الهيئة العامة
للطرق و الكبارى
(GARB)
وزارة النقل

قائمة الكميات الواردة بالمستخلص جاري (٤)

مشروع : القطار الكهربائى السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع غرب النيل
فى المسافة من الكم ٠٦٠+٣٣٥ الى الكم ٤٨٠+٣٣٥ بطول ٠,٤٢ كم مرحلة الحفر وتشكيل الجسور

رقم البند و بيانه : (٣-١) بالمتر المكعب اعمال توريد وتشغيل اتربة صالحة للردم ومطابقة للمواصفات والتشغيل باستخدام المعدات

تـــنفيـــذ : شركة محمد عبدالله محمد اسماعيل للانشاءات ورصف الطرق عقد رقم ٢٠٢٤/٢٠٢٣/٦١٧

مقدار العمل السابق : 43,483.20 م٣

بند المقايسة	رقم الطلب	التاريخ	من الكم	الى الكم	الطول	المسطح	الكمية
		كمية الاعمال بالمقايسة (م٣)					51,749.00
بالمتر المكعب اعمال تحميل وتوريد ونقل اتربة مطابقة للمواصفات وتشغيلها باستخدام الات التسوية بسمك لا يزيد عن ٥٠ سم حتي منسوب -٢ متر و بسمك لا يزيد عن ٢٥ سم لاستكمال المنسوب التصميمى لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن ١٥%) و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (95 % من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق و الكبارى وتعليمات المهندس المشرف. - في حالة طلب جهاز الاشراف زيادة نسبة الدمك ٩٥% يحسب زياده ١ جنيه على زياده نسبة الدمك لكل ١% - مسافة النقل حتى ٢ كم و يتم احتساب علاوه ١,٥ جنيه لكل كم بالزيادة أو النقصان . - السعر يشمل عمل تشوينات و تخليط و اختبارات و نقل لموقع العمل حتى مسافه ٢ كم .	IR-F-62	19/02/2025	335+280	335+480	200	1.92	384.00
	IR-F-68	15/02/2025	335+220	335+280	60	1.92	115.20
	IR-F-87	19/02/2025	335+060	335+220	160	1.92	307.20
	IR-F-88	17/02/2025	335+220	335+280	60	1.92	115.20
	IR-F-89	25/02/2025	335+220	335+480	260	1.92	499.20
	IR-F-90	26/02/2025	335+060	335+220	160	1.93	308.80
	IR-F-91	02/03/2025	335+220	335+480	260	1.93	501.80
	IR-F-92	04/03/2025	335+060	335+220	160	1.93	308.80
	IR-F-93	08/03/2025	335+220	335+480	260	1.93	501.80
	IR-F-94	11/03/2025	335+060	335+480	420	1.93	810.60
	IR-F-95	17/03/2025	335+060	335+480	420	2.70	1,134.00
	IR-F-96	23/03/2025	335+060	335+480	420	2.70	1,134.00
اجمالي الكميات خلال فترة المستخلص الحالية (م٣)							6,120.60
الاجمالـي الكلـي (م٣)							49,603.80

مهندس الشركة
م / محمد مصطفي عاشور

مهندس الاستشاري
مكتب XYZ
م / محمد شهاب خليل

مدير المشروع الاستشاري
مكتب / خالد قديل KK
م/ السيدة محمد سيف الدين

مدير مشروع
الهيئة العامة للطرق والكباري
م / مارجريت مجدي زاخر

الهيئة العامة
للطرق و الكباري
(GARB)
وزارة النقل

قائمة الكميات الواردة بالمستخلص جاري (٤)

مشروع : القطار الكهربائى السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع غرب النيل
فى المسافة من الكم ٠٦٠+٣٣٥ الى الكم ٤٨٠+٣٣٥ بطول ٠,٤٢ كم مرحلة الحفر وتشكيل الجسور

رقم البند و بيانه : (٣-١) بالمتر المكعب اعمال توريد وتشغيل اتربة صالحة للردم ومطابقة للمواصفات والتشغيل باستخدام المعدات

تـــنفيـــذ : شركة محمد عبدالله محمد اسماعيل للانشاءات ورصف الطرق عقد رقم ٢٠٢٤/٢٠٢٣/٦١٧

علاوة مسافة نقل تراب بنسبة ٧٥% من اجمالي الكمية

مقدار العمل السابق : 32,612.40 م٣

بند المقايسة	كمية الاعمال بالمقايسة (م٣)							38,811.75
	رقم الطلب	التاريخ	من الكم	الى الكم	الطول	المسطح	نسبة التراب	الكمية
بالمتر المكعب اعمال تحميل وتوريد ونقل اتربة مطابقة للمواصفات وتشغيلها باستخدام الات التسوية بسمك لا يزيد عن ٥٠ سم حتي منسوب -٢ متر و بسمك لا يزيد عن ٢٥ سم لاستكمال المنسوب التصميمى لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن ١٥%) و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (٩٥ % من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق و الكبارى وتعليمات المهندس المشرف. - في حالة طلب جهاز الاشراف زيادة نسبة الدمك ٩٥% يحسب زياده ١ جنيه على زياده نسبة الدمك لكل ١% - مسافة النقل حتى ٢ كم و يتم احتساب علاوه ١,٥ جنيه لكل كم بالزيادة أو النقصان . - السعر يشمل عمل تشوينات و تخليط و اختبارات و نقل لموقع العمل حتى مسافه ٢ كم .	IR-F-62	19/02/2025	335+280	335+480	200	1.92	75%	288.00
	IR-F-68	15/02/2025	335+220	335+280	60	1.92	75%	86.40
	IR-F-87	19/02/2025	335+060	335+220	160	1.92	75%	230.40
	IR-F-88	17/02/2025	335+220	335+280	60	1.92	75%	86.40
	IR-F-89	25/02/2025	335+220	335+480	260	1.92	75%	374.40
	IR-F-90	26/02/2025	335+060	335+220	160	1.93	75%	231.60
	IR-F-91	02/03/2025	335+220	335+480	260	1.93	75%	376.35
	IR-F-92	04/03/2025	335+060	335+220	160	1.93	75%	231.60
	IR-F-93	08/03/2025	335+220	335+480	260	1.93	75%	376.35
	IR-F-94	11/03/2025	335+060	335+480	420	1.93	75%	607.95
	IR-F-95	17/03/2025	335+060	335+480	420	2.70	75%	850.50
	IR-F-96	23/03/2025	335+060	335+480	420	2.70	75%	850.50

اجمالي الكميات خلال فترة المستخلص الحالية (م٣)	4,590.45
الاجمالـي الكلـي (م٣)	37,202.85

مهندس الشركة
م / محمد مصطفي عشور

مهندس الاستشاري
مكتب XYZ
م / محمد شهاب خليل

مدير المشروع الاستشارى
مكتب د/خالد قنديل KK
م/ السيد محمد سيف الدين

مدير مشروع
الهيئة العامة للطرق والكباري
م / مارجريت مجدي زاخر

الهيئة العامة
للطرق و الكباري
(GARB)
وزارة النقل

قائمة الكميات الواردة بالمستخلص جاري (٤)

مشروع : القطار الكهربائى السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع غرب النيل
فى المسافة من الكم ٣٣٥+٠٦٠ الى الكم ٣٣٥+٤٨٠ بطول ٠,٤٢ كم مرحلة الحفر وتشكيل الجسور

رقم البند و بيانه : (٣-١) بالمتر المكعب اعمال توريد وتشغيل اتربة صالحة للردم ومطابقة للمواصفات والتشغيل باستخدام المعدات

تـــنفيـــذ : شركة محمد عبدالله محمد اسماعيل للانشاءات ورصف الطرق عقد رقم ٢٠٢٤/٢٠٢٣/٦١٧

علاوة مسافة نقل رمل بنسبة ٢٥% من اجمالي الكمية

مقدار العمل السابق : 12,828.30 م٣

بند المقايسة	كمية الاعمال بالمقايسة (م٣)						12,937.25
	رقم الطلب	التاريخ	من الكم	الى الكم	الطول	المسطح	نسبة التراب	الكمية
بالمتر المكعب اعمال تحميل وتوريد ونقل اتربة مطابقة للمواصفات وتشغيلها باستخدام الات التسوية بسمك لا يزيد عن ٥٠ سم حتي منسوب -٢ متر و بسمك لا يزيد عن ٢٥ سم لاستكمال المنسوب التصميمى لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن ١٥%) و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (٩٥ % من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق و الكبارى وتعليمات المهندس المشرف. - في حالة طلب جهاز الاشراف زيادة نسبة الدمك ٩٥% يحسب زياده ١ جنيه على زياده نسبة الدمك لكل ١% - مسافة النقل حتى ٢ كم و يتم احتساب علاوه ١,٥ جنيه لكل كم بالزيادة أو النقصان . - السعر يشمل عمل تشوينات و تخليط و اختبارات و نقل لموقع العمل حتى مسافه ٢ كم .	IR-F-62	19/02/2025	335+280	335+480	200	1.92	25%	96.00
	IR-F-68	15/02/2025	335+220	335+280	60	1.92	25%	28.80
	IR-F-87	19/02/2025	335+060	335+220	160	1.92	25%	76.80
	IR-F-88	17/02/2025	335+220	335+280	60	1.92	25%	28.80
	IR-F-89	25/02/2025	335+220	335+480	260	1.92	25%	124.80
	IR-F-90	26/02/2025	335+060	335+220	160	1.93	25%	77.20
	IR-F-91	02/03/2025	335+220	335+480	260	1.93	25%	125.45
	IR-F-92	04/03/2025	335+060	335+220	160	1.93	25%	77.20
	IR-F-93	08/03/2025	335+220	335+480	260	1.93	25%	125.45
	IR-F-94	11/03/2025	335+060	335+480	420	1.93	25%	202.65
	IR-F-95	17/03/2025	335+060	335+480	420	2.70	25%	283.50
	IR-F-96	23/03/2025	335+060	335+480	420	2.70	25%	283.50
اجمالي الكميات خلال فترة المستخلص الحالية (م٣)								1,530.15
الاجمالـي الكلـي (م٣)								14,358.45

مهندس الشركة
م / محمد مصطفي عاشور

مهندس الاستشاري
مكتب XYZ
م / محمد شهاب خليل

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مكتب د/خالد قنديل KK
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الهيئة العامة للطرق والكباري
م / مارجريت مجدي زاخر

الهيئة العامة
للطرق و الكباري
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قائمة الكميات الواردة بالمستخلص جاري (٤)

مشروع : القطار الكهربائى السريع (العين السخنة -العاصمة الادارية -العلمين -مطروح) قطاع غرب النيل
فى المسافة من الكم ٠٦٠+٣٣٥ الى الكم ٤٨٠+٣٣٥ بطول ٠,٤٢ كم مرحلة الحفر وتشكيل الجسور

رقم البند و بيانه : (٣-١) بالمتر المكعب اعمال توريد وتشغيل اتربة صالحة للردم ومطابقة للمواصفات والتشغيل باستخدام المعدات

علاوة تحصيل رسوم الكارتة والموازين طبقا للائحة الشركة الوطنية

تـــنفيـــذ : شركة محمد عبدالله محمد اسماعيل للانشاءات ورصف الطرق عقد رقم ٢٠٢٤/٢٠٢٣/٦١٧

مقدار العمل السابق : 43,483.20 م٣

بند المقايسة	رقم الطلب	التاريخ	من الكم	الى الكم	الطول	المسطح	الكمية
	كمية الاعمال بالمقايسة (م٣)						51,749.00
بالمتر المكعب اعمال تحميل وتوريد ونقل اتربة مطابقة للمواصفات وتشغيلها باستخدام الات التسوية بسمك لا يزيد عن ٥٠ سم حتي منسوب -٢ متر و بسمك لا يزيد عن ٢٥ سم لاستكمال المنسوب التصميمى لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن ١٥%) و رشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى اقصى كثافة جافة (95 % من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق و الكبارى وتعليمات المهندس المشرف. - في حالة طلب جهاز الاشراف زيادة نسبة الدمك ٩٥% يحسب زياده ١ جنيه على زياده نسبة الدمك لكل ١% - مسافة النقل حتى ٢ كم و يتم احتساب علاوه ١,٥ جنيه لكل كم بالزيادة أو النقصان . - السعر يشمل عمل تشوينات و تخليط و اختبارات و نقل لموقع العمل حتى مسافه ٢ كم .	IR-F-62	19/02/2025	335+280	335+480	200	1.92	384.00
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	IR-F-89	25/02/2025	335+220	335+480	260	1.92	499.20
	IR-F-90	26/02/2025	335+060	335+220	160	1.93	308.80
	IR-F-91	02/03/2025	335+220	335+480	260	1.93	501.80
	IR-F-92	04/03/2025	335+060	335+220	160	1.93	308.80
	IR-F-93	08/03/2025	335+220	335+480	260	1.93	501.80
	IR-F-94	11/03/2025	335+060	335+480	420	1.93	810.60
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اجمالي الكميات خلال فترة المستخلص الحالية (م٣)							6,120.60
الاجمالـي الكلـي (م٣)							49,603.80

