الهيئة العامة
للطـرق والكبـاري

المنطقة الخامسة – (غرب الدلتا)

السيد المهندس / نائب رئيس الهيئة للتنفيذ والمناطق

تحية طيبة.. وبعد،،

بالإحالة إلى مشروع القطار الكهربائى فائق السرعه (فوكة - مطروح) (القطاع السابع)

نتشرف بأن نرفق لسيادتكم طيه المقايسات المعدلة للقطاعات الأتية:

مسلسل	اسم الشركة	بداية القطاع (كم)	نهاية القطاع (كم)	اتجـــــاه
١	شركة القاهرة للطرق والإنشاءات	٥٢١+٠٠٠	٥٢٢+٠٠٠	النجيلة

برجاء من سيادتكم التفضل بالأحاطه والتوجيه بالازم

وذلك لصالح بدء اجراءات التعاقد طبقا لأوامر الأسناد الصادرة للشركة.

وتفضلوا بقبول فائق الأحترام والتقدير،،

رئيس الإدارة المركزية
المنطقة الخامسة- غرب الدلتا
عميد مهندس/
"هاني محمد محمود طه"

وزارة النقل
MINISTRY OF TRANSPORT

الهيئة العامة للطرق و الكباري و النقل البري
General Authority For Roads, Bridges And Land Transport
(GARBLT)

الخط الكهربائي السريع
Electric Express Train
SYSTRA SHAKER

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

القاهرة للطرق والإنشاءات

مشروع القطار الكهربائى السريع

المقايسة المعدلة لبنود الاعمال بعد التفاوض بتاريخ (18/12/2023) للقطاع السابع (فوكا - مطروح) - شركة القاهرة للطرق والإنشاءات - النجيلة

القطاع من المحطة 521+000 إلى المحطة 522+000

رقم البند	بيان الأعمال	الوحدة	الكمية	الفئة	الاجمالى
1	**اعمال الازالة و التطهير**				
1-1	بالمتر المسطح اعمال تطهير الموقع من الاشجار والمزروعات و المخلفات فى مناطق الدلتا ذات الطبيعة الزراعية الكثيفة والتخلص منها بالمقالب العمومية تمهيدا لاعمال الرفع المساحى لكامل حدود المشروع طبقا للشروط والمواصفات و تعليمات المهندس المشرف.	م2	26,700.00	5.00	133,500.00
2	**اعمال الحفر**				
2-2	بالمتر المكعب اعمال حفر باستخدام المعدات الميكانيكية فى التربة المتماسكة عدا التربة الصخرية (باستخدام البلدوزر) وتسوية السطح بالات التسوية والرش بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (95% من الكثافة الجافة القصوى) ومحمل على البند تحميل ونقل الاتربة الزائدة لمسافة 500 متر من محور الطريق و يتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف. **يتم إحتساب علاوة 1.1 جنيه لكل 1 كم بالزيادة.**				
	السعر طبقا لمفاوضة فبراير 2023	م^3	39,000.00	28.80	1,123,200.00
3	**اعمال الردم**				
3-1	بالمتر المكعب اعمال توريد وتشغيل اتربة صالحة للردم و مطابقة للمواصفات والتشغيل باستخدام الات التسوية بسمك لا يزيد عن 50 سم حتي منسوب -2 متر و بسمك لا يزيد عن 25 سم لاستكمال المنسوب التصميمى لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن 15%) و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (95 % من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق و الكبارى وتعليمات المهندس المشرف. -في حالة طلب جهاز الإشراف زيادة نسبة الدمك عن 95 % يحسب زيادة 1 جنية علي زيادة نسبة الدمك لكل 1 % - مسافة النقل 2 كم ويتم احتساب علاوة 1.5 جنيه لكل 1 كم بالزيادة أو النقصان -السعر يشمل عمل تشوينات وتخليط واختبارات ونقل لموقع العمل حتي مسافة 2 كم -السعر يشمل قيمة المادة المحجرية				
	السعر طبقا لمفاوضة فبراير 2023	م^3	41,599.00	97.50	4,055,902.50
	علاوة مسافة النقل 228 كم	م^3	41,599.00	339.00	14,102,061.00
	علاوة تحصيل رسوم الكارتة والموازين طبقا للائحة الشركة الوطنية	م^3	41,599.00	13.00	540,787.00
	الإجمالى				19,955,450.50

(تسعة عشر مليونا و تسعمائة وخمسة وخمسون الفا وربعمائة وخمسون جنيها وخمسون قرشا لاغير)

مدير المشروع المقاول
م / محمد ضيف الله عبدالحافظ

مدير المشروع الاستشاري
م / خالد فوزي السيد

مدير المشروع المالك
م / إبراهيم عبدالله الحناوي

مدير عام المشروعات
م / محمد حسني فياض

يعتمد
رئيس الادارة المركزية
منطقة غرب الدلتا
الاسكندرية - مرسى مطروح
عميد مهندس /
" هانى محمد محمود طه "

الهيئة العامة
للطـرق والكبـاري

قائمة الكميات الواردة بالمستخلص جارى (2)

عملية : اسناد أعمال الجسر الترابي لمسارالقطار الكهربائي السريع الخط الاول (العين السخنة -العلمين)(قطاع فوكة / مطروح) لتنفيذ أعمال تشكيل الجسور
المسافة من الكم 521+000 الى الكم 522+000 بطول 1 كم اتجاه النجيلة

رقم البند و بيانه : (1-1) اعمال تطهير الموقع من الاشجار والمزروعات و المخلفات

تـنفيـذ : شركة القاهرة للطرق والانشاءات

مقدار العمل السابق : 26700.0 م3

بيان الاعمال	الكميه
مقدار العمل السابق	26700.00
اجمالي الكميات خلال فترة المستخلص الحالية (م^3)	0.00
الاجمالـي الكلـي (م^3)	26700.00

مهندس الشركة	مهندس الإستشاري (xyz)	مهندس الإستشاري مكتب د/خالد قنديل	مهندس الهيئة العامة للطرق والكباري
م / محمد ضيف الله	م / محمد شهاب خليل	م / خالد فوزي السيد	م / إبراهيم عبدالله الحناوي

الهيئة العامة
للطـرق والكبـاري

قائمة الكميات الواردة بالمستخلص جارى (2)

عملية :اسناد أعمال الجسر الترابي لمسارالقطار الكهربائي السريع الخط الاول (العين السخنة -العلمين)(قطاع فوكة / مطروح) لتنفيذ أعمال تشكيل الجسور
المسافة من الكم 521+000 الى الكم 522+000 بطول 1 كم اتجاه النجيلة

رقم البند و بيانه : (2-2)اعمال حفر باستخدام المعدات الميكانيكية فى التربة المتماسكة عدا التربة الصخرية (باستخدام البلدوزر)
طبقا لمفاوضة فبراير 2023

تــنفيــذ : شركة القاهرة للطرق والانشاءات

مقدار العمل السابق : 0.0 م3

بيان الاعمال	الكميه
مقدار العمل السابق	0.00
اجمالي الكميات خلال فترة المستخلص الحالية (م3)	37771.00
الاجمالـي الكلـي ($م^3$)	37771.00

مهندس الشركة	مهندس الإستشاري (xyz)	مهندس الإستشاري مكتب د/خالد قنديل	مهندس الهيئة العامة للطرق والكباري
م / محمد ضيف الله	م / محمد شهاب خليل	م / خالد فوزي السيد	م / إبراهيم عبدالله الحناوي

الهيئة العامة
للطـرق والكبـاري

قائمة الكميات الواردة بالمستخلص جارى (2)

عملية :اسناد أعمال الجسر الترابي لمسارالقطار الكهربائي السريع الخط الاول (العين السخنة -العلمين)(قطاع فوكة / مطروح) لتنفيذ أعمال تشكيل الجسور

المسافة من الكم 521+000 الى الكم 522+000 بطول 1 كم اتجاه النجيلة

رقم البند و بيانه : (3-1) أعمال توريد و تشغيل اتربة صالحة للردم مطابقة للمواصفات طبقا لمفاوضة فبراير 2023

تــنفيــذ : شركة القاهرة للطرق والانشاءات

مقدار العمل السابق : 0.0 م3

بيان الاعمال	الكميه
مقدار العمل السابق	0
اجمالي الكميات خلال فترة المستخلص الحالية (م^3)	41599.00
الاجمالـي الكلـي (م^3)	41599.00

مهندس الشركة	مهندس الإستشاري (xyz)	مهندس الإستشاري مكتب د/خالد قنديل	مهندس الهيئة العامة للطرق والكباري
م / محمد ضيف الله	م / محمد شهاب خليل	م / خالد فوزي السيد	م / إبراهيم عبدالله الحناوي

الهيئة العامة
للطـرق والكبـاري

قائمة الكميات الواردة بالمستخلص جارى (2)

عملية :اسناد أعمال الجسر الترابي لمسارالقطار الكهربائي السريـع الخط الاول (العين السخنة -العلمين)(قطاع فوكة / مطروح) لتنفيذ أعمال تشكيل الجسور
المسافة من الكم 521+000 الى الكم 522+000 بطول 1 كم اتجاه النجيلة

رقم البند و بيانه : (1-3) علاوة مسافة النقل 228 كم

تـنفيـذ : شركة القاهرة للطرق والانشاءات

مقدار العمل السابق : 0.0 م3

بيان الاعمال	الكميه
امقدار العمل السابق	0.00
اجمالي الكميات خلال فترة المستخلص الحالية (م^3)	41599.00
الاجمالـي الكلـي (م^3)	41599.00

مهندس الشركة
م / محمد ضيف الله

مهندس الإستشاري (xyz)
م / محمد شهاب خليل

مهندس الإستشاري
مكتب د/خالد قنديل
م / خالد فوزي السيد

مهندس الهيئة العامة للطرق والكباري
م / إبراهيم عبدالله الحناوي

الهيئة العامة
للطـرق والكبـاري

قائمة الكميات الواردة بالمستخلص جارى (2)

عملية :اسناد أعمال الجسر الترابي لمسارالقطار الكهربائي السريع الخط الاول (العين السخنة -العلمين)(قطاع فوكة / مطروح)
لتنفيذ أعمال تشكيل الجسور
المسافة من الكم 521+000 الى الكم 522+000 بطول 1 كم اتجاه النجيلة

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

تـنفيـذ : شركة القاهرة للطرق والانشاءات

مقدار العمل السابق : 0.0 م3

بيان الاعمال	الكميه
مقدار العمل السابق	0.00
اجمالي الكميات خلال فترة المستخلص الحالية (م^3)	41599.00
الاجمالـي الكلـي (م^3)	41599.00

مهندس الشركة	مهندس الإستشاري (xyz)	مهندس الإستشاري مكتب د/خالد قنديل	مهندس الهيئة العامة للطرق والكباري
م / محمد ضيف الله	م / محمد شهاب خليل	م / خالد فوزي السيد	م / إبراهيم عبدالله الحناوي

ق والكباري

مهلة اضافية

وارده من منطقة الخامسة / غرب الدلتا

ليـــه : اسناد اعمال الجسر الترابي والاعمال الصناعية لمشروع القطار الكهربائي
ة - مطروح) لتنفيذ اعمال الجسر الترابي قطاع (فوكة / مطروح) المسافة من الكم
٠,٥٢٢ بطول ١ كم اتجاه النجيلة
ه : شركه القاهرة للطرق والانشاءات
ه رقم : (١٢٨٨ / ٢٠٢٢ / ٢٠٢٣)
ه المسندة في التعاقد : ٢٠ مليون جنيه
العمليه : ١ / ٢ / ٢٠٢٣
ر طبقا للتعاقد : ٣٠ / ٩ / ٢٠٢٣
ر طبقا لاخرمد مدة : ٣٠ / ٣ / ٢٠٢٤

العملية قدرها (٦ شهور) ليصبح تاريخ النهو ٣٠ / ٩ / ٢٠٢٤ .

:
اب المنطقه المشرفه والمرفق به خطاب الشركة المنفذة و التي تطلب فيه مد مدة
خ النهو في ٢٠٢٤/٩/٣٠ وذلك بناءً علي قرار مجلس الوزراء بجلستة رقم (٢) المن
٢ والمتضمن مد جميع التعاقدات الجاري تنفيذها لمدة (٦ شهور) دون فرض فوائد
ى لمزيد من الدعم الموجة إلي مختلف أطياف مجتمع الأعمال لمواجهة تداعيات
الية للأسباب الاتية : -
تاخر التنفيذ بسبب تحرير سعر الصرف .
زيادة تكلفة المواد الخام (البيتومين . الحديد . الاسمنت) وارتفاع أسعار نقلها .
ارتفاع اسعارقطع الغيار وندرة توافرها بالأسواق .
نقص الدعم الدولاري بالاسواق .

س .....
صيانه / تنفيذ) : .....
ة المركزيه للشئون المالية .....
القانونية : .....
.....
.....
التنفيذ والمناطق .....

يعتمد ،،،

التوقيع (
لـواء مهندس / طارق محم
ر العامة للطر

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		19-10-2022					
Contractor reference	CA-Emb-1								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	(Lower Embankment) MATERIAL RESULTS			
Location to be Used	From 521+000 520+700	To 521+060 520+750	Fill -11 -11	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	15-10-2022	
2	Classification	m^3	5000	15-10-2022	
3	Proctor & O.m.c	m^3	5000	15-10-2022	
4	L.L & P.L & PI	m^3	5000	15-10-2022	
5	C.B.R	m^3	5000	19-10-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa Badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	eng / Ahmed Mohammed	Ahmed Mohamed	19-10-2022	A
QA/QC *	Ahmed Abo Zaid		19-10-2022	A
GARB**	Hussien Fouad		19-10-2022	A
Comments by	Both QA & Aty approval with Cs		19-10-2022	
Employers Representative	Mohamed Ahmed		8-2-23	Awc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date		Time					
	ENG/ Abdelrahman Adel	Abdelrahman Adel		19-10-2022							
Contractor Reference	CA-Emb-1										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	12.9%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.8%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	63%	
Comments by:		**Comments by:**		
		All test under Responsibility third party		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng/ Ahmed mohamed	Ahmed Mohamed	19/10/2022	A
Contractor QA/QC *	Ahmed Abo Zaid		19/10/2022	A
GARB**	Hussien Fouad		19/10/2022	A
Employers Representative	Mohamed Ahmed		15-1-2025	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	15/ 10/2022	code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-1	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		16000.00		gm
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS
(g)Mass retained	0.0	1884.0	3122.0	916.0	1008.0	565.0	995.0	
(g)Cumulative Retained	0.0	1884.0	5006.0	5922.0	6930.0	7495.0	8490.0	
Cumulative Retained %	0.0	11.8	31.3	37.0	43.3	46.8	53.1	
Cumulative Passing %	100.0	88.2	68.7	63.0	56.7	53.2	46.9	

	table classify
	soil classify
	A-1-a
PRO	2.16
WC	7.8
CBR	63%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	80.00	199.50	362.50					
Cumulative Retained %	16.00	39.90	72.50					
Cumulative Passing %	84.00	60.10	27.50					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	88.2	68.7	63.0	56.7	53.2	46.9	39.4	28.2	12.9

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

Contractor	Consultant

ENGINEERING CONSULTING OFFICE / المكتب الاستشاري الهندسي أ.د. خالد قنديل	**Electric Express Train - HSR** **From El Ain El Sokhna City To El Alamein - MATROUH** **Section - 7 From FOKA TO MARSA MATROUH** **From Station 504+000 To Station 568+177**	الهيئة القومية للأنفاق

PROCTOR TEST

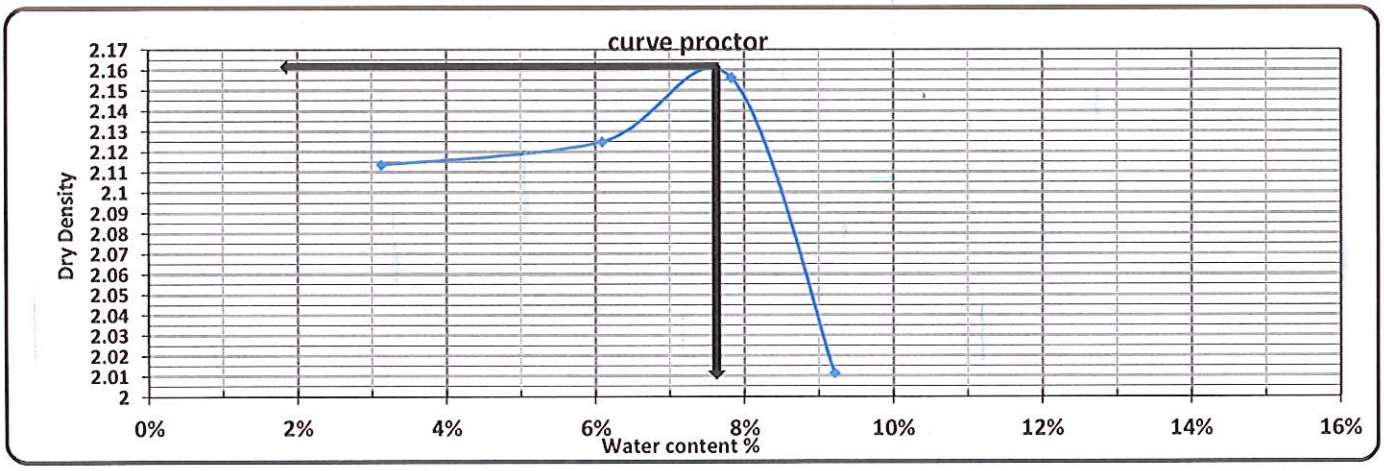
TESTING DATE:	2022/10/16	code	ZONE	520+500	522+000
LOCATION	kp:521+000	Ca-Emb-1	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

Weight of empty mold :	6428.0
Mold Volume:	2104.9

MAX Dry Density	2.16
Water content %	7.8

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	11016.0	11173.0	11322.0	11052	
WT. WET SOIL	4588.0	4745.0	4894.0	4624.0	
Wt. Density	2.180	2.254	2.325	2.197	

Tare No.	2	2	9	9	1	1	5	5		
Tare wt.	27.62	27.62	26.92	26.92	26.84	26.84	27.24	27.24		
Wt. Of wet soil & tare	120.0	120.0	133.2	133.2	145.3	145.3	144.5	144.5		
Wt. Of dry soil & tare	117.2	117.2	127.1	127.1	136.7	136.7	134.6	134.6		
Wt. Of water	2.8	2.8	6.1	6.1	8.6	8.6	9.9	9.9		
Wt. Of dry soil	89.6	89.6	100.2	100.2	109.9	109.9	107.4	107.4		
Water content %	3.1%	3.1%	6.1%	6.1%	7.8%	7.8%	9.2%	9.2%		
AV.Water content %	3.1%		6.1%		7.8%		9.2%			
Dry Density	2.114		2.125		2.156		2.011			



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	19/10/2022	Code	ZONE	520+500	522+000
Location :	kp;621+000	CA-Emb-1	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

- : Test Results

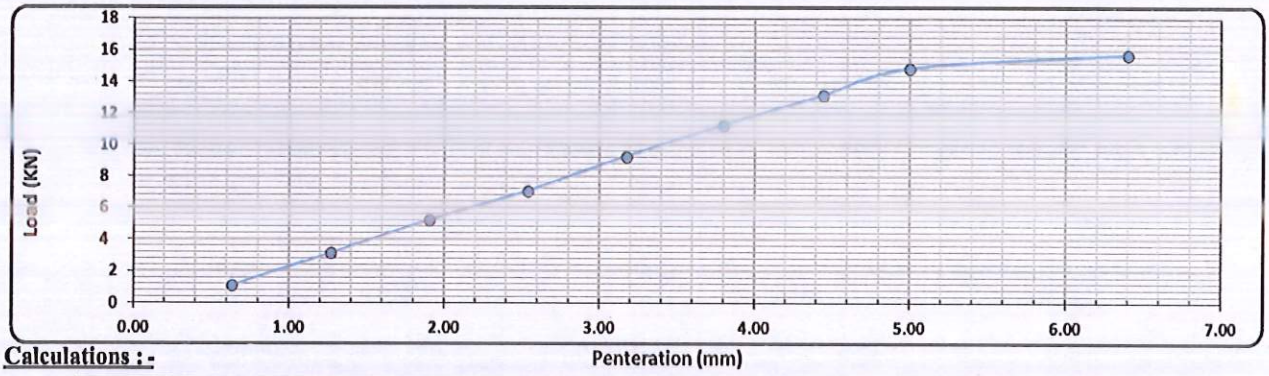
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16653
(gm)Mold WT. + Wet WT.	21525
(gm)Wet WT.	4872
Wet Density (g/cm^3)	2.237
Dry Density (g/cm^3)	2.091
Proctor Density (g/cm^3)	2.160
Compaction %	97

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	27.24
(gm)Tare WT. +Wet WT.	154.72
(gm)Tare WT. +Dry WT.	146.4
(gm)Water WT.	8.3
(gm)Dry WT.	119.2
Moisture Content %	7.0

Swelling	
Mold No.	55
Date	19/10/2022
(mm)Intial Height	5.00
(mm)Final Height	5.00
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	105.00	259.00	425.00	642.00	851.00	1001.00	1166.00	1285.00	1613.00
(KN)Load	1.0	2.5	4.2	6.3	8.3	9.8	11.4	12.6	15.8



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 97 %
2.50	6.29	13.4	47.1%	97	97	47.2%
5.00	12.59	20.0	62.9%			63.0%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		15/11/2022					
Contractor reference	CA-Emb-10								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+370 / 521+400 / -8 521+680 / 521+800 / -8 521+560 / 521+615 / -8		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	11-11-2022	
2	Classification	m^3	5000	11-11-2022	
3	Proctor & O.m.c	m^3	5000	11-11-2022	
4	L.L & P.L & PI	m^3	5000	11-11-2022	
5	C.B.R	m^3	5000	15-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	15/11/2022	A
QA/QC *	Ahmed Abo Zaid		15/11/2022	A
GARB**	Hussien Fouad		15/11/2022	A
Comments by	Fill Quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	15/11/2022	
Contractor Reference	CA-Emb-10			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	10.2%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.5%	
6	ASTM D 1557	Modified proctor	2.19	
7	ASTM D 1883	CBR	68%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Raman	15/11/2022	A
Contractor QA/QC *	Abdallah SAMY	Abdallah	15/11/2022	A
GARB**	Hussien Fouad	Hussien	15/11/2022	A
Employers Representative	Mohmed Ahmed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	15/11/2022	code	ZONE	520+500	522+000
Location :	KP:521+000	CH-Emb-1	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		15000.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	1281.0	1200.0	2071.0	1424.0	1598.0	1142.0	1900.0			A-1-a
(g)Cumulative Retained	1281.0	2481.0	4552.0	5976.0	7574.0	8716.0	10616.0		PRO	2.19
Cumulative Retained %	8.5	16.5	30.3	39.8	50.5	58.1	70.8		WC	7.5
Cumulative Passing %	91.5	83.5	69.7	60.2	49.5	41.9	29.2		CBR	66%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	100.00	248.34	325.00					
Cumulative Retained %	20.00	49.67	65.00					
Cumulative Passing %	80.00	50.33	35.00					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	91.5	83.5	69.7	60.2	49.5	41.9	29.2	23.4	14.7	10.2

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	23.1%	21.2%	1.9%

Contractor	Consultant

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

PROCTOR TEST

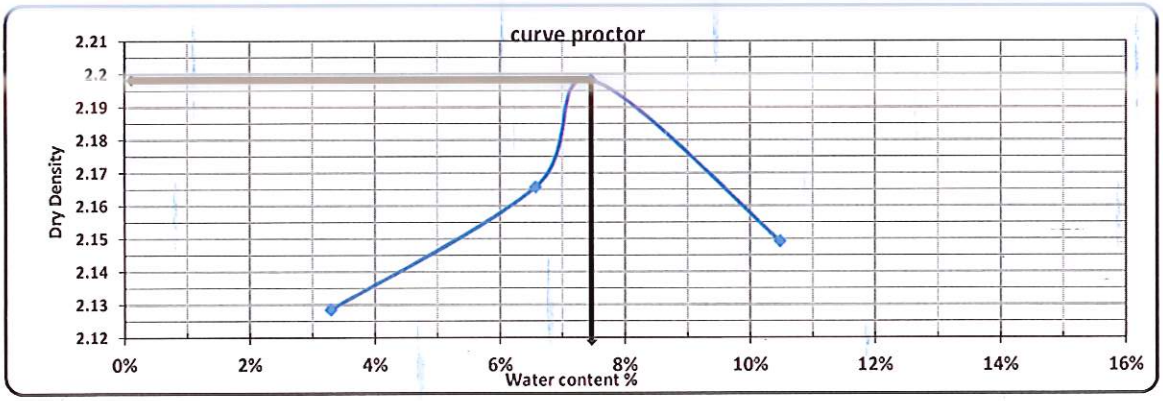
TESTING DATE:	10-11-2022	code	ZONE	520+500	522+000
LOCATION	KP:521+000	CA-Embk-6	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

Weight of empty mold :	6128.0
Mold Volume:	2104.9

MAX Dry Density	2.19
Water content %	7.5

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10756.0	10986.0	11100.0	11126	
WT. WET SOIL	4628.0	4858.0	4972.0	4998.0	
Wt. Density	2.199	2.308	2.362	2.374	

Tare No.	12	12	7	7	8	8	11	11		
Tare wt.	26.1	26.1	25.93	25.93	26.63	26.63	25.34	25.34		
Wt. Of wet soil & tare	128.2	128.2	131.6	131.6	131.8	131.8	134.6	134.6		
Wt. Of dry soil & tare	124.8	125.0	125.1	125.1	124.5	124.5	124.2	124.2		
Wt. Of water	3.3	3.2	6.5	6.5	7.3	7.3	10.4	10.4		
Wt. Of dry soil	98.7	98.9	99.1	99.1	97.9	97.9	98.9	98.9		
Water content %	3.4%	3.2%	6.6%	6.6%	7.5%	7.5%	10.5%	10.5%		
AV.Water content %	3.3%		6.6%		7.5%		10.5%			
Dry Density	2.129		2.166		2.198		2.149			



Contractor

Consultant

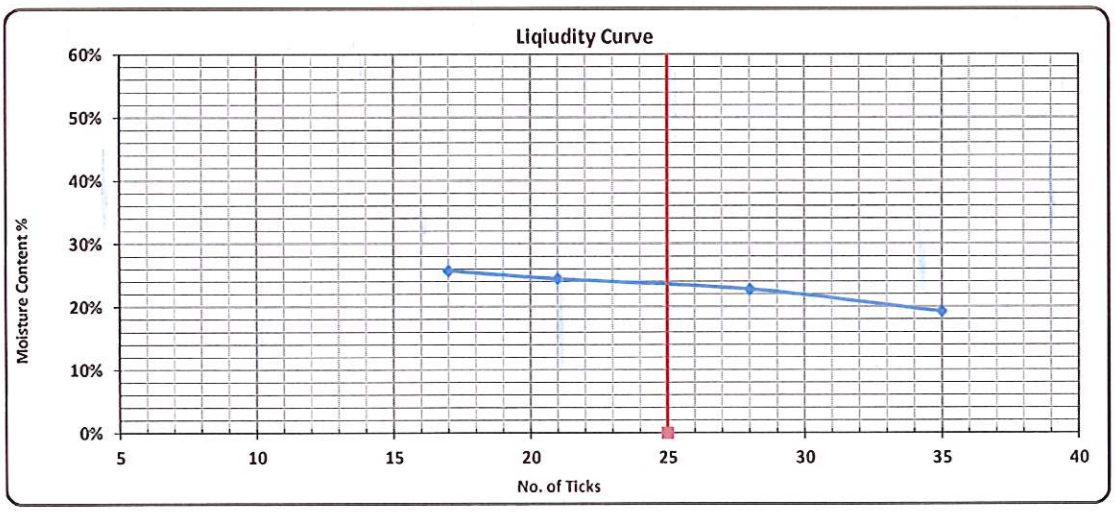
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR	GARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	15/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-10	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	35	28	21	17	-	-
Tare No.	30	12	3	9	F	D
Tare WT. (gm)	25.70	27.18	26.29	26.91	11.96	12.52
Tare WT. + Wet WT. (gm)	48.33	54.41	55.73	54.58	12.67	13.18
Tare WT. + Dry WT. (gm)	44.68	49.36	49.95	48.92	12.54	13.07
(gm)Water WT.	3.65	5.05	5.78	5.66	0.13	0.11
(gm)Dry WT.	18.98	22.18	23.66	22.01	0.58	0.55
Moisture Content %	19.2%	22.8%	24.4%	25.7%	22.4%	20.0%
Average %					21.2%	



L.L	P.L	P.I
23.1%	21.2%	1.9%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	15/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-10	Material	fill material layar		
Name Company	cairo company		quaintity	5000 m3		

-: Test Results

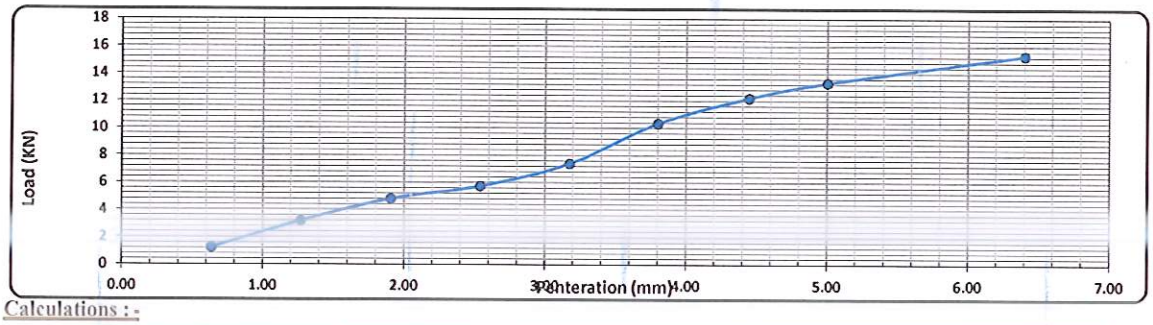
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16553
(gm)Mold WT. + Wet WT.	21564
(gm)Wet WT.	5011
Wet Density (g/cm^3)	2.301
Dry Density (g/cm^3)	2.141
Proctor Density (g/cm^3)	2.190
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	25.25
(gm)Tare WT. +Wet WT.	145.9
(gm)Tare WT. +Dry WT.	137.5
(gm)Water WT.	8.4
(gm)Dry WT.	112.3
Moisture Content %	7.5

Swelling	
Mold No.	5
Date	15/11/2022
(mm)Intial Height	5.1
(mm)Final Height	5.1
Difference	0
(mm)Sample Height	11.2
Swelling Ratio %	

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	125.00	325.00	489.00	585.00	754.00	1056.00	1244.00	1358.00	1564.00
(KN)Load	1.2	3.2	4.8	5.7	7.4	10.3	12.2	13.3	15.3



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	5.73	13.4	42.9%	98	100	43.9%
5.00	13.31	20.0	66.5%			68.0%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company			K.K				
Issued by Contractor	Name	Sign		Date			Time				
	Eng/ Abdelrahman Adel			20-11-2022							
Contractor reference	CA-EM6-11										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+615 / 521+680 / -8 521+000 / 521+080 / -9.5 521+500 / 521+540 / -8		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	16-11-2022	
2	Classification	m^3	5000	16-11-2022	
3	Proctor & O.m.c	m^3	5000	16-11-2022	
4	L.L & P.L & PI	m^3	5000	16-11-2022	
5	C.B.R	m^3	5000	20-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	20/11/2022	A
QA/QC *	Ahmed Abo Zaid		20/11/2022	A
GARB**	Hussien Soud		20/11/2022	A
Comments by	Final Quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel-Rahman	20-11-2022	
Contractor Reference	CA-Emb-11			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	14.7%	
4	ASTM D 4318	Atterberg limit	20 %	
5	ASTM D 2974	Moisture content	7.6%	
6	ASTM D 1557	Modified proctor	2.18	
7	ASTM D 1883	CBR	60%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	20/11/2022	A
Contractor QA/QC *	Eng / Abdallah SAMY	Abdallah	20/11/2022	A
GARB**	Hussien Fouad	Hussien	20/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GAPRLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	16/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-11	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		15000.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	174.0	305.0	1700.0	1550.0	1842.0	1090.0	1778.0			A-1-a
(g)Cumulative Retained	174.0	479.0	2179.0	3729.0	5571.0	6661.0	8439.0		PRO	2.18
Cumulative Retained %	1.2	3.2	14.5	24.9	37.1	44.4	56.3		WC	7.6
Cumulative Passing %	98.8	96.8	85.5	75.1	62.9	55.6	43.7		CBR	59.9

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	88.00	249.48	331.69					
Cumulative Retained %	17.60	49.90	66.34					
Cumulative Passing %	82.40	50.10	33.66					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	98.8	96.8	85.5	75.1	62.9	55.6	43.7	36.0	21.9	14.7

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	23%	20%	3.1%

Contractor	Consultant

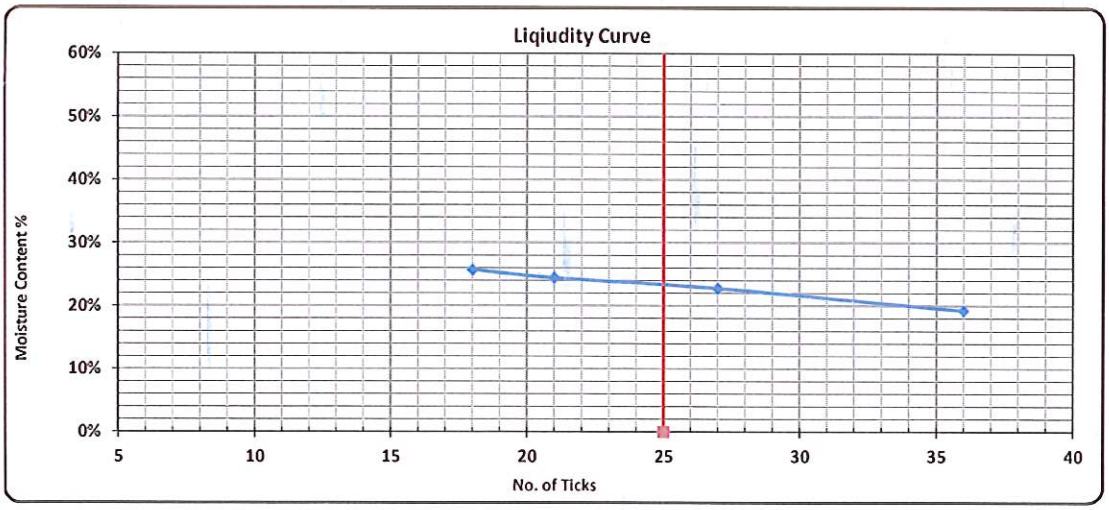
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد خليل — SYSTRA SHAKER	Electric Express Train - HSR	الهيئة القومية للأنفاق — الهيئة العامة للطرق والكباري والنقل البري (GARBLT)

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	16/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-11	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	36	27	21	18	-	-
Tare No.	12	7	4	11	F	D
Tare WT. (gm)	25.70	27.18	26.29	26.91	11.96	12.52
Tare WT. + Wet WT. (gm)	48.33	54.41	55.73	54.58	12.67	13.18
Tare WT. + Dry WT. (gm)	44.68	49.36	49.95	48.92	12.54	13.08
(gm)Water WT.	3.65	5.05	5.78	5.66	0.13	0.10
(gm)Dry WT.	18.98	22.18	23.66	22.01	0.58	0.56
Moisture Content %	19.2%	22.8%	24.4%	25.7%	22.4%	17.9%
Average %					20.1%	



L.L	P.L	P.I
23.2%	20.1%	3.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع : مطار العلمين
القطاع السابع
معمل المركزى
(رقم 6)

القاهرة للطرق والإنشاءات
س.ت : ١٠٦٣٠٥
ب.ض : ٠٤٦ - ٥٩٢ - ٥٤٥

المكتب الاستشاري الهندسي
أ.د. خالد خليل

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

PROCTOR TEST

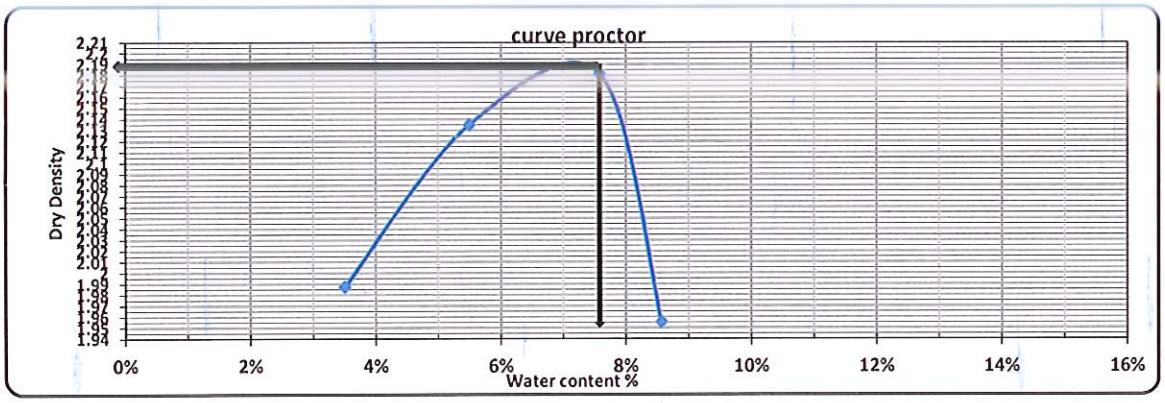
Testing Date :	16/11/2022	Code	ZONE	520+500	522+000
Location :	KP 521+000	CA-Emb-11	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6210.0
Mold Volume:	2104.9

MAX Dry Density	2.18
Water content %	7.6

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10540.0	10951.0	11150.0	10679	
WT. WET SOIL	4330.0	4741.0	4940.0	4469.0	
Wt. Density	2.057	2.252	2.347	2.123	

Tare No.	30	30	45	45	2	2	9	9		
Tare wt.	26.1	26.1	25.34	25.34	27.22	27.22	25.46	26.46		
Wt. Of wet soil & tare	128.2	128.2	157.2	157.2	153.4	153.4	150.9	150.9		
Wt. Of dry soil & tare	124.7	124.7	150.3	150.3	144.5	144.5	141.0	141.0		
Wt. Of water	3.5	3.5	6.9	6.9	8.9	8.9	9.9	9.9		
Wt. Of dry soil	98.6	98.6	125.0	125.0	117.3	117.3	115.6	114.6		
Water content %	3.5%	3.5%	5.5%	5.5%	7.6%	7.6%	8.5%	8.6%		
AV.Water content %	3.5%		5.5%		7.6%		8.6%			
Dry Density	1.987		2.135		2.182		1.956			



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	20/11/2022	Code	ZONE		520+500	522+000
Location :	KP:521+000	CA-Emb-11	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

- : Test Results

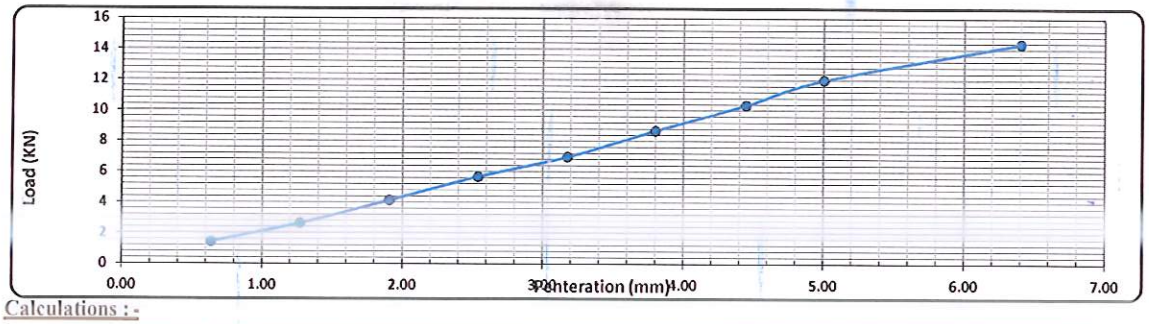
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16553
(gm)Mold WT. + Wet WT.	21536
(gm)Wet WT.	4983
Wet Density (g/cm^3)	2.288
Dry Density (g/cm^3)	2.128
Proctor Density (g/cm^3)	2.180
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	26.36
(gm)Tare WT. +Wet WT.	146
(gm)Tare WT. +Dry WT.	137.6
(gm)Water WT.	8.4
(gm)Dry WT.	111.2
Moisture Content %	7.6

Swelling	
Mold No.	1
Date	20/11/2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	146.00	269.00	421.00	578.00	711.00	886.00	1056.00	1223.00	1465.00
(KN)Load	1.4	2.6	4.1	5.7	7.0	8.7	10.3	12.0	14.4



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	5.66	13.4	42.4%	98	100	43.5%
5.00	11.99	20.0	59.9%			61.3%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign : Hassan	Sign :	Sign :

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		21/11/2022				
Contractor reference	CA-Emb-12-							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+540 / 521+560 / -8 521+680 / 521+780 / -7.5 521+800 / 521+950 / -8		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	17-11-2022	
2	Classification	m^3	5000	17-11-2022	
3	Proctor & O.m.c	m^3	5000	17-11-2022	
4	L.L & P.L & PI	m^3	5000	17-11-2022	
5	C.B.R	m^3	5000	21-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	21/11/2022	A
QA/QC *	Ahmed Abo Zaid		21/11/2022	A
GARB**	Hussien. Sowad	Hussien	21/11/2022	A
Comments by	Final Quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	21/11/2022	
Contractor Reference	CA-EMb-12 - 21/11/2022			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment		Soil (A-1-a)	
Location of stock		K.p (521+500) No (1)		
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	10.5%	
4	ASTM D 4318	Atterberg limit	18.6%	
5	ASTM D 2974	Moisture content	6.3%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	60.7%	
Comments by:			**Comments by:**	
			All test under Responsibility third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Abel	Abdel Rahman	21/11/2022	A
Contractor QA/QC *	Abdallah SAMY	Abdallah	21/11/2022	A
GARB**	Hussien Fouad	Hussien	21/11/2022	A
Employers Representative	Mohamed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	17/11/2022	Code	ZONE	520+500	522+000
Location :	KR:521+000	CA-Emb-12	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		20000.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	755.0	2755.0	3380.0	1480.0	2060.0	1080.0	2300.0			A-1-a
(g)Cumulative Retained	755.0	3510.0	6890.0	8370.0	10430.0	11510.0	13810.0		PRO	2.15
Cumulative Retained %	3.8	17.6	34.5	41.9	52.2	57.6	69.1		WC	6.3
Cumulative Passing %	96.2	82.5	65.6	58.2	47.9	42.5	31.0		CBR	59.4

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	84.30	214.54	331.14					
Cumulative Retained %	16.86	42.91	66.23					
Cumulative Passing %	83.14	57.09	33.77					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	96.2	82.5	65.6	58.2	47.9	42.5	31.0	25.7	17.7	10.5

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	24.3%	18.6%	5.7%

Contractor		Consultant
Hesse		

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

القاهرة نظرق والإنشاءات
س.ت: ١٠٦٧٠٥
ب.ق: ٠٤٦ - ٥٩٢ - ٥٤٥

المكتب الاستشاري الهندسي

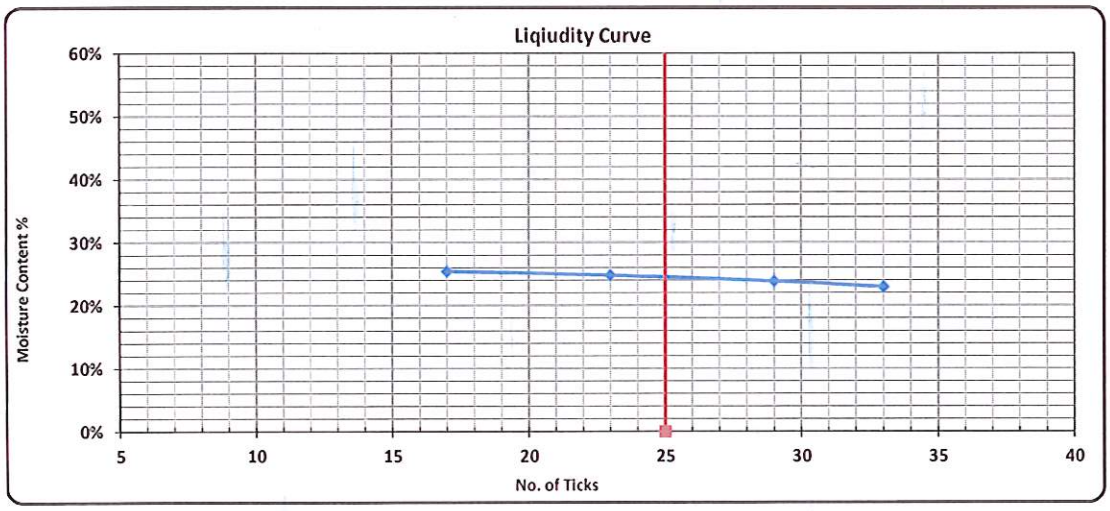
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR	CARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	18/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-12	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	33	29	23	17		
Tare No.	45	7	14	46		
Tare WT. (gm)	25.34	27.46	22.87	27.12	11.16	13.35
Tare WT. + Wet WT. (gm)	66.34	81.39	71.00	54.21	11.94	14.16
Tare WT. + Dry WT. (gm)	58.69	71.00	61.44	48.72	11.82	14.03
(gm)Water WT.	7.65	10.39	9.56	5.49	0.12	0.13
(gm)Dry WT.	33.35	43.54	38.57	21.60	0.66	0.68
Moisture Content %	22.9%	23.9%	24.8%	25.4%	18.2%	19.1%
Average %					18.6%	



L.L	P.L	P.I
24.3%	18.6%	5.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GAPBLT)

PROCTOR TEST

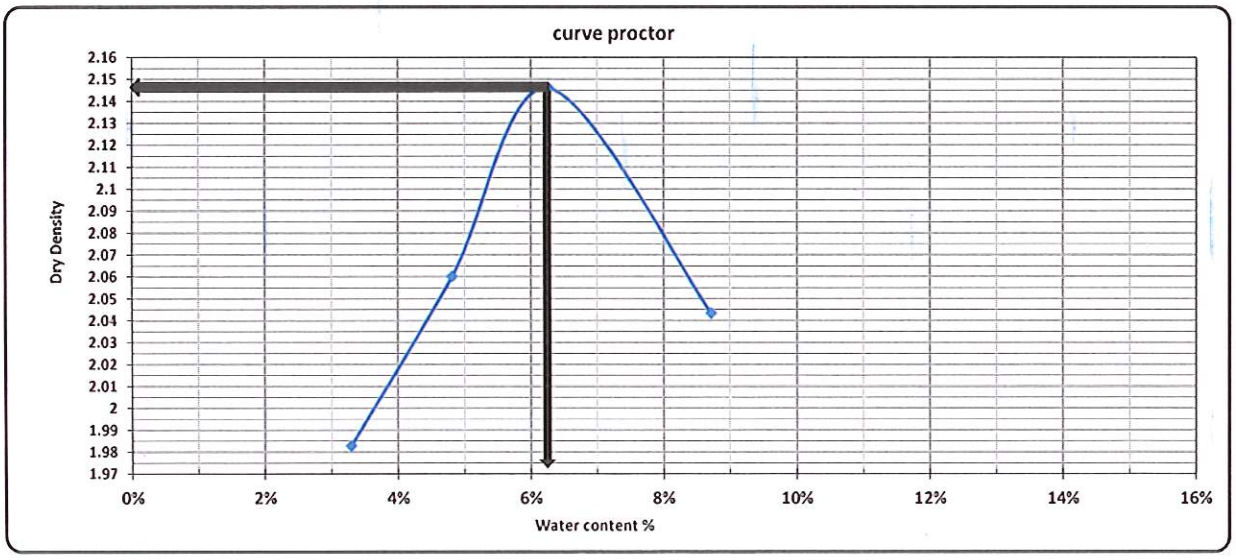
Testing Date :	18/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-12	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6210.0
Mold Volume:	2104.9

MAX Dry Density	2.150
Water content %	6.3

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10521.0	10755.0	11010.0	10886	
WT. WET SOIL	4311.0	4545.0	4800.0	4676.0	
Wt. Density	2.048	2.159	2.280	2.221	

Tare No.	1	1	23	23	16	16	45	45		
Tare wt.	26.84	26.84	25.27	25.27	25.99	25.99	25.32	25.32		
Wt. Of wet soil & tare	157.2	157.2	145.5	145.5	163.6	163.6	158.7	158.7		
Wt. Of dry soil & tare	153.0	153.0	140.0	140.0	155.5	155.5	148.0	148.0		
Wt. Of water	4.2	4.2	5.5	5.5	8.1	8.1	10.7	10.7		
Wt. Of dry soil	126.2	126.2	114.7	114.7	129.5	129.5	122.7	122.7		
Water content %	3.3%	3.3%	4.8%	4.8%	6.3%	6.3%	8.7%	8.7%		
AV.Water content %	3.3%		4.8%		6.3%		8.7%			
Dry Density	1.983		2.060		2.146		2.043			



Contractor		Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	21/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-12	Material	fill material layar		
Name Company	cairo company		quaintity	5000 m3		

- : Test Results

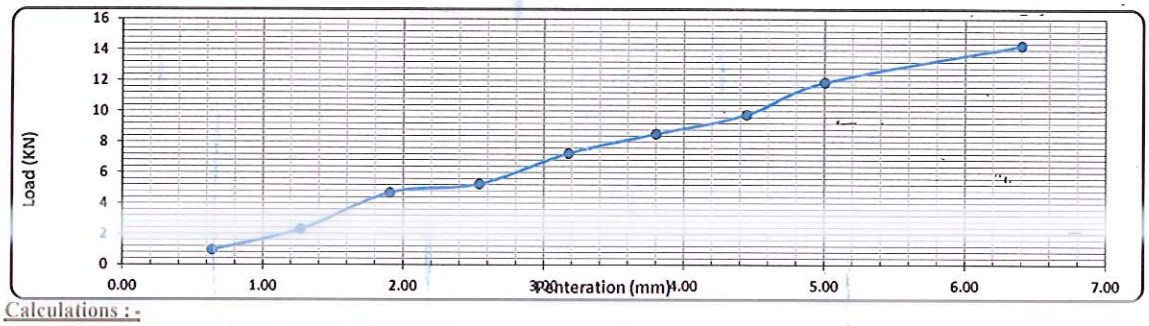
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16444
(gm)Mold WT. + Wet WT.	21266
(gm)Wet WT.	4822
Wet Density (g/cm^3)	2.214
Dry Density (g/cm^3)	2.101
Proctor Density (g/cm^3)	2.150
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	25.13
(gm)Tare WT. +Wet WT.	156
(gm)Tare WT. +Dry WT.	149.3
(gm)water wt.	6.7
(gm)Dry WT.	124.2
Moisture Content %	5.4

Swelling	
Mold No.	2
Date	21-11-2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

64.04	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	97.00	236.00	478.00	536.00	740.00	869.00	997.00	1213.00	1458.00
(KN)Load	1.0	2.3	4.7	5.3	7.3	8.5	9.8	11.9	14.3



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	5.25	13.4	39.3%	98	100	40.3%
5.00	11.89	20.0	59.4%			60.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign : Hassan	Sign :	Sign :

مشروع القطار الكهربي
القطاع السابع
معمل المركزى
(رقم 6)

القاهرة للطرق والإنشاءات

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company	K.K			
Issued by Contractor	Name	Sign		Date	Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		23/11/2022				
Contractor reference	CA-Emb-13							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+950 / 521+980 / -8 521+320 / 521+460 / -7.5 521+560 / 521+610 / -7.5		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	21-11-2022	
2	Classification	m^3	5000	21-11-2022	
3	Proctor & O.m.c	m^3	5000	21-11-2022	
4	L.L & P.L & PI	m^3	5000	21-11-2022	
5	C.B.R	m^3	5000	23-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	23/11/2022	A
QA/QC *	Ahmed Abo Zaid		23/11/2022	A
GARB**	Hussien Soweed		23/11/2022	A
Comments by	First Quality approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Abdelrahman Adel	Abdelrahman Adel		23/11/2022							
Contractor Reference	CA-Emb-13										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	12.7%	
4	ASTM D 4318	Atterberg limit	19.3%	
5	ASTM D 2974	Moisture content	6.3%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	66.4%	

Comments by:	Comments by:
	All test under Responsibility third Party.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Ahmed Mohamed	Ahmed Mohamed	23/11/2022	A
Contractor QA/QC *	Ahmed Abo Zaid		23/11/2022	A
GARB**	Hussien Sowad		23/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	19/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-13	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		20000.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	225.0	1190.0	3445.0	2135.0	2932.0	1750.0	1810.0			A-1-a
(g)Cumulative Retained	225.0	1415.0	4860.0	6995.0	9927.0	11677.0	13487.0		PRO	2.15
Cumulative Retained %	1.1	7.1	24.3	35.0	49.6	58.4	67.4		WC	6.3
Cumulative Passing %	98.9	92.9	75.7	65.0	50.4	41.6	32.6		CBR	64%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	86.10	204.52	304.50					
Cumulative Retained %	17.22	40.90	60.90					
Cumulative Passing %	82.78	59.10	39.10					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	98.9	92.9	75.7	65.0	50.4	41.6	32.6	27.0	19.2	12.7

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	25.3%	19.3%	5.9%

Contractor

Hassan

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

القاهرة للطرق والإنشاءات

Consultant

المكتب الاستشاري الهندسي
أ.د. خالد قنديل

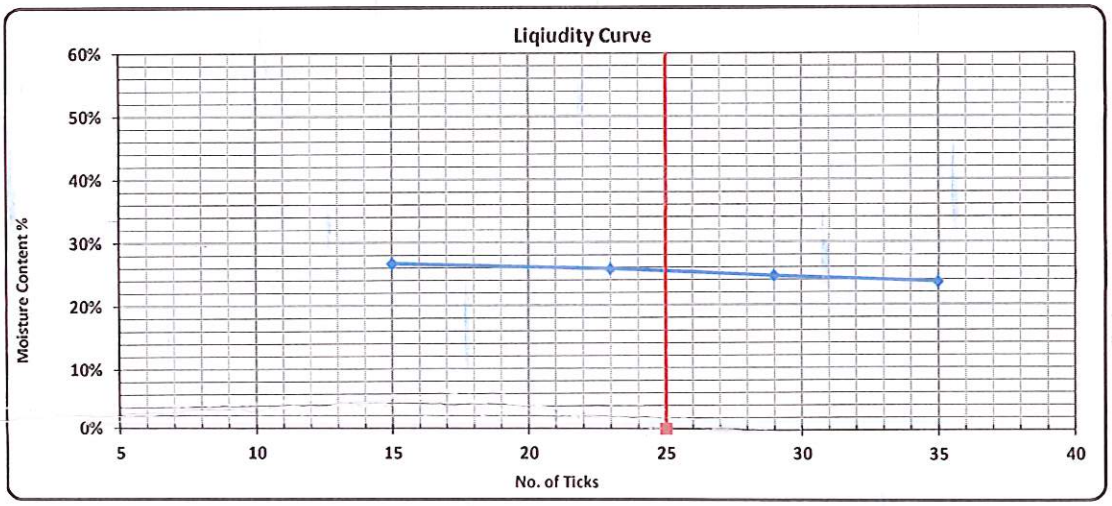
ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد فنديل — SYSTRA SHAKER	Electric Express Train - HSR	GARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	20/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-13	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	35	29	23	15	-	-
Tare No.	24	11	10	3	2	1
Tare WT. (gm)	24.68	26.87	26.42	26.38	12.78	12.55
Tare WT. + Wet WT. (gm)	70.94	63.30	67.65	68.53	13.86	13.57
Tare WT. + Dry WT. (gm)	62.10	56.10	59.20	59.65	13.69	13.40
(gm)Water WT.	8.84	7.20	8.45	8.88	0.17	0.17
(gm)Dry WT.	37.42	29.23	32.78	33.27	0.91	0.85
Moisture Content %	23.6%	24.6%	25.8%	26.7%	18.7%	20.0%
Average %					19.3%	



L.L	P.L	P.I
25.3%	19.3%	5.9%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

القاهرة للطرق والإنشاءات

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PROCTOR TEST

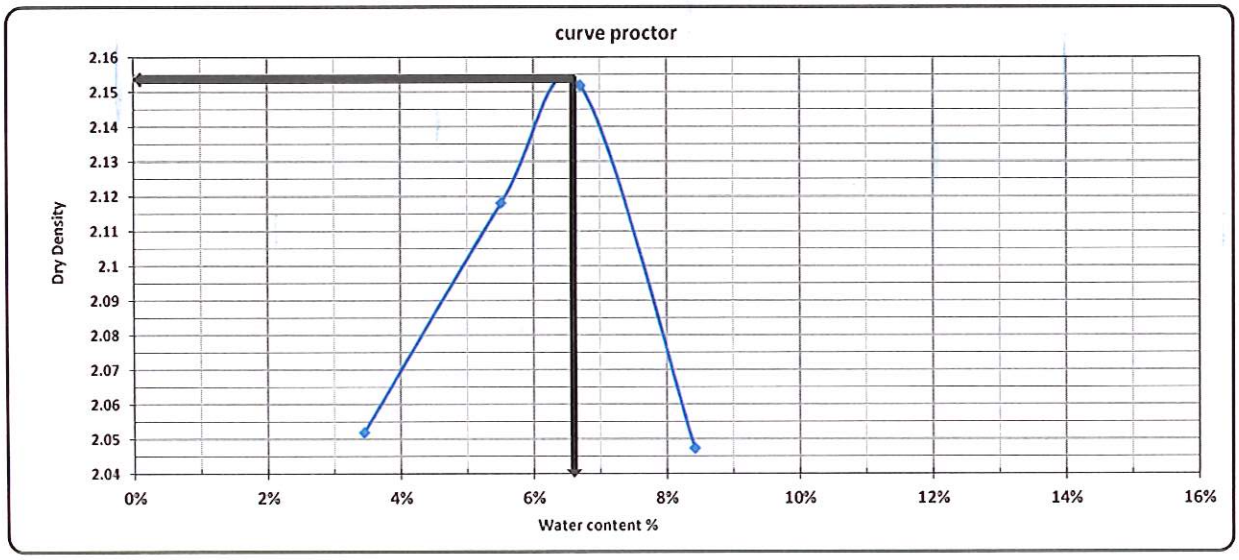
Testing Date :	20/1/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-13	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6428.0
Mold Volume:	2104.9

MAX Dry Density	2.152
Water content %	6.3

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10896.0	11132.0	11261.0	11100	
WT. WET SOIL	4468.0	4704.0	4833.0	4672.0	
Wt. Density	2.123	2.235	2.296	2.220	

Tare No.	11	11	3	3	8	8	10	10		
Tare wt.	25.99	25.99	26.38	26.38	26.53	26.53	26.41	26.41		
Wt. Of wet soil & tare	140.0	140.0	125.9	125.9	141.0	141.0	132.2	132.2		
Wt. Of dry soil & tare	136.2	136.2	120.7	120.7	133.8	133.8	124.0	124.0		
Wt. Of water	3.8	3.8	5.2	5.2	7.2	7.2	8.2	8.2		
Wt. Of dry soil	110.2	110.2	94.3	94.3	107.3	107.3	97.6	97.6		
Water content %	3.4%	3.4%	5.5%	5.5%	6.7%	6.7%	8.4%	8.4%		
AV.Water content %	3.4%		5.5%		6.7%		8.4%			
Dry Density	2.052		2.118		2.152		2.047			



Contractor

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 5)

القاهرة للطرق والإنشاءات
س.ت: ١٠٦٧٠٥
ب.ض: ٠٤٦-٥٩٢-٥٤٤

Consultant

	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	23/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-13	Material	fill material layar		
Name Company	cairo company		quaintity	5000 m3		

- : Test Results

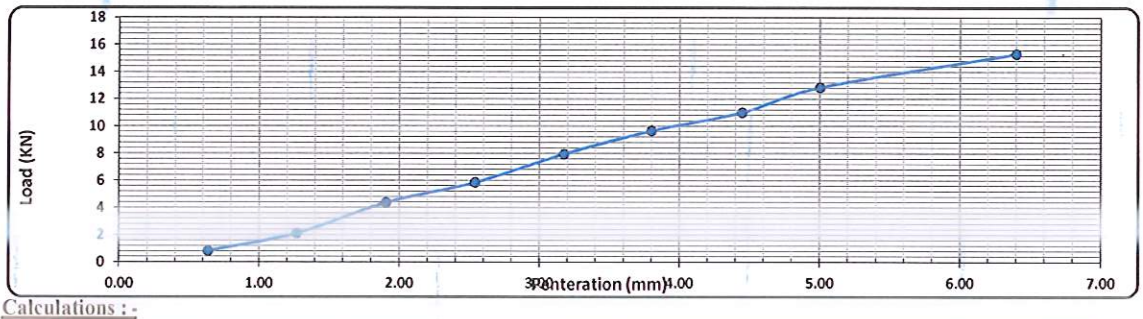
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16444
(gm)Mold WT. + Wet WT.	21213
(gm)Wet WT.	4769
Wet Density (g/cm^3)	2.190
Dry Density (g/cm^3)	2.078
Proctor Density (g/cm^3)	2.150
Compaction %	97

Mositure Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	25.13
(gm)Tare WT. +Wet WT.	156
(gm)Tare WT. +Dry WT.	149.3
(gm)water wt	6.7
(gm)Dry WT.	124.2
Moisture Content %	5.4

Swelling	
Mold No.	2
Date	23/11/2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	0 0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

64.04	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	84.00	216.00	446.00	597.00	811.00	986.00	1123.00	1311.00	1563.00
(KN)Load	0.8	2.1	4.4	5.9	7.9	9.7	11.0	12.8	15.3



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	5.85	13.4	43.8%	97	100	45.3%
5.00	12.85	20.0	64.2%			66.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 26-11-2022
			Time:
Contractor reference	CA-EMb-14		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+610 / 521+680 / -7.5 520+880 / 520+960 / -11.5		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	25-11-2022	
2	Classification	m^3	5000	25-11-2022	
3	Proctor & O.m.c	m^3	5000	25-11-2022	
4	L.L & P.L & PI	m^3	5000	25-11-2022	
5	C.B.R	m^3	5000	26-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	26/11/2022	A
QA/QC *	Ahmed Abo Zaid		26/11/2022	A
GARB**	Hussien Fouad	Hussien	26/11/2022	A
Comments by	final quantity approved with 0.5			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdelrahman Adel	26-11-2022	
Contractor Reference	CA-EMB-14			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Soil (A-1-a)			
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	10.3%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.1%	
6	ASTM D 1557	Modified proctor	2.18	
7	ASTM D 1883	CBR	42.7%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Ahmed mohamed	Ahmed mohamed	26/11/2022	A
Contractor QA/QC *	Ahmed Abo Zeid		26/11/2022	A
GARB**	Hussien Fouad		26/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NAHLA)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	23-11-2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-14	Material	fill material Layars	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		24805.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
0.00	2045.0	2312.0	2032.0	2554.0	2715.0	2615.0	2835.0			A-1-a
Cumulative Retained (g)	2045.0	4357.0	6389.0	8943.0	11658.0	14273.0	17108.0		PRO	2.18
Cumulative Retained %	8.2	17.6	25.8	36.1	47.0	57.5	69.0		WC	6.10
Cumulative Passing %	91.8	82.4	74.2	63.9	53.0	42.5	31.0		CBR	42.70

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	116.40	241.00	333.50					
Cumulative Retained %	23.28	48.20	66.70					
Cumulative Passing %	76.72	51.80	33.30					

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 %	91.8	82.4	74.2	63.9	53.0	42.5	31.0	23.8	16.1	10.3

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	(CARBUT) الجهاز التنفيذي للطرق والكباري والنقل البري / الهيئة القومية للأنفاق

PROCTOR TEST

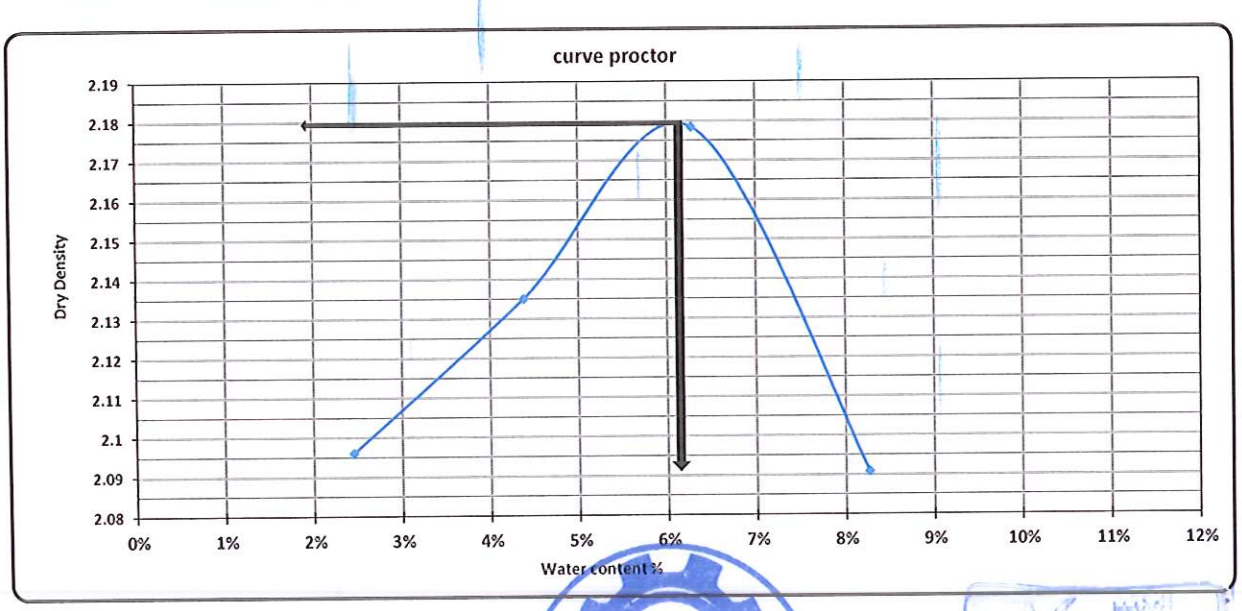
TESTING DATE:	24-11-2022	Code	Station	520+500	522+000
LOCATION	kp:521+000	CA-Emb-14	Material	fill material Layars	
NAME COMPANY	cairo company		layer thickness	5000m3	

Weight of empty mold :	5764.0
Mold Volume:	2169.0

MAX Dry Density	2.18
Water content %	6.1

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10422.0	10598.0	10786.0	10674	
WT. WET SOIL	4658.0	4834.0	5022.0	4910.0	
Wt. Density	2.148	2.229	2.315	2.264	

Tare No.	40	20	8	15	11	32	21	45		
Tare wt.	46.4	60.9	46.8	31.9	46.1	74.4	55.2	41.5		
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	147.6	147.8	145.7	145.0	143.9	145.5	142.6	141.9		
Wt. Of water	2.4	2.2	4.3	5.0	6.1	4.5	7.4	8.1		
Wt. Of dry soil	101.2	86.9	98.9	113.1	97.8	71.1	87.4	100.4		
Water content %	2.4%	2.5%	4.3%	4.4%	6.2%	6.3%	8.5%	8.1%		
AV.Water content %	2.5%		4.4%		6.3%		8.3%			
Dry Density	2.096		2.135		2.178		2.091			



Contractor

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Consultant

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد عجيل — SYSTRA — SHAKER	**Electric Express Train - HSR**	(CAPULT) — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	26/11/2022	Code	ZONE	520+500	522+000
Location :	kp:521+000	Ca-Emb-14	Material	fill material Layars	
Company Name	cairo company		quantity	5000m3	

- : Test Results

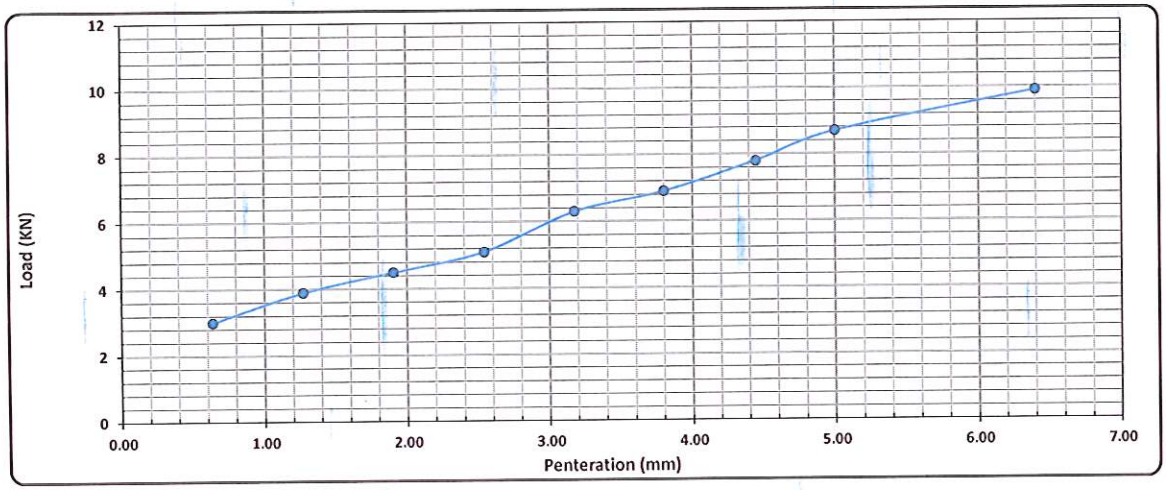
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2140
Mold WT. (gm)	4900
Mold WT. + Wet WT. (gm)	9836
Wet WT. (gm)	4936
Wet Density (g/cm^3)	2.307
Dry Density (g/cm^3)	2.176
Proctor Density (g/cm^3)	2.180
Compaction %	99.8

Mositure Ratio After Compacted Mold	
Tare No.	18
Tare WT. (gm)	77.7
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	145.9
Water WT. (gm)	4.1
Dry WT. (gm)	68.2
Moisture Content %	6.0

Swelling	
Mold No.	4
Date	٢٠٢٢/١١/٢٦
Intial Height (mm)	3.00
Final Height (mm)	3.00
Difference	0
Sample Height (mm)	11.90
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.10	0.13	0.15	0.17	0.21	0.23	0.26	0.29	0.33
Load (KN)	3.0	3.9	4.5	5.1	6.3	6.9	7.8	8.7	9.9



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.10	13.4	38.2%	100	98	37.5%
5.00	8.70	20.0	43.4%			42.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

القاهرة للتطوير والإنشاءات س.ت: ١٠٦٧٠٥ ب.ض: ٠٤٦ - ٥٨٢ - ٥٤٥

Electric Express Train Central Lab Number 4 Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abd el rahman Adel	Date: 29-11-2022
			Time:
Contractor reference	CA-Emb-15		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 520+960 / 521+000 / -11.5 521+140 / 521+280 / -8.5		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	25-11-2022	
2	Classification	m^3	5000	25-11-2022	
3	Proctor & O.m.c	m^3	5000	25-11-2022	
4	L.L & P.L & PI	m^3	5000	25-11-2022	
5	C.B.R	m^3	5000	29-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed Mohammed	Ahmed Mohamed	29/11/2022	A
QA/QC *	Ahmed Abo Zaid		29/11/2022	A
GARB**	Hussien Sowey	Hussien	29/11/2022	A
Comments by	Final Quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel		29-11-2022	
Contractor Reference	CA-EMb-15			
Received by ER		MAR	C1 C2 C3 DD MM YY HH MM	

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	9.1%	
4	ASTM D 4318	Atterberg limit	19.78%	
5	ASTM D 2974	Moisture content	6%	
6	ASTM D 1557	Modified proctor	2.18	
7	ASTM D 1883	CBR	57.6%	
Comments by:			Comments by:	
			All test under Responsibility third party.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	29/11/2022	A
Contractor QA/QC *	Hassan		29/11/2022	A
GARB**	Hussien Fouad	Hussien	29/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2025	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR** From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NAHU)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	25/11/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-EM6-15	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

1-visual inspection test .....

