الهيئة العامة
للطرق و الكباري
(GARB)
الإدارة المركزية للمنطقة الثالثة بقنا

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة و بعد .....

نتشرف أن نرفق لسيادتكم عدد ١ مقايسة معدلة ٢ لمشروع اعمال انشاء الجسر الترابي للقطار الكهربائي السريع ٦ أكتوبر أبوسمبل (القطاع الخامس) من الكم ٥٧٩،٠٠ ٦٤٠ حتي الكم ٦٤١،٢٣٦ على ان تراجع الأسعار بمعرفة الإدارة بالقاهرة .

اعداد المكتب الاستشاري سبكترم للاستشارات الهندسية وعلي مسئوليته .

تنفيذ شركة الذهبي للمقاولات

برجاء التكرم بالعلم والتوجيه باللازم

وتفضلوا بقبول وافر التحية والإحترام .....

تحريرا في ٢٠٢٣/١٢/٢٦

المرفقات / عدد (١)مقايسة

رئيس الإدارة المركزية

مهندس / عماد حسين

الهيئة العامة للطرق والكباري

وزارة النقل

مقايسة معدلة 2 (جزئية لبنود لأعمال)

مشروع : الجسر الترابى للقطار السريع (أكتوبر / أبو سمبل)

القطاع الخامس من الكم	629 +110.13	إلى الكم	715+624.53	بطول	86.52 كم
من إحداثى	E 489929.6671	و	N 2874215.5671		
الى إحداثى	E 440168.6522	و	N 2817778.3175		

إستشارى القطاع سبكترم للإستشارات الهندسية د . م . / عماد الدين نبيل

تنفيذ الشركه: / الذهبى للمقاولات فنة : الرابعه بقيمة : مليون

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

قيمة المقايسة 19,959,325 مليون

المقاول / شركة الذهبى للمقاولات

الإستشارى / سبكترم للاستشارات الهندسية Spectrum Consulting

المنطقة الثامنة بقنا / الهيئة العامة للطرق والكباري وزارة النقل

مقايسه (معدلة 2)

أعمال إنشاء الجسر الترابي للقطار الكهربائي السريع (أكتوبر / أبوسمبل)
من محطة 13.10+ 629 حتى محطة 624.63 + 715 بطول 86.5145 كم
تنفيذ شركة / الذهبي بوسيفا للمقاولات العمومية من محطة 579+640 الي 236+641 بطول 657 م

رقم البند	بيان الأعمال	الوحدة	الكمية	سعر الوحدة	الإجمالي
2	**أعمال الحفر**				
2-1	بالمتر المكعب أعمال حفر باستخدام المعدات الميكانيكية لجميع أنواع التربة عدا التربة الصخرية وتسوية السطح بآلات التسوية والرش بالمياه الأصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى أقصى كثافة جافة (95%) من الكثافة الجافة القصوى) ومحمل على البند تحميل ونقل الأتربة الزائدة لمسافة 500 متر من محور الطريق ويتم التنفيذ طبقاً للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقاً لأصول الصناعة ومواصفات الهيئة العامة للطرق والكباري وتعليمات المهندس المشرف. -علاوة 1جنيه لكم لمسافة نقل ناتج الحفر وتصبح 1.1 جنيه/كم ابتداء من 4/5/2023 -علاوة زيادة السولار 0.6 جنيه لم3 ابتداء من 4/5/2023	م3	26,000	23.00	598,000
	علاوة مسافة النقل 1 كم	م3	38	1.10	42
	علاوة زيادة السولار	م3	26,000	0.60	15,600
3	**أعمال الردم Embankment**				
3-1	أعمال تحميل وتوريد ونقل التربة مطابقة للمواصفات وتشكيلها باستخدام آلات التسوية بسمك لا يزيد عن 50 سم حتى منسوب (-2 متر) أسفل منسوب القرمة و بسمك لايزيد عن 25سم أعلى من منسوب (-2 متر) من منسوب القرمة لاستكمال القطاع التصميمي لتشكيل الجسر والأكتاف (نسبة تحمل كاليفورنيا حتى 15%) ورشها بالمياه الأصولية للوصول إلى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول إلى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) ويتم التنفيذ طبقاً للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقاً لأصول الصناعة ومواصفات الهيئة العامة للطرق والكباري وتعليمات المهندس المشرف. - في حالة طلب جهاز الإشراف زيادة نسبة الدمك عن 95% يحسب زيادة 1 جنيه على زيادة نسبة الدمك لكل 1%. - مسافة النقل حتى 2 كم و يتم احتساب علاوة 1.4 جنيه لكل كم بالزيادة أو النقصان وتصبح 1.5 جنيه /كم ابتداء من 4/5/2023. - السعر يشمل عمل التوريدات و تخليط و اختبارات و نقل لموقع العمل حتى مسافة 2 كم . -علاوة زيادة السولار 1.9 جنيه /م3 ابتداء من 4/5/2023 -السعر لا يشمل قيمة المادة المحجرية.	م3	291,465	60.00	17,487,900
	علاوة زيادة السولار 1.90جنيه /م3 ابتداء من 4/5/2023	م3	291,465	1.90	553,784
4	**طبقة تأسيس Prepared Subgrade**				
4-1	بالمتر المكعب أعمال توريد وفرش طبقة تأسيس (Prepared Subgrade) من الأحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات وأقصى حجم للحبيبات 100 مم وألا تزيد نسبة المار من منخل 200 عن 12% والتدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورنيا عن 25% وألا تزيد نسبة الفاقد بجهاز لوس انجلوس عن 30% وألا يزيد الانتفاش عن 15% وألا يقل معامل المرونة (Ev2) من تجربة لوح التحميل عن 80 ميجاباسكال ويتم فردها على طبقتين باستخدام الات التسوية الحديثة على أن لا يزيد سمك الطبقة بعد تمام الدمك عن 25 سم ورشها بالمياه الأصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول إلى أقصى كثافة جافة قصوى (لا تقل عن 95%) من الكثافة المعملية والفئة تشمل إجراء التجارب المعملية والحقلية ويتم التنفيذ طبقاً لأصول الصناعة والرسومات التفصيلية والبند بجميع مشتملاته طبقاً للمواصفات الفنية للمشروع والكود الاسترشادي وتعليمات المهندس المشرف. - مسافة النقل لا تقل عن 20 كم. - يتم احتساب علاوة 1.2 جنيه لكل 1 كم بالزيادة أو النقصان وتصبح 1.3 جنيه /كم ابتداء من 4/5/2023. - السعر لا يشمل قيمة المواد المحجرية. علاوة زيادة السولار 1.8 جنيه /م3 ابتداء 4/5/2023	م3	5,000	130.00	650,000
	مسافة نقل 100 كم	م3	5,000	104.00	520,000
	كارتة توريد الأساس	م3	5,000	25.00	125,000
	علاوة زيادة السولار	م3	5,000	1.80	9,000
	الأجمالي				19,959,325

مهندس الشركة المنفذة	مدير المشروع (الاستشاري)	مهندس هيئة الطرق والكباري (المنطقة الثامنة - قنا)	يعتمد ،، رئيس الإدارة المركزية المنطقة الثامنة (قنا)
المهندس/	المهندس/	المهندس/	السيد المهندس / عماد حنين
التوقيع/	التوقيع/	التوقيع/	التوقيع/

المسوحة ضوئيا بـ CamScanner

مشروع القطار الكهربائى السريع القطاع الخامس

تنفيذ شركة الذهبى للمقاولات

من الكم 952+637 الى 863+643

بيان اعمال توضيحى لمستخلص جارى (4) عقد (2024/2023/306)

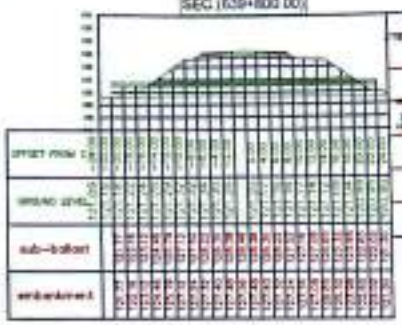
العقد	قيمة العقد	المستخلص	كميات حفر ترعة عادية	كميات الردم
(2024/2023/306)	عشرون مليون	جارى 1	-	23100.00
		جارى 2	10000.00	121500.00
		جارى 3	-	34400.00
		جارى 4	-	30000.00
كميات تم حصرها			-	24219.30
			14051.66	128231.31
				33745.88
			-	30262.98
اجمالى كميات تم حصرها			14051.66	216459.47
كميات تم صرفها			-	23100.00
			10000.00	121500.00
			-	34400.00
			-	30000.00
اجمالى كميات تم صرفها			10000.00	209000.00
المتبقى من الكمية			4051.66	7459.47

مدير المشروع للشركة المنفذة /

استشارى المساحة مكتب بريلانت /

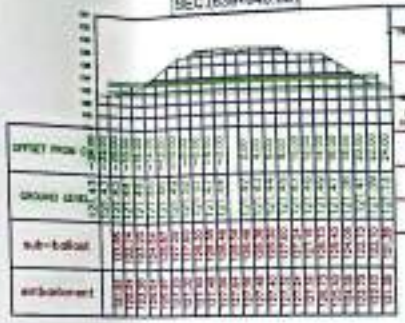
استشارى اسبكترم /

EXPRESS TRAIN
SEC (639+800.00)



