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Contractor

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2-Gradient test

1-visual inspection test

PARTICLE SIZE DISTRIBUTION OF SOIL

17-8-2023

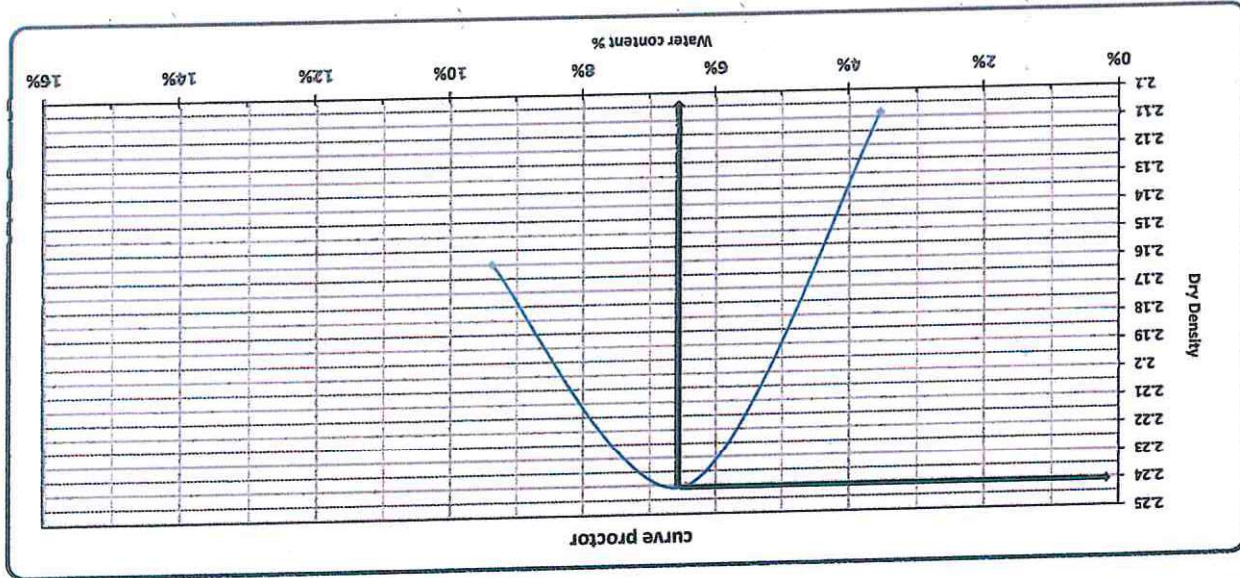
Mr. Elsayed

Mr. Elsayed

Consultant



Contractor



Tare No.	Tare wt.	Wt. Of wet soil & tare	Wt. Of dry soil & tare	Wt. Of water	Wt. Of dry soil	Water content %	AV. Water content %	Dry Density
1	23.54	133.7	141.40	4.5	106.7	3.2%	3.5%	2.108
2	25.43	145.86	126.82	6.0	95.1	3.8%	6.5%	2.240
3	31.67	141.56	134.87	6.7	101.4	6.6%	9.4%	2.160
4	33.45	138.65	129.86	8.8	95.1	9.2%		
5	34.76	132.64	123.59	9.0	95.2	9.5%		
6	28.43							

trial no :	Wt. Of Mold + wet soil	WT. WET SOIL	Wt. Density
1	10513	4436	2.183
2	10923	4846	2.385
3	10877	4800	2.362

Weight of empty mold :	Mold Volume:
6077.0	2032.0
MAX Dry Density	Water content %
2.24	9.4%

TESTING DATE:	LOCATION	NAME COMPANY
14/8/2023	K.P 550+500	EL MAHGOUB
ZONE	MATERIAL	QUANTITY
549+000	SUB BALLAST	2000 M3
552+000		

PROCTOR TEST

From Station 504+000 To Station 558+177

Section - 7 From FOKA TO MARSA MATROUH

From El Ain El Sokhna City To El Alamein - MATROUH

Electric Express Train - HSR

SVSTRA E-CONSTRUCTION

SHAKER

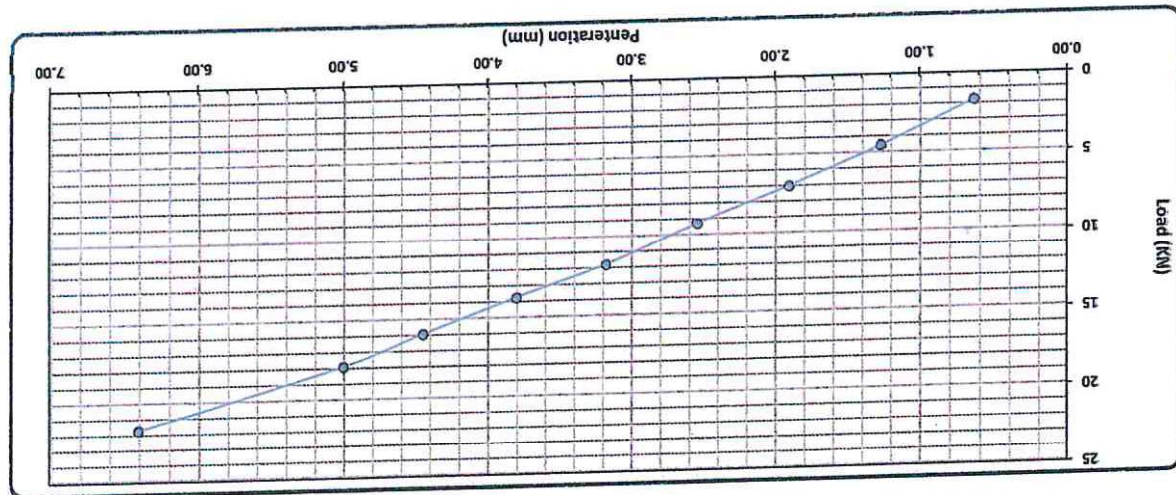
NAME COMPANY	EL MAHGOUB		
Location :	K.P(550+500)		
Testing Date :	2023/8/15	Code	FROM STA :
		MH SB-4	: Layer Thickness
			: Material
			SUB BALLAST
			20 CM
			552+000
			549+000

Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	7350
Mold WT. + Wet WT. (gm)	12390
Wet WT. (gm)	5040
Wet Density (g/cm^3)	2.343
Dry Density (g/cm^3)	2.198
Proctor Density (g/cm^3)	2.240
Compaction %	98

Moisture Ratio After Compacted Mold	
Fare No.	5
Fare WT. (gm)	31
Fare WT. + Wet WT. (gm)	160
Fare WT. + Dry WT. (gm)	152
Water WT. (gm)	7.8
Dry WT. (gm)	121.2
Moisture Content %	6.6

Swelling	
Mold No.	4
Date	2023/01/5
Initial Height (mm)	5.50
Final Height (mm)	5.50
Difference	0
Sample Height (mm)	121.00
Swelling Ratio %	0%

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	176.00	462.00	711.00	943.00	1198.00	1399.00	1623.00	1823.00	2213.00
Load (KN)	1.7	4.5	7.0	9.2	11.7	13.7	15.9	17.9	21.7



Penetration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR
5.00	17.87	20.0	89.2%	99	98	88.3%
2.50	9.24	13.4	69.2%			68.5%

NAME :

: 0315

Consultant Engineer

Lab. Specialist

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Знаєш пароль:

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17-8-22



Absorption & Aggregate specific gravity
AASHTO-T85

Testing date :-	15/01/2023
Location :-	K.P(550+500)
Material :-	sub ballast

Weight of sample	2000	gm
Weight of saturated -dry surface sample (B)	2018.40	gm
Weight of saturated sample in water (C)	1243.20	gm
Weight of dry sample after heating (A)	1987.00	gm

