

محضر استلام موقع

مشروع: أعمال الجسر الترابي للخط الأول للقطار الكهربائي السريع قطاع (برج العرب - العلمين) في المسافة من الكم 000+373 إلى الكم 1 كم بطول 1 كم

تنفيذ: شركة إنشاء للمقاولات العامة. إشركة إنشاء للمقاولات العامة والشراف : المنطقة الخامسة _ منطقة غرب الدلتا طبقاً للعقد رقم (2024/2023/815) بتاريخ 2023/12/04 إنه في يوم الاربعاء الموافق 2023/12/5 اجتمع كل من:-

1- السيد المهندس/محمد حسنى فياض

2- السيدة المهندسة/مارجريت مجدي زاخر

3- السيد المهندس/ محمود شعبان أحمد

مدير عام مشروعات - الهيئة العامة للطرق والكباري

مدير مشروع - الهيئة العامة للطرق والكباري

مدير مشروع - شركة انشاء للمقاولات العامة

وذلك للمرور على مسار العملية المذكورة عاليه لاستلام الموقع: وقد تبين أن الموقع خالياً من العوائق الظاهرية ويسمح بالبدء في التنفيذ وبناء عليه يعتبر تاريخ 2023/12/5 هو تاريخ استلام الموقع وبدء الأعمال بالعملية واقفل المحضر على ذلك ووقع الحضور

التوقيعات

Pichers 3-3

√ -2









محض____ر معاین___ة مساف___ة

أنه في يوم السبت 2023/12/2 وبحضور كلا من :-

1-- م / مارجريت مجدي الهيئة العامة للطرق والكباري

2-- م/ عبدالعزيز مصطفى سبكترم للاستشارات الهندسية (مكتب دعماد نبيل)

3-- م/ محمود شعبان احمد شركة إنشاء للمقاولات العامة

تم النزول والمعاينة وطبقا للتعليمات الواردة بالمقايسة بمسافات نقل التوريد للأتربة والرمال من المحجر حتى محور مسار الطريق وجد أنه:

يتم النقل للأتربة والرمال من المحجر إلى محور مسار القطار السريع (الحمام – العلمين) لقطاع شركة إنشاء للمقاولات العامة من 400+373 الى 374+000 مسافة قدرها :-

1-- 92 كم للتراب

2-- 80 كم للرمل

التوقيعات :-

3-- م/محمود شعبان

2-- م/ عبدالعزيز مصطفى

1-- م/مارجریت مجدي

شركة انشاء للمقاولات العامة التوقيع/ عَرَبُ عَلَيْ الْمُعَامِ مَعْمُودُ رَضُوارُ وَشُرِيكُمُ التَّوقِيعِ/ عَرَبُ عَرَبُ الْمُعَامِدُ مَعْمُودُ رَضُوارُ وَشُرِيكُمُ التَّوقِيعِ/ عَرَبُ عَرَبُ الْمُعَامِدُ العَامِدُ التَّوقِيعِ/ عَرَبُ عَرَبُ المُعْمَلِيمُ التَّوقِيعِ/ عَرَبُ عَلَيْ التَّوقِيعِ التَّولِيعِ الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِيعِ الْعَلَيْدِي الْعَلَيْدِيعِ الْعَلَيْدِي الْعِلْمُ الْعَلَيْدِي الْعَلِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَيْدِي الْعَلَي









محضر معاین ق مساف ق

أنه في يوم السبت 2023/12/2 وبحضور كلا من :-

مجدى الهيئة العامة للطرق والكباري

1-- م/ مارجريت مجد*ي*

سبكترم للاستشارات الهندسية (مكتب دعماد نبيل)

2-- م/ عبدالعزيز مصطفى

شركة إنشاء للمقاولات العامة

3-- م/ محمود شعبان احمد

تم النزول والمعاينة وطبقا للتعليمات الواردة بالمقايسة بمسافات نقل التوريد للسن

(prepared subgrade & sub ballast)

من الكسارة حتى محور مسار الطريق وجد أنه :-

يتم النقل السن من الكسارة إلى محور مسار القطار السريع (الحمام - العلمين) لقطاع شركة إنشاء للمقاولات العامة من 400+373 الى 374+000 مسافة قدر ها :-

(81 كم)

التوقيع / كر المناه المقاولات العامة التوقيع / كر المناه ا



التوقيعات:

3-- م/ محمود شعبان

2-- م/ عبدالعزيز مصطفى

1- م/ مارجريت مجدي





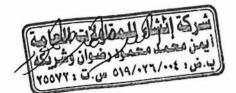






مشروع: القطار السريع (السخنة - العلمين - مطروح) المقايسة التقديرية لبنود الاعمال تنفيذ شركة: إنشاء للمقاولات العامة (2) القطاع من الكم 374+000 إلى الكم 374+000 بطول 1 كم

م البند	بيان الأعمال	الوحدة	الكمية	سعر اللئة	الاجمالي
1	اعمال الحفر				
	بالمتر المكعب اعمال حفر باستخدام المعدات الميكانيكية لجميع انواع التربة عدا التربة الصخرية و تسوية السطح بالات التسوية والرش بالمياه الاصولية للوصول الى نسبة الرطوية المطلوبة والدمك الجيد بالمسطح بالات التصوي و ومحمل على البند تحميل بالهواسات للوصول الى اقمى كثافة جافه (35% من الكثافة الجافة القصوى) ومحمل على البند تحميل ونقل الاتربة الزائدة لمسافة 500 متر من محور الطريق ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات المرضية النموذجية والرسومات التقصيلية المعتمدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئذ العامة للطرق و الكبارى وتعليمات المهندس المشرف. يتم احتساب علاوة 1 جنية لكل 1 كم بالزيادة.	34	20000	20	400000
3	اعمال الردم				
3-1	اعمال تحميل وتوريد اترية مطابقة للمواصفات وتشفيلها باستخدام الات التسوية بسمك لا يزيد عن 50 سم حتى منسوب -2 متر وبسمك لا يزيد عن 50 سم حتى منسوب -2 متر وبسمك لايزيد عن 25 سم لاستكمال المفسوب التصميمي لتشكيل الجسر والاكتاف (ئسبة لتحمل كالميفورية لا تقل عن 15 %) ورشها بالعباة الأصول بالسبة الرطوبة المطلوبة والدامك الجيد بالهراسات للوصول الى المنافقة و 15% من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسب التصميمية والقطاعات الموضوب التقصيفي المستعدة والبند بجميع مشتملاتة طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف في حالة طلب جهاز الاشراف زيادة نسبة الدمك عن 95% يحسب زيادة 1 جنية على زيادة لسبة الدمك لكل 1% مسافة النقل حتى 2 كم ويتم احتساب علاوة 1.4 جنية للكم بالزيادة أو النقصان السعر بشمل عمل تشوينات وتخليط واختبارات ونقل لموقع العمل حتى مسافة 2 كم	3,	30000	85	2550000
	علاوة مسافة النقل 92 كم (اترية) (990.1=126)	م3	24000	126	3024000
	علاوة مسافة النقل 80 كم (رمال طبيعية) (78°1.4=2.109)	30	6000	109.2	655200
	علاوة تحصيل رسوم الكارتة والموازين طبقا للالحة الشركة الوطنية	م3	30000	13	390000
4	طبقات الاساس				
	بالمتر المكعب أعمال توريد وفرش طبقه تأسيس (Prepared subgrade) من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات واقصي حجم للحبيبات 100 مم والا تزيد نسبة المار من منخل 200 عن 12% والتدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورنيا عن 25% والا تزيد نسبة الفاقد بجهاز لوس انجلوس عن 30% والا يزيد الامتصاص عن 15% والا يقل معامل المرونة (دري) من تجريه لوح التحميل عن 80 ميجابسكال ويتم فردها علي طبقتين باستخدام الات النسوية الحديثة علي أن لا يزيد سمك الطبقة بعد تمام الدمك عن 25 سم ورشها بالمياة الاصولية للوصول الي نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول إلي اقصي كثافة جافة (لا تقل عن 95% من الكثافة الحافظ القصوي) والفنه تشمل اجراء التجارب المعملية والحنظية ويتم التنفيذ طبقا لاصول الصناعة المستشاري وتعليمات المعتمدة والبند بجميع مشتملانه طبقا لامواء المشروع وتقرير الاستشاري وتعليمات المهندس المشرف. - سافه انقل 20 كم الزيادة المنافذة المدافة بينا شعل عن 35 عن الكم 355 الى الكم 395 المدافقة المدافقة الموادة المحجرية عبقا لالانه المدافة بينا شعل عن 37 عن 185 الى الكم 355 المدافقة المدافة بالموادة عن 37 عن 185 الى الكم 355 الى الكم 395 المدافقة المدافقة المدافقة الموادة المحجرية عبقا لالانه المدافة بينا شعل 35 عن 185 الى الكم 355 الى الكم 355 المدافقة المدافقة المدافقة المدافقة المدافقة المدافقة المدافقة المدافقة المدافقة الموادة المحجرية عبقا لالانه المدافقة ا	3,	8500	278	2363000
	علاوة مسافة النقل 81 كم (61-2.1.2*7)		0500	73.2	622200
1	علاوة تحصيل رسوم الكارتة والموازين طبقا للازمرة الشركة الوعائية	م3 م3	8500 8,500	25	212,500

















مشروع : القطار السريع (السخنة - العلمين - مطروح) المقايسة التقديرية لبنود الاعمال تنفيذ شركة: إنشاء للمقاولات العامة (2) القطاع من الكم 374+000 إلى الكم 374+000 بطول 1 كم