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م / محمد مصطفي عاشور

مهندس الاستشاري
مكتب XYZ
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مدير المشروع الاستشاري
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مدير مشروع
الهيئة العامة للطرق والكباري
م / مارجريت مجدي زاخر

MATERIAL APPROVAL REQUEST

محمد عبد الله للانشاءات ورصف الطرق

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

الهيئة العامة للطرق و الكباري (GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number			Time	
	Eng. Mohamed moustafa			22/03/2025			08:00	
				BAS-MA-SYS-MAR-F-13				
Received by GARB CONSULTANT	Eng. Sayed Saif		MAR	C1	C2	C3	DO	MM	YY	HH	MM
				335	EW	CS	23	3	25	8	0

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

Description of Materials	Fill Layer			
Location to be Used	From	335+060	TO	335+480
		17+607		18+027
Sample only	Yes	Materials Type	Fill Layer	
Supplier Name	محاجر وادي النطرون - العلمين	Data Sheet provided	YES ATTACHED	
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP	
Prequalification reference		Test Samples Results		
Reference Photos	No/Yes	Other		

Comments by: Eng. SAYED SAIF (KK)	Comments by: if (ER)
1-Quality test Result By third party lab (CEL) is Approved.	1-All tests were carried-out by third party lab (CEL).
2-This Sample Representive (5000 m3) only.	2-Results report attached and acceptable with the project specifications.
	3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margeret Magdy			
Employers Representative	Eng. Karim			A

CEL
Consulting Engineering Bureau & Laboratories
مكتب معامل الإستشارات الهندسية

Company Name	: محمد عبد الله للإنشاءات و رصف الطرق
Project	: **Electric Express Train, from Al Ain Sokhna to Marsa Matrouh**
Type of sample	: **Soil Embankment**
Location	: **St 335+060 : st 335+480**
Delivery Date	: 17/03/2025
Reporting Date	: 23/03/2025
Reporting No.	: 021
Sample No.	: 01

Dear Gentleman,

Attached here with the Soil Embankment delivered on 17/03/2025

Materials test

1. Sieve analysis according to ASTM C-136.
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.
7. Organic Content ASTM D-2974.

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

CEL
مكتب معامل الإستشارات الهندسية
مشروعات الإسكندرية وبرج العرب

Signature /.....

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

IAS ACCREDITED Testing Laboratory

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

Company Name : محمد عبد الله للإنشاءات و رصف الطرق
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment
Location : St 335+060 : st 335+480
Delivery Date : 17/03/2025
Reporting Date : 23/03/2025
Reporting No. : 021
Sample No. : 01

RESULTS OF SIEVE ANALYSIS According to ASTM C136.

Sieve Size (mm)	Passing %
50	100
37.5	100
25	92.9
19	87.4
12.50	73.9
9.50	67.0
4.75	52.9
2.36	50.6
2.00	49.7
1.18	42.5
0.600	34.1
0.425	29.3
0.300	21.6
0.150	16.2

CEL مكتب معامل الاستشارات الهندسية مشروعات الاسكندرية وبرج العرب

Signature /.....

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Zamalek, Cairo.
Tel.& Fax : 27367231 - 27363093

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www.cel-egypt.com

Company Name	: محمد عبد الله للإنشاءات و رصف الطرق
Project	: Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample	: Soil Embankment
Location	: St 335+060 : st 335+480
Delivery Date	: 17/03/2025
Reporting Date	: 23/03/2025
Reporting No.	: 021
Sample No.	: 01

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)	7.3

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Zamalek, Cairo.
Tel.& Fax : 27367231 - 27363093

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

Company Name	: محمد عبد الله للإنشاءات و رصف الطرق
Project	: **Electric Express Train, from Al Ain Sokhna to Marsa Matrouh**
Type of sample	: **Soil Embankment**
Location	: **St 335+060 : st 335+480**
Delivery Date	: **17/03/2025**
Reporting Date	: **23/03/2025**
Reporting No.	: **021**
Sample No.	: **01**

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

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

CEL
مكتب معامل الاستشارات الهندسية
مشروعات الإسكان

Signature /

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

IAS ACCREDITED Testing Laboratory

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

Company Name : محمد عبد الله للإنشاءات و رصف الطرق
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment
Location : St 335+060 : st 335+480
Delivery Date : 17/03/2025
Reporting Date : 23/03/2025
Reporting No. : 021
Sample No. : 01

Soil Classification According to Project Specs (Embankment)

TEST	Results (%)	Limits according Projects Specs	
Group Classification	(A-1-a)	(A-1-a)	(A-1-b)
2.00 mm (No.10).	49.7	Max 50 %	------
0.425 mm (No. 40).	29.3	Max 30 %	Max 50 %
0.075 mm (No. 200).	7.3	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)			
Liquid Limit	NP	------	------
Plasticity index	NP	Max 6 %	Max 6 %

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

Signature / .....

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Tel.& Fax : 27367231 - 27363093

IAS ACCREDITED Testing Laboratory

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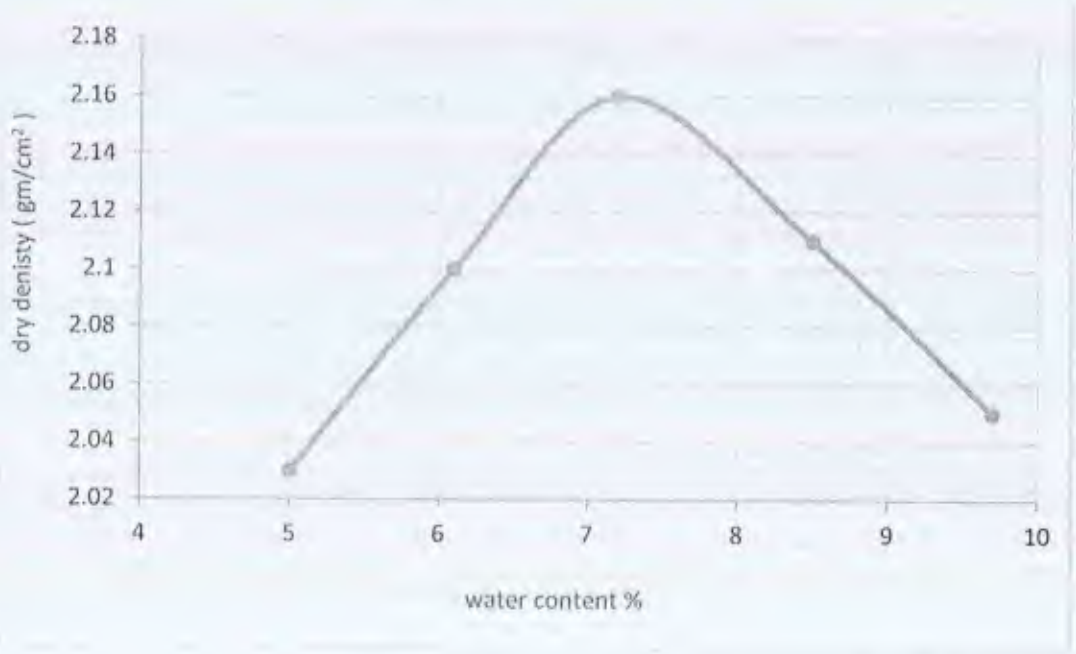
www.cel-egypt.com

Company Name	: محمد عبد الله للإنشاءات و رصف الطرق
Project	: Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample	: Soil Embankment
Location	: St 335+060 : st 335+480
Delivery Date	: 17/03/2025
Reporting Date	: 23/03/2025
Reporting No.	: 021
Sample No.	: 01

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



- **Max dry density (gm/cm²)** : 2.16
- **Optimum moisture content %** : 7.2

Signature / .....

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مكتب معامل الإستشارات الهندسية
مشروعات

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MATERIAL INSPECTION REQUEST

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد قنديل

محمد عبد الله للانشاءات ورصف الطرق

الهيئة العامة للطرق و الكباري (GARB) وزارة النقل

الهيئة القومية للإنفاق

SYSTRA SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/Serial Number			Time			
	Eng. Mohamed moustafa			16/02/2025			3:00 PM			
				BAS-MA-SYS-FDT-F-62						
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	17	2	25	3	0

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

Description of Materials	Fill Layer at level (-1.75 m) from Ferma Under Left Railway				
Location to be Used	From	335+280	TO	335+480	
		17+827		17+887	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-62 rev-2	Date	16/02/2025		
	BAS-MA-SYS-MAR-F-11				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	8	18/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng. A (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
QC SYSTRA	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Kareem Mostafa	Karim	16/2/2025	A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فنديل

محمد عبد الله
للانشاءات وارصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	17/02/2025	FINAL DATE	18/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-62 rev-2		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+290	335+315	335+340	335+365	335+390	335+415	335+440	335+465
		17+837	17+862	17+887	17+912	17+937	17+962	17+987	18+012
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	29	33	32	30	33	29	29
WT. OF CAN+WET SOIL	gms	204	204	204	205	204	205	206	203
WT. OF CAN+DRY SOIL	gms	192	194	192	193	193	195	193	191
WT. OF WATER	gms	12.0	10.0	12.0	12.0	11.0	10.0	13.0	12.0
WT. OF DRY SOIL	gms	159.0	165.0	159.0	161.0	163.0	162.0	164.0	162.0
WATER CONTENT	%	7.5	6.1	7.5	7.5	6.7	6.2	7.9	7.4
WT. OF WET SOIL	gms	3860	3867	3775	3791	3869	3827	3793	3764
WT. OF INITIAL SAND+CONT.	gms	7850	7929	7900	7862	7863	7949	7792	7867
WT. OF RESIDUAL SAND + CONT.	gms	3755	3778	3787	3786	3705	3778	3721	3778
WT. OF SAND TO FILL CONE+HOLE	gms	4095	4151	4113	4076	4158	4171	4071	4089
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2542	2598	2560	2523	2605	2618	2518	2536
UNIT WT. OF SAND	gm/cc	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47
GROSS VOLUME OF HOLE	ccs	1729.3	1767.3	1741.5	1716.3	1772.1	1781.0	1712.9	1725.2
WET UNIT WT. OF SOIL	gm/cc	2.23	2.19	2.17	2.21	2.18	2.15	2.21	2.18
DRY UNIT WT. OF SOIL	gm/cc	2.08	2.06	2.02	2.06	2.05	2.02	2.05	2.03
MAX. DRY DENSITY	gm/cc	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12
OPTIMUM MOISTURE CONTENT	%	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75
COMPACTION	%	**97.90**	**97.31**	**95.07**	**96.96**	**96.47**	**95.47**	**96.78**	**95.82**
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

(GARB)

Contractor Company	Mohamed Abdallah 4 for construction and roads paving			Designer Company				(K.K) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/Serial Number				Time			
	Eng. Mohamed moustafa			15 / 2 / 2025				3:00 PM			
				BAS-MA-SYS-FDT-F-68							
Received by GARB CONSULTANT	Eng.		MIR	C1	C2	C3	DD	MM	YY	ID	MM
				335	EW	CS	16	2	25	3	9

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

Description of Material	Fill Layer at level (-2 m) from Ferma Under run Railway				
Location to be Used	From	335+725	TO	335+280	
		17+767		17+827	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-68 REV 1	Date		15 / 2 / 2025	
	BAS-MA-SYS-MAR-F-11				
Supplier Name	محاجر وادي السرقون - الدلجي				
Test Requirement	F.D.T(ASTM D 1556)	Specification		EARTHWORK SPECIFICATIONS & TESTING REPORT (2021-1.2) VERSION 2 BY EMTSUN GROUP	
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	3	17/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	**Comments by: Eng. Kareem Mostafa (ER)**
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved	1-F.D.T was carried out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed moustafa			A
QA/QC *	Eng. Sayed Saif			A
Systra Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Maryret magdy			
Employers Representative	Eng. Kareem Mostafa	Karim 15/2/2025		A

