2025/2024/203) بتاريخ : 2024/08/19

إنه في يوم الاحد الموافق 2024/09/15 اجتمع كل من:-

1- السيد المهندس / محمد حسني فياض مدير عام المشروعات - الهيئة العامة للطرق والكباري

2- السيد المهندس /إبراهيم عبد الله الحناوي مهندس العملية - الهيئة العامة للطرق والكباري

3- السيد المهندس / محمود مندي مدير مشروع - شركة منصور علي حسن

وذلك للمرور على مسار العملية المذكورة عاليه لاستلام الموقع :-

وقد تبين أن الموقع خالياً من العوائق الظاهرية ويسمح بالبدء في التنفيذ وبناء عليه يعتبر تاريخ 2024/ 09/15 هو تاريخ استلام الموقع وبدء الأعمال بالعملية.

واقفل المحضر على ذلك ووقع الحضور

التوقيعات

3- محمود مندي

2-
1-

رئيس الإدارة المركزية

منطقة غرب الدلتا

الاسكندرية - مرسى مطروح

عميد . مهندس /

"هاني محمد محمود طه"

اللائحة الصادرة
من وزارة البترول

صلى الله عليه وسلم
البريد
02010



Highway Express Train - HSE
From El Ain El Sudani City To El Ahamm - MATROOH
Roadside - 3 Pave POMA To MATROOH MATROOH
From Matrooh 381+000 To Sudani 381+177



PARTICLE SIZE DISTRIBUTION OF SOIL

TEST DATE: 13/05/2023
E COMPANY: K.P 341+600
Roadside test: Matrooh All Highway-2

Zone: 541+600 to 541+600

Soil gradation				Sieve weight (g)			g/m	Table classify soil classify
Size	2	1.5	1	4/2	2/1	3/8		
Retained (g)	0.0	240.0	1277.8	4654.0	4087.0	3922.0	3676.0	A-7-e 2-150 6.50 45.20
Retained %	0.0	240.0	1277.8	4654.0	4087.0	3922.0	3676.0	
Passing %	100.0	75.0	94.6	94.6	94.6	94.6	94.6	

Soil gradation				WT OF sample		g/m
Size	10	40	200	500.00		
Retained (g)	85.00	265.00	344.00			
Retained %	17.00	53.00	68.80			
Passing %	83.00	47.00	31.20			

Liquid limit		Plastic limit		Shrinkage ratio		Liquid limit (PL)	Plastic limit (PL)	Shrinkage ratio	Liquid limit (PL)	Plastic limit (PL)	Shrinkage ratio
Size (mm)	2	1.5	1	2/4	1/2	12.5	9.5	4.75	2.00	0.075	0.075
Passing %	100.0	98.9	94.0	72.1	62.9	43.6	22.3	12.5	8.2		

LIQUID LIMIT (LL)		PLASTIC LIMIT (PL)		SHRINKAGE RATIO	
LL	PL	LL	PL	LL	PL
NP	NP	NP	NP	NP	NP

Contractor

Consultant

Khalaf Zaki





Electric Express Train - HSR



California Bearing Ratio TEST

Testing Date 1	06/20/23
Location 1	K.P. 540+500 (1500 m.3)
State of Compd	Madhya Pradesh
Zone	541+000

1.1 Test Details

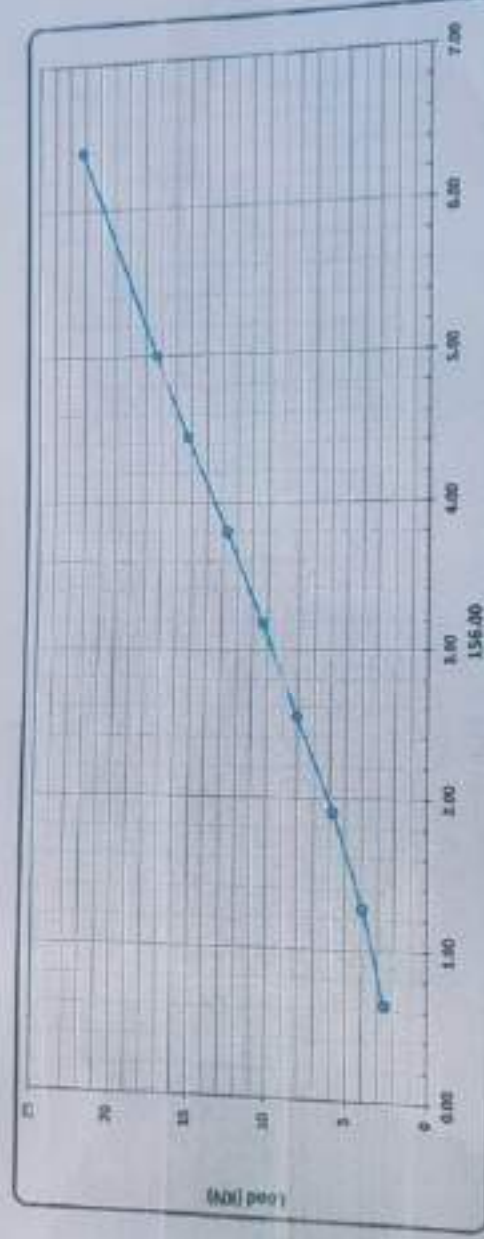
Compaction % Per Mold	
Mold No.	3
Mold Vol. (m ³)	2.136
Mold Wt. (kg)	8118
Mold Wt. + Wet Wt. (kg)	8350.4
Wet Wt. (kg)	4405
Wet Density (g/cm ³)	3.134
Wet Density (g/cm ³)	2.182
Proctor Density (g/cm ³)	2.386
Compaction %	90

Moisture Ratio After Compacted Mold	
Empty Pits	5.8
Empty Wt. (kg)	10.46
Wet Wt. + Wet Wt. (kg)	100.6
Wet Wt. + Wet Wt. (kg)	100.1
Wet Wt. (kg)	7.9
Wet Density (g/cm ³)	186.1
Moisture Content %	5.8

Sheeping	
Mold No.	3
Wet Wt. (kg)	8118
Wet Wt. + Wet Wt. (kg)	8350.4
Wet Wt. (kg)	4405
Wet Density (g/cm ³)	3.134
Wet Density (g/cm ³)	2.182
Proctor Density (g/cm ³)	2.386
Compaction %	90

Loading Results

150.00	0.04	1.23	1.91	2.54	3.18	3.86	4.48	5.09	5.69
Load Resulting (kg)	265.00	404.00	591.00	825.00	1094.00	1396.00	1687.00	2067.00	2387.00
Load (kN)	2.6	4.0	5.8	8.1	10.7	13.7	16.5	20.2	23.2



Calculations:

Penetration (mm)	Load (kN)	Standard Load (kN)	CBR (%)	Moist. Compaction (%)	Compaction (%)	CBR
2.50	5.08	13.4	40.3%	90	90	50.3%
5.00	17.30	20.0	86.5%			84.3%

Lab. Engineer

Consultant Engineer

Name:

Name: Hassan

Sign:

Sign:

[Handwritten signature]
I hereby certify that the above test was conducted in accordance with the provisions of the Indian Standards IS: 2713-1969 and the results are correct and reliable.

[Handwritten signature]
20/06/23



Ministry of Transport and Infrastructure
Kingdom of Saudi Arabia

Contracting Lady Mansour Ltd

Electric Express Train - MSR
From El Ain El Sakina City To El Alamiy - MATROUH
Section - 7 From FORA To MARSA MATROUH
From Station 804+000 To Station 854+177



Ministry of Transport and Infrastructure
Kingdom of Saudi Arabia

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE	28/2023	code	ZONE	541+400	541+800
Callon	K.P 540+500 (1500 ml)				
LAB COMPANY	Mansour Ali Hassan 2		Material		Sub-Balast

Visual Inspection Test

Gradient Test

Distribution of bulk materials				SAMPLE WEIGHT (kg)			gm		table classify
sieve size	4	3	1 1/2	3/4	1/2	3/8	# 4	PASS	
Mass retained (g)	0.0	0.0	1606.0	11208.0	13410.0	1507.9	4013.0		SOIL classify
Cumulative Retained (g)	0.0	0.0	1606.0	12804.0	26216.3	27791.3	22538.0		
Cumulative Retained %	0.0	0.0	3.2	25.6	52.3	55.7	54.9		2.205
Cumulative Passing %	100.0	100.0	96.8	74.4	47.7	44.3	36.1		5.8
									85.2%
Soft material gradient				WT OF sample			gm		specific gravity
sieve size	10	200							
Cumulative Retained (g)	127.00	435.00							2.537
Cumulative Retained %	25.40	85.20							
Cumulative Passing %	74.60	14.80							

General gradient

sieve size (mm)	4	3	1 1/2	3/4	1/2	3/8	# 4	# 10	# 200
Mass retained (g)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.075
Cumulative Retained %	100.0	100.0	98.8	74.4	47.7	44.3	36.1	36.3	5.2
									0 - 7

ATTERBERG LIMITS	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTIC INDEX (PI)
	N.P	N.P	N.P

Contractor

Consultant





Mansour Lab



Electric Express Train - MSR
From El Ain El Bashna City To El Alamein - MATROUH
Section - 7 Piles From A TO MARSA MATROUH
From Station 50+000 To Station 50+177



Mansour Lab

Proctor Test

TESTING DATE:	20/10/2023
LOCATION:	K.P. 5404/800 (1500 m3)
NAME COMPANY:	Mansour Al Hassan 2

code
MSL (J.P.)