.....

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		17042.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
0.00	2123.0	2635.0	2344.0	1586.0	1856.0	1441.0	1251.0			A-1-a
Cumulative Retained (g)	2123.0	4758.0	7102.0	8688.0	10544.0	11985.0	13236.0		PRO	2.18
Cumulative Retained %	12.5	27.9	41.7	51.0	61.9	70.3	77.7		WC	6.00
Cumulative Passing %	87.5	72.1	58.3	49.0	38.1	29.7	22.3		CBR	57.60

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	86.50	193.80	295.90					
Cumulative Retained %	17.30	38.76	59.18					
Cumulative Passing %	82.70	61.24	40.82					

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 %	87.5	72.1	58.3	49.0	38.1	29.7	22.3	18.5	13.7	9.1

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	24.54%	19.78%	4.76%

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	(CAPBILT) الهيئة القومية للإنفاق

PROCTOR TEST

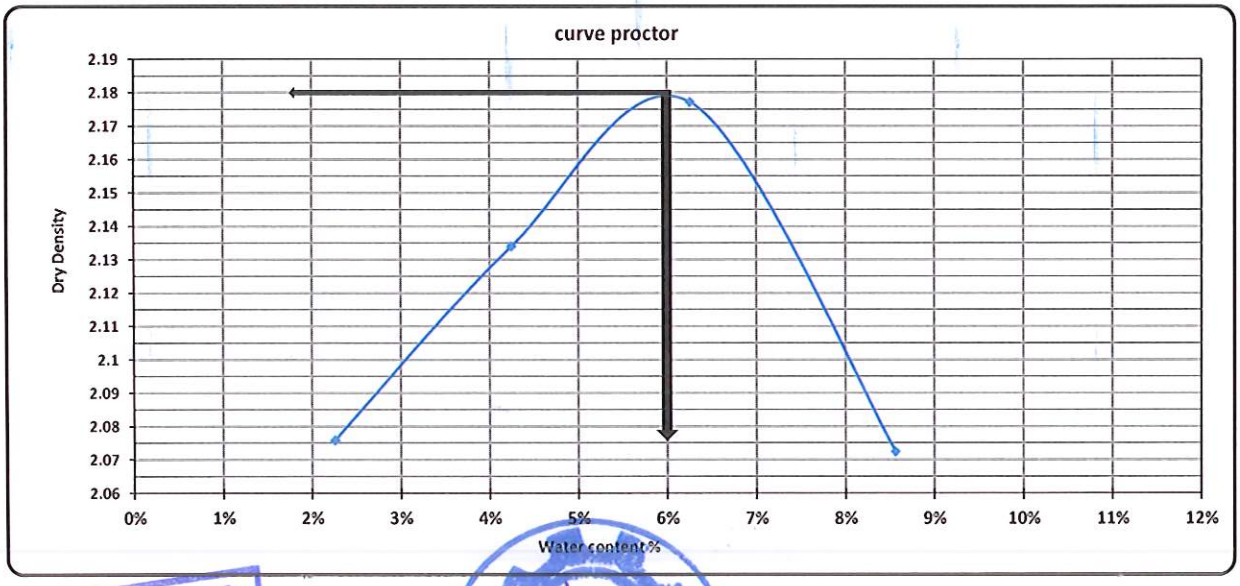
TESTING DATE:	26-11-2023	Code	Station	520+500	522+000
LOCATION	kp:521+560	CA-EM6-15	Material	fill matrial layer	
NAME COMPANY	cairo company		quantity	5000 m3	

Weight of empty mold :	5764.0
Mold Volume:	2169.0

MAX Dry Density	2.18
Water content %	6

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10368.0	10589.0	10782.0	10644	
WT. WET SOIL	4604.0	4825.0	5018.0	4880.0	
Wt. Density	2.123	2.225	2.314	2.250	

Tare No.	22	15	11	32	7	45	18	35		
Tare wt.	54.1	31.9	46.1	74.4	42.8	41.5	77.7	73.9		
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	147.8	147.5	145.8	146.9	143.7	143.6	144.2	144.1		
Wt. Of water	2.2	2.5	4.2	3.1	6.3	6.4	5.8	5.9		
Wt. Of dry soil	93.7	115.6	99.7	72.5	100.9	102.1	66.5	70.2		
Water content %	2.3%	2.2%	4.2%	4.3%	6.2%	6.3%	8.7%	8.4%		
AV.Water content %	2.3%		4.2%		6.3%		8.6%			
Dry Density	2.076		2.134		2.177		2.072			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec 7 Foka - Matrouh

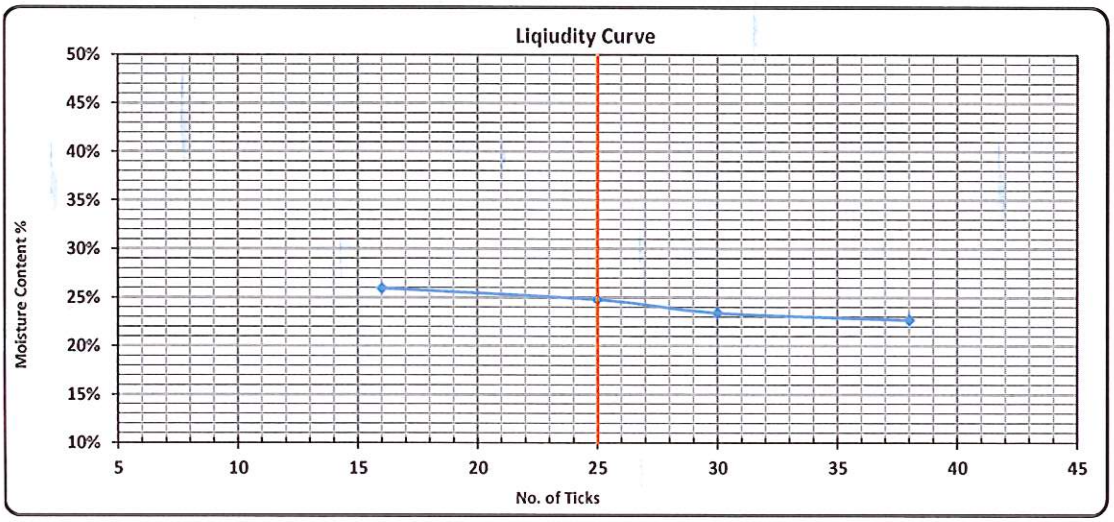
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR	CARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	26/11/2022	Code	FROM STA:	520+500	522+000
Location:	kp:521+560	CA-Emb-15	Material	fill matrial layar	
Company Name	cairo company		quantity	5000m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	38	30	25	16	-	-
Tare No.	11	90	10	10	4	20
Tare WT. (gm)	46.50	62.30	43.80	43.8	59.20	60.50
Tare WT. + Wet WT. (gm)	58.40	73.90	57.40	57.40	63.40	62.70
Tare WT. + Dry WT. (gm)	56.20	71.70	54.70	54.60	62.7	62.3
Water WT. (gm)	2.20	2.20	2.70	2.80	0.70	0.36
Dry WT. (gm)	9.70	9.40	10.90	10.80	3.50	1.84
Moisture Content %	22.7%	23.4%	24.8%	25.9%	20.0%	19.6%
Average %					19.8%	



L.L	P.L	P.I
24.54%	19.78%	4.76%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train Central Lab Number 4 Sec-7 Fuka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	GARBLT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	29/11/2022	Code	zone	520+500	522+000
Location :	kp:521+560		Material	fill matrial layer	
Company Name	cairo company		quaintity	5000m3	

-: Test Results

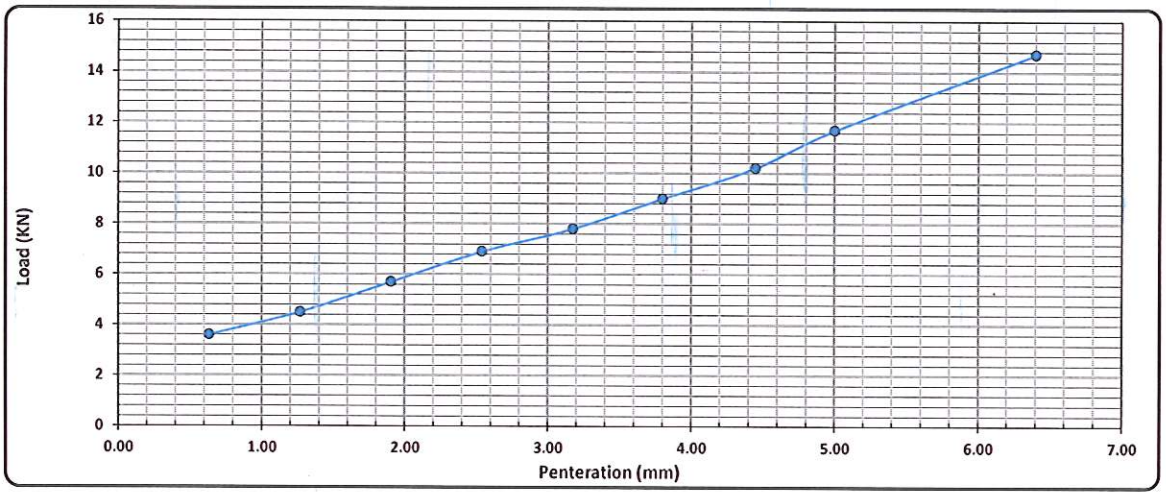
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2025
Mold WT. (gm)	5034
Mold WT. + Wet WT. (gm)	9687
Wet WT. (gm)	4653
Wet Density (g/cm^3)	2.298
Dry Density (g/cm^3)	2.167
Proctor Density (g/cm^3)	2.180
Compaction %	99.4

Mositure Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	60.1
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144.9
Water WT. (gm)	5.1
Dry WT. (gm)	84.8
Moisture Content %	6.0

Swelling	
Mold No.	3
Date	٢٠٢٢/١١/٢٩
Intial Height (mm)	9.00
Final Height (mm)	9.00
Difference	0
Sample Height (mm)	12.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0,64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0,12	0,15	0,19	0,23	0,26	0,30	0,34	0,39	0,49
Load (KN)	3.6	4.5	5.7	6.9	7.8	9.0	10.2	11.7	14.7



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compactioa	Compactioa	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	6.90	13.4	51.7%	99	98	50.9%
5.00	11.70	20.0	58.4%			57.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Soo-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		29-11-2022					
Contractor reference	CA-EMB-16								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+280 / 521+320 / -8.5 521+460 / 521+560 / -7.5 521+000 / 521+060 / -9			
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	25-11-2022	
2	Classification	m^3	5000	25-11-2022	
3	Proctor & O.m.c	m^3	5000	25-11-2022	
4	L.L & P.L & PI	m^3	5000	25-11-2022	
5	C.B.R	m^3	5000	29-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed Mohammed	Ahmed Mohammed	29/11/2022	A
QA/QC *	Ahmed Abo Zeid		29/11/2022	A
GARB**	Hussion Fouad		29/11/2022	A
Comments by	final quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	29-11-2022	
Contractor Reference	CA-Emb-16			
Received by ER		MAR	C1 C2 C3 DD MM YY HH MM	

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	(Lower Embankment) Soil (A-1-a)			
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	5.8%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	5.8%	
6	ASTM D 1557	Modified proctor	2.18	
7	ASTM D 1883	CBR	61.8%	
Comments by:			Comments by:	
			All testing on Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	29/11/2022	A
Contractor QA/QC *	Hassan	MA	29/11/2022	A
GARB**	Hussien Fouad	Hussien	29/11/2022	A
Employers Representative	Momas Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPBU)
Opreating Lab	AL Nuby Central Lab	

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	25/11/2022	Code	zone	520+500	522+000
LOCATION	kp:521+000	CA-Emb-16	Material	fill matrial layar	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test .....

.....

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		20208.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
0.00	2212.0	2780.0	2316.0	2880.0	2122.0	2010.0	2130.0			A-1-a
Cumulative Retained (g)	2212.0	4992.0	7308.0	10188.0	12310.0	14320.0	16450.0		PRO	2.18
Cumulative Retained %	10.9	24.7	36.2	50.4	60.9	70.9	81.4		WC	5.80
Cumulative Passing %	89.1	75.3	63.8	49.6	39.1	29.1	18.6		CBR	61.80

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	135.50	265.00	343.00					
Cumulative Retained %	27.10	53.00	68.60					
Cumulative Passing %	72.90	47.00	31.40					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	89.1	75.3	63.8	49.6	39.1	29.1	18.6	13.6	8.7	5.8

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد فتحي SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	(CAPBILT) الهيئة القومية للإنفاق

PROCTOR TEST

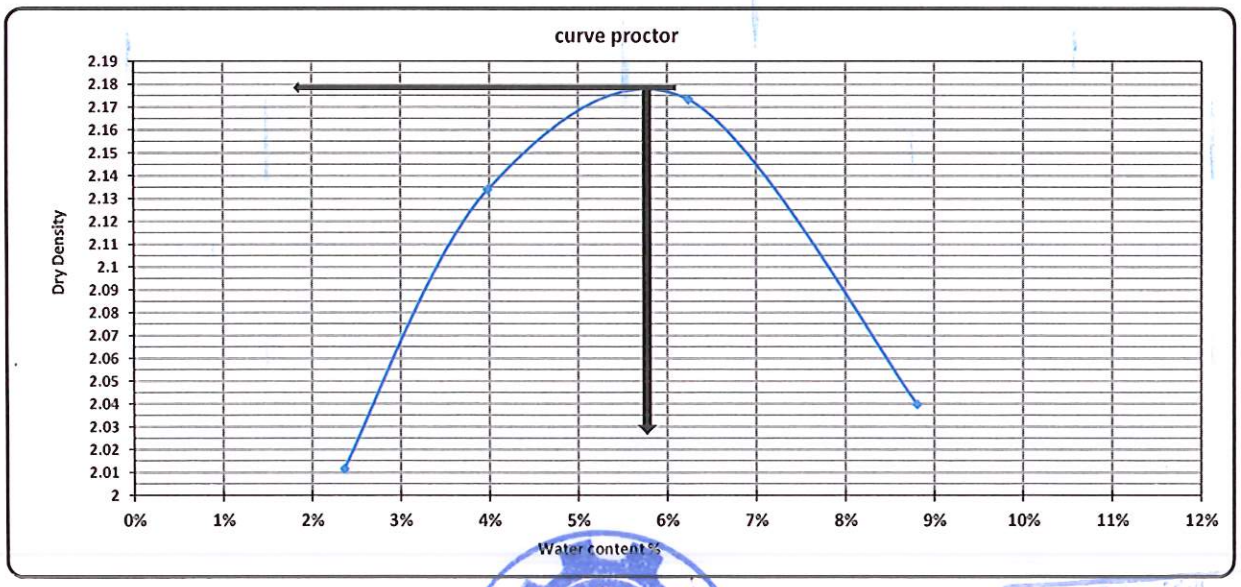
TESTING DATE:	26-11-2023	Code	zone	520+500 522+000
LOCATION	kp:521+000	CA-EM6-16	Material	fill matrial layar
NAME COMPANY	cairo company		quantity	5000m3

Weight of empty mold :	5764.0
Mold Volume:	2169.0

MAX Dry Density	2.18
Water content %	5.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10230.0	10577.0	10772.0	10578	
WT. WET SOIL	4466.0	4813.0	5008.0	4814.0	
Wt. Density	2.059	2.219	2.309	2.219	

Tare No.	32	15	7	11	35	45	34	19		
Tare wt.	74.4	31.9	42.8	46.1	73.9	41.5	70.1	44.4		
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	147.8	148.0	145.0	146.9	145.0	144.4	142.4	143.0		
Wt. Of water	2.2	2.0	5.0	3.1	5.0	5.6	7.6	7.0		
Wt. Of dry soil	73.4	116.1	102.2	100.8	71.1	102.9	72.3	98.6		
Water content %	3.0%	1.7%	4.9%	3.1%	7.0%	5.4%	10.5%	7.1%		
AV.Water content %	2.4%		4.0%		6.2%		8.8%			
Dry Density	2.012		2.134		2.173		2.040			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — (GARBLT)

California Bearing Ratio TEST

Testing Date :	29/11/2022	Code	zone	520+500 522+000	
Location :	kp:521+000	CA-Emb-16	Material	fill matrial layar	
Company Name	cairo company		quantity	5000m3	

-: Test Results

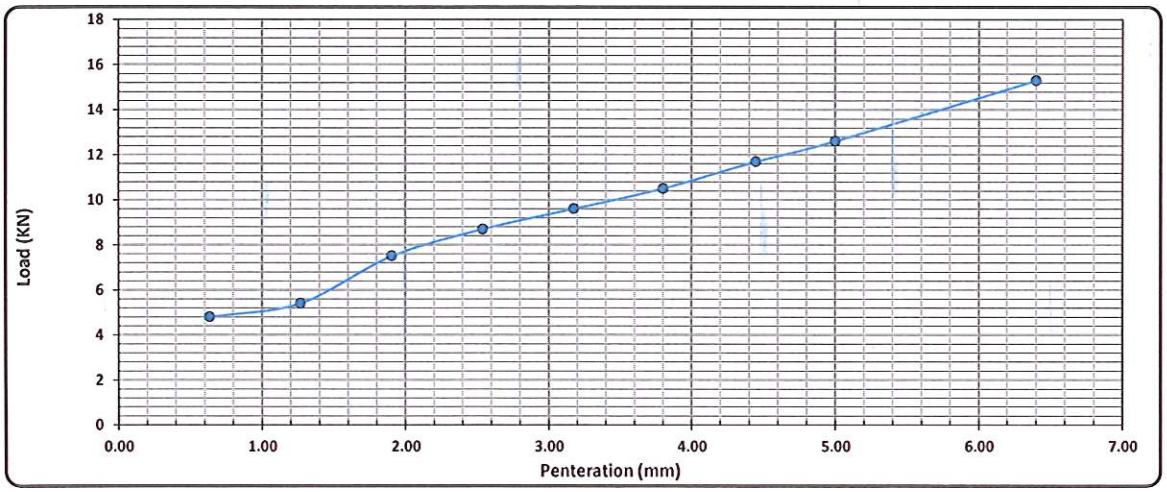
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm^3)	2158
Mold WT. (gm)	4890
Mold WT. + Wet WT. (gm)	9856
Wet WT. (gm)	4966
Wet Density (g/cm^3)	2.301
Dry Density (g/cm^3)	2.174
Proctor Density (g/cm^3)	2.180
Compaction %	99.7

Mositure Ratio After Compacted Mold	
Tare No.	17
Tare WT. (gm)	59.5
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	145
Water WT. (gm)	5.0
Dry WT. (gm)	85.5
Moisture Content %	5.8

Swelling	
Mold No.	1
Date	٢٠٢٢/١١/٢٩
Intial Height (mm)	5.00
Final Height (mm)	5.00
Difference	0
Sample Height (mm)	12.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.16	0.18	0.25	0.29	0.32	0.35	0.39	0.42	0.51
Load (KN)	4.8	5.4	7.5	8.7	9.6	10.5	11.7	12.6	15.3



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	8.70	13.4	65.2%	100	98	64.0%
5.00	12.60	20.0	62.9%			61.8%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		2-12-2022				
Contractor reference	CA-Emb-17							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+060 / 521+080 / -9 521+780 / 521+900 / -7.5 520+800 / 520+840 / -11.5		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	28-11-2022	
2	Classification	m^3	5000	28-11-2022	
3	Proctor & O.m.c	m^3	5000	28-11-2022	
4	L.L & P.L & PI	m^3	5000	28-11-2022	
5	C.B.R	m^3	5000	2-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El mahgob laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohammed	2/12/2022	A
QA/QC *	Hassan	2/12/2022	2/12/2022	A
GARB**	Hussien Fouad	Hussien	2/12/2022	A
Comments by	field quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	2-12-2022	
Contractor Reference	CA-EMB-17			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	8.9%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	8.3%	
6	ASTM D 1557	Modified proctor	2.18	
7	ASTM D 1883	CBR	65%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	2/12/2022	A
Contractor QA/QC *	Hassan	MA	2/12/2022	A
GARB**	Hussien Fouad	Hussien	2/12/2022	A
Employers Representative	Mohamed Ahmed		15-2-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NAUTA)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	30-11-2022	code	ZONE	520+500	522+000
LOCATION	K.P 521+000	CA-Emb-17			
NAME COMPANY	CAIRO				

1-visual Inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		27299.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1088.0	2908.0	3566.0	1872.0	2835.0	2319.0	3831.0			A-1-a
Cumulative Retained (g)	1088.0	3996.0	7562.0	9434.0	12269.0	14588.0	18419.0		PRO	2.18
Cumulative Retained %	4.0	14.6	27.7	34.6	44.9	53.4	67.5		WC	8.30
Cumulative Passing %	96.0	85.4	72.3	65.4	55.1	46.6	32.5		CBR	65.00

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	175.00	296.00	363.00					
Cumulative Retained %	35.00	59.20	72.60					
Cumulative Passing %	65.00	40.80	27.40					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	96.0	85.4	72.3	65.4	55.1	46.6	32.5	21.1	13.3	8.9

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

Contractor	Consultant
	Hassan MA

شركة المحجوب للمقاولات العمومية والتوريدات
معمل اختبارات وأبحاث التربة
المحجوب
القطار الكهربائي السريع - فوكه - مطروح

PROCTOR TEST

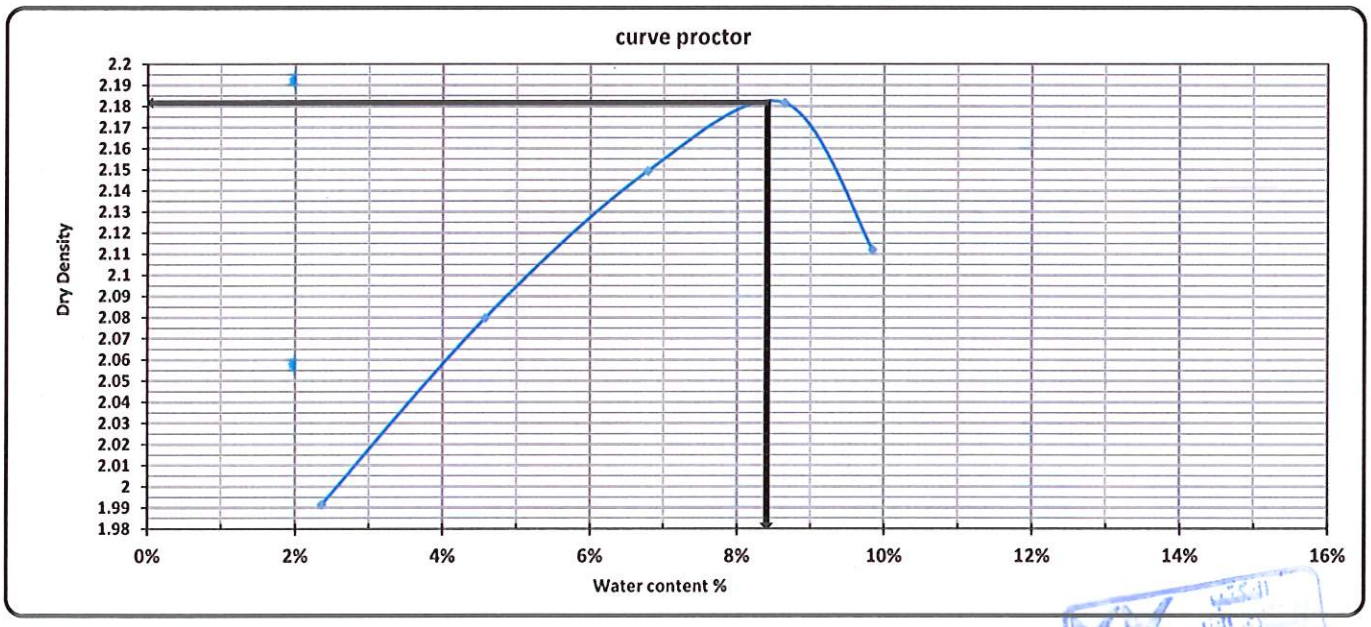
TESTING DATE:	1/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P 521+000	CA-EMb-17			
NAME COMPANY	cairo				

Weight of empty mold :	6093.0
Mold Volume:	2032.0

MAX Dry Density	2.18
Water content %	8.3

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10235.0	10512.6	10756.4	10909	10807
WT. WET SOIL	4142.0	4419.6	4663.4	4816.0	4714.0
Wt. Density	2.038	2.175	2.295	2.370	2.320

Tare No.	2	2	5	6	20	12	7	6	15	9
Tare wt.	32	8.8682	31	23.23	30	22.79	34.18	29	35.25	29
Wt. Of wet soil & tare	161.0	187.3	221.0	139.1	178.0	121.0	160.2	171.0	187.0	171.0
Wt. Of dry soil & tare	158.2	182.9	213.3	133.6	169.0	114.5	149.9	160.0	172.7	158.9
Wt. Of water	2.8	4.4	7.7	5.5	9.0	6.5	10.3	11.0	14.3	12.1
Wt. Of dry soil	126.2	174.0	182.3	110.4	139.0	91.7	115.7	131.0	137.5	129.9
Water content %	2.2%	2.5%	4.2%	4.9%	6.5%	7.1%	8.9%	8.4%	10.4%	9.3%
AV.Water content %	2.4%		4.6%		6.8%		8.6%		9.8%	
Dry Density	1.991		2.080		2.149		2.181		2.112	



Contractor

Consultant

Hassa

2/12/2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. داود فنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	(CAIRLT) الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	2/12/2022	Code			
Location :	521+000	CA-Emb-17	ZONE	520+500	522+000
Layer No. :	CAIRO				

-: Test Results

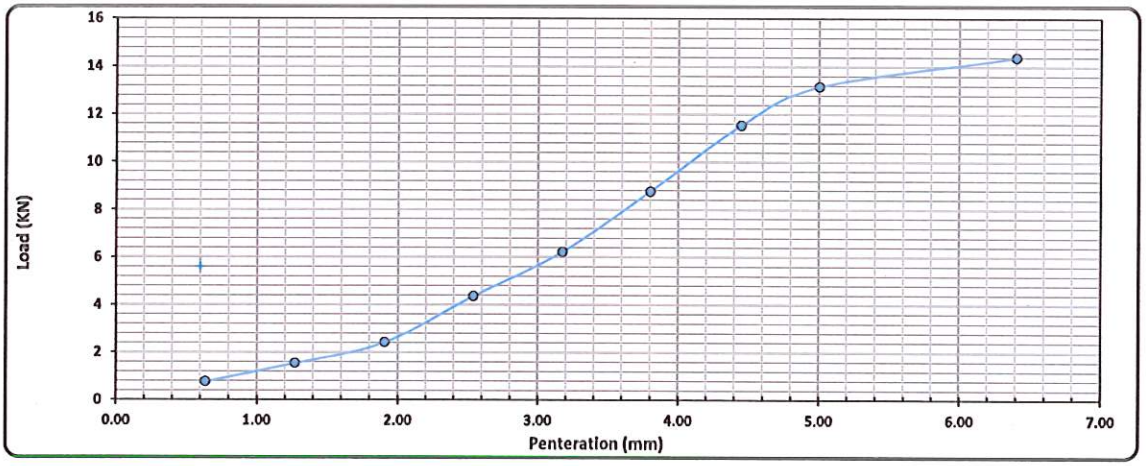
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	15700
Mold WT. + Wet WT. (gm)	20473.58
Wet WT. (gm)	4774
Wet Density (g/cm^3)	2.219
Dry Density (g/cm^3)	2.049
Proctor Density (g/cm^3)	2.180
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. +Wet WT. (gm)	233
Tare WT. +Dry WT. (gm)	221
Water WT. (gm)	12.0
Dry WT. (gm)	190.0
Moisture Content %	8.3

Swelling	
Mold No.	55
Date	2/12/2022
Intial Height (mm)	4.50
Final Height (mm)	4.50
Difference	0
Sample Height (mm)	122.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	77.00	156.00	245.00	444.00	634.00	893.00	1176.00	1341.00	1466.00
Load (KN)	0.8	1.5	2.4	4.4	6.2	8.8	11.5	13.1	14.4



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	4.35	13.4	32.6%	99	98	32.3%
5.00	13.14	20.0	65.6%			65.0%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

شركة المحجوب للمقاولات العمومية والتوريدات
معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المحجوب

المكتب الاستشاري الهندسي
أ.د. داود فنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 4/12/2022
			Time:
Contractor reference	CA-Emb-18		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 520+840 / 520+880 / -11.5 520+700 / 520+800 / -10.5 520+620 / 520+640 / -10		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	30-11-2022	
2	Classification	m^3	5000	30-11-2022	
3	Proctor & O.m.c	m^3	5000	30-11-2022	
4	L.L & P.L & PI	m^3	5000	30-11-2022	
5	C.B.R	m^3	5000	4-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa Badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	4/12/2-22	A
QA/QC *	Ahmed Abo Zaid		4/12/2-22	A
GARB**	Hussien Fouad		4/12/2-22	A
Comments by	Fill quantity approved			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel-Rahman	4/12/2022	
Contractor Reference	CA-Emb-18			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	7.4%	
4	ASTM D 4318	Atterberg limit	19%	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	65%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	4/12/2022	A
Contractor QA/QC *	Abdallah SAMY	Abdallah	4/12/2022	A
GARB**	Hussien Fouad	Hussien	4/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GAERT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	30/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	A-EMb-18	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		21000.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	3516.0	1842.0	3225.0	1415.0	2628.0	1430.0	2275.0			A-1-a
(g)Cumulative Retained	3516.0	5358.0	8583.0	9998.0	12626.0	14056.0	16331.0		PRO	2.16
Cumulative Retained %	16.7	25.5	40.9	47.6	60.1	66.9	77.8		WC	6.80
Cumulative Passing %	83.3	74.5	59.1	52.4	39.9	33.1	22.2		CBR	65%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	101.15	249.35	332.90					
Cumulative Retained %	20.23	49.87	66.58					
Cumulative Passing %	79.77	50.13	33.42					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	83.3	74.5	59.1	52.4	39.9	33.1	22.2	17.7	11.1	7.4

ATTERBERG LIMTS	(.L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	24.7%	19.0%	5.7%

Contractor

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

Consultant

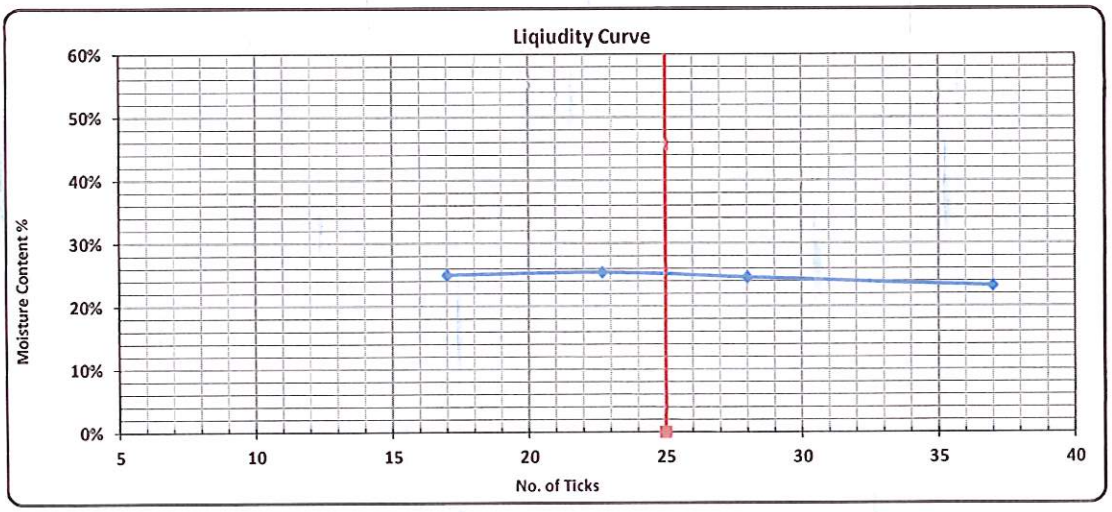
ENGINEERING CONSULTING OFFICE — SYSTRA SHAKER	Electric Express Train - HSR	GARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	30/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-EMb-18	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	37	28	22.7	17	-	-
Tare No.	30	15	7	4	F	B
Tare WT. (gm)	25.80	27.48	27.09	25.40	12.60	13.37
Tare WT. + Wet WT. (gm)	49.09	53.90	53.00	54.02	13.18	13.92
Tare WT. + Dry WT. (gm)	44.70	48.68	47.75	48.30	13.09	13.83
(gm)Water WT.	4.39	5.22	5.25	5.72	0.09	0.09
(gm)Dry WT.	18.90	21.20	20.66	22.90	0.49	0.46
Moisture Content %	23.2%	24.6%	25.4%	25.0%	18.4%	19.6%
Average %					19.0%	



L.L	P.L	P.I
24.7%	19.0%	5.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

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

PROCTOR TEST

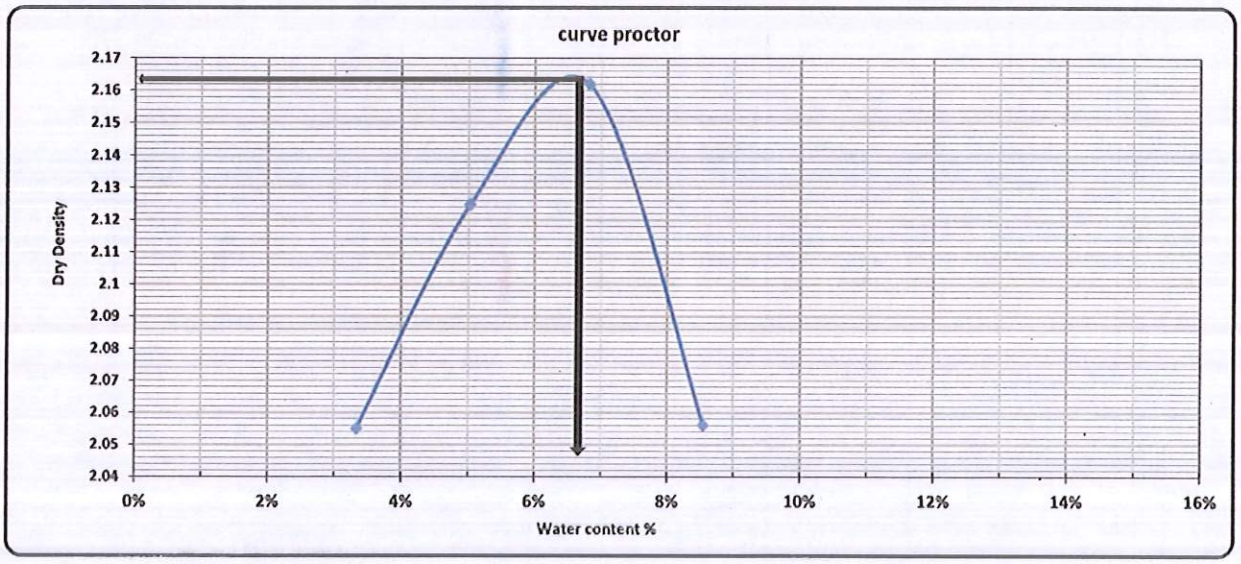
Testing Date :	1/12/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-18	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6428.0
Mold Volume:	2104.9

MAX Dry Density	2.16
Water content %	6.8

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10898.0	11125.0	11289.0	11126	
WT. WET SOIL	4470.0	4697.0	4861.0	4698.0	
Wt. Density	2.124	2.231	2.309	2.232	

Tare No.	4	4	12	12	16	16	23	23		
Tare wt.	24.64	24.64	27.09	27.09	24.86	24.86	22.58	22.58		
Wt. Of wet soil & tare	140.64	140.64	154.82	154.82	146.15	146.15	153.30	153.30		
Wt. Of dry soil & tare	136.89	136.89	148.70	148.70	138.40	138.40	143.00	143.00		
Wt. Of water	3.8	3.8	6.1	6.1	7.8	7.8	10.3	10.3		
Wt. Of dry soil	112.3	112.3	121.6	121.6	113.5	113.5	120.4	120.4		
Water content %	3.3%	3.3%	5.0%	5.0%	6.8%	6.8%	8.6%	8.6%		
AV.Water content %	3.3%		5.0%		6.8%		8.6%			
Dry Density	2.055		2.125		2.162		2.056			



Contractor		Consultant
مشروع القطار السريع قطاع السابع المركزي		

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	4/12/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-18	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

- : Test Results

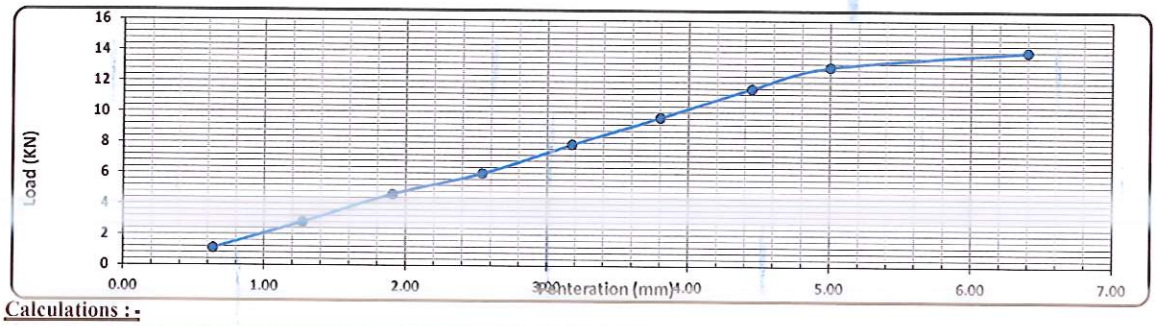
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16444
(gm)Mold WT. + Wet WT.	21386
(gm)Wet WT.	4942
Wet Density (g/cm^3)	2.270
Dry Density (g/cm^3)	2.136
Proctor Density (g/cm^3)	2.162
Compaction %	99

Mositure Ratio After Compacted Mold	
Tare No.	10
Tare WT. (gm)	27.86
(gm)Tare WT. +Wet WT.	124.6
(gm)Tare WT. +Dry WT.	118.9
(gm)Water WT.	5.7
(gm)Dry WT.	91.0
Moisture Content %	6.3

Swelling	
Mold No.	2
Date	4/12/2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	113.00	286.00	472.00	612.00	806.00	986.00	1181.00	1325.00	1429.00
(KN)Load	1.1	2.8	4.6	6.0	7.9	9.7	11.6	13.0	14.0



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	6.00	13.4	44.9%	99	100	45.5%
5.00	12.99	20.0	64.8%			65.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel			4-12-2022				
Contractor reference	CA-Emb-19							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From 520+640 521+140	To 520+700 521+270	Fill -10 -8
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	30-11-2022	
2	Classification	m^3	5000	30-11-2022	
3	Proctor & O.m.c	m^3	5000	30-11-2022	
4	L.L & P.L & PI	m^3	5000	30-11-2022	
5	C.B.R	m^3	5000	4-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa Badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	4/12/2022	A
QA/QC *	Ahmed Abo Zaid		4/12/2022	A
GARB**	Hussien Lotfy		4/12/2022	A
Comments by	Final Quantity approved with the QS			
Employers Representative	Mohamed Ahmed		8-2-23	AWC

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Abdelrahman Adel	Abdelrahman		4-12-2022							
Contractor Reference	CA-Emb-19										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	10.9%	
4	ASTM D 4318	Atterberg limit	21.1%	
5	ASTM D 2974	Moisture content	6.2%	
6	ASTM D 1557	Modified proctor	2.14	
7	ASTM D 1883	CBR	61%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdelrahman Adel	Abdelrahman	4/12/2022	A
Contractor QA/QC *	Abdallah SAMY	Abdo Amr	4/12/2022	A
GARB**	Hussien Fouad	Hussien	4/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-26	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GAFSRT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	30/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-19	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		20267.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	1557.0	3405.0	3980.0	2159.0	2180.0	940.0	1485.0			A-1-a
(g)Cumulative Retained	1557.0	4962.0	8942.0	11101.0	13281.0	14221.0	15706.0		PRO	2.14
Cumulative Retained %	7.7	24.5	44.1	54.8	65.5	70.2	77.5		WC	6.20
Cumulative Passing %	92.3	75.5	55.9	45.2	34.5	29.8	22.5		CBR	61.6

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	64.70	185.25	258.60					
Cumulative Retained %	12.94	37.05	51.72					
Cumulative Passing %	87.06	62.95	48.28					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	92.3	75.5	55.9	45.2	34.5	29.8	22.5	19.6	14.2	10.9

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	24.9%	21.1%	3.8%

Contractor	Consultant
مشروع القطار السريع القطاع السابع معمل المركزى (رقم 6)	

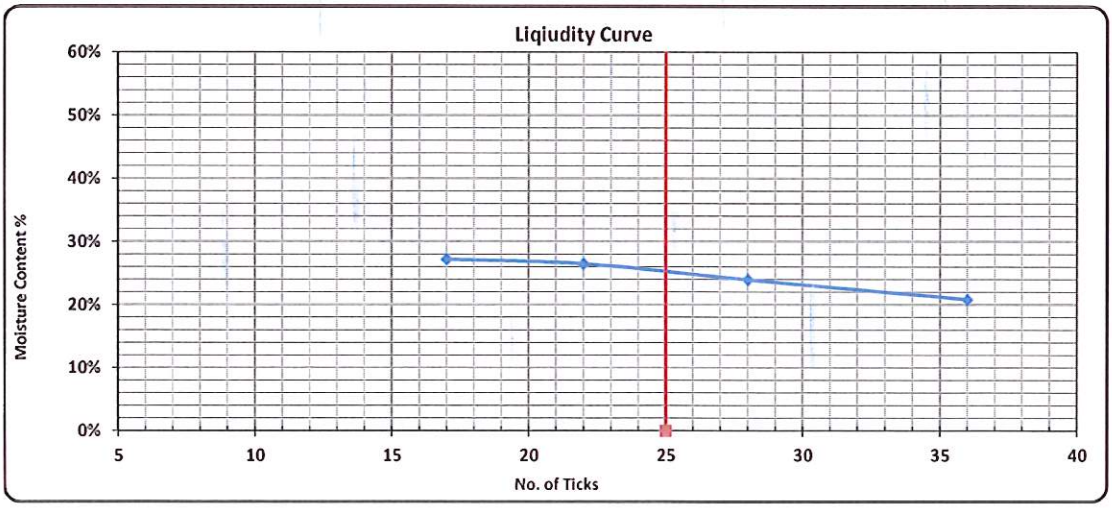
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR	(CARBUT) — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	30/11/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-19	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	36	28	22	17	-	-
Tare No.	30	4	7	15	F	B
Tare WT. (gm)	25.85	25.49	27.22	28.00	11.97	12.55
Tare WT. + Wet WT. (gm)	68.83	60.28	63.87	66.29	13.29	13.39
Tare WT. + Dry WT. (gm)	61.42	53.56	56.20	58.11	13.05	13.25
(gm)Water WT.	7.41	6.72	7.67	8.18	0.24	0.14
(gm)Dry WT.	35.57	28.07	28.98	30.11	1.08	0.70
Moisture Content %	20.8%	23.9%	26.5%	27.2%	22.2%	20.0%
Average %					21.1%	



L.L	P.L	P.I
24.9%	21.1%	3.8%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAREET)

PROCTOR TEST

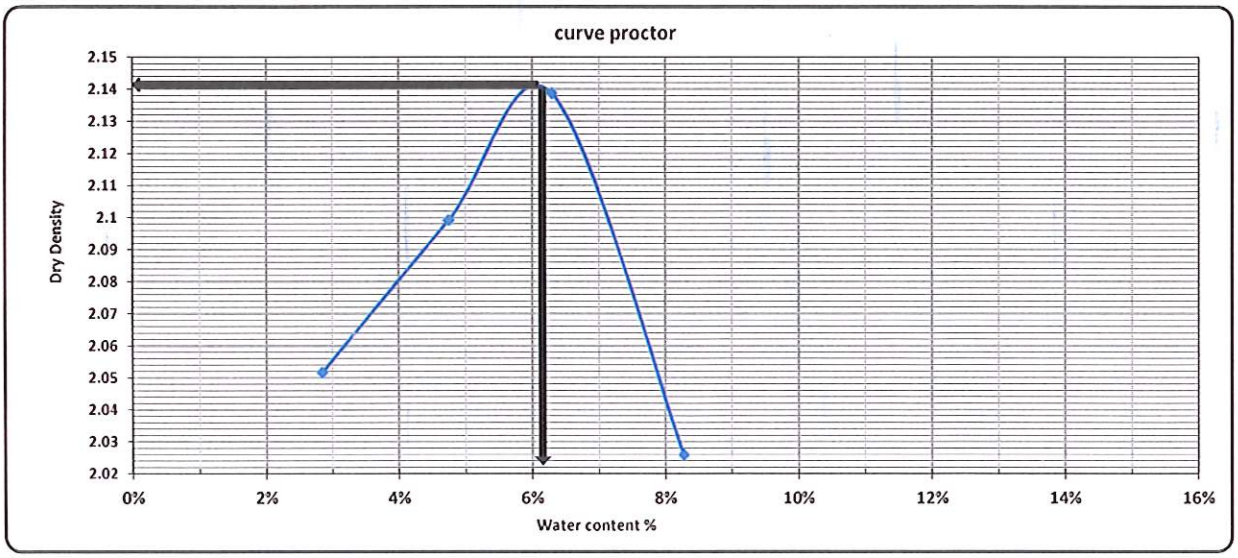
Testing Date :	1/12/2022	Code	ZONE	520+500	522+000
Location :	KR:521+000	CA-Emb-19	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6428.0
Mold Volume:	2104.9

MAX Dry Density	2.141
Water content %	6.2

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10869.0	11056.0	11213.0	11045	
WT. WET SOIL	4441.0	4628.0	4785.0	4617.0	
Wt. Density	2.110	2.199	2.273	2.193	

Tare No.	10	10	8	8	45	45	7	7		
Tare wt.	26.15	26.15	25.18	25.18	27.59	27.59	25.25	25.25		
Wt. Of wet soil & tare	129.40	129.40	146.24	146.24	132.19	132.19	137.58	137.58		
Wt. Of dry soil & tare	126.55	126.55	140.76	140.76	126.00	126.00	129.00	129.00		
Wt. Of water	2.9	2.9	5.5	5.5	6.2	6.2	8.6	8.6		
Wt. Of dry soil	100.4	100.4	115.6	115.6	98.4	98.4	103.8	103.8		
Water content %	2.8%	2.8%	4.7%	4.7%	6.3%	6.3%	8.3%	8.3%		
AV.Water content %	2.8%		4.7%		6.3%		8.3%			
Dry Density	2.052		2.099		2.139		2.026			



Contractor

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	4/12/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-19	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

- : Test Results

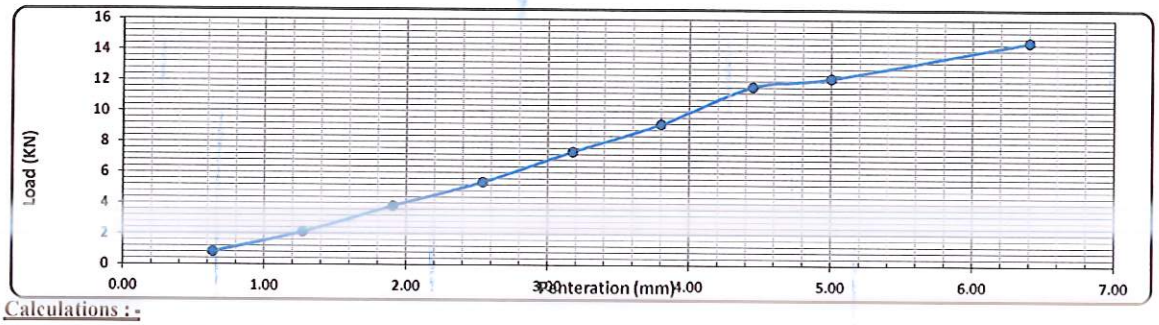
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16553
(gm)Mold WT. + Wet WT.	21426
(gm)Wet WT.	4873
Wet Density (g/cm^3)	2.238
Dry Density (g/cm^3)	2.114
Proctor Density (g/cm^3)	2.140
Compaction %	99

Mositure Ratio After Compacted Mold	
Tare No.	12
Tare WT. (gm)	26.48
(gm)Tare WT. +Wet WT.	144
(gm)Tare WT. +Dry WT.	137.5
(gm)Water WT.	6.5
(gm)Dry WT.	111.0
Moisture Content %	5.9

Swelling	
Mold No.	2
Date	4/12/2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	84.00	216.00	389.00	549.00	752.00	937.00	1187.00	1244.00	1486.00
(KN)Load	0.8	2.1	3.8	5.4	7.4	9.2	11.6	12.2	14.6



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	5.38	13.4	40.3%	99	100	40.8%
5.00	12.19	20.0	60.9%			61.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST	الهيئة القومية للأنفاق	الهيئة العامة للطرق والكباري والنقل البري (GARBLT)	القاهرة للطرق والإنشاءات	KK ENGINEERING CONSULTING OFFICE	SYSTRA SHAKER

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K						
Issued by Contractor	Name	Sign		Date		Time						
	Eng/ Abdelrahman Adel	Abdelrahman Adel		30/10/2022								
Contractor reference	CA-Emb-2											
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM	

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 520+750 / 520+780 / -11 521+140 / 521+240 / -10 521+000 / 521+010 / -10.5		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m³	5000	26-10-2022	
2	Classification	m³	5000	26-10-2022	
3	Proctor & O.m.c	m³	5000	26-10-2022	
4	L.L & P.L & PI	m³	5000	26-10-2022	
5	C.B.R	m³	5000	30-10-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	eng / Ahmed mohammed	Ahmed Mohamed	30/10/2022	A
QA/QC *	Ahmed Abo Zaid		30/10/2022	A
GARB**	Hussien Foad	Hussien	30/10/2022	A
Comments by	field quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel		30/10/2022	
Contractor Reference	CA - Emb - 22			
Received by ER	Mohs Ahmed		MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	6.2%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	5.8%	
6	ASTM D 1557	Modified proctor	2.13	
7	ASTM D 1883	CBR	35.6%	
Comments by:			Comments by: All test under Responsibility third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	30/10/2022	A
Contractor QA/QC *	Hassa		30/10/2022	A
GARB**	Hussien Foad	Hussien	30/10/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	26-10-2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-EMb-2	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		24949.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	3251.0	2941.0	2611.0	2116.0	2136.0	2025.0			A-1-a
Cumulative Retained (g)	0.0	3251.0	6192.0	8803.0	10919.0	13055.0	15080.0		PRO	2.13
Cumulative Retained %	0.0	13.0	24.8	35.3	43.8	52.3	60.4		WC	5.80
Cumulative Passing %	100.0	87.0	75.2	64.7	56.2	47.7	39.6		CBR	35.60

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	202.40	372.80	421.30					
Cumulative Retained %	40.48	74.56	84.26					
Cumulative Passing %	59.52	25.44	15.74					

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	87.0	75.2	64.7	56.2	47.7	39.6	23.5	10.1	6.2

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

Contractor

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Consultant

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فتحيل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PROCTOR TEST

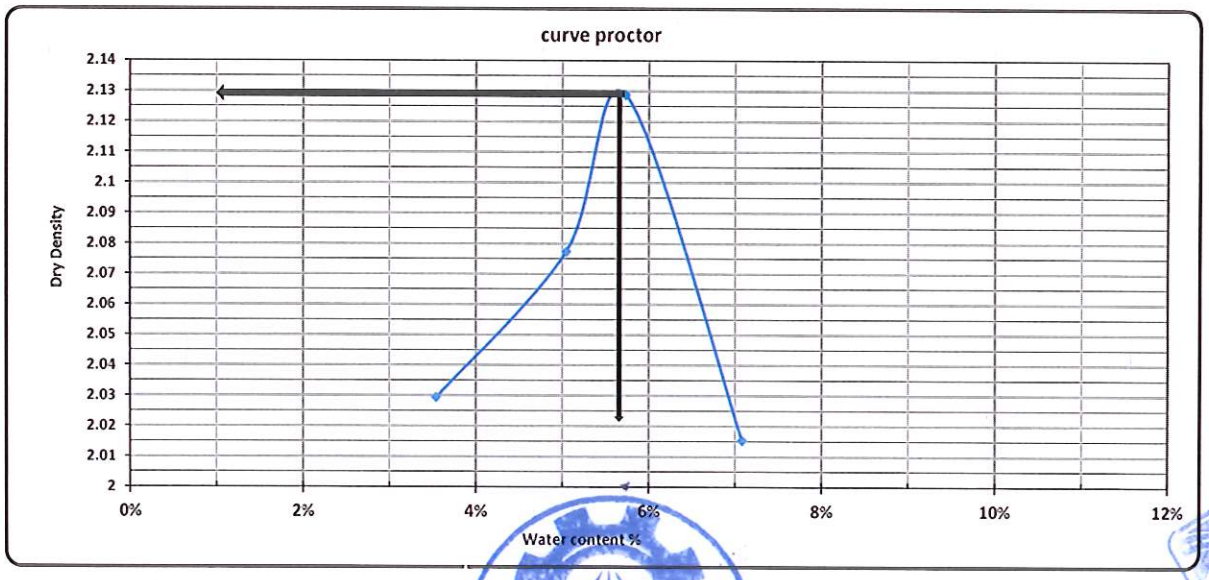
TESTING DATE:	2022/10/27	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-EMb-2	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

Weight of empty mold :	6070.0
Mold Volume:	2113.0

MAX Dry Density	2.13
Water content %	5.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10510.0	10681.0	10826.0	10630	
WT. WET SOIL	4440.0	4611.0	4756.0	4560.0	
Wt. Density	2.101	2.182	2.251	2.158	

Tare No.	16	40	19	4	11	8	73	10		
Tare wt.	33.5	46.9	44.6	59.7	46.5	46.9	43	43.8		
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	146.9	145.7	145.6	145.1	144.7	144.1	143.1	142.8		
Wt. Of water	3.1	4.3	4.4	4.9	5.3	5.9	6.9	7.2		
Wt. Of dry soil	113.4	98.8	101.0	85.4	98.2	97.2	100.1	99.0		
Water content %	2.7%	4.4%	4.4%	5.7%	5.4%	6.1%	6.9%	7.3%		
AV.Water content %	3.5%		5.0%		5.7%		7.1%			
Dry Density	2.029		2.077		2.129		2.015			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

KK ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — الهيئة العامة للطرق والكباري والنقل البري (GARBLT)

California Bearing Ratio TEST

Testing Date :	30-10-2022	Code	ZONE	520+500	522+000
Location :	kp:521+000	CA-Emb-2	Material	fill material layer	
Company Name	cairo company		quantity	5000 m3	