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	16/02/2025	FINAL DATE	17/02/2025
STAGE OF WORK	Fill Layer at level (-2 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-68 REV-1		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-2 m) from Ferma Under Left Railway		
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm
TEST No.	-	1	2	3
STATION		335+225	335+250	335+275
		17+772	17+797	17+822
CONTAINER No.	-	A-1	A-1	A-1
WEIGHT OF CAN	gms	29	29	31
WT. OF CAN+WET SOIL	gms	205.0	204.0	203.0
WT. OF CAN+DRY SOIL	gms	194.0	192.0	194.0
WT. OF WATER	gms	11.0	12.0	9.0
WT. OF DRY SOIL	gms	165.0	163.0	163.0
WATER CONTENT	%	6.7	7.4	5.5
WT. OF WET SOIL	gms	3751	3849	3848
WT. OF INITIAL SAND+CONT.	gms	7888	7766	7778
WT. OF RESIDUAL SAND + CONT.	gms	3803	3647	3625
WT. OF SAND TO FILL CONE+HOLE	gms	4085	4119	4153
WT. OF SAND TO FILL CONE	gms	1553	1553	1553
WT OF SAND TO FILL HOLE	gms	2532	2566	2600
UNIT WT. OF SAND	gm/cc	1.47	1.47	1.47
GROSS VOLUME OF HOLE	c.c.	1722.4	1745.6	1767.3
WET UNIT WT. OF SOIL	gm/cc	2.18	2.21	2.18
DRY UNIT WT. OF SOIL	gm/cc	2.04	2.05	2.06
MAX. DRY DENSITY	gm/cc	2.12	2.12	2.12
OPTIMUM MOISTURE CONTENT	%	7.75	7.75	7.75
COMPACTION	%	96.30	96.88	97.33
REQUIRED COMPACTION	%	95	95	95
REMARKS		PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name: Eng. Mohamed moustafa	Sign		Date/Serial Number: 17/02/2025 BAS-MA-SYS-FDT-F-87			Time: 3:00 PM		
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1: 335	C2: EW	C3: CS	DD: 18	MM: 2	YY: 25	HH: 3	MM: 0

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

Description of Materials	Fill Layer at level (-1.5 m) from Ferma Under Left Railway		
Location to be Used	From: 335+060 / 17+607	TO: 335+220 / 17+767	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-87 / BAS-MA-SYS-MAR-F-11	Date	17/02/2025
Supplier Name	محاجر وادي النطرون - العلمين		
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No/Yes	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	7	18/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Er : (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. /	18/2/2025		A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/02/2025	FINAL DATE	18/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-87		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	
SAMPLE No.	-	1	2	3	4	5	6	7	
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	
WEIGHT OF CAN	gms	31	33	30	31	33	33	31	
WT. OF CAN+WET SOIL	gms	203	206	203	206	204	203	203	
WT. OF CAN+DRY SOIL	gms	194	195	194	195	192	190	190	
WT. OF WATER	gms	9.0	11.0	9.0	11.0	12.0	13.0	13.0	
WT. OF DRY SOIL	gms	163.0	162.0	164.0	164.0	159.0	157.0	159.0	
WATER CONTENT	%	5.5	6.8	5.5	6.7	7.5	8.3	8.2	
WT. OF WET SOIL	gms	3785	3809	3803	3821	3779	3873	3722	
WT. OF INITIAL SAND+CONT.	gms	7782	7768	7765	7856	7796	7737	7755	
WT. OF RESIDUAL SAND + CONT.	gms	3709	3702	3615	3773	3705	3672	3791	
WT. OF SAND TO FILL CONE+HOLE	gms	4073	4066	4150	4083	4091	4065	3964	
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	
WT.OF SAND TO FILL HOLE	gms	2520	2513	2597	2530	2538	2512	2411	
UNIT WT. OF SAND	gm/cc	1.47	1.47	1.47	1.47	1.47	1.47	1.47	
GROSS VOLUME OF HOLE	ccs	1714.3	1709.5	1766.7	1721.1	1726.5	1708.8	1640.1	
WET UNIT WT. OF SOIL	gm/cc	2.21	2.23	2.15	2.22	2.19	2.27	2.27	
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.09	2.04	2.08	2.04	2.09	2.10	
MAX. DRY DENSITY	gm/cc	2.12	2.12	2.12	2.12	2.12	2.12	2.12	
OPTIMUM MOISTURE CONTENT	%	7.75	7.75	7.75	7.75	7.75	7.75	7.75	
COMPACTION	%	**98.70**	**98.42**	**96.26**	**98.14**	**96.00**	**98.73**	**98.95**	
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			17/02/2025				3:00 PM	
				BAS-MA-SYS-FDT-F-88					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	18	2	25	3	0

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

Description of Materials	Fill Layer at level (-1.75 m) from Ferma Under Left Railway				
Location to be Used	From	335+220	TO	335+280	
		17+767		17+827	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-88	Date	17/02/2025		
	BAS-MA-SYS-MAR-F-11				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	3	18/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng. (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim			A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/02/2025	FINAL DATE	18/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-88		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	1	2	3					
STATION	-	335+230	335+255	335+280					
		17+777	17+802	17+827					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	31	33	31					
WT. OF CAN+WET SOIL	gms	204	207	204					
WT. OF CAN+DRY SOIL	gms	190	194	194					
WT. OF WATER	gms	14.0	13.0	10.0					
WT. OF DRY SOIL	gms	159.0	161.0	163.0					
WATER CONTENT	%	8.8	8.1	6.1					
WT. OF WET SOIL	gms	3871	3728	3792					
WT. OF INITIAL SAND+CONT.	gms	7848	7760	7967					
WT. OF RESIDUAL SAND + CONT.	gms	3795	3756	3808					
WT. OF SAND TO FILL CONE+HOLE	gms	4053	4004	4159					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2500	2451	2606					
UNIT WT. OF SAND	gm/cc	1.47	1.47	1.47					
GROSS VOLUME OF HOLE	ccs	1700.7	1667.3	1772.8					
WET UNIT WT. OF SOIL	gm/cc	2.28	2.24	2.14					
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.07	2.02					
MAX. DRY DENSITY	gm/cc	2.12	2.12	2.12					
OPTIMUM MOISTURE CONTENT	%	7.75	7.75	7.75					
COMPACTION	%	98.68	97.59	95.06					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		PASSED	PASSED	PASSED					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			25/02/2025			3:00 PM		
				BAS-MA-SYS-FDT-F-89					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	26	2	25	3	0

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

Description of Materials	Fill Layer at level (-1.5 m) from Ferma Under Left Railway				
Location to be Used	From	335+220	TO	335+480	
		17+767		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-89	Date	25/02/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	11	27/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng. Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim	Karim 27/2/2025		A

ENGINEERING CONSULTING OFFICE
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الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للإنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	26/02/2025	FINAL DATE	27/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-89		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+230	335+255	335+280	335+305	335+330	335+355	335+380	335+405
		17+777	17+802	17+827	17+852	17+877	17+902	17+927	17+952
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	32	33	31	33	32	32	29
WT. OF CAN+WET SOIL	gms	204	205	204	203	207	206	206	208
WT. OF CAN+DRY SOIL	gms	193	193	190	191	194	191	192	190
WT. OF WATER	gms	11.0	12.0	14.0	12.0	13.0	15.0	14.0	18.0
WT. OF DRY SOIL	gms	160.0	161.0	157.0	160.0	161.0	159.0	160.0	161.0
WATER CONTENT	%	6.9	7.5	8.9	7.5	8.1	9.4	8.8	11.2
WT. OF WET SOIL	gms	3778	3807	3865	3773	3855	3756	3800	3774
WT. OF INITIAL SAND+CONT.	gms	7848	7745	7756	7776	7797	7716	7747	7744
WT. OF RESIDUAL SAND + CONT.	gms	3819	3682	3712	3774	3693	3762	3758	3792
WT. OF SAND TO FILL CONE+HOLE	gms	4029	4063	4044	4002	4104	3954	3989	3952
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2476	2510	2491	2449	2551	2401	2436	2399
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1673.0	1695.9	1683.1	1654.7	1723.6	1622.3	1645.9	1620.9
WET UNIT WT. OF SOIL	gm/cc	2.26	2.24	2.30	2.28	2.24	2.32	2.31	2.33
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.09	2.11	2.12	2.07	2.12	2.12	2.09
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	**98.28**	**97.17**	**98.06**	**98.65**	**96.25**	**98.40**	**98.74**	**97.40**
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	26/02/2025	FINAL DATE	27/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-89		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	9	10	11					
STATION	-	335+430	335+455	335+480					
		17+777	17+802	17+827					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	33	30	29					
WT. OF CAN+WET SOIL	gms	205	204	206					
WT. OF CAN+DRY SOIL	gms	192	191	190					
WT. OF WATER	gms	13.0	13.0	16.0					
WT. OF DRY SOIL	gms	159.0	161.0	161.0					
WATER CONTENT	%	8.2	8.1	9.9					
WT. OF WET SOIL	gms	3773	3874	3894					
WT. OF INITIAL SAND+CONT.	gms	7764	7789	7818					
WT. OF RESIDUAL SAND + CONT.	gms	3764	3682	3767					
WT. OF SAND TO FILL CONE+HOLE	gms	4000	4107	4051					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2447	2554	2498					
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48					
GROSS VOLUME OF HOLE	ccs	1653.4	1725.7	1687.8					
WET UNIT WT. OF SOIL	gm/cc	2.28	2.24	2.31					
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.08	2.10					
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15					
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10					
COMPACTION	%	98.12	96.61	97.61					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		PASSED	PASSED	PASSED					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			26/02/2025				3:00 PM	
				BAS-MA-SYS-FDT-F-90					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	27	2	25	3	0

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

Description of Materials	Fill Layer at level (-1.25 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+220	
		17+607		17+767	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-90	Date	26/02/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	7	28/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: E Karim ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. S ed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim	Karim		A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

قطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	27/02/2025	FINAL DATE	28/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-90		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	
SAMPLE No.	-	1	2	3	4	5	6	7	
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	
WEIGHT OF CAN	gms	32	30	31	32	30	33	32	
WT. OF CAN+WET SOIL	gms	206	205	206	205	206	207	207	
WT. OF CAN+DRY SOIL	gms	192	194	193	193	193	195	195	
WT. OF WATER	gms	14.0	11.0	13.0	12.0	13.0	12.0	12.0	
WT. OF DRY SOIL	gms	160.0	164.0	162.0	161.0	163.0	162.0	163.0	
WATER CONTENT	%	8.8	6.7	8.0	7.5	8.0	7.4	7.4	
WT. OF WET SOIL	gms	3782	3859	3806	3848	3796	3840	3886	
WT. OF INITIAL SAND+CONT.	gms	7714	7948	7745	7817	7734	7923	7877	
WT. OF RESIDUAL SAND + CONT.	gms	3693	3793	3683	3701	3728	3831	3798	
WT. OF SAND TO FILL CONE+HOLE	gms	4021	4155	4062	4116	4006	4092	4079	
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	
WT.OF SAND TO FILL HOLE	gms	2468	2602	2509	2563	2453	2539	2526	
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	
GROSS VOLUME OF HOLE	ccs	1667.6	1758.1	1695.3	1731.8	1657.4	1715.5	1706.8	
WET UNIT WT. OF SOIL	gm/cc	2.27	2.19	2.25	2.22	2.29	2.24	2.28	
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.06	2.08	2.07	2.12	2.08	2.12	
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	
COMPACTION	%	97.00	95.67	96.66	96.18	98.66	96.93	98.64	
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			2 / 3 / 2025 BAS-MA-SYS-FDT-F-91			3:00 PM		
Received by GARB CONSULTANT	Eng.		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	3	3	25	3	0

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

Description of Materials	Fill Layer at level (-1.25 m) from Ferma Under Left Railway				
Location to be Used	From	335+220 17+767	TO	335+480 18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-91 BAS-MA-SYS-MAR-F-12	Date	2 / 3 / 2025		
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	11	04/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng. Kareem Mostafa (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed moustafa			A
QA/QC *	Eng. Sayed Saif			A
Systra Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Kareem Mostafa			A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبدالله
للانشاءات ورصف الطرق

الهيئة العامة للطرق و الكباري (GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	03/03/2025	FINAL DATE	04/03/2025
STAGE OF WORK :	**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-91		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+225	335+250	335+275	335+300	335+325	335+350	335+375	335+400
		17+772	17+797	17+822	17+847	17+872	17+897	17+922	17+947
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	31	33	29	32	33	29	30
WT. OF CAN+WET SOIL	gms	207.0	206.0	205.0	205.0	203.0	208.0	208.0	207.0
WT. OF CAN+DRY SOIL	gms	193.0	195.0	191.0	191.0	195.0	193.0	195.0	194.0
WT. OF WATER	gms	14.0	11.0	14.0	14.0	8.0	15.0	13.0	13.0
WT. OF DRY SOIL	gms	160.0	164.0	158.0	162.0	163.0	160.0	166.0	164.0
WATER CONTENT	%	8.8	6.7	8.9	8.6	4.9	9.4	7.8	7.9
WT. OF WET SOIL	gms	3784	3784	3832	3814	3834	3850	3779	3787
WT. OF INITIAL SAND+CONT.	gms	7714	7751	7747	7891	7887	7812	7782	7777
WT. OF RESIDUAL SAND + CONT.	gms	3662	3722	3724	3837	3728	3738	3804	3743
WT. OF SAND TO FILL CONE+HOLE	gms	4052	4029	4023	4054	4159	4074	3978	4034
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2499	2476	2470	2501	2606	2521	2425	2481
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1688.5	1673.0	1668.9	1689.9	1760.8	1703.4	1638.5	1676.4
WET UNIT WT. OF SOIL	gm/cc	2.24	2.26	2.30	2.26	2.18	2.26	2.31	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.06	2.12	2.11	2.08	2.08	2.07	2.14	2.09
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	**95.85**	**98.59**	**98.10**	**96.63**	**96.54**	**96.12**	**99.48**	**97.36**
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبدالله للانشاءات ورصف الطرق