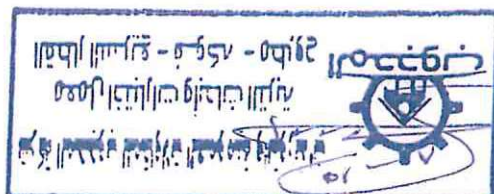
Results:-

Bul' spicific gravity = $A / (B-C)$	2.563
Apparent spicific gravity = $A / (A-C)$	2.671
Absorbtion = $(B-A)/A$	1.580

Los Anglos abrasion
AASHTO-T96

Weight of sample before	5000
Weight of sample before test (gm)	3712
Abrasion ratio (%)	25.76

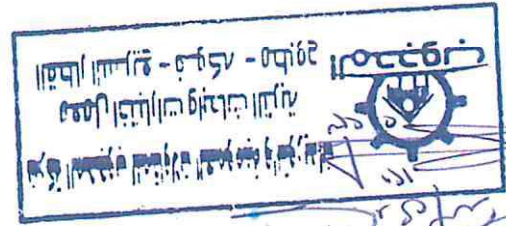
Results:-



[Signature]

Lab Engineer/

17-8-2023
[Signature]
Mohamed Elsayed



Youssef R. 16/9/23

Consultant

Contractor

LIMITS	N.P	
	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)
		PLASTIC INDEX (P.I.)

sieve size(in)	sieve size(mm)	Cumulative Passing %	REMARKS					
			2	1.5	1	3/4	1/2	3/8
2	50.0	100.0	98.4	84.2	73.1	57.5	49.1	40.2
50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425
200	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40

C-General gradient

sieve size	Cumulative Retained (g)	Cumulative Retained %	Cumulative Passing %
10	150.00	30.00	70.00
40	299.00	59.80	40.20
200	417.00	83.40	16.60

B-soft material gradation				WT.OF sample				500.00				gm	LA	25.40
sieve size	Mass retained (g)	Cumulative Retained %	Cumulative Passing %	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	S.G	2.587
2	0.0	0.0	100.0	98.4	84.2	73.1	57.5	49.1	40.2					
1.5	393.0	1.6	0.0	15.8	26.9	42.5	50.9	59.8					WC	6.6%
1	3493.0	3886.0	0.0	6612.0	10451.0	12511.0	14715.0						PRO	2.238
3/4	2726.0	3839.0											A-1-a	
1/2	2204.0												soil classify	
3/8	2060.0												table classify	
2	24591.00													

2-Gradient test

1-visual inspection test

TESTING DATE:	LOCATION	NAME COMPANY
8/8/2023	K.P(548+600)	EL MAHGOUB
code	MATERIAL	LAYER THICKNESS
MH SB-3	549+000	552+000
	SUB BALLAST	+20CM

PARTICLE SIZE DISTRIBUTION OF SOIL

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

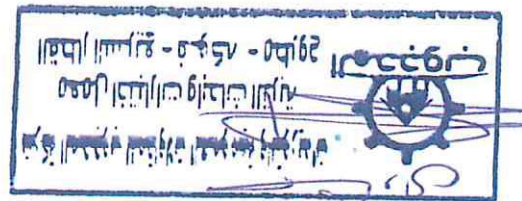
Section - 7 From FOKA To MARSA MATROUH

From Station 504+000 To Station 568+177

ENGINEERING CONSULTING OFFICE

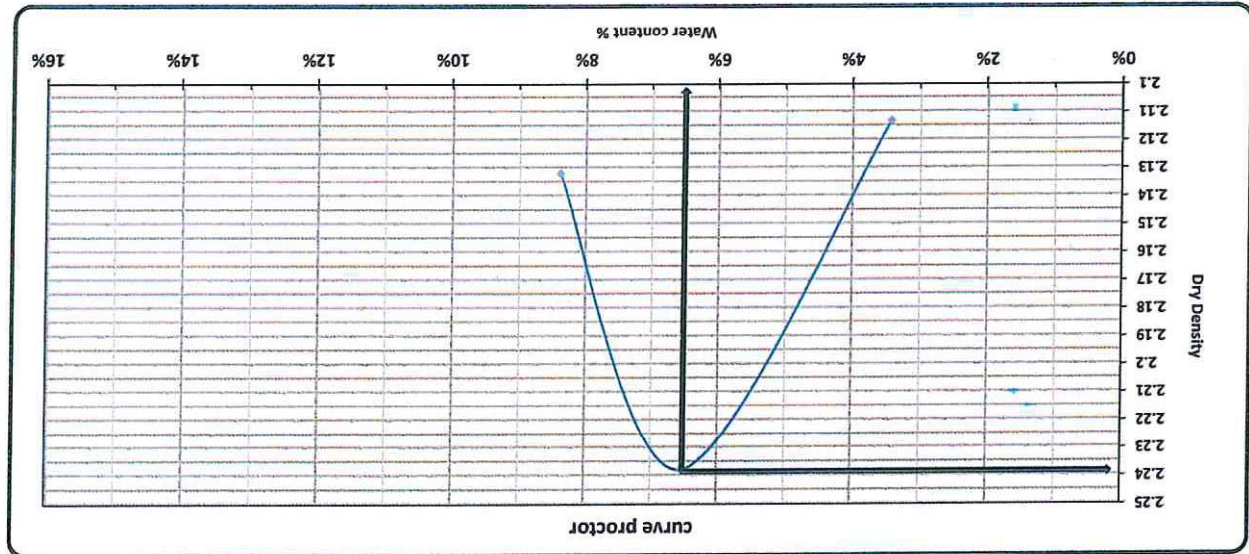
المكتب الاستشاري الهندسي

SYSTEMA SHAKER



Contractor

Consulant



Tare No.	1	2	3	4	5	6
Tare wt.	21.21	27.23	23.81	27.32	32.83	22.9
Wt. Of wet soil & tare	145.2	133.43	139.4	125.4	123.32	155.3
Wt. Of dry soil & tare	141.23	129.81	132.47	119.24	116.48	144.81
Wt. Of water	4.0	3.6	6.9	6.2	6.8	10.5
Wt. Of dry soil	120.0	102.6	108.7	91.9	83.6	121.9
Water content %	3.3%	3.5%	6.4%	6.7%	8.2%	8.6%
AV. Water content %	3.4%	6.5%	8.4%	2.132		
Dry Density	2.113	2.238	2.132			

trial no :	1	2	3
Wt. Of Mold+ wet soil	10512	10915	10766
WT. WET SOIL	4442	4845	4696
Wt. Density	2.186	2.384	2.311

Weight of empty mold :	6070.0
Mold Volume:	2032.0
MAX Dry Density	2.238
Water content %	6.6%

TESTING DATE:	11/8/2023	code	Station	549+000	552+000
LOCATION	K.P(548+600)	MH SB-3	Material	SUB BALLAST	
NAME COMPANY	EL MAHGOUB		layer thickness	20 CM	

PROCTOR TEST

Electric Express Train - HSR	From El Ain El Sokhna City To El Alamein - MATROUH	Section - 7 From FOKA TO MARSAA MATROUH	From Station 504+000 To Station 568+177
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California Bearing Ratio TEST

Testing Date :	2023\8\12	Code	FROM STA :	549+000	552+000
Location :	K.P(548+600)	MH SB-3	Material :	SUB BALLAST	
NAME COMPANY	EL MAHGOUB		: Layer Thickness	20 CM	

