

محضر استلام موقع

مشروع: أعمال الجسر الترابي للخط الأول للقطار الكهربائي السريع قطاع
(برج العرب - العلمين) في المسافة من الكم 373+000 إلى الكم 374+000
بطول 1 كم

تنفيذ: شركة إنشاء للمقاولات العامة .
إشراف : 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 حسني فياض مدير عام مشروعات - الهيئة العامة للطرق والكباري
- 2- السيدة المهندسة/مارجريت مجدي زاخر مدير مشروع - الهيئة العامة للطرق والكباري
- 3- السيد المهندس/محمود شعبان أحمد مدير مشروع- شركة انشاء للمقاولات العامة

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

التوقيعات

رئيس الإدارة المركزية
منطقة غرب الدلتا
الاستشارية - من
مطروح
عميد مهندس /
هاني محمد محمود طه

3- محمود شعبان أحمد

2- ك

1- ع

محضر معاينة مسافة

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

- 1-- م/ مارجريت مجدي الهيئة العامة للطرق والكباري
- 2-- م/ عبدالعزيز مصطفى سبكتروم للاستشارات الهندسية (مكتب د. عماد نبيل)
- 3-- م/ محمود شعبان احمد شركة إنشاء للمقاولات العامة

تم النزول والمعاينة وطبقا للتعليمات الواردة بالمقايضة بمسافات نقل التوريد للسن

(prepared subgrade & sub ballast)

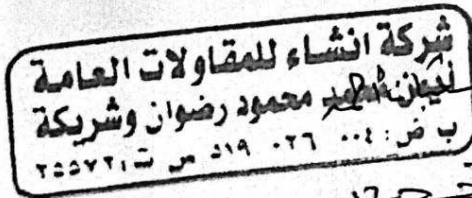
من الكسارة حتى محور مسار الطريق وجد أنه :-

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

(81 كم)

التوقيعات :-

- 3-- م/ محمود شعبان
- 2-- م/ عبدالعزيز مصطفى
- 1-- م/ مارجريت مجدي



التوقيع /
التوقيع /
التوقيع /

مشروع : القطار السريع (السخنة - العلمين - مطروح)
المقاييس التقديرية لبنود الاعمال تنفيذ شركة : إنشاء للمقاولات العامة (2)
القطاع من الكم 373+000 الي الكم 374+000 بطول 1 كم

رقم البند	بيان الأعمال	الوحدة	الكمية	سعر المنة	الإجمالي
1	اعمال الحفر				
1-1	بالمتر المكعب اعمال حفر باستخدام المعدات الميكانيكية لجميع انواع التربة عدا التربة الصخرية و تسوية السطح بالات التسوية والرش بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) ومحمل على البند تحميل ونقل الاتربة الزائدة لمسافة 500 متر من محور الطريق ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتعلاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف. يتم احتساب علاوة 1 جنيه لكل 1 كم بالزيادة.	3م	20000	20	400000
3	اعمال الردم				
3-1	اعمال تحميل وتوريد التربة مطابقة للمواصفات وتشغيلها باستخدام الات التسوية بسمك لا يزيد عن 50 سم حتى منسوب 2- متر وبسمك لايزيد عن 25 سم لاستكمال المنسوب التصميمي لتشكيل الجسر والاكتاف (نسبة تحمل كاليفورنيا لا تقل عن 15 %) ورشها بالمياه الاصولية الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) ويتم التنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتعلاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف. - في حالة طلب جهاز الاشراف زيادة نسبة الدمك عن 95% بحسب زيادة 1 جنيه على زيادة نسبة الدمك لكل 1%. -مسافة النقل حتى 2 كم ويتم احتساب علاوة 1.4 جنيه للكم بالزيادة او النقصان. -السعر يشمل عمل تشوينات وتخليط واختيارات ونقل لمواقع العمل حتى مسافة 2 كم -السعر يشمل قيمة المادة المحجيرة .	3 م	30000	85	2550000
	علاوة مسافة النقل 92 كم (تربة) (126=1.4*90)	3م	24000	126	3024000
	علاوة مسافة النقل 80 كم (رمال طبيعية) (109.2=1.4*78)	3م	6000	109.2	655200
	علاوة تحصيل رسوم الكارثة والموازن طبقا للائحة الشركة الوطنية	3م	30000	13	390000
4	طبقات الاساس				
4-1	بالمتر المكعب اعمال توريد وفرش طبقة تأسيس (Prepared subgrade) من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات واقصي حجم للحبيبات 100 مم والا تزيد نسبة العار 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 (Ev2) من تجريه لوح التحميل عن 80 ميجاسكال ويتم فرداها على طبقتين باستخدام الات التسوية الحديثة علي ان لا يزيد سمك الطبقة بعد تمام الدمك عن 25 سم ورشها بالمياه الاصولية للوصول الى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) والفئة تشمل اجراء التجارب المعملية والحقلية ويتم التنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتعلاته طبقا للمواصفات الخاصة بالمشروع وتقدير الاستشاري وتعليمات المهندس المشرف. - مسافة النقل 20 كم . - يتم احتساب علاوة 1.2 جنيه لكل 1 كم بالزيادة او النقصان . - السعر يشمل قيمة المواد المحجيرة طبقا للائحة العامة للتسعير (رقم 1) من الكم 325 الي الكم 392.5	3 م	8500	278	2363000
	علاوة مسافة النقل 81 كم (73.2=1.2*61)	3م	8500	73.2	622200
	علاوة تحصيل رسوم الكارثة والموازن طبقا للائحة الشركة الوطنية	3م	8,500	25	212,500

شركة إنشاء للمقاولات العامة
أيمن محمد محمود رضوان وشركاه
 ب.ض ١ ٥١٩/٠٢٦/٠٠٤ من ق. ٢٥٥٧٢





مشروع : القطار السريع (السخنة - العلمين - مطروح)
المقاييس التقديرية لبنود الاعمال تنفيذ شركة: إنشاء للمقاولات العامة (2)
القطاع من الكم 373+000 الي الكم 374+000 بطول 1 كم

رقم البند	بيان الأعمال	الوحدة	الكمية	سعر الفلة	الاجمال
4-2	بالمتر المكعب أعمال توريد وفرش طبقة أساس من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات واقصي حجم للحبيبات ما بين 31.5مم الى 40مم والا يزيد نسبة المار من منخل 200 عن 5% والتدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورنيا عن 80% والا يقل معامل المرونة (Ev2) من تجريه لوح التحميل عن 120 ميجاباسكال والا يزيد نسبة الفاقد بجهاز لوس انجلوس عن 30% والا يزيد الامتصاص عن 15% ويتم فردها علي طبقتين باستخدام الات التسوية الحديثة علي ان لا يزيد سمك الطبقة بعد تمام الدمك عن 20 سم ورشها بالمياة الاصولية للوصول الي نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الي اقصي كثافة جافة (لا تقل عن 100%) من الكثافة العملية والفننه تشمل اجراء التجارب العملية والحقلية ويتم التنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقا للمواصفات الفنية للمشروع وتقرير الاستشاري وتعليمات المهندس المشرف. - مسافة النقل لا تقل 20 كم . - يتم احتساب علاوة 1.2 جنيه لكل 1 كم بالزيادة او النقصان . - السعر يشمل قيمة المواد المحجيرة طبقا لافادة المنطقة بهذا قطاع رقم (5) من الكم 325 الي الكم 392.5	م ³	5,886.42	298	1,754,153
	علاوة مسافة النقل 81 كم (73.2=1.2*61)	3م	5,886.42	73.2	430,886
	علاوة تحصيل رسوم الكارتة والموازن طبقا للائحة الشركة الوطنية	3م	5,886.42	25	147,161
	الاجمالى				12,549,100

شركة إنشاء للمقاولات العامة
أحمد محمد محمود رضوان وشركه
ب.ض. : ٢٥٥٧٢٠ / ١٩٩٦ / ١٠ / ٢٥



17896ARK1L4526002



MATERIAL APPROVAL REQUEST



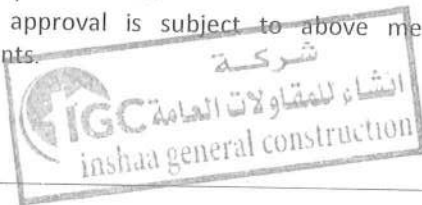
الهيئة العامة
للطرق والكباري
(GARB)



Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name Eng. Mahmoud Shaban	Sign 	Date/Serial Number 30/3/2023 (M.A.R. REV) (F-1)	Time 1:30																
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>373</td> <td>EW</td> <td>CS</td> <td>31</td> <td>03</td> <td>23</td> <td>01</td> <td>30</td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM	373	EW	CS	31	03	23	01	30
C1	C2	C3	DD	MM	YY	HH	MM													
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		
CODE - 3	Sub Element of Activity		

Description of Materials	FILL LAYER TOTAL QUANTITY (5000 m3)		
Location to be Used	From Station (373+000) to Station (374+000)		
Sample only	Yes	Materials 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		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 Representative (5000 m3) only.		1-All tests were carried-out (by third party lab of 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. Mahmoud shaban		31/3/2023	A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		12-4-2023	AWC

* Designer

** Alignment/Bridges: Culvert only



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Internal inspection and laboratories sector

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

I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة إنشاء للمقاولات
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

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	2.103
	OMC	5.9%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	49%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry



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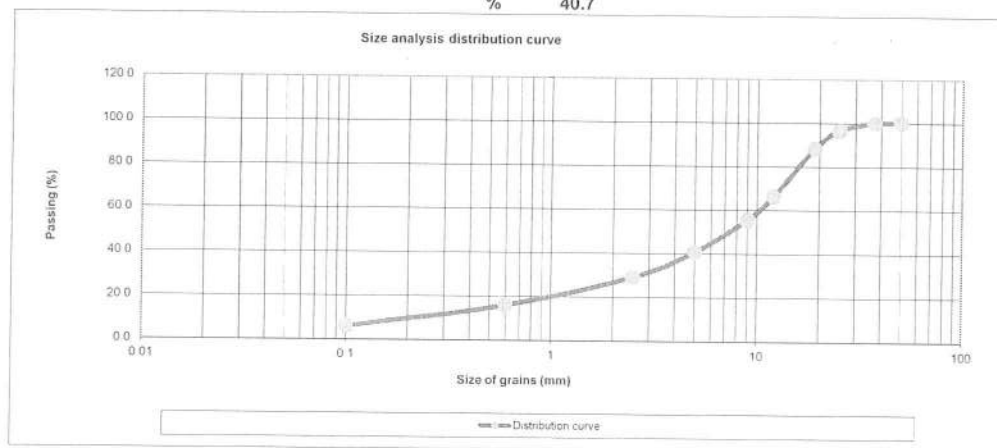
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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDURD SPECIFICATION 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 = 500 gm
%



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



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Modified Proctor Test Report ASTM - D 1557

Mould Number :- 1
Volume of mould = 2189 cm³
Weight of mould = 7239 g
G.S = 2.5 g/cm³

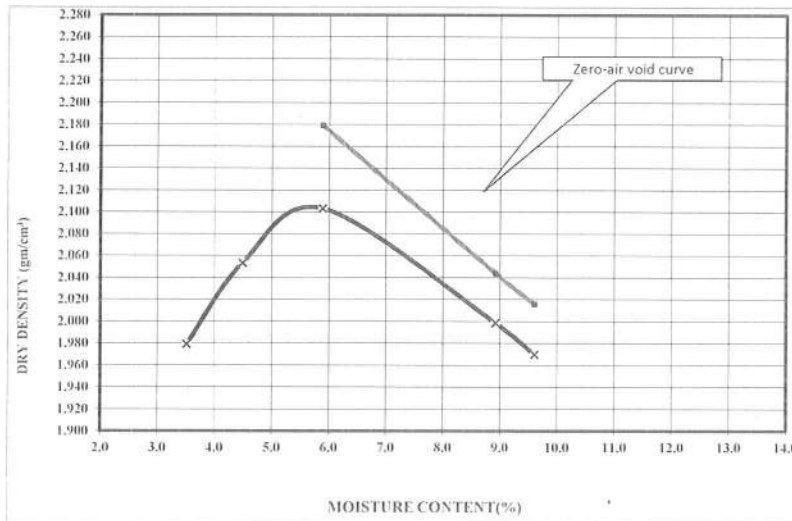
A- Density Calculations :-

	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/cm ³)	2.048	2.145	2.227	2.177	2.159
Dry density (g/cm ³)	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= 2.103 gm/cm³
O.M.C= 5.9 %



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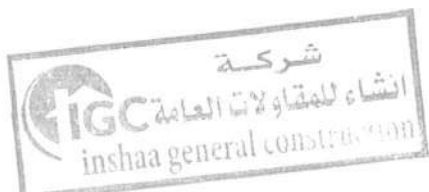
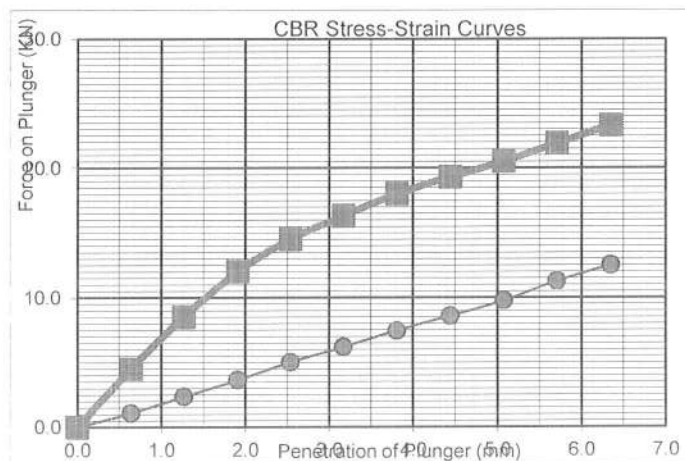
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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56					Swell %	
MOULD NO	1					56	
WT OF MOULD+SOIL	11915				Start	0.00	
WT OF MOULD	7025				End	0.00	
WT OF SOIL	4890				Swell	0.00	
VOLUME OF MOULD	2198						
WET DENSITY	2.225						
	MC before soaking				Weight of Rammer	4.54Kg	
TIN NO	1				MDD	Kg/m3	2.103
WT OF WET SOIL+TIN	250.00						
WT OF DRY SOIL+TIN	241				OMC	%	5.9
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	2.101				Capacity (KN)	50	
Pen	Reading (Div)			Bearing (KN)		CBR	
mm	56			56		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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Internal inspection and laboratories sector

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

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

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 :	31-3-2023

Temperature : 20 °C

Humidity : 40%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974



LAB DIRECTOR
CH/ Mostafa Asker

Mostafa



Kilo 23 Alexandria - Cairo Desert Road - Merghem

Tel: 002 03 4704595 - 002 034701191

Email : civdept@comibassal.com

WebSite : www.comibassal.com

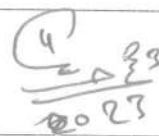



49 El Horria Ave. Alex, Egypt


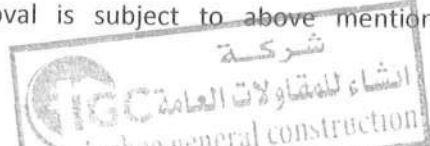
Tel: 002 033920176 - 002 033931482

Fax :002 033900476

Email : internal-inspection@comibassal.com

Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company			Designer Company	(SPECTRUM) Engineering Consulting Office						
Issued by Contractor	Name	Sign	Date/Serial Number	Time							
	Eng. Mohamed hassan		02-04-2023 (M.A.R) (F.2)	1:30							
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	HH	MM
				373	EW	C5	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		
CODE - 3	Sub Element of Activity		

Description of Materials	Fill Layer Total Quantity (10000 m3) Upper Embankment		
Location to be Used	From Station (373+000) to Station (374+000)		
Sample only	Yes	Materials 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		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 Representative (5000 m3) only. <div style="text-align: center; margin-top: 10px;">  </div>		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. <div style="text-align: center; margin-top: 10px;">  </div>	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed hassan		03-04-2023	A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		12-4-2023	AWC

* Designer

** Alignment/Bridges; Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

I- Introduction

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	شركة إنشاء للمقاولات
Sample :	FERMA
Station :	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

