



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

[illegible]

C-General gradient

sieve size	10	40	200						
Cumulative Retained (g)	180.00	323.00	424.00						
Cumulative Retained %	36.00	64.60	84.80						
Cumulative Passing %	64.00	35.40	15.20						

B-soft material gradation

[illegible]

2-Gradient test

1-visual inspection test

TESTING DATE:	13082023	code	ZONE	549+000	552+000
LOCATION	550+500	MH-SB-5	MATERIAL	SUB BALLAST	
NAME COMPANY	EL MAHGOUR		LAYER THICKNESS	3000 M3	

PARTICLE SIZE DISTRIBUTION OF SOIL

 المملكة العربية السعودية وزارة النقل والملاحة البحرية	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 50+000 To Station 568+177	 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي K.K. ENGINEERING SYSTRA SHAKER
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17-8-2023

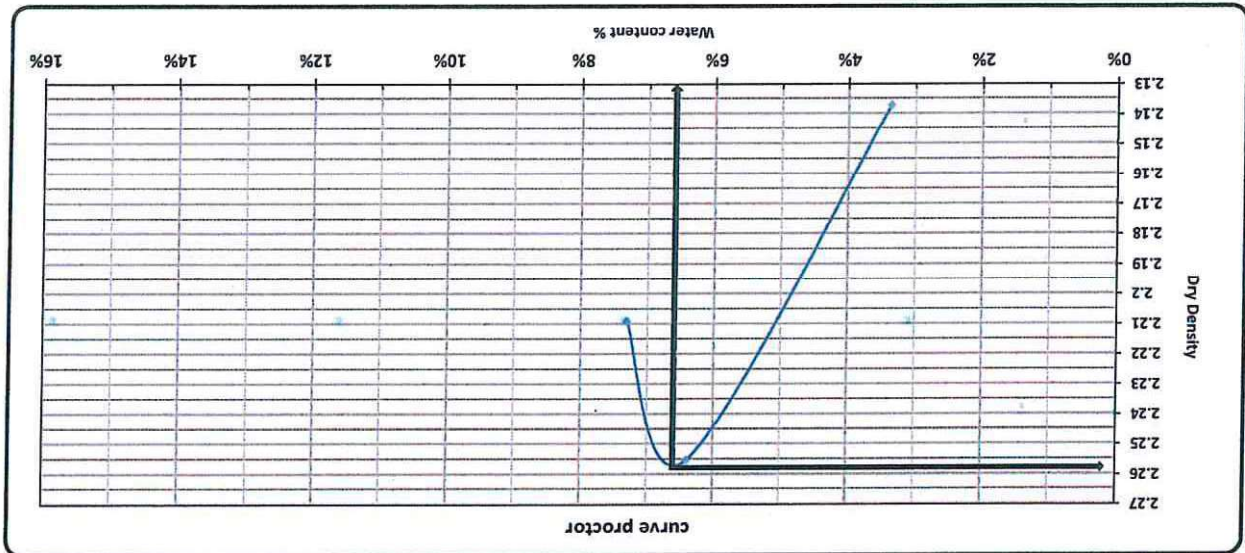
M. Al-Sayid

Mohamed Alsayid

Consultant



Contractor



Tare No.	1	2	3	4	5	6
Tare wt.	23.18	22.78	30.52	33.92	22.86	34.13
Wt. Of wet soil & tare	144.9	176.41	170.14	175.34	156.28	174.57
Wt. Of dry soil & tare	140.47	171.96	161.62	166.96	147.03	165.18
Wt. Of water	4.4	4.4	8.5	8.4	9.3	9.4
Wt. Of dry soil	117.3	149.2	131.1	133.0	124.2	131.1
Water content %	3.8%	3.0%	6.5%	6.3%	7.4%	7.2%
AV. Water content %	3.4%			6.4%		7.3%
Dry Density	2.137			2.255		2.209

trial no :	1	2	3
Wt. Of Mold + wet soil	10547	10934	10875
WT. WET SOIL	4489	4876	4817
Wt. Density	2.209	2.400	2.371

Weight of empty mold :	6058.0
Mold Volume:	2032.0
MAX Dry Density	2.255
Water content %	6.6%

TESTING DATE:	14/02/2023	code		ZONE	549+000	552+000
LOCATION	550+500	MATERIAL	SUB BALLAST	LAYER THICKNESS	3000 M3	
NAME COMPANY	EL MAHGOUB		MH-SB-5			

PROCTOR TEST

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

Testing Date :	2023\8\15	Code	MH SB-5	FROM STA :	549+000	552+000
Location :	K.P(550+500)			Material	SUB BALLAST	20 CM
NAME COMPANY	EL MAHGOUR			Layer Thickness		

:- Test Results

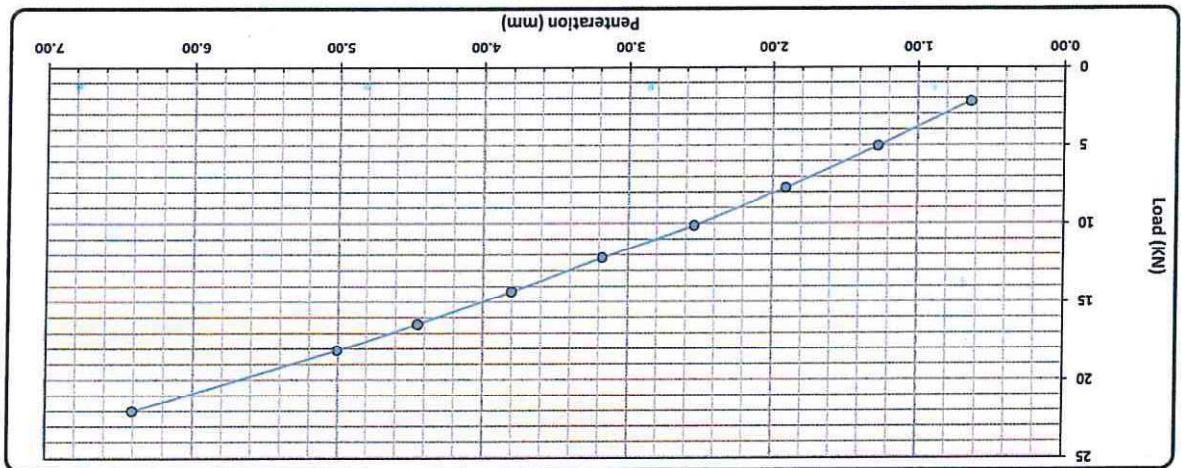
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7350
Mold WT. + Wet WT. (gm)	12390
Wet WT. (gm)	5040
Wet Density (g/cm ³)	2.343
Dry Density (g/cm ³)	2.198
Proctor Density (g/cm ³)	2.255
Compaction %	100