الهيئة العامة للطرق و الكباري (GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	03/03/2025	FINAL DATE	04/03/2025
STAGE OF WORK :	Fill Layer at level (-1.25 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-91		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-1.25 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	9	10	11					
STATION	-	335+425	335+450	335+475					
		17+972	17+997	18+022					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	32	31	32					
WT. OF CAN+WET SOIL	gms	203.0	204.0	204.0					
WT. OF CAN+DRY SOIL	gms	190.0	191.0	193.0					
WT. OF WATER	gms	13.0	13.0	11.0					
WT. OF DRY SOIL	gms	158.0	160.0	161.0					
WATER CONTENT	%	8.2	8.1	6.8					
WT. OF WET SOIL	gms	3871	3836	3843					
WT. OF INITIAL SAND+CONT.	gms	7860	7736	7888					
WT. OF RESIDUAL SAND + CONT.	gms	3761	3664	3801					
WT. OF SAND TO FILL CONE+HOLE	gms	4099	4072	4087					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2546	2519	2534					
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48					
GROSS VOLUME OF HOLE	ccs	1720.3	1702.0	1712.2					
WET UNIT WT. OF SOIL	gm/cc	2.25	2.25	2.24					
DRY UNIT WT. OF SOIL	gm/cc	2.08	2.08	2.10					
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15					
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10					
COMPACTION	%	96.71	96.95	97.72					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		PASSED	PASSED	PASSED					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فديل

محمد عبد الله
للانشاءات وارصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			04/03/2025 BAS-MA-SYS-FDT-F-92			3:00 PM		
Received by GARB CONSULTANT	Eng. Sayed Saif	for	MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	5	3	25	3	0

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

Description of Materials	Fill Layer at level (-1 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+220	
		17+607		17+767	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-92	Date	04/03/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	7	06/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) **is Approved.**	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif	for		A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim	Karim		A

ENGINEERING CONSULTING OFFICE
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الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

قطار كهربائي سريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	05/03/2025	FINAL DATE	06/03/2025
STAGE OF WORK :	Fill Layer at level (-1 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-92		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-1 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	
SAMPLE No.	-	1	2	3	4	5	6	7	
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	
WEIGHT OF CAN	gms	33	33	32	31	31	31	29	
WT. OF CAN+WET SOIL	gms	205	205	205	203	207	205	203	
WT. OF CAN+DRY SOIL	gms	192	191	193	190	193	192	193	
WT. OF WATER	gms	13.0	14.0	12.0	13.0	14.0	13.0	10.0	
WT. OF DRY SOIL	gms	159.0	158.0	161.0	159.0	162.0	161.0	164.0	
WATER CONTENT	%	8.2	8.9	7.5	8.2	8.6	8.1	6.1	
WT. OF WET SOIL	gms	3765	3785	3871	3783	3883	3748	3865	
WT. OF INITIAL SAND+CONT.	gms	7783	7791	7837	7766	7848	7741	7722	
WT. OF RESIDUAL SAND + CONT.	gms	3765	3735	3695	3736	3726	3733	3641	
WT. OF SAND TO FILL CONE+HOLE	gms	4018	4056	4142	4030	4122	4008	4081	
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	
WT.OF SAND TO FILL HOLE	gms	2465	2503	2589	2477	2569	2455	2528	
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	
GROSS VOLUME OF HOLE	ccs	1665.5	1691.2	1749.3	1673.6	1735.8	1658.8	1708.1	
WET UNIT WT. OF SOIL	gm/cc	2.26	2.24	2.21	2.26	2.24	2.26	2.26	
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.06	2.06	2.09	2.06	2.09	2.13	
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	
COMPACTION	%	**97.19**	**95.62**	**95.78**	**97.19**	**95.77**	**97.24**	**99.20**	
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			8/3/2025 BAS-MA-SYS-FDT-F-93				3:00 PM	
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DO	MM	YY	HH	MM
				335	EW	CS	9	3	25	3	0

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

Description of Materials	Fill Layer at level (-1 m) from Ferma Under Left Railway				
Location to be Used	From	335+220	TO	335+480	
		17+767		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-93		Date	8/3/2025	
	AS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP	
Reference Photos	No/Yes		Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	11	10/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng Karim	Karim 2025		A

ENGINEERING CONSULTING OFFICE
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للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	09/03/2025	FINAL DATE	10/03/2025
STAGE OF WORK :	**Fill Layer at level (-1 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-93		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+230	335+255	335+280	335+305	335+330	335+355	335+380	335+405
		17+777	17+802	17+827	17+852	17+877	17+902	17+927	17+952
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	29	32	29	31	32	29	30	30
WT. OF CAN+WET SOIL	gms	205	206	204	207	207	204	204	207
WT. OF CAN+DRY SOIL	gms	190	192	195	191	192	191	193	192
WT. OF WATER	gms	15.0	14.0	9.0	16.0	15.0	13.0	11.0	15.0
WT. OF DRY SOIL	gms	161.0	160.0	166.0	160.0	160.0	162.0	163.0	160.2
WATER CONTENT	%	9.3	8.8	5.4	10.0	9.4	8.0	6.7	9.4
WT. OF WET SOIL	gms	3854	3887	3845	3896	3764	3763	3845	3868
WT. OF INITIAL SAND+CONT.	gms	7868	7888	7971	7722	7846	7726	7728	7718
WT. OF RESIDUAL SAND + CONT.	gms	3823	3792	3845	3700	3843	3749	3646	3629
WT. OF SAND TO FILL CONE+HOLE	gms	4045	4096	4126	4022	4003	3977	4082	4089
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2492	2543	2573	2469	2450	2424	2529	2536
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1683.8	1718.2	1738.5	1668.2	1655.4	1637.8	1708.8	1713.5
WET UNIT WT. OF SOIL	gm/cc	2.29	2.26	2.21	2.34	2.27	2.30	2.25	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.0	2.08	2.10	2.12	2.08	2.13	2.11	2.06
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.1
COMPACTION	%	**97.39**	**96.75**	**97.58**	**98.75**	**96.69**	**98.92**	**98.04**	**96.00**
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
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الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	09/03/2025	FINAL DATE	10/03/2025
STAGE OF WORK :	**Fill Layer at level (-1 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-93		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	9	10	11					
STATION	-	335+425	335+450	335+475					
		17+777	17+802	17+827					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	29	29	33					
WT. OF CAN+WET SOIL	gms	206	207	203					
WT. OF CAN+DRY SOIL	gms	192	195	193					
WT. OF WATER	gms	14.0	12.0	10.0					
WT. OF DRY SOIL	gms	163.0	166.0	160.0					
WATER CONTENT	%	8.6	7.2	6.3					
WT. OF WET SOIL	gms	3849	3755	3838					
WT. OF INITIAL SAND+CONT.	gms	7812	7824	7900					
WT. OF RESIDUAL SAND + CONT.	gms	3772	3836	3768					
WT. OF SAND TO FILL CONE+HOLE	gms	4040	3988	4132					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2487	2435	2579					
UNIT WT. OF SAND	gm/cc	1.4[illegible]	1.48	1.48					
GROSS VOLUME OF HOLE	ccs	1680.4	1645.3	1742.6					
WET UNIT WT. OF SOIL	gm/cc	2.29	2.28	2.20					
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.13	2.07					
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15					
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10					
COMPACTION	%	**98.11**	**99.00**	**96.42**					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		**PASSED**	**PASSED**	**PASSED**					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			11/3/2025				3:00 PM	
				BAS-MA-SYS-FDT-F-94					
Received by GARB CONSULTANT	Eng. Sayed Saif for		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	12	3	25	3	0

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

Description of Materials	Fill Layer at level (-0.75 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+480	
		17+607		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-94	Date	11/3/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	17	13/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif for			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng.			A

ENGINEERING CONSULTING OFFICE
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(GARB)

وزارة النقل

الهيئة القومية للإنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	12/03/2025	FINAL DATE	13/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-94		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	335+245
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	17+792
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	30	33	31	31	29	29	31
WT. OF CAN+WET SOIL	gms	205	205	208	207	206	208	207	205
WT. OF CAN+DRY SOIL	gms	195	192	190	191	191	192	190	194
WT. OF WATER	gms	10.0	13.0	18.0	16.0	15.0	16.0	17.0	11.0
WT. OF DRY SOIL	gms	162.0	162.0	157.0	160.0	160.0	163.0	161.0	160.2
WATER CONTENT	%	6.2	8.0	11.5	10.0	9.4	9.8	10.6	6.9
WT. OF WET SOIL	gms	3860	3859	3844	3841	3887	3856	3812	3879
WT. OF INITIAL SAND+CONT.	gms	7796	7756	7827	7802	7813	7753	7787	7807
WT. OF RESIDUAL SAND + CONT.	gms	3695	3657	3835	3771	3786	3707	3839	3734
WT. OF SAND TO FILL CONE+HOLE	gms	4101	4099	3992	4031	4027	4046	3948	4073
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2548	2546	2439	2478	2474	2493	2395	2520
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1721.6	1720.3	1648.0	1674.3	1671.6	1684.5	1618.2	1702.7
WET UNIT WT. OF SOIL	gm/cc	2.24	2.24	2.33	2.29	2.33	2.29	2.36	2.28
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.08	2.09	2.09	2.13	2.08	2.13	2.13
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	98.22	96.59	97.33	97.00	98.88	96.96	99.10	99.15
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	12/03/2025	FINAL DATE	13/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-94		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	9	10	11	12	13	14	15	16
STATION	-	335+270	335+295	335+320	335+345	335+370	335+395	335+420	335+445
		17+817	17+842	17+867	17+892	17+917	17+942	17+967	17+992
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	33	30	29	32	31	32	30
WT. OF CAN+WET SOIL	gms	207	207	208	204	204	203	207	208
WT. OF CAN+DRY SOIL	gms	195	192	195	195	191	195	191	193
WT. OF WATER	gms	12.0	15.0	13.0	9.0	13.0	8.0	16.0	15.0
WT. OF DRY SOIL	gms	162.0	159.0	165.0	166.0	159.0	164.0	163.0	160.2
WATER CONTENT	%	7.4	9.4	7.9	5.4	8.2	4.9	9.8	9.4
WT. OF WET SOIL	gms	3877	3878	3718	3721	3866	3714	3816	3736
WT. OF INITIAL SAND+CONT.	gms	7815	7776	7828	7859	7834	7901	7817	7834
WT. OF RESIDUAL SAND + CONT.	gms	3726	3733	3844	3760	3725	3840	3850	3832
WT. OF SAND TO FILL CONE+HOLE	gms	4089	4043	3984	4099	4109	4061	3967	4002
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2536	2490	2431	2546	2556	2508	2414	2449
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1713.5	1682.4	1642.6	1720.3	1727.0	1694.6	1631.1	1654.7
WET UNIT WT. OF SOIL	gm/cc	2.26	2.30	2.26	2.16	2.24	2.19	2.34	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.11	2.10	2.05	2.07	2.09	2.13	2.06
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	97.98	97.97	97.59	95.43	96.25	97.20	99.09	96.02
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	12/03/2025	FINAL DATE	13/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-94		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm							
SAMPLE No.	-	17							
STATION	-	335+470							
		18+017							
CONTAINER No.	-	A-1							
WEIGHT OF CAN	gms	29							
WT. OF CAN+WET SOIL	gms	205							
WT. OF CAN+DRY SOIL	gms	195							
WT. OF WATER	gms	10.0							
WT. OF DRY SOIL	gms	166.0							
WATER CONTENT	%	6.0							
WT. OF WET SOIL	gms	3869							
WT. OF INITIAL SAND+CONT.	gms	7823							
WT. OF RESIDUAL SAND + CONT.	gms	3718							
WT. OF SAND TO FILL CONE+HOLE	gms	4105							
WT.OF SAND TO FILL CONE	gms	1553							
WT.OF SAND TO FILL HOLE	gms	2552							
UNIT WT. OF SAND	gm/cc	1.48							
GROSS VOLUME OF HOLE	ccs	1724.3							
WET UNIT WT. OF SOIL	gm/cc	2.24							
DRY UNIT WT. OF SOIL	gm/cc	2.12							
MAX. DRY DENSITY	gm/cc	2.15							
OPTIMUM MOISTURE CONTENT	%	7.10							
COMPACTION	%	98.43							
REQUIRED COMPACTION	%	95							
REMARKS		PASSED							

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فتحيل

محمد عبد الله
للإنشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			17/3/2025			3:00 PM		
				BAS-MA-SYS-FDT-F-95					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	18	3	25	3	0