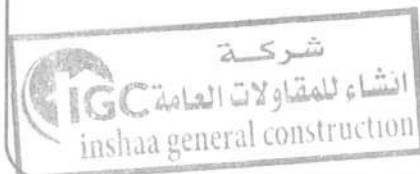
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction and optimum moisture content (Proctor test)	MDD	2.112
	OMC	6.3%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California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

LAB DIRECTOR

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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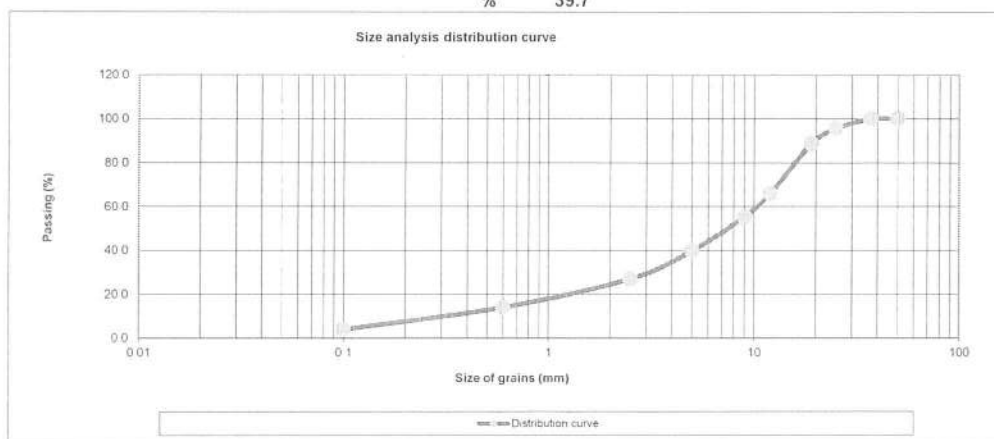
Internal inspection and laboratories sector

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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	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	

Total sample weight = 8093.00 pass No.4= 3214.0 Total fine aggregates weight = 500 gm
% 39.7



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



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COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

Modified Proctor Test Report ASTM - D 1557

Mould Number :- 1
Volume of mould = 2198 cm³
Weight of mould = 7020 g
G.S = 2.5 g/cm³

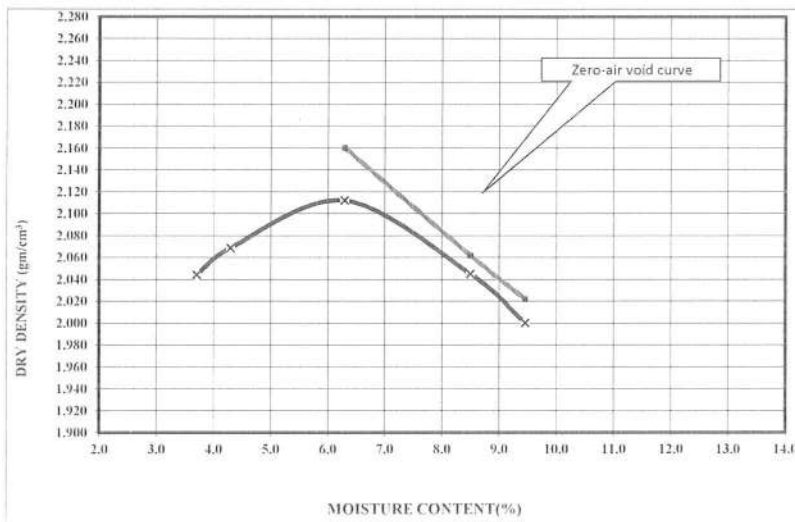
A- Density Calculations :-

	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 (cm ³)	2198	2198	2198	2198	2198
Wet density (g/cm ³)	2.120	2.157	2.245	2.219	2.189
Dry density (g/cm ³)	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= 2.112 gm/cm³
O.M.C= 6.3 %





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

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	:	3-4-2023

Temperature : 20 °C

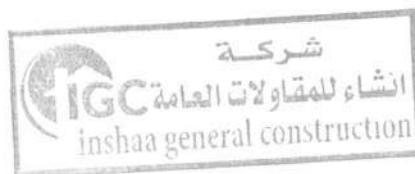
Humidity : 40%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974



LAB DIRECTOR
CH/ Mostafa Asker

Mostafa Asker



MATERIAL APPROVAL REQUEST	Inshaa		الهيئة العامة للمطرق والكباري GARE	الهيئة العامة للإسكاف SVSTRA	الهيئة العامة للمطرق والكباري GARE	الهيئة العامة للإسكاف SVSTRA

Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name	Sign	Date/Serial Number	Time																
	Eng. Mohamed hassan		07-04-2023 (M.A.R) (F.3)	1:30																
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>373</td> <td>EW</td> <td>CS</td> <td>08</td> <td>04</td> <td>23</td> <td>01</td> <td>30</td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM	373	EW	CS	08	04	23	01	30
C1	C2	C3	DD	MM	YY	HH	MM													
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		
CODE - 3	Sub Element of Activity		

Description of Materials	Fill Layer Total Quantity (15000 m3) Upper Embankment		
Location to be Used	From Station (37+000) to Station (374+000)		
Sample only	Yes	Materials 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		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 Representative (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		08-04-2033	A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		12-4-2023	AWC

* Designer

** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

I- Introduction

General Consultant :	SYSTRA
Consultant :	spectrum
Contractor :	شركة إنشاء 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

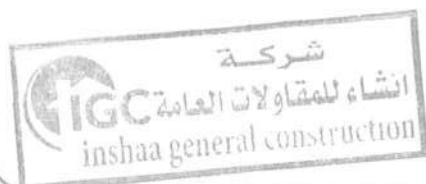
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction and optimum moisture content (Proctor test)	MDD	2.114
	OMC	5.9%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	52%

LAB DIRECTOR

Eng / Eman kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry



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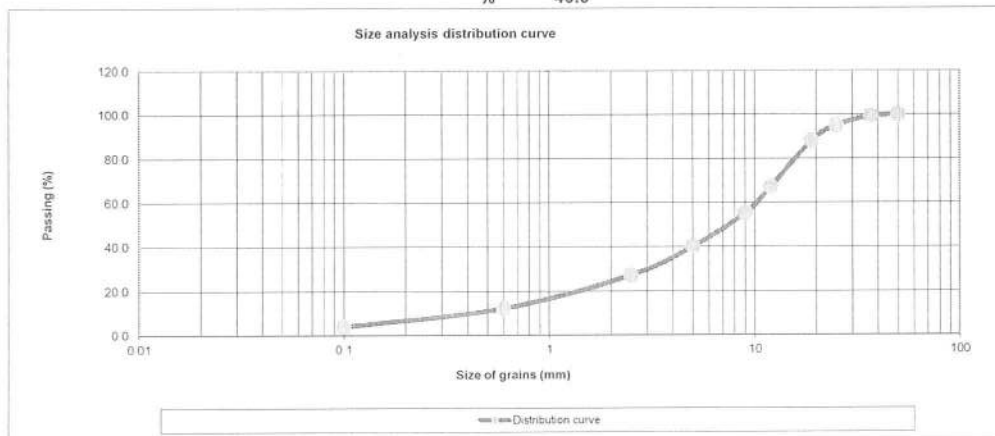
Internal inspection and laboratories sector

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

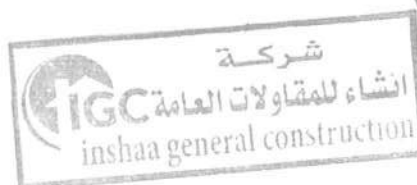
PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	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	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
% 40.0



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



Kilo 23 Alexandria - Cairo Desert Road - Merghem

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Internal inspection and laboratories sector

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

Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 2
Volume of mould = 2120 cm³
Weight of mould = 7080 g
G.S = 2.5 g/cm³

