

أعمال الجسر الترابي لمشروع القطار الكهربائي السريع

قطاع فوكة / مطروح

في المسافة من كم ٥٤٨+٠٠٠ الى كم ٥٥٩+٠٠٠ بطول ١١ كم (اتجاه برج العرب)

رقم البند	بيان الأعمال	الوحدة	الكمية	سعر الفئة	الإجمالي
١	أعمال الردم				
١-١	بالمتر المكعب أعمال توريد وتشغيل اترية صالحة للردم و مطابقة للمواصفات و التشغيل باستخدام الات التسوية بسلك لايزيد عن ٥٠سم حتى منسوب (٢- متر) و بسلك لايزيد عن ٢٥سم لاستكمال المنسوب التصميمي لتشكيل الجسر الترابي و الاكتاف (نسبة تحمل كاليفورنيا لا تقل عن ١٥٪) ورشها بالمياه الاصلوية للوصول الى نسبة الرطوبة المطلوبة و الدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (٩٥ ٪ من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية و القطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة و البند بجميع مشتملاته طبقا لاصول الصناعة و مواصفات الهيئة العامة للطرق و الكبارى وتعليمات المهندس المشرف . - فى حالة طلب جهاز الاشراف زيادة نسبة الدمك عن ٩٥٪ يحسب زيادة ١ جنيه على زيادة نسبة الدمك لكل ١٪. - مسافة النقل حتى ٢ كم ويتم احتساب علاوة ١,٤ جنيه للكم بالزيادة او النقصان . - السعر يشمل عمل تشوينات وتخليط واختبارات ونقل لموقع العمل حتى مسافة ٢ كم. السعر يشمل قيمة المادة الحجزية طبقا لافادة المنطقة بهذا القطاع (٧) من الكم ٥٠٤ الى الكم ٥٦٨	م٣	٦١٠٥٠,٠٦	٨٥	٥١٨٩٢٥٥
	علاوة مسافة النقل ١٦٦ كم	م٣	٦١٠٥٠,٠٦	٢٢٩,٦٠	١٤٠١٧٠٩٤
	علاوة تحصيل رسوم الكارثة والموازين طبقا للائحة الشركة الوطنية	م٣	٦١٠٥٠,٠٦	١٣	٧٩٣٦٥١



مكتبة





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



PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	13/8/2023	code	ZONE	549+000	552+000
LOCATION	K.P 550+500	MH-SB-4	MATERIAL	SUB BALLAST	
NAME COMPANY	EL MAHGOUB		LAYER THICKNESS	2000 M3	

1-visual inspection test

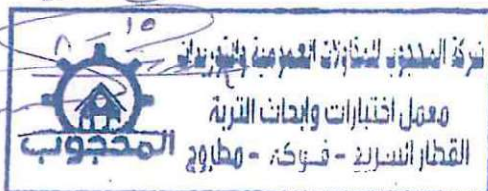
2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		53451.00		gm	table classify	
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify	
Mass retained (g)	0.0	1527.0	9580.0	4911.0	12197.0	4513.0	5451.0		A-1-a	
Cumulative Retained (g)	0.0	1527.0	11107.0	16018.0	28215.0	32728.0	38179.0		PRO	2.240
Cumulative Retained %	0.0	2.857	20.8	30.0	52.8	61.2	71.4		WC	6.6%
Cumulative Passing %	100.0	97.1	79.2	70.0	47.2	38.8	28.6		CBR	88.3%
B-soft material gradation				WT.OF sample		500.00		gm	S.G	2.563
sieve size	10	40	200						LA	25.76
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							
C-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	97.1	79.2	70.0	47.2	38.8	28.6	17.3	9.8	4.6
REMARKS		50-97		20-75		15-60		0-35		0-7

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

Contractor

Consultant



mohamed elsaied

m.elsaied

17-8-2023



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



PROCTOR TEST

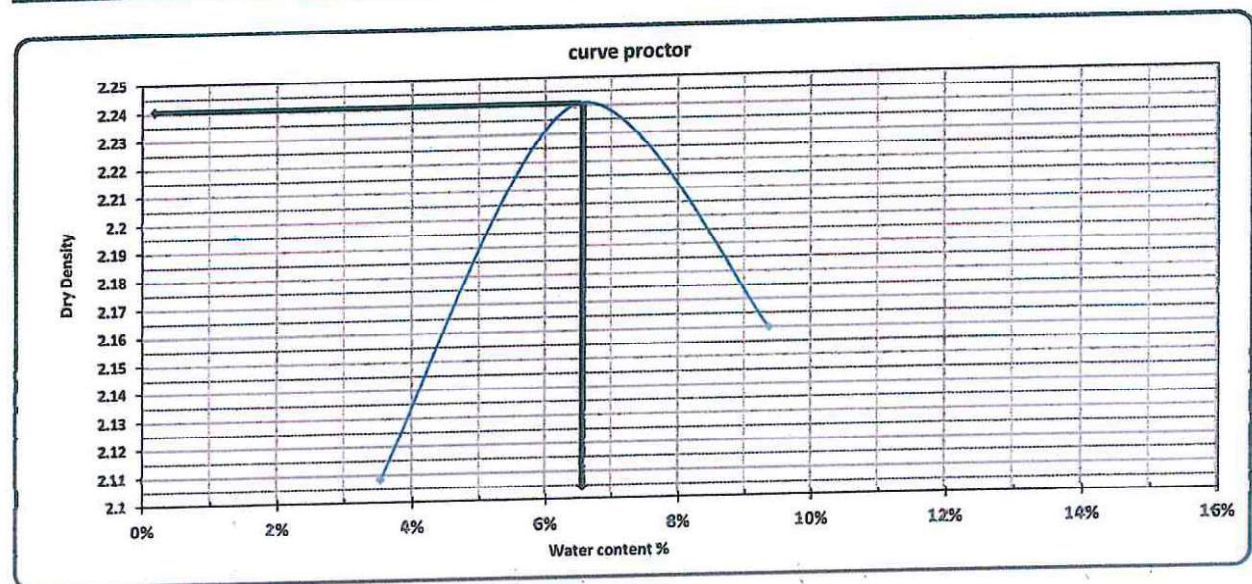
TESTING DATE:	14/8/2023	code	ZONE	549+000	552+000
LOCATION	K.P 550+500	MH-SB-4	MATERIAL	SUB BALLAST	
NAME COMPANY	EL MAHGOUB		QUANTITY	2000 M3	

