



مشروع القطر الكهربائي السريع
المقايمة التقديرية لبيوت الاعمال للطعام السابع (الوكلة - مطروح) - شركة ايجي كونتراكت - اثناء سبدي كريد
القطاع من المحطة ٥٠٧٤٠٠٠ إلى المحطة ٥٠٩٤٠٠٠

رقم البند	بيان الاعمال	الوحدة	الكمية	القيمة	الاساسي
٢	اعمال قديم				
١.٢	دمش المساهم اعمال توريد وتشغيل قربة معالجة قديم ومعالجة لمرافق والتشغيل باستخدام آلات قديمة سكك لا يزيد عن ٥٠ سم حتى مسوب ٩٠ متر و سكك لا يزيد عن ٦٥ سم لاستغلال المسوب القميصي تشكيل المسر والاكلاف (سوية ليعمل كطريقها لا تقل عن ١٦%) ورشها ببقايا الاسفلت الرصود الى سوية المرحلة المتعارفة والتمسك الجيد بالمراسل. الرصود الى السوي ثلاثة حذاء (95% من الثلاثة حذاء القميصي) ريش السوية حذاء المساهم القميصي والقطاعات الخرجية القميصي والريشودات القميصي القميصي القميصي مستعملاته حذاء الرصود السكك والريشودات القميصي القميصي القميصي القميصي القميصي القميصي على حالة طلب بهذا الإشراف زيادة نسبة السكك عن ٩٥% وحسب زيادة ١ حذاء على زيادة نسبة السكك تقل ١% ٥. مساحة التقل ٢ كم ويتم تعويض عترة ١.٤ حذاء لكل ١ كم بزيادة او التقلص بالصو يشمل عمل تشويكات وتخطيط والتخطيطات وتقل لوضع العمل حتى مسافة ٢ كم بالصو يشمل لينة السكك المحررة حذاء لينة المنطقة بهذا القطاع (٧) من القم ٥٠.٤ الى ٦٨	م	٤٠١١٧,٢٠٤	٨٨,٠٠٠	٣,٤٢٨,٠٢٧
	علاوة مساحة التقل ٢ كم	م	٤٠١١٧,٢٠٤	٣٨٨,٩٠	١٩,٠٣٩,١٠٤
	علاوة المسحوق رصود القارة والريشودات حذاء لينة المنطقة بهذا القطاع (٧) من القم ٥٠.٤ الى ٦٨	م	٤٠١١٧,٢٠٤	١٢,٠٠٠	٥٢٨,٢٤٩
	الإجمالي				٢٥,٠٨٥,٠٠٠

(عشرون مليون جنيهًا لأخر)

مدير عام المشروع
د/ محمد صليح الدين




مدير المشروع
د/ خالد قنديل

مدير المشروع
د/ خالد قنديل

مدير المشروع
د/ خالد قنديل

المكتب الاستشاري الهندسي KK
(د/ خالد قنديل)
مدير المشروع م/ خالد فوزي
مشروع: القطر الكهربائي السريع
القطاع السابع



 MINISTRY OF TRANSPORT AND ECONOMIC DEVELOPMENT وزارة النقل والتنمية الاقتصادية	 Egyptian Railways السكك الحديدية المصرية	Electric Express Train - HSR From El Ain El Khatma City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 509+000	 MINISTRY OF PLANNING وزارة التخطيط
Spreading (g) Al Taakol Control Lab			

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	13-07-2023	0003	ZONE	507+000	509+000
LOCATION	K.P (507+300)	EOC (02)	Material	fill material	
NAME COMPANY	EO-CONTRACT		quantity	3000 m³	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				TOTAL SAMPLE WEIGHT				13546.00	gm	table classify
sieve size	2	1.5	1	3/4	2/1	3/8	# 4	# 10	# 40	# 200
Mass retained (g)	0.0	4500.0	7200.0	15300.0	2541.0	2356.0	2554.0	19646.0	19646.0	19646.0
Cumulative Retained (g)	0.0	4500.0	11700.0	27000.0	29541.0	31647.0	34201.0	36167.0	38131.0	40097.0
Cumulative Retained %	0.0	33.2	84.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cumulative Passing %	100.0	66.8	15.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
									CLASS	A-1-A
									PRO	2.18
									WC	7.30
									CBR	57.40
									CORR. PRO	2.25
									CORR. WC	9.29

B-soft material gradation				WT. OF sample				500.00	gm
sieve size	10	40	200	# 4	# 10	# 40	# 200		
Cumulative Retained (g)	135.00	240.00	340.00						
Cumulative Retained %	27.00	48.00	68.00						
Cumulative Passing %	73.00	52.00	32.00						

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	91.5	78.3	49.2	45.1	40.9	36.5	26.6	19.0	12.67



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

Contractor

Name

Ahmed Haseem

Sign

Consultant

Mohamed Elsayed

M. Elsayed

22-7-2023

MODIFIED PROCTOR TEST ASTM D1557

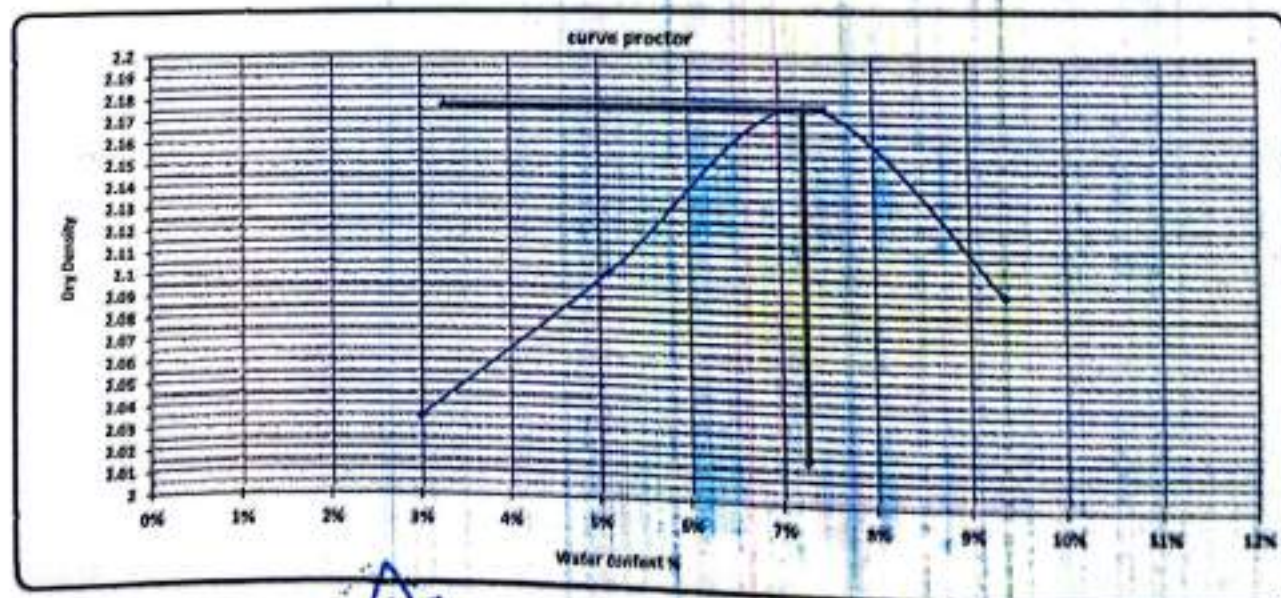
TESTING DATE:	14-07-2023	CODE	ZONE	507+000	509+000
LOCATION	K.P (507+300)	EOC (80)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	3000 m³	

Weight of empty mold :	5533.0
Mold Volume:	1134.0

MAX Dry Density	2.18
Water content %	7.3%

trial no :	1	2	3	4	
Wt. Of Mold + Wet Soil	10079.0	10310.0	10550.0	10665	
WT. WET SOIL	4450.0	4696.0	4665.0	4865.0	
Wt. Density	2.095	2.208	2.335	2.290	

Tare No.	11	7	23	4	3	21	25	1		
Tare wt.	54.63	53.36	54.68	52	35	87	56.55	54.22		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	151.0	150.0	150.0		
Wt. Of dry soil & tare	147.22	147.21	148.33	148.39	148.65	148.78	148.90	148.9		
Wt. Of water	2.8	2.8	4.7	4.7	6.3	6.2	8.1	8.1		
Wt. Of dry soil	92.6	94.8	96.7	93.3	86.7	86.8	85.4	87.3		
Water content %	3.0%	3.0%	5.2%	5.0%	7.4%	7.1%	9.5%	9.2%		
AV. Water content %	3.0%		5.1%		7.3%		9.4%			
Dry Density	2.034		2.141		2.177		2.098			



Contractor

Name : Ahmed Hafeez

Sign :

Consultant

mohamed elsaied

m-elsaied
22-7-2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	 SVSUA SHAKER	Electric Express Train - IREK From El Khatia City To El Assiout - MATROUH Code: Y From I KKA To MARSA MATRUH From El Assiout To El Khatia City - IREK	 SVSUA
		Absorption Of coarse Aggregate	

TESTING DATE:	14/07/2023	code	Station	507+000	509+000
LOCATION	K.P (507+300)	EGC (19)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	3000 m³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2575	gm
Weight of saturated sample in water (C)	1523	gm
Weight of dry sample after heating (A)	2495	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.372	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.448	
Apparent specific gravity = $A / (A-C)$	2.567	
Absorption = $(B-A)/A$	3.208	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Ahmed H. H. H.

Consultant Engineer

Name :

Sign :

mohamed elsaid

met said

22-7-2023

California Bearing Ratio TEST ASTM D1883

Testing Date :	15/7/2023	Code	FROM STA :	507+008	509+000
Location :	K.P (507+300)	EGC(B9)	Material	fill material	
Company Name	EG-CONTRACT		quantity	3000m ³	

Test Results

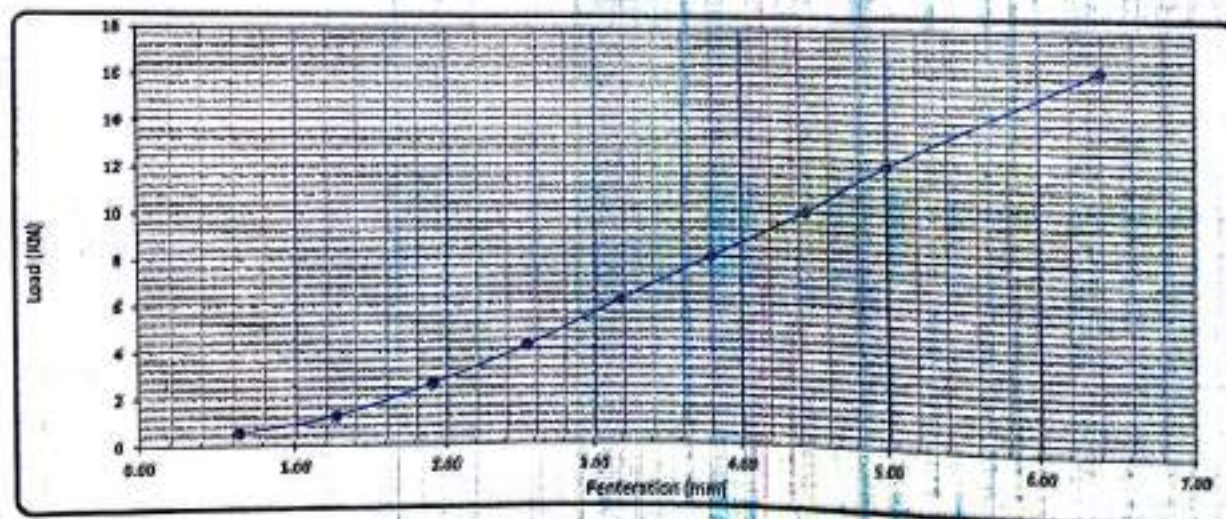
Compaction % for Mold	
Mold No.	1
Mold Vol.(cm ³)	2500
Mold WT.(gms)	4050
Mold WT. + Wat.WT.(gms)	5050
Wat.WT.(gms)	1000
Wat.Density (g/cm ³)	1.00
Dry Density (g/cm ³)	1.60
Proctor Density (g/cm ³)	1.975
Compaction %	80.6

Moisture Ratio After Compacted Mold	
Tare No.	16
Tare WT.(gms)	52.60
Tare WT. + Mold WT.(gms)	850
Tare WT. + Dry WT.(gms)	802
Water WT.(gms)	48
Dry WT.(gms)	800
Moisture Content %	6.0

Swelling	
Mold No.	1
Date	15/7/2023
Initial Height (mm)	10.0
Final Height (mm)	10.0
Difference	0.00
Sample Height (mm)	10.0
Swelling Ratio %	0.00%

Loading Reading :

Penetration (mm)	0.64	1.29	1.91	2.54	3.18	3.80	4.45	5.09	6.40
Load Reading (Kg)	13	133	283	400	477	544	6113	6309	1833
Load (KN)	0.5	1.2	2.6	4.0	4.8	5.6	10.6	12.7	18.3



Calculations :-

Penetration (mm)	Load (KN)	Standard Load (KN)	CBR (%)	Moisture Compaction (%)	Compaction (%)	CBR (%)
1.50	4.13	15.4	26.9%			26.9%
5.00	11.46	20.8	55.1%	100	80.6	87.4%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Contracted Engineer

Name :




Sign :

22-7-2023

Correction of Unit Weight and Water Content For Soils Containing oversize Particles (ASTM D-4718)			
Dry Unit Weight of Fine Fraction (γ_{DF}) (gm/cm^3)	2.177	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	7.30	Date of Sample	15/7/2023
Specific Gravity of over Size Fraction (G_M)	2.372	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh
Sample Data			
Total Weight of Wet Sample	UNIT		
Weight of Wet oversize Fraction (Retained 3/4)	gm	53845	
Weight of Wet Fine Fraction (Passing 3/4)	gm	27000	
Weight of Dry oversize Fraction (M_{OC})	gm	26845	
Weight of Dry Fine Fraction (M_{DF})	gm	24340	توزن خشن حبيبات
Total Weight of Dry Sample	gm	24429	توزن ناعم حبيبات
Water Content of oversize Fraction (W_C)	%	49.65	
Water Content of Fine Fraction (W_F)	%	0.03	
Percent of oversize Fraction By Mass (P_C)	%	0.10	
Percent of Fine Fraction By Mass (P_F)	%	50.42	
		49.58	
Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_1)			
Corrected Water for oversize Fraction & Finer Fraction (C_{W1})		$W_C P_F + W_F P_C$	9.29
Specific Gravity of over Size Fraction (G_M)	2.37		
Specific Gravity of Fine Fraction (γ_{DF})	2.177	gm/cm^3	
Specific Gravity of Water (γ_w)	0.980		
Calculations of Corrected Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{DM})			
Corrected Dry Unit Weight of Total Material (γ_{DM})		$(\gamma_{DF} \cdot G_M \cdot \gamma_w)$	2.25
		$(\gamma_{DF} \cdot P_C) + (G_M \cdot \gamma_w \cdot P_F)$	
Corrected Maximum Dry Density (M.D.D)	2.25		gm/cm^3
Corrected Optimum Moisture Content (O.M.C)	9.29		%
LAB Manager			
AHMED HALEEM			



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 2416.05

 ENGINEERING CONSULTING OFFICE مكتب الاستشارات الهندسية ا.د. خالد النجار	 SYSTEM 3 TAWKEEL	Electric Express Train - HSR From U1 Abu Dhabi City To U1 Masdar - MATIEN Section - T From FORA To MARSA MATRUH From Station 14 to Station 15-17		 وزارة النقل هيئة الطرق والمواصلات RTA
		Opening lap	Al Tawkeel Central Lab	

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	16-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (507+300)	EGC (91)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				TOTAL SAMPLE WEIGHT		52113.00		gm	table classify	soil classify
sieve size	2	1.5	1	4/3	3/1	1/2	# 4	# 10		
Mass retained (g)	0.0	2770.0	9100.0	7775.0	3135.0	4050.0	1105.0		CLASS	A-1-A
Cumulative Retained (g)	0.0	2770.0	12870.0	20345.0	23480.0	28090.0	34280.0	16930.0	PRO	2.16
Cumulative Retained %	0.0	5.3	22.7	39.3	44.3	52.0	64.5		WC	7.56
Cumulative Passing %	100.0	94.7	77.3	60.7	55.7	47.9	35.5		CBR	67.20
									COBR PAS	2.19
									COBR W2	1.04

B-soft material gradation				WT. OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	60.00	200.00	345.00					
Cumulative Retained %	18.00	40.00	69.00					
Cumulative Passing %	82.00	60.00	31.00					

C-General gradent										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	35.0	19.0	12.5	9.5	4.75	3.00	0.425	0.075
Cumulative Passing %	100.0	94.8	76.3	61.7	55.6	47.1	35.5	29.1	21.3	10.00

ATTERBERG LIMITS	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTIC INDEX (PI)
			N/A

Contractor

Name
Sign



Ahmed Hadeem

(Signature)

Consultant

(Signature)
mohamed elsaied

22-7-2023

 Karama Construction & Contracting Co. 	Electric Express Train - H&R From El Aso El Bahari City To El Aso El Bahari - MATRUH Section - 7 From FOKA TO HANSA MATRUH From Station 534+000 To Station 535+177	وزارة النقل وزارة الإسكان الهيئة العامة للإسكان
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MODIFIED PROCTOR TEST ASTM D1557

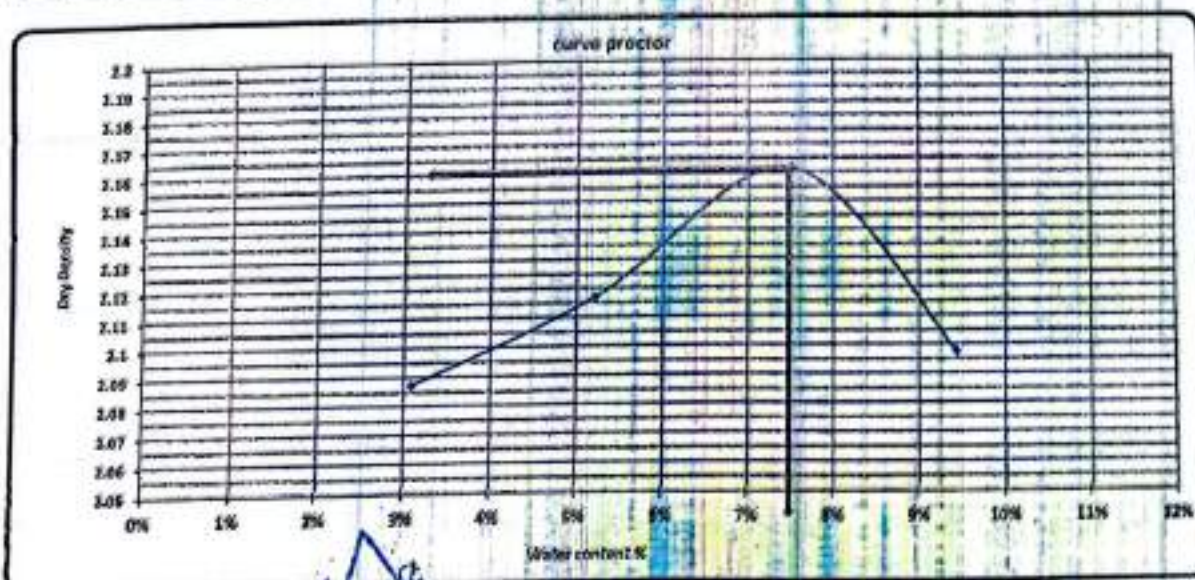
TESTING DATE:	17-07-2023	ZONE	507+000	509+000
LOCATION	K.P (507+390)	Material	fill material	
NAME COMPANY	EG-CONTRACT	quantity	5000 m³	

Weight of empty mold :	8420.0
Mold Volume	2124.0

MAX Dry Density	2.16
Water content %	7.5%

trial no :	1	2	3	4
Wt. Of Mold + Wet Soil	10190.0	10392.0	9525.0	10405
WT. WET SOIL	4870.0	4736.0	4935.0	4876.0
WL Density	2.152	2.227	2.328	2.308

Tare No.	16	17	18	19	20	21	22	23
Tare wt.	83.35	84.36	84.48	83.63	85.22	84.38	84.72	164.2
Wt. Of wet soil & tare	150.3	150.6	150.0	149.9	150.0	150.0	150.0	160.0
Wt. Of dry soil & tare	147.20	147.10	146.20	145.20	146.56	147.20	147.33	147.0
Wt. Of water	3.0	3.0	4.0	4.0	6.0	6.0	8.0	8.0
Wt. Of dry soil	91.0	92.7	96.8	91.6	88.1	88.0	97.4	88.3
Water content %	3.0%	3.1%	5.2%	5.2%	7.4%	7.6%	8.4%	9.5%
AV. Water content %	3.1%		5.2%		7.5%		8.4%	
Dry Density	2.087		2.117		2.166		2.087	