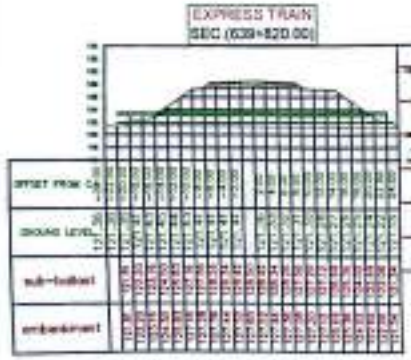
Total Volume at Station 639+800.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	17.36
Fill Vol	347.20
cum fill vol	16916.11

EXPRESS TRAIN
SEC (639+840.00)



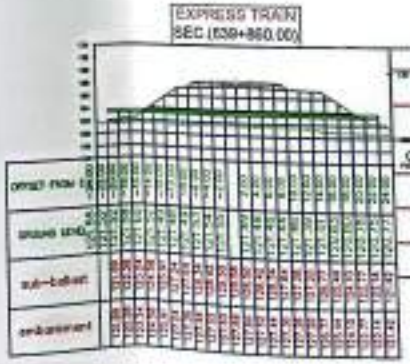
Total Volume at Station 639+840.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	17.36
Fill Vol	347.20
cum fill vol	17630.31

EXPRESS TRAIN
SEC (639+820.00)



Total Volume at Station 639+820.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	17.36
Fill Vol	347.20
cum fill vol	17283.31

EXPRESS TRAIN
SEC (639+860.00)



Total Volume at Station 639+860.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	17.36
Fill Vol	347.20
cum fill vol	17977.71

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

SECTION (FROM QAS TO ARAMAT)

*All dimensions are in meters

List of cross-sec Expression

Contractor EL-ZAHABY

EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing NO
H&R - SEC 5 - [illegible] [1]

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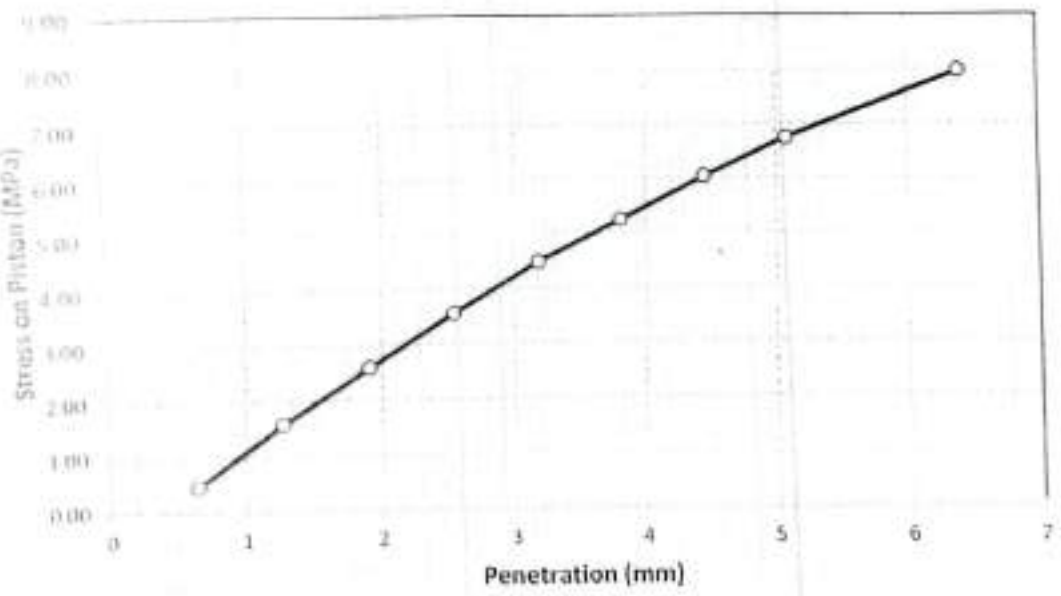
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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 = 2.22 (gm /cm^3)
At = 6.4 % optimum water content.
3- Surcharge load 4.50 Kg.
4- CBR = 10 for middle and lower embankments according project spec page No 36.

Signature / ...

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

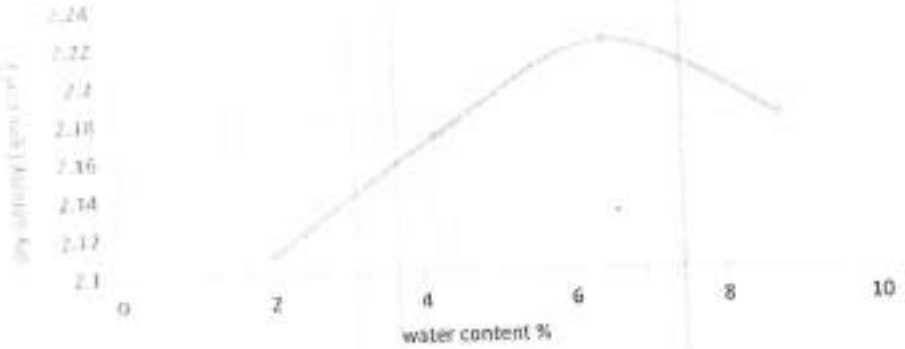
Type of sample : Soil Embankment (Upper Embankment 0.0 M)

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 %

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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مكتب معامل الاستشارات الهندسية

مشروعات - الاقصر

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المركز الرئيسي 3 شارع النيل الاقصر - الزمالك - القاهرة

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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 µm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 µM (No.200)	9.1

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مكتب معامل الاستشارات الهندسية

مشروعات و الاشراف

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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	¾	72.2
12.50	½	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

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مشروعات - الاقصر
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المركز الرئيسي 3 شارع الملك الافضل - الزمالك - القاهرة

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Consulting Engineering Bureau & Laboratories

مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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 M^3

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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219 991 437 رقم التسجيل الضريبي
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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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

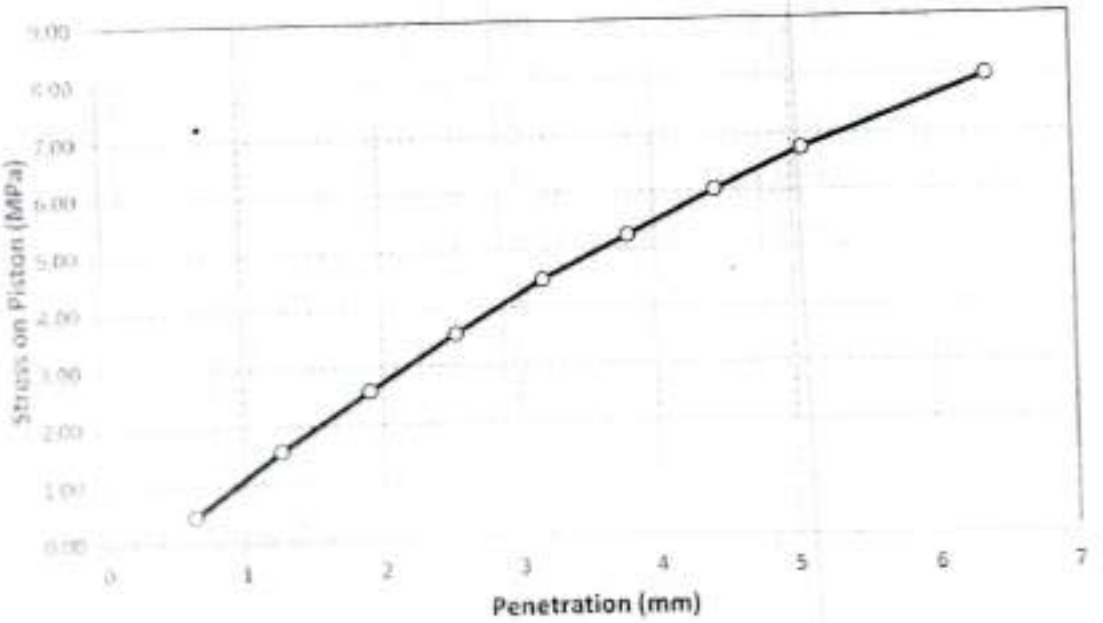
Delivery Date :08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature / ..

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مكتب معامل الاستشارات الهندسية

مشروعات : الأقصر

ت: 215.991.437

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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 2.22 (gm /cm³)
At – 6.4 % optimum water content.
3- Surcharge load 4.50 Kg.
4- CBR – 10 for middle and lower embankment as per project spec page No 36.