-: Test Results

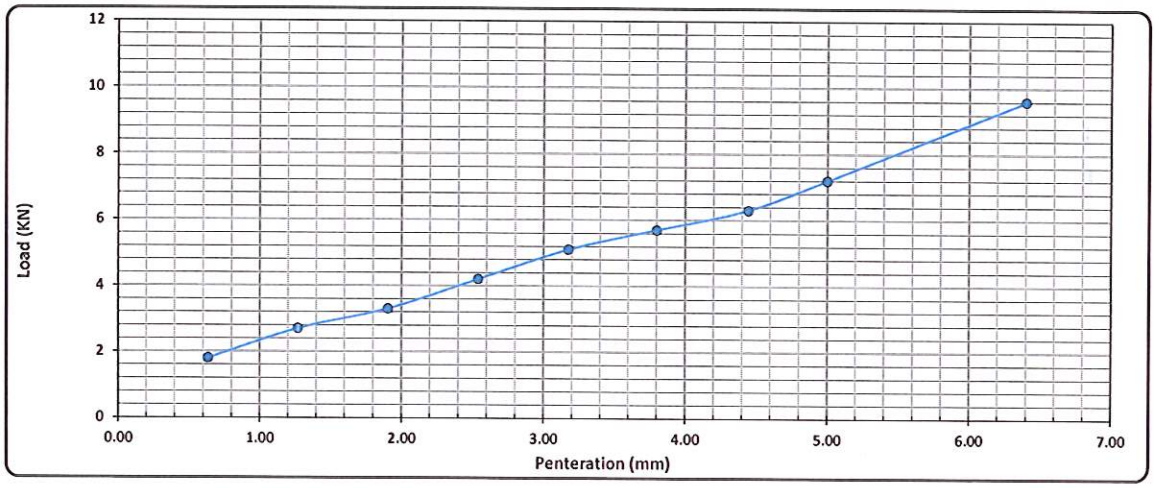
Compaction % for Mold	
Mold No.	6
Mold Vol. (cm^3)	2122
Mold WT. (gm)	6075
Mold WT. + Wet WT. (gm)	10789
Wet WT. (gm)	4714
Wet Density (g/cm^3)	2.221
Dry Density (g/cm^3)	2.108
Proctor Density (g/cm^3)	2.130
Compaction %	99.0

Mositure Ratio After Compacted Mold	
Tare No.	18
Tare WT. (gm)	77.7
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	146.3
Water WT. (gm)	3.7
Dry WT. (gm)	68.6
Moisture Content %	5.4

Swelling	
Mold No.	6
Date	30-10-2022
Intial Height (mm)	3.00
Final Height (mm)	3.00
Difference	0
Sample Height (mm)	12.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.06	0.09	0.11	0.14	0.17	0.19	0.21	0.24	0.32
Load (KN)	1.8	2.7	3.3	4.2	5.1	5.7	6.3	7.2	9.6



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	4.20	13.4	31.5%	99	98	31.2%
5.00	7.20	20.0	36.0%			35.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel			4/12/2022					
Contractor reference	CA-Emb-20								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+270 / 521+320 / -8 521+560 / 521+700 / -7 521+900 / 521+920 / -7.5		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	30-11-2022	
2	Classification	m^3	5000	30-11-2022	
3	Proctor & O.m.c	m^3	5000	30-11-2022	
4	L.L & P.L & PI	m^3	5000	30-11-2022	
5	C.B.R	m^3	5000	4-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa Badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	eng / Ahmed mohammed	Ahmed mohamed	4/12/2022	A
QA/QC *	Ahmed Abu Zaid		4/12/2022	A
GARB**	Hussien fouad		4/12/2022	A
Comments by	final Quntaty approved with 0%			
Employers Representative	Mohamed Ahmed		8-2-23	Awc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	4/12/2022	
Contractor Reference	CA-Emb-20			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment		Soil (A-1-a)	
Location of stock			K.p (520+500) No (3)	
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	14.5%	
4	ASTM D 4318	Atterberg limit	19.7%	
5	ASTM D 2974	Moisture content	7%	
6	ASTM D 1557	Modified proctor	2.11	
7	ASTM D 1883	CBR	31%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	4/12/2022	A
Contractor QA/QC *	Abdallah SAMY	Abdallah	4/12/2022	A
GARB**	Hussien Fouad		4/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للإنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	30/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	A-Emb-20	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		20611.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	311.0	1825.0	4806.0	2151.0	2219.0	1362.0	2097.0			A-2-4
(g)Cumulative Retained	311.0	2136.0	6942.0	9093.0	11312.0	12674.0	14771.0		PRO	2.11
Cumulative Retained %	1.5	10.4	33.7	44.1	54.9	61.5	71.7		WC	7.0
Cumulative Passing %	98.5	89.6	66.3	55.9	45.1	38.5	28.3		CBR	31%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	63.73	176.00	243.40					
Cumulative Retained %	12.75	35.20	48.68					
Cumulative Passing %	87.25	64.80	51.32					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	98.5	89.6	66.3	55.9	45.1	38.5	28.3	24.7	18.4	14.5

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	27.2%	19.7%	7.5%

Contractor

مشروع القطار الكهربائي
القطاع السابع
معمل المركزي
(رقم 6)

Consultant

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PROCTOR TEST

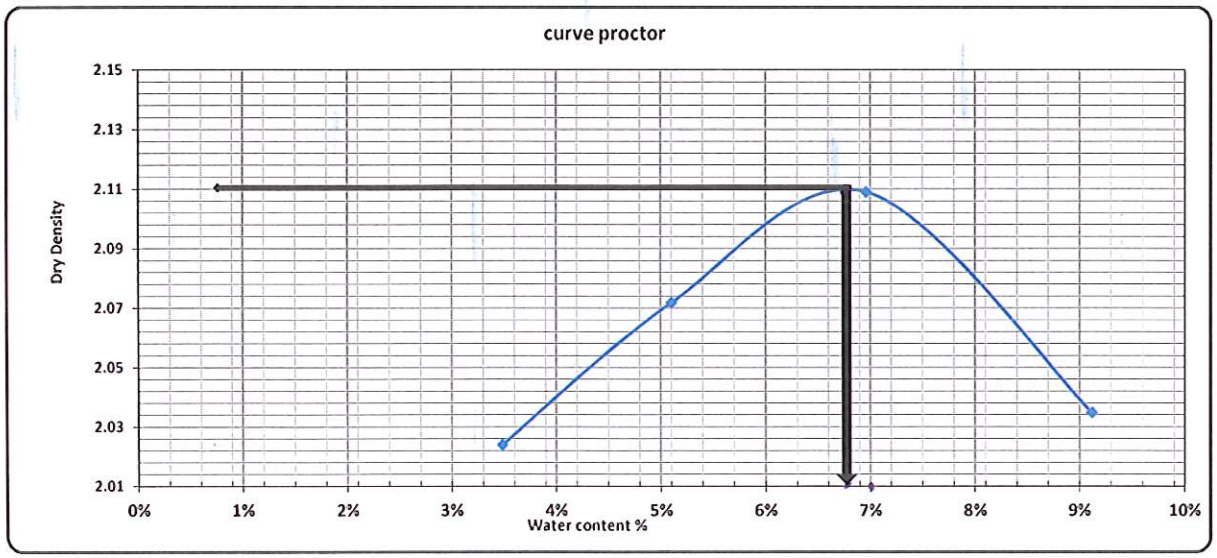
Testing Date :	1/12/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-26	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6428.0
Mold Volume:	2104.9

MAX Dry Density	2.110
Water content %	7.00

trial no :	1	2	3	4		
Wt. Of Mold+ wet soil	10845.0	11020.0	11185.0	11110		
WT. WET SOIL	4417.0	4592.0	4757.0	4682.0		
Wt. Density	2.098	2.182	2.260	2.224		

Tare No.	16	16	2	2	1	1	5	5				
Tare wt.	25.96	25.96	26.13	26.13	27.23	27.23	27.23	27.23				
Wt. Of wet soil & tare	148.2	148.2	160.5	160.5	118.6	118.6	125.5	125.5				
Wt. Of dry soil & tare	143.88	143.88	153.69	153.69	112.45	112.45	117.16	117.16				
Wt. Of water	4.3	4.3	6.8	6.8	6.1	6.1	8.4	8.4				
Wt. Of dry soil	117.9	117.9	127.6	127.6	85.2	85.2	89.9	89.9				
Water content %	3.7%	3.7%	5.3%	5.3%	7.2%	7.2%	9.3%	9.3%				
AV.Water content %	3.7%		5.3%		7.2%		9.3%					
Dry Density	2.024		2.072		2.109		2.035					



Contractor

Consultant

	Electric Express Train - HSR	

California Bearing Ratio TEST

Testing Date :	4/12/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-EMb-20	Material	fill material layar		
Name Company	cairo company		quaintity	5000 m3		

- : Test Results

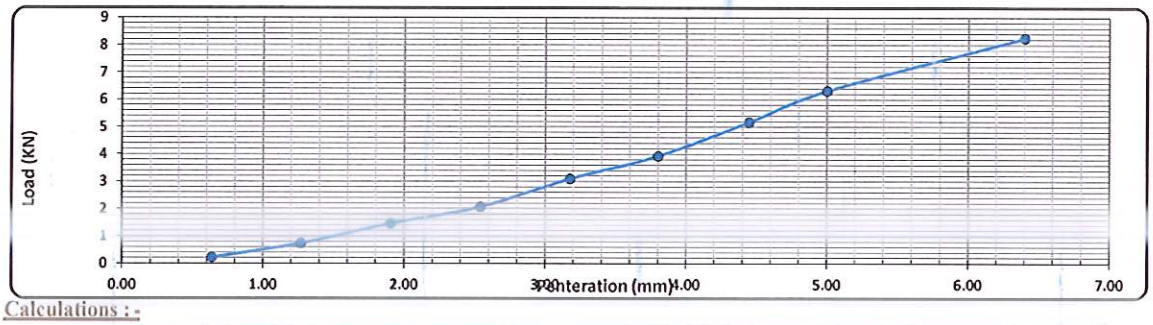
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16444
(gm)Mold WT. + Wet WT.	21321
(gm)Wet WT.	4806
Wet Density (g/cm^3)	2.207
Dry Density (g/cm^3)	2.075
Proctor Density (g/cm^3)	2.110
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	25.13
(gm)Tare WT. +Wet WT.	157
(gm)Tare WT. +Dry WT.	149.1
(gm)water wt	7.9
(gm)Dry WT.	124.0
Moisture Content %	6.4

Swelling	
Mold No.	2
Date	4/12/2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	00
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

63.73	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	22.00	75.00	149.00	211.00	316.00	401.00	528.00	645.00	842.00
(KN)Load	0.2	0.7	1.5	2.1	3.1	3.9	5.2	6.3	8.3



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	2.07	13.4	15.5%	98	100	15.8%
5.00	6.32	20.0	31.6%			32.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign : Hassan	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

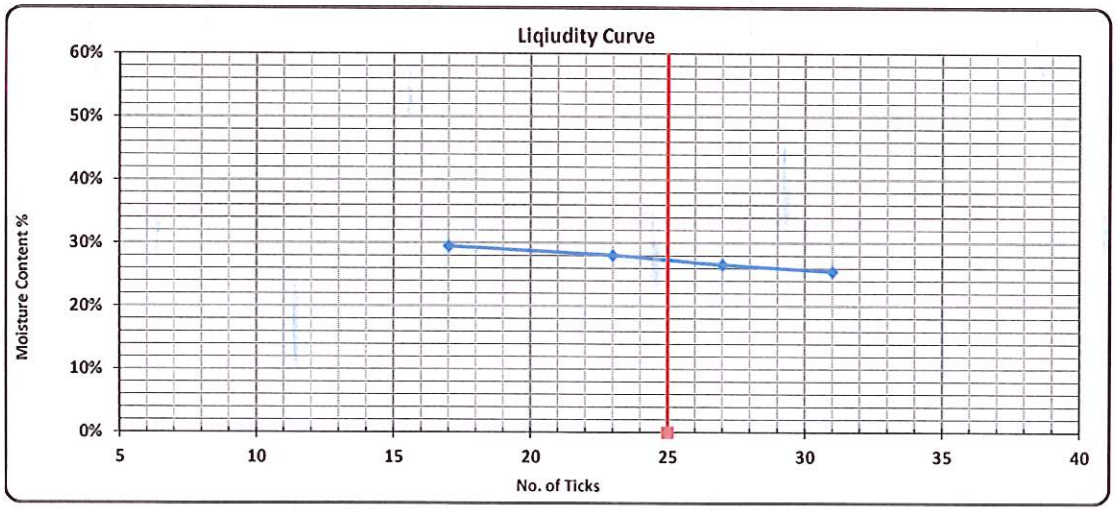
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR	الهيئة القومية للأنفاق — الشركة المصرية لمشروعات الطرق والكباري والنقل البري (GARBLT)

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	1/12/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000		Material		fill material layar	
Name Company	cairo company	CA-Emb-20	quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	31	27	23	17	-	-
Tare No.	30	3	4	7	B	C
Tare WT. (gm)	25.83	25.25	25.21	27.27	11.96	13.37
Tare WT. + Wet WT. (gm)	52.84	47.26	51.71	51.04	12.53	14.02
Tare WT. + Dry WT. (gm)	47.35	42.64	45.91	45.63	12.43	13.92
(gm)Water WT.	5.49	4.62	5.80	5.41	0.10	0.10
(gm)Dry WT.	21.52	17.39	20.70	18.36	0.47	0.55
Moisture Content %	25.5%	26.6%	28.0%	29.5%	21.3%	18.2%
Average %					19.7%	



L.L	P.L	P.I
27.2%	19.7%	7.5%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name : Hassan	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 5-12-2022
			Time
Contractor reference	CA-Emb-21		
Received by ER		MIR	C1 C2 C3 DD MM YY HH MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From: 521+920, 520+880 / To: 522+000, 520+980 / Fill: -7.5, -11		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	1-12-2022	
2	Classification	m^3	5000	1-12-2022	
3	Proctor & O.m.c	m^3	5000	1-12-2022	
4	L.L & P.L & PI	m^3	5000	1-12-2022	
5	C.B.R	m^3	5000	5-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa Badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohammed	5/12/2022	A
QA/QC *	Hassan	5/12/2022 MAR	5/12/2022	A
GARB**	Hussien Fouad		5/12/2022	A
Comments by	final Quantity approved with Pos			
Employers Representative	Mohamed Ahmed		8-2-23	AWC

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	5-12-2022	
Contractor Reference	CA-Emb-21			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)

The following test result are attached for review

Description of Materials	lower embankment	Soil (A-1-a)
Location of stock	K.p (521+500) No (1)	

Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	12.6%	
4	ASTM D 4318	Atterberg limit	20.4%	
5	ASTM D 2974	Moisture content	7%	
6	ASTM D 1557	Modified proctor	2.12	
7	ASTM D 1883	CBR	48%	

Comments by:	Comments by:
	All test under Responsibility Third party.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	5/12/2022	A
Contractor QA/QC *	Abdalloh SAMY	Abdalloh	5/12/2022	A
GARB**	Hussien Soweid	Hussien	5/12/2022	A
Employers Representative	Mohamed Ahmed		13-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	1/12/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-21	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		26157.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	373.0	2583.0	6135.0	2822.0	2260.0	1500.0	2681.0			A-1-a
(g)Cumulative Retained	373.0	2956.0	9091.0	11913.0	14173.0	15673.0	18354.0		PRO	2.12
Cumulative Retained %	1.4	11.3	34.8	45.5	54.2	59.9	70.2		WC	7.0
Cumulative Passing %	98.6	88.7	65.2	54.5	45.8	40.1	29.8		CBR	48%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	66.80	203.00	289.00					
Cumulative Retained %	13.36	40.60	57.80					
Cumulative Passing %	86.64	59.40	42.20					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	98.6	88.7	65.2	54.5	45.8	40.1	29.8	25.8	17.7	12.6

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	24.8%	20.4%	4.4%

Contractor

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

Consultant

5/12 2022

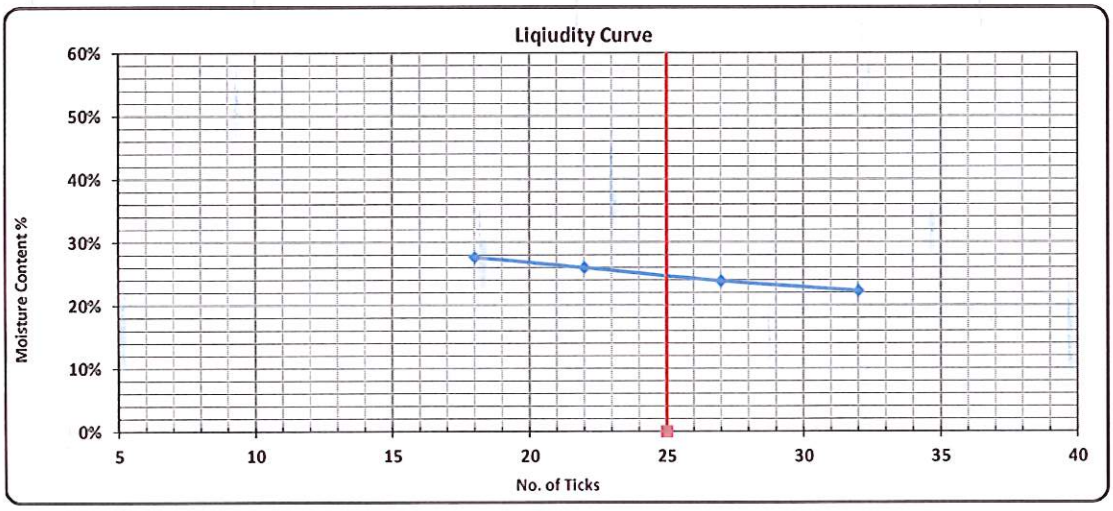
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR	(GARBLT) — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	2/12/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-EMb-21	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	32	27	22	18	-	-
Tare No.	46	45	10	2	B	G
Tare WT. (gm)	27.22	25.36	26.51	22.91	11.98	11.20
Tare WT. + Wet WT. (gm)	52.09	48.57	46.88	49.62	12.83	11.94
Tare WT. + Dry WT. (gm)	47.56	44.10	42.68	43.84	12.68	11.82
(gm)Water WT.	4.53	4.47	4.20	5.78	0.15	0.12
(gm)Dry WT.	20.34	18.74	16.17	20.93	0.70	0.62
Moisture Content %	22.3%	23.9%	26.0%	27.6%	21.4%	19.4%
Average %					20.4%	



L.L	P.L	P.I
24.8%	20.4%	4.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign : 5/12/2022

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د خالد فتحي — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة العامة للطرق والكباري والنقل البري (GARBLT) — الهيئة القومية للأنفاق

PROCTOR TEST

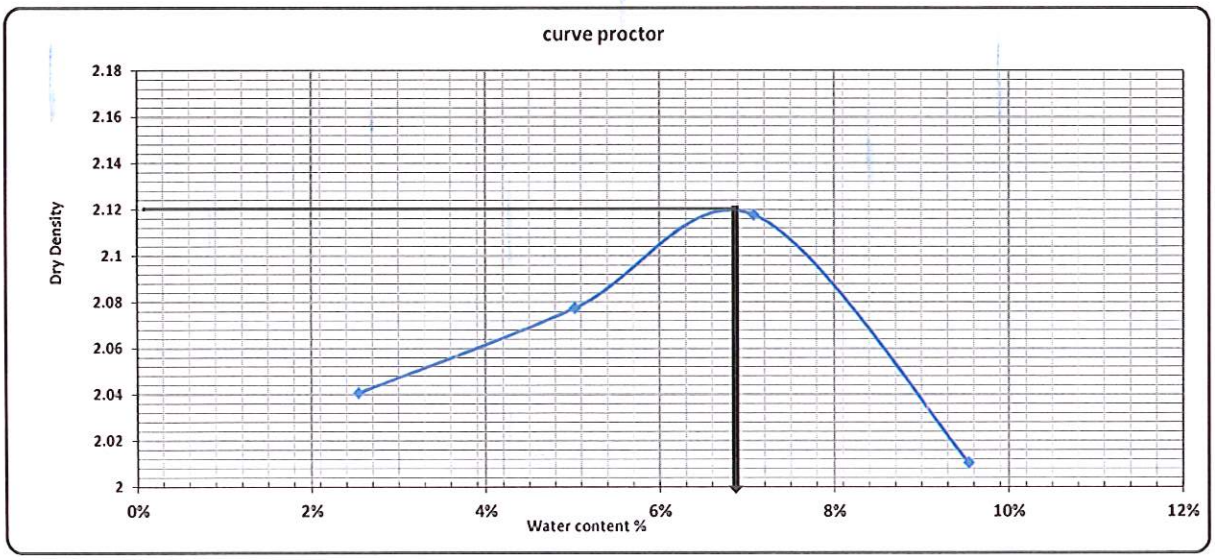
Testing Date :	2/12/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-EMB-21	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6210.0
Mold Volume:	2104.9

MAX Dry Density	2.120
Water content %	7.00

trial no :	1	2	3	4		
Wt. Of Mold+ wet soil	10623.0	10811.0	10992.0	10854		
WT. WET SOIL	4413.0	4601.0	4782.0	4644.0		
Wt. Density	2.097	2.186	2.272	2.206		

Tare No.	16	16	8	8	1	1	4	4				
Tare wt.	25.69	25.69	26.29	26.29	26.74	26.74	25.48	25.48				
Wt. Of wet soil & tare	145.9	145.9	103.3	103.3	143.8	143.8	125.1	125.1				
Wt. Of dry soil & tare	142.65	142.65	99.43	99.43	135.84	135.84	116.25	116.25				
Wt. Of water	3.2	3.2	3.8	3.8	7.9	7.9	8.8	8.8				
Wt. Of dry soil	117.0	117.0	73.1	73.1	109.1	109.1	90.8	90.8				
Water content %	2.7%	2.7%	5.2%	5.2%	7.3%	7.3%	9.7%	9.7%				
AV.Water content %	2.7%		5.2%		7.3%		9.7%					
Dry Density	2.041		2.077		2.118		2.010					



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	5/12/2022	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-21	Material	fill material layar		
Name Company	cairo company		quaintity	5000 m3		

- : Test Results

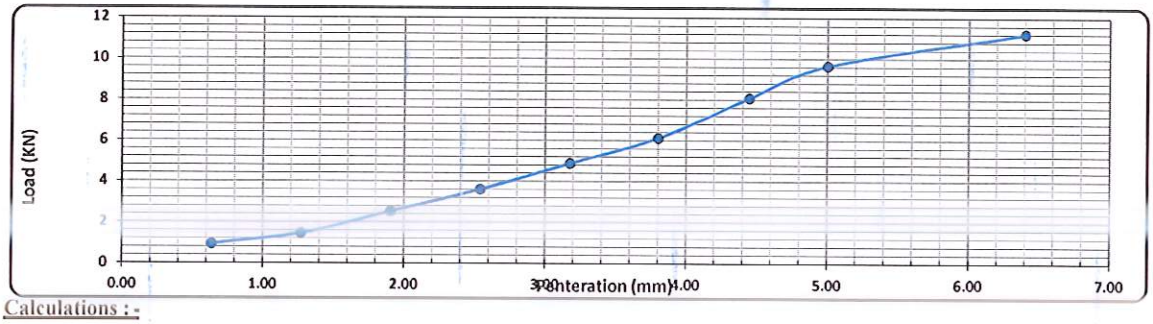
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16444
(gm)Mold WT. + Wet WT.	21328
(gm)Wet WT.	4884
Wet Density (g/cm^3)	2.243
Dry Density (g/cm^3)	2.101
Proctor Density (g/cm^3)	2.120
Compaction %	99

Mositure Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	25.26
(gm)Tare WT. +Wet WT.	158.24
(gm)Tare WT. +Dry WT.	149.85
(gm)water wt	8.4
(gm)Dry WT.	124.6
Moisture Content %	6.7

Swelling	
Mold No.	2
Date	5/12/2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	95.00	149.00	258.00	368.00	498.00	625.00	824.00	985.00	1145.00
(KN)Load	0.9	1.5	2.5	3.6	4.9	6.1	8.1	9.7	11.2



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 100 %
2.50	3.61	13.4	27.0%	99	100	27.3%
5.00	9.65	20.0	48.2%			48.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		5/12/2022				
Contractor reference	CA-Emb-22							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 520+980 / 521+000 / -11 521+820 / 521+900 / -7 521+700 / 521+800 / -7		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	1-12-2022	
2	Classification	m^3	5000	1-12-2022	
3	Proctor & O.m.c	m^3	5000	1-12-2022	
4	L.L & P.L & PI	m^3	5000	1-12-2022	
5	C.B.R	m^3	5000	5-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Mahgob laboratory) and the results founded meet the specifications and accepted.	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	5/12/2022	A
QA/QC *	Hassan	5-12-2022	5/12/2022	A
GARB**	Hussien Fouad	Hussien	5/12/2022	A
Comments by	Final Quality approval with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	Awc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name ENG/ Abdelrahman Adel	Sign Abdel Rahman	Date 5/12/2022	Time
Contractor Reference	CA-Emb-22			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.3%	
4	ASTM D 4318	Atterberg limit	18.7%	
5	ASTM D 2974	Moisture content	7%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	54.2%	

Comments by:	Comments by:
	- All test under Responsibility third party.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	5/12/2022	A
Contractor QA/QC *	Hassan		5/12/2022	A
GARB**	Hussien Fouad	Hussien	5/12/2022	A
Employers Representative	Mohmd Ahmd		15-1-2025	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	2/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P. 521+560	CA-Emb-22			
NAME COMPANY	CAIRO				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		26609.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	393.0	2953.0	4820.0	3125.0	2456.0	1596.0	2427.0			A-1-a
Cumulative Retained (g)	393.0	3346.0	8166.0	11291.0	13747.0	15343.0	17770.0		PRO	2.17
Cumulative Retained %	1.5	12.6	30.7	42.4	51.7	57.7	66.8		WC	7.00
Cumulative Passing %	98.5	87.4	69.3	57.6	48.3	42.3	33.2		CBR	54.20

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	98.00	195.00	300.00					
Cumulative Retained %	19.60	39.00	60.00					
Cumulative Passing %	80.40	61.00	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 %	98.5	87.4	69.3	57.6	48.3	42.3	33.2	26.7	20.3	13.3

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	21.60	18.70	3.00

Contractor	Consultant
شركة المحجوب للمقاولات العمومية والتوريدات معمل اختبارات وأبحاث التربة القطار السريع - فوكه - مطروح المحجوب	Hassan

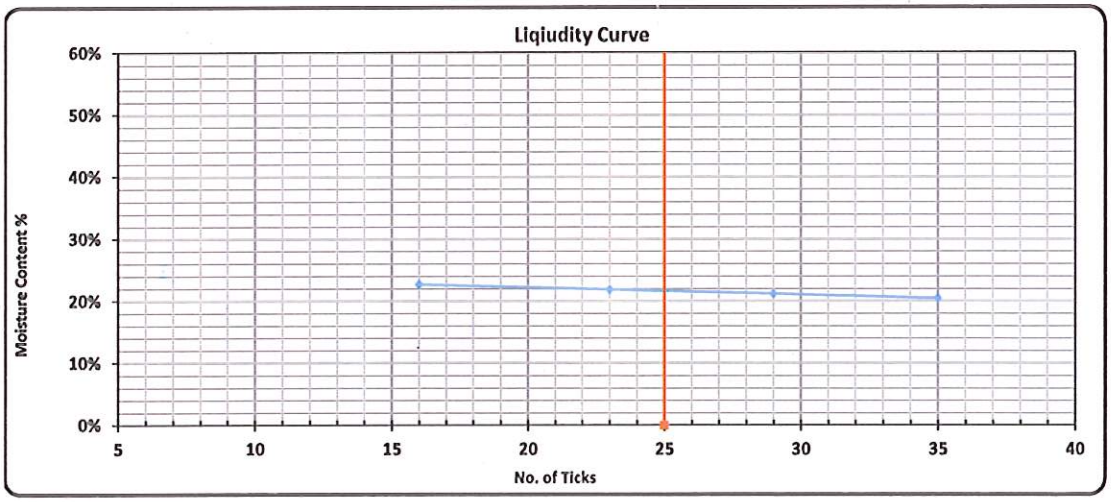
KK ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد فديل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — الشركة القابضة للنقل والكباري والطرق (CARBLT)

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	**2022-12-02**	**Code:**	**ZONE**	**520+500**	**522+000**
Location:	**521+560**	CA-Emb-22			
Layer No. :	**CAIRO**				

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	16	23	29	35	-	-
Tare No.	20	7	21	25	5	23
Tare WT. (gm)	22.82	35.28	29.05	33.13	10.98	19.33
Tare WT. + Wet WT. (gm)	42.57	56.01	49.02	51.09	11.66	20.01
Tare WT. + Dry WT. (gm)	38.92	52.29	45.53	48.04	11.55	19.90
Water WT. (gm)	3.65	3.72	3.49	3.05	0.11	0.11
Dry WT. (gm)	16.10	17.01	16.48	14.91	0.57	0.57
Moisture Content %	22.7%	21.9%	21.2%	20.5%	19.1%	18.3%
Average %					18.7%	



L.L	P.L	P.I
21.6%	18.7%	3.0%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign :

معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المطلوب

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد غنيل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للإنفاق NATIONAL AUTHORITY FOR TUNNELS

PROCTOR TEST

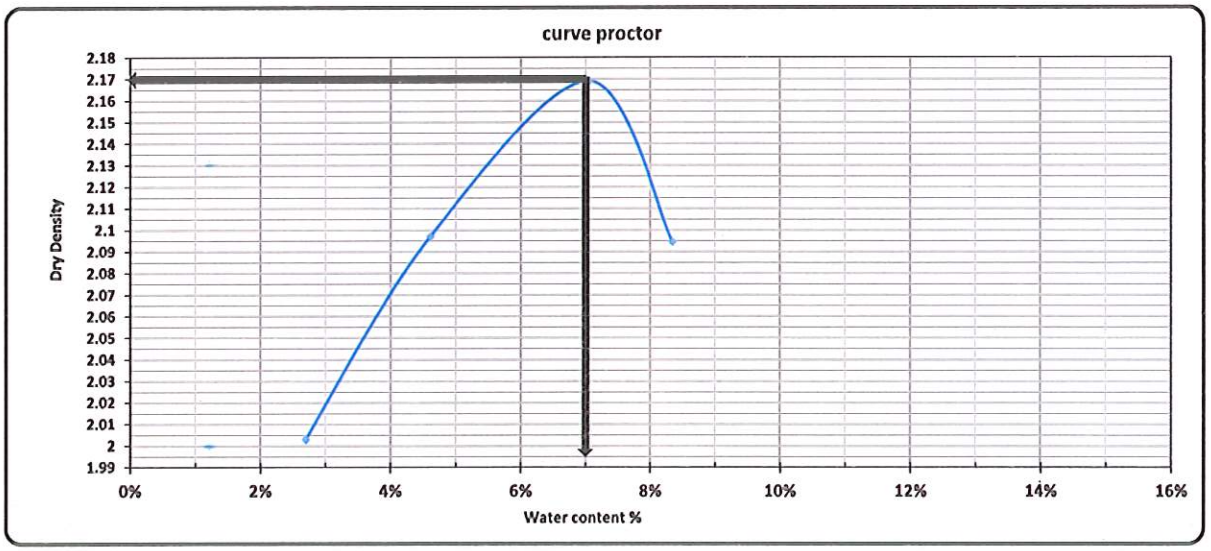
TESTING DATE:	3/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P 521+560	A-E-Mb-22			
NAME COMPANY	CAIRO				

Weight of empty mold :	6055.0
Mold Volume:	2032.0

MAX Dry Density	2.17
Water content %	7

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10235.0	10512.6	10763.1	10666	
WT. WET SOIL	4180.0	4457.6	4708.1	4611.0	
Wt. Density	2.057	2.194	2.322	2.269	

Tare No.	1	2	3	4	5	6	7	8		
Tare wt.	33.19	27.39	29.26	34.61	35.82	30.10	32.91	36.43		
Wt. Of wet soil & tare	134.82	134.85	174.92	122.54	121.85	145.93	155.23	149.92		
Wt. Of dry soil & tare	132.2	131.9	168.7	118.5	116.4	138.0	145.7	141.3		
Wt. Of water	2.6	2.9	6.2	4.0	5.5	7.9	9.6	8.6		
Wt. Of dry soil	99.1	104.5	139.4	83.9	80.6	107.9	112.7	104.9		
Water content %	2.6%	2.8%	4.5%	4.8%	6.8%	7.3%	8.5%	8.2%		
AV.Water content %	2.7%		4.6%		7.1%		8.3%			
Dry Density	2.003		2.097		2.169		2.094			



Contractor	Consultant
شركة المحجوب للمقاولات العامة والتوريدات معمل اختبارات وأبحاث التربة القطار السريع - فوكه - مطروح المحجوب	Hassan

المقاولون للطرق والإنشاءات
س.ت: ١٠٦٧٠٥
ب.ض: ٠٤٦ - ٥٩٢ - ٥٤٤

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	(CAIRILT) الهيئة القومية للإنفاق

California Bearing Ratio TEST

Testing Date :	5/12/2022	Code			
Location :	521+560	CA-Emb-22	ZONE	520+500	522+000
Layer No. :	CAIRO				

-: Test Results

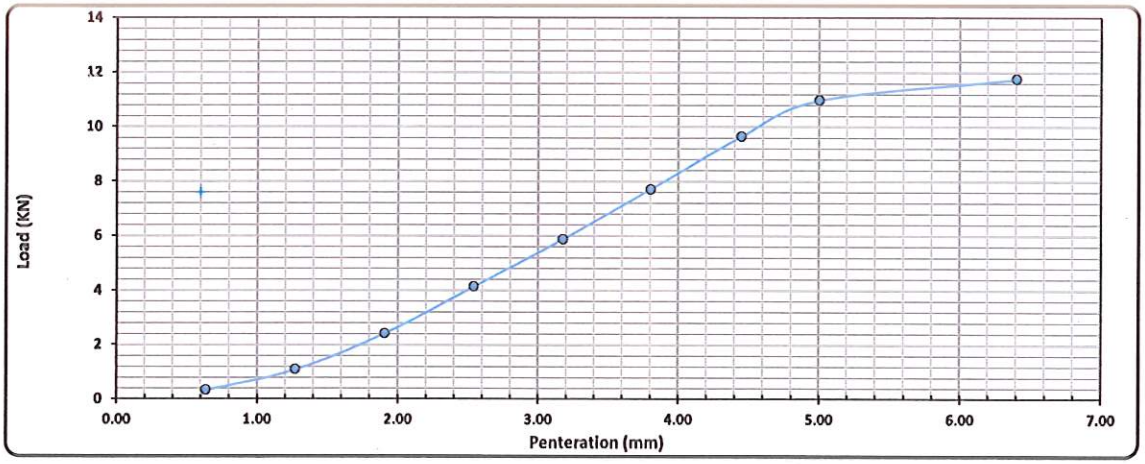
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	15700
Mold WT. + Wet WT. (gm)	20473.58
Wet WT. (gm)	4774
Wet Density (g/cm^3)	2.219
Dry Density (g/cm^3)	2.074
Proctor Density (g/cm^3)	2.170
Compaction %	96

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. +Wet WT. (gm)	233
Tare WT. +Dry WT. (gm)	221
Water WT. (gm)	12.0
Dry WT. (gm)	190.0
Moisture Content %	7.0

Swelling	
Mold No.	55
Date	5/12/2022
Intial Height (mm)	4.50
Final Height (mm)	4.50
Difference	0
Sample Height (mm)	122.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	33.00	110.00	245.00	421.00	598.00	785.00	983.00	1119.00	1198.00
Load (KN)	0.3	1.1	2.4	4.1	5.9	7.7	9.6	11.0	11.7



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	4.13	13.4	30.9%	99	98	30.6%
5.00	10.97	20.0	54.8%			54.2%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign : MA

معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المحجوب

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		6-12-2022				
Contractor reference	CA-EMB-23							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+800 / 521+820 / -7 521+320 / 521+440 / -7 521+440 / 521+520 / -7		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	2-12-2022	
2	Classification	m^3	5000	2-12-2022	
3	Proctor & O.m.c	m^3	5000	2-12-2022	
4	L.L & P.L & PI	m^3	5000	2-12-2022	
5	C.B.R	m^3	5000	6-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	6/12/2022	A
QA/QC *	Hassan	6 12 2022 MA	6/12/2022	A
GARB**	Hussien Fouad	Hussien	6/12/2022	A
Comments by	final quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	A-c

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company			
Electric express train	Cairo for Roads and construction Company			k.k			
Issued by Contractor	Name	Sign	Date		Time		
	ENG/ Abdelrahman Adel	Abdel Rahman	6-12-2022				
Contractor Reference	CA- Emb-23						
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	7.1%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.3%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	64.7%	
Comments by:		**Comments by:**		
		All test under Responsibility Third party		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman		
Contractor QA/QC *	Hassan	MA		
GARB**	Hussien Sowars	Hussien	6-12-2022	A
Employers Representative	Mohamed Ahmed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CARBUT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	02/12/2022	Code	Station	520+500	522+000
LOCATION	kp: 520+700	CA-Emb-23	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test .....

.....

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		30411.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	4120.0	3685.0	3195.0	3145.0	3441.0	3782.0	3624.0			A-1-a
Cumulative Retained (g)	4120.0	7805.0	11000.0	14145.0	17586.0	21368.0	24992.0		PRO	2.15
Cumulative Retained %	13.5	25.7	36.2	46.5	57.8	70.3	82.2		WC	6.30
Cumulative Passing %	86.5	74.3	63.8	53.5	42.2	29.7	17.8		CBR	64.70

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	76.00	194.00	301.00					
Cumulative Retained %	15.20	38.80	60.20					
Cumulative Passing %	84.80	61.20	39.80					

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 %	86.5	74.3	63.8	53.5	42.2	29.7	17.8	15.1	10.9	7.1

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Hassa MA
6/12 2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد فتحي	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	(GARBLT)

PROCTOR TEST

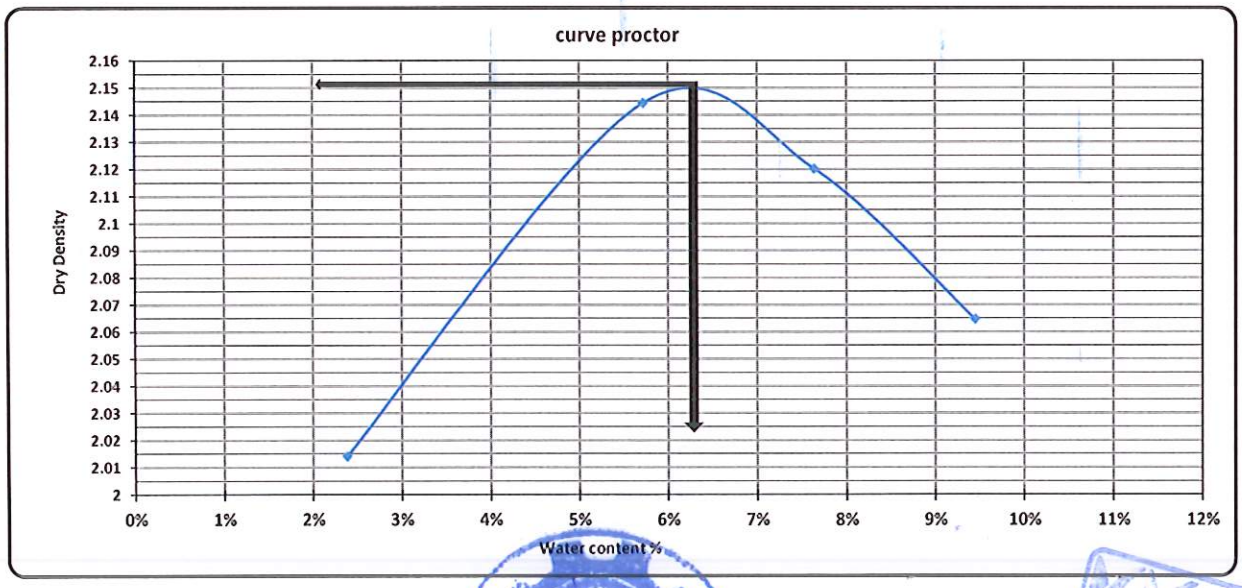
TESTING DATE:	2-12-2022	Code	Station	520+500	522+000
LOCATION	kp: 520+700	CA-Emb-23	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000m3	

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.15
Water content %	6.3

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10524.0	10970.0	11003.0	10954	
WT. WET SOIL	4487.0	4933.0	4966.0	4917.0	
Wt. Density	2.062	2.267	2.282	2.260	

Tare No.	26	40	8	11	18	32	17	16		
Tare wt.	55	46.4	46.8	46.1	77.7	74.4	59.5	33.9		
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	146.9	144.0	144.3	144.5	144.9	144.6	142.1	140.1		
Wt. Of water	3.1	6.0	5.7	5.5	5.1	5.4	7.9	9.9		
Wt. Of dry soil	123.0	267.8	97.5	98.4	67.2	70.2	82.6	106.2		
Water content %	2.5%	2.2%	5.8%	5.6%	7.6%	7.7%	9.6%	9.3%		
AV.Water content %	2.4%		5.7%		7.6%		9.4%			
Dry Density	2.014		2.144		2.120		2.065			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec 7 Fuka - Matrouh

6/12 2022 MA

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	CARBUT — الهيئة القومية للإنفاق

California Bearing Ratio TEST

Testing Date :	6-12-2022	Code	Station	520+500	522+000	
Location :	kp:520+700	CA-EMb-23	Material	fill material layer		
Company Name	cairo company		quantity	5000m3		

- : Test Results

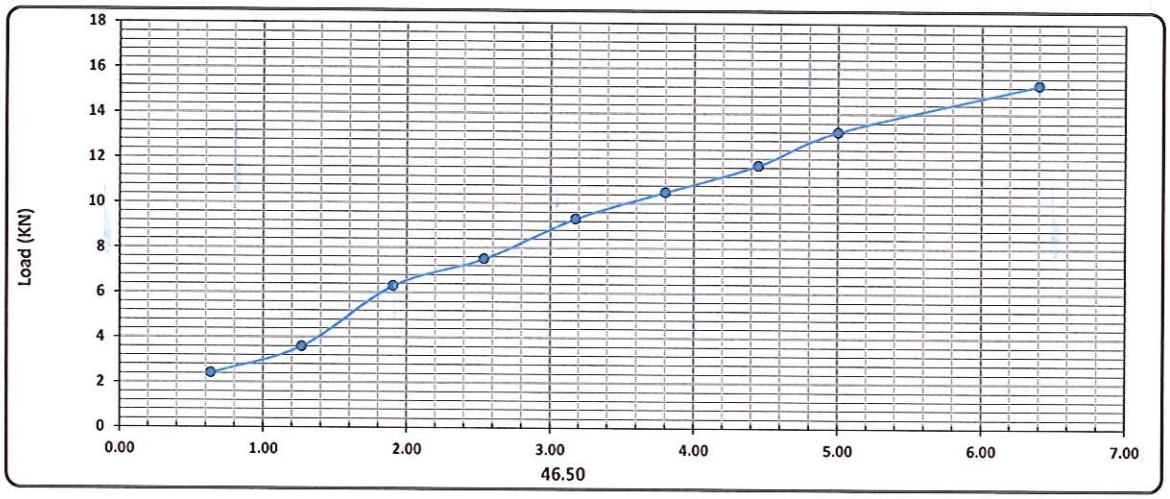
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2168
Mold WT. (gm)	5089
Mold WT. + Wet WT. (gm)	10035
	4946
Wet Density (g/cm^3)	2.281
Dry Density (g/cm^3)	2.145
Proctor Density (g/cm^3)	2.150
Compaction %	99.8

Mositure Ratio After Compacted Mold	
Tare No.	17
Tare WT. (gm)	59.5
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144.6
3398	5.4
Dry WT. (gm)	[illegible]
Moisture Content %	6.3

Swelling	
Mold No.	2
Date	6-12-2022
Intial Height (mm)	2.00
Final Height (mm)	2.60
Difference	1
Sample Height (mm)	12.00
Swelling Ratio %	5%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.08	0.12	0.21	0.25	0.31	0.35	0.39	0.44	0.51
Load (KN)	2.4	3.6	6.3	7.5	9.3	10.5	11.7	13.2	15.3



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	7.50	13.4	56.2%	100	98	55.2%
5.00	13.20	20.0	65.9%			64.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec 7 Paks - Matrouh

6/12/2022

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		7-12-2022					
Contractor reference	CA-EMB-24								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS			
Location to be Used	From 521+520 521+900 521+000	To 521+560 522+000 521+050	Fill -7 -7 -8.5		
MAR Approval No				Date	
Supplier Name					
Test Requirement		Specification		Clause	
Reference Photos	Yes attached / No	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	3-12-2022	
2	Classification	m^3	5000	3-12-2022	
3	Proctor & O.m.c	m^3	5000	3-12-2022	
4	L.L & P.L & PI	m^3	5000	3-12-2022	
5	C.B.R	m^3	5000	7-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	7/12/2022	A
QA/QC *	Hassan	7/12/2022	7/12/2022	A
GARB**	Hussien Saeed	Hussien	7/12/2022	A
Comments by	field quantity approved with Res			
Employers Representative	Mohamed Ahmed		8-2-23	Acc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Abdelrahman Adel	Abdelrahman		7-12-2022							
Contractor Reference	CA-Emb-24										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-2-4)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.6%	
4	ASTM D 4318	Atterberg limit	16.9%	
5	ASTM D 2974	Moisture content	7.2%	
6	ASTM D 1557	Modified proctor	2.11	
7	ASTM D 1883	CBR	55.8%	
Comments by:		**Comments by:**		
		All test under Responsibility third party		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdelrahman Adel	Abdelrahman Adel	7/12/2022	A
Contractor QA/QC *	Hassan	MA	7/12/2022	A
GARB**	Hussein Fouad	Hussein	7/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NARUT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	03/12/2022	Code	ZONE	520+500	522+000
LOCATION	K.P(521+000)	CA-Emb-24			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		42845.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	5231.0	3987.0	3752.0	4521.0	3937.0	4126.0	4652.0			A-2-4
Cumulative Retained (g)	5231.0	9218.0	12970.0	17491.0	21428.0	25554.0	30206.0		PRO	2.11
Cumulative Retained %	12.2	21.5	30.3	40.8	50.0	59.6	70.5		WC	7.20
Cumulative Passing %	87.8	78.5	69.7	59.2	50.0	40.4	29.5		CBR	55.80

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	62.00	154.00	270.00					
Cumulative Retained %	12.40	30.80	54.00					
Cumulative Passing %	87.60	69.20	46.00					

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 %	87.8	78.5	69.7	59.2	50.0	40.4	29.5	25.8	20.4	13.6

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	24.85%	16.90%	7.94%

Contractor

Consultant

Electric Express Train Central Lab Number 4 Sec 7 Foka - Matrouh

7/12/2022 Hassan

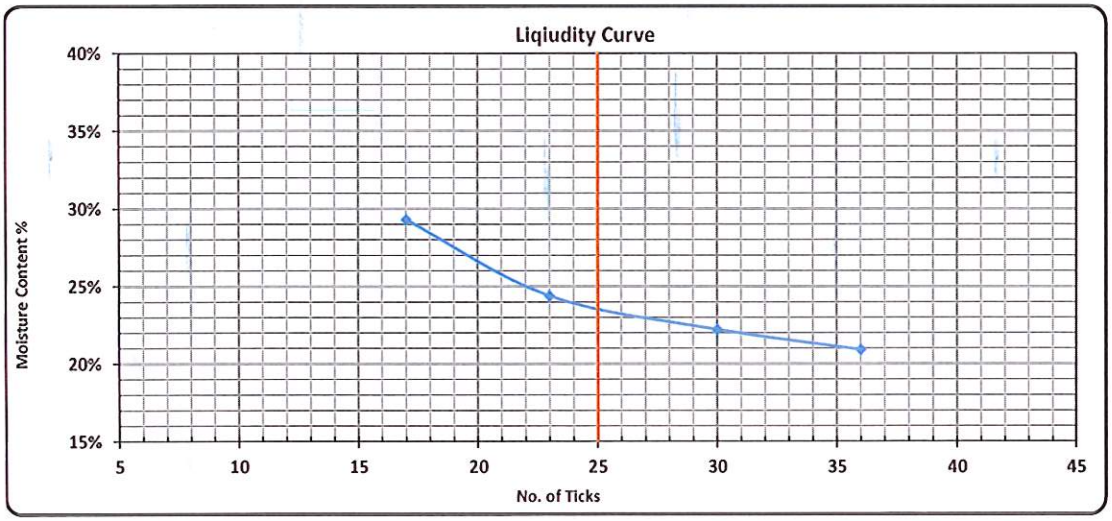
	Electric Express Train - HSR	

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	12/03/2022	Code	ZONE	520+500	522+000
Location:	K.P(521+000)	CA-EMb-24			
Company Name	cairo company				

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	36	30	23	17	-	-
Tare No.	16	15	26	11	90	21
Tare WT. (gm)	33.40	31.60	55.00	46.3	62.60	54.70
Tare WT. + Wet WT. (gm)	67.50	70.10	85.60	74.10	65.40	58.80
Tare WT. + Dry WT. (gm)	61.60	63.10	79.60	67.80	65.0	58.2
Water WT. (gm)	5.90	7.00	6.00	6.30	0.40	0.60
Dry WT. (gm)	28.20	31.50	24.60	21.50	2.40	3.50
Moisture Content %	20.9%	22.2%	24.4%	29.3%	16.7%	17.1%
Average %					16.9%	



L.L	P.L	P.I
24.85%	16.90%	7.94%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	(GARBLT) / الهيئة التنموية للإنقاذ

PROCTOR TEST

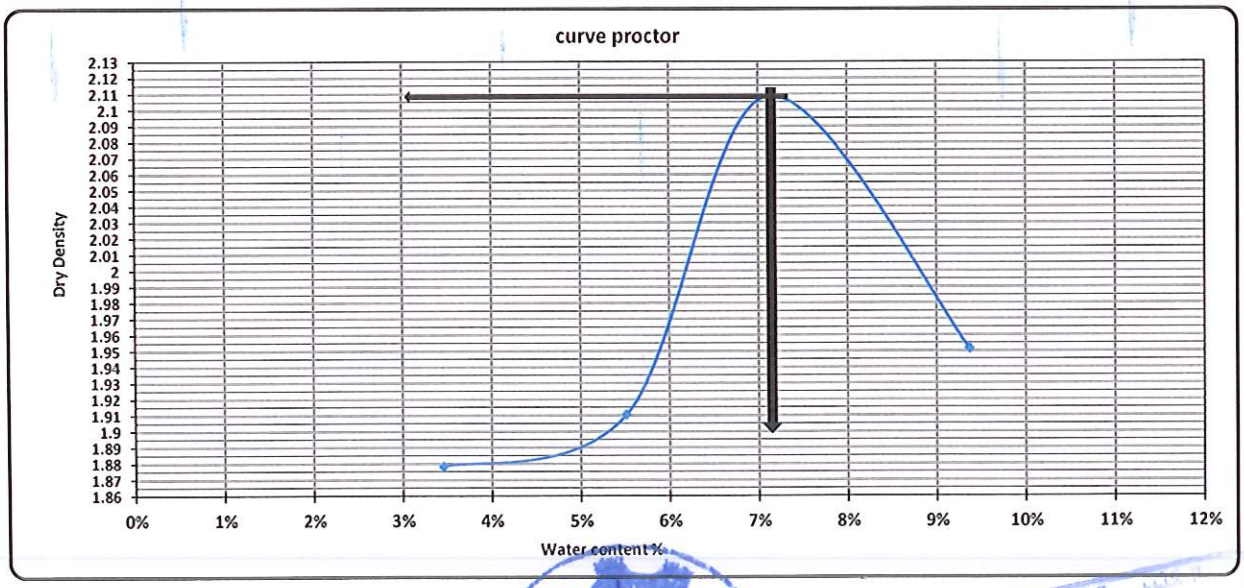
TESTING DATE:	3-12-2022	Code	ZONE	520+500	522+000
LOCATION	K.P(521+000)	CA-EM6-24			
NAME COMPANY	cairo company				

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.11
Water content %	7.2

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10265.0	10423.0	10952.0	10681	
WT. WET SOIL	4228.0	4386.0	4915.0	4644.0	
Wt. Density	1.943	2.016	2.259	2.134	

Tare No.	8	40	17	18	90	19	17	33		
Tare wt.	46.8	46.4	59.5	77.7	62.5	44.4	59.5	73.6		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0		
Wt. Of dry soil & tare	145.6	141.1	145.3	146.2	144.1	143.1	142.2	143.5		
Wt. Of water	4.4	8.9	4.7	3.8	5.9	6.9	7.8	6.5		
Wt. Of dry soil	123.0	267.8	85.8	68.5	81.6	98.7	82.7	69.9		
Water content %	3.6%	3.3%	5.5%	5.5%	7.2%	7.0%	9.4%	9.3%		
AV.Water content %	3.5%		5.5%		7.1%		9.4%			
Dry Density	1.878		1.910		2.109		1.951			



Contractor

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Consultant

Hassan
7/12 2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	CARBUT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	07-12-2022	Code	ZONE	520+500	522+000
Location :	K.P(521+000)	CA-EMB-24			
Company Name	cairo company				

Test Results : -

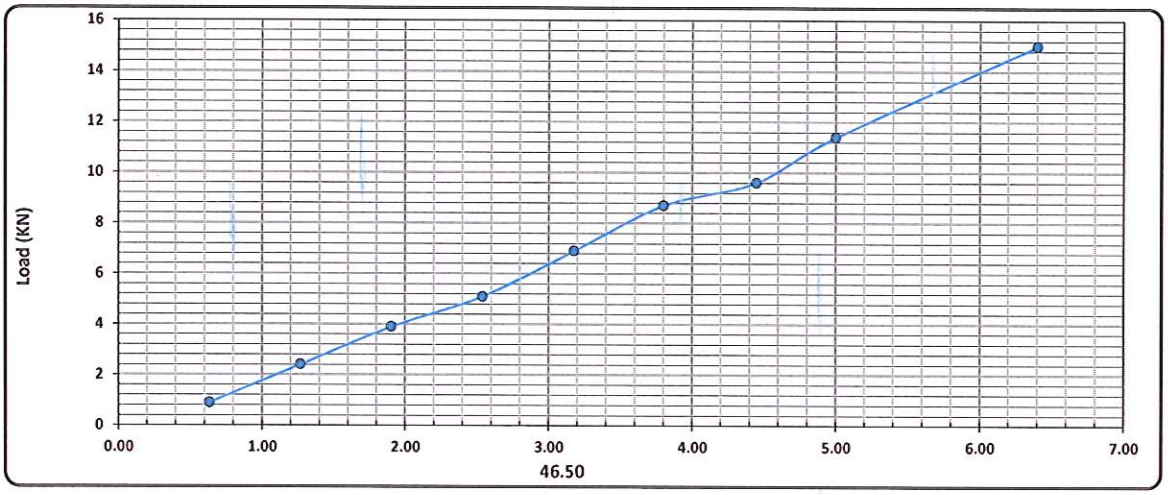
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2025
Mold WT. (gm)	5034
Mold WT. + Wet WT. (gm)	9617
Wet WT. (gm)	4583
Wet Density (g/cm^3)	2.263
Dry Density (g/cm^3)	2.110
Proctor Density (g/cm^3)	2.110
Compaction %	100.0

Mositure Ratio After Compacted Mold	
Tare No.	8
Tare WT. (gm)	46.8
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143
3398	7.0
Dry WT. (gm)	96.2
Moisture Content %	7.3

Swelling	
Mold No.	3
Date	07-12-2022
Intial Height (mm)	4.00
Final Height (mm)	4.55
Difference	1
Sample Height (mm)	11.90
Swelling Ratio %	5%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.08	0.13	0.17	0.23	0.29	0.32	0.38	0.50
Load (KN)	0.9	2.4	3.9	5.1	6.9	8.7	9.6	11.4	15.0



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compactioa	Compactioa	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.10	13.4	38.2%	100	98	37.4%
5.00	11.40	20.0	56.9%			55.8%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign : 7/12/2022

Electric Express Train Central Lab Number 4 Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		10-12-2022				
Contractor reference	CA-Emb-25							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+050 / 521+080 / -8.5 520+800 / 520+880 / -11 520+700 / 520+770 / -10		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	6-12-2022	
2	Classification	m^3	5000	6-12-2022	
3	Proctor & O.m.c	m^3	5000	6-12-2022	
4	L.L & P.L & PI	m^3	5000	6-12-2022	
5	C.B.R	m^3	5000	10-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	10/12/2022	A
QA/QC *	Hassan	10/12/2022	10/12/2022	A
GARB**	Hussien Fouad	Hussien	10/12/2022	A
Comments by	Final Quantity approved with 0s			
Employers Representative	Mohamed Ahmed		8-2-23	Awc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	10-12-2022	
Contractor Reference	CA-Emb-25			
Received by ER				

MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	12.6%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	5.8%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	51.4%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	10/12/2022	A
Contractor QA/QC *	Hassan	MA	10/12/2022	A
GARB**	Hussien Fouad		10/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR** From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NAT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	06/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+500	CA-Emb-25	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		25054.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	2265.0	2502.0	2421.0	2356.0	2654.0	2125.0	2786.0			A-1-a
Cumulative Retained (g)	2265.0	4767.0	7188.0	9544.0	12198.0	14323.0	17109.0		PRO	2.17
Cumulative Retained %	9.0	19.0	28.7	38.1	48.7	57.2	68.3		WC	5.80
Cumulative Passing %	91.0	81.0	71.3	61.9	51.3	42.8	31.7		CBR	51.50

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	83.00	195.00	301.00					
Cumulative Retained %	16.60	39.00	60.20					
Cumulative Passing %	83.40	61.00	39.80					

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 %	91.0	81.0	71.3	61.9	51.3	42.8	31.7	26.4	19.3	12.6

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

Contractor		Consultant
	Electric Express Train Central Lab Number 4 Sec-7 Foka - Matrouh	Hassan 10/12/2022

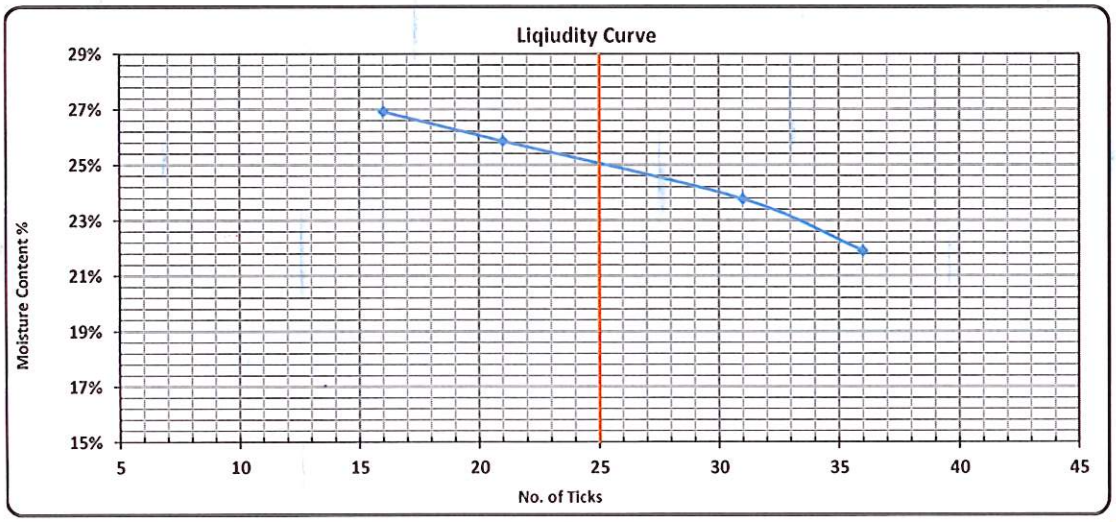
ENGINEERING CONSULTING OFFICE — SYSTRA SHAKER	Electric Express Train - HSR	CARBUT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	07/12/2022	Code	FROM STA:	520+500	522+000
Location:	kp:521+500	CA-Emb-25	Material:	fill material layer	
Company Name	cairo company		quantity	5000m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	36	31	21	16	-	-
Tare No.	20	16	40	7	10	18
Tare WT. (gm)	60.90	33.90	46.40	42.8	43.70	77.70
Tare WT. + Wet WT. (gm)	82.60	51.60	68.30	69.20	47.60	79.30
Tare WT. + Dry WT. (gm)	78.70	48.20	63.80	63.60	47.0	79.0
Water WT. (gm)	3.90	3.40	4.50	5.60	0.65	0.28
Dry WT. (gm)	17.80	14.30	17.40	20.80	3.25	1.32
Moisture Content %	21.9%	23.8%	25.9%	26.9%	20.0%	21.2%
Average %					20.6%	



L.L	P.L	P.I
24.86%	20.61%	4.25%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	Sign : 10/12 2022

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد فتحي	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PROCTOR TEST

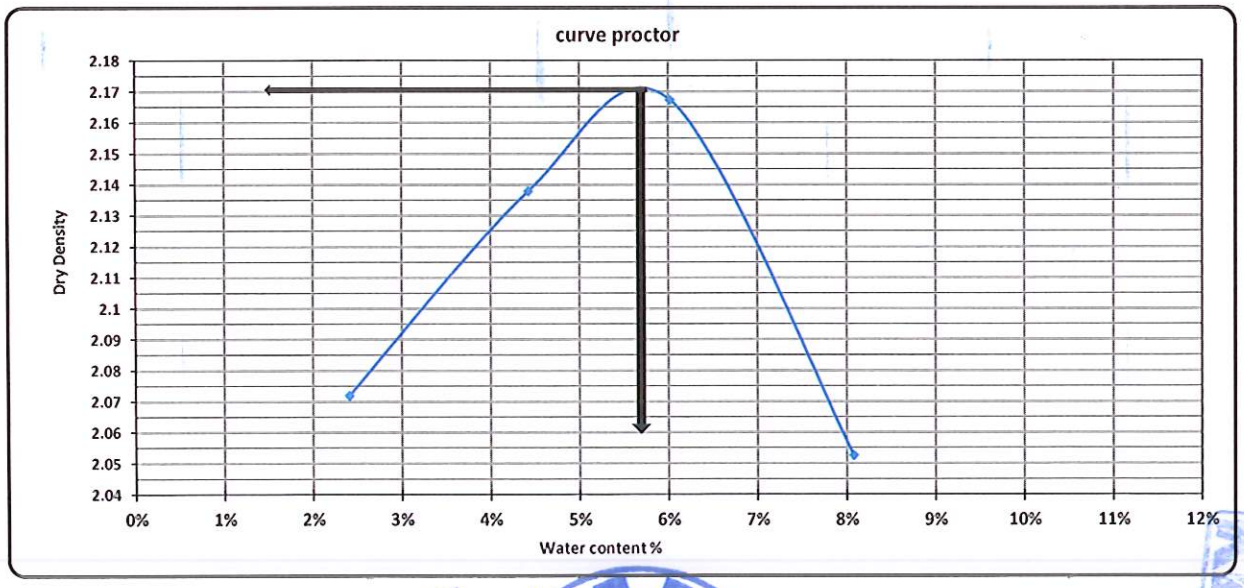
TESTING DATE:	07/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+500	CA-Emb-25	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000m3	

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.17
Water content %	5.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10654.0	10895.0	11037.0	10864	
WT. WET SOIL	4617.0	4858.0	5000.0	4827.0	
Wt. Density	2.122	2.233	2.298	2.218	

Tare No.	8	27	19	25	33	90	32	10		
Tare wt.	46.8	54.1	44.4	75.8	73.6	62.5	74.4	33.9		
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	147.2	143.2	145.6	146.8	145.6	145.1	144.3	141.4		
Wt. Of water	2.8	6.8	4.4	3.2	4.4	4.9	5.7	8.6		
Wt. Of dry soil	123.0	267.8	101.2	71.0	72.0	82.6	69.9	107.5		
Water content %	2.3%	2.5%	4.3%	4.5%	6.1%	5.9%	8.2%	8.0%		
AV.Water content %	2.4%		4.4%		6.0%		8.1%			
Dry Density	2.072		2.138		2.167		2.053			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec 7 Foka - Matrouh