Contractor

Name :

Ahmed Elsayed

Sign :

[Signature]

Consultant

mohamed elsaied

[Signature]

22-7-2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ. د. خالد غانم	 VUSTA SHARJH	Electric Express Train - 0255 Point of Absorption City (M.A. 0255) - 0255 Section - Point of Absorption City (M.A. 0255)	 وزارة النقل Ministry of Transport
		Point of Absorption City (M.A. 0255) - 0255	

Absorption Of coarse Aggregate

TESTING DATE:	15/07/2023	code	Station	507+000	509+000
LOCATION	K.P (507+300)	EGC (91)	Material	All material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2615	gm
Weight of saturated sample in water (C)	1531	gm
Weight of dry sample after heating (A)	2490	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.237	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.412	
Apparent specific gravity = $A / (A-C)$	2.596	
Absorption = $(B-A)/A$	2.52%	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Ahmed Hameed

Consultant Engineer

Name :

Sign :

mohamed elsayed

m.elsayed

u-123

California Bearing Ratio TEST ASTM D1883

Testing Date :	17/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (507+300)	EGG(01)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m ³	

Test Results

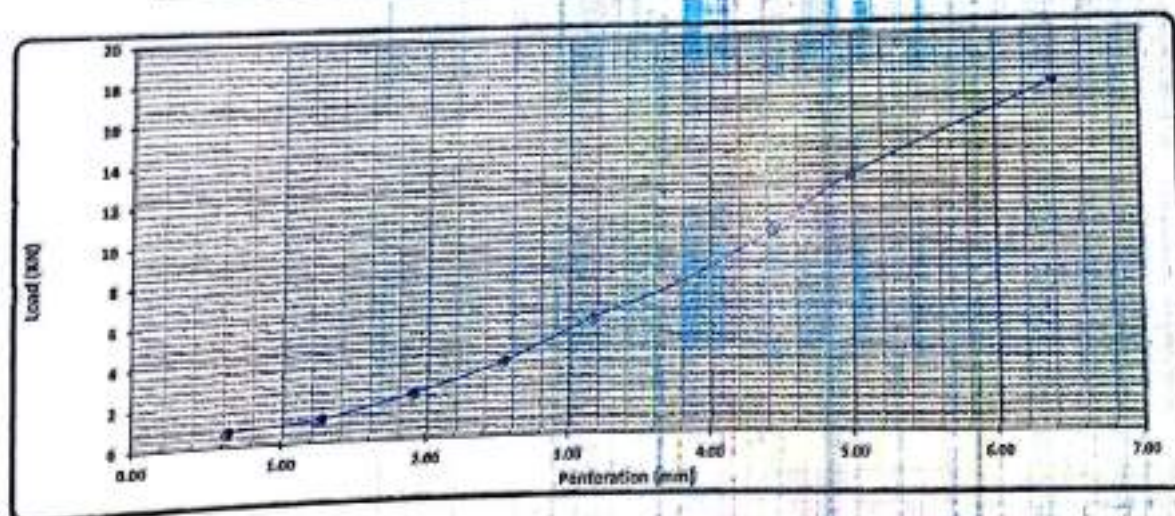
Compaction % for Mold	
Mold No.	2
Mold Vol (cm ³)	2118
Mold Wt. (gm)	5079
Mold Wt. + Wet Wt. (gm)	6206
Wet Wt. (gm)	4086
Wet Density (g/cm ³)	1.93
Dry Density (g/cm ³)	1.84
Proctor Density (g/cm ³)	2.123
Compaction %	86.9

Moisture Ratio After Compacted Mold	
Test No.	1
Vane Wt. (gm)	31.11
Tare Wt. + Wet Wt. (gm)	100
Tare Wt. + Dry Wt. (gm)	148.4
Water Wt. (gm)	7.4
Dry Wt. (gm)	141.1
Moisture Content %	5.2

Swelling	
Mold No.	2
Date	15/7/2023
Initial Height (mm)	0.40
Final Height (mm)	0.38
Difference	0.02
Swelling Ratio (%)	5.00%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.81	4.45	5.08	5.71
Load Reading (Kg)	10	20	30	40	50	60	70	80	90
Load (Kgf)	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4



Calculations :

Penetration (mm)	Load (Kgf)	Standard Load (Kgf)	CBR (%)	Mold Compaction (%)	Compaction (%)	CBR (%)
0.64	10	15.4	17.6%	86.9	86.9	38.6%
2.54	40	30.8	35.2%			77.2%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Hakeem

Sign :

Constant Engineer

Name : Mohamed Elsayed

Sign :

22-7-2023

Correction of Unit Weight and Water Content For Soils Containing oversize Particles (ASTM D-4718)			
Dry Unit Weight of Fine Fraction (γ_{20}) (gm/cm^3)	2.160	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	7.60	Date of Sample	17/7/2023
Specific Gravity of over Size Fraction (G_M)	2.280	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh
Sample Data			
	UNIT	VALUE	
Total Weight of Wet Sample	gm	55110	
Weight of Wet oversize Fraction (Retained 3/4)	gm	20345	1624.15
Weight of Wet Fine Fraction (Passing 3/4)	gm	32765	2348.85
Weight of Dry oversize Fraction (M_{OC})	gm	18921	الوزن الجاف
Weight of Dry Fine Fraction (M_{OF})	gm	29816	الوزن الجاف
Total Weight of Dry Sample	gm	48737	
Water Content of oversize Fraction (W_C)	%	0.08	
Water Content of Fine Fraction (W_F)	%	0.10	
Percent of oversize Fraction By Mass (P_C)	%	38.82	
Percent of Fine Fraction By Mass (P_F)	%	61.18	
Calculations of Corrected Water for oversize Fraction & Fine Fraction (W_{CF})			
Corrected Water for oversize Fraction & Fine Fraction (W_{CF})		$(W_F \cdot P_F) + (W_C \cdot P_C)$	8.97
Specific Gravity of over Size Fraction (G_M)	2.280		
Specific Gravity of Fine Fraction (γ_{20})	2.160	gm/cm^3	
Specific Gravity of Water (γ_w)	0.980		
Calculations of Correctd Unit Dry Weight of the Total Material (combined fine and oversize fractions) (γ_{20})			
Corrected Dry Unit Weight of Total Material (γ_{20})		$\frac{(\gamma_{20} \cdot G_M \cdot \gamma_w)}{((\gamma_{20} \cdot P_C) + (G_M \cdot \gamma_w \cdot P_F))}$	2.19
Corrected Maximum Dry Density (M.D.D)	2.19	gm/cm^3	
Corrected Optimum Moisture Content (O.M.C)	8.47	%	
LAB Manager AHMED HALEEM			





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 509+177



Operating lap: Al Tawkeel Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	17-07-2023	code:	ZONE	507+000	509+000
LOCATION	K.P (507+300)	EGC (92)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				TOTAL SAMPLE WEIGHT		44450.00	gm	table classify	
sieve size	2	1.5	1	4/3	2/1	3/3	# 4	PASS	soil classify
Mass retained (g)	0.0	1370.0	6345.0	7050.0	3220.0	4230.0	5325.0		CLASS A-1-A
Cumulative Retained (g)	0.0	1370.0	7715.0	14765.0	17985.0	22215.0	28035.0	16445.0	PRO 2.16
Cumulative Retained %	0.0	3.1	17.3	33.2	40.4	49.9	63.0		WC 7.70
Cumulative Passing %	100.0	96.9	82.7	66.8	59.6	50.1	36.97		CBR 49.40
								CORR.PRO	2.21
								CORR.WC	3.73

B-soft material gradation				WT.OF sample		500.00	gm
sieve size	10	40	200				
Cumulative Retained (g)	75.00	185.00	315.00				
Cumulative Retained %	15.00	37.00	63.00				
Cumulative Passing %	85.00	63.00	37.00				

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	96.9	82.7	66.8	59.6	50.1	37.0	31.4	23.3	11.60

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





Contractor

Name: Ahmed Haseem
 Sign:

Consultant

mohamed elsaied

 22-7-2023

 	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 509+177		 

MODIFIED PROCTOR TEST ASTM D1557

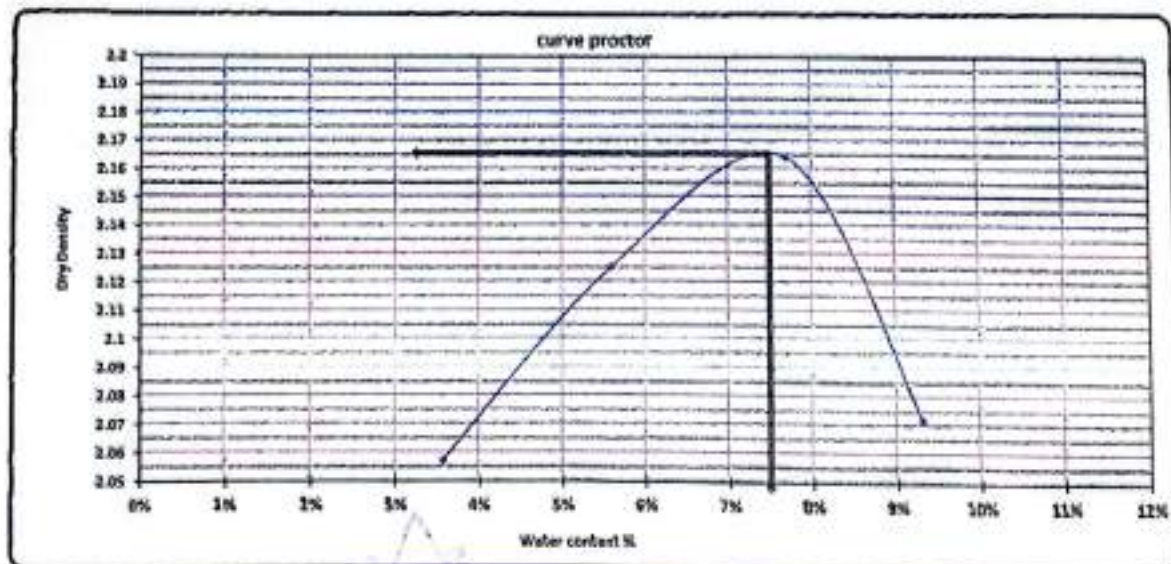
TESTING DATE:	18-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (507+300)		Material	fill material	
NAME COMPANY	EG-CONTRACT	EGG (92)	quantity	5000 m³	

Weight of empty mold :	5638.0
Mold Volume:	2124.0

MAX Dry Density	2.16
Water content %	7.7%

trial no :	1	2	3	4	
Wt. Of Mold + Wet Soil	10145.0	10333.0	10570.0	10430	
WT, WET SOIL	4525.0	4765.0	4950.0	4810.0	
Wt. Density	2.138	2.243	2.331	2.265	

Tare No.	5	3	9	13	14	19	21	23	
Tare wt.	56.83	55.72	55.88	53.21	56.51	56.33	54.47	54.4	
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	146.70	146.91	144.30	145.10	143.20	143.40	142.00	141.7	
Wt. Of water	3.3	3.1	5.7	4.9	6.8	6.6	8.0	8.3	
Wt. Of dry soil	90.7	91.1	88.9	91.9	86.7	87.3	87.6	87.3	
Water content %	3.6%	3.5%	5.8%	5.3%	7.8%	7.6%	9.1%	9.5%	
AV. Water content %	3.6%		5.6%		7.7%		9.3%		
Dry Density	2.057		2.125		2.164		2.072		



Contractor

Name : Ahmed Elshew



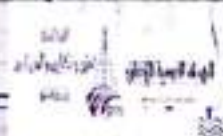
Sign :



Consultant

mohamed elsaied

m.elsaied
22-7-2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي ا.د. خالد فاضل	 SVO/TA	Electric Express Train - HSR	
		From El Ain El Sidhna City To El Alahule - MATROUH	
		Section - 7 From FORA To MARSA MATROUH	
		From Station 504+000 To Station 503+177	
Absorption Of coarse Aggregate			

TESTING DATE:	18/07/2023	code	Station	507+000	509+000
LOCATION	K.P (507+300)	EOC (02)	Material	6W material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2535	gm
Weight of saturated sample in water (C)	1493	gm
Weight of dry sample after heating (A)	2450	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.351	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.433	
Apparent specific gravity = $A / (A-C)$	2.560	
Absorption = $(B-A)/A$	3.460	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Hafeez

Sign :

Consultant Engineer

Name : Mohamed Elsaied

Sign :

(Signature)

22-7-2023



Electric Express Train - HSR

المملكة العربية السعودية
Kingdom of Saudi Arabia

California Bearing Ratio TEST ASTM D1883

Testing Date :	19/7/2023	Code :	FROM STA :	507+000	509+000
Location :	K.P (507+300)	EGC(92)	Material :	fill material	
Company Name :	EG-CONTRACT		quantity :	5000m ³	

-: Test Results

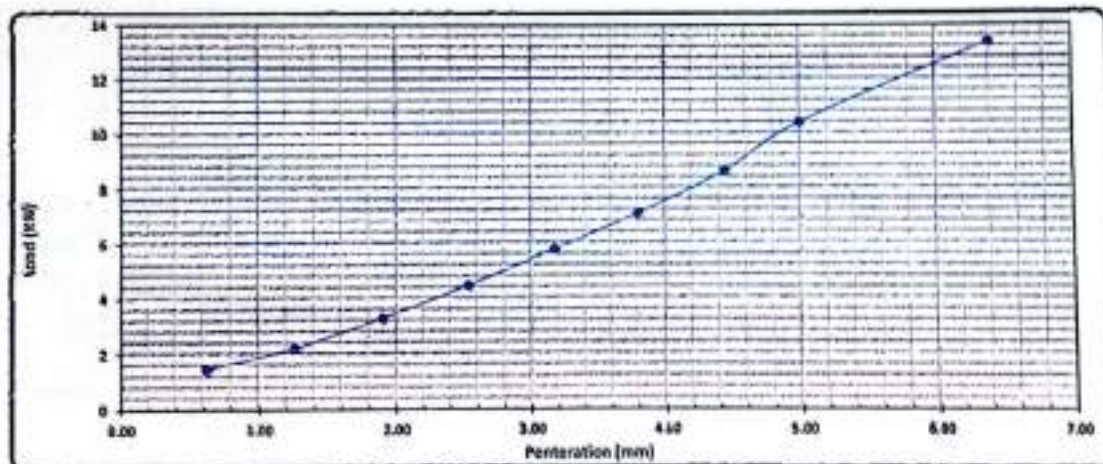
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm ³)	2168
Wet WT. (gms)	4823
Mold WT. + Wet WT. (gms)	5033
Wet WT. (gms)	4080
Wet Density (g/cm ³)	2.300
Dry Density (g/cm ³)	2.146
Proctor Density (g/cm ³)	2.122
Compaction %	49.4

Moisture Ratio After Compacted Mold	
Tare No.	15
Tare WT. (gms)	53.33
Tare WT. + Wet WT. (gms)	158
Tare WT. + Dry WT. (gms)	143.3
Wet WT. (gms)	6.7
Dry WT. (gms)	80.8
Moisture Content %	7.8

Swelling	
Mold No.	3
Date	19/7/2023
Initial Height (mm)	8.08
Final Height (mm)	8.18
Difference	0.10
Swollen Height (mm)	126.0
Swelling Ratio %	0.00%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.81	4.45	5.08	6.40
Load Reading (Kg)	156	243	310	496	651	710	804	1156	1185
Load (Kg)	1.4	2.2	3.2	4.4	5.7	6.0	6.6	10.4	13.2



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kg)	(lb)	(%)	(%)	(%)	95 % and 98 %
1.50	4.41	13.4	31.8%	99	98	31.8%
5.00	10.35	23.8	51.7%			48.4%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Hafeez

Sign :

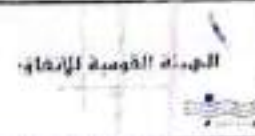
Consultant Engineer

Name: Mohamed Elsaied

Sign :

M. Elsaied

22-7-2023



Correction of Unit Weight and Water Content For Soils Containing oversize Particles
(ASTM D-4718)

Dry Unit Weight of Fine Fraction (γ_{df}) (gm/cm ³)	2.160	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	7.70	Date of Sample	18/7/2023
Specific Gravity of over Size Fraction (G_m)	2.350	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE	
Total Weight of Wet Sample	gm	44480	
Weight of Wet oversize Fraction (Retained 3/4)	gm	14760	
Weight of Wet Fine Fraction (Passing 3/4)	gm	29720	
Weight of Dry oversize Fraction (M_{dc})	gm	13727	الوزن الجاف
Weight of Dry Fine Fraction (M_{df})	gm	27045	الوزن الجاف
Total Weight of Dry Sample	gm	40772	
Water Content of oversize Fraction (W_c)	%	0.08	
Water Content of Fine Fraction (W_f)	%	0.10	
Percent of oversize Fraction By Mass (P_c)	%	33.67	
Percent of Fine Fraction By Mass (P_f)	%	66.33	

1033.2
2674.8

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_f) :-




Corrected Water for oversize Fraction & Finer Fraction (C_w)	$W_f P_f + W_c P_c$	9.09
Specific Gravity of over Size Fraction (G_m)	2.35	
Specific Gravity of Fine Fraction (γ_{df})	2.160	gm/cm ³
Specific Gravity of Water (γ_w)	0.980	

Calculations of Corrected Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{dt}) :-

Corrected Dry Unit Weight of Total Material (γ_{dt})	$(\gamma_{df} \cdot G_m \cdot \gamma_w)$	2.21
	$((\gamma_{df} \cdot P_c) + (G_m \cdot \gamma_w \cdot P_f))$	
Corrected Maximum Dry Density (M.D.D)	2.21	gm/cm ³
Corrected Optimum Moisture Content (O.M.C)	9.09	%

LAB Manager
AHMED HALEEM

Ahmed

 KK ENGINEERING CONSULTING OFFICE مكتب الاستشارات الهندسية ك.ع.م.	 SVOTRA SHAKER	Electric Express Train - HSN From El Ajla El Bakhara City To El Alamein - (KAT) (KUB) Section - 7 From FOKA To MAKSA MATROUK From Station 507+000 To Station 509+000		 وزارة النقل والاقتصاد م.ن.ا.ا.
		Opening tap Al Tawkef Central Lab		

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	15-07-2023	0039	ZONE	507+000	509+000
LOCATION	K.P (507+300)	500 (500)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	8000 m³	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				TOTAL SAMPLE WEIGHT		4455.00	gm		table classify
sieve size	2	1.5	1	4/3	3/4	2/3	#4	PA22	soil classify
Mass retained (g)	0.0	1580.0	8300.0	5940.0	2115.0	1007.0	1025.0		CLASS
Cumulative Retained (g)	0.0	2680.0	11480.0	21100.0	23570.0	27550.0	32845.0	16010.0	PRO
Cumulative Retained %	0.0	5.1	25.5	43.2	48.9	67.0	67.2		WC
Cumulative Passing %	100.0	94.8	74.5	56.8	51.1	43.0	32.77		CBR
									Qual. No
									Qual. No

B-soft material gradation				WT. OF sample		500.00	gm
sieve size	10	40	200				
Cumulative Retained (g)	125.00	335.00	335.00				
Cumulative Retained %	25.00	67.00	67.00				
Cumulative Passing %	75.00	33.00	33.00				

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	94.8	74.5	56.8	51.1	43.0	32.8	24.6	17.4	10.0

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

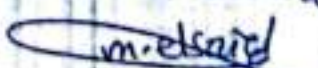
Contractor




Name
Sign

Ahmed Haseem



Consultant

Mohamed elsaied

 22-7-2023

 	Electric Express Train - HSR		
	From El Ain El Sokhna City To El Monasia - (MAYKOUR)		
	Section - 7 From FOKA TO BASSA MATHOUSI		
From Station 504+000 To Station 505+177			