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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

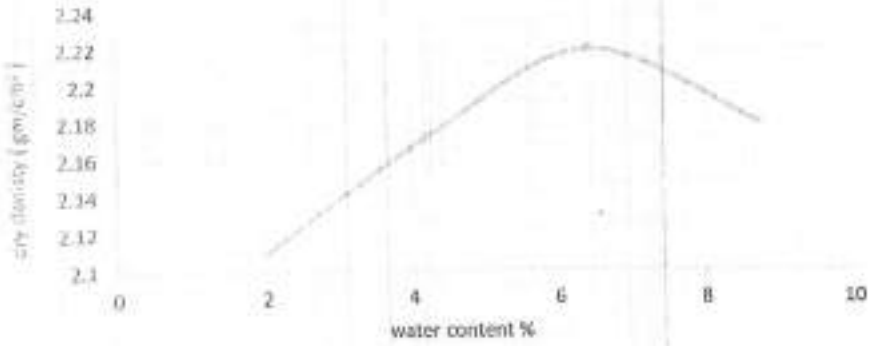
Type of sample : **Soil Embankment (Upper Embankment 0.0 M)**

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^2) : 2.22
- Optimum moisture content % : 6.4 %

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Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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Test	Results (%)
[illegible]	[illegible]

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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	¾	72.2
12.50	½	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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 M^3

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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Company Name : [illegible]
Project : Electric Express Train - HSR From Qana To Armant
Testing Date : 27 / 1 /2024
Soil type : Upper Embankment
Location : ST From 641+780 To 641+880
Level : - 0.50 M
Report No. : 140

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

Test #	Station	Test Hole Volume cm³	Bulk Density gm/ cm³	Moisture Content %	Dry Density (gm/ cm³)	Degree of Compaction (%)	Acceptance
1	641+820	1504.2	2.25	6.3	2.14	96.4%	Comply
2	641+840	1519.4	2.28	6.8	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

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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

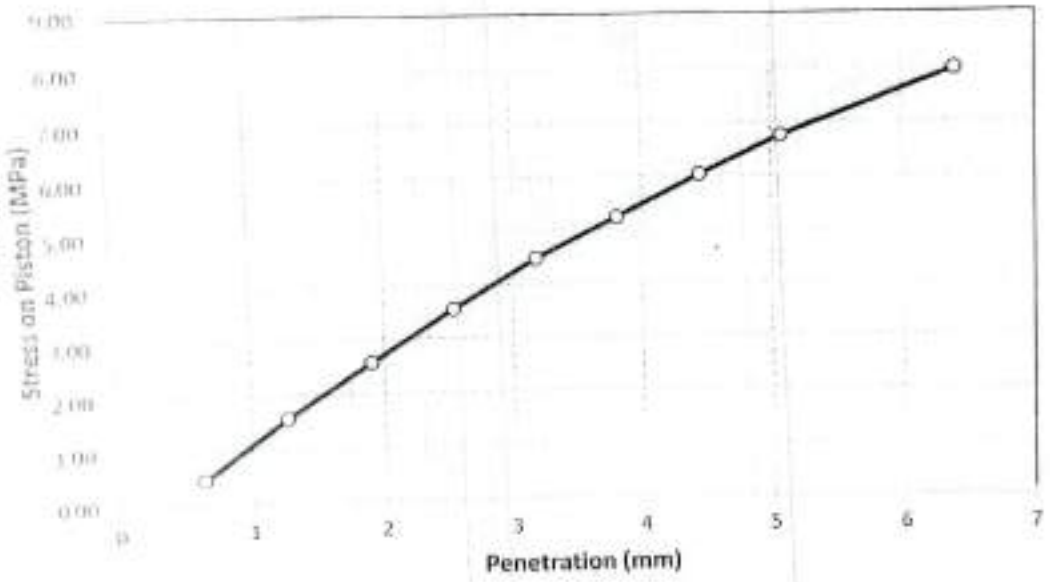
Delivery Date :08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature / ..

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مشروعات : الاقصر

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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 = 2.22 (gm /cm^3)
At = 6.4 % optimum water content.
3- Surcharge load 4.50 Kg.
4- CBR > 10 for middle and lower embankment according project spec page No 36.

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

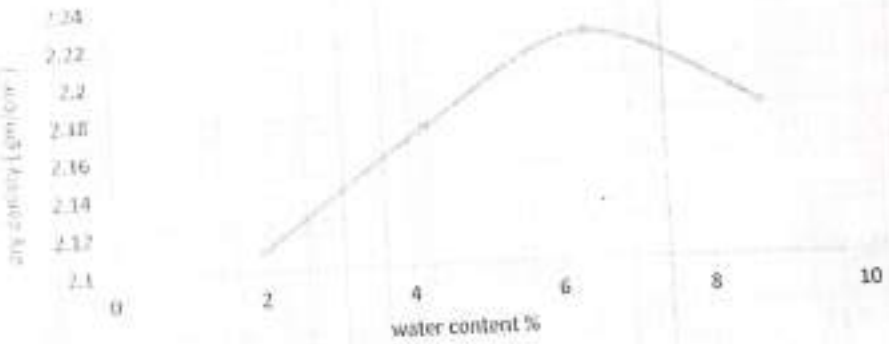
Type of sample : Soil Embankment (Upper Embankment 0.0 M)

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 %

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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 µm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 µM (No.200)	9.1

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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	¾	72.2
12.50	½	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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 M^3

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

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Consultant Eng : Abderrahman Ahmed

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مكتب معامل الاستشارات الهندسية

Company Name : شركة المعبر

Project : Electric Express Train - HSR From Qous To Armant

Testing Date : 21 / 1 /2024

Soil type : Upper Embankment

Location : ST From 640+780 To 640+960

Level : -0.75 M

Report No. : 138-2

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	641+799	1543.1	2.27	6.4	2.13	96.0%	Comply
2	641+820	1488.2	2.28	6.4	2.15	96.7%	Comply
3	641+845	1481.3	2.26	6.4	2.13	95.9%	Comply
4	641+855	1507.6	2.29	6.4	2.15	97.0%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm^3

At optimum moisture content = 6.4 %

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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

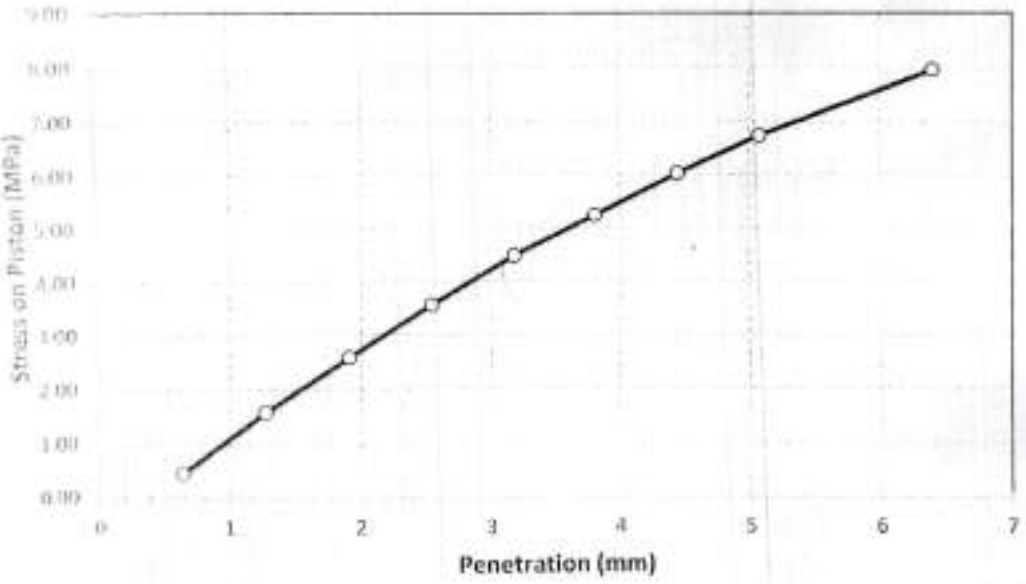
Delivery Date :08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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 = 2.22 (gm /cm^3)
At = 6.4 % optimum water content.

3- Surcharge load 4.50 Kg.

4- CBR = 10 for middle and lower embankment according project spec page No 36.

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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

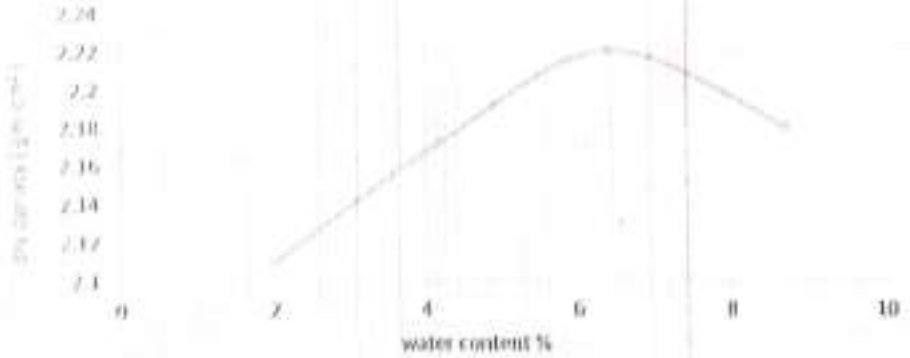
Type of sample : **Soil Embankment (Upper Embankment 0.0 M)**

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 %

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مشروعات و الاستثمار
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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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 μm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μM (No.200)	9.1

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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	¾	72.2
12.50	½	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

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Company Name	: شركة الذهبي
Project	: Electric Express Train – HSR From Qous To Armant
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 M^3

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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Company Name : شركة الذهبى

Project : Electric Express Train – HSR From Qous To Armant

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 cm³	Bulk Density gm/ cm³	Moisture Content %	Dry Density (gm/ cm³)	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 dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

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Company Name : شركة الذهبي

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)

