الهيئة العامة
للطرق و الكباري
(GARB)
وزارة النقل
الإداره المركزية للمنطقة الثامنة بقنا

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة و بعد ،،،،

نتشرف ان نرفق لسيادتكم عدد ١ مقايسة معدلة ٢ لمشروع اعمال انشاء الجسر الترابي للقطار الكهربائي السريع ٦ أكتوبر أبوسمبل (القطاع الخامس) من الكم ٥٧٩+ 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 فى ٢٠٢٣/١٢/٢٦

المرفقات / عدد (١)مقايسة

رئيس الإدارة المركزية

مهندس / عماد حسين

الهيئة العامة للطرق والكبارى

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+624.63	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 فئة : الرابعه بقيمة : مليون

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

قيمة المقايسة 19,959,325 مليون

المقاول / الشركة الذهبى

الإستشارى / سبكترم للاستشارات الهندسية Spectrum Consulting

المنطقة الثامنة بقنا / الهيئة العامة للطرق والكبارى وزارة النقل إدارة المشروعات

مقايسه (معدلة 2)

أعمال انشاء الجسر الترابي للقطار الكهربائي السريع (أكتوبر / أبوسمبل)
من محطة 110.13+ 629 حتى محطة 624.63 + 715 بطول 86.5145 كم
تنفيذ شركة / الذهبى يوسف للمقاولات العموميه من محطة 640+579 الي 641+236 بطول 657 م

رقم البند	بيان الأعمال	الوحدة	الكمية	سعر الفئة	الاجمالى
2	إعمال الحفر				
2-1	بالمتر المكعب اعمال حفر باستخدام المعدات الميكانيكيه 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 جافه (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 مشتملاتة طبقاً لأصول الصناعة ومواصفات الهيئة العامة للطرق والكباري وتعليمات المهندس المشرف. -علاوة 1جنية /كم لمسافة نقل تتابع الحفر وتصبح 1.1 جنية/كم ابتداء من 4/5/2023 -علاوة زيادة السولار 0.6 جنية /م3 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	إعمال الردم Embankment				
3-1	أعمال تحميل وتوريد ونقل أتربة مطابقة للمواصفات وتشغيلها باستخدام آلات التسوية بسمك لا يزيد عن 50 سم حتى منسوب (-2 متر) اسفل منسوب الفرمه و بسمك لايزيد عن 25سم اعلى من منسوب (-2 متر) من منسوب الفرمه لاستكمال المنسوب التصميمى 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 طبقا للمناسيب ومواصفات الهيئة العامة للطرق والكباري والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقا لأصول الصناعة - فى حالة طلب جهاز الاشراف زيادة نسبة الدمك عن 95% بحسب زيادة 1 جنيه على زيادة نسبة دمك لكل 1%. - مسافة النقل حتى 2 كم و يتم احتساب علاوة 1.4 جنيه لكل كم بالزيادة او النقصان وتصبح 1.5 جنيه /كم ابتداء من 4/5/2023. - السعر يشمل عمل تشوينات و تخليط و اختبارات و نقل لموقع العمل حتى مسافة 2 كم ، -علاوة زيادة السولار 1.9 جنية /م3 ابتداء من 4/5/2023 -السعر لا يشمل قيمة المادة المحجرية.	م3	291,465	60.00	17,487,900
	علاوة زيادة السولار 1.90جنية /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 السار من منخل 200 عن 12% والتدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورنيا عن 25% وألا تزيد نسبة الفاقد بجهاز لوس أنجلوس عن 30% وألا يزيد الامتصاص عن 15% وألا يقل معامل المرونة (Ev2) من تجربة لوح التحميل عن 80 ميجابسكال 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 للهراسات للوصول إلى أقصى كثافة جافة قصوى (لا تقل عن 95%) من الكثافة المعملية والفنة تشمل إجراء التجارب المعملية والحقلية ويتم التنفيذ طبقاً لأصول الصناعة والرسومات التفصيلية والبند بجميع مشتملاته طبقاً للمواصفات الفنية للمشروع وتقرير الاستشارى 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 المحجريه. 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

يعتمد!!!
رئيس الإدارة المركزية
المنطقة الثامنة (قنا)
السيد المهندس / عماد حسين
التوقيع /

مهندس هيئة الطرق والكباري
(المنطقة الثامنة - قنا)
المهندس/
التوقيع/

مدير المشروع (الاستشاري)
المهندس/
التوقيع

مهندس الشركة المنفذة
المهندس/
التوقيع

CEL

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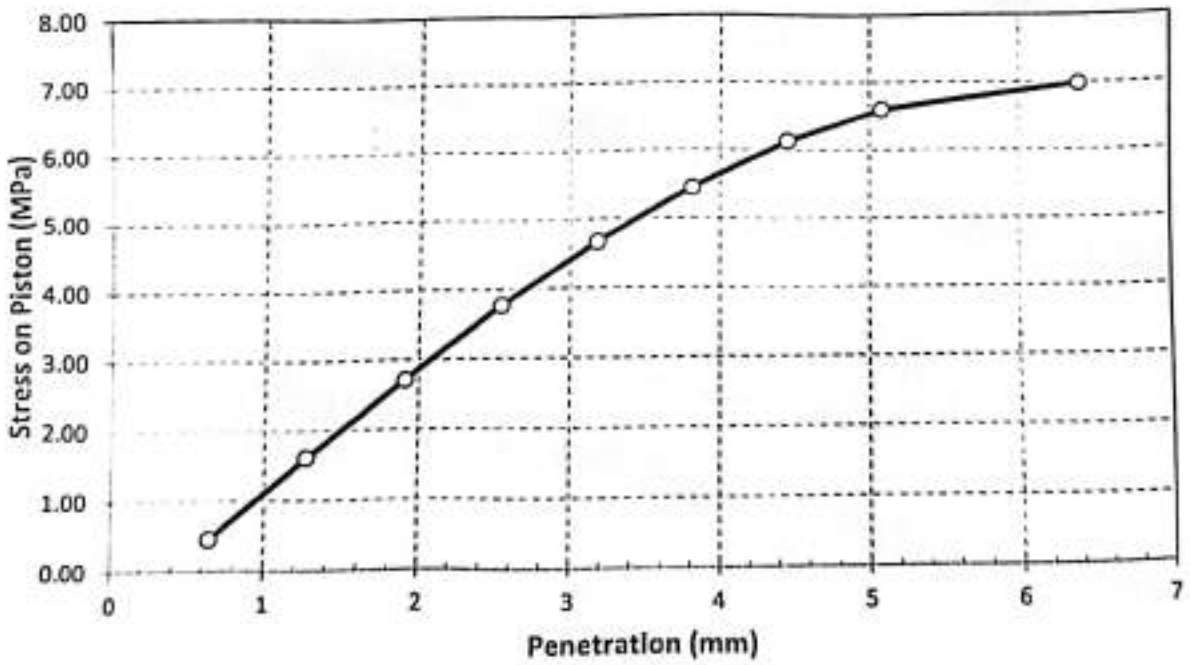
مكتب معامل الإستشارات الهندسية

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	: 5/10/2023
Reporting Date	: 9/10/2023
Reporting No.	: 10-10

Load Penetration Curve of CBR Test

ASTM D-1883



Signature / ..

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مكتب معامل الاستشارات الهندسية

مشروعات الاقسام

219 011 437

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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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	1.62
1.91	0.075	2.72
2.54	0.100	3.78
3.18	0.125	4.67
3.81	0.150	5.45
4.45	0.175	6.14
5.08	0.200	6.60
6.35	0.250	6.99

CBR Result	Stress (Mpa)		CBR 100 %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	54.8 %
	6.90	3.78	

Notes:
1- Attached graph shows penetration resistance versus penetration magnitude.
2- The sample was compacted to dry density of = 2.23(gm /cm^3)
At = 6.4 % optimum water content.
3- Surcharge load 4.5 KG.
4- CBR > 10 for middle and lower embankments according project spec page No 36.

Signature /

9 El Nasr E Afifi Street
Zamalek, Cairo
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٩ ش النصر الافندي
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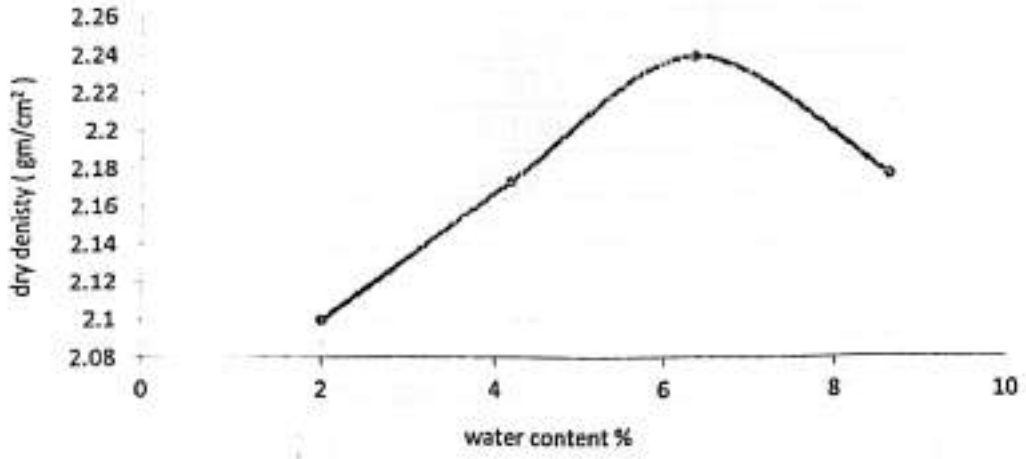
مكتب معامل الاستشارات الهندسية

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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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



- Max dry density (gm/cm²) : 2.23
- Optimum moisture content % : 6.4 %

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219 991 437
3 شارع النيل الأعلى - الزمالك - القاهرة

3 E. Malek E. Afdal Street
Zamalek, Cairo
Tel & Fax: 27356283 - 27356283
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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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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)	9.5

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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 : 5/10/2023

Reporting Date : 9/10/2023

Reporting No. : 10-10

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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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).	39.4	Max 50 %	------	------
0.425 mm (No. 40).	26.3	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	9.5	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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3 شارع الملك الأفضل - الزمالك - القاهرة

3 El Malek El Afdal Street
Zamalek, Cairo
Tel & Fax 27362[illegible] 27362[illegible]

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٣ ش الملك الأفضل
الزمالك القاهرة
تليفون و فاكس ٢٧٣٦٢[illegible] ٢٧٣٦٢[illegible]

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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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	99.5
37.5	1.5	95.4
25	1	91.6
19	¾	80.7
12.50	½	75.2
9.50	3/8	71.9
4.75	4	56.0
2.00	10	39.4
0.425	40	26.3

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

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تليفون - فاكس ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣

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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	**: 5/10/2023**
Reporting Date	**: 9/10/2023**
Reporting No.	**: 10-10**

Dear Gentleman,

Attached here with the delivered on 5 / 10 / 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

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

Signature /

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مشروعات - الاقصر
219.991.437 طريق النصر شرقي
المركز الرئيسي 3 شارع الملك الأفضل - الزمالك - القاهرة

5 E. Malek El Afdal Street
Zamalek, Cairo
Tel & Fax: 27367[illegible] 27353693

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تليفون وفاكس [illegible]

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Testing Date : 27/11/2023
Soil type : Upper Embankment
Location : ST From 641+420 TO 641+660
Level : - 1 M
Report No. : 110

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+440	1903.5	2.28	5	2.17	97.4%	Comply
2	641+460	1382.6	2.29	5.3	2.18	97.6%	Comply
3	641+480	1431.3	2.28	5.5	2.16	97.0%	Comply
4	641+500	1398.6	2.30	5.5	2.18	97.6%	Comply
5	641+520	1348.6	2.29	5.3	2.17	97.5%	Comply
6	641+550	1313.2	2.29	5.8	2.17	97.2%	Comply
7	641+580	1325.0	2.30	5.8	2.17	97.3%	Comply
8	641+600	1543.8	2.29	6	2.16	96.8%	Comply
9	641+620	1377.8	2.27	6	2.14	96.2%	Comply
10	641+640	1903.5	2.28	5	2.17	97.4%	Comply

Degree of compaction based on proctor test dated At

- **Max. dry density = 2.23 gm/cm^3**
- **At optimum moisture content = 6.4 %**
- **Signature / ..**

3 El Malek El Afdal Street
Zamalek, Cairo
Tel& Fax: 2736723 - 2736393

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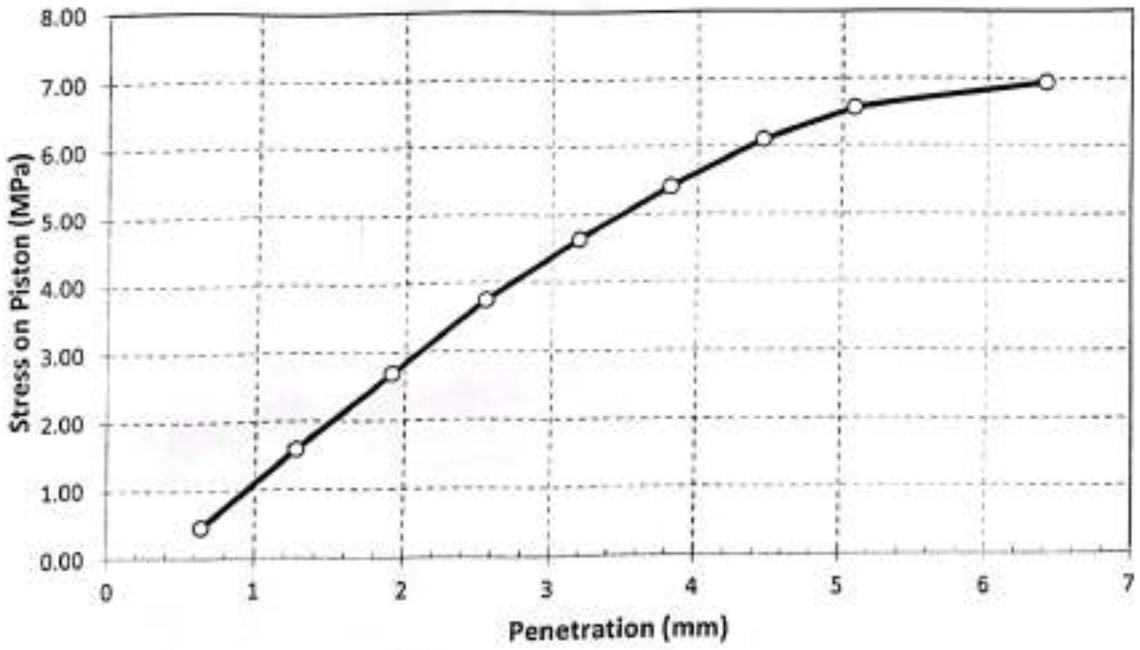
مكتب معامل الاستشارات الهندسية

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	**: 5/10/2023**
Reporting Date	**: 9/10/2023**
Reporting No.	**: 10-11**

Load Penetration Curve of CBR Test

ASTM D-1883



Signature /

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219 961 437

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3 El Malek El Afdal Street
Zamalek, Cairo
Tel & Fax: 2736723 - 27363083

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مكتب معامل الإستشارات 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 : 5/10/2023

Reporting Date : 9/10/2023

Reporting No. : 10-11

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	1.59
1.91	0.075	2.69
2.54	0.100	3.75
3.18	0.125	4.64
3.81	0.150	5.41
4.45	0.175	6.10
5.08	0.200	6.57
6.35	0.250	6.95

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.75	54.3 %

Notes:

1- Attached graph shows penetration resistance versus penetration magnitude.

2- The sample was compacted to dry density of = 2.23(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

CEL

3 شارع [illegible]

CEL

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

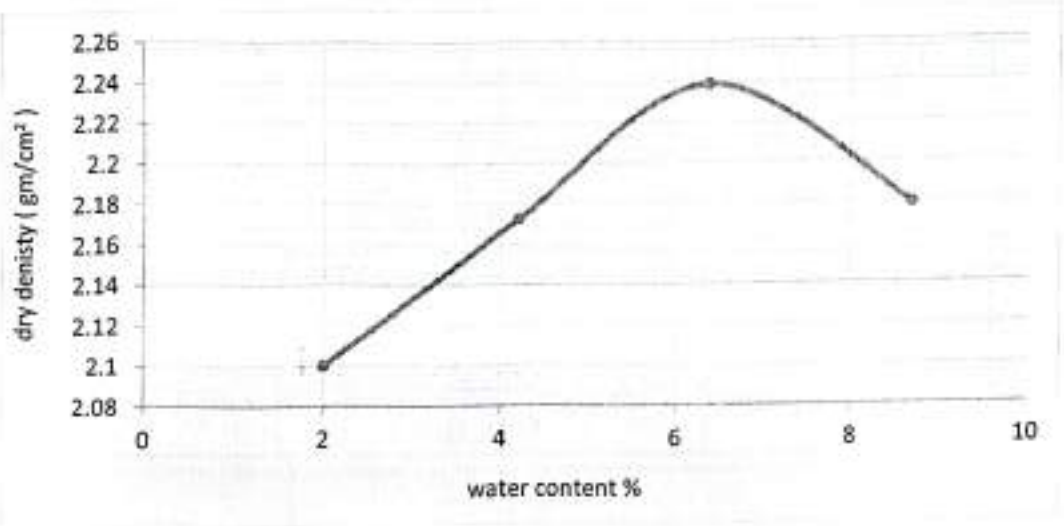
Type of sample : Soil Embankment (Upper Embankment 0.0 M)

Delivery Date : 5/10/2023

Reporting Date : 9/10/2023

Reporting No. : 10-11

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



- **Max dry density (gm/cm²)** : 2.23
- **Optimum moisture content %** : 6.4 %

Signature

CEL

3 E Malek E Afdal Street
Zamalek, Cairo
Tel & Fax: 27367[illegible] 27363[illegible]

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[illegible] الملك الأفضل
الزمالك - القاهرة
تليفون - فاكس [illegible]

CEL

Consulting Engineering Bureau & Laboratories

مكتب معامل الإستشارات 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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-11

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).	34.0	Max 50 %	------	------
0.425 mm (No. 40).	22.1	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	-----	------	------	------
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature /

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Consulting Engineering Bureau & Laboratories
مكتب معامل الإستشارات 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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-11

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

CEL
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Signature

3 El Malek El Afdal Street
Zamalek, Cairo
Tel & Fax: 27367523 - 27363693
IAS ACCREDITED Testing Laboratory
٣ شارع الملك الأفضل
الزمالك - القاهرة
تليفون - فاكس

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مكتب معامل الإستشارات 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 : 5/10/2023

Reporting Date : 9/10/2023

Reporting No. : 10-11

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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-11

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	98.4
37.5	1.5	94.4
25	1	90.8
19	¾	78.7
12.50	½	72.3
9.50	3/8	70.9
4.75	4	53.9
2.00	10	34.0
0.425	40	22.1

CEL
Signature/

3 El Malek El Afdal Sheet
Zamalek, Cairo.
Tel& Fax: 2736723! - 2736393

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الزمالك - القاهرة
تليفون + فاكس

CEL

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	**: 5/10/2023**
Reporting Date	**: 9/10/2023**
Reporting No.	**: 10-11**

Dear Gentleman,

Attached here with the delivered on 5 / 10 / 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

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

Signature /.

