

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 01/01/2023
Reporting Date : 06/01/2023
Reporting No. : 01
Sample No. : 01

Dear Gentleman,

Attached here with the Soil Embankment delivered on 01/01/2023

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 / 
The stamp contains the following text: **CEL**, مكتب معامل الاستشارات الهندسية, السيد المهندس, رقم التسجيل ٢٧٣١٧٢٣١ - ٢٧٣٦٣٠٩٣, شارع الملك الأفضل - الزمالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment - (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 01/01/2023
Reporting Date : 06/01/2023
Reporting No. : 01
Sample No. : 01

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	94.7
25	85.3
19	80.4
12.50	70.1
9.50	65.4
4.75	51.8
2.36	47.7
2.00	43.7
1.18	40.2
0.600	35.9
0.425	32.6
0.300	25.5
0.150	16.9

CEL
مكتب معامل الاستشارات الهندسية
الاسكندرية
ر.م. حسن عبد الله (011) 5555-815
ج.م. هادي (011) 5555-815

Signature

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment- (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 01/01/2023
Reporting Date : 06/01/2023
Reporting No. : 01
Sample No. : 01

**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)	14.1

CEL
مكتب معامل الإستشارات الهندسية
المباني الشامية
Signature / ...
رئيس قسم المعاملات - القاهرة
3 شارع الملك الأفدال - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 01/01/2023
Reporting Date : 06/01/2023
Reporting No. : 01
Sample No. : 01

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



Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 01/01/2023
 Reporting Date : 06/01/2023
 Reporting No. : 01
 Sample No. : 01

Soil Classification According to Project Specs (Embankment)

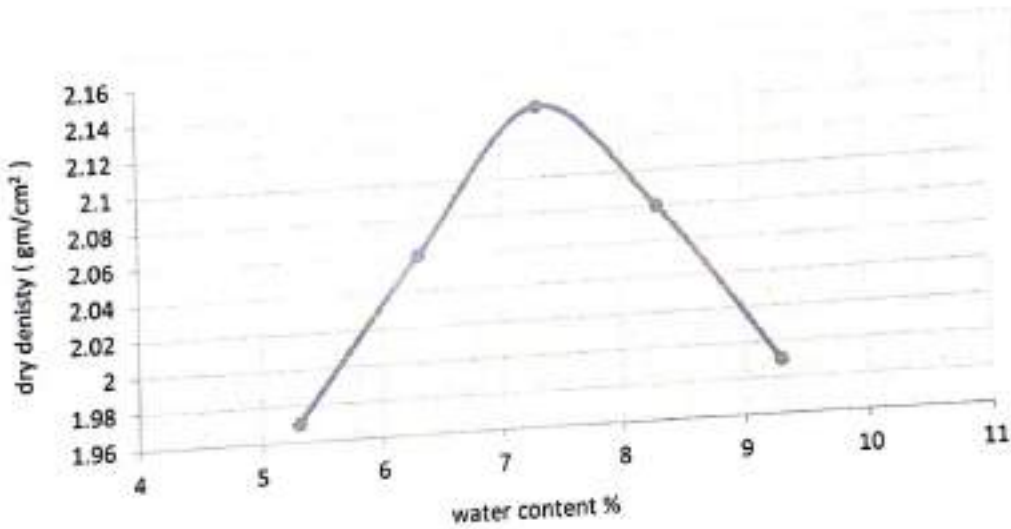
TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
• Group Classification	(A-1-b)		
2.00 mm (No.10).	43.7	Max 50 %	-----
0.425 mm (No. 40).	32.6	Max 30 %	Max 50 %
0.075 mm (No. 200).	14.1	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

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

Signature / 
 210-0841-537
 3 شارع عبد القادر - الزمالة - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment - (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 01/01/2023
Reporting Date : 06/01/2023
Reporting No. : 01
Sample No. : 01

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



- Max dry density (gm/cm³) : 2.14
- Optimum moisture content % : 7.3

Signature / ...
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مكتب معامل الاستشارات الهندسية
الساحل الشمالي
المنطقة الصناعية - برج 1 - طابق 1 - قاعة 101 - قاعة 101 - قاعة 101

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 04/01/2023
Reporting Date : 10/01/2023
Reporting No. : 02
Sample No. : 02

Dear Gentleman,

Attached here with the Soil Embankment delivered on 04/01/2023

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
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 /

مكتب معامل الاستشارات الهندسية
المعامل الشطرنجي
رام الله - 001 - 001 - 001
فريق العمل - القاهرة - 001 - 001 - 001

Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 04/01/2023
 Reporting Date : 10/01/2023
 Reporting No. : 02
 Sample No. : 02

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	95.3
25	89.5
19	84.7
12.50	69.5
9.50	65.3
4.75	54.7
2.36	49.9
2.00	46.2
1.18	42.2
0.600	38.9
0.425	34.4
0.300	22.2
0.150	17.9


 مكتب معامل الاستشارات الهندسية
 Signature: 
 رقم تسجيل الممارسة: 218-294-827
 مقر العمل: 3 شارع الملك ائفدال - الزمالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment - (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 04/01/2023
Reporting Date : 10/01/2023
Reporting No. : 02
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)	14.4



Signature

Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 04/01/2023
 Reporting Date : 10/01/2023
 Reporting No. : 02
 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


 مكتب معامل الاستشارات الهندسية
 الساحل الشمالي
 رقم التسجيل 627 - 627 - 201
 ٢٧٣٦٣٠٩٣ - ٢٧٣٦٧٢٣١
 تليفون + فاكس :
 Signature

Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 04/01/2023
 Reporting Date : 10/01/2023
 Reporting No. : 02
 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-b)	(A-1-a)	(A-1-b)
2.00 mm (No.10).	46.2	Max 50 %	-----
0.425 mm (No. 40).	34.4	Max 30 %	Max 50 %
0.075 mm (No. 200).	14.4	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

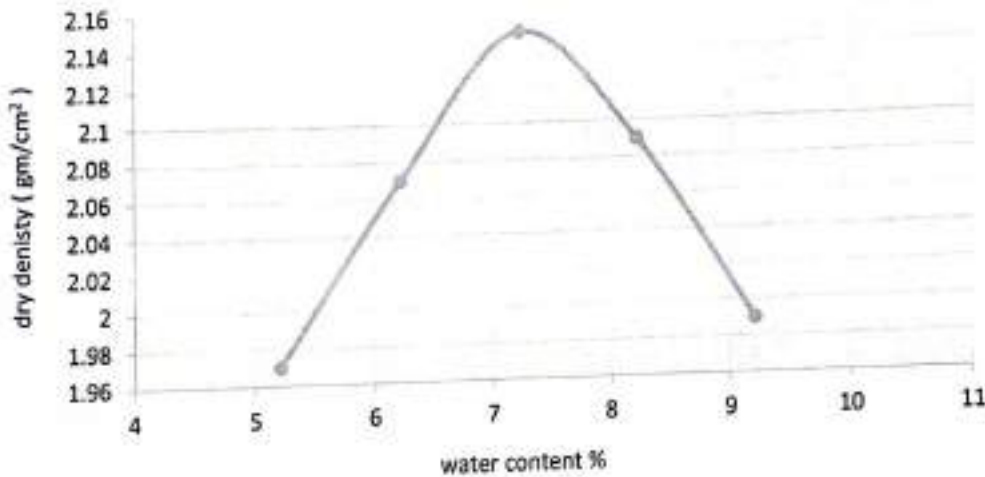
The test results are (☒ Comply - ☐ Not Comply) with specifications limits


 مكتب معامل الاستشارات الهندسية
 السهل الشمالي
 رقم سجل التجديد 2010-2023
 ص ٢٢٣٦٣٠٩٣ - ٢٧٣٦٧٢٣١

Signature

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 04/01/2023
Reporting Date : 10/01/2023
Reporting No. : 02
Sample No. : 02

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



- Max dry density (gm/cm³) : 2.15
- Optimum moisture content % : 7.2

Signature / 
مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: info@cel-egypt.com
الهاتف: 27367231 - 27363093
الفاكس: 27367231 - 27363093

Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 04/01/2023
 Reporting Date : 10/01/2023
 Reporting No. : 02
 Sample No. : 02

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	2.79
1.27	0.050	3.04
1.91	0.075	3.30
2.54	0.100	3.69
3.18	0.125	3.94
3.81	0.150	4.17
4.45	0.175	4.45
5.08	0.200	4.68
5.71	0.225	4.95
6.35	0.250	5.18

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	53.4
	6.90	3.69	

Notes :

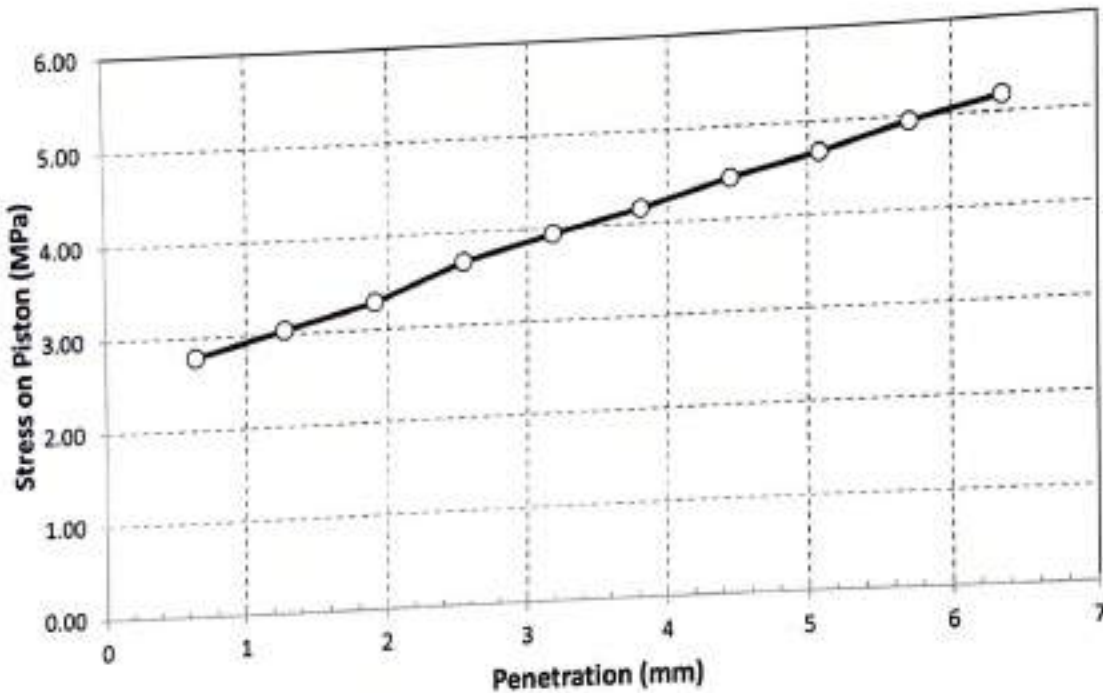
- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.15 (gm /cm³) at 7.2 % optimum water content.
- 3- Surcharge load 4.50 Kg.