م البند	بيان الأعمال	الوحدة	الكمية	سعرالفلة	الاجمال
	بالمتر المكعب أعمال توريد وفرش طبقه أساس من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات واقميي حجم للحبيبات ما بين 31.5مم إلى 90مم والا يزيد نسبة المار من منخل 200 عن 5% والتدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورتيا عن 60%والا يقل معامل المورقة (202) من تجرب فوح التحميل عن 120% والدين المتصاص تجربه فوح التحميل عن 120% والا يزيد المتصاص عن 15% والمتبتر فردها علي طبقتين باستخدام الات التسوية الحديثة علي أن لا يزيد سمك الطبقة بعد تمام الدمك عن 20 سم ورشها بالمياة الاصولية للوصول إلى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول إلى اقمي من 20 سم ورشها بالمياة الاصولية للوصول إلى المتباث الجيد بالهراسات للوصول إلى اقمي طبقا لاحول المتعادة جانفة إلا تقل عن 100%) من الكتافة المعملية والفئه تشمل اجراء التجارب المعملية والحقلية ويتم التنفيذ طبقا للمواصفات الفئية للمشروع وتقرير الاستشاري وتعليمات المهندس المشرف. - مسافة النقل لا تقل 20 كم يتم احتساب علازه 1.2 جنيه لكل 1 كم بالزياده او النقصان السعر بشمل قيمة المواد المعجرية طبقا لافادة المنطقة بهذا فطاع رقم (5) من الكم 1325 الى الكم 3925	٠,	5,886.42	298	1,754,153
	علاوة مسافة النقل 81 كم (61°73.2=1.2)	30	5,886.42	73.2	430,886
	علاوة تحصيل رسوم الكارثة والموازين طبقا للالحة الشركة الوطنية	م3	5,886.42	25	147,161
	الإجمالي	12,549,100			

















Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company			Designer Company			(SPECTRUM) Engineering Consulting Office				
	Name -	Sign Date/Serial Number		Time							
Issued by Contractor	Eng. Mahmoud Shaban	وعياه	2 2	30/3/2023 (M.A.R. REV) (F-1)		1:30					
Received by GARB Fng. Mazen Fr	- /		MAR	C1	C2	C3	DD	MM	YY	НН	MM
CONSULTANT	Eng. Mazen Essamy	azen Essamy		373	EW	CS	31	03	23	01	30

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

Description of Materials	FILL LAYER TOTAL QUA	FILL LAYER TOTAL QUANTITY (5000 m3)				
Location to be Used	From Station (373+00	From Station (373+000) to Station (374+000)				
Sample only	Yes	Ma	nterials Type	Fill layers		
Supplier Name		Data Sheet provided		Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)		
Reference in BoQ	(3-1)	Specification		EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Prequalification reference		Tes	t Samples Results			
Reference Photos	No/Yes	Oth	ner			
Comments by: Eng. Maze 1-Quality test Result By Third P 2-This Sample Representive (5)	arty Lab is Approved.		1-All tests were comibassal intern 2-Results report project specificati 3-Final approval comments.	attached and acceptable with the		

	- 1388 y 7-6 11	APPRO	VAL STATUS		
Organisation	Name	Sign	n	Date	A-AWC-R
Contractor	Eng. Mahmoud shaban		c/2 - 2	31/3/2023	А
QA/QC *	Eng. Mazen Essamy		1		A
GARB**	Eng. Mohammed Fayad				
Employers Representative	Eng. Alaa Abd-Allatif	for 1	N PRIS	12-4-2023	Lwc

^{*} Designer ** Alignment/Bridges: Culvert only



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I- Introduction

General Consultant:

SYSTRA

Consultant

SPECTRUM

Contractor

شركة أنشاء للمقاو لات

Sample

FERMA

Station

St(373+000) to St(374+000)

Date of Test

31/03/2023

QC

847-1

II- Sample description:

Gravel and sand

III- Required tests

1- Grain size analysis and classification

2- Modified compaction and optimum moisture content (Proctor test)

3- Liquid limit, plastic limit and plasticity index

4- California bearing ratio (CBR)

IV- Results

 Grain size analysis and classifica- 	Grain size analysis	As showed in appendix
tion	Classification	A-1-a
2- Modified compaction and opti-	MDD	2.103
mum moisture content (Proctor test)	OMC	5.9%
3- Liquid limit, plastic limit and plas-	LL	Non plastic
ticity index	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	49%

LAB DIRECTOR

WebSite: www.comibassal.com

Eng / Eman kandil

COMIBASSA COMIBASSA

Geotechnical consultant

Dr. Mohamed Mostafa Badry



Kijo 23 Alexandria - Cairo Desert Road Merchem Tel 002 03 4704595 002 03470 1191 Email: civdept@comibassalxon CONSTRUCTION

Clin

SOCOTEC 180 8001:2018





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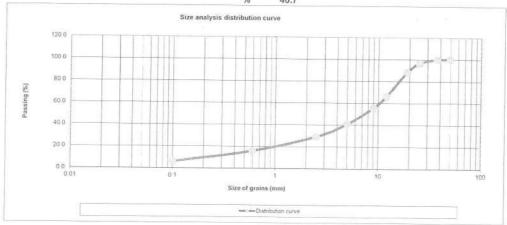
PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT	CUMULATIVE	CUMULATIVE	CUMULATIVE	STANDURD
	RETAINED	WEIGHT	PERCENTAGE	PERCENTAGE	SPECIFICATION
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	0.00	0.00	0.00	100.0	
1	271.00	271.00	3.43	96.6	
3/4	657.00	928.00	11.76	88.2	
1/2	1738.00	2666.00	33.78	66.2	
3/8	851.00	3517.00	44.56	55.4	
No.4	1162.00	4679.00	59.28	40.7	
No.10	143.00	143.00	28.60	29.1	
No.40	305.00	305.00	61.00	15.9	
No.200	427.00	427.00	85.40	5.9	

Total sample weight = 7893.00

pass No.4= 3214.0 Total fine aggregates weight % 40.7

500 gm



Soil classification: A - 1- a (Non Plastic)







Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191

Email: civdept@comibassal.com WebSite: www.comibassal.com







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Modified Proctor Test Report ASTM - D 1557

Mould Number :-Volume of mould =

Weight of mould =

2189 cm3 7239 g

G.S =

2.5 g/cm3

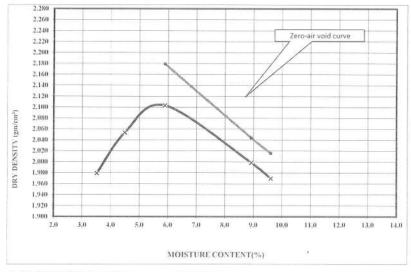
A- Density Calculations :-

	1	2	3	4	5
Weight.of wet soil+mould (g)	11723	11935	12114	12004	11965
Weight.of mould (g)	7239	7239	7239	7239	7239
Weight.of wet soil (g)	4484	4696	4875	4765	4726
Volume of mould (cm ³)	2189	2189	2189	2189	2189
Wet density (g/cm³)	2.048	2.145	2.227	2.177	2.159
Dry density (g/cm³)	1.979	2.053	2.103	1.998	1.970
Zero-air Void curve			2.179	2.044	2.016

B-Moisture Calculations :-

Weight.of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight.of dry soil+container (g)	244.3	242.7	240.6	236.4	235.8
Weight.of container (g)	82.0	80.0	81.0	84.0	88.0
moisture content(%)	3.5	4.5	5.9	8.9	9.6

C - Dry density-Moisture relationship:-



M.D.D= O.M.C=

2.103 gm/cm³ 5.9 %

Kilo 23 Alexandria - Cairo Desert Road - Merghem -

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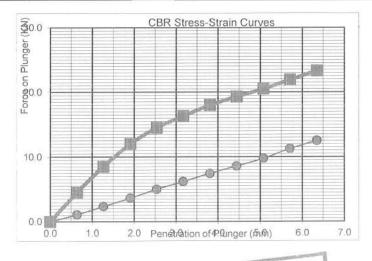
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Report Of CBR Test - ASTM - D 1883

NO OF	BLOWS	56			Swe	ell %	
MOULD NO		1			56		
WT OF	MOULD+SOI	L 11915		Start	0.00		
WT OF	MOULD	7025		End	0.00		
WT OF	SOIL	4890		Swell	0.00		
VOLUN	IE OF MOUL	D 2198					
WET DI	ENSITY	2.225					100
		MC be	efore soakir	ng Weig	ght of Ran	nmer	4.54Kg
TIN NO		1			MDD	Kg/m3	2.103
WT OF	WET SOIL+7	TIN 250.00					
	DRY SOIL+T				OMC	%	5.9
WT OF	WATER	9.00					
WT OF TIN		88			PRO	DVING R	ING
WT OF DRY SOIL		153			Div/	KN	0.0210
	JRE CONTE	NT 5.9 2.101				(1.55.1)	
DRY DE	DRY DENSITY				Capacit	y (KN)	50
Pen	Readin	a (Div)	Bearin	ng (KN)		CBR	
	56	g (DIV)	56	ig (itia)	standar	56	
0.00	0		0.0		0.0		
0.64	110		1.1		4.5		
1.27	240		2.4		8.5		
1.91	370		3.6		12.0		
2.54	510		5.0		14.5	38	
3.17	630		6.2		16.3		
3.81	760		7.5		18.0		
4.45	875		8.6		19.3		
5.08	995		9.8		20.5	49	
5.71	1150		11.3		21.9		
6.35	1275		12.5		23.3		







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Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Report :	379 - 1 - Center
Date :	12/04/2023

CHEMICAL ANALYSIS

General Consultant

:

SYSTRA

Consultant

Sample

.

SPECTRUM

Contractor

شركة انشاء للمقاولات

Project

Electric express train

.