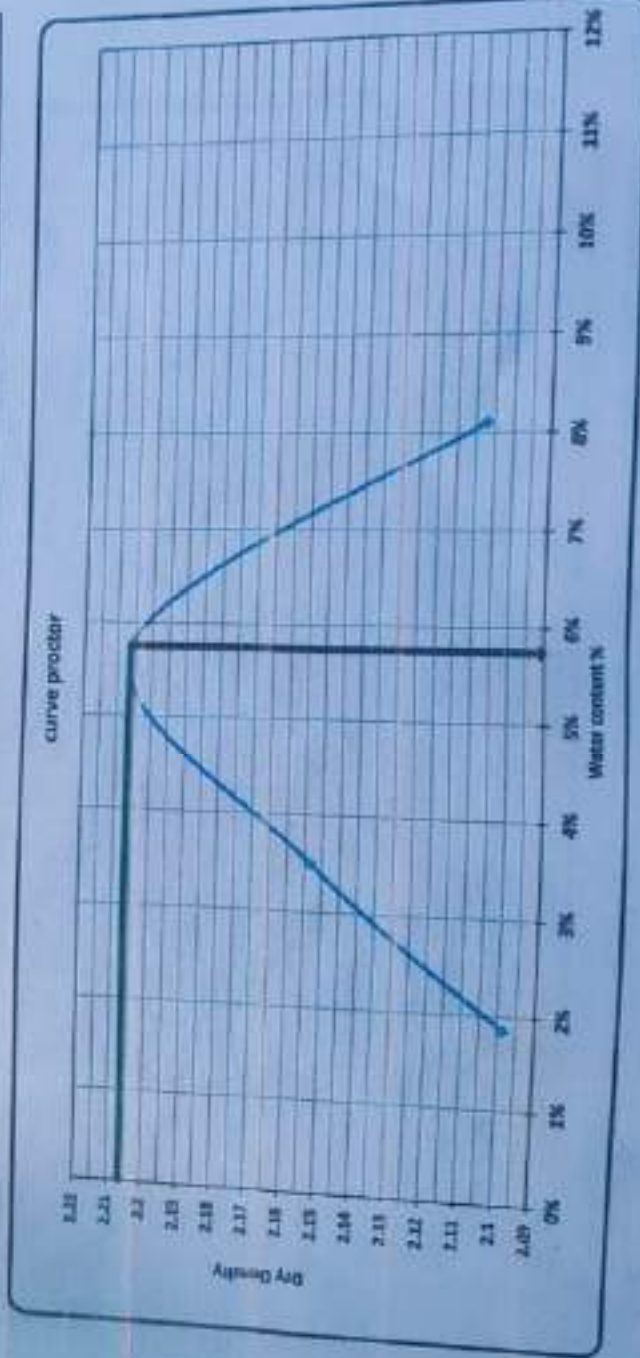
Zone	541+400 TO 541+800
------	--------------------

Weight of empty mold:	5759.0
Mold Volume:	2134.0

MAX Dry Density	2.205
Water content %	5.8

trial no	1	2	3	4
Wt. Of Mold wet soil	10320.0	10515.0	10707.3	10629
Wt. Wet SOIL	4561.0	4756.0	4978.3	4864.0
Wt. Density	2.137	2.229	2.303	2.278

Test No.	1	2	3	4	5	6	7	8
Test wt.	55.85	54.5	55.55	52.42	56.06	56.74	56.54	57.51
Wt. Of wet soil & tare	199.7	200.3	190.6	199.3	199.5	200.1	200.3	200.4
Wt. Of dry soil & tare	197.3	197.4	194.1	191.1	192.0	192	189.5	189.6
Wt. Of water	2.4	2.9	5.0	4.8	7.4	8.1	10.6	10.8
Wt. Of dry soil	141.5	142.9	138.9	142.0	135.1	135.3	132.9	131.7
Water content %	1.7%	2.0%	3.6%	3.4%	5.5%	6.0%	8.0%	8.3%
A.V. Water content %	1.9%		3.5%		5.8%			8.1%
Dry Density	2.408		2.153		2.306			2.107



Contractor

Signature of Contractor

Consultant

Signature of Consultant
Hassan



MINISTRY OF TRANSPORT AND INFRASTRUCTURE
KINGDOM OF SAUDI ARABIA



NSQA
NATIONAL SOCIETY FOR QUALITY ASSURANCE

Electric Engineer's Trade / IIR
From 10 Mo 20 Bureau City To 30 Mo 2018 / BATHOUB
Building: 2 / Test 2023 To Bureau Bathoub
From Bureau Bathoub To Bureau 2018-117

**Absorption & Aggregate specific gravity
AASHTO-T85**

TESTING DATE:	30/2023	code	541-400	541-400	541-400
LOCATION	K.P. 2-40+500 (1500 m3)	material	Sub-Ballast		
NAME COMPANY	Masoor Al Hassan 2	layer thickness			0.29 cm

Weight of sample	2000	gm
Weight of saturated dry surface sample (B)	2021	gm
Weight of saturated sample in water (C)	1227	gm
Weight of dry sample after heating (A)	1989	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.837	%
Apparent specific gravity = $A / (A-C)$	2.646	%
Absorption = $(B-A) / A$	1.809	%

Los Anglos abrasion AASHTO-T96

Results:-

Weight of sample before test (gm)	Weight of sample after test (gm)	Abrasion ratio (%)
6000	3920	23.60

Lab. Engineer	
Name :	
Sign :	

Consultant Engineer	
Name :	Haissan
Sign :	<i>[Signature]</i> 2023



California Bearing Ratio TEST

Testing Date :	11/5/2023	Category	Zone
Location :	K.P 541+500		
Name of Company :	Minister Al Hassan 2		

Test Results

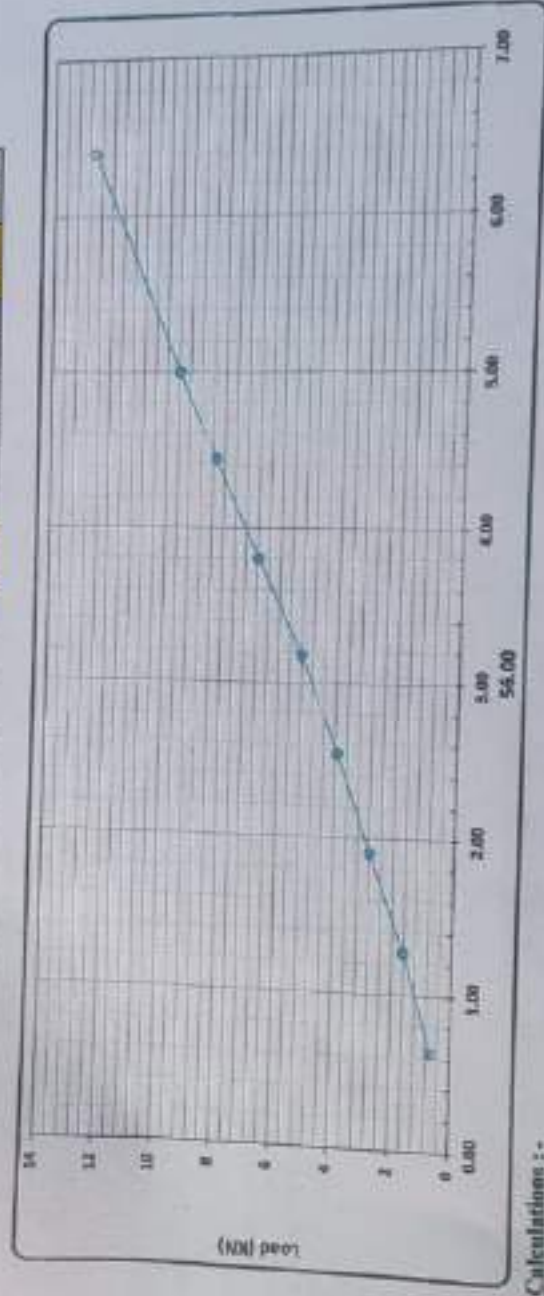
Compaction % for Mold	
Mold No.	1
Field V.C. (%)	2.12
Mold Wt. (gm)	3876
Mold Wt. + Wet Wt. (gm)	12745
Wet Wt. (gm)	4873
Wet Density (g/cm^3)	2.394
Dry Density (g/cm^3)	2.196
Proctor Density (g/cm^3)	2.356
Compactive %	100