Weight of empty mold :	6077.0
Mold Volume:	2032.0

MAX Dry Density	2.24
Water content %	6.6%

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

Tare No.	1	2	3	4	5	6				
Tare wt.	23.54	25.43	31.67	33.45	34.76	28.43				
Wt. Of wet soil & tare	133.7	145.86	132.82	141.56	138.65	132.64				
Wt. Of dry soil & tare	130.20	141.40	126.82	134.87	129.86	123.59				
Wt. Of water	3.4	4.5	6.0	6.7	8.8	9.0				
Wt. Of dry soil	106.7	116.0	95.1	101.4	95.1	95.2				
Water content %	3.2%	3.8%	6.3%	6.6%	9.2%	9.5%				
AV. Water content %	3.5%		6.5%		9.4%					
Dry Density	2.108		2.240		2.160					



Consultant

mohamed elsaied

m-elsaied

17-8-2023

	Electric Express Train - HSR	
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California Bearing Ratio TEST

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

Test Results

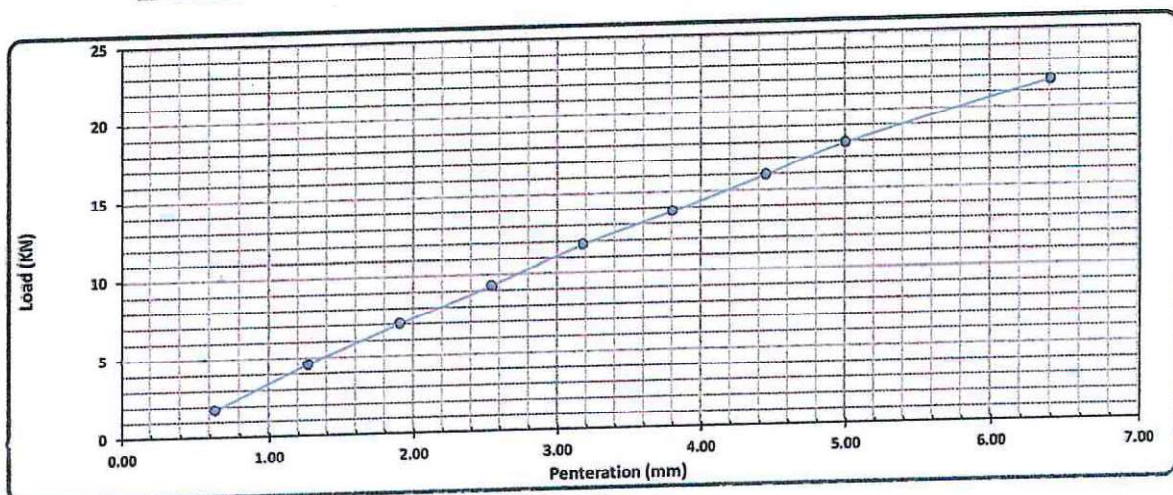
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7350
Mold WT. + Wei WT. (gm)	12390
Wet WT. (gm)	5040
Wet Density (g/cm ³)	2.343
Dry Density (g/cm ³)	2.198
Procter Density (g/cm ³)	2.240
Compaction %	98

Tare No.	5
Tare WT. (gm)	31
Tare WT. + Wei 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 (mm)	Load (KN)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR % عند نسبة 98
2.50	9.24	13.4	69.2%	99	98	68.5%
5.00	17.87	20.0	89.2%			88.3%

Lab. Specialist

Lab. Engineer

Consultant Engineer

Name :

Name :

Name : mohamed elsaied

Sign :

Sign :



17-8-2023

EL Mahgoub company

Express Electric Trian project



**Absorbtion & 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)	2018.40	gm
Weight of saturated sample in water (C)	1243.20	gm
Weight of dry sample aftr heating (A)	1987.00	gm

Results:-

Bulj spicific gravity = $A / (B-C)$	2.563	
Apparent spicific gravity = $A / (A-C)$	2.671	
Asorbton = $(B-A)/A$	1.580	

Los Anglos abrasion AASHTO-T96

Results:-

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

Lab Engineer/



mohamed elszaid

m. elszaid

17-8-2023



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



PARTICLE SIZE DISTRIBUTION OF SOIL

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

1-visual inspection test

2-Gradient test

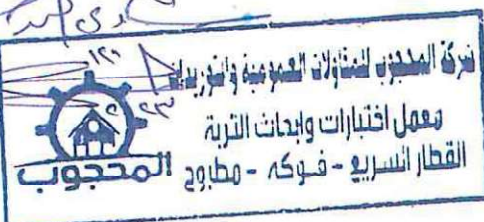
A-gradation of bulk materials				SAMPLE WEIGHT [g]		24591.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify
Mass retained (g)	0.0	393.0	3493.0	2726.0	3839.0	2060.0	2204.0		A-1-a
Cumulative Retained (g)	0.0	393.0	3886.0	6612.0	10451.0	12511.0	14715.0		PRO 2.238
Cumulative Retained %	0.0	1.6	15.8	26.9	42.5	50.9	59.8		WC 6.6%
Cumulative Passing %	100.0	98.4	84.2	73.1	57.5	49.1	40.2		CBR 86.7%
B-soft material gradation				WT.OF sample		500.00		gm	S.G 2.587
sieve size	10	40	200						LA 25.40
Cumulative Retained (g)	150.00	299.00	417.00						
Cumulative Retained %	30.00	59.80	83.40						
Cumulative Passing %	70.00	40.20	16.60						

C-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	98.4	84.2	73.1	57.5	49.1	40.2	28.1	16.1	6.7
REMARKS		50-97		20-75		15-60		0-35		0-7

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

Contractor

Consultant



Youssef Ragab
2-23

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فخريل	 SVS TRA 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 وزارة النقل والاقتصاد (CAPILL)
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PROCTOR TEST