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

Description of Materials	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Location to be Used	From	335+060 / 17+607	TO 335+480 / 18+027
MAR & UIR Approval No	BAS-MA-SYS-IR-F-95 / BAS-MA-SYS-MAR-F-12	Date	17/3/2025
Supplier Name	محاجر وادي النطرون - العلمين		
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No/Yes	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	17	19/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif	for		A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng Karim	Karim 17/3/2025		A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/03/2025	FINAL DATE	19/03/2025
STAGE OF WORK :	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-95		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.5 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	335+245
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	17+792
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	30	29	29	30	33	31	31	32
WT. OF CAN+WET SOIL	gms	203	204	206	205	207	208	208	208
WT. OF CAN+DRY SOIL	gms	193	195	192	195	195	190	193	191
WT. OF WATER	gms	10.0	9.0	14.0	10.0	12.0	18.0	15.0	17.0
WT. OF DRY SOIL	gms	163.0	166.0	163.0	165.0	162.0	159.0	162.0	160.2
WATER CONTENT	%	6.1	5.4	8.6	6.1	7.4	11.3	9.3	10.6
WT. OF WET SOIL	gms	3761	3850	3784	3750	3892	3890	3712	3894
WT. OF INITIAL SAND+CONT.	gms	7796	7772	7722	7917	7782	7774	7730	7934
WT. OF RESIDUAL SAND + CONT.	gms	3737	3694	3765	3811	3626	3781	3731	3836
WT. OF SAND TO FILL CONE+HOLE	gms	4059	4078	3957	4106	4156	3993	3999	4098
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2506	2525	2404	2553	2603	2440	2446	2545
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1693.2	1706.1	1624.3	1725.0	1758.8	1648.6	1652.7	1719.6
WET UNIT WT. OF SOIL	gm/cc	2.22	2.26	2.33	2.17	2.21	2.36	2.25	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.14	2.15	2.05	2.06	2.12	2.06	2.05
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	97.34	99.56	99.78	95.33	95.83	98.58	95.61	95.22
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/03/2025	FINAL DATE	19/03/2025
STAGE OF WORK :	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-95		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.5 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	9	10	11	12	13	14	15	16
STATION	-	335+270	335+295	335+320	335+345	335+370	335+395	335+420	335+445
		17+817	17+842	17+867	17+892	17+917	17+942	17+967	17+992
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	31	32	33	29	29	30	30	30
WT. OF CAN+WET SOIL	gms	206	208	203	203	206	206	205	206
WT. OF CAN+DRY SOIL	gms	195	194	192	191	190	193	191	192
WT. OF WATER	gms	11.0	14.0	11.0	12.0	16.0	13.0	14.0	14.0
WT. OF DRY SOIL	gms	164.0	162.0	159.0	162.0	161.0	163.0	163.0	160.2
WATER CONTENT	%	6.7	8.6	6.9	7.4	9.9	8.0	8.6	8.7
WT. OF WET SOIL	gms	3791	3829	3819	3830	3899	3806	3786	3770
WT. OF INITIAL SAND+CONT.	gms	7759	7860	7750	7814	7843	7727	7729	7875
WT. OF RESIDUAL SAND + CONT.	gms	3709	3821	3686	3725	3800	3699	3697	3820
WT. OF SAND TO FILL CONE+HOLE	gms	4050	4039	4064	4089	4043	4028	4032	4055
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2497	2486	2511	2536	2490	2475	2479	2502
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1687.2	1679.7	1696.6	1713.5	1682.4	1672.3	1675.0	1690.5
WET UNIT WT. OF SOIL	gm/cc	2.25	2.28	2.25	2.24	2.32	2.28	2.26	2.23
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.10	2.11	2.08	2.11	2.11	2.08	2.05
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	97.94	97.59	97.92	96.79	98.05	98.04	96.81	95.39
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/03/2025	FINAL DATE	19/03/2025
STAGE OF WORK :	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-95		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.5 m) from Ferma Under Left Railway
DEPTH OF HOLE	cm	15 cm

SAMPLE No.	-	17
STATION	-	335+470
		18+017
CONTAINER No.	-	A-1
WEIGHT OF CAN	gms	30
WT. OF CAN+WET SOIL	gms	207
WT. OF CAN+DRY SOIL	gms	190
WT. OF WATER	gms	17.0
WT. OF DRY SOIL	gms	160.0
WATER CONTENT	%	10.6

WT. OF WET SOIL	gms	3840
WT. OF INITIAL SAND+CONT.	gms	7719
WT. OF RESIDUAL SAND + CONT.	gms	3742
WT. OF SAND TO FILL CONE+HOLE	gms	3977
WT.OF SAND TO FILL CONE	gms	1553
WT.OF SAND TO FILL HOLE	gms	2424
UNIT WT. OF SAND	gm/cc	1.48
GROSS VOLUME OF HOLE	ccs	1637.8
WET UNIT WT. OF SOIL	gm/cc	2.34
DRY UNIT WT. OF SOIL	gm/cc	2.12
MAX. DRY DENSITY	gm/cc	2.15
OPTIMUM MOISTURE CONTENT	%	7.10
COMPACTION	%	98.58
REQUIRED COMPACTION	%	95
REMARKS		PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

Company Name : محمد عبد الله للإنشاءات و رصف الطرق
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Soil Embankment
Location : St 335+060 : st 335+480
Delivery Date : 17/03/2025
Reporting Date : 23/03/2025
Reporting No. : 021
Sample No. : 01

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

Penetration		Stress on piston (MPa)
mm	Inch	
0.64	0.025	0.74
1.27	0.050	1.36
1.91	0.075	2.28
2.54	0.100	3.20
3.18	0.125	3.51
3.81	0.150	3.88
4.45	0.175	4.19
5.08	0.200	4.67
5.71	0.225	5.07
6.35	0.250	5.54

CBR Result	Stress (MPa)		CBR %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.20	45.3

Notes:

1- Attached graph shows penetration resistance versus penetration magnitude.
2- The sample was compacted to dry density of 2.16 (gm /cm^3) at 7.2 % optimum water content.
3- Surcharge load 4.50 Kg.

مكتب معامل الاستشارات الهندسية
مشروعات الأنفاق والطرق

Signature / .....

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

IAS ACCREDITED Testing Laboratory

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MATERIAL INSPECTION REQUEST

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فديل

محمد عبد الله للانشاءات وصف الطرق

الهيئة العامة للطرق و الكباري (GARB) وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SALINI SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number				Time		
	Eng. Mohamed moustafa			23/3/2025				3:00 PM		
				BAS-MA-SYS-FDT-F-96						
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	C5	24	3	25	3	0

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

Description of Materials	Fill Layer at level (-0.25 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+480	
		17+607		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-96	Date	23/3/2025		
	BAS-MA-SYS-MAR-F-13				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	17	25/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A w c
SYSTRA Consultant	Eng. Hamouda Ali			
GARB**	Eng. Margret magdy			
Employers Representative	Eng. / Karim	Karim 25 2025		A - w C

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للإنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	24/03/2025	FINAL DATE	25/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-96		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	335+245
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	17+792
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	29	30	33	32	30	33	29	30
WT. OF CAN+WET SOIL	gms	208	204	206	203	205	207	203	204
WT. OF CAN+DRY SOIL	gms	194	194	194	193	191	191	194	194
WT. OF WATER	gms	14.0	10.0	12.0	10.0	14.0	16.0	9.0	10.0
WT. OF DRY SOIL	gms	165.0	164.0	161.0	161.0	161.0	158.0	165.0	160.2
WATER CONTENT	%	8.5	6.1	7.5	6.2	8.7	10.1	5.5	6.2
WT. OF WET SOIL	gms	3777	3765	3792	3882	3768	3844	3828	3859
WT. OF INITIAL SAND+CONT.	gms	7828	7792	7751	7705	7711	7780	7809	7816
WT. OF RESIDUAL SAND + CONT.	gms	3765	3685	3699	3531	3754	3796	3745	3649
WT. OF SAND TO FILL CONE+HOLE	gms	4063	4107	4052	4174	3957	3984	4064	4167
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2510	2554	2499	2621	2404	2431	2511	2614
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1695.9	1725.7	1688.5	1770.9	1624.3	1642.6	1696.6	1766.2
WET UNIT WT. OF SOIL	gm/cc	2.23	2.18	2.25	2.19	2.32	2.34	2.26	2.18
DRY UNIT WT. OF SOIL	gm/cc	2.05	2.06	2.09	2.06	2.13	2.13	2.14	2.06
MAX. DRY DENSITY	gm/cc	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
OPTIMUM MOISTURE CONTENT	%	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
COMPACTION	%	95.04	95.20	96.76	95.55	98.80	98.38	99.05	95.21
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات وصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

قطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	24/03/2025	FINAL DATE	25/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-96		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	9	10	11	12	13	14	15	16
STATION	-	335+270	335+295	335+320	335+345	335+370	335+395	335+420	335+445
		17+817	17+842	17+867	17+892	17+917	17+942	17+967	17+992
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	31	29	30	31	33	30	31	32
WT. OF CAN+WET SOIL	gms	203	208	203	203	203	205	203	207
WT. OF CAN+DRY SOIL	gms	192	190	190	194	194	190	190	190
WT. OF WATER	gms	11.0	18.0	13.0	9.0	9.0	15.0	13.0	17.0
WT. OF DRY SOIL	gms	161.0	161.0	160.0	163.0	161.0	160.0	163.0	160.2
WATER CONTENT	%	6.8	11.2	8.1	5.5	5.6	9.4	8.0	10.6
WT. OF WET SOIL	gms	3762	3788	3778	3822	3815	3881	3866	3855
WT. OF INITIAL SAND+CONT.	gms	7783	7713	7779	7867	7869	7742	7878	7738
WT. OF RESIDUAL SAND + CONT.	gms	3711	3782	3738	3715	3724	3663	3816	3736
WT. OF SAND TO FILL CONE+HOLE	gms	4072	3931	4041	4152	4145	4079	4062	4002
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2519	2378	2488	2599	2592	2526	2509	2449
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1702.0	1606.8	1681.1	1756.1	1751.4	1706.8	1695.3	1654.7
WET UNIT WT. OF SOIL	gm/cc	2.21	2.36	2.25	2.18	2.18	2.27	2.28	2.33
DRY UNIT WT. OF SOIL	gm/cc	2.07	2.12	2.08	2.06	2.06	2.08	2.11	2.11
MAX. DRY DENSITY	gm/cc	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
OPTIMUM MOISTURE CONTENT	%	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
COMPACTION	%	95.78	98.17	96.23	95.49	95.51	96.25	97.78	97.51
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
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محمد عبد الله
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(GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	24/03/2025	FINAL DATE	25/03/2025
STAGE OF WORK :	Fill Layer at level (-0.25 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-96		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.25 m) from Ferma Under Left Railway								
DEPTH OF HOLE	cm	15 cm								
SAMPLE No.	-	17								
STATION	-	335+470								
		18+017								
CONTAINER No.	-	A-1								
WEIGHT OF CAN	gms	32								
WT. OF CAN+WET SOIL	gms	207								
WT. OF CAN+DRY SOIL	gms	190								
WT. OF WATER	gms	17.0								
WT. OF DRY SOIL	gms	158.0								
WATER CONTENT	%	10.8								
WT. OF WET SOIL	gms	3781								
WT. OF INITIAL SAND+CONT.	gms	7769								
WT. OF RESIDUAL SAND + CONT.	gms	3764								
WT. OF SAND TO FILL CONE+HOLE	gms	4005								
WT.OF SAND TO FILL CONE	gms	1553								
WT.OF SAND TO FILL HOLE	gms	2452								
UNIT WT. OF SAND	gm/cc	1.48								
GROSS VOLUME OF HOLE	ccs	1656.8								
WET UNIT WT. OF SOIL	gm/cc	2.28								
DRY UNIT WT. OF SOIL	gm/cc	2.06								
MAX. DRY DENSITY	gm/cc	2.16								
OPTIMUM MOISTURE CONTENT	%	7.20								
COMPACTION	%	95.39								
REQUIRED COMPACTION	%	95								
REMARKS		PASSED								

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name: Eng. Mohamed moustafa	Sign		Date/Serial Number: 17/02/2025 BAS-MA-SYS-FDT-F-87			Time: 3:00 PM		
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1: 335	C2: EW	C3: CS	DD: 18	MM: 2	YY: 25	HH: 3	MM: 0

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

Description of Materials	Fill Layer at level (-1.5 m) from Ferma Under Left Railway		
Location to be Used	From: 335+060 / 17+607	TO: 335+220 / 17+767	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-87 / BAS-MA-SYS-MAR-F-11	Date	17/02/2025
Supplier Name	محاجر وادي النطرون - العلمين		
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No/Yes	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	7	18/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Er : (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. /	18/2/2025		A

ENGINEERING CONSULTING OFFICE
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محمد عبد الله
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(GARB)