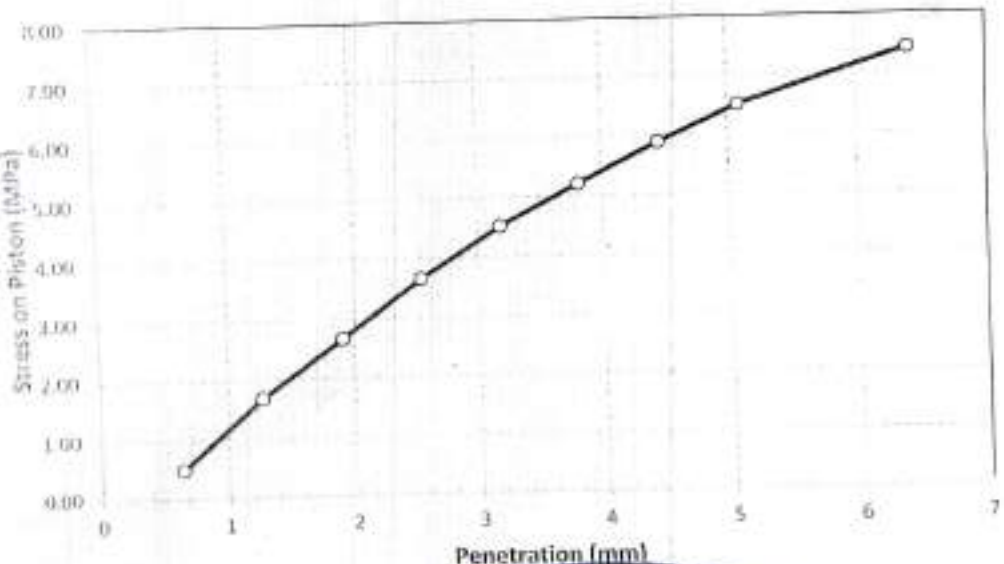
Delivery Date : 08/11/2023

Reporting Date : 12/11/2023

Reporting No. : 08-15

Load Penetration Curve of CBR Test

ASTM D-1883



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Company Name : شركة الفطيم
Project : Electric Express Train – HHR From Qatar To Artmant
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	52.8 %
At 0.1 inch (2.54 mm) penetration	6.90	3.65	

Notes:
1- Attached graph shows penetration resistance versus penetration magnitude
2- The sample was compacted to 4D (mold diameter, height, etc.)
At +0.4 % optimum water content
3- Surcharge load 4.50 kg
4- CBR = 10 for middle and lower embankment

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

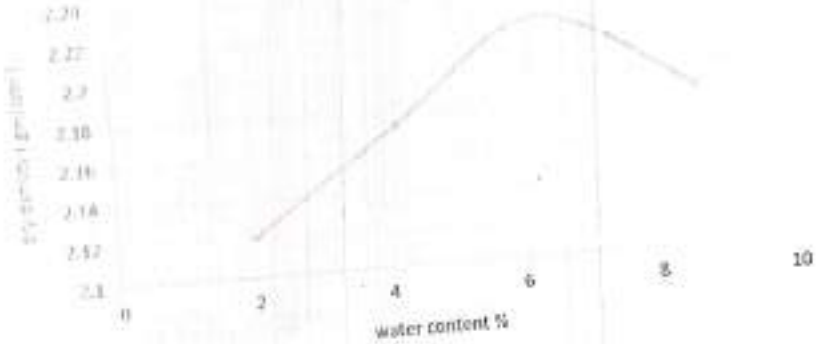
Type of sample : Soil Embankment (Upper Embankment 0.0 M)

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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Company Name : شركة القطر

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

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).	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

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Company Name : شركة الذهبي

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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Company Name : شركة الذهبي

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 µm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 µM (No.200)	10.0

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Company Name : شركة الذهبي

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	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

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Company Name : شركة الفهري

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 M^3

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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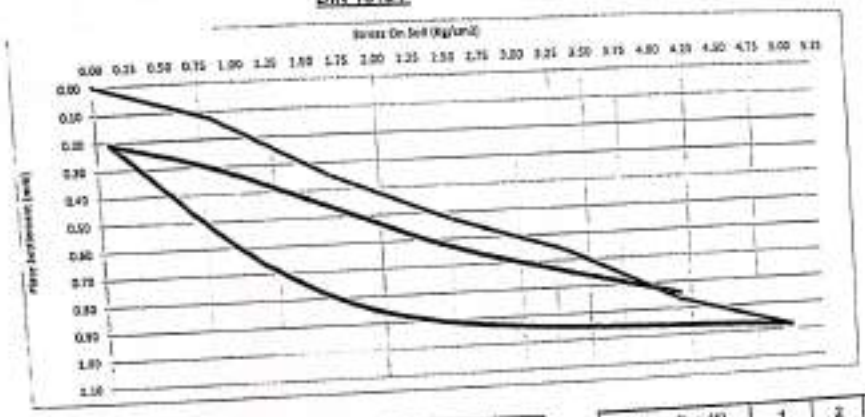
مكتب معامل الإستشارات الهندسية

مشروعات محافظات الوجه القبلى

Company Name : شركة الأهلى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (5) – Qous to Armant
Test Date : 13/01/2024
report date : 16/01/2024
Station : 039+ 020
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	585	1172.8	1758.3	2352.8	2946.1	3532.5
Stress (Kg/cm2)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.13	0.35	0.53	0.66	0.87	0.98

UnLoading (1)	1	2	3	4
Stage(Kg)	3533	1766	884	71
Stress (Kg/cm2)	5.00	2.50	1.250	0.10
Settlement (mm)	0.98	0.91	0.69	0.21

D (mm) =	330	S1 (mm)=	0.31	S2(mm)=	0.78	ΔS =	0.39
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS		113.7				

Ev2/Ev1 = 1.11

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	585.385	1172.8	1758.3	2352.8	2946.1
Stress (Kg/cm2)	0.10	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.21	0.31	0.47	0.63	0.74	0.84

D (mm) =	330	S1 (mm)=	0.42	S2(mm)=	0.76	ΔS =	0.33
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS		135.3				

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Δσ = The difference between 0.3 and 0.7 from the maximum loading (stress) (Kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)

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مشروعات محافظات الوجه القبلى

Company Name : شركة الذهبى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (5) - Qous to Ameriat.
Test Date : 13/01/2024
report date : 15/01/2024
Station : 639+620
Test No. : 01

Nonrepetitive Static Plate Load Tests of Spils
DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.95	0.05	19.80	0.20	0.13
2	1.66	19.70	0.30	19.60	0.40	0.35
3	2.50	19.46	0.54	19.49	0.51	0.53
4	3.33	19.30	0.70	19.38	0.62	0.66
5	4.17	19.11	0.89	19.16	0.84	0.87
6	5.00	19.00	1.00	19.04	0.96	0.98

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
1	2.50	19.10	0.90	19.08	0.92	0.91
2	1.25	19.37	0.63	19.25	0.75	0.69
3	0.100	19.80	0.20	19.78	0.22	0.21

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.83	19.69	0.31	19.70	0.30	0.31
approximately equ	1.66	19.48	0.52	19.59	0.41	0.47
stress is reached.						
2	2.50	19.36	0.64	19.38	0.62	0.63
3	3.33	19.25	0.75	19.27	0.73	0.74
4	4.17	19.14	0.86	19.18	0.82	0.84

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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	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
date of measurement	: 11/01/2024
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	First Cycle	Second Cycle	E_{V2}/E_{V1} Ratio
	From	To		(m)	E_{V1} (MPa)	E_{V2} (Mpa)	
1	639+560	639+660	: 639+620	: -5.5	111.7	135.3	1.21

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مشروعات محافظات الوجه القبلى

Company : شركة الأهلى للمقاولات و التوريدات العمومية

Project : Electric Express Train - Sector (5) – Qous to Armant.
Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134-2012-04 and project requirements
Test Location : Station 639+580 to 639+960
Station : 030 : 020
Level : -5.5
Test Date : 13/01/2024
Rapot 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 300 mm and 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges 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 (Enerpac)
7. Reaction loading system by roller compactor 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 300 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 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 5.0 kg/cm ^{2}
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 50 % , 25 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2 nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so 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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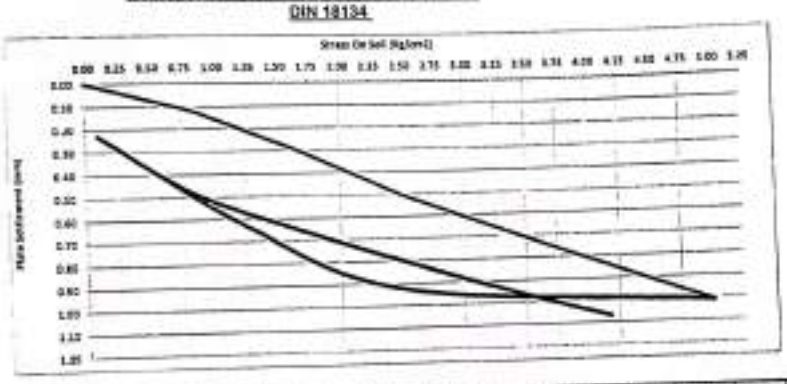
Company Name : شركة المصرى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (5) – Qoos to Ameant.
Test Date : 13/01/2024
report date : 15/01/2024
station : 639+100
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	586	1172.8	1766.3	2352.6	2946.1	3532.8
Stress (Kg/cm2)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.12	0.32	0.51	0.68	0.84	1.01

UnLoading (1)	1	2	3	4
Stage(Kg)	3533	1766	884	71
Stress (Kg/cm2)	5.00	2.50	1.250	0.10
Settlement (mm)	1.01	0.92	0.63	0.23