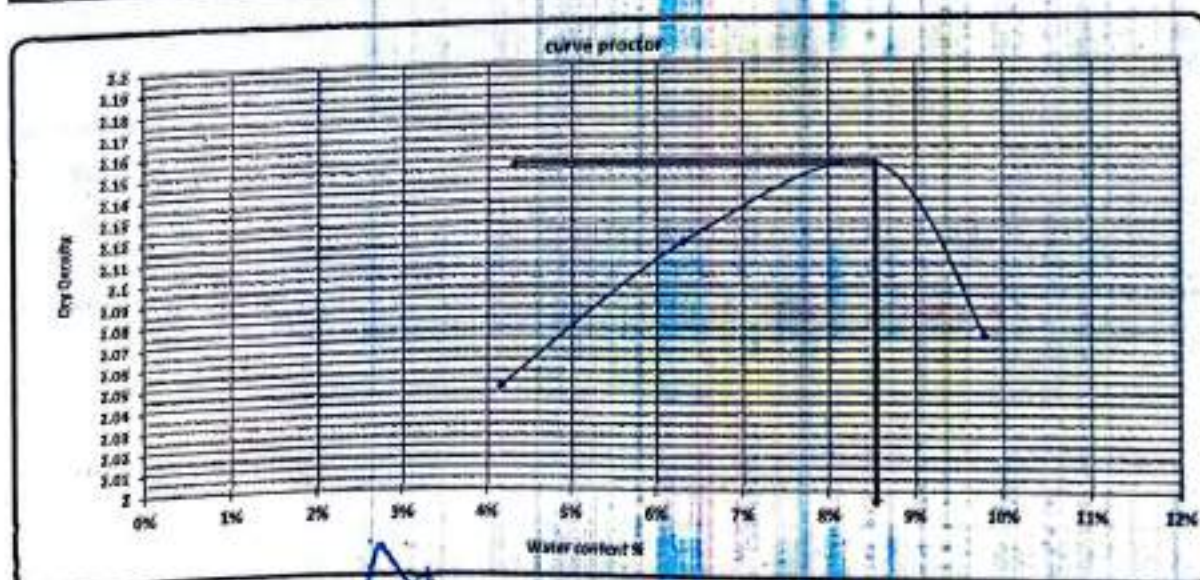
MODIFIED PROCTOR TEST ASTM D1557

TESTING DATE:	16-07-2023	5000	ZONE	507+000	509+000
LOCATION	K.P (507+500)	EGC (90)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of empty mold :	5020.0	MEAN Dry Density	2.15
Mold Volume:	1114.0	Water content %	8.5%

trial no :	1	2	3	4	
Wt. Of Mold + Wet Soil	16150.0	16195.0	16190.0	16453	
WT. WET SOIL	4536.0	4775.0	4900.0	4850.0	
Wt. Density	2.133	2.249	2.335	2.374	

Tare No.	5	6	7	8	9	10	11		
Tare wt.	55.23	54.32	53.08	54.81	55.16	54.35	54.34	53.18	
Wt. Of wet soil & tare	154.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	
Wt. Of dry soil & tare	140.36	140.30	144.20	140.40	140.70	143.65	141.60	141.3	
Wt. Of water	13.6	9.7	5.8	9.6	9.3	6.6	8.4	8.7	
Wt. Of dry soil	90.6	93.0	93.7	90.8	84.7	88.3	87.3	87.4	
Water content %	4.3%	4.8%	6.4%	6.2%	8.6%	8.5%	9.6%	10.0%	
AV. Water content %	4.3%		6.3%		8.6%		9.8%		
Dry Density	2.046		2.116		2.153		2.071		



Contractor

Name : Ahmed M. Elsayed




Sign :

Consultant

mohamed elsayed

m. elsayed

22-7-2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فاضل	 SVS TRA SHAKER	Electric Traction Train - HSE From Station 507+000 To Station 509+000 Station 507+000 To Station 509+000	 وزارة النقل والبنى التحتية م.م.م.
		From Station 507+000 To Station 509+000	

Absorption Of coarse Aggregate

TESTING DATE:	16/07/2013	Grade	Station	507+000	509+000
LOCATION	K.P (507+300)	EGC (50)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m ³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2620	gm
Weight of saturated sample in water (C)	1530	gm
Weight of dry sample after heating (A)	2490	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.280	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.404	
Apparent specific gravity = $A / (A-C)$	2.594	
Absorption = $(B-A)/A$	5.22%	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Ahmed H. H.

Consultant Engineer

Name :





Sign :

Mohamed Elsaid

M. Elsaid

22-7-2013



 	Electric Express Train - HSR	 
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California Bearing Ratio TEST ASTM D1883

Testing Date :	17/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (507+300)	EGC (20)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m ³	

Test Results

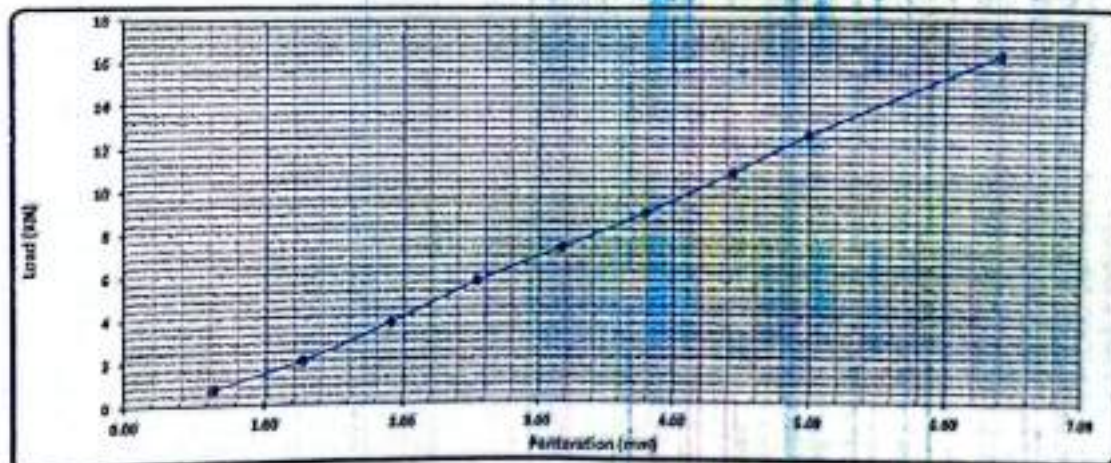
Compaction % for Mold	
Mold No.	1
Moist Vol. (cm ³)	2102
Mold WT. (gm)	820
Mold WT. + Wet WT. (gm)	7602
Wet WT. (gm)	6782
Wet Density (g/cm ³)	1.833
Dry Density (g/cm ³)	1.618
Proctor Density (g/cm ³)	1.654
Compaction %	106.8

Moisture Ratio After Compacted Mold	
Test No.	1
Test WT. (gm)	5425
Test WT. + W. WT. (gm)	140
Test WT. + Dry WT. (gm)	1525
Water WT. (gm)	7.8
Dry WT. (gm)	88.2
Moisture Content %	8.5

Swelling	
Mold No.	1
Wet	1755.23
Initial Height (mm)	8.20
Final Height (mm)	8.20
Difference	0.00
Swelling Ratio (%)	0.01%

Loading Reading :

Penetration (mm)	0.04	1.27	1.91	2.54	3.18	3.81	4.45	5.08	6.40
Load Reading (Kg)	70	317	419	513	710	875	1112	1397	1814
Load (KN)	6.7	3.1	3.7	5.0	7.0	8.6	10.7	13.8	16.5



Calculations :

Penetration (mm)	Load (KN)	Standard Load (KN)	CBR (%)	Moist. Compaction (%)	CBR (%)	CBR (%)
2.54	5.0	15.4	31.4%	100	32	33.0%
5.08	10.7	34.4	61.7%		72	69.2%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Hadeel

Sign :

Contract Engineer

Name : Mohamed Elsaid

Sign :

22-7-2023



الهيئة العامة للطيران المدني
(GACRA)



المملكة العربية السعودية
Kingdom of Saudi Arabia

Correction of Unit Weight and Water Content For Soils Containing Oversize Portion

(ASTM D-4719)

Dry Unit Weight of Fine Fraction (γ_{df}) (gm/cm^3)	2.150	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	8.60	Date of Sample	15/7/2023
Specific Gravity of over Size Fraction (G_m)	2.280	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matruh

Sample Data	UNIT	Value	
Total Weight of Wet Sample	gm	42955	
Weight of Wet oversize Fraction (Retained 3/4)	gm	21100	1477
Weight of Wet Fine Fraction (Passing 3/4)	gm	21755	2897.95
Weight of Dry oversize Fraction (M_{dc})	gm	19023	
Weight of Dry Fine Fraction (M_{df})	gm	25157	
Total Weight of Dry Sample	gm	44180	
Water Content of oversize Fraction (W_c)	%	0.08	
Water Content of Fine Fraction (W_f)	%	0.10	
Percent of oversize Fraction By Mass (P_c)	%	43.72	
Percent of Fine Fraction By Mass (P_f)	%	56.28	

Calculations of Corrected Water for oversize Fraction & Fine Fraction (%)

Corrected Water for oversize Fraction & Fine Fraction (W_c)	$W_c P_c + W_f P_f$		8.86
Specific Gravity of over Size Fraction (G_m)	2.28		
Specific Gravity of Fine Fraction (γ_{df})	2.150	gm/cm^3	
Specific Gravity of Water (γ_w)	0.980		

Calculations of Corrected Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{dc})

Corrected Dry Unit Weight of Total Material (γ_{dc})	$\frac{(\gamma_{df} \cdot G_m \cdot \gamma_w)}{[(\gamma_{df} \cdot P_c) + (G_m \cdot \gamma_w \cdot P_f)]}$		2.19
Corrected Maximum Dry Density (M.D.D)	2.19	gm/cm^3	
Corrected Optimum Moisture Content (O.M.C)	8.86	%	

LAB Manager

AHMED HALEEM





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 503+177



Opreating lap Al Tawkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	22-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (508+300)	EGC (93)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

1-visual inspection test

2-Gradient test

4-gradation of bulk materials				TOTAL SAMPLE WEIGHT		43040.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify
Mass retained (g)	0.0	4500.0	7500.0	11400.0	2570.0	2451.0	2214.0		CLASS A-1-A
Cumulative Retained (g)	0.0	4500.0	12000.0	23400.0	25970.0	28421.0	30635.0	12405.0	PRO 2.20
Cumulative Retained %	0.0	10.5	27.9	54.4	60.3	66.0	71.2		WC 7.80
Cumulative Passing %	100.0	89.5	72.1	45.6	39.7	34.0	28.82		CBR 56.90
								CORR .PRO	2.27
								CORR .WC	9.90

B-soft material gradation				WT.OF sample		500.00	gm
sieve size	10	40	200				
Cumulative Retained (g)	60.00	160.00	300.00				
Cumulative Retained %	12.00	32.00	60.00				
Cumulative Passing %	88.00	68.00	40.00				

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	89.5	72.1	45.6	39.7	34.0	28.8	25.4	19.6	11.53

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

Contractor
 Name Ahmed Haleem
 Sign *Ahmed Haleem*

Consultant
mohamed elsaid
m.elsaid
 25-7-2023

Electric Express Train - HSR
From El Ain El Sokhna City To El Ajemoin - MATROUH
Section - 7 From FOKA TO MARSA MATROUH
From Station 504+000 To Station 508+177

MODIFIED PROCTOR TEST ASTM D1557

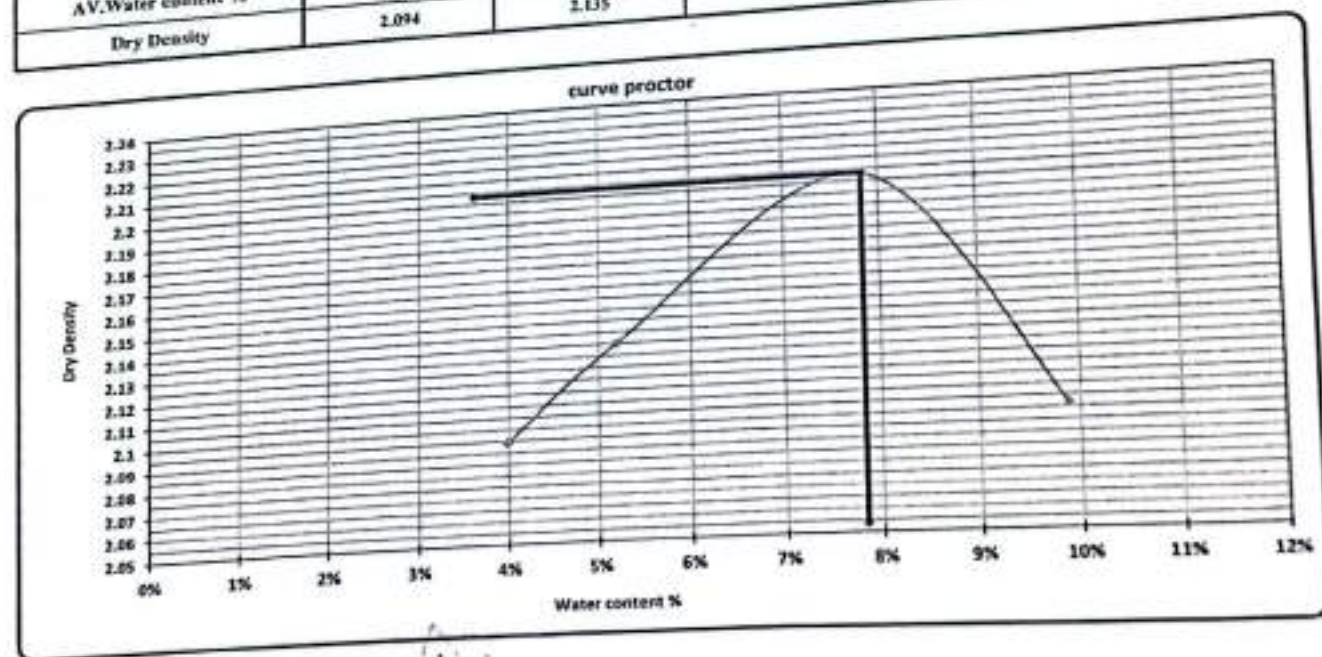
TESTING DATE:	23-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (508+300)	EGC (3%)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of empty mold :	5620.0
Mold Volume:	2124.0

MAX Dry Density	2.20
Water content %	7.8%

trial no :	1	2	3	4	
Wt. Of Mold + Wet Soil	10245.0	10390.0	10665.0	10525	
WT. WET SOIL	4625.0	4770.0	5045.0	4905.0	
Wt. Density	2.177	2.246	2.375	2.309	

Tare No.	1	2	6	5	7	8	9	4	
Tare wt.	55.08	54.34	54.73	54.66	55.84	53.91	56.05	54.95	
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	146.70	146.40	145.70	144.90	143.00	143.20	141.40	141.6	
Wt. Of water	3.7	3.6	4.3	5.1	7.0	6.8	8.6	8.4	
Wt. Of dry soil	91.2	92.1	91.0	90.2	87.2	89.3	85.4	86.7	
Water content %	4.1%	3.9%	4.7%	5.7%	8.0%	7.6%	10.1%	9.7%	
AV. Water content %	4.0%		5.2%		7.8%		9.9%		
Dry Density	2.094		2.135		2.203		2.102		



Contractor

Name : Ahmed Hakeem

Sign :




Ahmed Hakeem

Consultant

mohamed elsaid

m.elsaid

25-7-2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فاضل	 SVSTRA SHAREN	Electric Express Train - HSR From EL Ain El Sakina City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 524+000 To Station 550+177		
		Absorption Of coarse Aggregate		

TESTING DATE:	23/07/2023	code	Station	507+000	509+000
LOCATION	K.P (508+300)	EGC (93)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2590	gm
Weight of saturated sample in water (C)	1538	gm
Weight of dry sample after heating (A)	2500	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.376	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.462	
Apparent specific gravity = $A / (A-C)$	2.599	
Absorption = $(B-A)/A$	3.600	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Hafeem

Sign :

Ahmed Hafeem

Consultant Engineer

Name :

Sign :

mohamed elsaid
m.elsaid

25-7-2023

California Bearing Ratio TEST ASTM D1883

Testing Date :	24/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (508+300)	EGC(93)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m ³	

Test Results

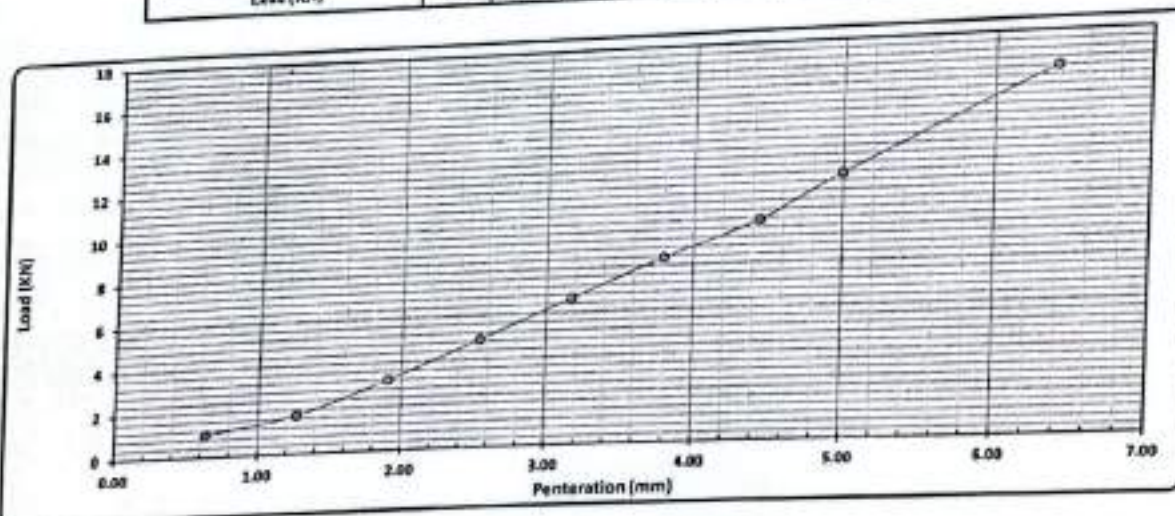
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm ³)	1130
Mold WT. (gm)	5318
Mold WT. + Wet WT. (gm)	11525
Wet WT. (gm)	5018
Wet Density (g/cm ³)	2.354
Dry Density (g/cm ³)	2.187
Proctor Density (g/cm ³)	2.280
Compaction %	95.4

Moisture Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	56
Tare WT. + Wet WT. (gm)	158
Tare WT. + Dry WT. (gm)	145.3
Water WT. (gm)	6.7
Dry WT. (gm)	87.3
Moisture Content %	7.7

Swelling	
Mold No.	1
Date	14/7/2023
Initial Height (mm)	20.00
Final Height (mm)	20.09
Difference	0.09
Sample Height (mm)	120.0
Swelling Ratio %	0.06%

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)	112	193	255	342	436	526	612	695	825
Load (KN)	1.1	1.7	2.2	2.9	3.6	4.3	5.0	5.9	7.4



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kg)	(Kg)	(%)	(%)	(%)	95 %
2.50	4.88	13.4	36.5%	99	95	34.9%
5.00	11.93	20.0	59.6%			56.9%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Hameed

Sign :

Consultant Engineer

Name : mohamed elsaid

Sign :

m-elsaid

25-7-2023



المهندسة
الهندسة والكهرباء والبناء
(EAB/EC)



المجلس الأعلى للتخطيط
الاستراتيجي
الجمهورية العربية السورية

Correction of Unit Weight and Water Content For Soils Containing oversize Particles (ASTM D-4718)

Dry Unit Weight of Fine Fraction (γ_{df}) (gm/cm ³)	2.200	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	7.80	Date of Sample	23/7/2023
Specific Gravity of over Size Fraction (G_M)	2.376	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE		
Total Weight of Wet Sample	gm	43040		
Weight of Wet oversize Fraction (Retained 3/4)	gm	23400		
Weight of Wet Fine Fraction (Passing 3/4)	gm	19640		
Weight of Dry oversize Fraction (M_{oc})	gm	21294	الوزن جاف	
Weight of Dry Fine Fraction (M_{df})	gm	17872	الوزن ناعم جاف	
Total Weight of Dry Sample	gm	39166		
Water Content of oversize Fraction (W_c)	%	0.10		
Water Content of Fine Fraction (W_f)	%	0.10		
Percent of oversize Fraction By Mass (P_c)	%	54.37		
Percent of Fine Fraction By Mass (P_f)	%	45.63		

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_T) :-

Corrected Water for oversize Fraction & Finer Fraction (C_w)	$W_f P_f + W_c P_c$	9.89
--	---------------------	------

Specific Gravity of over Size Fraction (G_M)	2.376			
Specific Gravity of Fine Fraction (γ_{df})	2.200	gm/cm ³		
Specific Gravity of Water (γ_w)	0.980			

Calculations of Correctd Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{DT}) :-

Calculations of Corrected Unit Dry Weight of the Total	(YDF * GM * YW)	2.27
Corrected Dry Unit Weight of Total Material (Y _{DT})	((YDF * PC) + (GM * YW * PF))	