FERMA

Station

ST (373 +0.00): (374 +0.00)

Date of Test

31-3-2023

Temperature : 20 °C

Humidity: 40%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974





LAB DIRECTOR
CH/ Mostafa Asker

Moustof



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Inshaa







Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		De	Designer Company			(SPECTRUM) Engineering Consulting Office			
	Name	Sign	Da	te/Seria	al Num	ber	Time	2		
Issued by Contractor	Eng. Mohamed hassan	4 233 2027		(M	1-2023 .A.R)			1:	30	
Received by			C1	C2	C3	DD	MM	YY	нн	MM
GARB CONSULTANT	Eng. Mazen Essamy		MAR 373	EW	CS	03	04	23	01	30

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

Description of Materials	Fill Layer Total (Fill Layer Total Quantity (10000 m3) Upper Embankment					
Location to be Used	From Station (3	From Station (373+000) to Station (374+000)					
Sample only	Yes	Materials Type	Fill layers				
Supplier Name	18	Data Sheet provided	Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)				
Reference in BoQ	(3-1)	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. Mazen Essamy (SPECTRUM)

Comments by: Eng. Alaa Abd-Allatif (ER)

1-Quality test Result By Third Party Lab is Approved.

2-This Sample Representive (5000 m3) only.

- 1- All tests were carried-out by third Party lab (comibassal international)
- 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 hassan	702	03-04-2033	А
QA/QC *	Eng. Mazen Essamy		-	A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif	for ne	113 12-4-2023	Ausc

^{**} Alignment/Bridges: Culvert only



Accredited by: Egyption General Authority for Petroleum under No. 34/29-11-2011
Accredited by: Egyption Accreditation and (EGAC) under No. 031706/1A

I- Introduction

General Consultant:

SYSTRA

Consultant

SPECTRUM

Contractor

شركة أنشاء للمقاولات

Sample

FERMA

Station

FERIVIA

St(373+000) to St(374+000)

Date of Test

03/04/2023

QC

847-2

II- Sample description:

Gravel and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction and optimum moisture content (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)

IV- Results

1- Grain size analysis and classifica-	Grain size analysis	As showed in appendix
tion	Classification	A-1-a
2- Modified compaction and opti-	MDD	2.112
mum moisture content (Proctor test)	OMC	6.3%
3- Liquid limit, plastic limit and plas-	LL	Non plastic
ticity index	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	53%

LAB DIRECTOR

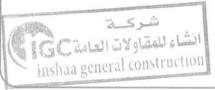
Ceman

Eng / Eman kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191

Email: civdept@comibassal.com WebSite: www.comibassal.com







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PARTICLE SIZE DISTRIBUTION **ANALYSIS** ASTM C-136 / AASHTO T27

	WEIGHT	CUMULATIVE	CUMULATIVE	CUMULATIVE	STANDURD
	RETAINED	WEIGHT	PERCENTAGE	PERCENTAGE	SPECIFICATION
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	0.00	0.00	0.00	100.0	
1	352.00	352.00	4.35	95.7	
3/4	568.00	920.00	11.37	88.6	
1/2	1832.00	2752.00	34.00	66.0	
3/8	864.00	3616.00	44.68	55.3	
No.4	1263.00	4879.00	60.29	39.7	
No.10	162.00	162.00	32.40	26.8	
No.40	324.00	324.00	64.80	14.0	
No.200	451.00	451.00	90.20	3.9	

pass

%

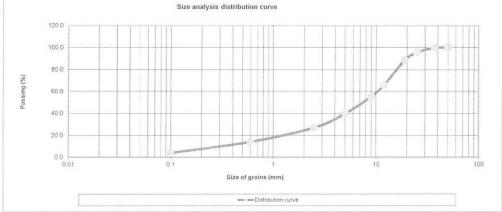
Total sample weight

= 8093.00

3214.0 Total fine aggregates weight 39.7

500 gm

Size analysis distribution curve 120.0



Soil classification: A - 1- a (Non Plastic)





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MIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by: Egyption Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report ASTM - D 1557

Mould Number :-Volume of mould =

Weight of mould =

2198 cm3 7020 g 2.5 g/cm3

G.S =

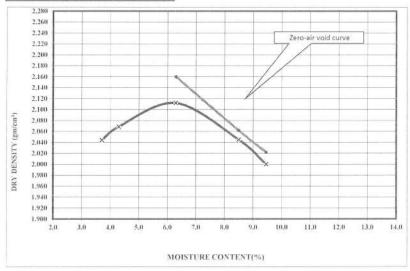
A- Density Calculations :-

	1	2	3	4	5
Weight.of wet soil+mould (g)	11679	11762	11954	11897	11832
Weight.of mould (g)	7020	7020	7020	7020	7020
Weight.of wet soil (g)	4659	4742	4934	4877	4812
Volume of mould (cm³)	2198	2198	2198	2198	2198
Wet density (g/cm³)	2.120	2.157	2.245	2.219	2.189
Dry density (g/cm³)	2.044	2.069	2.112	2.045	2.000
Zero-air Void curve			2.160	2.062	2.022

B- Moisture Calculations :-

Weight.of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight.of dry soil+container (g)	244.0	243.0	240.0	237.0	236.0
Weight.of container (g)	82.0	80.0	81.0	84.0	88.0
moisture content(%)	3.7	4.3	6.3	8.5	9.5

C - Dry density-Moisture relationship:-



M.D.D= O.M.C=

2.112 gm/cm3 6.3





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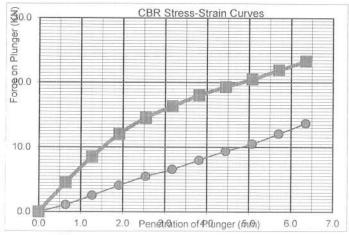
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Report Of CBR Test - ASTM - D 1883

NO OF	BLOWS	56			Swell %		
MOUL	ONO	1			56		
WT OF	MOULD+SO	IL 11944		Start	0.00		
WT OF	MOULD	7010		End	0.00		
WT OF		4934		Swell	0.00		
VOLUN	IE OF MOUL	.D 2198					
WET D	ENSITY	2.245					
		MC b	efore soaking	y Wei	ght of Ran	nmer	4.54Kg
TIN NO)	1			MDD	Kg/m3	2.112
WT OF	WET SOIL+	TIN 250.00					
	DRY SOIL+	TIN 240.5			OMC	%	6.3
WT OF	WATER	9.50				70	0.0
WT OF	TIN	92			PROVING RING		ING
WT OF	DRY SOIL	148.5			Div/KN (0.0210
	URE CONTE						
DRY D	ENSITY	2.110			Capacity (KN)		50
Pen	Poadir	ng (Div)	Bearing	· /IZNI\		CBR	
mm	56	ig (DIV)	56	(KIA)	standar	56	
0.00	0		0.0		0.0	30	
0.64	110		1.1		4.5		
1.27	258		2.5		8.5		
1.91	415		4.1		12.0		
2.54	558		5.5		14.5	41	
3.17	667		6.5		16.3		
3.81	816		8.0		18.0		
4.45	956		9.4		19.3		
5.08	1070		10.5		20.5	53	
5.71	1230		12.1		21.9		



SPECTRUM CONSULTING CONSULTING





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Report	:	379 - 2 - Center	
Date	:	12/04/2023	

CHEMICAL ANALYSIS

General Consultant

:

SYSTRA

Consultant

.

SPECTRUM

Contractor

شركة انشاء للمقاولات

Project :

Electric express train

Sample :

FERMA

ST

ST (373 +0.00): (374 +0.00)

Date of Test

Station

3-4-2023

Temperature : 20 °C

Humidity: 40%

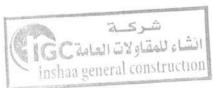
ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974





LAB DIRECTOR
CH/ Mostafa Asker

Mousto



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Inshaa







Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Des	Designer Company			(SPECTRUM) Engineering Consulting Office				
Name		e Sign		Date/Serial Number				Time			
Issued by Contractor	Eng. Mohamed hassan	4023		07-04-2023 (M.A.R) • (F.3)		1:30					
Received by			C1	C2	C3	DD	MM	YY	нн	MM	
GARB CONSULTANT	Eng. Mazen Essamy	N	373	EW	CS	08	04	23	01	30	

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

Fill Layer Total Quantity	(15	nbankment					
From Station (37*+000)	to St	tation (374+000)					
Yes	Materials Type		Fill layers				
	Data Sheet provided		Data Sheet provided		Data Sheet provided		Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)
(3-1)	Spe	cification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP				
	Test Samples Results						
No/Yes	Other						
n Essamy (SPECTRUM)		Comments by: En	g. Alaa Abd-Allatif (ER)				
The state of the s		(comibassal intern 2-Results report project specificati 3-Final approval	attached and acceptable with the				
	No/Yes No/Yes Ressamy (SPECTRUM) Party Lab is Approved.	From Station (37*+000) to State Yes Ma Date Special Section (37*+000) to State No Section Section (37*+000) to State No Section Section (37*+000) to State Prom Station (37*+000) to State Prom Station (37*+000) to State Section Section (37*+000) to State Prom Station (37*+000) to State Section Section (37*+0	Data Sheet provided Specification Test Samples Results No/Yes Other Comments by: En 1- All tests wer (comibassal interred) 2-Results report project specification 3-Final approval				

		APPROVAL STATUS	Esta	
Organisation	Name	Sign (4)	Date	A-AWC-R
Contractor	Eng. Mohamed hassan	- 102 102	08-04-2033	А
QA/QC*	Eng. Mazen Essamy		-	P
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif	for we	113 12-4-2023	Awc

^{*} Designer

^{**} Alignment/Bridges: Culvert only



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

I- Introduction

General Consultant:

SYSTRA

Consultant

spectrum

Contractor

شركة أنشاء للمقاولات

Sample

FERMA

Station

St(373+000) to st(374+000)

Date of Test

08/04/2023

QC

847-3

II- Sample description:

Gravel and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction and optimum moisture content (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)

IV- Results

1- Grain size analysis and classifica-	Grain size analysis	As showed in appendix
tion	Classification	A-1-a
2- Modified compaction and opti-	MDD	2.114
mum moisture content (Proctor test)	OMC	5.9%
3- Liquid limit, plastic limit and plas-	LL	Non plastic
 Modified compaction and optinum moisture content (Proctor test Liquid limit, plastic limit and plascity index 	PL.	Non plastic
***************************************	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	52%

LAB DIRECTOR

Ceman_

Eng / Eman kandil

Dr.