CEL
مكتب معامل الاستشارات الهندسية
مشروعات - الإقتصاد
219 991 437
الوكر التونسي 3 شارع البنك الأفضل - الزمالك - القاهرة

3 E. Malek El Afdal Street
Zamalek, Cairo
Tel.& Fax: 27367520 - 27369360

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مكتب معامل الإستشارات الهندسية

Company Name	: شركة الذهبى
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 4/12/2023
Soil type	:Upper Embankment
Location	: ST From 641+660 TO 641+780
Level	: - 1 M
Report No.	: 114

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+685	1631.9	2.26	5.8	2.14	95.8%	Comply
2	641+706	1602.1	2.30	6	2.17	97.1%	Comply
3	641+726	1510.4	2.29	6.4	2.15	96.5%	Comply
4	641+741	1304.9	2.30	6	2.17	97.4%	Comply
5	641+756	1729.2	2.25	6	2.13	95.3%	Comply
6	641+776	1680.6	2.30	6.4	2.17	97.1%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.23 gm/cm^3
- At optimum moisture content = 6.4 %
- Signature / .....

CEL 219.991.437

3 El Malek El Afdal Street
Zamalek, Cairo
Tel & Fax : 27357231 - 27353093

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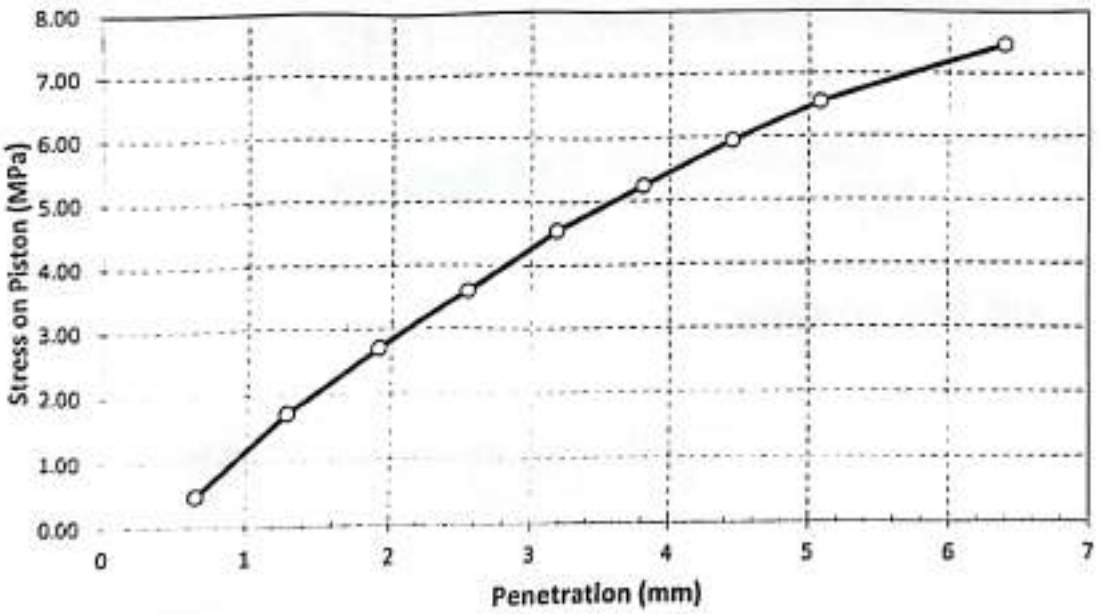
مكتب معامل الاستشارات الهندسية

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	: 28/10/2023
Reporting Date	: 01/11/2023
Reporting No.	: 08-12

Load Penetration Curve of CBR Test

ASTM D-1883



CEL

Signature:

219 991 437

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

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

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

Delivery Date : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-12

Test Results of California Bearing Ratio on Base Materials

ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.48
1.27	0.050	1.72
1.91	0.075	2.71
2.54	0.100	3.60
3.18	0.125	4.56
3.81	0.150	5.24
4.45	0.175	5.94
5.08	0.200	6.55
6.35	0.250	7.48

CBR Result	Stress (Mpa)		CBR 100 %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	52.1%
	6.90	3.60	

Notes:

1- Attached graph shows penetration resistance versus penetration magnitude.

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

At = [illegible] optimum water content.

3- Surcharge load 50 Kg.

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

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مكتب معامل الإستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

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).	43.8	Max 50 %	------	------
0.425 mm (No. 40).	29.6	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	10.2	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	---	------	------	------
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature /

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219 991 437
3 شارع النيل الأفضل - الزمالك - القاهرة

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Consulting Engineering Bureau & Laboratories
مكتب معامل الإستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

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

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

Signature: CEL

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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: 639+000 E=32°54'25.6" N=25°53'59.1"

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

Delivery Date : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-12

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)	10.2

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مكتب معامل الاستشارات الهندسية

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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-12

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	99.1
37.5	1.5	95.3
25	1	87.7
19	¾	82.9
12.50	½	71.5
9.50	3/8	65.2
4.75	4	49.4
2.00	10	43.8
0.425	40	29.6

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3 شارع

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مكتب معامل الاستشارات الهندسية

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	: 28/10/2023
Reporting Date	: 01/11/2023
Reporting No.	: 08-12

Dear Gentleman,

Attached here with the delivered on 28 / 10 / 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

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

Signature

مكتب معامل الاستشارات الهندسية
مشروعات و الاقمار
219.991.437
3 شارع الملك الافضل - الزمالك

CEL

Consulting Engineering Bureau & Laboratories

مكتب معامل الإستشارات الهندسية

Company Name	: شركة الذهبى
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 26/12/2023
Soil type	:Middle Embankment
Location	: ST From 639+780 To 639+940
Level	: -4.5M
Report No.	: 121

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+820	1526.4	2.27	6.4	2.13	96.2%	Comply
2	639+860	1551.4	2.25	6.4	2.12	95.4%	Comply
3	639+895	1488.2	2.26	5.3	2.14	96.6%	Comply
4	639+915	1495.8	2.32	5.8	2.19	98.7%	Comply
5	639+935	1636.1	2.26	6.4	2.13	95.8%	Comply

Degree of compaction based on proctor test dated At

- **Max. dry density = 2.22 gm/cm^3**
- **At optimum moisture content = 6.4 %**
- **Signature /**

CEL

3 El Malek El Afdal Street
Zamalek, Cairo
Tel & Fax: 27367[illegible] 27363093

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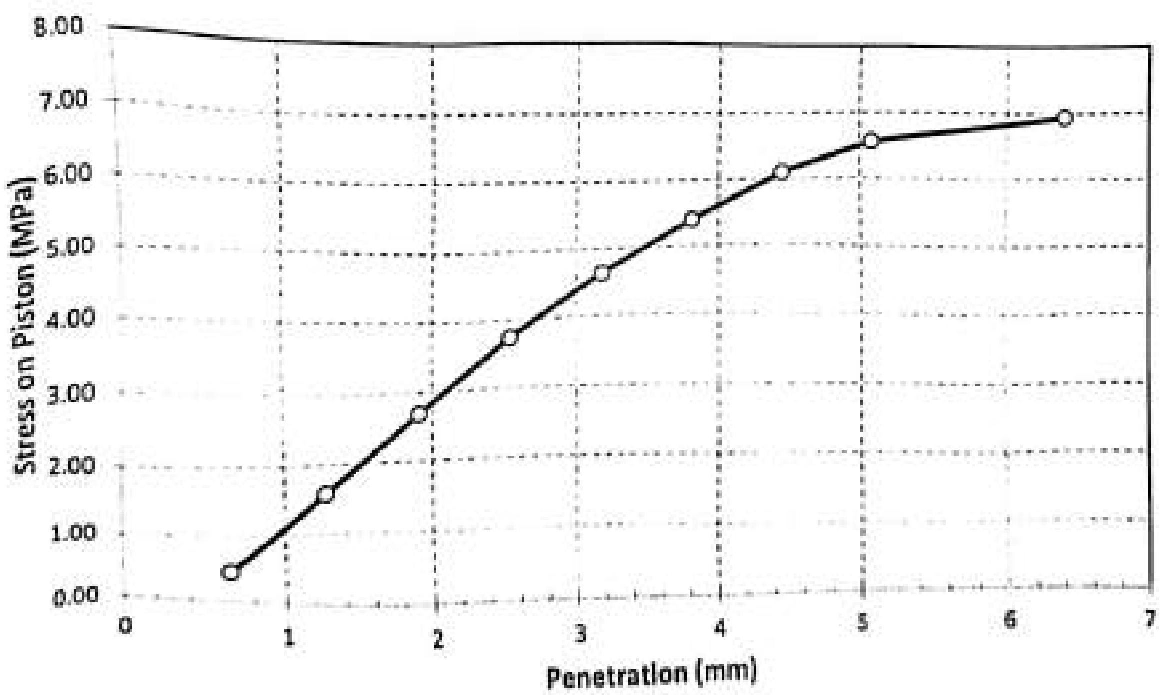
مكتب معامل الإستشارات الهندسية

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	: 5/10/2023
Reporting Date	: 9/10/2023
Reporting No.	: 10-11

Load Penetration Curve of CBR Test

ASTM D-1883



Signature / .... -

E Malek E Adal Street
Zamalek, Cairo
Tel.&Fax: 2736723 - 7363303

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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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-11

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	1.59
1.91	0.075	2.69
2.54	0.100	3.75
3.18	0.125	4.64
3.81	0.150	5.41
4.45	0.175	6.10
5.08	0.200	6.57
6.35	0.250	6.95

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.75	54.3 %

Notes:

1- Attached graph shows penetration resistance versus penetration magnitude.
2- The sample was compacted to dry density of = 2.23(gm /cm^3)
At = 6.4 % optimum water content.
3- Surcharge load = 0.0 kg.

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

Signature

CEL
شروت
3 شارع الملك الأفضل - الزمالك

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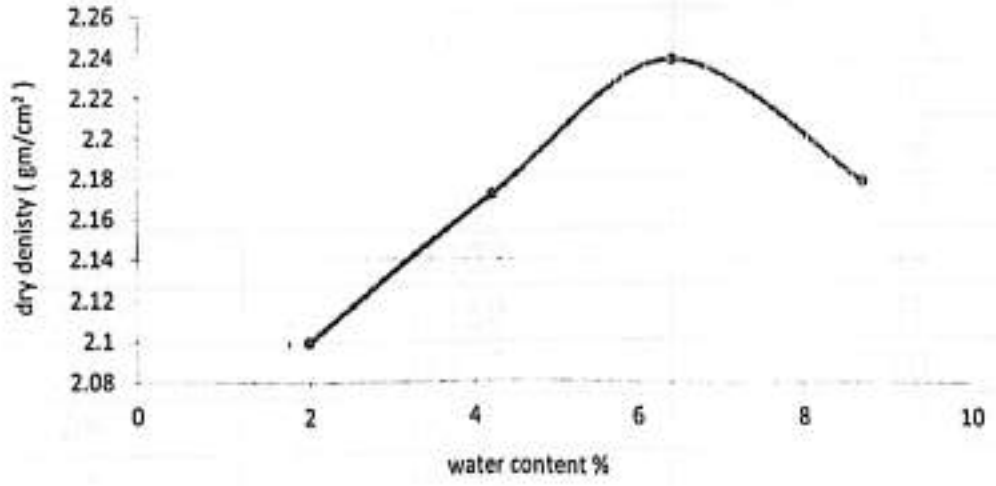
CEL

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	**: 5/10/2023**
Reporting Date	**: 9/10/2023**
Reporting No.	**: 10-11**

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



- **Max dry density (gm/cm³)** : **2.23**
- **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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-11

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).	34.0	Max 50 %	------	------
0.425 mm (No. 40).	22.1	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	-----	------	------	------
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature

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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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-11

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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Zamalek, Cairo
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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 : 5/10/2023

Reporting Date : 9/10/2023

Reporting No. : 10-11

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 : 5/10/2023

Reporting Date : 9/10/2023

Reporting No. : 10-11

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	98.4
37.5	1.5	94.4
25	1	90.8
19	¾	78.7
12.50	½	72.3
9.50	3/8	70.9
4.75	4	53.9
2.00	10	34.0
0.425	40	22.1

CEL

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	**: 5/10/2023**
Reporting Date	**: 9/10/2023**
Reporting No.	**: 10-11**

Dear Gentleman,

Attached here with the delivered on 5 / 10 / 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

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

Signatur

مكتب معامل الاستشارات الهندسية
شروحات . الاقصر
210 991 437
المركز الرئيسي 3 شارع النيل الاقصر - الزينية - الزينية

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Consulting Engineering Bureau & Laboratories

مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى

Project : Electric Express Train – HSR From Qous To Armant

Testing Date : 9/12/2023

Soil type :Upper Embankment

Location : ST From 641+400 To 641+660

Level : - 0.75M

Report No. : 118

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+420	1633.3	2.31	5.3	2.20	98.6%	Comply
2	641+440	1606.3	2.27	5.8	2.15	96.4%	Comply
3	641+460	1529.9	2.26	6.4	2.12	95.2%	Comply
4	641+480	1607.6	2.28	5.8	2.16	96.8%	Comply
5	641+500	1438.9	2.33	6	2.22	99.6%	Comply
6	641+520	1489.6	2.31	5.3	2.19	98.3%	Comply
7	641+540	1637.5	2.25	5.8	2.12	95.2%	Comply
8	641+560	1638.9	2.27	5.8	2.15	96.2%	Comply
9	641+580	1903.5	2.28	6	2.15	96.5%	Comply
10	641+600	1382.6	2.29	5.8	2.17	97.1%	Comply
11	641+620	1431.3	2.28	5.8	2.16	96.8%	Comply
12	641+640	1398.6	2.30	5.3	2.18	97.8%	Comply
13	641+655	1348.6	2.29	5.3	2.17	97.5%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.23 gm/cm^3
- At optimum moisture content = 6.4 %
- Signature /

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3 E Mark F. Ali Street
Zamalek, Cairo
Tel & Fax: 2736723 - 27363593

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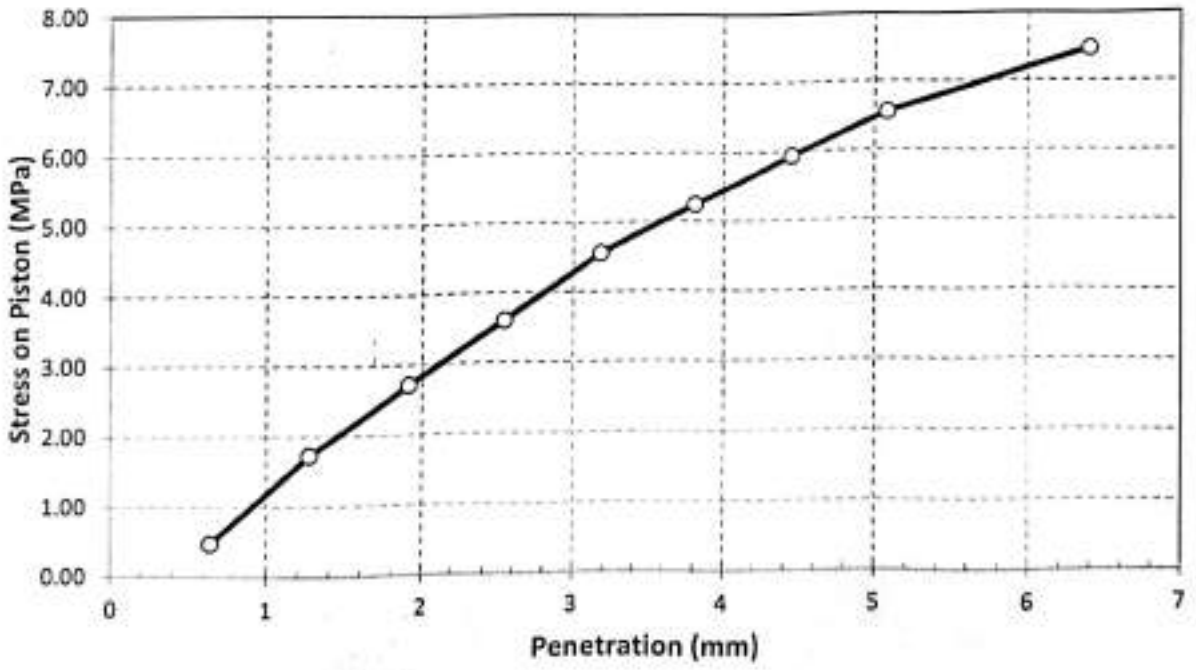
مكتب معامل الاستشارات الهندسية

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	: 28/10/2023
Reporting Date	: 01/11/2023
Reporting No.	: 08-12

Load Penetration Curve of CBR Test

ASTM D-1883



Signature :

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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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.48
1.27	0.050	1.72
1.91	0.075	2.71
2.54	0.100	3.60
3.18	0.125	4.56
3.81	0.150	5.24
4.45	0.175	5.94
5.08	0.200	6.55
6.35	0.250	7.48

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.60	52.1%

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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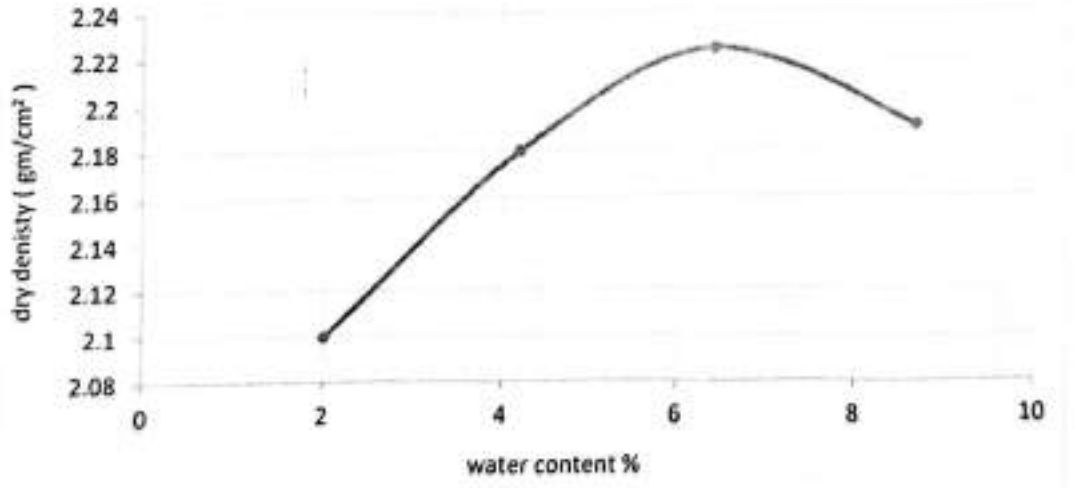
مكتب معامل الاستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