Signature /

CEL
 مكتب معامل الاستشارات الهندسية
 السجل المصالحات
 رقم التسجيل 219 - 801 - 237
 شارع الملك الأفندي - الزمالة - القاهرة
 فاكس : 27367231 - 27363093

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment - (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 04/01/2023
Reporting Date : 10/01/2023
Reporting No. : 02
Sample No. : 02

Load Penetration Curve of CBR Test ASTM D-1883



CEL
مكتب معامل الاستشارات الهندسية
Signature: 
المهندس / المهندس / المهندس
27367231 - 27363093
3 El Malek El Afdal Street
Zamalek, Cairo.

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 17/01/2023
Reporting Date : 23/01/2023
Reporting No. : 03
Sample No. : 03

Dear Gentleman,

Attached here with the Soil Embankment delivered on 17/01/2023

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 /.....
The stamp is an oval shape containing the CEL logo at the top. Below the logo, the text 'مكتب معامل الاستشارات الهندسية' (Consulting Engineering Bureau & Laboratories) is written. In the center, 'السيد / السيد' (Mr./Mrs.) is written. Below that, 'رامسدة مصرية - 004 - 004' (Ramssada Misriya - 004 - 004) is written. At the bottom, 'مركز القليوبية - القليوبية - مصر' (Center of Qalyubia - Qalyubia - Egypt) is written.

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 17/01/2023
Reporting Date : 23/01/2023
Reporting No. : 03
Sample No. : 03

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	93.2
25	88.7
19	82.3
12.50	71.3
9.50	66.7
4.75	53.1
2.36	50.8
2.00	44.8
1.18	40.2
0.600	35.5
0.425	33.4
0.300	24.2
0.150	16.9

CEL
مكتب معامل الاستشارات الهندسية
الساحل الشمالي
Signature / ...
د. محمد أحمد كمال - مهندس
شارع المظفر - الزمالة - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 17/01/2023
Reporting Date : 23/01/2023
Reporting No. : 03
Sample No. : 03

**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)	13.8

Signature /

مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: info@cel-egypt.com
رقم الترخيص: ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
مركز فاكس : شارع النور - الزمالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 17/01/2023
Reporting Date : 23/01/2023
Reporting No. : 03
Sample No. : 03

**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

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مكتب معامل الاستشارات الهندسية
المسجل رقم ١٢٣٤٥٦٧٨٩
بموجب مرسوم رقم ١٢٣٤٥٦٧٨٩
تاريخ ١٢٣٤٥٦٧٨٩ - ١٢٣٤٥٦٧٨٩

Signature / ...

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 17/01/2023
Reporting Date : 23/01/2023
Reporting No. : 03
Sample No. : 03

Soil Classification According to Project Specs (Embankment)

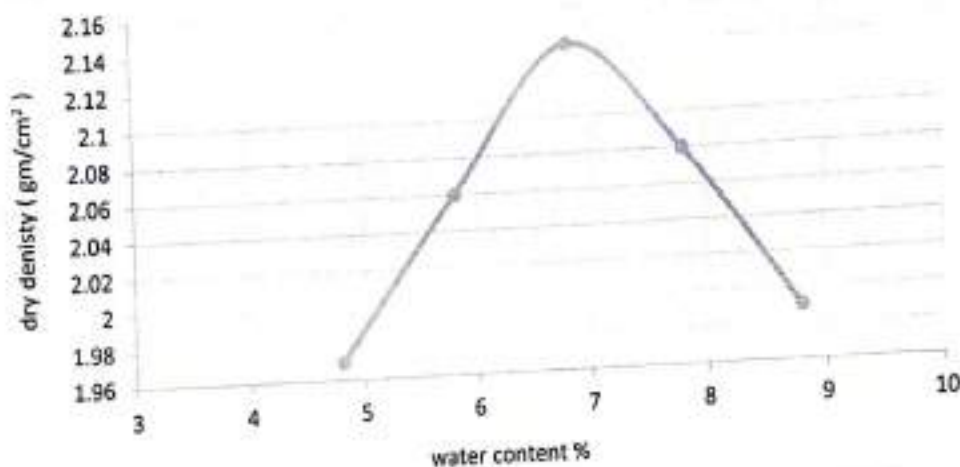
TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
• Group Classification	(A-1-b)		
2.00 mm (No.10).	44.8	Max 50 %	-----
0.425 mm (No. 40).	33.4	Max 30 %	Max 50 %
0.075 mm (No. 200).	13.8	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

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

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مكتب معامل الاستشارات الهندسية
الاستشاري (الممثل)
Signature /
رقم سجل المهندس: 537 - 537 - 537
مركز القاهرة: شارع الملك الأفندي - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 17/01/2023
Reporting Date : 23/01/2023
Reporting No. : 03
Sample No. : 03

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



- Max dry density (gm/cm²) : 2.14
- Optimum moisture content % : 6.8

Signature / 

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 04
Sample No. : 04

Dear Gentleman,

Attached here with the Soil Embankment delivered on 11/02/2023

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
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


مكتب معامل الاستشارات الهندسية
Signature /
د. محمد عبد الله - 011-244-0000
شارع محمد عبد الله - القاهرة - مصر

Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 11/02/2023
 Reporting Date : 17/02/2023
 Reporting No. : 04
 Sample No. : 04

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	92.1
25	85.3
19	81.7
12.50	73.9
9.50	66.8
4.75	51.1
2.36	48.2
2.00	43.2
1.18	37.4
0.600	33.9
0.425	31.7
0.300	25.9
0.150	15.9

