

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة وبعد ،،،،،

نتشرف أن نرفق لسيادتك عدد ١ مقايضة معدلة ٢ لمشروع أعمال إنشاء الجسر الترابي للقطار الكهربائي السريع ٦ أكتوبر
أبوسمبل (القطاع الخامس) من الكم ٦٤٠.٥٧٩ حتى الكم ٦٤١.٢٣٦ على أن تراجع الأسعار بمعرفة الإدارة بالقاهرة .
اعداد المكتب الاستشاري سبكتروم للاستشارات الهندسية وعلي مسئوليته .

نفذ شركة الذهبي للمقاولات

برجاء التكرم بالعلم والتوجيه باللازم

وتفضلوا بقبول وافر التحية والإحترام ،،،،،



رئيس الإدارة المركزية

مهندس / عماد حسين
عماد حسين



تحريرا في ٢٠٢٣/١٢/٢٦

المرفقات / عدد (١) مقايضة



الهيئة العامة للطرق والكباري

وزارة النقل

مقايمة معدلة 2 (جزيرة لنور لأعمال)

مشروع : الجسر الترابي للطريق المربع (أكتوبر / أبو سمبل)

القطاع الخامس من الكم 629 + 110.13 إلى الكم 715 + 824.53 بطول 86.52 كم

من إحداثي E 489929.6671 و N 2874215.5671

إلى إحداثي E 440168.6522 و N 2817778.3175

إستشاري القطاع سبكتروم للإستشارات الهندسية د. م. / عماد الدين شبل

تنفيذ الشركة : الذهبى للمقاولات فئة : الرابعة بقيمة : مليون

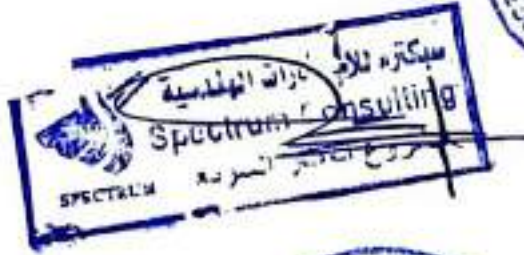
من الكم 640 + 579 إلى الكم 641 + 236 بطول 657 م

19,959,325 مليون



المقاول /

الإستشاري /



المنطقة الثامنة بقنا /

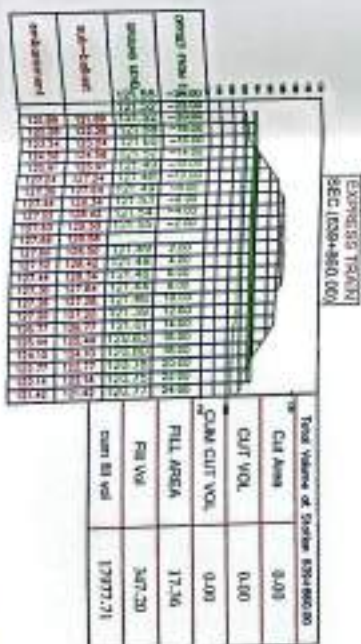
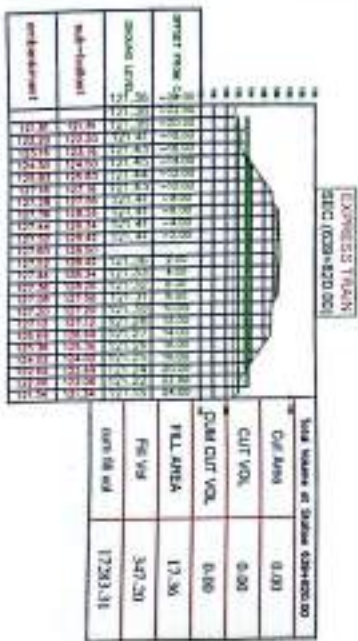
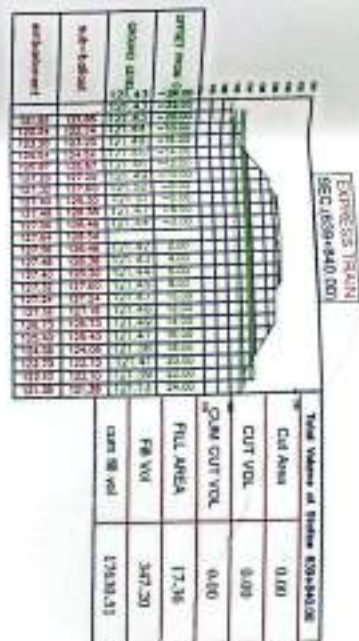


مقاييسه (معدلة 2)				
أعمال إنشاء الجسر الترابي للطريق الكهربي السريع (أكتوبر / أوسعيد)				
من محطة 629+110.13 حتى محطة 624.63 + 715 بطول 86.5145 كم				
للجسر شركة / اذعن تاسيس المقاولات العمومية من محطة 640+579 الى 641+236 بطول 657 م				
رقم البند	بيان الأعمال	كمية	سعر الوحدة	الاجمالي
2	إيجال لاجل			
2-1	بالمشر السكب أعمال حفر باستخدام المعدات الميكانيكية لصنع أنواع التربة عدا التربة الصخرية وتبوية السطح بالآلات الترابية وقرش بدهان الأسفلتية للوصول إلى نسبة الرطوبة المطلوبة والتمك من البهرسات للوصول إلى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) ومعدل على التربة لعمق 2م من مقبوس (2م متر) من مقبوس القرش لاستكمال التسوية الطريق ويتم التفتيش طبقا للمواصفات التصميمية والمقاييس المعتمدة للعرضة الترابية والرسومات التنفيذية المعتمدة والبدع معاشلة طبقا لأصول الصناعات والمواصفات الفنية العامة للطرق والكباري وتعليمات المهندس المشرف -علاوة 1 جنيه لكل مسافة نقل تاج الحفر وتصبح 1.1 جنيه لكل ابتداء من 4/5/2023 علاوة زيادة السوازل 0.6 جنيه لكل ابتداء من 4/5/2023	3م	26,000	998,000
	علاوة مسافة نقل 1 كم			
	علاوة زيادة السوازل			
3	أعمال الترميم Embankment			
3-1	أعمال تصليح وتبوية ونقل التربة المطلوبة للمواصفات وتشطيبها باستخدام آلات تقوية بسك 7 ياردة عن 50 سم على مسلوب (2 متر) أسفل مسلوب القرش و بسك لا يزيد عن 28 سم أعلى من مقبوس (2م متر) من مقبوس القرش لاستكمال التسوية التصميمية لتشكيل الجسر والاكلاف (نسبة ترميم الجسر) حتى 15% ورشها بدهان الأسفلتية للوصول إلى نسبة الرطوبة المطلوبة والتمك من البهرسات للوصول إلى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) ويتم التفتيش طبقا للمواصفات والمقاييس المعتمدة للعرضة الترابية والرسومات التنفيذية المعتمدة والبدع معاشلة طبقا لأصول الصناعات والمواصفات الفنية العامة للطرق والكباري وتعليمات المهندس المشرف - مسافة نقل حتى 2 كم ويتم احتساب علاوة 1.6 جنيه لكل كم بما يزيد أو نقصان وتصبح 1.5 جنيه لكل ابتداء من 4/5/2023 - الترميم يشمل حتى لتبويته ونقله والفتحات ونقل لمواقع العمل حتى مسافة 2 كم ، -علاوة زيادة السوازل 1.9 جنيه لكل ابتداء من 4/5/2023 -علاوة زيادة قيمة البعثة المصحوبة	3م	291,465	17,487,900
	علاوة زيادة السوازل 1.90 جنيه لكل 3م ابتداء من 4/5/2023			
4	طبقة تأسيس Prepared Subgrade			
4-1	بالمشر السكب أصل توريد وقرش طبقة تأسيس (Prepared Subgrade) من الأحجار الصلبة المدرجة بنقل تكسور الكسوات والمطابقة للمواصفات وأقصى حجم الحبيبات 100 سم وألا تزيد نسبة السيل من 200 عن 12% والفتوح الرور بالآلات الخاصة بالمشروع لا تقل نسبة ترميم كل يوم لها عن 25% وألا تزيد نسبة التفتيش بعمق 80 سم بعمق 30% وألا يزيد الانحناء عن 15% وألا يقل معدل التربة (Ev2) من تجربة لوح التعديل عن 25 سم ورشها بدهان الأسفلتية للوصول إلى نسبة الرطوبة المطلوبة والتمك من البهرسات للوصول إلى أقصى كثافة جافة قصوى (95% من الكثافة الجافة القصوى) ويتم التفتيش طبقا للمواصفات والمقاييس المعتمدة للعرضة الترابية والرسومات التنفيذية المعتمدة والبدع معاشلة طبقا لأصول الصناعات والمواصفات الفنية العامة للطرق والكباري وتعليمات المهندس المشرف - مسافة نقل لا تقل عن 20 كم - يتم احتساب علاوة 1.2 جنيه لكل 1 كم بما يزيد أو نقصان وتصبح 1.3 جنيه لكل ابتداء من 4/5/2023 - السيل لا يشمل قيمة السوازل المصحوبة علاوة زيادة السوازل 1.8 جنيه لكل 3م ابتداء من 4/5/2023	3م	5,000	650,000
	مسافة نقل 100 كم			
	كارتة توريد الأساس			
	علاوة زيادة السوازل			
	الاجمالي			19,959,325