D (mm) =	300	S1 (mm)=	0.37	S2(mm)=	0.11	ΔS =	0.44
Ev1 (MPa) =	0.75*D*Δσ/ΔS		99.3				

Ev2/Ev1 = 3.27

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	586.395	1172.8	1766.3	2352.6	2946.1
Stress (Kg/cm2)	0.10	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.23	0.46	0.65	0.80	0.94	1.07

D (mm) =	300	S1 (mm)=	0.62	S2(mm)=	0.37	ΔS =	0.25
Ev2 (MPa) =	0.75*D*Δσ/ΔS		128.4				

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Δσ = The difference between 0.3 and 0.7 from the maximum loading (stress) (kg/cm²)
ΔS = Difference in settlements corresponding to the [illegible] loading (mm)

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[illegible]

Company Name: [illegible]
Project: [illegible]
Test Date: [illegible]
Report Date: [illegible]
Station: [illegible]
Test No.: [illegible]

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)

Loading	Stress MN/m2	Dia 1	Settlement mm	Dia 2	Settlement mm	Average
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Unloading Stage (1)

Loading	Stress MN/m2	Dia 1	Settlement mm	Dia 2	Settlement mm	Average
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Loading Stage (2)

Loading	Stress MN/m2	Dia 1	Settlement mm	Dia 2	Settlement mm	Average
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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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	Descriptions
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+660	639+760	: 639+700	: -5.5	99.3	126.4	1.27

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مختبرات

Subject:

Project:

Subject:

Test Location:

Station:

Level:

Test Date:

Report Date:

Type of test:

Report No.:

Dear Gentlemen,

Attachment:

1.

2.

3.

4.

5.

6.

7.

8.

Test Procedure:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

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مكتب معامل الإستشارات الهندسية

Company Name	: شركة الذهبي
Project	: Electric Express Train – HSR From Qous To Armant
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/cm^3

At optimum moisture content = 6.4 %

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Company Name : شركة الذهبي

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)

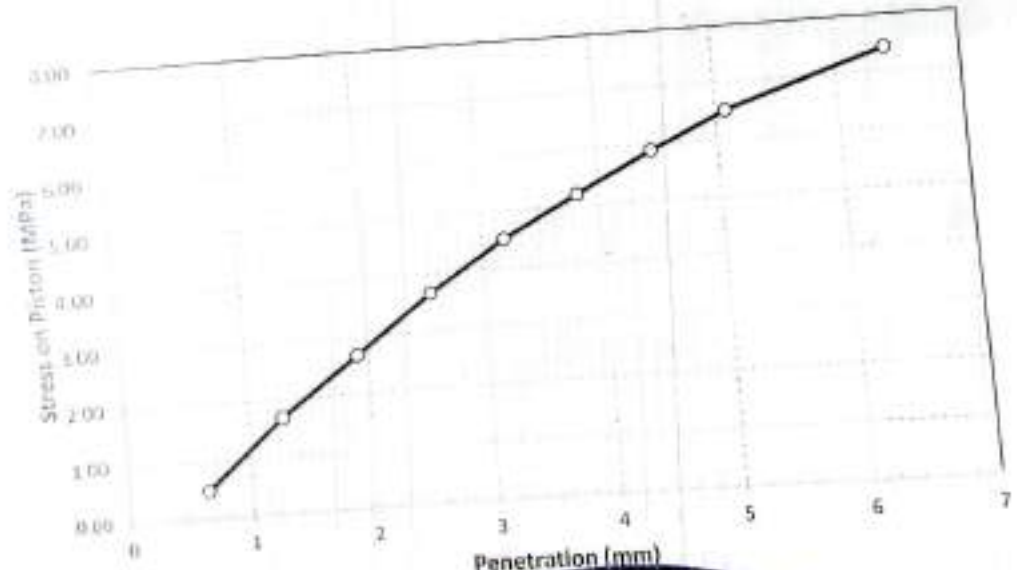
Delivery Date : 08/11/2023

Reporting Date : 12/11/2023

Reporting No. : 08-15

Load Penetration Curve of CBR Test

ASTM D-1883



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Company Name : شركة الذهبي

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:

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.

4- CBR > 10 for middle and lower embankments according project spec page No 36.

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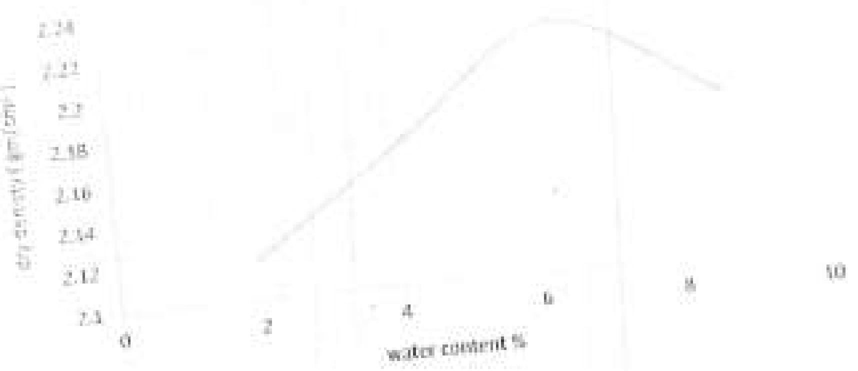
Company Name	: شركة الأهلي
Project	: Electric Express Train – HSR From Qous To Armant
Location	: ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample	: Soil Embankment (Upper Embankment 0.0 M)
Delivery Date	: 08/11/2023
Reporting Date	: 12/11/2023
Reporting No.	: 08-15

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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Company Name : شركة الذهبي
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

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).	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

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Company Name : شركة الذهبي
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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Company Name : شركة الذهبي

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 µm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 µM (No.200)	10.0

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Company Name : شركة الذهبي

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	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

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Company Name : شركة الذهبي

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 M^3

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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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/cm^3

At optimum moisture content = 6.4 %

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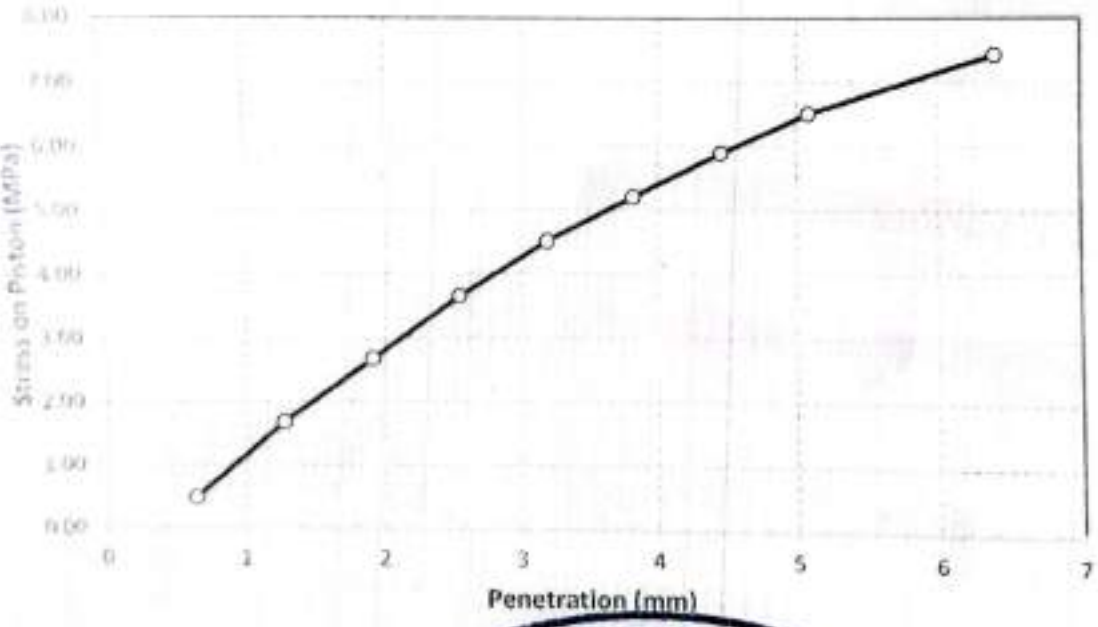
Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Load Penetration Curve of CBR Test

ASTM D-1883



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Company Name : شركة الذهبي

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:

1- Attached graph shows penetration resistance versus penetration magnitude.

2- The sample was compacted to dry density ρ_d=2.22(gm/cm^3)

At = 6.4 % optimum water content.

3- Surcharge load 4.50 Kg.

4- CBR > 10 for middle and lower embankments according project spec page No 36.