Mold No.	1
Tare Wt. (gm)	25.85
Tare Wt. + Wet Wt. (gm)	100
Tare Wt. + Dry Wt. (gm)	101.2
Water Wt. (gm)	8.8
Dry Wt. (gm)	100.2
Moisture Content %	4.5

Mold No.	1
Disc	10
Initial Height (mm)	8.00
Final Height (mm)	8.00
Difference	0.00
Sample Height (mm)	100.00
Sealing Ratio %	99%

Loading Reading

54.99	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	5.60
Load Reading (kg)	65.00	100.00	165.00	250.00	332.00	407.00	466.00	517.00	557.00
Load (KN)	0.6	1.0	1.6	2.5	3.2	4.0	4.7	5.2	5.7



Calculations

Penetration (mm)	Load (kN)	Standard Load (kN)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR
2.50	3.33	12.4	29.4%			
5.00	5.33	25.0	47.8%	100	98	28.8%
						46.9%

Lab. Engineer

Name :



Sign :

Consultant Engineer

Name :

Sign :

Plate Load Test Results

Company Name

CAROL ANN HARRIS

Location:

Trust Data

Lower level

541-175 UCRL-175

541-420

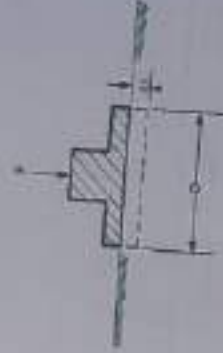
12/7/2007

preheated suboxide

EQUIPMENT AND TEST PROCEDURE

The basis of the given equations is Boussinesq's theory of the relationship between the circular edged plate with the diameter D

The load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The

 $\beta = 0.05$

100

 $\sigma = \text{standard deviation of } \ln x$

The diameter D of the plate is generally 0.30 m. For very coarse material

The load is applied in 5 load increments of equal size. Under each load step the settlement must come to a noticeable end (≤ 0.02 mm). After the maximum load is reached the unloading procedure can begin. After that, the plate is released in 5 steps. A loadstep of $\Delta p = 0.01$ m and $\Delta p = 0.762$ m are

Diameter = 300 mm

Location	Land	Land	Income	Debt 1	Debt 2	Debt 3	Equity 1	Equity 2	Equity 3	ATC
Stage No.	Dev	AC	M/M/MT	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	4.70	6.50		0.000	0.000		0.000
1.000	2.1	0.707	0.01	4.61	6.15		0.090	0.350		0.220
2.000	17.1	5.652	0.08	4.54	5.98		0.160	0.520		0.340
3.000	34.2	11.304	0.16	4.42	5.68		0.280	0.820		0.550
4.000	53.4	17.663	0.25	4.24	5.51		0.460	0.990		0.725
5.000	70.5	23.315	0.33	4.18	5.45		0.520	1.050		0.785
6.000	89.7	29.673	0.42	4.08	5.32		0.620	1.180		0.900
7.000	106.8	35.325	0.50	3.95	5.15		0.750	1.350		1.050
8.000	53.4	17.663	0.25	4.01	5.21		0.690	1.290		0.990
9.000	26.7	8.831	0.12	4.12	5.35		0.580	1.150		0.865
10.000	2.1	0.707	0.01	4.32	5.69		0.380	0.810		0.595
11.000	2.1	0.707	0.01	4.32	5.69		0.380	0.810		0.595
12.000	17.1	5.652	0.08	4.26	5.56		0.440	0.940		0.690
13.000	34.2	11.304	0.16	4.16	5.42		0.540	1.080		0.810
14.000	53.4	17.663	0.25	4.09	5.38		0.610	1.120		0.865
15.000	70.5	23.315	0.33	4.03	5.28		0.670	1.220		0.945
16.000	89.7	29.673	0.42	3.96	5.18		0.740	1.320		1.030

$0.7\omega_1$	0.35	β	λR	$\lambda\omega_1$
$0.2\omega_1$	0.15	0.52375	0.245	0.2
$0.7\omega_2$	0.35	0.56289		
$0.3\omega_2$	0.15	0.78501	0.17988	0.2
B (mm)	200			
F_{11}	183.67			
F_{12}	251.57			
Area (Sq.m)	6.07665			

4.20E-1	1.23		
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$$E_{\text{eff}} = 0.75 \cdot D \cdot \Delta \sigma / \Delta \epsilon$$

 $\bar{E}_i$ = deformation modulus

A_{ij} = load increments

 Δy = settlement increment

D = diameter of the plate, generally 0.30 m



مستور مختبر
لبنان

Electric Express Train - HSR
From El Aia El Bokline City To El Alamein - MATROUH
Section - 7 From FOKA TO MARSA MATROUH
From Station 854+000 To Station 881+177



وزارة النقل
لبنان

Operating Lab

Mansour Lab

Proctor Test

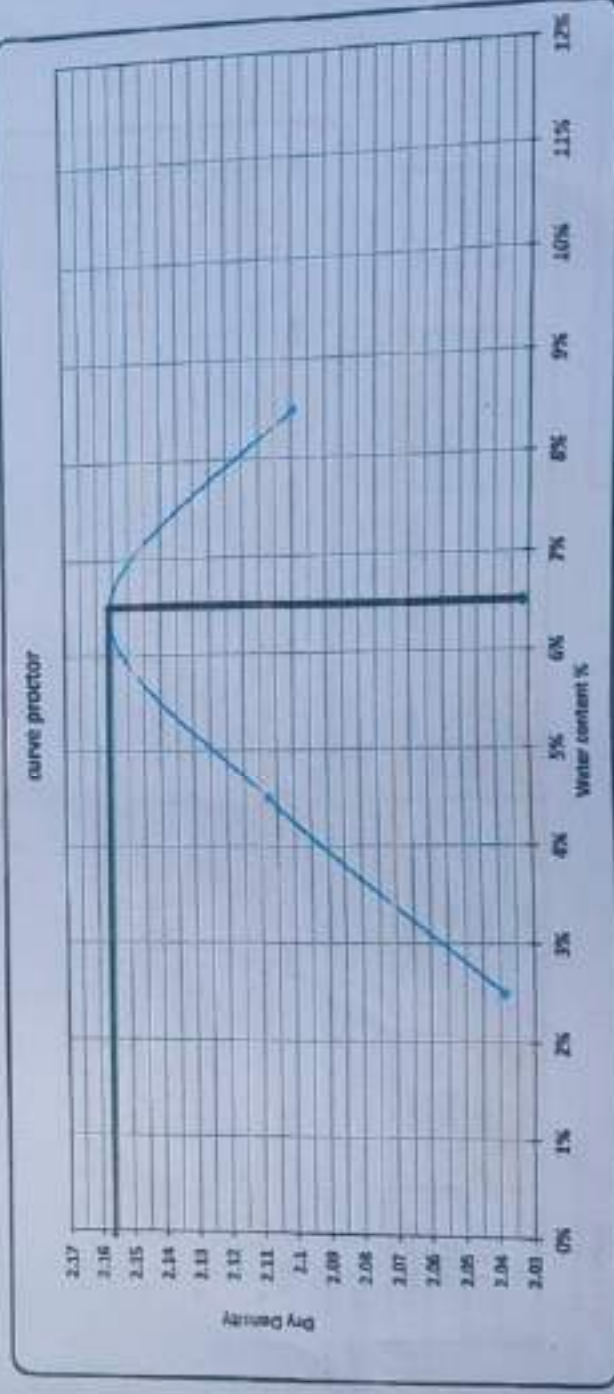
TESTING DATE	9/5/2023		
LOCATION	K.P 541+000		
NAME COMPANY	Mansour Al Hamsa-2		
	0.630		
	945-10		
		Zone	541+400 to 541+600

Weight of empty mold :	5750.0
Mold Volume:	2134.0

MAX Dry Density	2.156
Water content %	6.5

Trial no :	1	2	3	4
Wt. Of Mold + wet soil	10217.9	10455.8	10658.7	16619.6
W.T. WET SOIL	4458.3	4780.0	4897.7	4860.6
Wt. Density	2.089	2.263	2.296	2.278

Tare No.	1	2	3	4	5	6	7	8
Tare wt.	85.85	84.5	85.65	82.42	86.56	86.74	86.74	87.92
Wt. Of wet soil & tare	280.0	260.0	260.0	260.0	260.0	260.0	260.0	260.0
Wt. Of dry soil & tare	192.7	180.6	189.8	193.7	191.5	191	188.9	188.9
Wt. Of water	8.3	9.4	6.2	6.3	6.7	6.7	11.2	11.1
Wt. Of dry soil	214.0	275.0	188.1	141.2	134.3	134.5	132.0	131.0
Water content %	2.5%	2.5%	6.5%	6.5%	6.5%	6.5%	8.5%	8.5%
AV. Water content %	2.5%	2.5%	4.5%	4.5%	6.5%	6.5%	8.5%	8.5%
Dry Density	2.039		2.146		2.156		2.099	