مشروع القطار الكهربائي السريع القطاع الخامس				
تنفيذ شركة الذهبى للمقاولات				
من الكم 637+952 الى 643+863				
بيان اعمال توضيحي لمستخلص جاري (4) عقد (2024/2023/306)				
العقد	قيمة العقد	المستخلص	كميات حفر ثرية عادية	كميات الردم
(2024/2023/306)	عشرون مليون	جاري 1	-	23100.00
		جاري 2	10000.00	121500.00
		جاري 3	-	34400.00
		جاري 4	-	30000.00
كميات تم حصرها			-	24219.30
			14051.66	128231.31
				33745.88
			-	30262.98
اجمالي كميات تم حصرها			14051.66	216459.47
كميات تم صرفها			-	23100.00
			10000.00	121500.00
			-	34400.00
			-	30000.00
اجمالي كميات تم صرفها			10000.00	209000.00
المتبقى من القيمة			4051.66	7459.47



[illegible]

***All observations are by phone**

List of cross-sections investigated



Contractor	IL-ZAMM	(2)
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ELZABETH COMPANY
from km 637+852 to 643+863

Drawing No. HMR - SIC 5 - 0704-000-111	Drawing of 02 / 2000 Vol. 1300
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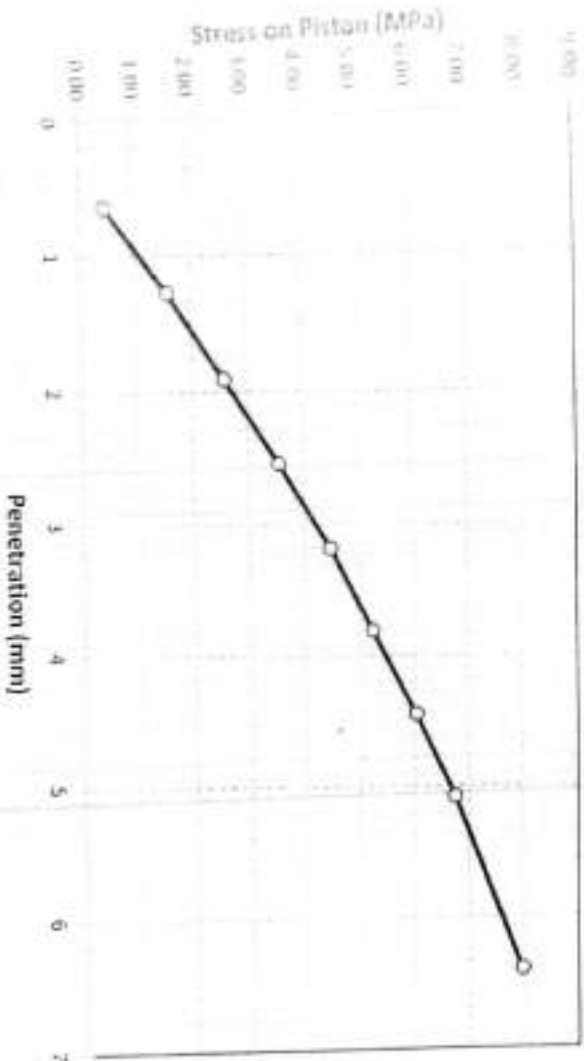
WILLIAM L. BEECHER

محکمہ تعلیم
گجرات

Company Name : شركة الخلقي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E=492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature /


CEL
مكتب استشارات الهندسة ومختبرات
رقم التسجيل: 219, 991, 437
الشارع: 3 شارع الملك فيصل، الرياض، المملكة العربية السعودية

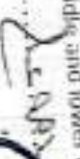
Company Name : شركة الملقحي
Project : Electric Express Train - HSR from Qous To Arman
Location : ST:641+400 E=492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

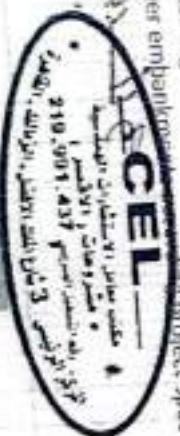
Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
	0.050	1.58	
1.27	0.075	2.58	
1.91	0.100	3.55	
2.54	0.125	4.47	
3.18	0.150	5.23	
3.81	0.175	6.03	
4.45	0.200	6.74	
5.08	0.250	7.97	
6.35			
CBR Result		Stress (Mpa)	
At 1 inch (2.54 mm) penetration		St. Value	Sample results
		6.90	3.55
			CBR 100 %
			51.5 %

Notes:
1. Attached graph shows penetration resistance versus penetration magnitude.
2. The sample was compacted to dry density of $\approx 2.22 \text{ (gm/cm}^3\text{)}$

At = 6.4 % optimum water content.
3. Surcharge load 4.50 Kg.

CBR > 10 for middle and lower embankment. See project spec page No 36.
Signature / 



(الشركة) : شركة الكهرباء
 Project : Electric Express Train – HSR From Qous To Armanat
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

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



- Max dry density (gm/cm^3) : 2.22
- Optimum moisture content % : 6.4 %

Signature / *[Signature]*





Consulting Engineering Bureau & Laboratories
بureau of Consulting Engineering & Laboratories

Company Name : شركة الخليج

Project : Electric Express Train - HSR From Qous To Arman

Location : ST:641+400 E= 492410,088 N=2862759,57

Type of sample : Soil Embankment (Upper Embankment 0.0 M)

Delivery Date : 08/01/2024

Reporting Date : 11/1/2024

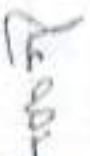
Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10)	27.5	Max 50 %	-----	-----
4.75 mm (No. 40)	15.6	Max 30 %	Max 50 %	-----
4.75 mm (No. 200)	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	-----	-----	-----	-----
Plasticity Index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature


CEL
بureau of Consulting Engineering & Laboratories
215 991 437
3



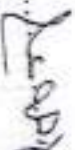
CEL

Consulting Engineering Bureau & Laboration
مكتب استشارات ومختبرات الهندسة

Company Name : شركة الانجي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Liquid Limit	0
Plastic Limit	0
Plasticity Index	0

Signature / : 



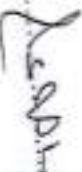
44, 42448 P/2/10 Sheet
For civil works
Scale: 1:100



Company Name : شركة الأهلي
Project : Electric Express Train - IISR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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)	9.1

Signature / 



شركة الأهلي : company Name
 Project : Electric Express Train - HSR From Qous To Armat
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	$\frac{3}{4}$	72.2
12.50	$\frac{1}{2}$	64.1
9.50	$\frac{3}{8}$	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature /

[Handwritten Signature]



Company Name : شركة الأقيس
Project : Electric Express Train – HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman,