Geotechnical consultant

Dr. Mohamed Mostafa Badry



انشاء للمقاولات العامة IGC انشاء للمقاولات العامة

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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

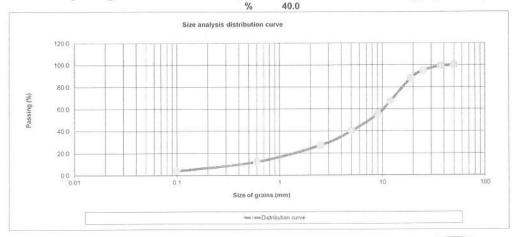
	WEIGHT CUMULATI		CUMULATIVE	CUMULATIVE	STANDURD
	RETAINED	WEIGHT	PERCENTAGE	PERCENTAGE	SPECIFICATION
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	59.00	59.00	0.73	99.3	
1	346.00	405.00	4.98	95.0	
3/4	568.00	973.00	11.98	88.0	
1/2	1698.00	2671.00	32.87	67.1	
3/8	970.00	3641.00	44.81	55.2	
No.4	1230.00	4871.00	59.95	40.0	
No.10	162.00	162.00	32.40	27.1	
No.40	348.00	348.00	69.60	12.2	
No.200	453.00	453.00	90.60	3.8	

Total sample weight

= 8125.00

pass No.4= 3254.0 Total fine aggregates weight

500 gm



Soil classification: A - 1- a (Non Plastic)







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Modified Proctor Test Report ASTM - D 1557

Mould Number :-Volume of mould =

Weight of mould =

2 2120 cm3 7080 g

G.S =

2.5 g/cm3

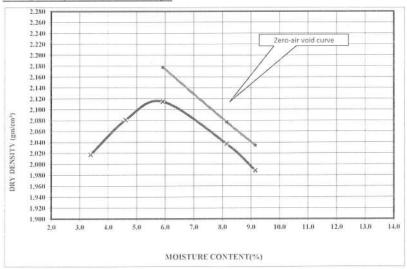
A- Density Calculations :-

	1	2	3	4	5
Weight.of wet soil+mould (g)	11502	11695	11828	11750	11611
Weight.of mould (g)	7080	7080	7080	7080	7010
Weight.of wet soil (g)	4422	4615	4748	4670	4601
Volume of mould (cm³)	2120	2120	2120	2120	2120
Wet density (g/cm³)	2.086	2.177	2.240	2.203	2.170
Dry density (g/cm³)	2.018	2.081	2.114	2.037	1.988
Zero-air Void curve			2.178	2.077	2.034

B- Moisture Calculations :-

Weight.of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight.of dry soil+container (g)	244.5	242.5	240.5	237.8	236.5
Weight.of container (g)	82.0	80.0	80.0	88.0	89.0
moisture content(%)	3.4	4.6	5.9	8.1	9.2

C - Dry density-Moisture relationship:-



N.D.D= O.M.C=

2.114 gm/cm3 5.9 %



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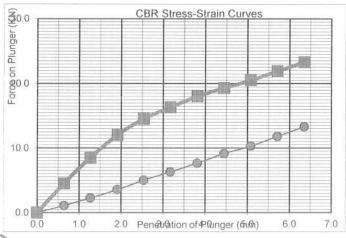
COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by: Egyption Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

NO OF	BLOWS	S 56 Swell %						
MOULI	O NO	1				56		
WT OF	MOULD+SOIL	11950			Start	0.00		
WT OF	MOULD	7010			End	0.00		
WT OF		4940			Swell	0.00		
	IE OF MOULD	2198						
WET D	ENSITY	2.247						
		MC be	efore soa	aking	Weig	ght of Ran	nmer	4.54Kg
TIN NO)	1				MDD	Kg/m3	2.114
	WET SOIL+TIN	250.00						
WT OF	DRY SOIL+TIN	240.5				OMC	%	5.9
	WATER	9.50						
WT OF TIN		92				PRO	DVING R	ING
WIOLET	DRY SOIL URE CONTENT	148.5				Div/KN		0.0210
Name and Address of the Owner, where		6.4					(1/4)	
וט אאט	ENSITY	2.112				Capacit	y (KN)	50
Pen	Reading (I	Div) I	Res	aring (I	ZNI)	Ι	CBR	
mm	56	1	56	aring (i	1	standar	56	
0.00	0		0.0			0.0		-
0.64	110		1.1			4.5		
1.27	230		2.3			8.5		
1.91	360		3.5			12.0		
2.54	510 640		5.0			14.5	38	
3.17	780	-	6.3 7.6			16.3 18.0		
3 81	100		9.1			19.3		
3.81	930	1	9 1			10.0		
3.81 4.45 5.08	930		10.3			20.5	52	
4.45						20.5	52	- 3









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Report	:	379 - 3 - Center	
Date	:	12/04/2023	

CHEMICAL ANALYSIS

General Consultant

SYSTRA

Consultant

SPECTRUM

Contractor

شركة انشاء للمقاولات

Project

Electric express train

Sample

FERMA

ST (373 +0.00): (374 +0.00)

Date of Test

Station

8-4-2023

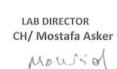
Temperature : 20 °C

Humidity: 40%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974









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Fax:002 033900476

MATERIAL APPROVAL REQUEST











Contractor Company	INSHAA GENERAL (Company	OF CONSTRUCTION		Designer Company			(SPECTRUM) Engineering Consulting Office						
	Name	Sign		ne Sign Date/Serial Number				ber	Time				
Issued by Contractor	Eng. Mahmoud Shaban	che-	Sign I		9/5/2023 (M.A.R. REV) .(F-4)			1:30					
Received by				C1	C2	C3	DD	MM	YY	НН	MM		
GARB CONSULTANT	Eng. Mazen Essamy		MAR	373	EW	CS	10	5	23	01	30		

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

Description of Materials	FILL LAYER TOTAL	TILL LAYER TOTAL QUANTITY (20000 m3)						
Location to be Used	From Station (373	rom Station (373+000) to Station (374+000)						
Sample only	Yes	Ma	iterials Type	Fill layers				
Supplier Name	s	Data Sheet provided		Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)				
Reference in BoQ	(3-1)	Specification		EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP				
Prequalification reference		Tes	st Samples Results					
Reference Photos	No/Yes	Oth	ner					
Comments by: Eng. Maze		UM)	Comments by: En	g. Alaa Abd-Allatif (ER)				
1-Quality test Result By Third P 2-This Sample Representive (5	SPECTRUM SPECTRUM		comibassal intern 2-Results report project specificati 3-Final approval	attached and acceptable with the				

		APPROVAL STATUS		
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud shaban	ورسعبان		А
QA/QC*	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif	lor of	91 \$ 15.5.2023	Awc

^{*} Designer

^{**} Alignment/Bridges: Culvert only



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

I- Introduction

General Consultant:

SYSTRA

Consultant

SPECTRUM

Contractor

شركة انشاء للمقاولات

Sample

FERMA

Station

St(373+000) to St(374+000)

Date of Test

10/05/2023

QC

1457

II- Sample description:

Gravel and sand

III- Required tests and Results

Required Test	S	Results
1- Grain size analysis and classifica-	Grain size analysis	As showed in appendix
tion	Classification	A-1-b
2- Modified compaction (Proctor	MDD	2.123
test)	OMC	7.1%
3- Liquid limit, plastic limit and plas-	LL	24.0%
ticity index	PL.	21.2%
*	PI	2.8
4- California bearing ratio (CBR)	CBR ratio	22%

IV- Notes

- 1- Samples were brought by : Client
- 2- Samples are responsible from the Person who brought it.
- 3- The results are applying only for the present report.