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\15
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	223.00	2.2
1.27	512.00	5.0
1.91	784.00	7.7
2.54	1032.00	10.1
3.18	1242.00	12.2
3.80	1462.00	14.3
4.45	1673.00	16.4
5.00	1845.00	18.1
6.40	2241.00	22.0



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(kn)	(lb)	(%)	(%)	(%)	% 99
2.50	10.11	13.4	75.8%	99	75.0%	75.0%
5.00	18.08	20.0	90.3%	100	89.4%	89.4%

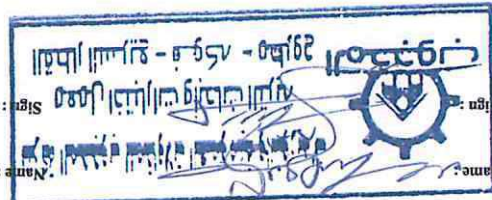
Lab. Specialist

Lab. Engineer

Consultant Engineer

Sign :

Name :



17-8-2023



Absorption & Aggregate specific gravity
AASHTO-T85

Testing date :-	15/8/2023
Location :-	K.P(550+500)
Material :-	sub ballast

Weight of sample	2000	gm
Weight of saturated -dry surface sample (B)	2015.50	gm
Weight of saturated sample in water (C)	1244.40	gm
Weight of dry sample after heating (A)	1991.00	gm

Results:-

Bull specific gravity = $A / (B - C)$	2.582
Apparent specific gravity = $A / (A - C)$	2.667
Absorption = $(B - A) / A$	1.231

Los Anglos abrasion
AASHTO-T96

Weight of sample before	5000
Weight of sample before test (gm)	3785
Abrasion ratio (%)	24.30

Results:-



Lab Engineer/

17-8-2023

m-elsayd

molamed elsayd



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

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	97.1	79.2	70.0	47.2	38.8	28.6	17.3	9.8
REMARKS									

B-soft material gradation									
sieve size	10	40	200	WT. OF sample			500.00	gm	LA
Cumulative Retained (g)	197.00	328.00	420.00						
Cumulative Retained %	39.40	65.60	84.00						
Cumulative Passing %	60.60	34.40	16.00						
A-gradation of bulk materials									
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	gm
Mass retained (g)	0.0	1527.0	9580.0	4911.0	12197.0	4513.0	5451.0		
Cumulative Retained (g)	0.0	1527.0	11107.0	16018.0	28215.0	32728.0	38179.0		
Cumulative Retained %	0.0	2.857	20.8	30.0	52.8	61.2	71.4		
Cumulative Passing %	100.0	97.1	79.2	70.0	47.2	38.8	28.6		
table classify									
soil classify									

2-Gradient test

TESTING DATE:		13/02/2023	code	MH-SB-4	ZONE		549+000	552+000	SUB BALLAST	
LOCATION		K.P 550+500			MATERIAL					
NAME COMPANY		EL MAHGOUB			LAYER THICKNESS		2000 M3			
1-Visual inspection test										