Hassa
10 12 2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	CAPBLT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	10-12-2022	Code	ZONE	520+500	522+000	
Location :	kp:521+500	CA-EMb-25	Material	fill material layer		
Company Name	cairo company		quantity	5000m3		

- : Test Results

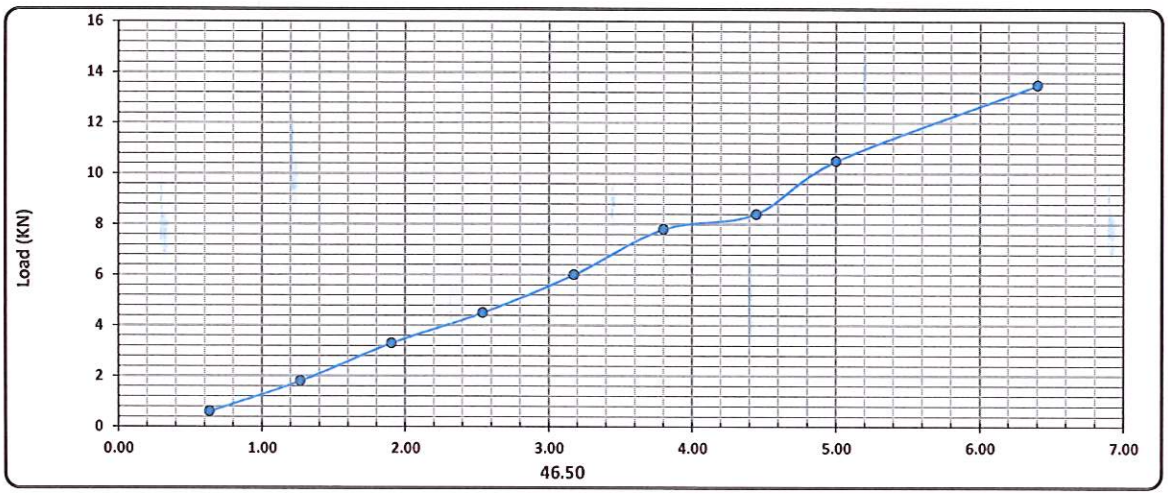
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2140
Mold WT. (gm)	4900
Mold WT. + Wet WT. (gm)	9810
Wet WT. (gm)	4910
Wet Density (g/cm^3)	2.294
Dry Density (g/cm^3)	2.168
Proctor Density (g/cm^3)	2.170
Compaction %	99.9

Mositure Ratio After Compacted Mold	
Tare No.	17
Tare WT. (gm)	59.5
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	145
3398	5.0
Dry WT. (gm)	85.5
Moisture Content %	5.8

Swelling	
Mold No.	4
Date	10-12-2022
Intial Height (mm)	6.00
Final Height (mm)	6.60
Difference	1
Sample Height (mm)	11.90
Swelling Ratio %	5%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.02	0.06	0.11	0.15	0.20	0.26	0.28	0.35	0.45
Load (KN)	0.6	1.8	3.3	4.5	6.0	7.8	8.4	10.5	13.5



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	4.50	13.4	33.7%	100	98	33.1%
5.00	10.50	20.0	52.4%			51.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	Sign : 10/12 2022

Electric Express Central Lab Nurseries Km 7 Paka - Mahmoud

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		11/12/2022				
Contractor reference	CA-Emb-28							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From 520+770 521+140	To 520+800 521+300	Fill -10 -7.5	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	7-12-2022	
2	Classification	m^3	5000	7-12-2022	
3	Proctor & O.m.c	m^3	5000	7-12-2022	
4	L.L & P.L & PI	m^3	5000	7-12-2022	
5	C.B.R	m^3	5000	11-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	11/12/2022	A
QA/QC *	Hassan	11-12-2022	11/12/2022	A
GARB**	Hussien Fouad	Hussien	11/12/2022	A
Comments by	Fill quantity approved with Cos			
Employers Representative	Mohamed Ahmed		8-2-23	Anz

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	11/12/2022	
Contractor Reference	CA-Emb-28			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	15%	
4	ASTM D 4318	Atterberg limit	19.62%	
5	ASTM D 2974	Moisture content	6.5%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	50%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	11/12/2022	A
Contractor QA/QC *	Hassan		11/12/2022	A
GARB**	Hussien Fouad	Hussien	11/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAIRO)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	07/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-28	Material	fill material layers	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		22813.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1215.0	1425.0	1675.0	1758.0	2191.0	1875.0	2352.0			A-1-a
Cumulative Retained (g)	1215.0	2640.0	4315.0	6073.0	8264.0	10139.0	12491.0		PRO	2.15
Cumulative Retained %	5.3	11.6	18.9	26.6	36.2	44.4	54.8		WC	6.50
Cumulative Passing %	94.7	88.4	81.1	73.4	63.8	55.6	45.2		CBR	50.00

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	109.00	241.00	334.00					
Cumulative Retained %	21.80	48.20	66.80					
Cumulative Passing %	78.20	51.80	33.20					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	94.7	88.4	81.1	73.4	63.8	55.6	45.2	35.4	23.4	15.0

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	23.25%	19.62%	3.64%

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Hassa
11/12 2022

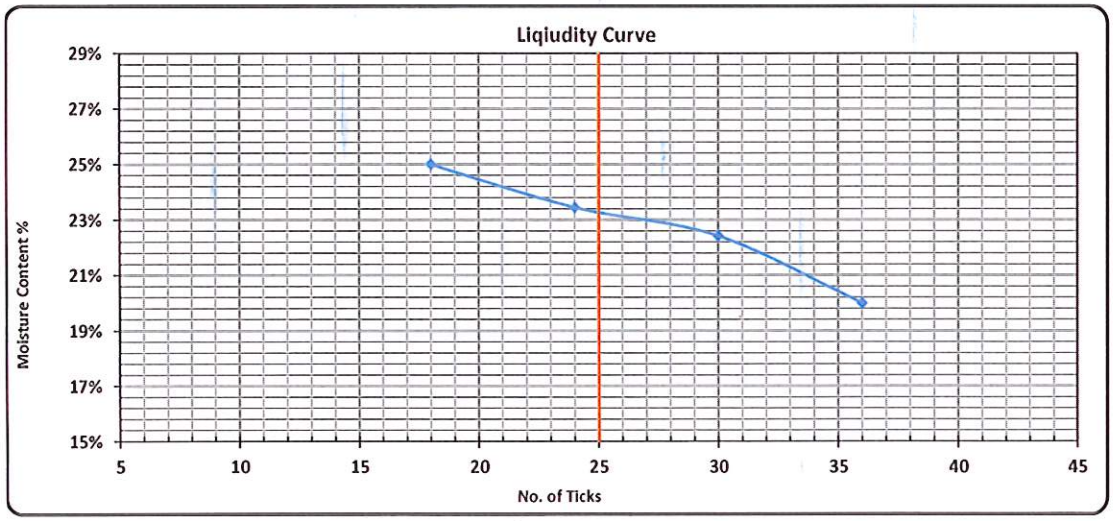
ENGINEERING CONSULTING OFFICE — SYSTRA — SHAKER	Electric Express Train - HSR	CAPBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	08/12/2022	Code	ZONE	520+500	522+000
Location:	kp:521+500	CA-Emb-28	Material	fill material layers	
Company Name	cairo company		quantity	5000m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	36	30	24	18	-	-
Tare No.	15	17	7	40	33	73
Tare WT. (gm)	31.40	59.60	43.70	46.4	73.50	34.50
Tare WT. + Wet WT. (gm)	54.20	86.90	71.60	68.90	76.60	37.20
Tare WT. + Dry WT. (gm)	50.40	81.90	66.30	64.40	76.1	36.8
Water WT. (gm)	3.80	5.00	5.30	4.50	0.50	0.45
Dry WT. (gm)	19.00	22.30	22.60	18.00	2.60	2.25
Moisture Content %	20.0%	22.4%	23.5%	25.0%	19.2%	20.0%
Average %					19.6%	



L.L	P.L	P.I
23.25%	19.62%	3.64%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	GARBLT / الهيئة القومية للأنفاق

PROCTOR TEST

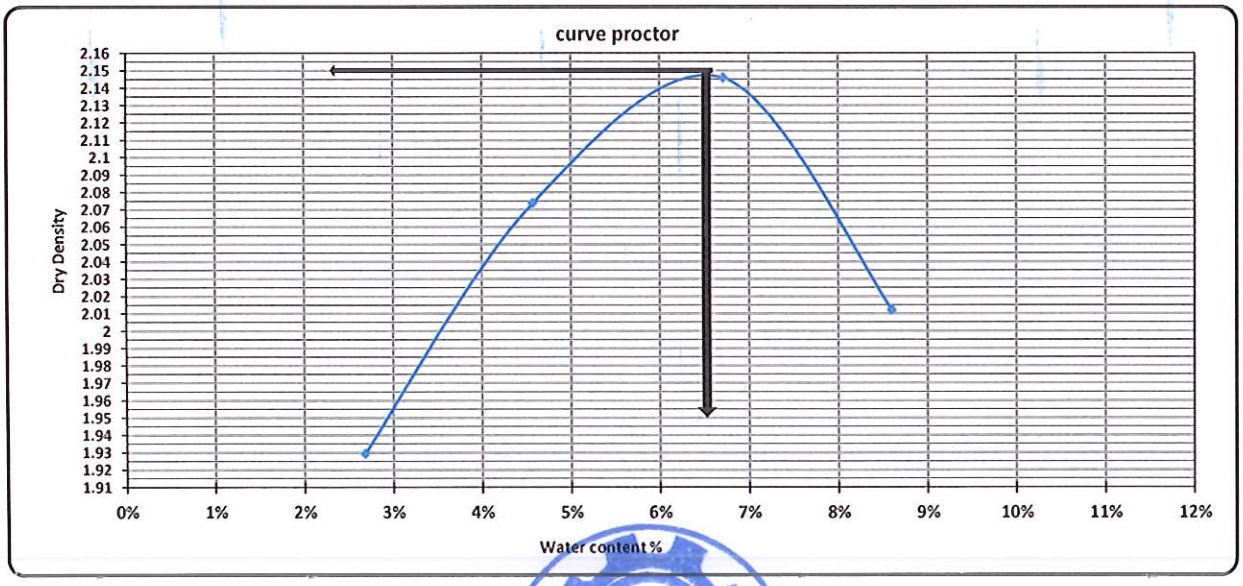
TESTING DATE:	8-12-2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-26	Material	fill material layers	
NAME COMPANY	cairo company		quantity	5000m3	

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.15
Water content %	6.5

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10348.0	10756.0	11020.0	10792	
WT. WET SOIL	4311.0	4719.0	4983.0	4755.0	
Wt. Density	1.981	2.169	2.290	2.185	

Tare No.	10	7	16	15	17	90	11	26		
Tare wt.	43.7	42.8	33.1	31.4	59.6	62.4	46.6	54.9		
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	146.8	142.6	144.9	144.8	144.3	144.5	142.0	142.3		
Wt. Of water	3.2	7.4	5.1	5.2	5.7	5.5	8.0	7.7		
Wt. Of dry soil	123.0	267.8	111.8	113.4	84.7	82.1	95.4	87.4		
Water content %	2.6%	2.8%	4.6%	4.6%	6.7%	6.7%	8.4%	8.8%		
AV.Water content %	2.7%		4.6%		6.7%		8.6%			
Dry Density	1.929		2.074		2.146		2.012			



Contractor

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Consultant

11/12 2022

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. فاد قنبل — SYSTRA — SHAKER	**Electric Express Train - HSR**	CARBUT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	11-12-2022	Code	ZONE	520+500	522+000	
Location :	kp:521+000	CA-Emb-26	Material	fill material layers		
Company Name	cairo company		quantity	5000m3		

-: Test Results

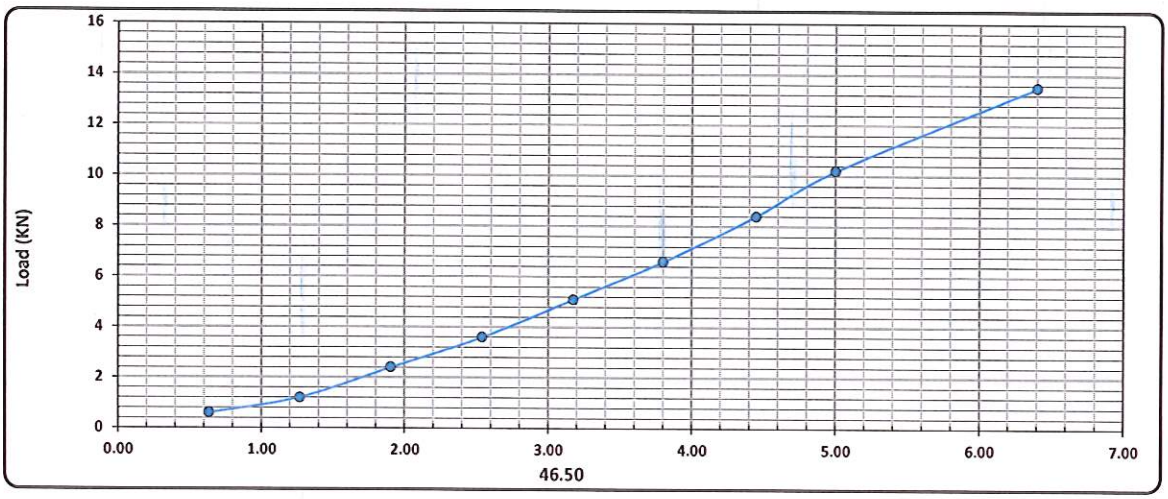
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm^3)	2158
Mold WT. (gm)	4890
Mold WT. + Wet WT. (gm)	9820
Wet WT. (gm)	4930
Wet Density (g/cm^3)	2.285
Dry Density (g/cm^3)	2.147
Proctor Density (g/cm^3)	2.150
Compaction %	99.9

Mositure Ratio After Compacted Mold	
Tare No.	16
Tare WT. (gm)	33.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143
3398	7.0
Dry WT. (gm)	109.1
Moisture Content %	6.4

Swelling	
Mold No.	1
Date	11-12-2022
Intial Height (mm)	8.00
Final Height (mm)	8.25
Difference	0
Sample Height (mm)	12.00
Swelling Ratio %	2%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.02	0.04	0.08	0.12	0.17	0.22	0.28	0.34	0.45
Load (KN)	0.6	1.2	2.4	3.6	5.1	6.6	8.4	10.2	13.5



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	3.60	13.4	27.0%	100	98	26.5%
5.00	10.20	20.0	50.9%			50.0%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	Sign : 11-12-2022

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		12/12/2022					
Contractor reference	CA-Emb-27								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+300 / 521+320 / -7.5 521+320 / 521+440 / -6.5 521+560 / 521+635 / -6.5		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	8-12-2022	
2	Classification	m^3	5000	8-12-2022	
3	Proctor & O.m.c	m^3	5000	8-12-2022	
4	L.L & P.L & PI	m^3	5000	8-12-2022	
5	C.B.R	m^3	5000	12-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	12/12/2022	A
QA/QC *	Hassan	12/12/2022	12/12/2022	A
GARB**	Hussien Fouad	Hussien	12/12/2022	A
Comments by	Fill quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	Awc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	12/12/2022	
Contractor Reference	CA-EMb-27			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment		Soil (A-1-a)	
Location of stock			K.p (521+500) No (1)	
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	14.8%	
4	ASTM D 4318	Atterberg limit	20.61%	
5	ASTM D 2974	Moisture content	6%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	48.5%	
Comments by:			Comments by:	
			All test under Responsibility Third party.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	12/12/2022	
Contractor QA/QC *	Hassan	MA	12/12/2022	
GARB**	Hussien Fouad		12/12/2022	
Employers Representative	Mohamed Ahmed		15-1-23	

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	08/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+560	CA-Emb-27	Material	fill material layers	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		14527.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	872.0	983.0	1210.0	1213.0	1423.0	1323.0	1612.0			A-1-a
Cumulative Retained (g)	872.0	1855.0	3065.0	4278.0	5701.0	7024.0	8636.0		PRO	2.17
Cumulative Retained %	6.0	12.8	21.1	29.4	39.2	48.4	59.4		WC	6.00
Cumulative Passing %	94.0	87.2	78.9	70.6	60.8	51.6	40.6		CBR	48.50

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	80.10	192.00	317.00					
Cumulative Retained %	16.02	38.40	63.40					
Cumulative Passing %	83.98	61.60	36.60					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	94.0	87.2	78.9	70.6	60.8	51.6	40.6	34.1	25.0	14.8

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	24.89%	20.61%	4.29%

Contractor

Consultant

12/12/2022 Hassan

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	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	الجهاز التنفيذي للطرق والكباري والنقل البري (GARBLT) الهيئة القومية للأنفاق

PROCTOR TEST

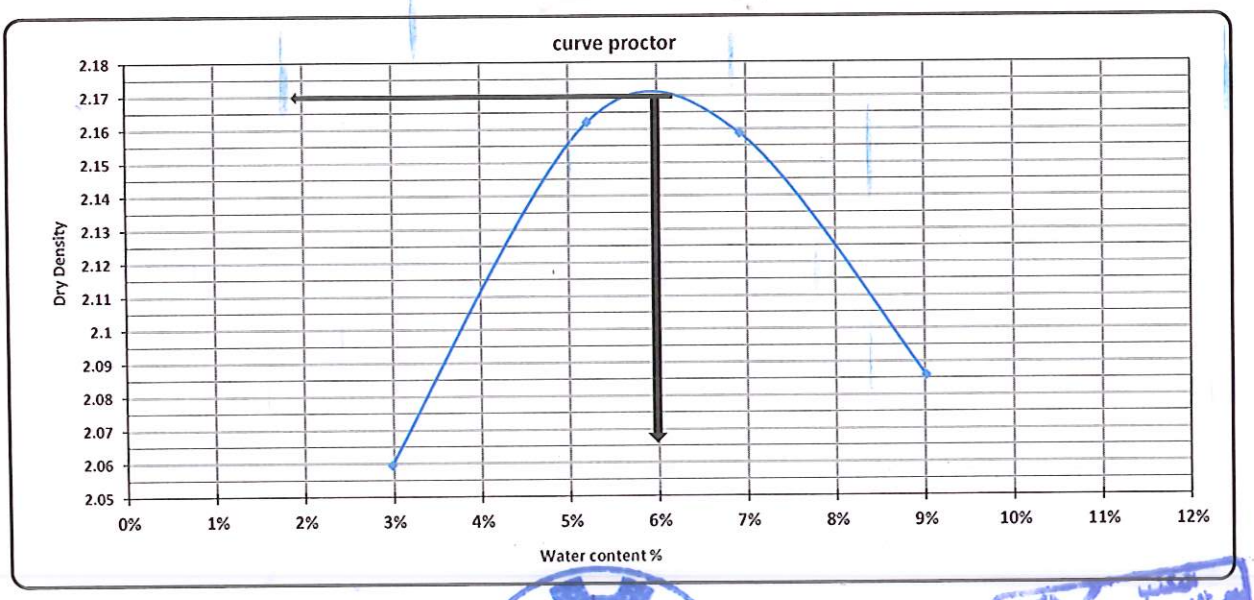
TESTING DATE:	08/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+560	CA-EMb-27	Material	fill material layers	
NAME COMPANY	cairo company		quantity	5000m3	

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.17
Water content %	6

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10652.0	10987.0	11060.0	10985	
WT. WET SOIL	4615.0	4950.0	5023.0	4948.0	
Wt. Density	2.121	2.275	2.308	2.274	

Tare No.	26	7	8	21	4	21	33	18		
Tare wt.	54.9	42.8	46.8	55.2	59.7	55.2	73.6	77.7		
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	146.3	142.1	145.0	145.2	144.2	143.8	143.6	144.1		
Wt. Of water	3.7	7.9	5.0	4.8	5.8	6.2	6.4	5.9		
Wt. Of dry soil	123.0	267.8	98.2	90.0	84.5	88.6	70.0	66.4		
Water content %	3.0%	2.9%	5.1%	5.3%	6.9%	7.0%	9.1%	8.9%		
AV.Water content %	3.0%		5.2%		6.9%		9.0%			
Dry Density	2.060		2.162		2.159		2.086			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Hassa

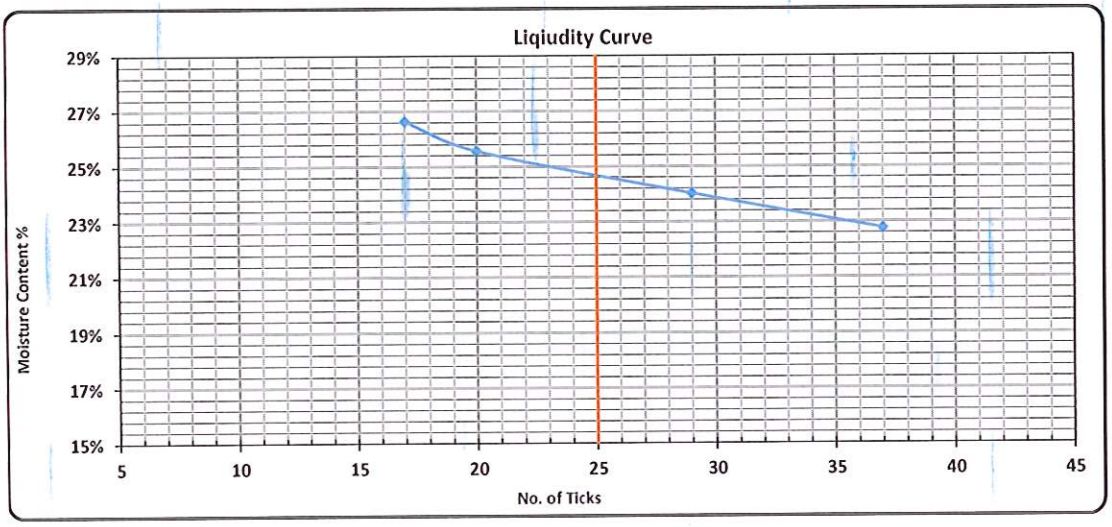
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فتحيل / SYSTRA SHAKER	Electric Express Train - HSR	CARBLT / الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	09/12/2022	Code	FROM STA:	520+500	522+000
Location:	kp:521+500	CA-Emb-27	Material:	fill material layar	
Company Name	cairo company		Layer Thickness :	5000m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	37	29	20	17	-	-
Tare No.	17	90	20	26	22	11
Tare WT. (gm)	59.90	62.90	60.10	54.9	54.10	46.60
Tare WT. + Wet WT. (gm)	87.40	94.90	93.00	89.60	56.20	48.20
Tare WT. + Dry WT. (gm)	82.30	88.70	86.30	82.30	55.9	47.9
Water WT. (gm)	5.10	6.20	6.70	7.30	0.35	0.28
Dry WT. (gm)	22.40	25.80	26.20	27.40	1.75	1.32
Moisture Content %	22.8%	24.0%	25.6%	26.6%	20.0%	21.2%
Average %					20.6%	



L.L	P.L	P.I
24.89%	20.61%	4.29%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SMAKER	**Electric Express Train - HSR**	CARBUT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	12/12/2022	Code	ZONE	520+500	522+000	
Location :	kp:521+560	CA-Emb-27	Material	fill material layers		
Company Name	cairo company		quantity	5000m3		

- : Test Results

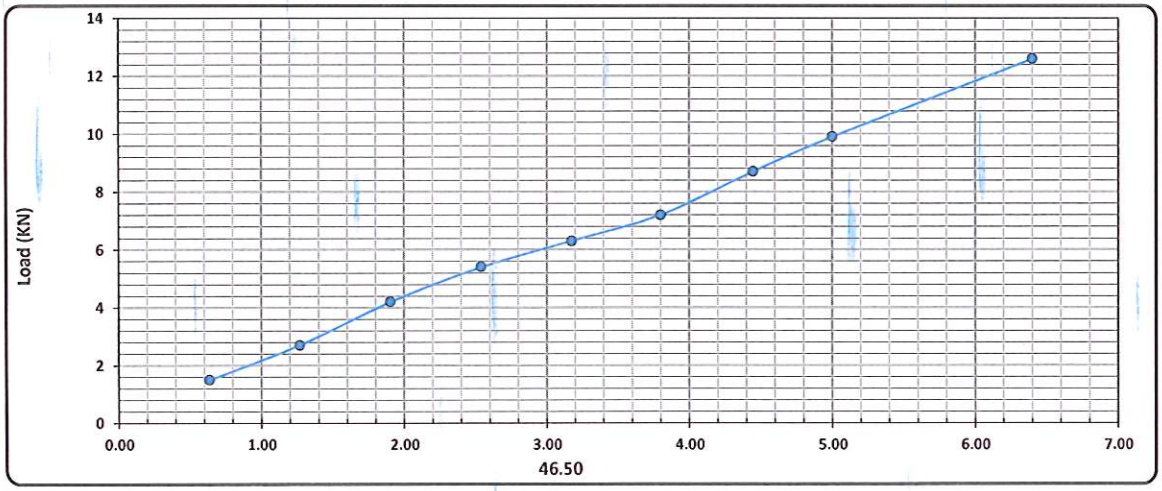
Compaction % for Mold	
Mold No.	6
Mold Vol. (cm^3)	2122
Mold WT. (gm)	5075
Mold WT. + Wet WT. (gm)	9950
Wet WT. (gm)	4875
Wet Density (g/cm^3)	2.297
Dry Density (g/cm^3)	2.168
Proctor Density (g/cm^3)	2.170
Compaction %	99.9

Mositure Ratio After Compacted Mold	
Tare No.	8
Tare WT. (gm)	46.88
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144.2
Water WT.(gm)	5.8
Dry WT. (gm)	97.3
Moisture Content %	6.0

Swelling	
Mold No.	6
Date	٢٠٢٢/١٢/١٢
Intial Height (mm)	4.00
Final Height (mm)	4.35
Difference	0
Sample Height (mm)	11.90
Swelling Ratio %	3%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.05	0.09	0.14	0.18	0.21	0.24	0.29	0.33	0.42
Load (KN)	1.5	2.7	4.2	5.4	6.3	7.2	8.7	9.9	12.6



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compactioa	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.40	13.4	40.4%	100	98	39.7%
5.00	9.90	20.0	49.4%			48.5%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train Central Lab Number 4 Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K					
Issued by Contractor	Name	Sign		Date		Time					
	Eng/ Abdelrahman Adel	Abdelrahman Adel		13 - 12 - 2022							
Contractor reference	CA-Emb-28										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS			
Location to be Used	From 521+635 520+880	To 521+700 520+995	Fill -6.5 -10.5	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	11-12-2022	
2	Classification	m^3	5000	11-12-2022	
3	Proctor & O.m.c	m^3	5000	11-12-2022	
4	L.L & P.L & PI	m^3	5000	11-12-2022	
5	C.B.R	m^3	5000	13-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	13/12/2022	A
QA/QC *	Hassan	13 12 2022	13/12/2022	A
GARB**	Hussien Fouad	Hussien	13/12/2022	
Comments by	Bill Quantity Approved With Qs			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Abdelrahman Adel	Abdelrahman Adel		13-12-2022							
Contractor Reference	CA-Emb-28										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment - Soil (A-1-a)			
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.2%	
4	ASTM D 4318	Atterberg limit	21.07%	
5	ASTM D 2974	Moisture content	7.5%	
6	ASTM D 1557	Modified proctor	2.13	
7	ASTM D 1883	CBR	45.7%	
Comments by:			**Comments by:**	
			All test under Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Ahmed Mohamed	Ahmed Mohamed	13/12/2022	A
Contractor QA/QC *	Hassan	13-12-2022	13/12/2022	A
GARB**	Hussien Fouad		13/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للإنفاق (NAHRT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	11/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-28	Material	fill material layers	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		19765.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1325.0	1572.0	1991.0	2179.0	1874.0	1984.0	1987.0			A-1-a
Cumulative Retained (g)	1325.0	2897.0	4888.0	7067.0	8941.0	10925.0	12912.0		PRO	2.13
Cumulative Retained %	6.7	14.7	24.7	35.8	45.2	55.3	65.3		WC	7.50
Cumulative Passing %	93.3	85.3	75.3	64.2	54.8	44.7	34.7		CBR	45.70

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	92.40	213.60	338.70					
Cumulative Retained %	18.48	42.72	67.74					
Cumulative Passing %	81.52	57.28	32.26					

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 %	93.3	85.3	75.3	64.2	54.8	44.7	34.7	28.3	19.9	11.2

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	24.52%	21.07%	3.45%

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

13/12/2022

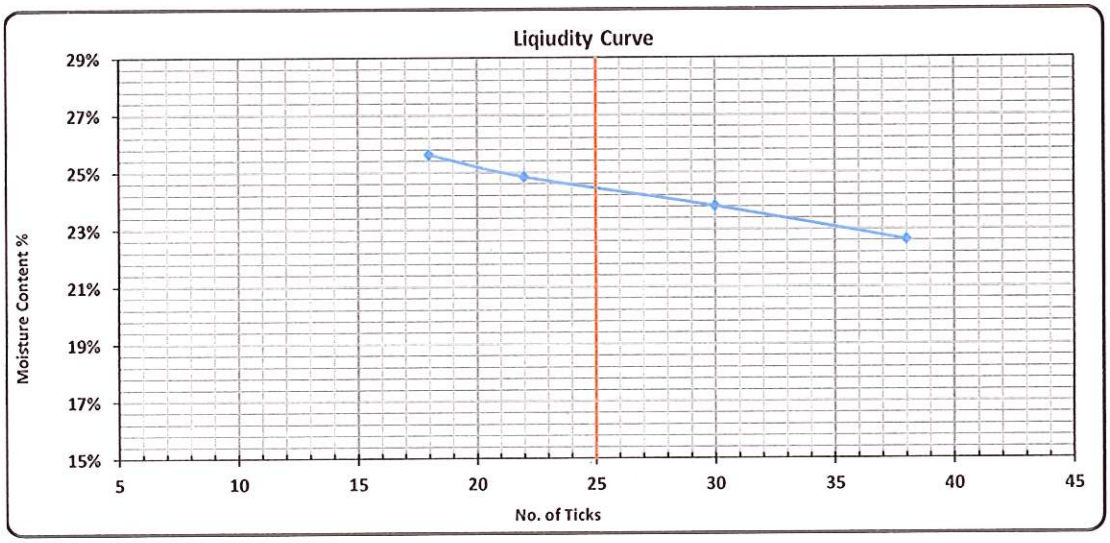
ENGINEERING CONSULTING OFFICE — SYSTRA — SHAKER	Electric Express Train - HSR	GARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

TESTING DATE:	12/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-EM6-28	Material	fill material layers	
NAME COMPANY	cairo company		quantity	5000m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	38	30	22	18	-	-
Tare No.	18	45	32	21	15	40
Tare WT. (gm)	77.70	41.50	74.40	55.2	31.90	46.40
Tare WT. + Wet WT. (gm)	98.30	70.10	94.50	75.30	34.50	49.20
Tare WT. + Dry WT. (gm)	94.50	64.60	90.50	71.20	34.1	48.7
Water WT. (gm)	3.80	5.50	4.00	4.10	0.45	0.49
Dry WT. (gm)	16.80	23.10	16.10	16.00	2.15	2.31
Moisture Content %	22.6%	23.8%	24.8%	25.6%	20.9%	21.2%
Average %					21.1%	



L.L	P.L	P.I
24.52%	21.07%	3.45%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign : 13/12 2022

Electric Express Train
Central Lab Number 4
Sec-7 Fahs - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PROCTOR TEST

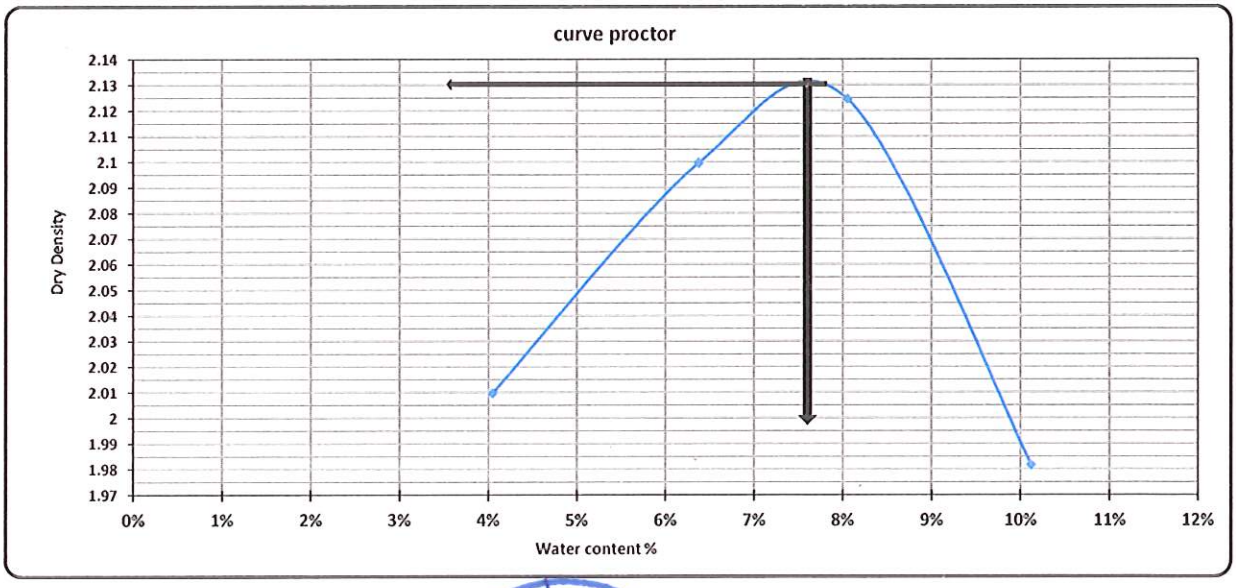
TESTING DATE:	12/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-EMB-28	Material	fill material layers	
NAME COMPANY	cairo company		quantity	5000m3	

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.13
Water content %	7.5

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10587.0	10897.0	11032.0	10785	
WT. WET SOIL	4550.0	4860.0	4995.0	4748.0	
Wt. Density	2.091	2.233	2.295	2.182	

Tare No.	40	16	22	20	8	15	26	4		
Tare wt.	46.4	33.9	54.1	60.9	46.8	31.9	55	60.1		
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	144.9	139.4	144.2	144.7	142.3	141.2	141.2	141.8		
Wt. Of water	5.1	10.6	5.8	5.3	7.7	8.8	8.8	8.2		
Wt. Of dry soil	123.0	267.8	90.1	83.8	95.5	109.3	86.2	81.7		
Water content %	4.1%	4.0%	6.4%	6.3%	8.1%	8.1%	10.2%	10.0%		
AV.Water content %	4.1%		6.4%		8.1%		10.1%			
Dry Density	2.010		2.099		2.124		1.981			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	الهيئة القومية للإنشاء — CARBUTI

California Bearing Ratio TEST

Testing Date :	13/12/2022	Code	FROM STA	520+500	522+000
Location :	kp:521+000	CA-Emb-28	Material	fill material layar	
Company Name	cairo company		quantity	5000m3	

-: Test Results

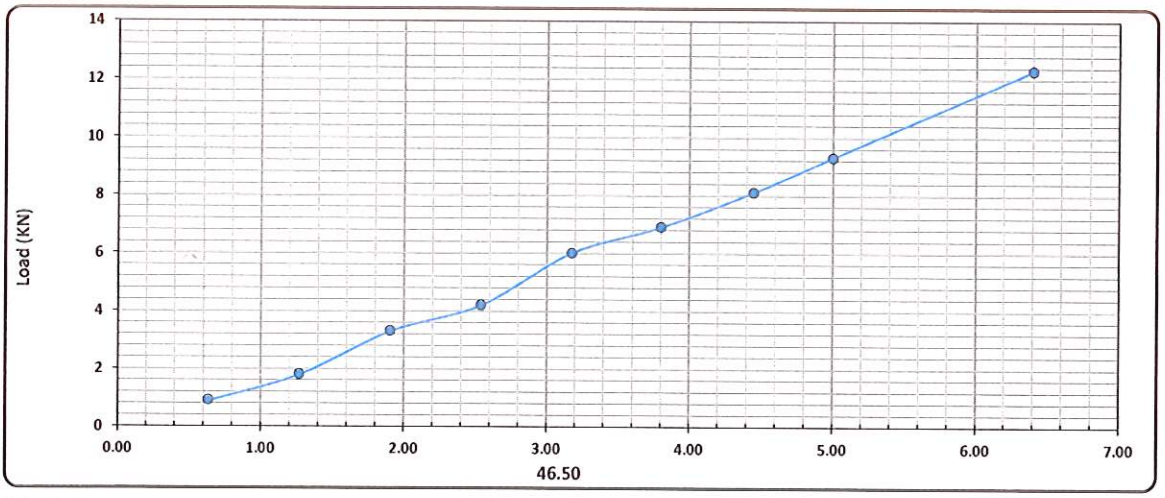
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2168
Mold WT. (gm)	5089
Mold WT. + Wet WT. (gm)	10030
Wet WT. (gm)	4941
Wet Density (g/cm^3)	2.279
Dry Density (g/cm^3)	2.123
Proctor Density (g/cm^3)	2.130
Compaction %	99.7

Mositure Ratio After Compacted Mold	
Tare No.	15
Tare WT. (gm)	31.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	141.9
Water WT.(gm)	8.1
Dry WT. (gm)	110.0
Moisture Content %	7.4

Swelling	
Mold No.	3
Date	13/12/2022
Intial Height (mm)	2.00
Final Height (mm)	2.00
Difference	0
Sample Height (mm)	12.00
Swelling Ratio %	0%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.06	0.11	0.14	0.20	0.23	0.27	0.31	0.41
Load (KN)	0.9	1.8	3.3	4.2	6.0	6.9	8.1	9.3	12.3



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	4.20	13.4	31.5%	100	98	30.9%
5.00	9.30	20.0	46.4%			45.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 15-12-2022
			Time:
Contractor reference	CA-Emb-29		
Received by ER		MIR	C1 C2 C3 DD MM YY HH MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 520+995 / 521+000 / -10.5 521+000 / 521+080 / -8 521+440 / 521+550 / -6.5		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	11-12-2022	
2	Classification	m^3	5000	11-12-2022	
3	Proctor & O.m.c	m^3	5000	11-12-2022	
4	L.L & P.L & PI	m^3	5000	11-12-2022	
5	C.B.R	m^3	5000	15-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	15/12/2022	A
QA/QC *	Hassa	15/12 2022	15/12/2022	A
GARB**	Hussien Fouad	Hussien	15/12/2022	A
Comments by	Soil quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	Awc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	15-12-2022	
Contractor Reference	CA-Emb-29			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	9.9%	
4	ASTM D 4318	Atterberg limit	19.99%	
5	ASTM D 2974	Moisture content	7%	
6	ASTM D 1557	Modified proctor	2.12	
7	ASTM D 1883	CBR	45.6%	

Comments by:	Comments by:
	All test under Responsibility Third party.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdelrahman Adel	Abdel Rahman	15/12/2022	A
Contractor QA/QC *	Hassan	MA	15/12/2022	A
GARB**	Hussien Fouad	Hussien	15/12/2022	A
Employers Representative	Mohd Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPBT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	11/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-29	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

1-visual inspection test .....

.....

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		27072.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	2785.0	2849.0	2101.0	2260.0	2230.0	2455.0	2562.0			A-1-a
Cumulative Retained (g)	2785.0	5634.0	7735.0	9995.0	12225.0	14680.0	17242.0		PRO	2.12
Cumulative Retained %	10.3	20.8	28.6	36.9	45.2	54.2	63.7		WC	7.00
Cumulative Passing %	89.7	79.2	71.4	63.1	54.8	45.8	36.3		CBR	45.60

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	120.60	254.00	364.00					
Cumulative Retained %	24.12	50.80	72.80					
Cumulative Passing %	75.88	49.20	27.20					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	89.7	79.2	71.4	63.1	54.8	45.8	36.3	27.6	17.9	9.9

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	23.88%	19.99%	3.89%

Contractor

Consultant

15/12/2022

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

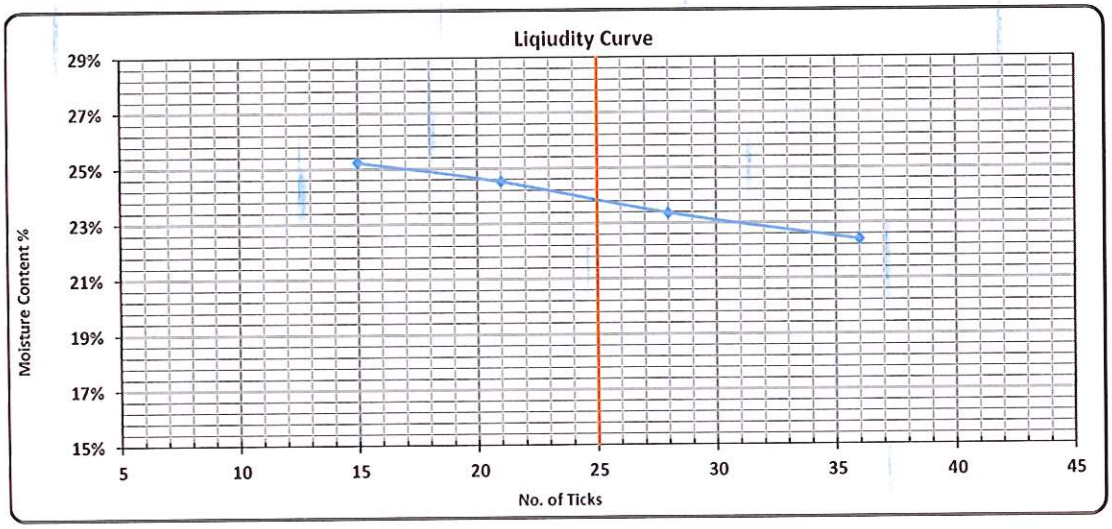
ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR	CARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	12/12/2022	Code	ZONE	520+500	522+000
Location:	kp:521+000	CA-Emb-29	Material	fill material layer	
Company Name	cairo company		quantity	5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	36	28	21	15	-	-
Tare No.	26	8	4	49	25	10
Tare WT. (gm)	55.00	46.80	60.10	33.9	75.80	43.70
Tare WT. + Wet WT. (gm)	78.50	69.50	86.50	60.20	79.20	47.20
Tare WT. + Dry WT. (gm)	74.20	65.20	81.30	54.90	78.7	46.6
Water WT. (gm)	4.30	4.30	5.20	5.30	0.55	0.60
Dry WT. (gm)	19.20	18.40	21.20	21.00	2.85	2.90
Moisture Content %	22.4%	23.4%	24.5%	25.2%	19.3%	20.7%
Average %					20.0%	



L.L	P.L	P.I
23.88%	19.99%	3.89%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign : 15/12/2022

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GAPBLT)

PROCTOR TEST

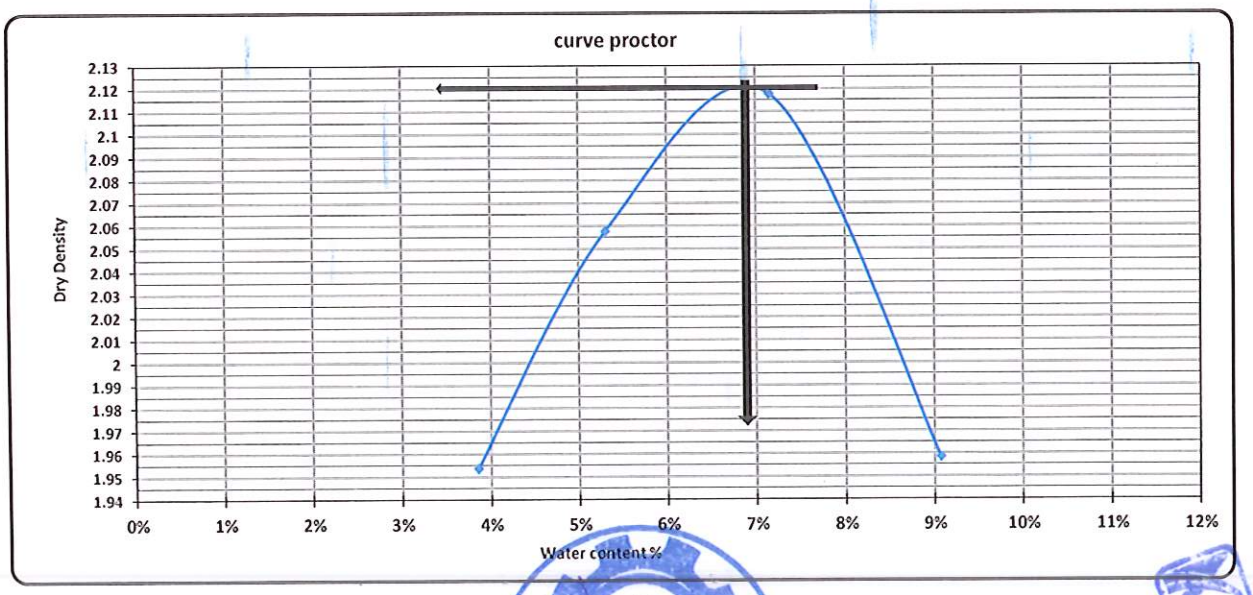
TESTING DATE:	12/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Sm6-29	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.12
Water content %	7

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10452.0	10752.0	10975.0	10685	
WT. WET SOIL	4415.0	4715.0	4938.0	4648.0	
Wt. Density	2.029	2.167	2.269	2.136	

Tare No.	32	21	7	73	19	45	10	25		
Tare wt.	74.4	55.2	42.8	42.9	44.4	41.5	43.7	75.8		
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	145.2	139.8	144.6	144.6	142.9	142.8	141.2	143.8		
Wt. Of water	4.8	10.2	5.4	5.4	7.1	7.2	8.8	6.2		
Wt. Of dry soil	123.0	267.8	101.8	101.7	98.5	101.3	97.5	68.0		
Water content %	3.9%	3.8%	5.3%	5.3%	7.2%	7.1%	9.0%	9.1%		
AV.Water content %	3.9%		5.3%		7.2%		9.1%			
Dry Density	1.954		2.058		2.118		1.958			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Hassan
15/12/2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SMAKER	**Electric Express Train - HSR**	CARBU — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	15/12/2022	Code	ZONE	520+500	522+000
Location :	kp:521+000	CA-EMB-29	Material	fill material layer	
Company Name	cairo company		quantity	5000 m3	

- : Test Results

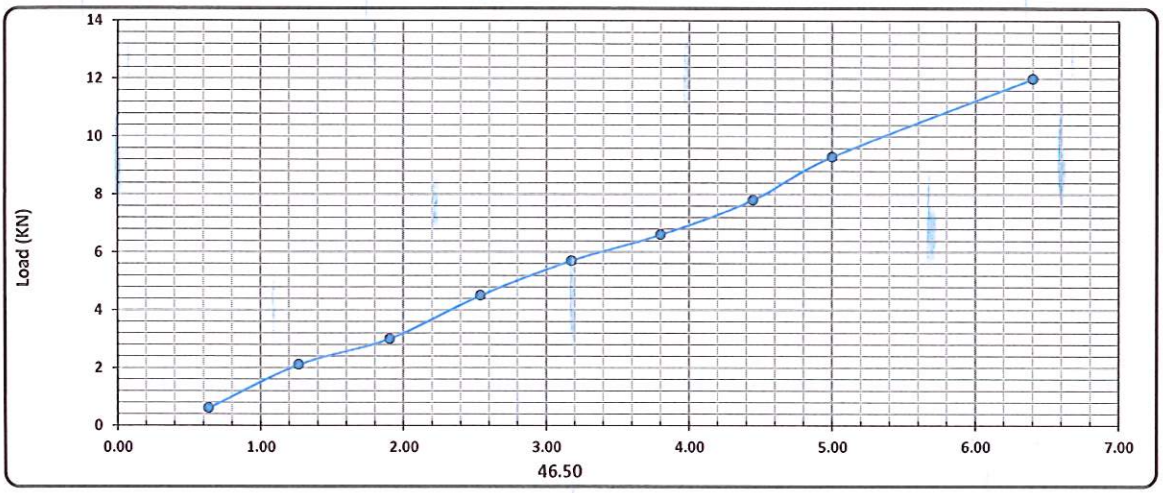
Compaction % for Mold	
Mold No.	6
Mold Vol. (cm^3)	2122
Mold WT. (gm)	5076
Mold WT. + Wet WT. (gm)	9880
Wet WT. (gm)	4804
Wet Density (g/cm^3)	2.264
Dry Density (g/cm^3)	2.117
Proctor Density (g/cm^3)	2.120
Compaction %	99.8

Mositure Ratio After Compacted Mold	
Tare No.	20
Tare WT. (gm)	60.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144.2
Water WT.(gm)	5.8
Dry WT. (gm)	83.3
Moisture Content %	7.0

Swelling	
Mold No.	6
Date	٢٠٢٢/١٢/١٥
Intial Height (mm)	4.00
Final Height (mm)	4.00
Difference	0
Sample Height (mm)	12.00
Swelling Ratio %	0%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.02	0.07	0.10	0.15	0.19	0.22	0.26	0.31	0.40
Load (KN)	0.6	2.1	3.0	4.5	5.7	6.6	7.8	9.3	12.0



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	4.50	13.4	33.7%	100	98	33.1%
5.00	9.30	20.0	46.4%			45.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	Sign : 15/12 2022

Electric Express Train Central Lab Number 4 Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 1-11-2022
			Time:
Contractor reference	CA-Emb-3		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+010 521+080 -10.5 520+620 520+690 -10.5			
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	28-10-2022	
2	Classification	m^3	5000	28-10-2022	
3	Proctor & O.m.c	m^3	5000	28-10-2022	
4	L.L & P.L & PI	m^3	5000	28-10-2022	
5	C.B.R	m^3	5000	1-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	1/11/2022	A
QA/QC *	Ahmed Abo Zaid		1/11/2022	A
GARB**	Hussien Fouad	Hussien	1/11/2022	A
Comments by	Bad quantity approved with Cs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel-Rahman	1-11-2022	
Contractor Reference	CA-Emb-3			
Received by ER	Mohamed Ahmed		MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.1%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	42.6%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	1/11/2022	A
Contractor QA/QC *	Hassan		1/11/2022	A
GARB**	Hussien Fouad	Hussien	1/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2025	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	27-10-2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-3	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		23286.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	2968.0	2842.0	2513.0	1516.0	1654.0	1369.0			A-1-a
Cumulative Retained (g)	0.0	2968.0	5810.0	8323.0	9839.0	11493.0	12862.0		PRO	2.16
Cumulative Retained %	0.0	12.7	25.0	35.7	42.3	49.4	55.2		WC	6.80
Cumulative Passing %	100.0	87.3	75.0	64.3	57.7	50.6	44.8		CBR	42.60

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	122.40	258.20	353.50					
Cumulative Retained %	24.48	51.64	70.70					
Cumulative Passing %	75.52	48.36	29.30					

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	87.3	75.0	64.3	57.7	50.6	44.8	33.8	21.6	13.1

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	GARBLT / الهيئة القومية للإنفاق

PROCTOR TEST

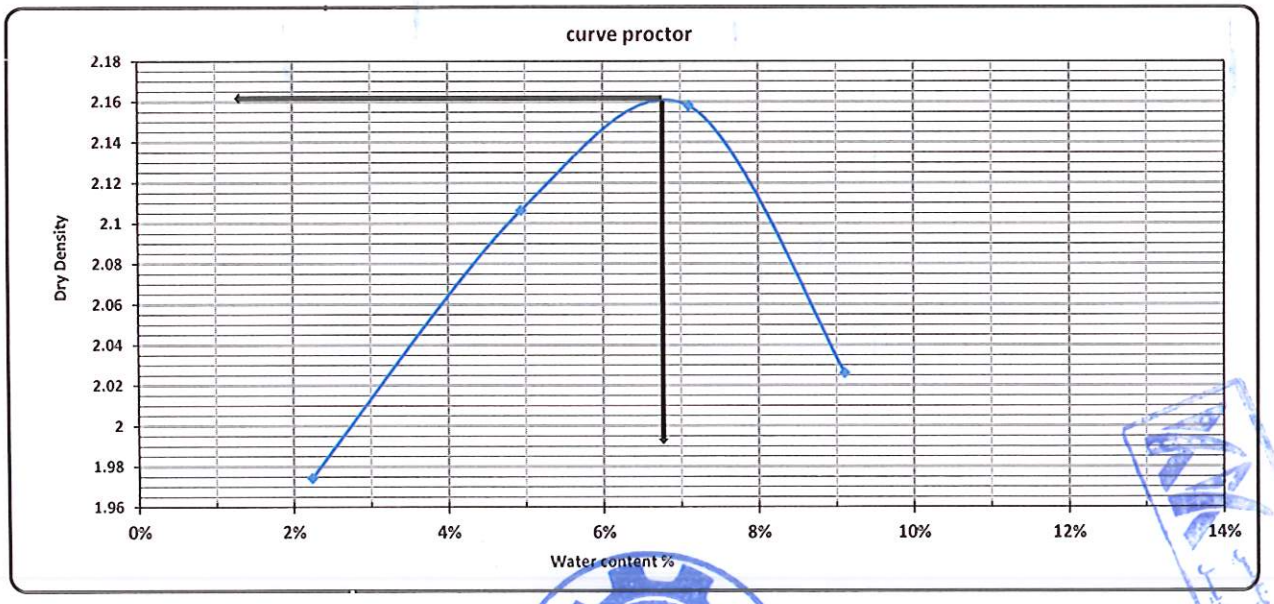
TESTING DATE:	2022-10-27	Code	ZONE	520+500	522+000
LOCATION	kp: 521+000	CA-EW6-3	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

Weight of empty mold :	6070.0
Mold Volume:	2113.0

MAX Dry Density	2.16
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10335.0	10741.0	10954.0	10741	
WT. WET SOIL	4265.0	4671.0	4884.0	4671.0	
Wt. Density	2.018	2.211	2.311	2.211	

Tare No.	10	45	7	73	18	90	11	21		
Tare wt.	43.7	41.5	42.8	42.9	77.8	62.5	46.1	55.2		
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	147.5	147.8	144.8	145.1	145.2	144.2	141.2	142.2		
Wt. Of water	2.5	2.2	5.2	4.9	4.8	5.8	8.8	7.8		
Wt. Of dry soil	103.8	106.3	102.0	102.2	67.4	81.7	95.1	87.0		
Water content %	2.4%	2.1%	5.1%	4.8%	7.1%	7.1%	9.3%	9.0%		
AV.Water content %	2.2%		4.9%		7.1%		9.1%			
Dry Density	1.974		2.106		2.158		2.026			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matroub

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	الجهاز القومي للطرق والكباري والنقل البري (CARBUT) — الهيئة القومية للإنفاق

California Bearing Ratio TEST

Testing Date :	1-11-2022	Code	zone	520+500	522+000
Location :	Rp:521+000	CA-Emb-3	Material	fill material layer	
Company Name	cairo company		quantity	5000 m3	

-: Test Results

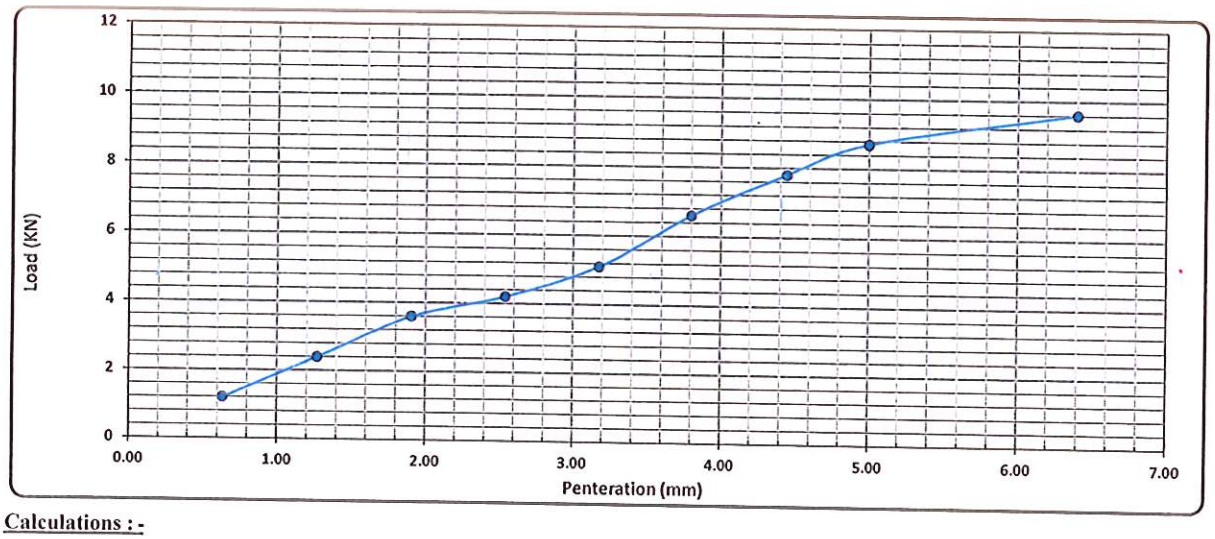
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2140
Mold WT. (gm)	4900
Mold WT. + Wet WT. (gm)	9838
Wet WT. (gm)	4938
Wet Density (g/cm^3)	2.307
Dry Density (g/cm^3)	2.160
Proctor Density (g/cm^3)	2.160
Compaction %	100.0

Mositure Ratio After Compacted Mold	
Tare No.	10
Tare WT. (gm)	43.7
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.2
Water WT. (gm)	6.8
Dry WT. (gm)	99.5
Moisture Content %	6.8

Swelling	
Mold No.	4
Date	1-11-2022
Intial Height (mm)	1.00
Final Height (mm)	1.00
Difference	0
Sample Height (mm)	11.90
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.04	0.08	0.12	0.14	0.17	0.22	0.26	0.29	0.32
Load (KN)	1.2	2.4	3.6	4.2	5.1	6.6	7.8	8.7	9.6



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	4.20	13.4	31.5%	100	98	30.8%
5.00	8.70	20.0	43.4%			42.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train Central Lab Number 4 Sec-7 Feka - Matrouh

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 15-12-2022
			Time:
Contractor reference	CA-EMB-30		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+550 / 521+560 / -6.5 521+700 / 521+800 / -6.5 520+800 / 520+880 / -10.5 521+800 / 521+810 / -6.5		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	11-12-2022	
2	Classification	m^3	5000	11-12-2022	
3	Proctor & O.m.c	m^3	5000	11-12-2022	
4	L.L & P.L & PI	m^3	5000	11-12-2022	
5	C.B.R	m^3	5000	15-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	15/12/2022	A
QA/QC *	Hassan	15/12/2022	15/12/2022	A
GARB**	Hussien Fouad	Hussien	15/12/2022	A
Comments by	Rid Quantity applied with Es			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST	الهيئة القومية للأنفاق	الهيئة العامة للطرق والكباري والنقل البري (GARBLT)	القاهرة للطرق والإنشاءات	KK Engineering Consulting Office	Electric Express Train SYSTRA SHAKER

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Ahmed Mohamed			15-12-2022							
Contractor Reference	CA-Emb-30										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	12%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.5%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	48.5%	
Comments by:			Comments by:	
			All test under Responsibility third Party.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Ahmed mohamed		15/11/2022	A
Contractor QA/QC *	Hassan		15/11/2022	A
GARB**	Hussein Fouad		15/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NAT)
Opreating Lab	AL Nuby Central Lab	

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	11/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA- EMb- 30	Material	fill material layar	
NAME COMPANY	cairo company		quantity	5000m3	

1-visual inspection test .....

.....