Attached here with the delivered on 08 / 01 / 2024

This sample is representative for 5.000 M³

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

Signature / 

Consultant Eng : Abderrahman Ahmed

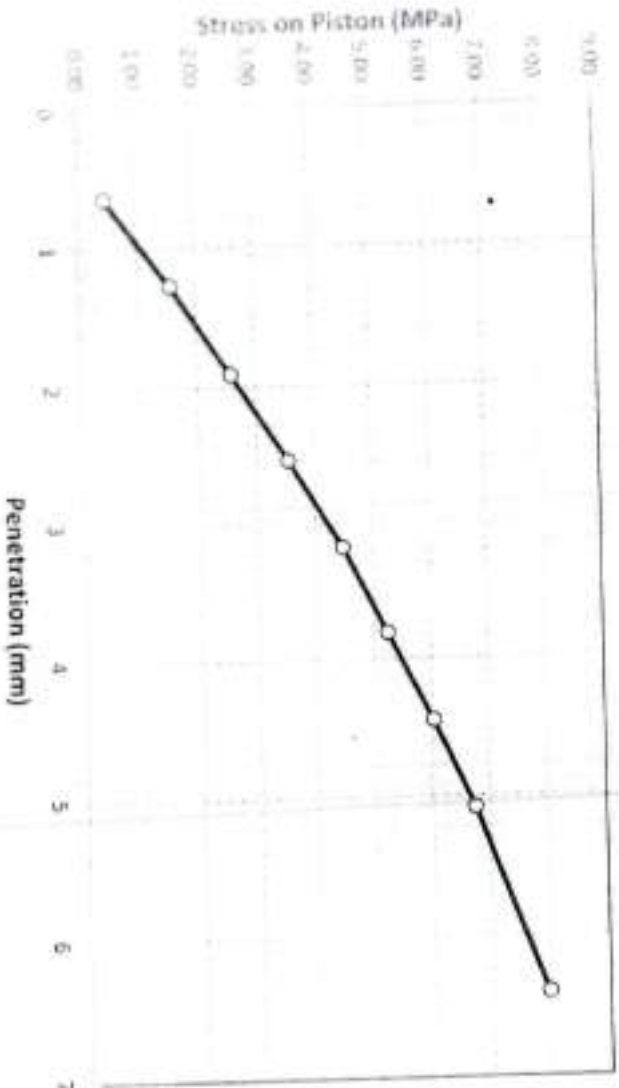


CEL

Consulting Engineering Bureau & Laboratories
مكتب مهندسين واستشارات ومختبرات

Company Name : شركة الأهلي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Load Penetration Curve of CBR Test ASTM D-1883



Signature /



IAS
REGISTERED

Company Name : شركة (الذبي)
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

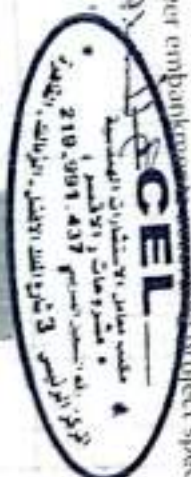
penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
1.27	0.050	1.58	
1.91	0.075	2.58	
2.54	0.100	3.55	
3.18	0.125	4.47	
3.81	0.150	5.23	
4.45	0.175	6.03	
5.08	0.200	6.74	
6.35	0.250	7.97	

CBR Result		Stress (Mpa)		CBR 100 %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results		
	6.90	3.55		51.5 %

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.22 (gm/cm³)
At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kg.

CBR = 10 for middle and lower embankment.
Signature /  Project spec page No 36.



IAS

Company Name : شركة الخبي
Project : Electric Express Train - HSR From Qous To Armani
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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



- Max dry density (gm/cm³) : 2.22
- Optimum moisture content % : 6.4 %

Signature /



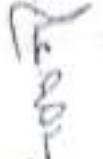
Company Name : شركة 2013
 Project : Electric Express Train - HSR From Qous To Arman
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10)	27.5	Max 50 %	-----	-----
0.425 mm (No. 40)	15.6	Max 30 %	Max 50 %	-----
0.075 mm (No. 200)	9.1	Max 15 %	Max 15 %	Max 15 %
Applied Limit	-----	-----	-----	-----
Plasticity Index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature :


CEL
 219 591 437
 0097 2013

CEL

Construction Engineering Services & Laboratories
Abu Dhabi, United Arab Emirates

Company Name : شركة الخبي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E=492410.088 N=2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Report No. : 10-19

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

Test	Results (%)
Liquid Limit	0
Plastic Limit	0
Plasticity Index	0

Signature /



IAS
ARCHITECTS

CEL

Company of Engineering, Research & Development
Kuala Lumpur, Malaysia

Company Name: CEL
Product: Electric Tension Test - 1000 Tonn (Type 1000)
Model: CEL-1000 (Type 1000) No. 1000
Type of sample: Steel Reinforcement / Upper Reinforcement 1000 T
Sample Size: 1000 (1000)
Accounting Date: 10/1/2024
Drawing No.: 10-1

Electric Tension Test - 1000 Tonn (Type 1000)
By visiting (SST/10-10)

Item	Result (%)
Percentage of material fiber that specimen 5-10 (No. 10)	10



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مكتب استشارات الهندسة ومختبرات

Company Name : عقبات 45 ج5
Project : Electric Express Train - HSR From Qous To Armani
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	3/4	72.2
12.50	1/2	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature /



11/01/2024
CEL Logo
11/01/2024



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Consulting Engineering Bureau & Laboratories
مكتب استشارات الهندسة ومختبرات

Company Name : شركة النقي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman,

Attached here with the delivered on 08 / 01 / 2024

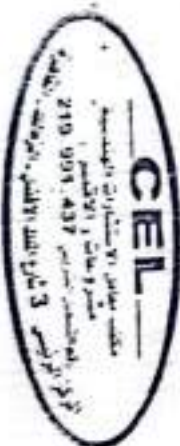
This sample is representative for 5.000 M³

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

Signature / *Abderrahman Ahmed*

Consultant Eng : Abderrahman Ahmed



CEL

1. 4000-5000

Effective Spaces Only: Half from Gains to Account

127 / 1303-1

Robert A. Johnson
Editor

1.81' from 644 + 780 to 644 + 800

 $\bar{I} = 0.50 \text{ NI}$

18-40

Compaction Test by Unified Grad - Cone Test Method
ASTM D 1557

ABIM D-1666

Test #	Station	Test Hole Volume cm ³	Soil Density gm/cm ³	Moisture Content %	Dry Density gm/cm ³	Degree of Compaction (%)	Acceptance
1	641+820	1504.2	2.25	5.3	2.14	96.4%	Comply
2	641+840	1519.4	2.28	5.8	2.16	97.1%	Comply
3	641+860	1527.1	2.23	6	2.13	96.9%	Comply
4	641+876	1520.8	2.30	6.4	2.16	97.6%	Comply

Max. dry density = 2.22 gm/cm³

Signature

~~1/2~~

CELL

[illegible]

1. 0.5 mm of 200 mesh sieve

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

Tel: 011-2610 2700 Fax: 011-2610 2701

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ACKNOWLEDGMENTS

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Consulting Engineering Bureau & Laboratories
مكتب استشارات الهندسة والبحوث

Company Name : شركة الخديجي

Project : Electric Express Train - HSR From Qous To Arman

Location : ST:641+400 E= 492410,088 N=2862759,57

Type of sample : Soil Embankment (Upper Embankment 0.0 M)

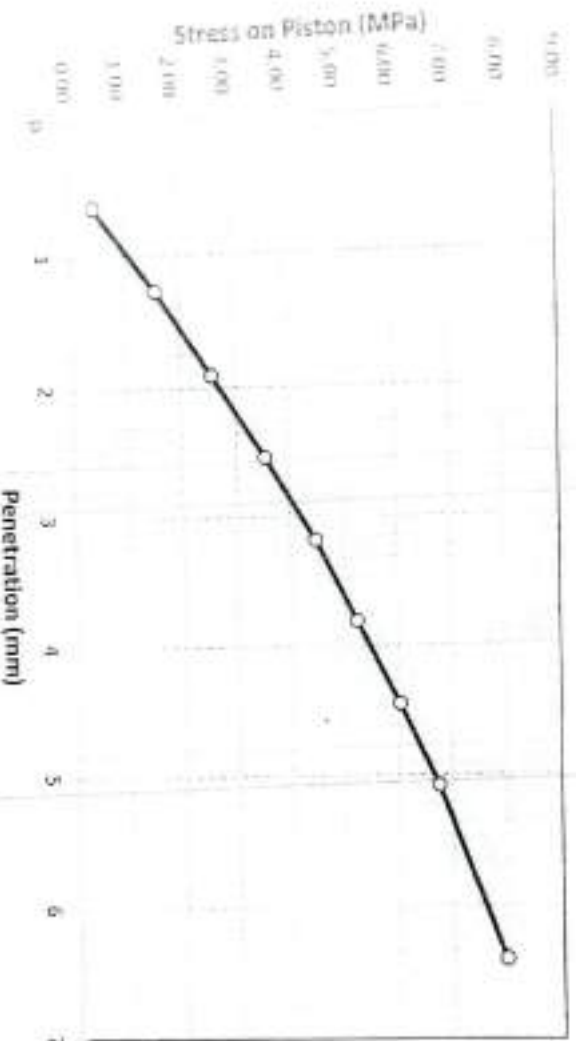
Delivery Date : 08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature /



IAS

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Company

Engineering
Office

00 AM

Station 5

PHI MM

BOF-3
Type of Activity

Unit at (-0.5)

DO

LOC

Unit at
ton

Company Name : شركة الأبي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410.088 N=2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
1.27	0.050	1.58	
1.91	0.075	2.58	
2.54	0.100	3.55	
3.18	0.125	4.47	
3.81	0.150	5.23	
4.45	0.175	6.03	
5.08	0.200	6.74	
6.35	0.250	7.97	
CBR Result		CBR 100 %	
At 6.1 inch (154 mm) penetration		St. Value	Sample results
		6.90	3.55

Notes: 1- Attached graph shows penetration resistance versus penetration magnitude.