1-visual inspection test

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

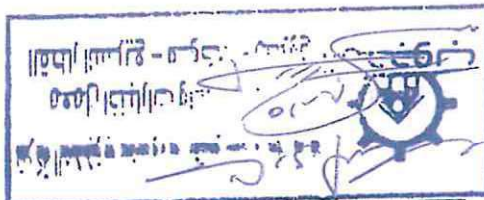
From Station 504+000 To Station 568+177

17-8-2023

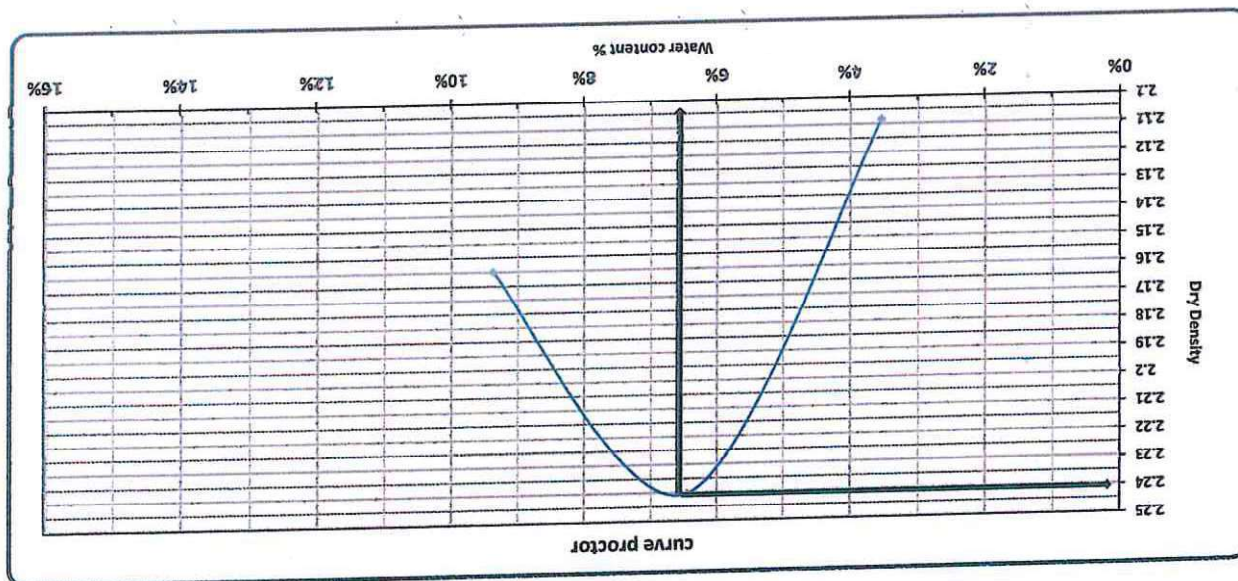
M. Elsayed

Mohamed 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	145.86	4.5	106.7	3.2%	3.5%	2.108
2	25.43	132.82	141.40	6.0	95.1	3.8%	6.5%	2.240
3	31.67	138.65	129.86	6.7	95.1	6.3%	9.4%	2.160
4	33.45	132.64	123.59	8.8	95.2	9.2%		
5	34.76			9.0		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	6.6%

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

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 558+177
ENGINEERING CONSULTING OFFICE	SVSTRA E. SHAKER		

California Bearing Ratio TEST

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

:- Test Results

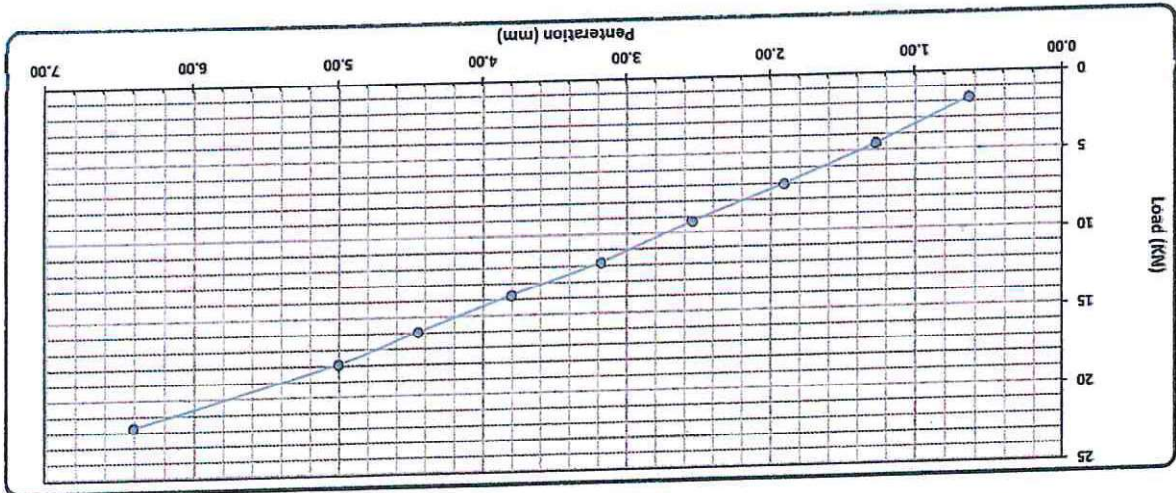
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7350
Mold WT. + Wet WT. (gm)	12390
Wet WT. (gm)	5040
Wet Density (g/cm ³)	2.343
Dry Density (g/cm ³)	2.198
Proctor Density (g/cm ³)	2.240
Compaction %	98

Mold 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

Mold No.	4
Date	2023/8/15
Initial Height (mm)	5.50
Final Height (mm)	5.50
Difference	0
Sample Height (mm)	121.00
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)	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



Calculations :-

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

Lab. Specialist

Lab. Engineer

Consultant Engineer

Sign :

Name :

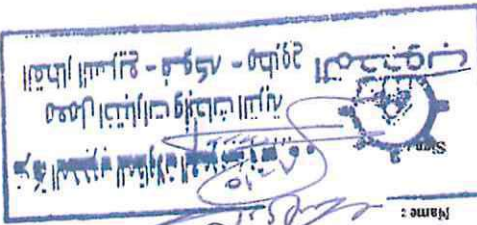
Name :

Sign :

Consultant Engineer

Lab. Engineer

Lab. Specialist



Name : Mohamed Elsayed

Signature

17-8-2023



Absorption & Aggregate specific gravity
AASHTO-T85

Testing date :-	15/02/2023
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

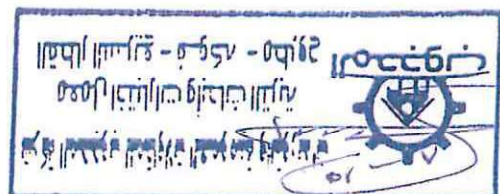
Results:-

Bul' splicific gravity = $A / (B-C)$	2.563
Apparent splicific 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. 16/9/2023

Consultant

Contractor

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

REMARKS	sieve size (mm)	sieve size (in)	Cumulative Passing %
	50.0	2	100.0
	37.5	1.5	98.4
	25.0	1	84.2
	19.0	3/4	73.1
	12.5	1/2	57.5
	9.5	3/8	49.1
	4.75	# 4	40.2
	2.00	# 10	28.1
	0.425	# 40	16.1
	0.075	# 200	6.7
			0.7

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	gm	LA
500.00		25.40
		2.587
		86.7%
		6.6%
		2.238
		A-1-a
		soil classify
		table classify

A-gradation of bulk materials

sieve size	Mass retained (g)	Cumulative Retained (g)	Cumulative Retained %	Cumulative Passing %
2	0.0	393.0	393.0	100.0
1.5	393.0	3493.0	3886.0	98.4
1	2726.0	10451.0	42.5	84.2
4/3	3839.0	12511.0	50.9	73.1
2/1	2060.0	14715.0	59.8	57.5
8/3	2204.0			49.1
# 4				40.2
PASS				
gm	24591.00			