CEL
 مكتب معامل الاستشارات الهندسية
 Signature / *[Signature]*
 رقم تسجيل مصرية 827 - 824 - 819
 جسر القويس ، 3 شارع الملك الأفندي - الزمالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 04
Sample No. : 04

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)	13.9

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مكتب معامل الاستشارات الهندسية
Signature / **الشيخ محمد الشامي**
رسم التسجيل الهندسي 627 - 601 م 819
شماره القياس : 3 شارع شوك الأختار - الزمالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 04
Sample No. : 04

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

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 مكتب معامل الاستشارات الهندسية
 ٣ شارع الملك ابي الفضل - الزمالك - القاهرة
 رقم التليفون : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
 فاكس : ٢٧٣٦٣٠٩٣

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 04
Sample No. : 04

Soil Classification According to Project Specs (Embankment)

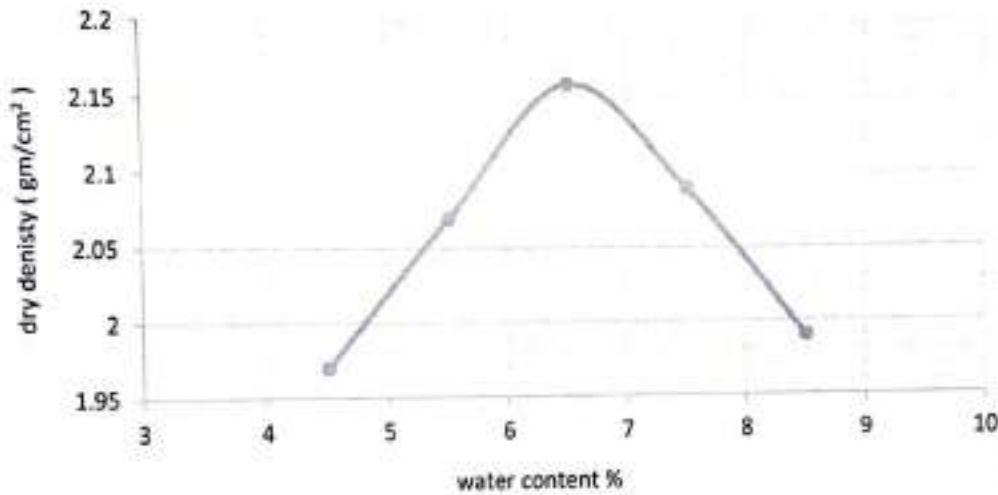
TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
• Group Classification	(A-1-b)		
2.00 mm (No.10).	43.2	Max 50 %	-----
0.425 mm (No. 40).	31.7	Max 30 %	Max 50 %
0.075 mm (No. 200).	13.9	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

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

CEL
مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: info@cel-egypt.com
Signature: [Signature]
215-091-037 - 215-091-037
شارع النيل - القاهرة - مصر

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment - (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 04
Sample No. : 04

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



- Max dry density (gm/cm²) : 2.16
- Optimum moisture content % : 6.5

CEL
مكتب معامل الاستشارات الهندسية
Signature / *الشيخ الشامي*
رقم تسجيل المهندسين : 837 - 891 - 819
قرايلا قرايلا : 3 كورج شارع النيل - القاهرة - مصر

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 04
Sample No. : 04

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	3.55
1.27	0.050	3.75
1.91	0.075	3.96
2.54	0.100	4.16
3.18	0.125	4.36
3.81	0.150	4.56
4.45	0.175	4.77
5.08	0.200	4.97
5.71	0.225	5.17
6.35	0.250	5.38

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	60.3
	6.90	4.16	

Notes :

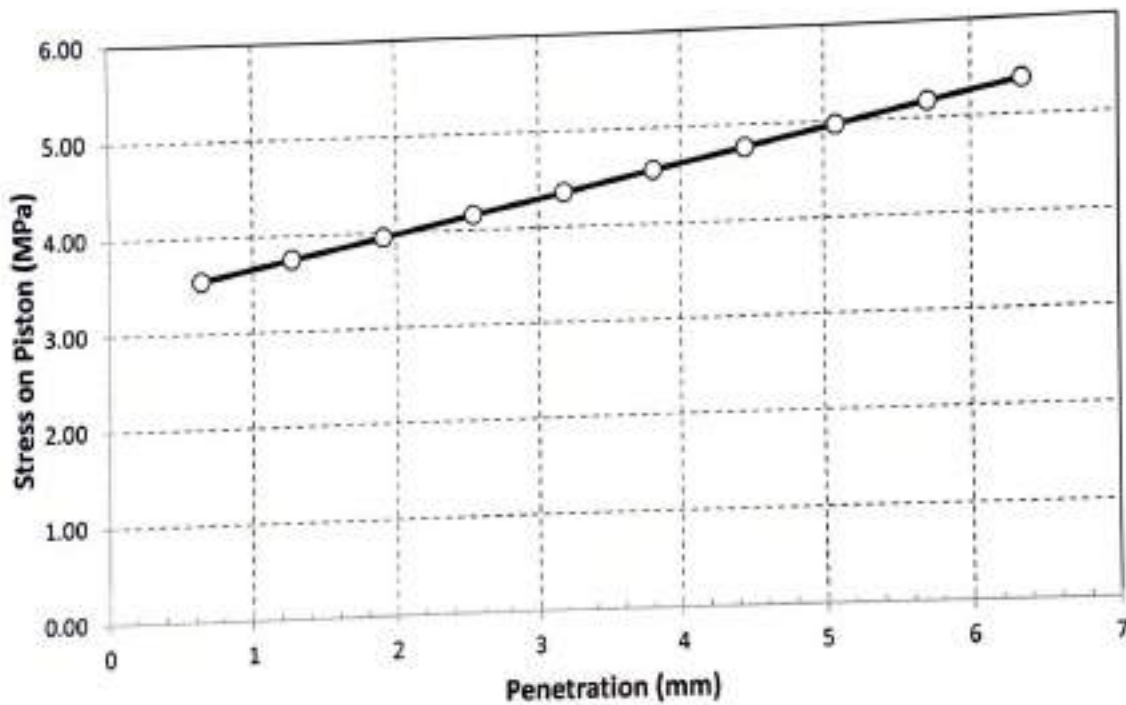
- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.16 (gm /cm³) at 6.5 % optimum water content.
- 3- Surcharge used 4.50 Kg.