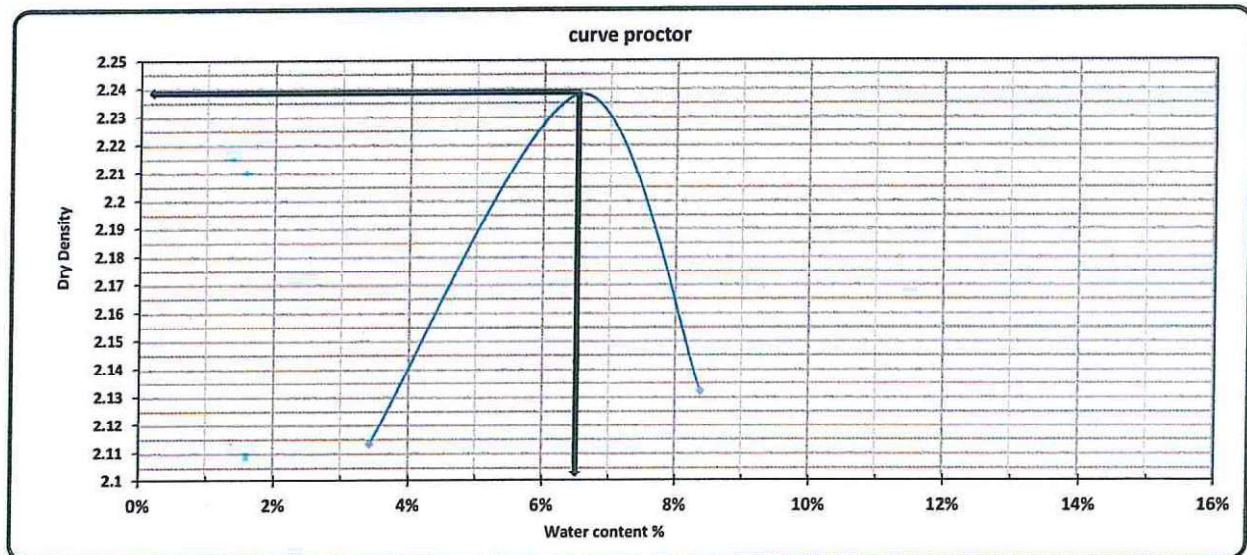
TESTING DATE:	11/8/2023	code	Station	549+000	552+000
LOCATION	K.P(548+600)	MH SB-3	Material	SUB BALLAST	
NAME COMPANY	EL MAHGOUB		layer thickness	20 CM	

Weight of empty mold :	6070.0
Mold Volume:	2032.0

MAX Dry Density	2.238
Water content %	6.6%

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		

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%				
Dry Density	2.113		2.238		2.132				



Contractor



Consultant

Youssef Ragab
2023

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

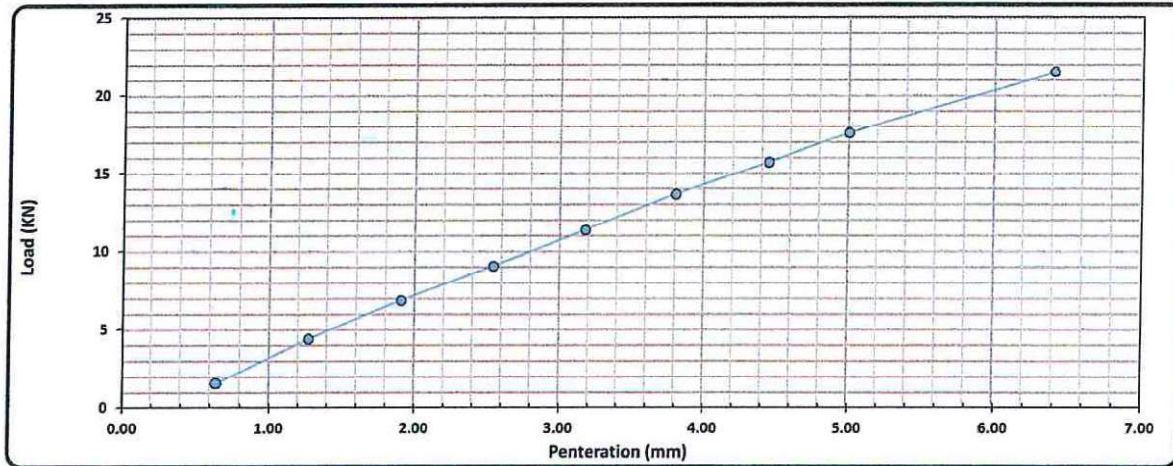
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7350
Mold WT. + Wet WT. (gm)	12390
Wet WT. (gm)	5040
Wet Density (g/cm ³)	2.343
Dry Density (g/cm ³)	2.198
Proctor Density (g/cm ³)	2.238
Compaction %	98

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



Calculations :-

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

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

Youssef Ragab

Youssef
12/8
7-23

EL Mahgoub company

Express Electric Trian project



**Absorbtion & 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 aftr heating (A)	1982.6	gm

Results:-

Bulj spcific gravity = $A / (B-C)$	2.587	
Apparent spcific gravity = $A / (A-C)$	2.705	
Asorbtion = $(B-A)/A$	1.685	

Los Anglos abrasion AASHTO-T96

Results:-

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

Lab Engineer/



Youssef Ragab
12/8/2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	 SVSYRA 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		المكتب المركزي لاختبار و التحليل (CARTEL)
				

Operating Lab.	AL Nuby Central Lab
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PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	02-08-2023	Code	Zone	549+000	552+000
LOCATION	K,P (550+000)	MH (S.B-2)	Material	Sub Ballast	
NAME COMPANY	EL MAHGOUP		Layer Thickness	20	

1-visual inspection test

2-Gradient test

									Table classify	
4-gradation of bulk materials			SAMPLE WEIGHT [g]		29354.00		gm		Soil Classify	A-1-a
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	PRO	2.255
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			WT.OF sample		500.00		gm
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				

-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	99.6	94.7	74.6	62.1	54.8	36.7	29.5	16.5	6.3
Limits		100-75	100-50	70-75		60-15		0-35	30-0	0-7

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

Contractor Engineer :-

Name :

Sign :

Lab. Engineer :-

Name :

Sign :



