

السيد العقيد المهندس / رئيس الإدارة المركزية لمنطقة (غرب الدلتا الاسكندرية-مطروح)
الهيئة العامة للطرق والكبارى والنقل البرى

تحية طيبة وبعد ،،،،

نتشرف بأن نرفق لسيادتكم طيه حصر المستخلص الجارى رقم (١) عن عملية : أعمال
تنفيذ الجسر الترابى بقطاعات مشروع القطار الكهربائى السريع (العين
السخنة - العاصمة الادارية - العلمين - مطروح) قطاع غرب النيل لتنفيذ
المسافة من الكم ٣٩٢+٠٠٠ الى الكم ٣٩٤+٥٠٠ بطول ٢,٥ كم
(مرحلة أستكمال أعمال الردم وطبقات الأساس) .

عقد رقم : ٢٠٢٤/٢٠٢٣/١٧٢

عن المدة: من بدء العمل حتى ٢٦ / ٠٩ / ٢٠٢٣
تنفيذ: شركة الصفا للمقاولات العامة وانشاء الطرق .

برجاء التكرم بالإحاطة والتنبيه باللازم
وتفضلوا بقبول فائق التحية والاحترام

ممثل الهيئة بالمشروع

م. مارجريت مجدي

محضر إستلام موقع

مشروع: أعمال الجسر الترابى لمشروع القطار الكهربائى السريع قطاعات غرب النيل فى المسافة من كم ٣٩٢ إلى كم ٣٩٤,٥٠٠ بطول ٢,٥ كم مرحلة أستكمال أعمال الردم وطبقات الأساس

تنفيذ: شركة الصفا للمقاولات العامة وإنشاء الطرق

إشراف: المنطقة الخامسة - منطقة غرب الدلتا

طبقاً للعقد رقم (٢٠٢٣/١٧٢ / ٢٠٢٤) بتاريخ ٢٠٢٣/٠٨/١٠

إنه فى يوم/ الثلاثاء الموافق ٢٠٢٣/٠٩/١٩ إجتمع كلاً من:-

- ١- السيد المهندس / محمد حسنى فياض مدير عام المشروعات - الهيئة العامة للطرق والكبارى
- ٢- السيد المهندس /مارجريت مجدى مهندس العملية - الهيئة العامة للطرق والكبارى
- ٣- السيد المهندس / محمود سالم سالم شتيوي مدير مشروع الشركة

وذلك للمرور على مسار العملية المذكورة عاليه لإستلام الموقع :-
وقد تبين أن الموقع خالياً من العوائق الظاهرية ويسمح بالبدء فى التنفيذ وبناء عليه يعتبر تاريخ ٢٠٢٣/٠٩/١٩ هو تاريخ إستلام الموقع وبدء الأعمال بالعملية.
وأقفل المحضر على ذلك ووقع الحضور

التوقيعات

محمد سالم سالم شتيوي

٣-

محمد حسنى فياض

٢-

مارجريت مجدى

١-

رئيس الإدارة المركزية

منطقة غرب الدلتا

الاسكندرية - مرسى مطروح

عميد مهندس //

"هانى محمد محمود طه"

٢٠٢٣/١٠/١٨

1093405

جدول وثيقة تأمين الحوادث الشخصية

رقم الوثيقة:	1305/2023	فرع الأصدار:	فرع الإسكندرية
اسم المشترك:	الصفا المفلحات العامة وإنشاء الطرق / محمود سليم شوقي	العضو:	55 (رحمن الميركات بسك / محمد محمد حرك - الإسكندرية)
المستفيد:	هذه العامة للطرق والكبرى	التغطية التأمينية:	تأميناً على عدد 4 أفراد غير محندي الأسماء مقسمين كالتالي (عدد 1 مهندس + عدد 1 مساعد مهندس + عدد 1 سائق معدة + عدد 1 عامل) عاملين لدى المشترك ، بإجمالي مبلغ تأمين وقدره 130,000 ج.م * مئة وثلاثون ألف جنيه مصري فقط لا غير * بواقع 75,000 ج.م * خمسة وسبعون ألف جنيه مصري فقط لا غير * المهندس - 30,000 ج.م ثلاثون ألف جنيه مصري فقط لا غير * مساعد المهندس - 15,000 ج.م * خمسة عشر ألف جنيه مصري فقط لا غير * سائق معدة - 10,000 ج.م * عشرة آلاف جنيه مصري فقط لا غير * العامل برونك عند خطر (الوفاة + العجز التام المستقيم) نتيجة حادث وذلك لقاء وبسبب مزاوله أعمالهم داخل موقع العمل فقط من تنفيذ أصل الخط رقم (2024/2023/172) أعمال الجسر الترابي والمسار القطار الكهربائي السريع للخط الأول (قطاع برج العرب / العطين) (استكمال أعمال الترميم وطبقات الأسفلت) لتبلغ المسافة من الكم 392,000 إلى الكم 394,500 بطول 2,5 كم ، التوسم عليه بموجب وثيقة جميع الخطوط مملوكة رقم 609 / 2023 والمصدرة من شركة وثاق للتأمين التكافلي - مصر .
مدة التأمين:	من: 13/08/2023 إلى: 12/04/2024	حساب الأشتراك:	الإشتراك الصافي: 600.00 ج.م نصف التبعة النسبية: 6.00 ج.م الضريبة التوعية: 11.60 ج.م مصاريف الأصدار: 57.00 ج.م رسم الأشراف و الرقابة / سنة في الألف: 3.60 ج.م أشتراك صندوق حملة الوثائق / ثلث في الألف: 1.20 ج.م مقابل خدمات مراجعة واعتماد / واحد في الألف: 0.60 ج.م إجمالي الأشتراك: 680.00 ج.م فقط مستقلة وتعاون جنيه مصري

حدود التغطية :-

الحدود الفرد	التغطية
طبقاً لحدود التغطية الواردة بالتغطية التأمينية لكل فرد	الوفاة نتيجة حادث
طبقاً لحدود التغطية الواردة بالتغطية التأمينية لكل فرد	العجز التام المستقيم نتيجة حادث
غير مغطى	العجز الجزئي المستقيم نتيجة حادث
غير مغطى	العجز التام المؤقت نتيجة حادث
غير مغطى	إرجاع التغطيات الطبية نتيجة حادث

الحد الأقصى الذي تتزعم به الشركة عن الحادث الواحد (بمهما بلغ عدد الأشخاص) :-
 130,000.00 ج.م فقط مئة و ثلاثون ألف جنيه مصري

الحد الأقصى الذي تتزعم به الشركة خلال مدة التأمين :-

130,000.00 ج.م فقط مئة و ثلاثون ألف جنيه مصري

تحريراً في: 13/08/2023

تاريخ الطباعة: 13/08/2023

إصدار: نسخة واحدة

كود المنتج: 1 إدارة



19685



Head Office: 25 Mosbous St., Dokki - Giza
 Mahandeseen Branch: 20 Wadi el Nil st., Mahandeseen - Giza
 Near City Branch: 6 Abbas El Aged st., Near City - Cairo
 Down Town Branch: 48 Ishtar St., Addeen - Down Town - Cairo
 Alexandria Branch: 58 Fouad st., (El Horq Road) - Alexandria
 El Mansoura Branch: Awad Alla Building 2, El Gash st., El Mansoura
 Port said Branch: Block 3/A, Al-Masrouh and Mahmoud Sedq Street - East Section - Ras El Nasr - Port Said
 Ismailia Branch: Shaban Street Andalus Tower - Front of Financial Directorate
 Port said Branch: Gamal Abdel Nasser Street - Agricultural Society Building, next to Sharkia Governorate
 Damietta Branch: Cornish El Nile Fourth Section, Dumyat, El Nile Building, above B-Tech and Wafa Bank

الفرع الرئيسي: 25 شارع مصطفى - الدقي - الجيزة
 فرع المهندسين: 20 في وادي النيل - المهندسين - الجيزة
 فرع مدينة نصر: 6 شارع عباس - المتاحف - مدينة نصر - القاهرة
 فرع وسط البلد: 48 في شارع - ماديون - القاهرة
 فرع الإسكندرية: 58 شارع فؤاد (طريق الحرية) - الإسكندرية
 فرع المنصورة: 58 شارع موسى الله رقم 2 في الجيش أمام البنك المصري الخليوي - المنصورة
 فرع بورسعيد: 2/3 شارع التأمين ومحمود مصطفى - قسم الشرق - برج الصفا أعلى مصرف أبو ظبي - بورسعيد
 فرع الإسماعيلية: شارع شهاب برج الأتكنس - أمام المديرية الثانية
 فرع الزقازيق: ش. جمال عبد الناصر مبنى الجمعية الزراعية بهواز مبنى محافظة الشرقية
 فرع دمياط: ش. رقم 2 الدور الرابع حارة الزقازيق أعلى ب.ك. كوتيش النيل - دمياط

1230085

وثيقة تأمين جميع اخطار المقاولين

بموجب هذه الوثيقة تم الاتفاق بين شركة وثاق للتأمين التكافلي (المعروفة هنا فيما بعد بالشركة) والمشتري الوارد اسمه بجدول الوثيقة على ان تتمتع الشركة وفقا لشروط هذه الوثيقة ومقابل تمام سداد الاشتراك المبين بجدول الوثيقة بتعويض المشتري عن الخسائر والأضرار التي تحدث بسبب تحقق أي من الأخطار المغطاة الواردة بالوثيقة وذلك خلال مدة السليمة بهذه الوثيقة أو أي ملاحق لها وذلك في حدود الشروط والأحكام والاستثناءات الواردة بهذه الوثيقة.

جدول الوثيقة

رقم الوثيقة :	609/2023	إصدار
اسم المشتري / أو المشتركين :	الصفا للمقاولات العامة وإنشاء الطرق / محمود سالم سليم شوي	
العضون :	55 أرض المزاحات بمك / محمد محمد عواد - الإسماعيلية	
اسم المستفيد :	الهيئة العامة للطرق والكبارى	
اسم المقولة :	تأمين على أعمال الجسر الترابي لمسار الخط السريع للخط الأول (قطاع برج العرب / العلمين) إكمال أعمال الردم و طبقات الأساس لتنفيذ المسافة من الكم 392,000 إلى الكم 394,500 بطول 2.5 كم.	
موقع العمل :	قطاع برج العرب - العلمين	
مدة التأمين :		
أ. بالنسبة للأصل :	بدا التأمين في : 2023/08/13	
	ونتهى في : 2024/04/12	
ب. بالنسبة لأصل المضافة :	تبدأ من :	
	وتنتهي في :	
مبلغ التأمين :	11,500,000.00	فقط أحد عشر مليوناً وخمسة آلاف جنيه مصري
القسم الأول :	الأضرار المادية	
القسم الثاني :	المسئولية المدنية قبل الغير	



13/08/2023

تحريرا في

13/08/2023

تاريخ الطباعة

يوسف ايمن يوسف محمود

اسم المستخدم

إدارة

1

كود المنتج



Head Office : 20 El Nasr St., El Nasr City - Giza
Mohandeseen Branch : 6 Abbas El Masry St., El Nasr City - Cairo
Nasr City Branch : 88 Fouad St., (El Horia Road) - Alexandria
Alexandria Branch : 90 Fawzy Moust Street - Smouha - El Gaber Station Area
Smouha Branch : Awad Alla Building 2, El Gash St., El Mansoura
El Mansoura Branch : Block 3 / A, Al-Maamoun and Mahmoud Sedq Street - East Sedq, Alula Tower above Abu Dhabi Bank - Port Said
Port said Branch : Shebin Street Andalus Tower - Front of Financial Directorate
Ismailia Branch : Gamal Abdel Nasser Street - Agricultural Society Building, next to Sharkia Governorate
Port said Branch : Cornish El Nile Fourth Section, Damiat, El Rihai Building, above B-Tech and Wells Bank
Damietta Branch

19685

الفرقة الأولى : ٢٥ شارع مصطفى - الدقي - الجيزة
فرع القاهرة : ٢٠ شارع مصطفى - الدقي - الجيزة
فرع مدينة نصر : ٦٠ شارع عباس - المقاد مدينة نصر - القاهرة
فرع الإسكندرية : ٨٨ شارع فؤاد (طريق المعرية) - الإسكندرية
فرع صلاحيات : ٩٠ شارع فؤاد (طريق المعرية) - الإسكندرية
فرع بورسعيد : ٩٠ شارع فؤاد (طريق المعرية) - الإسكندرية
فرع بورسعيد : ٩٠ شارع فؤاد (طريق المعرية) - الإسكندرية
فرع بورسعيد : ٩٠ شارع فؤاد (طريق المعرية) - الإسكندرية
فرع بورسعيد : ٩٠ شارع فؤاد (طريق المعرية) - الإسكندرية
فرع بورسعيد : ٩٠ شارع فؤاد (طريق المعرية) - الإسكندرية

MATERIAL APPROVAL REQUEST										

Contractor Company	Al-SAFA General Contracting Company			Designer Company	(SPECTRUM) Engineering Consulting Office						
Issued by Contractor	Name	Sign		Date/Serial Number	Time						
	Eng. Ahmed Ragab			24-May-2023 (QT - 064)	10:00						
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	HH	MM
				393	EW	CS	25	5	23	10	0

CODE-1	S15	D3	Kp 393+000
		EW	
		MS	

Description of Materials	SUB-GRADE (15000 M3).		
Location to be Used	From Station (392+900) to Station (394+500)		
Sample only	Yes	Materials Type	Sand & Gravel
Supplier Name	EL-BARAKA "Stones Cusher"	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-122.1) VERSION1-2022 BY CIVECON GROUP
Prequalification reference		Test Samples Results	Yes attached
Reference Photos	No	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By COMIBASSAL Laboratory is Approved.		1-All tests were carried-out Third Party Lab (COMIBASSAL).	
2-This Sample Representative (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. Ahmed Ragab			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Margrate Magdy			
Employers Representative	Eng. Alaa Abd-Allatif		17-7-2023	AWC

* Designer

** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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Accredited by : Egypt Accreditation Council (EGAC) under No. 031706/1A

1- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة البترول
Sample Prepared Sub-grade :
Station From stored Materials
Date of Test : 25/05/2023
QC : 1559

1- Sample description:

crushed stone and sand

II- Required tests and Results:

Required Tests		Results
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MD	2.208
	OMC	7.5%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	93%
5- Specific gravity (SG), absorption and degradation.	S S D	2.512
	Absorption	1.6%
	Degradation	0.2%
	Abrasion ratio	29.4%
6- Los Angeles test		

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 report.