Signature

مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: cel@cel-egypt.com
رقم هاتف القاهرة: 27367231 - 27363093
فكس القاهرة: 27367231 - 27363093

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 04
Sample No. : 04

Load Penetration Curve of CBR Test ASTM D-1883



CEL
مكتب معامل الاستشارات الهندسية
Signature: *[Signature]*
رئيس المكتب: *[Signature]*
210-204-637
شارع الملك فيصل - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 05
Sample No. : 05

Dear Gentleman,

Attached here with the Soil Embankment delivered on 11/02/2023

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 The stamp is an oval shape with a blue border. Inside, the word 'CEL' is at the top. Below it, there is Arabic text: 'مكتب معامل الاستشارات الهندسية' and 'التسجيل المهنى'. At the bottom of the stamp, there is more Arabic text: 'رقم التسجيل ٤٨٢٩ - ٤٨٣٠' and 'جوليا هادي'.

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 05
Sample No. : 05

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	99.3
37.5	95.3
25	91.2
19	83.9
12.50	74.6
9.50	63.8
4.75	58.4
2.36	52.6
2.00	49.3
1.18	44.2
0.600	38.9
0.425	36.2
0.300	24.9
0.150	17.0

CEL
مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: info@cel-egypt.com
رقم التسجيل: ٢٧٣٦٢٣١ - ٢٧٣٦٣٠٩٣
عنوان: شارع الملك الأفضل - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 05
Sample No. : 05

**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)	14.8

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مكتب معامل الاستشارات الهندسية
Signature / **البرهان الشيمالي**
رئيس المختبر / مدير عام
ش.م.م. ١٩٩٩ - ٢٠٢٣
٥١ شارع شبراخيت - القاهرة - مصر

Sample No. : 05

of soils according to ASTM D-4318

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

Signature / 

Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 11/02/2023
 Reporting Date : 17/02/2023
 Reporting No. : 05
 Sample No. : 05

Soil Classification According to Project Specs (Embankment)

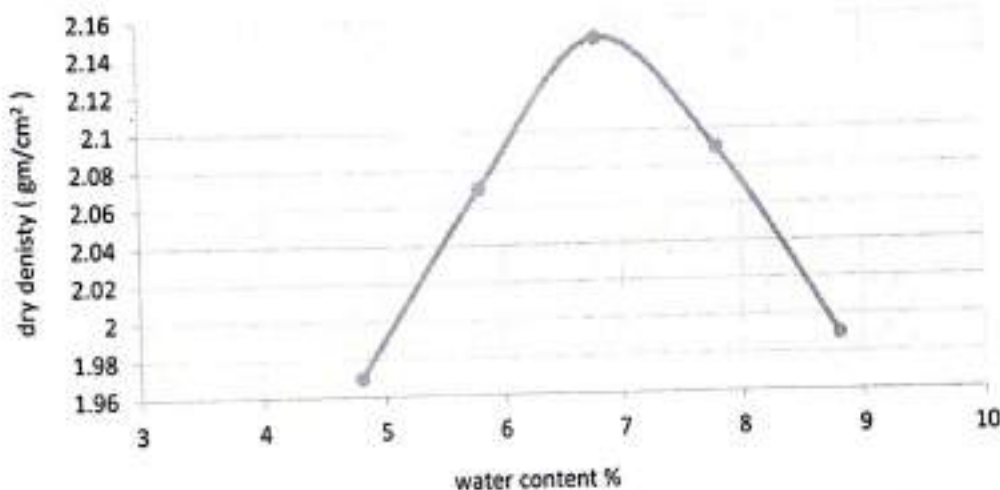
TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
• Group Classification	(A-1-b)		
2.00 mm (No.10).	49.3	Max 50 %	-----
0.425 mm (No. 40).	36.2	Max 30 %	Max 50 %
0.075 mm (No. 200).	14.8	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

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

Signature 
 Ramy El Afdal El Afdal Street
 Zamalek, Cairo.
 Tel. & Fax : 27367231 - 27363093

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 11/02/2023
Reporting Date : 17/02/2023
Reporting No. : 05
Sample No. : 05

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



- Max dry density (gm/cm²) : 2.15
- Optimum moisture content % : 6.8

Signature / 
الشيخ محمد مصطفى
الساحل الشمالي
210-001-637
رام الله - القاهرة - الزمالة - القاهره
مركز التأسيس

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 14/02/2023
Reporting Date : 20/02/2023
Reporting No. : 06
Sample No. : 06

Dear Gentleman,

Attached here with the Soil Embankment delivered on 14/02/2023

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
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

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مكتب معمل الاستشارات الهندسية
البريد الإلكتروني
27367231 - 27363093
3 شارع الملك الأفدر - القاهرة

Signature /

Company Name : EG CONTRACK
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Soil Embankment – (middle embankment)
 Location : St. (499+500) : (500+000)
 Delivery Date : 14/02/2023
 Reporting Date : 20/02/2023
 Reporting No. : 06
 Sample No. : 06