:- Test Results

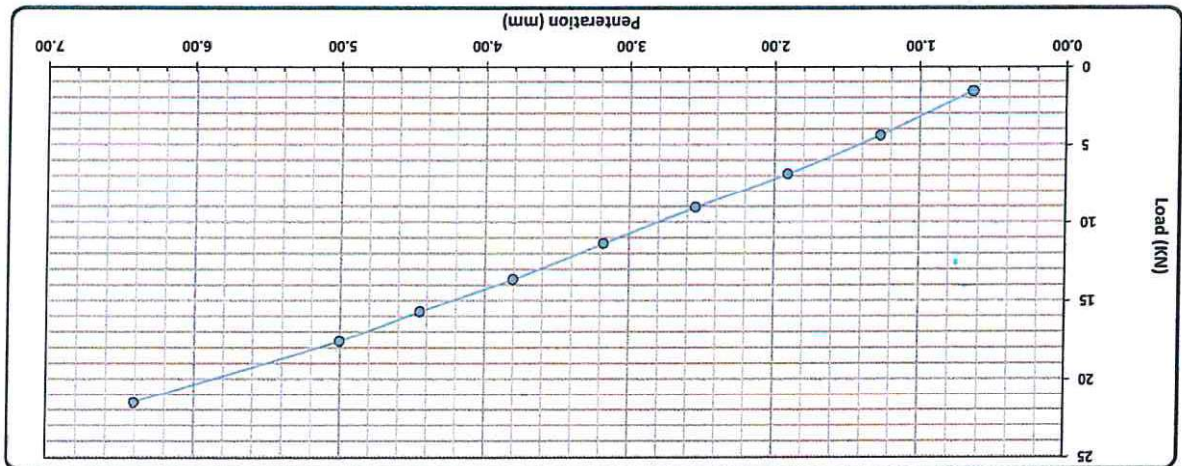
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7350
Mold WT. + Wet WT. (gm)	12390
Wet WT. (gm)	5040
Wet Density (g/cm ³)	2.343
Dry Density (g/cm ³)	2.198
Proctor Density (g/cm ³)	2.238
Compaction %	98

Moisture Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. + Wet WT. (gm)	160
Tare WT. + Dry WT. (gm)	152
Water WT. (gm)	7.8
Dry WT. (gm)	121.2
Moisture Content %	6.6

Swelling	
Mold No.	4
Date	2023\8\12
Initial Height (mm)	4.10
Final Height (mm)	4.10
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0%

Loading Reading :

Penetration (mm)	Load Reading (kg)	Load (kN)
0.64	156.00	1.5
1.27	445.00	4.4
1.91	699.00	6.9
2.54	921.00	9.0
3.18	1156.00	11.3
3.80	1389.00	13.6
4.45	1598.00	15.7
5.00	1789.00	17.5
6.40	2190.00	21.5



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(kN)	(lb)	(%)	(%)	(%)	
2.50	9.03	13.4	67.6%	99	98	66.9%
5.00	17.53	20.0	87.6%			86.7%

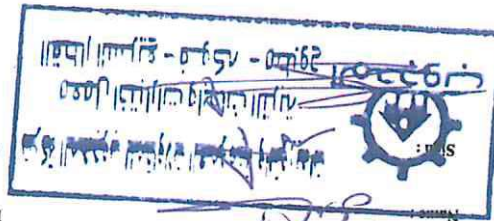
Lab. Specialist

Lab. Engineer

Consultant Engineer

Name :

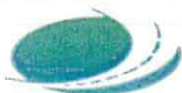
Sign :



Name :

Sign :

2023/8/12
Houssef R. Agab
Houssef



Absorption & Aggregate specific gravity
AASHTO-T85

Testing date :-	10/8/2023
location :-	K.P(548+600)
material :-	sub ballast

Weight of sample	2000	gm
Weight of saturated -dry surface sample (B)	2016	gm
Weight of saturated sample in water (C)	1249.6	gm
Weight of dry sample after heating (A)	1982.6	gm

Results:-

Bul/ spicific gravity = A / (B-C)	2.587	
Apparent spicific gravity = A/(A-C)	2.705	
Asorbtion = (B-A)/A	1.685	

Los Anglos abrasion
AASHTO-T96

Results:-

Weight of sample before	5000
Weight of sample before test (gm)	3730
Abrasion ratio (%)	25.40



100%
12/8/2023

Operating Lab. AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	02-08-2023	Code	MH (S.B-2)	Layer Thickness	20
LOCATION	K.P (650+000)	Material	Sub Ballast	Zone	649+000
NAME COMPANY	EL MAHGOUP				652+000

2-Gradient test

Table classify

4-gradation of bulk materials									
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	PRO
Mass retained (g)	0.0	114.0	1450.0	5891.0	3658.0	2165.0	5293.0	WC	6.80
Cumulative Retained (g)	0.0	114.0	1564.0	7455.0	11113.0	13278.0	18571.0	CBR	89.70
Cumulative Retained %	0.0	0.4	5.3	25.4	37.9	45.2	63.3	Los Angles	26.20
Cumulative Passing %	100.0	99.6	94.7	74.6	62.1	54.8	36.7	Specific gravity	2.574

1-soft material gradation									
sieve size	10	40	200						
Cumulative Retained (g)	98.00	275.00	414.00						
Cumulative Retained %	19.60	55.00	82.80						
Cumulative Passing %	80.40	45.00	17.20						

WT.OF sample 500.00 gm

General gradient									
sieve size(mm)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425
Cumulative Passing %	100.0	99.6	94.7	74.6	62.1	54.8	36.7	29.5	16.5
Limits									

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

Director Engineer :-

Lab. Engineer :-

Consultant Engineer :-



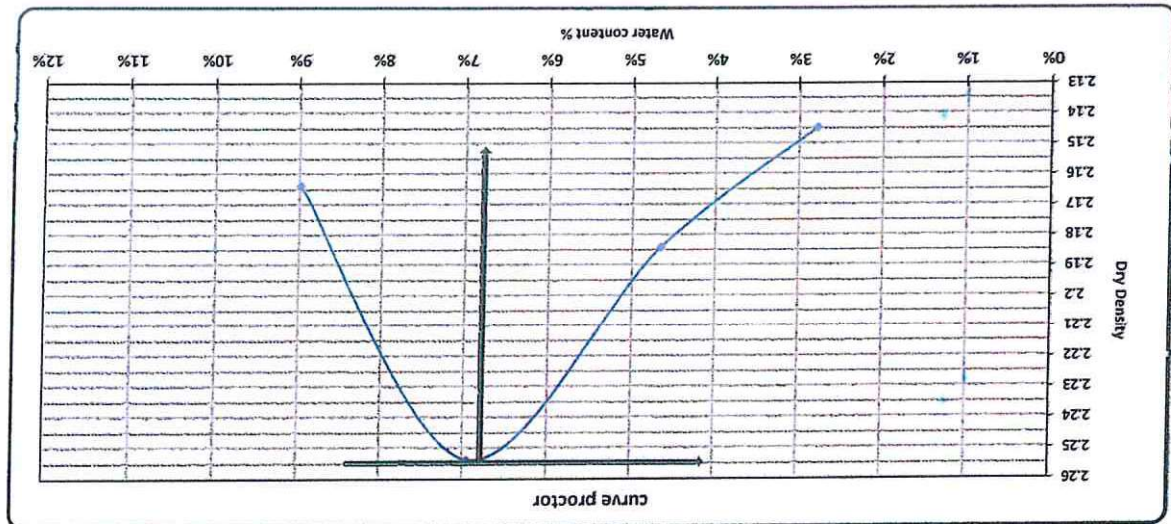
Name: / Hussein R. Rashed
Sign: / Hussein R. Rashed
2023

TESTING DATE: 03-08-2023	NAME COMPANY: EL MAHGOUP	LOCATION: K.P (650+000)	zone	645+000	552+000
Code	MM (S.B-2)				