Corrected Maximum Dry Density (M.D.D)	2.27	gm/cm ³
---------------------------------------	------	--------------------

Corrected Optimum Moisture Content (O.M.C)	9.89	%
--	------	---

LAB Manager

AHMED HALEEM

Ahmed Haleem

2106

1767.6



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 509+177



Operating lap: Al Tawkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	22-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (507+300)	EGC (B4)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	3000 m³	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				TOTAL SAMPLE WEIGHT		40400.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify
Mass retained (g)	0.0	2000.0	6000.0	11000.0	2400.0	2206.0	2214.0		CLASS
Cumulative Retained (g)	0.0	2000.0	8000.0	19000.0	22280.0	24486.0	26700.0	13700.0	PRO
Cumulative Retained %	0.0	5.0	19.8	49.0	55.1	60.6	66.1		WC
Cumulative Passing %	100.0	95.0	80.2	51.0	44.9	39.4	33.91		CBR
									CORR. PRO
									2.25
									CORR. WC
									9.30

B-soft material gradation			WT. OF sample		500.00		gm
sieve size	10	40	200				
Cumulative Retained (g)	60.00	155.00	305.00				
Cumulative Retained %	12.00	31.00	61.00				
Cumulative Passing %	88.00	69.00	39.00				

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	95.0	80.2	51.0	44.9	39.4	33.9	29.8	23.4	13.23

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

Contractor
Name: Ahmed Halpern
Sign:

Consultant
mohamed elsaied

25-7-2023

MODIFIED PROCTOR TEST ASTM D1557

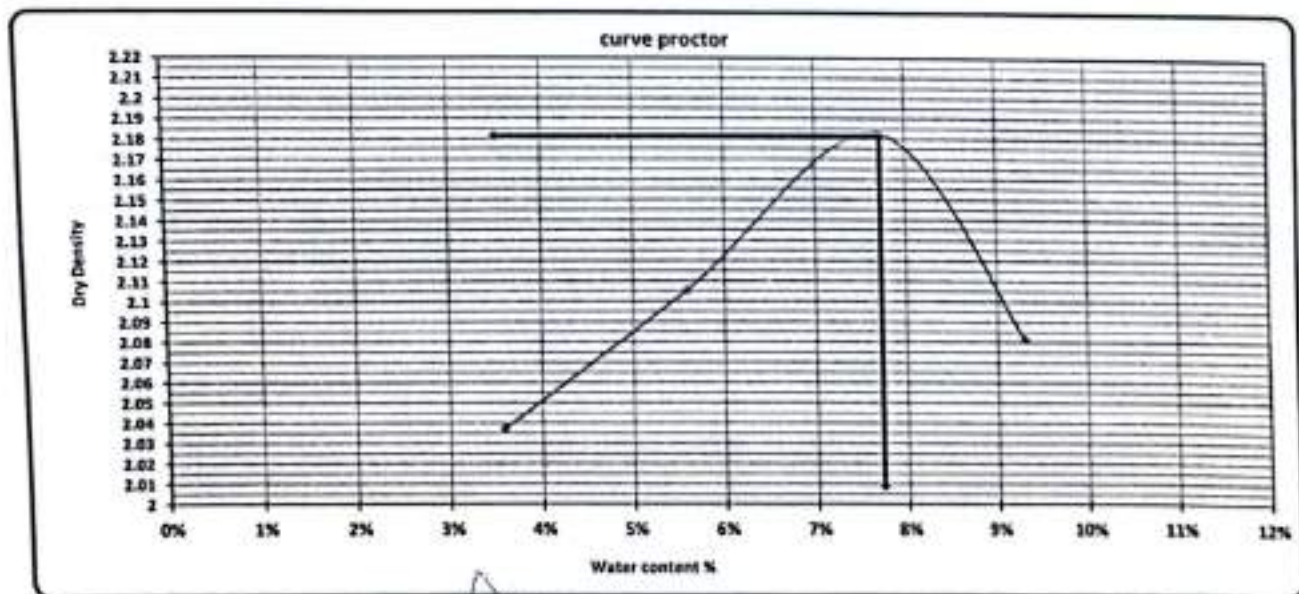
TESTING DATE:						23-07-2023		code		ZONE		507+000		509+000	
LOCATION						K.P (507+300)		EGC (94)		Material		fill material			
NAME COMPANY						EG-CONTRACT				quantity		3000 m³			

Weight of empty mold :	5620.0
Mold Volume:	2124.0

MAX Dry Density	2.18
Water content %	7.7%

trial no :	1	2	3	4	
WL Of Mold + Wet Soil	10102.0	10342.0	10613.0	10452	
WT. WET SOIL	4482.0	4722.0	4993.0	4832.0	
WL Density	2.110	2.223	2.351	2.275	

Tare No.	5	3	9	13	16	19	21	23		
Tare wt.	56.3	55.72	55.88	53.21	56.51	56.08	54.42	54.04		
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	146.70	146.80	144.80	145.10	143.20	143.40	142.00	141.7		
Wt. Of water	3.3	3.2	5.2	4.9	6.8	6.6	8.0	8.3		
Wt. Of dry soil	90.4	91.1	88.9	91.9	86.7	87.3	87.6	87.7		
Water content %	3.7%	3.5%	5.8%	5.3%	7.8%	7.6%	9.1%	9.5%		
AV. Water content %	3.6%		5.6%		7.7%		9.3%			
Dry Density	2.037		2.105		2.183		2.081			



Contractor

Name : Ahmed Elamrany
Sign : *[Signature]*

Consultant

mohamed elszaid

[Signature]

25-7-2023

Absorption Of coarse Aggregate

TESTING DATE:	23/07/2023	code	Station	507+000	509+000
LOCATION	K.P (507+300)	EGC (94)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	3000 m³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2590	gm
Weight of saturated sample in water (C)	1535	gm
Weight of dry sample after heating (A)	2495	gm

Results:-

Bulk specific gravity = A / (B-C)	2.365	
Bulk specific gravity (S.S.D) = B / (B-C)	2.455	
Apparent specific gravity = A / (A-C)	2.599	
Absorption = (B-A)/A	3.808	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Haleem

Sign :

Consultant Engineer

Name : mohamed elsaid

Sign :

m.elsaid

25-7-2023

California Bearing Ratio TEST ASTM D1883

Testing Date :	24/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (507+300)	EGC(94)	Material	fill material	
Company Name	EG-CONTRACT		quantity	3000m ³	

Test Results

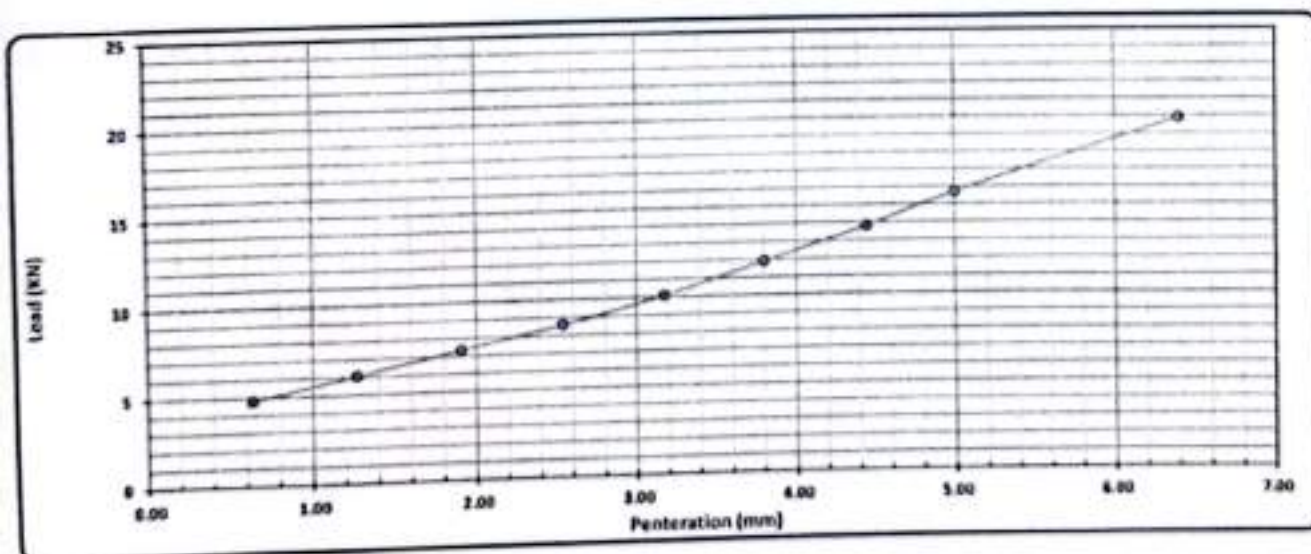
Compaction % for Mold	
Mold No.	1
Mold Vol.(cm ³)	2130
Mold WT. (gm)	5310
Mold WT. + Wet WT. (gm)	10325
Wet WT. (gm)	5015
Wet Density (g/cm ³)	2.354
Dry Density (g/cm ³)	2.189
Proctor Density (g/cm ³)	2.180
Compaction %	100.4

Moisture Ratio After Compacted Mold	
Tare No.	10
Tare WT. (gm)	56
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.4
Water WT. (gm)	6.6
Dry WT. (gm)	87.4
Moisture Content %	7.6

Swelling	
Mold No.	1
Date	24/7/2023
Initial Height (mm)	10.00
Final Height (mm)	10.00
Difference	0.00
Sample Height (mm)	120.0
Swelling Ratio %	0.00%

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)	534	674	814	954	1120	1322	1534	1744	2219
Load (KN)	4.8	6.1	7.3	8.6	10.1	11.9	13.8	15.7	19.9



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kia)	(lb)	(%)	(%)	(%)	95 Soil on %
2.50	8.59	13.4	64.3%	100	95	60.8%
5.00	15.70	20.8	78.4%			76.2%

Lab. Specialist

Lab. Engineer

Consultant Engineer

Name :

Name :

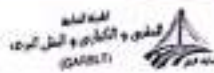
Name : mohamed elsaied

Sign :

Sign :

Sign :

25-7-2023



Correction of Unit Weight and Water Content For Soils Containing oversize Particles

(ASTM D-4718)

Dry Unit Weight of Fine Fraction (γ_{DF}) (gm/cm ³)	2.180	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	7.70	Date of Sample	23/7/2023
Specific Gravity of over Size Fraction (G_M)	2.365	Project	Express Train Project
Specific Gravity of Water (γ_W)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE	
Total Weight of Wet Sample	gm	40400	
Weight of Wet oversize Fraction (Retained 3/4)	gm	19800	
Weight of Wet Fine Fraction (Passing 3/4)	gm	20600	
Weight of Dry oversize Fraction (M_{OC})	gm	18018	الوزن جاف
Weight of Dry Fine Fraction (M_{OF})	gm	18952	الوزن ناعم جاف
Total Weight of Dry Sample	gm	36970	
Water Content of oversize Fraction (W_C)	%	0.10	
Water Content of Fine Fraction (W_F)	%	0.09	
Percent of oversize Fraction By Mass (P_C)	%	48.74	
Percent of Fine Fraction By Mass (P_F)	%	51.26	

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_T) :-

Corrected Water for oversize Fraction & Finer Fraction (C_W)	$W_F P_F + W_C P_C$		9.28
Specific Gravity of over Size Fraction (G_M)	2.365		
Specific Gravity of Fine Fraction (γ_{DF})	2.180	gm/cm ³	
Specific Gravity of Water (γ_W)	0.980		

Calculations of Corrected Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{DT}) :-

Corrected Dry Unit Weight of Total Material (γ_{DT})	$(\gamma_{DF} \cdot G_M \cdot \gamma_W)$		2.25
	$((\gamma_{DF} \cdot P_C) + (G_M \cdot \gamma_W \cdot P_F))$		
Corrected Maximum Dry Density (M.D.D)	2.25	gm/cm ³	
Corrected Optimum Moisture Content (O.M.C)	9.28	%	

LAB Manager

AHMED HALEEM

Ahmed

1782

1648

Al Tawkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	24-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (508+300)	EGC (95)	Material	fill material	
NAME COMPANY	EG-CONTRACT	quantity		5000 m³	
1-visual inspection test					
2-Gradient test					

A-gradation of bulk materials

sieve size	2	1.5	1	TOTAL SAMPLE WEIGHT		56710.00		gm		table classify
Mass retained (g)	0.0	2000.0	6000.0	4/3	2/1	8/3	# 4	PASS		soil classify
Cumulative Retained (g)	0.0	2000.0	8000.0	11245.0	4500.0	5450.0	4625.0		CLASS	A-1-A
Cumulative Retained %	0.0	3.5	14.1	19245.0	23745.0	29195.0	33820.0	22890.0	PRO	2.16
Cumulative Passing %	100.0	96.5	85.9	33.9	41.9	51.5	59.6		WC	7.50
				66.1	58.1	48.5	40.36		CBR	52.00
									CORR.PRO	2.21
									CORR.WC	8.70

B-soft material gradation

sieve size	10	40	200	WT.OF sample		500.00		gm
Cumulative Retained (g)	75.00	165.00	320.00					
Cumulative Retained %	15.00	33.00	64.00					
Cumulative Passing %	85.00	67.00	36.00					

C-General gradient

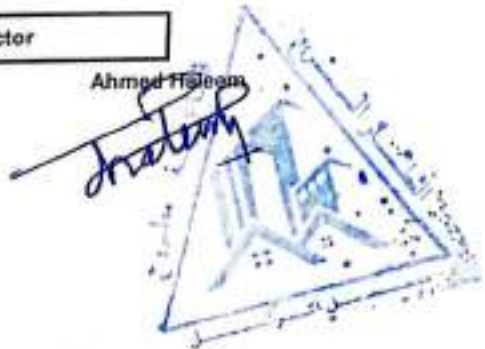
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	96.5	85.9	66.1	58.1	48.5	40.4	34.3	27.0	14.33

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

Contractor

Name Ahmed H. H. H.

Sign




Consultant

mohamed elsaid

m.elsaid

29-7-2023

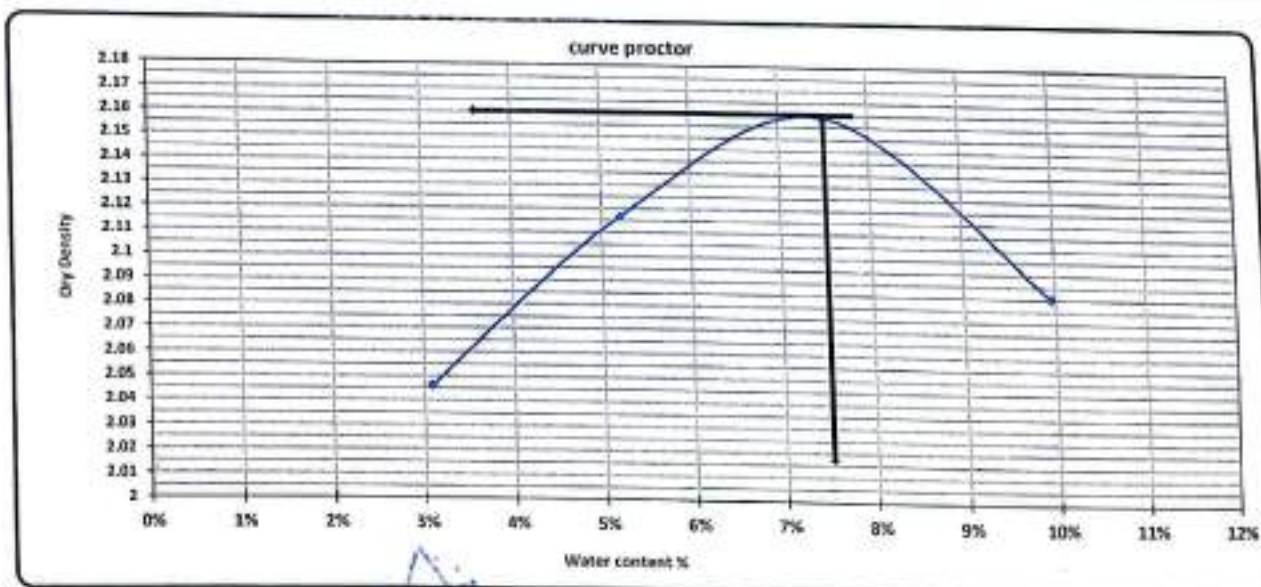
	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177		
	MODIFIED PROCTOR TEST ASTM D1557		

TESTING DATE:	25-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (508+300)				
NAME COMPANY	EG-CONTRACT	EGC (95)	Material	fill material	
			quantity	5000 m³	

Weight of empty mold :	5620.0	MAX Dry Density	2.16
Mold Volume:	2124.0	Water content %	7.5%

trial no :	1	2	3	4	
Wt. Of Mold + Wet Soil	10160.0	10350.0	10550.0	10490	
WT. WET SOIL	4480.0	4730.0	4930.0	4870.0	
Wt. Density	2.109	2.227	2.321	2.293	

Tare No.	16	17	18	19	20	21	22	23		
Tare wt.	55.35	54.36	54.48	53.63	55.22	54.28	54.22	56.62		
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	147.20	147.10	145.30	145.20	143.50	143.20	141.80	141.1		
Wt. Of water	2.8	2.9	4.7	4.8	6.5	6.8	8.2	8.9		
Wt. Of dry soil	91.9	92.7	90.8	91.6	88.3	88.9	87.6	84.5		
Water content %	3.0%	3.1%	5.2%	5.2%	7.4%	7.6%	9.4%	10.5%		
AV. Water content %	3.1%		5.2%		7.5%		10.0%			
Dry Density	2.046		2.117		2.189		2.085			



Contractor

Name : Ahmed Hegazy




Sign :

Consultant

mohamed elsaied

m.elsaied

24-7-2023

 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فاضل	 SYSTRA	Electric Express Train - HSR	 الهيئة العامة للسكك الحديدية مصر
		From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 554+000 To Station 588+177	
Absorption Of coarse Aggregate			

TESTING DATE:	25/07/2023	code	Station	507+000	509+000
LOCATION	K.P (508+300)	EGC (05)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2530	gm
Weight of saturated sample in water (C)	1492	gm
Weight of dry sample after heating (A)	2450	gm

Results:-

Bulk specific gravity = A / (B-C)	2.300	
Bulk specific gravity (S.S.D) = B / (B-C)	2.437	
Apparent specific gravity = A / (A-C)	2.557	
Absorption = (B-A)/A	1.253	%

Lab. Specialist

Name : 

Sign :

Lab. Engineer

Name : Ahmed Hafeem

Sign :

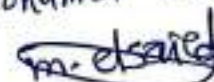


Consultant Engineer

Name :

Sign :

mohamed elsaied



29-7-2023

California Bearing Ratio TEST ASTM D1883

Testing Date :	27/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (508+300)	EGC(95)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m ³	

:- Test Results

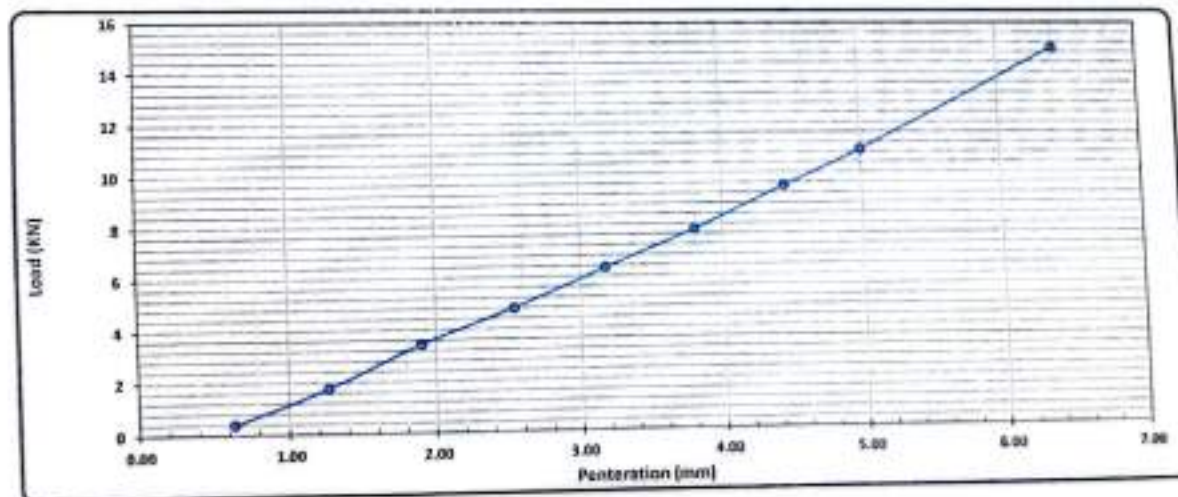
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm ³)	1138
Mold WT. (gm)	5316
Mold WT. + Wet WT. (gm)	10225
Wet WT. (gm)	4915
Wet Density (g/cm ³)	2.388
Dry Density (g/cm ³)	2.148
Proctor Density (g/cm ³)	2.100
Compaction %	99.5

