

Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية

Company Name	شرکه مهندس کریم : e
Project	: Electric Express Train – HSR From Qous To Armant
<b>Testing Date</b>	: 28 / 11 /2023
Soil type	: Middle Embankment
Location	: ST from 668+520 / 668+600
Level	: - 1.5 M
Report No.	: 105
	Compaction test by using Sand – Cone Test Method
	<u>ASTM D- 1556</u>

Test #	Station	Test Hole Volume cm <sup>3</sup>	Bulk Density gm/ cm <sup>3</sup>	Moisture Content %	Dry Density (gm/ cm³)	Degree of Compacti on (%)	Acceptance
1	668+545	1263	2.36	6	2.22	98.9%	Comply
2	668+595	1280	2.33	6.4	2.19	97.3%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.25 gm/cm<sup>3</sup>
- At optimum moisture content = 6.4 %

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



۲ ش الملك الأعضل الزمالك - الفاضرة ظيفون • فاكس - ۲۷۳٦ ۲۲۲۱ ۲۰۱۳ ۲۷۳۲

	مكتب معامل الإستشارات الهندسية
Company Name	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: STa 667+840 E=32°48'10" N=25°40'45"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 04-6

Dear Gentleman,

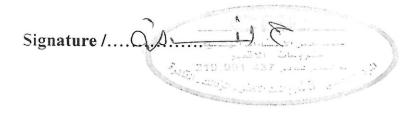
Attached here with the delivered on 8 / 11 / 2023

This sample is representative for 5.000 M<sup>3</sup>

#### Materials test

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

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Consulting Engineering Buroau & Laboratorios مكتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شركة مهندس كريم		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: STa 667+840 E=32°48'10" N=25°40'45"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 08/11/2023		
<b>Reporting Date</b>	: 12/11/2023		
<b>Reporting No.</b>	: 04-6		

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### **RESULTS OF SIEVE ANALYSIS According to ASTM D-422**.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	98.3
37.5	1.5	92.1
25	1	87.3
19	3/4	75.7
12.50	1/2	66.2
9.50	3/8	61.2
4.75	4	54.2
2.00	10	27.2
0.425	40	19.1

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۲۰ الملك الأقصلي الزمانك - الداهرة تليمون «فاضن» ۲۰۱۲٬۳۰۱ - ۱۷۳۹٬۲۰۱

Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شركة مهندس كريم:		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: STa 667+840 E=32°48'10" N=25°40'45"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 08/11/2023		
<b>Reporting Date</b>	: 12/11/2023		
<b>Reporting No.</b>	: 04-6		

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## <u>Materials finer than 75 μm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μM (No.200)	7.6

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۲۰ المالك الأفضل الزمالك - الفاهرة تليمون • فاكس • ۲۷۳۱،۲۳۱ - ۲۷۳۱۲ ۲۷۳۱

Consulting Engineering Bureau & Laboratories محتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شركة مهندس كريم		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: STa 667+840 E=32°48'10" N=25°40'45"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 08/11/2023		
<b>Reporting Date</b>	: 12/11/2023		
<b>Reporting No.</b>	: 04-6		

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# <u>Results of liquid limit and plasticity index</u> of soils according to ASTM D-4318

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

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Consulting Engineering Bureau & Laboratories مكتب معامل الاستشارات المهندسينة			
<b>Company Name</b>	شركة مهندس كريم		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: STa 667+840 E=32°48'10" N=25°40'45"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 08/11/2023		
<b>Reporting Date</b>	: 12/11/2023		
<b>Reporting No.</b>	: 04-6		