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		17299.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1252.0	1325.0	1452.0	1978.0	1752.0	1452.0	2495.0			A-1-a
Cumulative Retained (g)	1252.0	2577.0	4029.0	6007.0	7759.0	9211.0	11706.0		PRO	2.16
Cumulative Retained %	7.2	14.9	23.3	34.7	44.9	53.2	67.7		WC	6.50
Cumulative Passing %	92.8	85.1	76.7	65.3	55.1	46.8	32.3		CBR	48.50

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	99.90	220.00	314.00					
Cumulative Retained %	19.98	44.00	62.80					
Cumulative Passing %	80.02	56.00	37.20					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	92.8	85.1	76.7	65.3	55.1	46.8	32.3	25.9	18.1	12.0

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

15/12/2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد فتحيل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	CARBUT / الجهة الذهبية للإنشاء

PROCTOR TEST

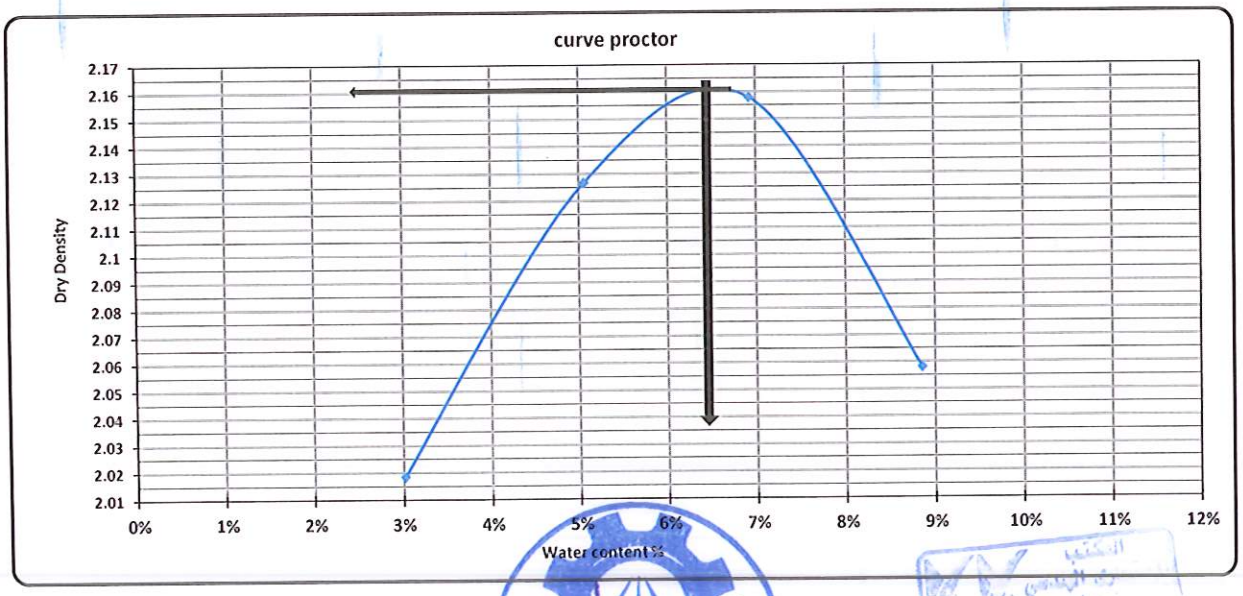
TESTING DATE:	12-12-2022	Code	ZONE	520+500	522+000
LOCATION	Kp:521+000	CA-Emb-30	Material	fill material layar	
NAME COMPANY	cairo company		quantity	5000m3	

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.16
Water content %	6.5

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10562.0	10899.0	11058.0	10912	
WT. WET SOIL	4525.0	4862.0	5021.0	4875.0	
Wt. Density	2.080	2.234	2.307	2.240	

Tare No.	11	16	22	26	7	17	90	4		
Tare wt.	46.9	33.9	54.1	54.9	42.8	59.5	62.9	60.1		
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	146.2	142.1	145.4	145.4	143.1	144.1	142.9	142.7		
Wt. Of water	3.8	7.9	4.6	4.6	6.9	5.9	7.1	7.3		
Wt. Of dry soil	123.0	267.8	91.3	90.5	100.3	84.6	80.0	82.6		
Water content %	3.1%	2.9%	5.0%	5.1%	6.9%	7.0%	8.9%	8.8%		
AV.Water content %	3.0%		5.1%		6.9%		8.9%			
Dry Density	2.019		2.127		2.158		2.058			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

15/12 2022 Hassan

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فتحيل — SYSTRA SHAKER	**Electric Express Train - HSR**	GARBLT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	15/12/2022	Code	ZONE	520+500	522+000	
Location :	kp:521+000	CA-EMb-3c	Material	fill material layar		
Company Name	cairo company		quantity	5000m3		

-: Test Results

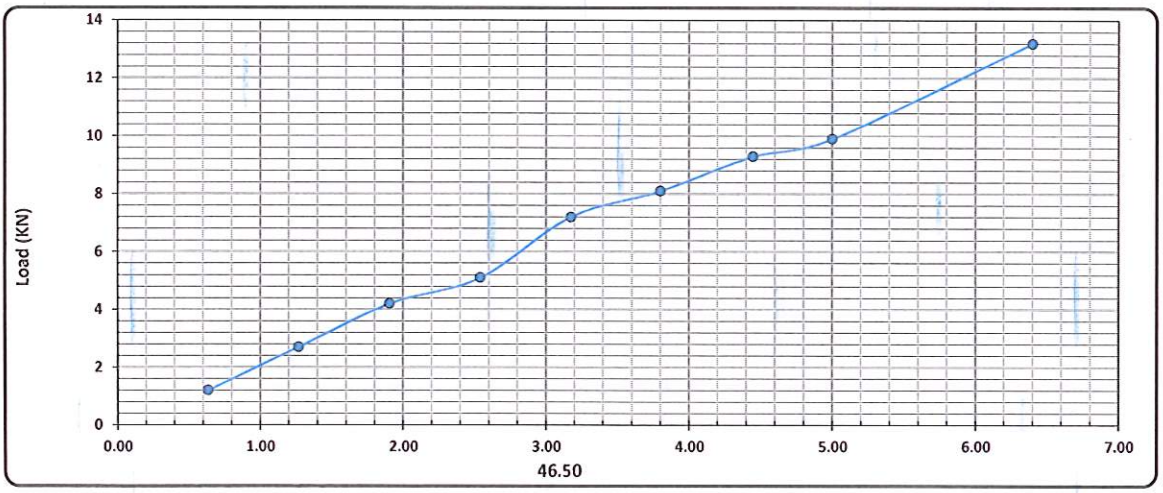
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2140
Mold WT. (gm)	4900
Mold WT. + Wet WT. (gm)	9820
Wet WT. (gm)	4920
Wet Density (g/cm^3)	2.299
Dry Density (g/cm^3)	2.160
Proctor Density (g/cm^3)	2.160
Compaction %	100.0

Mositure Ratio After Compacted Mold	
Tare No.	19
Tare WT. (gm)	44.4
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.6
Water WT.(gm)	6.4
Dry WT. (gm)	99.2
Moisture Content %	6.5

Swelling	
Mold No.	4
Date	٢٠٢٢/١٢/١٥
Intial Height (mm)	7.00
Final Height (mm)	7.30
Difference	0
Sample Height (mm)	11.90
Swelling Ratio %	3%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.04	0.09	0.14	0.17	0.24	0.27	0.31	0.33	0.44
Load (KN)	1.2	2.7	4.2	5.1	7.2	8.1	9.3	9.9	13.2



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.10	13.4	38.2%	100	98	37.4%
5.00	9.90	20.0	49.4%			48.5%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company				K.K			
Issued by Contractor	Name	Sign		Date				Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		2-11-2022							
Contractor reference	CA-Emb-4										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From 521+320	To 521+500	Fill -8.5	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	29-10-2022	
2	Classification	m^3	5000	29-10-2022	
3	Proctor & O.m.c	m^3	5000	29-10-2022	
4	L.L & P.L & PI	m^3	5000	29-10-2022	
5	C.B.R	m^3	5000	2-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed Mohammed	Ahmed Mohamed	2/11/2022	A
QA/QC *	Ahmed Abo Zaid		2/11/2022	A
GARB**	Hussien Fouad		2/11/2022	A
Comments by	Fill quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	2-11-2022	
Contractor Reference	CA-Emb-4			
Received by ER	Mohd Ahmed		MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	8.5%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	5.3%	
6	ASTM D 1557	Modified proctor	2.18	
7	ASTM D 1883	CBR	44.1%	
Comments by:		**Comments by:**		
		All test under Responsibility Third party		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	abdel Rahman Adel	2/11/2022	A
Contractor QA/QC *	Hassan		2/11/2022	A
GARB**	Hussien Fouad	Hussien	2/11/2022	A
Employers Representative	Mohd Ahmed		13-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPUT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	29/10/2022	Code	ZONE	520+500	522+000
LOCATION	521+000	CA-EM6-4	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		29893.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	3532.0	3550.0	3965.0	3765.0	2606.0	3012.0	2968.0			A-1-a
Cumulative Retained (g)	3532.0	7082.0	11047.0	14812.0	17418.0	20430.0	23398.0		PRO	2.18
Cumulative Retained %	11.8	23.7	37.0	49.6	58.3	68.3	78.3		WC	5.3
Cumulative Passing %	88.2	76.3	63.0	50.4	41.7	31.7	21.7		CBR	44.10

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	39.90	225.30	305.30					
Cumulative Retained %	7.98	45.06	61.06					
Cumulative Passing %	92.02	54.94	38.94					

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 %	88.2	76.3	63.0	50.4	41.7	31.7	21.7	20.0	11.9	8.5

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

Contractor		Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	(CAPILT) الجهة القومية للإنشاء

PROCTOR TEST

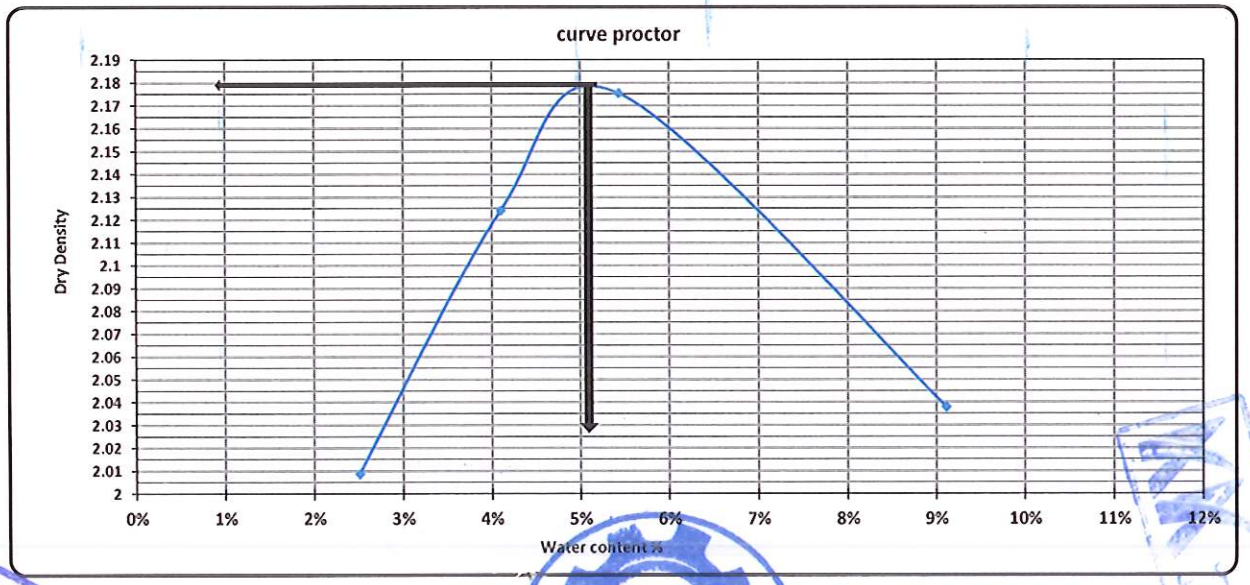
TESTING DATE:	2022/10/29	Code	ZONE	520+500	522+000
LOCATION	kp: 521+000	CA-Emb-4	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.18
Water content %	5.3

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10656.0	10986.0	11165.0	11013	
WT. WET SOIL	4466.0	4796.0	4975.0	4823.0	
Wt. Density	2.059	2.211	2.294	2.224	A-1-a

Tare No.	22	20	18	34	11	40	73	25		
Tare wt.	54.1	60.9	77.7	70.2	46.1	46.4	42.9	75.8		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0		
Wt. Of dry soil & tare	148.0	147.5	147.2	146.8	144.2	145.1	141.5	143.5		
Wt. Of water	2.0	2.5	2.8	3.2	5.8	4.9	8.5	6.5		
Wt. Of dry soil	93.9	86.6	69.5	76.6	98.1	98.7	98.6	67.7		
Water content %	2.1%	2.9%	4.0%	4.2%	5.9%	5.0%	8.6%	9.6%		
AV.Water content %	2.5%		4.1%		5.4%		9.1%			
Dry Density	2.009		2.124		2.175		2.038			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	2-11-2022	Code	ZONE	520+500	522+000
Location :	kp: 521+000	CA-Emb-4	Material	fill material layer	
Company Name	cairo company		quantity	5000 m3	

-: Test Results

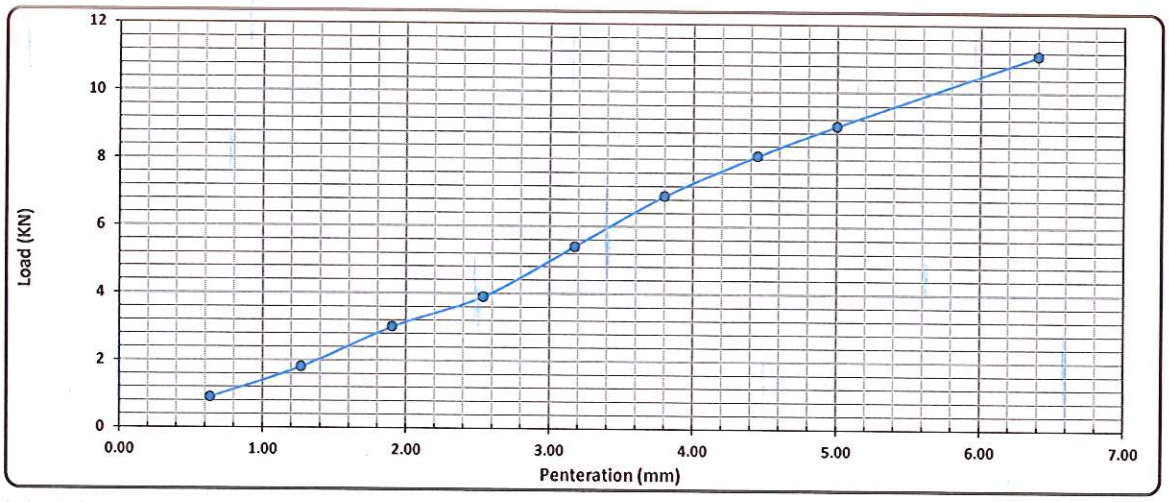
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm^3)	2158
Mold WT. (gm)	4890
Mold WT. + Wet WT. (gm)	9840
Wet WT. (gm)	4950
Wet Density (g/cm^3)	2.294
Dry Density (g/cm^3)	2.179
Proctor Density (g/cm^3)	2.180
Compaction %	100.0

Mositure Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	60.1
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	145.5
Water WT. (gm)	4.5
Dry WT. (gm)	85.4
Moisture Content %	5.3

Swelling	
Mold No.	1
Date	2-11-2022
Intial Height (mm)	2.00
Final Height (mm)	2.00
Difference	0
Sample Height (mm)	12.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.06	0.10	0.13	0.18	0.23	0.27	0.30	0.37
Load (KN)	0.9	1.8	3.0	3.9	5.4	6.9	8.1	9.0	11.1



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	3.90	13.4	29.2%	100	98	28.6%
5.00	9.00	20.0	44.9%			44.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

القاهرة نظرى والإنشاءات ش.م.م ١٠٦٧٠٥ ت: ٥٤٢٠٤٦٩ - ٥٤٥ ب.ص: ٥٤٢٠٤٦٩ - ٥٤٥

Electric Express Train Central Lab Number 4 Sec-7 Paks - Matrouh

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 2/11/2022
			Time:
Contractor reference	CA-Emb-5		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From: 520+620, 521+680, 521+500	To: 520+700, 521+760, 521+650	Fill: -10.5, -8.5, -9
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	1-11-2022	
2	Classification	m^3	5000	1-11-2022	
3	Proctor & O.m.c	m^3	5000	1-11-2022	
4	L.L & P.L & PI	m^3	5000	1-11-2022	
5	C.B.R	m^3	5000	2-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	2/11/2022	A
QA/QC *	Ahmed Abo Zaid		2/11/2022	A
GARB**	Hussien Sonas	Hussien	2/11/2022	A
Comments by	Fill Quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	Ahmed

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdelrahman Adel	2/11/2022	
Contractor Reference	CA-EMb-5			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	10.25%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.3%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	44.1%	
Comments by:			Comments by:	
			All test under Responsibility third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	ENG/ahmed mohamed	Ahmed mohamed	2/11/2022	A
Contractor QA/QC *	Ahmed Abo Zaid		2/11/2022	A
GARB**	Hussien Fouad		2/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	29-10-2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+560	CA-Embk-5	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		13999.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	1985.0	1430.0	2133.0	985.0	1422.0	1533.0			A-1-a
Cumulative Retained (g)	0.0	1985.0	3415.0	5548.0	6533.0	7955.0	9488.0		PRO	2.15
Cumulative Retained %	0.0	14.2	24.4	39.6	46.7	56.8	67.8		WC	6.30
Cumulative Passing %	100.0	85.8	75.6	60.4	53.3	43.2	32.2		CBR	44.10

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	104.00	240.60	341.00					
Cumulative Retained %	20.80	48.12	68.20					
Cumulative Passing %	79.20	51.88	31.80					

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 %	100.00	85.82	75.61	60.37	53.33	43.17	32.22	25.52	16.72	10.25

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE / المكتب الاستشاري الهندسي أ.د خالد قنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	(CABUT) / الجهة التنفيذية للإنشاء

PROCTOR TEST

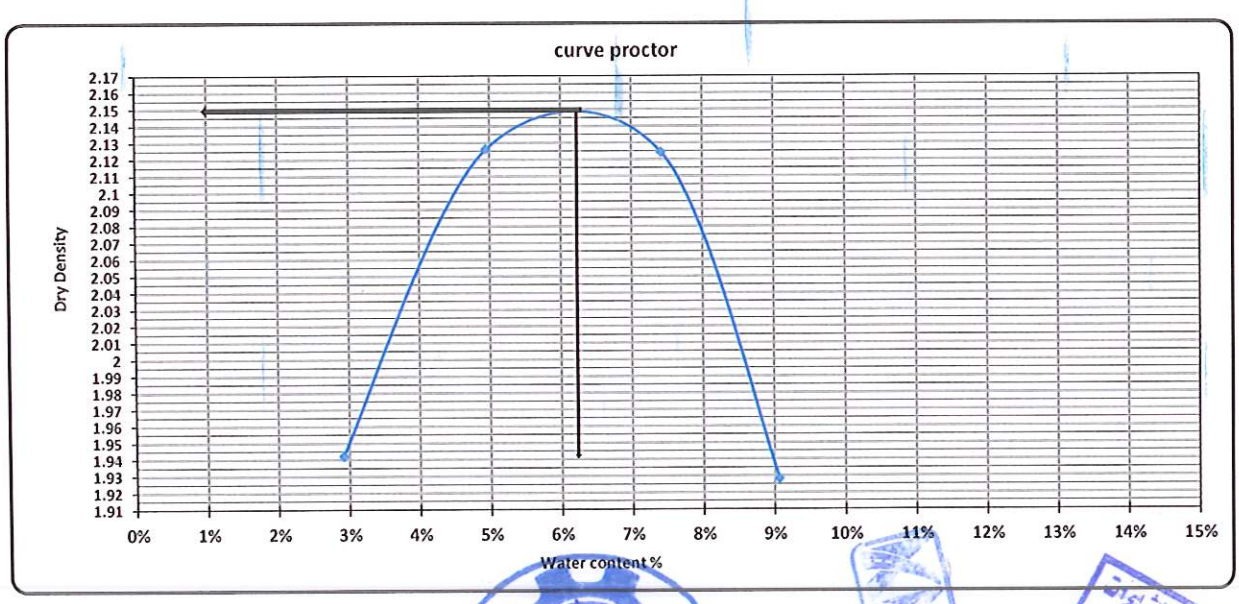
TESTING DATE:	2022/10/30	Code	ZONE	520+500	522+000
LOCATION	kp:521+560	C14-EM1-S1	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.15
Water content %	6.3

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10526.0	11030.0	11140.0	10752	
WT. WET SOIL	4336.0	4840.0	4950.0	4562.0	
Wt. Density	1.999	2.231	2.282	2.103	

Tare No.	16	40	11	15	33	25	35	8		
Tare wt.	33.9	46.4	46.1	31.9	73.6	75.8	73.9	46.8		
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	147.0	146.8	144.6	145.0	145.0	144.6	142.0	143.8		
Wt. Of water	3.0	3.2	5.4	5.0	5.0	5.4	8.0	6.2		
Wt. Of dry soil	113.1	100.4	98.5	113.1	71.4	68.8	68.1	97.0		
Water content %	2.7%	3.2%	5.5%	4.4%	7.0%	7.8%	11.7%	6.4%		
AV.Water content %	2.9%		5.0%		7.4%		9.1%			
Dry Density	1.942		2.126		2.124		1.928			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	2/11/2022	Code	ZONE	520+500	522+000
Location :	kp:521+560	CA-EM'b-5	Material	fill material layer	
Company Name	cairo company		quantity	5000 m3	

- : Test Results

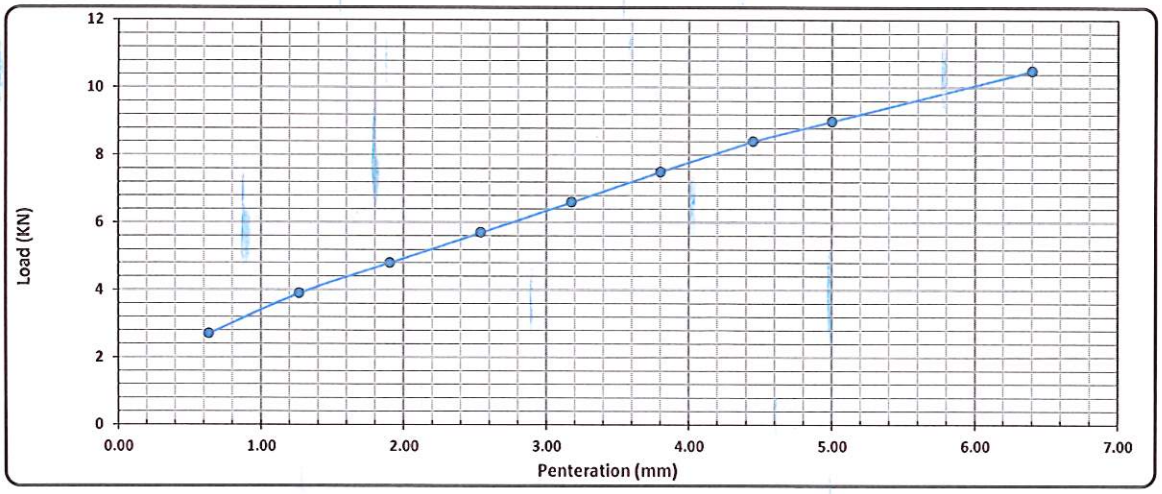
Compaction % for Mold	
Mold No.	6
Mold Vol. (cm^3)	2122
Mold WT. (gm)	6075
Mold WT. + Wet WT. (gm)	10982
Wet WT. (gm)	4907
Wet Density (g/cm^3)	2.312
Dry Density (g/cm^3)	2.159
Proctor Density (g/cm^3)	2.160
Compaction %	100.0

Mositure Ratio After Compacted Mold	
Tare No.	17
Tare WT. (gm)	59.5
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144
Water WT. (gm)	6.0
Dry WT. (gm)	84.5
Moisture Content %	7.1

Swelling	
Mold No.	6
Date	02/11/2022
Intial Height (mm)	6.00
Final Height (mm)	6.00
Difference	0
Sample Height (mm)	11.90
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.09	0.13	0.16	0.19	0.22	0.25	0.28	0.30	0.35
Load (KN)	2.7	3.9	4.8	5.7	6.6	7.5	8.4	9.0	10.5



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR % عند نسبة 98
2.50	5.70	13.4	42.7%	100	98	41.9%
5.00	9.00	20.0	44.9%			44.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		6-11-2022					
Contractor reference	CA-EM6-6								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+650 / 521+680 / -9 521+140 / 521+280 / -9.5 521+000 / 521+030 / -10		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	2-11-2022	
2	Classification	m^3	5000	2-11-2022	
3	Proctor & O.m.c	m^3	5000	2-11-2022	
4	L.L & P.L & PI	m^3	5000	2-11-2022	
5	C.B.R	m^3	5000	6-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	6/11/2022	A
QA/QC *	Ahmed Abo Zaid		6/11/2022	A
GARB**	Hussien Fouad	Hussien	6/11/2022	A
Comments by	Lab quality approved with Qs			
Employers Representative	Mohd Ahs		8-2-23	Anc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Abdelrahman Adel	Abdel Rahman		6-11-2022							
Contractor Reference	CA-Emb-6										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment Soil (A-1-a)			
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	10%	
4	ASTM D 4318	Atterberg limit	16.6 %	
5	ASTM D 2974	Moisture content	7%	
6	ASTM D 1557	Modified proctor	2.21	
7	ASTM D 1883	CBR	63.6%	
Comments by:			Comments by:	
			All test under Responsibility third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	6/11/2022	A
Contractor QA/QC *	Abdallah SAMY	Abdallah	6/11/2022	A
GARB**	Hussien Fouad	Hussien	6/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPSLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	2/11 /2022	code	ZONE	520+500	522+000	
LOCATION	kp;521+000	CA-Emb-6	Material	fill material layar		
NAME COMPANY	cairo company		quaintity	5000 m3		

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		17500.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	1124.0	2296.0	4534.0	2234.0	1828.0	905.0	870.0			A-1-a
(g)Cumulative Retained	1124.0	3420.0	7954.0	10188.0	12016.0	12921.0	13791.0		PRO	2.21
Cumulative Retained %	6.4	19.5	45.5	58.2	68.7	73.8	78.8		WC	7.00
Cumulative Passing %	93.6	80.5	54.5	41.8	31.3	26.2	21.2		CBR	64%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	52.00	151.00	263.20					
Cumulative Retained %	10.40	30.20	52.64					
Cumulative Passing %	89.60	69.80	47.36					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	93.6	80.5	54.5	41.8	31.3	26.2	21.2	19.0	14.8	10.0

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	24.6%	16.6%	8%

Contractor

Consultant

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

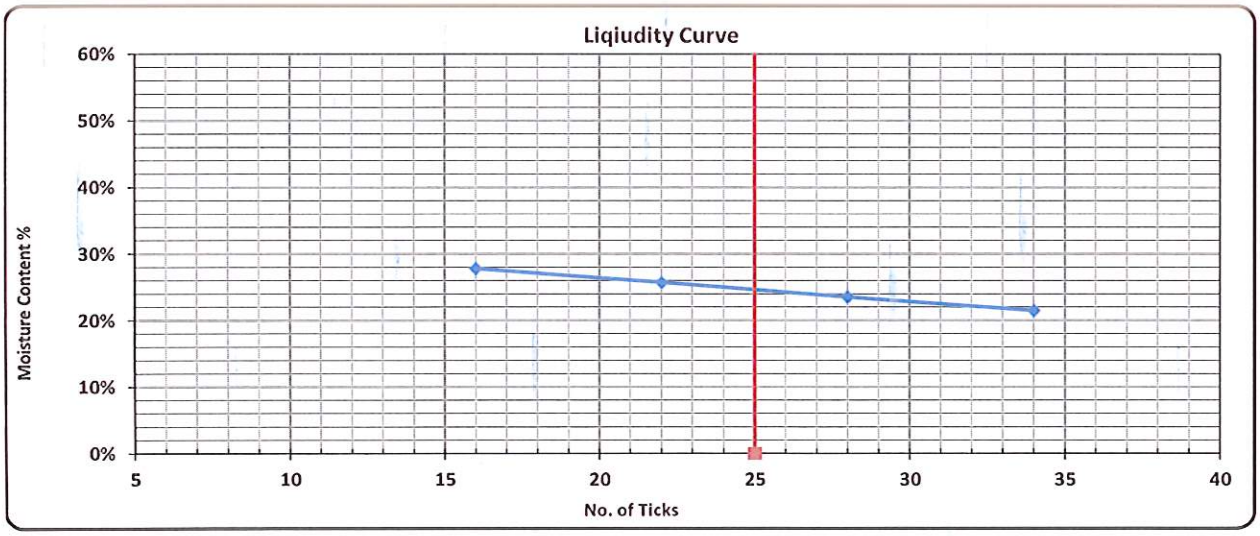
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — GARBLT

Plasticity and Liquidity Test -Atterberg Limits

TESTING DATE:	2/ 11 /2022	code	ZONE		520+500	522+000
LOCATION	KP:521+000	CA-Emb-6	Material		fill material layar	
NAME COMPANY	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	34	28	22	16	-	-
Tare No.	7	46	30	14	8	6
Tare WT. (gm)	26.98	27.36	25.75	22.81	12.11	11.02
Tare WT. + Wet WT. (gm)	43.05	43.16	47.08	42.25	12.84	11.84
Tare WT. + Dry WT. (gm)	40.21	40.15	42.72	38.02	12.73	11.73
(gm)Water WT.	2.84	3.01	4.36	4.23	0.11	0.11
(gm)Dry WT.	13.23	12.79	16.97	15.21	0.62	0.71
Moisture Content %	21.5%	23.5%	25.7%	27.8%	17.7%	15.5%
Average %					16.6%	



L.L	P.L	P.I
24.6%	16.6%	8.0%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار الكهربائي السريع
القطاع السابع
معمل المركزى
(رقم 6)

القاهرة للطرق والإنشاءات
س.ت: ١٠٦٧٠٥
ب.ض: ٠٤٦ - ٥٩٢ - ٥٤٥

المكتب الاستشاري الهندسي
أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد فتحي — SYSTRA — SHAKER	**Electric Express Train - HSR** From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	GARBLT — الهيئة القومية للأنفاق

PROCTOR TEST

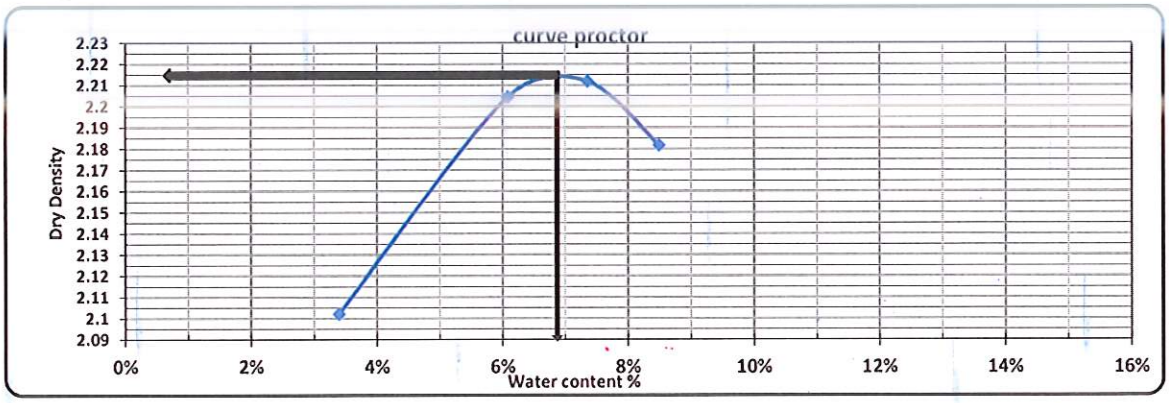
TESTING DATE:	2/ 11 /2022	code	ZONE	520+500	522+000
LOCATION	KP:521+000	CA-Emb-6	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

Weight of empty mold :	6210.0
Mold Volume:	2104.9

MAX Dry Density	2.21
Water content %	7

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10785.0	11132.0	11208.0	11192	
WT. WET SOIL	4575.0	4922.0	4998.0	4982.0	
Wt. Density	2.173	2.338	2.374	2.367	

Tare No.	12	12	16	16	2	2	14	14		
Tare wt.	26.1	26.1	25.98	25.98	22.82	22.82	22.88	22.88		
Wt. Of wet soil & tare	128.2	128.2	138.6	138.6	172.3	172.3	153.9	153.9		
Wt. Of dry soil & tare	124.8	124.8	132.1	132.1	162.1	162.1	143.6	143.6		
Wt. Of water	3.3	3.3	6.5	6.5	10.2	10.2	10.3	10.3		
Wt. Of dry soil	98.7	98.7	106.1	106.1	139.3	139.3	120.7	120.7		
Water content %	3.4%	3.4%	6.1%	6.1%	7.4%	7.4%	8.5%	8.5%		
AV.Water content %	3.4%		6.1%		7.4%		8.5%			
Dry Density	2.102		2.204		2.212		2.182			



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	6/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-6	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

-: Test Results

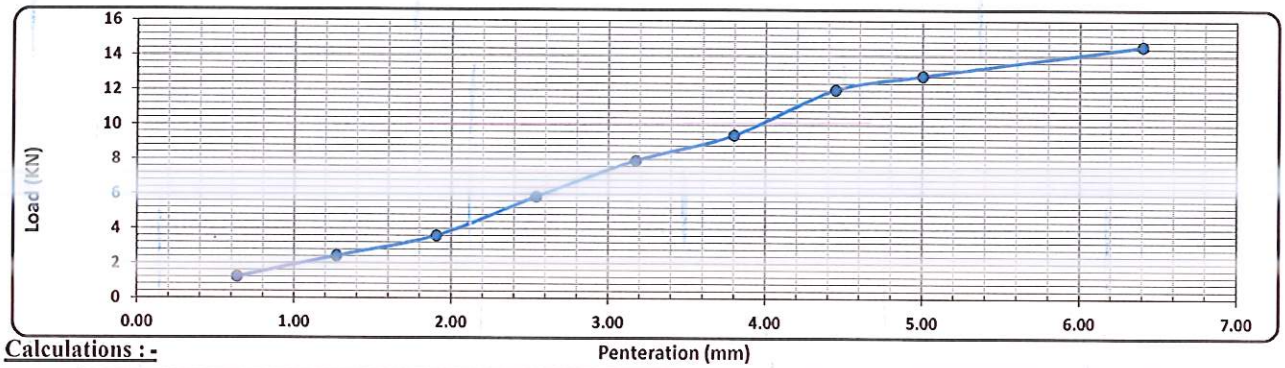
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16553
(gm)Mold WT. + Wet WT.	21564
(gm)Wet WT.	5011
Wet Density (g/cm^3)	2.301
Dry Density (g/cm^3)	2.160
Proctor Density (g/cm^3)	2.210
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	25.25
(gm)Tare WT. +Wet WT.	145.9
(gm)Tare WT. +Dry WT.	138.5
(gm)Water WT.	7.4
(gm)Dry WT.	113.3
Moisture Content %	6.5

Swelling	
Mold No.	2
Date	6/11/2022
(mm)Intial Height	5.00
(mm)Final Height	5.00
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	124.00	247.00	367.00	597.00	810.00	961.00	1228.00	1310.00	1485.00
(KN)Load	1.2	2.4	3.6	5.9	7.9	9.4	12.0	12.8	14.6



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 97 %
2.50	5.85	13.4	43.8%	98	97	43.5%
5.00	12.84	20.0	64.1%			63.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		7/11/2022					
Contractor reference	CA-EMb-72								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From 521+030 521+400 521+500	To 521+080 521+500 521+540	Fill -10 -8 -8.5	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	5-11-2022	
2	Classification	m^3	5000	5-11-2022	
3	Proctor & O.m.c	m^3	5000	5-11-2022	
4	L.L & P.L & PI	m^3	5000	5-11-2022	
5	C.B.R	m^3	5000	7-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	7/11/2022	A
QA/QC *	Ahmed Abo Zaid		7/11/2022	A
GARB**	Hussien Fouad	Hussien	7/11/2022	A
Comments by	Final Quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name: ENG/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 7/11/2022	Time:
Contractor Reference	CA-Emb-7			
Received by ER		MAR	C1 / C2 / C3 / DD / MM / YY / HH / MM	

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	8.9%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.9 %	
6	ASTM D 1557	Modified proctor	2.2	
7	ASTM D 1883	CBR	66%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng/ahmed mohamed	Ahmed Mohamed	7/11/2022	A
Contractor QA/QC *	Ahmed Abo Zaid		7/11/2022	A
GARB**	Hussien Fouad		7/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2021	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	4/11/2022	code	ZONE	520+500	522+000
Location	KP:521+000	Emb-7	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 M3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		18000.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	0.0	1703.0	5200.0	2701.0	1540.0	809.0	1290.0			A-1-a
(g)Cumulative Retained	0.0	1703.0	6903.0	9604.0	11144.0	11953.0	13243.0		PRO	2.20
Cumulative Retained %	0.0	9.5	38.4	53.4	61.9	66.4	73.6		WC	7.90
Cumulative Passing %	100.0	90.5	61.7	46.6	38.1	33.6	26.4		CBR	66.5%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	85.00	250.00	332.00					
Cumulative Retained %	17.00	50.00	66.40					
Cumulative Passing %	83.00	50.00	33.60					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	90.5	61.7	46.6	38.1	33.6	26.4	21.9	13.2	8.9

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

Contractor

Consultant

مشروع القطار السريع
القطاع السابع
معمل المركزي
(رقم 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 568+177		

PROCTOR TEST

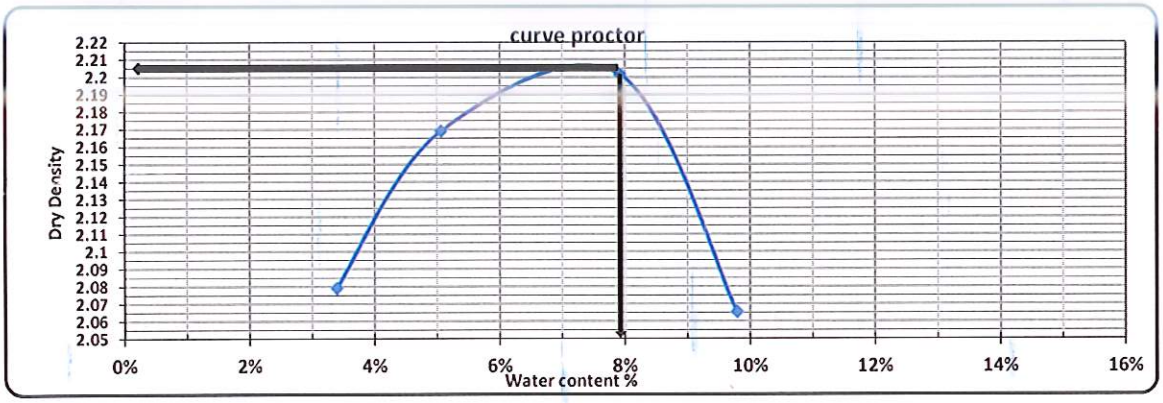
TESTING DATE:	4/11/2022	code	ZONE	520+500	522+000
Location	KP:521+000	CA-EMb-7	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 M3	

Weight of empty mold :	6428.0
Mold Volume:	2104.9

MAX Dry Density	2.20
Water content %	7.9

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10953.0	11225.0	11429.0	11201	
WT. WET SOIL	4525.0	4797.0	5001.0	4773.0	
Wt. Density	2.150	2.279	2.376	2.268	

Tare No.	12	12	45	45	9	9	5	5		
Tare wt.	26.1	26.1	25.28	25.28	26.98	26.98	26.54	25.54		
Wt. Of wet soil & tare	128.2	128.2	126.2	126.2	131.9	131.9	142.0	142.0		
Wt. Of dry soil & tare	124.8	124.8	121.3	121.3	124.2	124.2	131.6	131.6		
Wt. Of water	3.3	3.3	4.9	4.9	7.7	7.7	10.3	10.3		
Wt. Of dry soil	98.7	98.7	96.0	96.0	97.2	97.2	105.1	106.1		
Water content %	3.4%	3.4%	5.1%	5.1%	7.9%	7.9%	9.8%	9.7%		
AV.Water content %	3.4%		5.1%		7.9%		9.8%			
Dry Density	2.079		2.169		2.202		2.065			



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	7-11-2022	Code	ZONE	520+500	522+000
Location :	kp:521+000	CA-Emb-7	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 M3	

- : Test Results

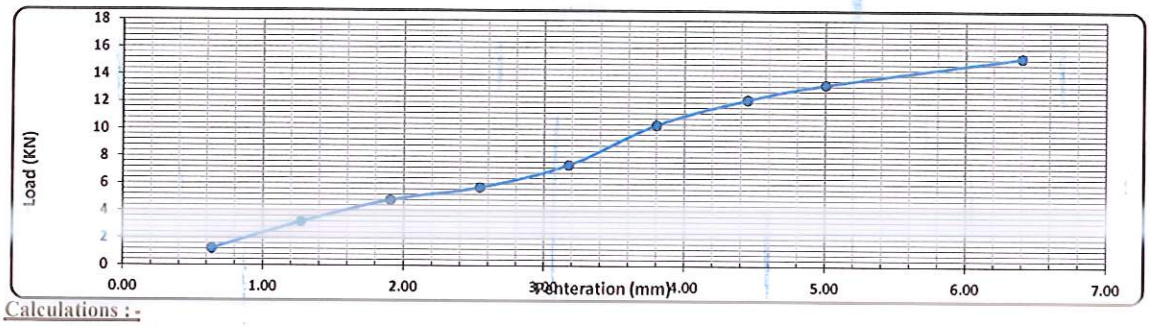
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16553
(gm)Mold WT. + Wet WT.	21564
(gm)Wet WT.	5011
Wet Density (g/cm^3)	2.301
Dry Density (g/cm^3)	2.147
Proctor Density (g/cm^3)	2.200
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	25.25
(gm)Tare WT. +Wet WT.	145.9
(gm)Tare WT. +Dry WT.	137.82
(gm)Water WT.	8.1
(gm)Dry WT.	112.6
Moisture Content %	7.2

Swelling	
Mold No.	2
Date	7-11-2022
(mm)Intial Height	5.00
(mm)Final Height	5.00
Difference	0.0
(mm)Sample Height	11.0
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	125.00	325.00	489.00	585.00	754.00	1056.00	1244.00	1358.00	1564.00
(KN)Load	1.2	3.2	4.8	5.7	7.4	10.3	12.2	13.3	15.3



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR
2.50	5.73	13.4	42.9%	98	99	43.6%
5.00	13.31	20.0	66.5%			67.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 13-11-2022
			Time:
Contractor reference	CA-Emb-8		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	low embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+540 / 521+560 / -8.5 521+140 / 521+300 / -9		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	10-11-2022	
2	Classification	m^3	5000	10-11-2022	
3	Proctor & O.m.c	m^3	5000	10-11-2022	
4	L.L & P.L & PI	m^3	5000	10-11-2022	
5	C.B.R	m^3	5000	13-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa badr laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	13/11/2022	A
QA/QC *	Ahmed Abo Zaid		13/11/2022	A
GARB**	Hussien Fouad	Hussien	13/11/2022	A
Comments by	Final Quantity Approved With Qs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company								Designer Company
Electric express train	Cairo for Roads and construction Company								k.k
Issued by Contractor	Name	Sign		Date					Time
	ENG/ Abdelrahman Adel	Abdelrahman Adel		18-11-2022					
Contractor Reference	CA-EMb-8								
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	5.3%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	8.4%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	71.2%	
Comments by:			Comments by:	
			All test under Responsibility third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Ahmed Mohamed	Ahmed Mohamed	18/11/2022	A
Contractor QA/QC *	Ahmed Abo Zaid		18/11/2022	A
GARB**	Hussein Fouad		18/11/2022	A
Employers Representative	Mohamed Ahmed		18-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	7/11/2022	code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-8	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		17000.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
(g)Mass retained	1959.0	2315.0	2432.0	1498.0	1925.0	935.0	1481.0			A-1-a
(g)Cumulative Retained	1959.0	4274.0	6706.0	8204.0	10129.0	11064.0	12545.0		PRO	2.17
Cumulative Retained %	11.5	25.1	39.4	48.3	59.6	65.1	73.8		WC	8.4
Cumulative Passing %	88.5	74.9	60.6	51.7	40.4	34.9	26.2		CBR	71%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	176.00	339.00	398.00					
Cumulative Retained %	35.20	67.80	79.60					
Cumulative Passing %	64.80	32.20	20.40					

C-General gradient										
(in)sieve size	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	88.5	74.9	60.6	51.7	40.4	34.9	26.2	17.0	8.4	5.3

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

Contractor		Consultant
Hassan مشروع القطار الكهربائي القطاع السابع معمل المركزى (رقم 6)	القاهرة للنظرة والاستشارات س.ت: ١٠٦٧٠٥ ب.ض: ٥٤٦ - ٥٩٢ - ٥٥٥	المكتب الهندسي أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE	**Electric Express Train - HSR** **From El Ain El Sokhna City To El Alamein - MATROUH** **Section - 7 From FOKA TO MARSA MATROUH** **From Station 504+000 To Station 568+177**	

PROCTOR TEST

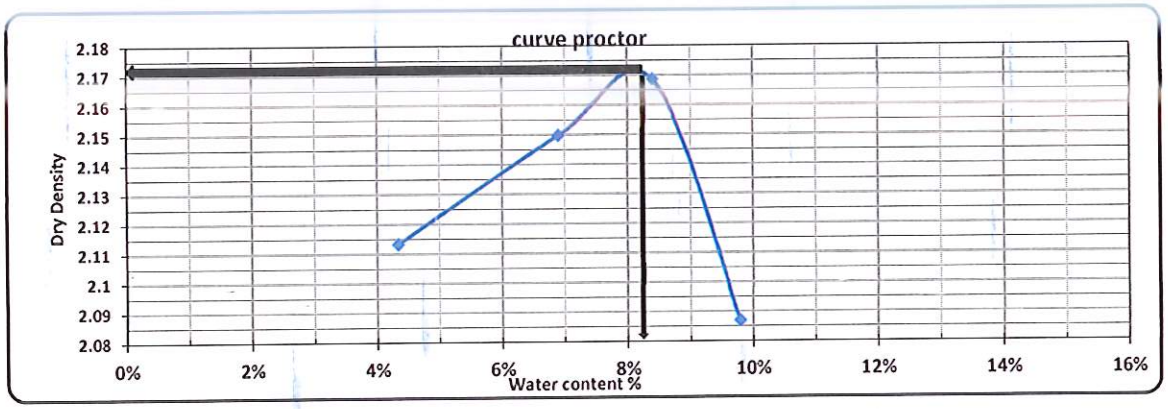
Testing Date :	8/11/2022	code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-8	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

Weight of empty mold :	6428.0
Mold Volume:	2104.9

MAX Dry Density	2.17
Water content %	8.4

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	11069.0	11265.0	11376.0	11251	
WT. WET SOIL	4641.0	4837.0	4948.0	4823.0	
Wt. Density	2.205	2.298	2.351	2.291	

Tare No.	1	1	7	7	15	16	8	8		
Tare wt.	26.8	26.8	26.69	26.69	27.5	27.1	26.54	25.54		
Wt. Of wet soil & tare	152.0	152.0	120.8	120.8	146.6	156.0	142.0	142.0		
Wt. Of dry soil & tare	146.8	146.8	114.8	114.8	137.0	146.4	131.6	131.6		
Wt. Of water	5.2	5.2	6.1	6.1	9.6	9.6	10.3	10.3		
Wt. Of dry soil	120.0	120.0	88.1	88.1	109.5	119.3	105.1	106.1		
Water content %	4.3%	4.3%	6.9%	6.9%	8.7%	8.0%	9.8%	9.7%		
AV.Water content %	4.3%		6.9%		8.4%		9.8%			
Dry Density	2.113		2.150		2.169		2.087			



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	11/11/2022	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-EMb-8	Material	fill material layar	
NAME COMPANY	cairo company		quaintity	5000 m3	

-: Test Results

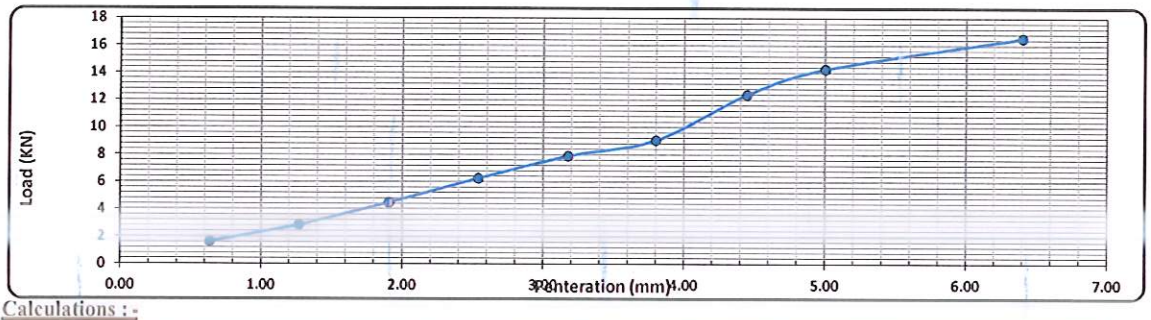
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
(gm)Mold WT.	16553
(gm)Mold WT. + Wet WT.	21564
(gm)Wet WT.	5011
Wet Density (g/cm^3)	2.301
Dry Density (g/cm^3)	2.147
Proctor Density (g/cm^3)	2.170
Compaction %	99

Mositure Ratio After Compacted Mold	
Tare No.	4
Tare WT. (gm)	25.25
(gm)Tare WT. +Wet WT.	145.9
(gm)Tare WT. +Dry WT.	137.82
(gm)Water WT.	8.1
(gm)Dry WT.	112.6
Moisture Content %	7.2

Swelling	
Mold No.	2
Date	11/11/2022
(mm)Intial Height	4.0
(mm)Final Height	4.0
Difference	0
(mm)Sample Height	11.9
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(kg)Load Reading	165.00	291.00	457.00	638.00	805.00	923.00	1264.00	1455.00	1687.00
(KN)Load	1.6	2.9	4.5	6.3	7.9	9.0	12.4	14.3	16.5



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 99 %
2.50	6.25	13.4	46.8%	99	99	46.9%
5.00	14.26	20.0	71.2%			71.2%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 14/11/2022
			Time:
Contractor reference	CA-EMB-9		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 521+300 / 521+320 / -9 521+560 / 521+680 / -8.5 521+320 / 521+370 / -8		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	10-11-2022	
2	Classification	m^3	5000	10-11-2022	
3	Proctor & O.m.c	m^3	5000	10-11-2022	
4	L.L & P.L & PI	m^3	5000	10-11-2022	
5	C.B.R	m^3	5000	14-11-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (el nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	eng / Ahmed mohammed	Ahmed mohamed	14/11/2022	A
QA/QC *	Ahmed Abo Zaid		14/11/2022	A
GARB**	Hussien Sollad	Hussien	14/11/2022	A
Comments by	All quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdelrahman Adel	14/11/2022	
Contractor Reference	CA-Emb-9			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	12.4%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.4%	
6	ASTM D 1557	Modified proctor	2.165	
7	ASTM D 1883	CBR	42.6%	
Comments by:		**Comments by:**		
		All test under Responsibility third party		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Ahmed Mohamed	Ahmed Mohamed	14/11/2022	A
Contractor QA/QC *	Ahmed Abo Zeid		14/11/2022	A
GARB**	Hussien Fouad	Hussien	14/11/2022	A
Employers Representative	Mohamed Ahmed		15-1-2023	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPBOT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	10/11/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-9	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

1-visual inspection test .....

.....

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		28776.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	2732.0	2956.0	2636.0	2685.0	2730.0	2963.0	2894.0			A-1-a
Cumulative Retained (g)	2732.0	5688.0	8324.0	11009.0	13739.0	16702.0	19596.0		PRO	2.165
Cumulative Retained %	9.5	19.8	28.9	38.3	47.7	58.0	68.1		WC	6.40
Cumulative Passing %	90.5	80.2	71.1	61.7	52.3	42.0	31.9		CBR	42.60

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	96.40	203.00	305.40					
Cumulative Retained %	19.28	40.60	61.08					
Cumulative Passing %	80.72	59.40	38.92					

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 %	90.5	80.2	71.1	61.7	52.3	42.0	31.9	25.8	18.9	12.4

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

Contractor

Consultant

Electric Express Train
Central Lab Number 1
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	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	CAPBLT

PROCTOR TEST

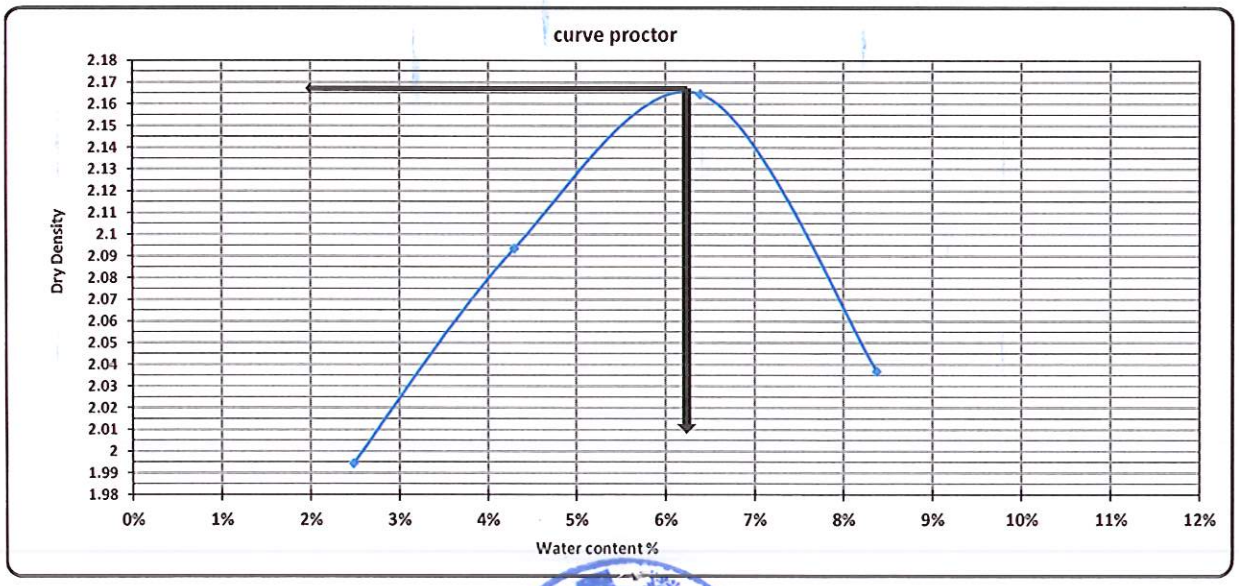
TESTING DATE:	10-11-2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-4	Material	fill material layer	
NAME COMPANY	cairo company		quantity	5000 m3	

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.165
Water content %	6.4

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10623.0	10926.0	11185.0	10978	
WT. WET SOIL	4433.0	4736.0	4995.0	4788.0	
Wt. Density	2.044	2.183	2.303	2.207	

Tare No.	8	11	15	16	4	22	45	7		
Tare wt.	46.8	46.5	31.3	33.2	59.5	54	41.1	42.8		
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	147.2	147.8	145.3	145.0	144.5	144.3	141.8	141.5		
Wt. Of water	2.8	2.2	4.7	5.0	5.5	5.7	8.2	8.5		
Wt. Of dry soil	100.4	101.3	114.0	111.8	85.0	90.3	100.7	98.7		
Water content %	2.8%	2.2%	4.1%	4.5%	6.5%	6.3%	8.1%	8.6%		
AV.Water content %	2.5%		4.3%		6.4%		8.4%			
Dry Density	1.994		2.094		2.165		2.037			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE — SYSTRA SHAKER	**Electric Express Train - HSR**	CARBUT — الهيئة القومية للإنفاق

California Bearing Ratio TEST

Testing Date :	14-11-2022	Code	ZONE	520+500	522+000	
Location :	kp:521+000	CA-EM)-9	Material	fill material layer		
Company Name	cairo company		quantity	5000 m3		

-: Test Results

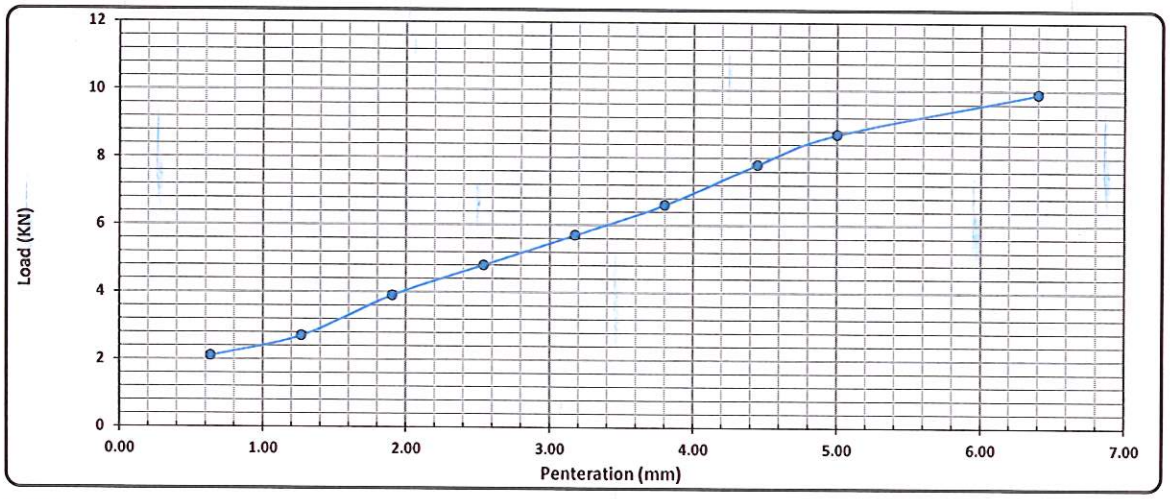
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2168
Mold WT. (gm)	5089
Mold WT. + Wet WT. (gm)	10078
Wet WT. (gm)	4989
Wet Density (g/cm^3)	2.301
Dry Density (g/cm^3)	2.166
Proctor Density (g/cm^3)	2.170
Compaction %	99.8

Mositure Ratio After Compacted Mold	
Tare No.	16
Tare WT. (gm)	33.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.2
Water WT. (gm)	6.8
Dry WT. (gm)	109.3
Moisture Content %	6.2

Swelling	
Mold No.	2
Date	14-11-2022
Intial Height (mm)	3.00
Final Height (mm)	3.00
Difference	0
Sample Height (mm)	11.90
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.07	0.09	0.13	0.16	0.19	0.22	0.26	0.29	0.33
Load (KN)	2.1	2.7	3.9	4.8	5.7	6.6	7.8	8.7	9.9



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR % عند نسبة 98
2.50	4.80	13.4	36.0%	100	98	35.3%
5.00	8.70	20.0	43.4%			42.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K					
Issued by Contractor	Name	Sign		Date		Time					
	Eng/ Abdelrahman Adel	Abdelrahman Adel		18/12/2022							
Contractor reference	CA-Emb-31										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From 521+810 520+620 520+800	To 521+900 520+700 520+825	Fill -6.5 -9.5 -10	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	14-12-2022	
2	Classification	m^3	5000	14-12-2022	
3	Proctor & O.m.c	m^3	5000	14-12-2022	
4	L.L & P.L & PI	m^3	5000	14-12-2022	
5	C.B.R	m^3	5000	18-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	18-12-2022	A
QA/QC *	Abdallah SAMY	Abdallah	18-12-2022	A
GARB**	Hussien Fouad	Hussien	18-12-2022	A
Comments by	Field quality approved with Cs		18-12-2022	
Employers Representative	Mohamed Awad		8-2-23	A-C

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company			
Electric express train	Cairo for Roads and construction Company			k.k			
Issued by Contractor	Name	Sign	Date	Time			
	ENG/ Abdelrahman Adel	Abdel Rahman	18/12/2022				
Contractor Reference	CA-Emb-31						
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	15%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.5%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	70.6%	

Comments by:	Comments by:
	All test under Responsibility Third Party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	18-12-2022	A
Contractor QA/QC *	Hassan		18-12-2022	A
GARB**	Hussien Fouad	Hussien	18-12-2022	A
Employers Representative	Mohamed Ahmed		19-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	11/12/2022	Code	ZONE	520+500	522+000
LOCATION	Kp:521+560	CA-Emb-31			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		20233.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1225.0	1321.0	1236.0	1490.0	1652.0	1532.0	2142.0			A-1-a
Cumulative Retained (g)	1225.0	2546.0	3782.0	5272.0	6924.0	8456.0	10598.0		PRO	2.15
Cumulative Retained %	6.1	12.6	18.7	26.1	34.2	41.8	52.4		WC	7.50
Cumulative Passing %	93.9	87.4	81.3	73.9	65.8	58.2	47.6		CBR	70.60

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	75.30	210.00	342.00					
Cumulative Retained %	15.06	42.00	68.40					
Cumulative Passing %	84.94	58.00	31.60					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	93.9	87.4	81.3	73.9	65.8	58.2	47.6	40.4	27.6	15.0

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	GAPBLT / الهيئة القومية للإنفاق

PROCTOR TEST

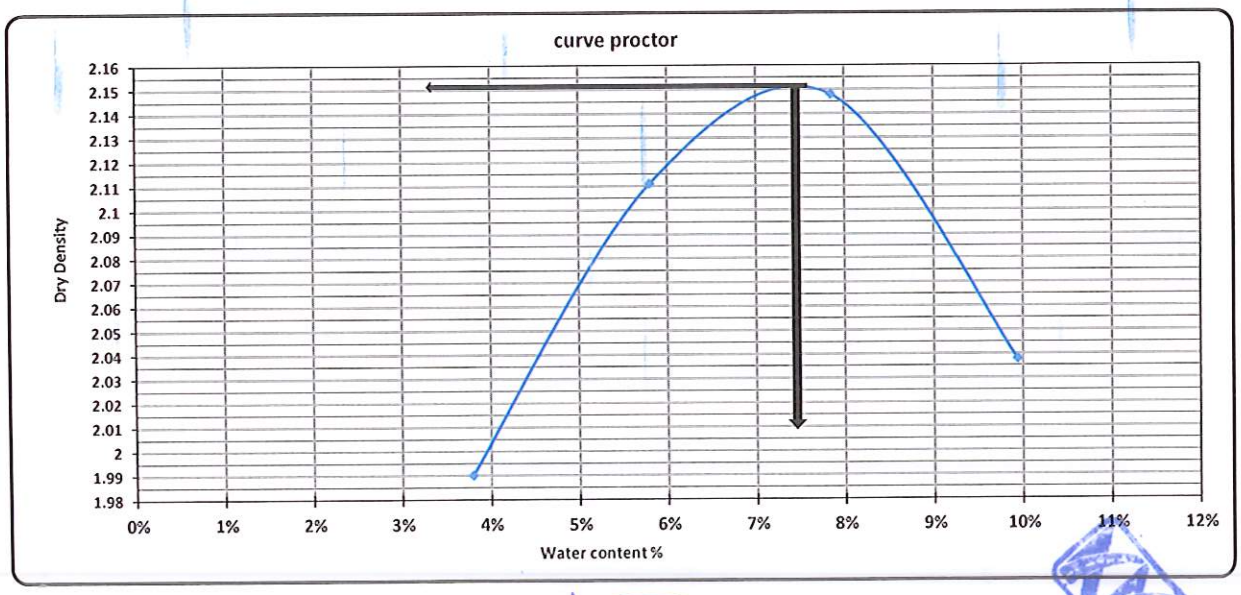
TESTING DATE:	12-12-2022	Code	Station	520+500	522+000
LOCATION	kp:521+560	CA-Emb-31			
NAME COMPANY	cairo company				

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.15
Water content %	7.5

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10532.0	10897.0	11078.0	10912	
WT. WET SOIL	4495.0	4860.0	5041.0	4875.0	
Wt. Density	2.066	2.233	2.317	2.240	

Tare No.	25	33	35	4	22	8	17	16		
Tare wt.	75.8	73.6	73.9	60.1	54.1	46.8	59.5	33.9		
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	145.2	140.1	145.8	145.1	143.1	142.4	141.9	139.4		
Wt. Of water	4.8	9.9	4.2	4.9	6.9	7.6	8.1	10.6		
Wt. Of dry soil	123.0	267.8	71.9	85.0	89.0	95.6	82.4	105.5		
Water content %	3.9%	3.7%	5.8%	5.8%	7.8%	7.9%	9.8%	10.0%		
AV.Water content %	3.8%		5.8%		7.9%		9.9%			
Dry Density	1.990		2.111		2.148		2.038			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	CARBU — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	18/12/2022	Code	zone	520+500	522+000
Location :	kp:521+560	CA-Emb-31	Material	fill material layer	
Company Name	cairo company		quantity	5000 m3	

- : Test Results

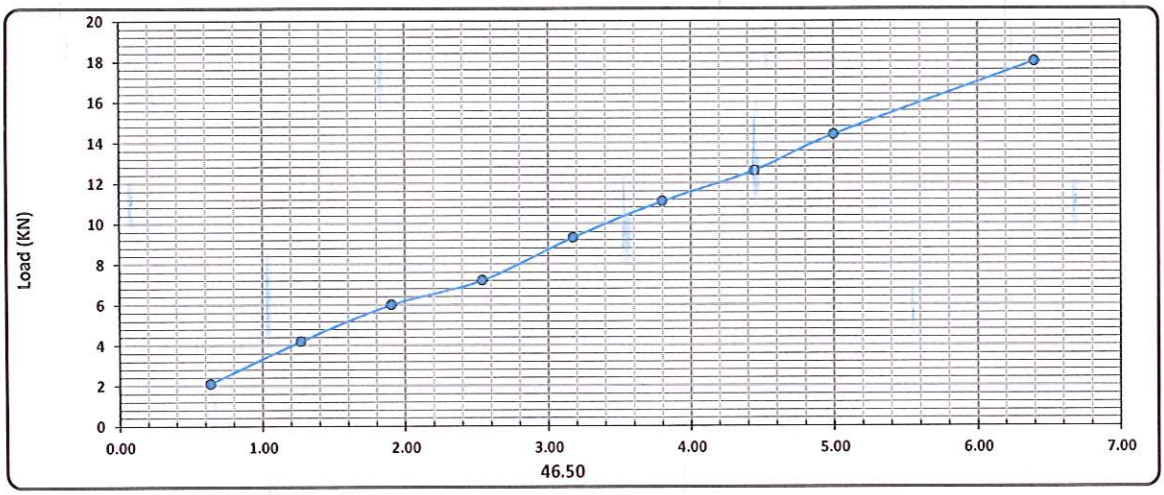
Compaction % for Mold	
Mold No.	3
Mold Vol. (cm^3)	2025
Mold WT. (gm)	5034
Mold WT. + Wet WT. (gm)	9695
Wet WT. (gm)	4661
Wet Density (g/cm^3)	2.302
Dry Density (g/cm^3)	2.146
Proctor Density (g/cm^3)	2.150
Compaction %	99.8

Mositure Ratio After Compacted Mold	
Tare No.	73
Tare WT. (gm)	33.3
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	142.1
Water WT.(gm)	7.9
Dry WT. (gm)	108.8
Moisture Content %	7.3

Swelling	
Mold No.	3
Date	٢٠٢٢/١٢/١٨
Intial Height (mm)	4.00
Final Height (mm)	4.00
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.0%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.07	0.14	0.20	0.24	0.31	0.37	0.42	0.48	0.60
Load (KN)	2.1	4.2	6.0	7.2	9.3	11.1	12.6	14.4	18.0