Weight of empty mold: 6290.0	Mold Volume: 2142.0	MAX Dry Density	2.255	Water content %	6.8
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trial no: 1	11012.0	11186.0	2	3	4
Wt. Of Mold + wet soil	4722.0	4896.0	5163.0	5051.0	2.358
Wt. WET SOIL	2.204	2.286	2.410	2.358	

Tare No. 18	7	32	22	26	16	33
Tare wt. 77.8	43.7	42.9	74.4	54.1	55	34
Wt. Of wet soil & tare 150.0	150.0	150.0	150.0	150.0	150.0	150.0
Wt. Of dry soil & tare 148.0	147.2	145.3	146.6	143.8	140.6	143.6
Wt. Of water 2.0	4.7	3.4	6.2	6.2	9.4	6.4
Wt. Of dry soil 70.2	103.5	102.4	89.7	88.8	106.6	70.0
Water content % 2.8%	2.7%	4.6%	4.7%	6.9%	8.8%	9.1%
AV. Water content % 2.8%	4.6%	6.9%	6.9%	9.0%		
Dry Density 2.145	2.184	2.254	2.164			



Contractor Engineer :-

Name :

Sign :

Lab. Engineer :-

Name :

Sign :

Consultant Engineer :-

Name : /oussaf 12/8/2023

Sign : /oussaf 12/8/2023

	Electric Express Train - HSR			٢٠٢٣ ٢٤/٨ ٢٠٢٣
	From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOCA To MARSA MATROUH From Station 604+000 To Station 668+177			

Operating Lab. AL Naby Central Lab

Absorption & Aggregate specific gravity
AASHTO-T85

TESTING DATE:	03-08-2023	code	Zone	549+000	552+000
LOCATION	K.P (550+000)	EL MAHGOUP	MM (S.B-2)		
NAME COMPANY					

Weight of sample	2500.0	gm
Weight of saturated-dry surface sample (B)	2510.0	gm
Weight of saturated sample in water (C)	1551.7	gm
Weight of dry sample after heating (A)	2467.0	gm

Results:-

Bulk Specific gravity = A / (B-C)	2.574	
Apparent specific gravity = A / (A-C)	2.695	
Absorption = (B-A)/A	1.743	%

Los Anglos abrasion AASHTO-T96

Weight of sample before test (gm)	5000
Weight of sample after test (gm)	3690
Abrasion ratio (%)	26.2

Contractor Engineer :-
Name :
Sign :



Lab. Engineer :-
Name :
Sign :
Consultant Engineer :-
Name :
Sign :
2023

Name :
Sign :

Contractor Engineer

Name :
Sign :

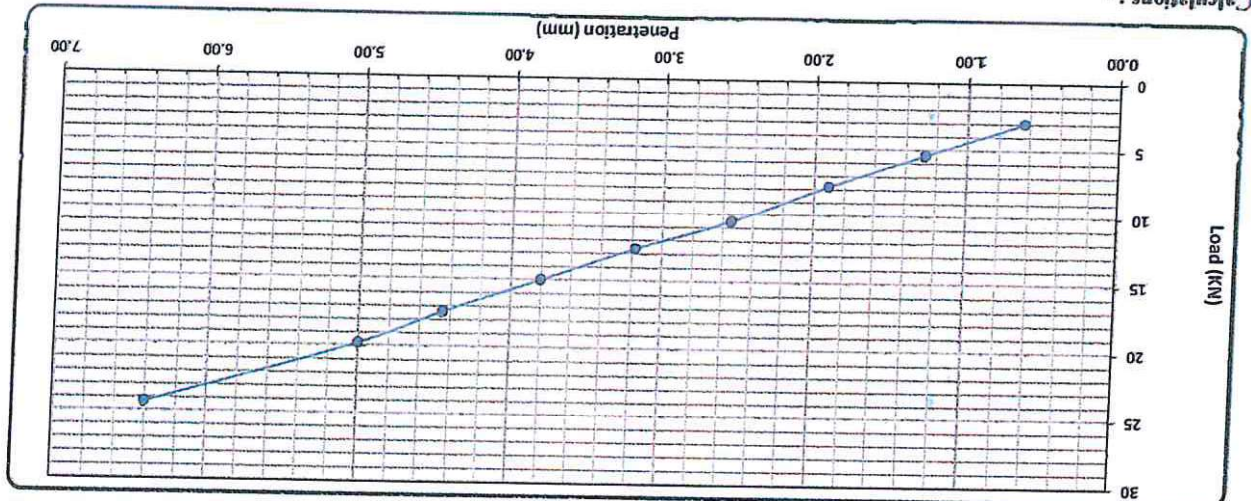
Lab Engineer

Name :
Sign :

Consultant Engineer

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
5.00	19.80	20.0	98.9%	108	98	89.7%
2.50	10.50	13.4	78.7%	(%)	(%)	71.4%
(mm)	(kn)	(lb)	(%)	(%)	(%)	98.9%

Calculations :-



Penetration (mm)	Load Reading (mm)	Load (KN)
0.64	0.10	3.0
1.27	0.18	5.4
1.91	0.26	7.8
2.54	0.35	10.5
3.18	0.42	12.6
3.80	0.50	15.0
4.45	0.58	17.4
5.00	0.66	19.8
6.40	0.81	24.3

Loading Reading :

Mold No.	Mold Vol (cm³)	Mold WT. (gm)	Mold WT. + Wet WT. (gm)	Wet WT. (gm)	Wet Density (g/cm³)	Dry Density (g/cm³)	Proctor Density (g/cm³)	Compaction %
1	2122	4803	10305	5502	2.593	2.435	2.255	108.0

Mold No.	Tare WT. (gm)	Tare WT. + Wet WT. (gm)	Tare WT. + Dry WT. (gm)	Wet WT	Dry WT. (gm)	Moisture Content %
32	74.4	150	145.4	4.6	71.0	6.5

Mold No.	Date	Initial Height (mm)	Final Height (mm)	Difference	Sample Height (mm)	Swelling Ratio %
1	05-08-2023	4.00	4.00	0	120.00	0.0%

:- Test Results

Company Name	Location	Code	FROM STA :	TO STA :	Section
EL MAHGOUP	K.P (550+000)	MH (S.B-2)	549+000	552+000	Section - 7 From FOKA To MARSA MATROUH

California Bearing Ratio TEST

From Station	To Station	Section	From Station	To Station	Section
From Station 504+000 To Station 568+177	From Station 504+000 To Station 568+177	Section - 7 From FOKA To MARSA MATROUH	From Station 504+000 To Station 568+177	From Station 504+000 To Station 568+177	Section - 7 From FOKA To MARSA MATROUH

PARTICLE SIZE DISTRIBUTION OF SOIL				
TESTING DATE:	12/6/2023	code	MH-5	layer thickness
LOCATION	k.p(549+200)	PERPARED		
NAME COMPANY	EL MAHGOUB			
1-Visual inspection test				
2-Gradient test				

A-gradation of bulk materials									
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	
Mass retained (g)	0.0	1583.0	5309.0	4044.0	6038.0	2394.0	4008.0		
Cumulative Retained (g)	0.0	1583.0	6892.0	10936.0	16974.0	19368.0	23376.0		
Cumulative Retained %	0.0	4.3	18.9	30.0	46.6	53.1	64.1		
Cumulative Passing %	100.0	95.7	81.1	70.0	53.4	46.9	35.9		
CBR									52.0%
WC									6.2%
PRO									2.183
soil classify									A-1-a
table classify									