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	98.1
37.5	94.7
25	84.6
19	79.3
12.50	71.4
9.50	62.8
4.75	48.3
2.36	43.9
2.00	40.8
1.18	37.7
0.600	32.9
0.425	30.1
0.300	22.2
0.150	16.2

CEL
 مكتب معامل الاستشارات الهندسية
 السواحل الشمالي
 Signature /
 رقم تسجيل المهندس : 215-895-837
 صراف حراس : 3 شارع طوكيو - الزمالة - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 14/02/2023
Reporting Date : 20/02/2023
Reporting No. : 06
Sample No. : 06

**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)	13.1

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مكتب معامل الاستشارات الهندسية
الساحل الشمالي
Signature / ...
د. محمد عبد الله - م. أحمد - م. خالد - م. فادي

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 14/02/2023
Reporting Date : 20/02/2023
Reporting No. : 06
Sample No. : 06

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

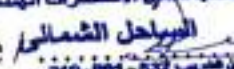
Signature 
مكتب معامل الاستشارات الهندسية
الساحل الشمالي
رام الله - 091 - 037 - 019
شارع الملك الفاضل - القاهرة - 27367231 - 27363093

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 14/02/2023
Reporting Date : 20/02/2023
Reporting No. : 06
Sample No. : 06

Soil Classification According to Project Specs (Embankment)

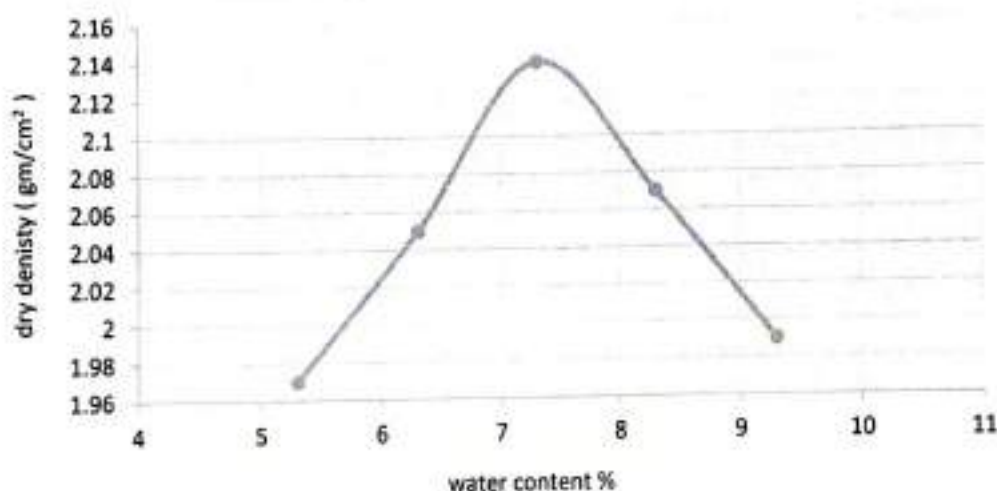
TEST	Results (%)	Limits according Projects Specs	
		(A-1-a)	(A-1-b)
• Group Classification	(A-1-b)		
2.00 mm (No.10).	40.8	Max 50 %	-----
0.425 mm (No. 40).	30.1	Max 30 %	Max 50 %
0.075 mm (No. 200).	13.1	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

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

CEL
مكتب معامل الاستشارات الهندسية
Signature: 
219-801-537
شركة المالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 14/02/2023
Reporting Date : 20/02/2023
Reporting No. : 06
Sample No. : 06

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

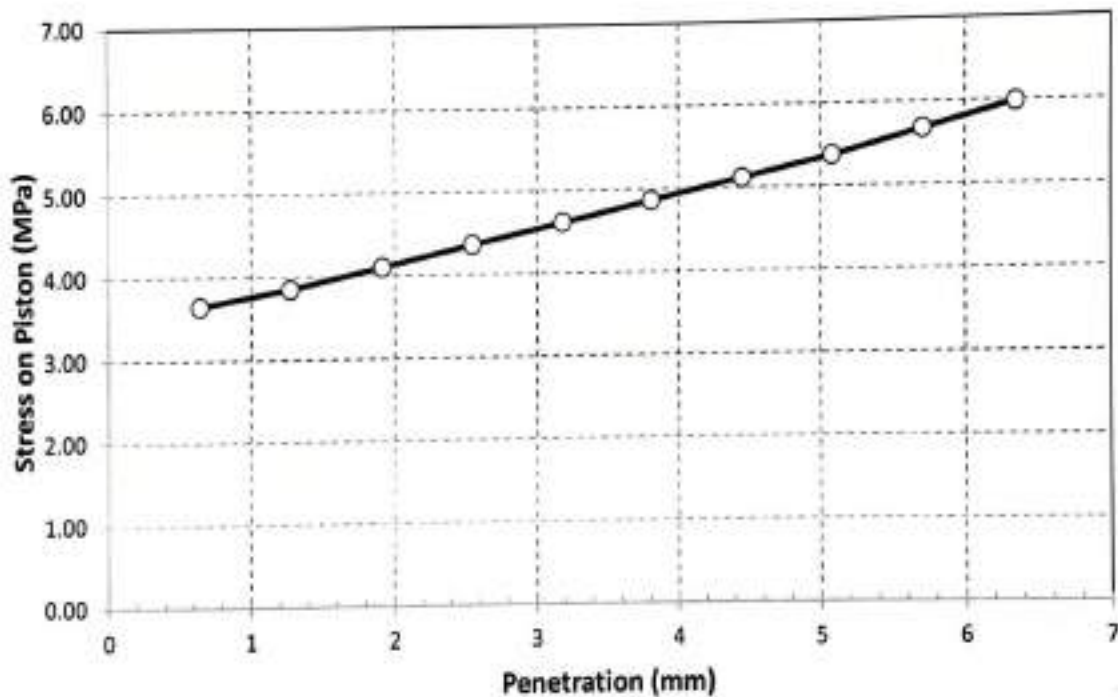


- Max dry density (gm/cm²) : 2.14
- Optimum moisture content % : 7.3

CEL
مكتب معمل الاستشارات الهندسية
التمثيل الشمالي
Signature / *[Signature]*
إدارة معمل الاستشارات الهندسية - القاهرة - ٢٧٣٦٣٠٩٣ - ٢٧٣٦٧٢٣١