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
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Email : internal-inspection@comibassal.com

23 Alexandria - Cairo Desert Road - Merghem
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Email : chadept@comibassal.com
Website : www.comibassal.com



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APPENDIX

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 83 4704595 - 002 034701191
Email : clvdept@comibassal.com
WebSite : www.comibassal.com



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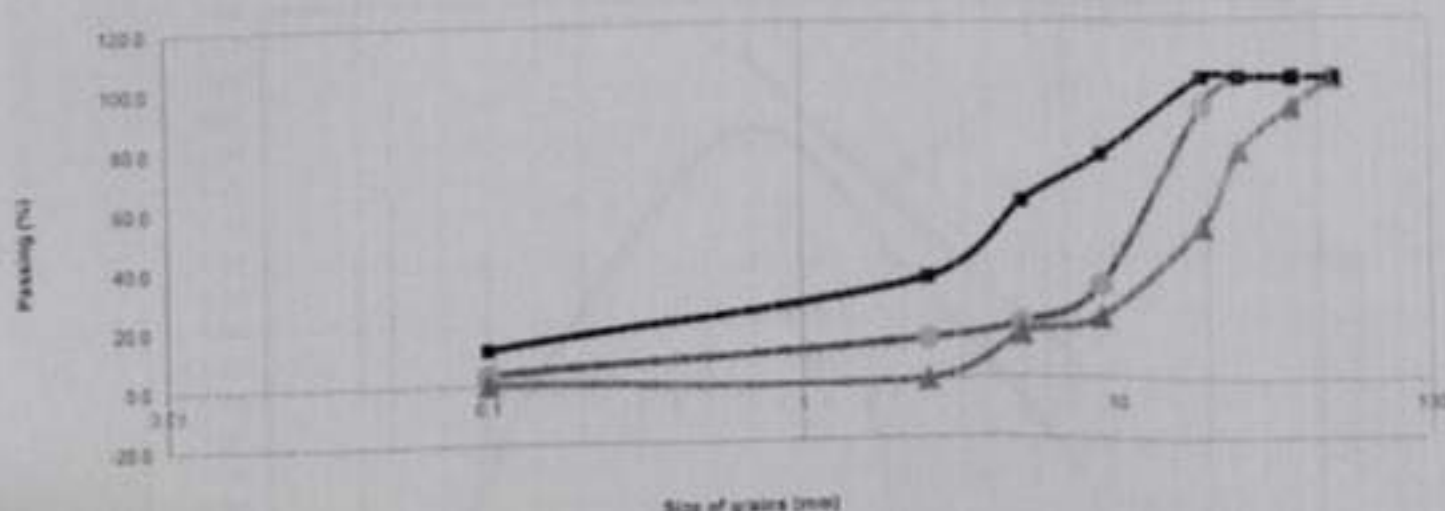
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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION 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	970.00	970.00	9.69	90.3	50	100
3/4	4390.00	6938.00	69.32	30.7	20	75
3/8	1220.00	8158.00	81.51	18.5	15	90
No.10	124.00	124.00	24.80	13.9	0	35
No.200	406.00	406.00	81.20	3.5	0	12

Total sample weight = 10008.00 pass No 3/8 = 1850.0 Total fine aggregates weight = 500 gm
% 18.5

Size analysis distribution curve



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



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Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 3
Volume of mould = 2190 cm³
Weight of mould = 5657 g
G.S = 2.7 g/cm³

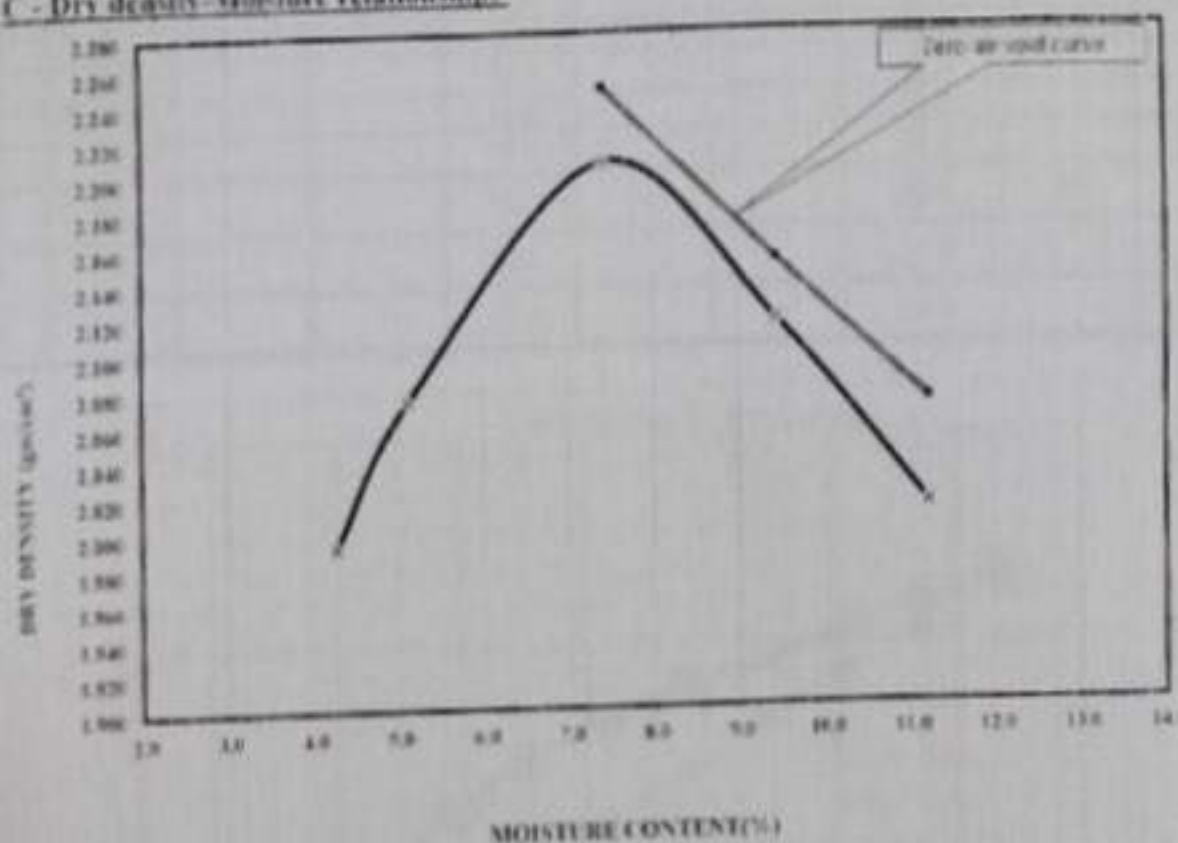
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil-mould (g)	10205	10430	10850	10730	10560
Weight of mould (g)	5657	5657	5657	5657	5657
Weight of wet soil (g)	4548	4773	5193	5073	4903
Volume of mould (cm ³)	2190	2190	2190	2190	2190
Wet density (g/cm ³)	2.077	2.179	2.371	2.316	2.239
Dry density (g/cm ³)	1.992	2.073	2.207	2.116	2.013
Zero-air Void curve			2.249	2.151	2.072

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)	241.0	241.0	237.0	231.0	228.0
Weight of container (g)	30.0	65.0	62.0	30.0	32.0
moisture content(%)	4.3	5.1	7.4	9.5	11.2

C - Dry density-Moisture relationship:-



M.D.D= 2.208 gm/cm³
O.M.C= 7.5 %





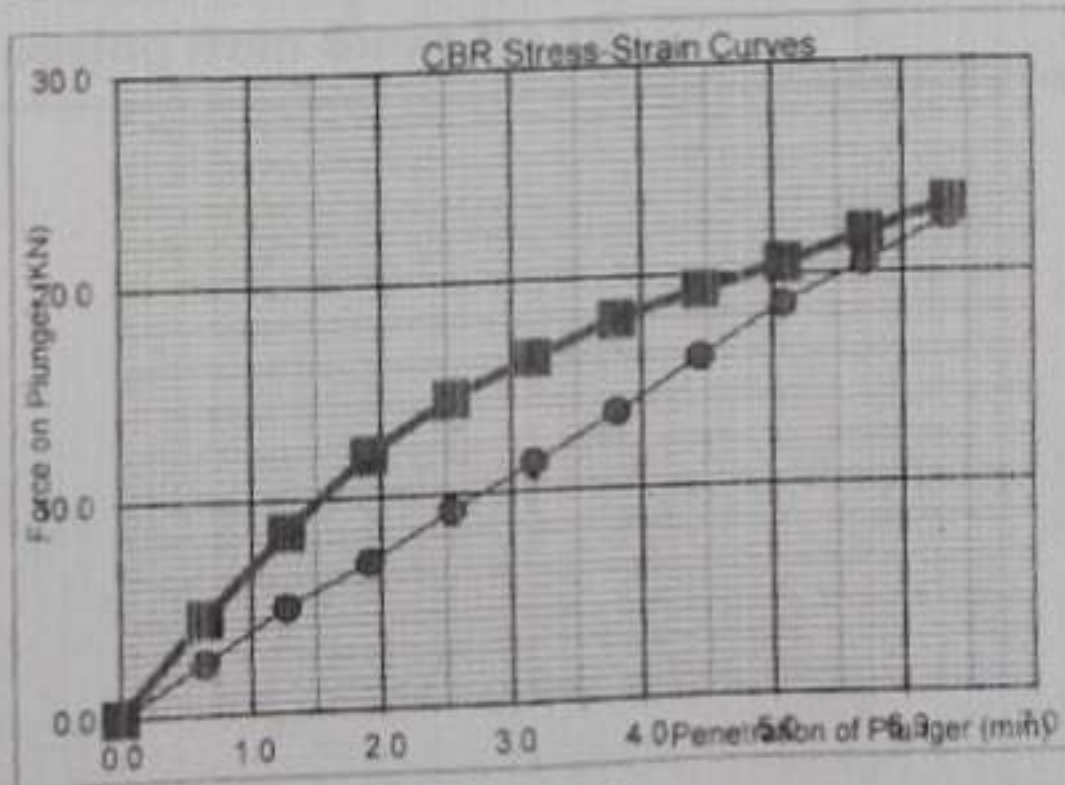
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Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56					
MOULD NO	1					
WT OF MOULD+SOIL	10381					
WT OF MOULD	5402					
WT OF SOIL	4979					
VOLUME OF MOULD	2188					
WET DENSITY	2.276					
MC before soaking		Weight of Rammer		4.54Kg		
TIN NO	1			MDD	Kg/m ³	2.208
WT OF WET SOIL+TIN	250.00			OMC	%	7.50
WT OF DRY SOIL+TIN	236					
WT OF WATER	14.00					
WT OF TIN	31					
WT OF DRY SOIL	205	2.125				
MOISTURE CONTENT	6.8					
DRY DENSITY	2.130					
Bearing (KN)						
Pen mm	97		56		standard	56
0.00	0		FALSE		0.0	
0.64	245		2.4		4.5	
1.27	502		4.9		8.5	
1.91	710		7.0		12.0	
2.54	925		9.2		14.5	70
3.17	1155		11.3		16.3	
3.81	1390		13.6		18.0	
4.45	1645		16.1		19.3	
5.08	1895		18.6		20.5	93
5.71	2090		20.5		21.9	
6.35	2305		22.6		23.3	



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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	3530
% abrasion By Weight Passing from Sieve No.12	29.4%



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Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2535
Weight of saturated sample in water (C)	1526
Weight of dry sample after heating (A)	2495

Results:-

Saturation surface dry specific gravity = $B / (B-C)$	2.512
Bulk specific gravity = $A / (B-C)$	2.473
Apparent specific gravity = $A / (A-C)$	2.575
Absorption of water = $(B-A)/A \times 100$	1.6
Degradation of aggregate = $(2500-A)/A \times 100$	0.2



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Report :	610 - 4 - Center
Date :	17/07/2023

CHEMICAL ANALYSIS

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	شركة الصفا للمقاولات
Project :	Electric express train
Sample :	Prepared Sub Grade
Station :	From Stored Materials
Date of Test :	25-5-2023

Temperature : 30 °C

Humidity : 50%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0185%	ASTM D 2974
SULPHATE	0.0463%	
ORGANIG MATTER	NEGATIVE	

LAB DIRECTOR
CH/ Mostafa Asker



Mousta



MATERIAL APPROVAL REQUEST

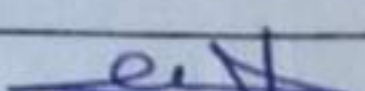
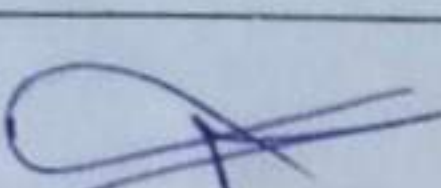


الهيئة العامة
للطرق والكباري
(GARB)



الهيئة العامة للإعاشاق



Contractor Company	Al-SAFA General Contracting Company			Designer Company				(SPECTRUM) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/Serial Number				Time			
	Eng. Ahmed Ragab			30-Apr-2023				10:00			
				(QT - 062)							
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	HH	MM
				393	EW	CS	1	5	23	10	0

CODE-1	S15	D3	Kp 393+000
		EW	
		MS	

Description of Materials	Fill Layer (100000 M3).		
Location to be Used	From Station (392+900) to Station (394+500)		
Sample only	Yes	Materials Type	Sand & Gravel
Supplier Name	SIWI-MAHDI	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-122.1) VERSION1-2022 BY CIVECON GROUP
Prequalification reference		Test Samples Results	Yes attached
Reference Photos	No	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By COMIBASSAL Laboratory is Approved.		1-All tests were carried-out Third Party Lab (COMIBASSAL).	
2-This Sample Representative (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. Ahmed Ragab			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Margrate Magdy			
Employers Representative	Eng. Alaa Abd-Allatif		23-7-2023	AWC

* Designer

** Alignment/Bridges: Culvert only

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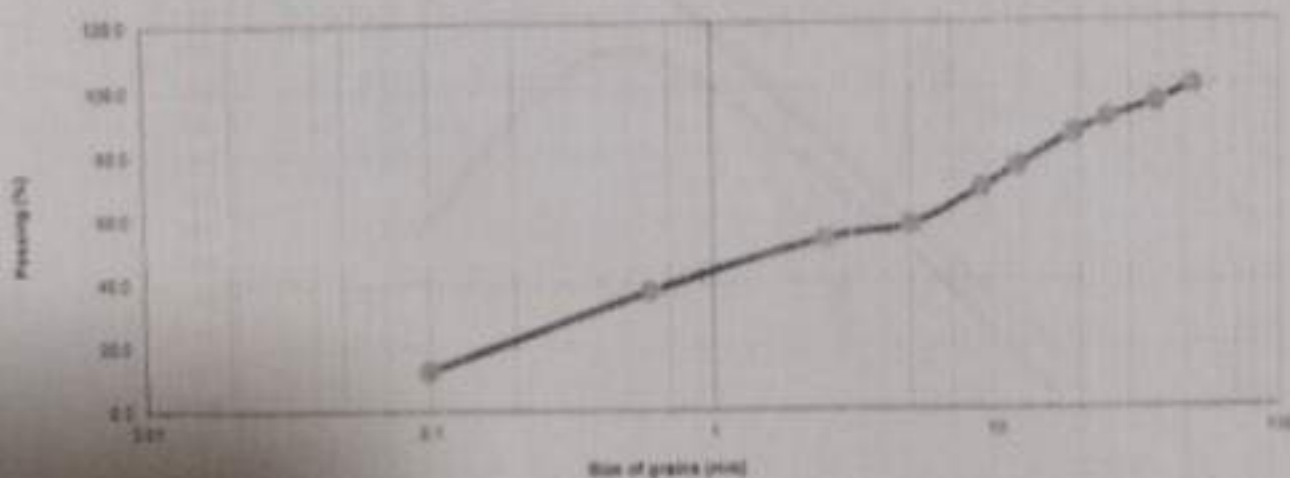
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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDURD SPECIFICATION LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	522.00	522.00	5.23	94.8	
1	491.00	1013.00	10.14	89.9	
3/4	460.00	1473.00	14.75	85.3	
1/2	990.00	2463.00	24.66	75.3	
3/8	666.00	3129.00	31.32	68.7	
No.4	1120.00	4249.00	42.54	57.5	
No.10	71.00	71.00	7.10	53.4	
No.40	350.00	350.00	35.00	37.4	
No.200	780.00	780.00	78.00	12.6	

Total sample weight = 9989.00 pass No 4= 5740.0 Total fine aggregates weight = 1000 gm
% 57.5

Size analysis distribution curve



Soil classification: A - 1 - b

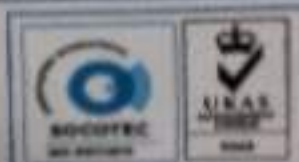


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APPENDIX

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I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة الصفا للمقاولات
Sample : FERMA
Station : From Stored Materials
Date of Test : 01/05/2023
QC : 1558-1

II- Sample description:

Gravel and sand

III- Required tests and Results

Required Tests		Results
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-b
2- Modified compaction (Proctor test)	MDD	2.109
	OMC	6.9%
3- Liquid limit, plastic limit and plasticity index	LL	24%
	PL	21.0%
	PI	3.0%
4- California bearing ratio (CBR)	CBR ratio	30%

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 report.