2-Gradient test

1-visual inspection test

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

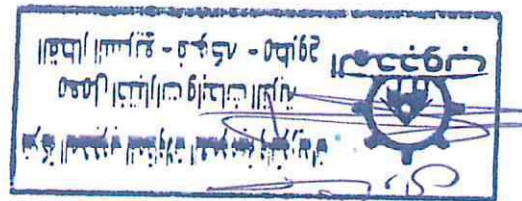
PARTICLE SIZE DISTRIBUTION OF SOIL

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

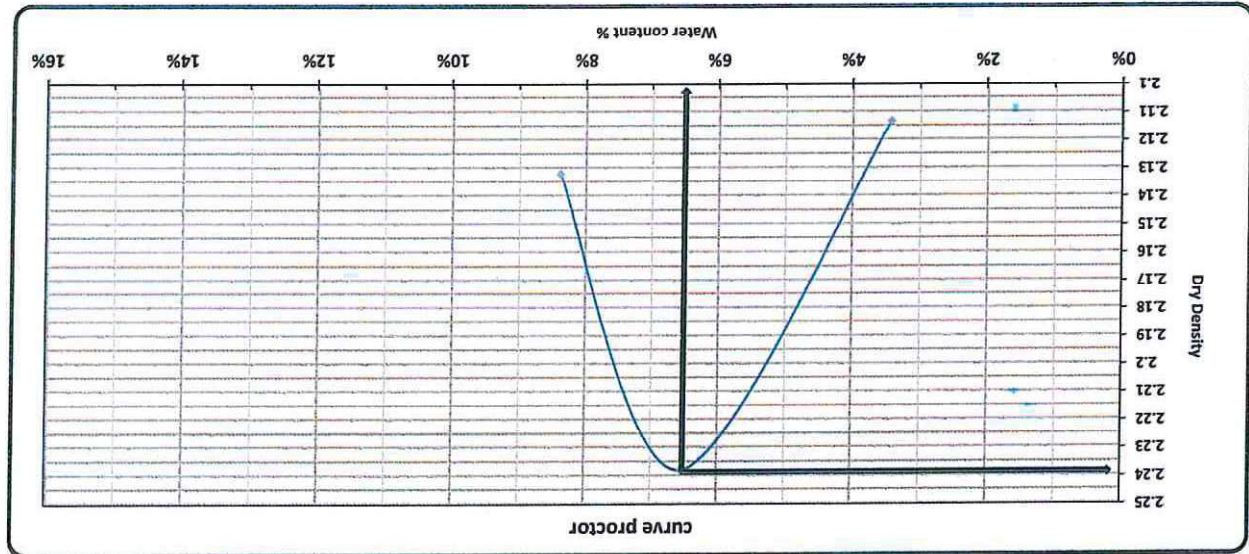
Section - 7 From FOKA To MARSA MATROUH

From Station 504+000 To Station 568+177



Contractor

Consulant



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	21.21	145.2	141.23	4.0	120.0	3.3%	3.4%	2.113
2	27.23	133.43	129.81	3.6	102.6	3.5%	6.5%	2.238
3	23.81	139.4	132.47	6.9	108.7	6.4%	8.4%	2.132
4	27.32	125.4	119.24	6.2	91.9	6.7%		
5	32.83	123.32	116.48	6.8	83.6	8.2%		
6	22.9	155.3	144.81	10.5	121.9	8.6%		

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

Weight of empty mold :	Mold Volume:
6070.0	2032.0

MAX Dry Density	Water content %
2.238	6.6%

TESTING DATE:	LOCATION	NAME COMPANY
11/8/2023	K.P(548+600)	EL MAHGOUB

code	Material	Station
MH SB-3	SUB BALLAST	549+000

layer thickness	20 CM
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PROCTOR TEST

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
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KS	KS
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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

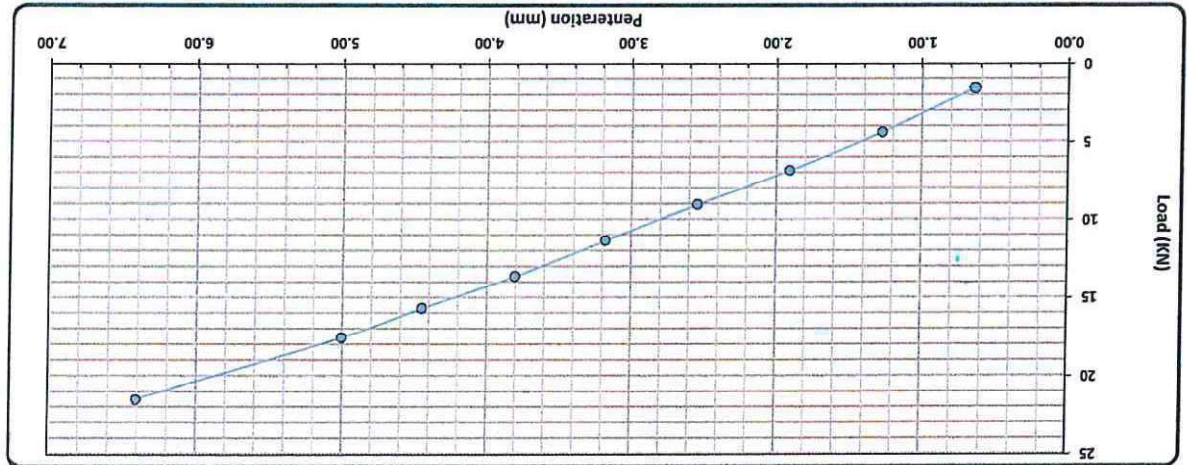
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7350
Mold WT. + Wet WT. (gm)	12390
Wet WT. (gm)	5040
Wet Density (g/cm ³)	2.343
Dry Density (g/cm ³)	2.198
Proctor Density (g/cm ³)	2.238
Compaction %	98

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

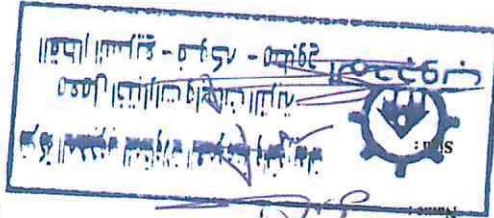
Consultant Engineer

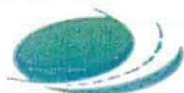
Name :