2- The sample was compacted to dry density of = 2.22 (gm/cm³)

At = 6.4 % optimum water content.

3- Surcharge load 4.50 K/B.

4- CBR > 10 for middle and lower embankment.

Signature /



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Geotechnical Engineering Bureau & Laboratories
مكتب ومختبر الجيوتقنيك والهندسة الجيوتقنية

Company Name : شركة الألفي
Project : Electric Express Train - HSR From Qous To Armanat
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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



- Max dry density (g/cm³) : 2.22
- Optimum moisture content % : 6.4 %

Signature / *[Signature]*



Company Name : شركة الأحمدي
 Project : Electric Express Train - HSR From Qous To Arman
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

Soil Classification

Soil Classification					
TEST	Results (%)	Limits according Projects Specs			
		(A-1-a)	(A-1-b)	(A-2-4)	
Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)	
2.00 mm (No.10).	27.5	Max 50 %	-----	-----	
0.425 mm (No. 40).	15.6	Max 30 %	Max 50 %	-----	
0.075 mm (No. 200).	9.1	Max 15 %	Max 15 %	Max 15 %	
Liquid Limit		-----	-----	-----	
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %	

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

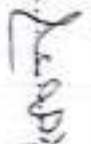
Signature /



Company Name : شركة الانجي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Liquid Limit	0
Plastic Limit	0
Plasticity Index	0

Signature / 


شركة الاستشارات الهندسية والبيانات
مقر الشركة: 219 991 407
مقر العمل: 3 شارع الملك فيصل، الرياض

CEL

Consulting Engineering Bureau & Laboratories
مكتب استشارات ومختبرات الهندسة

Company Name : شركة الخافي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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)	9.1

Signature / *K. A. D. M.*



Company Name : شركة الخفجي
 Project : Electric Express Train - HSR From Qous To Armanat
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	$\frac{3}{4}$	72.2
12.50	$\frac{1}{2}$	64.1
9.50	$\frac{3}{8}$	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature /.....



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Consulting Engineering Bureau & Laboratories
مكتب استشارات ومختبرات الهندسة

Company Name : شركة القبي
Project : Electric Express Train – HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman,

Attached here with the delivered on 08 / 01 / 2024

This sample is representative for 5.000 M³

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

Signature / 

Consultant Eng : Abderrahman Ahmed



CEL
Consulting Engineering Bureau & Laboratories
بureau de Consultance et de Laboratoire

Company Name : شركة الجبوري
 Project : Electric Express Train - ESSR From Ques To Azzamat
 Testing Date : 23 / 1 / 2024
 Soil type : Upper Embankment
 Location : ST From 6+0-780 To 6+0-800
 Level : ± 0.75 M
 Report No. : L38-2

Compaction test by using Sand - Cone Test Method
ASTM D 1556

Test #	Station	Test mass Volume cm ³	Bulk Density g/cm ³	Moisture Content %	Dry Density (g/cm ³)	Degree of Compaction %	Acceptance
1	6+1-795	1543.1	2.27	6.4	2.13	96.0%	Comply
2	6+1-820	1488.2	2.28	6.4	2.15	96.7%	Comply
3	6+1-845	1481.3	2.26	6.4	2.13	95.9%	Comply
4	6+1-855	1507.6	2.29	6.4	2.15	97.0%	Comply

Degree of compaction based on proctor test stage A:

Max. dry density = 2.22 g/cm³

Az optimum moisture content = 6.4 %

Signature:


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23/01/2024
278 808 433
بureau de Consultance et de Laboratoire

1- Road & Bridge Survey
 2- Soil Test
 3- Water & Sewerage
 4- Environmental

LAS
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Consulting Engineering Bureau & Laboratories
شركة استشارات ومختبرات الهندسة المدنية

Company Name : شركة الطائي

Project : Electric Express Train - HSR From Qous To Armanat

Location : ST:641+400 E= 492410,088 N=2862759,57

Type of sample : Soil Embankment (Upper Embankment 0.0 M)

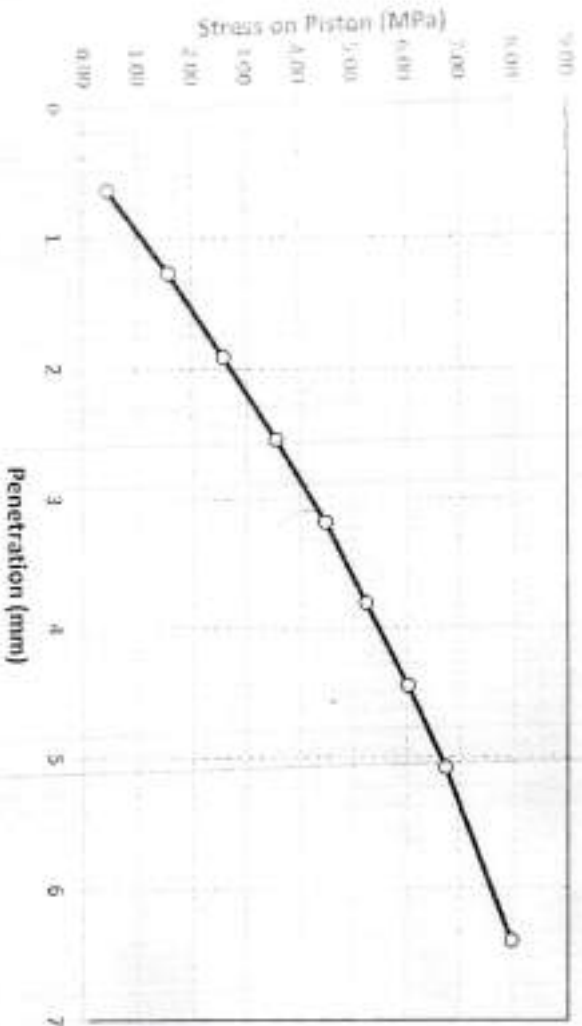
Delivery Date : 08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature /


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شركة الطائي
مختبرات ومختبرات الهندسة المدنية
رقم التسجيل: 219, 991, 437
الرياض - المملكة العربية السعودية

IAS
ACCREDITED

Company Name : شركة الأهلي
Project : Electric Express Train – HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Test Results of California Bearing Ratio on Base Materials

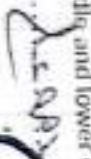
ASTM D 1883

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
1.27	0.050	1.58	
1.91	0.075	2.58	
2.54	0.100	3.55	
3.18	0.125	4.47	
3.81	0.150	5.23	
4.45	0.175	6.03	
5.08	0.200	6.74	
6.35	0.250	7.97	

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.55	51.5 %

Notes:

1. Attached graph shows penetration resistance versus penetration magnitude.
2. The sample was compacted to dry density of $\approx 2.22 \text{ (gm /cm}^3\text{)}$
At = 6.4 % optimum water content.
3. Surcharge load 4.50 Kgf.

4. CBR = 10 for middle and lower embankment. See project spec page No 36.
Signature / 



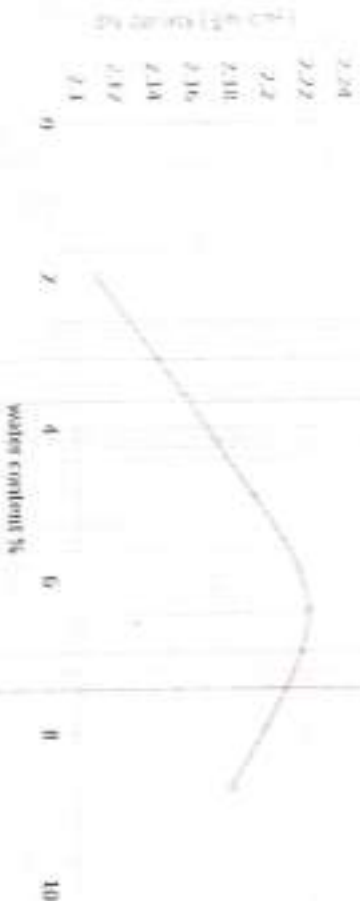
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مكتب استشارات ومختبرات الهندسة

Company Name : شركة الخبي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

ASTM D-1557



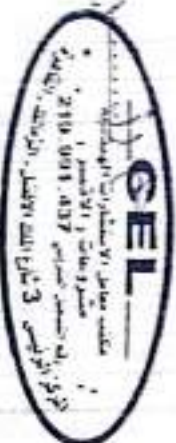
• Max dry density (gm/cm³)