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For: Dr. M.
Dr. Mohamed Mostafa Badry

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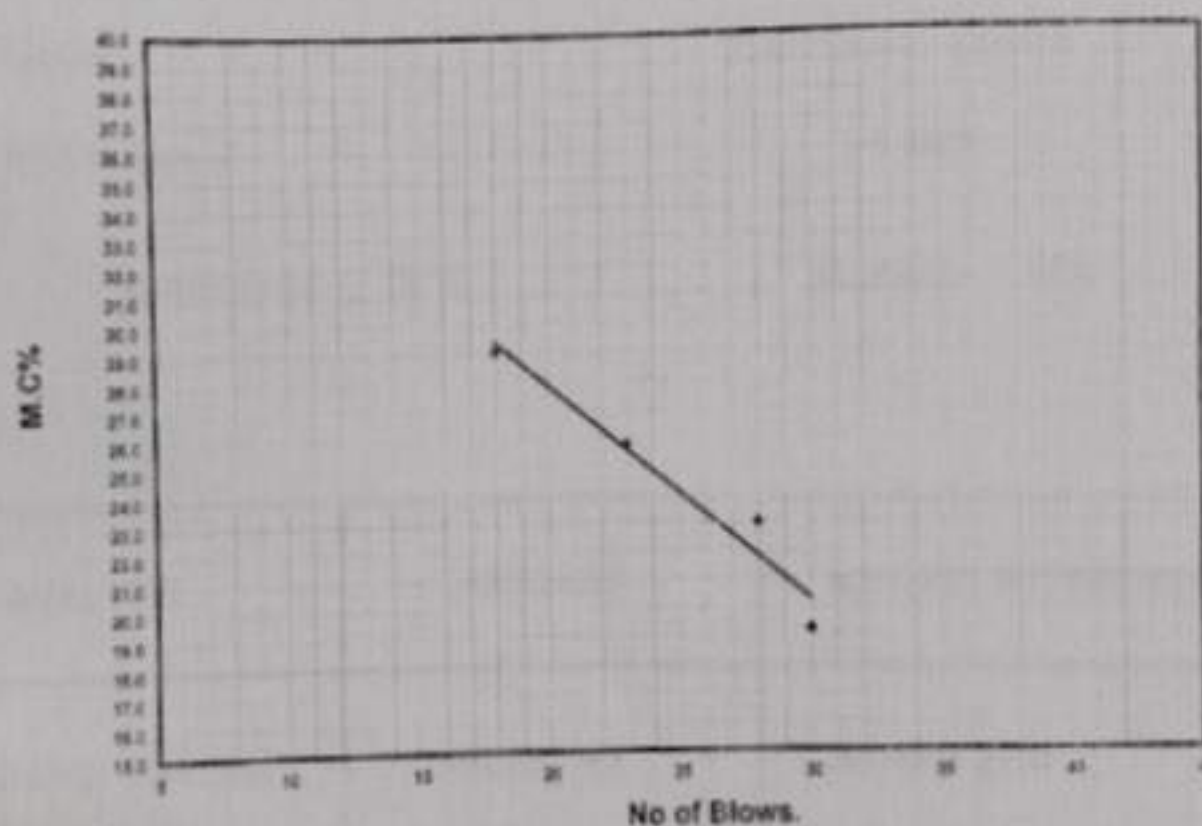
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Liquid and Plastic Limits Test

ASTM - D 4318

Test No	1	2	3	4	5	6
Type of test	Liquid Limit				Plastic Limit	
NO of B.	30	28	23	18		
Container No	j	c	s	m	F	J
Mass of wet soil + container	52.00	50.50	46.90	41.00	27.00	32.00
Mass of dry soil + container	47.00	44.80	41.80	36.50	26.10	30.20
Mass of container	21.00	20.00	22.00	21.00	21.60	22.00
Mass of moisture	5.00	5.70	5.10	4.50	0.90	1.80
Mass of dry soil	26.00	24.80	19.80	15.50	4.50	8.20
Moisture content	19.23	22.98	25.76	29.03	20.00	21.95



Results:
Liquid Limit (L.L.) : 24 %
Plastic Limit (P.L.) : 21.0 %
Plasticity Index (P.I.) : 3.0 %



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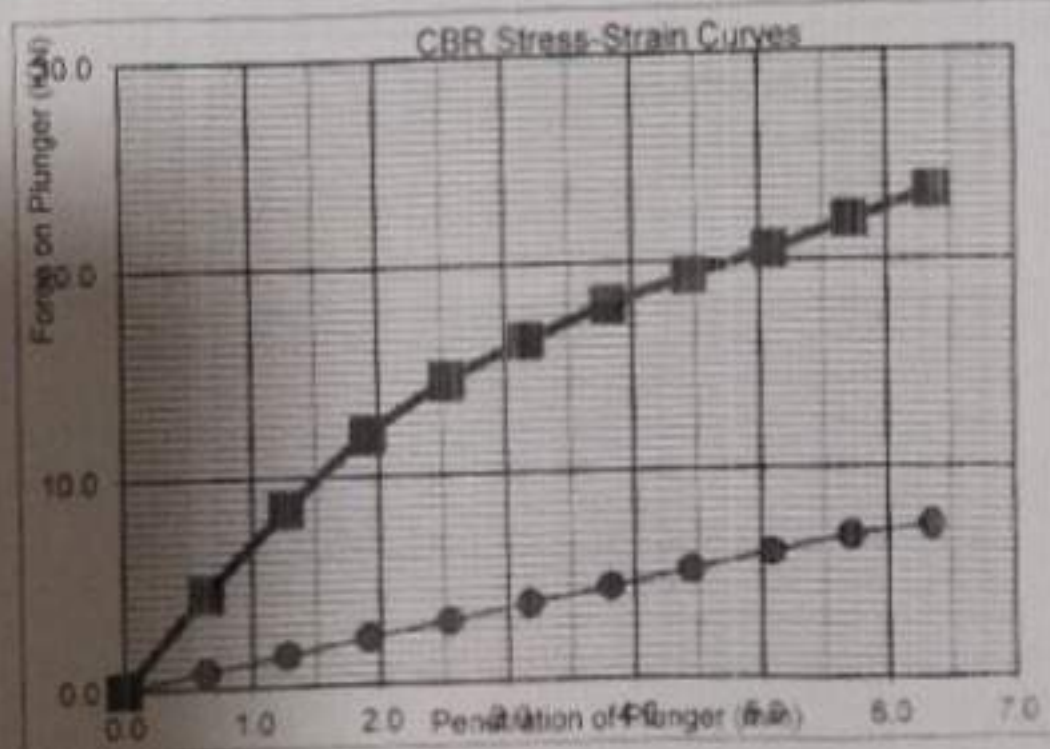
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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56				
MOULD NO	2				
WT OF MOULD+SOIL	10119				
WT OF MOULD	5208				
WT OF SOIL	4911				
VOLUME OF MOULD	2190				
WET DENSITY	2.242				
	MC before soaking		Weight of Rammer	4.54Kg	
TIN NO	1		MDD	Kg/m ³	2.109
WT OF WET SOIL+TIN	250.00		OMC	%	6.900
WT OF DRY SOIL+TIN	240				
WT OF WATER	10.00				
WT OF TIN	81				
WT OF DRY SOIL	159				
MOISTURE CONTENT	6.3				
DRY DENSITY	2.110		Capacity (KN)	50	
Pen	Reading (Div)	Bearing (KN)	standar	CBR	
mm	56	56	0.0	56	
0.00	0	0.0	4.5		
0.64	80	0.8	8.5		
1.27	151	1.5	12.0		
1.91	232	2.3	14.5	22	
2.54	302	3.0	16.3		
3.17	374	3.7	18.0		
3.81	450	4.4	19.3		
4.45	528	5.2	20.5	30	
5.08	610	6.0	21.9		
5.71	687	6.7	23.3		
6.35	740	7.3			



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Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 1
Volume of mould = 2180 cm³
Weight of mould = 5398 g
G.S = 2.55 g/cm³

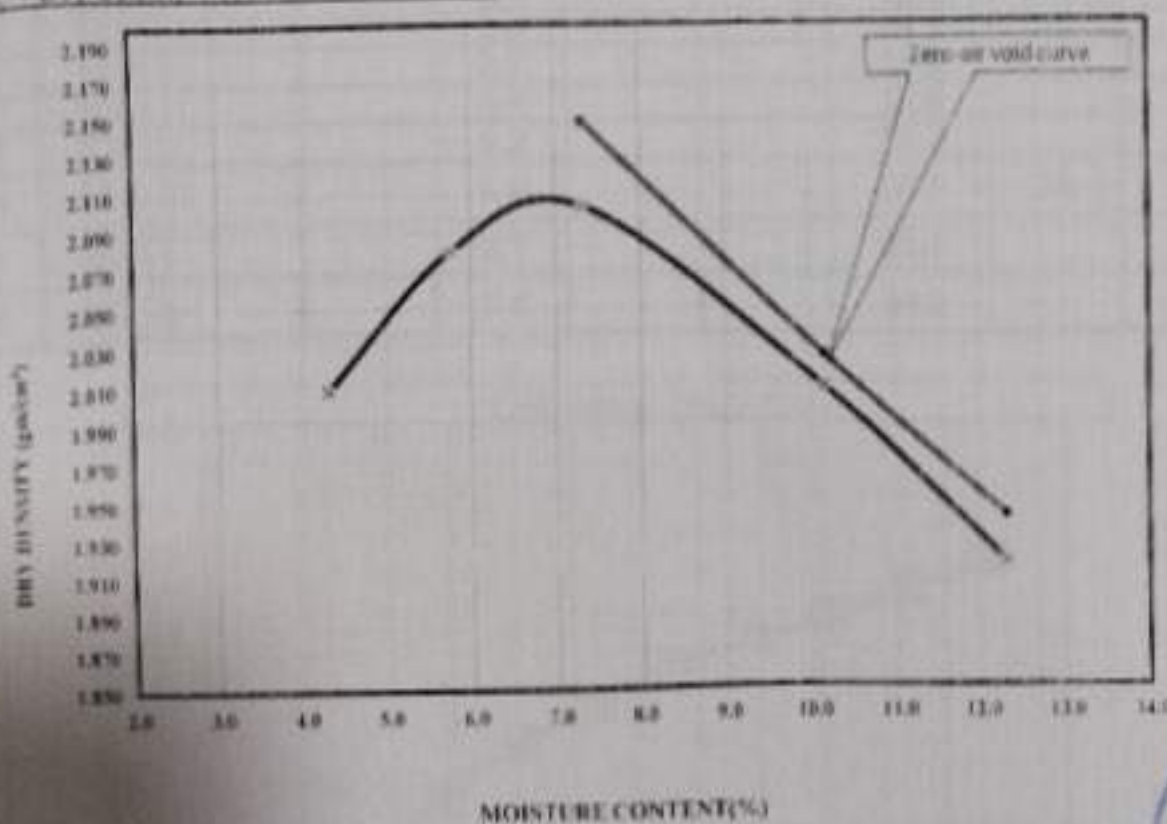
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil-mould (g)	9960	10195	10320	10221	10090
Weight of mould (g)	5398	5398	5398	5398	5398
Weight of wet soil (g)	4562	4797	4922	4823	4692
Volume of mould (cm ³)	2180	2180	2180	2180	2180
Wet density (g/cm ³)	2.093	2.200	2.258	2.212	2.152
Dry density (g/cm ³)	2.006	2.080	2.104	2.008	1.916
Zero-air Void curve			2.149	2.026	1.941

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)	241.0	238.0	235.0	230.0	226.0
Weight of container (g)	32.0	30.0	30.0	33.0	31.0
moisture content(%)	4.3	5.8	7.3	10.2	12.3

C - Dry density-Moisture relationship:-



M.D.D= 2.109 gm/cm³
O.M.C= 6.9 %



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I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة الصفا للمقاولات
Sample : Prepared Sub-grade
Station : From stored Materials
Date of Test : 25/05/2023
QC : 1559

II- Sample description:

Crushed stone and sand

III- Required tests and Results:

Required Tests		Results
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MDD	2.208
	OMC	7.5%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	93%
5- Specific gravity (SG), absorption and degradation.	S S D	2.512
	Absorption	1.6%
	Degradation	0.2%
	Abrasion ratio	29.4%
6- Los Angeles test		

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 report.

LAB DIRECTOR

Eng / Eman kandil

Eman



Geotechnical consultant

For Dr. H.
Dr. Mohamed Mostafa Badry

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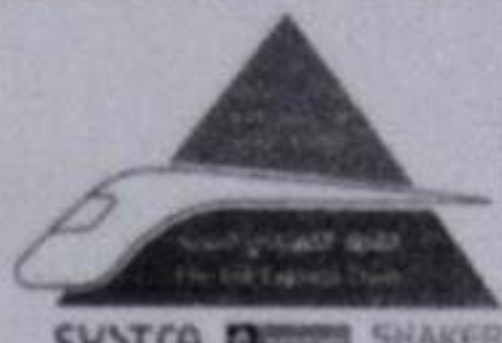
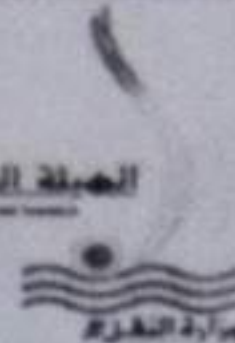
MATERIAL APPROVAL REQUEST

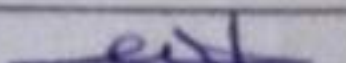


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(GARBU)



الهيئة العامة للتخطيط
والتطوير الاقتصادي



Contractor Company		Al-SAFA General Contracting Company		Designer Company		(SPECTRUM) Engineering Consulting Office						
Issued by Contractor	Name	Sign		Date/Serial Number		Time						
	Eng. Ahmed Ragab				27-Mar-2023		10:00					
					(QT .S6)							
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	HH	MM	
				393	EW	CS	28	3	23	10	0	

CODE-1	S15	D3	Kp 393+000
		EW	
		MS	

Description of Materials	Fill Layer Total Quantity (90000 m ³)		
Location to be Used	From Station (392+900) to Station (394+500)		
Sample only	Yes	Materials Type	Gravel & Sand
Supplier Name	MAHDI & SIWI	Data Sheet provided	Yes attached
Reference in BoQ	(3-1)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-122.1) VERSION1-2022 BY CIVECON GROUP
Prequalification reference		Test Samples Results	Yes attached
Reference Photos	No	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By COMBASSAL Laboratory is Approved.		1-All tests were carried-out by Third party lab (comibassal)	
2-This Sample Representative (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. Ahmed Ragab			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Margrate Magdy			
Employers Representative	Eng. Alaa Abd-Allatif		2023/03/28	AWC

