



مركز الدراسات الاستراتيجية
للجسور والطرق
(الهندسة المدنية)
د. أحمد / محمد الجوزي



المجلس الأعلى
للطرق والكباري
CHIEF AUTHORITY
FOR ROADS BRIDGES
(CARBS)



وزارة النقل
MINISTRY OF TRANSPORT
AND PUBLIC WORKS

مشروع القطار الكهربائي فائق السرعة قطاع (العلمين - فوكة)
المقايضة التقديرية لبيود الاعمال تنفيذ المؤسسة المصرية المتحدة الجاه الضبعة
القطاع من المحطة 476+600 إلى 477+600

رقم الهند	بيان الأصناف	الوحدة	الكمية	القيمة	الإجمالي
٢	أصناف الترميم				
١.٢	أعمال ترميم وتوريد وتل في تربة مطابقة للمواصفات وتشملها باستخدام آلات قنوية بسك ٧ يزيد عن ٥٠ سم على متسوب - أكثر وبمسك الأيدي عن ٢٥ سم الاستكمال المتسوب التوسيعي لتشكيل الجسر والاكشاف (تسوية تعديل كوابلها لارتفاع من ٢١٥) ورشها بدمية الأصولية الوصول في أسية الرطوبة المطلوبة و التمسك الجود بالمواسم الوصول في أقصى كثافة جافة (٢١٥) من التكلفة المئوية القصوى) ويتم تنفيذ طبقا للمواصفات التوسيعية و القاعات العرضية التوسيعية والرسومات التنفيذية المضافة و التيه بجميع مشكلاته طبقا لأصول الصناعة ومواصفات الهيئة العامة للطرق والكباري وتقنيات الهندسة الشرفية - معالجة التل حتى ٢١ سم ويتم احتساب علوة ١.١ جنية لكل متر مربع في التوسيع - السعر يشمل عمل تشييدات وتخليط وتثبيتات ونقل لوقع العمل - السعر يشمل قيمة هدية المحورية طبقا لإفاعة المنطقة بهذا القطاع (١) من كم ٢١٥ إلى كم ٥٠١	3م	27,961.36	85	2,376,718
	علوة مسافة تلال ٢١٢ كم	3م	27,961.36	295.40	8,258,788
	علوة لتسليم رسوم التكررة والتوليد طبقا للخدمة لشركة قوقية	3م	27,961.36	13	363,498
	الإجمالي				11,000,000

(لفظ أحد عشر مليوناً جنية مصري لأشهر)

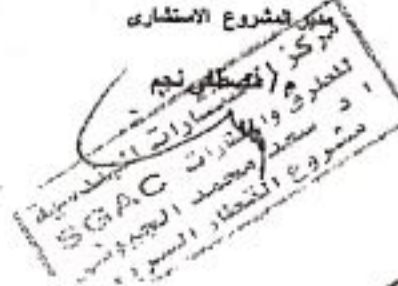
مدير علم المشروعات (الهيئة)

م/محمد حسني شحات

مدير المشروع (الهيئة)

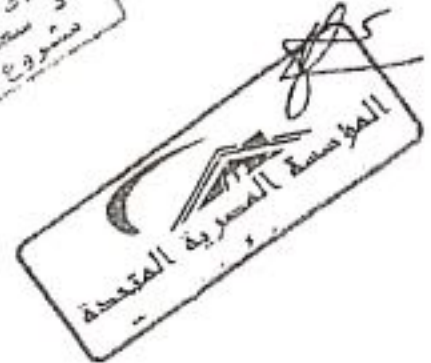
م/أحمد العناني

مدير المشروع الاستشاري



مدير المشروع المقاول

م/محمود شاويش



محضر استلام موقع

مشروع: أعمال الجسر الترابي لمسار القطار الكهربائي السريع الخط الأول
(العين السخنة - مطروح) قطاع (العلمين/فوكة) لتنفيذ المسافة من الكم
476+600 الى الكم 477+600 بطول 1 كم إتجاه الضبعة

تنفيذ: شركة المؤسسة المصرية المتحدة

إشراف: المنطقة الخامسة - منطقة غرب الدلتا

طبقاً للعقد رقم (2024/2023/255) بتاريخ 2023/8/22

إنه في يوم الثلاثاء الموافق 2023/08/27 اجتمع كل من:-

- 1- السيد المهندس /محمد حسني فياض مدير عام مشروعات - الهيئة العامة للطرق والكباري
- 2- السيد المهندس /إبراهيم عبد الله الحناوي مدير مشروع - الهيئة العامة للطرق والكباري
- 3- السيد المهندس /محمود شاويش مدير مشروع-شركة المؤسسة المصرية المتحدة

وذلك للمرور على مسار العملية المذكورة عاليه لاستلام الموقع :-
وقد تبين أن الموقع خالياً من العوائق الظاهرية ويسمح بالبدء في التنفيذ وبناء عليه يعتبر
تاريخ 2023/08/26 هو تاريخ استلام الموقع وبدء الأعمال بالعملية
واقفل المحضر على ذلك ووقع الحضور

التوقيعات

3- محمود شاويش

2- [Signature]

1-

رئيس الإدارة المركزية

منطقة غرب الدلتا

الاسكندرية - مطروح

عميد . مهندس /

هاني محمد محمود طه

MATERIAL INSPECTION REQUEST

الهيئة العامة
للمطرق والكباري
(GARB)



مركز الاستشارات الهندسية
للمنشاءات والمطرق
(مركز الجودة)
مركز الاستشارات الهندسية
للمنشاءات والمطرق
(مركز الجودة)



69

Contractor Company	United Egyption Foundation		Designer Company	SGAC
Issued by Contractor	Name	Sign	Date	Time
	Mahmoud Shawish		15.8.20	
Received by ER			MIR	
			C1	C2
			C3	DD
			MM	YY
			HH	MM

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

Description of Materials	Fill material results			
Location to be Used	1-From station 477+060 to station 477+220 (-5.5)			
MAR Approval No		Date		
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		
Item	Description	Unit	Quantity	Arrival Date
1	LL & P.L & O.M.C %	m3	5000	
2	Proctor	m3	5000	
3	Classification	m3	5000	
4	Seive analysis	m3	5000	
Comments by:		Comments by:		
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specificonctions and accepted				

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negrn			
Comment by ER				
Employers Representative				

* Designer

MATERIAL INSPECTION REQUEST

المركز القومي
للمطرق والكباري
(QAREB)



مركز الإشراف والإدارة
قائلاً والمطرق والكباري
(SGAC)
دكتور/ محمد الجيهش



Contractor Company	United Egypton Foundation		Designer Company	SGAC
Issued by Contractor	Name	Sign	Date	Time
	Mahmoud Shawiesh		15.8.2020	
Received by ER			MIR	
CODE - 1	S1 to S21	D1 to S3	Kp XXX Note	
CODE - 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used	
CODE - 3	Work Activity			
	Sub Element of Activity			

Description of Materials	Fill material results			
Location to be Used	1-From station 476+900 to station 477+060 (-5.5) 2-From station 477+000 to station 477+220 (-5.5)			
MAR Approval No		Date		
Supplier Name				
Test Requirement		Specification	Clause	
Reference Photos	Yes attached / No	Other		
Item	Description	Unit	Quantity	Arrival Date
1	CBR	m3	10000	
Comments by:				
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specifcontions and accepted				

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negm			
Comment by ER				
Employers Representative				

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (477+000)
Delivery Date : 09/08/2022
Reporting Date : 15/08/2022
Reporting No. : 29
Sample No. : 26

Dear Gentleman,

Attached here with the Soil Replacement delivered on 09/08/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.
6. CBR according to ASTM D-1883.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (477+000)
Delivery Date : 09/08/2022
Reporting Date : 15/08/2022
Reporting No. : 29
Sample No. : 26

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	98.5
37.5	92.7
25	84.1
19	73.7
12.50	61.8
9.50	56.8
4.75	51.2
2.36	48.1
2.00	43.4
1.18	40.8
0.600	33.9
0.425	28.9
0.300	21.5
0.150	15.1

CEL
مكتب معامل الاستشارات الهندسية
Signature /
تم التسجيل رقم 637 - 901 - 246
م. ١٠ شارع شارع النيل - القاهرة

**Materials finer than 75 μm (no.200) sieve
by washing ASTM D-1140.**

Test	Results (%)
Percentage of material finer than Sieve Size 75 μm (No.200)	13.4

Signature /  

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (477+000)
Delivery Date : 09/08/2022
Reporting Date : 15/08/2022
Reporting No. : 29
Sample No. : 26

**Results of liquid limit and plasticity index
of soils according to ASTM D-4318**

Test	Results (%)
Liquid Limit	25.8
Plastic Limit	19.7
Plasticity Index	6.1

CEL
مكتب معامل الاستشارات الهندسية
Signature / **المهندس / المهندس**
رقم الترخيص: 927 - 927 - 927
إدارة ترخيص: شارع مكة - القاهرة - مصر

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (477+000)
Delivery Date : 09/08/2022
Reporting Date : 15/08/2022
Reporting No. : 29
Sample No. : 26

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)*
• Group Classification	(A-2-4)*			
2.00 mm (No.10).	43.4	Max 50 %	-----	-----
0.425 mm (No. 40).	28.9	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	13.4	Max 15 %	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)				
Liquid Limit	25.8	-----	-----	-----
Plasticity index	6.1	Max 6 %	Max 6 %	Max 10 %