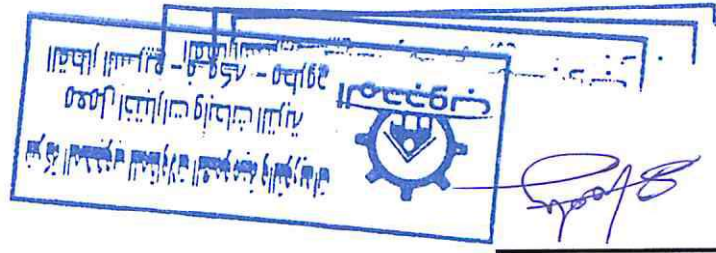
B-soft material gradation				
sieve size	10	40	200	
Cumulative Retained (g)	189.00	295.00	365.00	
Cumulative Retained %	37.80	59.00	73.00	
Cumulative Passing %	62.20	41.00	27.00	
WT.OF sample				500.00
gm				

C-General gradient									
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425
Cumulative Passing %	100.0	95.7	81.1	70.0	53.4	46.9	35.9	22.3	14.7
REMARKS									0-12

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

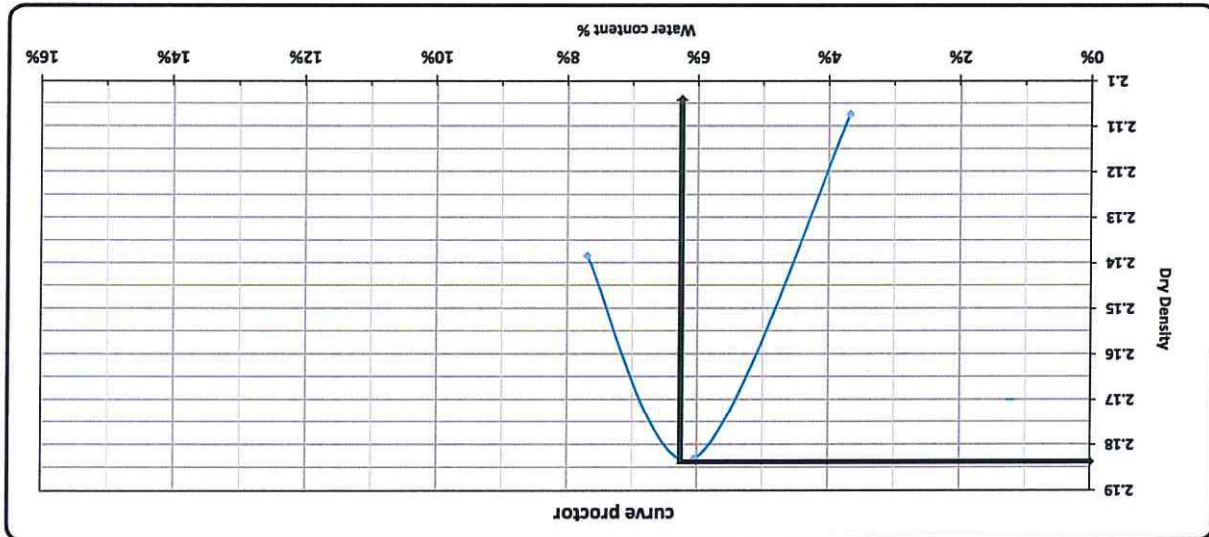
Consultant

Contractor



Consultant

Contractor



Tare No.	1	2	3	4	5	6	7	8
Tare wt.	30.12	28.77	30.78	34.98	29.45	28.96		
Wt. Of wet soil & tare	167.9	160.9	166.2	157.0	160.9	156.3		
Wt. Of dry soil & tare	163.3	155.9	158.7	149.8	151.7	147.0		
Wt. Of water	4.6	5.0	7.5	7.2	9.2	9.3		
Wt. Of dry soil	133.1	127.1	128.0	114.8	122.3	118.0		
Water content %	3.5%	3.9%	5.8%	6.2%	7.5%	7.9%		
AV.Water content %	3.7%	6.0%		7.7%				
Dry Density	2.107		2.183		2.139			

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10523.0	10787.0	10763.0		
WT. WET SOIL	4440.0	4704.0	4680.0		
Wt. Density	2.185	2.315	2.303		

Weight of empty mold :	6083.0
Mold Volume:	2032.0

MAX Dry Density	2.183
Water content %	6.2%

TESTING DATE:	13/6/2023	code	Station	549+000	552+000
LOCATION	k.p(549+200)			Material	PERPAVED
NAME COMPANY	EL MAHGOUB	MH-5	layer thickness	25 cm	

PROCTOR TEST

 إدارة الاستشارات الهندسية ENGINEERING CONSULTING OFFICE	From Station 504+000 To Station 568+177 Section - 7 From FOKA TO MARSA MATROUH From El Ain El Sokhna City To El Alamein - MATROUH Electric Express Train - HSR	 وزارة النقل والاقتصاد Ministry of Transport and Economic Affairs
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California Bearing Ratio TEST

Testing Date :	14/6/2023	Code	MH-5	FROM STA :	S49+000	PERPARED	25 cm
Location :	k.p(549+200)			: Material			
Layer No. :	EL MAHJOUB			: Layer Thickness			

-: Test Results

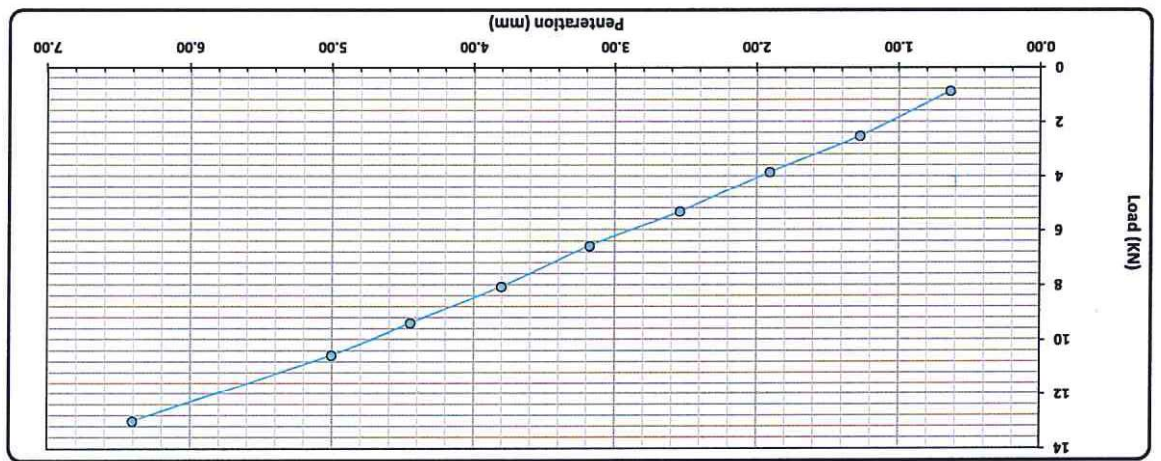
Compaction % for Mold		Mold No.	55
Mold Vol. (cm³)			2151
Mold WT. (gm)			7810
Mold WT. + Wet WT. (gm)			12790
Wet WT. (gm)			4980
Wet Density (g/cm³)			2.315
Dry Density (g/cm³)			2.180
Proctor Density (g/cm³)			2.183
Compaction %			100

Moisture Ratio After Compacted Mold		Tare No.	5
Tare WT. (gm)			34
Tare WT. + Wet WT. (gm)			160
Tare WT. + Dry WT. (gm)			152
Water WT. (gm)			8.0
Dry WT. (gm)			118.0
Moisture Content %			6.2

Swelling		Mold No.	3
Date			14-6-2023
Initial Height (mm)			3.65
Final Height (mm)			3.65
Difference			0
Sample Height (mm)			122.00
Swelling Ratio %			0%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	88.00	256.00	392.00	542.00	670.00	821.00	956.00	1076.00	1324.00
Load (KN)	0.9	2.5	3.8	5.3	6.6	8.0	9.4	10.5	13.0