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	7.20	13.4	53.9%	100	98	53.0%
5.00	14.40	20.0	71.9%			70.6%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name ENG/ Abdelrahman Adel	Sign Abdel Rahman	Date 18/12/2022	Time
Contractor Reference	CA-Emb-32			
Received by ER		MAR	C1 C2 C3 DD MM YY HH MM	

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.9%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6%	
6	ASTM D 1557	Modified proctor	2.18	
7	ASTM D 1883	CBR	60.2%	
Comments by:		**Comments by:**		
		All test under Responsibility Thirty party		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	18-12-2022	A
Contractor QA/QC *	Hassan	18, 12 2022	18-12-2022	A
GARB**	Hussien Fouad		18-12-2022	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 18/12/2022
			Time:
Contractor reference	CA-Emb-32		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 520+825 / 520+880 / -10 520+700 / 520+800 / -9.5 520+880 / 520+900 / -10		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	14-12-2022	
2	Classification	m^3	5000	14-12-2022	
3	Proctor & O.m.c	m^3	5000	14-12-2022	
4	L.L & P.L & PI	m^3	5000	14-12-2022	
5	C.B.R	m^3	5000	18-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	eng / Ahmed mohammed	Ahmed Mohamed	18-12-2022	A
QA/QC *	Abdallah SAMY	Abdallah	18-12-2022	A
GARB**			18-12-2022	A
Comments by	Final quantity approved with QS		18-12-2022	
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NAHET)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	14/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	CA-Emb-32			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		27953.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	2114.0	2452.0	2489.0	2722.0	2352.0	2641.0	3142.0			A-1-a
Cumulative Retained (g)	2114.0	4566.0	7055.0	9777.0	12129.0	14770.0	17912.0		PRO	2.18
Cumulative Retained %	7.6	16.3	25.2	35.0	43.4	52.8	64.1		WC	6.00
Cumulative Passing %	92.4	83.7	74.8	65.0	56.6	47.2	35.9		CBR	60.20

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	73.00	200.00	305.90					
Cumulative Retained %	14.60	40.00	61.18					
Cumulative Passing %	85.40	60.00	38.82					

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 %	92.4	83.7	74.8	65.0	56.6	47.2	35.9	30.7	21.6	13.9

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	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	SYSTRA SHAKER

PROCTOR TEST

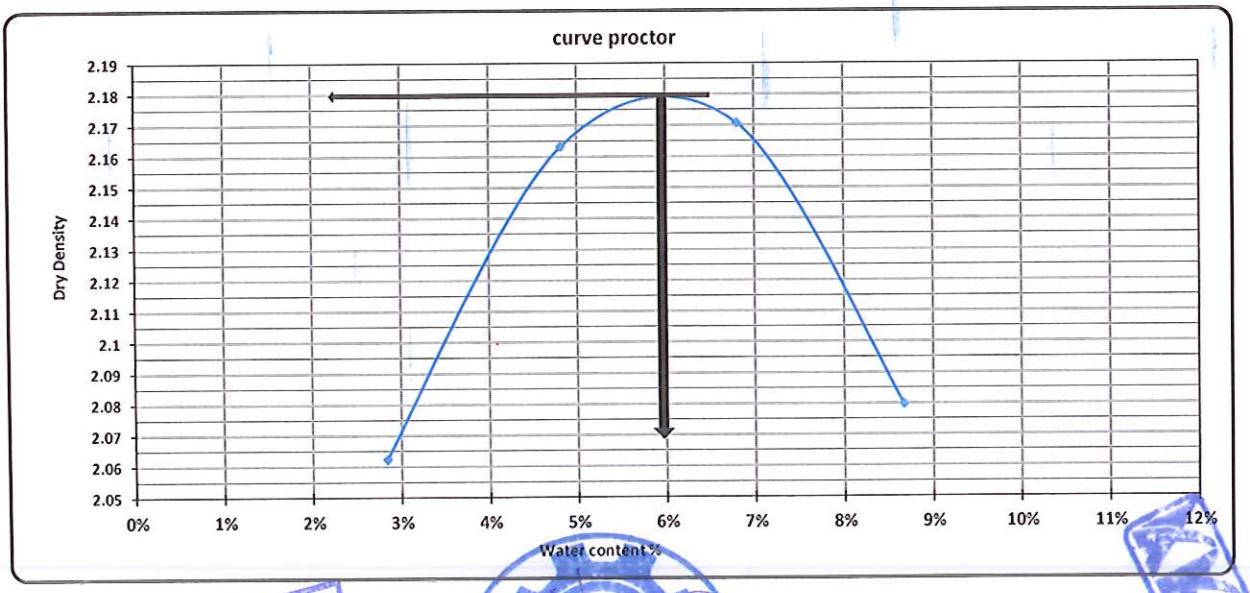
TESTING DATE:	15-12-2022	Code	Station	520+500	522+000
LOCATION	kp:521+000	CA-Emb-32			
NAME COMPANY	cairo company				

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.18
Water content %	6

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10652.0	10971.0	11082.0	10955	
WT. WET SOIL	4615.0	4934.0	5045.0	4918.0	
Wt. Density	2.121	2.267	2.318	2.260	

Tare No.	8	15	21	7	90	16	17	45		
Tare wt.	46.8	31.9	55.2	42.8	62.5	33.9	59.5	41.5		
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	146.6	142.2	145.7	145.0	144.5	142.5	142.9	141.2		
Wt. Of water	3.4	7.8	4.3	5.0	5.5	7.5	7.1	8.8		
Wt. Of dry soil	123.0	267.8	90.5	102.2	82.0	108.6	83.4	99.7		
Water content %	2.8%	2.9%	4.8%	4.9%	6.7%	6.9%	8.5%	8.8%		
AV.Water content %	2.8%		4.8%		6.8%		8.7%			
Dry Density	2.062		2.163		2.171		2.080			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SMAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — (CAPUT)

California Bearing Ratio TEST

Testing Date :	18/12/2022	Code	FROM STA :	520+500	522+000
Location :	kp:521+000	CA-Emb-32			
Company Name	cairo company				

- : Test Results

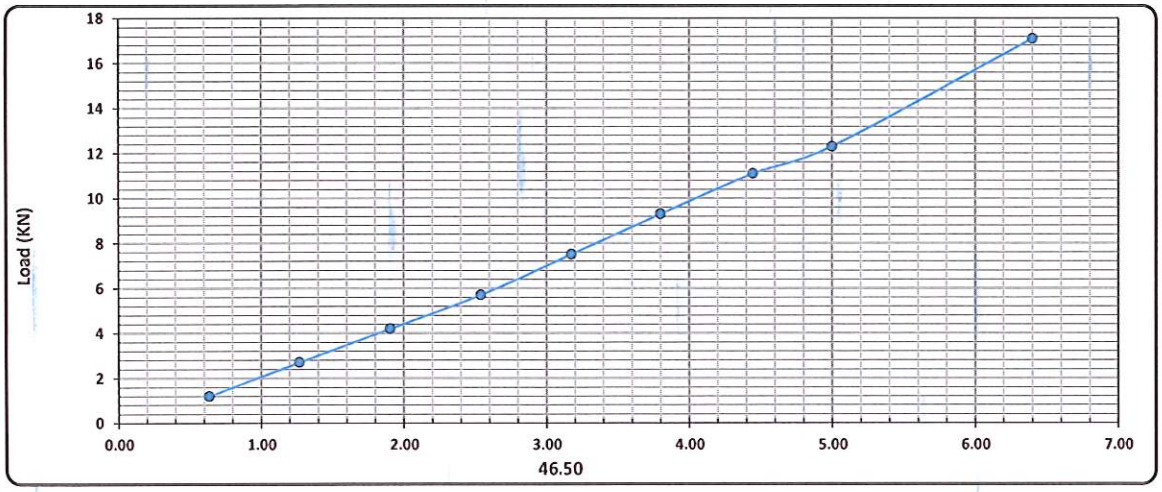
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2140
Mold WT. (gm)	4900
Mold WT. + Wet WT. (gm)	9840
Wet WT. (gm)	4940
Wet Density (g/cm^3)	2.308
Dry Density (g/cm^3)	2.179
Proctor Density (g/cm^3)	2.180
Compaction %	99.9

Mositure Ratio After Compacted Mold	
Tare No.	8
Tare WT. (gm)	46.8
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144.2
Water WT.(gm)	5.8
Dry WT. (gm)	97.4
Moisture Content %	6.0

Swelling	
Mold No.	4
Date	18-12-2022
Intial Height (mm)	9.00
Final Height (mm)	9.10
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.1%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.04	0.09	0.14	0.19	0.25	0.31	0.37	0.41	0.57
Load (KN)	1.2	2.7	4.2	5.7	7.5	9.3	11.1	12.3	17.1



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.70	13.4	42.7%	100	98	41.9%
5.00	12.30	20.0	61.4%			60.2%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		20/12/2022				
Contractor reference	CA-Emb-33							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From 520+900 520+880	To 521+000 520+970	Fill -10 -9.5	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	16-12-2022	
2	Classification	m^3	5000	16-12-2022	
3	Proctor & O.m.c	m^3	5000	16-12-2022	
4	L.L & P.L & PI	m^3	5000	16-12-2022	
5	C.B.R	m^3	5000	20-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	20-12-2022	A
QA/QC *	Abdallah SAMY	Abdallah	20-12-2022	A
GARB**	Hussien Fouad		20-12-2022	A
Comments by	Final quantity approved with Qs		20-12-2022	A
Employers Representative	Mohamed Ahd		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	20/12/2022	
Contractor Reference	CA-Emb-33			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	14.4%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	61.7%	

Comments by:	Comments by:
	All test under Responsibility third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Abel Hassan	Abdel Rahman	20-12-2022	A
Contractor QA/QC *		20-12-2022	20-12-2022	A
GARB**	Hussien Fouad		20-12-2022	A
Employers Representative	Mohamed Ahmed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق NATIONAL AUTHORITY FOR TUNNELS

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	16/12/2022	Code	ZONE	520+500	522+000
LOCATION	kp:521+000	A-Emb-33			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		29372.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	2050.0	2490.0	2533.0	2852.0	2521.0	2650.0	3152.0			A-1-a
Cumulative Retained (g)	2050.0	4540.0	7073.0	9925.0	12446.0	15096.0	18248.0		PRO	2.17
Cumulative Retained %	7.0	15.5	24.1	33.8	42.4	51.4	62.1		WC	6.00
Cumulative Passing %	93.0	84.5	75.9	66.2	57.6	48.6	37.9		CBR	61.70

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	66.30	190.00	310.00					
Cumulative Retained %	13.26	38.00	62.00					
Cumulative Passing %	86.74	62.00	38.00					

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 %	93.0	84.5	75.9	66.2	57.6	48.6	37.9	32.9	23.5	14.4

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	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	GAPBLT الهيئة القومية للأنفاق

PROCTOR TEST

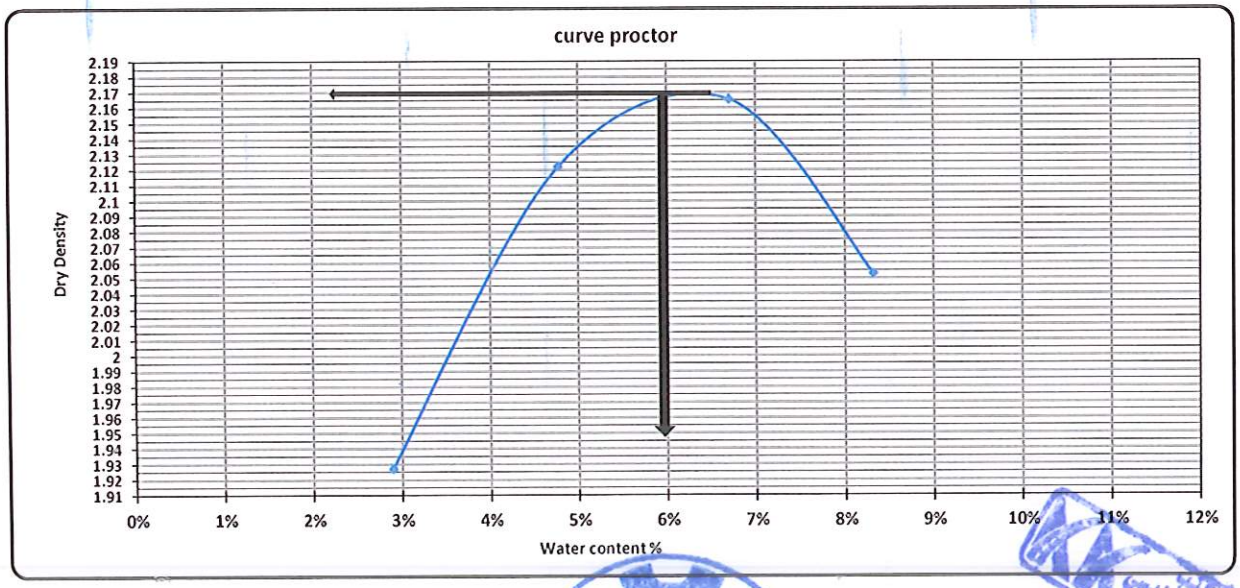
TESTING DATE:	17/12/2022	Code	Station	520+500	522+000
LOCATION	kp:521+000	A-Emb-33			
NAME COMPANY	cairo company				

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.17
Water content %	6

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10352.0	10875.0	11065.0	10876	
WT. WET SOIL	4315.0	4838.0	5028.0	4839.0	
Wt. Density	1.983	2.223	2.311	2.224	

Tare No.	16	40	7	19	73	26	20	35		
Tare wt.	33.9	46.4	42.8	44.4	72.9	55	60.9	73.9		
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	146.5	142.1	145.1	145.2	145.1	144.1	143.1	144.2		
Wt. Of water	3.5	7.9	4.9	4.8	4.9	5.9	6.9	5.8		
Wt. Of dry soil	123.0	267.8	102.3	100.8	72.2	89.1	82.2	70.3		
Water content %	2.8%	2.9%	4.8%	4.8%	6.8%	6.6%	8.4%	8.3%		
AV.Water content %	2.9%		4.8%		6.7%		8.3%			
Dry Density	1.927		2.122		2.165		2.053			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SMAKER	**Electric Express Train - HSR**	CARBUT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	20/12/2022	Code	zone	520+500	522+000
Location :	Kp:521+000	CA-Emb-33	Material	fill material	
Company Name	cairo company		quantity	5000m3	

-: Test Results

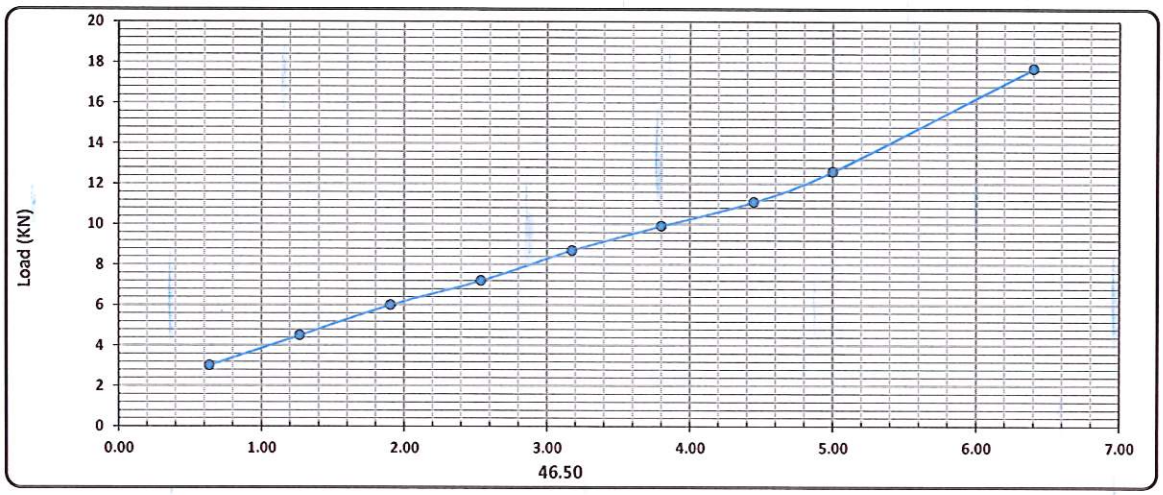
Compaction % for Mold	
Mold No.	5
Mold Vol. (cm^3)	2122
Mold WT. (gm)	5075
Mold WT. + Wet WT. (gm)	9955
Wet WT. (gm)	4880
Wet Density (g/cm^3)	2.300
Dry Density (g/cm^3)	2.170
Proctor Density (g/cm^3)	2.170
Compaction %	100.0

Mositure Ratio After Compacted Mold	
Tare No.	10
Tare WT. (gm)	43.7
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144
Water WT.(gm)	6.0
Dry WT. (gm)	100.3
Moisture Content %	6.0

Swelling	
Mold No.	5
Date	20-12-2022
Intial Height (mm)	7.00
Final Height (mm)	7.05
Difference	0.05
Sample Height (mm)	120.00
Swelling Ratio %	0.04%

Loading Reading :

46.50	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.10	0.15	0.20	0.24	0.29	0.33	0.37	0.42	0.59
Load (KN)	3.0	4.5	6.0	7.2	8.7	9.9	11.1	12.6	17.7



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	% عند نسبة 98
2.50	7.20	13.4	53.9%	100	98	52.9%
5.00	12.60	20.0	62.9%			61.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel Sign: Abdelrahman Adel	Date: 20-12-2022	Time
Contractor reference	CA-Emb-34		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS			
Location to be Used	From 520+970 521+140	To 521+000 521+315	Fill -9.5 -7	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	16-12-2022	
2	Classification	m^3	5000	16-12-2022	
3	Proctor & O.m.c	m^3	5000	16-12-2022	
4	L.L & P.L & PI	m^3	5000	16-12-2022	
5	C.B.R	m^3	5000	20-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El mahjoub laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohammed	20/12/2022	A
QA/QC *	Abdallah Safy	Abdallah	20/12/2022	A
GARB**	Hussien Fouad		20/12/2022	A
Comments by	Final quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-25	Awc

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	20-12-2022	
Contractor Reference	CA- Emb-34			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment Soil (A-1-a)			
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.9%	
4	ASTM D 4318	Atterberg limit	19.2%	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	48.4%	

Comments by:	Comments by:
	All test under Responsibility Third party.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	20/12/2022	A
Contractor QA/QC *	Hassan	20/12/2022	20/12/2022	A
GARB**	Hussien Fouad		20/12/2022	A
Employers Representative	Mahmoud Ahmed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	17/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P 521+000	CA-EMb-34			
NAME COMPANY	CAIRO				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		20863.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	165.0	1876.0	2387.0	2765.0	1986.0	4402.8			A-1-a
Cumulative Retained (g)	0.0	165.0	2041.0	4428.0	7193.0	9179.0	13581.8		PRO	2.155%
Cumulative Retained %	0.0	0.8	9.8	21.2	34.5	44.0	65.1		WC	6.8%
Cumulative Passing %	100.0	99.2	90.2	78.8	65.5	56.0	34.9		CBR	48.4%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	132.00	240.00	329.00					
Cumulative Retained %	26.40	48.00	65.80					
Cumulative Passing %	73.60	52.00	34.20					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.0	99.2	90.2	78.8	65.5	56.0	34.9	25.7	18.1	11.9

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	24.9%	19.2%	5.7%

Contractor		Consultant
شركة المحجوب للمقاولات العمومية والتوريدات معمل اختبارات وأبحاث التربة القطار السريع - فوكه - مطروح المحجوب	القاهرة للطرق والإنشاءات س.ت: ١٠٦٧٠٥ ب.ض: ٥٤٦ - ٥٩٢ - ٥٤٥	Hassan 20 12 2022 المكتب الاستشاري الهندسي أ.د. خالد قنديل

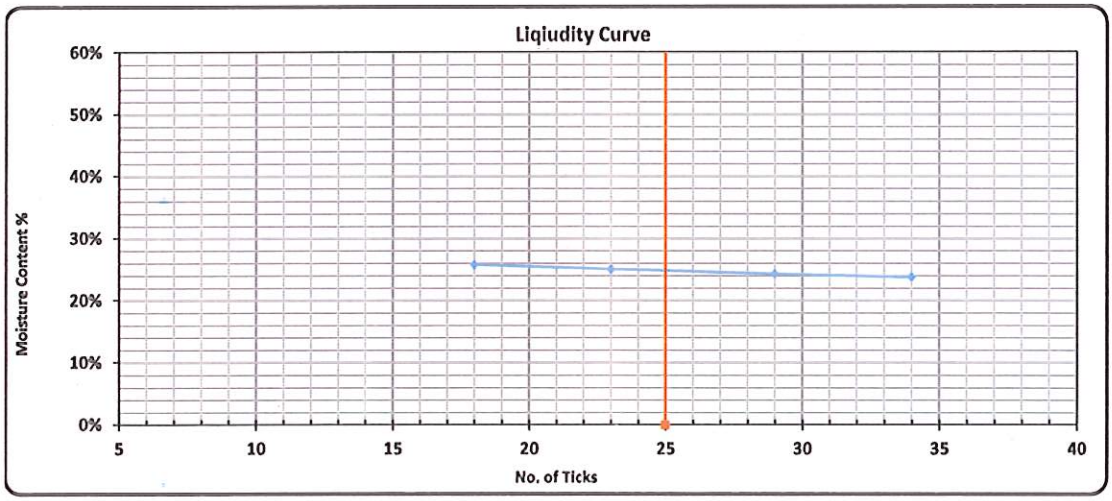
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — الإدارة العامة للطرق والكباري والنقل البري (GARBLT)

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	2022-12-17	Code:	ZONE	520+500	522+000
Location:	521+000	CA-Emb-34			
Layer No. :	CAIRO				

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	18	23	29	34	-	-
Tare No.	20	7	21	25	5	23
Tare WT. (gm)	34.65	30.32	22.65	30.76	10.22	20.65
Tare WT. + Wet WT. (gm)	54.30	44.87	43.43	55.32	10.98	21.11
Tare WT. + Dry WT. (gm)	50.27	41.95	39.37	50.60	10.86	21.04
Water WT. (gm)	4.03	2.92	4.06	4.72	0.12	0.07
Dry WT. (gm)	15.62	11.63	16.72	19.84	0.64	0.39
Moisture Content %	25.8%	25.1%	24.3%	23.8%	18.9%	19.5%
Average %					19.2%	



L.L	P.L	P.I
24.9%	19.2%	5.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign : 20/12 2022

المكتب الاستشاري الهندسي أ.د. خالد قنديل

المجوب — معمل اختبارات وأبحاث التربة — القطار السريع - فوكه - مطروح

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PROCTOR TEST

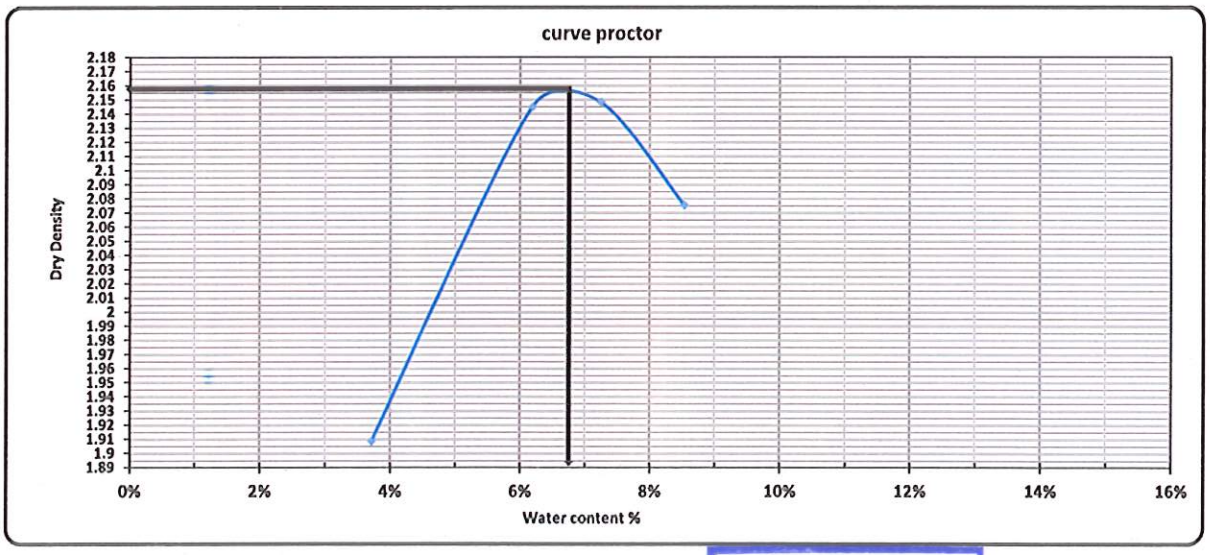
TESTING DATE:	18/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P 521+000	CA-6mb-34			
NAME COMPANY	CAIRO				

Weight of empty mold :	6058.0
Mold Volume:	2032.0

MAX Dry Density	2.155
Water content %	6.8%

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10081.4	10664.5	10739.7	10636.1	
WT. WET SOIL	4023.4	4606.5	4681.7	4578.1	
Wt. Density	1.980	2.267	2.304	2.253	

Tare No.	2	2	5	6	20	12	12	12		
Tare wt.	30.34	28.56	22.77	28.98	30.57	30.65	30.79	28.98		
Wt. Of wet soil & tare	167.7	155.87	155.98	174.73	155.87	167.43	155.48	166.98		
Wt. Of dry soil & tare	163.4	150.72	148.2	166.25	147.56	158.009999	145.82	155.97		
Wt. Of water	4.3	5.2	7.8	8.5	8.3	9.4	9.7	11.0		
Wt. Of dry soil	133.0	122.2	125.4	137.3	117.0	127.4	115.0	127.0		
Water content %	3.2%	4.2%	6.2%	6.2%	7.1%	7.4%	8.4%	8.7%		
AV.Water content %	3.7%		6.2%		7.2%		8.5%			
Dry Density	1.909		2.145		2.148		2.076			



Contractor.

Consultant

Hassan

20 / 12 / 2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	CARBLT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	20/12/2022	Code	ZONE	520+500	522+000
Location :	521+000	CA-EMB-34			
Layer No. :	CAIRO				

-: Test Results

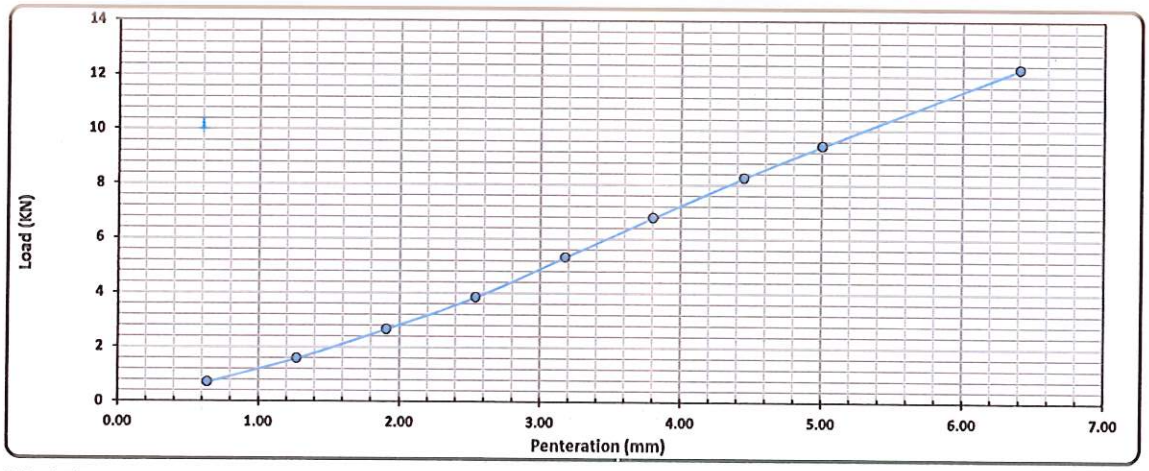
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	15700
Mold WT. + Wet WT. (gm)	20473.58
Wet WT. (gm)	4774
Wet Density (g/cm^3)	2.219
Dry Density (g/cm^3)	2.078
Proctor Density (g/cm^3)	2.155
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. +Wet WT. (gm)	233
Tare WT. +Dry WT. (gm)	221
Water WT. (gm)	12.0
Dry WT. (gm)	190.0
Moisture Content %	6.8

Swelling	
Mold No.	55
Date	20/12/2022
Intial Height (mm)	5.00
Final Height (mm)	5.00
Difference	0
Sample Height (mm)	122.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	71.00	160.00	270.00	390.00	540.82	690.00	840.00	960.00	1250.00
Load (KN)	0.7	1.6	2.6	3.8	5.3	6.8	8.2	9.4	12.3



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	3.82	13.4	28.6%	99	98	29.7%
5.00	9.41	20.0	47.0%			48.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign : 20/12/2022

شركة المحجوب للمقاولات العمومية والتوريدات — معمل اختبارات وأبحاث التربة — القطار السريع - فوكه - مطروح — المحجوب

القاهرة للطرق والإنشاءات — س.ت: ١٠٦٧٠٥ — ب.ض: ٠٤٦ - ٢٩٢ - ٥٤٥

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		25-12-2022				
Contractor reference	CA-Emb-35							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+315 521+320 -7 521+560 521+700 -6 521+700 521+780 -6		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	21-12-2022	
2	Classification	m^3	5000	21-12-2022	
3	Proctor & O.m.c	m^3	5000	21-12-2022	
4	L.L & P.L & PI	m^3	5000	21-12-2022	
5	C.B.R	m^3	5000	25-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El mahjoub laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	25/12/2022	A
QA/QC *	Abdalloh SAMY	Abdalloh	25/12/2022	A
GARB**	Hussien Fouad		25/12/2022	A
Comments by	Final quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Abdelrahman Adel	Abdel Rahman		28-12-2022							
Contractor Reference	CA-SMb-35										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.6%	
4	ASTM D 4318	Atterberg limit	18.7%	
5	ASTM D 2974	Moisture content	6.7%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	48.4%	
Comments by:		**Comments by:**		
		All test under Responsibility Third party		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	25/12/2022	A
Contractor QA/QC *	Hassan	25/12/2022	25/12/2022	A
GARB**	Hussien Fouad		25/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GAEILT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	22/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P 521+000	C1-BM6-35			
NAME COMPANY	CAIRO				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		19548.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	120.0	243.0	1575.0	2657.0	2986.0	1875.0	3563.0			A-1-a
Cumulative Retained (g)	120.0	363.0	1938.0	4595.0	7581.0	9456.0	13019.0		PRO	2.157
Cumulative Retained %	0.6	1.9	9.9	23.5	38.8	48.4	66.6		WC	6.7%
Cumulative Passing %	99.4	98.1	90.1	76.5	61.2	51.6	33.4		CBR	48.4%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	132.00	249.00	327.00					
Cumulative Retained %	26.40	49.80	65.40					
Cumulative Passing %	73.60	50.20	34.60					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	99.4	98.1	90.1	76.5	61.2	51.6	33.4	24.6	16.8	11.6

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	23.6%	18.7%	4.9%

Contractor

شركة المحجوب للمقاولات العمومية والتوريدات
معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المحجوب

Consultant

25-12-2022 Hassan

المكتب الاستشاري الهندسي
أ.د. خالد قنديل

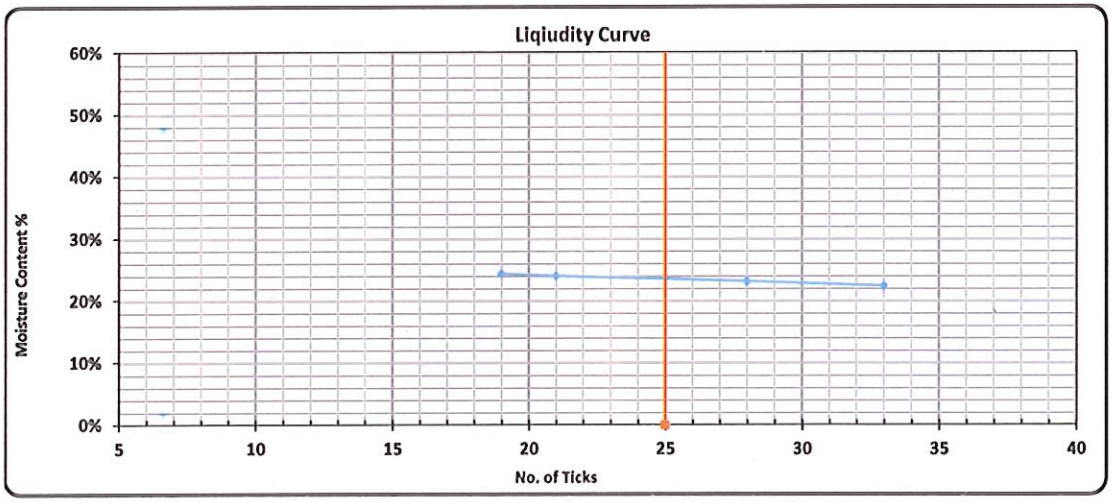
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — الهيئة العامة للطرق والكباري والنقل البري (CARBUT)

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	**2022-12-22**	**Code:**	**ZONE**	**520+500**	**522+000**
Location:	**521+000**	CA-Emb-35			
Layer No. :	**CAIRO**				

Testing Results :-

Test	**Liqiud Limit**				**Plastic Limit**	
No. of Ticks	**19**	**21**	**28**	**33**	**-**	**-**
Tare No.	**20**	**7**	**21**	**25**	**5**	**23**
Tare WT. (gm)	**33.42**	**30.45**	**22.87**	**28.89**	**10.87**	**12.65**
Tare WT. + Wet WT. (gm)	**56.43**	**44.87**	**34.64**	**47.54**	**11.87**	**13.76**
Tare WT. + Dry WT. (gm)	**51.91**	**42.07**	**32.42**	**44.12**	**11.71**	**13.59**
Water WT. (gm)	**4.52**	**2.80**	**2.22**	**3.42**	**0.16**	**0.17**
Dry WT. (gm)	**18.49**	**11.62**	**9.55**	**15.23**	**0.84**	**0.94**
Moisture Content %	**24.5%**	**24.1%**	**23.2%**	**22.5%**	**19.3%**	**18.1%**
Average %					**18.7%**	



L.L	**P.L**	**P.I**
23.6%	**18.7%**	**4.9%**

Lab. Specialist	**Lab. Engineer**	**Consultant Engineer**
Name :	**Name :**	**Name :** Hassan
Sign :	**Sign :**	**Sign :** 23/12/2022

شركة المحجوب للاستشارات الهندسية والتوريدات
معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المحجوب

المكتب الاستشاري الهندسي أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PROCTOR TEST

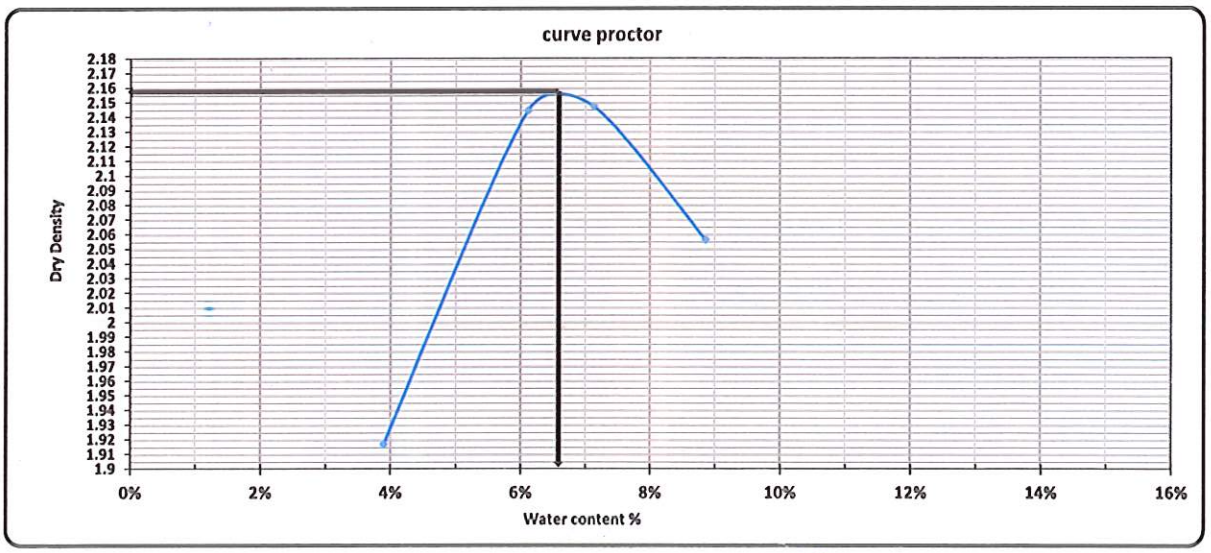
TESTING DATE:	23/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P. 521+000	CA-Emb-35			
NAME COMPANY	CAIRO				

Weight of empty mold :	6055.0
Mold Volume:	2032.0

MAX Dry Density	2.157
Water content %	6.70%

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10102.7	10653.4	10730.6	10604.6	
WT. WET SOIL	4047.7	4598.4	4675.6	4549.6	
Wt. Density	1.992	2.263	2.301	2.239	

Tare No.	2	2	5	6	20	12	12	12		
Tare wt.	30.12	28.87	29.44	22.8	26.79	28.99	22.99	33.84		
Wt. Of wet soil & tare	156.9	156.76	138.98	156.43	160.91	163.89	145.78	168.93		
Wt. Of dry soil & tare	152.4	151.73	132.85	148.49	151.82	155.07	136.16	157.52		
Wt. Of water	4.5	5.0	6.1	7.9	9.1	8.8	9.6	11.4		
Wt. Of dry soil	122.2	122.9	103.4	125.7	125.0	126.1	113.2	123.7		
Water content %	3.7%	4.1%	5.9%	6.3%	7.3%	7.0%	8.5%	9.2%		
AV.Water content %	3.9%		6.1%		7.1%		8.9%			
Dry Density	1.917		2.145		2.148		2.057			



Contractor	Consultant
شركة المحجوب للمقاولات العمومية والتوريدات معمل اختبارات وأبحاث التربة القطار السريع - فوكه - مطروح المحجوب	25/12/2022 Hassan المكتب الاستشاري الهندسي أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — (CAIRUT)

California Bearing Ratio TEST

Testing Date :	25/12/2022	Code			
Location :	521+000	CA-Smb-35	ZONE	520+500	522+000
Layer No. :	CAIRO				

-: Test Results

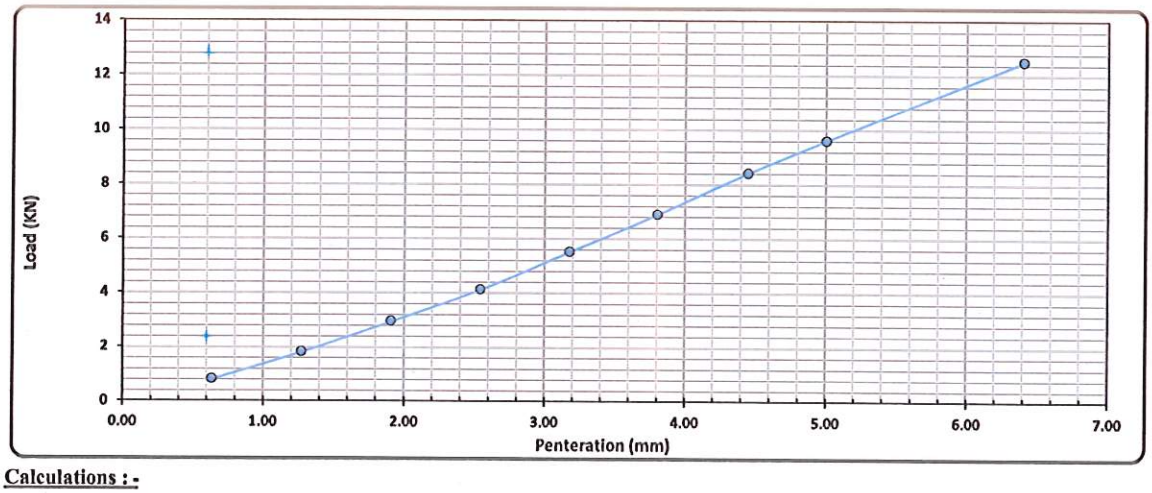
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	15700
Mold WT. + Wet WT. (gm)	20473.58
Wet WT. (gm)	4774
Wet Density (g/cm^3)	2.219
Dry Density (g/cm^3)	2.080
Proctor Density (g/cm^3)	2.157
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. +Wet WT. (gm)	233
Tare WT. +Dry WT. (gm)	221
Water WT. (gm)	12.0
Dry WT. (gm)	190.0
Moisture Content %	6.7

Swelling	
Mold No.	55
Date	5/12/2022
Intial Height (mm)	4.50
Final Height (mm)	4.50
Difference	0
Sample Height (mm)	122.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	82.00	184.00	299.00	419.00	561.22	702.00	857.14	979.59	1275.51
Load (KN)	0.8	1.8	2.9	4.1	5.5	6.9	8.4	9.6	12.5



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	4.11	13.4	30.8%	99	98	29.7%
5.00	9.60	20.0	47.9%			48.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan 25-12-2022
Sign :	Sign :	Sign :

شركة نصر للإنشاءات

شركة المجبوب للمقاولات العمومية والإنشاءات
معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المجبوب

المكتب الإستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company		Designer Company	K.K
Issued by Contractor	Name	Sign	Date	Time
	Eng/ Abdelrahman Adel	Abdelrahman Adel	25-12-2022	
Contractor reference	CA-Emb-36			
Received by ER			MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+780 / 521+800 / -6 521+900 / 522+000 / -6.5 521+440 / 521+545 / -6		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	21-12-2022	
2	Classification	m^3	5000	21-12-2022	
3	Proctor & O.m.c	m^3	5000	21-12-2022	
4	L.L & P.L & PI	m^3	5000	21-12-2022	
5	C.B.R	m^3	5000	25-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El mahjoub laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	eng / Ahmed mohammed	Ahmed mohamed	25/12/22	A
QA/QC *	Abdallah SAMY	Abdallah	25/12/22	A
GARB**	Hussien Fouad		25/12/22	A
Comments by	Link quantity approved with Cs			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company			
Electric express train	Cairo for Roads and construction Company			k.k			
Issued by Contractor	Name	Sign	Date		Time		
	ENG/ Abdelrahman Adel	Abdel Rahman	25-12-2022				
Contractor Reference	CA-Emb-36						
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment Soil (A-1-a)			
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	14.7%	
4	ASTM D 4318	Atterberg limit	17%	
5	ASTM D 2974	Moisture content	6.2%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	48.4%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahma	25/12/2022	A
Contractor QA/QC *	Hassan	25/12/2022	25/12/2022	A
GARB**	Hussien Fouad		25/12/2022	A
Employers Representative	Mohmd Ahmd		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	**Electric Express Train - HSR** **From El Ain El Sokhna City To El Alamein - MATROUH** **Section - 7 From FOKA To MARSA MATROUH** **From Station 504+000 To Station 568+177**	الهيئة القومية للأنفاق (NAREIT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	**22/12/2022**	**code**	**ZONE**	**520+500**	**522+000**
LOCATION	**K.P 521+000**	CA-Emb-36			
NAME COMPANY	**CAIRO**				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				**SAMPLE WEIGHT [g]**		**20884.00**		**gm**		**table classify**
sieve size	**2**	**1.5**	**1**	**4/3**	**2/1**	**8/3**	**# 4**	**PASS**		**soil classify**
Mass retained (g)	**0.0**	**56.0**	**1432.0**	**2576.0**	**2698.0**	**1987.0**	**4595.0**			**A-1-a**
Cumulative Retained (g)	**0.0**	**56.0**	**1488.0**	**4064.0**	**6762.0**	**8749.0**	**13344.0**		**PRO**	**2.159**
Cumulative Retained %	**0.0**	**0.3**	**7.1**	**19.5**	**32.4**	**41.9**	**63.9**		**WC**	**6.20%**
Cumulative Passing %	**100.0**	**99.7**	**92.9**	**80.5**	**67.6**	**58.1**	**36.1**		**CBR**	**48.4%**

B-soft material gradation				**WT.OF sample**		**500.00**		**gm**
sieve size	**10**	**40**	**200**					
Cumulative Retained (g)	**103.00**	**205.00**	**296.00**					
Cumulative Retained %	**20.60**	**41.00**	**59.20**					
Cumulative Passing %	**79.40**	**59.00**	**40.80**					

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**	**99.7**	**92.9**	**80.5**	**67.6**	**58.1**	**36.1**	**28.7**	**21.3**	**14.7**

ATTERBERG LIMTS	**LIQUID LIMIT (L.L.)**	**PLASTIC LIMIT (P.L.)**	**PLASTIC INDEX (P.I.)**
	21.5%	**17.0%**	**4.5%**

Contractor

شركة المحجوب للمقاولات العمومية والتوريدات
معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المحجوب

Consultant

Hassan
25/12/2022

المكتب الاستشاري الهندسي
أ.د. خالد قنديل

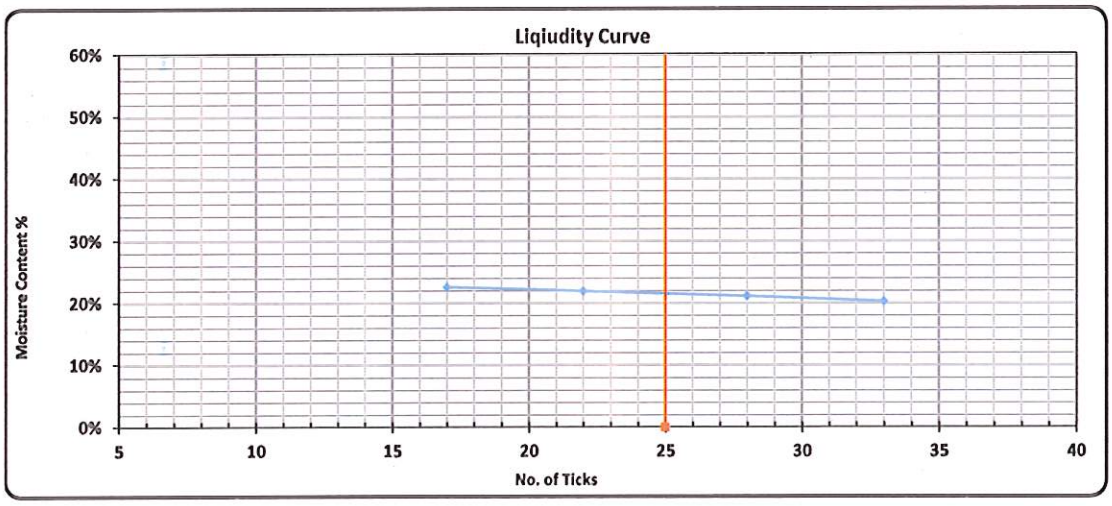
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. فاد فنجيل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — الإدارة العامة للطرق والكباري والنقل البري (CARBLT)

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	**2022-12-22**	**Code:**	**ZONE**	**520+500**	**522+000**
Location:	**521+000**	CA-8mb-36			
Layer No. :	**CAIRO**				

Testing Results :-

Test	**Liqiud Limit**				**Plastic Limit**	
No. of Ticks	17	22	28	33	-	-
Tare No.	20	7	21	25	5	23
Tare WT. (gm)	28.43	30.54	28.54	24.54	11.87	10.56
Tare WT. + Wet WT. (gm)	39.54	44.38	39.76	44.58	13.75	11.67
Tare WT. + Dry WT. (gm)	37.49	41.89	37.80	41.20	13.48	11.51
Water WT. (gm)	2.05	2.49	1.96	3.38	0.27	0.16
Dry WT. (gm)	9.06	11.35	9.26	16.66	1.61	0.95
Moisture Content %	22.6%	21.9%	21.1%	20.3%	16.6%	17.3%
Average %					17.0%	



L.L	**P.L**	**P.I**
21.5%	17.0%	4.5%

Lab. Specialist	**Lab. Engineer**	**Consultant Engineer**
Name :	**Name :**	**Name :**
Sign :	**Sign :**	**Sign :**

Hassan 25-12-2022

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	GARBLT — الهيئة القومية للأنفاق

PROCTOR TEST

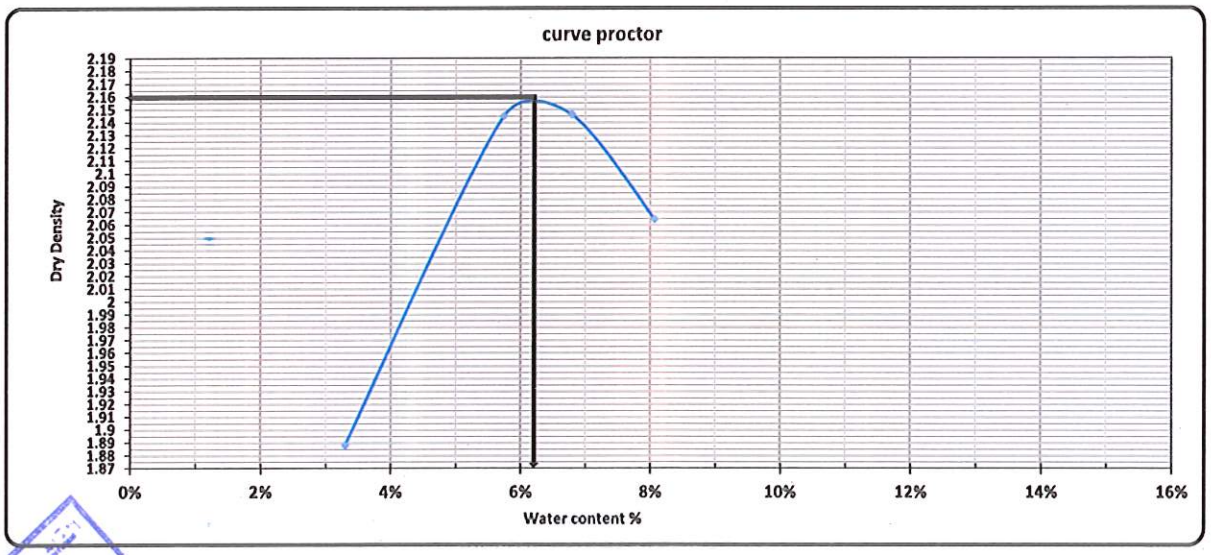
TESTING DATE:	23/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P. 521+000	CA-Emb-36			
NAME COMPANY	CAIRO				

Weight of empty mold :	6055.0
Mold Volume:	2032.0

MAX Dry Density	2.159
Water content %	6.20%

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10019.4	10625.0	10712.3	10588.4	
WT. WET SOIL	3964.4	4570.0	4657.3	4533.4	
Wt. Density	1.951	2.249	2.292	2.231	

Tare No.	2	2	5	6	20	12	17	22		
Tare wt.	37.31	36.38	29.54	34.98	38.65	30.87	28.55	33.12		
Wt. Of wet soil & tare	156.9	168.32	165.43	156.76	167.98	135.69	156.8	160.87		
Wt. Of dry soil & tare	153.3	163.75	158.11	150.09	159.86	128.93	147.37	151.18		
Wt. Of water	3.5	4.6	7.3	6.7	8.1	6.8	9.4	9.7		
Wt. Of dry soil	116.0	127.4	128.6	115.1	121.2	98.1	118.8	118.1		
Water content %	3.0%	3.6%	5.7%	5.8%	6.7%	6.9%	7.9%	8.2%		
AV.Water content %	3.3%		5.7%		6.8%		8.1%			
Dry Density	1.888		2.145		2.146		2.064			



Contractor	Consultant
شركة المجدوي للمقاولات العمومية والبريدات معمل اختبارات وأبحاث التربة القطار السريع - فوكة - مطروح	25/12 2022

KK ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	CARBLT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	25/12/2022	Code	ZONE	520+500	522+000
Location :	521+000	CA-Sm6-36			
Layer No. :	CAIRO				

- : Test Results

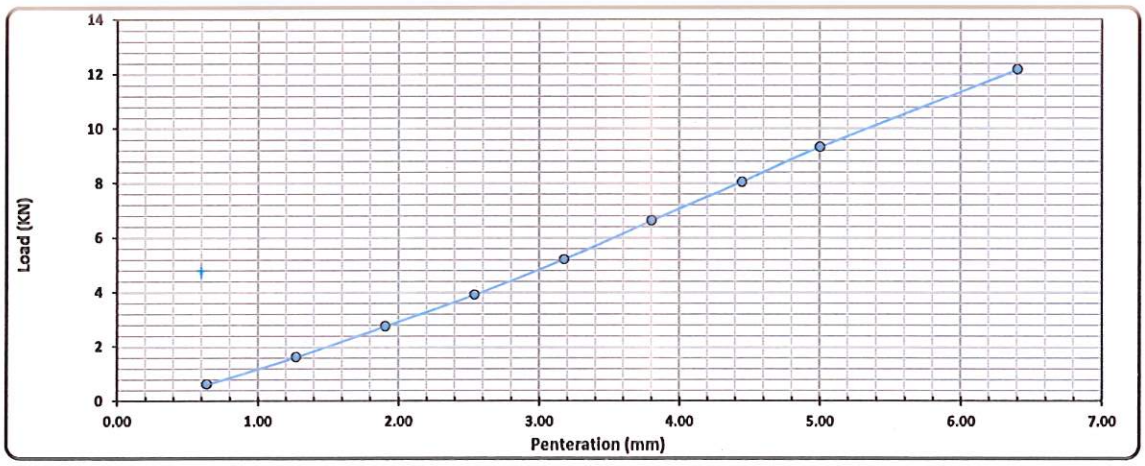
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	15700
Mold WT. + Wet WT. (gm)	20473.58
Wet WT. (gm)	4774
Wet Density (g/cm^3)	2.219
Dry Density (g/cm^3)	2.090
Proctor Density (g/cm^3)	2.159
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. +Wet WT. (gm)	233
Tare WT. +Dry WT. (gm)	221
Water WT. (gm)	12.0
Dry WT. (gm)	190.0
Moisture Content %	6.2

Swelling	
Mold No.	55
Date	25/12/2022
Intial Height (mm)	4.50
Final Height (mm)	4.50
Difference	0
Sample Height (mm)	122.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	62.00	164.00	280.00	397.96	530.00	675.00	820.00	950.00	1240.00
Load (KN)	0.6	1.6	2.7	3.9	5.2	6.6	8.0	9.3	12.2



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	3.90	13.4	29.2%	99	98	29.7%
5.00	9.31	20.0	46.5%			48.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa 25/12/2022
Sign :	Sign :	Sign

شركة المحجوب للمقاولات العمومية والتوريدات
معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المحجوب

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel Sign: Abdelrahman Adel	Date: 25-12-2022	Time
Contractor reference	CA-Emb-37		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+545 / 521+560 / -6 521+800 / 521+900 / -6 520+900 / 520+990 / -9		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	21-12-2022	
2	Classification	m^3	5000	21-12-2022	
3	Proctor & O.m.c	m^3	5000	21-12-2022	
4	L.L & P.L & PI	m^3	5000	21-12-2022	
5	C.B.R	m^3	5000	25-12-2022	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El mahjoub laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	25/12/2022	A
QA/QC *	Abdallah Sally	Abdallah	25/12/2022	A
GARB**	Hussien Fouad		25/12/2022	A
Comments by	find quality approved with Cos			
Employers Representative	Mohamed Ahmed		8-2-23	A

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	25-12-2022	
Contractor Reference	CA-Emb-37			
Received by ER				

MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)

The following test result are attached for review

Description of Materials	Lower embankment Soil (A-1-a)
Location of stock	K.p (520+500) No (3)

Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	14.6%	
4	ASTM D 4318	Atterberg limit	17.5%	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	44.5	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	25/12/2022	A
Contractor QA/QC *	Hassan	25-12-2022	25/12/2022	A
GARB**	Hussien Fouad		25/12/2022	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA & SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NAT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	22/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P. 520+500	CA-Emb-37			
NAME COMPANY	CAIRO				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		25412.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	726.0	2313.0	2741.0	2841.0	1842.0	2336.0	3524.0			A-1-a
Cumulative Retained (g)	726.0	3039.0	5780.0	8621.0	10463.0	12799.0	16323.0		PRO	2.15
Cumulative Retained %	2.9	12.0	22.7	33.9	41.2	50.4	64.2		WC	6.8%
Cumulative Passing %	97.1	88.0	77.3	66.1	58.8	49.6	35.8		CBR	44.5%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	87.00	174.00	296.00					
Cumulative Retained %	17.40	34.80	59.20					
Cumulative Passing %	82.60	65.20	40.80					

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 %	97.1	88.0	77.3	66.1	58.8	49.6	35.8	29.5	23.3	14.6

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	23.20	17.50	5.70

Contractor	Consultant
شركة المجدوب للمقاولات العمومية والتوريدات معمل اختبارات وأبحاث التربة الخط السريع فوكة - مطروح	Hersa 25/12/2022

المكتب الاستشاري الهندسي أ.د. خالد قنديل

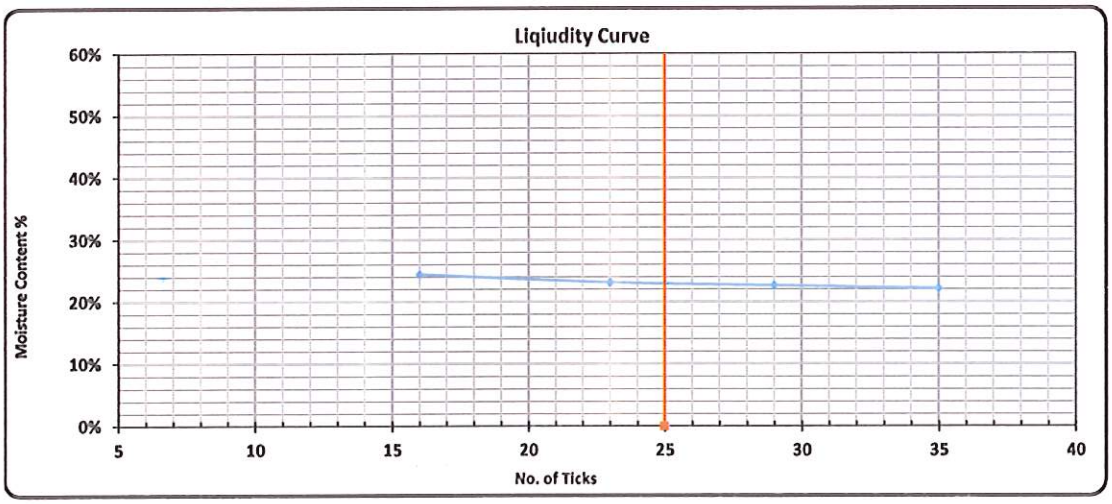
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل · SYSTRA · SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق · الإدارة المركزية للمعامل والتجارب والبحث العلمي (CARBLT)

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	**2022-12-22**	**Code:**	**ZONE**	**520+500**	**522+000**
Location:	**520+500**	CA-Emb-37			
Layer No. :	**CAIRO**				

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	16	23	29	35	-	-
Tare No.	20	7	21	25	5	23
Tare WT. (gm)	37.90	35.40	29.32	35.90	19.75	22.03
Tare WT. + Wet WT. (gm)	52.50	56.39	53.43	50.41	20.56	23.22
Tare WT. + Dry WT. (gm)	49.63	52.45	48.99	47.78	20.44	23.04
Water WT. (gm)	2.87	3.94	4.44	2.63	0.12	0.18
Dry WT. (gm)	11.73	17.05	19.67	11.88	0.69	1.01
Moisture Content %	24.4%	23.1%	22.6%	22.2%	17.3%	17.7%
Average %					17.5%	



L.L	P.L	P.I
23.2%	17.5%	5.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

25/12/2022
Hassa

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	GARBLT الهيئة القومية للأنفاق

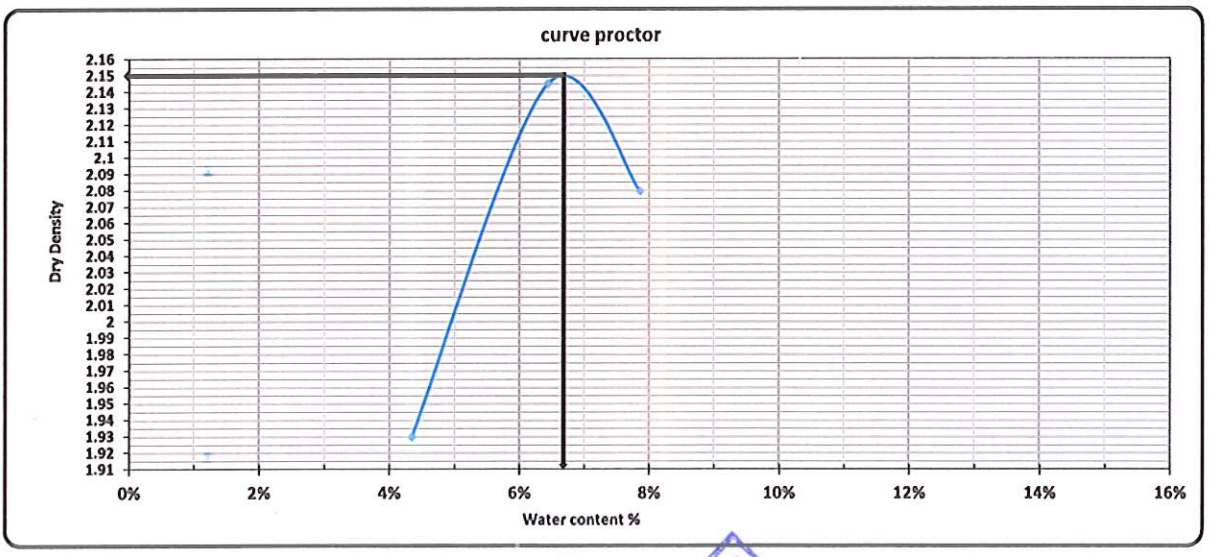
PROCTOR TEST

TESTING DATE:	23/12/2022	code	ZONE	520+500	522+000
LOCATION	K.P. 520+500	CA-Emb-37			
NAME COMPANY	CAIRO				

Weight of empty mold :	6050.0	MAX Dry Density	2.15
Mold Volume:	2032.0	Water content %	6.8%

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10142.4	10666.7	10607.8		
WT. WET SOIL	4092.4	4616.7	4557.8		
Wt. Density	2.014	2.272	2.243		

Tare No.	2	2	5	6	20	12				
Tare wt.	20.21	28.87	30.88	28.86	29.66	30.57				
Wt. Of wet soil & tare	134.9	155.76	156.87	160.32	166.87	166.87				
Wt. Of dry soil & tare	130.2	150.32	148.96	152.65	157.18	156.61				
Wt. Of water	4.7	5.4	7.9	7.7	9.7	10.3				
Wt. Of dry soil	110.0	121.5	118.1	123.8	127.5	126.0				
Water content %	4.2%	4.5%	6.7%	6.2%	7.6%	8.1%				
AV.Water content %	4.4%		6.4%		7.9%					
Dry Density	1.930		2.143		2.079					



Contracter

Consultant

25 12 2022

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — الهيئة العامة للطرق والكباري والنقل البري (GARBLT)

California Bearing Ratio TEST

Testing Date :	25/12/2022	Code	ZONE	520+500	522+000
Location :	520+500	CA-Emb-37			
Layer No. :	CAIRO				