* Only allowed in lower embankment

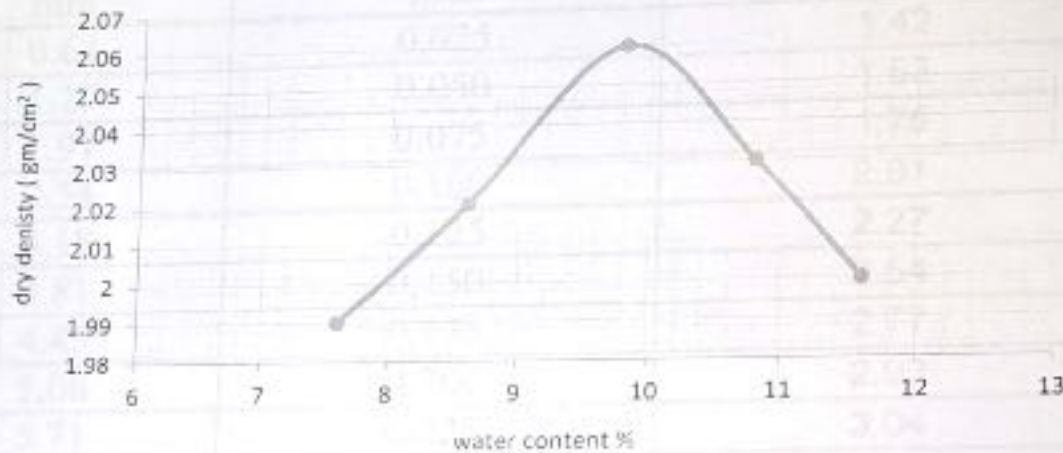
The test results are (☒ Comply - ☐ Not Comply) with specifications limits

Signature /

CEL
مكتب معامل الاستشارات الهندسية
.....
د. هشام عبد الله
27367231 - 27363093
3 - شارع الملك الأفضل - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (477+000)
Delivery Date : 09/08/2022
Reporting Date : 15/08/2022
Reporting No. : 29
Sample No. : 26

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557



- Max dry density (gm/cm³) : 2.06
- Optimum moisture content % : 9.8

CEL
مكتب معامل الاستشارات الهندسية
المسجل التجاري
Signature /
210-999-9999
رقم الهاتف : 210-999-9999 - فاكس : 210-999-9999

Company Name : EGYPTIAN UNITED GROUP
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Replacement (Embankment)
 Location : St. (477+000)
 Delivery Date : 09/08/2022
 Reporting Date : 15/08/2022
 Reporting No. : 29
 Sample No. : 26

Test Results of California Bearing Ratio on Base Materials ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	1.42
1.27	0.050	1.53
1.91	0.075	1.75
2.54	0.100	2.01
3.18	0.125	2.27
3.81	0.150	2.54
4.45	0.175	2.77
5.08	0.200	2.92
5.71	0.225	3.04
6.35	0.250	3.17

CBR Result	Stress (Mpa)		CBR %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	2.01	29.11

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.06 gm/cm^3 at 9.8% optimum water content.
- 3- Surcharge load 4.50 Kg.

Signature / ...

المهندس / محمد عبد الحليم
 رقم هاتف : 27367231 - 27363093
 صرته : لا شارع شمس الجبل - القاهرة - مصر

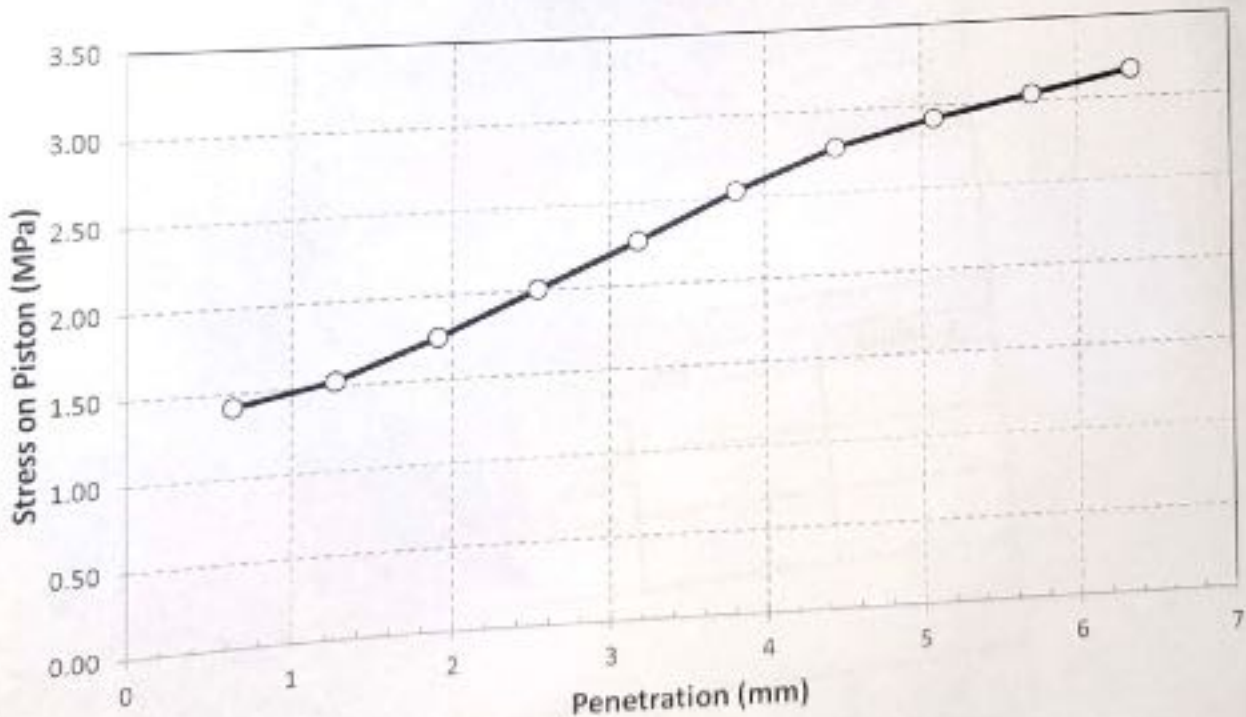
3 El Malek El Afdal Street
 Zamalek, Cairo.
 Tel. & Fax : 27367231 - 27363093



ش ٣ الملك الأفضل
 الزمالك - القاهرة
 تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
www.cel-egypt.com

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (477+000)
Delivery Date : 09/08/2022
Reporting Date : 15/08/2022
Reporting No. : 29
Sample No. : 26

Load Penetration Curve of CBR Test
ASTM D-1883



Signature /
CEL
مكتب - معامل الاستشارات الهندسية
البيانات الهندسية
رقم ترخيص المهندس: ٤٣٧ - ٩٥٩ - ٤٧٥
د. محمد تيمور : ١ شارع شاذي الأفندي - الزمالك - القاهرة

MATERIAL INSPECTION REQUEST

مركز البحوث والدراسات
(DAMB)



مركز البحوث والدراسات
الطرق والمواصلات
(DAMB)



Contractor Company	United Egypt Foundation		Designer Company	SGAC							
Issued by Contractor	Name	Sign	Date	Time							
	Mahmoud Shawish		19.8.20								
Received by ER			MIR	C1	C2	C3	DD	MM	YY	HH	MM

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

Description of Materials	Fill material results					
Location to be Used	1-From station 476+740 to station 476+900 (-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	L.L & P.L & O.M.C %	m3	5000			
2	Proctor	m3	5000			
3	Classification	m3	5000			
4	Seive analysis	m3	5000			
Comments by:			Comments by:			
A sample has been taken from fill material by SGAC office to (CEL) lab and the results founded meet the specifications and accepted						

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negm			
Comment by ER				
Employers Representative				

* Designer

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+700)
Delivery Date : 13/08/2022
Reporting Date : 19/08/2022
Reporting No. : 30
Sample No. : 27

Dear Gentleman,

Attached here with the Soil Replacement delivered on 13/08/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature / ...



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+700)
Delivery Date : 13/08/2022
Reporting Date : 19/08/2022
Reporting No. : 30
Sample No. : 27

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	91.4
25	83.4
19	70.6
12.50	61.3
9.50	50.8
4.75	43.5
2.36	40.8
2.00	38.1
1.18	34.9
0.600	26.8
0.425	23.3
0.300	18.9
0.150	13.8

Signature /

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+700)
Delivery Date : 13/08/2022
Reporting Date : 19/08/2022
Reporting No. : 30
Sample No. : 27

Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	9.3

Signature / ...