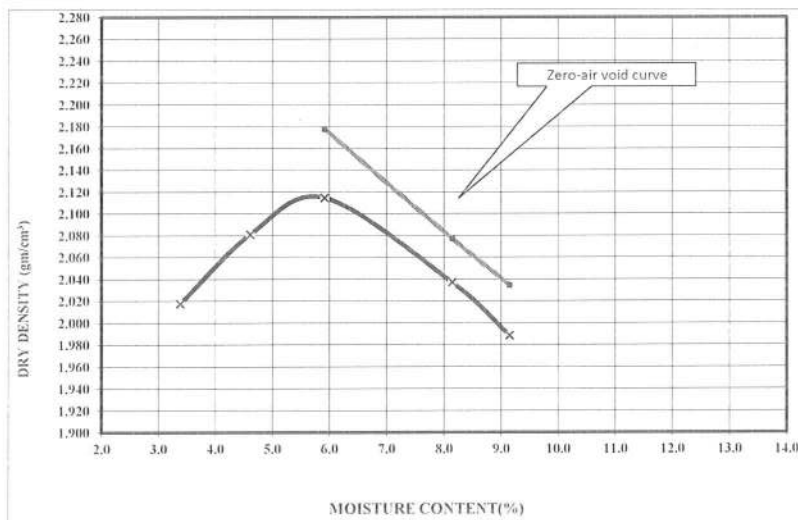
A- Density Calculations :-

	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 (cm ³)	2120	2120	2120	2120	2120
Wet density (g/cm ³)	2.086	2.177	2.240	2.203	2.170
Dry density (g/cm ³)	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:-



M.D.D= 2.114 gm/cm³
O.M.C= 5.9 %





COMIBASSAL International Controllers

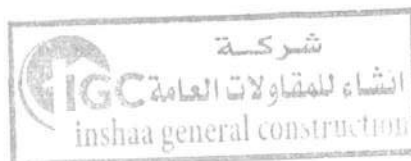
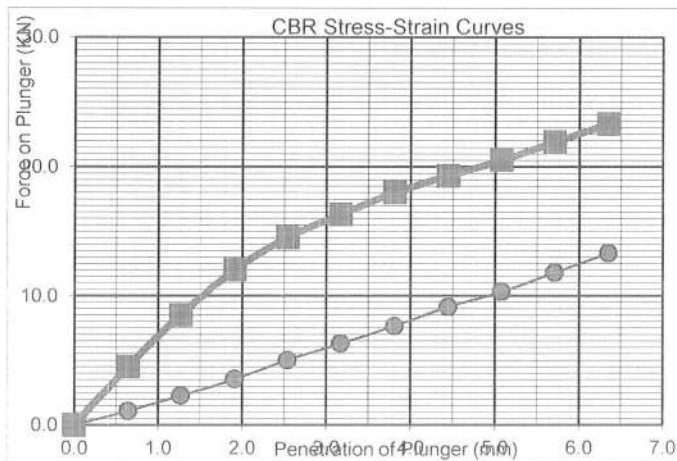
Internal inspection and laboratories sector

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

Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56				Swell %	
MOULD NO	1				56	
WT OF MOULD+SOIL	11950			Start	0.00	
WT OF MOULD	7010			End	0.00	
WT OF SOIL	4940			Swell	0.00	
VOLUME OF MOULD	2198					
WET DENSITY	2.247					
	MC before soaking			Weight of Rammer	4.54Kg	
TIN NO	1			MDD	Kg/m3	2.114
WT OF WET SOIL+TIN	250.00					
WT OF DRY SOIL+TIN	240.5			OMC	%	5.9
WT OF WATER	9.50					
WT OF TIN	92			PROVING RING		
WT OF DRY SOIL	148.5			Div/KN	0.0210	
MOISTURE CONTENT	6.4					
DRY DENSITY	2.112			Capacity (KN)	50	

Pen	Reading (Div)	Bearing (KN)	CBR
mm	56	56	standar
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	5.0	14.5
3.17	640	6.3	16.3
3.81	780	7.6	18.0
4.45	930	9.1	19.3
5.08	1050	10.3	20.5
5.71	1203	11.8	21.9
6.35	1355	13.3	23.3





COMIBASSAL International Controllers

Internal inspection and laboratories sector

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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
Station :	ST (373 +0.00) : (374 +0.00)
Date of Test :	8-4-2023

Temperature : 20 °C

Humidity : 40%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974



LAB DIRECTOR
CH/ Mostafa Asker

Mostafa Asker



MATERIAL
APPROVAL
REQUEST

Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name Eng. Mahmoud Shaban	Sign 	Date/Serial Number 9/5/2023 (M.A.R. REV) (F-4)	Time 1:30																
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>373</td> <td>EW</td> <td>CS</td> <td>10</td> <td>5</td> <td>23</td> <td>01</td> <td>30</td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM	373	EW	CS	10	5	23	01	30
C1	C2	C3	DD	MM	YY	HH	MM													
373	EW	CS	10	5	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 (20000 m3)		
Location to be Used	From Station (373+000) to Station (374+000)		
Sample only	Yes	Materials 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		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 Representative (5000 m3) only 		1-All tests were carried out (by third party lab of comibassal international). 2-Results report attached and acceptable with the project specifications. 3-Final approval is subject to above mentioned comments. Note: wait for chemical analysis Result # Done 5-7-2023	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud shaban		10/5/2023	A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		15.5.2023	Awc

* Designer

** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton 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 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	2.123
	OMC	7.1%
3- Liquid limit, plastic limit and plasticity index	LL	24.0%
	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.

LAB DIRECTOR

Eng / Eman kandil

Eman



Geotechnical consultant

For: Dr. M.

Dr. Mohamed Mostafa Badry





COMIBASSAL International Controllers Internal inspection and laboratories sector

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

APPENDIX



COMIBASSAL International Controllers

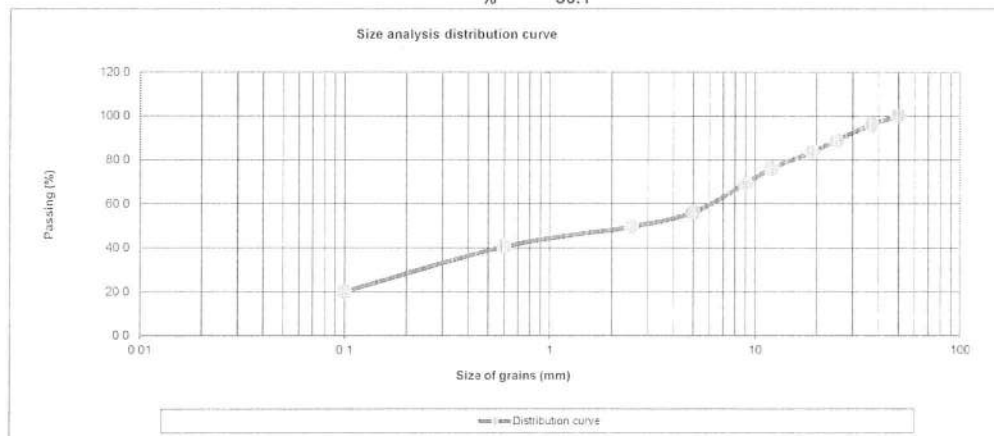
Internal inspection and laboratories sector

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

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	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= 5613.0 Total fine aggregates weight = 500 gm
% 56.1



Soil classification: A - 1- b



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

Modified Proctor Test Report ASTM - D 1557

Mould Number :- 1
Volume of mould = 2199 cm³
Weight of mould = 5657 g
G.S = 2.6 g/cm³

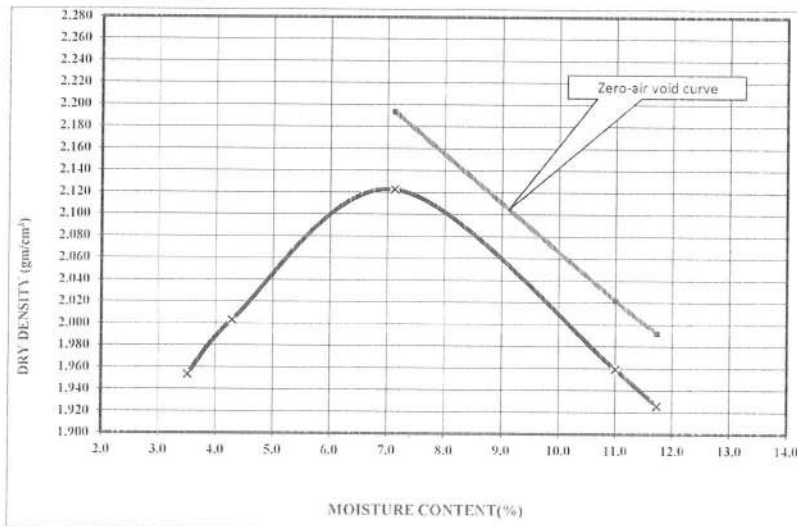
A- Density Calculations :-

	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/cm ³)	2.022	2.089	2.274	2.175	2.151
Dry density (g/cm ³)	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= 2.123 gm/cm³
O.M.C= 7.1 %