-: Test Results

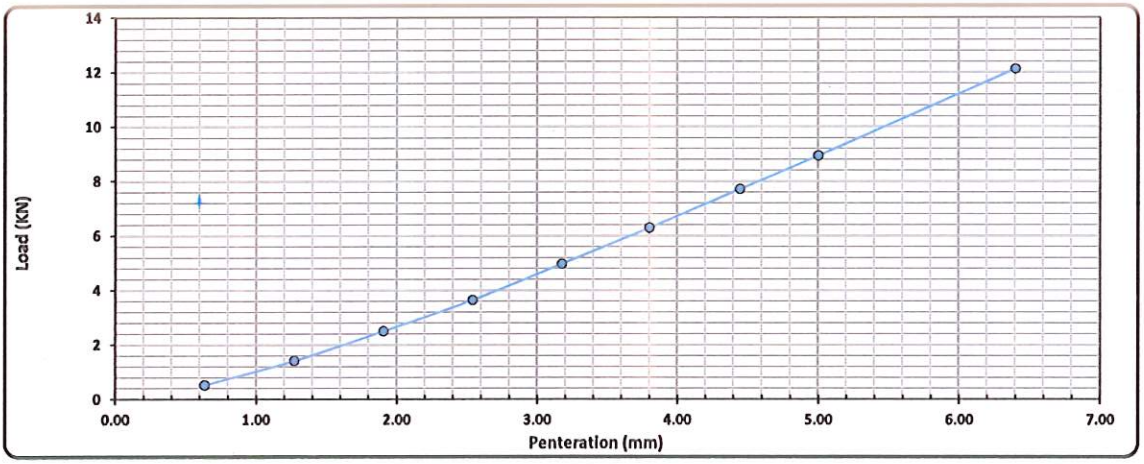
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	15700
Mold WT. + Wet WT. (gm)	20473.58
Wet WT. (gm)	4774
Wet Density (g/cm^3)	2.219
Dry Density (g/cm^3)	2.078
Proctor Density (g/cm^3)	2.150
Compaction %	98

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. +Wet WT. (gm)	233
Tare WT. +Dry WT. (gm)	221
Water WT. (gm)	12.0
Dry WT. (gm)	190.0
Moisture Content %	6.8

Swelling	
Mold No.	55
Date	25/12/2022
Intial Height (mm)	4.50
Final Height (mm)	4.50
Difference	0
Sample Height (mm)	122.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	52.00	143.00	253.00	370.00	505.00	640.00	785.00	910.00	1235.00
Load (KN)	0.5	1.4	2.5	3.6	4.9	6.3	7.7	8.9	12.1



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	3.63	13.4	27.2%	99	98	29.7%
5.00	8.92	20.0	44.5%			48.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Massa
Sign :	Sign :	Sign : 25/12/2022

شركة المحجوب للمقاولات العمومية والتوريدات — معمل اختبارات وأبحاث التربة — القطار السريع - فوكه - مطروح — المحجوب

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 3/1/2023
			Time
Contractor reference	CA-Emb-38		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS	
Location to be Used	From / To / Fill 520+990 / 521+000 / -9 520+620 / 520+700 / -9 520+700 / 520+795 / -9		
MAR Approval No			Date
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	1-1-2023	
2	Classification	m^3	5000	1-1-2023	
3	Proctor & O.m.c	m^3	5000	1-1-2023	
4	L.L & P.L & PI	m^3	5000	1-1-2023	
5	C.B.R	m^3	5000	3-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El mahjoub laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	3-1-2023	A
QA/QC *	Abdallah SAMY	AbdoSAM	3-1-2023	A
GARB**	Hussien Fouad	Hussien	3-1-2023	A
Comments by	Full Quantity approved with Qs		3-1-2023	A
Employers Representative	Mohamed Ahmed		8-2-23	AWC

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdelrahman Adel	3/1/2023	
Contractor Reference	CA-Emb-38			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment		Soil (A-1-a)	
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.9%	
4	ASTM D 4318	Atterberg limit	18.6%	
5	ASTM D 2974	Moisture content	6.9%	
6	ASTM D 1557	Modified proctor	2.14	
7	ASTM D 1883	CBR	45.1%	
Comments by:			Comments by:	
			All test under Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Ahmed mohamed	Ahmed Mohamed	3-1-2023	A
Contractor QA/QC *	Abdallah SAMY	Abdallah	3-1-2023	A
GARB**	Hussien Fouad	Hussien	3-1-2023	A
Employers Representative	[illegible]	[illegible]	15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (NATIONAL AUTHORITY FOR TUNNELS) / الهيئة العامة للطرق والكباري والنقل البري (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	30\12\2023	code	ZONE	520+500	522+000
LOCATION	520+500	CA-Emb-38			
NAME COMPANY	Cairo		Material	embankment	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		19795.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	167.0	1148.0	2219.0	3188.0	2391.0	1476.0	2418.0			A-1-a
Cumulative Retained (g)	167.0	1315.0	3534.0	6722.0	9113.0	10589.0	13007.0		PRO	2.149
Cumulative Retained %	0.8	6.6	17.9	34.0	46.0	53.5	65.7		WC	6.9%
Cumulative Passing %	99.2	93.4	82.1	66.0	54.0	46.5	34.3		CBR	45.5%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	90.00	199.00	298.00					
Cumulative Retained %	18.00	39.80	59.60					
Cumulative Passing %	82.00	60.20	40.40					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	99.2	93.4	82.1	66.0	54.0	46.5	34.3	28.1	20.6	13.9

ATTERBERG LIMTS	LIQUID LIMIT (L.L.)	PLASTIC LIMIT (P.L.)	PLASTIC INDEX (P.I.)
	22.70	18.60	4.10

Contractor	Consultant
شركة المحجوب للمقاولات العمومية والتوريدات معمل اختبارات وأبحاث التربة القطار السريع - فوكه - مطروح المحجوب	المكتب الاستشاري الهندسي أ.د. خالد قنديل

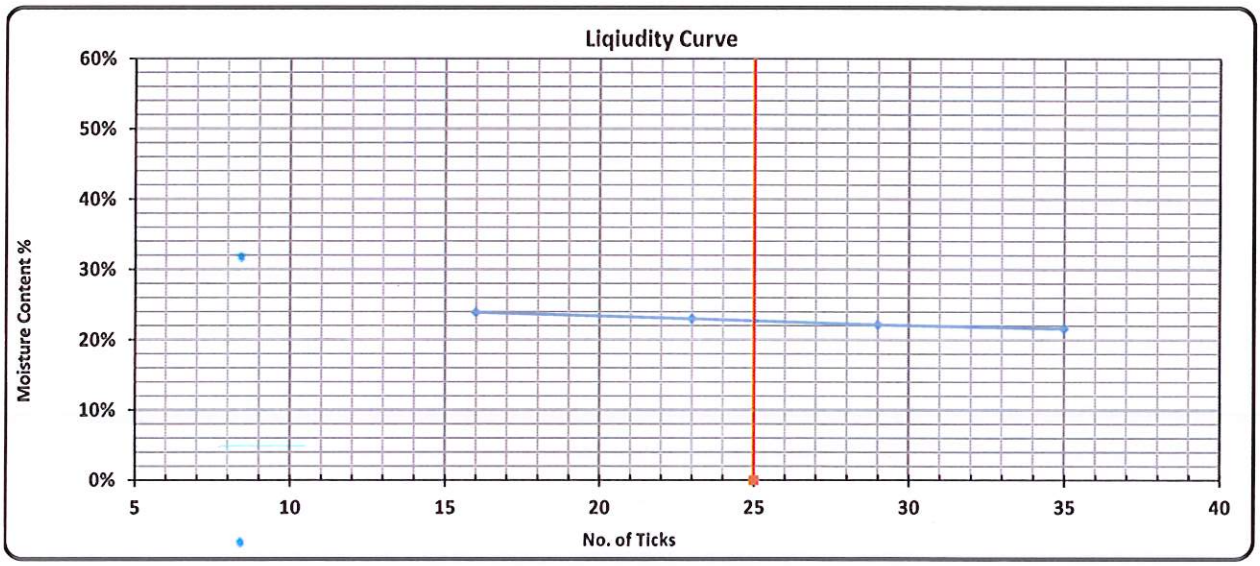
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	(GARBLT) — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date:	2023\12\31	Code:	ZONE	520+500	TO STA:	522+000
Location:	520+500	A-Emb-38				
NAME COMPANY :	Cairo					

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	16	23	29	35	-	-
Tare No.	20	7	21	25	5	23
Tare WT. (gm)	23.29	32.97	33.15	14.08	20.06	13.42
Tare WT. + Wet WT. (gm)	42.38	41.95	46.34	22.59	20.92	13.95
Tare WT. + Dry WT. (gm)	38.70	40.27	43.95	21.08	20.78	13.87
Water WT. (gm)	3.68	1.68	2.39	1.51	0.14	0.08
Dry WT. (gm)	15.41	7.30	10.80	7.00	0.72	0.45
Moisture Content %	23.9%	23.0%	22.2%	21.6%	19.4%	17.8%
Average %					18.6%	



L.L	P.L	P.I
22.7%	18.6%	4.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	(GARBLT) — الهيئة القومية للأنفاق

PROCTOR TEST

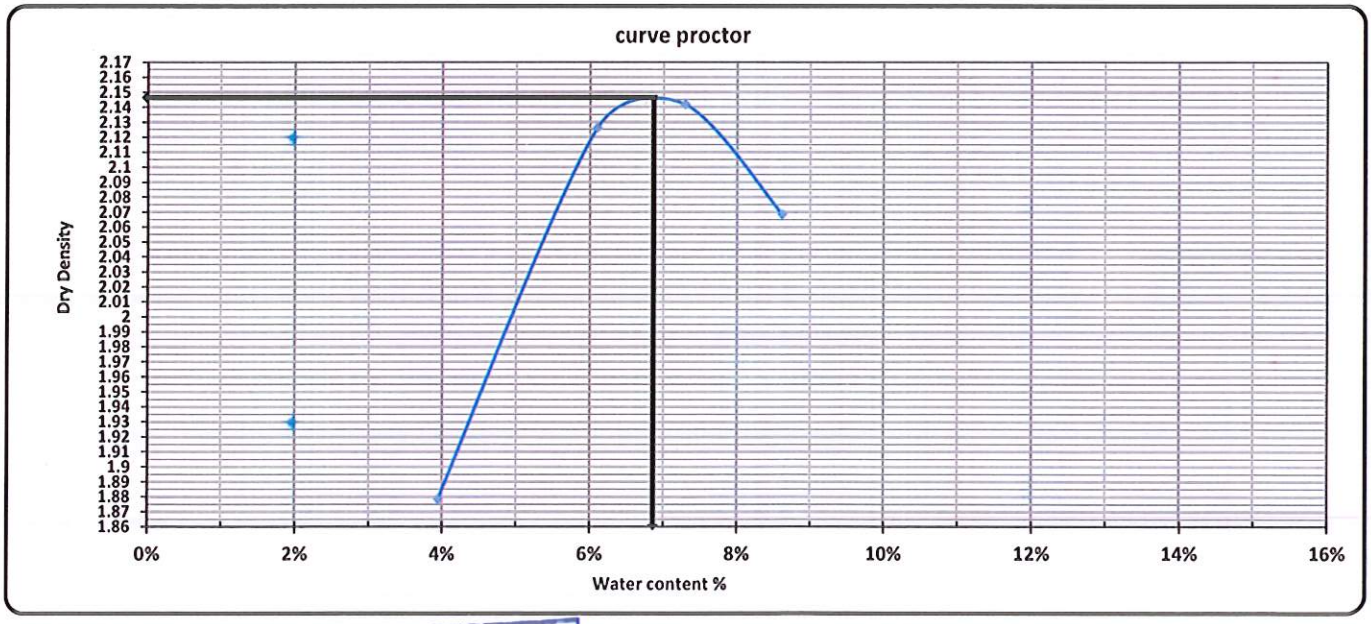
TESTING DATE:	1\1\2023	code	Station	520+500	522+000
LOCATION	520+500	CA-Emb-38			
NAME COMPANY	Cairo		Material	embankment	

Weight of empty mold :	6055.0
Mold Volume:	2032.0

MAX Dry Density	2.149
Water content %	6.9%

trial no :	1	2	3	4	5
Wt. Of Mold+ wet soil	10023.5	10639.2	10724.5	10621	
WT. WET SOIL	3968.5	4584.2	4669.5	4565.9	
Wt. Density	1.953	2.256	2.298	2.247	

Tare No.	2	2	5	6	20	12	7	6		
Tare wt.	30.21	28.98	34.87	22.98	34.87	29.65	34.56	38.65		
Wt. Of wet soil & tare	156.9	155.87	176.76	155.98	156.87	155.89	156.87	156.23		
Wt. Of dry soil & tare	152.3	150.76	168.86	148.08	148.84	147.03	147.24	146.82		
Wt. Of water	4.5	5.1	7.9	7.9	8.0	8.9	9.6	9.4		
Wt. Of dry soil	122.1	121.8	134.0	125.1	114.0	117.4	112.7	108.2		
Water content %	3.7%	4.2%	5.9%	6.3%	7.0%	7.5%	8.5%	8.7%		
AV.Water content %	4.0%		6.1%		7.3%		8.6%			
Dry Density	1.879		2.126		2.142		2.069			



Contractor

Consultant

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	GARBLT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	2023\1\2	Code	FROM STA :	520+500	TO STA :	522+000
Location :	520+500	CA-Emb-38				
NAME COMPANY	Cairo		Material :	embankment		

- : Test Results

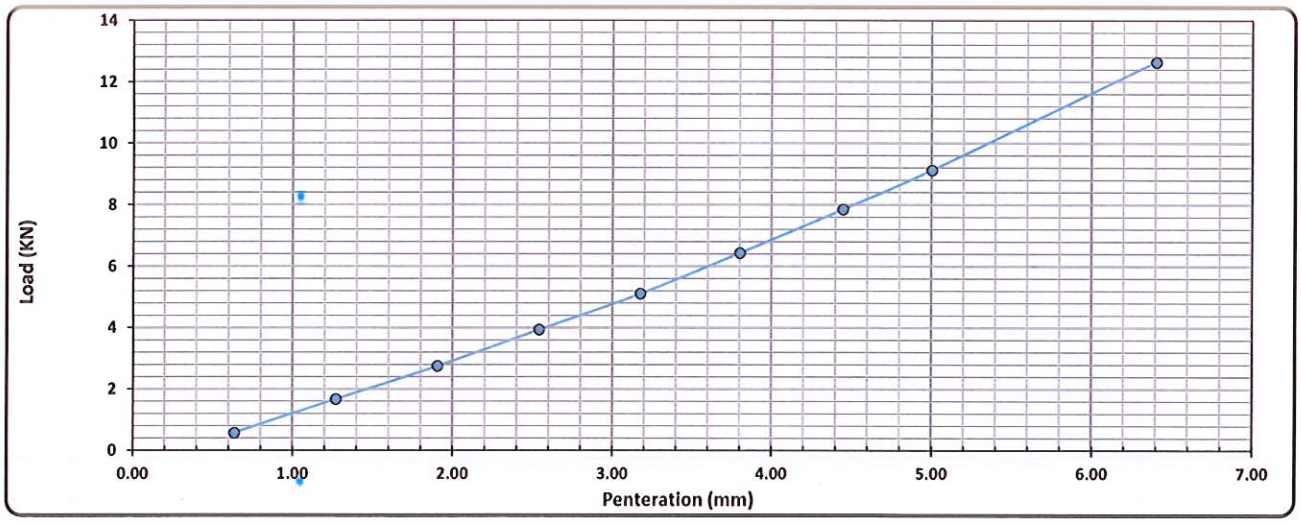
Compaction % for Mold	
Mold No.	55
Mold Vol. (cm^3)	2151
Mold WT. (gm)	15700
Mold WT. + Wet WT. (gm)	20261
Wet WT. (gm)	4561
Wet Density (g/cm^3)	2.120
Dry Density (g/cm^3)	2.119
Proctor Density (g/cm^3)	2.149
Compaction %	99

Mositure Ratio After Compacted Mold	
Tare No.	5
Tare WT. (gm)	31
Tare WT. +Wet WT. (gm)	212
Tare WT. +Dry WT. (gm)	200.3
Water WT. (gm)	11.7
Dry WT. (gm)	169.3
Moisture Content %	6.9%

Swelling	
Mold No.	55
Date	2023\1\3
Intial Height (mm)	2.10
Final Height (mm)	2.10
Difference	0
Sample Height (mm)	121.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (kg)	58.00	170.00	280.00	401.00	520.00	655.00	800.00	930.00	1290.00
Load (KN)	0.6	1.7	2.7	3.9	5.1	6.4	7.8	9.1	12.6



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	عند نسبة 98 %
2.50	3.93	13.4	29.4%	99	98	29.1%
5.00	9.11	20.0	45.5%			45.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

شركة المجوب للمقاولات العمومية والتوريدات
معمل اختبارات وأبحاث التربة
القطار السريع - فوكه - مطروح
المجوب

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company	Designer Company	K.K
Issued by Contractor	Name: Eng/ Abdelrahman Adel	Sign: Abdelrahman Adel	Date: 5-1-2023 / Time:
Contractor reference	CA-Emb-39		
Received by ER		MIR	

C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 520+795 / 520+800 / -9 520+800 / 520+900 / -9.5 521+320 / 521+415 / -6		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	1-1-2023	
2	Classification	m^3	5000	1-1-2023	
3	Proctor & O.m.c	m^3	5000	1-1-2023	
4	L.L & P.L & PI	m^3	5000	1-1-2023	
5	C.B.R	m^3	5000	5-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	5/1/2023	A
QA/QC *	Abdallah Saleh	Abdallah	5/1/2023	A
GARB**	Hussien Fouad		5/1/2023	A
Comments by	Final Quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	AWC

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	5-1-2023	
Contractor Reference	CA-Emb-39			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	14.9%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.4%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	50%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	5/1/2023	A
Contractor QA/QC *	Hassan	5-1-2023	5/1/2023	A
GARB**	Hussien Fouad		5/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPUT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	1-1-2023	Code	ZONE	520+500	522+000
LOCATION	K.P (521+000)	CA-Emb-39			
NAME COMPANY	Al Kahera				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		24732.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1252.0	1652.0	2232.0	2423.0	2752.0	2852.0	2162.0			A-1-a
Cumulative Retained (g)	1252.0	2904.0	5136.0	7559.0	10311.0	13163.0	15325.0		PRO	2.16
Cumulative Retained %	5.1	11.7	20.8	30.6	41.7	53.2	62.0		WC	6.80
Cumulative Passing %	94.9	88.3	79.2	69.4	58.3	46.8	38.0		CBR	50.00

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	83.40	184.00	304.00					
Cumulative Retained %	16.68	36.80	60.80					
Cumulative Passing %	83.32	63.20	39.20					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	94.9	88.3	79.2	69.4	58.3	46.8	38.0	31.7	24.0	14.9

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

Contractor	Consultant
	Hassan 5/1/2023

القطار السريع
معمل النوبي المركزي
قطاع فوكا - مطروح

المكتب الاستشاري الهندسي أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PROCTOR TEST

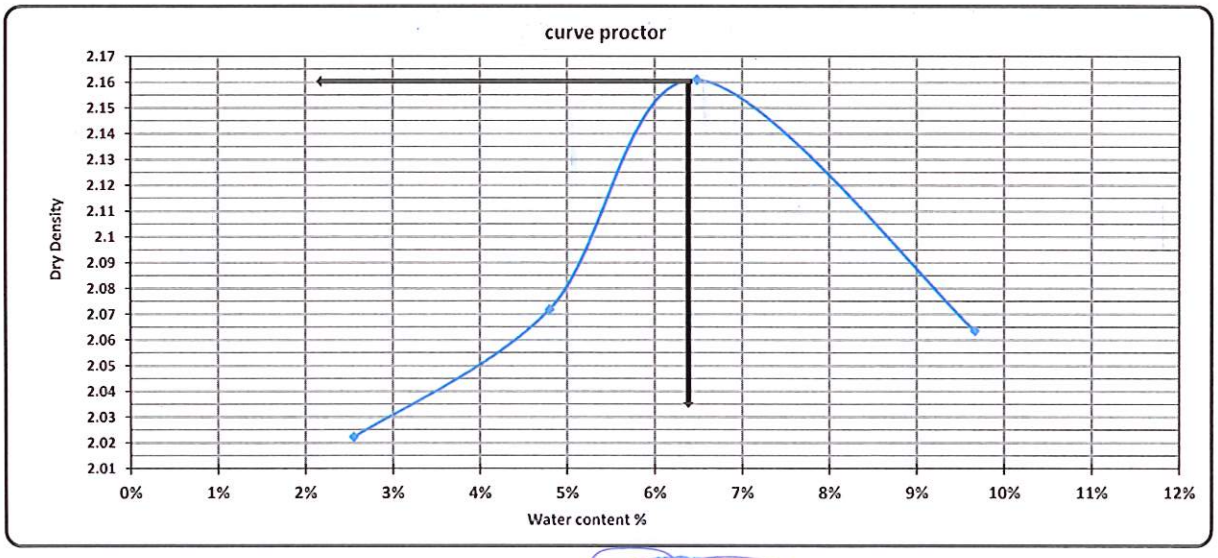
TESTING DATE:	1-1-2023	code	ZONE	520+500	522+000
LOCATION	K.P (521+000)	CA-Emb-39			
NAME COMPANY	Al Kahara				

Weight of empty mold :	6070.0
Mold Volume:	2113.0

MAX Dry Density	2.16
Water content %	6.4

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10452.0	10658.0	10932.0	10852	
WT. WET SOIL	4382.0	4588.0	4862.0	4782.0	
Wt. Density	2.074	2.171	2.301	2.263	

Tare No.	7	10	4	11	17	45	18	33		
Tare wt.	42.9	43.9	59.5	46.4	59.9	41.3	77.8	73.6		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0		
Wt. Of dry soil & tare	147.5	147.2	145.9	145.2	144.5	143.4	143.6	143.3		
Wt. Of water	2.5	2.8	4.1	4.8	5.5	6.6	6.4	6.7		
Wt. Of dry soil	104.6	103.3	86.4	98.8	84.6	102.1	65.8	69.7		
Water content %	2.4%	2.7%	4.7%	4.9%	6.5%	6.5%	9.7%	9.6%		
AV.Water content %	2.6%		4.8%		6.5%		9.7%			
Dry Density	2.022		2.072		2.161		2.064			



Contractor

Consultant

2023 Hassa

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	5-1-2023	Code	FROM STA :	520+500	522+000
Location :	K.P (521+000)	CA- Emb-39			
Company Name	Al Kahera				

Test Results : -

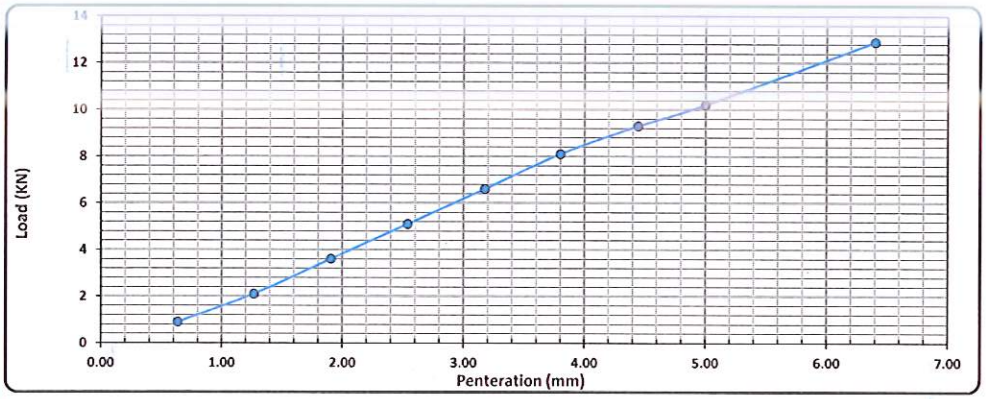
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2168
Mold WT. (gm)	5082
Mold WT. + Wet WT. (gm)	10050
Wet WT. (gm)	4968
Wet Density (g/cm^3)	2.292
Dry Density (g/cm^3)	2.155
Proctor Density (g/cm^3)	2.160
Compaction %	100

Mositure Ratio After Compacted Mold	
Tare No.	32
Tare WT. (gm)	74.4
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	145.5
Water WT. (gm)	4.5
Dry WT. (gm)	71.1
Moisture Content %	6.3

Swelling	
Mold No.	2
Date	5-1-2023
Intial Height (mm)	7.00
Final Height (mm)	7.10
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.1%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.07	0.12	0.17	0.22	0.27	0.31	0.34	0.43
Load (KN)	0.9	2.1	3.6	5.1	6.6	8.1	9.3	10.2	12.9



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	عند نسبة 98 %
2.50	5.10	13.4	38.2%	100	98	37.5%
5.00	10.20	20.0	50.9%			50.0%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hasra
Sign :	Sign :	Sign

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company				K.K			
Issued by Contractor	Name	Sign		Date				Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		5-1-2023							
Contractor reference	CA-Embmo										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS			
Location to be Used	From 521+415 521+760 521+140	To 521+440 521+900 521+300	Fill -6 -5.5 -6.5	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	1-1-2023	
2	Classification	m^3	5000	1-1-2023	
3	Proctor & O.m.c	m^3	5000	1-1-2023	
4	L.L & P.L & PI	m^3	5000	1-1-2023	
5	C.B.R	m^3	5000	5-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohammed	5/1/2023	A
QA/QC *	Abdallah SAMY	Abdallah	5/1/2023	A
GARB**	Hussien Fouad		5/1/2023	A
Comments by	Not satisfactory approved with Cos			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST	الهيئة القومية للأنفاق	الهيئة العامة للطرق والكباري والنقل البري (GARBLT)	القاهرة للطرق والإنشاءات	KK Engineering Consulting Office	Electric Express Train SYSTRA SHAKER

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date				Time			
	ENG/ Abdelrahman Adel	Abdel Rahman		5-1-2023							
Contractor Reference	CA-EM6-40										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.2%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.5%	
6	ASTM D 1557	Modified proctor	2.14	
7	ASTM D 1883	CBR	54.1%	
Comments by:			Comments by:	
			All test under Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdelrahman Adel	Abdelrahman	5/1/2023	A
Contractor QA/QC *	Hassan	5-1-2023	5/1/2023	A
GARB**	Hussien Fouad		5/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	1-1-2023	Code	ZONE	520+500	522+000
LOCATION	K.P (521+500)	CA-Emb-40			
NAME COMPANY	Al Kahera				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		23707.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1325.0	1541.0	1875.0	2280.0	2145.0	2390.0	2252.0			A-1-a
Cumulative Retained (g)	1325.0	2866.0	4741.0	7021.0	9166.0	11556.0	13808.0		PRO	2.14
Cumulative Retained %	5.6	12.1	20.0	29.6	38.7	48.7	58.2		WC	7.50
Cumulative Passing %	94.4	87.9	80.0	70.4	61.3	51.3	41.8		CBR	54.10

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	93.80	230.00	341.60					
Cumulative Retained %	18.76	46.00	68.32					
Cumulative Passing %	81.24	54.00	31.68					

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 %	94.4	87.9	80.0	70.4	61.3	51.3	41.8	33.9	22.5	13.2

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

Contractor		Consultant

القطار السريع
معمل النوبي المركزي
قطاع فوكا - مطروح

المكتب الاستشاري الهندسي أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PROCTOR TEST

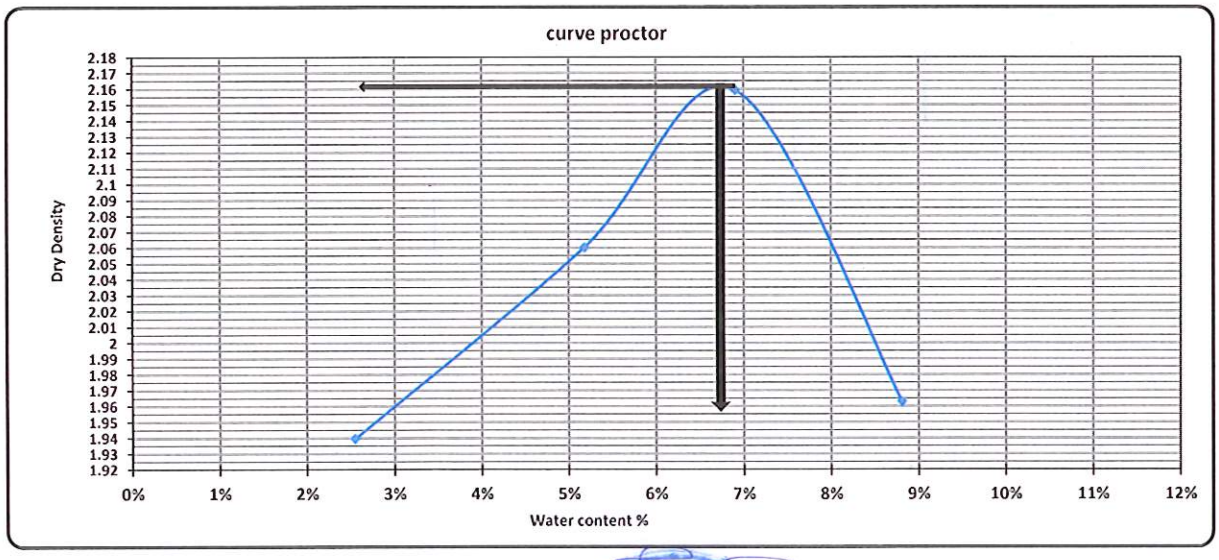
TESTING DATE:	1-1-2023	code	ZONE	520+500	522+000
LOCATION	K.P (521+500)	CA-EM6-40			
NAME COMPANY	Al Kahera				

Weight of empty mold :	6037.0
Mold Volume:	2176.0

MAX Dry Density	2.16
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10365.0	10752.0	11060.0	10685	
WT. WET SOIL	4328.0	4715.0	5023.0	4648.0	
Wt. Density	1.989	2.167	2.308	2.136	

Tare No.	10	7	16	15	17	90	11	26		
Tare wt.	43.7	42.9	33.1	31.4	59.6	62.4	46.6	54.9		
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	147.2	147.5	144.3	144.1	144.2	144.3	141.3	142.6		
Wt. Of water	2.8	2.5	5.7	5.9	5.8	5.7	8.7	7.4		
Wt. Of dry soil	103.5	104.6	111.2	112.7	84.6	81.9	94.7	87.7		
Water content %	2.7%	2.4%	5.1%	5.2%	6.9%	7.0%	9.2%	8.4%		
AV.Water content %	2.5%		5.2%		6.9%		8.8%			
Dry Density	1.940		2.060		2.159		1.963			



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	5-1-2023	Code			
Location :	K.P (521+500)	CA-Emb-46	FROM STA :	520+500	522+000
Company Name	Al-Kallera				

Test Results : -

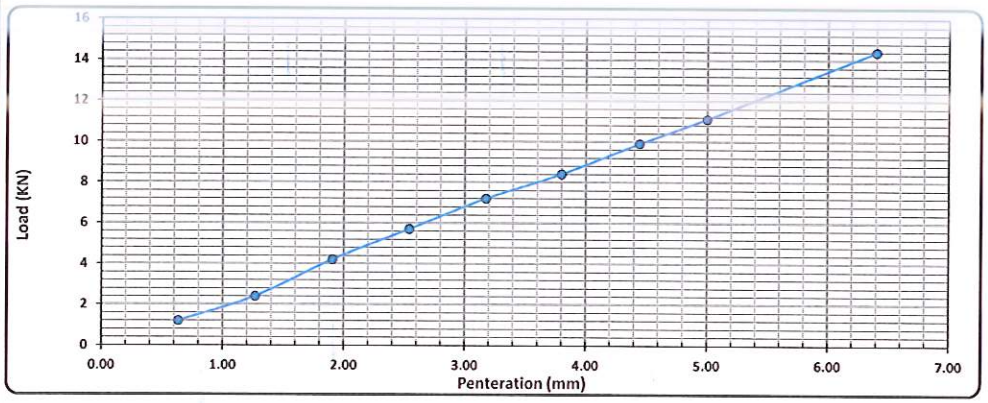
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2140
Mold WT. (gm)	4900
Mold WT. + Wet WT. (gm)	9830
Wet WT. (gm)	4930
Wet Density (g/cm^3)	2.304
Dry Density (g/cm^3)	2.148
Proctor Density (g/cm^3)	2.140
Compaction %	100

Mositure Ratio After Compacted Mold	
Tare No.	15
Tare WT. (gm)	31.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	142
Water WT. (gm)	8.0
Dry WT. (gm)	110.1
Moisture Content %	7.3

Swelling	
Mold No.	4
Date	5-1-2023
Intial Height (mm)	5.15
Final Height (mm)	5.15
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.1%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.04	0.08	0.14	0.19	0.24	0.28	0.33	0.37	0.48
Load (KN)	1.2	2.4	4.2	5.7	7.2	8.4	9.9	11.1	14.4



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	عند نسبة 98 %
2.50	5.70	13.4	42.7%	100	98	41.7%
5.00	11.10	20.0	55.4%			54.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	5-1-2023

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		5-1-2023				
Contractor reference	CA-Emb-41							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment	FILL MATERIAL RESULTS			
Location to be Used	From	To	Fill		
	521+300	521+320	-6.5		
	521+560	521+760	-5.5		
	520+900	521+000	-8.5		
	521+440	521+560	-5.5		
MAR Approval No				Date	
Supplier Name					
Test Requirement		Specification		Clause	
Reference Photos	Yes attached / No	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	1-1-2023	
2	Classification	m^3	5000	1-1-2023	
3	Proctor & O.m.c	m^3	5000	1-1-2023	
4	L.L & P.L & PI	m^3	5000	1-1-2023	
5	C.B.R	m^3	5000	5-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	5/1/2023	A
QA/QC *	Abdallah SAMY	Abdosha	5/1/2023	A
GARB**	Hussien Fouad		5/1/2023	A
Comments by	Final quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date				Time			
	ENG/ Abdelrahman Adel	Abdel Rahman		5-1-2023							
Contractor Reference	CA-EMB-41										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment Soil (A-1-a)			
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.6%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	57.5%	
Comments by:			Comments by:	
			All test under Responsibility third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	5/1/2023	A
Contractor QA/QC *	Hassan	5-1-2023	5/1/2023	
GARB**	Hussien Fouad		5/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	1-1-2023	Code	ZONE	520+500	522+000
LOCATION	K.P (521+500)	CA-Emb-41			
NAME COMPANY	Al Kahera				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		26916.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1456.0	1821.0	2452.0	2654.0	2852.0	2984.0	2301.0			A-1-a
Cumulative Retained (g)	1456.0	3277.0	5729.0	8383.0	11235.0	14219.0	16520.0		PRO	2.16
Cumulative Retained %	5.4	12.2	21.3	31.1	41.7	52.8	61.4		WC	6.80
Cumulative Passing %	94.6	87.8	78.7	68.9	58.3	47.2	38.6		CBR	57.50

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	132.20	257.50	350.00					
Cumulative Retained %	26.44	51.50	70.00					
Cumulative Passing %	73.56	48.50	30.00					

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 %	94.6	87.8	78.7	68.9	58.3	47.2	38.6	28.4	18.7	11.6

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

Contractor		Consultant
	القطار السريع معمل النوبي المركزي قطاع فوكا - مطروح	

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

PROCTOR TEST

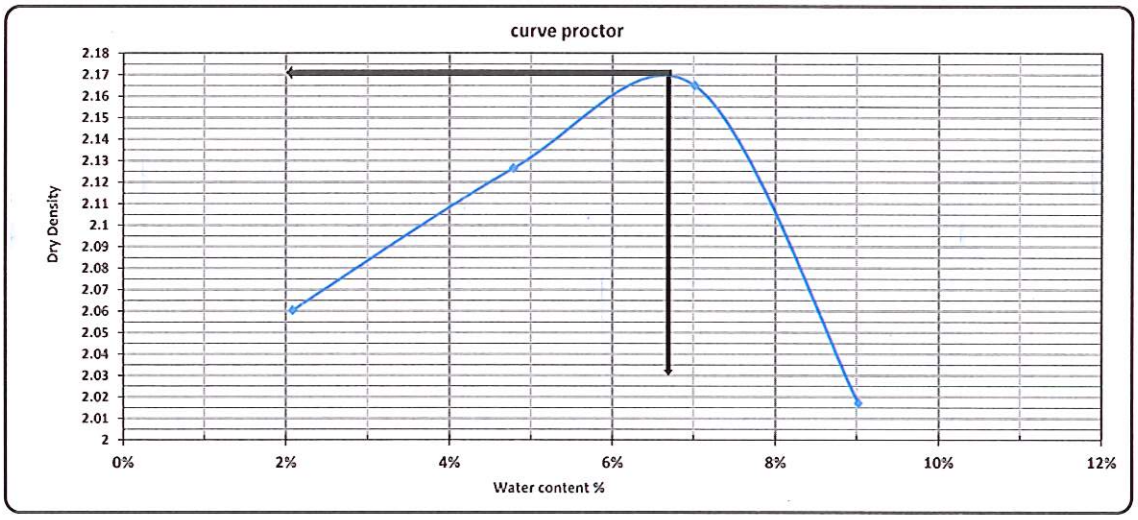
TESTING DATE:	1-1-2023	code			
LOCATION	K.P (521+000)	CA-Emb-41	ZONE	520+500	522+000
NAME COMPANY	Al Kahera				

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.17
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10752.0	11023.0	11215.0	10960	
WT. WET SOIL	4562.0	4833.0	5025.0	4770.0	
Wt. Density	2.103	2.228	2.317	2.199	

Tare No.	40	16	20	19	22	33	34	45		
Tare wt.	46.4	33.9	60.9	44.4	54.1	73.6	70.2	41.5		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0		
Wt. Of dry soil & tare	148.0	147.5	145.0	146.3	145.0	144.0	142.0	143.0		
Wt. Of water	2.0	2.5	5.0	3.7	5.0	6.0	8.0	7.0		
Wt. Of dry soil	101.6	113.6	84.1	101.9	90.9	70.4	71.8	101.5		
Water content %	2.0%	2.2%	5.9%	3.6%	5.5%	8.5%	11.1%	6.9%		
AV.Water content %	2.1%		4.8%		7.0%		9.0%			
Dry Density	2.060		2.126		2.165		2.017			



Lab. Engineer

Name :

Sign :

Consultant Engineer

Name : Hassan

5/1/2023

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	5-1-2023	Code			
Location :	K.P (521+500)	CA-Emb-41	FROM STA :	520+500	522+000
Company Name	Al Kahera				

Test Results : -

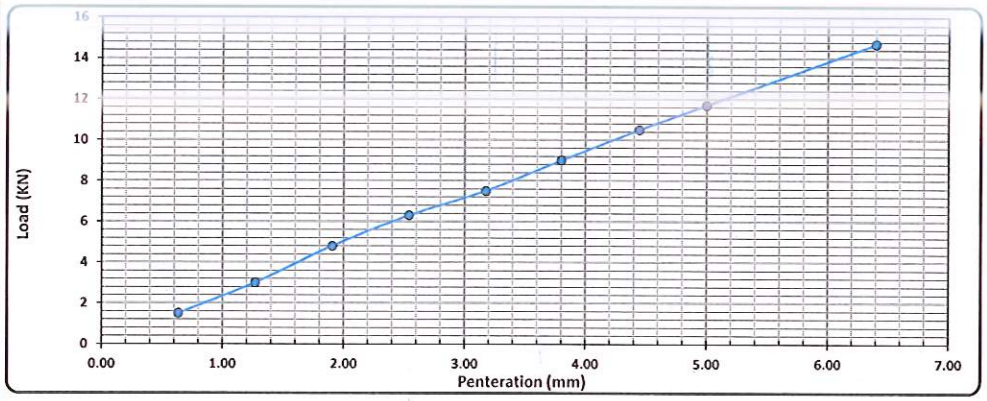
Compaction % for Mold	
Mold No.	1
Mold Vol. (cm^3)	2158
Mold WT. (gm)	4890
Mold WT. + Wet WT. (gm)	9850
Wet WT. (gm)	4960
Wet Density (g/cm^3)	2.298
Dry Density (g/cm^3)	2.152
Proctor Density (g/cm^3)	2.160
Compaction %	100

Mositure Ratio After Compacted Mold	
Tare No.	16
Tare WT. (gm)	33.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	142.6
Water WT. (gm)	7.4
Dry WT. (gm)	108.7
Moisture Content %	6.8

Swelling	
Mold No.	1
Date	5-1-2023
Intial Height (mm)	6.00
Final Height (mm)	6.10
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.1%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.05	0.10	0.16	0.21	0.25	0.30	0.35	0.39	0.49
Load (KN)	1.5	3.0	4.8	6.3	7.5	9.0	10.5	11.7	14.7



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	عند نسبة 98 %
2.50	6.30	13.4	47.2%	100	98	46.4%
5.00	11.70	20.0	58.4%			57.5%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassan
Sign :	Sign :	Sign : 5-1-2023

القطار السريع
معمل النوبي المركزي
قطاع فوكا - مطروح

المكتب الإستشاري الهندسي
أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K					
Issued by Contractor	Name	Sign		Date		Time					
	Eng/ Abdelrahman Adel	Abdelrahman Adel		8-1-2023							
Contractor reference	CA-Emb-42										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From 521+900 520+800	To 522+000 520+900	Fill -6 -9	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	4-1-2023	
2	Classification	m^3	5000	4-1-2023	
3	Proctor & O.m.c	m^3	5000	4-1-2023	
4	L.L & P.L & PI	m^3	5000	4-1-2023	
5	C.B.R	m^3	5000	8-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (El Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	8/1/2023	A
QA/QC *	Abdallah SAMY	Abdallah	8/1/2023	A
GARB**	Hussien Fouad		8/1/2023	A
Comments by	Final Quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name ENG/ Abdelrahman Adel	Sign Abdel Rahman	Date 8-1-2023	Time
Contractor Reference	CA-Emb-42			
Received by ER		MAR	C1 C2 C3 DD MM YY HH MM	

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (521+000) No (2)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.1%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	57.4%	
Comments by:		**Comments by:**		
		All test under Responsibility third party.		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Ali	Abdel Rahman	8/1/2023	A
Contractor QA/QC *	Hassan	8-1-2023	8/1/2023	A
GARB**	Hussien Fouad		8/1/2023	A
Employers Representative	Moha Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

Opreating Lab	AL Nuby Central Lab

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	4-1-2023	Code	ZONE	520+500	522+000
LOCATION	K.P (521+000)	CA-Emb-42			
NAME COMPANY	Al Kahera				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		27066.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	1542.0	1895.0	2550.0	3265.0	3152.0	2895.0	2956.0			A-1-a
Cumulative Retained (g)	1542.0	3437.0	5987.0	9252.0	12404.0	15299.0	18255.0		PRO	2.17
Cumulative Retained %	5.7	12.7	22.1	34.2	45.8	56.5	67.4		WC	6.80
Cumulative Passing %	94.3	87.3	77.9	65.8	54.2	43.5	32.6		CBR	57.40

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	85.60	218.00	330.00					
Cumulative Retained %	17.12	43.60	66.00					
Cumulative Passing %	82.88	56.40	34.00					

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 %	94.3	87.3	77.9	65.8	54.2	43.5	32.6	27.0	18.4	11.1

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

Contractor

Consultant

Hassa 8/1/2023

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

PROCTOR TEST

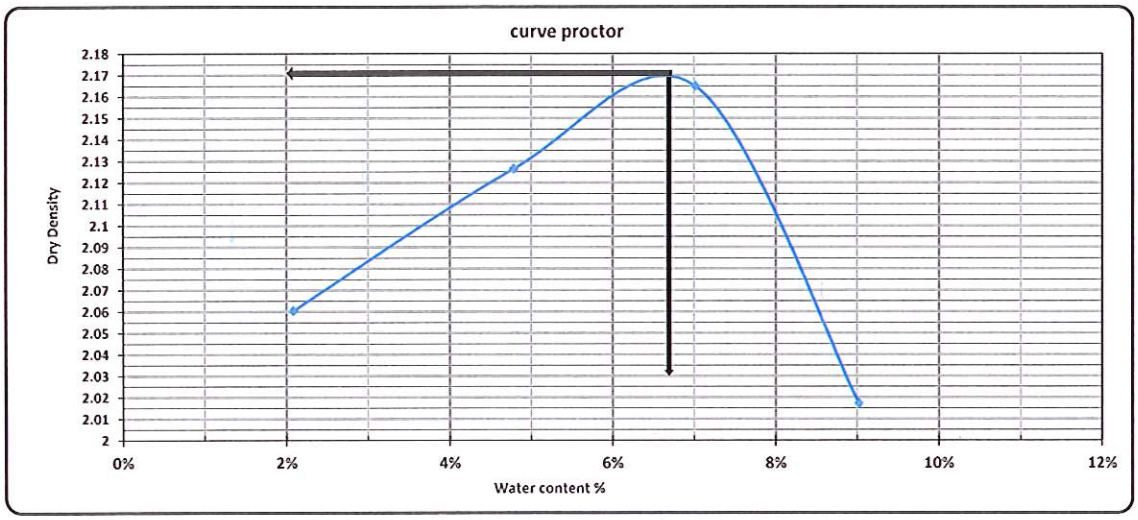
TESTING DATE:	4-1-2023	code	ZONE	520+500	522+000
LOCATION	K.P (521+000)	CA-EMB-42			
NAME COMPANY	Al Kahera				

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.17
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10752.0	11023.0	11215.0	10960	
WT. WET SOIL	4562.0	4833.0	5025.0	4770.0	
Wt. Density	2.103	2.228	2.317	2.199	

Tare No.	40	16	20	19	22	33	34	45		
Tare wt.	46.4	33.9	60.9	44.4	54.1	73.6	70.2	41.5		
Wt. Of wet soil & tare	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0		
Wt. Of dry soil & tare	148.0	147.5	145.0	146.3	145.0	144.0	142.0	143.0		
Wt. Of water	2.0	2.5	5.0	3.7	5.0	6.0	8.0	7.0		
Wt. Of dry soil	101.6	113.6	84.1	101.9	90.9	70.4	71.8	101.5		
Water content %	2.0%	2.2%	5.9%	3.6%	5.5%	8.5%	11.1%	6.9%		
AV.Water content %	2.1%		4.8%		7.0%		9.0%			
Dry Density	2.060		2.126		2.165		2.017			



Lab. Engineer

Name :

Sign :

Consultant Engineer

Name : Hassa

Sign 8/1/2023

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	8-1-2023	Code			
Location :	K.P (521+000)	CA-EM6-42	FROM STA :	520+500	522+000
Company Name	Al Kallera				

Test Results : -

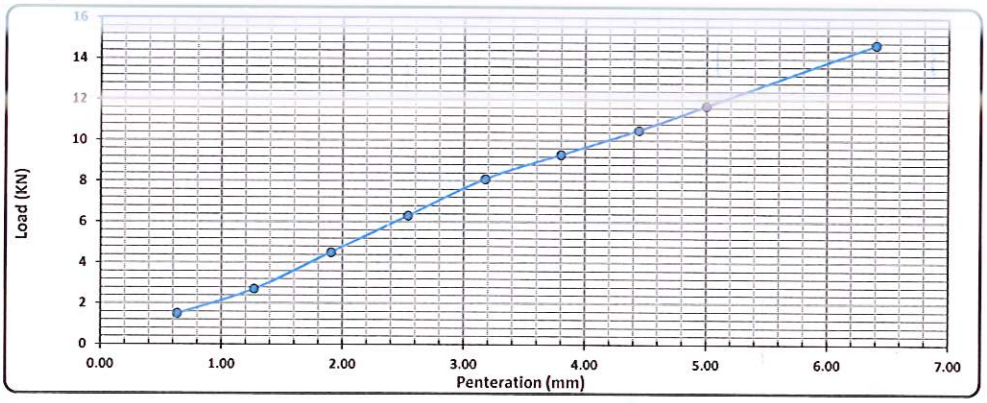
Compaction % for Mold	
Mold No.	5
Mold Vol. (cm^3)	2122
Mold WT. (gm)	4803
Mold WT. + Wet WT. (gm)	9701
Wet WT. (gm)	4898
Wet Density (g/cm^3)	2.308
Dry Density (g/cm^3)	2.163
Proctor Density (g/cm^3)	2.170
Compaction %	100

Mositure Ratio After Compacted Mold	
Tare No.	8
Tare WT. (gm)	46.8
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.5
Water WT. (gm)	6.5
Dry WT. (gm)	96.7
Moisture Content %	6.7

Swelling	
Mold No.	5
Date	8-1-2023
Intial Height (mm)	4.00
Final Height (mm)	4.10
Difference	0
Sample Height (mm)	120.00
Swelling Ratio %	0.1%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.05	0.09	0.15	0.21	0.27	0.31	0.35	0.39	0.49
Load (KN)	1.5	2.7	4.5	6.3	8.1	9.3	10.5	11.7	14.7



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(lb)	(%)	(%)	(%)	عند نسبة 98 %
2.50	6.30	13.4	47.2%	100	98	46.4%
5.00	11.70	20.0	58.4%			57.4%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hesra
Sign :	Sign :	Sign :

الانتظار السريع
معمل النوبي المركزي
قطاع غوكا - مطروح

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		8/1/2023				
Contractor reference	CA-Emb-43							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+000 / 521+080 / -7.5 521+320 / 521+440 / -5.5 520+700 / 520+790 / -8.5		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	4-1-2023	
2	Classification	m^3	5000	4-1-2023	
3	Proctor & O.m.c	m^3	5000	4-1-2023	
4	L.L & P.L & PI	m^3	5000	4-1-2023	
5	C.B.R	m^3	5000	8-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (Gomaa bader laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	8-1-2023	A
QA/QC *	Abdallah SAMY	Abdallah	8-1-2023	A
GARB**	Hussien Fouad		8-1-2023	A
Comments by	fill quantity approved with CBR		8-1-2023	A
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date				Time			
	ENG/ Abdelrahman Adel	Abdel Rahman		8/1/2023							
Contractor Reference	CA-EMb-43										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.9%	
4	ASTM D 4318	Atterberg limit	19.6%	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	61%	
Comments by:			Comments by:	
			All test under Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	8-1-2023	A
Contractor QA/QC *	Hassan	8-1-2023	8-1-2023	A
GARB**	Hussien Fouad		8-1-2023	A
Employers Representative	Mohd Ahd		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PARTICLE SIZE DISTRIBUTION OF SOIL

Testing Date :	4/1/2023	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-43	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		19322.00		gm		table classify
sieve size	2	1 1/2	1	3/4	1/2	3/8	# 4	PASS		soil classify
(g)Mass retained	226.0	3870.0	4809.0	1510.0	1118.0	706.0	1275.0			A-1-a
g)Cumulative Retained	226.0	4096.0	8905.0	10415.0	11533.0	12239.0	13514.0		PRO	2.15
Cumulative Retained %	1.2	21.2	46.1	53.9	59.7	63.3	69.9		WC	6.8%
umulative Passing %	98.8	78.8	53.9	46.1	40.3	36.7	30.1		CBR	61%

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
(g)Cumulative Retained	87.38	286.16	302.36					
Cumulative Retained %	17.48	57.23	60.47					
Cumulative Passing %	82.52	42.77	39.53					

C-General gradient										
(in)sieve size	5	4.0	3	1 1/2	3/4	3/8	# 4	# 10	# 40	# 200
(mm)sieve size	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	98.8	78.8	53.9	46.1	40.3	36.7	30.1	24.8	12.9	11.9

ATTERBERG LIMTS	(. L.L)LIQUID LIMIT	(.P.L)PLASTIC LIMIT	(.P.I)PLASTIC INDEX
	24.8%	19.6%	5.2%

Contractor	Operated by	Consultant
Hassan مشروع القطار السريع القطاع السابع معمل المركزى (رقم 6)	Gomaa Bader Lab	Abdo Shal المكتب الاستشارى الهندسى أ.د. خالد قنديل

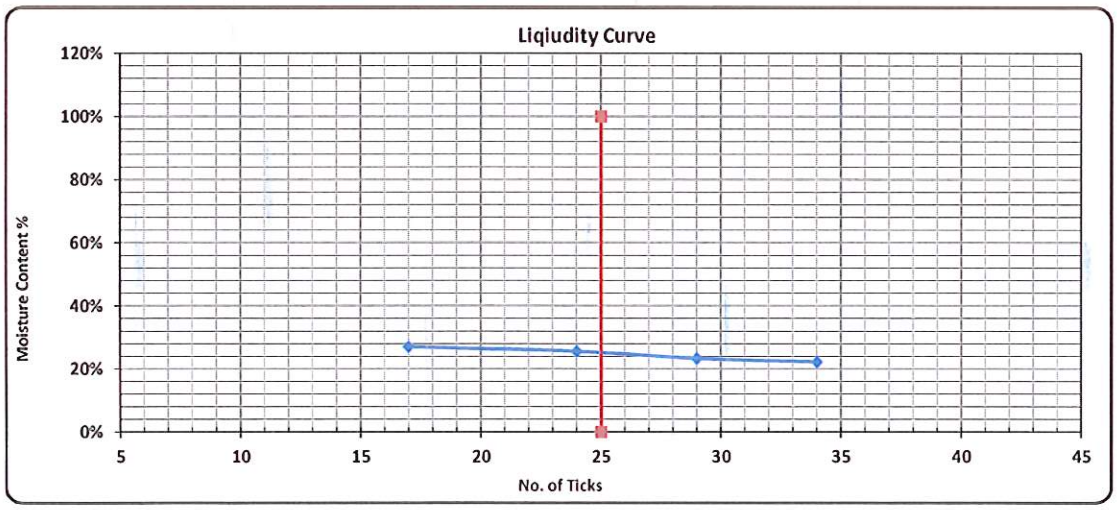
ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR	GARBLT — الهيئة القومية للأنفاق

Plasticity and Liquidity Test -Atterberg Limits

Testing Date :	4/1/2023	Code	ZONE	520+500		522+000
Location :	KP:521+000	CA-Emb-43	Material		fill material layar	
Name Company	cairo company		quaintity		5000 m3	

Testing Results :-

Test	Liqiud Limit				Plastic Limit	
No. of Ticks	34	29	24	17	-	-
Tare No.	46	23	5	2	G	H
Tare WT. (gm)	27.13	25.17	27.41	27.30	13.35	11.16
Tare WT. + Wet WT. (gm)	52.03	43.52	45.00	46.36	14.03	12.00
Tare WT. + Dry WT. (gm)	47.50	40.05	41.42	42.31	13.92	11.86
Water WT. (gm)	4.53	3.47	3.58	4.05	0.11	0.14
Dry WT. (gm)	20.37	14.88	14.01	15.01	0.57	0.70
Moisture Content %	22.2%	23.3%	25.5%	27.0%	19.3%	20.0%
Average %					19.6%	



L.L	P.L	P.I
24.8%	19.6%	5.2%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة العامة لطرق و الكباري و النقل البري (GARBLT) — الهيئة القومية للأنفاق

PROCTOR TEST

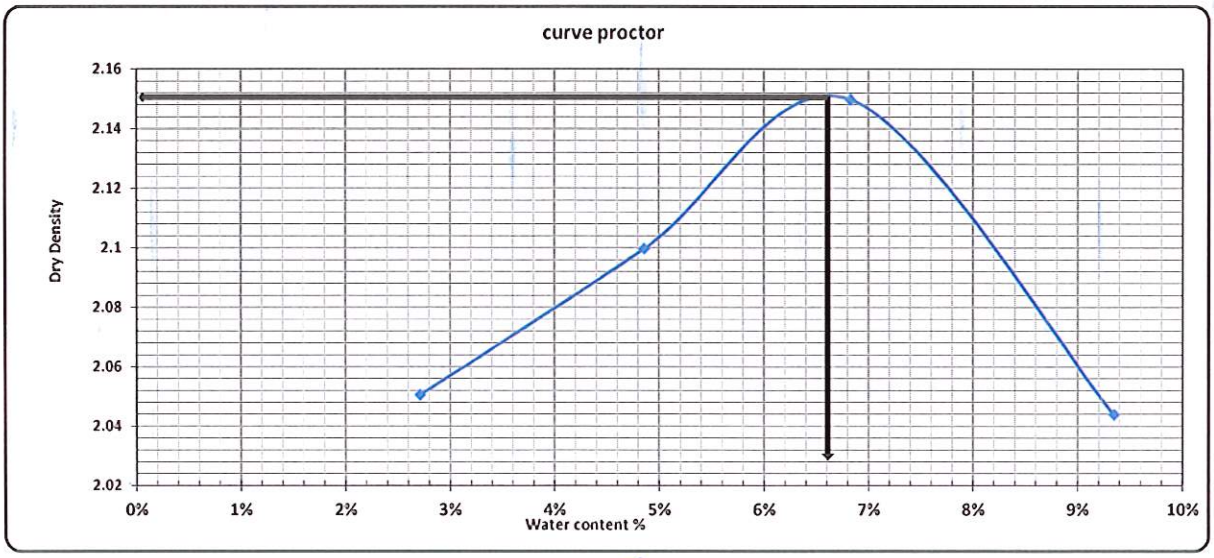
Testing Date :	5/1/2023	Code	ZONE	520+500	522+000
Location :	KP 521+000	CA-Emb-43	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

Weight of empty mold :	6430.0
Mold Volume:	2104.9

MAX Dry Density	2.150
Water content %	6.80

trial no :	1	2	3	4		
Wt. Of Mold+ wet soil	10863.0	11064.0	11264.0	11134		
WT. WET SOIL	4433.0	4634.0	4834.0	4704.0		
Wt. Density	2.106	2.202	2.297	2.235		

Tare No.	11	11	46	46	7	7	10	10				
Tare wt.	24.61	24.61	26.64	26.64	27.46	27.46	26.63	26.63				
Wt. Of wet soil & tare	146.3	146.3	134.6	134.6	157.6	157.6	136.6	136.6				
Wt. Of dry soil & tare	143.13	143.13	129.64	129.64	149.31	149.31	127.23	127.23				
Wt. Of water	3.2	3.2	5.0	5.0	8.3	8.3	9.4	9.4				
Wt. Of dry soil	118.5	118.5	103.0	103.0	121.9	121.9	100.6	100.6				
Water content %	2.7%	2.7%	4.9%	4.9%	6.8%	6.8%	9.3%	9.3%				
AV.Water content %	2.7%		4.9%		6.8%		9.3%					
Dry Density	2.051		2.100		2.150		2.044					



Contractor

Consultant

Electric Express Train - HSR

California Bearing Ratio TEST

Testing Date :	8/1/2023	Code	ZONE	520+500	522+000
Location :	KP:521+000	CA-Emb-43	Material	fill material layar	
Name Company	cairo company		quaintity	5000 m3	

-: Test Results

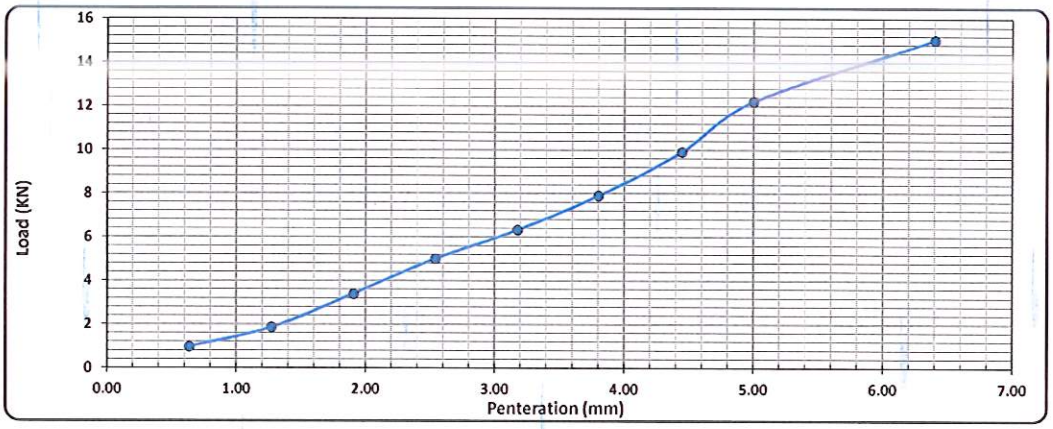
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2177.5
Mold WT. (gm)	16444
Mold WT. + Wet WT. (gm)	21356
Wet WT. (gm)	4912
Wet Density (g/cm^3)	2.256
Dry Density (g/cm^3)	2.125
Proctor Density (g/cm^3)	2.150
Compaction %	99

Mositure Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	24.23
Tare WT. +Wet WT. (gm)	136.64
Tare WT. +Dry WT. (gm)	130.13
Water WT. (gm)	6.5
Dry WT. (gm)	105.9
Moisture Content %	6.1

Swelling	
Mold No.	
Date	8/4/2023
Intial Height (mm)	4.0
Final Height (mm)	4.0
Difference	0.0
Sample Height (mm)	11.9
Swelling Ratio %	0.0%

Loading Reading :

(mm)Penteration	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
(mm)Load Reading	98	189	346	510	645	806	1011	1246	1534
(KN)Load	1.0	1.9	3.4	5.0	6.3	7.9	9.9	12.2	15.0



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 100
2.50	5.00	13.4	37.4%	99	100	37.9%
5.00	12.21	20.0	61.0%			61.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

مشروع القطار السريع
القطاع السابع
معمل المركزى
(رقم 6)

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K					
Issued by Contractor	Name	Sign		Date		Time					
	Eng/ Abdelrahman Adel	Abdelrahman Adel		13/1/2023							
Contractor reference	CA-Emb-44										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower and middle embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 520+790 / 520+800 / -8.5 520+620 / 520+700 / -8.5 521+440 / 521+560 / -5 521+140 / 521+155 / -6		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	9-1-2023	
2	Classification	m^3	5000	4-1-2023	
3	Proctor & O.m.c	m^3	5000	4-1-2023	
4	L.L & P.L & PI	m^3	5000	4-1-2023	
5	C.B.R	m^3	5000	13-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (EL Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed Mohamed	13-1-2023	A
QA/QC *	Hassan	13-1-2023	13-1-2023	A
GARB**	Hussien Fouad		13-1-2023	A
Comments by	final quantity approval with Qs		13-1-2023	A
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	13/1/2023	
Contractor Reference	CA-Emb-44			
Received by ER			MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower and middle embankment Soil (A-1-a)			
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	9.62%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.5%	
6	ASTM D 1557	Modified proctor	2.15	
7	ASTM D 1883	CBR	55.8%	
Comments by:			**Comments by:**	
			All tes Tunder Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	13-1-2023	A
Contractor QA/QC *	Hassan	13-1-2023	13-1-2023	A
GARB**	Hussien Fouad		13-1-2023	A
Employers Representative	Mohamed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPSU)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	09/01/2023	code	ZONE	520+500	522+000
LOCATION	K.P 520+000	CA-Emb-49			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		22335.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	3261.0	3362.0	3261.0	2685.0	2212.0	1822.0			A-1-a
Cumulative Retained (g)	0.0	3261.0	6623.0	9884.0	12569.0	14781.0	16603.0		PRO	2.15
Cumulative Retained %	0.0	14.6	29.7	44.3	56.3	66.2	74.3		WC	6.50
Cumulative Passing %	100.0	85.4	70.3	55.7	43.7	33.8	25.7		CBR	55.80

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	89.10	206.20	312.50					
Cumulative Retained %	17.82	41.24	62.50					
Cumulative Passing %	82.18	58.76	37.50					

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 %	100.00	85.40	70.35	55.75	43.73	33.82	25.66	21.09	15.08	9.62

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. فادي فتيل	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	(CAPBLT) — الهيئة القومية للأنفاق