Contractor

Consultant

Checked Zakari

File

Operating Lab: Marisour Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	05/2023	Zone	541+400 to 541+600
LOCATION:	K.P 541+500		
NAME COMPANY:	Marisour Ali Hassan-2		

Soil inspection test

Gradient test

gradation of bulk materials

sieve size	2	1.5	1	SAMPLE WEIGHT (g)			g/m	table classify
0.00	0.0	283.0	2738.0	4/3	2/1	3/8	# 4	soil classify
annulative Retained (g)				953.0	4338.0	3491.0	5927.6	A-1-a
Cumulative Retained %	0.0	2803.0	5721.0	9074.0	11012.0	14753.0	20530.0	2.155
Cumulative Passing %	0.0	9.7	18.9	21.7	35.8	47.8	67.1	6.50
	100.0	90.3	81.1	70.3	64.3	62.2	52.9	46.90

soft material gradation

sieve size	10	40	200	WT. OF sample		g/m
annulative Retained (g)	59.00	200.00	350.00			
Cumulative Retained %	11.90	40.00	70.00			
Cumulative Passing %	88.20	60.00	30.00			

General gradient

sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	90.3	81.1	78.3	64.3	62.2	32.9	29.0	19.8	9.2

ATTERBERG LIMITS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	NL	NP	NP

Contractor

Consultant

Khalaf Zaki
 KZ

Plate Load Test Results

Company Name

Mansour Ali Hameed 2

Location

0Cp+145

Taste Data

12/7/2023

Layer level

unhard subgrade

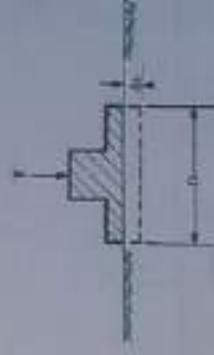
19277077	10	3414600
LC066661		

Unit	Weight
1	100
2	100
3	100
4	100
5	100
6	100
7	100
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9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
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87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

EQUIPMENT AND TEST PROCEDURE:—

limits of the given equation is Housniess's theory of the relationship between the modulus of elasticity and the settlement of a foundation under a load, for each case with the diameter D .

load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is



10

1998

1

the diameter Δ of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $\Delta = 0.60$ m and $\rho = 0.762$ m are

i load as applied in 6 load increments of equal size. Until each load step the settlement must come to a noticeable end (≤ 0.02 mm). After the maximum load is reached the unloading procedure can begin. After that, the plate is released in 5 steps. A loaded plate may be used for a further research once again without the need for additional weight for the hydraulic jack.