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+700)
Delivery Date : 13/08/2022
Reporting Date : 19/08/2022
Reporting No. : 30
Sample No. : 27

Results of liquid limit and plasticity index
of soils according to ASTM D-4318

Test	Results (%)
Liquid Limit	26.7
Plastic Limit	18.6
Plasticity Index	8.1

Signature /



Company Name : EGYPTIAN UNITED GROUP
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Replacement (Embankment)
 Location : St. (476+700)
 Delivery Date : 13/08/2022
 Reporting Date : 19/08/2022
 Reporting No. : 30
 Sample No. : 27

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)*
• Group Classification	(A-2-4)*			
2.00 mm (No.10).	38.1	Max 50 %	-----	-----
0.425 mm (No. 40).	23.3	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	9.3	Max 15 %	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)				
Liquid Limit	26.7	-----	-----	-----
Plasticity index	8.1	Max 6 %	Max 6 %	Max 10 %

* Only allowed in lower embankment

The test results are (✓ Comply - □ Not Comply) with specifications limits

Signature : 

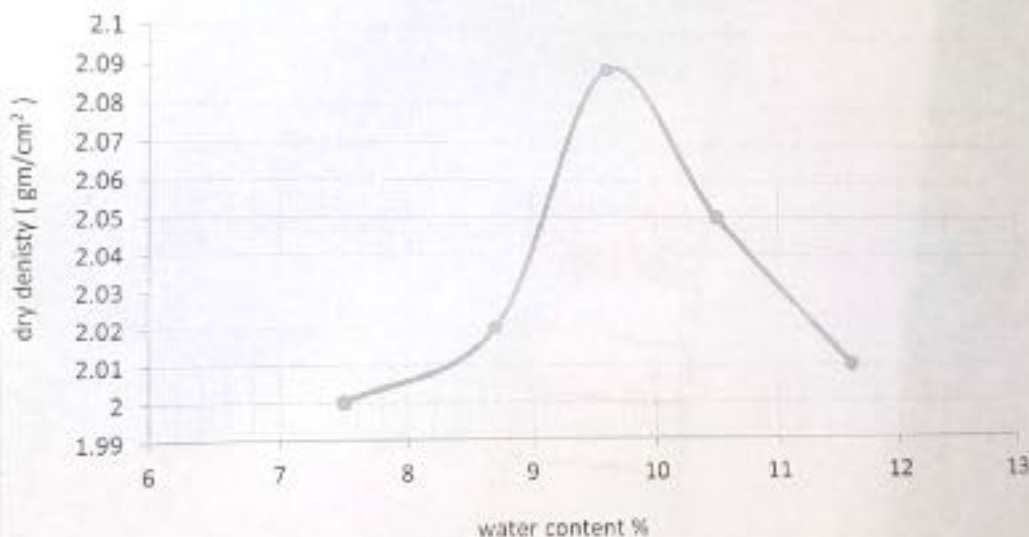
3 El Malek El Aldal Street
 Zamalek, Cairo.
 Tel.& Fax : 27367231 - 27363093

IAS
 ACCREDITED
 Testing Laboratory

ش الملك الأفضل
 الزمالك - القاهرة
 تليفون - فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
 www.cel-egypt.com

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+700)
Delivery Date : 13/08/2022
Reporting Date : 19/08/2022
Reporting No. : 30
Sample No. : 27

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557



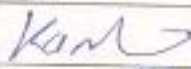
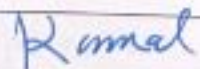
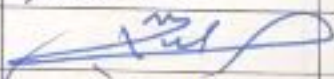

- Max dry density (gm/cm²) : 2.09
- Optimum moisture content % : 9.6

Signature /



Contractor Company	United Egyption Foundation		Designer Company	SGAC							
Issued by Contractor	Name	Sign	Date	Time							
	Mahmoud Shawish		27.9.2022								
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	Fill material results					
Location to be Used	1-From station476+080 to station 476+200 (-2.5) 2-From station476+000 to station 476+080 (-2.5) 3-From station476+640 to station 476+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	LL & P.L & O.M.C %	m3	5000			
2	Proctor	m3	5000			
3	Classification	m3	5000			
4	Seive analysis	m3	5000			
Comments by:			Comments by:			
Asample has been taken form fill material by SGAC office to <u>(CEL)</u> lab and the results founded meet the specificonitions and accepted						
APPROVAL STATUS						
Organisation	Name	Sign	Date	A-AWC-R		
Contractor	Kamel Shehab					
QA/QC *						
GARB**	Eng/ Mostafa Negm					
Comment by ER						
Employers Representative						

* Designer

MATERIAL INSPECTION REQUEST

إدارة الطرق والكباري
(GARB)



مركز الدراسات الهندسية
للطرق والمباني والمباني
(مركز الدراسات الهندسية
للطرق والمباني والمباني)



Contractor Company	United Egyption Foundation		Designer Company	SGAC
Issued by Contractor	Name	Sign	Date	Time
	Mahmoud Shawiesh		27.9.2022	
Received by ER			MIR	
CODE - 1	S1 to S21	D1 to S3	Kp XXX Note	
CODE - 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used	
CODE - 3	Sub Element of Activity			

Description of Materials	Fill material results				
Location to be Used	1-From station476+580 to station 476+640 (-4.5) 2-From station476+300 to station 476+540 (-3) 3-From station476+080 to station 476+200 (-2.5) 4-From station476+000 to station 476+080 (-2.5) 5-From station476+640 to station 476+740 (-4.4)				
MAR Approval No			Date		
Supplier Name					
Test Requirement	Specification		Clause		
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	CBR	m3	10000		
Comments by:					
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specificonitions and accepted					

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negrn			
Comment by ER				
Employers Representative				

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+640)
Delivery Date : 21/09/2022
Reporting Date : 27/09/2022
Reporting No. : 51
Sample No. : 20

Dear Gentleman,

Attached here with the Soil Replacement delivered on 21/09/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.
6. CBR according to ASTM D-1883.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature /.....



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+640)
Delivery Date : 21/09/2022
Reporting Date : 27/09/2022
Reporting No. : 51
Sample No. : 20

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	88.9
25	79.1
19	72.7
12.50	66.3
9.50	58.4
4.75	38.7
2.36	37.2
2.00	35.8
1.18	31.1
0.600	29.4
0.425	28.5
0.300	23.5
0.150	17.1

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+640)
Delivery Date : 21/09/2022
Reporting Date : 27/09/2022
Reporting No. : 51
Sample No. : 20

**Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.**

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ M (No.200)	11.6

Signature /

مكتب معامل الاستشارات الهندسية
الملك فيصل
رقم تسجيل المهندس : 527 - 891 - 219
مركز الرئيس : 3 شارع الملك فيصل - الزمالك - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+640)
Delivery Date : 21/09/2022
Reporting Date : 27/09/2022
Reporting No. : 51
Sample No. : 20

Results of liquid limit and plasticity index
of soils according to ASTM D-4318

Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature /

مكتب معامل الاستشارات الهندسية
الطريق رقم 3 - شوارع قنطرة النجيلة - القاهرة
رقم الترخيص 837 - 218-801
مركز القياس : 3 شارع قنطرة النجيلة - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+640)
Delivery Date : 21/09/2022
Reporting Date : 27/09/2022
Reporting No. : 51
Sample No. : 20

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
Group Classification	A-1-a	(A-1-a)	(A-1-b)
2.00 mm (No.10).	35.8	Max 50 %	-----
0.425 mm (No. 40).	28.5	Max 30 %	Max 50 %
0.075 mm (No. 200).	11.6	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

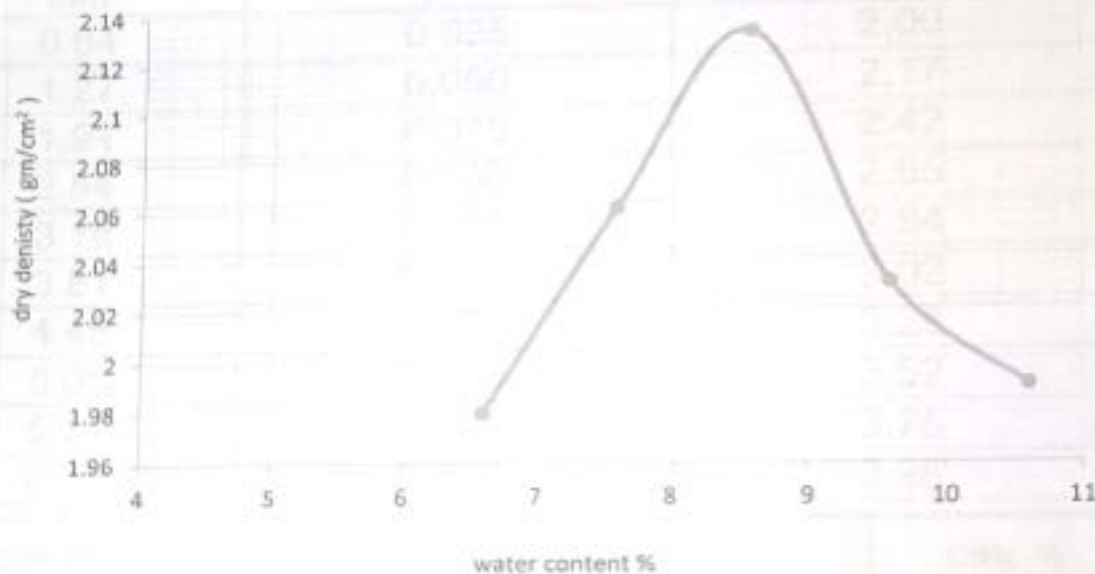
The test results are (☒ Comply - ☐ Not Comply) with specifications limits

Signature

CEL
مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: info@cel-egypt.com
رقم تسجيل فني: 219-001-827
مركز الترخيص: 3 شارع الملك الأفندي - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+640)
Delivery Date : 21/09/2022
Reporting Date : 27/09/2022
Reporting No. : 51
Sample No. : 20

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557.