Moisture Ratio After Compacted Mold	
Tare No.	21
Tare WT. (gm)	51.35
Tare WT. + Wet WT. (gm)	158
Tare WT. + Dry WT. (gm)	143.2
Water WT. (gm)	6.8
Dry WT. (gm)	81.9
Moisture Content %	7.4

Swelling	
Mold No.	1
Date	27/7/2023
Initial Height (mm)	15.00
Final Height (mm)	15.00
Difference	0.00
Sample Height (mm)	120.8
Swelling Ratio %	0.00%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	6.40
Load Reading (Kg)	42	195	382	552	792	865	1053	1211	1663
Load (KN)	0.4	1.8	3.4	4.8	6.3	7.8	9.5	10.9	15.0



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kg)	(lb)	(%)	(%)	(%)	(%)
2.50	4.79	13.4	35.9%	99	95	34.3%
5.00	10.50	20.0	52.4%			52.0%

Lab. Supervisor

Name :

Sign :

Lab. Engineer

Name :

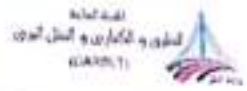
Sign :

Consultant Engineer

Name : Mohamed Elsaied

Sign :

29-7-2023



Correction of Unit Weight and Water Content For Soils Containing oversize Particles
(ASTM D-4718)

Dry Unit Weight of Fine Fraction (γ_{DF}) (gm/cm ³)	2.160	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	7.50	Date of Sample	27/7/2023
Specific Gravity of over Size Fraction (G_M)	2.360	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE	
Total Weight of Wet Sample	gm	56710	
Weight of Wet oversize Fraction (Retained 3/4)	gm	19245	1539.6
Weight of Wet Fine Fraction (Passing 3/4)	gm	37465	2997.2
Weight of Dry oversize Fraction (M_{DC})	gm	17705	الوزن خشن جاف
Weight of Dry Fine Fraction (M_{DF})	gm	34468	الوزن ناعم جاف
Total Weight of Dry Sample	gm	52173	
Water Content of oversize Fraction (W_C)	%	0.09	
Water Content of Fine Fraction (W_F)	%	0.09	
Percent of oversize Fraction By Mass (P_C)	%	33.94	
Percent of Fine Fraction By Mass (P_F)	%	66.06	

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_T) :-

Corrected Water for oversize Fraction & Finer Fraction (C_W)	$W_F P_F + W_C P_C$	8.70
Specific Gravity of over Size Fraction (G_M)	2.360	
Specific Gravity of Fine Fraction (γ_{DF})	2.160	gm/cm ³
Specific Gravity of Water (γ_w)	0.980	

Calculations of Correctd Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{DT}) :-

Corrected Dry Unit Weight of Total Material (γ_{DT})	$(\gamma_{DF} * G_M * \gamma_w)$	2.21
	$((\gamma_{DF} * P_C) + (G_M * \gamma_w * P_F))$	
Corrected Maximum Dry Density (M.D.D)	2.21	gm/cm ³
Corrected Optimum Moisture Content (O.M.C)	8.70	%

LAB Manager
AHMED HALEEM





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 548+577



Operating lap

Al Tawkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:		25-07-2023		code		ZONE		507+000		509+000	
LOCATION		K.P (507+300)		EGC (96)		Material		fill material			
TEST COMPANY		EG-CONTRACT				quantity		5000 m³			
soil inspection test											

radiant test

radiation of bulk material

				TOTAL SAMPLE WEIGHT		50433.00		gm		
sieve size	2	1.5	1	4/3	2/1	3/3	# 4	PASS	table classify	soil classify
Mass retained (g)	0.0	2500.0	5500.0	11040.0	4632.0	5321.0	4865.0		CLASS	A-1-A
Cumulative Retained (g)	0.0	2500.0	8000.0	19040.0	23672.0	28993.0	33858.0	16573.0	PRO	2.17
Cumulative Retained %	0.0	5.0	15.9	37.6	46.9	57.3	67.1		WC	7.70
Cumulative Passing %	100.0	95.0	84.1	62.2	53.1	42.5	32.9		GBR	86.90
									CORR PRO	2.22
									CORR WC	8.70

soil material gradation

				WT. OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	75.00	165.00	320.00					
Cumulative Retained %	15.00	33.00	64.00					
Cumulative Passing %	85.00	67.00	36.00					

general gradient

sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	95.0	84.1	62.2	53.1	42.5	32.9	27.9	22.0	11.33

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

Contractor

Name

Ahmed Haldem

Sign

[Signature]

Consultant

mohamed elsaied

[Signature]

29-7-2023

Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 508+177 MODIFIED PROCTOR TEST ASTM D1557

TESTING DATE:

26-07-2023

LOCATION

K.P (507+300)

NAME COMPANY

EG-CONTRACT

code

EOC (96)

ZONE

Material

quantity

507+000

509+000

fill material

5000 m³

Weight of empty mold :

5628.0

Mold Volume:

2124.0

MAX Dry Density

2.17

Water content %

7.7%

trial no :

1

2

3

4

Wt. Of Mold + Wet Soil

10100.0

10350.0

10590.0

10490

WT. WET SOIL

4480.0

4730.0

4970.0

4870.0

Wt. Density

2.109

2.127

2.340

2.293

Tare No.

5

3

6

9

7

14

15

16

Tare wt.

56.44

54.58

56.55

55.21

55.31

56.32

54.21

57.33

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

147.20

147.10

145.30

145.20

143.40

143.20

141.80

141.1

Wt. Of water

2.8

2.9

4.7

4.8

6.6

6.8

8.2

8.9

Wt. Of dry soil

90.8

92.5

88.8

90.0

88.1

86.9

87.6

83.8

Water content %

3.1%

3.1%

5.3%

5.3%

7.5%

7.8%

9.8%

13.4%

AV. Water content %

3.1%

5.3%

7.7%

10.0%

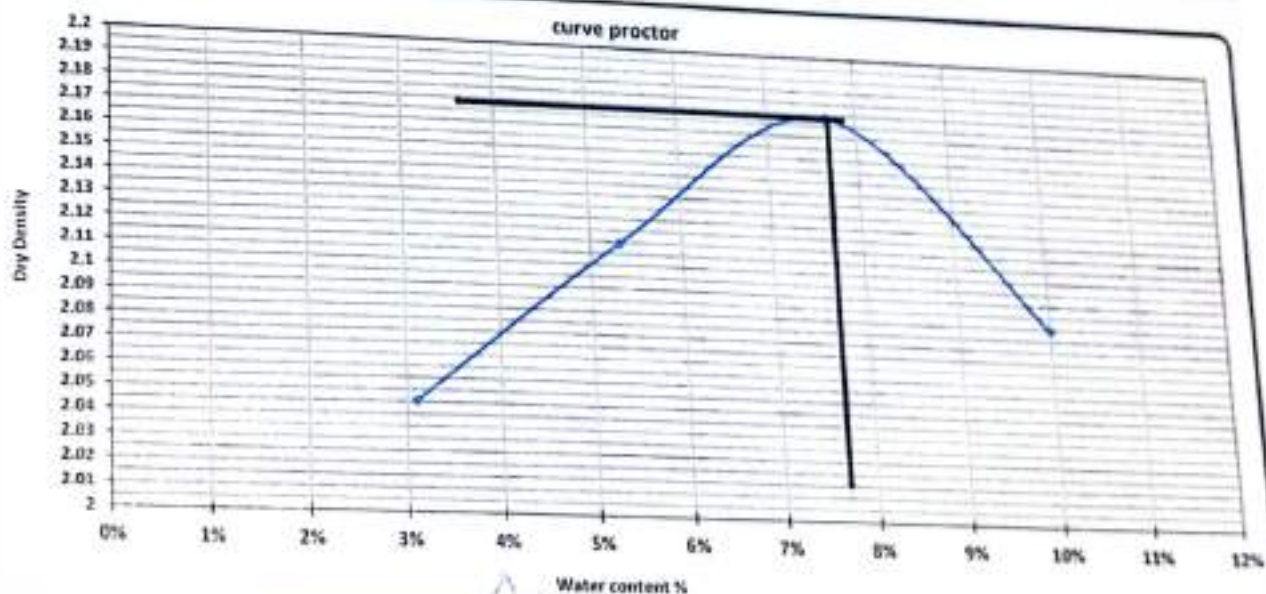
Dry Density

2.044

2.115

2.173

2.064



Contractor

Name : Ahmed Elsayed

Sign :

Consultant

mohamed elsayed

m. elsayed

29-7-2023

Absorption Of coarse Aggregate

TESTING DATE:	26/07/2023	code	Station	507+000	509+000
LOCATION	K.P (507+300)	EGC (96)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m ³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2525	gm
Weight of saturated sample in water (C)	1490	gm
Weight of dry sample after heating (A)	2440	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.357	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.440	
Apparent specific gravity = $A / (A-C)$	2.568	
Absorption = $(B-A)/A$	3.484	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Ahmed Hakeem

Consultant Engineer

Name :

Sign :

mohamed elsaied

m. elsaied

29-7-2023



Electric Express Train - HSR

California Bearing Ratio TEST ASTM D1883

Date :	27/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (507+300)	EGC(96)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m³	

Test Results

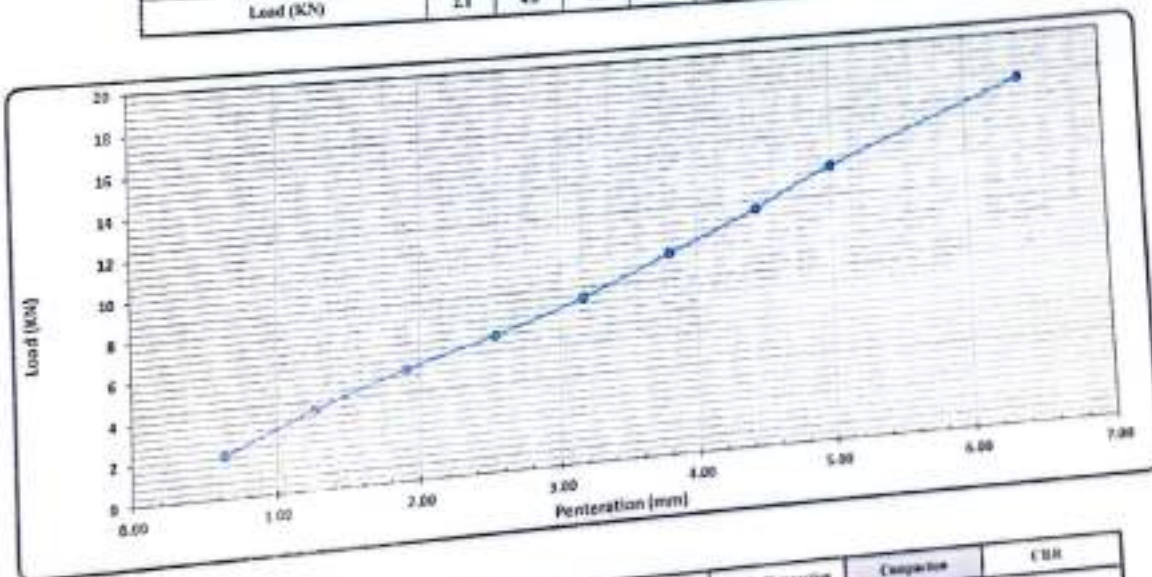
Compaction % for Mold	
Mold No.	1
Mold Vol.(cm³)	2215
Mold WT.(gm)	5170
Mold WT. + Wet WT.(gm)	10332
Wet WT.(gm)	5162
Wet Density (g/cm³)	2.330
Dry Density (g/cm³)	2.167
Proctor Density (g/cm³)	2.170
Compaction %	99.9

Moisture Ratio After Compacted Mold	
Tare No.	15
Tare WT.(gm)	91.22
Tare WT. + Wet WT.(gm)	150
Tare WT. + Dry WT.(gm)	943
Water WT.(gm)	7.8
Dry WT.(gm)	92.8
Moisture Content %	7.3

Swelling	
Mold No.	1
Date	27/7/2023
Initial Height (mm)	38.88
Final Height (mm)	38.88
Diffrence	0.00
Sample Weight (mm)	128.8
Swelling Ratio %	0.00%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	6.40
Load Reading (Kg)	234	442	614	754	920	1122	1334	1544	1966
Load (KN)	2.3	4.0	6.5	6.8	8.3	10.1	12.8	13.9	17.7



Calculations :-

Penetration (mm)	Load (KN)	Standard Load (lb)	CBR (%)	Mold - Comparison (%)	Compaction (%)	CBR
0.64	2.3	13.4	50.8%	100	95	95.4%
2.54	6.8	20.0	67.4%			66.0%
5.08	13.9					

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

mohamed elsaied

m.elsaied

29-7-2023



السلطة الفلسطينية
Ministry of Public Works and Urban Planning
سلطة الأشغال والبناء

مجلس إدارة
Board of Directors



المجلس التنفيذي
Executive Council



Correction of Unit Weight and Water Content For Soils Containing oversize Particles (ASTM D-4718)

Unit Weight of Fine Fraction (γ_{DF}) (gm/cm ³)	2.170	Company	EG-CONTRACT
Maximum Moisture Content (O.M.C) (%)	7.70	Date of Sample	27/7/2023
Specific Gravity of over Size Fraction (G_M)	2.357	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE	
Total Weight of Wet Sample	gm	51430	
Weight of Wet oversize Fraction (Retained 3/4)	gm	19040	
Weight of Wet Fine Fraction (Passing 3/4)	gm	32390	
Weight of Dry oversize Fraction (M_{DC})	gm	17517	الوزن جاف
Weight of Dry Fine Fraction (M_{DF})	gm	29799	الوزن ناعم جاف
Total Weight of Dry Sample	gm	47316	
Water Content of oversize Fraction (W_C)	%	0.09	
Water Content of Fine Fraction (W_F)	%	0.09	
Percent of oversize Fraction By Mass (P_C)	%	37.02	
Percent of Fine Fraction By Mass (P_F)	%	62.98	

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_T) :-

Corrected Water for oversize Fraction & Finer Fraction (C_W)	$W_F P_F + W_C P_C$	8.70
Specific Gravity of over Size Fraction (G_M)	2.357	
Specific Gravity of Fine Fraction (γ_{DF})	2.170	gm/cm ³
Specific Gravity of Water (γ_w)	0.980	

Calculations of Correctd Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{DT}):-

Corrected Dry Unit Weight of Total Material (γ_{DT})	$(\gamma_{DF} * G_M * \gamma_w)$	2.22
	$((\gamma_{DF} * P_C) + (G_M * \gamma_w * P_F))$	

Corrected Maximum Dry Density (M.D.D)	2.22	gm/cm ³
Corrected Optimum Moisture Content (O.M.C)	6.70	%

LAB Manager
AHMED HALEEM



1523.2
2591.2



Electric Express Train - HSR
 From El Ain El Sokhna City To El Alamein - MATROUH
 Section - 7 From FOKA To MARSA MATROUH
 From Station 504+300 To Station 508+177



Operating tap

Al Tawkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	26-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (508+300)	EG-137	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				TOTAL SAMPLE WEIGHT		44170.00	gm		table classify
sieve size	2	1.5	1	4/3	2/1	3/3	# 4	PASS	soil classify
Mass retained (g)	8.0	2000.0	6000.0	9508.0	3112.0	4537.0	4403.0		CLASS A-1-A
Cumulative Retained (g)	8.0	2008.0	8008.0	17688.0	20789.0	25317.0	29720.0	14450.0	PRO 2.17
Cumulative Retained %	0.0	4.0	18.1	40.0	47.0	57.3	67.3		WC 6.50
Cumulative Passing %	100.0	96.0	81.9	60.0	53.0	42.7	32.71		CBR 58.80
									CORR PRO 2.22
									CORR WC 8.23

B-soil material gradation				WT. OF sample		500.00	gm
sieve size	10	40	200				
Cumulative Retained (g)	55.00	140.00	200.00				
Cumulative Retained %	11.00	28.00	56.00				
Cumulative Passing %	89.00	72.00	44.00				

General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	95.5	81.9	60.0	53.0	42.7	32.7	29.1	23.6	14.33

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

Contractor

Name

Sign

Ahmed Hossam
[Signature]

Consultant

mohamed elsaied

m.elsaied

29-7-2023



 ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ. د. خالد فاضل	 SVS/TA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Marsa - MATROUH Section - T From FOKA To MARSA MATROUH From Station 534+000 To Station 588+177		 الهيئة العامة للنقل الوزارة العامة للنقل والاقتصاد
		Absorption Of coarse Aggregate		

TESTING DATE:	27/07/2023	code	Station	587+000	588+000
LOCATION	K.P (508+300)	EGC (97)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m ³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2610	gm
Weight of saturated sample in water (C)	1550	gm
Weight of dry sample after heating (A)	2490	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.349	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.462	
Apparent specific gravity = $A / (A-C)$	2.649	
Absorption = $(B-A)/A$	4.819	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed Halem

Sign :

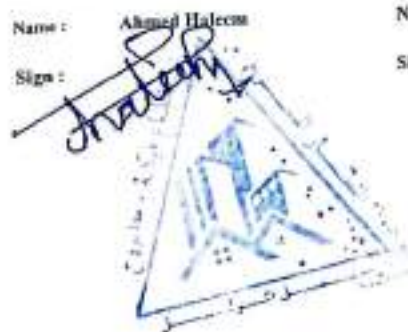
Consultant Engineer

Name : mohamed elszied

Sign :

m-elszied

29-7-2023



California Bearing Ratio TEST ASTM D1883

Testing Date :	29/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (508+300)	EGC(97)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m³	

Test Results

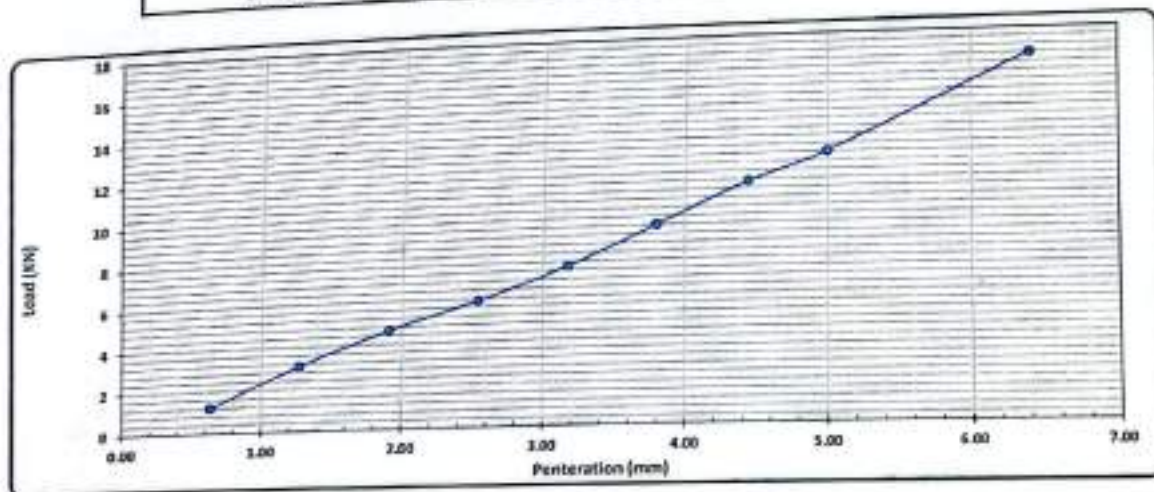
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm³)	2166
Mold WT. (gm)	4854
Mold WT. + Wet WT. (gm)	8652
Wet WT. (gm)	5002
Wet Density (g/cm³)	2.316
Dry Density (g/cm³)	2.172
Proctor Density (g/cm³)	2.170
Compaction %	100.1

Moisture Ratio After Compacted Mold	
Tare No.	21
Tare WT. (gm)	53.12
Tare WT. + Wet WT. (gm)	190
Tare WT. + Dry WT. (gm)	144
Wet WT. (gm)	6.8
Dry WT. (gm)	80.8
Moisture Content %	6.6

Swelling	
Mold No.	3
Date	29/7/2023
Initial Height (mm)	30.00
Final Height (mm)	31.80
Difference	1.80
Sample Height (mm)	126.0
Swelling Ratio %	0.98%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.83	4.45	5.00	6.49
Load Reading (Kg)	134	342	514	654	810	1012	1234	1380	1860
Load (KN)	1.3	3.3	4.6	5.9	7.4	9.2	11.3	12.4	16.8