* Designer

** Alignment/Bridges: Culvert only



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56

I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة الصفا للمقاولات
Sample : FERMA
Station : St(392+900) to St(394+500)
Date of Test : 28/03/2023
QC : 801-2

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 classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction and optimum moisture content (Proctor test)	MDD	2.119
	OMC	5.9%
3- Liquid limit, plastic limit and plasticity index	LL	26.2%
	PL	24.5%
	PI	1.7%
4- California bearing ratio (CBR)	CBR ratio	52%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For Dr. H-
Dr. Mohamed Mostafa Badry



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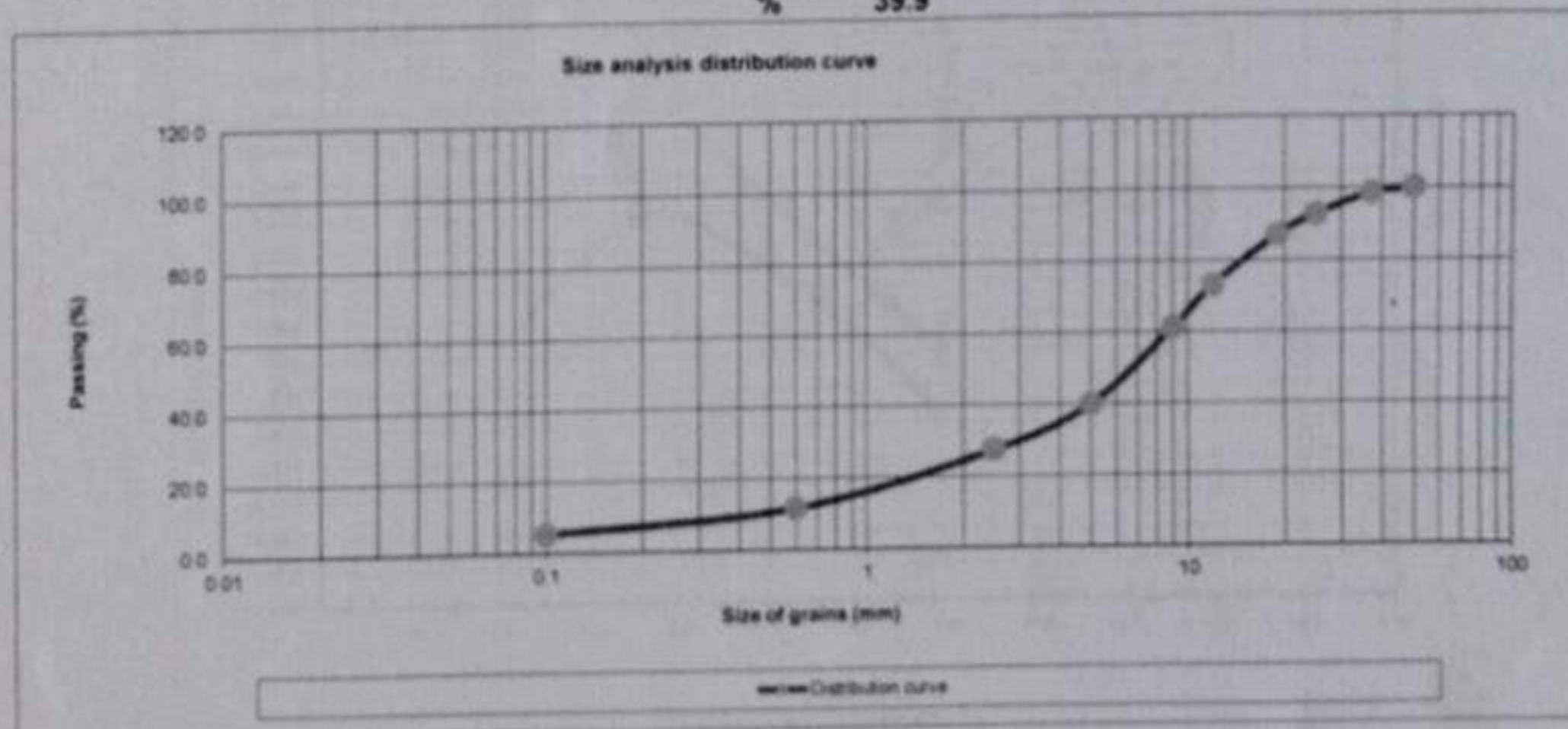
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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDURD SPECIFICATION LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	101.00	101.00	1.36	98.6	
1	438.00	539.00	7.25	92.8	
3/4	423.00	962.00	12.94	87.1	
1/2	1035.00	1997.00	26.86	73.1	
3/8	892.00	2889.00	38.86	61.1	
No.4	1580.50	4469.50	60.12	39.9	
No.10	158.00	158.00	31.60	27.3	
No.40	356.00	356.00	71.20	11.5	
No.200	435.00	435.00	87.00	5.2	

Total sample weight = 7434.50 pass No.4= 2965.0 Total fine aggregates weight = 500 gm
% 39.9



Soil classification: A - 1 - a



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Modified Proctor Test Report ASTM - D 1557

Mould Number :- 1
Volume of mould = 2183 cm³
Weight of mould = 5921 g
G.S = 2.5 g/cm³

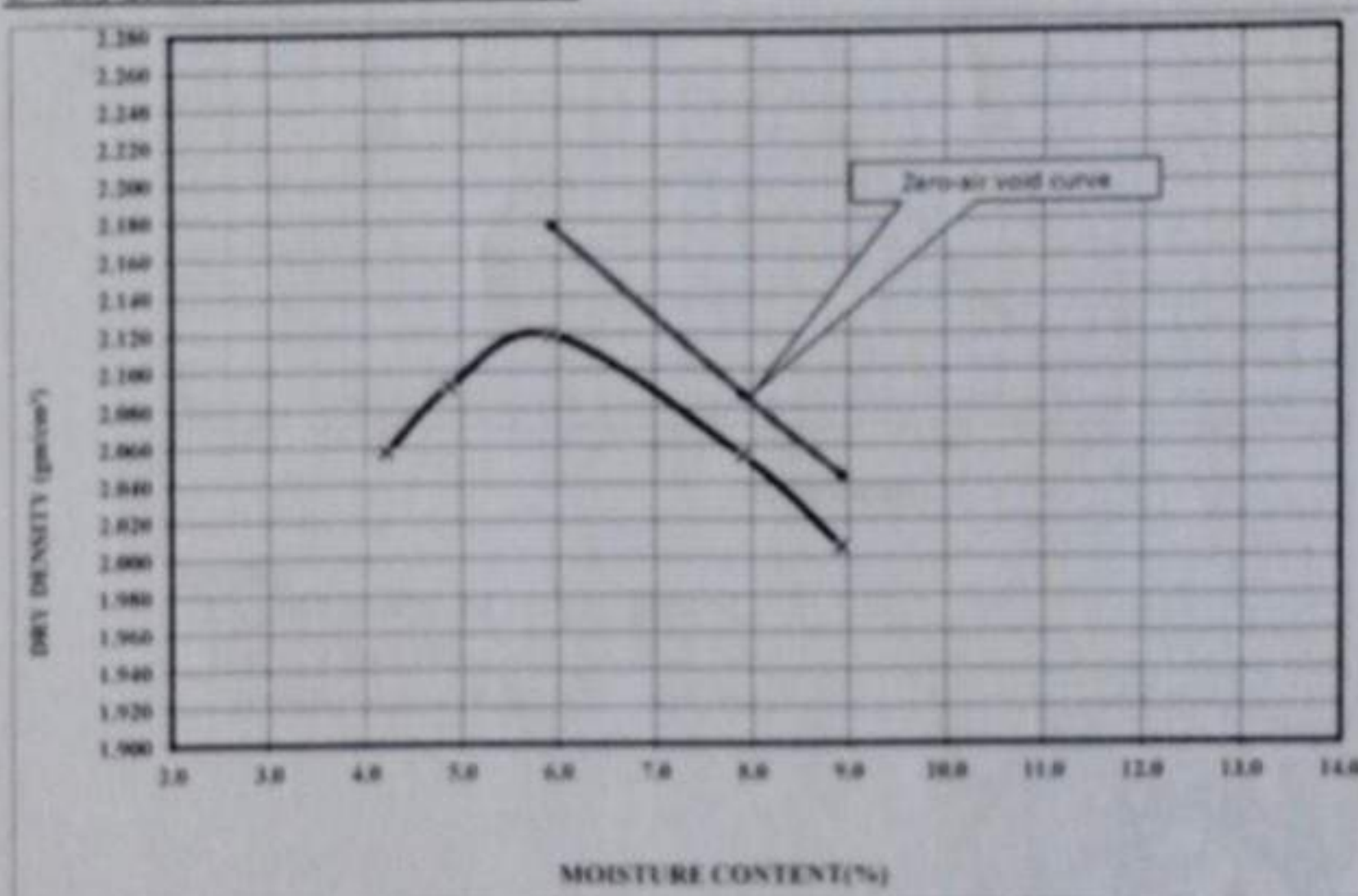
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	10601	10710	10822	10760	10690
Weight of mould (g)	5921	5921	5921	5921	5921
Weight of wet soil (g)	4680	4789	4901	4839	4769
Volume of mould (cm ³)	2183	2183	2183	2183	2183
Wet density (g/cm ³)	2.144	2.194	2.245	2.217	2.185
Dry density (g/cm ³)	2.057	2.092	2.119	2.054	2.005
Zero-air Void curve			2.177	2.087	2.044

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)	243.2	242.1	240.6	237.9	236.8
Weight of container (g)	82.0	80.0	82.0	85.0	89.0
moisture content(%)	4.2	4.9	5.9	7.9	8.9

C - Dry density-Moisture relationship:-



M.D.D= 2.119 gm/cm³
O.M.C= 5.9 %



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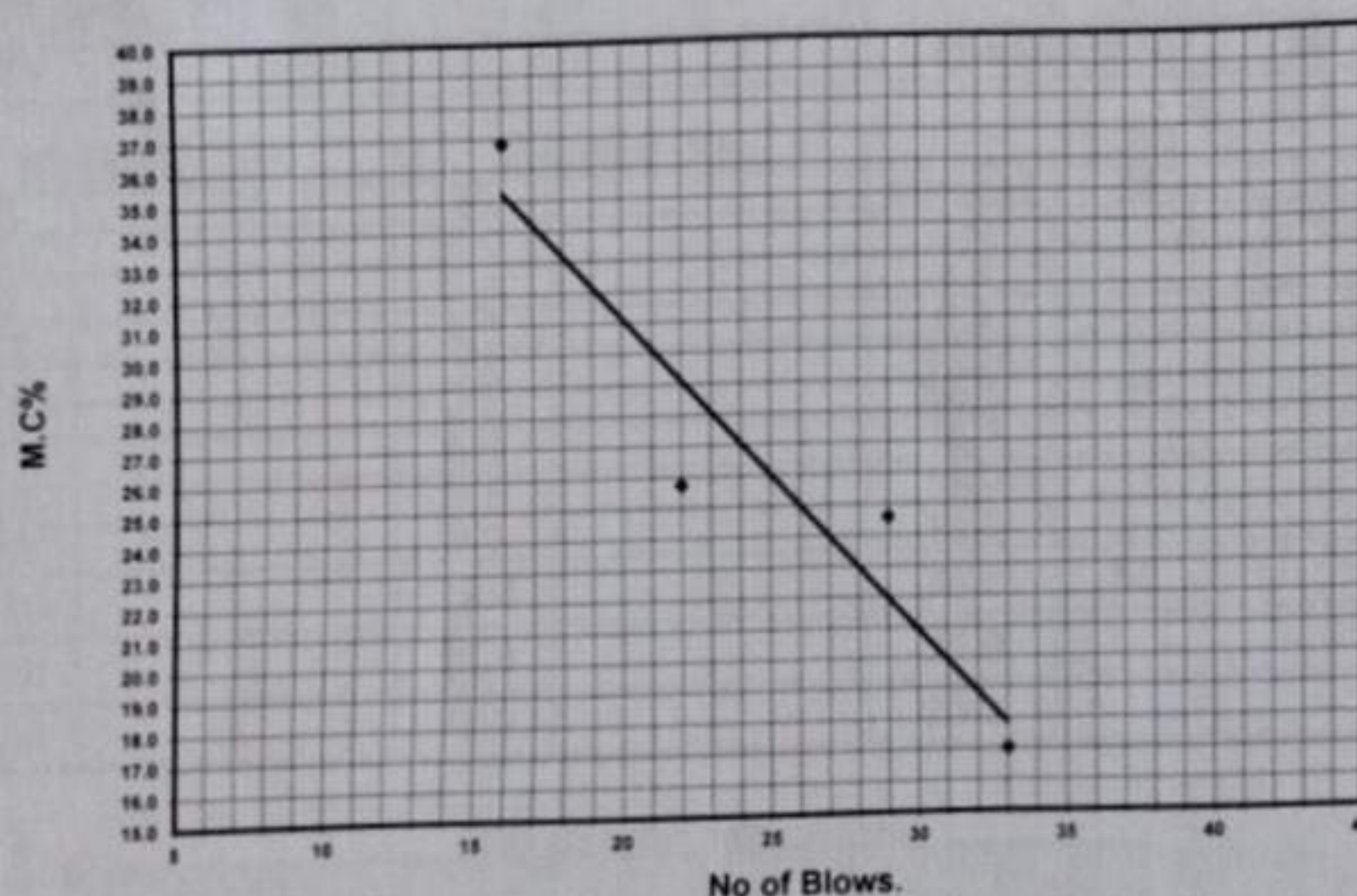
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Liquid and Plastic Limits Test

ASTM - D 4318

Test No	1	2	3	4	5	6
Type of test	Liquid Limit				Plastic Limit	
NO of B.	33	29	22	16		
Container No	a	b	c	e	F	J
Mass of wet soil + container	99.00	111.90	99.60	50.10	63.80	47.95
Mass of dry soil + container	97.40	106.00	96.00	42.00	57.90	46.20
Mass of container	88.00	82.00	82.00	20.00	34.00	39.00
Mass of moisture	1.60	5.90	3.60	8.10	5.90	1.75
Mass of dry soil	9.40	24.00	14.00	22.00	23.90	7.20
Moisture content	17.02	24.58	25.71	36.82	24.69	24.31



Results:

Liquid Limit (L.L) : 26.2 %
Plastic Limit (P.L) : 24.5 %
Plasticity Index (P.I): 1.7 %