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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مكتب معامل الاستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

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).	43.8	Max 50 %	------	------
0.425 mm (No. 40).	29.6	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	10.2	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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3 El Malek El Afdal Street
Zamalek, Cairo.
Tel & Fax: 27367237 - 27363393

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٣ شارع الملك الأفضل
الزمالك - القاهرة
تليفون و فاكس: ٢٧٣٦٧٢٣٧ - ٢٧٣٦٣٣٩٣

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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: 639+000 E=32°54′25.6″ N=25°53′59.1″
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

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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3 El Malek E Afdal Street
Zamalek, Cairo
Tel & Fax: 27367[illegible] - 27363093

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تليفون + فاكس: [illegible]

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مكتب معامل الاستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

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)	10.2

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مكتب معامل الاستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-12

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	99.1
37.5	1.5	95.3
25	1	87.7
19	¾	82.9
12.50	½	71.5
9.50	3/8	65.2
4.75	4	49.4
2.00	10	43.8
0.425	40	29.6

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مكتب معامل الإستشارات الهندسية

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	**: 28/10/2023**
Reporting Date	**: 01/11/2023**
Reporting No.	**: 08-12**

Dear Gentleman,

Attached here with the delivered on 28 / 10 / 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

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

Signature

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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Testing Date : 13/12/2023
Soil type :Middle Embankment
Location : ST From 638+920 TO 639+100
Level : - 3M
Report No. : 119

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+940	1436.8	2.23	5.3	2.12	95.6%	Comply
2	638+968	1486.8	2.25	5.3	2.14	96.2%	Comply
3	639+025	1506.9	2.28	5.3	2.16	97.4%	Comply
4	639+055	1534.0	2.27	5.3	2.15	97.0%	Comply
5	639+075	1405.6	2.31	5.3	2.19	98.7%	Comply
6	639+095	1413.9	2.29	5.3	2.18	98.1%	Comply

Degree of compaction based on proctor test dated At

- **Max. dry density = 2.22 gm/cm^3**
- **At optimum moisture content = 6.4 %**
- **Signature**

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219 991 437

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Zamalek, Cairo
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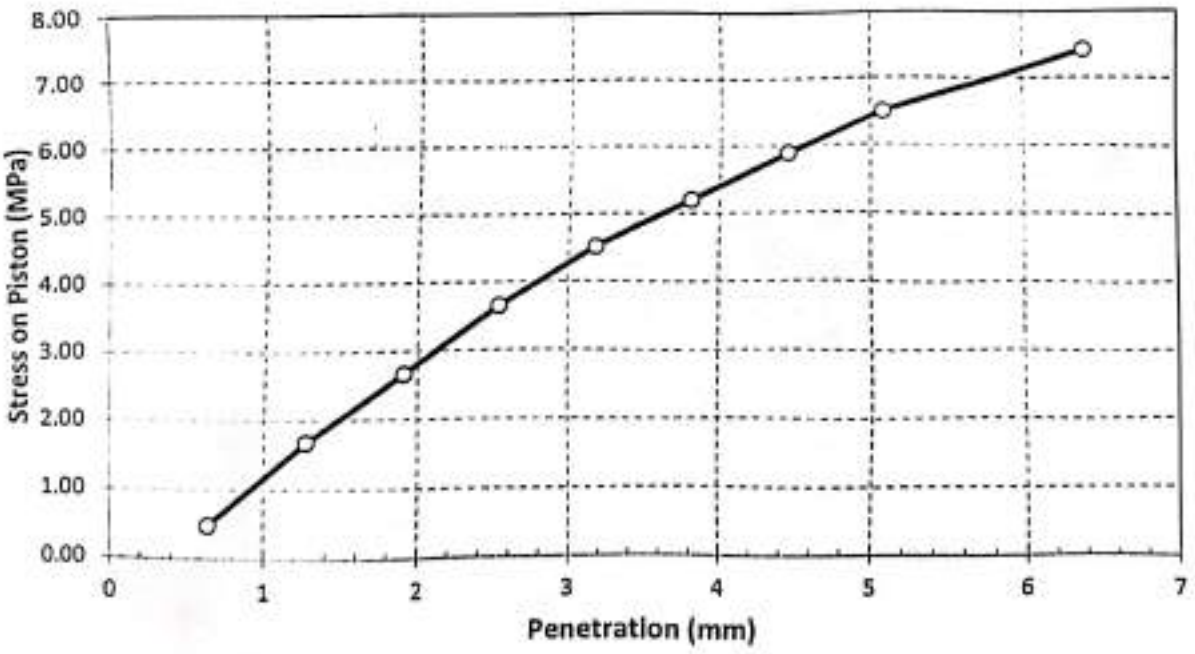
مكتب معامل الإستشارات الهندسية

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	: 28/10/2023
Reporting Date	: 01/11/2023
Reporting No.	: 08-13

Load Penetration Curve of CBR Test

ASTM D-1883



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مكتب معامل الإستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.48
1.27	0.050	1.67
1.91	0.075	2.66
2.54	0.100	3.65
3.18	0.125	4.51
3.81	0.150	5.20
4.45	0.175	5.88
5.08	0.200	6.50
6.35	0.250	7.42

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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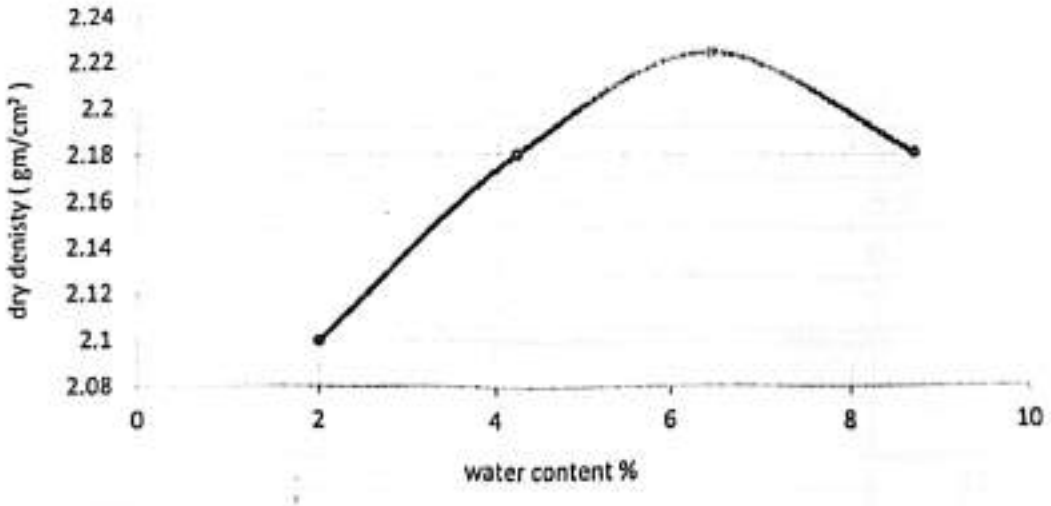
مكتب معامل الإستشارات الهندسية

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	: 28/10/2023
Reporting Date	: 01/11/2023
Reporting No.	: 08-13

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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).	45.3	Max 50 %	------	------
0.425 mm (No. 40).	30.7	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	10.9	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: 639+000 E=32°54'25.6" N=25°53'59.1"

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

Delivery Date : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

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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E. Malek E. Afdal Street
Zamalek, Cairo
Tel & Fax: 2735[illegible] 2736[illegible]

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مكتب معامل الإستشارات الهندسية

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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

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)	10.9

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مكتب معامل الاستشارات الهندسية

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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	98.2
37.5	1.5	96.8
25	1	86.6
19	¾	80.4
12.50	½	71.1
9.50	3/8	64.5
4.75	4	48.9
2.00	10	45.3
0.425	40	30.7

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219 901 437 السجل الضريبي
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مكتب معامل الإستشارات الهندسية

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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

Dear Gentleman,

Attached here with the delivered on 28 / 10 / 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

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

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Company Name	: شركة الذهبي
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 30/11/2023
Soil type	: LowerEmbankment
Location	: ST From 639+580/639+780-6
Level	: - 6 M
Report No.	: 113

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+600	1556.9	2.26	5.5	2.14	96.5%	Comply
2	639+615	1577.1	2.27	5.5	2.15	96.8%	Comply
3	639+645	1407.6	2.31	5.5	2.19	98.4%	Comply
4	639+674	1541.0	2.23	5.5	2.11	95.1%	Comply
5	639+690	1468.1	2.29	5.5	2.17	97.8%	Comply
6	639+700	1359.0	2.29	5.5	2.17	97.7%	Comply
7	639+722	1424.3	2.28	5.5	2.16	97.4%	Comply
8	639+742	1474.3	2.27	5.5	2.15	96.9%	Comply
9	639+775	1467.4	2.22	5.5	2.11	95.0%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.22 gm/cm^3
- At optimum moisture content = 6.4 %
- Signature /

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3 E. Mark E. Abdel Shaheed
Zamalek, Cairo
Tel & Fax: 27367231 - 27363093

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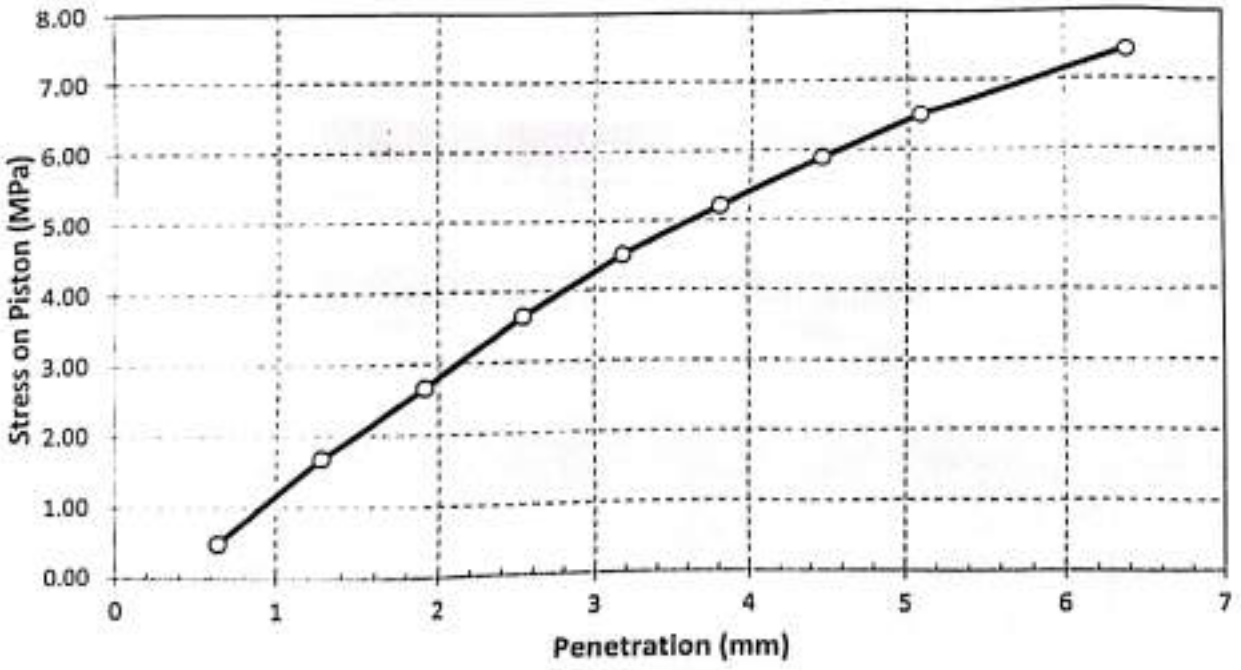
مكتب معامل الاستشارات الهندسية

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	: 28/10/2023
Reporting Date	: 01/11/2023
Reporting No.	: 08-13

Load Penetration Curve of CBR Test

ASTM D-1883



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مكتب معامل الإستشارات الهندسية

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	: 28/10/2023
Reporting Date	: 01/11/2023
Reporting No.	: 08-13

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.48
1.27	0.050	1.67
1.91	0.075	2.66
2.54	0.100	3.65
3.18	0.125	4.51
3.81	0.150	5.20
4.45	0.175	5.88
5.08	0.200	6.50
6.35	0.250	7.42

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

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: 639+000 E=32°54′25.6″ N=25°53′59.1″

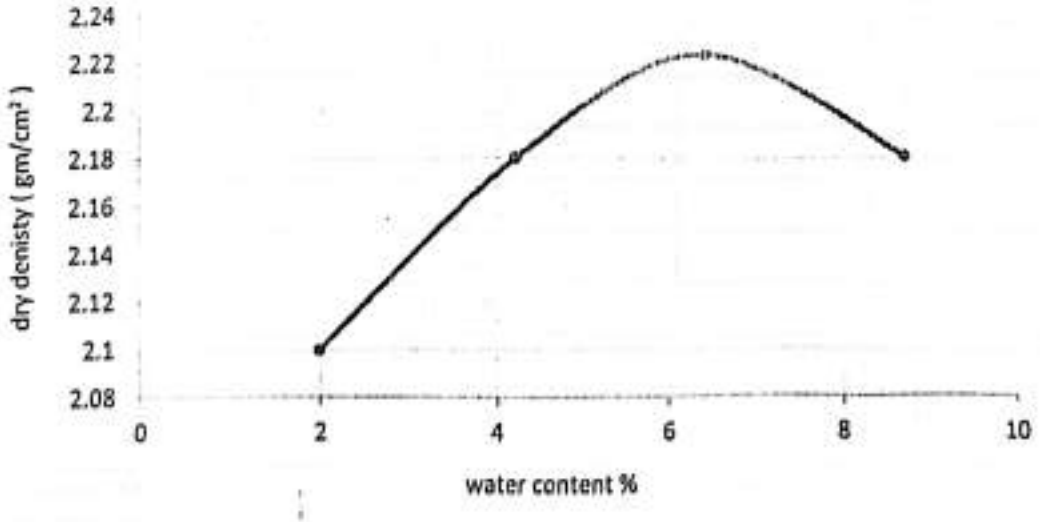
Type of sample : Soil Embankment (Upper Embankment 0.0 M)

Delivery Date : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

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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مكتب معامل الإستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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).	45.3	Max 50 %	------	------
0.425 mm (No. 40).	30.7	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	10.9	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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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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ت: 095/437
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Zamalek, Cairo
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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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

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)	10.9

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المركز الرئيسي : 3 شارع الملك الافضل - الزمالك - القاهرة

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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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	98.2
37.5	1.5	96.8
25	1	86.6
19	¾	80.4
12.50	½	71.1
9.50	3/8	64.5
4.75	4	48.9
2.00	10	45.3
0.425	40	30.7

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مكتب معامل الاستشارات الهندسية

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	: **28/10/2023**
Reporting Date	: **01/11/2023**
Reporting No.	: **08-13**

Dear Gentleman,

Attached here with the delivered on 28 / 10 / 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

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

Signature م/ باسم علي

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Company Name	: شركة الذهبى
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 18/12/2023
Soil type	:Middle Embankment
Location	: ST From 638+780 To 638+940
Level	: -5 M
Report No.	: 120

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+825	1483.3	2.31	6.4	2.17	97.6%	Comply
2	638+850	1629.9	2.28	6.4	2.15	96.6%	Comply
3	638+870	1591.0	2.30	6.4	2.16	97.3%	Comply
4	638+895	1374.3	2.23	5.8	2.11	95.0%	Comply
5	638+905	1656.3	2.25	6.4	2.12	95.3%	Comply
6	638+925	1463.9	2.32	6.4	2.18	98.4%	Comply

Degree of compaction based on proctor test dated At

- **Max. dry density = 2.22 gm/cm^3**
- **At optimum moisture content = 6.4 %**
- **Signature / .....**

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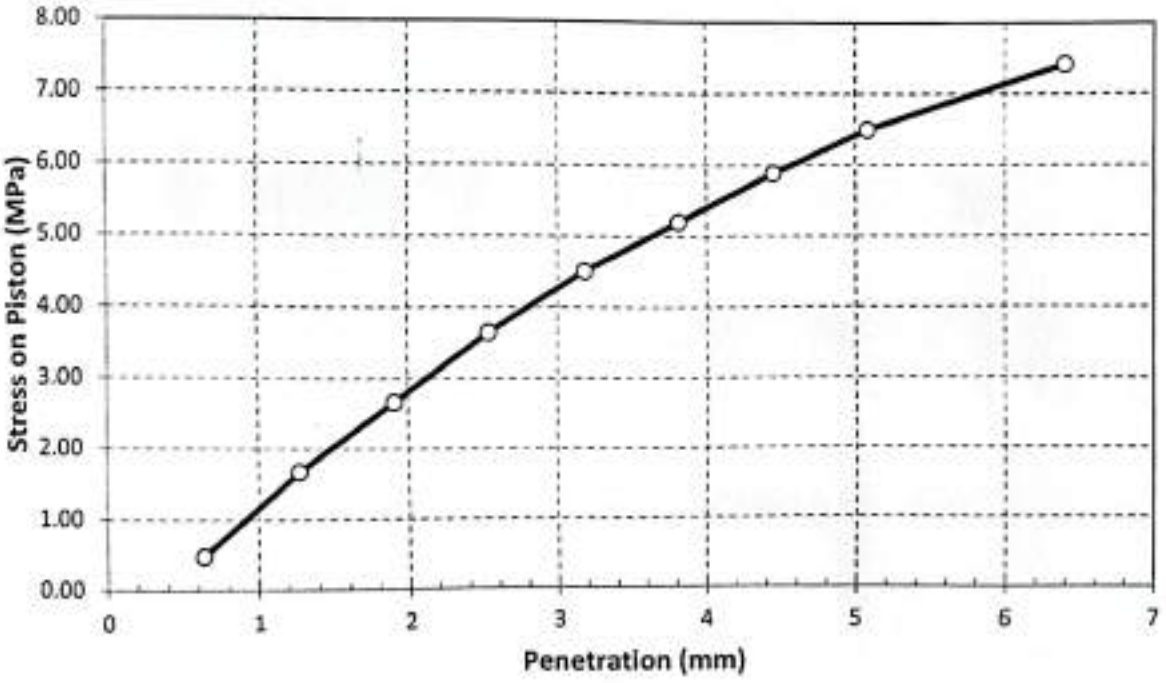
mpany Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