Consultant Engineer :-

Name : Youssef Ragob

Sign : Youssef 8/8/2023

	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		

Operating Lab. AL Nuby Central Lab

PROCTOR TEST

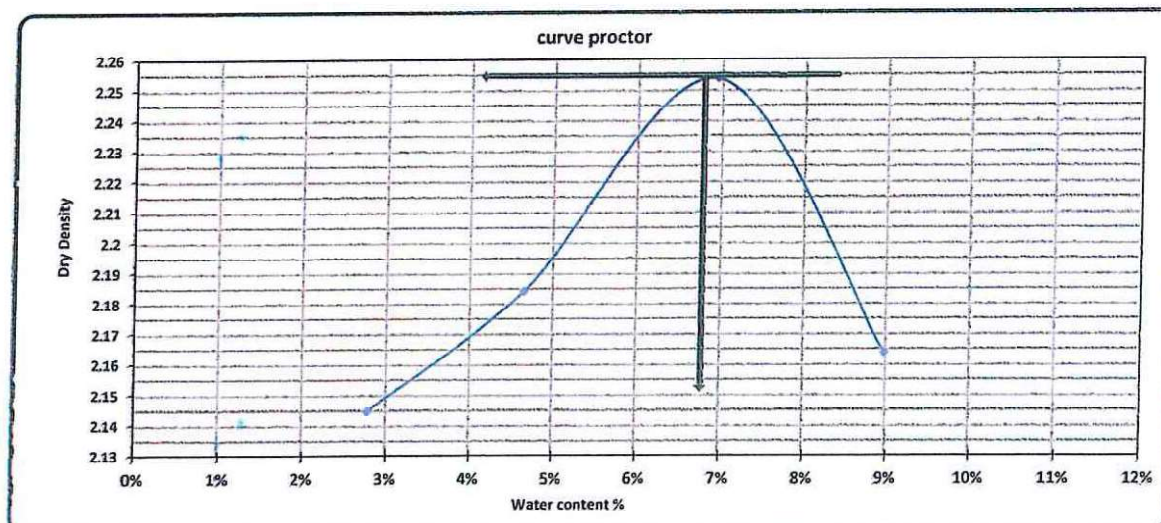
TESTING DATE:	03-08-2023	Cede			
LOCATION	K,P (550+000)	zone	649+000	552+000	
NAME COMPANY	EL MAHGOUP	MH (S.B-2)			

Weight of empty mold :	6290.0
Mold Volume:	2142.0

MAX Dry Density	2.255
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	11012.0	11186.0	11453.0	11341	
WT. WET SOIL	4722.0	4896.0	5163.0	5051.0	
Wt. Density	2.204	2.286	2.410	2.358	

Tare No.	18	10	7	32	22	26	16	33		
Tare wt.	77.8	43.7	42.9	74.4	54.1	55	34	73.6		
Wt. Of wet soil & tare	150.0	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	143.8	140.6	143.6		
Wt. Of water	2.0	2.8	4.7	3.4	6.2	6.2	9.4	6.4		
Wt. Of dry soil	70.2	103.5	102.4	72.2	89.7	88.8	106.6	70.0		
Water content %	2.8%	2.7%	4.6%	4.7%	6.9%	7.0%	8.8%	9.1%		
AV. Water content %	2.8%		4.6%		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 : Youssef Rafab

Sign :

Youssef
8/8/2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فادي	Electric Express Train - HSR		 الهيئة العامة للنقل مصر
	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		

Operating Lab. AL Nuby Central Lab

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

TESTING DATE:	03-08-2023	code	zone	549+000	552+000
LOCATION	K,P (550+000)	MH (S.B-2)			
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	
Absorbition = (B-A)/A	1.743	%

Los Anglos abrasion AASHTO-T96

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

Contractor Engineer :-

Name :

Sign :

Lab. Engineer :-

Name :

Sign :



Consultant Engineer :-

Name : Youssef Rajab

Sign : Youssef 8/8/2023

 ENGINEERING CONSULTANCY OFFICE المكتب الاستشاري الهندسي د. خالد فاضل	 CVSIFA	Electric Express Train - HSR		 الهيئة العامة للقنوات (S.A.E.C.)
		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		

Operating Lab: AL Nuby Central Lab

California Bearing Ratio TEST

Testing Date :	05-08-2023	Code	FROM STA :	549+000	552+000
Location :	K,P (550+000)	MH (S.B-2)			
Company Name	EL MAHGOUP				

- : Test Results

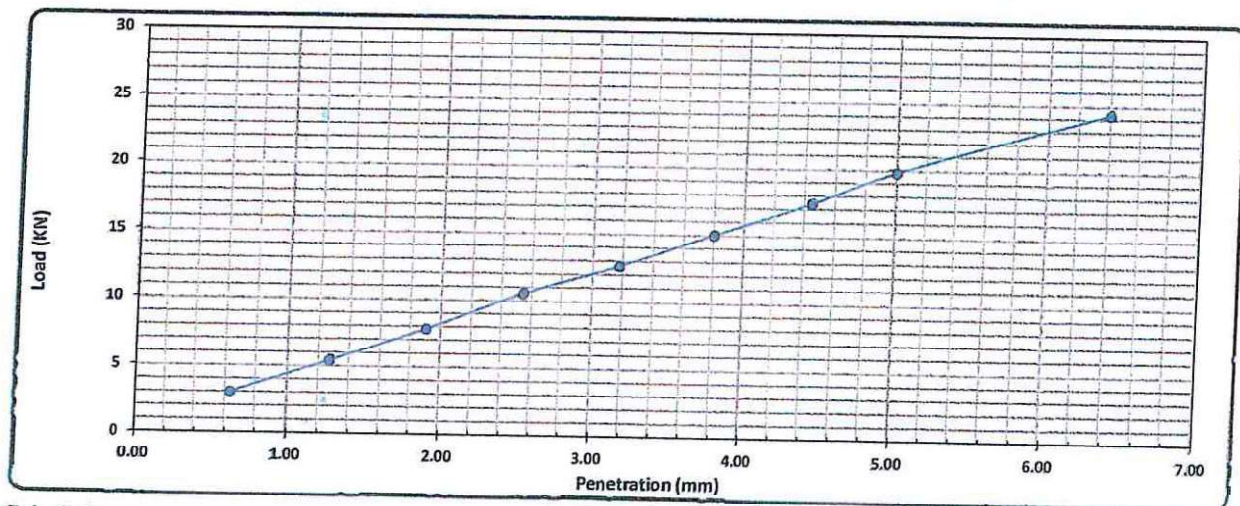
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm ³)	2122
Mold WT. (gm)	4803
Mold WT. + Wet WT. (gm)	10305
Wet WT. (gm)	5502
Wet Density (g/cm ³)	2.593
Dry Density (g/cm ³)	2.435
Proctor Density (g/cm ³)	2.255
Compaction %	108.0