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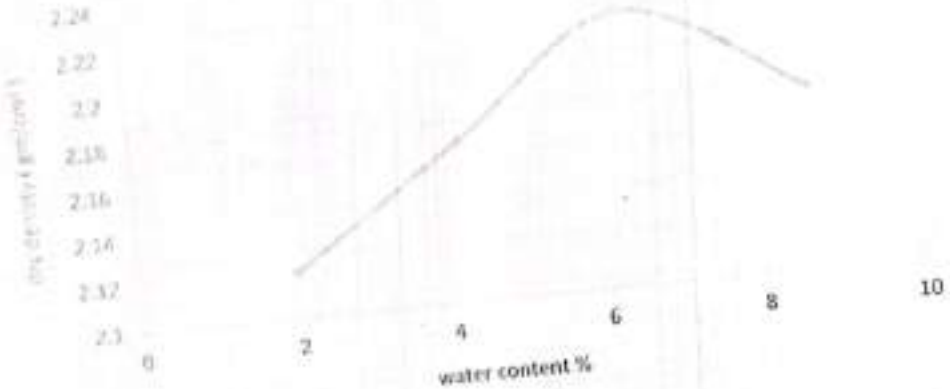
Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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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Company Name : شركة الأهبي
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

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).	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

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Company Name : شركة الذهبي

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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[illegible]

Company Name	[illegible]
Project	Electric Express Train - HSR From Qena To Armant
Location	ST: 639+000 E=32°54'25.6" N=26°31'59.1"
Type of sample	Soil Embankment (Upper Embankment 8.0 M)
Delivery Date	08/11/2023
Reporting Date	12/11/2023
Reporting No.	08-15

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

Test	Results (%)
Percentage of material finer than Sieve Size 75 µM (No.200)	[illegible]

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Company Name : شركة الذهبي

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	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

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Company Name : شركة الذهبي

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 M^3

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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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/cm^3

At optimum moisture content = 6.4 %

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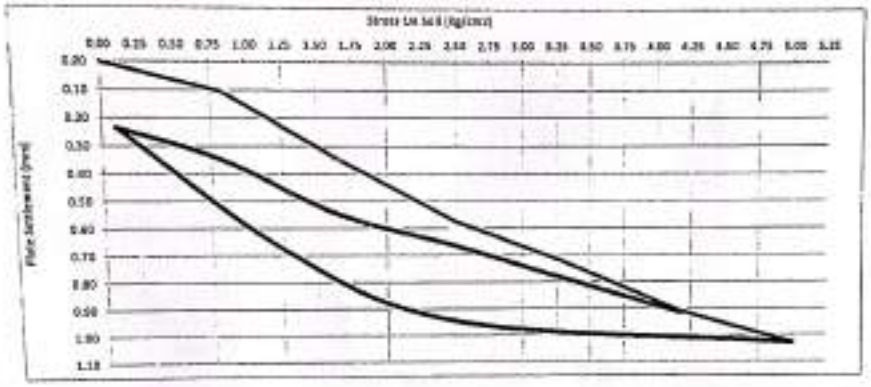
Company Name : شركة الدلجى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (5) – Qous to Armant.
Test Date : 23/01/2024
report date : 25/01/2024
Station : 641+180
Test No. : 91

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	586	1172.8	1766.3	2352.6	2946.1	3532.5
Stress (Kg/cm2)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.11	0.35	0.57	0.73	0.91	1.03

Unl.oading (1)	1	2	3	4
Stage(Kg)	3533	1766	884	71
Stress (Kg/cm2)	5.00	2.50	1.250	0.10
Settlement (mm)	1.03	0.95	0.67	0.23

D (mm) =	380	S1 (mm)=	0.30	S2(mm)=	0.77	ΔS =	0.48
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS		95.2				

Ev2/Ev1 = 1.53

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	586.385	1172.8	1766.3	2352.6	2946.1
Stress (Kg/cm2)	0.10	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.23	0.35	0.55	0.67	0.79	0.91

D (mm) =	300	S1 (mm)=	0.51	S2(mm)=	0.83	ΔS =	0.38
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS		145.2				

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Δσ = the difference between 0.3 and 0.7 from the maximum loading (stress) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)

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Company Name : شركة الأهلى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (3) – Qous to Aswan.
Test Date : 23/01/2024
report data : 25/01/2024
Station : 641+180
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.84	0.16	19.95	0.05	0.11
2	1.66	19.60	0.40	19.70	0.30	0.35
3	2.50	19.39	0.61	19.46	0.54	0.57
4	3.33	19.24	0.76	19.30	0.70	0.73
5	4.17	19.07	0.93	19.13	0.89	0.91
6	5.00	18.94	1.06	19.00	1.00	1.03

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
1	2.50	19.02	0.98	19.09	0.91	0.95
2	1.25	19.30	0.70	19.35	0.65	0.67
3	0.100	19.73	0.27	19.80	0.20	0.23

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.83	19.61	0.39	19.69	0.31	0.35
oximately equ	1.66	19.42	0.58	19.48	0.52	0.55
stress is reached.						
2	2.50	19.31	0.69	19.36	0.64	0.67
3	3.33	19.19	0.81	19.23	0.77	0.79
4	4.17	19.07	0.93	19.10	0.90	0.91

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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 : Upper Embankment**
- **Job requiremer : Ev2 > 60 MPa**

Item	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
Date of measurement	: 23/01/2024
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	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To		(m)	E_{v1} (MPa)	E_{v2} (Mpa)	
1	641+150	641+200	: 641+180	: 0.0	95.2	145.2	1.53

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Company : شركة الذهبى للمقاولات و التوريدات العمومية

Project : Electric Express Train - Sector (5) – Qous to Armant.
Subject : Dvlermine the deformation and strength sharacteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements
Test Location : Station 641+150 to 641+200
Station : 641+180
Level : 0.0
Test Date : 23/01/2024
Rapot Date : 25/01/2024
Type of soil : Upper Embankmant
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 300 mm and 380 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed 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 (Enerpac)
7. Reaction loading system by roller compactor 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 300 mm and 380 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For ø 300 mm loading plate, the limit values are 5.0 kg/cm ^{2}
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 50 % , 25 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2 nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so 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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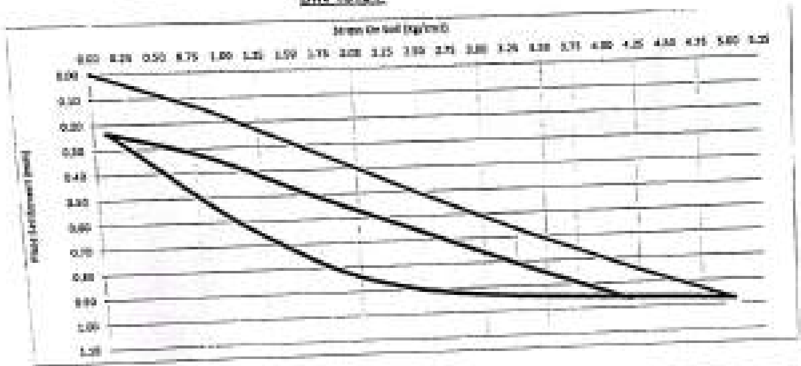
Company Name	: شركة الأهلي للمقاولات والتوريدات العمومية
Project	: Electric Express Train - Sector (5) – Qena to Armant
Test Date	: 23/01/2024
report date	: 29/01/2024
Station	: 641+120
Test No.	: 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	586	1172.6	1760.3	2352.6	2946.1	3533.6
Stress (Kg/cm2)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.16	0.33	0.51	0.69	0.83	0.98

D (mm) =	300	S1 (mm) =	0.29	S2(mm) =	0.71	ΔS =	0.42
Ev1 (MPa) =	(0.75*D*Δσ/ΔS)		164.9				

Un-Loading (1)	1	2	3	4
Stage(Kg)	3533	1766	884	71
Stress (Kg/cm2)	5.00	2.50	1.250	0.10
Settlement (mm)	0.98	0.90	[illegible]	0.23

Ev2/Ev1 = [illegible]

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	586.395	1172.6	1766.3	2352.6	2946.1
Stress (Kg/cm2)	0.10	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.23	0.33	0.60	0.68	0.82	0.87

D (mm) =	300	S1 (mm) =	0.47	S2(mm) =	0.86	ΔS =	0.39
Ev2 (MPa) =	(0.75*D*Δσ/ΔS)		117.0				

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

Δσ = The difference between 0.3 and 0.7 from the maximum loading (σmax) (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)

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Company Name : شركة الأهلى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (3) – Qous to Ameret.
Test Date : 23/01/2024
report date : 25/01/2024
Station : 61+120
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.80	0.20	19.91	0.09	0.15
2	1.66	19.61	0.39	19.74	0.26	0.33
3	2.50	19.43	0.57	19.55	0.45	0.51
4	3.33	19.25	0.75	19.39	0.61	0.68
5	4.17	19.10	0.90	19.23	0.77	0.83
6	5.00	18.98	1.02	19.07	0.93	0.98

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
1	2.50	19.06	0.94	19.14	0.86	0.90
2	1.25	19.30	0.70	19.38	0.62	0.66
3	0.100	19.73	0.27	19.80	0.20	0.23

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.83	19.64	0.36	19.69	0.31	0.33
pximately equ	1.66	19.46	0.54	19.53	0.47	0.50
stress is reached.						
2	2.50	19.30	0.70	19.37	0.63	0.66
3	3.33	19.15	0.85	19.21	0.79	0.82
4	4.17	19.01	0.99	19.06	0.94	0.97

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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 : Upper Embankment
- Job requiremer : Ev2 > 60 MPa

Item	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
date of measurement	: 23/01/2024
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	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To		(m)	E_{v1} (MPa)	E_{v2} (Mpa)	
1	641+100	641+150	: 641+120	: 0.0	104.8	117.0	1.12

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Company : شركة الذهبى للطرقات و التوريدات العمومية

Project : Electric Express Train - Sector (5) – Qous to Armant
Subject : - Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements
Test Location : Station 641+100 to 641+150
Station : 641+120
Level : 0.0
Test Date : 23/01/2024
Repot Date : 25/01/2024
Type of soil : Upper 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 330 mm and 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed 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 (Enerpac)
7. Reaction loading system by roller compactor 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 300 mm and 330 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 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 0.0 kg/cm ^{2}
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 50 % , 25 %, and approximately 2 % of the maximum load
9. Following unloading, a further (2 nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so 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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مشروعات محافظات الوجه القبلى