revised version = 5.000 mm

Loading	Load	Load	Stress	Dist 1	Dist 2	Dist 3	Dist 4	Dist 5	Dist 6	Dist 7	Dist 8	Dist 9	Dist 10	Dist 11	Dist 12	Dist 13	Dist 14	Dist 15	Dist 16	Dist 17	Dist 18	Dist 19	Dist 20	Dist 21	Dist 22	Dist 23	Dist 24	Dist 25	Dist 26	Dist 27	Dist 28	Dist 29	Dist 30	Dist 31	Dist 32	Dist 33	Dist 34	Dist 35	Dist 36	Dist 37	Dist 38	Dist 39	Dist 40	Dist 41	Dist 42	Dist 43	Dist 44	Dist 45	Dist 46	Dist 47	Dist 48	Dist 49	Dist 50	Dist 51	Dist 52	Dist 53	Dist 54	Dist 55	Dist 56	Dist 57	Dist 58	Dist 59	Dist 60	Dist 61	Dist 62	Dist 63	Dist 64	Dist 65	Dist 66	Dist 67	Dist 68	Dist 69	Dist 70	Dist 71	Dist 72	Dist 73	Dist 74	Dist 75	Dist 76	Dist 77	Dist 78	Dist 79	Dist 80	Dist 81	Dist 82	Dist 83	Dist 84	Dist 85	Dist 86	Dist 87	Dist 88	Dist 89	Dist 90	Dist 91	Dist 92	Dist 93	Dist 94	Dist 95	Dist 96	Dist 97	Dist 98	Dist 99	Dist 100	Dist 101	Dist 102	Dist 103	Dist 104	Dist 105	Dist 106	Dist 107	Dist 108	Dist 109	Dist 110	Dist 111	Dist 112	Dist 113	Dist 114	Dist 115	Dist 116	Dist 117	Dist 118	Dist 119	Dist 120	Dist 121	Dist 122	Dist 123	Dist 124	Dist 125	Dist 126	Dist 127	Dist 128	Dist 129	Dist 130	Dist 131	Dist 132	Dist 133	Dist 134	Dist 135	Dist 136	Dist 137	Dist 138	Dist 139	Dist 140	Dist 141	Dist 142	Dist 143	Dist 144	Dist 145	Dist 146	Dist 147	Dist 148	Dist 149	Dist 150	Dist 151	Dist 152	Dist 153	Dist 154	Dist 155	Dist 156	Dist 157	Dist 158	Dist 159	Dist 160	Dist 161	Dist 162	Dist 163	Dist 164	Dist 165	Dist 166	Dist 167	Dist 168	Dist 169	Dist 170	Dist 171	Dist 172	Dist 173	Dist 174	Dist 175	Dist 176	Dist 177	Dist 178	Dist 179	Dist 180	Dist 181	Dist 182	Dist 183	Dist 184	Dist 185	Dist 186	Dist 187	Dist 188	Dist 189	Dist 190	Dist 191	Dist 192	Dist 193	Dist 194	Dist 195	Dist 196	Dist 197	Dist 198	Dist 199	Dist 200	Dist 201	Dist 202	Dist 203	Dist 204	Dist 205	Dist 206	Dist 207	Dist 208	Dist 209	Dist 210	Dist 211	Dist 212	Dist 213	Dist 214	Dist 215	Dist 216	Dist 217	Dist 218	Dist 219	Dist 220	Dist 221	Dist 222	Dist 223	Dist 224	Dist 225	Dist 226	Dist 227	Dist 228	Dist 229	Dist 230	Dist 231	Dist 232	Dist 233	Dist 234	Dist 235	Dist 236	Dist 237	Dist 238	Dist 239	Dist 240	Dist 241	Dist 242	Dist 243	Dist 244	Dist 245	Dist 246	Dist 247	Dist 248	Dist 249	Dist 250	Dist 251	Dist 252	Dist 253	Dist 254	Dist 255	Dist 256	Dist 257	Dist 258	Dist 259	Dist 260	Dist 261	Dist 262	Dist 263	Dist 264	Dist 265	Dist 266	Dist 267	Dist 268	Dist 269	Dist 270	Dist 271	Dist 272	Dist 273	Dist 274	Dist 275	Dist 276	Dist 277	Dist 278	Dist 279	Dist 280	Dist 281	Dist 282	Dist 283	Dist 284	Dist 285	Dist 286	Dist 287	Dist 288	Dist 289	Dist 290	Dist 291	Dist 292	Dist 293	Dist 294	Dist 295	Dist 296	Dist 297	Dist 298	Dist 299	Dist 300	Dist 301	Dist 302	Dist 303	Dist 304	Dist 305	Dist 306	Dist 307	Dist 308	Dist 309	Dist 310	Dist 311	Dist 312	Dist 313	Dist 314	Dist 315	Dist 316	Dist 317	Dist 318	Dist 319	Dist 320	Dist 321	Dist 322	Dist 323	Dist 324	Dist 325	Dist 326	Dist 327	Dist 328	Dist 329	Dist 330	Dist 331	Dist 332	Dist 333	Dist 334	Dist 335	Dist 336	Dist 337	Dist 338	Dist 339	Dist 340	Dist 341	Dist 342	Dist 343	Dist 344	Dist 345	Dist 346	Dist 347	Dist 348	Dist 349	Dist 350	Dist 351	Dist 352	Dist 353	Dist 354	Dist 355	Dist 356	Dist 357	Dist 358	Dist 359	Dist 360	Dist 361	Dist 362	Dist 363	Dist 364	Dist 365	Dist 366	Dist 367	Dist 368	Dist 369	Dist 370	Dist 371	Dist 372	Dist 373	Dist 374	Dist 375	Dist 376	Dist 377	Dist 378	Dist 379	Dist 380	Dist 381	Dist 382	Dist 383	Dist 384	Dist 385	Dist 386	Dist 387	Dist 388	Dist 389	Dist 390	Dist 391	Dist 392	Dist 393	Dist 394	Dist 395	Dist 396	Dist 397	Dist 398	Dist 399	Dist 400	Dist 401	Dist 402	Dist 403	Dist 404	Dist 405	Dist 406	Dist 407	Dist 408	Dist 409	Dist 410	Dist 411	Dist 412	Dist 413	Dist 414	Dist 415	Dist 416	Dist 417	Dist 418	Dist 419	Dist 420	Dist 421	Dist 422	Dist 423	Dist 424	Dist 425	Dist 426	Dist 427	Dist 428	Dist 429	Dist 430	Dist 431	Dist 432	Dist 433	Dist 434	Dist 435	Dist 436	Dist 437	Dist 438	Dist 439	Dist 440	Dist 441	Dist 442	Dist 443	Dist 444	Dist 445	Dist 446	Dist 447	Dist 448	Dist 449	Dist 450	Dist 451	Dist 452	Dist 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675	Dist 676	Dist 677	Dist 678	Dist 679	Dist 680	Dist 681	Dist 682	Dist 683	Dist 684	Dist 685	Dist 686	Dist 687	Dist 688	Dist 689	Dist 690	Dist 691	Dist 692	Dist 693	Dist 694	Dist 695	Dist 696	Dist 697	Dist 698	Dist 699	Dist 700	Dist 701	Dist 702	Dist 703	Dist 704	Dist 705	Dist 706	Dist 707	Dist 708	Dist 709	Dist 710	Dist 711	Dist 712	Dist 713	Dist 714	Dist 715	Dist 716	Dist 717	Dist 718	Dist 719	Dist 720	Dist 721	Dist 722	Dist 723	Dist 724	Dist 725	Dist 726	Dist 727	Dist 728	Dist 729	Dist 730	Dist 731	Dist 732	Dist 733	Dist 734	Dist 735	Dist 736	Dist 737	Dist 738	Dist 739	Dist 740	Dist 741	Dist 742	Dist 743	Dist 744	Dist 745	Dist 746	Dist 747	Dist 748	Dist 749	Dist 750	Dist 751	Dist 752	Dist 753	Dist 754	Dist 755	Dist 756	Dist 757	Dist 758	Dist 759	Dist 760	Dist 761	Dist 762	Dist 763	Dist 764	Dist 765	Dist 766	Dist 767	Dist 768	Dist 769	Dist 770	Dist 771	Dist 772	Dist 773	Dist 774	Dist 775	Dist 776	Dist 777	Dist 778	Dist 779	Dist 780	Dist 781	Dist 782	Dist 783	Dist 784	Dist 785	Dist 786	Dist 787	Dist 788	Dist 789	Dist 790	Dist 791	Dist 792	Dist 793	Dist 794	Dist 795	Dist 796	Dist 797	Dist 798	Dist 799	Dist 800	Dist 801	Dist 802	Dist 803	Dist 804	Dist 805	Dist 806	Dist 807	Dist 808	Dist 809	Dist 810	Dist 811	Dist 812	Dist 813	Dist 814	Dist 815	Dist 816	Dist 817	Dist 818	Dist 819	Dist 820	Dist 821	Dist 822	Dist 823	Dist 824	Dist 825	Dist 826	Dist 827	Dist 828	Dist 829	Dist 830	Dist 831	Dist 832	Dist 833	Dist 834	Dist 835	Dist 836	Dist 837	Dist 838	Dist 839	Dist 840	Dist 841	Dist 842	Dist 843	Dist 844	Dist 845	Dist 846	Dist 847	Dist 848	Dist 849	Dist 850	Dist 851	Dist 852	Dist 853	Dist 854	Dist 855	Dist 856	Dist 857	Dist 858	Dist 859	Dist 860	Dist 861	Dist 862	Dist 863	Dist 864	Dist 865	Dist 866	Dist 867	Dist 868	Dist 869	Dist 870	Dist 871	Dist 872	Dist 873	Dist 874	Dist 875	Dist 876	Dist 877	Dist 878	Dist 879	Dist 880	Dist 881	Dist 882	Dist 883	Dist 884	Dist 885	Dist 886	Dist 887	Dist 888	Dist 889	Dist 890	Dist 891	Dist 892	Dist 893	Dist 894	Dist 895	Dist 896	Dist 897	Dist 898	Dist 899	Dist 900	Dist 901	Dist 902	Dist 903	Dist 904	Dist 905	Dist 906	Dist 907	Dist 908	Dist 909	Dist 910	Dist 911	Dist 912	Dist 913	Dist 914	Dist 915	Dist 916	Dist 917	Dist 918	Dist 919	Dist 920	Dist 921	Dist 922	Dist 923	Dist 924	Dist 925	Dist 926	Dist 927	Dist 928	Dist 929	Dist 930	Dist 931	Dist 932	Dist 933	Dist 934	Dist 935	Dist 936	Dist 937	Dist 938	Dist 939	Dist 940	Dist 941	Dist 942	Dist 943	Dist 944	Dist 945	Dist 946	Dist 947	Dist 948	Dist 949	Dist 950	Dist 951	Dist 952	Dist 953	Dist 954	Dist 955	Dist 956	Dist 957	Dist 958	Dist 959	Dist 960	Dist 961	Dist 962	Dist 963	Dist 964	Dist 965	Dist 966	Dist 967	Dist 968	Dist 969	Dist 970	Dist 971	Dist 972	Dist 973	Dist 974	Dist 975	Dist 976	Dist 977	Dist 978	Dist 979	Dist 980	Dist 981	Dist 982	Dist 983	Dist 984	Dist 985	Dist 986	Dist 987	Dist 988	Dist 989	Dist 990	Dist 991	Dist 992	Dist 993	Dist 994	Dist 995	Dist 996	Dist 997	Dist 998	Dist 999	Dist 1000	Dist 1001	Dist 1002	Dist 1003	Dist 1004	Dist 1005	Dist 1006	Dist 1007	Dist 1008	Dist 1009	Dist 1010	Dist 1011	Dist 1012	Dist 1013	Dist 1014	Dist 1015	Dist 1016	Dist 1017	Dist 1018	Dist 1019	Dist 1020	Dist 1021	Dist 1022	Dist 1023	Dist 1024	Dist 1025	Dist 1026	Dist 1027	Dist 1028	Dist 1029	Dist 1030	Dist 1031	Dist 1032	Dist 1033	Dist 1034	Dist 1035	Dist 1036	Dist 1037	Dist 1038	Dist 1039	Dist 1040	Dist 1041	Dist 1042	Dist 1043	Dist 1044	Dist 1045	Dist 1046	Dist 1047	Dist 1048	Dist 1049	Dist 1050	Dist 1051	Dist 1052	Dist 1053	Dist 1054	Dist 1055	Dist 1056	Dist 1057	Dist 1058	Dist 1059	Dist 1060	Dist 1061	Dist 1062	Dist 1063	Dist 1064	Dist 1065	Dist 1066	Dist 1067	Dist 1068	Dist 1069	Dist 1070	Dist 1071	Dist 1072	Dist 1073	Dist 1074	Dist 1075	Dist 1076	Dist 1077	Dist 1078	Dist 1079	Dist 1080	Dist 1081	Dist 1082	Dist 1083	Dist 1084	Dist 1085	Dist 1086	Dist 1087	Dist 1088	Dist 1089	Dist 1090	Dist 1091	Dist 1092	Dist 1093	Dist 1094	Dist 1095	Dist 1096	Dist 1097	Dist 1098	Dist 1099	Dist 1100	Dist 1101	Dist 1102	Dist 1103	Dist 1104	Dist 1105	Dist 1106	Dist 1107	Dist 1108	Dist 1109	Dist 1110	Dist 1111	Dist 1112	Dist 1113	Dist 1114	Dist 1115	Dist 1116	Dist 1117	Dist 1118	Dist 1119	Dist 1120	Dist 1121	Dist 1122	Dist 1123	Dist 1124	Dist 1125	Dist 1126	Dist 1127	Dist 1128	Dist 1129	Dist 1130	Dist 1131	Dist 1132	Dist 1133	Dist 1134	Dist 1135	Dist 1136	Dist 1137	Dist 1138	Dist 1139	Dist 1140	Dist 1141	Dist 1142	Dist 1143	Dist 1144	Dist 1145	Dist 1146	Dist 1147	Dist 1148	Dist 1149	Dist 1150	Dist 1151	Dist 1152	Dist 1153	Dist 1154	Dist 1155	Dist 1156	Dist 1157	Dist 1158	Dist 1159	Dist 1160	Dist 1161	Dist 1162	Dist 1163	Dist 1164	Dist 1165	Dist 1166	Dist 1167	Dist 1168	Dist 1169	Dist 1170	Dist 1171	Dist 1172	Dist 1173	Dist 1174	Dist 1175	Dist 1176	Dist 1177	Dist 1178	Dist 1179	Dist 1180	Dist 1181	Dist 1182	Dist 1183	Dist 1184	Dist 1185	Dist 1186	Dist 1187	Dist 1188	Dist 1189	Dist 1190	Dist 1191	Dist 1192	Dist 1193	Dist 1194	Dist 1195	Dist 1196	Dist 1197	Dist 1198	Dist 1199	Dist 1200	Dist 1201	Dist 1202	Dist 1203	Dist 1204	Dist 1205	Dist 1206	Dist 1207	Dist 1208	Dist 1209	Dist 1210	Dist 1211	Dist 1212	Dist 1213	Dist 1214	Dist 1215	Dist 1216	Dist 1217	Dist 1218	Dist 1219	Dist 1220	Dist 1221	Dist 1222	Dist 1223	Dist 1224
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	σ	$\Delta\sigma$	$\Delta\sigma$
$0.7n_1$	0.35	1.64813	
$0.3\sigma_1$	0.15	0.56424	0.2
$0.7n_2$	0.35	1.32289	
$0.3\sigma_2$	0.15	1.08803	0.2
D (mm)	200		
E_{T1}	0.2339		
E_{T2}	196.21		
Area (Sq.mm)	0.07065		