Load Penetration Curve of CBR Test

ASTM D-1883



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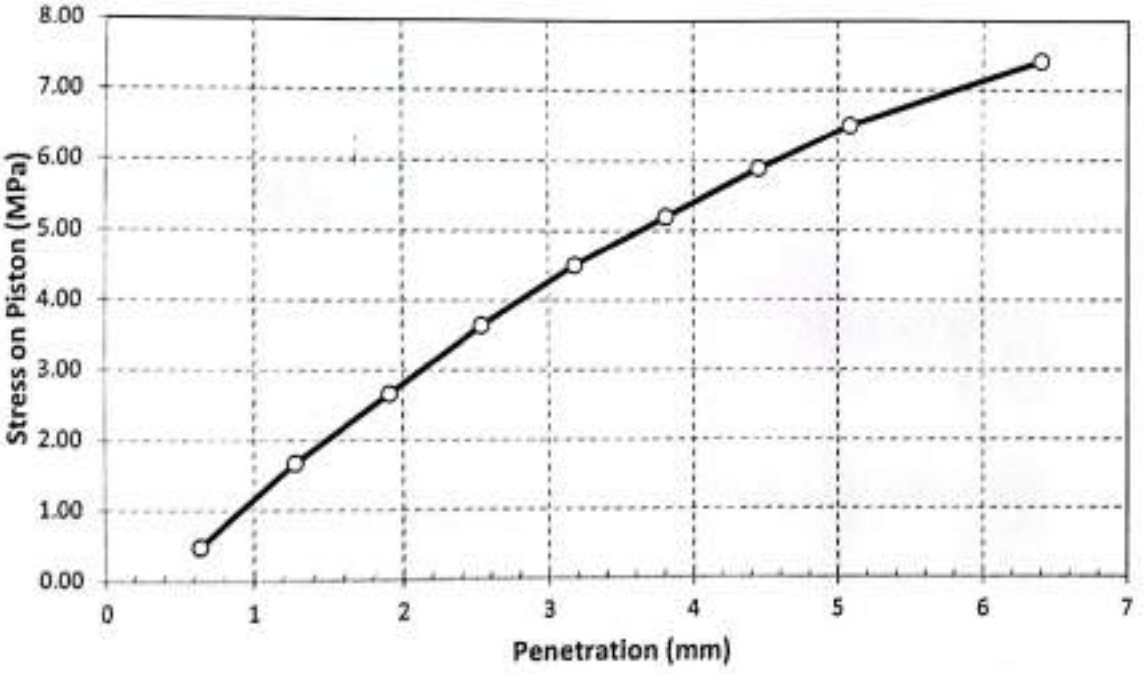
mpany Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54′25.6″ N=25°53′59.1″
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.48
1.27	0.050	1.67
1.91	0.075	2.66
2.54	0.100	3.65
3.18	0.125	4.51
3.81	0.150	5.20
4.45	0.175	5.88
5.08	0.200	6.50
6.35	0.250	7.42

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

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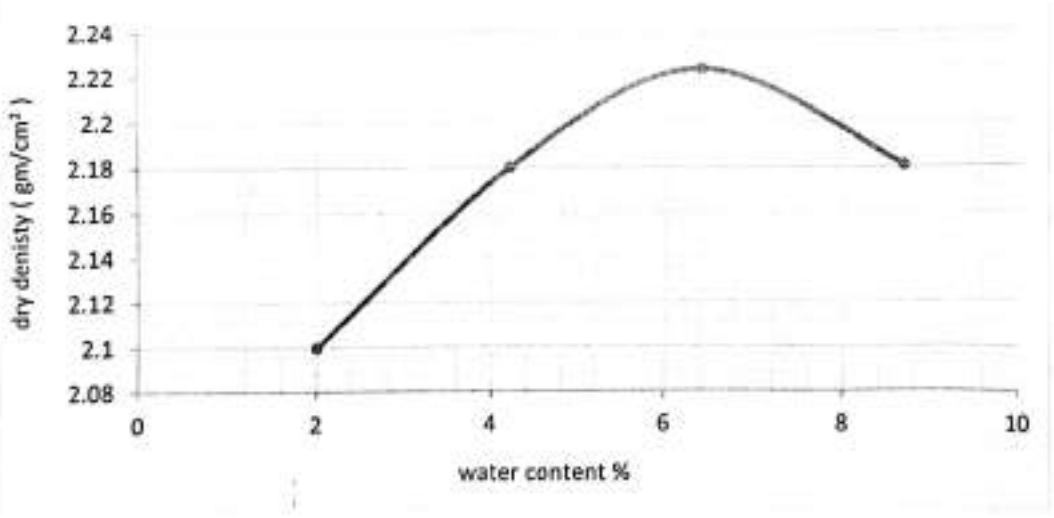
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54′25.6″ N=25°53′59.1″
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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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مكتب معامل الاستشارات الهندسية

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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).	45.3	Max 50 %	------	------
0.425 mm (No. 40).	30.7	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	10.9	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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

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 : 28/10/2023
Reporting Date : 01/11/2023
Reporting No. : 08-13

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)	10.9

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مكتب معامل الاستشارات الهندسية

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 : 28/10/2023

Reporting Date : 01/11/2023

Reporting No. : 08-13

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	98.2
37.5	1.5	96.8
25	1	86.6
19	¾	80.4
12.50	½	71.1
9.50	3/8	64.5
4.75	4	48.9
2.00	10	45.3
0.425	40	30.7

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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 : **28/10/2023**
Reporting Date : **01/11/2023**
Reporting No. : **08-13**

Dear Gentleman,

Attached here with the delivered on 28 / 10 / 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

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

Signature /

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى

Project : Electric Express Train – HSR From Qous To Armant

Testing Date : 6/12/2023

Soil type :Middle Embankment

Location : ST From 638+920 / 639+100

Level : - 3.5M

Report No. : 117

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+965	1763.2	2.26	5.8	2.13	96.1%	Comply
2	638+996	1381.3	2.32	5.8	2.20	99.0%	Comply
3	639+050	1658.3	2.23	5.3	2.12	95.4%	Comply
4	639+085	1450.7	2.24	5.8	2.12	95.3%	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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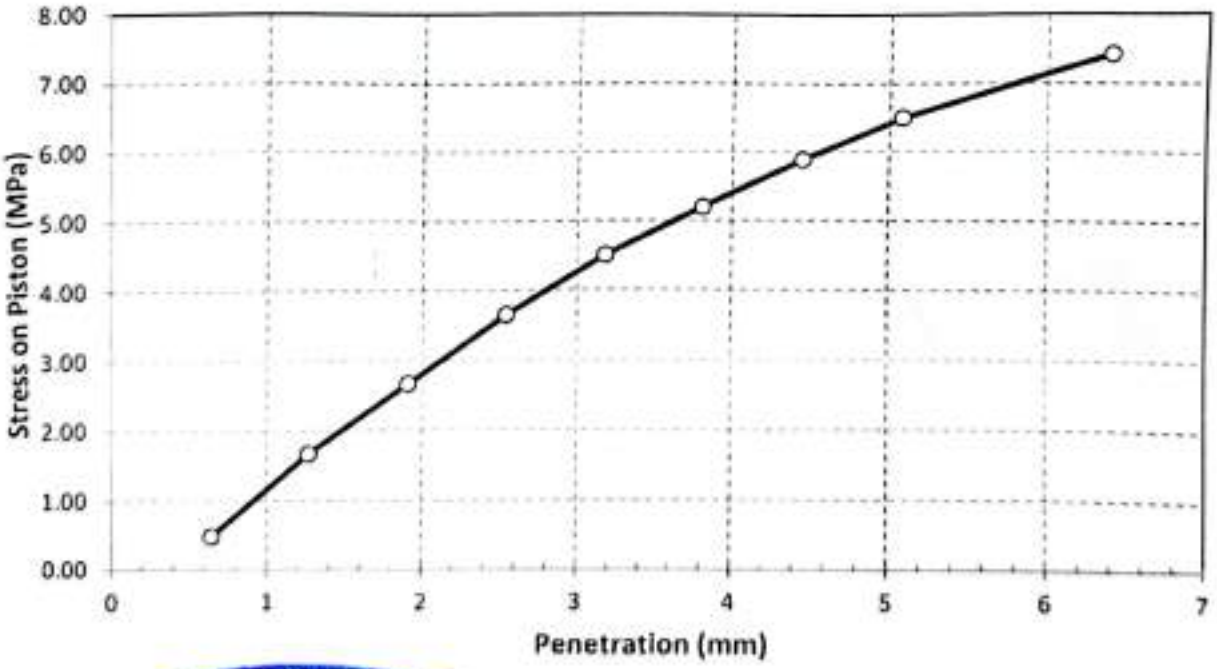
مكتب معامل الاستشارات الهندسية

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.	**: 08-14**

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. : **08-14**

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 = 2.23(gm /cm^3)
At = 6.4 % optimum water content.
3- Surcharge load = 10 kg.
4- CBR > 10 for middle and lower embankments according project spec page No 36.

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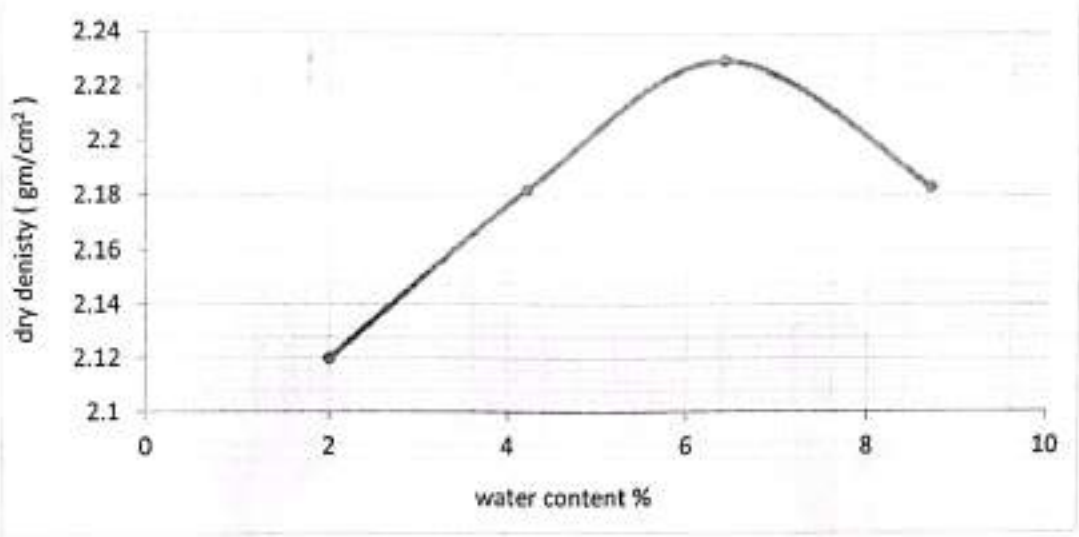
مكتب معامل الإستشارات الهندسية

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. : 08-14

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



- **Max dry density (gm/cm²)** : 2.23
- **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. : 08-14

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).	43.3	Max 50 %	------	------
0.425 mm (No. 40).	29.2	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	9.8	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: 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. : 08-14

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. : 08-14

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)	9.9

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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. : 08-14

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	96.1
37.5	1.5	91.6
25	1	85.1
19	¾	80.7
12.50	½	70.0
9.50	3/8	61.8
4.75	4	45.8
2.00	10	43.3
0.425	40	29.2

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مكتب معامل الاستشارات الهندسية

ompany Name : شركة الذهبي

roject : Electric Express Train – HSR From Qous To Armant

ocation : ST: 639+000 E=32°54′25.6″ N=25°53′59.1″

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

Delivery Date : 08/11/2023

Reporting Date : 12/11/2023

Reporting No. : 08-14

ear 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

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

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مكتب معامل الإستشارات الهندسية

Company Name : شركة الذهبي

Project : Electric Express Train – HSR From Qous To Armant

Testing Date : 29/11/2023

Soil type : Middle Embankment

Location : ST From 638+720 TO 638+920

Level : - 3.5 M

Report No. : 112

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

#	Station	Test Hole Volume cm^3	Bulk Density gm/cm^3	Moisture Content %	Dry Density (gm/cm^3)	Degree of Compaction (%)	Acceptance
	638+740	1676.4	2.34	6.4	2.20	98.7%	Comply
2	638+785	1545.8	2.32	6.4	2.18	97.6%	Comply
3	638+814	1402.8	2.32	6	2.19	98.2%	Comply
4	638+840	1455.6	2.24	5.8	2.12	95.1%	Comply
5	638+865	1295.8	2.33	6.4	2.19	98.0%	Comply
6	638+895	1373.6	2.25	5.5	2.13	95.5%	Comply
7	638+918	1522.2	2.31	6.4	2.17	97.3%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.23 gm/cm^3
- At optimum moisture content = 6.4 %
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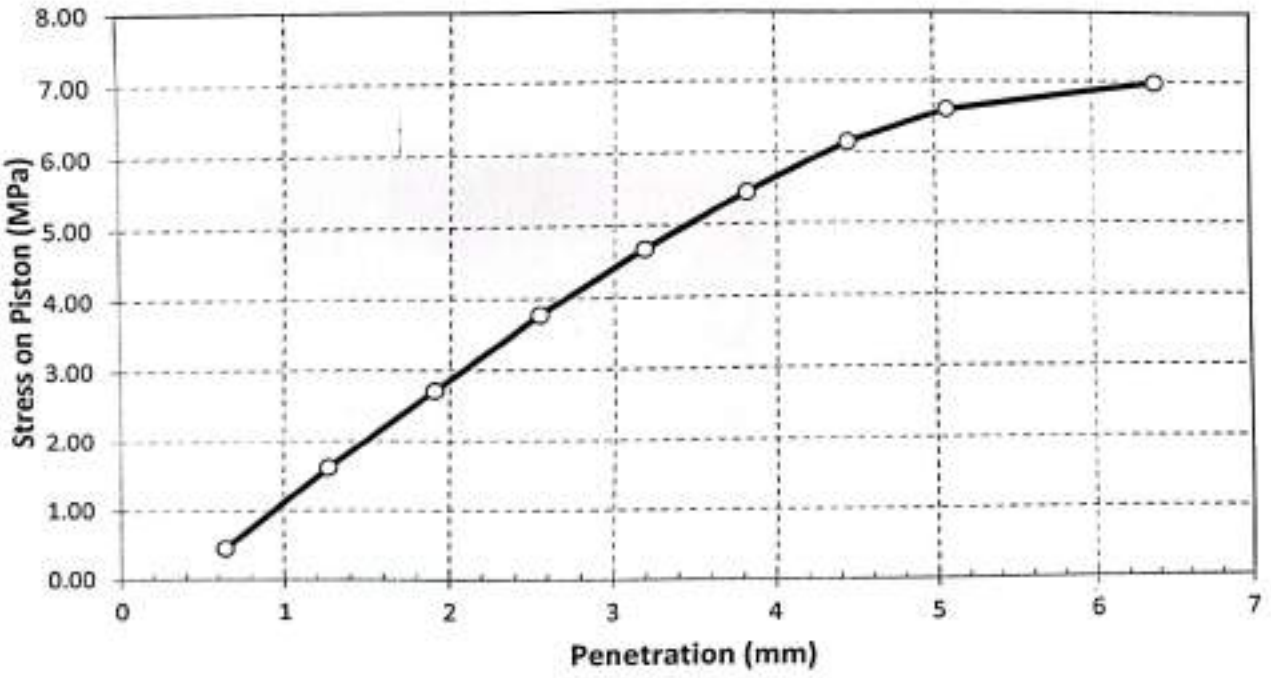
Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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	1.62
1.91	0.075	2.72
2.54	0.100	3.78
3.18	0.125	4.67
3.81	0.150	5.45
4.45	0.175	6.14
5.08	0.200	6.60
6.35	0.250	6.99

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.78	54.8 %

Notes:

1- Attached graph shows penetration resistance versus penetration magnitude.
2- The sample was compacted to dry density of = 2.23(gm /cm^3)
At = 6.4 % optimum water content.
3- Surcharge load 4.50 k.g.
4- CBR > 10 for middle and lower embankments according project spec page No 36.