- Max dry density (gm/cm³) : 2.13
- Optimum moisture content % : 8.6

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+640)
Delivery Date : 21/09/2022
Reporting Date : 27/09/2022
Reporting No. : 51
Sample No. : 20

Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	2.00
1.27	0.050	2.17
1.91	0.075	2.42
2.54	0.100	2.55
3.18	0.125	2.84
3.81	0.150	3.02
4.45	0.175	3.25
5.08	0.200	3.52
5.71	0.225	3.75
6.35	0.250	3.98

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	36.9
	6.90	2.55	

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.13 (gm/cm³) at 8.6 % optimum water content.
- 3- Surcharge load 4.50 Kpa

Signature

رئيس قسم الاختبارات
مركز التأسيس
219-091-327
31 شارع - القاهرة

Penetration (mm)	Stress on Piston (MPa)
0.8	1.9
1.5	2.0
2.1	2.2
2.7	2.2
3.3	2.4
4.0	2.5
4.6	2.7
5.2	2.9
5.8	3.0
6.5	3.2

Signature _____



MATERIAL INSPECTION REQUEST

الهيئة العامة
للمطابق و الكباري
(GARB)



مركز الإنشاءات الهندسية
للطرق و الممرات و الطرق
(مركز الإنشاءات)
الطريق و الممرات و الطرق



Contractor Company	United Egyption Foundation		Designer Company	SGAC
Issued by Contractor	Name	Sign	Date	Time
	Mahmoud Shawish		17.10.2022	
Received by ER			MIR	

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	Fill material results				
Location to be Used	1-From station475+740 to station 476+880 (-5) 2-From station476+540 to station 476+660 (-4)				
MAR Approval No				Date	
Supplier Name					
Test Requirement	Specification			Ciause	
Reference Photos	Yes attached / No			Other	
Item	Description	Unit	Quantity	Arrival Date	Note
1	LL & P.L & O.M.C %	m3	5000		
2	Proctor	m3	5000		
3	Classification	m3	5000		
4	Seive analysis	m3	5000		
Comments by:			Comments by:		
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specifcotions and accepted					
APPROVAL STATUS					
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	Kamel Shehab				
QA/QC *					
GARB**	Eng/ Mostafa Negm				
Comment by ER					
Employers Representative					

MATERIAL INSPECTION REQUEST

الهيئة العامة
للطرق والكباري
(EGAR)



مركز البحوث والدراسات
الطرق والكباري
(RESEARCH CENTER)



Contractor Company	United Egyption Foundation		Designer Company	SGAC			
Issued by Contractor	Name	Sign	Date	Time			
	Mahmoud Shawiesh		17.10.2022				
Received by ER			MIR	C1	C2	C3	C4
				MM	YY	HH	MM
CODE-1	S1 to S22 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	Fill material results				
Location to be Used	1-From station475+900 to station 476+000 (-2) 2-From station476+000 to station 476+080 (-2) 3-From station476+200 to station 476+320 (-2.5) 3-From station476+900 to station 476+000 (-1.75) 4-From station475+740 to station 476+880 (-5) 5-From station476+540 to station 476+660 (-4)				
MAR Approval No			Date		
Supplier Name					
Test Requirement			Specification	Clause	
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	CBR	m3	10000		
Comments by:					
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specificonitions and accepted			Comments by:		
APPROVAL STATUS					
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	Kamel Shehab				
QA/QC *					
GARB**	Eng/ Mostafa Negrn				
Comment by ER					
Employers Representative					

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

Results of Sieve Analysis According to ASTM D-422

Dear Gentleman,

Attached here with the Soil Replacement delivered on 11/10/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.
6. CBR according to ASTM D-1883.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	92.8
25	81.9
19	76.8
12.50	72.1
9.50	64.6
4.75	43.8
2.36	41.2
2.00	40.8
1.18	37.6
0.600	33.2
0.425	31.7
0.300	24.4
0.150	19.1

Signature /

CEL
مكتب معامل الاستشارات الهندسية
السيد الشحات
رقم تسجيل مهندسين 8377 - 844 - 848
المركز الرئيسي : 3 شارع شاذي الوفايل - الزمالة - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

**Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.**

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ M (No.200)	12.9

Signature /  **CEL**
مكتب معامل الاستشارات الهندسية
الاسم: السيد / 
رقم الترخيص: 537 - 901 - 219
المركز: القاهرة - شارع الملك الأفندي - الملك - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

**Results of liquid limit and plasticity index
of soils according to ASTM D-4318**

Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
Group Classification	A-1-b	(A-1-a)	(A-1-b)
2.00 mm (No.10).	40.8	Max 50 %	-----
0.425 mm (No. 40).	31.7	Max 30 %	Max 50 %
0.075 mm (No. 200).	12.9	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

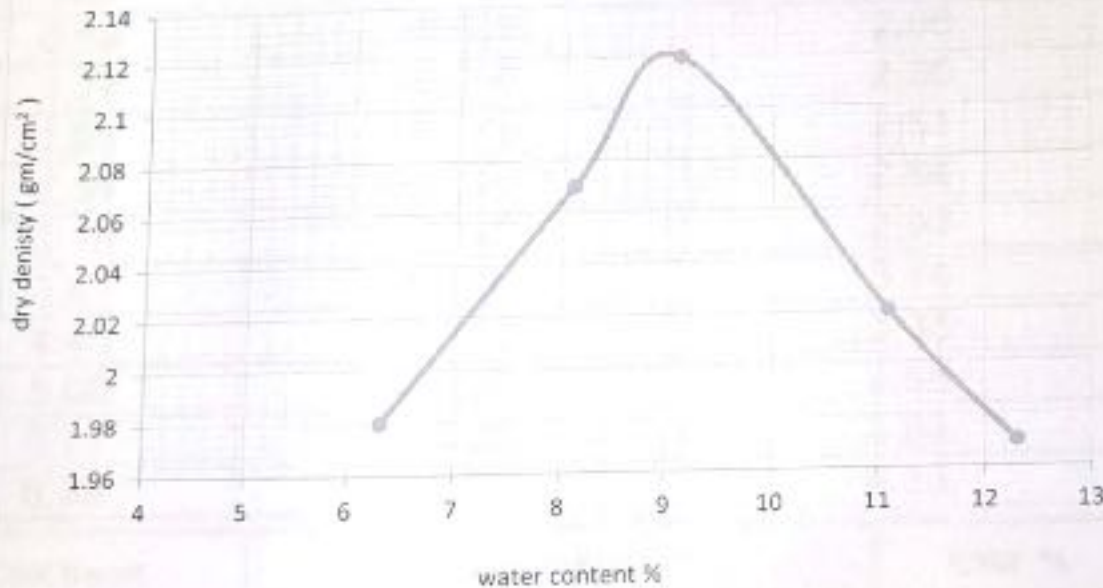
The test results are (☒ Comply - ☐ Not Comply) with specifications limits

Signature



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557.



- Max dry density (gm/cm³) : 2.12
- Optimum moisture content % : 9.1

Signature /

CEL
مكتب معامل الاستشارات الهندسية
الساحل الشمالي
رقم اتصال القاهرة: 337 - 349 - 351
البريد الإلكتروني: info@cel-egypt.com

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	2.08
1.27	0.050	2.30
1.91	0.075	2.51
2.54	0.100	2.84
3.18	0.125	2.96
3.81	0.150	3.14
4.45	0.175	3.38
5.08	0.200	3.58
5.71	0.225	3.83
6.35	0.250	4.13

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	41.1
	6.90	2.84	

Notes:

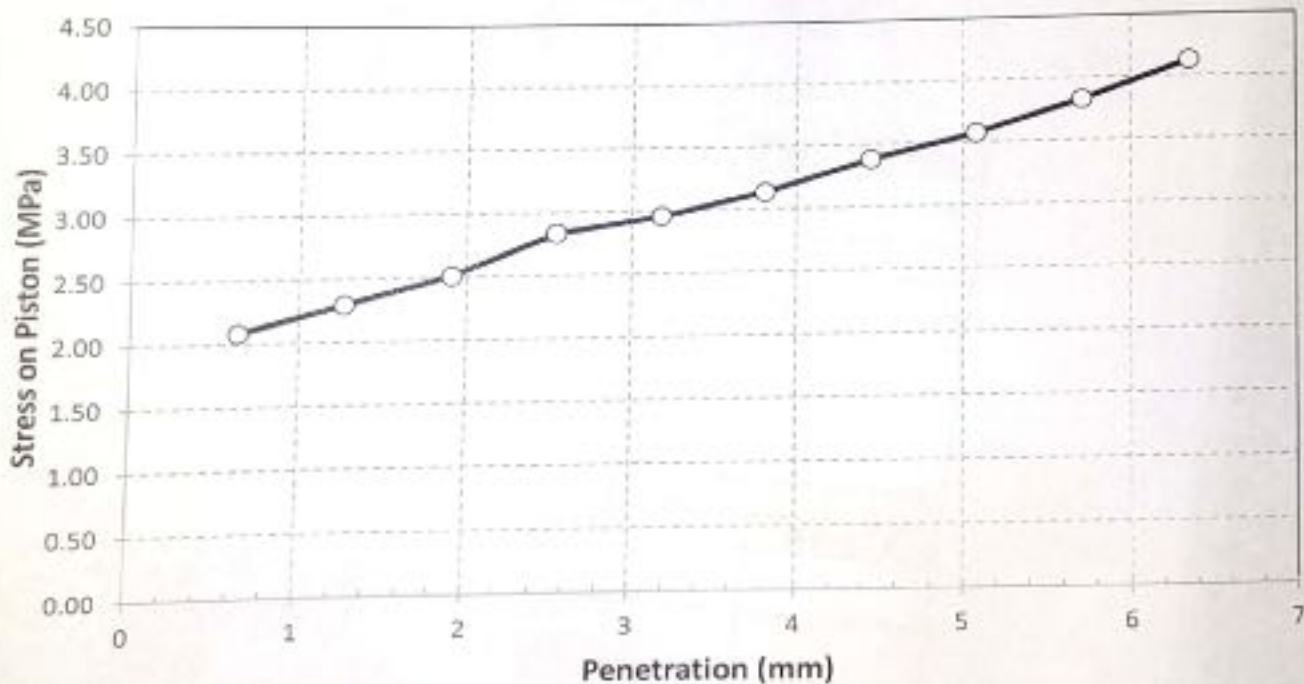
- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.12 (gm /cm³) at 9.1 % optimum water content.
- 3- Surcharge load 450 K