Endwert	1,94		
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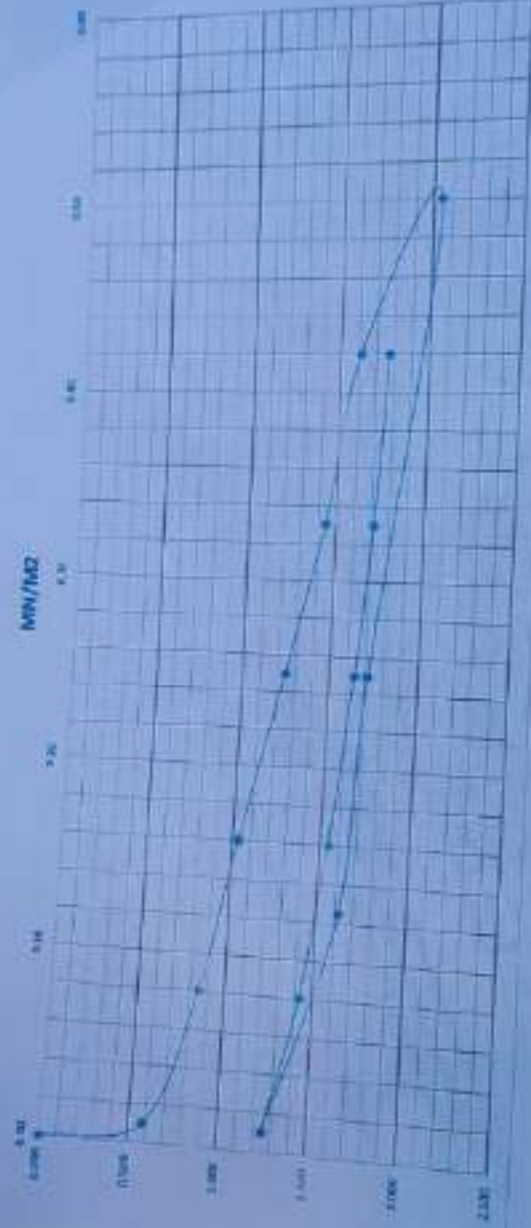
$$k_{\text{cat}} = 0.23 \text{ s}^{-1} \quad k_{\text{p}} = 0.001 \text{ s}^{-1} \quad A_0$$
 ϵ = deformation modulus

As a result, the respondent is not required to

is authorized for removal.

a diameter of the plate, generally 0.30 m

calculations for each Δt are tabulated below. Plot the load versus responses $0.3 \sigma_{H_0}$ and $1.2 \sigma_{H_0}$.



Name :
Lab. Specialist

Name :
Lab. Engineer

Name : Ahmed Hamed
Sign : Ahmed Hamed

Signature of Lab. Engineer
Signature of Lab. Specialist
Date :
Page :
No. of Pages :
No. of Sheets :
No. of Columns :
No. of Rows :
No. of Pages :
No. of Sheets :
No. of Columns :
No. of Rows :

Plate Load Test Results

Company Name

Maniour Ali Hassan 2

Location

341+420

Test Date

12/7/2023

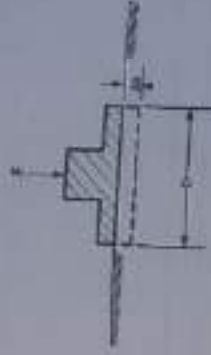
Layer level

pre-bed subgrade

EQUIPMENT AND TEST PROCEDURE

For basis of the given equation is Boussinesq's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

As load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



P = load
 S = settlement
 D = diameter of the plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

The load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 3 steps. A loaded jack, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Diameter = 300mm

Loading Stage No.	Load Bar	Load KN	Stress MPa/ksi	Dist 1 mm	Dist 2 mm	Dist 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg Sett. mm
0.000	0.0	0.000	0.00	10.85	13.98		0.000	0.000		0.000
1.000	2.1	0.707	0.01	10.57	13.10		0.280	0.380		0.380
2.000	17.1	5.652	0.08	10.09	13.04		0.760	0.940		0.850
3.000	34.2	11.304	0.16	9.85	12.92		1.000	1.060		1.030
4.000	51.3	17.663	0.25	9.55	12.79		1.300	1.190		1.245
5.000	70.5	23.315	0.33	9.28	12.67		1.570	1.310		1.440
6.000	89.7	29.673	0.42	9.03	12.58		1.820	1.400		1.610
7.000	106.8	35.325	0.50	8.44	12.30		2.410	1.680		2.045
8.000	53.4	17.663	0.25	8.83	12.57		2.020	1.410		1.715
9.000	26.7	8.831	0.12	8.94	12.65		1.910	1.330		1.620
9.000	2.1	0.707	0.01	9.53	12.81		1.320	1.170		1.245
10.000	2.1	0.707	0.01	9.53	12.81		1.320	1.170		1.245
11.000	17.1	5.652	0.08	9.30	12.68		1.540	1.300		1.425
12.000	34.2	11.304	0.16	9.11	12.64		1.740	1.340		1.540
13.000	51.3	17.663	0.25	8.96	12.59		1.890	1.390		1.640
14.000	70.5	23.315	0.33	8.84	12.56		2.010	1.420		1.715
15.000	89.7	29.673	0.42	8.80	12.49		2.050	1.490		1.770

$0.7 \sigma_1$	0.35	σ_1	0.70	σ_1	0.70
$0.3 \sigma_1$	0.15	σ_1	0.30	σ_1	0.30
$0.7 \sigma_2$	0.35	σ_2	0.70	σ_2	0.70
$0.3 \sigma_2$	0.15	σ_2	0.30	σ_2	0.30
D (mm)	300	D (mm)	300	D (mm)	300
E_s	100,000	E_s	100,000	E_s	100,000
Δs	10.0	Δs	10.0	Δs	10.0
Δs_{max}	0.00001	Δs_{max}	0.00001	Δs_{max}	0.00001

Δs_{max}	1.42	
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$$E_s = 0.75 \cdot D \cdot \Delta s / \Delta s$$

E_s = deformation modulus
 Δs = load increment
 Δs = settlement increment
 D = diameter of the plate, generally 0.30 m



Electric Express Train - HER
From El Ain El Bouhaya City To El Aamain - MATROUH
Section - 7 From FOHA To MARSA MATROUH
From Station 504+000 To Station 505+177



TESTING DATE: 4/6/2023
LOCATION: K.P 540+500
NAME COMPANY: Mansour Ali Hassan-2

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	4/6/2023	CODE:	MHS-23	Zone:	541+400 to 541+800
LOCATION:	K.P 540+500				
NAME COMPANY:	Mansour Ali Hassan-2				
Visual inspection test					

Gradation test

gradation of bulk materials

sieve size	2	1.5	1	4/3	2/1	3/8	20/80.00	gm	table classify
0.075	0.0	97.0	100.0	4613.6	3100.0	2283.0	3387.0		soil classify
Cumulative Retained (%)	0.0	97.0	100.0	7198.5	10298.5	13179.5	16566.5		A-1-a
Cumulative Retained %	0.0	97.0	100.0	25.8	40.6	49.1	61.7		PRO
Cumulative Passing %	100.0	3.0	0.0	73.2	59.4	50.9	38.3		WC
									CBR
									41.60

soft material gradation

sieve size	10	40	200	500.00	gm
Cumulative Retained (%)	115.00	330.00	428.00		
Cumulative Retained %	23.00	66.00	85.60		
Cumulative Passing %	77.00	34.00	14.40		

General gradation

sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	98.4	90.4	73.2	50.4	50.9	38.3	25.5	13.0	5.5

ATTERBERG LIMITS	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTIC INDEX (PI)
	NL	NP	NP



Consultant
Abdullah Hassan

Plate Load Test Results

Company Name

Mansour Ali Hassan 2

Our Ali Hassan 2
5411476

Pratibha, Aji, Hassan 2

Trusts Over

541+420

Layer level

12/7/2023

Layer level

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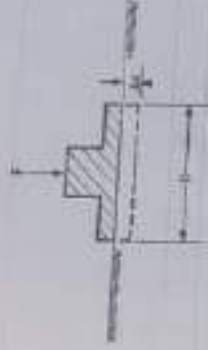
12772023
prebored subgrade

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EQUIPMENT AND TEST PROCEDURE :

basis of the given equation is Boussinesq's theory of the relationship between the stress and the displacement in a rigid plate with the diameter D .

load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is recorded. The following sketch shows the principle of the test.