12.22

• Optimum moisture content %

6.4 %

Signature /



IAS

Company Name : شركة الأهلي
Project : Electric Express Train – HSR From Qous To Armani
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
• Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10).	27.5	Max 50 %	-----	-----
0.425 mm (No. 40).	15.6	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	-----	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature /



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Company Name : شركة الأهلي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Liquid Limit	0
Plastic Limit	0
Plasticity Index	0

Signature /

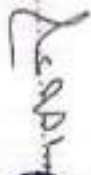


MAC

Company Name : شركة الطائي
Project : Electric Express Train - HSR From Qous To Armanit
Location : ST:641+400 E= 492410.088 N=2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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)	9.1

Signature : 

مكتب استشارات الهندسة ومختبرات الطائي
تحت إشراف وزارة البترول والثروة المعدنية
رقم التسجيل: 319-891-437
الطابق 3 شارع الملك فيصل - الرياض

Company Name : شركة النخعي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST 641+400 L= 492419.088 N=2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	$\frac{3}{4}$	72.2
12.50	$\frac{1}{2}$	64.1
9.50	$\frac{3}{8}$	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature / *Dr. Abdullah*



Company Name : شركة الطي
Project : Electric Express Train - HSR From Qous To Armani
Testing Date : 21 / 1 / 2024
Soil type : Upper Embankment
Location : ST From 641+400 To 641+780
Level : - 0.25 M
Report No. : 138

Compaction test by using Sand - Cone Test Method
ASTM D-1556

Test #	Station	Test Hole Volume cm ³	Bulk Density g/ cm ³	Moisture Content %	Dry Density (g/ cm ³)	Degree of Compaction (%)	Acceptance
1	641+425	1473.6	2.27	5.3	2.16	97.1%	Comply
2	641+450	1553.5	2.27	6.4	2.13	96.0%	Comply
3	641+475	1763.2	2.26	5.8	2.13	96.1%	Comply
4	641+500	1281.3	2.29	5.8	2.17	97.5%	Comply
5	641+525	1634.0	2.26	6.4	2.13	95.8%	Comply
6	641+550	1404.2	2.31	5.8	2.19	98.5%	Comply
7	641+575	1319.4	2.26	5.8	2.14	96.4%	Comply
8	641+600	1450.7	2.25	5.8	2.13	95.8%	Comply
9	641+625	1539.6	2.24	5.3	2.13	96.0%	Comply
10	641+650	1548.6	2.29	5.3	2.17	97.9%	Comply
11	641+675	1323.6	2.24	5.8	2.12	95.4%	Comply
12	641+700	1512.5	2.28	6.4	2.15	96.7%	Comply
13	641+720	1460.4	2.30	6.4	2.16	97.3%	Comply
14	641+740	1472.9	2.35	6.4	2.21	99.3%	Comply
15	641+760	1521.5	2.28	6.4	2.14	96.4%	Comply
16	641+776	1412.5	2.30	6.4	2.16	97.2%	Comply

Degree of compaction based on proctor test listed At

Max. dry density = 2.22 g/cm³

At optimum moisture content = 6.4 %

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مكتب محاسن والاستشارات الهندسية

Company Name : شركة الدقي

Project : Electric Express Train - HSR From Qous To Arment

Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"

Type of sample : Soil Embankment (Upper Embankment 0.0 M)

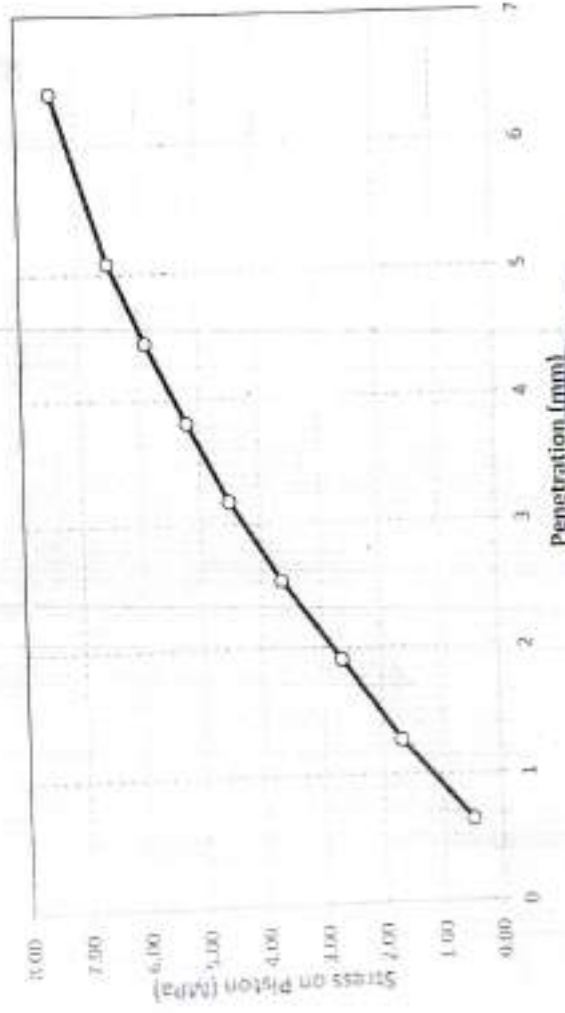
Delivery Date : 08/11/2023

Reporting Date : 12/11/2023

Reporting No. : 08-15

Load Penetration Curve of CBR Test

ASTM D-1883



Penetration (mm)

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مقر وحالت : القاهرة - مصر

رقم الترخيص : 19 999 - 437

الهيئة العامة للغرفة التجارية - القاهرة

Signature / *[Handwritten Signature]*

Dr. Mohamed Elmaghrabi
Director - Cairo
12/11/2023 (Page 001)

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Company Name : شركة الهندسة
Project : Electric Express Train - HSE from Qassim To Ar-Ramth
Location : ST: 639-0000 L=12.5475.6° N=25.5579.1°
Type of sample : Soil Embankment (Upper Embankment (0.0 M)
Delivery Date : 06.11.2023
Reporting Date : 12.11.2023
Reporting No. : 06-15

Test Results of California Bearing Ratio on Base Materials
ASTM D 1553

mm	penetration		stress on piston (Mpa)
	inch		
0.54	0.025		
1.27	0.050		
1.91	0.075		
2.54	0.100		
3.18	0.125		
3.81	0.150		
4.45	0.175		
5.08	0.200		
6.35	0.250		
CBR Result		Stress (Mpa)	CBR 100 %
4.11 inch (2.54 mm) penetration		Sample results	52.8%
		SL Value	1.65
		4.00	

Note: 1- Attached graph shows Penetration resistance versus Penetration magnitude

2- The sample was compared to 40% standard value (2.5 mm) per 1

At = 6.4 % optimum water content

3- Surcharge load 4.5 kg

4- CBR = 10 for middle and lower stress levels

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Signature: [Signature]



Calculated by: [Name]
Checked by: [Name]
Approved by: [Name]

— Available 25/26

- ; Electric Express Train - USR From Qous To 30
- ; E=32°54'25.6" N=25°53'59.1"
- ; S.T: 6.39+000
- ; 5.00 Embankment (Upper Embankment 0.0 M)

Type of sample	Soil Embankment
Date	08/11/2023

Delivery Date	08/11/2023
---------------	------------

Return Date : 12/11/2023

2000-2001

Moisture – Density relation of soil



212

6.44%

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219 901 437

المجلس الأعلى للطفولة - القاهرة

5

1

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TECHNICAL

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Company Name : شركة النخعي
 Project : Electric Express Train - HSR From Qous To Armanat
 Location : ST : 639+000 E=32°54'25.6" N=25°53'59.1"
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/11/2023
 Reporting Date : 12/11/2023
 Reporting No. : 08-15

Soil Classification

TEST	Results (%)	Limits according Projects Specs			
		(A-1-a)	(A-1-b)	(A-1-c)	(A-2-4)
Group Classification	(A-1-a)				
2,000 mm (No. 10).	47.7	Max 50 %	-----	-----	-----
75,000 mm (No. 40).	28.8	Max 30 %	Max 50 %	-----	-----
4,750 mm (No. 200).	10.0	Max 15 %	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	---	-----	-----	-----	-----
Plasticity Index	0	Max 6 %	Max 6 %	Max 10 %	Max 10 %

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

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 رقم الترخيص 3 شارع وسط الأنوار، الخرطوم، السودان

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مكتب محاميل للاستشارات والهندسة

Company Name : شركة الذهي

Project

: Electric Express Train - HSR From Qous To Armant

Location

: ST: 639+000 E=32°54'25.6" N=25°53'59.1"

Type of sample

: Soil Embankment (Upper Embankment 0.0 M)

Delivery Date

: 08/11/2023

Reporting Date

: 12/11/2023

Reporting No.