Signature /

رسم المهندس المهندس
المرکز لاسیس 31 رقم 31
219 - 901 - 837

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (475+540)
Delivery Date : 11/10/2022
Reporting Date : 17/10/2022
Reporting No. : 53
Sample No. : 22

Load Penetration Curve of CBR Test
ASTM D-1883



Signature /

CEL
مكتب معامل الاستشارات الهندسية

الشيخ احمد الشحات

رئيس قسم فحوصات التربة والاسفلت - القاهرة
شارع الملك فيصل - القاهرة

101, 103

MATERIAL INSPECTION REQUEST



Contractor Company	United Egypton Foundation		Designer Company	SGAC
Issued by Contractor	Name	Sign	Date	Time
	Mahmoud Shawish		6.11.2022	
Received by ER				
		MIR	C1 C2 C3 D0	MM YY HH MM

CODE - 1	51 to 521	D1 to 53	Kp XXX Note
CODE - 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE - 3		Work Activity	
		Sub Element of Activity	

Description of Materials	Fill material results				
Location to be Used	1-From station 476+880 to station 476+980 (-5) 2-From station 476+640 to station 476+740 (-4) 3-From station 476+000 to station 476+100 (-1.75)				
MAR Approval No			Date		
Supplier Name					
Test Requirement			Specification	Clause	
Reference Photos	Yes attached / No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	LL & P.L & O.M.C %	m3	5000		
2	Proctor	m3	5000		
3	Classification	m3	5000		
4	Seive analysis	m3	5000		

Comments by:	Comments by:
A sample has been taken from fill material by SGAC office o (CEL) lab and the results founded meet the specifications and accepted	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QC *				
ARB **	Eng/ Mostafa Negm			
Approval by ER				
Employers representative				

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+000)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 54
Sample No. : 23

Results of Sieve Analysis According to ASTM D-422

Dear Gentleman,

Attached here with the Soil Replacement delivered on 01/11/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature / ...

CEL
مكتب معامل الاستشارات الهندسية
المعامل الشمالي
رقم تسجيل قديم: 537 - 991 - 319
شركة القياس: 31 شارع قسم الهندسة - 11511

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+000)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 54
Sample No. : 23

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	96.6
25	83.7
19	70.6
12.50	62.9
9.50	59.1
4.75	40
2.36	38.2
2.00	37.3
1.18	33.7
0.600	30.9
0.425	29.1
0.300	25.8
0.150	19.3

Signature /

مكتب معامل الاستشارات الهندسية
السلطة المصرية
رقم تسجيله ١٣٩٩ - ٥٥٤
مركز الرئيس : ٢٥ شارع الملك فيصل - الزمالك - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+000)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 54
Sample No. : 23

**Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.**

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	11.8

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+000)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 54
Sample No. : 23

Results of liquid limit and plasticity index
of soils according to ASTM D-4318

Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature /
المسجل (الشخص)
رقم التسجيل الهندسي: 5377 - 5378 - 5379
المركز الرئيسي: 1 شارع قاعة الأبطال - القاهرة - الجيزة

Malek El Afdal Street
Cairo, Egypt.
& Fax : 27367231 - 27363093



3 ش الملك الأفضل
الزمالك - القاهرة
تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
www.cel-egypt.com

Company Name : EGYPTIAN UNITED GROUP
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Replacement (Embankment)
 Location : St. (476+000)
 Delivery Date : 01/11/2022
 Reporting Date : 06/11/2022
 Reporting No. : 54
 Sample No. : 23

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
Group Classification	A-1-a	(A-1-a)	(A-1-b)
2.00 mm (No.10).	37.3	Max 50 %	-----
0.425 mm (No. 40).	29.1	Max 30 %	Max 50 %
0.075 mm (No. 200).	11.8	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

The test results are (☒ Comply - ☐ Not Comply) with specifications limits



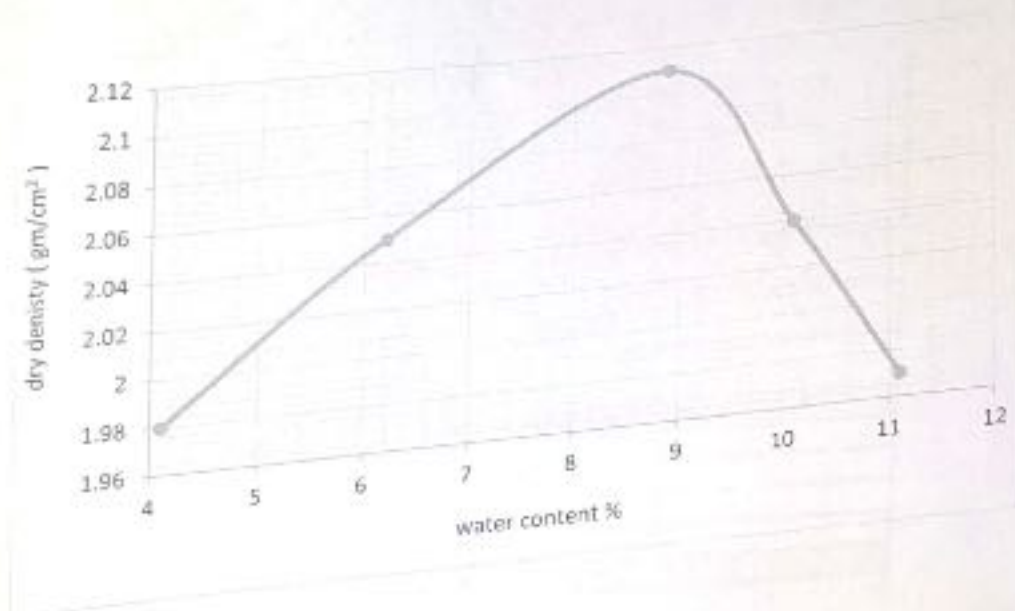
Malek El Afdal Street
Malek, Cairo.
& Fax : 27367231 - 27363093



٣ ش الملك الأفضل
الزمالك - القاهرة
تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
www.cel-egypt.com

Client Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+000)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 54
Sample No. : 23

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557



- Max dry density (gm/cm²) : 2.11
- Optimum moisture content % : 8.9

Signature



3 El Malek El Afdal Street
 Zamalek, Cairo.
 Tel & Fax : 27367231 - 27363093



٢٧٣٦٣٠٩٣ - ٢٧٣٦٧٢٣١
 تليفون + فاكس :
 www.cel-egypt.com

MATERIAL INSPECTION REQUEST

الهيئة العامة
للمطرق والكباري
(GARB)



مركز الإشراف والرقابة
على المطرق والكباري
(مركز الإشراف والرقابة)
(SGAC)

وزارة النقل
(Ministry of Transport)



Contractor Company	United Egypt Foundation		Designer Company	SGAC							
Issued by Contractor	Name	Sign	Date	Time							
	Mahmoud Shawish		6.11.2023								
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	Fill material results					
Location to be Used	1-From station476+740 to station 476+860 (-4.5) 2-From station476+300 to station 476+540 (-2)					
MAR Approval No					Date	
Supplier Name						
Test Requirement	Specification				Clause	
Reference Photos	Yes attached / No				Other	
Item	Description	Unit	Quantity	Arrival Date	Note	
1	LL & P.L & O.M.C %	m3	5000			
2	Proctor	m3	5000			
3	Classification	m3	5000			
4	Seive analysis	m3	5000			
Comments by:			Comments by:			
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specifcontions and accepted						
APPROVAL STATUS						
Organisation	Name	Sign	Date	A-AWC-R		
Contractor	Kamel Shehab					
QA/QC *						
GARB**	Eng/ Mostafa Negrn					
Comment by ER						
Employers Representative						

MATERIAL INSPECTION REQUEST

الهيئة العامة
للتنظيم والبناء
(GARB)



مركز الدراسات والبحوث
الطرق والجسور
(SGAC)

وزارة النقل
(Ministry of Transport)



Contractor Company	United Egypt Foundation		Designer Company	SGAC			
Issued by Contractor	Name	Sign	Date	Time			
	Mahmoud Shawiesh		6.11.2027				
Received by ER			MIR	C1	C2	C3	DD
CODE - 1	S1 to S21		D1 to S3	Kp XXX Note			
CODE - 2	Station Reference		Depot Reference	For Kilometer point only Start Km is used			
CODE - 3			Work Activity				
			Sub Element of Activity				