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الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/02/2025	FINAL DATE	18/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-87		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	
SAMPLE No.	-	1	2	3	4	5	6	7	
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	
WEIGHT OF CAN	gms	31	33	30	31	33	33	31	
WT. OF CAN+WET SOIL	gms	203	206	203	206	204	203	203	
WT. OF CAN+DRY SOIL	gms	194	195	194	195	192	190	190	
WT. OF WATER	gms	9.0	11.0	9.0	11.0	12.0	13.0	13.0	
WT. OF DRY SOIL	gms	163.0	162.0	164.0	164.0	159.0	157.0	159.0	
WATER CONTENT	%	5.5	6.8	5.5	6.7	7.5	8.3	8.2	
WT. OF WET SOIL	gms	3785	3809	3803	3821	3779	3873	3722	
WT. OF INITIAL SAND+CONT.	gms	7782	7768	7765	7856	7796	7737	7755	
WT. OF RESIDUAL SAND + CONT.	gms	3709	3702	3615	3773	3705	3672	3791	
WT. OF SAND TO FILL CONE+HOLE	gms	4073	4066	4150	4083	4091	4065	3964	
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	
WT.OF SAND TO FILL HOLE	gms	2520	2513	2597	2530	2538	2512	2411	
UNIT WT. OF SAND	gm/cc	1.47	1.47	1.47	1.47	1.47	1.47	1.47	
GROSS VOLUME OF HOLE	ccs	1714.3	1709.5	1766.7	1721.1	1726.5	1708.8	1640.1	
WET UNIT WT. OF SOIL	gm/cc	2.21	2.23	2.15	2.22	2.19	2.27	2.27	
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.09	2.04	2.08	2.04	2.09	2.10	
MAX. DRY DENSITY	gm/cc	2.12	2.12	2.12	2.12	2.12	2.12	2.12	
OPTIMUM MOISTURE CONTENT	%	7.75	7.75	7.75	7.75	7.75	7.75	7.75	
COMPACTION	%	**98.70**	**98.42**	**96.26**	**98.14**	**96.00**	**98.73**	**98.95**	
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			17/02/2025				3:00 PM	
				BAS-MA-SYS-FDT-F-88					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	18	2	25	3	0

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

Description of Materials	Fill Layer at level (-1.75 m) from Ferma Under Left Railway				
Location to be Used	From	335+220	TO	335+280	
		17+767		17+827	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-88	Date	17/02/2025		
	BAS-MA-SYS-MAR-F-11				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	3	18/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng. (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim			A

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الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/02/2025	FINAL DATE	18/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-88		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	1	2	3					
STATION	-	335+230	335+255	335+280					
		17+777	17+802	17+827					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	31	33	31					
WT. OF CAN+WET SOIL	gms	204	207	204					
WT. OF CAN+DRY SOIL	gms	190	194	194					
WT. OF WATER	gms	14.0	13.0	10.0					
WT. OF DRY SOIL	gms	159.0	161.0	163.0					
WATER CONTENT	%	8.8	8.1	6.1					
WT. OF WET SOIL	gms	3871	3728	3792					
WT. OF INITIAL SAND+CONT.	gms	7848	7760	7967					
WT. OF RESIDUAL SAND + CONT.	gms	3795	3756	3808					
WT. OF SAND TO FILL CONE+HOLE	gms	4053	4004	4159					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2500	2451	2606					
UNIT WT. OF SAND	gm/cc	1.47	1.47	1.47					
GROSS VOLUME OF HOLE	ccs	1700.7	1667.3	1772.8					
WET UNIT WT. OF SOIL	gm/cc	2.28	2.24	2.14					
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.07	2.02					
MAX. DRY DENSITY	gm/cc	2.12	2.12	2.12					
OPTIMUM MOISTURE CONTENT	%	7.75	7.75	7.75					
COMPACTION	%	98.68	97.59	95.06					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		PASSED	PASSED	PASSED					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			25/02/2025			3:00 PM		
				BAS-MA-SYS-FDT-F-89					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	26	2	25	3	0

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

Description of Materials	Fill Layer at level (-1.5 m) from Ferma Under Left Railway				
Location to be Used	From	335+220	TO	335+480	
		17+767		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-89	Date	25/02/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	11	27/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng. Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim	Karim 27/2/2025		A

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SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	26/02/2025	FINAL DATE	27/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-89		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+230	335+255	335+280	335+305	335+330	335+355	335+380	335+405
		17+777	17+802	17+827	17+852	17+877	17+902	17+927	17+952
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	32	33	31	33	32	32	29
WT. OF CAN+WET SOIL	gms	204	205	204	203	207	206	206	208
WT. OF CAN+DRY SOIL	gms	193	193	190	191	194	191	192	190
WT. OF WATER	gms	11.0	12.0	14.0	12.0	13.0	15.0	14.0	18.0
WT. OF DRY SOIL	gms	160.0	161.0	157.0	160.0	161.0	159.0	160.0	161.0
WATER CONTENT	%	6.9	7.5	8.9	7.5	8.1	9.4	8.8	11.2
WT. OF WET SOIL	gms	3778	3807	3865	3773	3855	3756	3800	3774
WT. OF INITIAL SAND+CONT.	gms	7848	7745	7756	7776	7797	7716	7747	7744
WT. OF RESIDUAL SAND + CONT.	gms	3819	3682	3712	3774	3693	3762	3758	3792
WT. OF SAND TO FILL CONE+HOLE	gms	4029	4063	4044	4002	4104	3954	3989	3952
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2476	2510	2491	2449	2551	2401	2436	2399
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1673.0	1695.9	1683.1	1654.7	1723.6	1622.3	1645.9	1620.9
WET UNIT WT. OF SOIL	gm/cc	2.26	2.24	2.30	2.28	2.24	2.32	2.31	2.33
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.09	2.11	2.12	2.07	2.12	2.12	2.09
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	**98.28**	**97.17**	**98.06**	**98.65**	**96.25**	**98.40**	**98.74**	**97.40**
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**

Eng. / CONSULTANT

Eng. / CONTRACTOR

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الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	26/02/2025	FINAL DATE	27/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-89		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.5 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	9	10	11					
STATION	-	335+430	335+455	335+480					
		17+777	17+802	17+827					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	33	30	29					
WT. OF CAN+WET SOIL	gms	205	204	206					
WT. OF CAN+DRY SOIL	gms	192	191	190					
WT. OF WATER	gms	13.0	13.0	16.0					
WT. OF DRY SOIL	gms	159.0	161.0	161.0					
WATER CONTENT	%	8.2	8.1	9.9					
WT. OF WET SOIL	gms	3773	3874	3894					
WT. OF INITIAL SAND+CONT.	gms	7764	7789	7818					
WT. OF RESIDUAL SAND + CONT.	gms	3764	3682	3767					
WT. OF SAND TO FILL CONE+HOLE	gms	4000	4107	4051					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2447	2554	2498					
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48					
GROSS VOLUME OF HOLE	ccs	1653.4	1725.7	1687.8					
WET UNIT WT. OF SOIL	gm/cc	2.28	2.24	2.31					
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.08	2.10					
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15					
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10					
COMPACTION	%	98.12	96.61	97.61					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		PASSED	PASSED	PASSED					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			26/02/2025				3:00 PM	
				BAS-MA-SYS-FDT-F-90					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	27	2	25	3	0

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

Description of Materials	Fill Layer at level (-1.25 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+220	
		17+607		17+767	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-90	Date	26/02/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	7	28/02/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: E Karim ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. S ed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim	Karim		A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

قطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	27/02/2025	FINAL DATE	28/02/2025
STAGE OF WORK :	**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-90		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	
SAMPLE No.	-	1	2	3	4	5	6	7	
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	
WEIGHT OF CAN	gms	32	30	31	32	30	33	32	
WT. OF CAN+WET SOIL	gms	206	205	206	205	206	207	207	
WT. OF CAN+DRY SOIL	gms	192	194	193	193	193	195	195	
WT. OF WATER	gms	14.0	11.0	13.0	12.0	13.0	12.0	12.0	
WT. OF DRY SOIL	gms	160.0	164.0	162.0	161.0	163.0	162.0	163.0	
WATER CONTENT	%	8.8	6.7	8.0	7.5	8.0	7.4	7.4	
WT. OF WET SOIL	gms	3782	3859	3806	3848	3796	3840	3886	
WT. OF INITIAL SAND+CONT.	gms	7714	7948	7745	7817	7734	7923	7877	
WT. OF RESIDUAL SAND + CONT.	gms	3693	3793	3683	3701	3728	3831	3798	
WT. OF SAND TO FILL CONE+HOLE	gms	4021	4155	4062	4116	4006	4092	4079	
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	
WT.OF SAND TO FILL HOLE	gms	2468	2602	2509	2563	2453	2539	2526	
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	
GROSS VOLUME OF HOLE	ccs	1667.6	1758.1	1695.3	1731.8	1657.4	1715.5	1706.8	
WET UNIT WT. OF SOIL	gm/cc	2.27	2.19	2.25	2.22	2.29	2.24	2.28	
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.06	2.08	2.07	2.12	2.08	2.12	
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	
COMPACTION	%	97.00	95.67	96.66	96.18	98.66	96.93	98.64	
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			2 / 3 / 2025 BAS-MA-SYS-FDT-F-91			3:00 PM		
Received by GARB CONSULTANT	Eng.		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	3	3	25	3	0

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

Description of Materials	Fill Layer at level (-1.25 m) from Ferma Under Left Railway				
Location to be Used	From	335+220 17+767	TO	335+480 18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-91 BAS-MA-SYS-MAR-F-12	Date	2 / 3 / 2025		
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	11	04/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng. Kareem Mostafa (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed moustafa			A
QA/QC *	Eng. Sayed Saif			A
Systra Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Kareem Mostafa			A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبدالله
للانشاءات ورصف الطرق

الهيئة العامة للطرق و الكباري (GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	03/03/2025	FINAL DATE	04/03/2025
STAGE OF WORK :	**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-91		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+225	335+250	335+275	335+300	335+325	335+350	335+375	335+400
		17+772	17+797	17+822	17+847	17+872	17+897	17+922	17+947
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	31	33	29	32	33	29	30
WT. OF CAN+WET SOIL	gms	207.0	206.0	205.0	205.0	203.0	208.0	208.0	207.0
WT. OF CAN+DRY SOIL	gms	193.0	195.0	191.0	191.0	195.0	193.0	195.0	194.0
WT. OF WATER	gms	14.0	11.0	14.0	14.0	8.0	15.0	13.0	13.0
WT. OF DRY SOIL	gms	160.0	164.0	158.0	162.0	163.0	160.0	166.0	164.0
WATER CONTENT	%	8.8	6.7	8.9	8.6	4.9	9.4	7.8	7.9
WT. OF WET SOIL	gms	3784	3784	3832	3814	3834	3850	3779	3787
WT. OF INITIAL SAND+CONT.	gms	7714	7751	7747	7891	7887	7812	7782	7777
WT. OF RESIDUAL SAND + CONT.	gms	3662	3722	3724	3837	3728	3738	3804	3743
WT. OF SAND TO FILL CONE+HOLE	gms	4052	4029	4023	4054	4159	4074	3978	4034
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2499	2476	2470	2501	2606	2521	2425	2481
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1688.5	1673.0	1668.9	1689.9	1760.8	1703.4	1638.5	1676.4
WET UNIT WT. OF SOIL	gm/cc	2.24	2.26	2.30	2.26	2.18	2.26	2.31	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.06	2.12	2.11	2.08	2.08	2.07	2.14	2.09
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	**95.85**	**98.59**	**98.10**	**96.63**	**96.54**	**96.12**	**99.48**	**97.36**
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبدالله للانشاءات ورصف الطرق

الهيئة العامة للطرق و الكباري (GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	03/03/2025	FINAL DATE	04/03/2025
STAGE OF WORK :	Fill Layer at level (-1.25 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-91		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-1.25 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	9	10	11					
STATION	-	335+425	335+450	335+475					
		17+972	17+997	18+022					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	32	31	32					
WT. OF CAN+WET SOIL	gms	203.0	204.0	204.0					
WT. OF CAN+DRY SOIL	gms	190.0	191.0	193.0					
WT. OF WATER	gms	13.0	13.0	11.0					
WT. OF DRY SOIL	gms	158.0	160.0	161.0					
WATER CONTENT	%	8.2	8.1	6.8					
WT. OF WET SOIL	gms	3871	3836	3843					
WT. OF INITIAL SAND+CONT.	gms	7860	7736	7888					
WT. OF RESIDUAL SAND + CONT.	gms	3761	3664	3801					
WT. OF SAND TO FILL CONE+HOLE	gms	4099	4072	4087					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2546	2519	2534					
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48					
GROSS VOLUME OF HOLE	ccs	1720.3	1702.0	1712.2					
WET UNIT WT. OF SOIL	gm/cc	2.25	2.25	2.24					
DRY UNIT WT. OF SOIL	gm/cc	2.08	2.08	2.10					
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15					
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10					
COMPACTION	%	96.71	96.95	97.72					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		PASSED	PASSED	PASSED					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فديل

محمد عبد الله
للانشاءات وارصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