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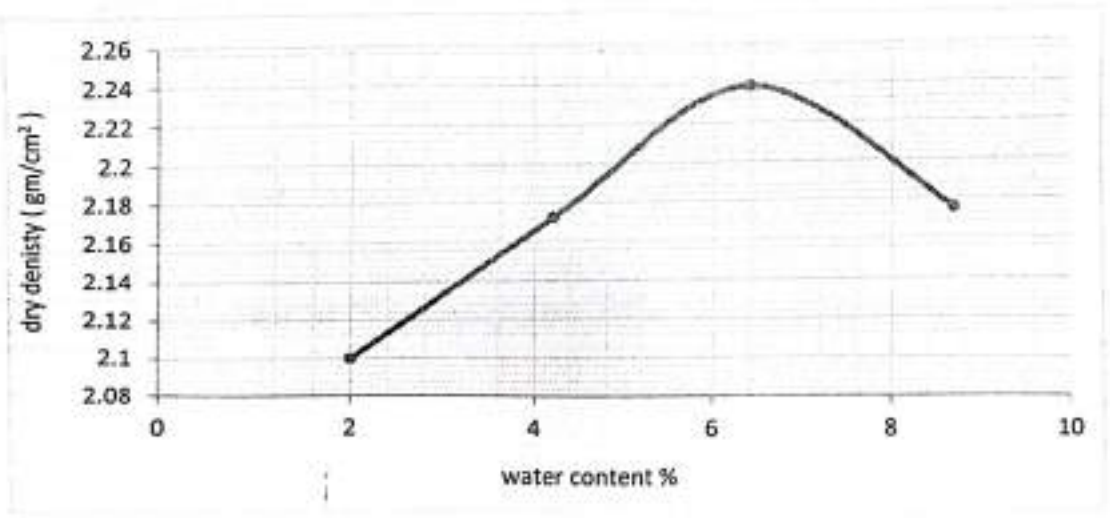
مكتب معامل الاستشارات الهندسية

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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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



- Max dry density (gm/cm²) : 2.23
- 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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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).	39.4	Max 50 %	------	------
0.425 mm (No. 40).	26.3	Max 30 %	Max 50 %	------
0.075 mm (No. 200).	9.5	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 الإستشارات 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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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 : 5/10/2023
Reporting Date : 9/10/2023
Reporting No. : 10-10

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)	9.5

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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 : 5/10/2023

Reporting Date : 9/10/2023

Reporting No. : 10-10

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	99.5
37.5	1.5	95.4
25	1	91.6
19	¾	80.7
12.50	½	75.2
9.50	3/8	71.9
4.75	4	56.0
2.00	10	39.4
0.425	40	26.3

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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	: **5/10/2023**
Reporting Date	: **9/10/2023**
Reporting No.	: **10-10**

Dear Gentleman,

Attached here with the delivered on 5 / 10 / 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

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

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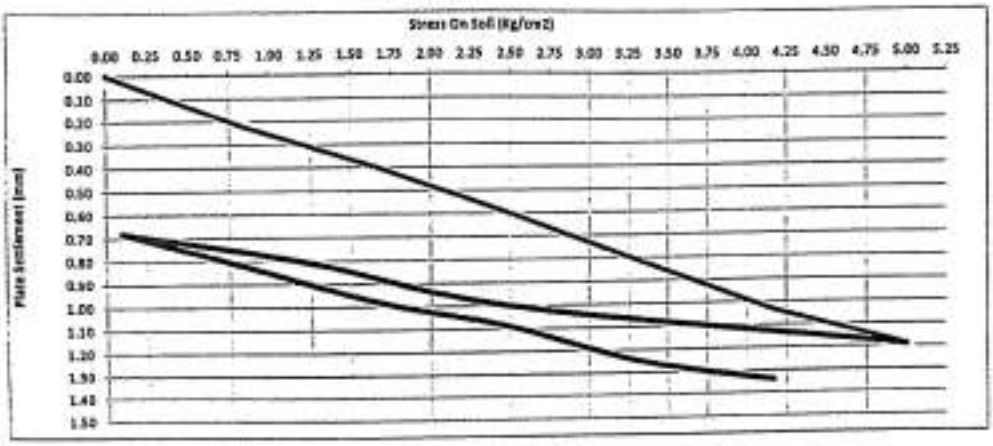
مكتب معامل الإستشارات الهندسية
مشروعات محافظات الوجه القبلى

Company Name : شركة الذهبى للمقاولات و التوريدات العمومية
Project : Electric Express Train Sector (5) Qous to Armant.
Test Date : 28/11/2023
report date : 29/11/2023
Station : 641+820
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	3532.5
Stress (Kg/cm2)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.22	0.40	0.60	0.82	1.04	1.19

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)	1.19	1.00	0.81	0.68

D (mm) = 300		S1 (mm)= 0.37	S2(mm)= 0.86	ΔS = 0.49
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS	89.3		

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)	0.65	0.82	0.90	1.09	1.25	1.34

D (mm) = 300		S1 (mm)= 0.95	S2(mm)= 1.27	ΔS = 0.32
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS	138.3		

Ev2/Ev1 = 1.55

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 (smax) (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 Armant.
Test Date : 28/11/2023
report date : 29/11/2023
Station : 641+820
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	19.76	0.24	19.80	0.20	0.22
2	1.66	19.57	0.43	19.63	0.37	0.40
3	2.50	19.34	0.66	19.46	0.54	0.60
4	3.33	19.09	0.91	19.28	0.72	0.82
5	4.17	18.86	1.14	19.07	0.93	1.04
6	5.00	18.73	1.27	18.89	1.11	1.19

Unloading Stage (1)

Loading	Stress	Dial 1	Settlement	Dial 2	Settlement	Average
	Kg/cm2		mm		mm	
1	2.50	18.95	1.05	19.05	0.95	1.00
2	1.25	19.17	0.83	19.21	0.79	0.81
3	0.100	19.31	0.69	19.33	0.67	0.68

Loading Stage (2)

Loading	Stress	Dial 1	Settlement	Dial 2	Settlement	Average
	Kg/cm2		mm		mm	
0	0.83	19.16	0.84	19.20	0.80	0.82
oximately equ	1.66	19.03	0.97	19.01	0.99	0.98
stress is reached						
2	2.50	18.99	1.01	18.83	1.17	1.09
3	3.33	18.81	1.19	18.69	1.31	1.25
4	4.17	18.76	1.24	18.56	1.44	1.34

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مكتب معامل الاستشارات الهندسية
مشروعات محافظات الاقصر
219 991 437
المركز الرئيسى 3 شارع الملك الأفضل - الزمالك - القاهرة

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

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تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣

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 : Middle Embankment**
- **Job requiremer : Ev2 > 40 MPa**

Item	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
date of measurement	: 28/11/2023
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+780	641+840	641+820	: -1.5	89.3	138.3	1.55

Signature / ..... CEL مكتب معامل الاستشارات الهندسية ... مشروعات ... الاقصر ... 219.991.437 ... 3 شارع الملك الأفضل - الزمالك - القاهرة

CEL
Consulting Engineering Bureau & Laboratories
مكتب معامل الإستشارات الهندسية
مشروعات محافظات الوجه القبلى

Company : شركة الذهبى للمقاولات و المرافق العمومية -

Project : Electric Express Train Sector (b) 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+780 to 641+840
Station : 641+820
Level : -1.5
Test Date : 28/11/2023
Repot Date : 29/11/2023
Type of soil : Middle 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 % , 20 %, 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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www.cel-egypt.com

CEL

Consulting Engineering Bureau & Laboratories

مكتب معامل الاستشارات الهندسية

Company Name	: شركة الذهبى
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 28/11/2023
Soil type	: Middle Embankment
Location	: ST From 641+780 TO 641+840
Level	: - 1.5 M
Report No.	: 111-1

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+810	1550.0	2.29	5.8	2.16	96.9%	Comply
2	641+830	1513.9	2.34	6.4	2.20	98.7%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.23 gm/cm^3
- At optimum moisture content = 6.4 %
- Signature / Sahar

CEL
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مشروعات - الاقصر
219.991.437
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3 El Malek El Afdal Street
Zamalek, Cairo
Tel & Fax : 27363723 - 27363093

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الزمالك - القاهرة
تليفون وفاكس : ٢٧٣٦٣٠٩٣ - ٢٧٣٦٣٧٢٣

مشروع القطار الكهربائي السريع القطاع الخامس

تنفيذ شركة الذهبي للمقاولات

من الكم 720 +638 الي 642+500

بيان اعمال توضيحي لمستخلص جاري (3) عقد (2024/2023/306)

العقد	قيمة العقد	المستخلص	كميات حفر تربة عادية	كميات الردم
(2024/2023/306)	عشرون مليون	جاري 1	-	23100.00
		جاري 2	10000.00	121500.00
		جاري 3	-	34400.00
كميات تم حصرها			-	24219.30
			14051.66	128231.31
			-	33745.88
اجمالي كميات تم حصرها			14051.66	186196.49
كميات تم صرفها			-	23100.00
			10000.00	121500.00
			-	34400.00
اجمالي كميات تم صرفها			10000.00	179000.00
المتبقي من الكمية			4051.66	7196.49

مهندس الشركة المنفذة /

استشاري المساحة مكتب برليانت /

برليانت كونسلت للاستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشاري الاعمال المساحية بالقطاع الخامس

استشاري اسبكترم /

سبكترم للاستشارات الهندسية
Spectrum Consulting
مشروع القطار السريع

محضر اعتماد حصر كميات

التاريخ :2/1/2024
اسم المشروع :مشروع القطار الكهربائى السريع (6اكتوبر -اسوان -ابوسمبل)القطاع الخامس

قامت شركة برليانت كونلت للاستشارات الهندسية المساحية (استشارى الاعمال المساحية لهيئة الطرق والكبارى)

باعتماد الكميات المنفذة الخاصة بشركة الذهبي للمقاولات

م	من المحطة رقم	الى المحطة رقم	التصنيف	الكمية بالمتر المكعب	الملاحظات
1	638+720	639+100	اعمال ردم	9174.1	اعمال ردم على (REV05)
2	639+580	639+920	اعمال ردم	14427.09	اعمال ردم على (REV05)
3	641+000	641+840	اعمال ردم	10144.69	اعمال ردم على (REV05)
		اجمالى الكمية		33745.88	

حصر جارى (3)
المرفقات :
استلام ميزانية شبكية
قطاعات عرضية
شيت اكسيل موضح به الكميات

مهندس الشركة المنفذة

استشارى المساحة / مكتب برليانت

برليانت كونسلت للإستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشارى الاعمال المساحية بالقطاع الخامس

استشارى / مكتب سبكترم

Spectrum Consulting

حصر كميات الردم مستخلص جاري (3) شركة الذهبي (637+952-643+863) مشروع القطار السريع القطاع الخامس (قوص /ارمنت)

Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
638+720.00	16.61	166.1	166.1
638+740.00	16.61	332.2	498.3
638+760.00	16.61	332.2	830.5
638+780.00	16.61	332.2	1162.7
638+800.00	16.61	332.2	1494.9
638+820.00	16.61	332.2	1827.1
638+840.00	16.61	332.2	2159.3
638+860.00	16.61	332.2	2491.5
638+880.00	16.61	332.2	2823.7
638+900.00	16.61	332.2	3155.9
638+920.00	16.61	332.2	3488.1
638+940.00	32.47	490.8	3978.9
638+960.00	32.47	649.4	4628.3
638+980.00	32.47	649.4	5277.7
639+000.00	32.47	649.4	5927.1
639+020.00	32.47	649.4	6576.5

برليات كونسلت للاستشارات الهندسية

Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
639+040.00	32.47	649.4	7225.9
639+060.00	32.47	649.4	7875.3
639+080.00	32.47	649.4	8524.7
639+100.00	32.47	649.4	9174.1
639+580.00	45.41	454.1	9628.2
639+600.00	45.41	908.2	10536.4
639+620.00	45.41	908.2	11444.6
639+640.00	45.41	908.2	12352.8
639+660.00	45.41	908.2	13261
639+680.00	45.41	908.2	14169.2
639+700.00	45.41	908.2	15077.4
639+720.00	45.41	908.2	15985.6
639+740.00	46.77	921.76	16907.36
639+760.00	32.66	794.31	17701.67
639+780.00	37.15	698.17	18399.84
639+800.00	37.15	743.05	19142.89
639+820.00	37.15	743.05	19885.94
639+840.00	37.15	743.05	20628.99
639+860.00	37.15	743.06	21372.04

Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
639+880.00	37.15	743.05	22115.09
639+900.00	37.15	743.05	22858.14
639+920.00	37.15	743.05	23601.19
641+000.00	9.21	92.15	23693.34
641+020.00	9.21	184.3	23877.64
641+040.00	9.21	184.3	24061.94
641+060.00	9.21	184.3	24246.24
641+080.00	9.21	184.3	24430.54
641+100.00	9.21	184.3	24614.84
641+120.00	9.21	184.3	24799.14
641+140.00	9.21	184.3	24983.44
641+160.00	9.21	184.3	25167.74
641+180.00	9.21	184.3	25352.04
641+200.00	9.21	184.3	25536.34
641+220.00	9.21	184.3	25720.64
641+240.00	9.21	184.3	25904.94
641+260.00	9.21	184.3	26089.24
641+280.00	9.21	184.3	26273.54

برلينات كونسلت للاستشارات الهندسية
HSR. BLUE LINE.Sec.05

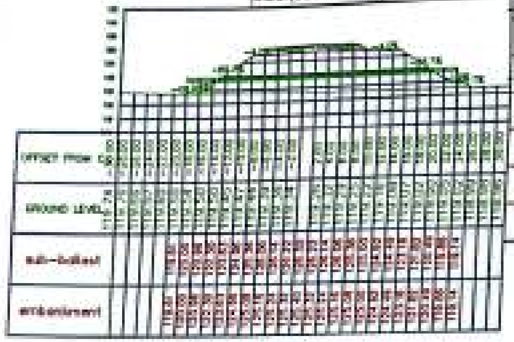
Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
641+300.00	9.21	184.3	26457.84
641+320.00	9.21	184.3	26642.14
641+340.00	9.21	184.3	26826.44
641+360.00	9.21	184.3	27010.74
641+380.00	9.21	184.3	27195.04
641+400.00	9.21	184.3	27379.34
641+420.00	9.21	184.3	27563.64
641+440.00	12.86	220.75	27784.39
641+460.00	12.86	257.2	28041.59
641+480.00	12.86	257.2	28298.79
641+500.00	12.86	257.2	28555.99
641+520.00	12.86	257.2	28813.19
641+540.00	12.86	257.2	29070.39
641+560.00	12.86	257.2	29327.59
641+580.00	12.86	257.2	29584.79
641+600.00	12.86	257.2	29841.99

برليانت كونسلت للإستشارات الهندسية
HSR. BLUE LINE.Sec.05

Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
641+620.00	12.86	257.2	30099.19
641+640.00	12.86	257.2	30356.39
641+660.00	12.86	257.2	30613.59
641+680.00	12.86	257.2	30870.79
641+700.00	12.86	257.2	31127.99
641+720.00	12.86	257.2	31385.19
641+740.00	12.86	257.2	31642.39
641+760.00	12.86	257.2	31899.59
641+780.00	12.86	257.2	32156.79
641+800.00	31.33	441.86	32598.65
641+820.00	32.45	637.77	33236.42
641+840.00	18.49	509.46	33745.88
	اجمالي كمية الردم (م3)		33745.88

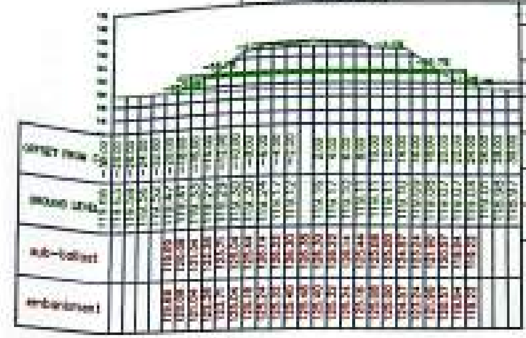
برلينات كونسلت للإستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشاري الاعمال المساحية بالقطاع الخامس

EXPRESS TRAIN
SEC.(638+720.00)



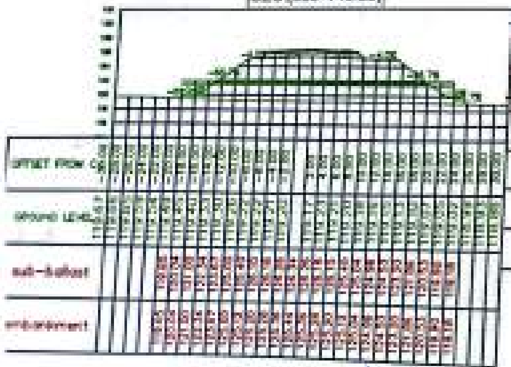
= Total Volume at Station 638+720.00	
Cut Area	0.00
= CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	166.10
cum fill vol	166.10

EXPRESS TRAIN
SEC.(638+760.00)



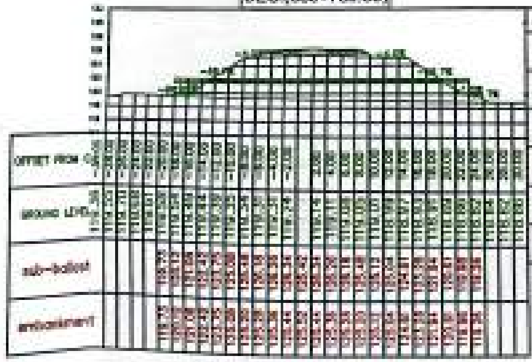
= Total Volume at Station 638+760.00	
Cut Area	0.00
= CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	830.50

EXPRESS TRAIN
SEC.(638+740.00)



= Total Volume at Station 638+740.00	
Cut Area	0.00
= CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	498.30

EXPRESS TRAIN
SEC.(638+780.00)



= Total Volume at Station 638+780.00	
Cut Area	0.00
= CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	1162.70

Owner:
Ministry of Transportation
National Authority for Tunnels (NAT)

Client:
National Authority for Roads, Bridges and Land Transport

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

Owner Consultant

Contractor: EL-ZAHABY

Drawing Name:
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale: HZ 1:1000 / VU 1:100

Drawing NO: HSR - SEC 5 - cross-sec- (1)

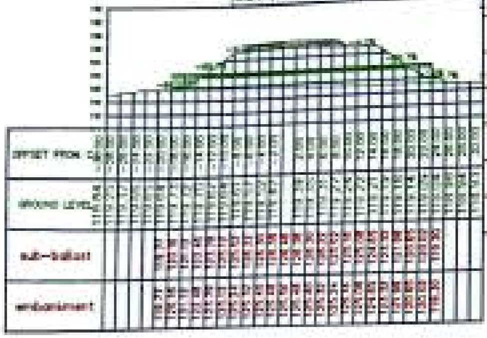
برلنت كونسلت للاستشارات الهندسية
HSR. BLUE LINE.Sec.05
استشاري الاعمال المساحية بالقطاع الخامس

Spectrum Consulting

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

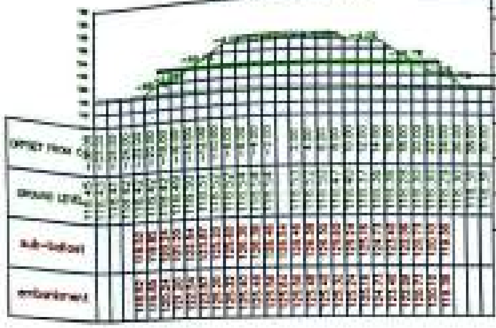
KEY PLAN

EXPRESS TRAIN
SEC.(638+800.00)



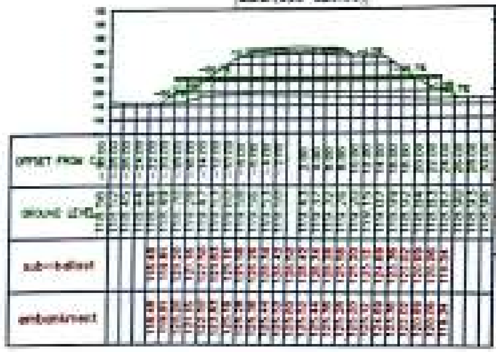
Total Volume at Station 638+800.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	1494.90

EXPRESS TRAIN
SEC.(638+840.00)



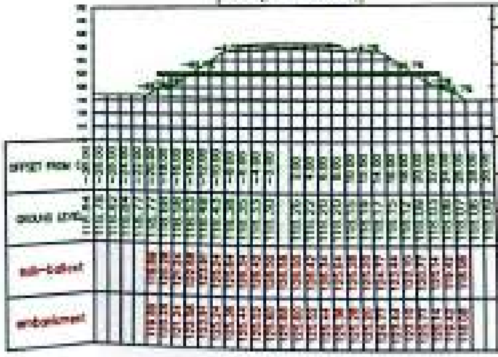
Total Volume at Station 638+840.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	2159.30