Description of Materials	Fill material results					
Location to be Used	1-From station476+880 to station 476+980 (-5) 2-From station476+640 to station 476+740 (-4) 3-From station476+000 to station 476+100 (-1.75) 4-From station476+740 to station 476+860 (-4.5) 5-From station476+300 to station 476+540 (-2)					
MAR Approval No					Date	
Supplier Name						
Test Requirement	Specification				Clause	
Reference Photos	Yes attached / No				Other	
Item	Description	Unit	Quantity	Arrival Date	Note	
1	CBR	m3	10000			
Comments by:			Comments by:			
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specifcontions and accepted						
APPROVAL STATUS						
Organisation	Name	Sign	Date	A-AWC-R		
Contractor	Kamel Shehab					
QA/QC *						
GARB**	Eng/ Mostafa Negm					
Comment by ER						
Employers Representative						

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+300)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 55
Sample No. : 24

Results of sieve analysis according to ASTM D-422

Dear Gentleman,

Attached here with the Soil Replacement delivered on 01/11/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.
6. CBR according to ASTM D-1883.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature /



3 El Malek El Afdal Street
Zamalek, Cairo.
Tel. & Fax : 27367231 - 27363093



٣ ش الملك الأفضل
الزمالك - القاهرة
تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
www.cel-egypt.com

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+300)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 55
Sample No. : 24

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
	100
50	88.2
37.5	81.7
25	72.7
19	65.3
12.50	61.1
9.50	41.6
4.75	41.2
2.36	38.8
2.00	36.5
1.18	32.9
0.600	30.2
0.425	24.1
0.300	17.6
0.150	

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+300)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 55
Sample No. : 24

Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	12.3

Signature



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+300)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 55
Sample No. : 24

**Results of liquid limit and plasticity index
of soils according to ASTM D-4318**

Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+300)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 55
Sample No. : 24

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
Group Classification	A-1-b	(A-1-a)	(A-1-b)
2.00 mm (No.10).	38.1	Max 50 %	-----
0.425 mm (No. 40).	30.2	Max 30 %	Max 50 %
0.075 mm (No. 200).	12.3	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

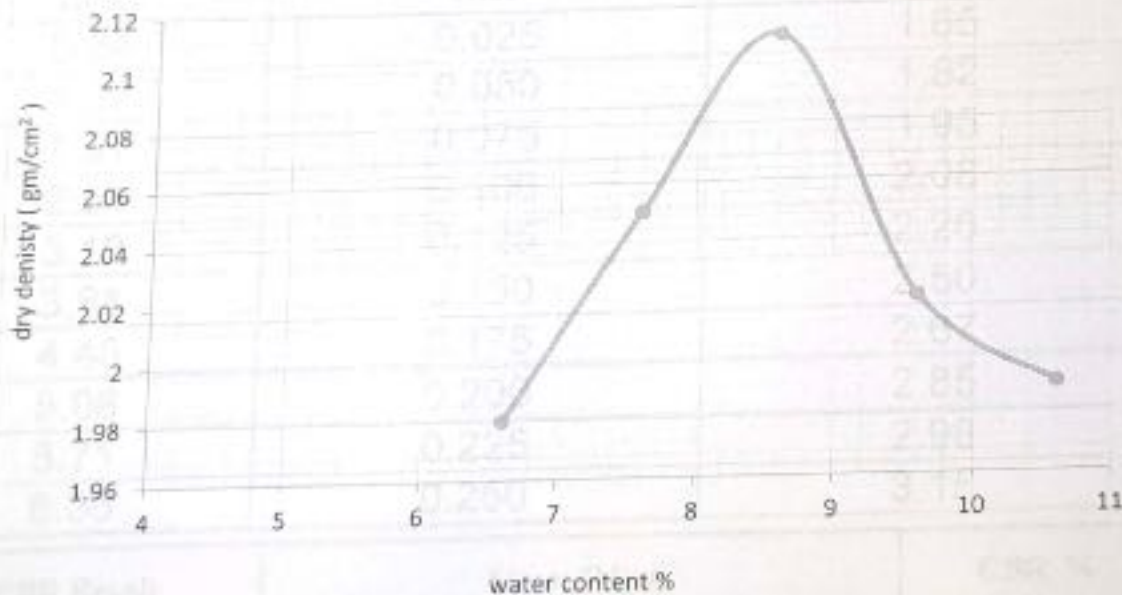
The test results are (☒ Comply - ☐ Not Comply) with specifications limits

Signature /

CEL
مكتب معامل الاستشارات الهندسية
الاستاذ المساعد
د. محمد عبد الله
رئيس قسم الاختبارات
مركز القاهرة لدراسات البيئة والتنمية
3 شارع الملك الأفضل - الزمالك - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+300)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 55
Sample No. : 24

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557.



- Max dry density (gm/cm³) : 2.11
- Optimum moisture content % : 8.6

Signature

CEL
مكتب معمل الاستشارات الهندسية
السجل الشمالي
د. محمد عبد الله
مهندس استشاري
ص.ب. ١٠٠٠٠ - القاهرة

Company Name : EGYPTIAN UNITED GROUP
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Replacement (Embankment)
 Location : St. (476+300)
 Delivery Date : 01/11/2022
 Reporting Date : 06/11/2022
 Reporting No. : 55
 Sample No. : 24

Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	1.65
1.27	0.050	1.82
1.91	0.075	1.95
2.54	0.100	2.08
3.18	0.125	2.26
3.81	0.150	2.50
4.45	0.175	2.67
5.08	0.200	2.85
5.71	0.225	2.98
6.35	0.250	3.15

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	30.2
	6.90	2.08	

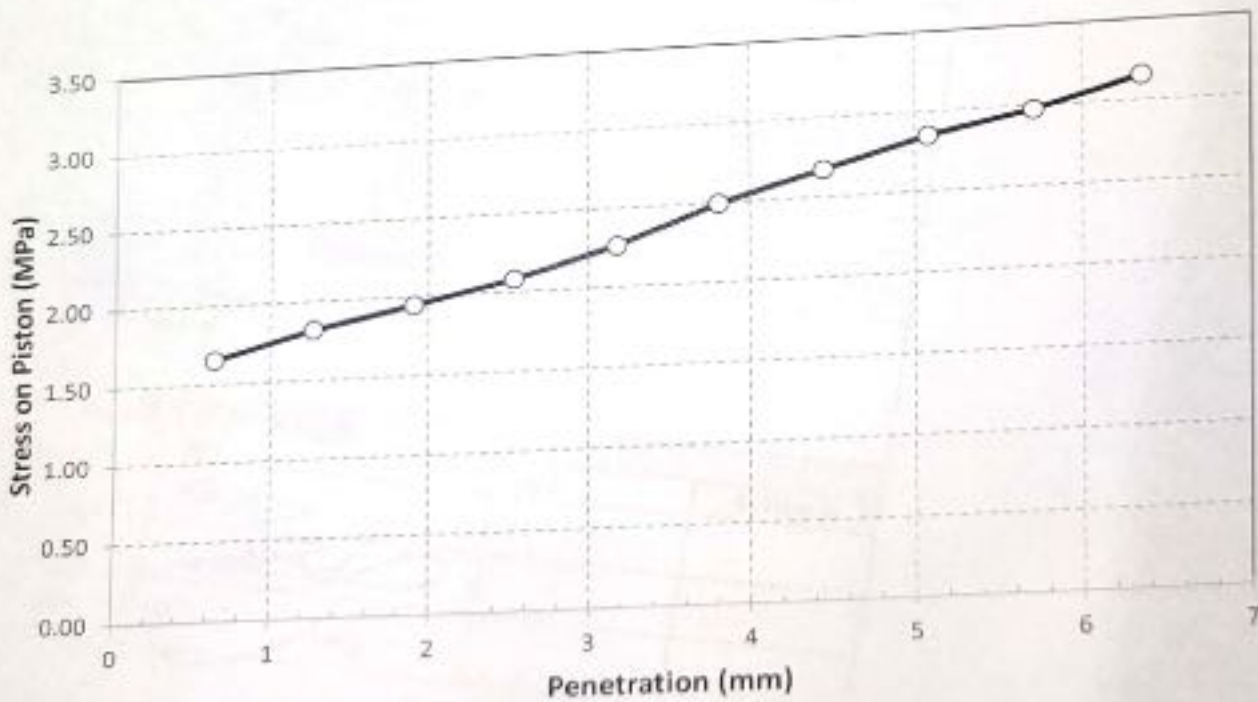
Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of $2.11 \text{ (gm/cm}^3\text{)}$ at 8.6 % optimum water content.
- 3- Surcharge load 4.50 Kg

Signature /

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+300)
Delivery Date : 01/11/2022
Reporting Date : 06/11/2022
Reporting No. : 55
Sample No. : 24

Load Penetration Curve of CBR Test
ASTM D-1883



Signature



MATERIAL INSPECTION REQUEST

الهيئة العامة
للمشروعات والكباريت
(GARB)



مركز الدراسات والبحوث
للمشروعات والكباريت
(مركز أبحاث)
مركز أبحاث

وزارة النقل
Ministry of Transport



Contractor Company	United Egyption Foundation		Designer Company	SGAC	
Issued by Contractor	Name	Sign	Date	Time	
	Mahmoud Shawish		23.11.2023		
Received by ER			MIR		