Calculations :-

Penetration (mm)	Load (KN)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR
2.50	5.89	13.4	44.1%	100	95	41.8%
5.00	12.42	26.8	62.0%			58.9%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

mohamed elsaied

m.elsaied

29-7-2023

Correction of Unit Weight and Water Content For Soils Containing oversize Particles
(ASTM D-4718)

Dry Unit Weight of Fine Fraction (γ_{DF}) (gm/cm ³)	2.170	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	6.50	Date of Sample	29/7/2023
Specific Gravity of over Size Fraction (G_M)	2.349	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE		
Weight of Wet Sample	gm	44170		
Weight of Wet oversize Fraction (Retained 3/4)	gm	17668		1236.76
Weight of Wet Fine Fraction (Passing 3/4)	gm	26502		2120.16
Weight of Dry oversize Fraction (M_{DC})	gm	16431	الوزن جاف	
Weight of Dry Fine Fraction (M_{DF})	gm	24382	الوزن لاعم جاف	
Weight of Dry Sample	gm	40813		
Water Content of oversize Fraction (W_C)	%	0.08		
Water Content of Fine Fraction (W_F)	%	0.09		
Percent of oversize Fraction By Mass (P_C)	%	40.26		
Percent of Fine Fraction By Mass (P_F)	%	59.74		

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_T) :-

Corrected Water for oversize Fraction & Finer Fraction (C_W)	$W_F P_F + W_C P_C$	8.23
Specific Gravity of over Size Fraction (G_M)	2.349	
Specific Gravity of Fine Fraction (γ_{DF})	2.170	gm/cm ³
Specific Gravity of Water (γ_w)	0.980	

Calculations of Correctd Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{DT}) :-

Corrected Dry Unit Weight of Total Material (γ_{DT})	$(\gamma_{DF} * G_M * \gamma_w)$ $((\gamma_{DF} * P_C) + (G_M * \gamma_w * P_F))$	2.22
Corrected Maximum Dry Density (M.D.D)	2.22	gm/cm ³
Corrected Optimum Moisture Content (O.M.C)	8.23	%

LAB Manager
AHMED HALEEM





Electric Express Train - HSR
From El Ain El Sokhna City To El Alamein - MATROUH
Section - 3 From FORA To MARSA MATROUH
From Station 504+205 To Station 508+177



PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	24-07-2023	CODE	ZONE	507+000	508+000
LOCATION	K.P (508+300)	EGG (S)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	
1-visual inspection test					
2-Gradient test					

A-gradation of bulk materials

sieve size	2	1.5	1	TOTAL SAMPLE WEIGHT		507+000	gm		
Mass retained (g)	0.0	2000.0	6000.0	11245.0	4500.0	5450.0	4625.0	PASS	
Cumulative Retained (g)	0.0	2000.0	8000.0	19245.0	23745.0	29195.0	33820.0	CLASS	A-1-A
Cumulative Retained %	0.0	3.5	14.1	33.8	41.8	51.8	59.8	PRO	2.18
Cumulative Passing %	100.0	96.5	85.9	66.1	58.1	48.2	40.2	WC	7.08
								CBR	52.08
								CBR PRO	2.21
								CBR MC	9.70

B-soft material gradation

sieve size	10	40	200	WT OF sample		500.00	gm
Cumulative Retained (g)	75.00	165.00	320.00				
Cumulative Retained %	15.00	33.00	64.00				
Cumulative Passing %	85.00	67.00	36.00				

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	96.5	85.9	66.1	58.1	48.2	40.2	34.3	27.8	18.02

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

Contractor

Name: Ahmed Mohamed
Sign:

Consultant

mohamed elsaid

29-7-2023



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 566+177



MODIFIED PROCTOR TEST ASTM D1557

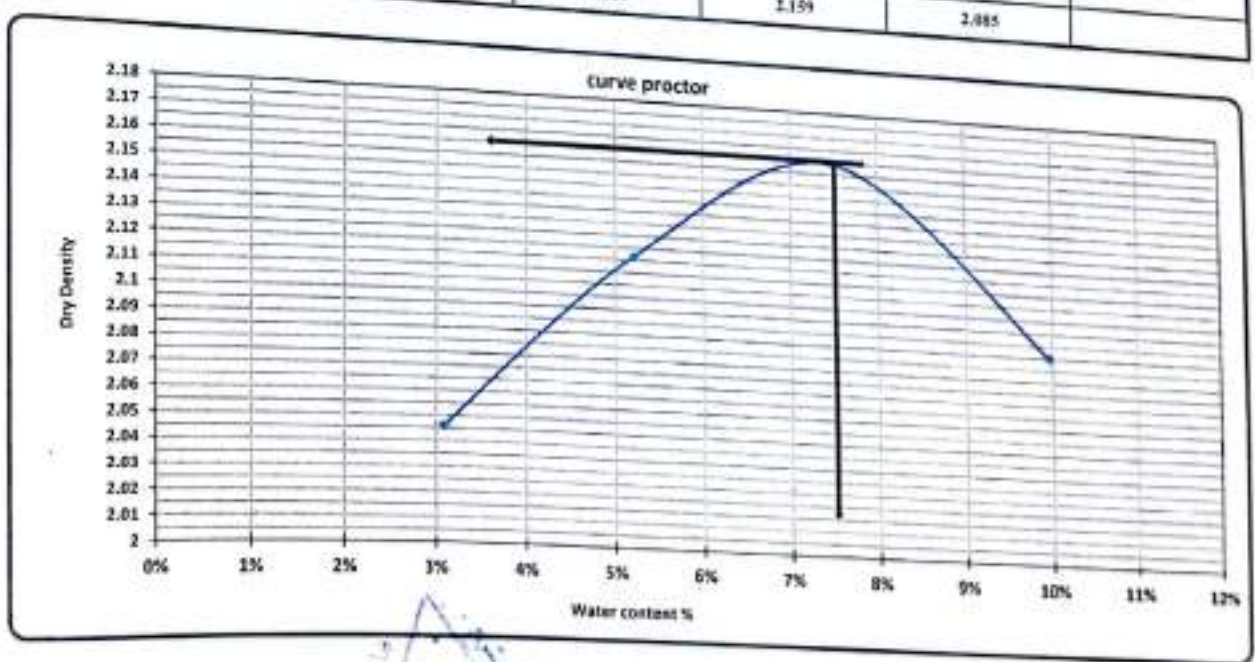
TESTING DATE:	25-07-2023	code	ZONE
LOCATION	K.P (508+300)	EGC (95)	Material
NAME COMPANY	EG-CONTRACT	quantity	507+000 509+500
			fill material
			5000 m³

Weight of empty mold :	5620.0
Mold Volume:	2124.0

MAX Dry Density	2.16
Water content %	7.5%

trial no :	1	2	3	4	
Wt. Of Mold + Wet Soil	10160.0	10350.0	10550.0	10490	
WT. WET SOIL	4480.0	4730.0	4930.0	4870.0	
Wt. Density	2.109	2.227	2.321	2.293	

Tare No.	16	17	18	19	20	21	22	23		
Tare wt.	55.35	54.36	54.48	53.63	55.22	54.28	54.22	56.62		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	158.0		
Wt. Of dry soil & tare	147.20	147.10	145.30	145.20	143.50	143.20	141.90	141.1		
Wt. Of water	2.8	2.9	4.7	4.8	6.5	6.8	8.2	8.9		
Wt. Of dry soil	91.9	92.7	90.8	91.6	88.3	88.9	87.6	84.5		
Water content %	3.0%	3.1%	5.2%	5.2%	7.4%	7.6%	9.4%	10.5%		
AV. Water content %	3.1%		5.2%		7.4%		9.4%			
Dry Density	2.046		2.187		2.159		2.085			




Contractor

Name : Ahmed Hefson
Sign :


Consultant

mohamed elsaied

29-7-2023




ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. فلاح فاضل



VSTRA SHAKER

Electric Express Train - HSR
From El Ain El Sakina City To El Alamein - MATROUH
Section - T From FOKA To MARSA MATROUH
From Station 504+000 To Station 508+177



س.م.ت.

Absorption Of coarse Aggregate

TESTING DATE:	25/07/2023	code	Station	507+000	509+000
LOCATION	K.P (508+300)	EGC (95)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity		
				5000 m³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2530	gm
Weight of saturated sample in water (C)	1492	gm
Weight of dry sample after heating (A)	2450	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.360	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.437	
Apparent specific gravity = $A / (A-C)$	2.557	
Absorption = $(B-A)/A$	3.265	%

Lab. Specialist

Name : 

Sign :

Lab. Engineer

Name : Ahmed Hafeem

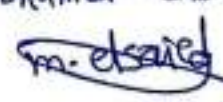
Sign :



Consultant Engineer

Name : mohamed elsaied

Sign :



29-7-2023

Electric Express Train - HSR

California Bearing Ratio TEST ASTM D1883

Testing Date :	27/7/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (508+300)	EGC(95)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m'	

Test Results

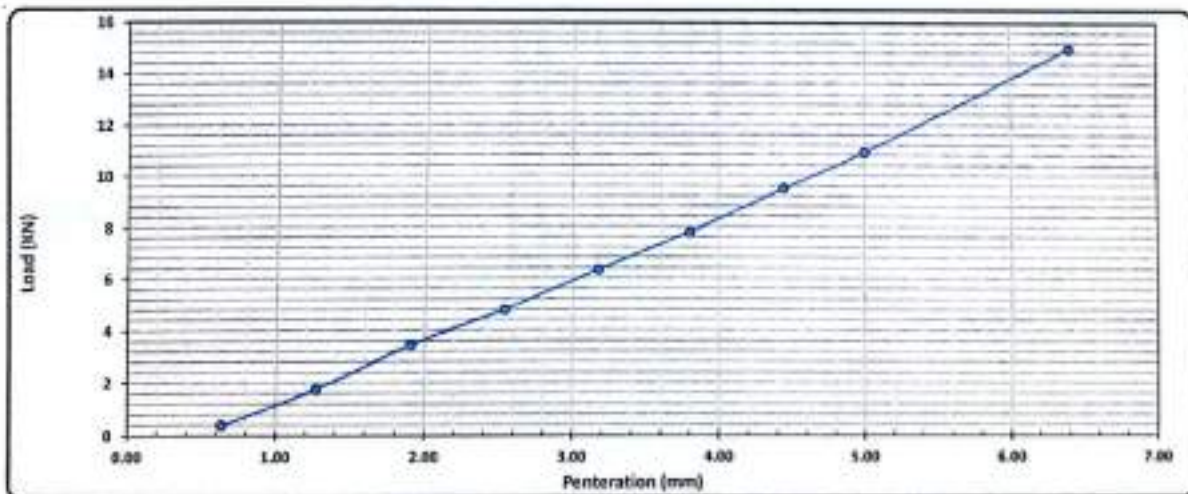
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm ³)	2130
Mold WT. (gm)	5310
Mold WT. + Wet WT. (gm)	10228
Wet WT. (gm)	4918
Wet Density (g/cm ³)	1.908
Dry Density (g/cm ³)	1.148
Theoretical Density (g/cm ³)	1.140
Compaction %	99.5

Moisture Ratio After Compacted Mold	
Tare No.	21
Tare WT. (gm)	51.33
Tare WT. + Wet WT. (gm)	158
Tare WT. + Dry WT. (gm)	143.2
Water WT. (gm)	6.8
Dry WT. (gm)	91.9
Moisture Content %	7.4

Swelling	
Mold No.	1
Date	27/7/2023
Initial Height (mm)	15.88
Final Height (mm)	15.88
Difference	0.00
Sample Height (mm)	128.8
Swelling Ratio %	0.00%

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)	42	195	382	532	702	865	1053	1211	1663
Load (KN)	0.4	1.8	3.4	4.8	6.3	7.8	9.5	10.9	15.0



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(KN)	(lb)	(%)	(%)	(%)	45 lb/in ² %
2.50	4.79	11.4	35.9%	99	95	34.3%
5.00	10.99	20.0	54.4%			52.0%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Consultant Engineer

Name :

Sign :

29-7-2023

Correction of Unit Weight and Water Content For Soils Containing oversize Particles
(ASTM D-4718)

Dry Unit Weight of Fine Fraction (γ_{df}) (gm/cm ³)	2.160	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	7.50	Date of Sample	27/7/2023
Specific Gravity of over Size Fraction (G_m)	2.360	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE		
Total Weight of Wet Sample	gm	56710		
Weight of Wet oversize Fraction (Retained 3/4)	gm	19245		1539.6
Weight of Wet Fine Fraction (Passing 3/4)	gm	37465		2997.2
Weight of Dry oversize Fraction (M_{dc})	gm	17705	الوزن جاف	
Weight of Dry Fine Fraction (M_{df})	gm	34468	الوزن جاف	
Total Weight of Dry Sample	gm	52173		
Water Content of oversize Fraction (W_c)	%	0.09		
Water Content of Fine Fraction (W_f)	%	0.09		
Percent of oversize Fraction By Mass (P_c)	%	33.94		
Percent of Fine Fraction By Mass (P_f)	%	66.06		

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_T) :-




Corrected Water for oversize Fraction & Finer Fraction (C_w)	$W_f P_f + W_c P_c$	8.70
Specific Gravity of over Size Fraction (G_m)	2.360	
Specific Gravity of Fine Fraction (γ_{df})	2.160	gm/cm ³
Specific Gravity of Water (γ_w)	0.980	

Calculations of Correctd Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{dt}) :-

Corrected Dry Unit Weight of Total Material (γ_{dt})	$(\gamma_{df} * G_m * \gamma_w)$	2.21
	$((\gamma_{df} * P_c) + (G_m * \gamma_w * P_f))$	
Corrected Maximum Dry Density (M.D.D)	2.21	gm/cm ³
Corrected Optimum Moisture Content (O.M.C)	8.70	%

LAB Manager

AHMED HALEEM

 K.K. KAWKAB شركة كوكاب للتجارة والبناء (شركة مساهمة مصرية)	 SUEZ CANAL قناة السويس	Electric Express Train - HSR From El Ain El Sokheia City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 505+177	 وزارة النقل Ministry of Transport
Operating lap	Al Tawkol Central Lab		

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	29-07-2023	CODE	ZONE	507+000	509+000
LOCATION	K.P (507+300)	EGC (25)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				TOTAL SAMPLE WEIGHT		54145.00		gm	table classify	
sieve size	2	1.5	1	40	20	80	#4	PASS	soil classify	
Mass retained (g)	1122.0	3214.0	5013.0	8908.0	1881.0	5037.0	4401.0		CLASS	A-1-A
Cumulative Retained (g)	1122.0	4336.0	9349.0	18257.0	24068.0	30177.0	34578.0	19405.0	PRO	2.19
Cumulative Retained %	2.1	8.0	18.4	35.0	45.5	55.8	64.1		WC	6.09
Cumulative Passing %	97.9	92.0	81.6	65.0	54.5	44.1	35.95		CBR	98.50
									CBR PRO	2.23
									CBR WC	2.20

B-soft material gradation				WT. OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	60.00	160.00	240.00					
Cumulative Retained %	12.00	32.00	48.00					
Cumulative Passing %	88.00	64.00	52.00					

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 %	97.9	92.0	81.6	65.0	54.5	44.1	35.9	31.6	23.0	13.00

ATTERBERG LIMITS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	34.51%	19.19%	5.32%

Contractor

Name
Sign

Ahmed Halaoui



Consultant

mohamed elsaied

m. elsaied

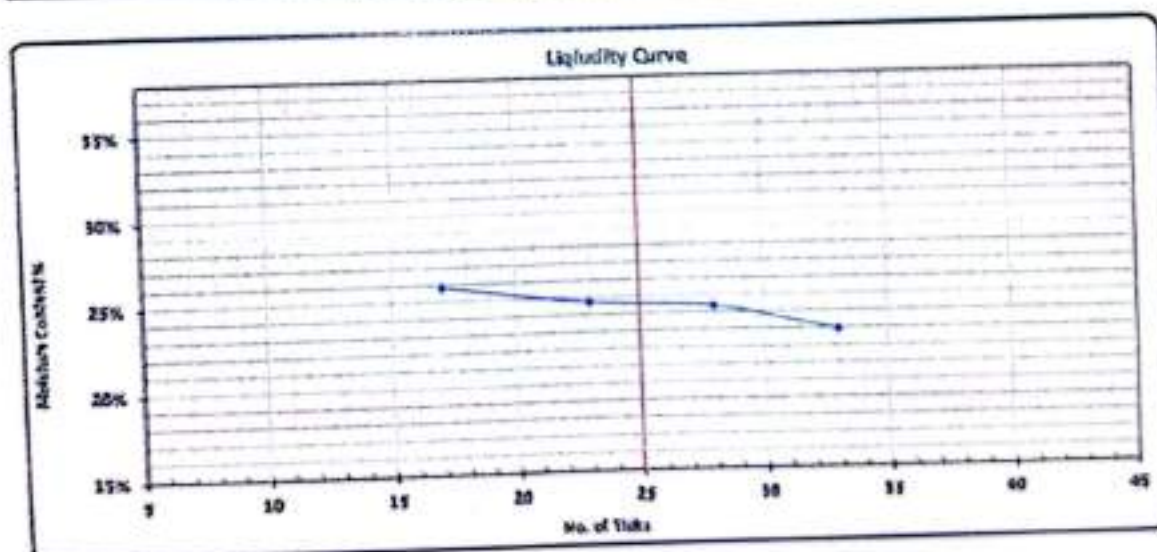
31-7-2023

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	29/7/2023	CODE	Station	507+000	507+000
Location:	K.P (507+300)	EGC (98)	Material	fill material	
Company Name	EG CONTRACT		quantity	5000m³	

Testing Results :-

Test	Liquid Limit				Plastic Limit	
No. of Ticks	33	28	23	17	-	-
Tare Wt.	12	13	14	15	16	17
Tare WT. (gm)	57.14	55.35	54.41	55.83	55.54	57.02
Tare WT. + Wet WT. (gm)	81.77	76.79	69.74	70.05	55.90	59.62
Tare WT. + Dry WT. (gm)	72.20	73.59	66.70	67.13	55.5	59.4
Water WT. (gm)	4.97	4.20	3.04	2.92	0.39	0.27
Dry WT. (gm)	31.66	17.34	13.28	11.39	3.08	1.43
Moisture Content %	22.5%	24.4%	24.7%	25.8%	19.5%	18.9%
Average %					19.2%	





L.L.	P.L.	P.I.
24.51 %	19.19 %	5.32 %

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : mohamed elsaied
Sign :	Sign :	Sign : m elsaied



31-7-2023

 ENGINEERING CONSULTING OFFICE المهندسين الاستشاريين والبناء إ.م.م. ك.ك.	 SYSTEMS	E-240210 Engineer Train - HQE From (3) Km (3) Station City To (3) Alameda - MATROUKA Section - 1 From (1) Km To (1) MATROUKA MATROUKA From Station (1) Km To (1) Station (1) Km	
		Absorption Of coarse Aggregate	

TESTING DATE:	30/07/2023	Code	Station	507+000	507+000
LOCATION	K.P (507+300)	EGC (38)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m ³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2600	gm
Weight of saturated sample in water (C)	1543	gm
Weight of dry sample after heating (A)	2485	gm

Results:-

Bulk specific gravity = $A / (B-C)$	2.361	
Bulk specific gravity (S.S.D) = $B / (B-C)$	2.460	
Apparent specific gravity = $A / (A-C)$	2.538	
Absorption = $(B-A)/A$	0.022	%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name : Ahmed H. H.