: 08-15

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

Test	Results (%)
Liquid Limit	0
Plastic Limit	0
Plasticity Index	0

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شركة الاستشارات الهندسية والمخبرية

Company Name : شركة الدقي

Project : Electric Express Train - HSR From Qous To Armant

Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"

Type of sample : Soil Embankment (Upper Embankment 0.0 M)

Delivery Date : 08/11/2023

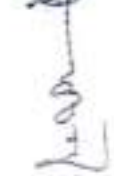
Reporting Date : 12/11/2023

Reporting No. : 08-15

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)	10.0

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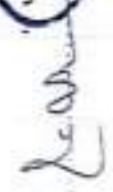
1001 1001 1001 1001
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Company Name : شركة الأهلي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	97.5
37.5	1.5	92.7
25	1	84.2
19	¾	82.8
12.50	½	71.3
9.50	3/8	62.6
4.75	4	47.9
2.00	10	47.7
0.425	40	28.8

Signature / 


 مكتب محاسن الاستشارات والهندسة
 مشروع : قطارات كهربائية
 رقم الملف : 08-15-23
 التاريخ : 12/11/2023

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شركة استشارات ومختبرات الهندسة

Company Name : شركة المكي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Dear Gentleman,

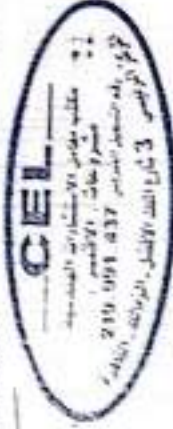
Attached here with the delivered on 8 / 11 / 2023

This sample is representative for 5.000 M³

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

Signature /  Consultant Eng : Abderrahman Ahmed



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مكتب معامل الإستشارات الهندسية
مشروعات محافظات الوجه القبلى

شركة تالعى للبحوث والدراسات الهندسية
: Elctric Express Train - Sector (S) - Giza (G) Amend.
: 13/04/2024
: 16/01/2024
: 02/01/2020
: 01

Company Name
Project
Test Date
Report Date
Author
Test No.

Nonresistive Static Plate Load Tests of Soils DIN 18134



Unloading (%)	1	2	3	4
Stress (kg/cm ²)	3253	1766	884	31
Stress (kg/cm ²)	5.00	2.50	1.250	0.10
Settlement (mm)	0.96	0.91	0.89	0.23

$$E_{vd} = 1 = 1.13$$

Load (kN)	0	1	2	3	4	5	6
Stress (kg/cm ²)	0	98.8	197.6	296.4	395.2	494.0	592.8
Stress (kg/cm ²)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.13	0.36	0.63	0.88	1.17	1.46

D (mm) = 300	S ₁ (mm) = 6.31	S ₂ (mm) = 6.78	S ₃ = 6.39
E _{vd} (MPa) = 0.75/0.0015	115.7		

Load (kN)	0	1	2	3	4	5
Stress (kg/cm ²)	0	98.8	197.6	296.4	395.2	494.0
Stress (kg/cm ²)	0.00	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.00	0.13	0.36	0.63	0.88	1.17

D (mm) = 300	S ₁ (mm) = 6.42	S ₂ (mm) = 6.76	S ₃ = 6.33
E _{vd} (MPa) = 0.75/0.0015	115.7		

E_{vd} = Modulus of deformation during the loading stage.
E_{vd} = Modulus of deformation during the unloading stage.
D = Plate diameter (mm)
S₁ = The difference between S₁ and S₂ from the maximum loading (mm)
S₂ = Difference in settlements corresponding to S₁ and S₃ from the maximum loading (mm)



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تليفون : 27367231 - 27363093
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Company Name : شركة طهني للميكانيك و التوريدات المعمارية :
 Project : Electric Business Train - Sector 5 - Giza to Asyut
 Test Date : 13/01/2024
 report date : 15/01/2024
 Station : 539+620
 Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)				Settlement		Average
Loading	Stress Kg/cm ²	Dial 1	mm	Dial 2	mm	
0	0.00	20.00	0.00	19.70	0.30	0.35
1	0.83	19.96	0.05	19.50	0.50	0.73
2	1.66	19.70	0.30	19.30	0.40	0.35
3	2.50	19.46	0.54	19.08	0.51	0.53
4	3.33	19.30	0.70	18.98	0.82	0.96
5	4.17	19.11	0.89	18.75	0.64	0.87
6	5.00	19.00	1.00	18.54	0.96	0.93

Unloading Stage (1)				Settlement		Average
Loading	Stress Kg/cm ²	Dial 1	mm	Dial 2	mm	
1	2.50	19.10	0.90	18.08	0.82	0.91
2	1.25	19.37	0.63	19.25	0.75	0.59
3	0.100	19.50	0.20	19.78	0.22	0.41

Loading Stage (2)				Settlement		Average
Loading	Stress Kg/cm ²	Dial 1	mm	Dial 2	mm	
0	0.83	19.59	0.31	19.70	0.50	0.31
1	1.66	19.48	0.52	19.59	0.41	0.47
stress is reached.						
2	2.50	19.36	0.54	19.38	0.62	0.53
3	3.33	19.25	0.75	19.27	0.73	0.74
4	4.17	19.14	0.86	19.18	0.82	0.54



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مكتب معامِل الإستشارات الهندسية

مشروعات محافظات الوجه القبلي

Report

1. Evaluation and representation of results.
2. Load Settlement curve.
3. The test report content the following:-
 - location of test site - Dimension of loading plate.
 - Measuring device used - Type of soil.
 - Type of Bedding material below the plate -Weathering condition.
 - Time and date of measurements - Unusual observation made during test .
 - Dial gauge reading and corresponding normal stress - Loading-settlement curve.
 - Description of the soil condition below the plate after testing.

Report

- Type of soil : Lower Embankment
- Job requiremer : Ev2 > 30 MPa

Item		Description
Type of bedding material below the plate		Natural Soil
Plate Diameter (mm)		300
Date of measurement		13/01/2024
Unusual observation made during test		NO
Description of the soil conditions below the plate after testing		No deformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To			E_{v1} (MPa)	E_{v2} (MPa)	
1	639+580	639+680	639+620	-5.5	111.7	135.3	1.21

Signature /

مكتب معامِل الإستشارات الهندسية
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توقيع المهندس 3 شارع الملك الأفندي، الزمالة، القاهرة

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Zamalek, Cairo.

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مكتب معامل الإستشارات الهندسية
مشروعات محافظات الوجه القبلي

Company : شركة لافسي للمحلات و التوزيعات المعمارية

Project : Electric Express Train - Sector (5) - Giza to Arment.
Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications EN 18134/2012-04 and project requirements
Test Location : Station 039+303 to 039+050
Station : 039+020
Level : -5.5
Test Date : 13/05/2024
Report Date : 15/01/2024
Type of soil : Lower Embankment
Report No. : 01

Dear Gentleman,

According to the above mentioned subject the test performed as follows:-

Apparatus

1. Loading plates consists of two plates with 303 mm and 303 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel struts/gauges with magnetic supports to load the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Eimco)
7. Reaction loading system by roller comparator with weight approximately 15 ton.
8. Calibration certificates are attached.

Test Procedure

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plates 303 mm and 303 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 20 seconds
4. The strain gauge and the dial gauge shall be set to zero
5. For a 300 mm loading plate, the first values are 2.0 kg/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 60 %, 20 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (i.e. that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads



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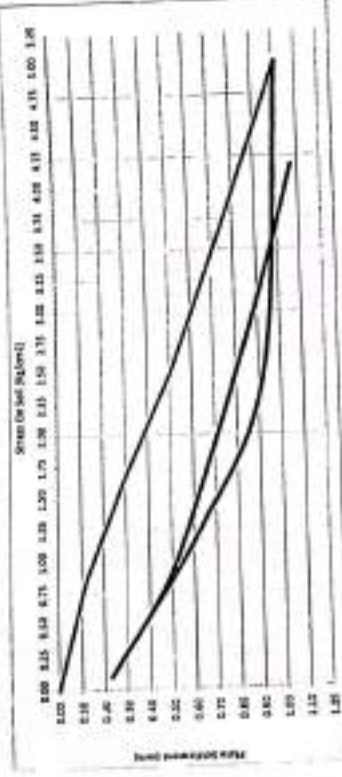
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تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
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Company Name
Project
Test Date
Report Date
Material
Test No.