Name :

Sign :

Sign :





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

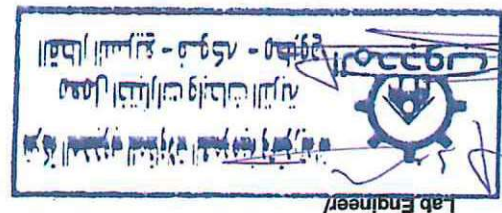
Results:-

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



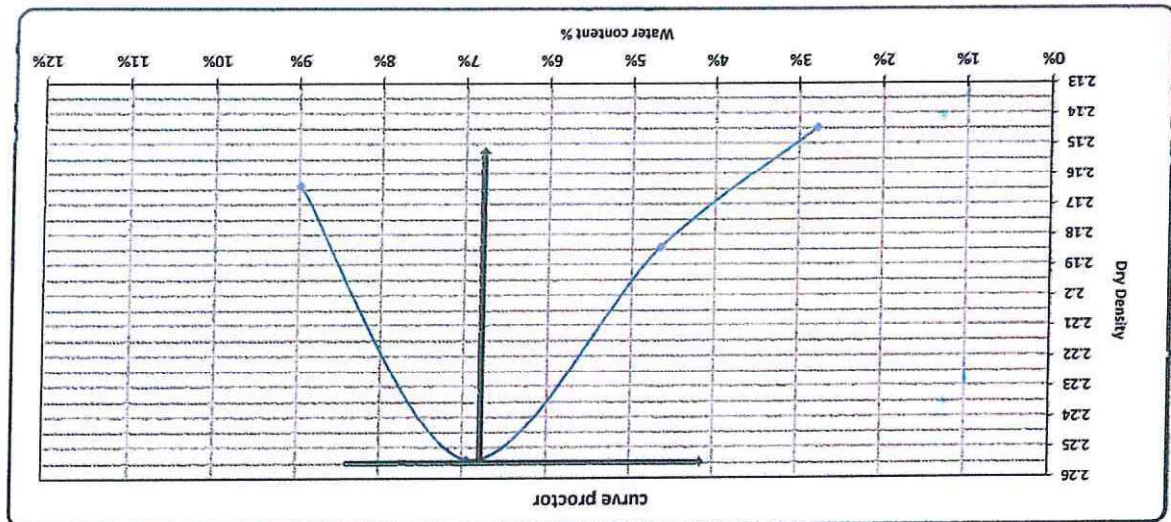
100%
12/8/2023

TESTING DATE: 03-08-2023	NAME COMPANY: EL MAHGOUP	LOCATION: K.P (650+000)	zone	645+000	652+000
Code	MM (S.B-2)				

Weight of empty mold: 6290.0	Mold Volume: 2142.0	MAX Dry Density	2.258	Water content %	6.8
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trial no: 1	11012.0	4722.0	4896.0	5163.0	2.358
trial no: 2	11186.0	4722.0	4896.0	5163.0	2.358
trial no: 3	11453.0	4722.0	4896.0	5163.0	2.358
trial no: 4	11341	4722.0	4896.0	5163.0	2.358

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
18	77.8	43.7	150.0	148.0	147.2	2.8	2.8%	2.145
10	42.9	74.4	150.0	146.6	145.3	4.7	4.6%	2.184
32	54.1	55	150.0	143.8	143.8	6.2	6.9%	2.254
22	34	73.6	150.0	140.6	140.6	9.4	9.0%	2.164
16								
33								



Contractor Engineer :-

Name :

Sign :

Lab. Engineer :-

Name :

Sign :

Consultant Engineer :-

Name :

Sign :

	Electric Express Train - HSR			١٠٠٠٠٠٠٠ ١٠٠٠٠٠٠٠ ١٠٠٠٠٠٠٠	١٠٠٠٠٠٠٠ ١٠٠٠٠٠٠٠ ١٠٠٠٠٠٠٠
	From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 558+177				

Operating Lab	AL Naby Central Lab
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Absorption & Aggregate specific gravity
AASHTO-T85

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

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 :-	
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Lab. Engineer :-	
Name :	Youssef Raghib
Sign :	Youssef Raghib

Name :
Sign :

Name :
Sign :

Name :
Sign :

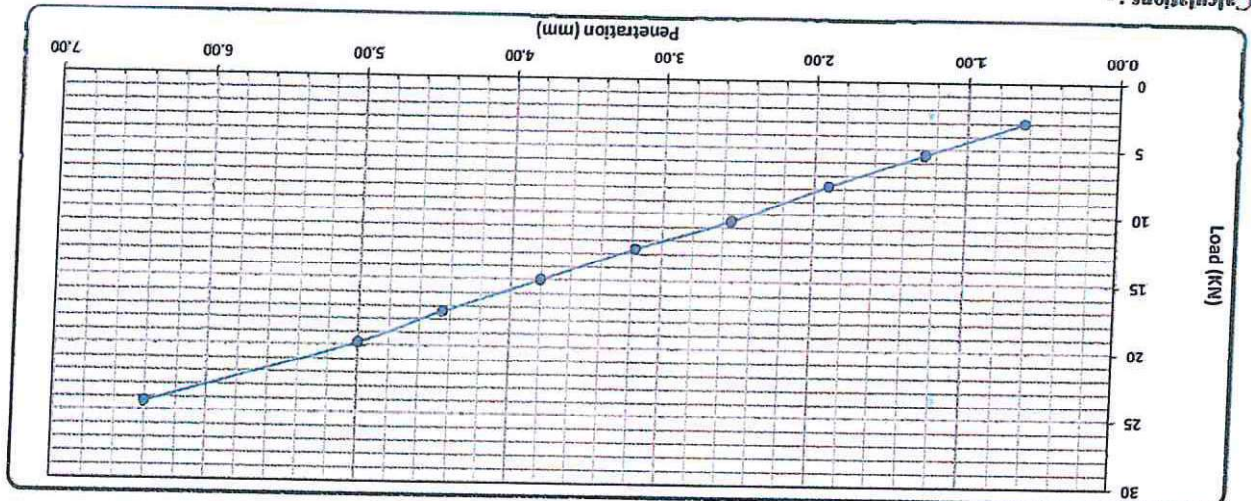
Contractor Engineer

Lab Engineer

Consultant Engineer

Penetration (mm)	Load (kN)	Standard Load (lb)	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%
						98 % comp. %
						CBR