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (middle embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 14/02/2023
Reporting Date : 20/02/2023
Reporting No. : 06
Sample No. : 06

Load Penetration Curve of CBR Test ASTM D-1883



CEL
مكتب معامل الاستشارات الهندسية
Signature: *[Signature]*
رئيس المكتب: *[Signature]*
219 - 001 - 000
مركز القوس : 3 شارع الملك الأفندي - الزمالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (upper embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 23/03/2023
Reporting Date : 29/03/2023
Reporting No. : 07
Sample No. : 07

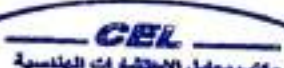
Dear Gentleman,

Attached here with the Soil Embankment delivered on 23/03/2023

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


مكتب معامل الاستشارات الهندسية
Signature / 
رام محمد محمد
215-0991-827
مركز فاكس : 3 شارع الملك الأفندي - الزمالك - القاهرة

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (upper embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 23/03/2023
Reporting Date : 29/03/2023
Reporting No. : 07
Sample No. : 07

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	93.6
25	82.3
19	71.1
12.50	67.9
9.50	56.8
4.75	45.1
2.36	42.2
2.00	37.5
1.18	33.9
0.600	30.2
0.425	28.3
0.300	20.8
0.150	15.8

CEL
مكتب معامل الاستشارات الهندسية
Signature / *[Signature]*
رئيس مكتب الاستشارات الهندسية
210 - 209 - 207
شارع الملك فيصل - القاهرة

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

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (upper embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 23/03/2023
Reporting Date : 29/03/2023
Reporting No. : 07
Sample No. : 07

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
الاستشاريون
رام الله - فلسطين 994 - 094 - 299
شماره التليفون : 27367231 - 27363093 - الفاكس : 27367231 - 27363093

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (upper embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 23/03/2023
Reporting Date : 29/03/2023
Reporting No. : 07
Sample No. : 07

Soil Classification According to Project Specs (Embankment)

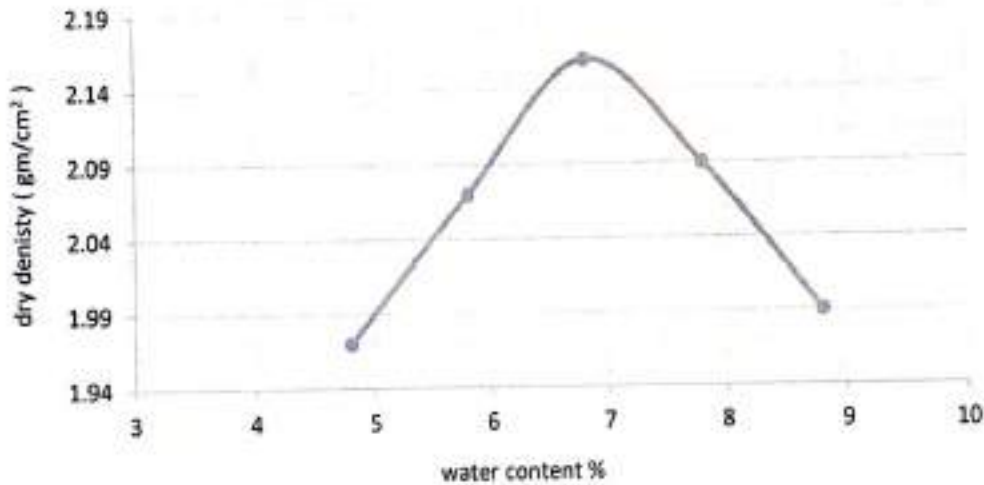
TEST	Results (%)	Limits according Projects Specs	
• Group Classification	(A-1-a)	(A-1-a)	(A-1-b)
2.00 mm (No.10).	37.5	Max 50 %	-----
0.425 mm (No. 40).	28.3	Max 30 %	Max 50 %
0.075 mm (No. 200).	12.8	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	-----	-----
Plasticity index	NP	Max 6 %	Max 6 %

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

CEL
مكتب معامل الاستشارات الهندسية
المنطقة الشمالية
219-096 - 27367231
Signature

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (upper embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 23/03/2023
Reporting Date : 29/03/2023
Reporting No. : 07
Sample No. : 07

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



- Max dry density (gm/cm²) : 2.16
- Optimum moisture content % : 6.8

Signature / 
مكتب معامل الاستشارات الهندسية
السليل الشمالي
رقم الترخيص: ٢٠٢٣ - ٢٠٢٣ - ٢٠٢٣
مركز فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (Upper Embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 29/03/2023
Reporting Date : 05/04/2023
Reporting No. : 08
Sample No. : 08

Dear Gentleman,

Attached here with the Soil Embankment – (upper embankment)
delivered on 29/03/2023

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
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 الشهري
رام صيد الفيل، 3 شارع هك الطويل - الزمالك - القاهرة
تليفون : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
فاكس : ٢٧٣٦٣٠٩٣