SPECTRUM CONSULTING STATES

LAB DIRECTOR

Eng / Eman kandil

CO1/13/150 (E)

Geotechnical consultant

Dr. Mohamed Mostafa Badry

شركة العامة IGC انشاء للمقاولات العامة inshaa general construction

Kilo 23 Alexandria - Cairo Desert Road - Merghem

Tel: 002 03 4704595 - 002 034701191 Email: civdept@comibassal.com

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49 El Horria Ave. Alex, Egypt Tel: 002 033920176 - 002 033931482

Fax :002 033920176



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APPENDIX

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COMIBASSAL International Controllers

Internal inspection and laboratories sector

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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

WEIGHT RETAINED (gm)		CUMULATIVE	CUMULATIVE	CUMULATIVE	STANDURD	
	RETAINED WEIGHT F		PERCENTAGE	PERCENTAGE	SPECIFICATION	
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS	
2	0.00	0.00	0.00	100.0		
1 1/2	381.00	381.00	3.81	96.2		
1	726.00	1107.00	11.07	88.9		
3/4	528.00	1635.00	16.35	83.7		
1/2	765.00	2400.00	24.00	76.0		
3/8	679.00	3079.00	30.79	69.2		
No.4	1308.00	4387.00	43.87	56.1		
No.10	59.00	59.00	11.80	49.5		
No.40	140.00	140.00	28.00	40.4		
No.200	322.00	322.00	64.40	20.0		

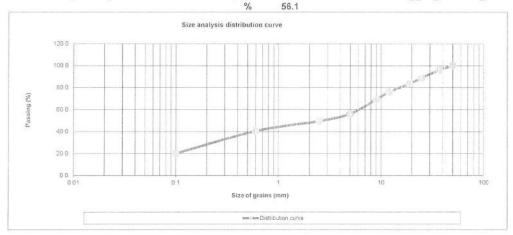
Total sample weight

= 10000.00

pass No.4=

No.4= 5613.0 Total fine aggregates weight

500 gm



Soil classification: A - 1- b

SPECTRUM SPE

Kilo 23 Alexandria - Cairo Desert Road - Merghem

Tel: 002 03 4704595 - 002 034701191

Email: civdept@comibassal.com WebSite: www.comibassal.com







COMING SOLVE

49 El Horria Ave. Alex,Egypt Tel: 002 033920176 - 002 033931482 Fax: 002 033900476



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report ASTM - D 1557

Mould Number :-

Volume of mould = Weight of mould =

G.S =

2199 cm³

5657 g 2.6 g/cm3

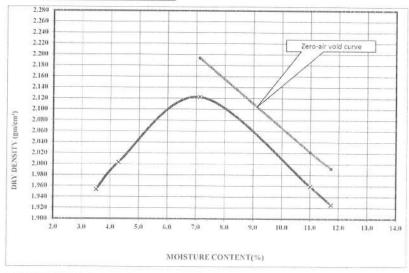
A- Density Calculations :-

	1	2	3	4	5
Weight.of wet soil+mould (g)	10103	10250	10657	10439	10388
Weight.of mould (g)	5657	5657	5657	5657	5657
Weight.of wet soil (g)	4446	4593	5000	4782	4731
Volume of mould (cm ³)	2199	2199	2199	2199	2199
Wet density (g/cm³)	2.022	2.089	2.274	2.175	2.151
Dry density (g/cm³)	1.953	2.003	2.123	1.959	1.925
Zero-air Void curve			2.194	2.022	1.992

B-Moisture Calculations :-

Weight.of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight.of dry soil+container (g)	244.3	241.0	234.9	228.3	227.0
Weight.of container (g)	82.0	31.0	23.0	31.0	31.0
moisture content(%)	3.5	4.3	7.1	11.0	11.7

C - Dry density-Moisture relationship:-



M.D.D= O.M.C=

2.123 gm/cm³ 7.1 %

انشاء للمقاولات العاملة الماملة inshaa general construction





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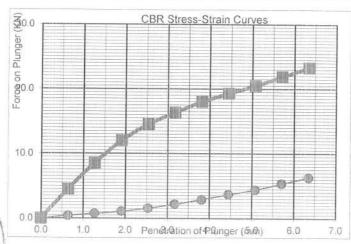
Fax:002 033900476



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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS		56			Sw	ell %		
MOULD NO		1			56	THE OWNER OF SALES	LIGHT SHIP SHIP SHIP	
	MOULD+S	OIL	11980		Start	0.00		
WTOF	MOULD		7010		End	0.00		
WT OF			4970		Swell	0.00		
VOLUM	IE OF MOU	JLD	2198					
WET D	ENSITY		2.261					
			MC be	fore soakin	g Wei	ght of Rar	nmer	4.54Kc
TIN NO			1			MDD	Kg/m3	2.123
	WET SOIL		250.00					
WT OF	DRY SOIL	+TIN	240.5			OMC	%	7.1
WT OF	WATER		9.50			01110	70	7.1
WT OF TIN WT OF DRY SOIL			92 148.5			PRO	OVING R	NG
WTOF	DRY SOIL		148.5			Div/KN		0.0210
	JRE CONT	ENT	6.4					
DRY DE	ENSITY		2.125			Capacit	ty (KN)	50
Pen	Read	ina /F	Div)	Bearin	a /IZN)		CBR	
mm	56	ing (L	7147	56	g (KN)	standar	56	
0.00	0			0.0		0.0	30	
0.64	42			0.4		4.5		
1.27	73			0.7		8.5		
1.91 2.54	108			1.1		12.0		
2.54	157			1.5		14.5	12	
3.17	222		,	2.2		16.3		
3.81	295			2.9		18.0		
4.45	375			3.7		19.3		
5.08	450			4.4		20.5	22	
5.71	546			5.4		21.9		
6.35	643			6.3		23.3		









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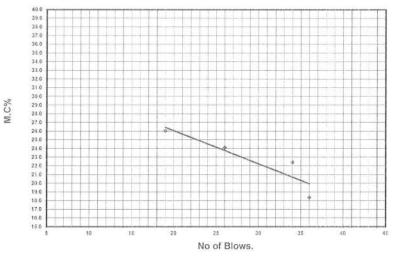
Fax:002 033900476



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Liquid and Plastic Limits Test ASTM - D 4318

Test No	1	2	3	4	5	6		
Type of test	Salara Salara	Liquio	l Limit		Plastic	Plastic Limit		
NO of B.	36	34	26	19				
Container No	j	c	S	m	F	J		
Mass of wet soil +container	49.50	54.90	45.30	43.80	31.90	30.80		
Mass of dry soil +container	46.20	49.50	41.40	39.40	30.70	29.80		
Mass of container	28.20	25.40	25.20	22,50	24.60	25.40		
Mass of moisture	3.30	5.40	3.90	4.40	1.20	1.00		
Mass of dry soil	18.00	24.10	16.20	16.90	6.10	4.40		
Moisture content	18.33	22.41	24.07	26.04	19.67	22.73		



Results:

Liquid Limit (L.L) : 24 %. 21.2 %. Plastic Limit (P.L) : 2.8 %. Plasticity Index (P.I):









SOCOTEC







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Report :		582 - 1 - Center	
Date	:	05/07/2023	

CHEMICAL ANALYSIS

General Consultant

SYSTRA

Consultant

SPECTRUM

Contractor

شركة انشاء للمقاولات

Project

Electric express train

Sample

FERMA

Station

ST (373 +0.00): (374 +0.00)

Date of Test

10-5-2023

Temperature : 25 °C

Humidity: 45%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974





LAB DIRECTOR CH/ Mostafa Asker



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Contractor Company	INSHAA GENERAL (Company	GENERAL OF CONSTRUCTION			Designer Company				(SPECTRUM) Engineering Consulting Office			
Name		Sign		Date/Serial Number				Time				
Issued by Contractor	Eng. Mahmoud Shaban	و المورية		23/08/2023 (M.A.R.) (F.5)				1:30				
Received by				C1	C2	C3	DD	MM	YY	НН	MM	
GARB Eng. Mazen Essamy CONSULTANT		MAR	373	EW	CS	24	08	23	01	30		

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

Description of Materials	FILL LAYER TOTAL QUANTITY (25000 m3)			
Location to be Used	From Station (373+000) to Station (374+000)			
Sample only	Yes	Materials Type		Fill layers
Supplier Name		Da	ta Sheet provided	Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)
Reference in BoQ	(3-1)	Specification		EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Prequalification reference		Test Samples Results		
Reference Photos	No/Yes Other		her	
Comments by: Eng. Maze 1-Quality test Result By Third F 2-This Sample Representive (5	Party Lab is Approved.)	1-All tests were comibassal intern 2-Results report project specificati 3-Final approval comments.	attached and acceptable with the

		APPROVAL STATUS			
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	Eng. Mahmoud shaban	o he so	24/08/2023	А	
QA/QC*	Eng. Mazen Essamy		_	A	
GARB**	Eng. Margret magdy			•	
Employers Representative	Eng. Alaa Abd-Allatif	f E	ZP1 - 7-9-2023	Awa	

^{*} Designer ** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories secto

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Report NO.	1851
Date of report	07-09-2023

I- Introduction

General Consultant:

SYSTRA

Consultant

SPECTRUM

Contractor

شركة انشاء للمقاو لات العامة

Sample

Upper Embankment.

Station

St(373+000) to st(374+000)

Date of Test

24/08/2023

II- Sample description:

Gravel and sand.

III- Required tests and Results

Required Test	Results		
1- Grain size analysis and classifica-	Grain size analysis	As showed in appendix	
tion	Classification	A-1-b	
2- Modified compaction (Proctor test)	MDD	2.113	
	OMC	8.4%	
3- Liquid limit, plastic limit and plasticity index	LL	24.0%	
	PL	21.2%	
	PI	2.8%	
4- California bearing ratio (CBR)	CBR ratio	32%	

IV-Notes

1- Samples were brought by : Contractor.

2- Samples are responsible from the Person who brought it.

3- The results are applying only for the present seport.

LAB DIRECTOR eman Eng / Eman kandil

شركة انشاء للمقاولات العامة GC inshaa general construction



Geotechnical consultant

-or. Dr. H.

Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Merghem

Tel: 002 03 4704595 - 002 034701191 Email: civdept@comibassal.com

WebSite: www.comibassal.com



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Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

APPENDIX

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COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT	CUMULATIVE	CUMULATIVE	CUMULATIVE	STANDURD	
	RETAINED	WEIGHT PERCENTAGE PERCENTAGE S		SPECIFICATION		
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS	
2	0.00	0.00	0.00	100.0		
1 1/2	250.00	250.00	2.50	97.5		
1	418.00	668.00	6.68	93.3		
3/4	297.00	965.00	9.65	90.3		
1/2	860.00	1825.00	18.25	81.7		
3/8	519.00	2344.00	23.44	76.6		
No.4	1155.00	3499.00	34.99	65.0		
No.10	22.00	22.00	4.40	62.1		
No.40	118.00	118.00	23.60	49.7		
No.200	336.00	336.00	67.20	21.3		

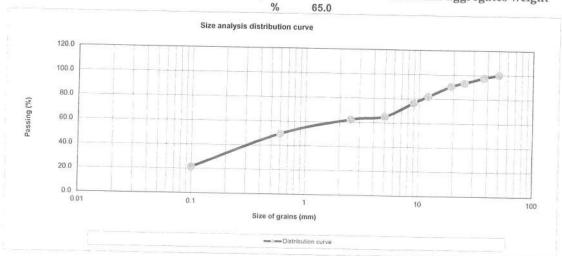
Total sample weight

= 9999.00

pass

No.4= 6500.0 Total fine aggregates weight

500 gm



Soil classification: A - 1- b



SPECTRUM CONSULTING CONSULTING



Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191

Email: civdept@comibassal.com WebSite: www.comibassal.com



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Tel: 002 033920176 - 002 033931482

Fax:002 033900476



MIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report ASTM - D 1557

Mould Number :-

Volume of mould =

Weight of mould =

G.S =

2199 cm3

5657 g

2.65 g/cm3

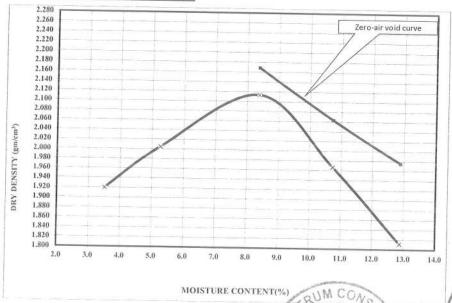
A- Density Calculations :-

	1	2	3	4	5
Weight.of wet soil+mould (g)	9989	10257	10650	10405	10115
Weight.of mould (g)	5657	5657	5657	5657	5657
Weight.of wet soil (g)	4332	4600	4993	4748	4458
Volume of mould (cm ³)	2180	2180	2180	2180	2180
Wet density (g/cm³)	1.987	2.110	2,290	2,178	2.045
Dry density (g/cm³)	1.920	2.005	2.113	1.967	1.812
Zero-air Void curve	-		2.169	2.063	1.975

B-Moisture Calculations :-

Weight.of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight.of dry soil+container (g)	244.3	239.0	233.0	228.0	225.0
Weight.of container (g)	82.0	30.0	30.0	23.0	31.0
moisture content(%)	3.5	5.3	8.4	10.7	12.9

C - Dry density-Moisture relationship:-



M.D.D= O.M.C=

2.113 gm/cm3 8.4 %





شركة انشاء للمقاولات العامة كالم Kilo 23 Alexandria Cairo Desert Road HMerghem 11

Tel: 002 03 4704595 - 002 034701191 Email: civdept@comibassal.com WebSite: www.comibassal.com



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Tel: 002 033920176 - 002 033931482

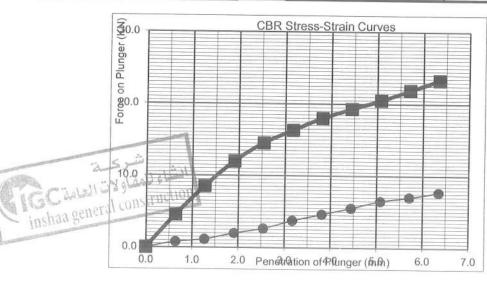
Fax:002 033900476



Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by: Egyption Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

	BLOW	S	56						
MOUL			1				T		
	MOULE		10150						
WT OF	MOUL	D	5171						
WT OF			4979						
VOLU	ME OF N	/IOULD	2198						
WET D	ENSITY	,	2.265						
			MC be	efore s	oaking	We	ight of Ran	nmer	4.54Kg
TIN NO			1				MDD	Kg/m3	2.113
WT OF	WET S	OIL+TIN	250.00				1		201110
WT OF	DRY S	OIL+TIN	238				OMC	%	8.4
WT OF	WATER	3	12.00				OIVIC	70	0.4
WT OF	TIN		92				-		
WT OF TIN WT OF DRY SOIL		92 146					1		
	MOISTURE CONTENT		8.2						
DRY DI	ENSITY		2.093						
Pen	Re	eading (D	livi	D.	earing (K	AIX		ODD	
mm	56	l l	10)	56	aring (K	14)	standar	CBR 56	
0.00	0			0.0			0.0	- 30	
0.64	77			0.8			4.5		
1.27	114			1.1			8.5		
1.91	200			2.0			12.0		
2.54	267			2.6			14.5	20	
3.17	380			3.7			16.3		
3.81	470			4.6			18.0		
4.45	560			5.5			19.3		
5.08	660			6.5			20.5	32	
5.71	715			7.0			21.9		
6.35	785			7.7			23.3	_	







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Tel: 002 033920176 - 002 033931482

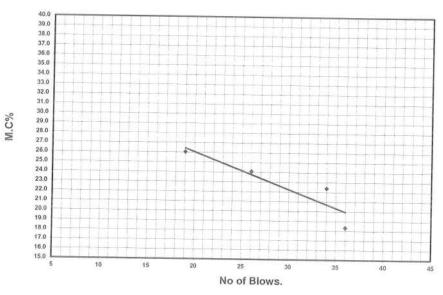
Fax:002 033900476



Accredited by: Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by: Egyption Accreditation council (EGAC) under No. 031706/1A

Liquid and Plastic Limits Test ASTM - D 4318

Test No	1	2	3	4	5	6
Type of test	Liquid Limit			Plastic Limit		
NO of B.	36	34	26	19		
Container No	j	c	s	m	F	J
Mass of wet soil +container	49.50	54.90	45.30	43.80	31.90	30.80
Mass of dry soil +container	46.20	49.50	41.40	39.40	30.70	29.80
Mass of container	28.20	25.40	25.20	22.50	24.60	25.40
Mass of moisture	3.30	5.40	3.90	4.40	1.20	1.00
Mass of dry soil	18.00	24.10	16.20	16.90	6.10	4.40
Moisture content	18.33	22.41	24.07	26.04	19.67	22.73



Results:

Liquid Limit (L.L): 24 %. Plastic Limit (P.L) : 21.2 %. Plasticity Index (P.I): 2.8 %.







Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191

Email: civdept@comibassal.com WebSite: www.comibassal.com



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Fax:002 033900476



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by : Egyption Accreditation council (EGAC) under No. 031706/1A

Report	:	697 - 1 - Center
Date	:	07/09/2023

CHEMICAL ANALYSIS

General Consultant :

:

SYSTRA

Consultant

:

SPECTRUM

Contractor : Project : شركة انشاء للمقاولات

Sample

Electric express train

L pper Embankment ST (375 +0.00) : (374 +0.00)

Station : Date of Test :

24-8-2023

Temperature : 25 °C

Humidity: 45%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974





LAB DIRECTOR
CH/ Mostafa Asker





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Fax:002 033900476



Inshaa







Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Des	Designer Company			(SPECTRUM) Engineering Consulting Office			
	Name	Sign	Date	Date/Serial Number			Time			
Issued by Contractor	Eng. Mohamed hassan	2023		30-03-2023 (M.A.R) (P.S.G.1)						
Received by			CI	C2	C3	DD	MM	YY	НН	MM
GARB CONSULTANT	Eng. Mazen Essamy	MA	R 373	EW	CS	31	03	23	01	30

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

Description of Materials	Prepared Subgra	Prepared Subgrade Total Quantity (5000 m3)						
Location to be Used	From Station (37	rom Station (37 [°] +000) to Station (374+000)						
Sample only	Yes	Materials Type	Prepared Subgrade					
Supplier Name		Data Sheet provided	Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)					
Reference in BoQ	(3-1)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP					
Prequalification reference		Test Samples Results	CIVECON GROOP					
Reference Photos	No/Yes	Other						
Comments by: Eng. Maze	n Essamy (SPECT	RUM) Comments by: Er	ng. Alaa Abd-Allatif (ER)					

1-Quality test Result By Third Party Lab is Approved.

2-This Sample Representive (5000 m3) only

- 1- All tests were carried-out by third Party lab (comibassal international)
- 2-Results report attached and acceptable with the project specifications.
- 3-Final approval is subject to above mentioned comments. شركة

انشاء للمقاولات العامة C الشاء inshaa general construction

		APPROVAL STATUS		
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed hassan	909	31-03-2023	А
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			,
Employers Representative	Eng. Alaa Abd-Allatif	or ~ E	517 12.4-2023	Awc

^{**} Alignment/Bridges: Culvert only



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I- Introduction

General Consultant:

SYSTRA

Consultant

SPECTRUM

Contractor

شركة انشاء للمقاو لات

Sample

Prepare Sub-Grade

Station

St(373+000) to st(374+000)

Date of Test

31/03/2023

00

000 4

Q

883-1

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6- Los Angeles test

IV- Results

1- Grain size analysis and classifica-	Grain size analysis	As showed in appendix
tion	Classification	A-1-a
2- Modified compaction(Proctor	MDD	2.150
test)	OMC	5.70%
3- Liquid limit, plastic limit and plas-	LL	Non plastic
ticity index	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CB	CBR ratio	90%
5- Specific gravity (SG), absorption	SSD	2.511
and degradation	Absorption	1.2%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	26.5%

LAB DIRECTOR.