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 (cm ³)	Mold WT. (gm)	Mold WT. + Wet WT. (gm)	Wet WT. (gm)	Wet Density (g/cm ³)	Dry Density (g/cm ³)	Precor Density (g/cm ³)	Compaction %
1	2122	4803	10305	5502	2.593	2.435	2.255	108.0

Tare 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

AL Naby Central Lab

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
Electric Express Train - HSR		

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	12/6/2023	code	MH-5	layer thickness	25 cm
LOCATION	k.p(549+200)			Material	PERPADED
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									

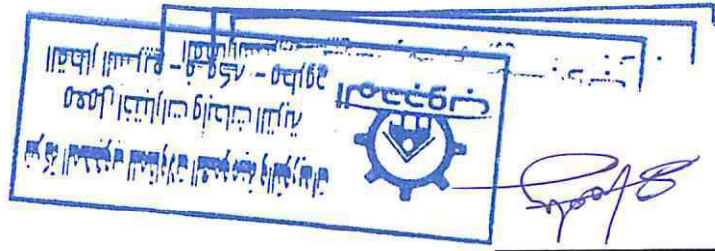
B-soft material gradation					WT.OF sample		500.00	gm
sieve size	10	40	200					
Cumulative Retained (g)	189.00	295.00	365.00					
Cumulative Retained %	37.80	59.00	73.00					
Cumulative Passing %	62.20	41.00	27.00					

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									

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

Consultant

Contractor

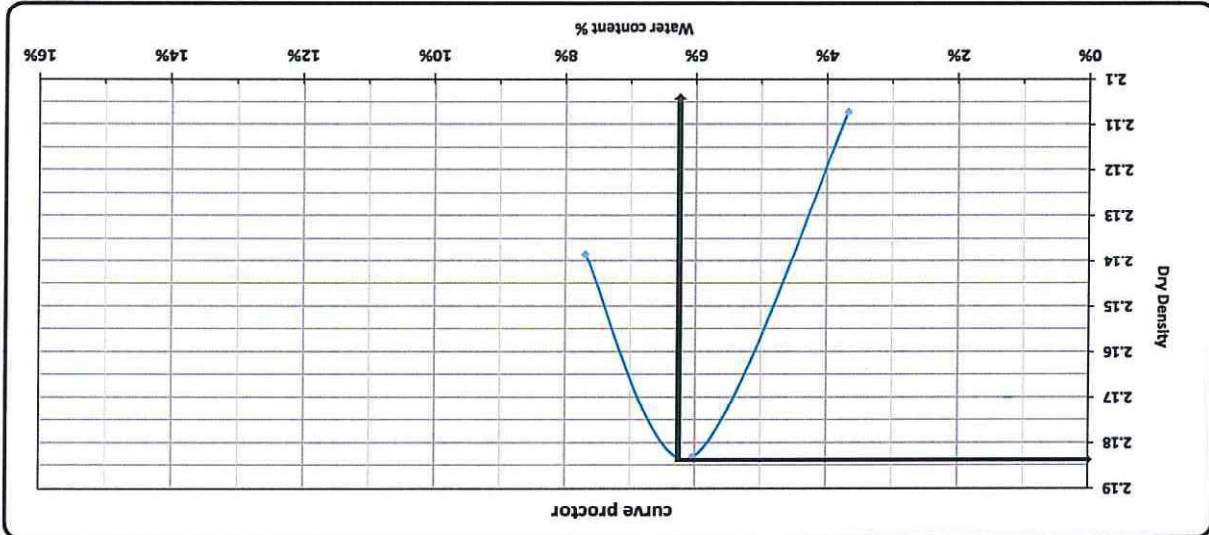


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Consultant

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	MH-5	Station	549+000	PERPARED	552+000
LOCATION	k.p(549+200)	Material		layer thickness	25 cm	NAME COMPANY	EL MAHGOUB

PROCTOR TEST

Engineering Consulting Office
Ministry of Transport and Public Works
State of Palestine

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

Ministry of Transport and Public Works
State of Palestine

California Bearing Ratio TEST

Testing Date :	14/6/2023	Code	FROM STA :	S49+000	SS2+000
Location :	k.p(549+200)	MH-5	: Material	PERPAVED	
Layer No. :	EL MAHJUB		: Layer Thickness	25 cm	

:- Test Results

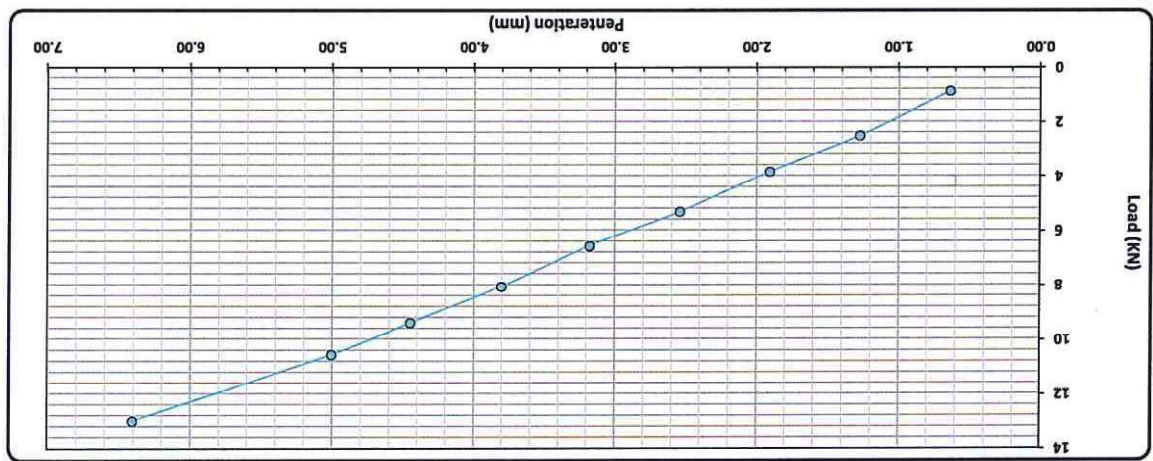
Compaction % for Mold		Mold No.	55
Mold Vol. (cm ³)		2151	7810
Mold WT. (gm)		12790	4980
Mold WT. + Wet WT. (gm)		2315	2.180
Wet Density (g/cm ³)		2.183	Proctor Density (g/cm ³)
Dry Density (g/cm ³)		100	Compaction %