EXPRESS TRAIN
SEC.(638+820.00)



Total Volume at Station 638+820.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	1827.10

EXPRESS TRAIN
SEC.(638+860.00)



Total Volume at Station 638+860.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	2491.50

*All dimensions are in meters

List of cross-sec Expression

Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBER - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

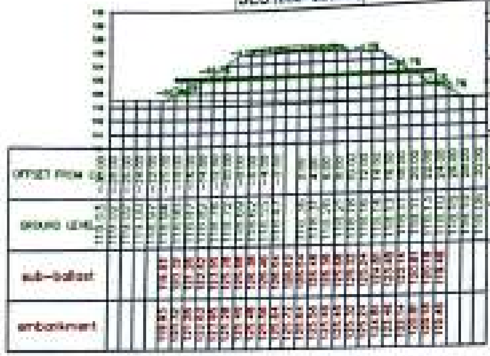
Drawing NO
HSR - SEC 5 - cross-sec- (1)

برلنيات كونسيليوم للاستشارات الهندسية
HSR. ELG LINE.Sec.05
استشاري الأعمال المساحية بالقطاع الخامس

Spectrum Consulting

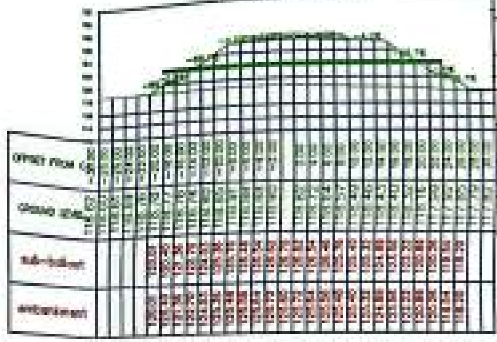
شركة

EXPRESS TRAIN
SEC.(638+880.00)



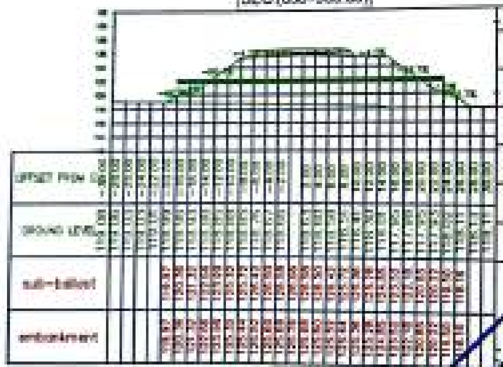
Total Volume at Station 638+880.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	2823.70

EXPRESS TRAIN
SEC.(638+920.00)



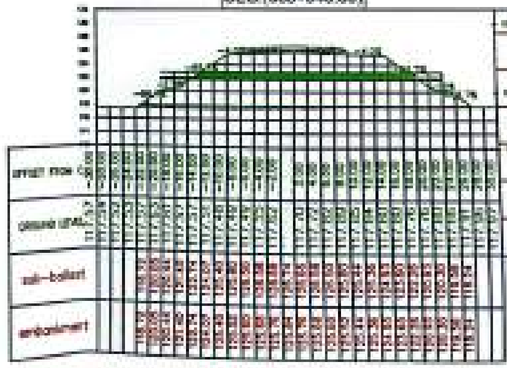
Total Volume at Station 638+920.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	3488.10

EXPRESS TRAIN
SEC.(638+900.00)



Total Volume at Station 638+900.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	16.61
Fill Vol	332.20
cum fill vol	3155.90

EXPRESS TRAIN
SEC.(638+940.00)



Total Volume at Station 638+940.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	490.80
cum fill vol	3978.90

Spectrum Consult

HSR. CLUB LINE.Sec.05

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

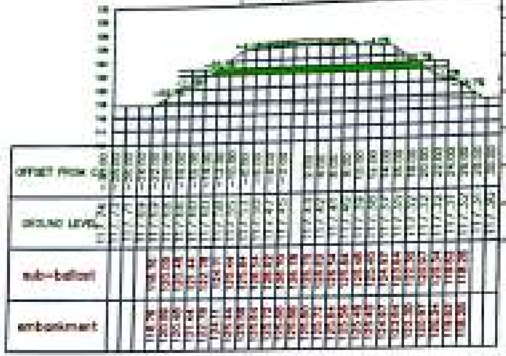
List of cross-sec Expression

Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

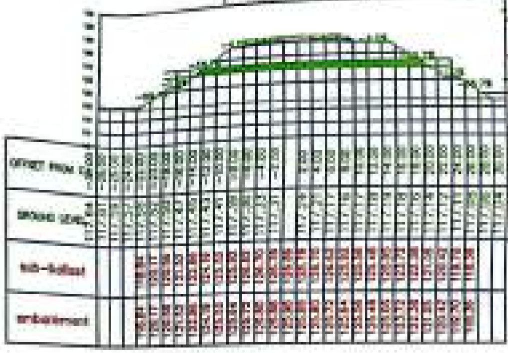
Drawing NO
HSR - SEC 5 - cross-sec- (1)

EXPRESS TRAIN
SEC.(638+960.00)



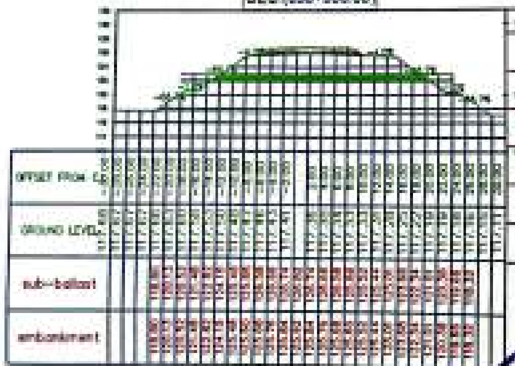
Total Volume at Station 638+960.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	4628.30

EXPRESS TRAIN
SEC.(639+000.00)



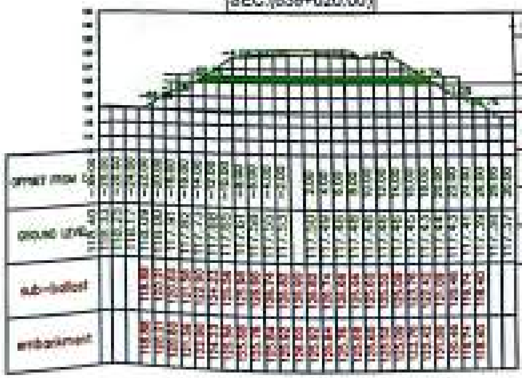
Total Volume at Station 639+000.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	5927.10

EXPRESS TRAIN
SEC.(638+980.00)



Total Volume at Station 638+980.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	5277.70

EXPRESS TRAIN
SEC.(639+020.00)

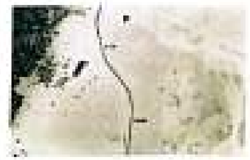


Total Volume at Station 639+020.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	6576.50

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

Owner
General Authority for Roads, Bridges and Land Transport

KEY PLAN



SECTION (FROM QUS TO ARMANT)

* All dimensions are in meters

List of cross-sec Expression

Existing Ground Level
Proposed Sub-Ballast level

Owner consultant

Contractor EL-ZAHABY

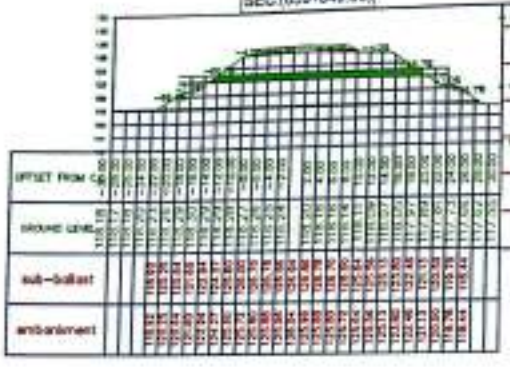
Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing NO
HSR - SEC 5 - cross-sec-

برلنت كونسلت للاستشارات الهندسية
HSR. SLUBLINE.Sec.05
استشاري الاعمال المساحية بالقطاع الخامس

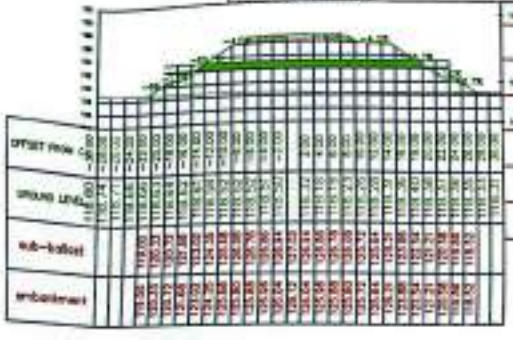
Spectrum Consult

EXPRESS TRAIN
SEC.(639+040.00)



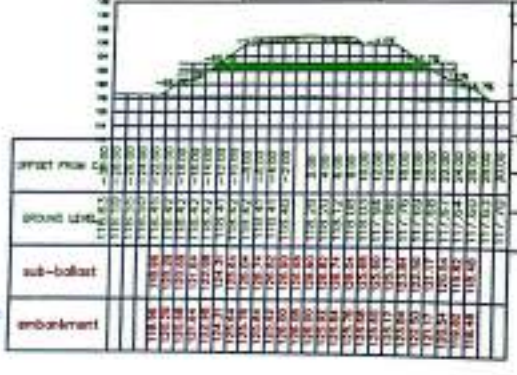
Total Volume at Station 639+040.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	7225.90

EXPRESS TRAIN
SEC.(639+060.00)



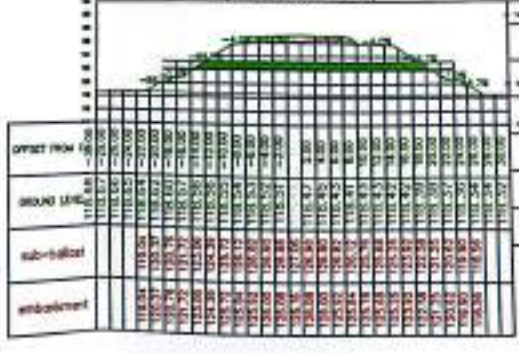
Total Volume at Station 639+060.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	8524.70

EXPRESS TRAIN
SEC.(639+080.00)



Total Volume at Station 639+080.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	7875.30

EXPRESS TRAIN
SEC.(639+100.00)



Total Volume at Station 639+100.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.47
Fill Vol	649.40
cum fill vol	9174.10

Spectrum Consulting

برليانت كونسلت لإستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشاري الاعمال المعمارية بالقطاع الخاص

شركة الزهبي

Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

Contractor	EL-ZAHABY

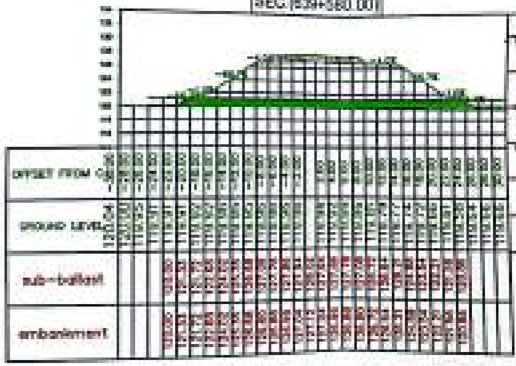
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing NO
HSR - SEC 5 - cross-sec- (1)

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

EXPRESS TRAIN
SEC (639+580.00)



Total Volume at Station 639+580.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	454.10
cum fill vol	9952.90

*All dimensions are in meters

List of cross-sec Expression

Owner consultant

QA/M/T Consultant

Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale

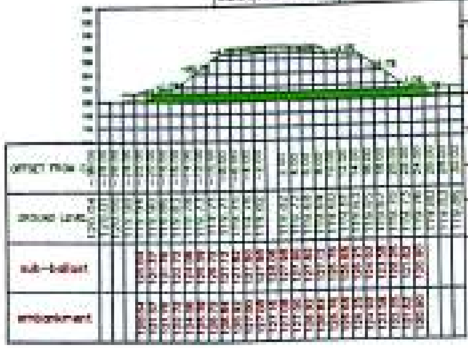
Drawing NO
HSR - SEC 5 - cross-sec- (1)

برلايانت كونسلت للإستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشاري الأعمال المساحية بالقطاع الخامس

شركة الذهبي

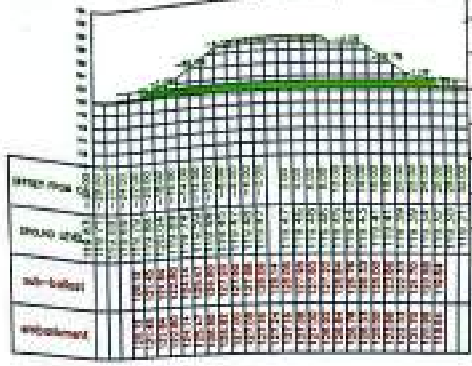
Spectrum Consultants

EXPRESS TRAIN
SEC.(639+600.00)



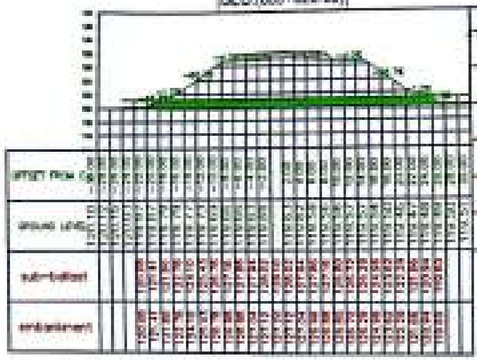
Total Volume at Station 639+600.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	908.20
cum fill vol	10861.10

EXPRESS TRAIN
SEC.(639+640.00)



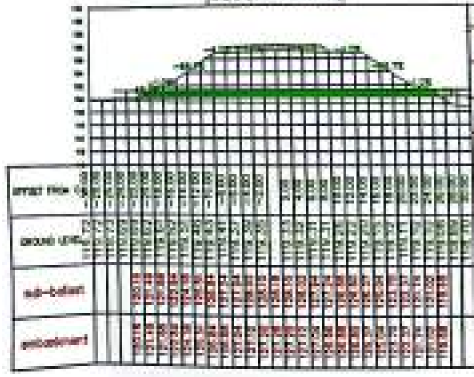
Total Volume at Station 639+640.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	908.20
cum fill vol	12677.50

EXPRESS TRAIN
SEC.(639+620.00)



Total Volume at Station 639+620.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	908.20
cum fill vol	11769.30

EXPRESS TRAIN
SEC.(639+660.00)



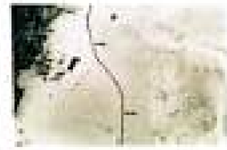
Total Volume at Station 639+660.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	908.20
cum fill vol	13585.70

استشاري كونسلت للاستشارات الهندسية
HSR. BLUE LINE.Sec.05
استشاري الاعمال المساحية بالقطاع الخامس

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

Client
General Authority for Roads, Bridges and Transport

KEY PLAN



*All dimensions are in meters

List of cross-sec Expression

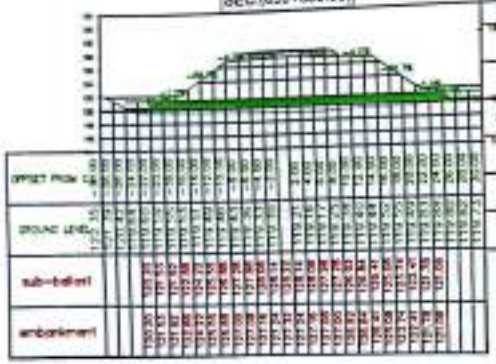
Owner Consultant

Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

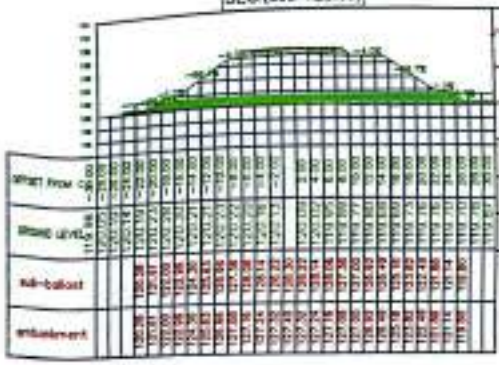
Drawing NO
HSR - SEC 5 - cross-sec- (1)

EXPRESS TRAIN
SEC.(639+680.00)



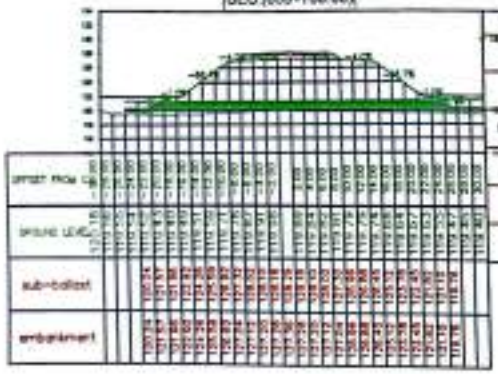
Total Volume at Station 639+680.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	908.20
cum fill vol	14493.90

EXPRESS TRAIN
SEC.(639+720.00)



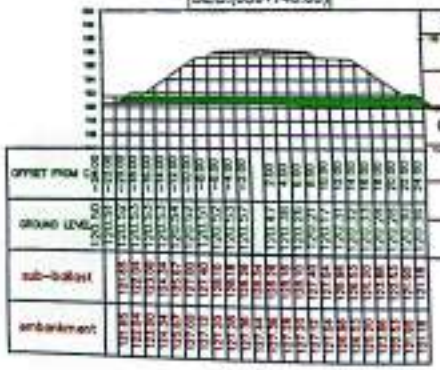
Total Volume at Station 639+720.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	908.20
cum fill vol	16310.30

EXPRESS TRAIN
SEC.(639+700.00)



Total Volume at Station 639+700.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	45.41
Fill Vol	908.20
cum fill vol	15402.10

EXPRESS TRAIN
SEC.(639+740.00)



Total Volume at Station 639+740.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	46.77
Fill Vol	921.76
cum fill vol	17232.06

Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

SECTION (FROM GUS TO ARMANT)

*All dimensions are in meter)