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

Description of Materials	Fill material results				
Location to be Used	1-From station477+840 to station 478+000 (-4) 2-From station476+980 to station 477+100 (-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	LL & P.L & O.M.C %	m3	5000		
2	Proctor	m3	5000		
3	Classification	m3	5000		
4	Seive analysis	m3	5000		

Comments by:

Comments by:

Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specificonitions and accepted

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negm			
Comment by ER				
Employers Representative				

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

Dear Gentleman,

Attached here with the Soil Replacement delivered on 17/11/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.
6. CBR according to ASTM D-1883.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

CEL
مكتب معامل الاستشارات الهندسية
المعامل الشمالي
رقم تسجيل قيدية: ٢٧٣٦٢٧٢٣١
شركة للرؤى: ٢٧٣٦٢٠٩٣ - القاهرة

Signature /

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	95.1
25	86.3
19	76.2
12.50	71.4
9.50	63.2
4.75	45.8
2.36	43.3
2.00	39.7
1.18	34.1
0.600	32.5
0.425	31.2
0.300	25.1
0.150	18.4

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

**Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.**

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	12.4

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

**Results of liquid limit and plasticity index
of soils according to ASTM D-4318**

Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
Group Classification	A-1-b	(A-1-a)	(A-1-b)
2.00 mm (No.10).	39.7	Max 50 %	-----
0.425 mm (No. 40).	31.2	Max 30 %	Max 50 %
0.075 mm (No. 200).	12.4	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

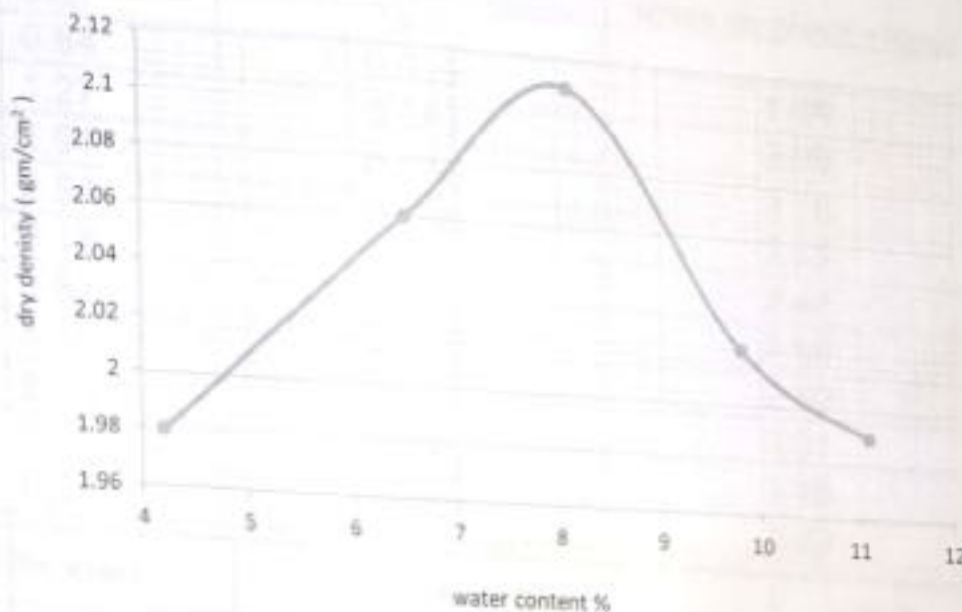
The test results are ☒ Comply ☐ Not Comply) with specifications limits

Signature /

CEL
مكتب معامل الاستشارات الهندسية
الساحل الشمالي
بمقره في مدينة ١٥٧٧
البريد الإلكتروني: info@cel-egypt.com
الهاتف: ٢٧٣٦٣٠٩٣ - ٢٧٣٦٣٠٩٣

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557.



- Max dry density (gm/cm³) : 2.11
- Optimum moisture content % : 8.1

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	1.89
1.27	0.050	2.08
1.91	0.075	2.18
2.54	0.100	2.35
3.18	0.125	2.44
3.81	0.150	2.58
4.45	0.175	2.80
5.08	0.200	3.01
5.71	0.225	3.18
6.35	0.250	3.29

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	34.1
	6.90	2.35	

Notes:

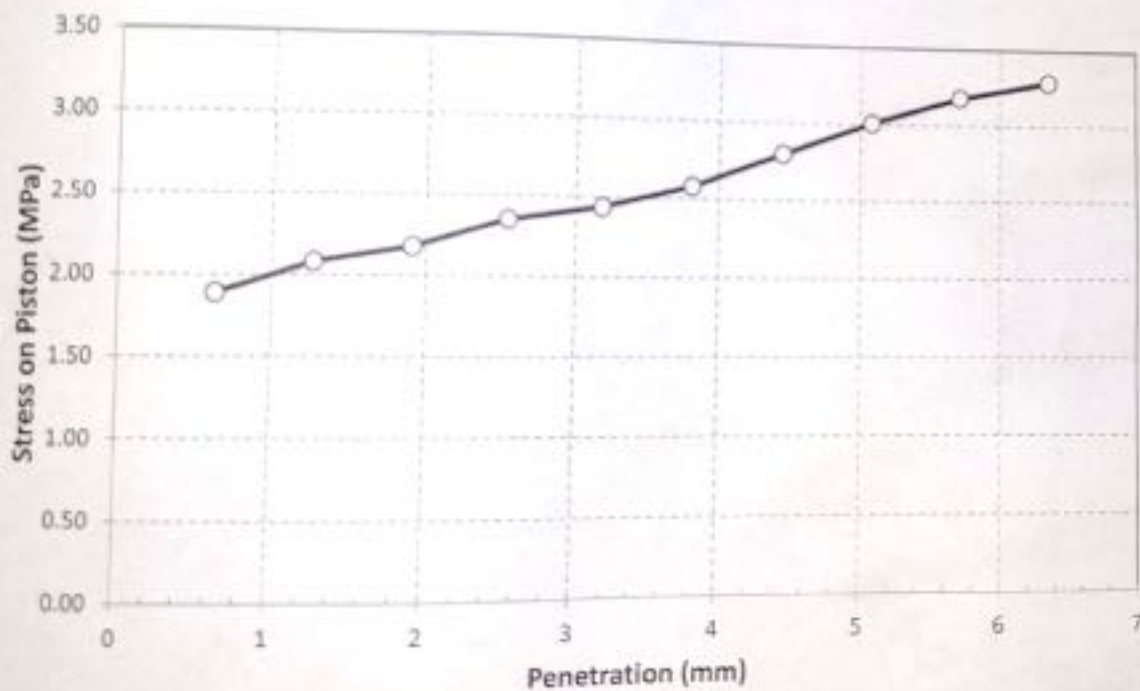
- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.11 (gm /cm³) at 8.1 % optimum water content.
- 3- Surcharge load 4.50 Kg.

Signature :

CEL
مكتب معامل الاستشارات الهندسية
المعامل الشمالية
رقم قسيمة ختمية 3039 - 1011 - 6011
الدفاع القوي 1 3 شارع طوكيو - القاهرة

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+980)
Delivery Date : 17/11/2022
Reporting Date : 23/11/2022
Reporting No. : 57
Sample No. : 26

Load Penetration Curve of CBR Test
ASTM D-1883



Signature /



MATERIAL INSPECTION REQUEST

الهيئة العامة
للمرور والكباريت
(GARB)



مركز الدراسات والبحوث
النقل والبنية التحتية
(مركز البحوث
النقل والبنية التحتية)



Contractor Company	United Egyption Foundation		Designer Company	SGAC
Issued by Contractor	Name	Sign	Date	Time
	Mahmoud Shawish		6.12.2023	
Received by ER			MIR	

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	Fill material results				
Location to be Used	1-From station477+100 to station 477+220 (-5) 2-From station476+340 to station 476+540 (-2)				
MAR Approval No				Date	
Supplier Name					
Test Requirement	Specification			Clause	
Reference Photos	Yes attached / No			Other	
Item	Description	Unit	Quantity	Arrival Date	Note
1	LL & P.L & O.M.C %	m3	5000		
2	Proctor	m3	5000		
3	Classification	m3	5000		
4	Seive analysis	m3	5000		

Comments by:	Comments by:
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specifcontions and accepted	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negm			
Comment by ER				
Employers Representative				

MATERIAL INSPECTION REQUEST

الهيئة العامة
للمنارة والملاحة
(GARIB)



مركز الدراسات والبحوث
القناة والسفن والملاحة
(مركز بحوث)
دكتور/ محمد الشويش

وزارة النقل



Contractor Company	United Egypton Foundation		Designer Company	SGAC							
Issued by Contractor	Name	Sign	Date	Time							
	Mahmoud Shawiesh		6.12.22								
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	Fill material results					
Location to be Used	1-From station477+600 to station 477+840 (-5) 2-From station477+100 to station 477+220 (-5) 3-From station476+340 to station 476+540 (-2)					
MAR Approval No					Date	
Supplier Name						
Test Requirement			Specification	Clause		
Reference Photos	Yes attached / No		Other			
Item	Description	Unit	Quantity	Arrival Date	Note	
1	CBR	m3	10000			

Comments by:	Comments by:
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specificonctions and accepted	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negm			
Comment by ER				
Employers Representative				

Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+100)
Delivery Date : 30/11/2022
Reporting Date : 06/12/2022
Reporting No. : 59
Sample No. : 28

Dear Gentleman,

Attached here with the Soil Replacement delivered on 30/11/2022

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.
6. CBR according to ASTM D-1883.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature _____