Eng / Eman kandil

COMIBASSA CONTRACTOR

Geotechnical consultant

Dr. Mohamed/Mostafa Badry

Kilo 23 Alexandria Carro Desert Road Merghem Tel 002 03 4704595 2002 034701191

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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT	CUMULATIVE	CUMULATIVE	CUMULATIVE	STANDURD	
	RETAINED	WEIGHT	PERCENTAGE	PERCENTAGE	SPECIFICAT	ION
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS	
5	0.00	0.00	0.00	100.0	100	100
4	0.00	0.00	0.00	100.0	90	100
3	0.00	0.00	0.00	100.0	75	100
1.5	189.00	189.00	1.88	98.1	50	100
3/4	2800.00	4567.00	45.53	54.5	20	75
3/8	3197.00	7764.00	77.40	22.6	15	60
No.10	195.00	195.00	39.00	13.8	0	35
No.200	343.00	343.00	68.60	7.1	0	12

Total sample weight

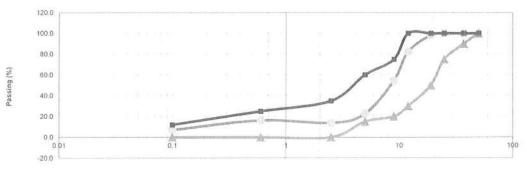
= 10031.00

pass No.3/8= 3845.0 Total fine aggregates weight

500 gm

% 38.3

Size analysis distribution curve



Size of grains (mm)

- Distribution curve

-a---Minmum Limits

Soil classification: A - 1- a (Non-Plastic)



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Modified Proctor Test Report ASTM - D 1557

Mould Number :-

Volume of mould =

Weight of mould =

G.S =

2120 cm3

7021 g

2.5 g/cm3

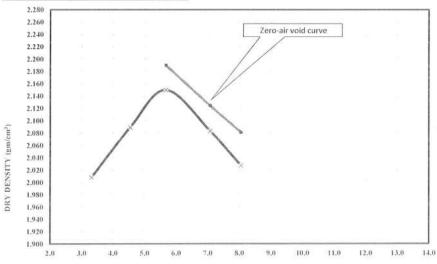
A- Density Calculations :-

	1	2	3	4	5
Weight.of wet soil+mould (g)	11420	11651	11837	11750	11665
Weight.of mould (g)	7021	7021	7021	7021	7021
Weight.of wet soil (g)	4399	4630	4816	4729	4644
Volume of mould (cm ³)	2120	2120	2120	2120	2120
Wet density (g/cm³)	2.075	2.184	2.272	2.231	2.191
Dry density (g/cm³)	2.008	2.089	2.150	2.083	2.027
Zero-air Void curve			2.190	2.124	2.081

B-Moisture Calculations :-

Weight.of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight.of dry soil+container (g)	244.8	242.7	241.2	239.3	238.0
Weight.of container (g)	88.0	82.0	86.0	88.0	89.0
moisture content(%)	3.3	4.5	5.7	7.1	8.1

C - Dry density-Moisture relationship:-



MOISTURE CONTENT(%)

M.D.D= O.M.C= 2.150 gm/cm3



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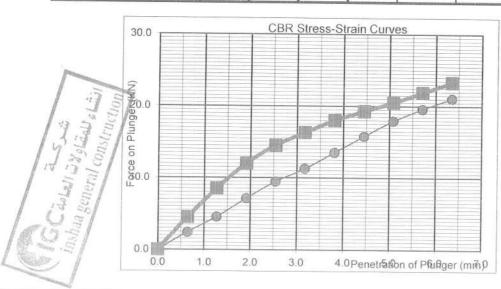
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Report Of CBR Test - ASTM - D 1883

NO OF E		56			Sw	rell %	
MOULD	NO	1			56		
WT OFN	IOULD+SOIL	11965		Start	0.00		
WT OF N	NOULD	7020		End	0.00		
WT OF S		4945		Swell	0.00		
VOLUME OF MOULD		2190					
WET DENSITY		2.258					
		MC	C before soaking We		eight of Ram	mer	4.54Ka
TIN NO		1			MDD	Kg/m3	2.150
WT OF WET SOIL+TIN		IN 250.00				riginio	2.100
WT OF DRY SOIL+TIN		N 242.2			OMC	%	5.7
WT OF WATER		7.80			OIVIO	/0	5.7
WT OF TIN		86			PE	OVING RIN	IG
WT OF DRY SOIL		156.2	2.125		Div/KN		40
MOISTURE CONTENT		T 5.0					
DRY DENSITY		2.151			Capacit	y (KN)	50
D		97	T Bearing	Bearing (KN) CBR			
Pen mm	56		56	(((())	standar	56	
0.00	0		FALSE		0.0	36	
0.64	245		2.4		4.5		
1.27	465		4.6		8.5		
1.91	727		7.1		12.0		
2.54	965		9.5		14.5	72	
3.17	1150		11.3		16.3		
3.81	1380		13.5		18.0		
4.45	1610		15.8		19.3		
5.08	1830		17.9		20.5	90	
	2000		19.6		21.9		
5.71	2000						







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ABRASION AND IMPACT "LOS ANGELES "TEST

(For coarse aggregate) ASTM- C 131-96 / AASHTO-T-96

Speed	Rotate at 30 to 33 Rpm For 500 Revolution
Trial Grading	A
Intitial Weight (W1) gms	5000
Weight of tested sample (W2) gms Retained on sieve No.12	3675
% abrasion By Weight Passing from Sieve No.12	26.5%







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Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2525
Weight of saturated sample in water (C)	1520
Weight of dry sample aftre heating (A)	2495

Results:-

Saturation surface dry spicific gravity = B / (B-C)	2.512
Bulk spicific gravity = A / (B-C)	2.483
Apparent spicific gravity = A /(A-C)	2.559
Asorbtion of water = (B-A)/A*100	1.2
Degradation of aggregate = (2500-A)/ A*100	0.2





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Report	:	379 - 4 - Center	
Date	:	12/04/2023	

CHEMICAL ANALYSIS

General Consultant

:

SYSTRA

Consultant

.

SPECTRUM

Contractor

شركة انشاء للمقاولات

Project

Electric express train

Sample :

Prepard Sub Grade

Station :

ST (373 +0.00): (374 +0.00)

Date of Test

.

31-3-2023

Temperature : 20 °C

Humidity: 40%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0010%	
SULPHATE	0.0120%	ASTM D 2974
ORGANIG MATTER	NEGATIVE	





LAB DIRECTOR CH/ Mostafa Asker

Moustal



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Fax:002 033900476



Inshaa

الطرق و الكباري IGARE V



Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Des	Designer Company			(SPECTRUM) Engineering Consulting Office			
	Name	Sign	Date	e/Seria	al Num	ber	Time	Time		
Issued by Contractor	Eng. Mohamed hassan	60 53		02-04-2023 (M.A.R) (P.S.G.2)			1:30 ,			
Received by	2		C1	C2	C3	DD	MM	YY	НН	MM
GARB CONSULTANT	Eng. Mazen Essamy	M	AR 373	EW	CS	03	04	23	0.1	30

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

Description of Materials	Prepared Subgr	repared Subgrade Total Quantity (10000 m3)				
Location to be Used	From Station (3	7 ^r +000) to Station (374+000)				
Sample only	Yes	Materials Type	Prepared Subgrade			
Supplier Name		Data Sheet provided	Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)			
Reference in BoQ	-2.29	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP			
Prequalification reference		Test Samples Results	5.725.7 5.705.			
Reference Photos	No/Yes	Other				

Comments by: Eng. Mazen Essamy (SPECTRUM)

Comments by: Eng. Alaa Abd-Allatif (ER)

1-Quality test Result By Third Party Lab is Approved.

2-This Sample Representive (5000 mg) only:

1- All tests were carried-out by third Party lab (comibassal international)

2-Results report attached and acceptable with the project specifications.

3-Final approval is subject to above mentioned comments.

شركة انشاء للمقاولات العامة C Inshaa general construction

				monne Seneren	Carrent Company
		APPROVAL STATU	S		
Organisation	Name	Sign		Date	A-AWC-R
Contractor	Eng. Mohamed hassan	Ce	1023	03-04-2023	А
QA/QC *	Eng. Mazen Essamy				A
GARB**	Eng. Mohammed Fayad				
Employers Representative	Eng. Alaa Abd-Allatif	lor	ESIF	12-4-2023	Awc
* * .		and the same of			

^{*} Designer

^{**} Alignment/Bridges: Culvert only



Accredited by: Egyption General Authority for Petroleum under No. 34/29-11-2011 Accredited by: Egyption Accreditation council (EGAC) under No. 031706/1A

I- Introduction

General Consultant:

SYSTRA

Consultant

SPECTRUM

Contractor

شركة انشاء للمقاولات

Sample

Prepare Sub-Grade

Station

St(373+000) to st(374+000)

Date of Test

03/04/2023

OC

883-2

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6- Los Angeles test



IV- Results

1- Grain size analysis and classifica-	Grain size analysis	As showed in appendix
tion	Classification	A-1-a
2- Modified compaction(Proctor	MDD	2.155
test)	OMC	5.7%
3- Liquid limit, plastic limit and plas-	LL	Non plastic
icity index	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CB	CBR ratio	92%
5- Specific gravity (SG), absorption	SSD	2.512
and degradation	Absorption	1.2%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	27%

LAB DIRECTOR

eman

Eng / Eman kandil

Ge Di

Geotechnical consultant

Dr. Mohamed Mostafa Badis

Kilo 23 Alexandria - Cairo Desert Road - Merghem

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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT	CUMULATIVE	CUMULATIVE	CUMULATIVE	STANDURD	
	RETAINED	WEIGHT	PERCENTAGE	PERCENTAGE	SPECIFICAT	ION
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS	
5	0.00	0.00	0.00	100.0	100	100
4	0.00	0.00	0.00	100.0	90	100
3	0.00	0.00	0.00	100.0	75	100
1.5	189.00	189.00	1.88	98.1	50	100
3/4	2800.00	4567.00	45.53	54.5	20	75
3/8	3197.00	7764.00	77.40	22.6	15	60
No.10	195.00	195.00	39.00	13.8	0,	35
No.200	343.00	343.00	68.60	7.1	0	12