CONTRACTOR

CONSULTANT

LAP ENG

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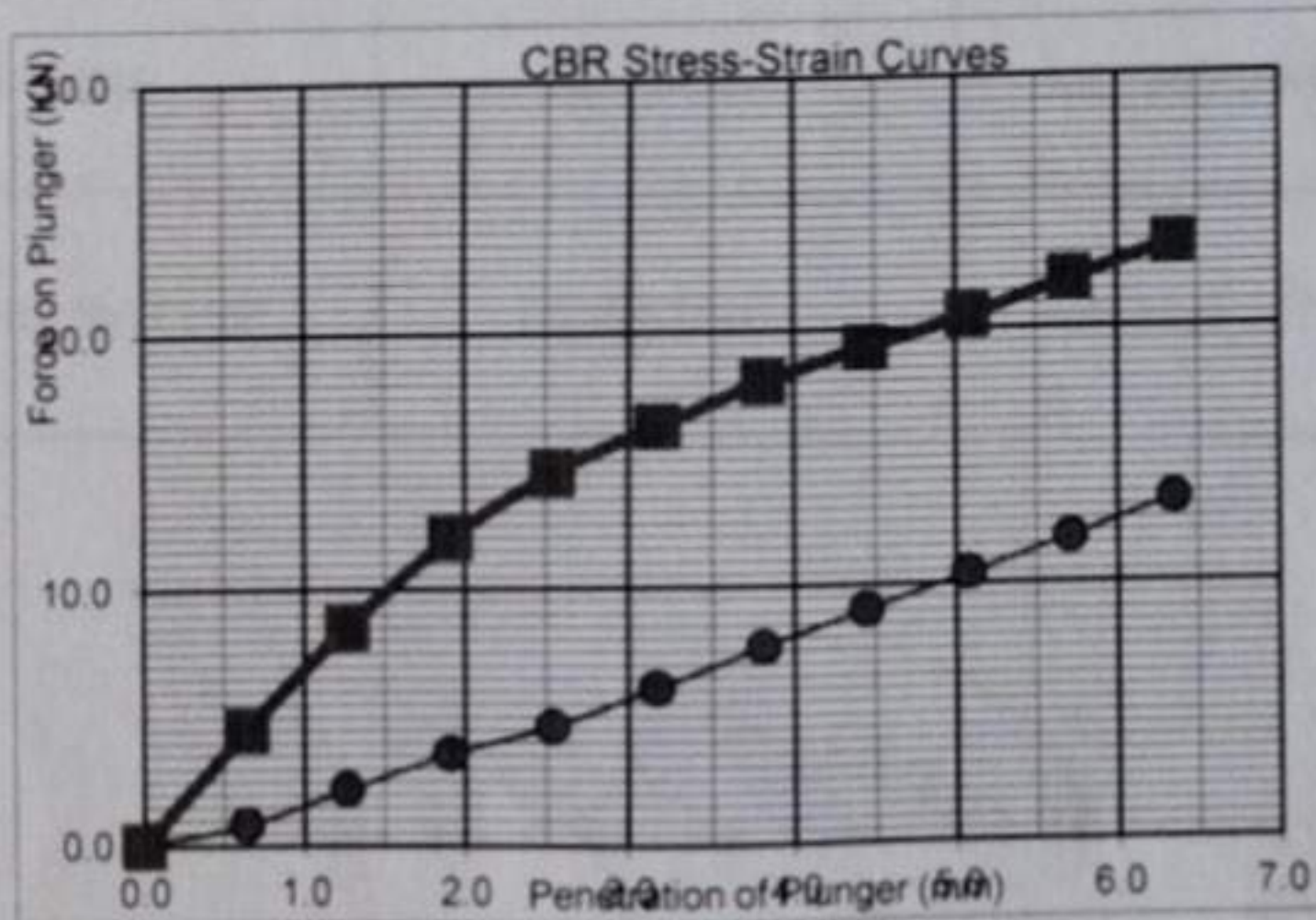
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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56				Swell %	
MOULD NO	1				56	
WT OF MOULD+SOIL	11955			Start	0.00	
WT OF MOULD	7025			End	0.00	
WT OF SOIL	4930			Swell	0.00	
VOLUME OF MOULD	2198					
WET DENSITY	2.243					
	MC before soaking			Weight of Rammer	4.54Kg	
TIN NO	1			MDD	Kg/m3	2.119
WT OF WET SOIL+TIN	250.00			OMC	%	5.9
WT OF DRY SOIL+TIN	241					
WT OF WATER	9.00					
WT OF TIN	88			PROVING RING		
WT OF DRY SOIL	153			Div/KN	0.0210	
MOISTURE CONTENT	5.9					
DRY DENSITY	2.118			Capacity (KN)	50	
Pen	Reading (Div)		Bearing (KN)		standar	56
mm	56		56		0.0	
0.00	0		0.0		4.5	
0.64	83		0.8		8.5	
1.27	222		2.2		12.0	
1.91	362		3.5		14.5	35
2.54	470		4.6		16.3	
3.17	621		6.1		18.0	
3.81	780		7.6		19.3	
4.45	920		9.0		20.5	52
5.08	1060		10.4		21.9	
5.71	1200		11.8		23.3	
6.35	1350		13.2			



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Report :	331 - 2 - Center
Date :	08/04/2023

CHEMICAL ANALYSIS

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	شركة الصفا للمقاولات
Project :	Electric express train
Sample :	FERMA
Sataion :	ST (392 + 900) : (394 + 500)
Date of Test :	28-3-2023

Temperature : 18 °C

Humidity : 45%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974



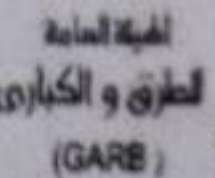
LAB DIRECTOR
CH/ Mostafa Asker

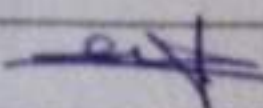
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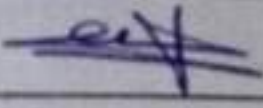
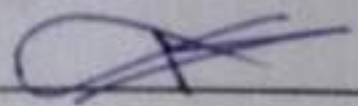
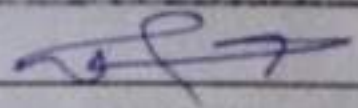
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Contractor Company	Al-Safa General Contracting Company			Designer Company	(SPECTRUM) Engineering Consulting Office						
Issued by Contractor	Name	Sign		Date/Serial Number	Time						
	Eng. Ahmed Ragab			14/4/2023	10:00						
				(QT - 060)							
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	MM	MM
				393	EW	CS	15	4	23	10	0

CODE-1	S15	D3	Kp 393+000
		EW	
		MS	

Description of Materials	SUB-BALLAST (5000 M3).		
Location to be Used	From Station (392+900) to Station (394+500)		
Sample only	Yes	Materials Type	Sand & Gravel
Supplier Name	EL-BARAKA "Stones Crusher"	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (EG21-122.1) VERSION1-2022 BY CIVECON GROUP
Prequalification reference		Test Samples Results	Yes attached
Reference Photos	No	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM) 1-Quality test Result By COMIBASSAL Laboratory is Approved. 2-This Sample Representative (5000 m3) only.		Comments by: Eng. Alaa Abd-Allatif (ER) 1-All tests were carried-out Third Party Lab (COMIBASSAL). 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. Ahmed Ragab			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Margrate Magdy			
Employers Representative	Eng. Alaa Abd-Allatif		25-5-2023	AWC

* Designer
 ** Alignment/Bridges, Culvert only



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Internal inspection and laboratories sector

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16 - old subballast

I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة الصفا للمقاولات
Sample : Sub-Ballast
Station : St(392+900) to st(394+500)
Date of Test : 15/04/2023
QC : 1241

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 classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MDD	2.207
	OMC	7.1%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CB)	CBR ratio	95%
5- Specific gravity (SG), absorption and degradation	S S D	2.520
	Absorption	1.3%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	23.6%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry

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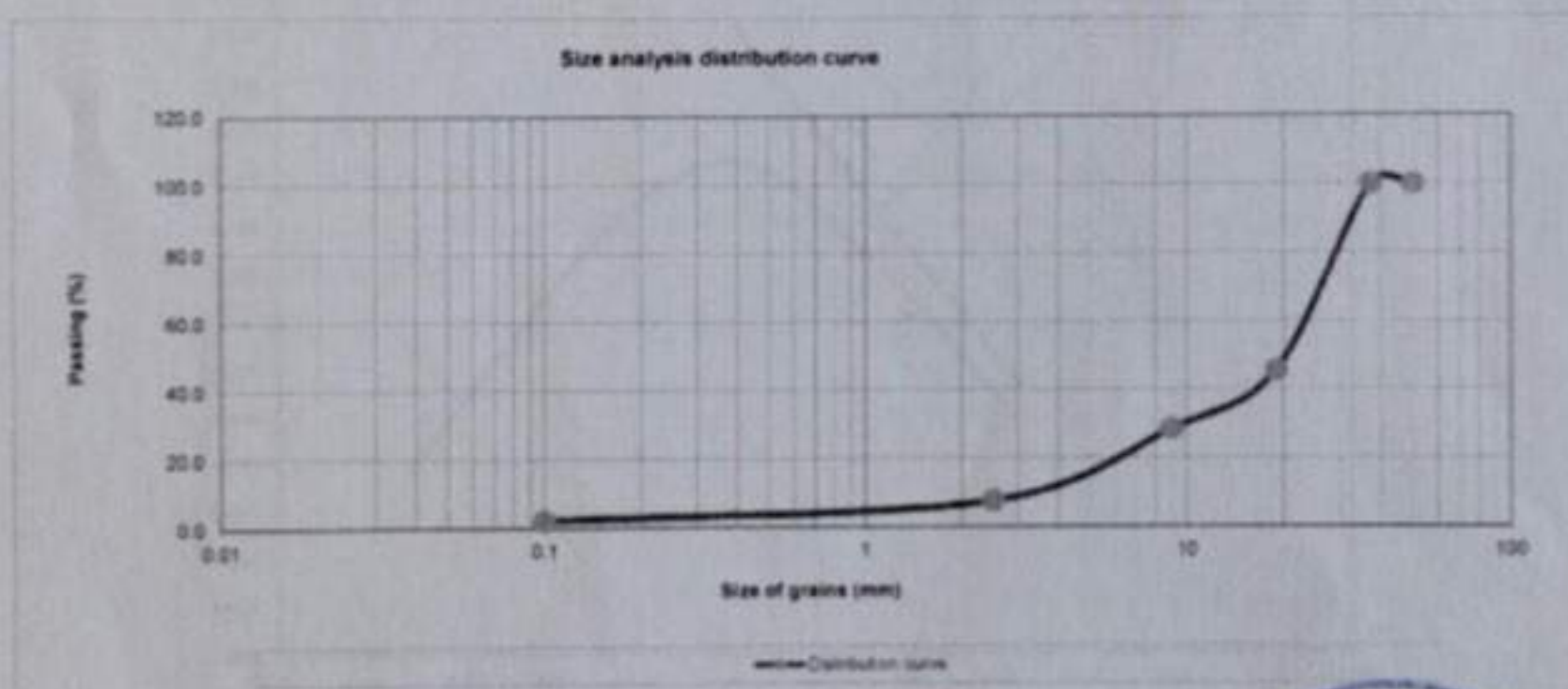
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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	0.00	0.00	0.00	100.0	
1	4030.00	4030.00	35.84	64.2	
3/4	2081.00	6111.00	54.35	45.7	
1/2	1520.00	7631.00	67.87	32.1	
3/8	412.00	8043.00	71.53	28.5	
No.4	1286.00	9329.00	82.97	17.0	
No.10	280.00	280.00	56.00	7.5	
No.200	439.00	439.00	87.80	2.1	

Total sample weight= 11244.00 pass No.4= 1915.0 Total fine aggregates weight = 500 gm



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



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Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 1
Volume of mould = 2188 cm³
Weight of mould = 7250 g
G.S = 2.7 g/cm³

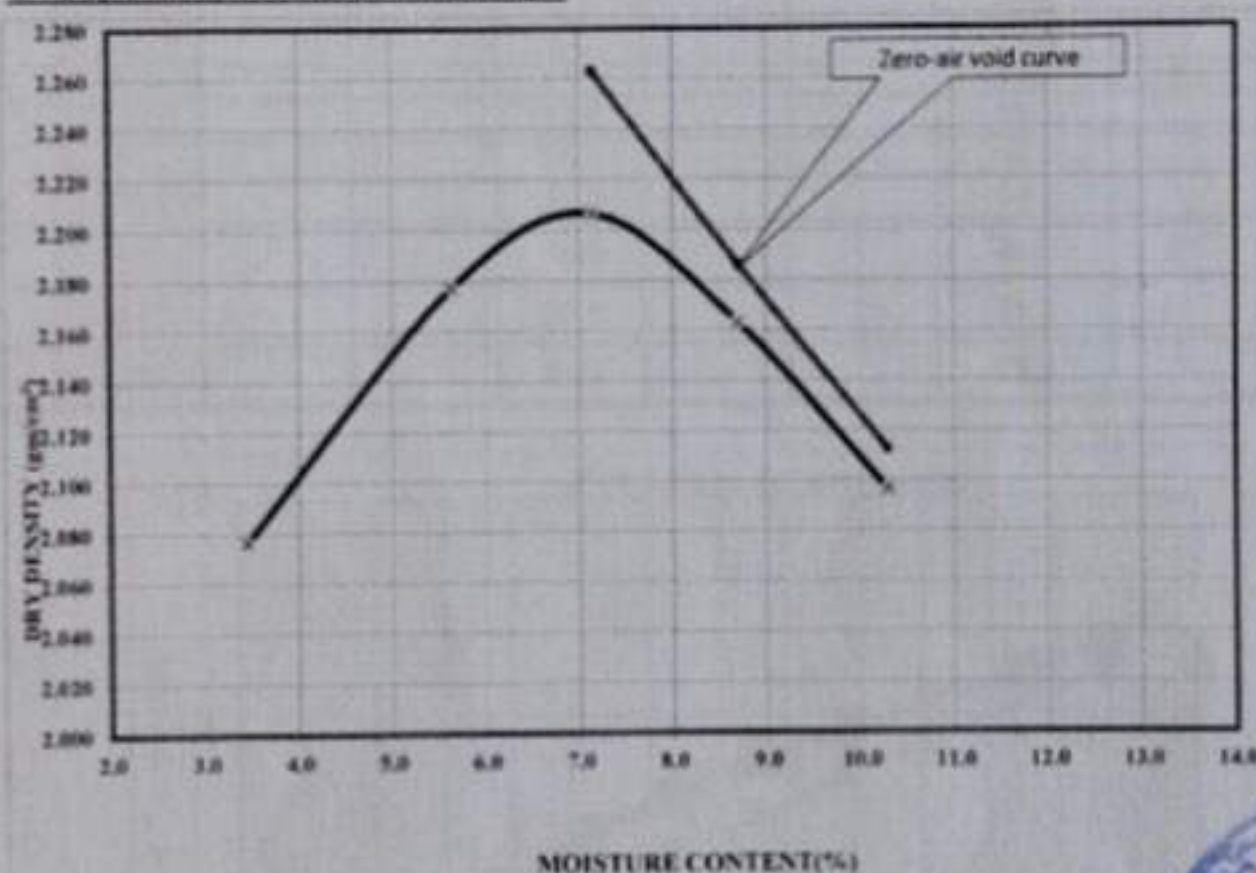
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	11950	12282	12423	12395	12310
Weight of mould (g)	7250	7250	7250	7250	7250
Weight of wet soil (g)	4700	5032	5173	5145	5060
Volume of mould (cm ³)	2188	2188	2188	2188	2188
Wet density (g/cm ³)	2.148	2.300	2.364	2.351	2.313
Dry density (g/cm ³)	2.076	2.177	2.207	2.163	2.097
Zero-air Void curve			2.263	2.187	2.113

B- Moisture Calculations :-

Weight of wet soil (g)	150.0	150.0	150.0	150.0	150.0
Weight of dry soil (g)	145.0	142.0	140.0	138.0	136.0
moisture content %	3.4	5.6	7.1	8.7	10.3