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

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

Loading Reading :

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



Calculations :-

Pentration (mm)	Load (KN)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR
2.50	10.50	13.4	78.7%	108	98	98 عند نسبة 98 %
5.00	19.80	20.0	98.9%			71.4%
						89.7%

Contractor Engineer

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

Youssef Ragab

Youssef
8/8
2023

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	12/6/2023	code	ZONE	549+000	552+000
LOCATION	k.p(549+200)	MH-5	Material	PERPARED	
NAME COMPANY	EL MAHGOUB		layer thickness	25 cm	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		36464.00	gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify
Mass retained (g)	0.0	1583.0	5309.0	4044.0	6038.0	2394.0	4008.0		A-1-a
Cumulative Retained (g)	0.0	1583.0	6892.0	10936.0	16974.0	19368.0	23376.0	PRO	2.183
Cumulative Retained %	0.0	4.3	18.9	30.0	46.6	53.1	64.1	WC	6.2%
Cumulative Passing %	100.0	95.7	81.1	70.0	53.4	46.9	35.9	CBR	52.0%

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				

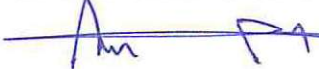
C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	95.7	81.1	70.0	53.4	46.9	35.9	22.3	14.7	9.7
REMARKS		97-50		75-20		60-15		0-35		0-12

ATTEBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	N.P	N.P	N.P

Contractor

Consultant





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



PROCTOR TEST

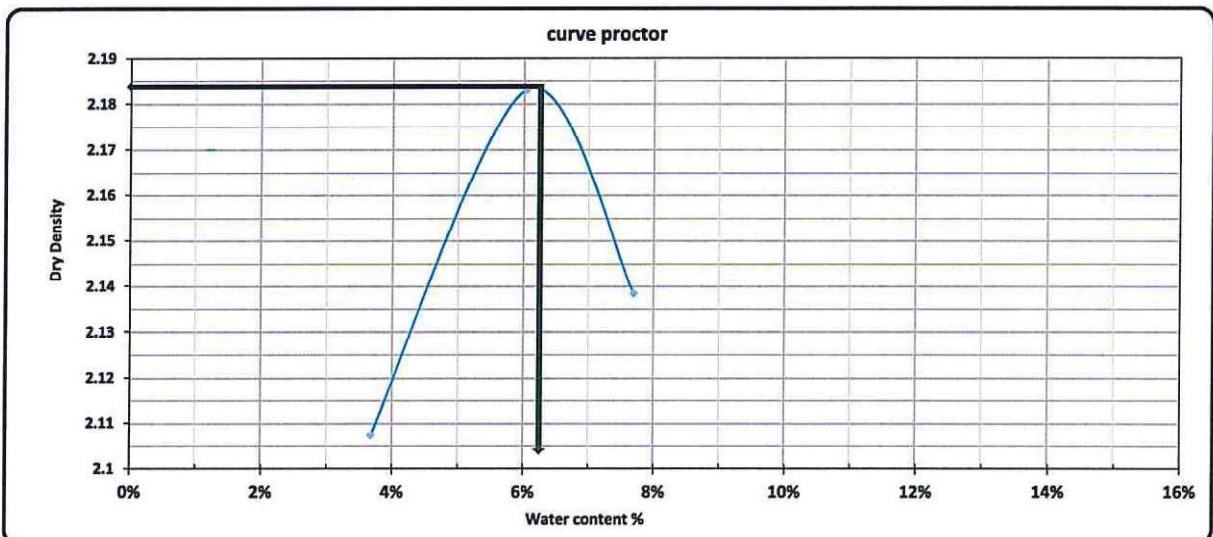
TESTING DATE:	13/6/2023	code	Station	549+000	552+000
LOCATION	k.p(549+200)	MH-5	Material	PERPARED	
NAME COMPANY	EL MAHGOUB		layer thickness	25 cm	

Weight of empty mold :	6083.0
Mold Volume:	2032.0

MAX Dry Density	2.183
Water content %	6.2%

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		

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					



Contractor



Consultant

[Handwritten signature]

California Bearing Ratio TEST

Testing Date :	14/6/2023	Code	FROM STA :	549+000	552+000
Location :	k.p(549+200)	MH-5	: Material	PERPARED	
Layer No. :	EL MAHJOUB		: Layer Thickness	25 cm	

- : Test Results

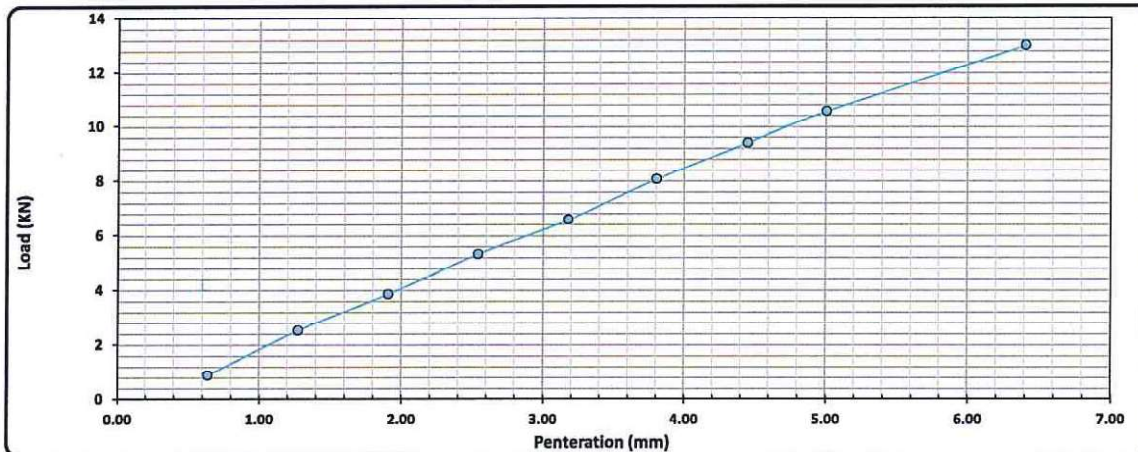
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7810
Mold WT. + Wet WT. (gm)	12790
Wet WT. (gm)	4980
Wet Density (g/cm ³)	2.315
Dry Density (g/cm ³)	2.180
Proctor Density (g/cm ³)	2.183
Compaction %	100