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COMIBASSAL International Controllers

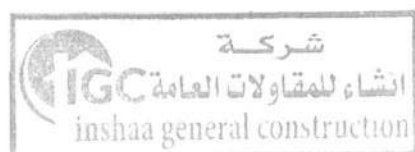
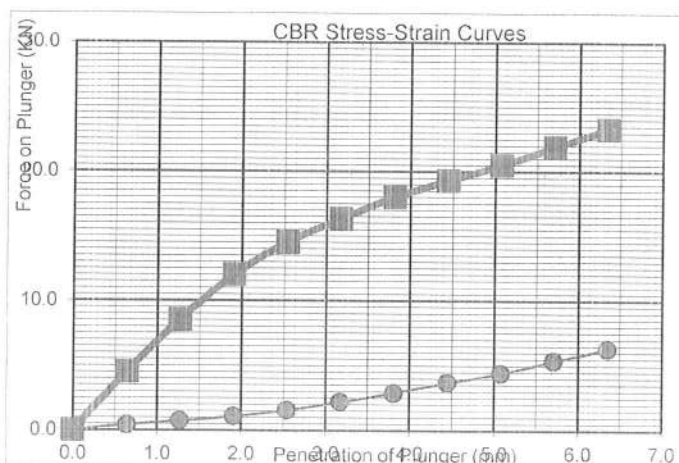
Internal inspection and laboratories sector

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

Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56					Swell %	
MOULD NO	1					56	
WT OF MOULD+SOIL	11980			Start	0.00		
WT OF MOULD	7010			End	0.00		
WT OF SOIL	4970			Swell	0.00		
VOLUME OF MOULD	2198						
WET DENSITY	2.261						
	MC before soaking			Weight of Rammer	4.54Kg		
TIN NO	1			MDD	Kg/m3	2.123	
WT OF WET SOIL+TIN	250.00						
WT OF DRY SOIL+TIN	240.5			OMC	%	7.1	
WT OF WATER	9.50						
WT OF TIN	92						
WT OF DRY SOIL	148.5			PROVING RING			
MOISTURE CONTENT	6.4			Div/KN	0.0210		
DRY DENSITY	2.125			Capacity (KN)	50		

Pen	Reading (Div)	Bearing (KN)	CBR
mm	56	56	standar
0.00	0	0.0	0.0
0.64	42	0.4	4.5
1.27	73	0.7	8.5
1.91	108	1.1	12.0
2.54	157	1.5	14.5
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
5.71	546	5.4	21.9
6.35	643	6.3	23.3



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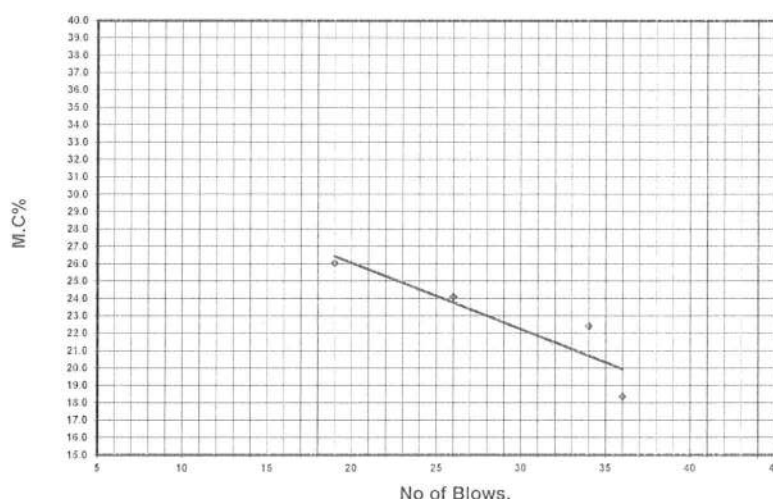
COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

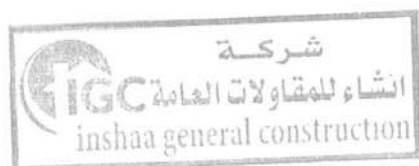
Liquid and Plastic Limits Test ASTM - D 4318

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 %.





COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

Report	:	582 - I - 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

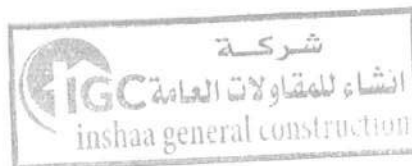
Humidity : 45%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974



LAB DIRECTOR
CH/ Mostafa Asker

Mostafa



MATERIAL APPROVAL REQUEST



الهيئة العامة
للمرور والكباري
(GARB)



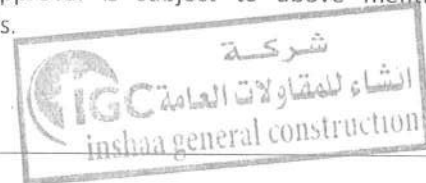
الهيئة العامة للإحصاء
مصر



Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name	Sign	Date/Serial Number	Time																
	Eng. Mahmoud Shaban		23/08/2023 (M.A.R) (F.5)	1:30																
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>373</td> <td>EW</td> <td>CS</td> <td>24</td> <td>08</td> <td>23</td> <td>01</td> <td>30</td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM	373	EW	CS	24	08	23	01	30
C1	C2	C3	DD	MM	YY	HH	MM													
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		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 Representative (5000 m3) only.		1-All tests were carried-out (by third party lab of 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. Mahmoud shaban		24/08/2023	A
QA/QC *	Eng. Mazen Essamy			F
GARB**	Eng. Margret magdy			
Employers Representative	Eng. Alaa Abd-Allatif		7-9-2023	AWC

* Designer

** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton 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 إنشاء للمقاولات 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

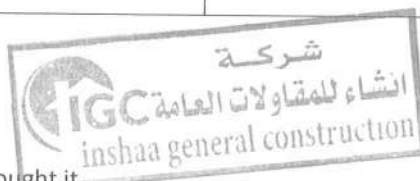
Required Tests		Results
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-b
2- Modified compaction (Proctor test)	MDD	2.113
	OMC	8.4%
3- Liquid limit, plastic limit and plasticity index	LL	24.0%
	PL	21.2%
	PI	2.8%
4- California bearing ratio (CBR)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

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

APPENDIX



COMIBASSAL International Controllers

Internal inspection and laboratories sector

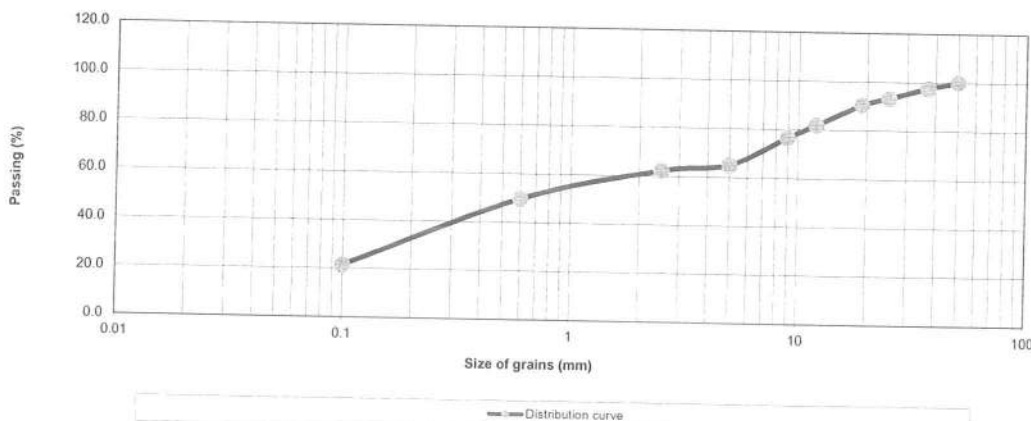
Accredited by : Egypt General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