المساحل الشبكية

Company Name : EGYPTIAN UNITED GROUP
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Replacement (Embankment)
 Location : St. (476+100)
 Delivery Date : 30/11/2022
 Reporting Date : 06/12/2022
 Reporting No. : 59
 Sample No. : 28

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	95.8
25	84.1
19	74.1
12.50	65.2
9.50	57.1
4.75	48.2
2.36	45.5
2.00	43.1
1.18	38.2
0.600	34.3
0.425	31.6
0.300	27.5
0.150	19.1

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+100)
Delivery Date : 30/11/2022
Reporting Date : 06/12/2022
Reporting No. : 59
Sample No. : 28

**Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.**

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ M (No.200)	13.6

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+100)
Delivery Date : 30/11/2022
Reporting Date : 06/12/2022
Reporting No. : 59
Sample No. : 28

**Results of liquid limit and plasticity index
of soils according to ASTM D-4318**

Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature /



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+100)
Delivery Date : 30/11/2022
Reporting Date : 06/12/2022
Reporting No. : 59
Sample No. : 28

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
Group Classification	A-1-b	(A-1-a)	(A-1-b)
2.00 mm (No.10).	43.1	Max 50 %	-----
0.425 mm (No. 40).	31.6	Max 30 %	Max 50 %
0.075 mm (No. 200).	13.6	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

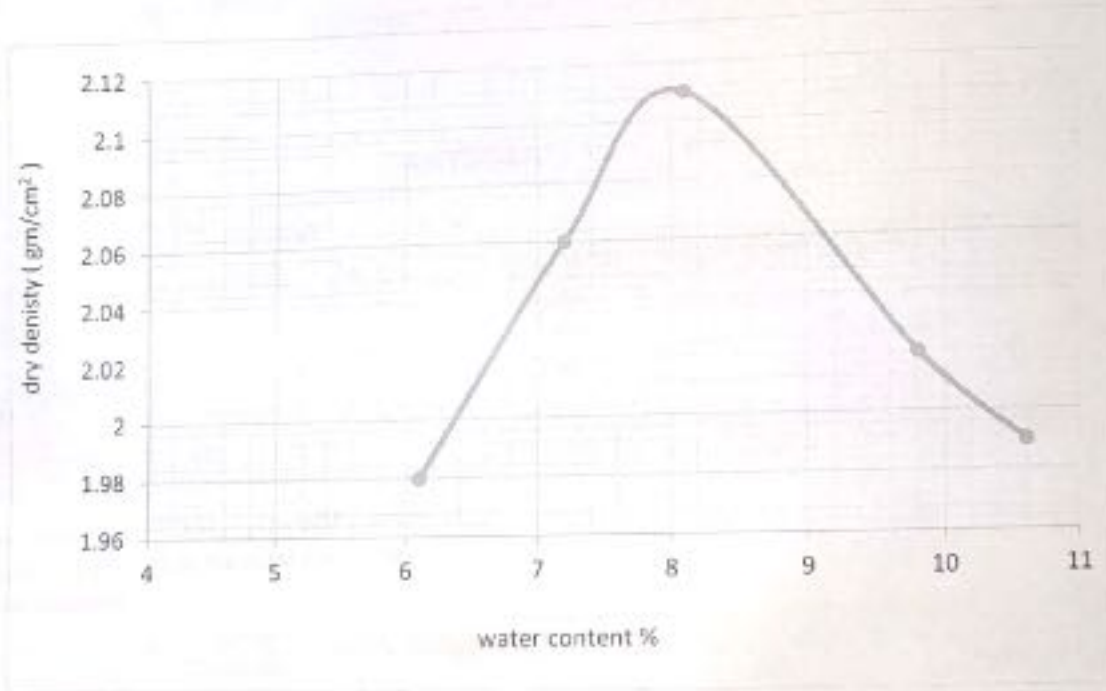
The test results are (☒ Comply - ☐ Not Comply) with specifications limits

Signature



Company Name : EGYPTIAN UNITED GROUP
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Location : St. (476+100)
Delivery Date : 30/11/2022
Reporting Date : 06/12/2022
Reporting No. : 59
Sample No. : 28

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557.



- Max dry density (gm/cm³) : 2.11
- Optimum moisture content % : 8.1

Signature /



MATERIAL INSPECTION REQUEST

الهيئة العامة
للمطرق والكباري
(GARB)



مركز الدراسات والبحوث
الطرق والكباري
(مركز أبحاث)
مركز أبحاث الطرق والكباري



170, 122, 104

Contractor Company	United Egyption Foundation		Designer Company	SGAC
Issued by Contractor	Name	Sign	Date	Time
	Mahmoud Shawish		6.2.2023	
Received by ER			MIR	

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	Fill material results				
Location to be Used	1-From station477+520 to station 477+600 (-5) 2-From station476+340 to station 476+540 (-1.75) 3-From station477+220 to station 477+280 (-5) 4-From station477+400 to station 477+520 (-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	LL & P.L & O.M.C %	m3	5000		
2	Proctor	m3	5000		
3	Classification	m3	5000		
	Seive analysis	m3	5000		
Comments by:		Comments by:			
Asample has been taken form fill material by SGAC office to (CEL) lab and the results founded meet the specificonctions and accepted					

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Kamel Shehab			
QA/QC *				
GARB**	Eng/ Mostafa Negrn			
Comment by ER				
Employers Representative				

Company Name : Egyptian United Group
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Delivery Date : 26-01-2023
Reporting Date : 06-02-2023
Reporting No. : 03
Sample No. : 02

Results of Tests Analysis According to ASTM D-422

Dear Gentleman,

Attached here with the Soil Replacement delivered on 26 / 01 / 2023

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according to ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Soil classification according to Project Specs.
5. Proctor test according to ASTM D-1557.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

Signature



Company Name : Egyptian United Group
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Delivery Date : 26-01-2023
Reporting Date : 06-02-2023
Reporting No. : 03
Sample No. : 02

Results of Sieve Analysis According to ASTM D-422.

Sieve Size (mm)	Passing %
50	97.8
37.5	91.2
25	85.2
19	71.4
12.50	62.3
9.50	51.4
4.75	38.9
2.36	33.3
2.00	31.4
1.18	30.5
0.600	28.5
0.425	26.2
0.300	21.7
0.150	14.8

Signature

مكتب معامل الاستشارات الهندسية

المساحل الشمالي

رقم الترخيص: 557 - 558 - 559

شماره الترخيص: 3 - 2 - 1

Company Name : Egyptian United Group
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Delivery Date : 26-01-2023
Reporting Date : 06-02-2023
Reporting No. : 03
Sample No. : 02

**Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.**

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	10.8

Signature/.....



Company Name : Egyptian United Group
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Delivery Date : 26-01-2023
Reporting Date : 06-02-2023
Reporting No. : 03
Sample No. : 02

Results of liquid limit and plasticity index
of soils according to ASTM D-4318

Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature /



Company Name : Egyptian United Group
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Replacement (Embankment)
 Delivery Date : 26-01-2023
 Reporting Date : 06-02-2023
 Reporting No. : 03
 Sample No. : 02

Soil Classification According to Project Specs (Embankment)

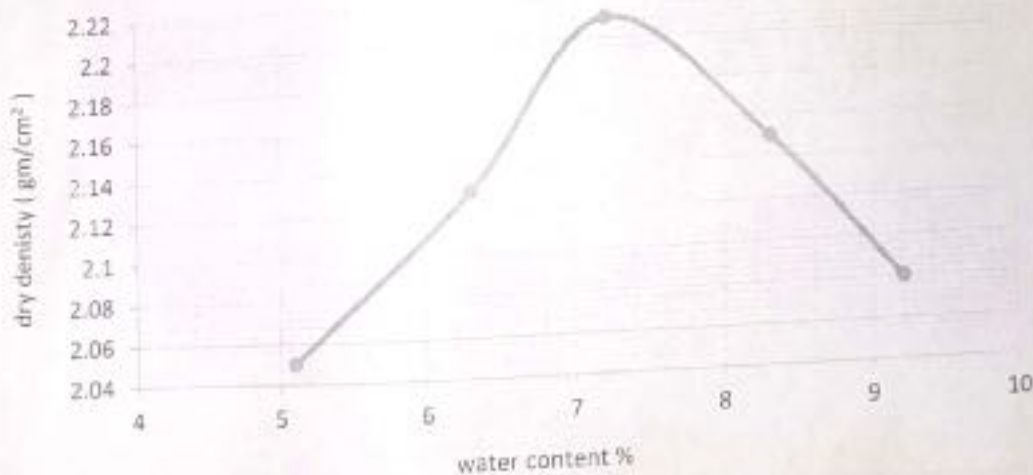
TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
Group Classification	(A-1-a)	(A-1-a)	(A-1-b)
2.00 mm (No.10).	31.4	Max 50 %	-----
0.425 mm (No. 40).	26.2	Max 30 %	Max 50 %
0.075 mm (No. 200).	10.8	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

The test results are ☒ Comply ☐ Not Comply) with specifications limits

Signature / ...

Company Name : Egyptian United Group
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Replacement (Embankment)
Delivery Date : 26-01-2023
Reporting Date : 06-02-2023
Reporting No. : 03
Sample No. : 02

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557



- Max dry density (gm/cm³) : 2.21
- Optimum moisture content % : 7.2

Signature /