Mositure 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
Intial Height (mm)	3.65
Final Height (mm)	3.65
Difference	0
Sample Height (mm)	122.00
Swelling Ratio %	0%

Loading Reading :

Penteration (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 :-

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	عند نسبة 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

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

EL Mahgoub company

Express Electric Trian project



**Absorbition & 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 aftr heating (A)		gm

Results:-

Bulj spcific gravity = $A / (B-C)$		
Apparent spcific gravity = $A / (A-C)$		
Asorbition = $(B-A)/A$		

Los Anglos abrasion AASHTO-T96

Results:-

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

Lab Engineer/



 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فتحي	 SVSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSА MATROUH From Station 504+000 To Station 568+177	 الهيئة القومية للإنتافاق (GAPRLT)
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PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	4/6/2023	code	ZONE	549+000	552+000
LOCATION	k.p(550+500)	MH-4	Material	PERPARED	
NAME COMPANY	EL MAHGOUB		layer thickness	25 cm	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		30484.00		gm	table classify	
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify	
Mass retained (g)	0.0	1544.0	5118.0	2613.0	3064.0	2407.0	4460.0		A-1-a	
Cumulative Retained (g)	0.0	1544.0	6662.0	9275.0	12339.0	14746.0	19206.0		PRO	2.186
Cumulative Retained %	0.0	5.1	21.9	30.4	40.5	48.4	63.0		WC	6.3%
Cumulative Passing %	100.0	94.9	78.1	69.6	59.5	51.6	37.0		CBR	50.4%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	166.00	288.00	368.00					
Cumulative Retained %	33.20	57.60	73.60					
Cumulative Passing %	66.80	42.40	26.40					

C-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	94.9	78.1	69.6	59.5	51.6	37.0	24.7	15.7	9.8
REMARKS		97-50		75-20		60-15		0-35		0-12

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

Contractor

Consultant




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

PROCTOR TEST

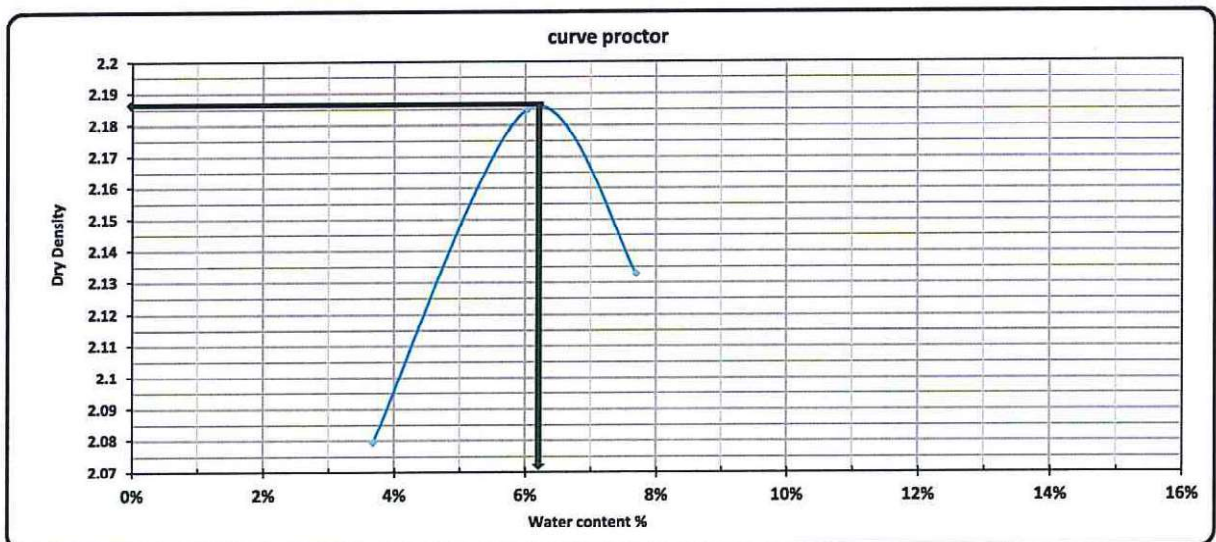
TESTING DATE:	2023/06/05	code	Station	549+000	552+000
LOCATION	k.p(550+500)	MH-4	Material	PERPARED	
NAME COMPANY	EL MAHJOUB		layer thickness	25 cm	

Weight of empty mold :	6088.0
Mold Volume:	2032.0

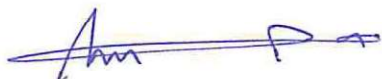
MAX Dry Density	2.186
Water content %	6.3%

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10469.0	10796.1	10755.5		
WT. WET SOIL	4381.0	4708.1	4667.5		
Wt. Density	2.156	2.317	2.297		

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	2.079		2.185		2.133					



Consultant



	Electric Express Train - HSR	
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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	PERPARED	
Layer No. :			: Layer Thickness	25 cm	