1

by an individual

10

(diameter D) of the plate is generally 0.30 m. For very coarse grained material also slides with diameter D are used.

Load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/min). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded plate, an excavator or a roller usually serve as counterweight for the hydraulic jack.

number = 734000

Landlog	Lead	Lead	Stem	Dial 1	Dial 2	Dial 3	Test 1	Test 2	Test 3	Avrg Test
Drain No.	Blue	RYN	MS/M2	mm	mm	mm	mm	mm	mm	mm
0.000	0.0	0.000	0.00	13.16	9.98		0.000	0.000		0.000
1.000	2.1	0.707	0.01	12.93	9.87		0.230	0.110		0.170
2.000	17.1	5.652	0.03	12.60	9.79		0.560	0.190		0.375
3.000	34.2	11.304	0.16	12.20	9.62		0.960	0.360		0.660
4.000	53.4	17.663	0.25	11.95	9.49		1.210	0.490		0.850
5.000	70.5	23.315	0.33	11.70	9.35		1.460	0.630		1.045
6.000	89.7	29.673	0.42	11.49	9.24		1.670	0.740		1.205
7.000	106.8	35.325	0.50	11.10	9.00		2.060	0.900		1.520
8.000	53.4	17.663	0.25	11.37	9.18		1.790	0.800		1.295
9.000	26.7	8.831	0.12	11.49	9.26		1.670	0.730		1.195
9.000	2.1	0.707	0.01	12.02	9.45		1.140	0.550		0.835
10.000	2.1	0.707	0.01	12.02	9.45		1.140	0.550		0.835
11.000	17.1	5.652	0.08	11.82	9.34		1.340	0.640		0.990
12.000	34.2	11.304	0.16	11.68	9.28		1.480	0.700		1.090
13.000	53.4	17.663	0.25	11.52	9.20		1.640	0.780		1.210
14.000	70.5	23.315	0.33	11.41	9.16		1.750	0.820		1.285
15.000	89.7	29.673	0.42	11.37	9.10		1.790	0.880		1.335

	σ	δ	$\Delta\sigma$
$0.7 \sigma_1$	0.35	0.97938	0.2
$0.3 \sigma_1$	0.15	0.62438	
$0.7 \sigma_2$	0.35	1.20411	0.2
$0.3 \sigma_2$	0.15	1.14592	
$D \text{ (mm)}$	300		
$E \sigma_1$	147.54		
$E \sigma_2$	297.83		
Area (Sq.mm)	0.87665		

Revised	1.61	
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$$E_{\pm} = \pm \sqrt{V^2 + \Delta^2} = \pm V \pm \Delta^2 / 2V$$

 ϵ' = deformation modulus

See also **Load Increment**

As a settlement increment

D = diameter of the plate, generally 0.30 m

Plate Load Test Results

Company Name

Mansour Ali Hassan 2

Location

541+420

Test Date

12/7/2023

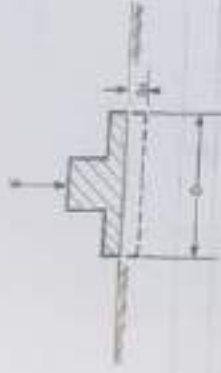
Layer level

preberd subgrade

EQUIPMENT AND TEST PROCEDURE

On basis of the given equation is Brinell's theory of the relationship between the modulus of elasticity and the settlement of a circular rigid plate with the diameter D .

A load is applied to a circular rigid steel bearing plate by a hydraulic jack in several steps. The settlement under each load step is noted. The following sketch shows the principle of the test.



P = load
 s = settlement
 D = diameter of test plate

The diameter D of the plate is generally 0.30 m. For very coarse grained material also plates with diameter $D = 0.60$ m and $D = 0.762$ m are used.

A load is applied in 6 load increments of equal size. Under each load step the settlement must come to a noticeable end (< 0.02 mm/minute). After the maximum load is reached the unloading procedure can begin. After that, the plate is reloaded in 5 steps. A loaded plate, an excavator or a roller usually serve as counterweight for the hydraulic jack.

Plate diameter = 300mm

Loading Step No.	Load Bar	Load K'N	Stress MPa/M2	Dist 1 mm	Dist 2 mm	Dist 3 mm	Sett. 1 mm	Sett. 2 mm	Sett. 3 mm	Avg. Sett. mm
0.000	0.0	0.000	0.00	5.90	5.80		0.000	0.000		0.000
1.000	2.1	0.707	0.01	5.79	5.70		0.110	0.100		0.105
2.000	17.1	5.652	0.08	5.52	5.55		0.380	0.250		0.315
3.000	34.2	11.304	0.16	5.17	5.21		0.730	0.590		0.660
4.000	53.4	17.663	0.25	4.86	4.73		1.040	1.070		1.055
5.000	70.5	23.315	0.33	4.70	4.61		1.200	1.190		1.195
6.000	89.7	29.673	0.42	4.42	4.43		1.480	1.370		1.425
7.000	106.8	35.325	0.50	3.94	4.00		1.960	1.500		1.880
8.000	53.4	17.663	0.25	4.31	4.32		1.590	1.480		1.535
9.000	26.7	8.831	0.12	4.57	4.38		1.330	1.420		1.375
9.000	2.1	0.707	0.01	4.78	4.70		1.120	1.100		1.110
10.000	2.1	0.707	0.01	4.78	4.70		1.120	1.100		1.110
11.000	17.1	5.652	0.08	4.62	4.65		1.280	1.150		1.215
12.000	34.2	11.304	0.16	4.50	4.61		1.400	1.190		1.295
13.000	53.4	17.663	0.25	4.35	4.50		1.550	1.300		1.425
14.000	70.5	23.315	0.33	4.27	4.44		1.630	1.360		1.495
15.000	89.7	29.673	0.42	4.19	4.38		1.710	1.420		1.565

ILT, σ_1	0.25	0.15	0.15	0.15	0.15
0.3 σ_1	0.15	0.15	0.15	0.15	0.15
0.7 σ_1	0.15	0.15	0.15	0.15	0.15
0.3 σ_1	0.15	0.15	0.15	0.15	0.15
D (mm)	300	300	300	300	300
K_v	109.76	109.76	109.76	109.76	109.76
K_v	236.16	236.16	236.16	236.16	236.16
Area (sq. m)	0.070685	0.070685	0.070685	0.070685	0.070685

Ex: 20/1	2.15	
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$$E_s = 0.75 \cdot D \cdot \Delta s / \Delta s$$

E_s = deformation modulus

Δs = load increment

Δs = settlement increment

D = diameter of the plate, generally 0.30 m



Mansour Lab

Electric Express Train - HSR
From El Ain El Sahel City To El Aharwa - MATROUH
Station - Y From POKA TO MARGA MATROUH
From Station Matrouh To Station 604+177



Proctor Test

TESTING DATE:	5-6-2023
LOCATION:	K.P. 640+600
NAME COMPANY:	Mansour Ali Hassan-2

Zone:	640+400 to 641+800
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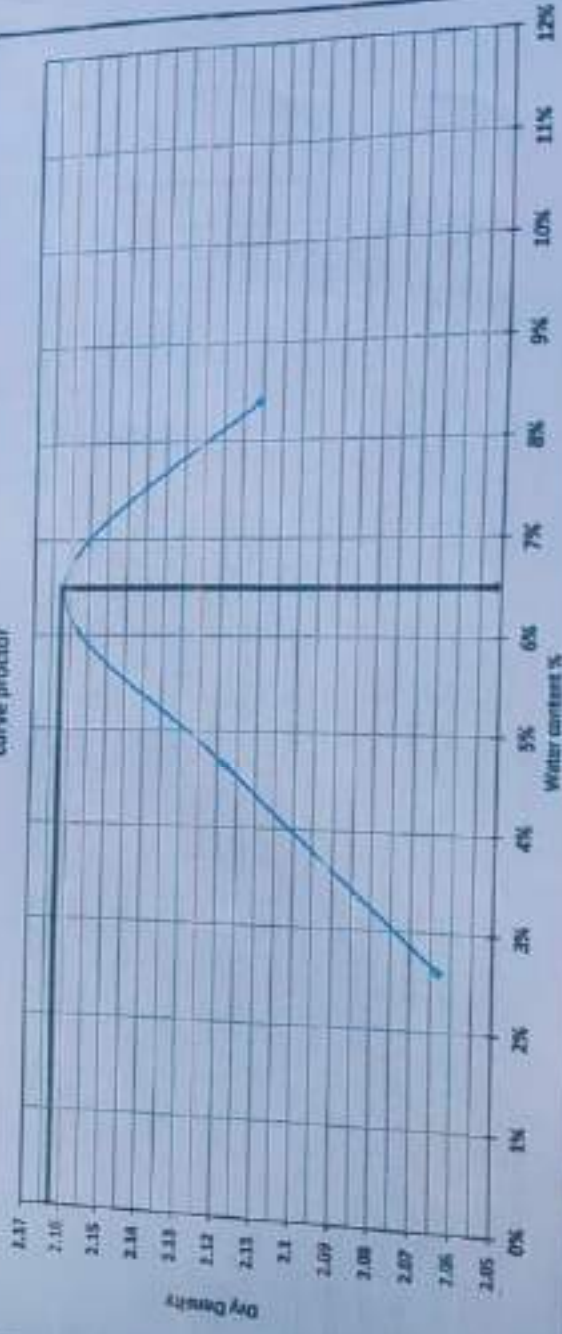
Weight of empty mold :	5755.0
Mold Volume:	2113.0