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

Swelling		Mold No.	3
Date		14-6-2023	3.65
Initial Height (mm)		3.65	Final Height (mm)
Difference		0	Sample Height (mm)
Swelling Ratio %		122.00	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)	(%)	(%)	(%)	% 98
2.50	5.31	13.4	39.8%	100	98	39.0%
5.00	10.54	20.0	52.7%			51.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
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Name : _____

Sign : _____



Name : _____

Sign : _____

Absorption & Aggregate specific gravity
AASHTO-T85

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 = $(B - A) / A$	

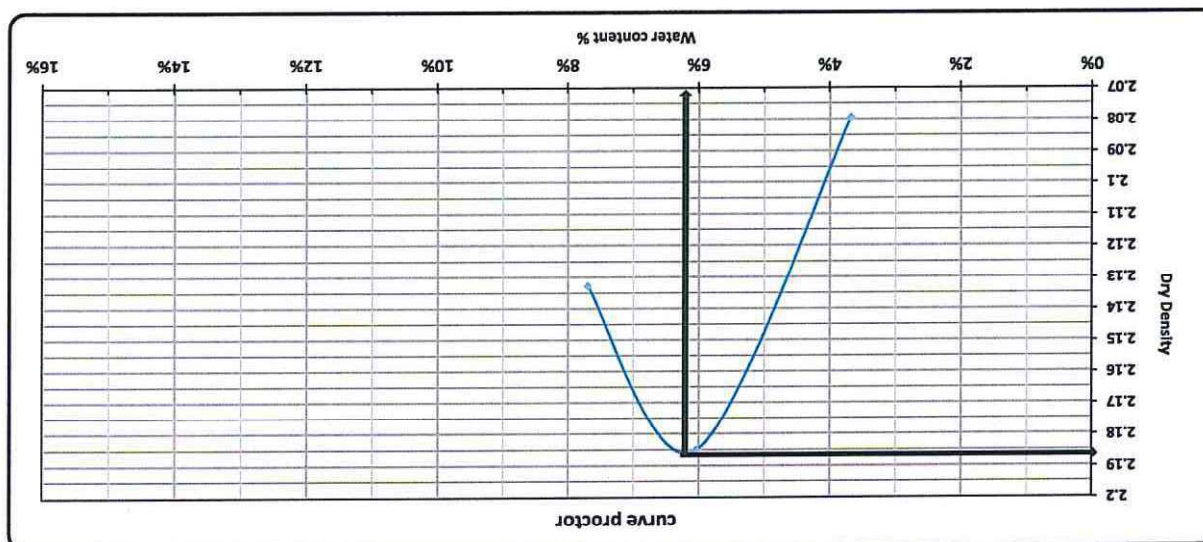
Los Anglos abrasion
AASHTO-T96

Results:-

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



Consultant



Mold Volume:	2032.0
Weight of empty mold :	6088.0

Water content %	6.3%
MAX Dry Density	2.186

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

PROCTOR TEST

 ENGINEERING COUNCILING OFFICE KARAKA	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	 MINISTRY OF EDUCATION EGYPT
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California Bearing Ratio TEST

Testing Date :	6/6/2023	Code	FROM STA :	549+000	552+000
Location :	k.p(550+500)	MH-4	Material :	PREPARED	
Layer No. :			Layer Thickness :	25 cm	

:- Test Results

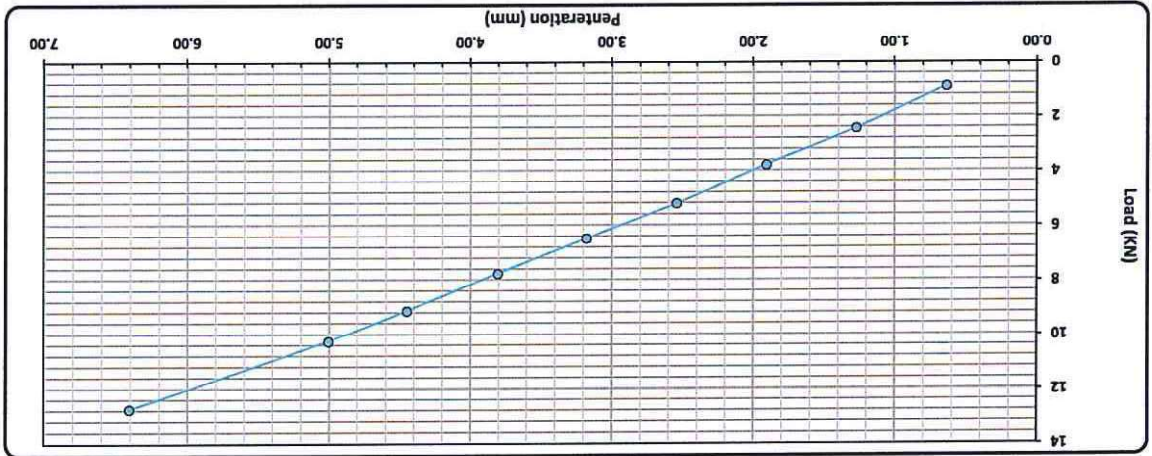
Compaction % for Mold	
Mold No.	55
Mold Vol.(cm ³)	2151
Mold WT. (gm)	7810
Mold WT. + Wet WT. (gm)	12790
Wet WT. (gm)	4980
Wet Density (g/cm ³)	2.315
Dry Density (g/cm ³)	2.168
Proctor Density (g/cm ³)	2.186
Compaction %	99