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	
2.50	5.31	13.4	39.8%	100	98	51.7%
5.00	10.54	20.0	52.7%			

Lab. Specialist	Lab. Engineer	Consultant Engineer
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Name : _____

Sign : _____

Name : _____

Sign : _____

AASHTO-T85
Absorption & Aggregate specific gravity

Testing date :-	12/6/2023
location :-	k.p(548+500)
material :-	prepared subgrade
NAME COMPANY	EL MAHGOUB

Weight of sample	gm
Weight of saturated -dry surface sample (B)	gm
Weight of saturated sample in water (C)	gm
Weight of dry sample after heating (A)	gm

Results:-

Bull specific gravity = $A / (B - C)$	
Apparent specific gravity = $A / (A - C)$	
Absorption = $(B - A) / A$	

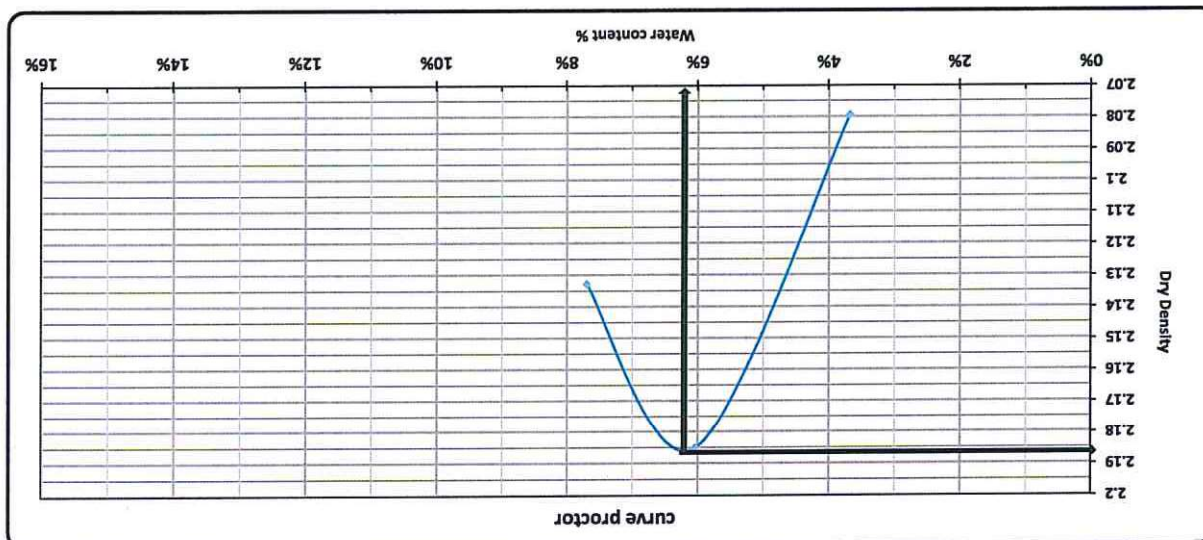
Los Angeles abrasion AASHTO-T96

Results:-

Weight of sample before test (gm)	3264	5000
Abrasion ratio (%)	34.72	



Consultant



TESTING DATE:	2023/06/05	code	Station	549+000	552+000
LOCATION	k.p(550+500)	MH-4	Material	PERPARED	
NAME COMPANY	EL MAHJUB		layer thickness	25 cm	

مكتب الاستشارات الهندسية ENGINEERING CONSULTING OFFICE SHAKRA مركز الدراسات والبحوث Center of Studies and Research	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Station - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	وزارة التخطيط Ministry of Planning
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California Bearing Ratio TEST

Testing Date :	6/6/2023	Code	FROM STA :	549+000	PERPARED	25 cm
Location :	k.p(S50+500)	MH-4	Material			
Layer No. :			Layer Thickness			

:- Test Results

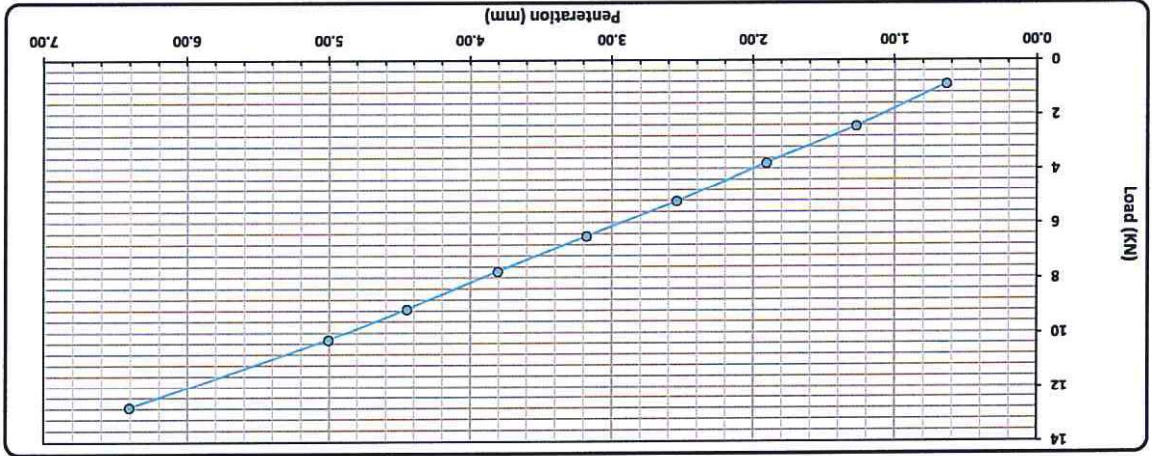
Compaction % for Mold	
Mold No.	55
Mold Vol.(cm ³)	2151
Mold WT. (gm)	7810
Mold WT. + Wet WT. (gm)	12790
Wet WT. (gm)	4980
Wet Density (g/cm ³)	2.315
Dry Density (g/cm ³)	2.168
Proctor Density (g/cm ³)	2.186
Compaction %	99

Moisture Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	34
Tare WT. + Wet WT. (gm)	160
Tare WT. + Dry WT. (gm)	152
Water WT. (gm)	8.0
Dry WT. (gm)	118.0
Moisture Content %	6.8

Swelling	
Mold No.	3
Date	٢٠٢٣/٠٦/٠٦
Initial Height (mm)	2.60
Final Height (mm)	2.60
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0%

Loading Reading :

Penetration (mm)	Load Reading (kg)	Load (KN)
0.64	90.00	0.9
1.27	247.00	2.4
1.91	385.00	3.8
2.54	530.00	5.2
3.18	660.00	6.5
3.80	790.00	7.7
4.45	930.00	9.1
5.00	1043.00	10.2
6.40	1298.00	12.7



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	99	98	50.4%
(mm)	(Kn)	(Tb)	(%)	(%)	(%)	(%)	
2.50	5.19	13.4	38.9%				38.4%
5.00	10.22	20.0	51.0%				50.4%

Lab. Specialist

Name :
Sign :

Lab. Engineer

Name :
Sign :

Consultant Engineer



EL Mahgoub company

Express Electric Trian project

El Mahgoub lab



Absorption & Aggregate specific gravity
AASHTO-T85

Testing date :-	4/6/2023
location :-	K.P(550+500)
material :-	prepared subgrade
NAME COMPANY	EL MAHGOUB

Weight of sample	gm
Weight of saturated -dry surface sample (B)	gm
Weight of saturated sample in water (C)	gm
Weight of dry sample after heating (A)	gm