Company : شركة لذهبى للمقاولات و التوريدات العمومية

Project : Electric Express Train - Sector (5) – Qous to Armant
Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements
Test Location : Station 641+100 to 641+150
Station : 641+120
Level : 0.0
Test Date : 23/01/2024
Repot Date : 25/01/2024
Type of soil : Upper 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 300 mm and 380 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed 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 (Enerpac)
7. Reaction loading system by roller compactor 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 380 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 300 mm loading plate, the limit values are 5.0 kg/cm ^{2}
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 50 %, 25 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2 nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so 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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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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

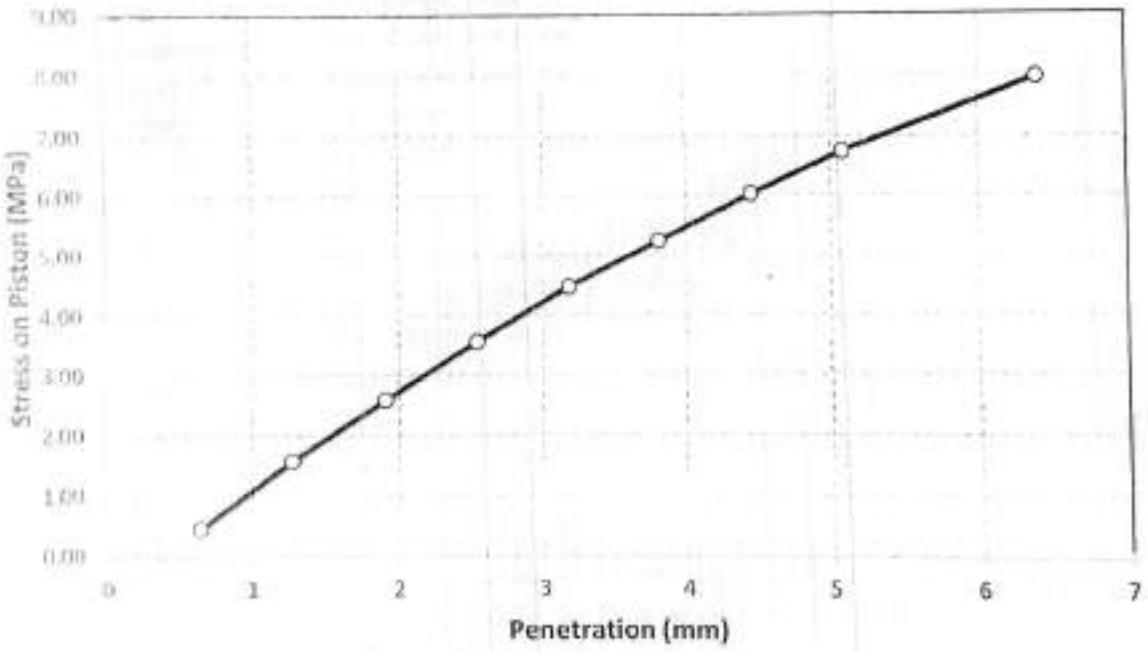
Delivery Date :08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



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Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
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 = 2.22 (gm /cm^3)
At = 6.4 % optimum water content.
3- Surcharge load 4.50 Kg.
4- CBR > 10 for middle and lower embankment according project spec page No 36.

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Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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

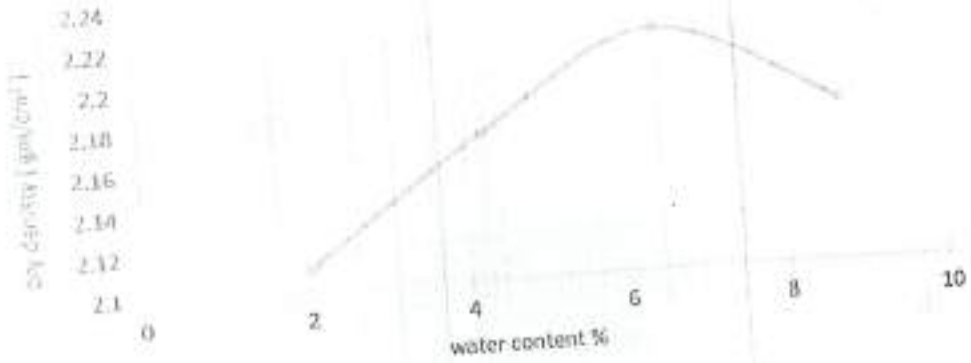
Type of sample : **Soil Embankment (Upper Embankment 0.0 M)**

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/cm²)** : **2.22**
- **Optimum moisture content %** : **6.4 %**

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Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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 µm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 µM (No.200)	9.1

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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	¾	72.2
12.50	½	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

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Company Name : شركة الذهبي

Project : **Electric Express Train – HSR From Qous To Armant**

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 M^3

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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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

Testing Date : 29 / 1 /2024

Soil type : Upper Embankment

Location : ST From 641+200 To 641+400

Level : - 0.0 M

Report No. : 143

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	641+225	1513.2	2.31	6	2.18	98.3%	Comply
2	641+250	1558.3	2.24	5.3	2.13	95.7%	Comply
3	641+275	1535.4	2.26	5.8	2.14	96.4%	Comply
4	641+300	1566.0	2.25	5.8	2.12	95.7%	Comply
5	641+325	1484.7	2.33	5.8	2.21	99.4%	Comply
6	641+350	1513.9	2.30	5.8	2.18	98.1%	Comply
7	641+375	1511.1	2.25	5.8	2.13	95.8%	Comply
8	641+395	1431.3	2.28	5.8	2.16	97.3%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm3

At optimum moisture content = 6.4 %

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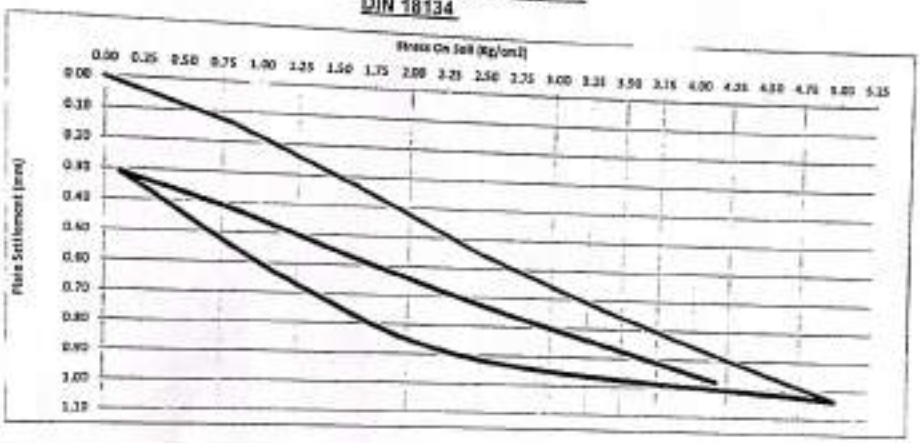
Company Name : شركة الكهرباء للمقاولات و القوى بدات العمومية
Project : Electric Express Train - Sector (5) – Qous to Aament.
Test Date : 23/01/2024
report date : 26/01/2024
Station : 641+020
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	586	1172.8	1756.3	2352.6	2946.1	3532.5
Stress (Kg/cm2)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.14	0.33	0.55	0.73	0.89	1.04

UnLoading (1)	1	2	3	4
Stage(Kg)	3533	1766	884	71
Stress (Kg/cm2)	5.00	2.50	1.250	0.10
Settlement (mm)	1.04	0.92	0.87	0.31

D (mm) =	300	S1 (mm)=	0.33	S2(mm)=	0.76	ΔS =	0.46
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS		95.9				

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	586.395	1172.8	1756.3	2352.6	2946.1
Stress (Kg/cm2)	0.10	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.31	0.42	0.69	0.73	0.86	0.98

Ev2/Ev1 =	1.41

D (mm) =	300	S1 (mm)=	0.55	S2(mm)=	0.88	ΔS =	0.33
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS		135.7				

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Δs = The difference between 0.3 and 0.7 from the maximum loading (smax) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)

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Company Name : شركة الذهبى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (5) – Qous to Armant.
Test Date : 23/01/2024
report date : 25/01/2024
Station : 641+020
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.83	0.17	19.89	0.11	0.14
2	1.66	19.64	0.36	19.69	0.31	0.33
3	2.50	19.43	0.57	19.47	0.53	0.55
4	3.33	19.25	0.75	19.30	0.70	0.73
5	4.17	19.09	0.91	19.14	0.86	0.89
6	5.00	18.94	1.06	18.99	1.01	1.04

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
1	2.50	19.06	0.94	19.11	0.89	0.92
2	1.25	19.31	0.69	19.35	0.65	0.67
3	0.100	19.67	0.33	19.71	0.29	0.31

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.83	19.60	0.40	19.55	0.45	0.42
oximately equ	1.66	19.44	0.56	19.40	0.60	0.58
stress is reached.						
2	2.50	19.29	0.71	19.26	0.74	0.73
3	3.33	19.17	0.83	19.13	0.87	0.85
4	4.17	19.04	0.96	19.01	0.99	0.98

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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 : Upper Embankment
- Job requiremer : Ev2 > 60 MPa

Item	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
date of measurement	: 23/01/2024
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	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To		(m)	E_{v1} (MPa)	E_{v2} (Mpa)	
1	641+000	641+050	: 641+020	: 0.0	95.9	135.7	1.41