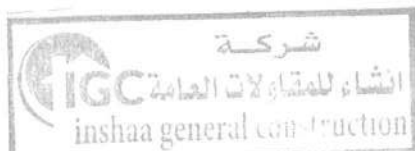
	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDURD SPECIFICATION LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	250.00	250.00	2.50	97.5	
1	418.00	668.00	6.68	93.3	
3/4	297.00	965.00	9.65	90.3	
1/2	860.00	1825.00	18.25	81.7	
3/8	519.00	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
% 65.0

Size analysis distribution curve



Soil classification: A - 1 - b



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COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 1
Volume of mould = 2199 cm³
Weight of mould = 5657 g
G.S = 2.65 g/cm³

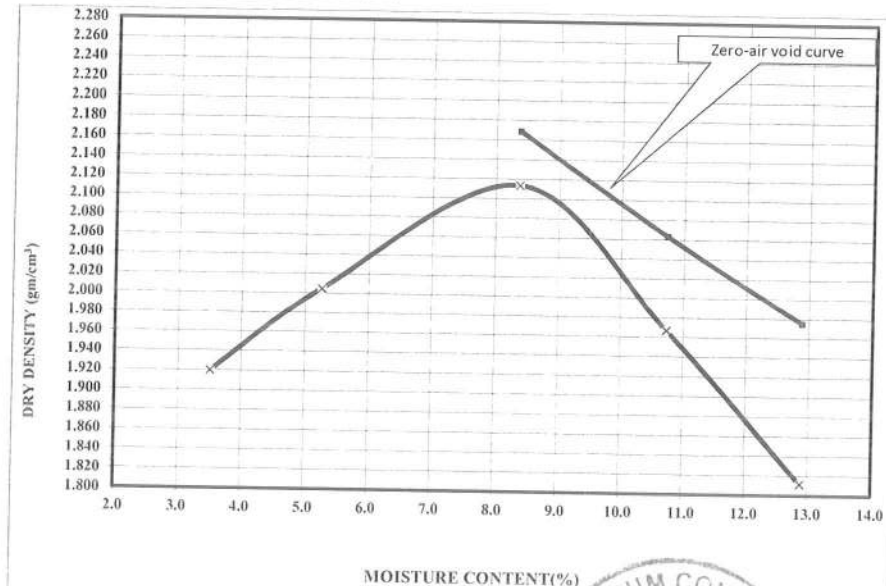
A- Density Calculations :-

	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/cm ³)	1.987	2.110	2.290	2.178	2.045
Dry density (g/cm ³)	1.920	2.005	2.113	1.967	1.812
Zero-air Void curve			2.169	2.063	1.975

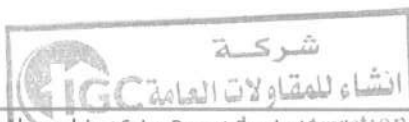
B- Moisture Calculations :-

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= 2.113 gm/cm³
O.M.C= 8.4 %



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COMIBASSAL International Controllers

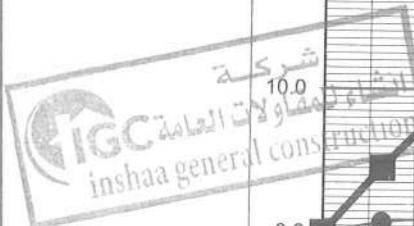
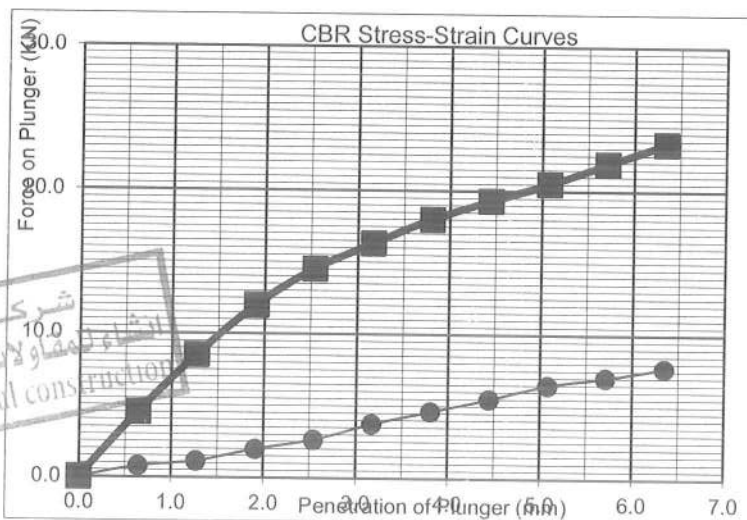
Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton 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	10150				
WT OF MOULD	5171				
WT OF SOIL	4979				
VOLUME OF MOULD	2198				
WET DENSITY	2.265				
	MC before soaking		Weight of Rammer	4.54Kg	
TIN NO	1		MDD	Kg/m3	2.113
WT OF WET SOIL+TIN	250.00		OMC	%	8.4
WT OF DRY SOIL+TIN	238				
WT OF WATER	12.00				
WT OF TIN	92				
WT OF DRY SOIL	146				
MOISTURE CONTENT	8.2				
DRY DENSITY	2.093				

Pen	Reading (Div)	Bearing (KN)	standar	CBR
mm	56	56	56	56
0.00	0	0.0	0.0	
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	





COMIBASSAL International Controllers

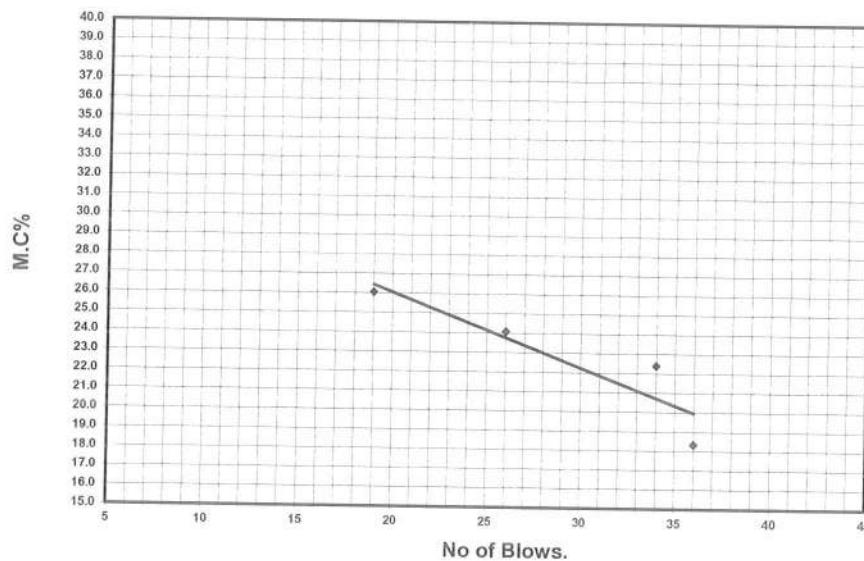
Internal inspection and laboratories sector

Accredited by : Egypt General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypt 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 %.



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Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

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

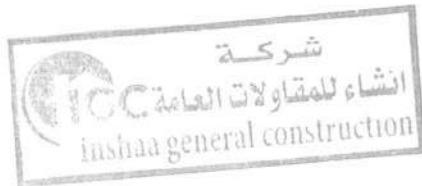
CHEMICAL ANALYSIS

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	شركة انشاء للمقاولات
Project	:	Electric express train
Sample	:	Upper Embankment
Station	:	ST (373 +0.00) : (374 +0.00)
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

Mostafa

MATERIAL APPROVAL REQUEST



شركة البناء
للطرق والكباري
IGARB



شركة الهندسة والاستشارات



Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name	Sign	Date/Serial Number	Time																
	Eng. Mohamed hassan		30-03-2023 (M.A.R) (P.S.G.1)	1:30																
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	<table border="1"> <tr> <th>C1</th> <th>C2</th> <th>C3</th> <th>DD</th> <th>MM</th> <th>YY</th> <th>HH</th> <th>MM</th> </tr> <tr> <td>373</td> <td>EW</td> <td>CS</td> <td>31</td> <td>03</td> <td>23</td> <td>01</td> <td>30</td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM	373	EW	CS	31	03	23	01	30
				C1	C2	C3	DD	MM	YY	HH	MM									
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		
CODE - 3	Sub Element of Activity		