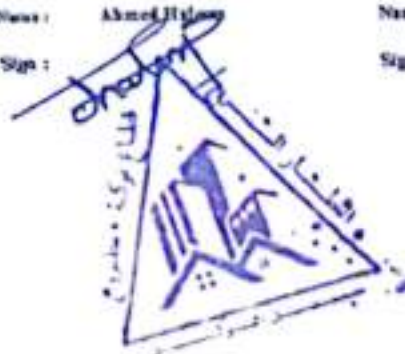
Sign :

Consultant Engineer

Name : Mohamed Elsayid

Sign : m.elsayid

31-7-2023



California Bearing Ratio TEST ASTM D1557

Testing Date :	31.7.2013	Code :	PROJ/NTA	15" x 150"	500" x 500"
Location :	K.P (507+300)	EGC (50)	Material :	F80 material	
Company Name :	EG CONTRACT		quantity :	50000m ³	

1. Test Results

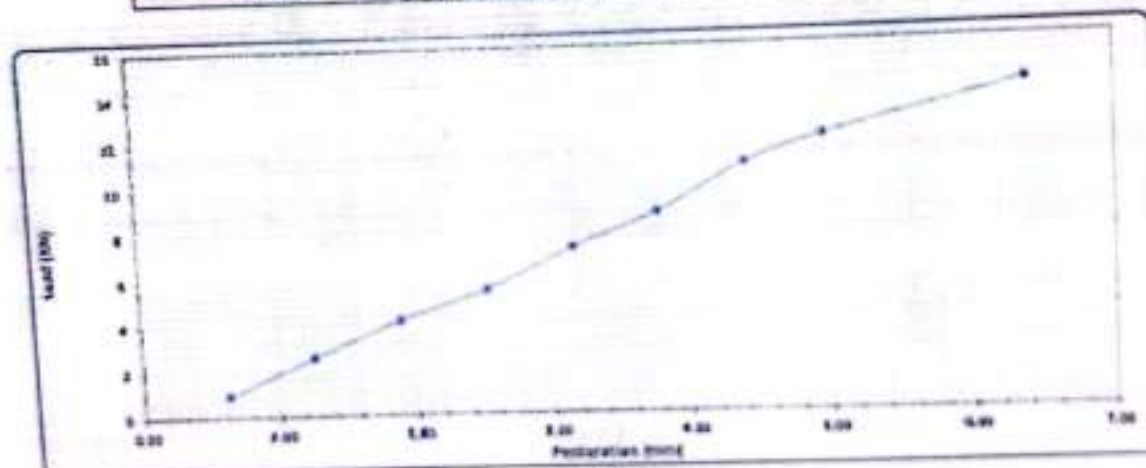
Compaction % for Mold	
Mold No.	1
Mold Vol (cm ³)	2070
Mold WT (gm)	5059
Mold WT + Wet WT (gm)	5020
Wet WT (gm)	2479
Wet Density (g/cm ³)	2.301
Dry Density (g/cm ³)	2.26*
Proctor Density (g/cm ³)	2.270
Compaction %	99.3

Moisture Ratio After Compacted Mold	
Ten No.	11
Ten WT (gm)	95.20
Ten WT + Wet WT (gm)	100
Ten WT + Dry WT (gm)	104.3
Wet WT (gm)	5.2
Dry WT (gm)	89.2
Moisture Content %	5.8

Swelling	
Mold No.	1
Base	20" x 15" x 15"
Swelling Height (mm)	28.25
Swelling Height (mm)	28.25
Swelling	0.25
Swelling Height (mm)	158.2
Swelling Ratio %	0.000%

Loading Reading :

Penetration (mm)	0.40	1.27	1.90	2.50	3.10	3.80	4.47	5.10	5.47
Load Reading (kg)	103	105	144	171	200	262	319	421	474
Load (kN)	0.9	1.0	1.3	1.6	1.9	2.6	3.1	4.1	4.6



Calculations :-

Penetration	% Load	Standard Load	CBR	Ratio of Penetration	Compaction	CBR
mm	kg	kg	%	%	%	%
2.50	1.6	1.6	100.0%	1.00	99.3	100.0%
5.00	3.2	3.2	100.0%	1.00	99.3	100.0%

Lab. Specimen

Lab. Engineer

Construction Engineer

Name :

Name :

Name :

Signature :

Signature :

Signature :



31-7-2013



Correction of Unit Weight and Water Content For Soils Containing oversize Particles
(ASTM D-4718)

Dry Unit Weights of Fine Fraction (γ_{df}) (gm/cm ³)	2.190	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	6.00	Date of Sample	30/7/2023
Specific Gravity of over Size Fraction (G_m)	2.351	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE	
Total Weight of Wet Sample	gm	53145	
Weight of Wet oversize Fraction (Retained 3/4)	gm	18955	1326.85
Weight of Wet Fine Fraction (Passing 3/4)	gm	34190	2735.2
Weight of Dry oversize Fraction (M_{od})	gm	17628	الوزن جاف
Weight of Dry Fine Fraction (M_{of})	gm	31455	الوزن ناعم جاف
Total Weight of Dry Sample	gm	49083	
Water Content of oversize Fraction (W_d)	%	0.08	
Water Content of Fine Fraction (W_f)	%	0.09	
Percent of oversize Fraction By Mass (P_d)	%	35.92	
Percent of Fine Fraction By Mass (P_f)	%	64.08	

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_F) >

Corrected Water for oversize Fraction & Finer Fraction (W_{cf})	$W_F P_F + W_C P_C$	8.28
Specific Gravity of over Size Fraction (G_m)	2.351	
Specific Gravity of Fine Fraction (γ_{df})	2.190	gm/cm ³
Specific Gravity of Water (γ_w)	0.980	

Calculations of Correctd Unit Dry Weight of the Total Material (combined finer and oversize fractions) (γ_{dr}) >

Corrected Dry Unit Weight of Total Material (γ_{dr})	$(\gamma_{df} \cdot G_m \cdot \gamma_w)$ $[(\gamma_{df} \cdot P_C) + (G_m \cdot \gamma_w \cdot P_F)]$	2.23
Corrected Maximum Dry Density (M.D.D)	2.23	gm/cm ³
Corrected Optimum Moisture Content (O.M.C)	8.28	%

LAB Manager
AHMED HALEEM



MODIFIED PROCTOR TEST ASTM D1557

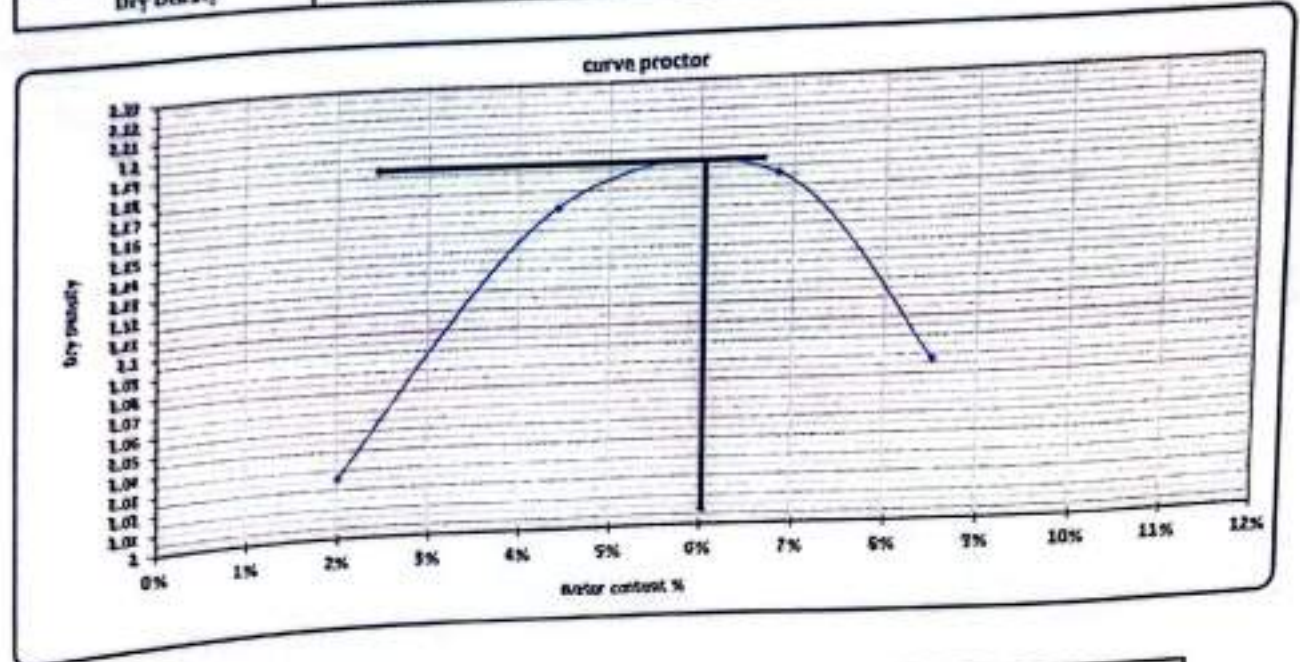
TESTING DATE:	30-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (507+300)	507C+507	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of empty mold :	5433.0
Mold Volume:	2124.0

MAX Dry Density	2.19
Water content %	6.0%

trial no :	1	2	3	4	
WT. OF TARE & Tare Soil	10530.2	10435.0	10370.0	10420	
WT. WET SOIL	4906.8	4888.0	4908.0	4909.0	
WT. Density	2.072	2.262	2.351	2.368	

Tare No.	1	2	3	4	5	11	12	13	
Tare wt.	56.21	56.33	55.19	55.2	55.52	55.68	56.43	56.1	
WT. OF wet soil & tare	150.2	150.8	150.0	150.0	150.0	150.8	156.8	150.0	
WT. OF dry soil & tare	145.10	145.28	145.00	145.90	144.90	144.00	143.00	143.4	
WT. OF water	5.0	5.5	5.0	5.1	5.1	6.8	8.0	6.6	
WT. OF dry soil	91.0	91.0	90.1	90.7	87.5	87.0	87.6	88.1	
Water content %	5.5%	6.0%	5.5%	5.6%	5.8%	6.8%	8.1%	7.5%	
AV. Water content %	5.0%		5.6%		5.8%		7.9%		
Dry Density	1.004		2.166		2.081		2.081		



Contractor
Name : Ahmed Haseeb
Sign :

Consultant
mohamed elsaied
m.elsaied
31-7-2023



Electric Express Train - HSR
From El Ain El Sekhina City To El Alamein - MATROUH
Section - 7 From FOKA To MARSA MATROUH
From Station 564+000 To Station 568+177



Operating lap

Al Tawkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	31-07-2023	code	ZONE	507+000	509+000
LOCATION	K.P (508+300)	EGC (89)	Material	fill material	
TESTING COMPANY	EG-CONTRACT			5000 m ³	

Visual inspection test

Gradient test

Gradation of bulk materials

TOTAL SAMPLE WEIGHT						26375.00		gm	table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS	soil classify
Mass retained (g)	0.0	1235.0	2500.0	3205.0	3225.0	3214.0	3021.0		GLASS
Cumulative Retained (g)	0.0	1235.0	3735.0	6940.0	10165.0	13379.0	16400.0	9975.0	PRO
Cumulative Retained %	0.0	4.7	14.2	26.3	38.5	50.7	62.2		WC
Cumulative Passing %	100.0	95.3	85.8	73.7	61.5	49.3	37.82		CBR
									CORR .PRO
									CORR .WC

Soft material gradation

WT. OF sample			600.00		gm
sieve size	10	40	200		
Cumulative Retained (g)	70.00	180.00	355.00		
Cumulative Retained %	11.67	30.00	59.17		
Cumulative Passing %	88.33	69.99	40.83		

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	95.3	85.8	73.7	61.5	49.3	37.8	32.5	24.2	14.75

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

Contractor

Name

Sign

Ahmed Halsem

Consultant

mohamed elsaied

m.elsaied

California Bearing Ratio TEST ASTM D1883

Testing Date :	2/8/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (508+300)	EGC(99)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m ³	

1- Test Results

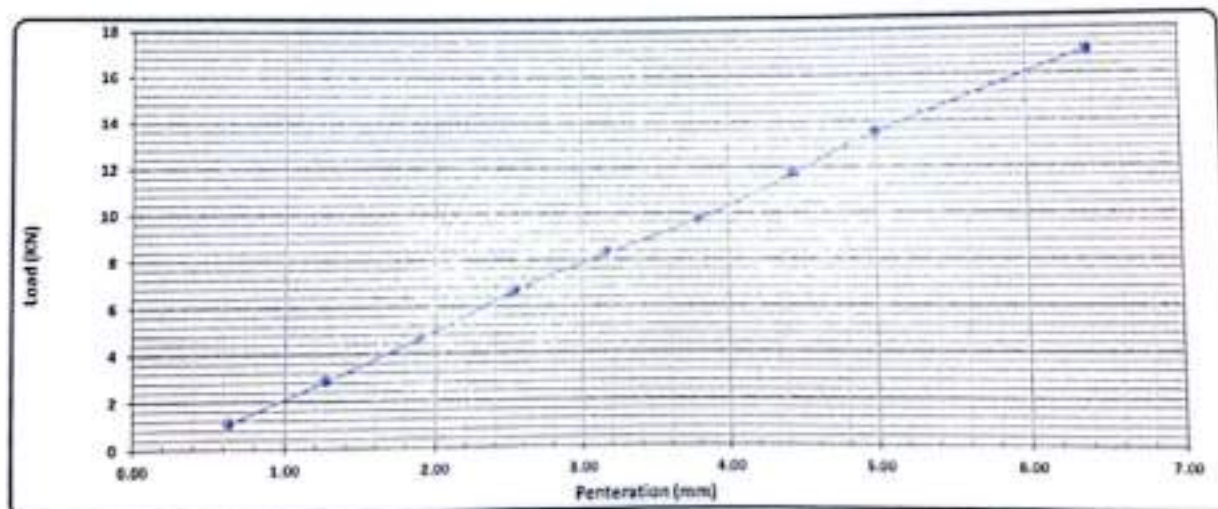
Compaction % for Mold	
Mold No.	3
Mold Vol (cm ³)	2160
Mold WT. (gm)	5310
Mold WT. + Wet WT. (gm)	10240
Wet WT. (gm)	4930
Wet Density (g/cm ³)	2.285
Dry Density (g/cm ³)	2.138
Proctor Density (g/cm ³)	2.180
Compaction %	98.1

Moisture Ratio After Compacted Mold	
Tare No.	12
Tare WT. (gm)	15.21
Tare WT. + Wet WT. (gm)	150
Tare WT. + Dry WT. (gm)	143.9
Water WT. (gm)	6.1
Dry WT. (gm)	88.7
Moisture Content %	6.9

Swelling	
Mold No.	3
Date	2/8/2023
Initial Height (mm)	28.00
Final Height (mm)	28.00
Difference	0.00
Sample Height (mm)	120.0
Swelling Ratio %	0.00%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	6.40
Load Reading (Kg)	125	322	521	745	925	1085	1302	1502	1896
Load (KN)	1.1	2.9	4.7	6.7	8.3	9.8	11.7	13.5	17.1



Calculations :-

Penetration (mm)	Load (KN)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR (%)
2.50	6.71	13.4	50.2%	98	98	48.7%
5.00	13.52	20.0	67.5%			65.4%

Lab. Specialist

Name :

Sign :

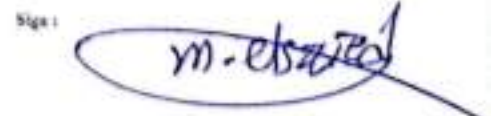
Lab. Engineer

Name : Ahmed H. H. H.

Sign : 

Consultant Engineer

Name : Mohamed Elsayed

Sign : 



Electric Express Train - HSR
From El Ain El Bahria City To El Alamein - MATROUH
Section - 2 From EORA TO MADSA MATROUH
From Station 508+000 To Station 509+177



MODIFIED PROCTOR TEST ASTM D1557

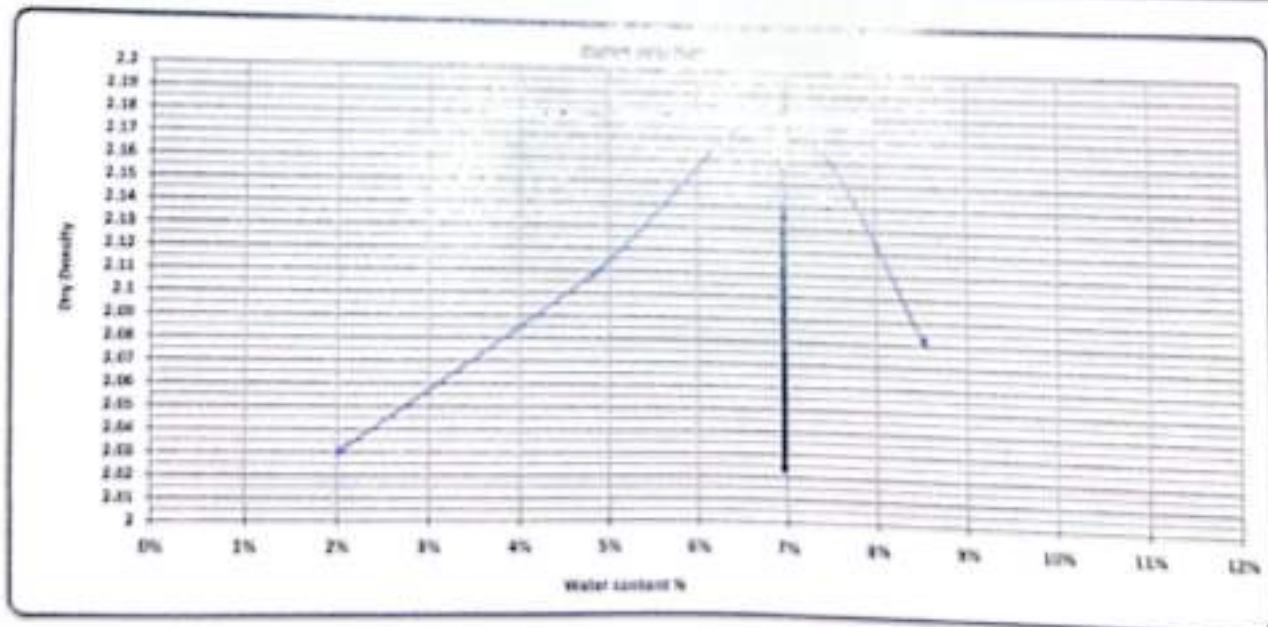
TESTING DATE:	1-08-2023	code	ZONE	507+500	509+000
LOCATION	K.P (508+300)		Material	fill material	
NAME COMPANY	EO-CONTRACT	E92 (01)	quantity	5000 m ³	

Weight of empty mold (1420.6
Mold Volume:	2124.6

MAX Dry Density	2.18
Water content %	7.4%

trial no.:	1	2	3	4	
WL OF Mold & Wet Soil	19025.6	19313.8	19172.6	19420	
WT. WET SOIL	4800.8	4801.8	4812.8	4800.8	
WL Density	2.072	2.208	2.331	2.248	

Tare No.	1	2	3	4	5	6	7	8	
Tare wt.	56.21	54.32	54.33	54.2	56.73	52.31	54.42	54.4	
WL OF wet soil & tare	150.8	150.8	150.8	150.8	150.8	150.8	150.8	150.8	
WL OF dry soil & tare	144.30	144.20	144.06	143.20	143.70	143.90	142.00	143.0	
WL OF water	1.5	1.8	4.5	4.8	6.3	6.3	8.8	7.8	
WL OF dry soil	91.8	91.8	91.8	91.8	87.4	91.8	87.6	88.6	
Water content %	2.1%	2.8%	4.4%	5.3%	7.2%	6.7%	9.1%	7.9%	
AV. Water content %	2.8%		4.8%		6.7%		8.3%		
Dry Density	2.071		2.108		2.130		2.083		



Contractor

Name: Mohamed Elsayed


Sign:



Consultant

mohamed elsayed

m.elsayed




SVSTRA SHAKER

Electric Express Train - HSR

From El Ain El Sokhna City To El Alamein - MATROUH

Section - 7 From FOKA To MARSA MATROUH

From Station 564+000 To Station 568+177



Operating lap

Al Tawkol Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	31-07-2023	ZONE	507+000	509+000
LOCATION	K.P (508+300)	Material	fill material	
TEST COMPANY	EG-CONTRACT	quantity	5000 m³	

Equal inspection test

gradient test

Gradation of bulk materials								gm	table classify
TOTAL SAMPLE WEIGHT								9975.00	
sieve size	2	1.5	1	4/3	3/4	2/4	# 4	PASS	soil classify
Mass retained (g)	0.0	1235.0	2500.0	3205.0	3235.0	5015.0	3021.0		CLASS
Cumulative Retained (g)	0.0	1235.0	3735.0	6940.0	10165.0	13375.0	16400.0	9975.0	PRO
Cumulative Retained %	0.0	4.7	14.2	26.3	38.5	60.7	62.2		WC
Cumulative Passing %	100.0	95.3	85.8	73.7	61.5	49.3	37.82		CBR
									CORR PRO
									CORR WC

ft material gradation				WT.OF sample		500.00	gm
sieve size	10	40	200				
Cumulative Retained (g)	70.00	180.00	305.00				
Cumulative Retained %	14.00	36.00	61.00				
Cumulative Passing %	86.00	64.00	39.00				

General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	95.3	85.8	73.7	61.5	49.3	37.8	32.5	24.2	11.7