الهيئة القومية للأنفاق

SYSTRA SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			04/03/2025 BAS-MA-SYS-FDT-F-92			3:00 PM		
Received by GARB CONSULTANT	Eng. Sayed Saif	for	MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	5	3	25	3	0

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

Description of Materials	Fill Layer at level (-1 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+220	
		17+607		17+767	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-92	Date	04/03/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	7	06/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) **is Approved.**	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif	for		A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Karim	Karim		A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فتحيل

محمد عبد الله
للانشاءات وصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

قطار كهربائي سريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	05/03/2025	FINAL DATE	06/03/2025
STAGE OF WORK :	Fill Layer at level (-1 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-92		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-1 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	
SAMPLE No.	-	1	2	3	4	5	6	7	
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	
WEIGHT OF CAN	gms	33	33	32	31	31	31	29	
WT. OF CAN+WET SOIL	gms	205	205	205	203	207	205	203	
WT. OF CAN+DRY SOIL	gms	192	191	193	190	193	192	193	
WT. OF WATER	gms	13.0	14.0	12.0	13.0	14.0	13.0	10.0	
WT. OF DRY SOIL	gms	159.0	158.0	161.0	159.0	162.0	161.0	164.0	
WATER CONTENT	%	8.2	8.9	7.5	8.2	8.6	8.1	6.1	
WT. OF WET SOIL	gms	3765	3785	3871	3783	3883	3748	3865	
WT. OF INITIAL SAND+CONT.	gms	7783	7791	7837	7766	7848	7741	7722	
WT. OF RESIDUAL SAND + CONT.	gms	3765	3735	3695	3736	3726	3733	3641	
WT. OF SAND TO FILL CONE+HOLE	gms	4018	4056	4142	4030	4122	4008	4081	
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	
WT.OF SAND TO FILL HOLE	gms	2465	2503	2589	2477	2569	2455	2528	
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	
GROSS VOLUME OF HOLE	ccs	1665.5	1691.2	1749.3	1673.6	1735.8	1658.8	1708.1	
WET UNIT WT. OF SOIL	gm/cc	2.26	2.24	2.21	2.26	2.24	2.26	2.26	
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.06	2.06	2.09	2.06	2.09	2.13	
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	
COMPACTION	%	**97.19**	**95.62**	**95.78**	**97.19**	**95.77**	**97.24**	**99.20**	
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			8/3/2025 BAS-MA-SYS-FDT-F-93				3:00 PM	
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DO	MM	YY	HH	MM
				335	EW	CS	9	3	25	3	0

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

Description of Materials	Fill Layer at level (-1 m) from Ferma Under Left Railway				
Location to be Used	From	335+220	TO	335+480	
		17+767		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-93		Date	8/3/2025	
	AS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP	
Reference Photos	No/Yes		Other		

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	11	10/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng Karim	Karim 2025		A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد هنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	09/03/2025	FINAL DATE	10/03/2025
STAGE OF WORK :	**Fill Layer at level (-1 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-93		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+230	335+255	335+280	335+305	335+330	335+355	335+380	335+405
		17+777	17+802	17+827	17+852	17+877	17+902	17+927	17+952
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	29	32	29	31	32	29	30	30
WT. OF CAN+WET SOIL	gms	205	206	204	207	207	204	204	207
WT. OF CAN+DRY SOIL	gms	190	192	195	191	192	191	193	192
WT. OF WATER	gms	15.0	14.0	9.0	16.0	15.0	13.0	11.0	15.0
WT. OF DRY SOIL	gms	161.0	160.0	166.0	160.0	160.0	162.0	163.0	160.2
WATER CONTENT	%	9.3	8.8	5.4	10.0	9.4	8.0	6.7	9.4
WT. OF WET SOIL	gms	3854	3887	3845	3896	3764	3763	3845	3868
WT. OF INITIAL SAND+CONT.	gms	7868	7888	7971	7722	7846	7726	7728	7718
WT. OF RESIDUAL SAND + CONT.	gms	3823	3792	3845	3700	3843	3749	3646	3629
WT. OF SAND TO FILL CONE+HOLE	gms	4045	4096	4126	4022	4003	3977	4082	4089
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2492	2543	2573	2469	2450	2424	2529	2536
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1683.8	1718.2	1738.5	1668.2	1655.4	1637.8	1708.8	1713.5
WET UNIT WT. OF SOIL	gm/cc	2.29	2.26	2.21	2.34	2.27	2.30	2.25	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.0	2.08	2.10	2.12	2.08	2.13	2.11	2.06
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.1
COMPACTION	%	**97.39**	**96.75**	**97.58**	**98.75**	**96.69**	**98.92**	**98.04**	**96.00**
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**	**PASSED**

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات وارصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	09/03/2025	FINAL DATE	10/03/2025
STAGE OF WORK :	**Fill Layer at level (-1 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-93		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-1 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm					
SAMPLE No.	-	9	10	11					
STATION	-	335+425	335+450	335+475					
		17+777	17+802	17+827					
CONTAINER No.	-	A-1	A-1	A-1					
WEIGHT OF CAN	gms	29	29	33					
WT. OF CAN+WET SOIL	gms	206	207	203					
WT. OF CAN+DRY SOIL	gms	192	195	193					
WT. OF WATER	gms	14.0	12.0	10.0					
WT. OF DRY SOIL	gms	163.0	166.0	160.0					
WATER CONTENT	%	8.6	7.2	6.3					
WT. OF WET SOIL	gms	3849	3755	3838					
WT. OF INITIAL SAND+CONT.	gms	7812	7824	7900					
WT. OF RESIDUAL SAND + CONT.	gms	3772	3836	3768					
WT. OF SAND TO FILL CONE+HOLE	gms	4040	3988	4132					
WT.OF SAND TO FILL CONE	gms	1553	1553	1553					
WT.OF SAND TO FILL HOLE	gms	2487	2435	2579					
UNIT WT. OF SAND	gm/cc	1.4[illegible]	1.48	1.48					
GROSS VOLUME OF HOLE	ccs	1680.4	1645.3	1742.6					
WET UNIT WT. OF SOIL	gm/cc	2.29	2.28	2.20					
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.13	2.07					
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15					
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10					
COMPACTION	%	**98.11**	**99.00**	**96.42**					
REQUIRED COMPACTION	%	95	95	95					
REMARKS		**PASSED**	**PASSED**	**PASSED**					

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign		Date/Serial Number				Time	
	Eng. Mohamed moustafa			11/3/2025				3:00 PM	
				BAS-MA-SYS-FDT-F-94					
Received by GARB CONSULTANT	Eng. Sayed Saif for		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	12	3	25	3	0

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

Description of Materials	Fill Layer at level (-0.75 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+480	
		17+607		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-94	Date	11/3/2025		
	BAS-MA-SYS-MAR-F-12				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	17	13/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif for			A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng.			A

ENGINEERING CONSULTING OFFICE
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الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للإنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	12/03/2025	FINAL DATE	13/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-94		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	335+245
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	17+792
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	30	33	31	31	29	29	31
WT. OF CAN+WET SOIL	gms	205	205	208	207	206	208	207	205
WT. OF CAN+DRY SOIL	gms	195	192	190	191	191	192	190	194
WT. OF WATER	gms	10.0	13.0	18.0	16.0	15.0	16.0	17.0	11.0
WT. OF DRY SOIL	gms	162.0	162.0	157.0	160.0	160.0	163.0	161.0	160.2
WATER CONTENT	%	6.2	8.0	11.5	10.0	9.4	9.8	10.6	6.9
WT. OF WET SOIL	gms	3860	3859	3844	3841	3887	3856	3812	3879
WT. OF INITIAL SAND+CONT.	gms	7796	7756	7827	7802	7813	7753	7787	7807
WT. OF RESIDUAL SAND + CONT.	gms	3695	3657	3835	3771	3786	3707	3839	3734
WT. OF SAND TO FILL CONE+HOLE	gms	4101	4099	3992	4031	4027	4046	3948	4073
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2548	2546	2439	2478	2474	2493	2395	2520
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1721.6	1720.3	1648.0	1674.3	1671.6	1684.5	1618.2	1702.7
WET UNIT WT. OF SOIL	gm/cc	2.24	2.24	2.33	2.29	2.33	2.29	2.36	2.28
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.08	2.09	2.09	2.13	2.08	2.13	2.13
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	98.22	96.59	97.33	97.00	98.88	96.96	99.10	99.15
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	12/03/2025	FINAL DATE	13/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-94		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	9	10	11	12	13	14	15	16
STATION	-	335+270	335+295	335+320	335+345	335+370	335+395	335+420	335+445
		17+817	17+842	17+867	17+892	17+917	17+942	17+967	17+992
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	33	33	30	29	32	31	32	30
WT. OF CAN+WET SOIL	gms	207	207	208	204	204	203	207	208
WT. OF CAN+DRY SOIL	gms	195	192	195	195	191	195	191	193
WT. OF WATER	gms	12.0	15.0	13.0	9.0	13.0	8.0	16.0	15.0
WT. OF DRY SOIL	gms	162.0	159.0	165.0	166.0	159.0	164.0	163.0	160.2
WATER CONTENT	%	7.4	9.4	7.9	5.4	8.2	4.9	9.8	9.4
WT. OF WET SOIL	gms	3877	3878	3718	3721	3866	3714	3816	3736
WT. OF INITIAL SAND+CONT.	gms	7815	7776	7828	7859	7834	7901	7817	7834
WT. OF RESIDUAL SAND + CONT.	gms	3726	3733	3844	3760	3725	3840	3850	3832
WT. OF SAND TO FILL CONE+HOLE	gms	4089	4043	3984	4099	4109	4061	3967	4002
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2536	2490	2431	2546	2556	2508	2414	2449
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1713.5	1682.4	1642.6	1720.3	1727.0	1694.6	1631.1	1654.7
WET UNIT WT. OF SOIL	gm/cc	2.26	2.30	2.26	2.16	2.24	2.19	2.34	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.11	2.10	2.05	2.07	2.09	2.13	2.06
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	97.98	97.97	97.59	95.43	96.25	97.20	99.09	96.02
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	12/03/2025	FINAL DATE	13/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-94		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.75 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm							
SAMPLE No.	-	17							
STATION	-	335+470							
		18+017							
CONTAINER No.	-	A-1							
WEIGHT OF CAN	gms	29							
WT. OF CAN+WET SOIL	gms	205							
WT. OF CAN+DRY SOIL	gms	195							
WT. OF WATER	gms	10.0							
WT. OF DRY SOIL	gms	166.0							
WATER CONTENT	%	6.0							
WT. OF WET SOIL	gms	3869							
WT. OF INITIAL SAND+CONT.	gms	7823							
WT. OF RESIDUAL SAND + CONT.	gms	3718							
WT. OF SAND TO FILL CONE+HOLE	gms	4105							
WT.OF SAND TO FILL CONE	gms	1553							
WT.OF SAND TO FILL HOLE	gms	2552							
UNIT WT. OF SAND	gm/cc	1.48							
GROSS VOLUME OF HOLE	ccs	1724.3							
WET UNIT WT. OF SOIL	gm/cc	2.24							
DRY UNIT WT. OF SOIL	gm/cc	2.12							
MAX. DRY DENSITY	gm/cc	2.15							
OPTIMUM MOISTURE CONTENT	%	7.10							
COMPACTION	%	98.43							
REQUIRED COMPACTION	%	95							
REMARKS		PASSED							

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد فتحيل

محمد عبد الله
للإنشاءات ورصف الطرق

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(GARB)

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الهيئة القومية للأنفاق

SYSTRA SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company			(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number			Time		
	Eng. Mohamed moustafa			17/3/2025			3:00 PM		
				BAS-MA-SYS-FDT-F-95					
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	CS	18	3	25	3	0

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

Description of Materials	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Location to be Used	From	335+060 / 17+607	TO 335+480 / 18+027
MAR & UIR Approval No	BAS-MA-SYS-IR-F-95 / BAS-MA-SYS-MAR-F-12	Date	17/3/2025
Supplier Name	محاجر وادي النطرون - العلمين		
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No/Yes	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	17	19/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Eng (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif	for		A
SYSTRA Consultant	Eng. Hamouda Ali			A
GARB**	Eng. Margret magdy			
Employers Representative	Eng Karim	Karim 17/3/2025		A