- : Test Results

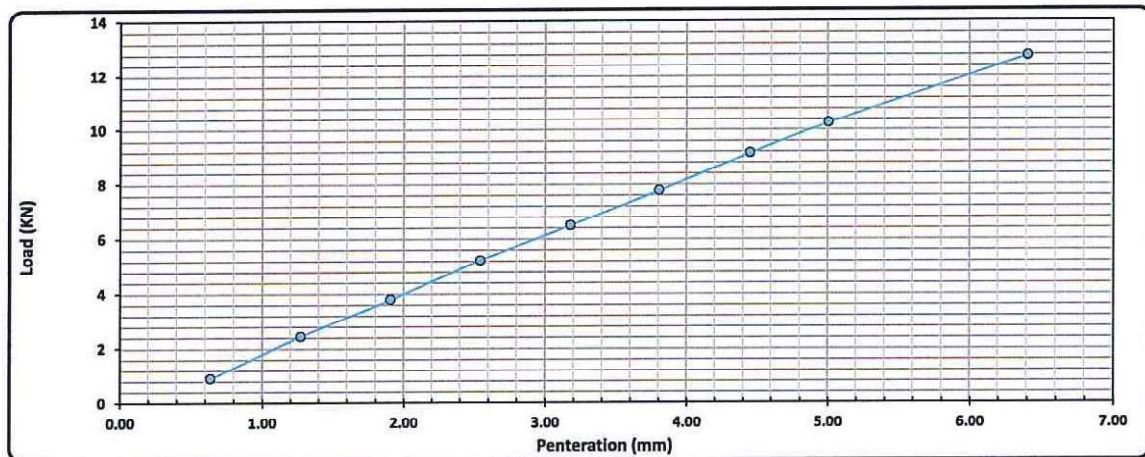
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7810
Mold WT. + Wet WT. (gm)	12790
Wet WT. (gm)	4980
Wet Density (g/cm ³)	2.315
Dry Density (g/cm ³)	2.168
Proctor Density (g/cm ³)	2.186
Compaction %	99

Mositure 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
Mositure Content %	6.8

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

Loading Reading :

Penteration (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 :-

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
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 :



Consultant Engineer

Name :

Sign :

EL Mahgoub company

Express Electric Trian project



**Absorbition & 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:-

Bulj spicific gravity = $A / (B-C)$		
Apparent spicific gravity = $A / (A-C)$		
Asorbition = $(B-A)/A$		

Los Anglos abrasion AASHTO-T96

Results:-

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

Lab Engineer/





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



PARTICLE SIZE DISTRIBUTION OF SOIL

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

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		26642.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify
Mass retained (g)	0.0	1820.0	3243.0	2413.0	3295.0	2412.0	3220.0		A-1-a
Cumulative Retained (g)	0.0	1820.0	5063.0	7476.0	10771.0	13183.0	16403.0		PRO
Cumulative Retained %	0.0	6.8	19.0	28.1	40.4	49.5	61.6		WC
Cumulative Passing %	100.0	93.2	81.0	71.9	59.6	50.5	38.4		CBR

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					

C-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	93.2	81.0	71.9	59.6	50.5	38.4	19.5	12.5	8.8
REMARKS		97-50		75-20		60-15		0-35		0-12

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

Contractor

Consultant



Signature of the consultant

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ. د. خالد غنيم	 SVSITA 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 الميناء والخطوط الجوية (SABEL)

PROCTOR TEST

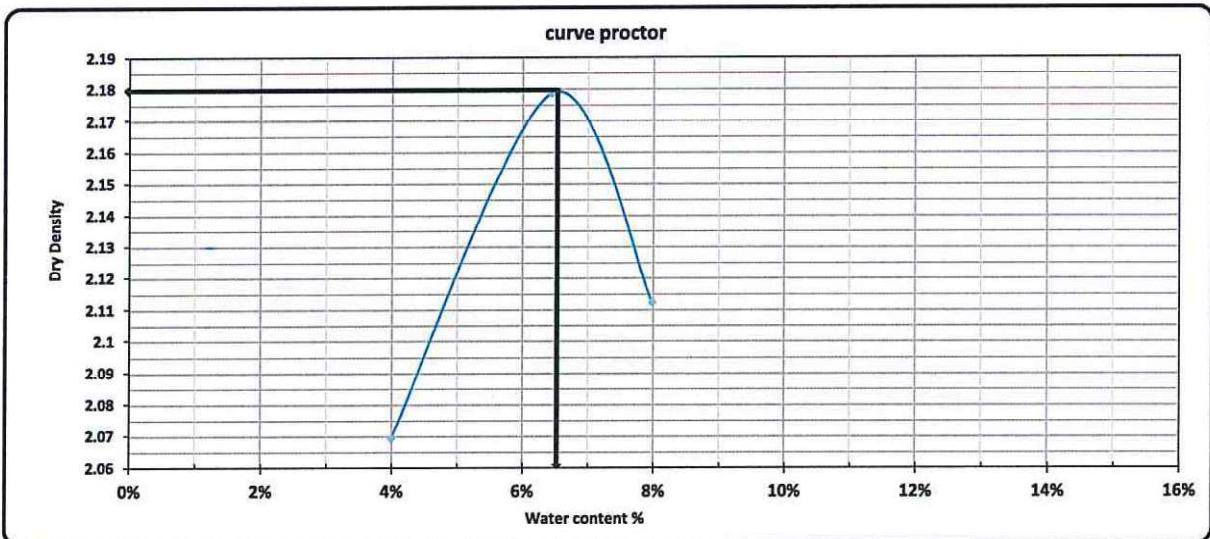
TESTING DATE:	2023/06/05	code	Station	549+000	552+000
LOCATION	k.p(551+300)	MH-3	Material	PERPARED	
NAME COMPANY	EL MAHJOUB		layer thickness	25 cm	

Weight of empty mold :	6088.0
Mold Volume:	2032.0

MAX Dry Density	2.18
Water content %	6.5%

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					



Contractor

شركة المحجوب للمقاولات والتشييد
معمل اختبارات وأبحاث التربة
القطار السريع - فوكا - مطروح

Consultant

M. I. [Signature]

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي إ.د. خالد فتوح	 SVSTA SHAKEN	Electric Express Train - HSR	 الهيئة العامة للإتقان مركز التميز (GARBI)
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California Bearing Ratio TEST

Testing Date :	6/6/2023	Code	FROM STA :	549+000	552+000
Location :	k.p(551+300)	MH-3	: Material	PERPARED	
Layer No. :			: Layer Thickness	25 cm	