Description of Materials	Prepared Subgrade Total Quantity (5000 m3)		
Location to be Used	From Station (373+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	
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 Representative (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		31-03-2023	A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		12-4-2023	Awc

* Designer

** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypt General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypt 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 : 31/03/2023
QC : 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 classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction(Proctor test)	MDD	2.150
	OMC	5.70%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CB)	CBR ratio	90%
5- Specific gravity (SG), absorption and degradation	S S D	2.511
	Absorption	1.2%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	26.5%

LAB DIRECTOR

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



49 El Horria Ave. Alex, Egypt

Tel: 002 033920176 - 002 033931482

Fax : 002 033900476

Email : internal-inspection@comibassal.com





COMIBASSAL International Controllers

Internal inspection and laboratories sector

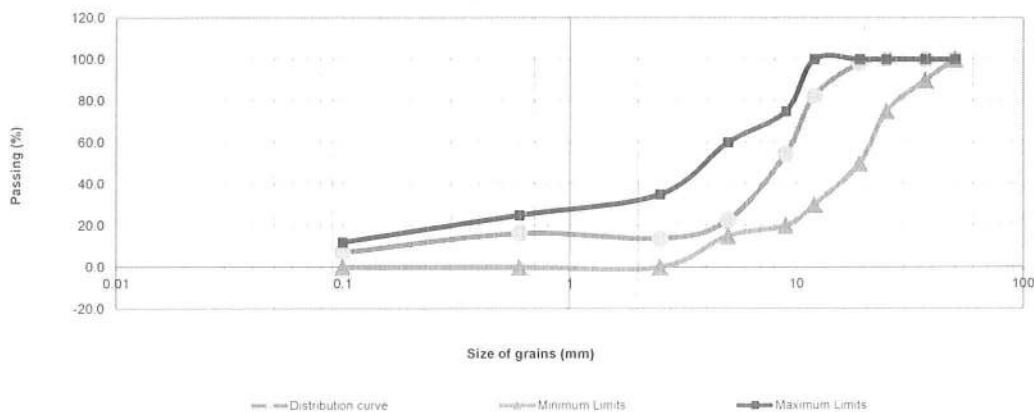
Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDURD 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	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



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



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COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 1
Volume of mould = 2120 cm³
Weight of mould = 7021 g
G.S = 2.5 g/cm³

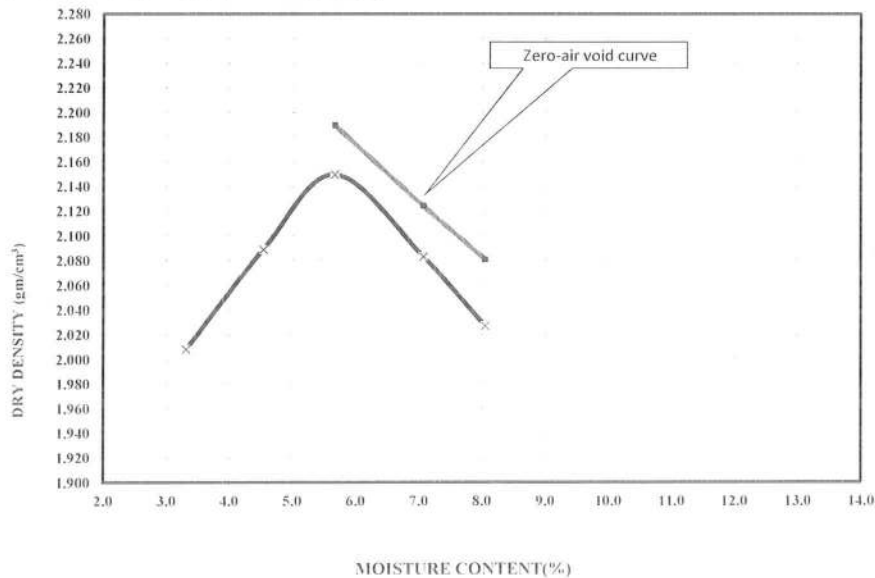
A- Density Calculations :-

	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/cm ³)	2.075	2.184	2.272	2.231	2.191
Dry density (g/cm ³)	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:-



M.D.D= 2.150 gm/cm³
O.M.C= 5.70 %



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COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

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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COMIBASSAL International Controllers Internal inspection and laboratories sector

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

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 after heating (A)	2495

Results:-

Saturation surface dry specific gravity = $B / (B-C)$	2.512
Bulk specific gravity = $A / (B-C)$	2.483
Apparent specific gravity = $A / (A-C)$	2.559
Absorption of water = $(B-A)/A \times 100$	1.2
Degradation of aggregate = $(2500-A) / A \times 100$	0.2





COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

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%	ASTM D 2974
SULPHATE	0.0120%	
ORGANIG MATTER	NEGATIVE	



LAB DIRECTOR
CH/ Mostafa Asker

Mostafa



S5-B-IN2

MATERIAL APPROVAL REQUEST	Inshaa		شركة انشاء العامة للطرق والكباري (GARE)	شركة انشاء العامة للمتاولات العامة (SPECTRA)

Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name	Sign	Date/Serial Number	Time																
	Eng. Mohamed hassan		02-04-2023 (M.A.R) (P.S.G.2)	1:30																
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>373</td> <td>EW</td> <td>CS</td> <td>03</td> <td>04</td> <td>23</td> <td>01</td> <td>30</td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM	373	EW	CS	03	04	23	01	30
C1	C2	C3	DD	MM	YY	HH	MM													
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		
CODE - 3	Sub Element of Activity		

Description of Materials	Prepared Subgrade Total Quantity (10000 m3)		
Location to be Used	From Station (373+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		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 Representative (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		03-04-2023	A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		12-4-2023	AWC

* Designer

** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

I- Introduction

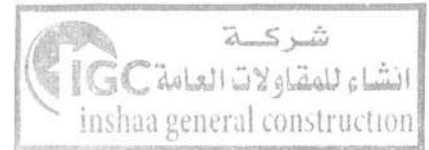
General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة انشاء للمقاولات
Sample : Prepare Sub-Grade
Station : St(373+000) to st(374+000)
Date of Test : 03/04/2023
QC : 883-2

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

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Merghem

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COMIBASSAL International Controllers

Internal inspection and laboratories sector

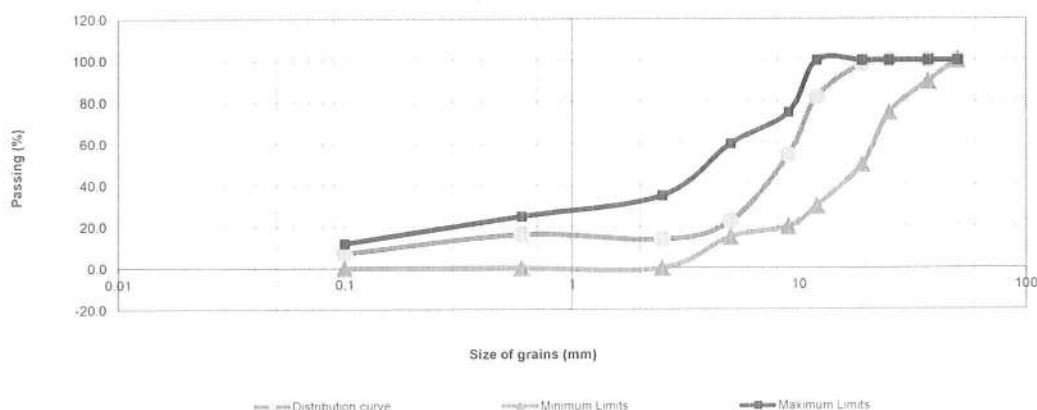
Accredited by : Egypt General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED	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	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



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



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COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 1
Volume of mould = 2150 cm³
Weight of mould = 7043.5 g
G.S = 2.6 g/cm³