MAX Dry Density	2.162
Water content %	6.5

trial no :	1	2	3	4
Wt. Of Mold + wet soil	10276.0	10485.0	10672.0	10612.0
WT. WET SOIL	4817.0	4730.0	4913.0	4952.0
Wt. Density	2.217	2.216	2.302	2.388

Tare No.	1	2	3	4	5	6	7	8
Tare wt.	85.85	54.5	55.65	51.42	56.96	56.74	57.92	
Wt. Of wet soil & tare	140.4	149.3	149.4	151.7	149.5	149.0	148.3	150.9
Wt. Of dry soil & tare	143.1	146.7	148.4	147.3	147.7	143	141.2	143.6
Wt. Of water	2.3	2.5	4.0	4.5	5.6	5.6	7.0	7.2
Wt. Of dry soil	91.3	92.2	99.4	94.7	86.7	86.8	84.3	86.7
Water content %	2.5%	2.7%	4.0%	4.8%	6.5%	6.5%	8.3%	8.5%
A.V. Water content %	2.6%		4.7%		6.5%			8.45%
Dry Density	2.063		2.118		2.162			2.181

curve proctor



Contractor

Consultant

Mohammed S. El

Compositions % for Model	
Model No.	1
Moist Vol. (cm ³)	5104
Moist WT. (gms)	9077
Wet WT. = Moist Vol. (gms)	13007
WT. (WT. (gms)	4000
Wet Density (g/cm ³)	3.269
Dry Density (g/cm ³)	3.166
Porosity (g/cm ³)	3.162
Compos. %	95

Modulus Ratio After Compacting Model	Test No.	
	Test WT-1240	8.9
	Test WT-1245 WT-1249	32.2
	Test WT-1249 WT-1250	144.2
	Water WT-1250	100.0
	WT-1250	6.6
	WT-1251	32.2
	Median Columns No.	4.3

Ordering	
Order No.	
Date	10/10/12
Order Weight (gms)	3.40
Order Weight (lbs)	7.48
Reference	
Order Weight (gms)	
Ordering Name	

Condition: All residents:

Production (mm)	0.64	1.27	3.81	2.54	3.18	3.80	5.43	1.00	0.45
Lead Weight (kg)	99.00	100.00	201.00	201.00	200.00	85.00	350.00	300.00	1000.00
Lead (kg)	1.0	1.0	2.0	1.8	0.8	0.4	7.0	3.0	30.2



Calculations:

Penetration	Load (kN)	Standard Load (kN)	CBR	Mod. - Compaction (%)	Compaction (%)	CBR
2.50	3.75	12.4	28.7%	(%)	(%)	26.10 Mod. 28
5.00	6.42	24.0	42.1%	69	98	27.8%
						41.4%

Late Winter/Early Spring

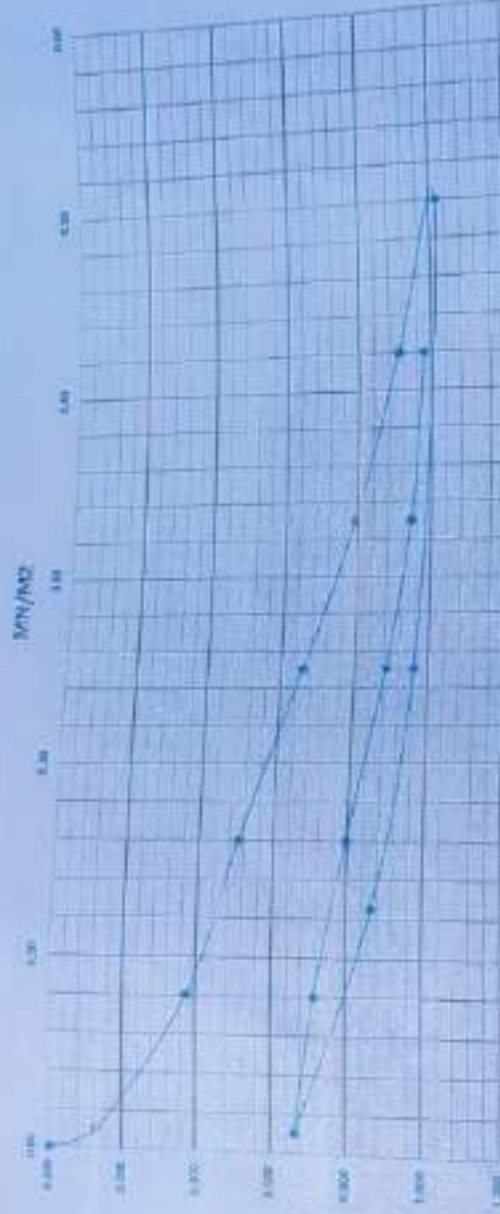
Consultant Engineers

Plasma

5

π diameter of the plate, generally 0.32 m

3. calculations for and Δ are usually taken from the load span between 0.2 σ_{max} and 0.7 σ_{max}



Self

Lab Specialist

Name :

Sign :

Yusuf

Lab Engineer

Name :

Sign :

Yusuf

Consultant Engineer

Name :

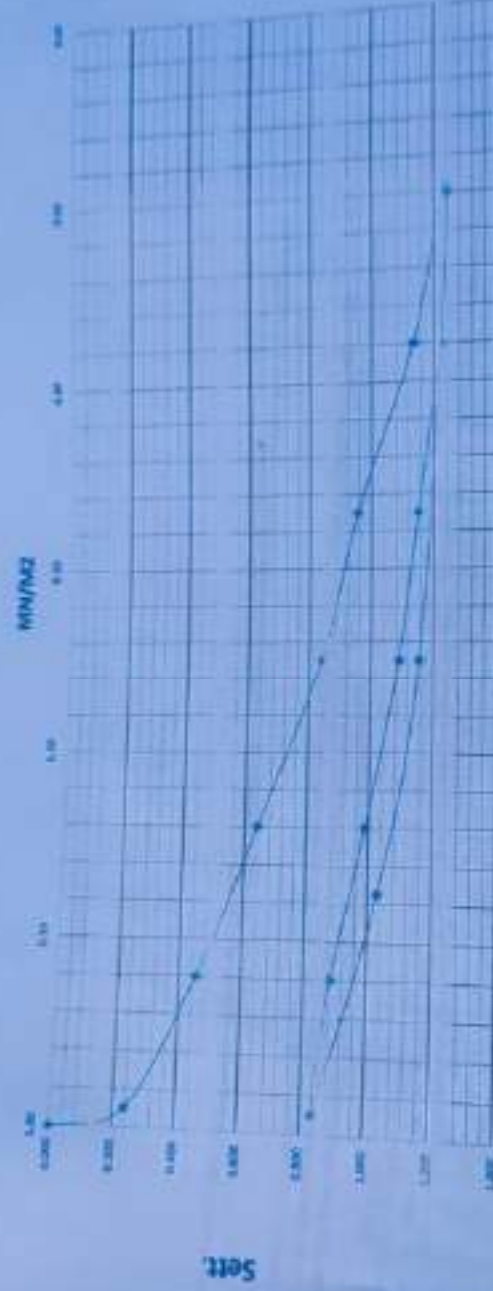
Sign :

Hassan

3/8/2023

ω = diameter of the plate, generally 0.30 m

For the calculations for step 4.1 the necessary values from the test data have been entered in the table and the results are shown in the table below.



Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

Signature: Hassan
Date: 11/11/2023



and 12 are usually taken from the last span between 0.2 σ_{max} and 0.7 σ_{max} .



is generally 0.50 m.

measurements of deflection should be taken at regular intervals along the length of the beam. The deflection should be measured at the same points as the load is applied.

Load	Strain
KN	MM/M2
0.000	0.000
0.707	0.01
5.652	0.08
11.304	0.1
17.663	0.2
23.315	0.5
29.673	0
35.325	0
41.063	0
46.811	0
52.559	0
58.307	0
64.055	0
69.803	0
75.551	0
81.299	0

DECLARATION

Name: Lab Engineer

Signature: [Signature]



Consultant Engineer

Name: Ahmed Mohamed

Signature: [Signature]