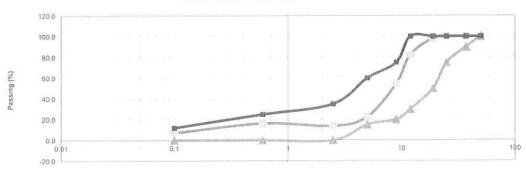
Total sample weight

= 10031.00

pass No.3/8= 3845.0 Total fine aggregates weight

500 gm

Size analysis distribution curve



Size of grains (mm)

-- Distribution curve

Soil classification: A - 1- a (Non-Plastic)







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Modified Proctor Test Report ASTM - D 1557

Mould Number :-

Volume of mould =

Weight of mould =

G.S =

2150 cm3

7043.5 g

2.6 g/cm3

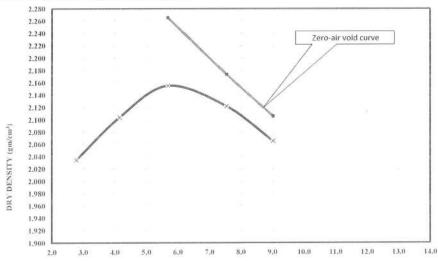
A- Density Calculations :-

	1	2	3	4	5
Weight.of wet soil+mould (g)	11540	11755	11940	11950	11885
Weight.of mould (g)	7043.5	7043.5	7043.5	7043.5	7043.5
Weight.of wet soil (g)	4496.5	4711.5	4896.5	4906.5	4841.5
Volume of mould (cm³)	2150	2150	2150	2150	2150
Wet density (g/cm³)	2.091	2.191	2.277	2.282	2.252
Dry density (g/cm³)	2.035	2.104	2.155	2.122	2.065
Zero-air Void curve			2.266	2.174	2.106

B- Moisture Calculations :-

Weight.of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight.of dry soil+container (g)	245.5	243.5	241.0	238.5	238.0
Weight.of container (g)	84.0	87.0	82.5	86.0	105.0
moisture content(%)	2.8	4.2	5.7	7.5	9.0

C - Dry density-Moisture relationship:-



M.D.D=

شركمة

O.M.C=

2.155 gm/cm³ 5.70 %

MOISTURE CONTENT(%) SPECTRUM CONSULTING

انشاء للمقاولات العامة Kilo 23 Alexandria - Cairo Desert Road - Merghem

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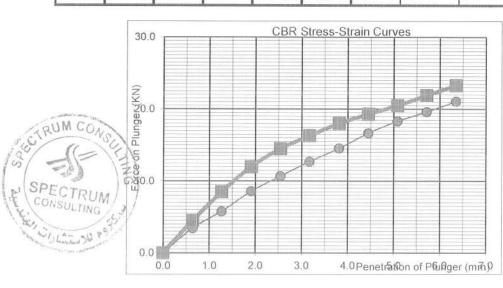
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Report Of CBR Test - ASTM - D 1883

01 01	_OWS	56			Sw	ell %	
MOULD N	10	1			56	T	
WT OFMO	MOULD+SOIL 11925			Start	0.00		
WT OF M	OULD	7043.5		End	0.00		
WT OF SO	OIL	4881.5		Swell	0.00		
VOLUME	OF MOULD	2150					
WET DEN	ISITY	2.270					
		MC	before soaking	We	ight of Ram	mer	4.54Kg
TIN NO		1			MDD	Kg/m3	2.155
WT OF W	ET SOIL+TIN	250.00					
WT OF DE	RY SOIL+TIN	241			OMC %		5.7
WT OF W	ATER	9.00					
WT OF TI	N	82.5			PR	OVING RI	VG
WT OF DE	RY SOIL	158.5	2.125		Div/KN		
MOISTUR	E CONTENT	5.7					
DRY DEN	SITY	2.148			Capacity (KN)		50
		97	Dansin	- (IZNI)		000	
Pen mm	56	97	Bearing 56	J (NN)	standar	CBR 56	
0.00	0		FALSE		0.0	30	
0.64	350		3.4		4.5		
1.27	590		5.8		8.5		
	875		8.6		12.0		
1.91						0.4	
1.91	1090		10.7		14.5	81	
	1090 1297		10.7		14.5 16.3	81	
2.54	THE RESIDENCE OF THE PARTY OF T		The second secon			81	
2.54 3.17	1297		12.7		16.3	81	
2.54 3.17 3.81	1297 1485		12.7 14.6		16.3 18.0	92	
2.54 3.17 3.81 4.45	1297 1485 1700		12.7 14.6 16.7		16.3 18.0 19.3		







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Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2525
Weight of saturated sample in water (C)	1520
Weight of dry sample aftre heating (A)	2495

Results:-

Saturation surface dry spicific gravity = B / (B-C)	2.512
Bulk spicific gravity = A / (B-C)	2.483
Apparent spicific gravity = A /(A-C)	2.559
Asorbtion of water = (B-A)/A*100	1.2
Degradation of aggregate = (2500-A)/ A*100	0.2







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ABRASION AND IMPACT "LOS ANGELES "TEST

(For coarse aggregate)

ASTM- C 131-96 / AASHTO-T-96

Speed	Rotate at 30 to 33 Rpm For 500 Revolution
Trial Grading	А
Intitial Weight (W1) gms	5000
Weight of tested sample (W2) gms Retained on sieve No.12	3650
% abrasion By Weight Passing from Sieve No.12	27.0%





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Report	:	379 - 5 - Center	
Date	:	12/04/2023	

CHEMICAL ANALYSIS

General Consultant

SYSTRA

Consultant

SPECTRUM

Contractor

Project

شركة انشاء للمقاولات

Sample

Electric express train

Prepard Sub Grade ST (373 +0.00): (374 +0.00)

Station Date of Test

3-4-2023

Temperature : 20 °C

Humidity: 40%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0012%	
SULPHATE	0.0090%	ASTM D 2974
ORGANIG MATTER	NEGATIVE	





LAB DIRECTOR CH/ Mostafa Asker



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Inshaa







Contractor Company	INSHAA GENERAL (Company				(SPECTRUM) Engineering Consulting Office			ing		
	Name	Sign	Date/Serial Number		Time					
Issued by Contractor	Eng. Mahmoud shaban	2027	è	28-04-2023 (M.A.R) (B.S.1)		1:30				
Received by			(C)	C2	C3	DD	MM	YY	НН	MM
GARB CONSULTANT	Eng. Mazen Essamy	MAI	373	EW	CS	29	04	23	01	30

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

Description of Materials	Sub-Ballast Total Quant	ity (5000 m3)	
Location to be Used	From Station (373+000)	to S	station (374+000)	
Sample only	Yes	Materials Type		Prepared Subgrade
Supplier Name		Da	ta Sheet provided	Yes attached INSHAA GENERAL OF CONSTRUCTION Company contracting ASTM D (1557)
Reference in BoQ	(4-2)	Spe	ecification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Prequalification reference		Tes	st Samples Results	
Reference Photos	No/Yes	Otl	ner	
Comments by: Eng. Mazer	Essamy (SPECTRUM)		Comments by: En	g. Alaa Abd-Allatif (ER)
1'5, con			(comibassal interr 2-Results report project specificati 3-Final approval	attached and acceptable with the

		APPROVAL STATUS		
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Hassan	C 430	29-04-2023	А
QA/QC *	Eng. Mazen Essamy		_	A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif	for re	CJ 6-5-2023	Awc

File: M-A-R-B-1 (1)

Page 1 of 1

^{*} Designer ** Alignment/Bridges: Culvert only



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I- Introduction

General Consultant:

SYSTRA

Consultant

SPECTRUM

Contractor

شركة إنشاء للمقاولات

Sample

Sub-Ballast

Station

St(373+000) to st(374+000)

Date of Test

29/04/2023

QC

1034-1

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6- Los Angeles test



IV- Results

 Grain size analysis and classifica- 	Grain size analysis	As showed in appendix	
tion	Classification	A-1-a	
2- Modified compaction (Proctor	MDD	2.180	
test)	OMC	7.5%	
3- Liquid limit, plastic limit and plas-	LL	Non plastic	
ticity index	PL	Non plastic	
	PI	Non plastic	
4- California bearing ratio (CBR)	CBR ratio	94%	
5- Specific gravity (SG), absorption	SSD	2.578	
and degradation	Absorption	1.3%	
	Degradation		
6- Los Angeles test	Abrasion ratio	29.7%	

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For Dr. M-Dr. Mohamed Mostafa Badry



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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

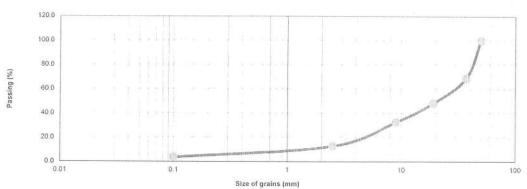
	WEIGHT	CUMULATIVE	CUMULATIVE	CUMULATIVE	STANDURD
	RETAINED	WEIGHT	PERCENTAGE	PERCENTAGE	SPECIFICATION
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	3125.00	3125.00	31.25	68.8	
1	1851.00	4976.00	49.76	50.2	
3/4	220.00	5196.00	51.95	48.0	
1/2	843.00	6039.00	60.38	39.6	
3/8	702.00	6741.00	67.40	32.6	
No.4	1150.00	7891.00	78.90	21.1	
No.10	200.00	200.00	40.00	12.7	
No.200	418.00	418.00	83.60	3.5	

total sample weight= 10001.00

pass No.4= 2110.0 Total fine aggregates weight pass% 21.1

500 gm

Size analysis distribution curve



- Distribution curve

Soil classification: A - 1- a - sample is non plastic







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