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مشروعات محافظات الوجه القبلى

Company : شركة الأهلى للمقاولات و التوريدات العمومية

Project : Electric Express Train - Sector (5) – Qous to Arment.
Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements
Test Location : Station 641+000 to 641+050
Station : 641+020
Level : 0.0
Test Date : 23/01/2024
Repot Date : 25/01/2024
Type of soil : Upper 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 300 mm and 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed 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 (Enerbac)
7. Reaction loading system by roller compactor 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 300 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 300 mm loading plate, the limit values are 5.0 kg/cm ²
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 % , 25 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2 nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so 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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مشروعات محافظات الوجه القبلى

Company Name : شركة الأهلى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (5) – Gous to Aswan.
Test Date : 23/01/2024
report date : 25/01/2024
Station : 641+080
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)

Loading	Stress	Dial 1	Settlement	Dial 2	Settlement	Average
	Kg/cm2		mm		mm	
0	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.87	0.13	19.79	0.21	0.17
2	1.66	19.66	0.34	19.62	0.38	0.36
3	2.50	19.45	0.55	19.41	0.59	0.57
4	3.33	19.27	0.73	19.23	0.77	0.75
5	4.17	19.08	0.92	19.06	0.95	0.94
6	5.00	18.94	1.06	18.90	1.10	1.08

Unloading Stage (1)

Loading	Stress	Dial 1	Settlement	Dial 2	Settlement	Average
	Kg/cm2		mm		mm	
1	2.50	19.04	0.96	18.99	1.01	0.99
2	1.25	19.26	0.74	19.22	0.78	0.76
3	0.100	19.63	0.37	19.59	0.41	0.39

Loading Stage (2)

Loading	Stress	Dial 1	Settlement	Dial 2	Settlement	Average
	Kg/cm2		mm		mm	
0	0.83	19.47	0.53	19.43	0.57	0.55
ximately equ	1.66	19.32	0.68	19.28	0.72	0.70
stress is reached.						
2	2.50	19.18	0.82	19.13	0.87	0.85
3	3.33	19.03	0.97	19.00	1.00	0.98
4	4.17	18.91	1.09	18.88	1.12	1.11

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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 : Upper Embankment**
- **Job requiremer : Ev2 > 60 MPa**

Item	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
date of measurement	: 23/01/2024
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	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To		(m)	E_{v1} (MPa)	E_{v2} (Mpa)	
1	641+050	641+100	: 641+060	: 0.0	95.1	130.4	1.37

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مكتب معامل الإستشارات الهندسية
مشروعات محافظات الوجه القبلى

Company : شركة الذهبى للمقاولات و التوريدات العمومية

Project : Electric Express Train - Sector (5) – Qous to Arment.
Subject : Determine the deformation and strength characteristics of soil by the plate loading test accurding specifications DIN 18134:2012-04 and project requirements
Test Location : Station 641+050 to 641+100
Station : 641+080
Level : 0.0
Test Date : 23/01/2024
Repot Date : 26/01/2024
Type of soil : Upper 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 300 mm and 900 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed 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 (Enerbac)
7. Reaction loading system by roller compactor 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 300 mm and 900 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 300 mm loading plate, the limit values are 5.0 kg/cm ^{2}
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 50 %, 25 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2 nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so 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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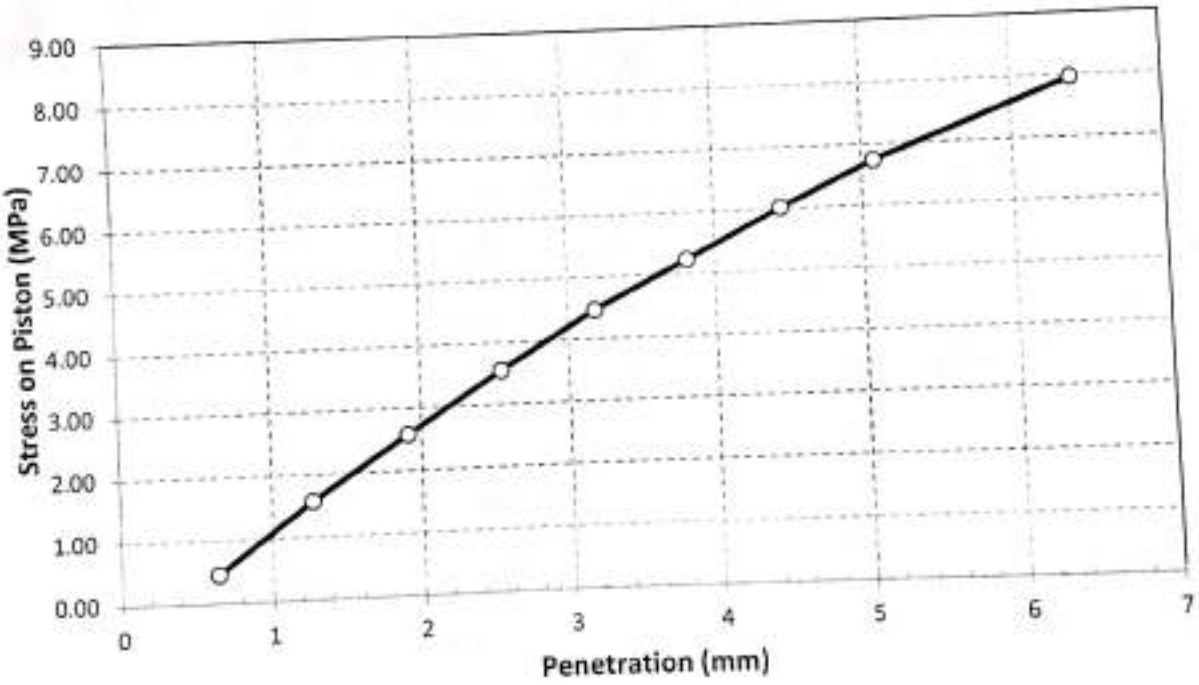
Company Name	: شركة الذهبي
Project	: Electric Express Train – HSR From Qous To Armant
Location	: ST:641+400 E= 492410,088 N=2862759,57
Type of sample	: Soil Embankment (Upper Embankment 0.0 M)
Delivery Date	:08/01/2024
Reporting Date	: 11/1/2024
Reporting No.	: 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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 = 2.22 (gm /cm^3)
At = 6.4 % optimum water content.

3- Surcharge load 4.50 Kg.

4- CBR > 10 for middle and lower embankments according project spec page No 36.

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Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

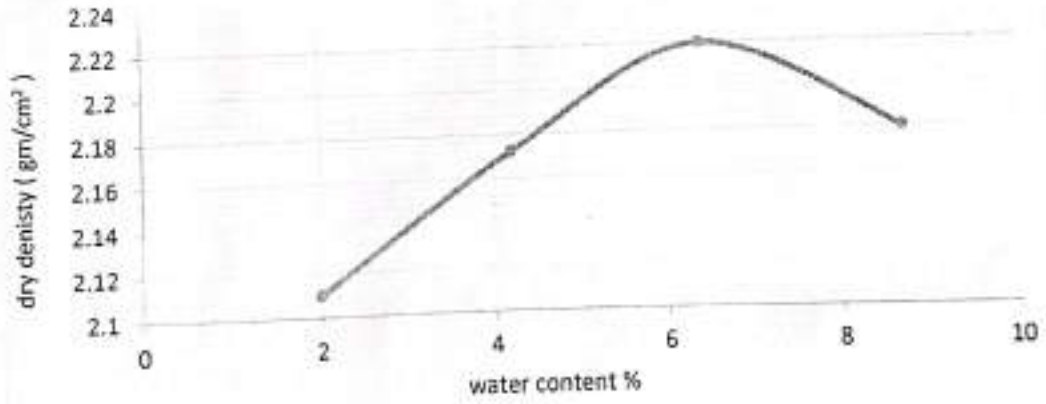
Type of sample : Soil Embankment (Upper Embankment 0.0 M)

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/cm²) : 2.22
- Optimum moisture content % : 6.4 %

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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

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Project : Electric Express Train – HSR From Qous To Armant
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

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Project : Electric Express Train – HSR From Qous To Armant
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 µm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 µM (No.200)	9.1

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Project : Electric Express Train – HSR From Qous To Armant
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	¾	72.2
12.50	½	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

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Company Name	: شركة الذهبي
Project	: **Electric Express Train – HSR From Qous To Armant**
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 M^3

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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Company Name : شركة الذهبى

Project : Electric Express Train – HSR From Qous To Armant

Testing Date : 23 / 1 /2024

Soil type : Upper Embankment

Location : ST From 641+000 To 641+200

Level : - 0.0 M

Report No. : 139

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	641+025	1465.3	2.27	5.3	2.15	97.0%	Comply
2	641+050	1527.8	2.25	5	2.14	96.4%	Comply
3	641+075	1575.0	2.29	5.3	2.18	98.1%	Comply
4	641+100	1660.4	2.26	5.8	2.13	96.0%	Comply
5	641+125	1575.0	2.29	5.8	2.16	97.3%	Comply
6	641+150	1667.4	2.22	5.3	2.11	94.9%	Comply
7	641+175	1552.8	2.26	5.3	2.15	96.7%	Comply
8	641+198	1515.3	2.28	5.8	2.16	97.1%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm^3

At optimum moisture content = 6.4 %

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