Signature /

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (Upper Embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 29/03/2023
Reporting Date : 05/04/2023
Reporting No. : 08
Sample No. : 08

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Passing %
50	100
37.5	94.1
25	84.3
19	74.9
12.50	66.3
9.50	57.1
4.75	47.4
2.36	42.2
2.00	39.4
1.18	36.9
0.600	32.8
0.425	30.3
0.300	25.0
0.150	17.5

CEL
مكتب معامل الاستشارات الهندسية
الساحل الشمالي
رقم تسجيل مصري 537 - 539 - 538
شركة مصرية - القاهرة - 11511
Signature: _____

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (Upper Embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 29/03/2023
Reporting Date : 05/04/2023
Reporting No. : 08
Sample No. : 08

**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)	13.4

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مكتب معامل الاستشارات الهندسية
الساحل الشمالي
رقم تسجيل مصرية 535 - 210-8991
شماره هاتفي 27367231 - 27363093

Signature

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (Upper Embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 29/03/2023
Reporting Date : 05/04/2023
Reporting No. : 08
Sample No. : 08

**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

CEL
مكتب معامل الاستشارات الهندسية
الساحل الشمالي
رام الله - مصر
Signature / ...

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (Upper Embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 29/03/2023
Reporting Date : 05/04/2023
Reporting No. : 08
Sample No. : 08

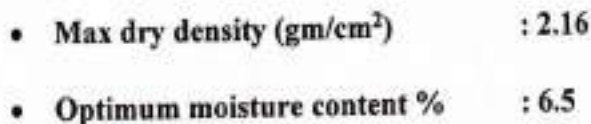
Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
• Group Classification	(A-1-b)	(A-1-a)	(A-1-b)
2.00 mm (No.10).	39.4	Max 50 %	-----
0.425 mm (No. 40).	30.3	Max 30 %	Max 50 %
0.075 mm (No. 200).	13.4	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

CEL
مكتب معامل الاستشارات الهندسية
المباني الشمالية
Signature / 
010-000-0000
010-000-0000

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



Signature _____

Company Name : EG CONTRACK
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment – (Upper Embankment)
Location : St. (499+500) : (500+000)
Delivery Date : 29/03/2023
Reporting Date : 05/04/2023
Reporting No. : 08
Sample No. : 08

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	3.04
1.27	0.050	3.25
1.91	0.075	3.55
2.54	0.100	3.85
3.18	0.125	4.11
3.81	0.150	4.31
4.45	0.175	4.56
5.08	0.200	4.74
5.71	0.225	4.89
6.35	0.250	5.02

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	55.9
	6.90	3.85	

Notes :

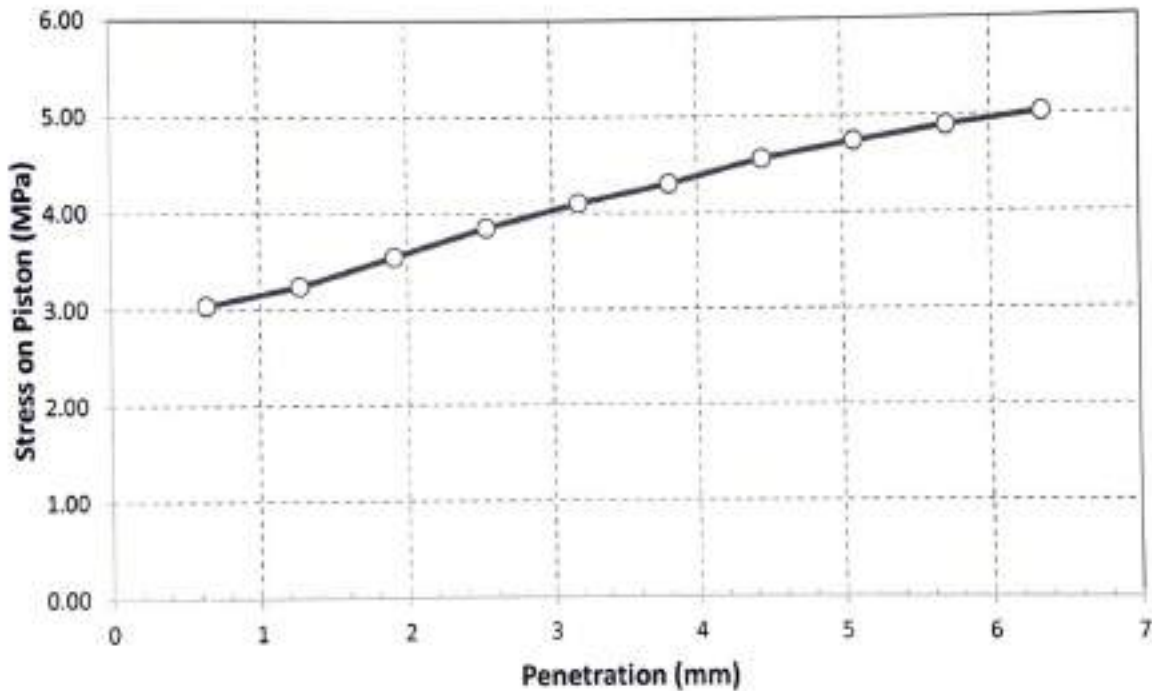
- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.16 (gm /cm³) at 6.5% optimum water content.
- 3- Surcharge used 4.50 Kg.

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Load Penetration Curve of CBR Test
ASTM D-1883



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الساحل الشمالي
رقم التسجيل: ٥٣٧ : ٥٥٩ - ٥١٥
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