C - Dry density-Moisture relationship:-



M.D.D= 2.207 gm/cm³
O.M.C= 7.1 %



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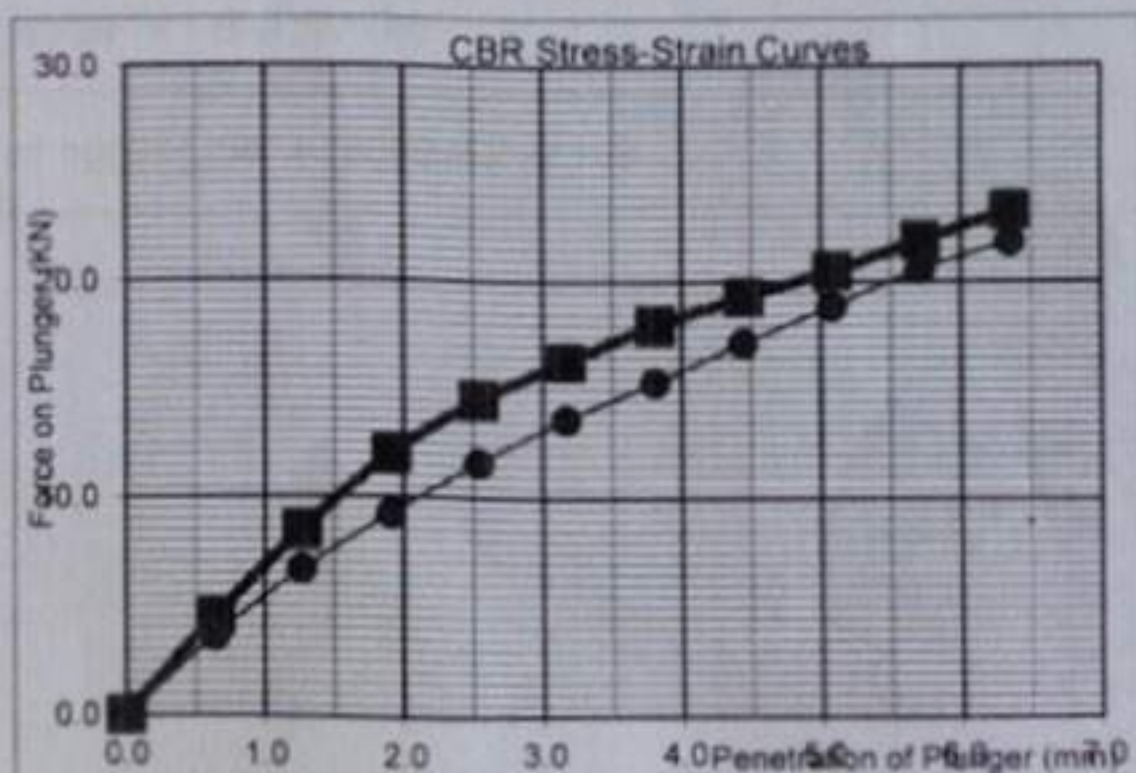
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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56					Swell %	
MOULD NO	1					56	
WT OF MOULD+SOIL	12410			Start	0.00		
WT OF MOULD	7250			End	0.00		
WT OF SOIL	5160			Swell	0.00		
VOLUME OF MOULD	2190						
WET DENSITY	2.356						
	MC before soaking			Weight of Rammer		4.54Kg	
TIN NO	1			MDD	Kg/m3	2.207	
WT OF WET SOIL+TIN	250.00			OMC	%	7.1	
WT OF DRY SOIL+TIN	239						
WT OF WATER	11.00						
WT OF TIN	82						
WT OF DRY SOIL	157	2.125					
MOISTURE CONTENT	7.0						
DRY DENSITY	2.202						
				Capacity (KN)		50	
Pen mm		97		Bearing (KN)		CBR	
	56			56		standar	56
0.00	0			FALSE		0.0	
0.64	368			3.6		4.5	
1.27	684			6.7		8.5	
1.91	943			9.2		12.0	
2.54	1166			11.6		14.5	88
3.17	1392			13.6		16.3	
3.81	1567			15.4		18.0	
4.45	1753			17.2		19.3	
5.08	1925			18.9		20.5	95
5.71	2097			20.6		21.9	
6.35	2230			21.9		23.3	



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Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2528
Weight of saturated sample in water (C)	1525
Weight of dry sample aftr heating (A)	2495

Results:-

Saturation surface dry spicific gravity = $B / (B-C)$	2.520
Bulk spicific gravity = $A / (B-C)$	2.488
Apparent spicific gravity = $A / (A-C)$	2.572
Asorbtion of water = $(B-A)/A \times 100$	1.3
Degradation of aggregate = $(2500-A)/ A \times 100$	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	A
Intital Weight (W1) gms	5000
Weight of tested sample (W2) gms Retained on sieve No.12	3820
% abrasion By Weight Passing from Sieve No.12	23.6%



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Report	:	491 - 1 - Center
Date	:	25/05/2023

CHEMICAL ANALYSIS

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	شركة الصفا للمقاولات
Project	:	Electric express train
Sample	:	Sub Ballast
Station	:	ST (392 +900) ; (394 + 500)
Date of Test	:	15-4-2023

Temperature : 24 °C

Humidity : 40%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0028%	ASTM D 2974
SULPHATE	0.0036%	
ORGANIG MATTER	NEGATIVE	



LAB DIRECTOR
CH/ Mostafa Asker

Per Amang Amin

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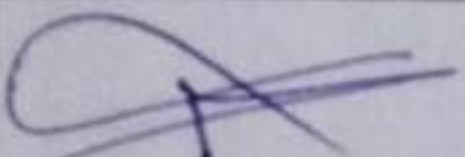
MATERIAL
APPROVAL
REQUEST

الهيئة العامة
للمرور والكباري
(GARB)



الهيئة العامة
للمرور والكباري
(GARB)



Contractor Company	AI-SAFA General Contracting Company			Designer Company				(SPECTRUM) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/Serial Number				Time			
	Eng. Ahmed Ragab			9-Jun-2023				10:00			
				(QT - 068)							
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	HH	MM
				393	EW	CS	10	6	23	10	0

CODE-1	S15	D3	Kp 393+000
		EW	
		MS	

Description of Materials	Fill Layer (105000 M3).		
Location to be Used	From Station (392+900) to Station (394+500)		
Sample only	Yes	Materials Type	Sand & Gravel
Supplier Name	SIWI-MAHDI	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-122.1) VERSION1-2022 BY CIVECON GROUP
Prequalification reference		Test Samples Results	Yes attached
Reference Photos	No	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By COMIBASSAL Laboratory is Approved.		1-All tests were carried-out Third Party Lab (COMIBASSAL).	
2-This Sample Representative (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. Ahmed Ragab			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Margate Magdy			
Employers Representative	Eng. Alaa Abd-Allatif		23-7-2023	AWC

* Designer

** Alignment/Bridges: Culvert only



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Internal inspection and laboratories sector

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I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة الصفا للمقاولات
Sample : FERMA
Station : From Stored Materials
Date of Test : 10/06/2023
QC : 1558-2

II- Sample description:

Gravel and sand

III- Required tests and Results

Required Tests		Results
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-b
2- Modified compaction (Proctor test)	MDD	2.105
	OMC	6.9%
3- Liquid limit, plastic limit and plasticity index	LL	24.6%
	PL	22.3%
	PI	2.3%
4- California bearing ratio (CBR)	CBR ratio	29%

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 report.

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For Dr. H.
Dr. Mohamed Mostafa Badry

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APPENDIX

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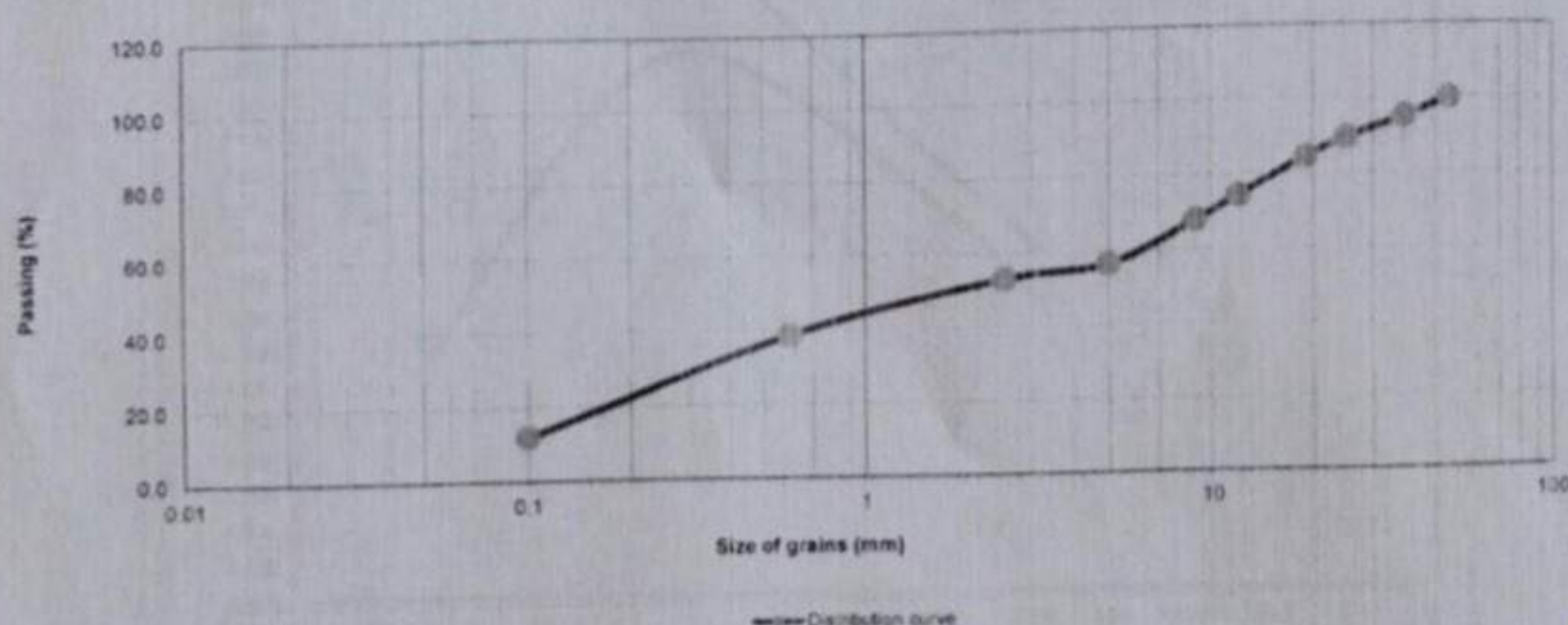
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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	502.00	502.00	5.02	95.0	
1	550.00	1052.00	10.52	89.5	
3/4	495.00	1547.00	15.47	84.5	
1/2	1010.00	2557.00	25.57	74.4	
3/8	650.00	3207.00	32.07	67.9	
No.4	1152.00	4359.00	43.59	56.4	
No.10	65.00	65.00	6.50	52.7	
No.40	315.00	315.00	31.50	38.6	
No.200	790.00	790.00	79.00	11.8	

Total sample weight = 9999.00 pass No.4= 5640.0 Total fine aggregates weight = 1000 gm
% 56.4

Size analysis distribution curve



Soil classification: A - 1 - b



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Internal inspection and laboratories sector

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Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 2
Volume of mould = 2189 cm³
Weight of mould = 5675 g
G.S = 2.56 g/cm³

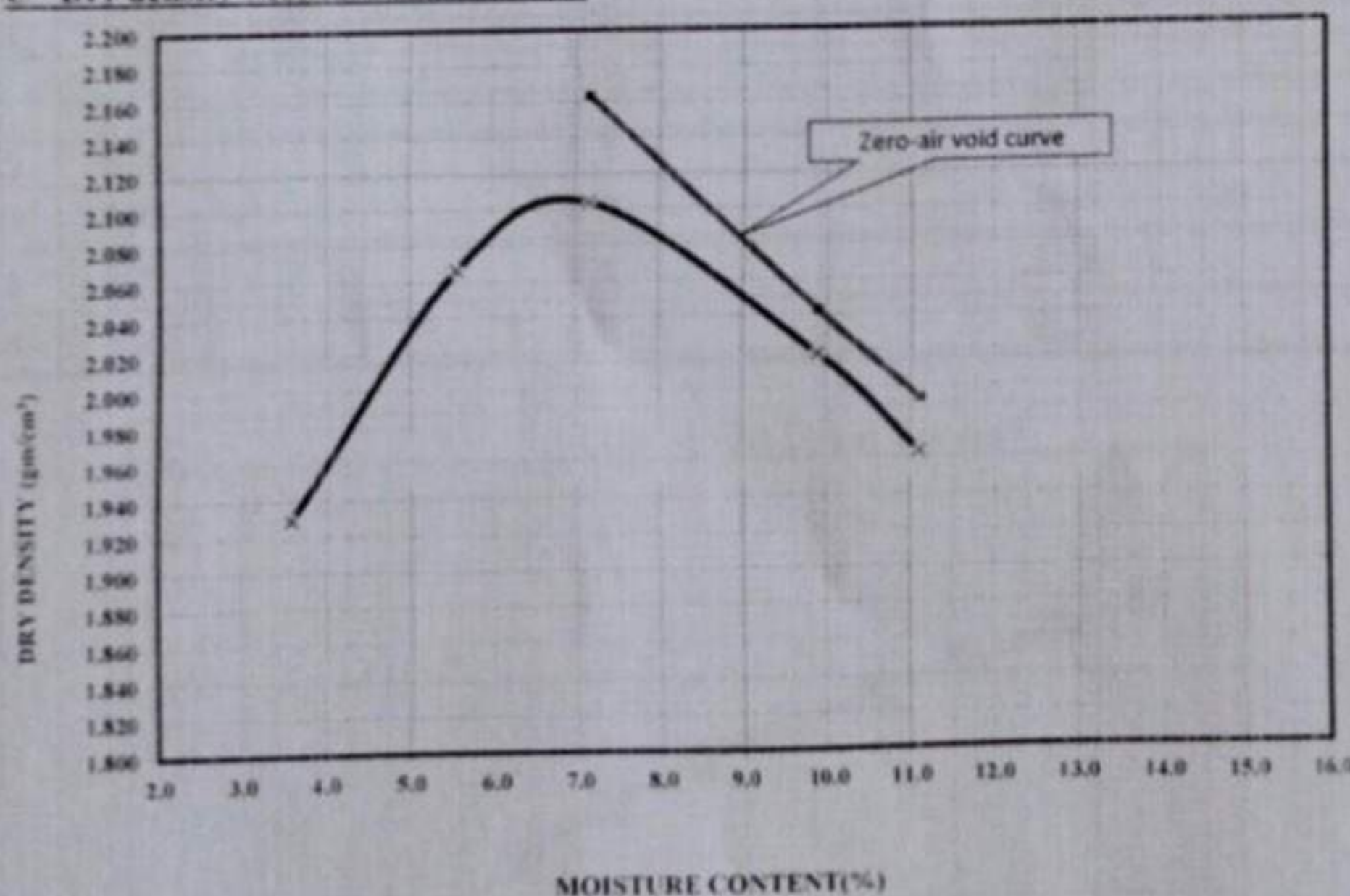
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	10050	10450	10610	10530	10450
Weight of mould (g)	5675	5675	5675	5675	5675
Weight of wet soil (g)	4375	4775	4935	4855	4775
Volume of mould (cm ³)	2189	2189	2189	2189	2189
Wet density (g/cm ³)	1.999	2.181	2.254	2.218	2.181
Dry density (g/cm ³)	1.930	2.066	2.104	2.018	1.963
Zero-air Void curve			2.163	2.043	1.993

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)	242.4	238.4	235.3	230.2	228.0
Weight of container (g)	30.0	30.0	30.0	30.0	30.0
moisture content(%)	3.6	5.6	7.2	9.9	11.1