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



Calculations :-

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

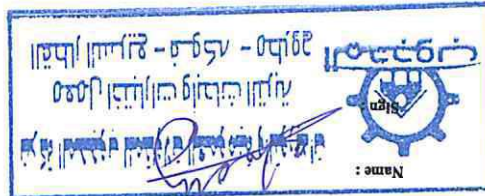
Lab. Specialist

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

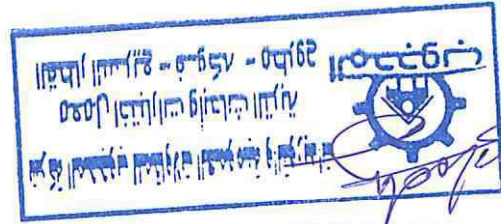
Results:-

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



Lab Engineer/

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Handwritten signature

Consultant

Contractor

ATTERBERG	LIQUID LIMIT (L.L.)	N.P	PLASTIC LIMIT (P.L.)	N.P	PLASTIC INDEX (P.I.)	N.P
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REMARKS	Cumulative Passing %	sieve size (mm)	sieve size (n)	# 2	# 10	# 40	# 200
	100.0	50.0	1.5	1	3/4	1/2	3/8
	93.2	37.5	25.0	19.0	12.5	9.5	4.75
	81.0	25.0	19.0	12.5	9.5	4.75	2.00
	59.6	12.5	9.5	4.75	2.00	0.425	0.075
	50.5	9.5	4.75	2.00	0.425	0.075	0.075
	38.4	4.75	2.00	0.425	0.075	0.075	0.075
	19.5	2.00	0.425	0.075	0.075	0.075	0.075
	12.5	0.425	0.075	0.075	0.075	0.075	0.075
	8.8	0.075	0.075	0.075	0.075	0.075	0.075
	0.12	0.075	0.075	0.075	0.075	0.075	0.075

C-General gradation

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

A-gradation of bulk materials	sieve size	Mass retained (g)	Cumulative Retained (g)	Cumulative Retained %	Cumulative Passing %
	2	0.0	1820.0	93.2	100.0
	1.5	3243.0	5063.0	19.0	81.0
	4/3	2413.0	7476.0	28.1	71.9
	2/1	3295.0	10771.0	40.4	59.6
	8/3	2412.0	13183.0	49.5	50.5
	# 4	3220.0	16403.0	61.6	38.4
	PASS				
	soil classify				
	table classify				
	A-1-a				
	PRO				
	WC				
	CBR				
	50.5%				

2-Gradient test

1-Visual inspection test

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

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	إ.د. خالد فاضل	SHAKEN
Logo of Engineering Consulting Office			



مشروع القطار الكهربائي السريع
المقايسة المعدلة لبنود الاعمال للقطاع السابع (فوكه - مطروح) - شركة المحجوب - اتجاه فوكه
القطاع من المحطة 548+000 إلى المحطة 559+000

رقم البند	بيان الأعمال	الوحدة	الكمية	الفئة	الاجمالى
1	اعمال الازالة و التطهير				
1-1	بالمتر المسطح اعمال تطهير الموقع من الاشجار والمزروعات و المخلفات فى مناطق الدلتا ذات الطبيعة الزراعية الكثيفة والتخلص منها بالمقالب العمومية تمهيدا لاعمال الرفع المساحى لكامل حدود المشروع طبقا للشروط والمواصفات و تعليمات المهندس المشرف.	م2	122,000	5.00	610,000
2	اعمال الحفر				
2-2	بالمتر المكعب اعمال حفر باستخدام المعدات الميكانيكية فى التربة المتماسكة عدا التربة الصخرية (باستخدام البلدوزر) وتسوية السطح باللات التسوية والرش بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (95% من الكثافة الجافة القصوى) ومحمل على البند تحميل ونقل الاتربة الزائدة لمسافة 500 متر من محور الطريق و يتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف. يتم احتساب علاوة 1 جنيه لكل 1 كم بالزيادة.	م3	177,000.00	20.10	3,557,700
3	اعمال الردم				
3-1	بالمتر المكعب اعمال توريد وتشغيل اتربة صالحة للردم و مطابقة للمواصفات والتشغيل باستخدام الات التسوية بسمك لا يزيد عن 50 سم حتى منسوب -2 متر و بسمك لا يزيد عن 25 سم لاستكمال المنسوب التصميمى لتشكيل الجسر والاكتاف (نسبة تحمل كالفورنيا لا تقل عن 15%) و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (95% من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف. فى حالة طلب جهاز الاشراف زيادة نسبة الدمك عن 95 % يحسب زيادة 1 جنية على زيادة نسبة الدمك لكل 1 % - مسافة النقل 2 كم ويتم احتساب علاوة 1.4 جنيه لكل 1 كم بالزيادة أو النقصان السعر يشمل عمل تشوينات وتخليط واختيارات ونقل لموقع العمل حتى مسافة 2 كم السعر يشمل قيمة المادة المحجورية طبقا لافادة المنطقة بهذا القطاع (7) من الكم 504 إلى 568	م3	48,328.14	85.00	4,107,892
	علاوة مسافة النقل 166 كم	م3	48,328.14	229.60	11,096,142
	علاوة تحصيل رسوم الكارثة والموازن طبقا للائحة الشركة الوطنية	م3	48,328.14	13.00	628,266
	الاجمالى				20,000,000
	(عشرون مليون جنيها لا غير)				

مدير المشروع المالك
م / إبراهيم الحناوي

مدير المشروع الإستشاري
م / خالد فوزي

مدير المشروع المقاول
م/ مختار طربان

يعتمد
رئيس الإدارة المركزية
منطقة غرب الدلتا
الإسكندرية - مرسى مطروح
عقيد مهندس /
"هانى محمد محمود طه"