PROCTOR TEST

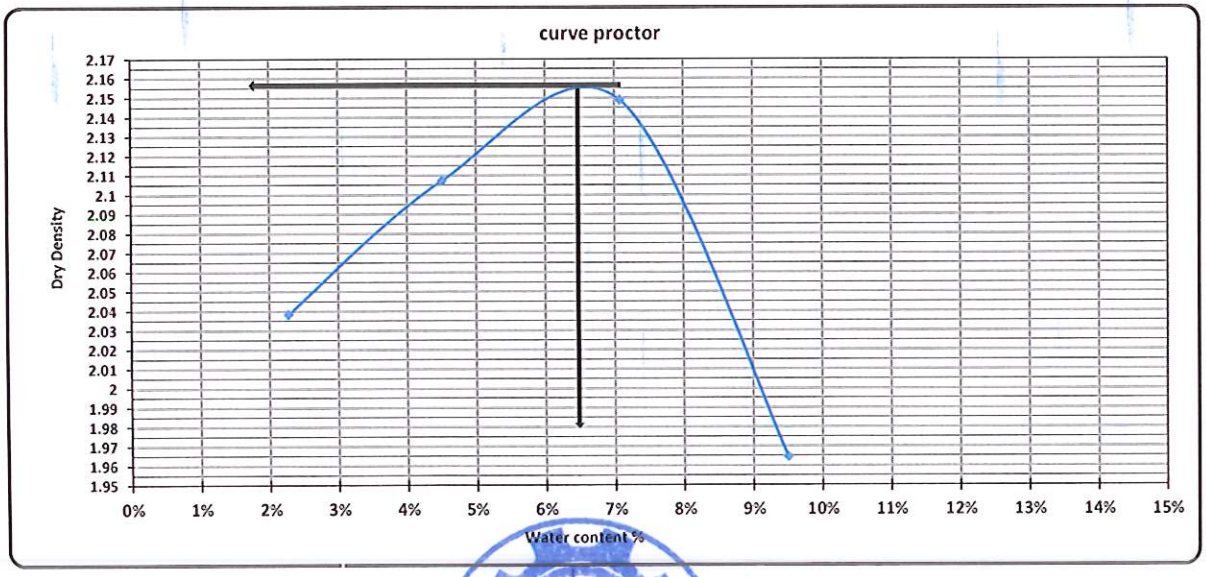
TESTING DATE:	2023/01/10	code	ZONE	520+500	522+000
LOCATION	K.P 520+500	CA-Emb-44			
NAME COMPANY	cairo company				

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.15
Water content %	6.5

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10712.0	10967.0	11181.0	10856	
WT. WET SOIL	4522.0	4777.0	4991.0	4666.0	
Wt. Density	2.085	2.202	2.301	2.151	

Tare No.	7	18	35	11	22	16	20	10		
Tare wt.	42.8	77.8	73.9	46.1	54.1	34	60.9	43.7		
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	147.6	148.4	146.8	145.4	143.6	142.4	142.0	141.1		
Wt. Of water	2.4	1.6	3.2	4.6	6.4	7.6	8.0	8.9		
Wt. Of dry soil	104.8	70.6	72.9	99.3	89.5	108.4	81.1	97.4		
Water content %	2.3%	2.3%	4.4%	4.6%	7.2%	7.0%	9.9%	9.1%		
AV.Water content %	2.3%		4.5%		7.1%		9.5%			
Dry Density	2.038		2.107		2.149		1.965			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

KK ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA D SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — NATIONAL TUNNEL AUTHORITY — GARBLT

California Bearing Ratio TEST

Testing Date :	13/1/2023	Code	FROM STA :	520+500	522+000
Location :	K.P 520+500	CA-Emb-44			
Company Name	cairo roads				

- : Test Results

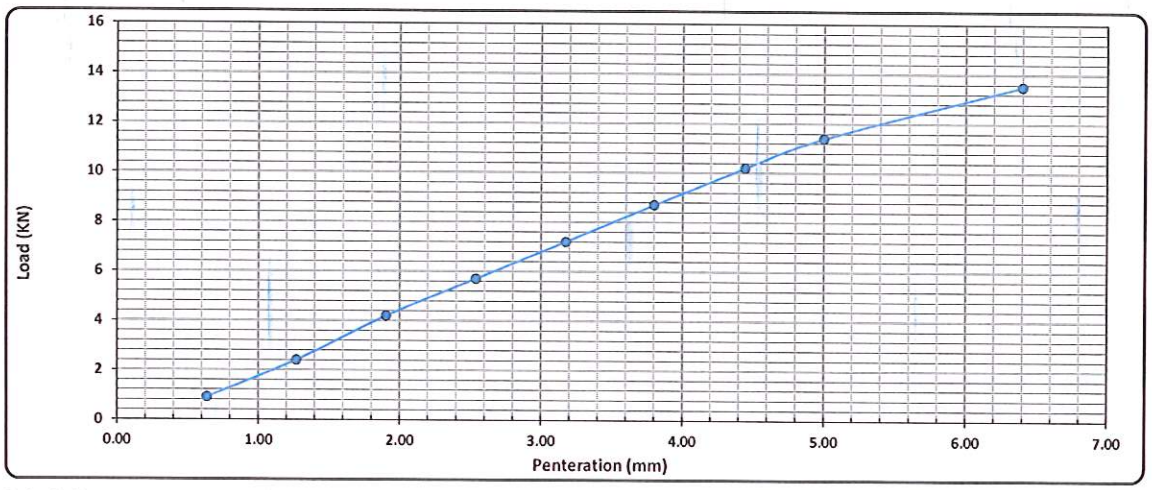
Compaction % for Mold	
Mold No.	6
Mold Vol. (cm^3)	2122
Mold WT. (gm)	6075
Mold WT. + Wet WT. (gm)	10912
Wet WT. (gm)	4837
Wet Density (g/cm^3)	2.279
Dry Density (g/cm^3)	2.146
Proctor Density (g/cm^3)	2.150
Compaction %	99.8

Mositure Ratio After Compacted Mold	
Tare No.	22
Tare WT. (gm)	54.1
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	144.4
Water WT. (gm)	5.6
Dry WT. (gm)	90.3
Moisture Content %	6.2

Swelling	
Mold No.	6
Date	13/1/2023
Intial Height (mm)	2.60
Final Height (mm)	2.60
Difference	0
Sample Height (mm)	119.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.08	0.14	0.19	0.24	0.29	0.34	0.38	0.45
Load (KN)	0.9	2.4	4.2	5.7	7.2	8.7	10.2	11.4	13.5



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.70	13.4	42.7%	100	98	41.9%
5.00	11.40	20.0	56.9%			55.9%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K					
Issued by Contractor	Name	Sign		Date		Time					
	Eng/ Abdelrahman Adel	Abdelrahman Adel		13-1-2023							
Contractor reference	CA- Emb-45										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+155 / 521+320 / -6 521+900 / 522+000 / -5.5 520+900 / 520+930 / -8		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	9-1-2023	
2	Classification	m^3	5000	9-1-2023	
3	Proctor & O.m.c	m^3	5000	9-1-2023	
4	L.L & P.L & PI	m^3	5000	9-1-2023	
5	C.B.R	m^3	5000	13-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (EL Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	eng / Ahmed Mohammed	Ahmed Mohamed	13/1/2023	A
QA/QC *	Hassan	13/1/2023	13/1/2023	A
GARB**	Hussien Fouad		13/1/2023	A
Comments by	final quantity approved with Qs			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company
Electric express train	Cairo for Roads and construction Company			k.k
Issued by Contractor	Name	Sign	Date	Time
	ENG/ Abdelrahman Adel	Abdel Rahman	13-1-2023	
Contractor Reference	CA-Emb-45			
Received by ER			MAR	

C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower embankment	Soil (A-1-a)		
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.23%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7%	
6	ASTM D 1557	Modified proctor	2.14	
7	ASTM D 1883	CBR	56.2%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman 13-1-2023	13/1/2023	A
Contractor QA/QC *	Hassan		13/1/2023	A
GARB**	Hussien Fouad		13/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA / SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CARSLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	09/01/2023	code			
LOCATION	K.P 520+500	CA-Emb-45	ZONE	520+500	522+000
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		25991.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	3751.0	3576.0	3361.0	2957.0	2616.0	2018.0			A-1-a
Cumulative Retained (g)	0.0	3751.0	7327.0	10688.0	13645.0	16261.0	18279.0		PRO	2.14
Cumulative Retained %	0.0	14.4	28.2	41.1	52.5	62.6	70.3		WC	7.00
Cumulative Passing %	100.0	85.6	71.8	58.9	47.5	37.4	29.7		CBR	56.20

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	76.80	169.60	277.00					
Cumulative Retained %	15.36	33.92	55.40					
Cumulative Passing %	84.64	66.08	44.60					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.00	85.57	71.81	58.88	47.50	37.44	29.67	25.11	19.61	13.23

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل	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	CARBLT — الهيئة القومية للأنفاق

PROCTOR TEST

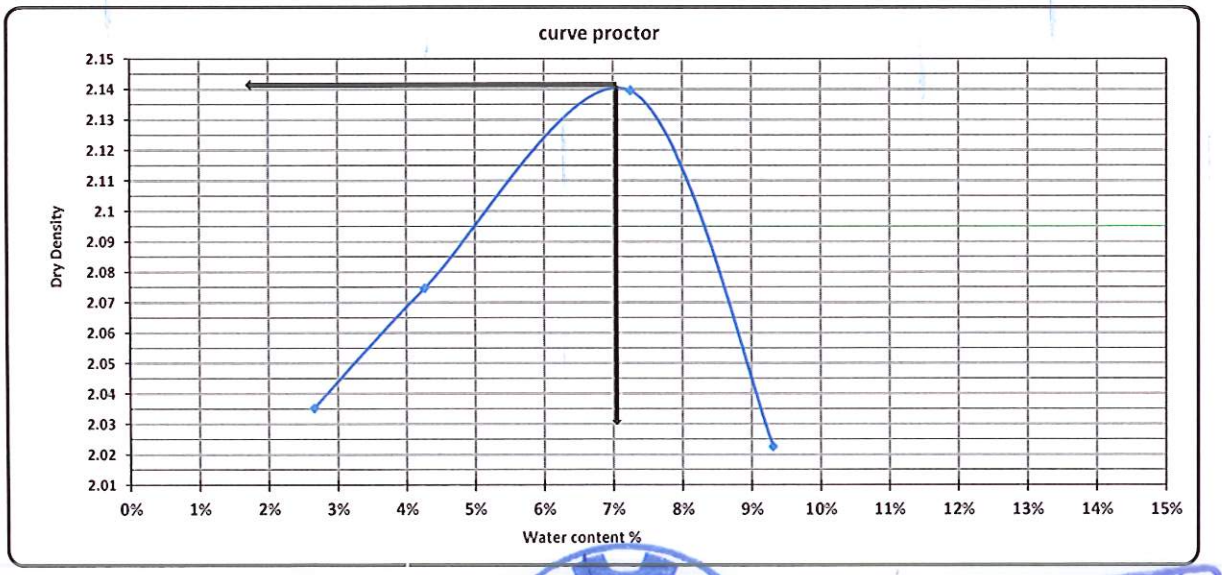
TESTING DATE:	2023/01/10	code	ZONE	520+500	522+000
LOCATION	K.P 520+500	CA-Emb-45			
NAME COMPANY	cairo company				

Weight of empty mold :	6070.0
Mold Volume:	2113.0

MAX Dry Density	2.14
Water content %	7

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10485.0	10641.0	10919.0	10742	
WT. WET SOIL	4415.0	4571.0	4849.0	4672.0	
Wt. Density	2.089	2.163	2.295	2.211	

Tare No.	25	10	7	8	21	22	16	40		
Tare wt.	75.8	43.7	42.8	46.8	55.2	54.1	34	46.4		
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	147.9	147.5	145.9	145.5	143.5	143.6	140.2	141.1		
Wt. Of water	2.1	2.5	4.1	4.5	6.5	6.4	9.8	8.9		
Wt. Of dry soil	72.1	103.8	103.1	98.7	88.3	89.5	106.2	94.7		
Water content %	2.9%	2.4%	4.0%	4.6%	7.4%	7.2%	9.2%	9.4%		
AV.Water content %	2.7%		4.3%		7.3%		9.3%			
Dry Density	2.035		2.075		2.140		2.023			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق — (ARBIT)

California Bearing Ratio TEST

Testing Date :	13/1/2023	Code	FROM STA :	520+500	522+000
Location :	K.P 520+500	CA-Emb-45			
Company Name	cairo company				

- : Test Results

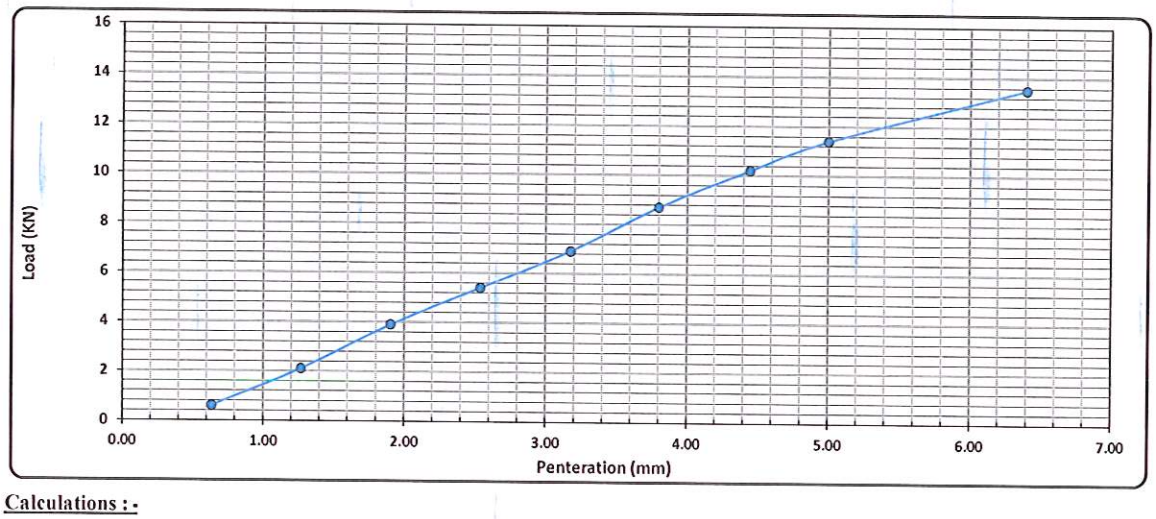
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2158
Mold WT. (gm)	4890
Mold WT. + Wet WT. (gm)	9789
Wet WT. (gm)	4899
Wet Density (g/cm^3)	2.270
Dry Density (g/cm^3)	2.125
Proctor Density (g/cm^3)	2.140
Compaction %	99.3

Mositure Ratio After Compacted Mold	
Tare No.	10
Tare WT. (gm)	43.7
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.2
Water WT. (gm)	6.8
Dry WT. (gm)	99.5
Moisture Content %	6.8

Swelling	
Mold No.	4
Date	13/01/2023
Intial Height (mm)	2.60
Final Height (mm)	2.60
Difference	0
Sample Height (mm)	119.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.02	0.07	0.13	0.18	0.23	0.29	0.34	0.38	0.45
Load (KN)	0.6	2.1	3.9	5.4	6.9	8.7	10.2	11.4	13.5



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR عند نسبة 98 %
2.50	5.40	13.4	40.4%	99	98	39.9%
5.00	11.40	20.0	56.9%			56.2%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Abdelshe
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K			
Issued by Contractor	Name	Sign		Date		Time			
	Eng/ Abdelrahman Adel	Abdelrahman Adel		15-1-2023					
Contractor reference	CA-Emb-46								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower and middle embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 520+930 / 521+000 / -8 521+560 / 521+700 / -5 521+700 / 521+745 / -5		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	11-1-2023	
2	Classification	m^3	5000	11-1-2023	
3	Proctor & O.m.c	m^3	5000	11-1-2023	
4	L.L & P.L & PI	m^3	5000	11-1-2023	
5	C.B.R	m^3	5000	15-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (EL Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed Mohammed	Ahmed Mohamed	15/1/2023	A
QA/QC *	Abdallah SAHY	Abdallah	15/1/2023	A
GARB**	Hussien Fouad		15/1/2023	A
Comments by	Bill quantity approved with QS			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company						
Electric express train	Cairo for Roads and construction Company			k.k						
Issued by Contractor	Name	Sign		Date			Time			
	ENG/ Abdelrahman Adel	Abdel Rahman		15-1-2023						
Contractor Reference	CA-Emb-ub									
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower and middle embankment Soil (A-1-a)			
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	10.4%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	55.3%	
Comments by:			**Comments by:**	
			All test under Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	15/1/2023	A
Contractor QA/QC *	Hassan		15/1/2023	A
GARB**	Hussien Fouad		15/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPSLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	10-1-2023	code	ZONE	520+500	522+000
LOCATION	K.P 520+440	CA-Em6-46			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		27939.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	3968.0	3859.0	3859.0	3565.0	2972.0	2521.0			A-1-a
Cumulative Retained (g)	0.0	3968.0	7827.0	11686.0	15251.0	18223.0	20744.0		PRO	2.16
Cumulative Retained %	0.0	14.2	28.0	41.8	54.6	65.2	74.2		WC	7.00
Cumulative Passing %	100.0	85.8	72.0	58.2	45.4	34.8	25.8		CBR	55.30

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	95.50	203.60	298.00					
Cumulative Retained %	19.10	40.72	59.60					
Cumulative Passing %	80.90	59.28	40.40					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.00	85.80	71.99	58.17	45.41	34.78	25.75	20.83	15.27	10.40

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	CARBLT — الهيئة القومية للأنفاق

PROCTOR TEST

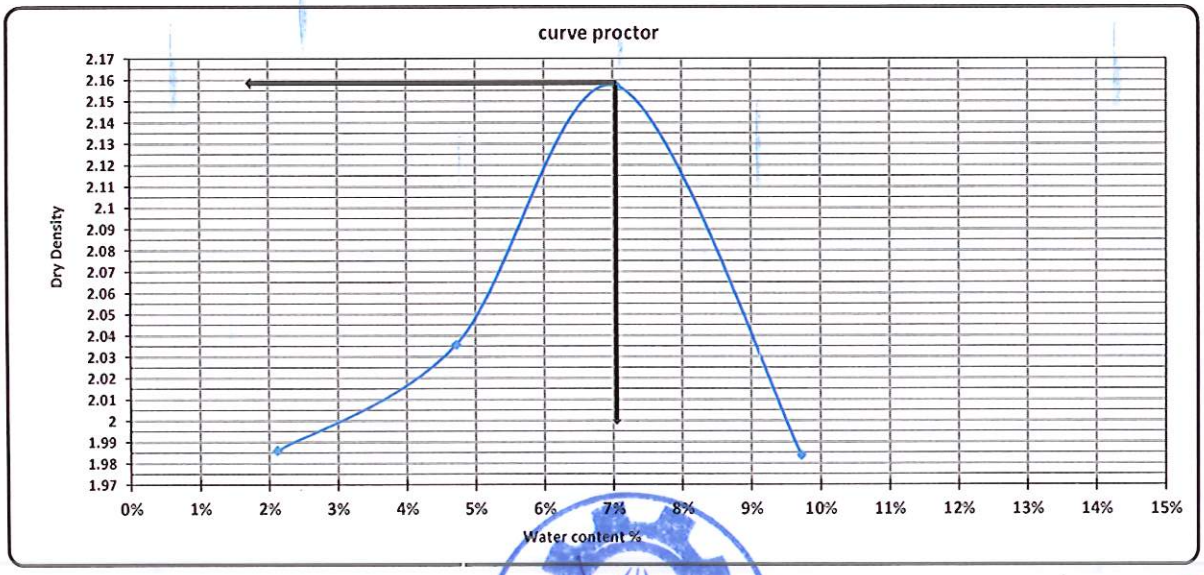
TESTING DATE:	2023/01/10	code	ZONE	520+500	522+000
LOCATION	K.P 520+500	CA-Emb-46			
NAME COMPANY	cairo company				

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.16
Water content %	7

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10589.0	10814.0	11199.0	10911	
WT. WET SOIL	4399.0	4624.0	5009.0	4721.0	
Wt. Density	2.028	2.132	2.309	2.177	

Tare No.	8	15	26	18	10	35	32	17		
Tare wt.	46.8	31.9	55	77.7	43.7	73.9	74.4	59.5		
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	147.9	147.5	145.9	146.6	143.1	144.9	143.2	142.1		
Wt. Of water	2.1	2.5	4.1	3.4	6.9	5.1	6.8	7.9		
Wt. Of dry soil	101.1	115.6	90.9	68.9	99.4	71.0	68.8	82.6		
Water content %	2.1%	2.2%	4.5%	4.9%	6.9%	7.2%	9.9%	9.6%		
AV.Water content %	2.1%		4.7%		7.1%		9.7%			
Dry Density	1.986		2.036		2.157		1.984			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec 7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	CARBUT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	14/1/2023	Code	FROM STA :	520+500	522+000
Location :	K.P 520+440	CA-Emb-46			
Company Name	cairo company				

- : Test Results

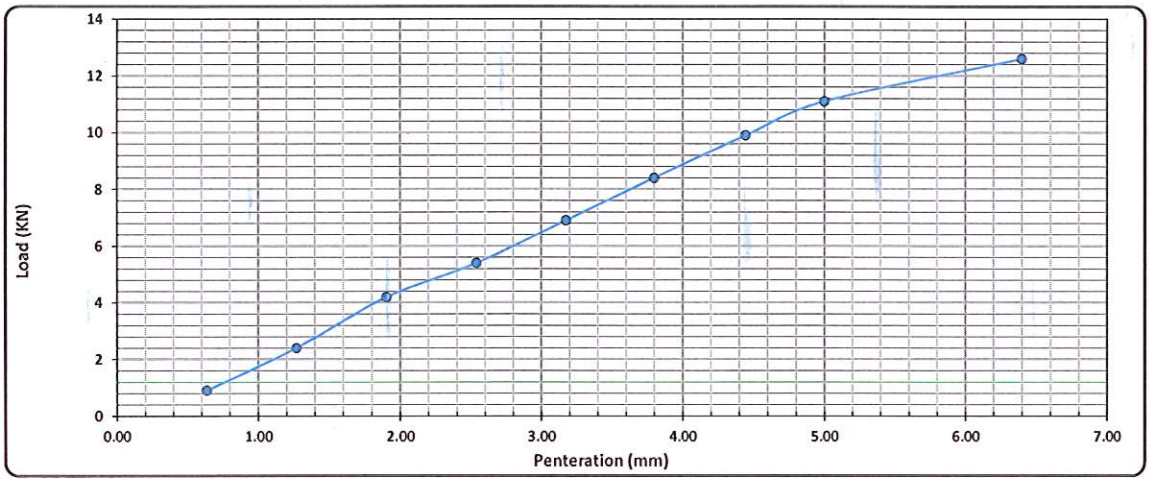
Compaction % for Mold	
Mold No.	5
Mold Vol. (cm^3)	2168
Mold WT. (gm)	5075
Mold WT. + Wet WT. (gm)	9993
Wet WT. (gm)	4918
Wet Density (g/cm^3)	2.268
Dry Density (g/cm^3)	2.122
Proctor Density (g/cm^3)	2.160
Compaction %	98.2

Mositure Ratio After Compacted Mold	
Tare No.	11
Tare WT. (gm)	46.1
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.3
Water WT. (gm)	6.7
Dry WT. (gm)	97.2
Moisture Content %	6.9

Swelling	
Mold No.	5
Date	14/01/2023
Intial Height (mm)	7.40
Final Height (mm)	7.40
Difference	0
Sample Height (mm)	119.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.08	0.14	0.18	0.23	0.28	0.33	0.37	0.42
Load (KN)	0.9	2.4	4.2	5.4	6.9	8.4	9.9	11.1	12.6



Calculations : -

Penteration	Load	Standard Load	CBR	Mold - Compaction	Compaction	CBR
(mm)	(Kn)	(Ib)	(%)	(%)	(%)	% عند نسبة 98
2.50	5.40	13.4	40.4%	98	98	40.3%
5.00	11.10	20.0	55.4%			55.3%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Abdo Sde
Sign :	Sign :	Sign :

القاهرة تنطرق والإنشاءات

Electric Express Train
Central Lab Number 4
Sec-7 Paks - Matrouh

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company		Designer Company	K.K	
Issued by Contractor	Name	Sign	Date	Time	
	Eng/ Abdelrahman Adel	Abdelrahman Adel	15-1-2023		
Contractor reference	CA-Emb-47				
Received by ER		MIR	C1 / C2 / C3 / DD / MM / YY / HH / MM		

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Lower and middle emb. FILL MATERIAL RESULTS			
Location to be Used	From / To / Fill 521+745 / 521+800 / -5 521+140 / 521+320 / -5.5 520+700 / 520+800 / -8 521+800 / 521+840 / -5			
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	11-1-2023	
2	Classification	m^3	5000	11-1-2023	
3	Proctor & O.m.c	m^3	5000	11-1-2023	
4	L.L & P.L & PI	m^3	5000	11-1-2023	
5	C.B.R	m^3	5000	15-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (EL Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	15/1/2023	A
QA/QC *	Abdallah SAMY	Abdallah	15/1/2023	A
GARB**	Hussien Fouad		15/1/2023	A
Comments by	final quality approval with QS			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company		Designer Company
Electric express train	Cairo for Roads and construction Company		k.k
Issued by Contractor	Name: ENG/ Abdelrahman Adel	Sign: Abdel Rahman	Date: 15-1-2023 / Time:
Contractor Reference	CA-Emb-47		
Received by ER		MAR	C1 C2 C3 DD MM YY HH MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	Lower and middle embankment Soil (A-1-a)			
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	9.05%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	7.5%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	54.7%	
Comments by:			Comments by: All test under Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	15/1/2023	A
Contractor QA/QC *	Hassan	15-1-2023	15/1/2023	A
GARB**	Hussien Fouad		15/1/2023	A
Employers Representative	Mohamed		15-1-25	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CAPSUT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	11-1-2023	code			
LOCATION	K.P 521+500	CA-Emb-47	ZONE	520+500	522+000
NAME COMPANY	cairo campany				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		29981.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	4112.0	4261.0	4020.0	3861.0	3561.0	2951.0			A-1-a
Cumulative Retained (g)	0.0	4112.0	8373.0	12393.0	16254.0	19815.0	22766.0		PRO	2.17
Cumulative Retained %	0.0	13.7	27.9	41.3	54.2	66.1	75.9		WC	7.50
Cumulative Passing %	100.0	86.3	72.1	58.7	45.8	33.9	24.1		CBR	54.70

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	89.50	211.00	312.00					
Cumulative Retained %	17.90	42.20	62.40					
Cumulative Passing %	82.10	57.80	37.60					

C-General gradient										
sieve size(in)	2	1.5	1	3/4	1/2	3/8	# 4	# 10	# 40	# 200
sieve size(mm)	50.0	37.5	25.0	19.0	12.5	9.5	4.75	2.00	0.425	0.075
Cumulative Passing %	100.00	86.28	72.07	58.66	45.79	33.91	24.07	19.76	13.91	9.05

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

ENGINEERING CONSULTING OFFICE / المكتب الاستشاري الهندسي أ.د. فاد قنديل / SYSTRA SNAKER	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	(CARBUT) / الهيئة القومية للإنفاق

PROCTOR TEST

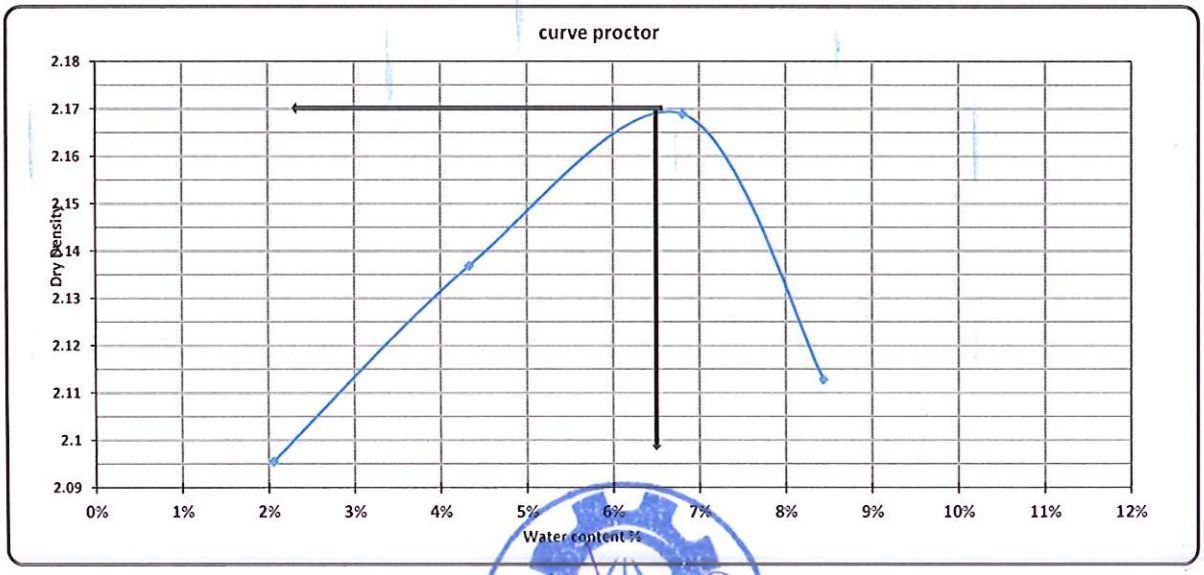
TESTING DATE:	2023/01/12	code	ZONE	520+500	522+000
LOCATION	521+500	CA-EMB-47			
NAME COMPANY	cairo campany				

Weight of empty mold :	6070.0
Mold Volume:	2113.0

MAX Dry Density	2.17
Water content %	6.5

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10589.0	10781.0	10965.0	10911	
WT. WET SOIL	4519.0	4711.0	4895.0	4841.0	
Wt. Density	2.139	2.230	2.317	2.291	

Tare No.	20	11	90	45	8	4	16	26		
Tare wt.	60.1	46.1	62.5	41.5	46.8	60.1	33.9	55		
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	148.1	148.0	146.6	145.2	143.5	144.2	141.1	142.5		
Wt. Of water	1.9	2.0	3.4	4.8	6.5	5.8	8.9	7.5		
Wt. Of dry soil	88.0	101.9	84.1	103.7	96.7	84.1	107.2	87.5		
Water content %	2.2%	2.0%	4.0%	4.6%	6.7%	6.9%	8.3%	8.6%		
AV.Water content %	2.1%		4.3%		6.8%		8.4%			
Dry Density	2.095		2.137		2.169		2.113			



Contractor

Electric Express Train
Central Lab Number 4
Sec 7 Foka - Matroah

Consultant

KK ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د فاد فتيل — SYSTRA SHAKER	**Electric Express Train - HSR**	الهيئة القومية للأنفاق (CAIRO)

California Bearing Ratio TEST

Testing Date :	15/1/2023	Code	FROM STA :	520+500	522+000
Location :	521+500	CA-Emb-47			
Company Name	cairo campany				

- : Test Results

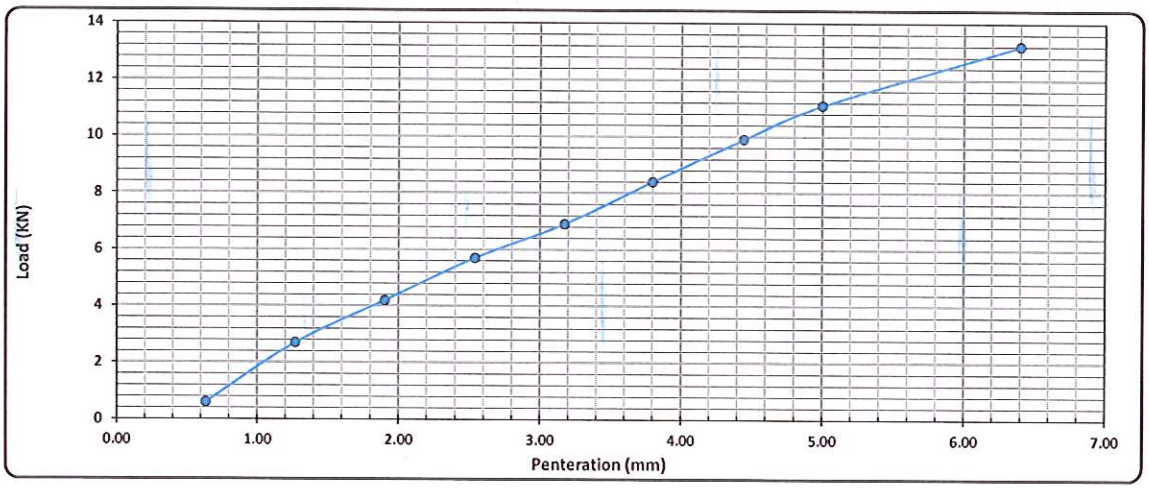
Compaction % for Mold	
Mold No.	4
Mold Vol. (cm^3)	2140
Mold WT. (gm)	4900
Mold WT. + Wet WT. (gm)	9804
Wet WT. (gm)	4904
Wet Density (g/cm^3)	2.292
Dry Density (g/cm^3)	2.146
Proctor Density (g/cm^3)	2.160
Compaction %	99.3

Mositure Ratio After Compacted Mold	
Tare No.	16
Tare WT. (gm)	33.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	142.6
Water WT. (gm)	7.4
Dry WT. (gm)	108.7
Moisture Content %	6.8

Swelling	
Mold No.	4
Date	15/01/2023
Intial Height (mm)	6.40
Final Height (mm)	6.40
Difference	0
Sample Height (mm)	119.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.02	0.09	0.14	0.19	0.23	0.28	0.33	0.37	0.44
Load (KN)	0.6	2.7	4.2	5.7	6.9	8.4	9.9	11.1	13.2



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR % عند نسبة 98
2.50	5.70	13.4	42.7%	99	98	42.1%
5.00	11.10	20.0	55.4%			54.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train Central Lab Number 4 Sec-7 Fuka - Matrouh

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		15-1-2023				
Contractor reference	CA-Emb-48							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower and middle embankment FILL MATERIAL RESULTS				
Location to be Used	From	To	Fill		
	521+840	521+900	-5		
	520+560	520+620	-10.5		
	521+320	521+440	-5		
	521+700	521+740	-4.5		
MAR Approval No				Date	
Supplier Name					
Test Requirement			Specification	Clause	
Reference Photos	Yes attached / No		Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	11-1-2023	
2	Classification	m^3	5000	11-1-2023	
3	Proctor & O.m.c	m^3	5000	11-1-2023	
4	L.L & P.L & PI	m^3	5000	11-1-2023	
5	C.B.R	m^3	5000	15-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (EL Tawakol laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	15/1/2023	
QA/QC *	Hassan	15-1-2023	15/1/2023	
GARB**	Hussien Fouad		15/1/2023	
Comments by	Field quality approved with es			
Employers Representative	Mohamed Ahmed		8-2-23	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company			Designer Company							
Electric express train	Cairo for Roads and construction Company			k.k							
Issued by Contractor	Name	Sign		Date			Time				
	ENG/ Abdelrahman Adel	Abdelrahman		15-1-2023							
Contractor Reference	CA- Emb-48										
Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower and middle embankment Soil (A-1-a)			
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.26%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.16	
7	ASTM D 1883	CBR	63.1%	
Comments by:			Comments by:	
			All test under Responsibility Third party	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdelrahman Adel A	Abdelrahman	15/1/2023	A
Contractor QA/QC *	Hassan		15/1/2023	A
GARB**	Hussien Fouad	Hussien	15/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (CARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	11-1-2023	code	ZONE	520+500	522+000
LOCATION	K.P 521+500	CA-Emb-48			
NAME COMPANY	Cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		27096.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	3851.0	3961.0	3632.0	2581.0	2961.0	2081.0			A-1-a
Cumulative Retained (g)	0.0	3851.0	7812.0	11444.0	14025.0	16986.0	19067.0		PRO	2.16
Cumulative Retained %	0.0	14.2	28.8	42.2	51.8	62.7	70.4		WC	6.80
Cumulative Passing %	100.0	85.8	71.2	57.8	48.2	37.3	29.6		CBR	63.10

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	69.40	196.00	310.00					
Cumulative Retained %	13.88	39.20	62.00					
Cumulative Passing %	86.12	60.80	38.00					

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 %	100.00	85.79	71.17	57.76	48.24	37.31	29.63	25.52	18.02	11.26

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

Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-1 Foka - Matrouh

15/1/2023

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	CAPWO / الهيئة القومية للإنفاق

PROCTOR TEST

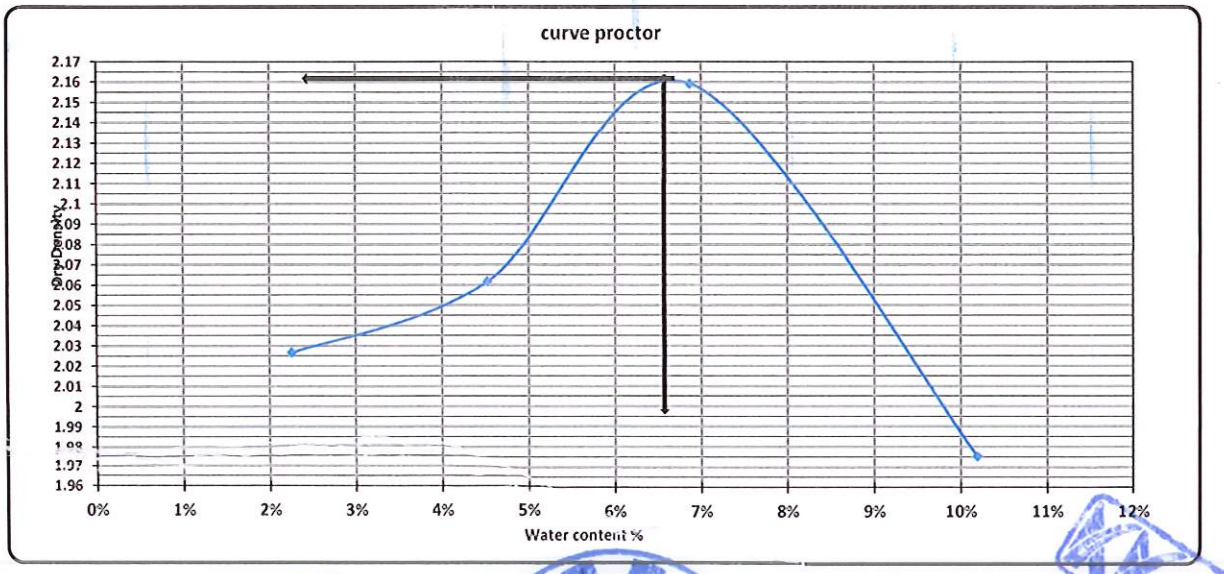
TESTING DATE:	2023/01/12	code	ZONE	520+500	522+000
LOCATION	K.P 521+500	CA-Emb-48			
NAME COMPANY	Cairo company				

Weight of empty mold :	6190.0
Mold Volume:	2169.0

MAX Dry Density	2.16
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10685.0	10864.0	11195.0	10911	
WT. WET SOIL	4495.0	4674.0	5005.0	4721.0	
Wt. Density	2.072	2.155	2.308	2.177	

Tare No.	25	45	40	16	18	10	11	32		
Tare wt.	75.8	41.5	46.4	33.9	77.7	43.7	46.1	74.4		
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	148.5	147.4	145.4	145.1	145.4	143.1	141.1	142.5		
Wt. Of water	1.5	2.6	4.6	4.9	4.6	6.9	8.9	7.5		
Wt. Of dry soil	72.7	105.9	99.0	111.2	67.7	99.4	95.0	68.1		
Water content %	2.1%	2.5%	4.6%	4.4%	6.8%	6.9%	9.4%	11.0%		
AV.Water content %	2.3%		4.5%		6.9%		10.2%			
Dry Density	2.027		2.062		2.159		1.975			



Contractor

Consultant

15 / 1 / 2023

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

KK ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA SKAKER	**Electric Express Train - HSR**	NARWA — الهيئة القومية للإنفاق

California Bearing Ratio TEST

Testing Date :	15/1/2023	Code	FROM STA :	520+500	522+000
Location :	K.P 521+500	CA-Emb-48			
Company Name	Cairo company				

- : Test Results

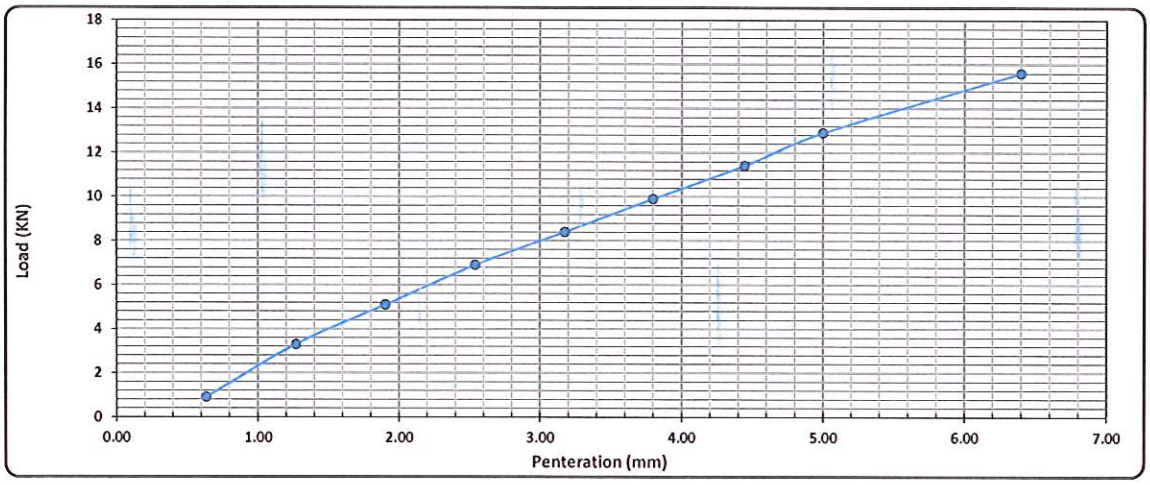
Compaction % for Mold	
Mold No.	6
Mold Vol. (cm^3)	2122
Mold WT. (gm)	5075
Mold WT. + Wet WT. (gm)	9970
Wet WT. (gm)	4895
Wet Density (g/cm^3)	2.307
Dry Density (g/cm^3)	2.160
Proctor Density (g/cm^3)	2.160
Compaction %	100.0

Mositure Ratio After Compacted Mold	
Tare No.	22
Tare WT. (gm)	54.1
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.9
Water WT. (gm)	6.1
Dry WT. (gm)	89.8
Moisture Content %	6.8

Swelling	
Mold No.	6
Date	15/01/2023
Intial Height (mm)	6.40
Final Height (mm)	6.40
Difference	0
Sample Height (mm)	119.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.03	0.11	0.17	0.23	0.28	0.33	0.38	0.43	0.52
Load (KN)	0.9	3.3	5.1	6.9	8.4	9.9	11.4	12.9	15.6



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR % عند نسبة 98
2.50	6.90	13.4	51.7%	100	98	50.7%
5.00	12.90	20.0	64.4%			63.1%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name : Hassa
Sign :	Sign :	Sign : 15/1/2023

Electric Express Train Central Lab Number 4 Sec-7 Fuka - Matrouh

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K					
Issued by Contractor	Name	Sign		Date		Time					
	Eng/ Abdelrahman Adel	Abdelrahman Adel		20-1-2023							
Contractor reference	CA-Emb-49										
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower and middle embankment FILL MATERIAL RESULTS		
Location to be Used	From / To / Fill 521+740 / 521+800 / -4.5 520+560 / 520+620 / -10 520+620 / 520+700 / -8		
MAR Approval No		Date	
Supplier Name			
Test Requirement		Specification	Clause
Reference Photos	Yes attached / No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	16-1-2023	
2	Classification	m^3	5000	16-1-2023	
3	Proctor & O.m.c	m^3	5000	16-1-2023	
4	L.L & P.L & PI	m^3	5000	16-1-2023	
5	C.B.R	m^3	5000	20-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (EL Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	20/1/2023	A
QA/QC *	Hassan	2023	20/1/2023	A
GARB**	Hussien Fouad	Hussien	20/1/2023	A
Comments by	Fill quantity approved with 0.5			
Employers Representative	Mohamed Ahmed	my	8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel		20-1-2023	
Contractor Reference	CA - Emb-49			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower and middle embankment Soil (A-1-a)			
Location of stock	K.p (521+500) No (1)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	11.3%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.17	
7	ASTM D 1883	CBR	64.7%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman	20/1/2023	A
Contractor QA/QC *	Hassan		20/1/2023	A
GARB**	Hussien Fouad	Hussien	20/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل — SYSTRA — SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق (GARBLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	17-1-2023	code	ZONE	520+500	522+000
LOCATION	K.P 521+500	CA-Emb-49			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		31809.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	4661.0	4231.0	3938.0	3401.0	3861.0	2951.0			A-1-a
Cumulative Retained (g)	0.0	4661.0	8892.0	12830.0	16231.0	20092.0	23043.0		PRO	2.17
Cumulative Retained %	0.0	14.7	28.0	40.3	51.0	63.2	72.4		WC	6.80
Cumulative Passing %	100.0	85.3	72.0	59.7	49.0	36.8	27.6		CBR	64.70

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	66.60	171.00	295.00					
Cumulative Retained %	13.32	34.20	59.00					
Cumulative Passing %	86.68	65.80	41.00					

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 %	100.00	85.35	72.05	59.67	48.97	36.84	27.56	23.89	18.13	11.30

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

Contractor

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Consultant

Hassa
20/1 2023

المكتب الاستشاري الهندسي أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA TO MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق

PROCTOR TEST

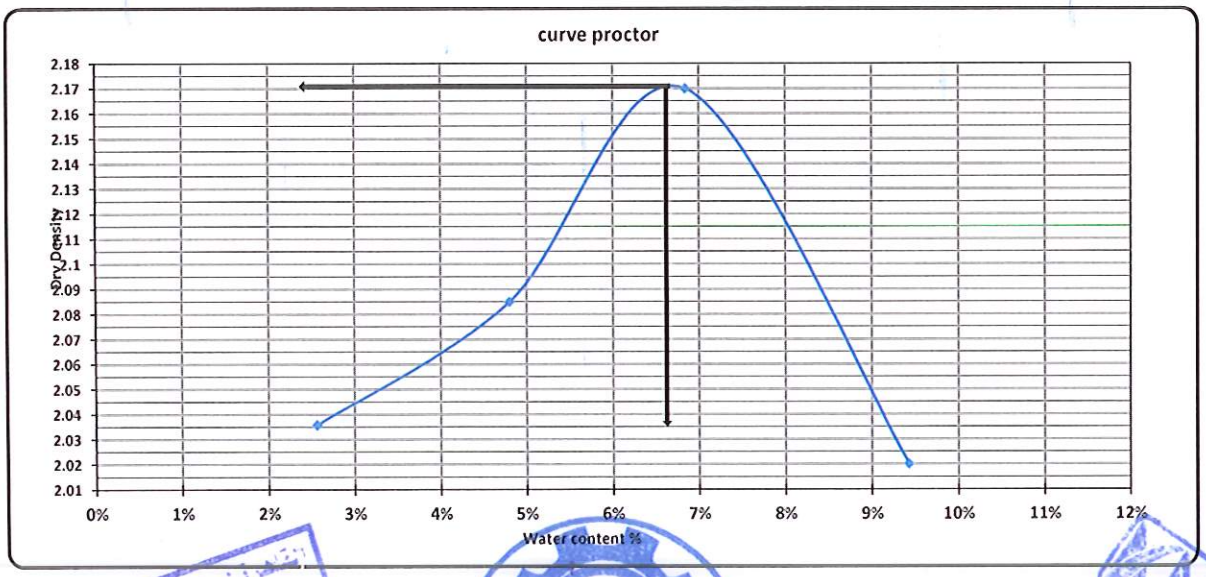
TESTING DATE:	2023/01/18	code	ZONE	520+500	522+000
LOCATION	K.P 521+500	CA-Emb-49			
NAME COMPANY	Al Kahera				

Weight of empty mold :	6070.0
Mold Volume:	2113.0

MAX Dry Density	2.17
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10482.0	10687.0	10969.0	10741	
WT. WET SOIL	4412.0	4617.0	4899.0	4671.0	
Wt. Density	2.088	2.185	2.319	2.211	

Tare No.	16	21	17	26	33	18	90	73		
Tare wt.	34	55.2	59.5	55	73.6	77.8	62.5	42.9		
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	146.9	147.8	145.9	145.6	145.4	145.1	141.1	142.5		
Wt. Of water	3.1	2.2	4.1	4.4	4.6	4.9	8.9	7.5		
Wt. Of dry soil	112.9	92.6	86.4	90.6	71.8	67.3	78.6	99.6		
Water content %	2.7%	2.4%	4.7%	4.9%	6.4%	7.3%	11.3%	7.5%		
AV.Water content %	2.6%		4.8%		6.8%		9.4%			
Dry Density	2.036		2.085		2.170		2.020			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

20/1/2023

ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA — SHAKER	**Electric Express Train - HSR**	CARBLT — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	20/1/2023	Code	FROM STA :	520+500	522+000
Location :	K.P 521+500	CA-Emb-49			
Company Name	Al-Kahera				

- : Test Results

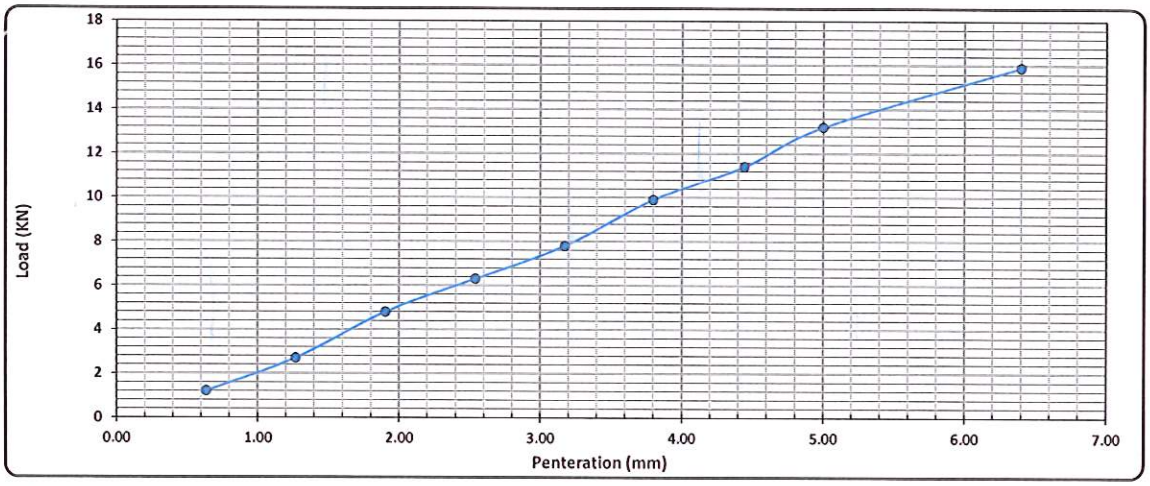
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2168
Mold WT. (gm)	5089
Mold WT. + Wet WT. (gm)	10080
Wet WT. (gm)	4991
Wet Density (g/cm^3)	2.302
Dry Density (g/cm^3)	2.168
Proctor Density (g/cm^3)	2.170
Compaction %	99.9

Mositure Ratio After Compacted Mold	
Tare No.	15
Tare WT. (gm)	31.9
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.1
Water WT. (gm)	6.9
Dry WT. (gm)	111.2
Moisture Content %	6.2

Swelling	
Mold No.	2
Date	20/01/2023
Intial Height (mm)	6.40
Final Height (mm)	6.40
Difference	0
Sample Height (mm)	119.00
Swelling Ratio %	0%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.04	0.09	0.16	0.21	0.26	0.33	0.38	0.44	0.53
Load (KN)	1.2	2.7	4.8	6.3	7.8	9.9	11.4	13.2	15.9



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (lb)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR % عند نسبة 98
2.50	6.30	13.4	47.2%	100	98	46.3%
5.00	13.20	20.0	65.9%			64.7%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
Sec-7 Fuka - Matrouh

المكتب الاستشاري الهندسي أ.د. خالد قنديل

MATERIAL INSPECTION REQUEST

Contractor Company	Cairo for Roads and construction Company			Designer Company		K.K		
Issued by Contractor	Name	Sign		Date		Time		
	Eng/ Abdelrahman Adel	Abdelrahman Adel		20-1-2023				
Contractor reference	CA- Emb- 50							
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	lower embankment	FILL MATERIAL RESULTS		
Location to be Used	From 520+800 520+800	To 520+900 520+895	Fill -8.5 -8	
MAR Approval No			Date	
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sieve analysis	m^3	5000	16-1-2023	
2	Classification	m^3	5000	16-1-2023	
3	Proctor & O.m.c	m^3	5000	16-1-2023	
4	L.L & P.L & PI	m^3	5000	16-1-2023	
5	C.B.R	m^3	5000	20-1-2023	

Comments by:	Comments by:
A sample has been taken from fill material by K.K office to (EL Nuby laboratory) and the results founded meet the specifications and accepted.	Test result for estimated quantities of about 5000 m3

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng / Ahmed mohammed	Ahmed mohamed	20/1/2023	A
QA/QC *	Hassan	20/1/2023	20/1/2023	A
GARB**	Hussien Fouad	Hussien	20/1/2023	A
Comments by	Final Quantity approved with 0s			
Employers Representative	Mohamed Ahmed		8-2-25	

* Designer

** Alignment / Bridges: Culvert Only

MATERIAL APPROVAL REQUEST

Location Name	Contractor Company	Designer Company
Electric express train	Cairo for Roads and construction Company	k.k

	Name	Sign	Date	Time
Issued by Contractor	ENG/ Abdelrahman Adel	Abdel Rahman	20-1-2023	
Contractor Reference	CA-Emb-50			

Received by ER			MAR	C1	C2	C3	DD	MM	YY	HH	MM

NB:Package 1 only (Package 2 via Content)				
The following test result are attached for review				
Description of Materials	lower embankment	Soil (A-1-a)		
Location of stock	K.p (520+500) No (3)			
Item	Specification	Test requirement	Test result attachment	Remarks
1	ASTM D 75	Aggregate Sampling	According to specifications	
2	ASTM C 136	Sieve Analysis	According to specifications	
3	ASTM D 1440	Passing Sieve, No 200	13.33%	
4	ASTM D 4318	Atterberg limit	N.P	
5	ASTM D 2974	Moisture content	6.8%	
6	ASTM D 1557	Modified proctor	2.17.	
7	ASTM D 1883	CBR	52.9%	

Comments by:	Comments by:
	All test under Responsibility Third party

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Abdel Rahman Adel	Abdel Rahman Adel	20/1/2023	A
Contractor QA/QC *	Hassan		20/1/2023	A
GARB**	Hussien Fouad	Hussien	20/1/2023	A
Employers Representative	Mohamed Ahmed		15-1-23	A

* Designer

** Alignment/Bridges: Culvert only

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل / SYSTRA SHAKER	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein - MATROUH Section - 7 From FOKA To MARSA MATROUH From Station 504+000 To Station 568+177	الهيئة القومية للأنفاق / (CAPSLT)

PARTICLE SIZE DISTRIBUTION OF SOIL

TESTING DATE:	17-1-2023	code	ZONE	520+500	522+000
LOCATION	K. P 520+500	CA-Emb-50			
NAME COMPANY	cairo company				

1-visual inspection test

2-Gradient test

A-gradation of bulk materials				SAMPLE WEIGHT [g]		24549.00		gm		table classify
sieve size	2	1.5	1	4/3	2/1	8/3	# 4	PASS		soil classify
Mass retained (g)	0.0	3841.0	3251.0	3332.0	2203.0	2141.0	2031.0			A-1-a
Cumulative Retained (g)	0.0	3841.0	7092.0	10424.0	12627.0	14768.0	16799.0		PRO	2.17
Cumulative Retained %	0.0	15.6	28.9	42.5	51.4	60.2	68.4		WC	6.80
Cumulative Passing %	100.0	84.4	71.1	57.5	48.6	39.8	31.6		CBR	52.90

B-soft material gradation				WT.OF sample		500.00		gm
sieve size	10	40	200					
Cumulative Retained (g)	73.50	174.80	288.80					
Cumulative Retained %	14.70	34.96	57.76					
Cumulative Passing %	85.30	65.04	42.24					

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 %	100.00	84.35	71.11	57.54	48.56	39.84	31.57	26.93	20.53	13.33

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

Contractor

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Consultant

20/1/2023 Hassa

المكتب الاستشاري الهندسي أ.د. خالد قنديل

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل	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	(GARBLT)

PROCTOR TEST

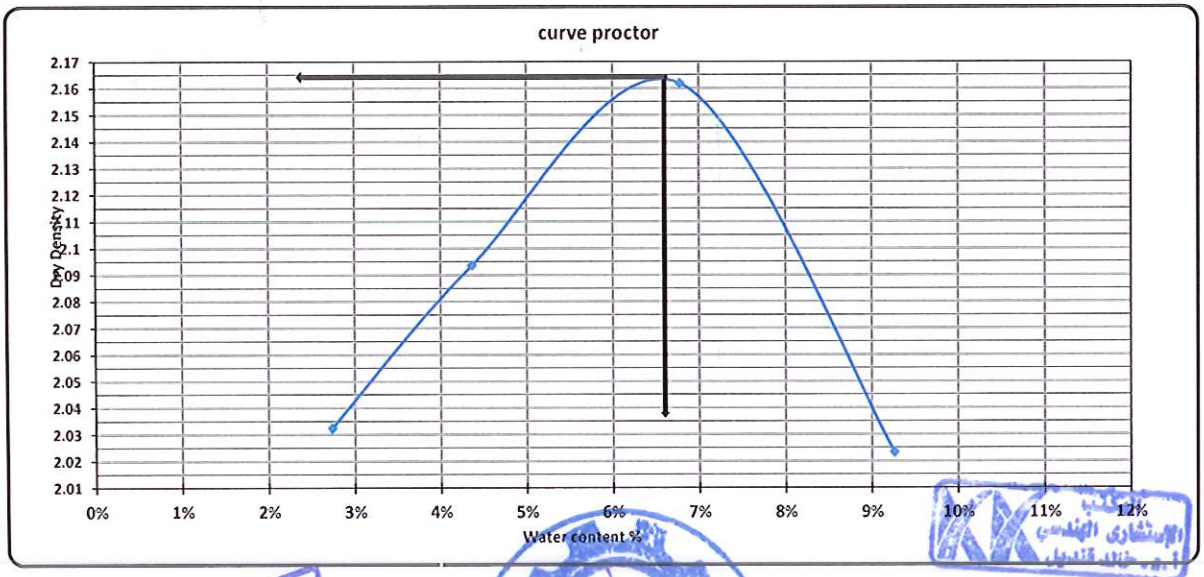
TESTING DATE:	2023/01/18	code	ZONE	520+500	522+000
LOCATION	K.P 520+000	CA-Emb-50			
NAME COMPANY	cairo company				

Weight of empty mold :	6070.0
Mold Volume:	2113.0

MAX Dry Density	2.17
Water content %	6.8

trial no :	1	2	3	4	
Wt. Of Mold+ wet soil	10482.0	10687.0	10948.0	10741	
WT. WET SOIL	4412.0	4617.0	4878.0	4671.0	
Wt. Density	2.088	2.185	2.309	2.211	

Tare No.	25	16	17	11	15	20	8	26		
Tare wt.	59.6	34	59.6	46.5	31.4	59.9	46.8	55		
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	147.6	146.9	146.1	145.8	142.7	144.1	141.2	142.0		
Wt. Of water	2.4	3.1	3.9	4.2	7.3	5.9	8.8	8.0		
Wt. Of dry soil	88.0	112.9	86.5	99.3	111.3	84.2	94.4	87.0		
Water content %	2.7%	2.7%	4.5%	4.2%	6.6%	7.0%	9.3%	9.2%		
AV.Water content %	2.7%		4.4%		6.8%		9.3%			
Dry Density	2.032		2.094		2.162		2.023			



Contractor

Consultant

Electric Express Train
Central Lab Number 4
Sec-7 Foka - Matrouh

Massa

KK ENGINEERING CONSULTING OFFICE — المكتب الاستشاري الهندسي أ.د خالد قنديل — SYSTRA B SHAKER	**Electric Express Train - HSR**	(CAPBLT) — الهيئة القومية للأنفاق

California Bearing Ratio TEST

Testing Date :	20/1/2023	Code	FROM STA :	520+500	522+000
Location :	521+500	CA-Emb-50			
Company Name	cairo company				

- : Test Results

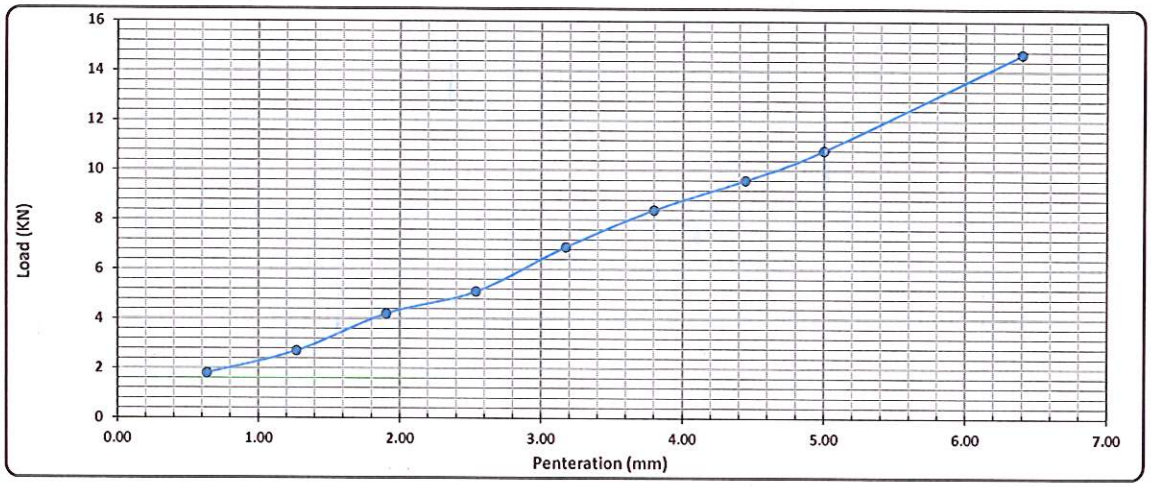
Compaction % for Mold	
Mold No.	2
Mold Vol. (cm^3)	2168
Mold WT. (gm)	5089
Mold WT. + Wet WT. (gm)	10110
Wet WT. (gm)	5021
Wet Density (g/cm^3)	2.316
Dry Density (g/cm^3)	2.169
Proctor Density (g/cm^3)	2.170
Compaction %	99.9

Mositure Ratio After Compacted Mold	
Tare No.	22
Tare WT. (gm)	54.1
Tare WT. +Wet WT. (gm)	150
Tare WT. +Dry WT. (gm)	143.9
Water WT. (gm)	6.1
Dry WT. (gm)	89.8
Moisture Content %	6.8

Swelling	
Mold No.	2
Date	20/01/2023
Intial Height (mm)	7.00
Final Height (mm)	7.10
Difference	0
Sample Height (mm)	119.00
Swelling Ratio %	0.1%

Loading Reading :

Penteration (mm)	0.64	1.27	1.91	2.54	3.18	3.80	4.45	5.00	6.40
Load Reading (mm)	0.06	0.09	0.14	0.17	0.23	0.28	0.32	0.36	0.49
Load (KN)	1.8	2.7	4.2	5.1	6.9	8.4	9.6	10.8	14.7



Calculations : -

Penteration (mm)	Load (Kn)	Standard Load (Ib)	CBR (%)	Mold - Compaction (%)	Compaction (%)	CBR % عند نسبة 98
2.50	5.10	13.4	38.2%	100	98	37.5%
5.00	10.80	20.0	53.9%			52.9%

Lab. Specialist	Lab. Engineer	Consultant Engineer
Name :	Name :	Name :
Sign :	Sign :	Sign :

Electric Express Train
Central Lab Number 4
See-Nfuka - Matrouh

المكتب الإستشاري الهندسي أ.د. خالد قنديل