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/03/2025	FINAL DATE	19/03/2025
STAGE OF WORK :	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-95		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.5 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	335+245
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	17+792
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	30	29	29	30	33	31	31	32
WT. OF CAN+WET SOIL	gms	203	204	206	205	207	208	208	208
WT. OF CAN+DRY SOIL	gms	193	195	192	195	195	190	193	191
WT. OF WATER	gms	10.0	9.0	14.0	10.0	12.0	18.0	15.0	17.0
WT. OF DRY SOIL	gms	163.0	166.0	163.0	165.0	162.0	159.0	162.0	160.2
WATER CONTENT	%	6.1	5.4	8.6	6.1	7.4	11.3	9.3	10.6
WT. OF WET SOIL	gms	3761	3850	3784	3750	3892	3890	3712	3894
WT. OF INITIAL SAND+CONT.	gms	7796	7772	7722	7917	7782	7774	7730	7934
WT. OF RESIDUAL SAND + CONT.	gms	3737	3694	3765	3811	3626	3781	3731	3836
WT. OF SAND TO FILL CONE+HOLE	gms	4059	4078	3957	4106	4156	3993	3999	4098
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2506	2525	2404	2553	2603	2440	2446	2545
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1693.2	1706.1	1624.3	1725.0	1758.8	1648.6	1652.7	1719.6
WET UNIT WT. OF SOIL	gm/cc	2.22	2.26	2.33	2.17	2.21	2.36	2.25	2.26
DRY UNIT WT. OF SOIL	gm/cc	2.09	2.14	2.15	2.05	2.06	2.12	2.06	2.05
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	97.34	99.56	99.78	95.33	95.83	98.58	95.61	95.22
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

ENGINEERING CONSULTING OFFICE
المكتب الاستشاري الهندسي
أ.د. خالد قنديل

محمد عبد الله
للانشاءات ورصف الطرق

الهيئة العامة
للطرق و الكباري
(GARB)

وزارة النقل

الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/03/2025	FINAL DATE	19/03/2025
STAGE OF WORK :	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-95		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.5 m) from Ferma Under Left Railway							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	9	10	11	12	13	14	15	16
STATION	-	335+270	335+295	335+320	335+345	335+370	335+395	335+420	335+445
		17+817	17+842	17+867	17+892	17+917	17+942	17+967	17+992
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	31	32	33	29	29	30	30	30
WT. OF CAN+WET SOIL	gms	206	208	203	203	206	206	205	206
WT. OF CAN+DRY SOIL	gms	195	194	192	191	190	193	191	192
WT. OF WATER	gms	11.0	14.0	11.0	12.0	16.0	13.0	14.0	14.0
WT. OF DRY SOIL	gms	164.0	162.0	159.0	162.0	161.0	163.0	163.0	160.2
WATER CONTENT	%	6.7	8.6	6.9	7.4	9.9	8.0	8.6	8.7
WT. OF WET SOIL	gms	3791	3829	3819	3830	3899	3806	3786	3770
WT. OF INITIAL SAND+CONT.	gms	7759	7860	7750	7814	7843	7727	7729	7875
WT. OF RESIDUAL SAND + CONT.	gms	3709	3821	3686	3725	3800	3699	3697	3820
WT. OF SAND TO FILL CONE+HOLE	gms	4050	4039	4064	4089	4043	4028	4032	4055
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2497	2486	2511	2536	2490	2475	2479	2502
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1687.2	1679.7	1696.6	1713.5	1682.4	1672.3	1675.0	1690.5
WET UNIT WT. OF SOIL	gm/cc	2.25	2.28	2.25	2.24	2.32	2.28	2.26	2.23
DRY UNIT WT. OF SOIL	gm/cc	2.11	2.10	2.11	2.08	2.11	2.11	2.08	2.05
MAX. DRY DENSITY	gm/cc	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
OPTIMUM MOISTURE CONTENT	%	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
COMPACTION	%	97.94	97.59	97.92	96.79	98.05	98.04	96.81	95.39
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

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الهيئة القومية للأنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	18/03/2025	FINAL DATE	19/03/2025
STAGE OF WORK :	Fill Layer at level (-0.5 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-95		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.5 m) from Ferma Under Left Railway
DEPTH OF HOLE	cm	15 cm

SAMPLE No.	-	17
STATION	-	335+470
		18+017
CONTAINER No.	-	A-1
WEIGHT OF CAN	gms	30
WT. OF CAN+WET SOIL	gms	207
WT. OF CAN+DRY SOIL	gms	190
WT. OF WATER	gms	17.0
WT. OF DRY SOIL	gms	160.0
WATER CONTENT	%	10.6

WT. OF WET SOIL	gms	3840
WT. OF INITIAL SAND+CONT.	gms	7719
WT. OF RESIDUAL SAND + CONT.	gms	3742
WT. OF SAND TO FILL CONE+HOLE	gms	3977
WT.OF SAND TO FILL CONE	gms	1553
WT.OF SAND TO FILL HOLE	gms	2424
UNIT WT. OF SAND	gm/cc	1.48
GROSS VOLUME OF HOLE	ccs	1637.8
WET UNIT WT. OF SOIL	gm/cc	2.34
DRY UNIT WT. OF SOIL	gm/cc	2.12
MAX. DRY DENSITY	gm/cc	2.15
OPTIMUM MOISTURE CONTENT	%	7.10
COMPACTION	%	98.58
REQUIRED COMPACTION	%	95
REMARKS		PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

MATERIAL INSPECTION REQUEST

ENGINEERING CONSULTING OFFICE المكتب الاستشاري الهندسي أ.د. خالد فديل

محمد عبد الله للانشاءات وصف الطرق

الهيئة العامة للطرق و الكباري (GARB) وزارة النقل

الهيئة القومية للأنفاق

SYSTRA SALINI SHAKER

Contractor Company	Mohamed Abdallah 4 for constructions and roads paving			Designer Company				(KK) Engineering Consulting Office		
Issued by Contractor	Name	Sign		Date/Serial Number				Time		
	Eng. Mohamed moustafa			23/3/2025				3:00 PM		
				BAS-MA-SYS-FDT-F-96						
Received by GARB CONSULTANT	Eng. Sayed Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				335	EW	C5	24	3	25	3	0

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

Description of Materials	Fill Layer at level (-0.25 m) from Ferma Under Left Railway				
Location to be Used	From	335+060	TO	335+480	
		17+607		18+027	
MAR & UIR Approval No	BAS-MA-SYS-IR-F-96	Date	23/3/2025		
	BAS-MA-SYS-MAR-F-13				
Supplier Name	محاجر وادي النطرون - العلمين				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	17	25/03/2025	
2					
3					
4					

Comments by: Eng. Sayed Saif (K.K)	Comments by: Karim (ER)
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.	1-F.D.T was carried- out by material engineer for both contractor and GARB Consultant 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Moustafa			A
QA/QC *	Eng. Sayed Saif			A w c
SYSTRA Consultant	Eng. Hamouda Ali			
GARB**	Eng. Margret magdy			
Employers Representative	Eng. / Karim	Karim 25 2025		A - w C

ENGINEERING CONSULTING OFFICE
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الهيئة القومية للإنفاق

القطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	24/03/2025	FINAL DATE	25/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-96		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	1	2	3	4	5	6	7	8
STATION	-	335+070	335+095	335+120	335+145	335+170	335+195	335+220	335+245
		17+617	17+642	17+667	17+692	17+717	17+742	17+767	17+792
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	29	30	33	32	30	33	29	30
WT. OF CAN+WET SOIL	gms	208	204	206	203	205	207	203	204
WT. OF CAN+DRY SOIL	gms	194	194	194	193	191	191	194	194
WT. OF WATER	gms	14.0	10.0	12.0	10.0	14.0	16.0	9.0	10.0
WT. OF DRY SOIL	gms	165.0	164.0	161.0	161.0	161.0	158.0	165.0	160.2
WATER CONTENT	%	8.5	6.1	7.5	6.2	8.7	10.1	5.5	6.2
WT. OF WET SOIL	gms	3777	3765	3792	3882	3768	3844	3828	3859
WT. OF INITIAL SAND+CONT.	gms	7828	7792	7751	7705	7711	7780	7809	7816
WT. OF RESIDUAL SAND + CONT.	gms	3765	3685	3699	3531	3754	3796	3745	3649
WT. OF SAND TO FILL CONE+HOLE	gms	4063	4107	4052	4174	3957	3984	4064	4167
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2510	2554	2499	2621	2404	2431	2511	2614
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1695.9	1725.7	1688.5	1770.9	1624.3	1642.6	1696.6	1766.2
WET UNIT WT. OF SOIL	gm/cc	2.23	2.18	2.25	2.19	2.32	2.34	2.26	2.18
DRY UNIT WT. OF SOIL	gm/cc	2.05	2.06	2.09	2.06	2.13	2.13	2.14	2.06
MAX. DRY DENSITY	gm/cc	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
OPTIMUM MOISTURE CONTENT	%	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
COMPACTION	%	95.04	95.20	96.76	95.55	98.80	98.38	99.05	95.21
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

Eng. / CONTRACTOR

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قطار الكهربائي السريع
Electric Express Train

SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	24/03/2025	FINAL DATE	25/03/2025
STAGE OF WORK :	**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**		
Request NO.	BAS-MA-SYS-IR-F-96		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		**Fill Layer at level (-0.25 m) from Ferma Under Left Railway**							
DEPTH OF HOLE	cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm
SAMPLE No.	-	9	10	11	12	13	14	15	16
STATION	-	335+270	335+295	335+320	335+345	335+370	335+395	335+420	335+445
		17+817	17+842	17+867	17+892	17+917	17+942	17+967	17+992
CONTAINER No.	-	A-1	A-1	A-1	A-1	A-1	A-1	A-1	A-1
WEIGHT OF CAN	gms	31	29	30	31	33	30	31	32
WT. OF CAN+WET SOIL	gms	203	208	203	203	203	205	203	207
WT. OF CAN+DRY SOIL	gms	192	190	190	194	194	190	190	190
WT. OF WATER	gms	11.0	18.0	13.0	9.0	9.0	15.0	13.0	17.0
WT. OF DRY SOIL	gms	161.0	161.0	160.0	163.0	161.0	160.0	163.0	160.2
WATER CONTENT	%	6.8	11.2	8.1	5.5	5.6	9.4	8.0	10.6
WT. OF WET SOIL	gms	3762	3788	3778	3822	3815	3881	3866	3855
WT. OF INITIAL SAND+CONT.	gms	7783	7713	7779	7867	7869	7742	7878	7738
WT. OF RESIDUAL SAND + CONT.	gms	3711	3782	3738	3715	3724	3663	3816	3736
WT. OF SAND TO FILL CONE+HOLE	gms	4072	3931	4041	4152	4145	4079	4062	4002
WT.OF SAND TO FILL CONE	gms	1553	1553	1553	1553	1553	1553	1553	1553
WT.OF SAND TO FILL HOLE	gms	2519	2378	2488	2599	2592	2526	2509	2449
UNIT WT. OF SAND	gm/cc	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
GROSS VOLUME OF HOLE	ccs	1702.0	1606.8	1681.1	1756.1	1751.4	1706.8	1695.3	1654.7
WET UNIT WT. OF SOIL	gm/cc	2.21	2.36	2.25	2.18	2.18	2.27	2.28	2.33
DRY UNIT WT. OF SOIL	gm/cc	2.07	2.12	2.08	2.06	2.06	2.08	2.11	2.11
MAX. DRY DENSITY	gm/cc	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
OPTIMUM MOISTURE CONTENT	%	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
COMPACTION	%	95.78	98.17	96.23	95.49	95.51	96.25	97.78	97.51
REQUIRED COMPACTION	%	95	95	95	95	95	95	95	95
REMARKS		PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Eng. / CONSULTANT

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SYSTRA SHAKER

Project	Electrical Express Train From Borg Alarab to Alamein		STATION REPRESENTED
SAMPLE Date	24/03/2025	FINAL DATE	25/03/2025
STAGE OF WORK :	Fill Layer at level (-0.25 m) from Ferma Under Left Railway		
Request NO.	BAS-MA-SYS-IR-F-96		

WORKSHEET FOR FIELD DENSITY TEST

BY SAND CONE METHOD ASTM D 1556

LAYER		Fill Layer at level (-0.25 m) from Ferma Under Left Railway								
DEPTH OF HOLE	cm	15 cm								
SAMPLE No.	-	17								
STATION	-	335+470								
		18+017								
CONTAINER No.	-	A-1								
WEIGHT OF CAN	gms	32								
WT. OF CAN+WET SOIL	gms	207								
WT. OF CAN+DRY SOIL	gms	190								
WT. OF WATER	gms	17.0								
WT. OF DRY SOIL	gms	158.0								
WATER CONTENT	%	10.8								
WT. OF WET SOIL	gms	3781								
WT. OF INITIAL SAND+CONT.	gms	7769								
WT. OF RESIDUAL SAND + CONT.	gms	3764								
WT. OF SAND TO FILL CONE+HOLE	gms	4005								
WT.OF SAND TO FILL CONE	gms	1553								
WT.OF SAND TO FILL HOLE	gms	2452								
UNIT WT. OF SAND	gm/cc	1.48								
GROSS VOLUME OF HOLE	ccs	1656.8								
WET UNIT WT. OF SOIL	gm/cc	2.28								
DRY UNIT WT. OF SOIL	gm/cc	2.06								
MAX. DRY DENSITY	gm/cc	2.16								
OPTIMUM MOISTURE CONTENT	%	7.20								
COMPACTION	%	95.39								
REQUIRED COMPACTION	%	95								
REMARKS		PASSED								

Eng. / CONSULTANT

Eng. / CONTRACTOR