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

Contractor

Name

Sign

Ahmed Halsem



Consultant

mohamed elsaed

m.elsaed

Electric Express Train - HSR



California Bearing Ratio TEST ASTM D1883

Testing Date :	2/8/2023	Code	FROM STA :	507+000	509+000
Location :	K.P. (507+000)	EGC(99)	Material	fill material	
Company Name	EG-CONSULT		quantity	5000m ³	

Test Results

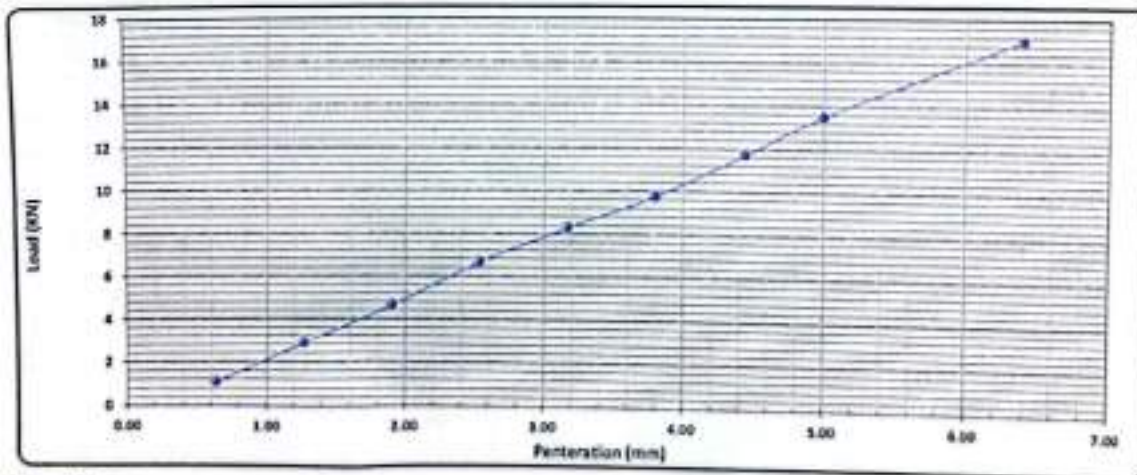
Compaction % for Mold	
Mold No.	3
Mold Vol.(cm ³)	2160
Mold WT. (gm)	5310
Mold WT. + Wet WT. (gm)	10245
Wet WT. (gm)	4935
Wet Density (g/cm ³)	2.285
Dry Density (g/cm ³)	2.138
Proctor Density (g/cm ³)	2.580
Compaction %	98.1

Moisture Ratio After Compacted Mold	
Tare No.	12
Tare WT. (gm)	55.21
Tare WT. + Wet WT. (gm)	159
Tare WT. + Dry WT. (gm)	143.9
Water WT. (gm)	6.1
Dry WT. (gm)	88.7
Moisture Content %	6.9

Swelling	
Mold No.	3
Date	2/8/2023
Initial Height (mm)	28.04
Final Height (mm)	28.00
Difference	0.00
Sample Height (mm)	120.0
Swelling Ratio %	0.00%

Loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.08	6.40
Load Reading (Kg)	125	312	521	745	925	1055	1302	1502	1696
Load (kN)	1.1	2.9	4.7	6.7	8.3	9.8	11.7	13.5	17.1



Calculations :-

Penetration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kg)	(lb)	(%)	(%)	(%)	98 % and up %
1.50	6.71	15.4	50.2%	98	99	45.7%
3.00	13.52	30.8	47.5%			45.4%

Lab. Specialist

Name :

Sign :

Lab. Engineer

Name :

Sign :

Amr Mohamed

Consultant Engineer

Name :

Sign :

mohamed elsayed

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



MODIFIED PROCTOR TEST ASTM D1557

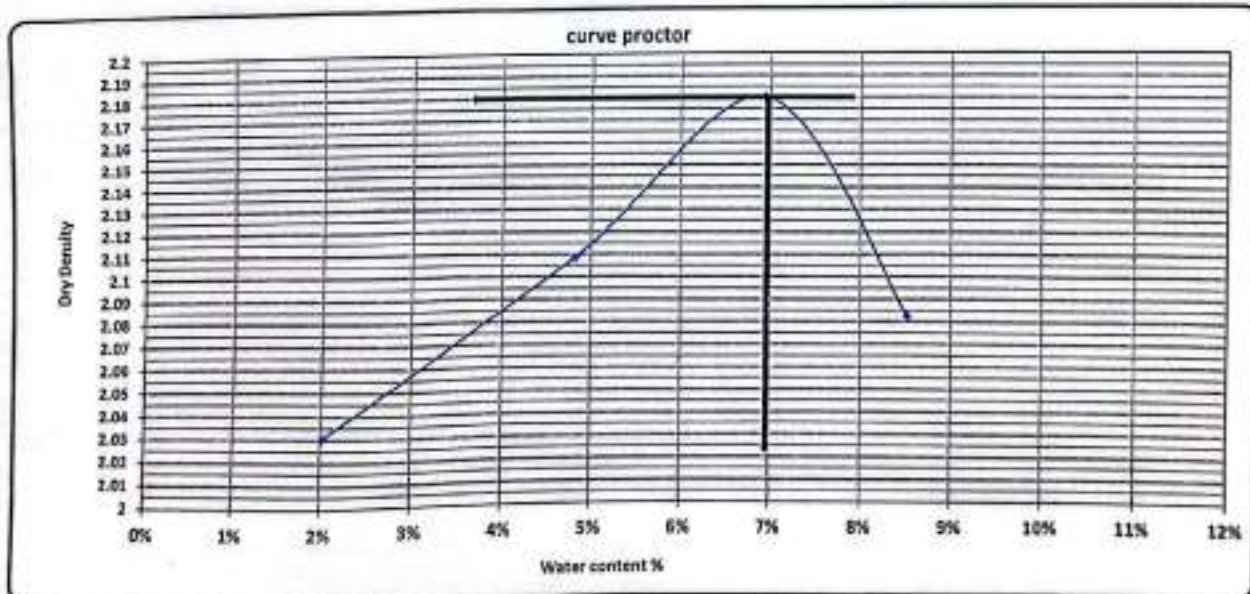
TESTING DATE:	1-08-2023	code	ZONE	507+000	509+000
LOCATION	K.P (508+300)	EGC (99)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m³	

Weight of empty mold :	5000g
Mold Volume:	2130.0

MAX Dry Density	2.18
Water content %	7.0%

trial no :	1	2	3	4	
Wt. Of Mold + Wet Soil	10620.0	10315.0	10572.0	10420	
WT. WET SOIL	4490.0	4695.0	4952.0	4890.0	
Wt. Density	2.072	2.210	2.331	2.260	

Tare No.	1	2	3	5	6	4	11	10		
Tare wt.	56.31	56.32	54.11	54.2	56.33	52.31	54.42	54.4		
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	148.10	148.20	146.00	145.20	143.70	143.90	142.00	143.0		
Wt. Of water	1.9	1.8	4.0	4.8	6.3	6.1	8.0	7.0		
Wt. Of dry soil	91.9	91.9	91.9	91.0	87.4	91.6	87.6	88.6		
Water content %	2.1%	2.0%	4.4%	5.3%	7.2%	6.7%	9.1%	7.9%		
AV. Water content %	2.0%		4.8%		6.9%		8.5%			
Dry Density	2.031		2.109		2.180		2.083			



Contractor

Name : Ahmed Hamed

Sign :



Consultant

mohamed elsayed

m.elsayed



Operating lap

Al Tawkol Central Lab

Electric Express Train - HSR
From El Ain El Sokhesa City To El Alamein - MATROUH
Section - 7 From FOKA To MARSA MATROUH
From Station 504+000 To Station 568+172



TESTING DATE:

31-07-2023

LOCATION

K.P (507+300)

TESTING COMPANY

EG-CONTRACT

Visual inspection test

adjacent test

PARTICLE SIZE DISTRIBUTION OF SOIL

CODE	ZONE	507+000	509+000
EGC (100)	Material	RM material	
	quantity	5000 m³	

Gradation of bulk materials

sieve size	2	1.5	1	4/3	2/1	5/3	#4	gm	table classify
Mass retained (g)	0.0	2290.0	10000.0	14000.0	3365.0	3854.0	3091.0	PASS	and classify
Cumulative Retained (g)	0.0	2290.0	12290.0	26290.0	29655.0	33509.0	36600.0	19600.0	CLASS
Cumulative Retained %	0.0	4.1	21.9	46.9	53.0	59.8	65.4		PRO
Cumulative Passing %	100.0	95.9	78.1	53.1	47.0	40.2	34.6		WC
									CIR
									2.22
									10.70

% material gradation

sieve size	10	40	200	WT. OF sample	500.00	gm
Mass retained (g)	80.00	225.00	330.00			
Cumulative Retained %	16.00	45.00	66.00			
Cumulative Passing %	84.00	55.00	34.00			

General gradient

sieve size(in)	2	1.5	1	3/4	1/2	3/8	#4	#10	#40	#200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	95.9	78.1	53.1	47.0	40.2	34.6	25.1	10.1	1.70

LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTIC INDEX (PI)
		R.P.

Contractor

Name
Sign

Aliouf Alouf

Consultant

mohamed elaid
re-elsaid

5-8-2023



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 508+177



MODIFIED PROCTOR TEST ASTM D1557

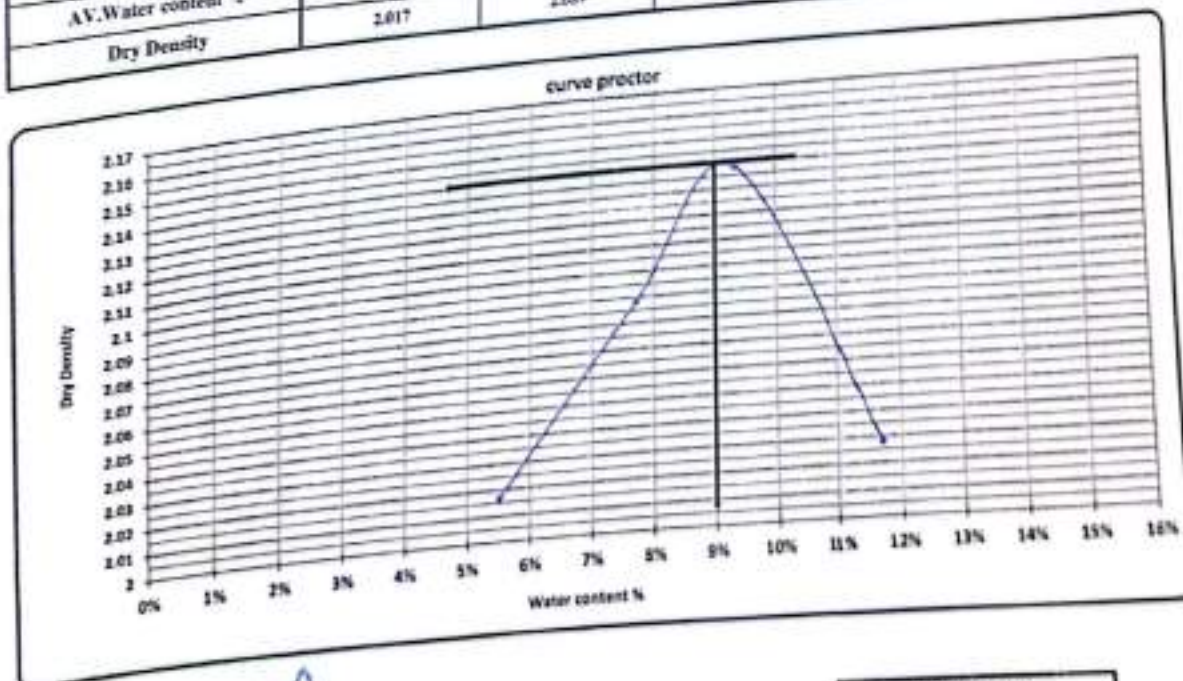
TESTING DATE:	1-08-2023	code	ZONE	507+000	509+000
LOCATION	K.P (507+300)	EGC (100)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m ³	

Weight of empty mold :	5620.0
Mold Volume:	2124.0

MAX Dry Density	2.14
Water content %	7.8%

trial no :	1	2	3	4	
WL Of Mold + Wet Soil	10140.0	10198.0	10586.0	10432	
WT. WET SOIL	4520.0	4778.0	4966.0	4812.0	
WL Density	2.128	2.280	2.338	2.266	

Tare No.	12	13	14	15	16	17	18	19	
Tare wt.	56.83	53.21	56.91	56.98	54.43	54.4	54.42	54.4	
WL Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	
WL Of dry soil & tare	145.00	145.10	143.20	143.40	142.00	141.70	140.90	140.0	
WL Of water	5.0	4.9	6.8	6.6	8.0	8.3	10.0	10.0	
WL Of dry soil	88.1	91.9	96.7	97.3	97.6	97.3	95.6	95.6	
Water content %	5.7%	5.3%	7.8%	7.6%	8.1%	8.5%	11.7%	11.7%	
AV. Water content %	5.5%		7.7%		8.3%		11.7%		
Dry Density	2.017		2.089		2.129		2.029		





Contractor
Name :
Sign :

Consultant

mohamed elsaied

m-elsaied

5-8-2023

	Electric Express Train - EET From El Ain El Sakina City To El Alamein - MATROUH Section - FF From TOWA To WAREH MATROUH From Station 524+000 To Station 506+000		
	Absorption Of coarse Aggregate		

TESTING DATE:	01/8/2023	code	Station	507+000	509+000
LOCATION	K.P (507+300)	EGC (100)	Material	fill material	
NAME COMPANY	EG-CONTRACT		quantity	5000 m ³	

Weight of sample	2500	gm
Weight of saturated surface dry sample (B)	2595	gm
Weight of saturated sample in water (C)	1543	gm
Weight of dry sample after heating (A)	2487	gm

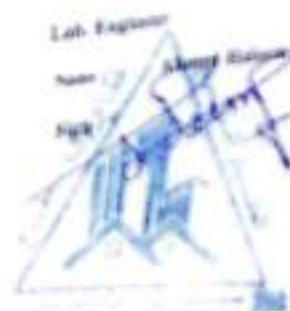
Results:-

Bulk specific gravity = $A / (B - C)$	2.354	
Bulk specific gravity (S.S.D) = $B / (B - C)$	2.467	
Apparent specific gravity = $A / (A - C)$	2.635	
Absorption = $(B - A) / A$	4.32%	%

Lab. Specialist

Name :

Sign :



Consultant Engineer

Name :

Sign :

mohamed elsaid

m.elsaid

5-8-2023



Electric Express Train - HSR



California Bearing Ratio TEST ASTM D1883

Testing Date :	2/8/2023	Code	FROM STA :	507+000	509+000
Location :	K.P (507+300)	EGC(100)	Material	fill material	
Company Name	EG-CONTRACT		quantity	5000m ³	

Test Results

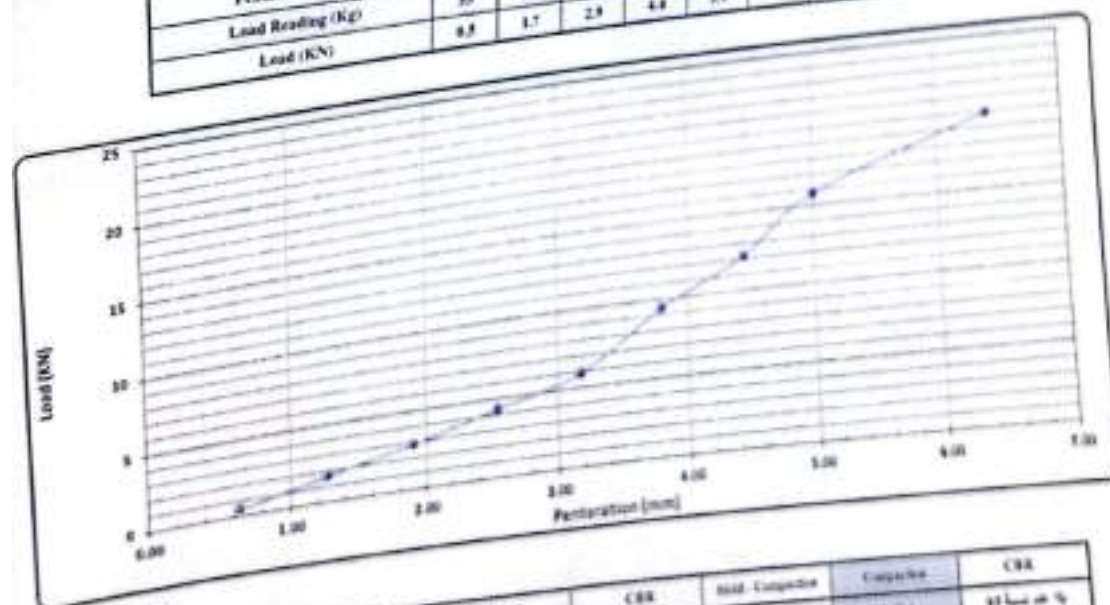
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm ³)	2160
Mold WT. (gm)	4338
Mold WT. + Wet WT. (gm)	10245
Wet WT. (gm)	5935
Wet Density (g/cm ³)	2.731
Dry Density (g/cm ³)	2.140
Proctor Density (g/cm ³)	2.140
Compaction %	100.0

Moisture Ratio After Compacted Mold	
Tare No.	10
Tare WT. (gm)	12.12
Tare WT. + Wet WT. (gm)	150
Tare WT. + Dry WT. (gm)	142
Water WT. (gm)	8.0
Dry WT. (gm)	89.9
Moisture Content %	8.9

Swelling	
Mold No.	3
Date	2/8/2023
Total Height (mm)	5.00
Final Height (mm)	5.04
Difference	0.04
Sample Height (mm)	120.0
Swelling Ratio %	0.04%

loading Reading :

Penetration (mm)	0.64	1.27	1.91	2.54	3.18	3.81	4.45	5.08	5.71
Load Reading (Kg)	55	100	325	483	665	1000	1355	1750	2115
Load (KN)	0.5	1.7	2.9	4.4	5.9	9.3	12.2	15.3	18.9



Calculations 1:

Penetration	Load	Standard Load	CBR	Moist - Compaction	Compaction	CBR
(mm)	(Kg)	(lb)	(%)	(%)	(%)	(%)
2.50	4.27	13.4	32.7%	100	10	32.4%
5.00	15.75	20.9	74.7%			74.7%

Lab Specialist

Name :

Sign :

Lab Engineer

Name :

Sign :



Contract Engineer

Name : mohamed elsaid

Sign :

m.elsaid

15-8-2023

Correction of Unit Weight and Water Content For Soils Containing oversize Particles (ASTM D-4718)			
Unit Weight of Fine Fraction (γ_{DF}) (gm/cm ³)	2.140	Company	EG-CONTRACT
Optimum Moisture Content (O.M.C) (%)	9.00	Date of Sample	1/8/2023
Specific Gravity of over Size Fraction (G_M)	2.360	Project	Express Train Project
Specific Gravity of Water (γ_w)	0.980	Sector	Foka - Matrouh

Sample Data	UNIT	VALUE	
Total Weight of Wet Sample	gm	55000	
Weight of Wet oversize Fraction (Retained 3/4)	gm	26290	
Weight of Wet Fine Fraction (Passing 3/4)	gm	29710	
Weight of Dry oversize Fraction (M_{DC})	gm	23661	الوزن الجاف
Weight of Dry Fine Fraction (M_{DF})	gm	26888	الوزن الجاف
Total Weight of Dry Sample	gm	50549	
Water Content of oversize Fraction (W_C)	%	0.11	
Water Content of Fine Fraction (W_F)	%	0.10	
Percent of oversize Fraction By Mass (P_C)	%	46.81	
Percent of Fine Fraction By Mass (P_F)	%	53.19	

Calculations of Corrected Water for oversize Fraction & Finer Fraction (W_T) :-				
Corrected Water for oversize Fraction & Finer Fraction (C_W)		$W_F P_F + W_C P_C$		10.78
Specific Gravity of over Size Fraction (G_M)	2.360			
Specific Gravity of Fine Fraction (Y_{DF})	2.140	gm/cm ³		
Specific Gravity of Water (Y_w)	0.980			
Calculations of Correctd Unit Dry Weight of the Total Material (combined finer and oversize fractions) (Y_{DT}):-				
Corrected Dry Unit Weight of Total Material (Y_{DT})		$(Y_{DF} * G_M * Y_w)$		2.22
		$((Y_{DF} * P_C) + (G_M * Y_w * P_F))$		
Corrected Maximum Dry Density (M.D.D)	2.22	gm/cm ³		
Corrected Optimum Moisture Content (O.M.C)	10.78	%		

LAB Manager
AHMED HALEEM