C - Dry density-Moisture relationship:-



M.D.D= 2.105 gm/cm³
O.M.C= 6.9 %



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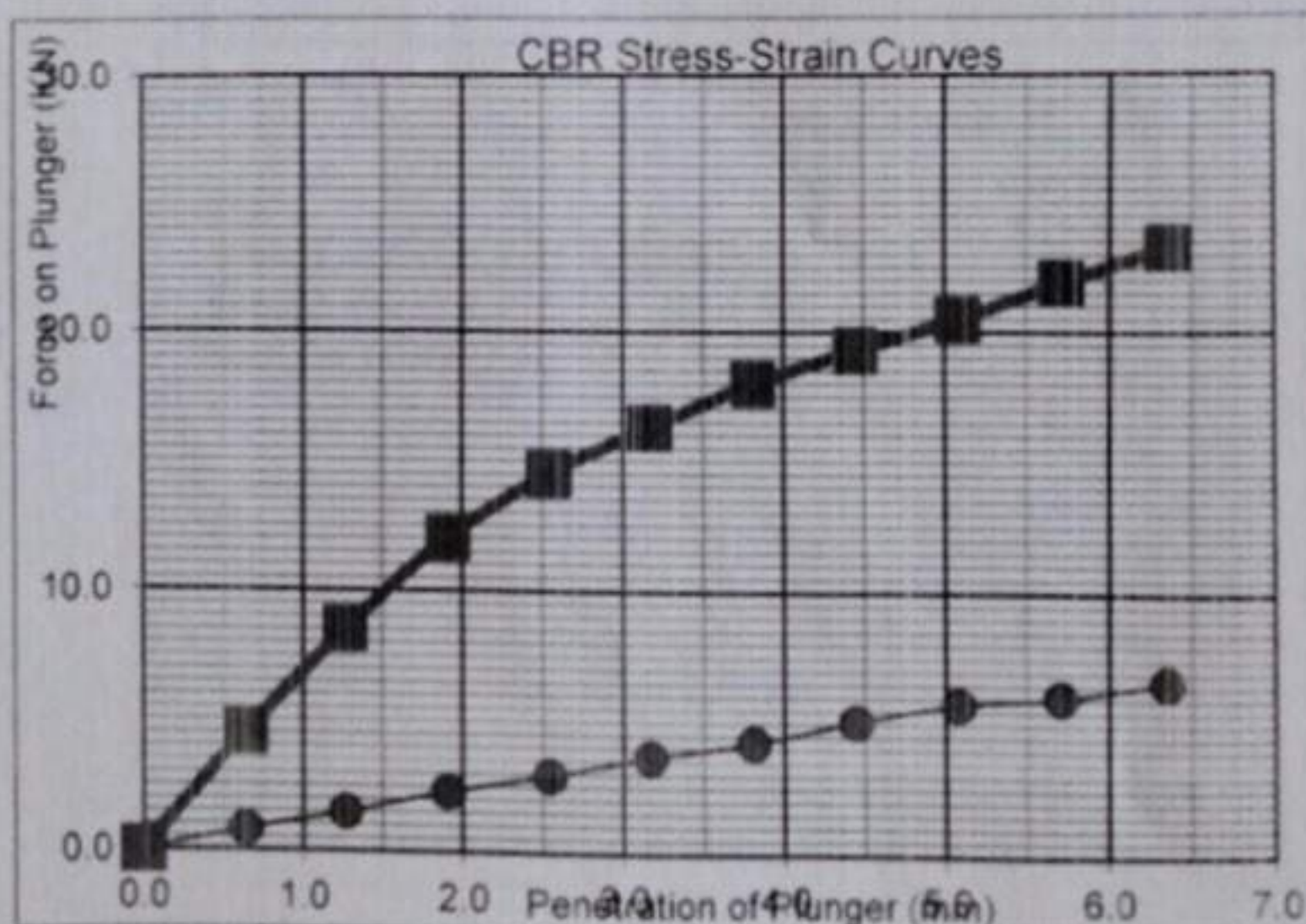
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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56				
MOULD NO	3				
WT OF MOULD+SOIL	10101				
WT OF MOULD	5208				
WT OF SOIL	4893				
VOLUME OF MOULD	2190				
WET DENSITY	2.234				
MC before soaking		Weight of Rammer		4.54Kg	
TIN NO	1		MDD	Kg/m3	2.105
WT OF WET SOIL+TIN	250.00		OMC	%	6.900
WT OF DRY SOIL+TIN	240				
WT OF WATER	10.00				
WT OF TIN	81				
WT OF DRY SOIL	159				
MOISTURE CONTENT	6.3				
DRY DENSITY	2.102		Capacity (KN)		50
Pen	Reading (Div)		Bearing (KN)		CBR
mm	56		56	standar	56
0.00	0		0.0	0.0	
0.64	81		0.8	4.5	
1.27	152		1.5	8.5	
1.91	234		2.3	12.0	
2.54	300		2.9	14.5	22
3.17	375		3.7	16.3	
3.81	435		4.3	18.0	
4.45	520		5.1	19.3	
5.08	590		5.8	20.5	29
5.71	620		6.1	21.9	
6.35	685		6.7	23.3	



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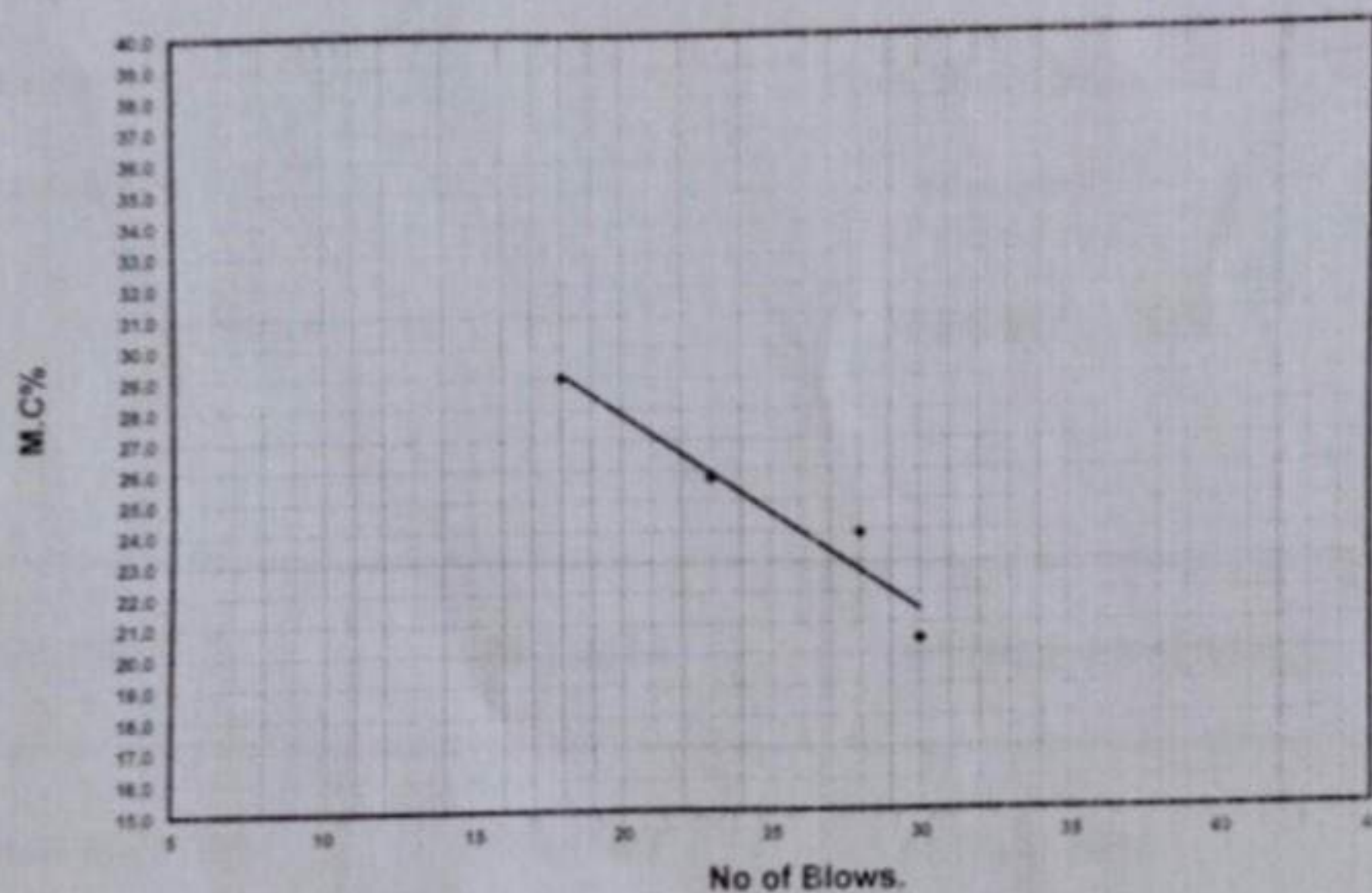
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Liquid and Plastic Limits Test

ASTM - D 4318

Test No	1	2	3	4	5	6
Type of test	Liquid Limit				Plastic Limit	
NO of B.	30	28	23	18		
Container No	j	c	s	m	F	J
Mass of wet soil + container	52.00	50.00	46.90	41.00	27.00	32.00
Mass of dry soil + container	46.90	44.40	41.80	36.50	26.00	30.20
Mass of container	22.00	21.00	22.00	21.00	21.60	22.00
Mass of moisture	5.10	5.60	5.10	4.50	1.00	1.80
Mass of dry soil	24.90	23.40	19.80	15.50	4.40	8.20
Moisture content	20.48	23.93	25.76	29.03	22.73	21.95



Results:

Liquid Limit (L.L.) : 24.6 %
Plastic Limit (P.L.) : 22.3 %
Plasticity Index (P.I.): 2.3 %



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Report :	610 - 2 - Center
Date :	23/07/2023

CHEMICAL ANALYSIS

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	شركة الصفا للمقاولات
Project :	Electric express train
Sample :	FERMA
Sataion :	From Stored Materials
Date of Test :	10-6-2023

Temperature : 18 °C

Humidity : 50%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974



LAB DIRECTOR
CH/ Mostafa Asker

Mostafa

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MATERIAL APPROVAL REQUEST			الهيئة العامة للمرور والكباري (GARB)		الهيئة العامة للإحصاء وزارة التخطيط			SYSTRA SHAKER

Contractor Company	Al-Safa General Contracting Company			Designer Company	(SPECTRUM) Engineering Consulting Office						
Issued by Contractor	Name	Sign		Date/Serial Number	Time						
	Eng. Ahmed Ragab			31-Jan-2023	10:00						
				(QT.044)							
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	HH	MM
				393	EW	CS	1	2	23	10	0

CODE-1	S15	D3	Kp 392+000
		EW	
		M5	

Description of Materials	Subgrade (10000 m³)		
Location to be Used	From Station (392+900) to Station (394+500)		
Sample only	Yes	Materials Type	Gravel & Sand
Supplier Name	CRUSHER STONES	Data Sheet provided	Yes attached
Reference in BoQ	(4-3)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-122.1) VERSION1-2022 BY CIVECON GROUP
Prequalification reference		Test Samples Results	Yes attached
Reference Photos	No	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM) 1-Quality test Result By COMBASSAL Laboratory is Approved. 2-This Sample Representative (5000 m3) only.		Comments by: Eng. Alaa Abd-Allatif (ER) 1-All tests were carried-out by Third party lab (comibassal) 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. Ahmed Ragab			A
QA/QC *	Eng. Mazen Essamy			A
GARB **	Eng. Mohammed Fayed			
Employers Representative	Eng. Alaa Abd-Allatif			AWC

* Designer
 ** Alignment/Bridges: Culvert only

2023
 10/02



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الجمعية التعاونية الانتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو 9001:2015

Accredited by:

Egyptian General Authority for Petroleum
Under No.: 34/29.11.2011

قطاع التفتيش الداخلى والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ١١٠٢٩ / ٢٠١١

I- Introduction

General Consultant: SYSTRA
Consultant : SPECTRUM
Contractor : شركة الصفا للمقاولات
Sample : upper embankment (prepared sub grade)
Station : st (392 + 900) : (394 + 500)
Date : 2 / 2 / 2023
QC : 361

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)
- 5- Specific gravity (SG)
- 6- los angeles

IV- Results

1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction and optimum moisture content (Proctor test)	MDD	2.179
	OMC	6.3%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	86%
5- Specific gravity (SG), absorption and degradation	S S D	2.537%
	Absorption	0.9%
	Degradation	0.2%
6- los angeles		27%

LAB DIRECTOR

Eng / Eman kandil

Eman



Geotechnical consultant

Dr. Mohamed Mostafa Badry

[Signature]

الإدارة، ٤٠ ش صفيية زغلول - الإسكندرية - ب ١٥٧
ت: ٤٨٧٠٥٧٢ - ف: ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥
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Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع، خلف ٤٩ طريق الحرية - الإسكندرية - مصر
ت: ٣٩٢٠١٧٦ - ٣٩٣١٤٨٢ - ف: ٣٩٠٠٤٧٦
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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ١١٠٢٩ / ٢٠١١

APPENDIX

الإدارة، ٤٠ ش صفيّة زغلول - الإسكندرية ص - ب ١٥٧
ت: ٤٨٧٠٥٧٣ - ف: ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥
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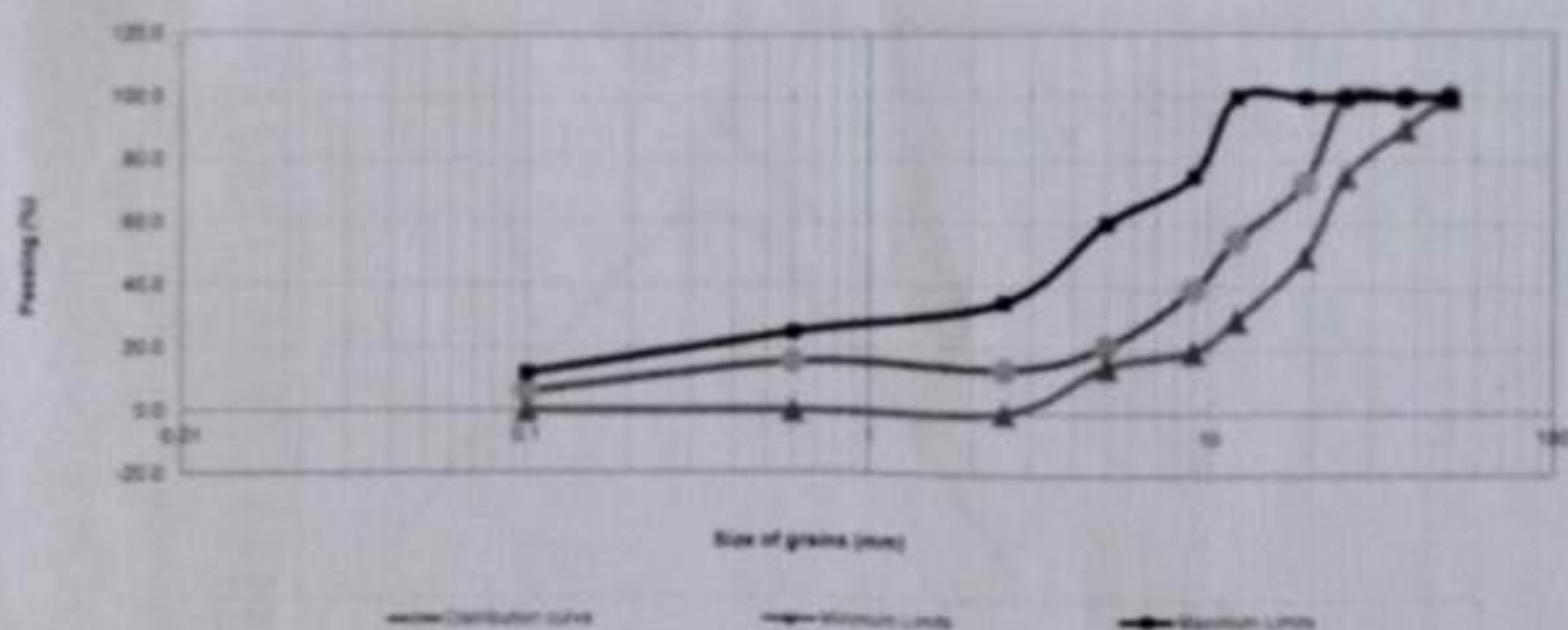
معتمد لدى الهيئة المصرية العامة للتبترول
تحت رقم ٢٩/١١٠٢٩/٢٤