شركة المعاملات والدراسات الهندسية
: Electronic Business Train - Sector (S) - Ques to Khamet
: 13/01/2024
: 15/01/2024
: 6.38 x 100
: 101

Nondestructive Static Plate Load Tests of Soils QIN 18134



Load (kg)	1	2	3	4	5	6
Settlement (mm)	0.00	0.10	0.12	0.30	0.51	0.68
Stress (kg/cm²)	0.00	0.03	0.04	0.10	0.16	0.20
Strain (%)	0.00	0.03	0.04	0.10	0.16	0.20

Load (kg)	300	600	900	1200	1500	1800
Settlement (mm)	0.00	0.10	0.12	0.30	0.51	0.68
Stress (kg/cm²)	0.00	0.03	0.04	0.10	0.16	0.20
Strain (%)	0.00	0.03	0.04	0.10	0.16	0.20

Load (kg)	1	2	3	4	5
Settlement (mm)	0.00	0.10	0.12	0.30	0.51
Stress (kg/cm²)	0.00	0.03	0.04	0.10	0.16
Strain (%)	0.00	0.03	0.04	0.10	0.16

Load (kg)	300	600	900	1200	1500	1800
Settlement (mm)	0.00	0.10	0.12	0.30	0.51	0.68
Stress (kg/cm²)	0.00	0.03	0.04	0.10	0.16	0.20
Strain (%)	0.00	0.03	0.04	0.10	0.16	0.20

Test = Modulus of deformation during the loading stage.
E₁ = Modulus of deformation during the unloading stage.
D = Plate diameter (mm).
E₂ = The difference between E₁ and E₂ from the maximum loading (mm) (kg/cm²).
D₁ = Difference in settlements (mm) (kg/cm²).



Unloading (t)	1	2	3	4
Stress (kg)	2533	1716	884	71
Strain (%)	5.00	2.50	1.250	0.10
Settlement (mm)	1.01	0.30	0.03	0.23

E₂/E₁ = 1.37

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九、《说文解字》：《说文解字》是东汉许慎所著的一部文字学著作，系统分析了汉字的构造和演变。

ラヂオの生放送で

Abstract

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Figure 1. The effect of the concentration of the polymer on the gelation time of the polymer solution.

卷之六

Investment	Sociedade		Sociedade		Average
	2014	2015	2014	2015	
Investment in equity	100	100	100	100	100
Investment in debt	100	100	100	100	100
Investment in real estate	100	100	100	100	100
Investment in infrastructure	100	100	100	100	100
Investment in technology	100	100	100	100	100
Investment in other	100	100	100	100	100

TABLE 1. <i>Continued</i>			
Strain	Strain No.	Strain No.	Strain No.
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
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94	94	94	94
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96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100



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مشروعات محافظات الوجه القبلي

Report

1. Evaluation and representation of results.
2. 1 read Settlement curve
3. The test report content the following:-
 - location of test site - Dimension of loading plate.
 - Measuring device used - Type of soil.
 - Type of Bedding material below the plate - Weathering condition.
 - Time and date of measurements - Unusual observation made during test.
 - Diag gauge reading and corresponding normal stress - Loading-settlement curve.
 - Description of the soil condition below the plate after testing.

Report

- Type of soil : Lower Embankment
- Job requirement : $E_v > 30 \text{ MPa}$

Item		Description
Type of bedding material below the plate		Natural Soil
Plate Diameter (mm)		300
Date of measurement		13/01/2024
Unusual observation made during test		NO
Description of the soil conditions below the plate after testing		No deformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle		Second Cycle	E_v/E_v Ratio
	From	To			E_v (MPa)	E_v (MPa)		
1	639+860	639+760	639+700	-5.5	60.3	126.4		1.27

Signature / 
مكتب معاميل الإستشارات الهندسية
3 شارع الملك الأفندي - الزمالة - القاهرة
218 999 437

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



3 شارع الملك الأفندي
الزمالك - القاهرة
تليفون : فاكس : 27367231
www.cel-egypt.com

Company Name : شركة الأهلي
Project : Electric Express Train – HSR From Qous To Armanit
Testing Date : 13 / 1 / 2024
Soil type : Lower Embankment
Location : ST From 639+580 To 639+760
Level : - 5.5 M
Report No. : 131

Compaction test by using Sand – Cone Test Method
ASTM D- 1556

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	639+610	1550.0	2.27	5.8	2.15	97.7%	Comply
2	639+675	1441.7	2.25	5.8	2.12	96.5%	Comply
3	639+710	1387.5	2.27	5.3	2.16	98.2%	Comply
4	639+755	1325.7	2.27	6	2.14	97.4%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

Signature / ...

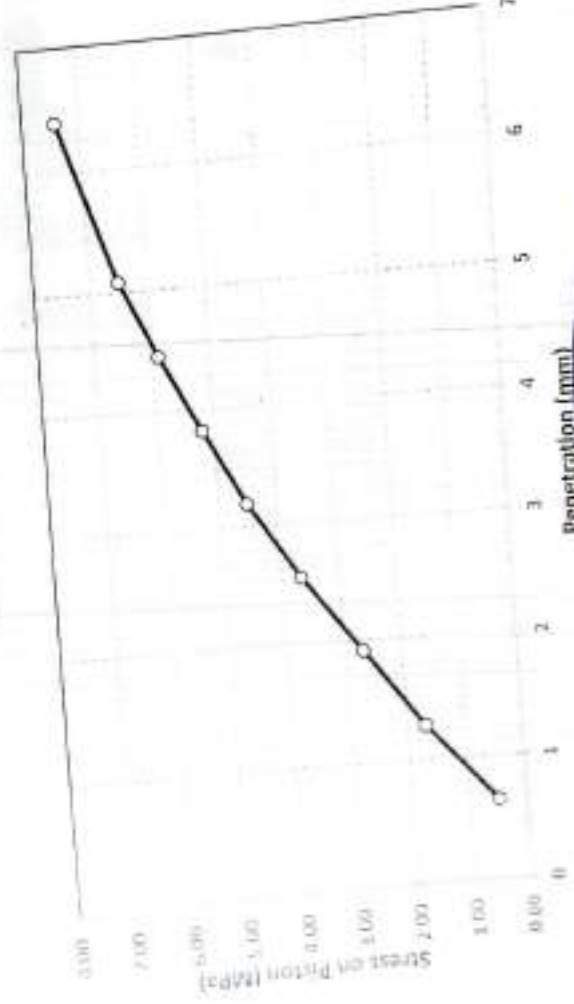


Mr. Muek E. Abdul Shauq
Director
131 / 1 / 2024



Company Name : شركة الذبيبي
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Load Penetration Curve of CBR Test
ASTM D-1883



Signature / *[Signature]*
مكاتب محاسبية والاستشارات الهندسية
مقره: الرياض، المنطقة الشرقية
الهاتف: 011 437 991 991
الفاكس: 011 437 991 991



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Company Name : شركة الأهلي
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

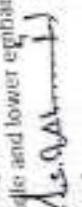
Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	
1.27	0.050	
1.91	0.075	
2.54	0.100	
3.18	0.125	
3.81	0.150	
4.45	0.175	
5.08	0.200	
6.35	0.250	
CBR Result	Stress (Mpa)	
At 0.5 inch (12.54 mm) penetration	St. Value	Sample results
	6.90	3.65
		CBR 100 %
		52.8%

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.22(gm/cm³)
- 3- At = 6.4 % optimum water content.
- 4- Surcharge load 4.50 Kg.

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مكاتب محاسن الاستشارات والمختبرات

Signature / توقيع :  3 شارع الملك فيصل، الرياض 11564
1- CBR : 10 for middle and lower embankments
2- The sample was compacted to dry density of 2.22(gm/cm³)
3- At = 6.4 % optimum water content
4- Surcharge load 4.50 Kg.