- : Test Results

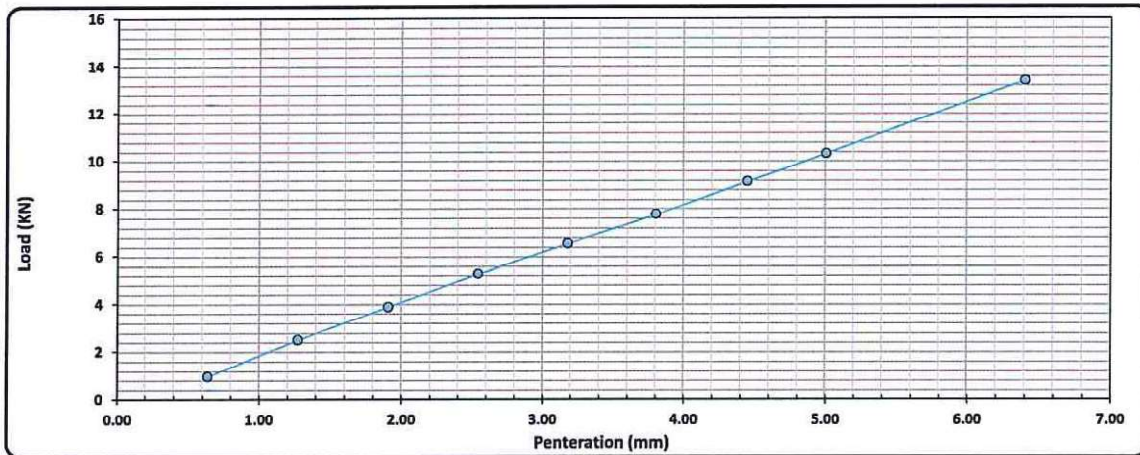
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm ³)	2151
Mold WT. (gm)	7810
Mold WT. + Wet WT. (gm)	12790
Wet WT. (gm)	4980
Wet Density (g/cm ³)	2.315
Dry Density (g/cm ³)	2.175
Proctor Density (g/cm ³)	2.180
Compaction %	100

Mositure 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
Intial Height (mm)	2.30
Final Height (mm)	2.30
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0%

Loading Reading :

Penteration (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 :-

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

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :



Consultant Engineer

Name :

Sign :

(Signature)

EL Mahgoub company

Express Electric Trian project



**Absorbition & 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 aftr heating (A)		gm

Results:-

Bulj spcific gravity = $A / (B-C)$		
Apparent spcific gravity = $A / (A-C)$		
Asorbtion = $(B-A)/A$		

Los Anglos abrasion AASHTO-T96

Results:-

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



M. El Mahjoub



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



PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	31/5/2023	code	ZONE	549+000	552+000
LOCATION	k.p(551+300)	MH-2	Material	PERPARED	
NAME COMPANY	EL MAHGOUB		layer thickness	25 cm	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		34875.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify
Mass retained (g)	0.0	3874.0	3611.0	3165.0	3659.0	3418.0	3967.0		A-1-a
Cumulative Retained (g)	0.0	3874.0	7485.0	10650.0	14309.0	17727.0	21694.0	PRO	2.182
Cumulative Retained %	0.0	11.1	21.5	30.5	41.0	50.8	62.2	WC	6.6%
Cumulative Passing %	100.0	88.9	78.5	69.5	59.0	49.2	37.8	CBR	45.7%

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

C-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	88.9	78.5	69.5	59.0	49.2	37.8	25.3	16.6	9.5
REMARKS		97-50		75-20		60-15		0-35		0-12

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

Contractor

Consultant



(Handwritten signature)

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي إ.د. خالد فهد	 SVS TRA SHAKER	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	 الهيئة العامة للنقل Ministry of Transport (GARBLT)
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PROCTOR TEST

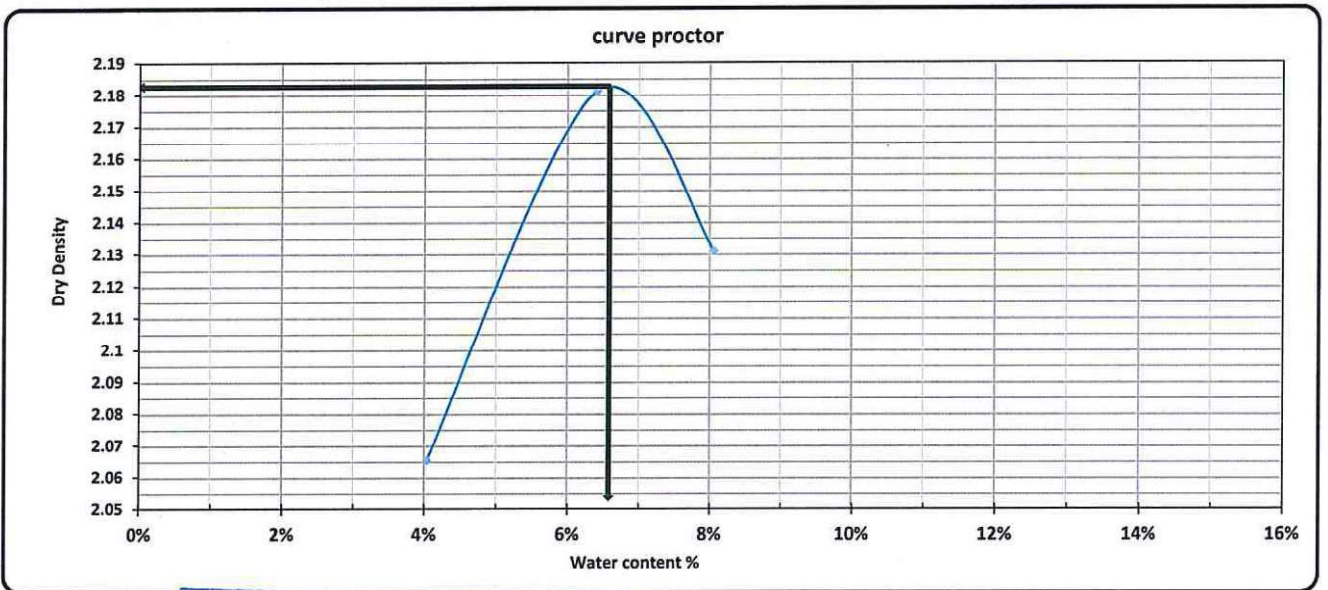
TESTING DATE:	2023/06/01	code	Station	549+000	552+000
LOCATION	kp(551+300)	MH-2	Material	PERPARED	
NAME COMPANY	EL MAHJOUB		layer thickness	25 cm	

Weight of empty mold :	6070.0
Mold Volume:	2032.0

MAX Dry Density	2.182
Water content %	6.6%

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		

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							



 Contractor شركة المتكاملات الهندسية والبناء معمل اختبارات وأبحاث التربة القطار السريع - فوكا - مطروح
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Consultant 