List of cross-sec Expression

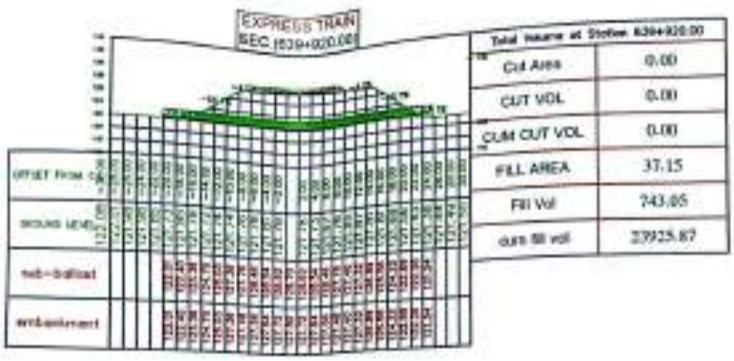
Owner consultant

Contractor EL-ZAHABY

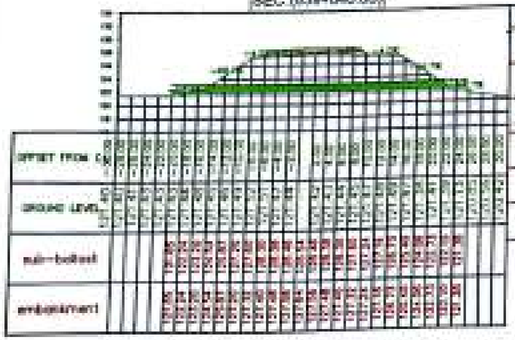
Drawing Name
cross-sec for HSR OCTOBRE - ASWAN se
EL-ZAHABY COMPANY
from km 637+952 to 643+8

Drawing scale H(1:1,000) V(1:100)

Drawing NO
HSR - SEC 5 - cross-s

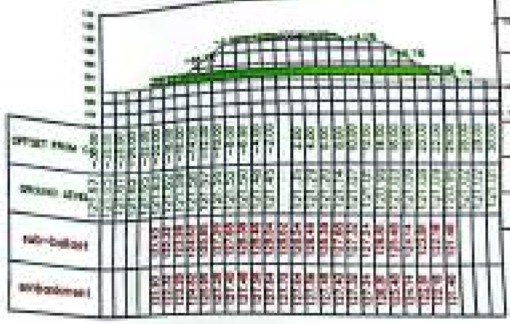


EXPRESS TRAIN
SEC.(639+840.00)



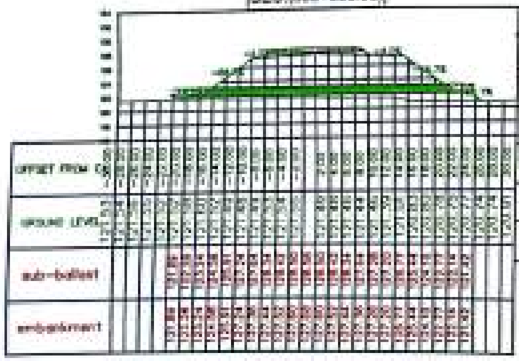
Total Volume at Station 639+840.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	37.15
Fill Vol	743.05
cum fill vol	20953.68

EXPRESS TRAIN
SEC.(639+880.00)



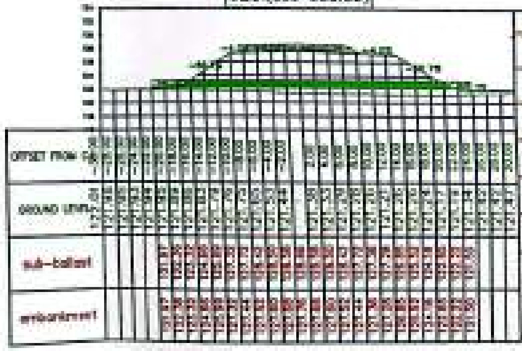
Total Volume at Station 639+880.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	37.15
Fill Vol	743.05
cum fill vol	22439.77

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	37.15
Fill Vol	743.05
cum fill vol	21696.73

EXPRESS TRAIN
SEC.(639+900.00)



Total Volume at Station 639+900.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	37.15
Fill Vol	743.05
cum fill vol	23182.82

Spectrum consult

برليانت كونسلت للاستشارات الهندسية
HSR. BLUE LINE.Sec.05
استشاري الاعمال المساحية بالقطاع الخامس

شركة الذهبي

Ministry of Transportation
National Authority for Tunnels (NAT)

Owner
General Authority for Roads, Bridges and Land Transport

Project Name

KEY PLAN

*All dimensions are in meters

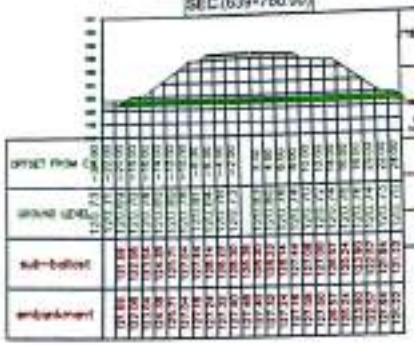
List of cross-sec Expression

Contractor | EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

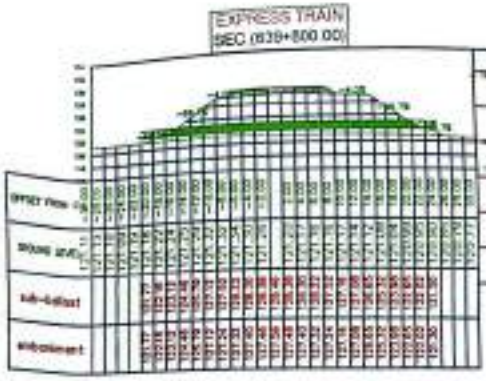
Drawing scale | Drawing NO
HSR - SEC 5 - cross-sec- (1)

EXPRESS TRAIN
SEC.(639+760.00)



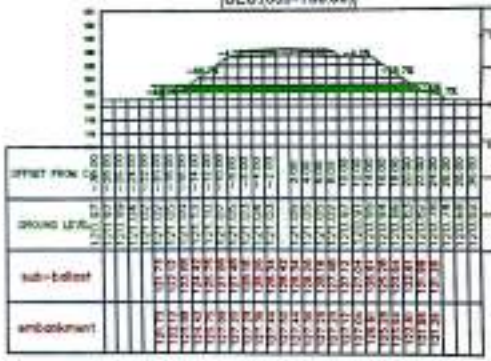
Total Volume at Station 639+760.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.66
Fill Vol	794.31
cum fill vol	18026.37

EXPRESS TRAIN
SEC.(639+800.00)



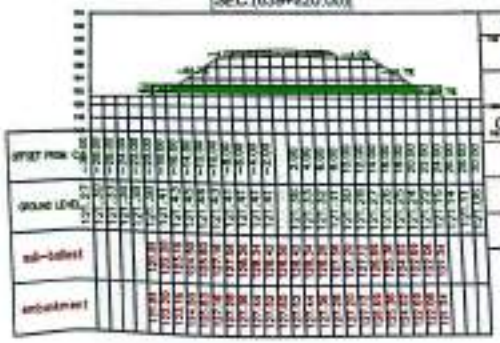
Total Volume at Station 639+800.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	37.15
Fill Vol	743.05
cum fill vol	19467.59

EXPRESS TRAIN
SEC.(639+780.00)



Total Volume at Station 639+780.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	37.15
Fill Vol	698.17
cum fill vol	18724.54

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	37.15
Fill Vol	743.05
cum fill vol	20210.63

Spectrum Consulting

برلبات كونسلت للاستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشاري الأعمال المساحية بالقطاع الخاص

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

Project Name
SECTION (FROM QUS TO ASWAN)

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

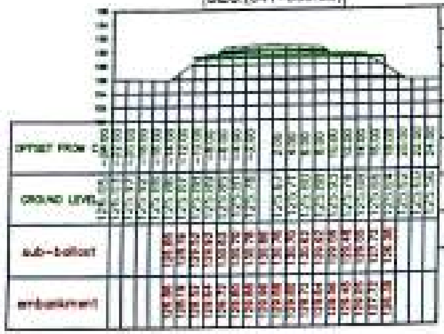
	Existing Ground Level
	Proposed Sub-Ballast level

Contractor	EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN sec
EL-ZAHABY COMPANY
from km 637+952 to 643+88

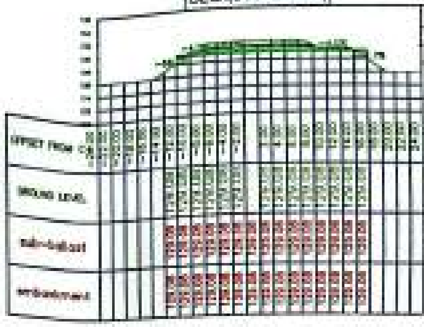
Drawing scale H(1:1000) V(1:100)	Drawing NO. HSR - SEC'S - cross-se

EXPRESS TRAIN
SEC.(641+000.00)



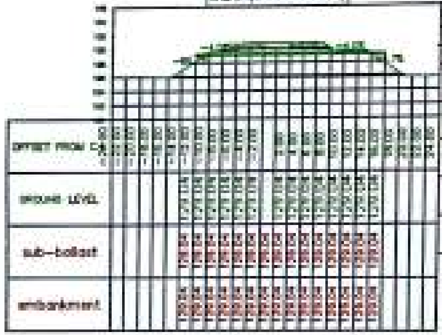
Total Volume at Station 641+000.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	92.15
cum fill vol	24389.54

EXPRESS TRAIN
SEC.(641+060.00)



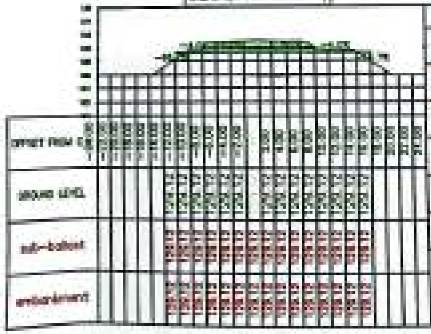
Total Volume at Station 641+060.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	24942.43

EXPRESS TRAIN
SEC.(641+040.00)



Total Volume at Station 641+040.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	24758.13

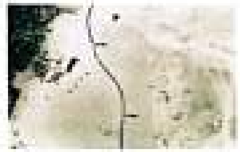
EXPRESS TRAIN
SEC.(641+080.00)



Total Volume at Station 641+080.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	25126.72

Owner:
Ministry of Transportation

KEY PLAN



*All dimensions are in meters

List of cross-sec Expression

Contractor: EL-ZAHABY

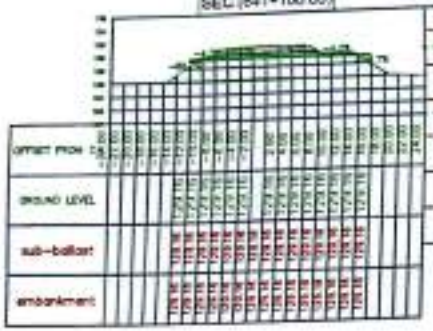
Drawing Name:
cross-sec for HSR OCTOBER - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale

Drawing NO
HSR - SEC 5 - cross-sec- (1)

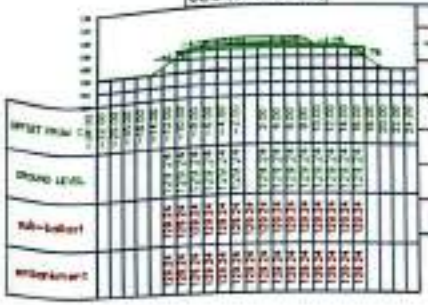
HSR. BLUE LINE.Sec.05

EXPRESS TRAIN
SEC.(641+100.00)



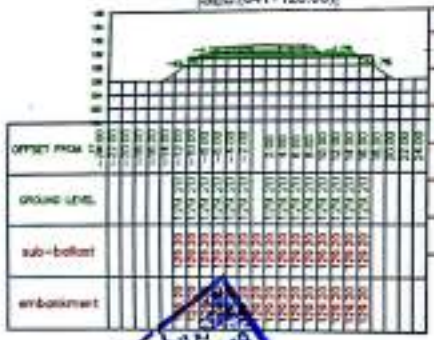
Total Volume at Station 641+100.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	25311.02

EXPRESS TRAIN
SEC.(641+140.00)



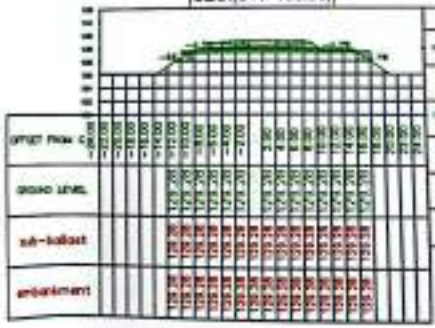
Total Volume at Station 641+140.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	25679.61

EXPRESS TRAIN
SEC.(641+120.00)



Total Volume at Station 641+120.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	25495.32

EXPRESS TRAIN
SEC.(641+160.00)



Total Volume at Station 641+160.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	25863.91

برلبانت كونسلت للإستشارات الهندسية
HSR. CLUB LINE.Sec.05
إستشارى الأعمال المعمارية بالمشروع المختص

شركة الزهبى

Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

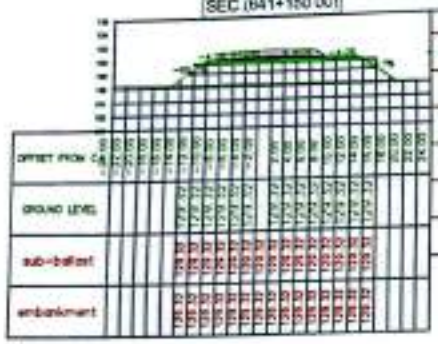
Contractor	EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale
H(1:1000)
V(1:100)

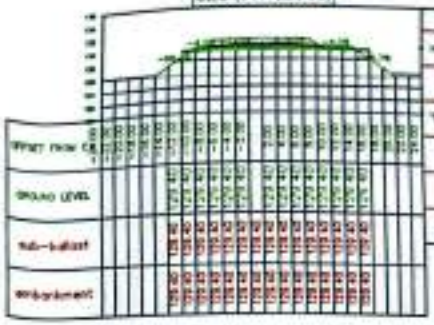
Drawing NO
HSR - SEC 5 - cross-sec- (1)

EXPRESS TRAIN
SEC (641+180.00)



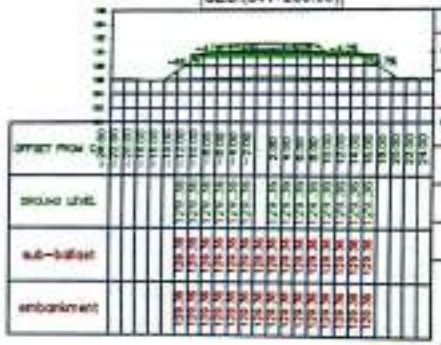
Total Volume at Station 641+180.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	26048.21

EXPRESS TRAIN
SEC (641+220.00)



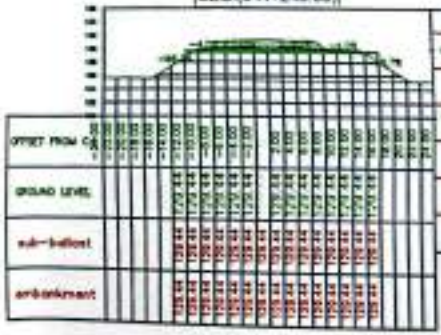
Total Volume at Station 641+220.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	26416.80

EXPRESS TRAIN
SEC (641+200.00)



Total Volume at Station 641+200.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	26232.50

EXPRESS TRAIN
SEC (641+240.00)



Total Volume at Station 641+240.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	26601.09

Spectrum Consulting

برليانت كونسلت للاستشارات الهندسية
HSR. CLUB LINE.Sec.05
إستشاري الأعمال المساحية بالقطاع الخاص

Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

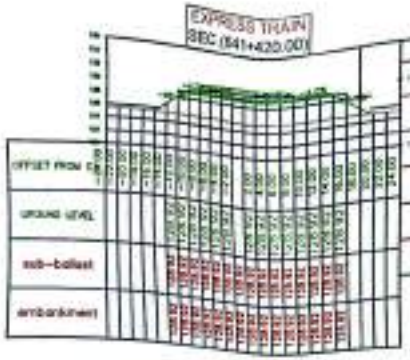
List of cross-sec Expression

Contractor	EL-ZAHABY

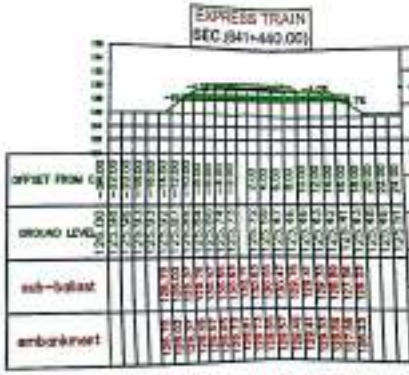
Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale
H(1:1000)
V(1:100)

Drawing NO
HSR - SEC 5 - cross-sec- (1)



Total Volume at Station 641+420.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	28293.76



Total Volume at Station 641+440.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	220.75
cum fill vol	28480.51

Spectrum Consulting
سبكترم للاستشارات الهندسية
مشروع القطار السريع

بريانت كونسلت للإستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشاري أعمال الصادية بالقطاع الخامس

شركة الزهبي

Contract
Ministry of Transportation
National Authority for Tunnels (NAT)

Project
General Authority for Roads, Bridges&Land Transport

Project Name
ELECTRIC EXPRESS TRAIN (HIGH SPEED RAIL)
SECTION (ASWAN TO ARMANT)

KEY PLAN

SECTION (FROM QUS TO ARMANT)

No.	Date	Drawing Status	Issued Month
	8/2023	CONSTRUCTION	

*All dimensions are in meters

List of cross-sec Expressions

	Tunneling Ground Level
	Proposed sub-ballast level

Owner consultant

QB/RL T Consultant

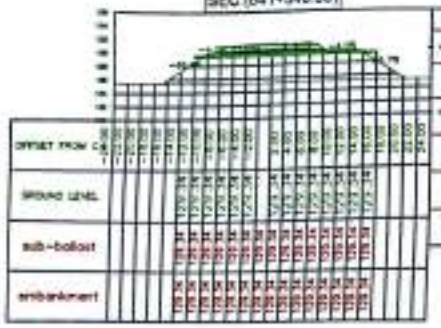
Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale
H(1:1000)
V(1:100)

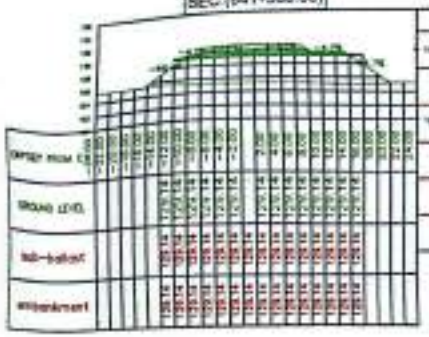
Drawing NO
HSR - SEC 5 - cross-sec-

EXPRESS TRAIN
SEC.(641+340.00)