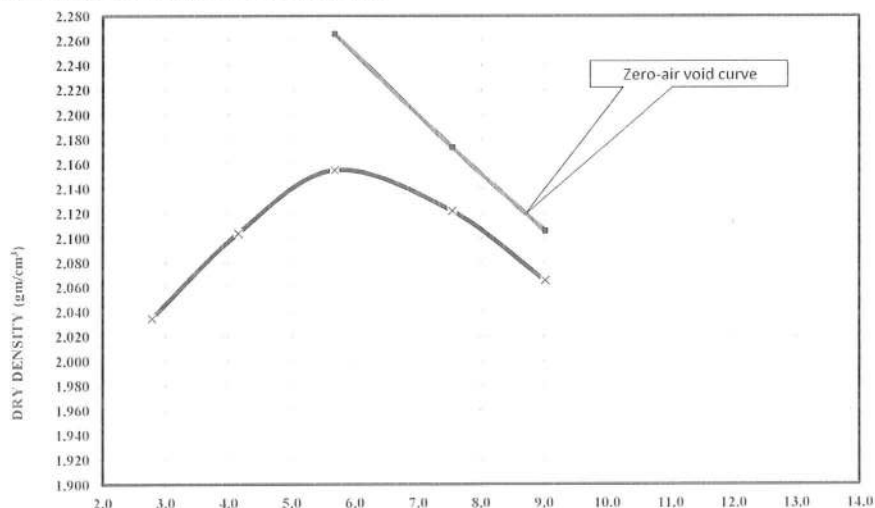
A- Density Calculations :-

	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 (cm ³)	2150	2150	2150	2150	2150
Wet density (g/cm ³)	2.091	2.191	2.277	2.282	2.252
Dry density (g/cm ³)	2.035	2.104	2.155	2.122	2.065
Zero-air Void curve			2.266	2.174	2.106

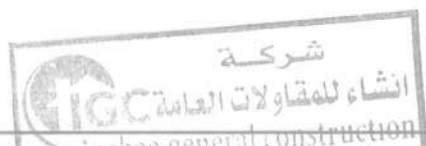
B- Moisture Calculations :-

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= 2.155 gm/cm³
O.M.C= 5.70 %



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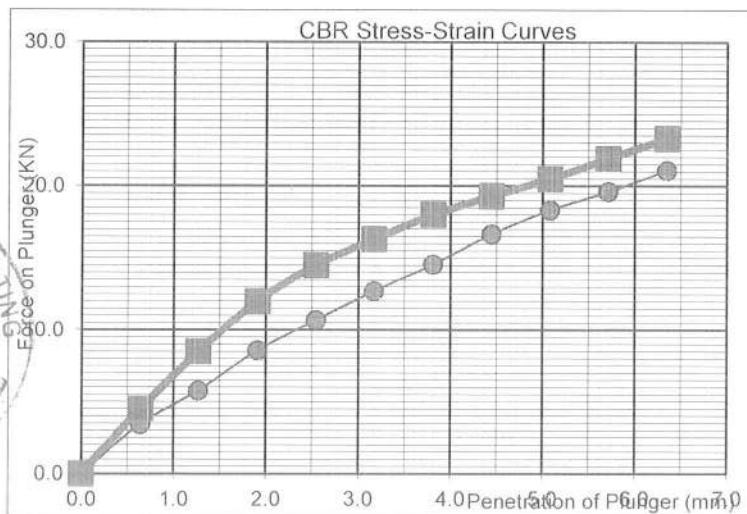
COMIBASSAL International Controllers

Internal inspection and laboratories sector

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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS		56			Swell %			
MOULD NO		1				56		
WT OF MOULD+SOIL		11925			Start	0.00		
WT OF MOULD		7043.5			End	0.00		
WT OF SOIL		4881.5			Swell	0.00		
VOLUME OF MOULD		2150						
WET DENSITY		2.270						
		MC before soaking			Weight of Rammer			4.54Kg
TIN NO		1				MDD	Kg/m3	2.155
WT OF WET SOIL+TIN		250.00						
WT OF DRY SOIL+TIN		241				OMC	%	5.7
WT OF WATER		9.00						
WT OF TIN		82.5			PROVING RING			
WT OF DRY SOIL		158.5	2.125		Div/KN			
MOISTURE CONTENT		5.7						
DRY DENSITY		2.148				Capacity (KN)		50
Pen mm	97			Bearing (KN)			CBR	
	56			56			standar	56
0.00	0			FALSE			0.0	
0.64	350			3.4			4.5	
1.27	590			5.8			8.5	
1.91	875			8.6			12.0	
2.54	1090			10.7			14.5	81
3.17	1297			12.7			16.3	
3.81	1485			14.6			18.0	
4.45	1700			16.7			19.3	
5.08	1870			18.3			20.5	92
5.71	2000			19.6			21.9	
6.35	2150			21.1			23.3	



شركة
انشاء للمقاولات العامة
inshaa general construction



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COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

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 aftr 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





COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

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	3650
% abrasion By Weight Passing from Sieve No.12	27.0%





COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

Report	:	379 - 5 - 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	:	3-4-2023

Temperature : 20 °C

Humidity : 40%

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



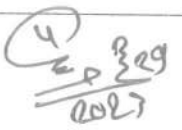
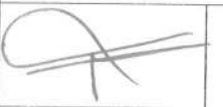
LAB DIRECTOR
CH/ Mostafa Asker

Mostafa


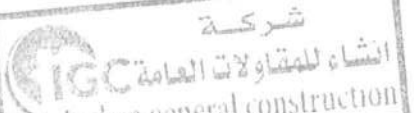





S5-B-IN2

MATERIAL APPROVAL REQUEST	Inshaa		شركة الإنشاء العامة IGARE		شركة الإنشاء العامة Inshaa General Construction	

Contractor Company	INSHAA GENERAL OF CONSTRUCTION Company		Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name	Sign	Date/Serial Number	Time																
	Eng. Mahmoud shaban		28-04-2023 (M.A.R) (B.S.1)	1:30																
Received by GARB CONSULTANT	Eng. Mazen Essamy		MAR	<table border="1"> <tr> <td>CI</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>373</td> <td>EW</td> <td>CS</td> <td>29</td> <td>04</td> <td>23</td> <td>01</td> <td>30</td> </tr> </table>	CI	C2	C3	DD	MM	YY	HH	MM	373	EW	CS	29	04	23	01	30
CI	C2	C3	DD	MM	YY	HH	MM													
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		
CODE-3	Sub Element of Activity		

Description of Materials	Sub-Ballast Total Quantity (5000 m3)		
Location to be Used	From Station (373+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	(1-2)	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 Representative (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		29-04-2023	A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		6-5-2023	AWC

* Designer

** Alignment/Bridges: Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

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

I- Introduction

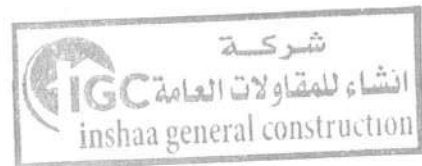
General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة إنشاء للمقاولات
Sample : Sub-Ballast
Station : St(373+000) to st(374+000)
Date of Test : 29/04/2023
QC : 1034-1

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

1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MDD	2.180
	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	94%
5- Specific gravity (SG), absorption and degradation	S S D	2.578
	Absorption	1.3%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	29.7%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For. DR. M.
Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Merghem

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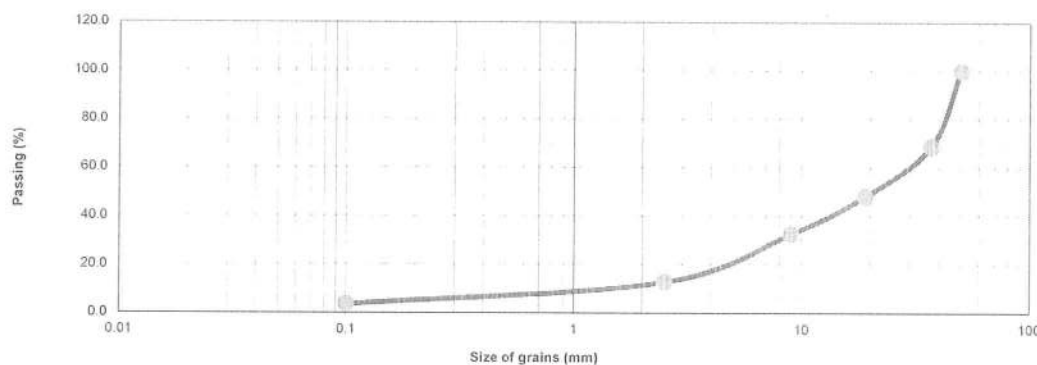
PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	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	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 = 500 gm
pass% 21.1

Size analysis distribution curve



— Distribution curve

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



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