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS	
	(gm)					
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	2380.00	2380.00	26.97	73.0	60	100
3/4	1375.00	5333.00	60.43	39.6	20	75
3/8	1590.00	6923.00	78.45	21.6	15	60
No.10	180.00	180.00	36.00	13.8	0	35
No.200	360.00	360.00	72.00	6.0	0	12

Total sample weight = 8825.00 pass No 3/8 = 3480.0 Total fine aggregates weight = 500 gm
% 39.4

Size analysis distribution curve



Soil classification: A - 1 - a (طينة اللينة)



الإدارة: ٤٥ ش. صفيية زغلول - الإسكندرية - مصر

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ت. ٤٨٦٩٧٩٨ - ف. ٤٨٧-٥٧٣ - ٤٨٦٩٧٩٨ - ٤٨٧-٦٦٥



القطاع: ٤٩ طريق الحرية - الإسكندرية - مصر

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قطاع التفتيش الداخلى والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ١١٠٢٩ / ٢٠١١

Modified Proctor Test Report ASTM - D 1557

Mould Number :- 1
Volume of mould = 2150 cm³
Weight of mould = 6600 g
G.S = 2.60 g/cm³

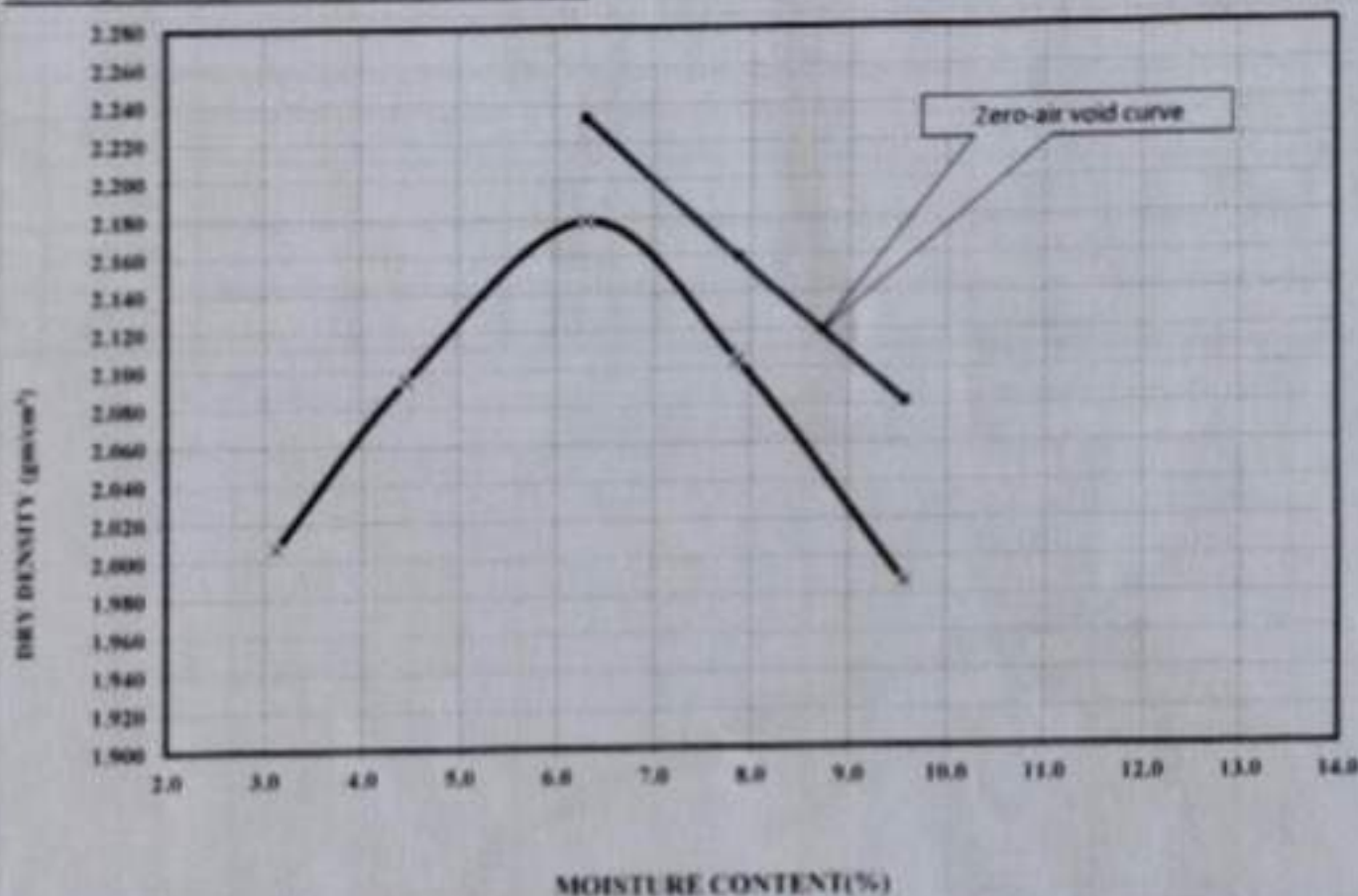
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	11050	11305	11580	11480	11280
Weight of mould (g)	6600	6600	6600	6600	6600
Weight of wet soil (g)	4450	4705	4980	4880	4680
Volume of mould (cm ³)	2150	2150	2150	2150	2150
Wet density (g/cm ³)	2.070	2.188	2.316	2.270	2.177
Dry density (g/cm ³)	2.007	2.095	2.179	2.104	1.987
Zero-air Void curve			2.233	2.159	2.082

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)	245.0	243.0	240.2	237.9	236.9
Weight of container (g)	85.0	86.0	85.0	84.0	100.0
moisture content (%)	3.1	4.5	6.3	7.9	9.6

C - Dry density-Moisture relationship:-



M.D.D= 2.179 gm/cm³
O.M.C= 6.3 %



الإدارة، ٤٠ ش صفيية زغلول - الإسكندرية - مصر

ت: ٤٨٧٠٥٧٢ - ف: ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

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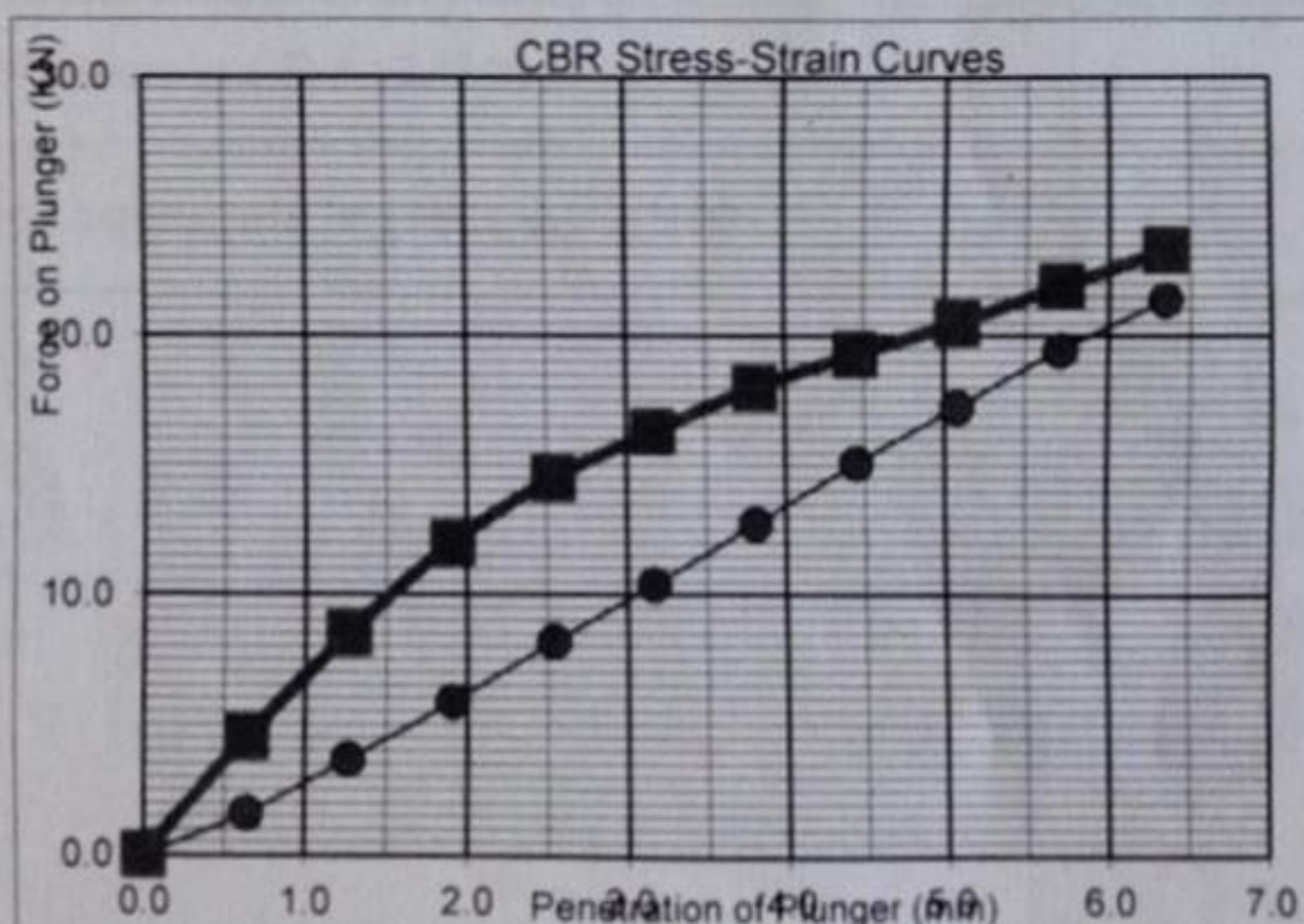
Egyptian General Authority for Petroleum
Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ١١٠٢٩ / ٢٠١١

Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56					Swell %	
MOULD NO	1					56	
WT OF MOULD+SOIL	12240			Start	0.00		
WT OF MOULD	7250			End	0.00		
WT OF SOIL	4990			Swell	0.00		
VOLUME OF MOULD	2165						
WET DENSITY	2.305						
	MC before soaking			Weight of Rammer	4.54Kg		
TIN NO	1			MDD	Kg/m3	2.179	
WT OF WET SOIL+TIN	250.00						
WT OF DRY SOIL+TIN	240			OMC	%	6.3	
WT OF WATER	10.00						
WT OF TIN	80			PROVING RING			
WT OF DRY SOIL	160			Div/KN	0.0210		
MOISTURE CONTENT	6.3						
DRY DENSITY	2.169			Capacity (KN)	50		
Pen	Reading (Div)		Bearing (KN)		CBR		
mm	56		56	standar	56		
0.00	0		0.0	0.0			
0.64	163		1.6	4.5			
1.27	375		3.7	8.5			
1.91	600		5.9	12.0			
2.54	835		8.2	14.5	62		
3.17	1060		10.4	16.3			
3.81	1300		12.7	18.0			
4.45	1540		15.1	19.3			
5.08	1760		17.3	20.5	86		
5.71	1985		19.5	21.9			
6.35	2180		21.4	23.3			



الإدارة: ٤٠ ش صفيية زغلول - الإسكندرية ص - ب ١٥٧

ت: ٤٨٧٠٥٧٢ - ف: ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

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القطاع: خلف ٤٩ طريق الحرية - الإسكندرية - مصر

ت: ٣٩٢٠١٧٦ - ٣٩٣١٤٨٢ - ف: ٣٩٠٠٤٧٦

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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ٢٩ / ١١٠٢٩ / ٢٠١١

Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2517
Weight of saturated sample in water (C)	1525
Weight of dry sample after heating (A)	2494

Results:-

Saturation surface dry specific gravity = $B / (B-C)$	2.537
Bulk specific gravity = $A / (B-C)$	2.514
Apparent specific gravity = $A / (A-C)$	2.574
Absorption of water = $(B-A) / A * 100$	0.9
Degradation of aggregate = $(2500-A) / A * 100$	0.2



الإدارة: ٤٠ ش. صفية زغلول - الإسكندرية - مصر

ت: ٤٨٧٠٥٧٢ - ف: ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

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Tel: 4870573 - Fax + Tel: 4869798 - 4870665



القطاع: خلف ٤٩ طريق الحرية - الإسكندرية - مصر

ت: ٣٩٢٠١٧٦ - ٣٩٢١٤٨٢ - ف: ٣٩٠٠٤٧٦

49 EL Horria Ave - Alex, Egypt

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COMIBASSAL International Controllers

الجمعية التعاونية الانتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسل)

حاصلة على شهادة الأيزو ISO 9001:2015

Accredited by:

Egyptian General Authority for Petroleum
Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ٢٩ / ١١٠٢٩ / ٢٠١١

ABRASION AND IMPACT " LOS ANGELES " TEST

(For small size 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	3650
% abrasion By Weight Passing from Sieve No.12	27.0%



الإدارة: ٤٠ أش صغية زغلول - الإسكندرية ص - ب ١٥٧

ت: ٤٨٧٠٥٧٢ - ف: ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

40safia zaghloul st ., p.o.Box 157 Alex, Egypt

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القطاع: خلف ٤٩ طريق الحرية - الاسكندرية - مصر

ت: ٣٩٢٠١٧٦ - ٣٩٢١٤٨٢ - ف: ٣٩٠٠٤٧٦

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معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ٢٩ / ١١٠٢٩ / ٢٠١١

Report :	196 - 4 - Center
Date :	10/02/2023

ORGANIG CHEMICAL ANALYSIS

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	ALSAFA FOR CONTRACTING
Project :	Electric express train
Sample :	PREPARED SUB GRADE
Station :	ST (392+900) : (394+500)
Date of Test :	2/2/2023

Temperature : 18 °C

Humidity : 50%

Test method	Results	Analysis
ASTM - D 2974	Non	Organig Chemical

LAB DIRECTOR
CH/ Mostafa Asker

Mostafa



الإدارة: ٤٠ ش صفيية زغلول - الإسكندرية ص - ب ١٥٧

ت: ٤٨٧٠٥٧٢ - ف: ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

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القطاع: خلف ٤٩ طريق الحرية - الإسكندرية - مصر

ت: ٣٩٢٠١٧٦ - ٣٩٣١٤٨٢ - ف: ٣٩٠٠٤٧٦

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