Company Name : شركة النخعي
 Project : Electric Express Train - HSR From Qous To Armanat
 Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/11/2023
 Reporting Date : 12/11/2023
 Reporting No. : 08-15

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



• Max dry density (g/cm³) : 2.22

• Optimum moisture content % : 6.4 %

Signature / *[Signature]*
CEL
 مكاتب استشارات الهندسة والبحوث
 مقترحات : 437 991 219
 رقم الترخيص : 3 شارع الملك فيصل - الرياض



Dr. Hani F. Al-Najdi
 Technical Manager
 Hani@cel.com.sa

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مكتب معامل الاستشارات الهندسية

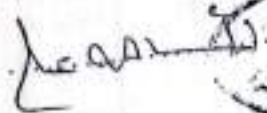
Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)	Max 50 %	-----	-----
2.00 mm (No.10).	47.7	Max 30 %	Max 50 %	-----
0.425 mm (No. 40).	28.8	Max 15 %	Max 15 %	Max 15 %
0.075 mm (No. 200).	10.0			
Liquid Limit	---	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature /





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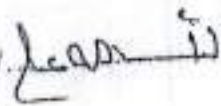
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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

Test	Results (%)
Liquid Limit	0
Plastic Limit	0
Plasticity Index	0

Signature /





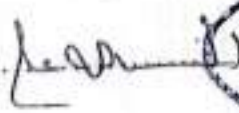
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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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)	10.0

Signature / 



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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	97.5
37.5	1.5	92.7
25	1	84.2
19	3/4	82.8
12.50	1/2	71.3
9.50	3/8	62.6
4.75	4	47.9
2.00	10	47.7
0.425	40	28.8

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

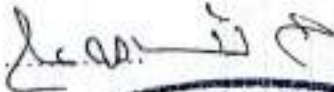
Dear Gentleman,

Attached here with the delivered on 8 / 11 / 2023

This sample is representative for 5.000 M³

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

Signature /...  Consultant Eng : Abderrahman Ahmed



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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Testing Date : 30 / 1 / 2024
Soil type : Middli Embankment
Location : ST From 638+740 To 639+100
Level : - 2 M
Report No. : 144

Compaction test by using Sand – Cone Test Method

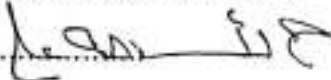
ASTM D- 1556

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	638+762	1398.6	2.30	5.8	2.17	97.8%	Comply
2	638+795	1348.6	2.29	5.3	2.17	98.0%	Comply
3	638+830	1436.8	2.23	5.3	2.12	95.6%	Comply
4	638+885	1486.8	2.25	5.8	2.13	95.8%	Comply
5	638+930	1506.9	2.28	5.3	2.16	97.4%	Comply
6	638+991	1534.0	2.27	5.8	2.14	96.5%	Comply
7	639+045	1452.1	2.23	5	2.13	95.8%	Comply
8	639+085	1511.8	2.25	6.4	2.11	95.2%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

Signature / 

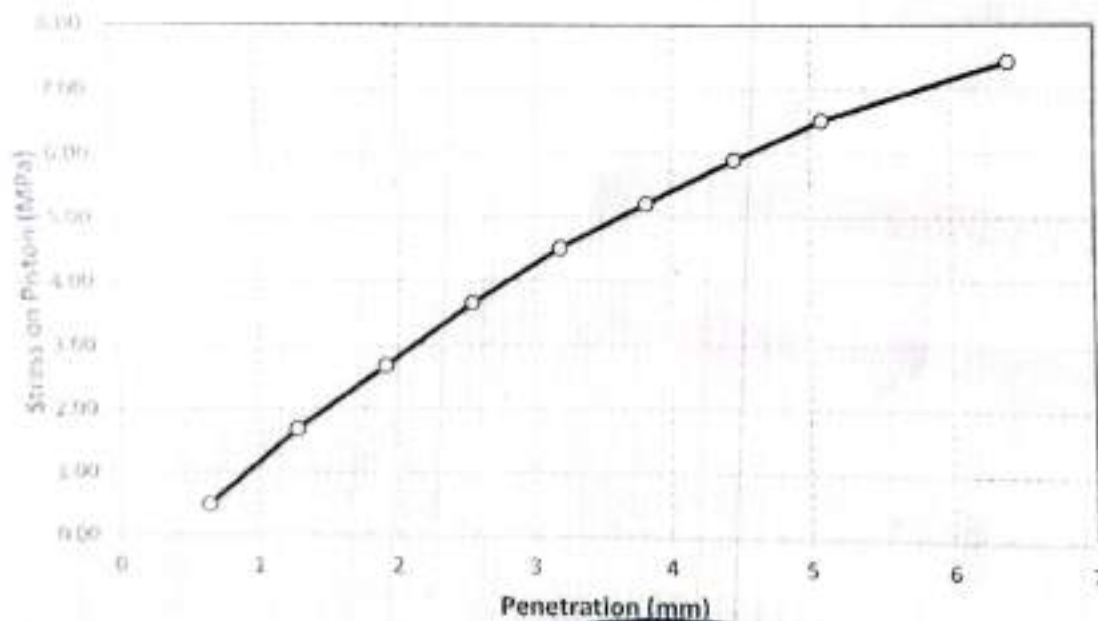


3 E Malek E Akbar Street
Zamalek, Cairo
Tel & Fax : 2736723 - 27363060



Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Load Penetration Curve of CBR Test
ASTM D-1883



Signature /



Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	
1.27	0.050	
1.91	0.075	
2.54	0.100	
3.18	0.125	
3.81	0.150	
4.45	0.175	
5.08	0.200	
6.35	0.250	

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.65	52.8%

Notes:

- Attached graph shows penetration resistance versus penetration magnitude.
- The sample was compacted to dry density of 2.22(gm/cm³)
- AI = 6.4 % optimum water content.
- Surcharge load 4.50 Kg.

Signature /

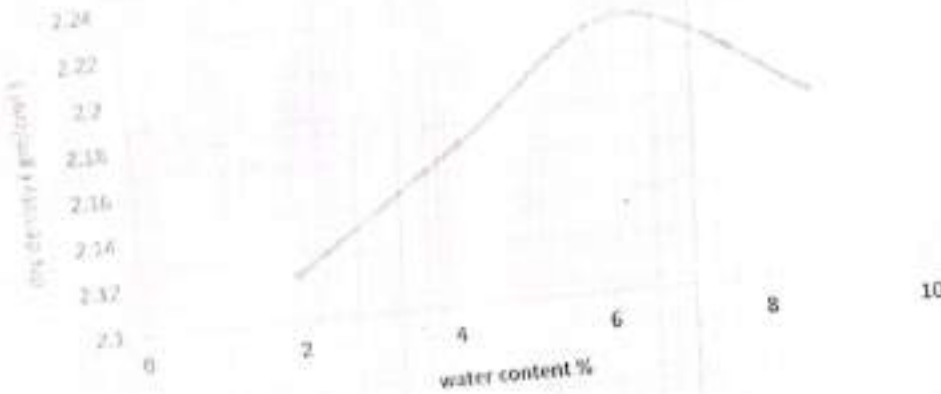


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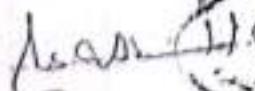
Consulting Engineering Bureau & Laboratories
مكتب محاميل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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



- Max dry density (gm/cm³) : 2.22
- Optimum moisture content % : 6.4 %

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مكتب معامل الاستشارات الهندسية

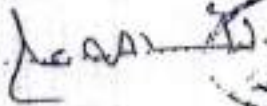
Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Arment
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
• Group Classification	(A-1-a)			
2.00 mm (No.10).	47.7	Max 50 %	-----	-----
0.425 mm (No. 40).	28.8	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	10.0	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	---	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature /





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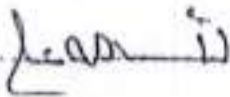
Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

Test	Results (%)
Liquid Limit	0
Plastic Limit	0
Plasticity Index	0

Signature /





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Geotechnical Engineering Services & Laboratories
P.O. Box 111, Jeddah 21511, Saudi Arabia

Company Name: شركة
Project: Electric Express Train - HSR From Qassim To Al-Madina
Location: ST: 639+000 E=32°54'25.6" N=25°51'50.1"
Type of sample: Soil Embankment (Upper Embankment 0.0 M)
Delivery Date: 08/11/2023
Reporting Date: 12/11/2023
Reporting No.: 08-15

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)	0.2

Signature: [Signature]

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Geotechnical Engineering Services & Laboratories
P.O. Box 111, Jeddah 21511, Saudi Arabia
Tel: 011-800 123 4567 Fax: 011-800 123 4567
Email: info@cel.com.sa

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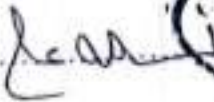
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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	97.5
37.5	1.5	92.7
25	1	84.2
19	3/4	82.8
12.50	1/2	71.3
9.50	3/8	62.6
4.75	4	47.9
2.00	10	47.7
0.425	40	28.8

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Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Dear Gentleman ,

Attached here with the delivered on 8 / 11 / 2023

This sample is representative for 5.000 M³

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

Signature /...

Consultant Eng : Abderrahman Ahmed



15, El Madi Street
Cairo 11511
Tel: 23902041 - 23902042



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Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Testing Date : 15 / 1 / 2024
Soil type : Middle Embankment
Location : ST From 638+940 To 638+980
Level : - 4.5 M
Report No. : 134-2

Compaction test by using Sand - Cone Test Method ASTM D- 1556

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	638+955	1545.8	2.26	6.4	2.13	95.9%	Comply
2	638+976	1568.1	2.30	6	2.17	97.8%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

Signature /



1 E. Mark E. Abdel Street
Zandoh, Giza
Tel: 27367201 - 27367201