Results:-

Bul/ spicific gravity = A / (B-C)	
Apparent spicific gravity = A / (A-C)	
Asorbtion = (B-A)/A	

Los Anglos abrasion AASHTO-T96

Results:-

Weight of sample before	5000
Weight of sample before test (gm)	3323
Abrasion ratio (%)	33.54



Lab Engineer/

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Asahi

Contractor[illegible]

B-soft material gradation						WT.OF sample		500.00		gm
sieve size	10	40	200							
Cumulative Retained (g)	246.00	337.00	385.00							
Cumulative Retained %	49.20	67.40	77.00							
Cumulative Passing %	50.80	32.60	23.00							

2-Gradient test

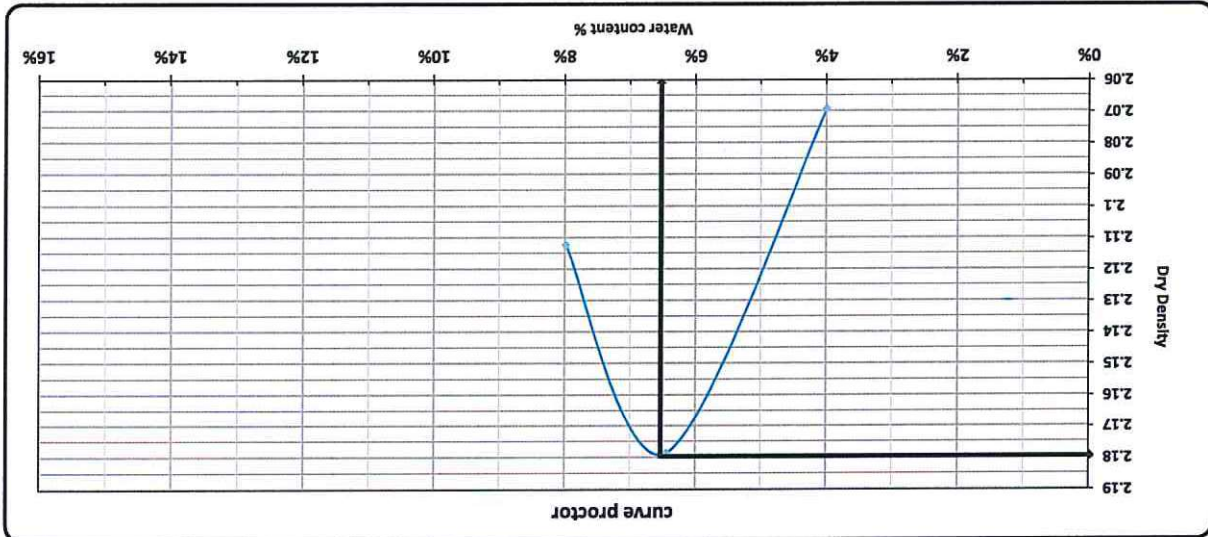
TESTING DATE:	4/6/2023	code	MH-3	Material	549+000	552+000
LOCATION	K(P(551+300)			PERPARED	25 cm	
NAME COMPANY	EL MAHGOUB			layer thickness		

TESTING DATE:	2023/06/05	code	MH-3	Station	549+000	552+000	
LOCATION	k.p(551+300)	Material		layer thickness	PERPARED		
NAME COMPANY	EL MAHJOURB	25 cm					

Weight of empty mold :	6088.0	Mold Volume:	2032.0
Water content %	6.5%	MAX Dry Density	2.18

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10460.9	10800.2	10723.0		
WT. WET SOIL	4372.9	4712.2	4635.0		
Wt. Density	2.152	2.319	2.281		

Tare No.	1	2	3	4	5	6	7	8
Tare wt.	30.34	28.45	34.87	28.12	30.54	30.26		
Wt. Of wet soil & tare	156.2	166.0	155.2	156.0	160.3	155.4		
Wt. Of dry soil & tare	151.5	160.5	148.2	148.0	151.2	145.7		
Wt. Of water	4.7	5.5	7.0	8.0	9.1	9.7		
Wt. Of dry soil	121.2	132.1	113.3	119.8	120.7	115.4		
Water content %	3.9%	4.1%	6.2%	6.7%	7.6%	8.4%		
AV. Water content %	4.0%	6.4%	8.0%					
Dry Density	2.069	2.179	2.112					



Consultant

Contractor

California Bearing Ratio TEST

Testing Date :	6/6/2023	Code	FROM STA :	S49+000	SS2+000
Location :	k.p(S51+300)	MH-3	Material	PREPARED	
Layer No. :			Layer Thickness	25 cm	

- : Test Results

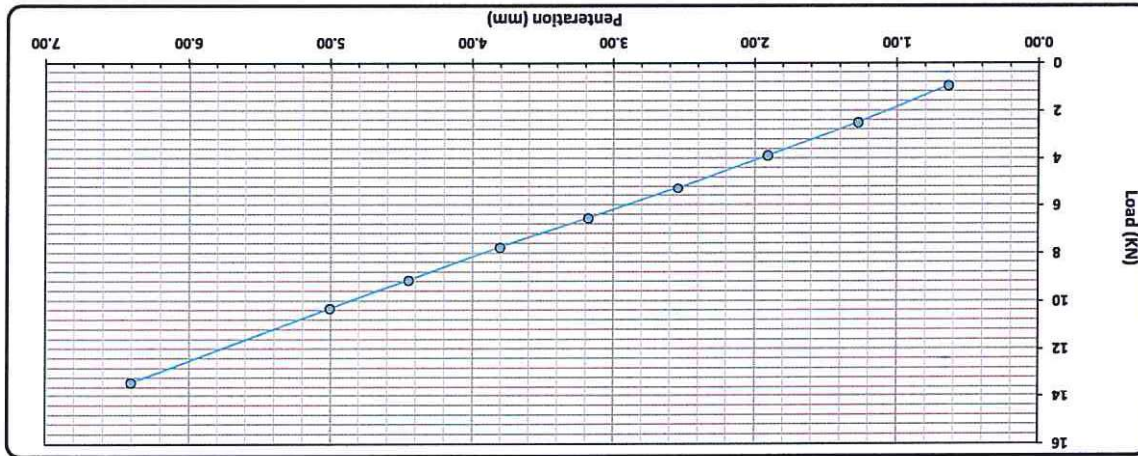
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7810
Mold WT. + Wet WT. (gm)	12790
Wet WT. (gm)	4980
Wet Density (g/cm ³)	2.315
Dry Density (g/cm ³)	2.175
Proctor Density (g/cm ³)	2.180
Compaction %	100

Moisture Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	28
Tare WT. + Wet WT. (gm)	160
Tare WT. + Dry WT. (gm)	152
Water WT. (gm)	8.0
Dry WT. (gm)	124.0
Moisture Content %	6.5

Swelling	
Mold No.	3
Date	٢٠٢٣/٠٦/٠٦
Initial Height (mm)	2.30
Final Height (mm)	2.30
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	96.00	254.00	395.00	536.00	666.00	790.00	930.00	1050.00	1365.00
Load (KN)	0.9	2.5	3.9	5.3	6.5	7.7	9.1	10.3	13.4



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	(%)
2.50	5.25	13.4	39.3%	98	38.7%	50.5%
5.00	10.29	20.0	51.4%	100		

Lab. Specialist

Lab. Engineer

Consultant Engineer



Sign :

Name :

Sign :

Name :

EL Mahgoub company

Express Electric Trian project

El Mahgoub lab



Absorption & Aggregate specific gravity
AASHTO-T85

Testing date :-	4/6/2023
location :-	K.p(551+300)
material :-	prepared subgrade
NAME COMPANY	EL MAHGOUB