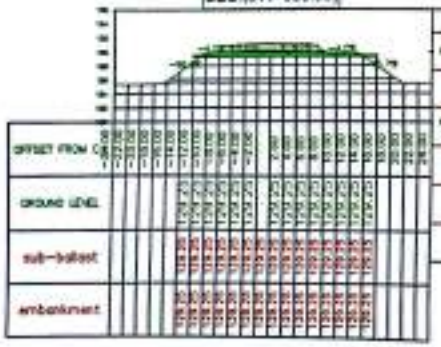
Total Volume at Station 641+340.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	27522.58

EXPRESS TRAIN
SEC.(641+360.00)



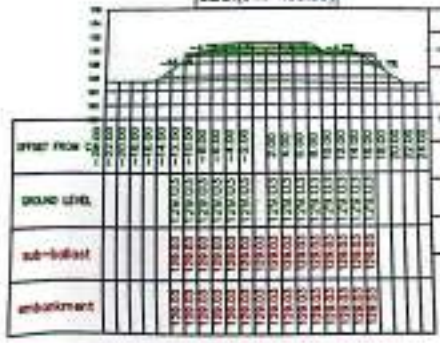
Total Volume at Station 641+380.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	27891.17

EXPRESS TRAIN
SEC.(641+360.00)



Total Volume at Station 641+360.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	27706.87

EXPRESS TRAIN
SEC.(641+400.00)



Total Volume at Station 641+400.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	28075.47

Spectrum Consulting
مشروع الطريق الحر

برليات كونسلت للإستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشاري الأعمال المساحية بالقطاع الخامس

Ministry of Transportation
National Authority for Tunnels (NAT)

National Authority for Roads , Bridges and Transport

HIGH SPEED RAIL (
SECTION (FROM CAIRO TO ARMANT)
STATION 6TH OCTOBER - STATION 7TH HIGH SEED

KEY PLAN

SECTION (FROM CAIRO TO ARMANT)
STATION 6TH OCTOBER - STATION 7TH HIGH SEED

no	DATE	REVISED ITEM	CHECKED BY
	8/2023	CROSS SEC	

*All dimensions are in meters

List of cross-sec Expression

	Existing Ground Level
	Proposed sub- ballast level

Owner consultant

Design & Consultant

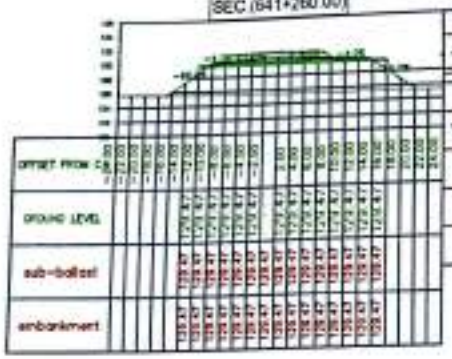
Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBER - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale
H(1:1000)
V(1:100)

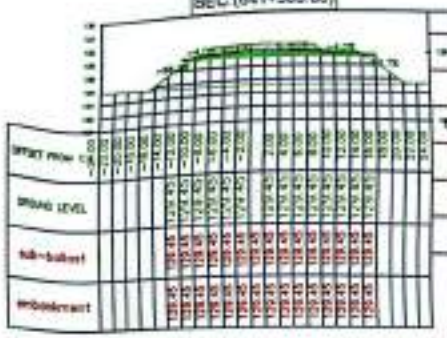
Drawing NO
HSR - SEC 5 - cross-sec- (1

EXPRESS TRAIN
SEC (641+260.00)



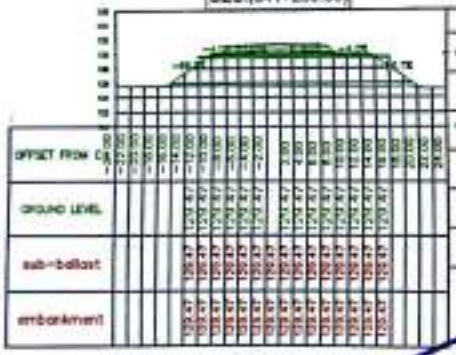
Total Volume at Station 641+260.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	26785.39

EXPRESS TRAIN
SEC (641+300.00)



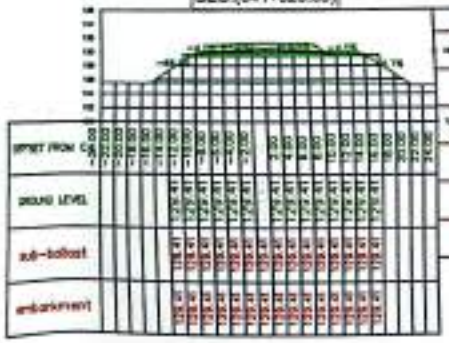
Total Volume at Station 641+300.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	27153.98

EXPRESS TRAIN
SEC.(641+280.00)



Total Volume at Station 641+280.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	26969.69

EXPRESS TRAIN
SEC.(641+320.00)



Total Volume at Station 641+320.00	
Cut Area	0.00
CUT VOL	0.00
*CUM CUT VOL	0.00
FILL AREA	9.21
Fill Vol	184.30
cum fill vol	27338.28

Spectrum Consulting

HSR. BLUE LINE.Sec.05

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

Existing Ground Level	
Proposed Sub-ballast level	

Owner consultant

GARR.T Consultant

Contractor EL-ZAHABY

Drawing Name

cross-sec for HSR OCTOBER - ASWAN section

EL-ZAHABY COMPANY

from km 637+952 to 643+863

Drawing scale H(1:1000) V(1:100)

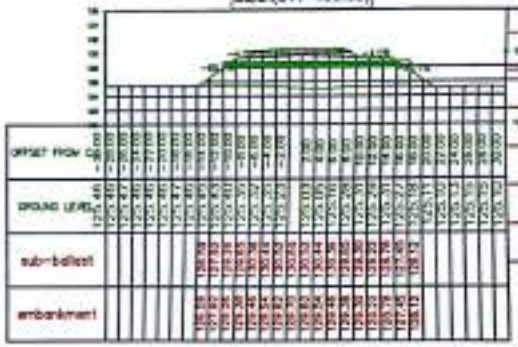
Drawing NO

HSR - SEC 5 - cross-sec- 1

EXPRESS TRAIN
SEC.(641+480.00)

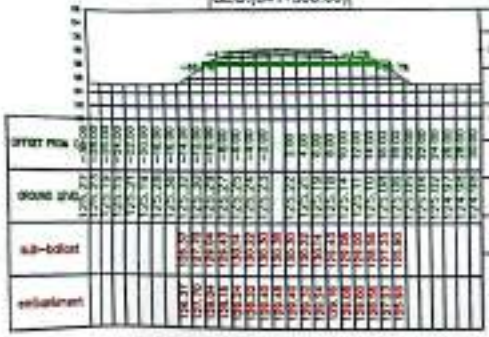
Total Volume at Station 641+480.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	28994.91

EXPRESS TRAIN
SEC.(641+480.00)



Total Volume at Station 641+480.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	28737.71

EXPRESS TRAIN
SEC.(641+500.00)



Total Volume at Station 641+500.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	28252.11

PROJECT
Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

	Existing Ground Level
	Proposed Sub-ballast Level

Contractor	EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - A
EL-ZAHABY CON
from km 637+952 to

Drawing scale
H(1:1000)
V(1:100)

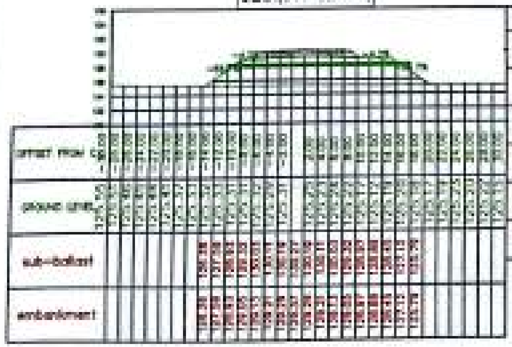
Drawing N
HSR - SEC 5

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

General Authority for Roads, Bridges and Land Transport

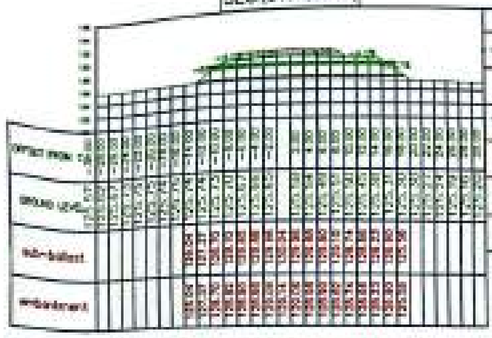
KEY PLAN

EXPRESS TRAIN SEC.(641+520.00)



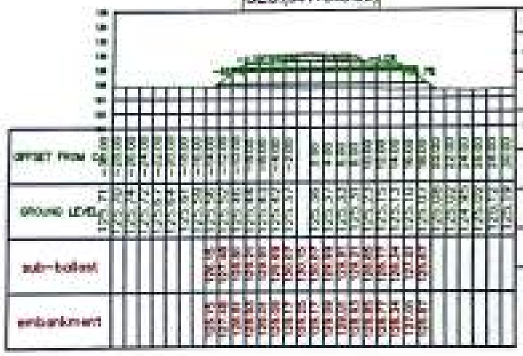
Total Volume at Station 641+520.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	29509.31

EXPRESS TRAIN SEC.(641+560.00)



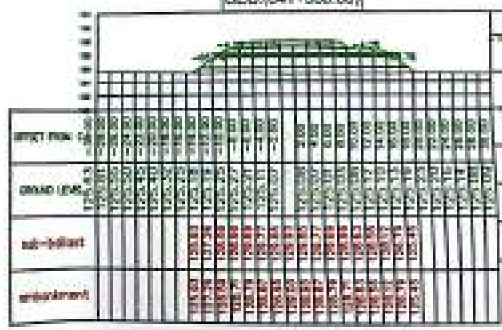
Total Volume at Station 641+560.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	30023.71

EXPRESS TRAIN SEC.(641+540.00)



Total Volume at Station 641+540.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	29766.51

EXPRESS TRAIN SEC.(641+580.00)



Total Volume at Station 641+580.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	30280.91

*All dimensions are in meters

List of cross-sec Expression

Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN sect
EL-ZAHABY COMPANY
from km 637+952 to 643+86

Drawing scale

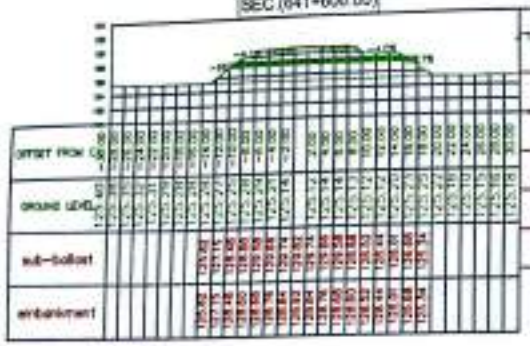
Drawing NO
HSR - SEC 5 -

شركة الذهبي

دارلبان كوسلط للاستشارات الهندسية
HSR. BEDELINE.Coc.00
استشاري اعمال المساحية بالقطاع الخامس

سبكترم
Spectrum

EXPRESS TRAIN
SEC.(641+600.00)



Total Volume at Station 641+600.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	30538.11

EXPRESS TRAIN
SEC.(641+640.00)

Total Volume at Station 641+640.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	31052.51

EXPRESS TRAIN
SEC.(641+620.00)

Total Volume at Station 641+620.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	30795.31

EXPRESS TRAIN
SEC.(641+660.00)

Total Volume at Station 641+660.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	31309.71

Ministry of Transportation
National Authority for Tunnels (NAT)

General Authority for Roads, Bridges&Land Transport

Project Name:
HSR(No. EXPRESS TRAIN (HIGH SPEED RAIL)
SECTION (FROM CUT TO ARMANT)
STATION 637+110.11 - STATION 723+634.69

KEY PLAN

SECTION (FROM CUT TO ARMANT)
STATION 637+110.11 - STATION 723+634.69

No.	Date	Drawing Name	Revised Remarks
	9/2022		

*All dimensions are in meters

List of cross-sec Expression

Existing Ground Level	
Proposed Sub -ballast level	

Owner consultant

QA/QC T Consultant

Contractor EL-ZAHABY

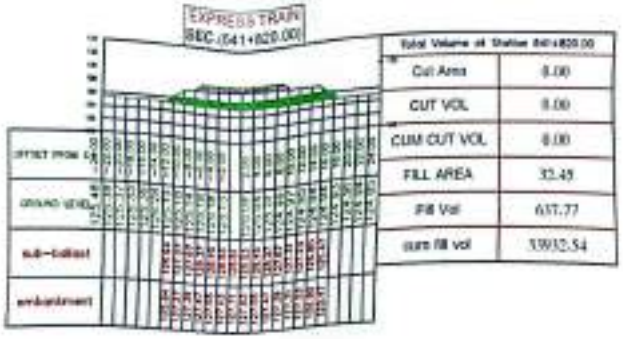
Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 1
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing scale H(1:1000) V.(1:100)	Drawing NO
	HSR - SEC 5 - cross-sec- (

مكتب هندسي للاستشارات الهندسية
Engineering Consulting Bureau
مشروع شركة نفر

برلنات كونسلك للاستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشارات أعمال المقاولات بالقطاع الخامس

شركة الزهبي للمقاولات



Total Volume at Station 641+620.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	32.45
Fill Vol	637.77
cum fill vol	33932.54

Total Volume at Station 641+640.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	38.49
Fill Vol	509.46
cum fill vol	34442.00

Ministry of Transportation
National authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

Contractor EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

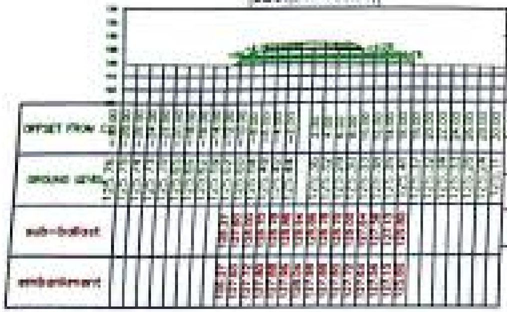
Drawing scale H(1:1000) V(1:100)

Drawing NO
HSR - SEC 5 - 0000-000- (1)

برليانت كونسلت للإستشارات الهندسية
HSR. OCTOBRE-ASWAN.Sec.05
إستشاري الأعمال المساندة لمشروع الخط

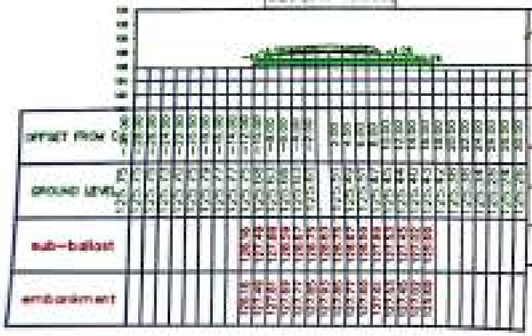
شركة

EXPRESS TRAIN
SEC (641+780.00)



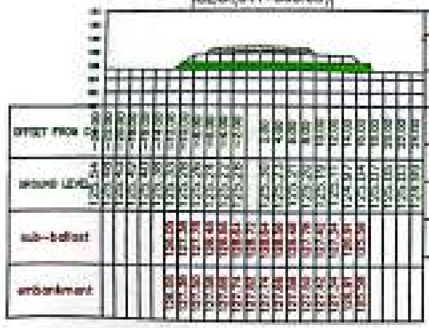
Total Volume at Station 641+780.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	32595.31

EXPRESS TRAIN
SEC (641+780.00)



Total Volume at Station 641+780.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	32852.91

EXPRESS TRAIN
SEC (641+800.00)



Total Volume at Station 641+800.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	31.33
Fill Vol	441.86
cum fill vol	33294.77

برلينات كوستك للإستشارات الهندسية
HSR. BLUE LINE.Sec.05
إستشارى الأعمال المساحية بالقطاع الخامس

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

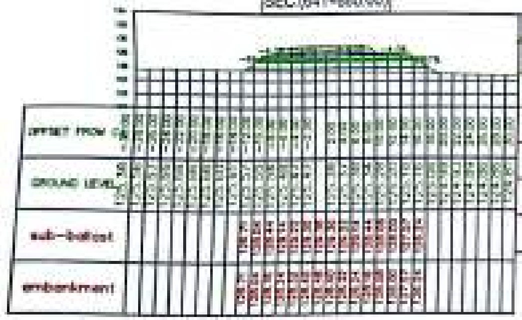
List of cross-sec Expression

Contractor: EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing NO
HSR - SEC5 - cross-sec - (1)

EXPRESS TRAIN
SEC.(641+680.00)

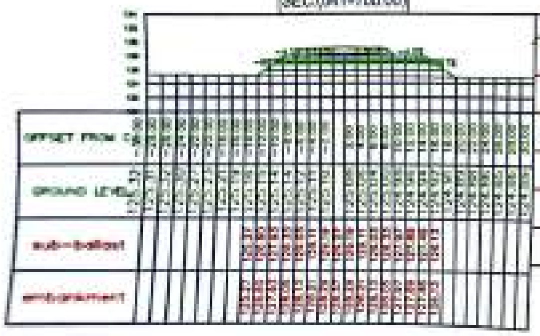


Total Volume at Station 641+680.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	31566.91

EXPRESS TRAIN
SEC.(641+720.00)

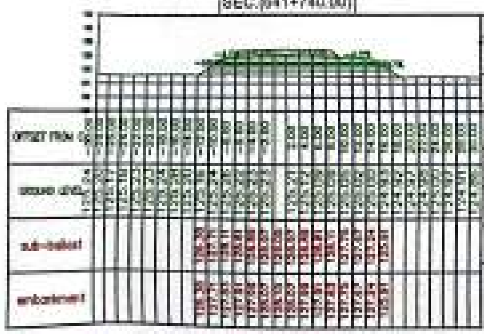
Total Volume at Station 641+720.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	32081.31

EXPRESS TRAIN
SEC.(641+700.00)



Total Volume at Station 641+700.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	31824.11

EXPRESS TRAIN
SEC.(641+740.00)



Total Volume at Station 641+740.00	
Cut Area	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	12.86
Fill Vol	257.20
cum fill vol	32338.51

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

KEY PLAN

*All dimensions are in meters

List of cross-sec Expression

Owner Consultant

Contractor: EL-ZAHABY

Drawing Name
cross-sec for HSR OCTOBRE - ASWAN section 5
EL-ZAHABY COMPANY
from km 637+952 to 643+863

Drawing NO
HSR - SEC 5 - cross-sec- (1)

برلينات كونسلت للاستشارات الهندسية
HSR. CODE LINE.Sec.05