Weight of sample		gm
Weight of saturated -dry surface sample (B)		gm
Weight of saturated sample in water (C)		gm
Weight of dry sample after heating (A)		gm

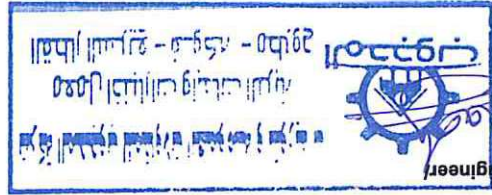
Results:-

Bul/ spicific gravity = A / (B-C)		
Apparent spicific gravity = A / (A-C)		
Asorbtion = (B-A)/A		

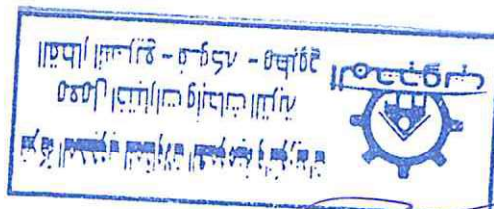
Los Anglos abrasion AASHTO-T96

Results:-

Weight of sample before	5000
Weight of sample before test (gm)	3342
Abrasion ratio (%)	33.16



M. S. El



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Consultant

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Contractor

LIMITS	N.P		
	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)

sieve size(in)	sieve size(mm)	REMARKS					
		Cumulative Passing %	97-50	75-20	60-15	0-35	0-12
2	50.0	100.0	88.9	78.5	69.5	59.0	49.2
1.5	37.5	25.0	19.0	12.5	9.5	4.75	2.00
1	25.0	19.0	12.5	9.5	4.75	2.00	0.425
3/4	19.0	12.5	9.5	4.75	2.00	0.425	0.075
1/2	12.5	9.5	4.75	2.00	0.425	0.075	# 200
3/8	9.5	4.75	2.00	0.425	0.075	# 40	# 10
# 4	4.75	2.00	0.425	0.075	# 10	# 40	# 200

C-General gradation

sieve size	Cumulative Retained (g)	Cumulative Retained %	Cumulative Passing %	B-soft material gradation	
				WT.OF sample	500.00 gm
10	165.00	33.00	67.00		
40	281.00	56.20	43.80		
200	374.00	74.80	25.20		

A-gradation of bulk materials	sieve size	Mass retained (g)	Cumulative Retained (g)	Cumulative Retained %	Cumulative Passing %	B-soft material gradation	
						WT.OF sample	500.00 gm
	2	0.0	3874.0	11.1	88.9		
	1.5	3611.0	7485.0	21.5	78.5		
	1	3165.0	10650.0	30.5	69.5		
	4/3	3659.0	14309.0	41.0	59.0		
	2/1	3418.0	17727.0	50.8	49.2		
	8/3	3967.0	21694.0	62.2	37.8		
	# 4						
	PASS						
	gm						
	34875.00						
table classify							
soil classify	A-1-a						
	PRO	2.182					
	WC	6.6%					
	CBR	45.7%					

2-Gradient test

1-visual inspection test

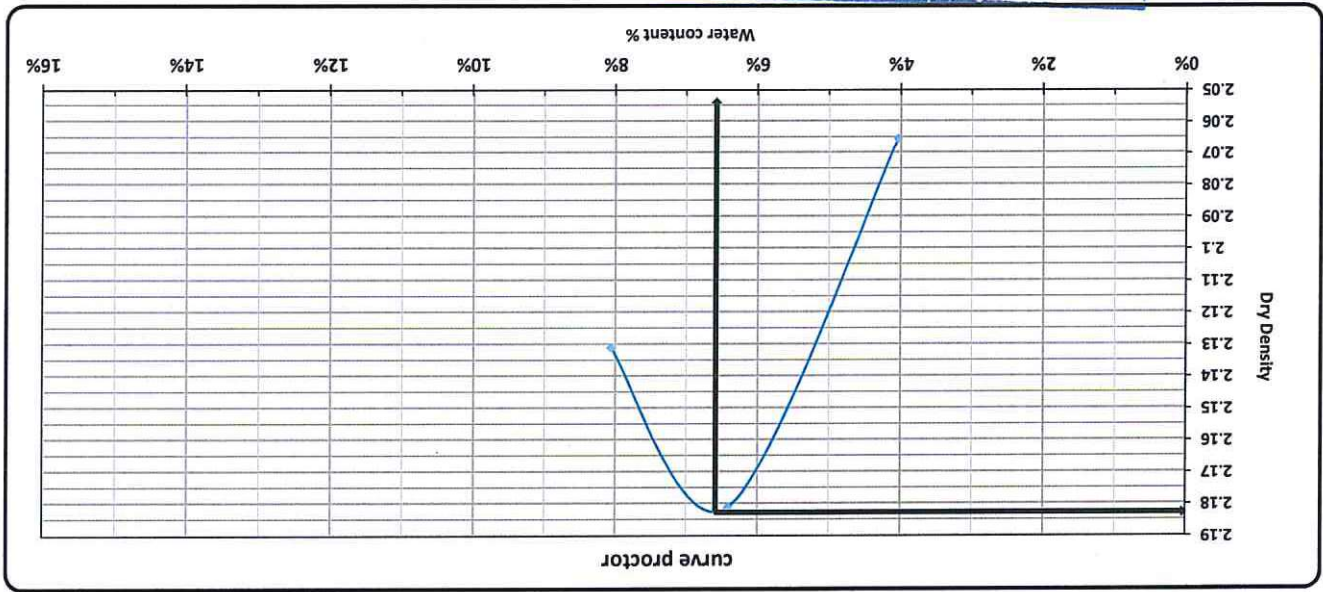
TESTING DATE:	31/5/2023	code	MH-2	layer thickness	25 cm
LOCATION	k.p(551+300)	Material	PERPARED	Material	PERPARED
NAME COMPANY	EL MAHGOUB	Material	PERPARED	Material	PERPARED

PARTICLE SIZE DISTRIBUTION OF SOIL

Electric Express Train - HSR		From El Ain El Sokhna City To El Alamein - MATROUH		Section - 7 From FOKA To MARSA MATROUH		From Station 504+000 To Station 568+177	
المشروع		المشروع		المشروع		المشروع	
المشروع		المشروع		المشروع		المشروع	

Consultant

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مؤسسة البنية التحتية
التيارات والجدران المائية
البحرية - حوض - حوض



Tare No.	1	2	3	4	5	6	7	8
Tare wt.	34.25	34.12	28.33	22.74	28.36	29.41		
Wt. Of wet soil & tare	155.4	155.3	156.7	154.3	156.7	150.5		
Wt. Of dry soil & tare	151.0	150.3	148.7	146.7	147.4	141.2		
Wt. Of water	4.4	5.0	8.1	7.6	9.3	9.3		
Wt. Of dry soil	116.7	116.2	120.3	124.0	119.1	111.8		
Water content %	3.8%	4.3%	6.7%	6.1%	7.8%	8.3%		
AV. Water content %	4.0%			6.4%		8.1%		
Dry Density	2.066			2.181		2.131		

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10436.8	10786.3	10749.7		
WT. WET SOIL	4366.8	4716.3	4679.7		
Wt. Density	2.149	2.321	2.303		

Weight of empty mold :	6070.0
Mold Volume:	2032.0
MAX Dry Density	2.182
Water content %	6.6%

TESTING DATE:	2023/06/01	code	MH-2	Station	549+000	552+000
LOCATION	k(p(551+300)	Material		PERPARED		
NAME COMPANY	EL MAHJOUR			layer thickness	25 cm	

PROCTOR TEST

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي

SYSTRA SHAKER

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA TO MARSA MATROUH

From Station 504+000 To Station 568+177

الهيئة العامة للنقل والاقتصاد