# Soil Classification According To Project Specs

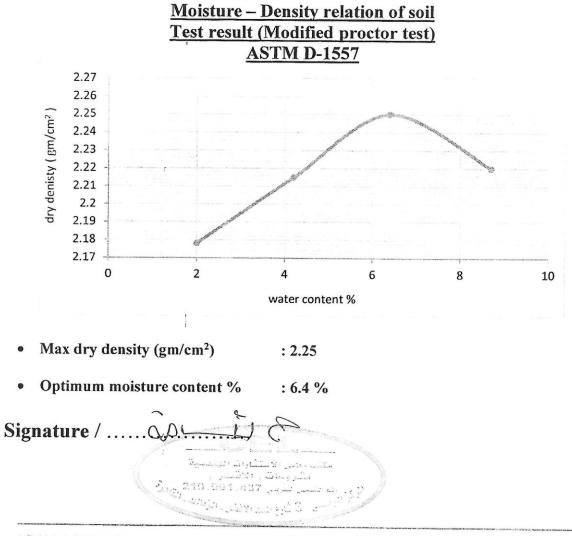
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TEST	Results (%)	Limits according Projects Specs		U
•Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10).	27.2	Max 50 %		
0.425 mm (No. 40).	19.1	Max 30 %	Max 50 %	
0.075 mm (No. 200).	7.6	Max 15 %	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)				
Liquid Limit				
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

The test results are (  $\Box$  Comply -  $\Box$  Not Comply ) with specifications limits

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C	onsulting Engineering Bureau & Laboratories		
	مكتب معامل الإستشارات الهندسية		
<b>Company Name</b>	شركة مهندس كريم:		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: STa 667+840 E=32°48'10" N=25°40'45"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 08/11/2023		
<b>Reporting Date</b>	: 12/11/2023		
<b>Reporting No.</b>	: 04-6		



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Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية			
Company Name	شركة مهندس كريم:		
Company Name			
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: STa 667+840 E=32°48'10" N=25°40'45"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 08/11/2023		
<b>Reporting Date</b>	: 12/11/2023		
<b>Reporting No.</b>	: 04-6		

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### **Test Results of California Bearing Ratio on Base Materials**

**ASTM D 1883** 

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.47
1.27	0.050	1.57
1.91	0.075	2.61
2.54	0.100	3.60
3.18	0.125	4.46
3.81	0.150	5.20
4.45	0.175	5.81
5.08	0.200	6.14
6.35	0.250	6.36

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm)	St. Value	Sample results	
penetration	6.90	3.60	52.2 %

Notes:

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- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of =  $2.25 \text{ (gm / cm^3)}$ 
  - At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kg.
- 4- CBR > 10 for middle and lower embankments according project spec page No 36.

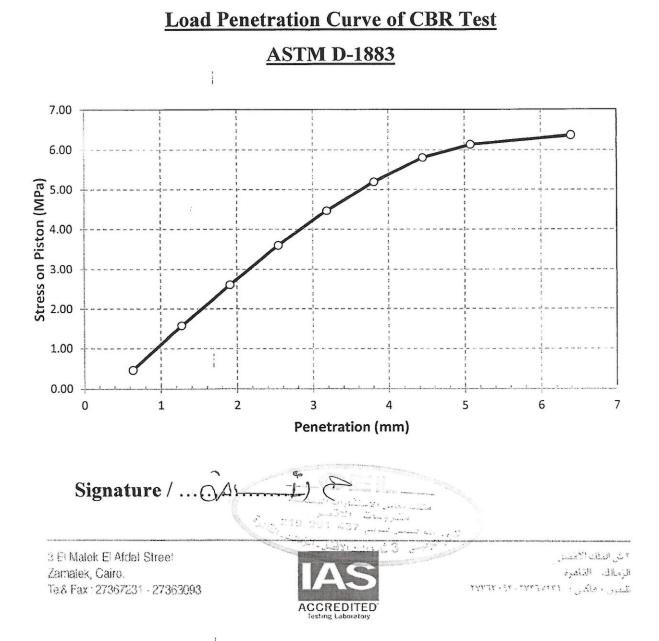
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c	onsulting Engineering Bureau & Laboratories مکتب معامل الإستشارات المهندسية
<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: STa 667+840 E=32°48'10" N=25°40'45"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 04-6





Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية

Company Name	شرکه مهندس کریم:
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 28 / 11 /2023
Soil type	: Middle Embankment
Location	: ST from 668+680 / 668+787
Level	: - 1.5 M
Report No.	: 106
<u>C</u>	<u>ompaction test by using Sand – Cone Test Method</u>
	<u>ASTM D- 1556</u>

Test #	Station	Test Hole Volume cm <sup>3</sup>	Bulk Density gm/ cm <sup>3</sup>	Moisture Content %	Dry Density (gm/ cm³)	Degree of Compacti on (%)	Acceptance
1	668+730	1276	2.34	6.4	2.20	98.5%	Comply
2	668+755	1656	2.33	6.4	2.19	98.0%	Comply
3	668+780	1337	2.29	6.4	2.16	96.7%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.23 gm/cm<sup>3</sup>
- At optimum moisture content = 6.4 %

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۲ ش الملك الافضل الزمالك - القاهرة عليمون ، هاكس : ۲۰۲۰ ۲۰۳۱ - ۲۰۳۲



Company Name: شركة مهندس كريمProject: Electric Express Train – HSR From Qous To ArmantLocation: St 668+700 E=40°25'40" N=32°48'0.6"Type of sample: Soil Embankment ( Upper Embankment 0.0 M )Delivery Date: 08/11/2023Reporting Date: 12/11/2023Reporting No.: 05-2

Dear Gentleman,

Attached here with the delivered on 08 / 11 / 2023

This sample is representative for 5.000 M<sup>3</sup>

Materials test

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

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۳ ش العلمان الأفنس . الوطالة - القاهرة تليفون - هاكان : - ۲۷۳۵، ۲۷۳۱ - ۲۶۰ ۲۷۳۱

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Company Name	شرکه مهندس کریم :
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25′40″ N=32°48′0.6″
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

#### **RESULTS OF SIEVE ANALYSIS According to ASTM D-422.**

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	94.5
37.5	1.5	87.5
25	1	77.1
19	3/4	71.0
12.50	1/2	60.8
9.50	3/8	53.5
4.75	4	41.7
2.00	10	31.2
0.425	40	18.3

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۳ ش الملك الأفضل . الزمانك - القاهرة المبرر - فأكس : - ۲۷۳٦۷۲۲۱ - ۲۷۳٦۲

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C	onsulting Engineering Bureau & Laboratories			
	مكتب معامل الإستشارات الهندسية			
<b>Company Name</b>	شركة مهندس كريم:			
Project	: Electric Express Train – HSR From Qous To Armant			
Location	: St 668+700 E=40°25'40" N=32°48'0.6"			
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )			
<b>Delivery Date</b>	: 08/11/2023			
<b>Reporting Date</b>	: 12/11/2023			
<b>Reporting No.</b>	: 05-2			

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### <u>Materials finer than 75 μm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μΜ (No.200)	4.1

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Company Name: شركة مهندس كريمProject: Electric Express Train – HSR From Qous To ArmantLocation: St 668+700 E=40°25'40" N=32°48'0.6"Type of sample: Soil Embankment ( Upper Embankment 0.0 M )Delivery Date: 08/11/2023Reporting Date: 12/11/2023Reporting No.: 05-2

### <u>Results of liquid limit and plasticity index</u> of soils according to ASTM D-4318

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

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۲۰۰۰ الملابا الأفضلي ارتباقه - العلمرة البنان - فاكس د ۲۷۳۱،۲۷۳۱ - ۲۷۳۱

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المهتدسية	استشارات	حامل الا	م حتتب

<b>Company Name</b>	شركة مهندس كريم :
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

# Soil Classification According To Project Specs

TEST	Results (%)	Limits according Projects Specs		
•Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10). 31.2 Max 50 %				
0.425 mm (No. 40).	18.3	Max 30 %	Max 50 %	
0.075 mm (No. 200).	4.1	Max 15 %	Max 15 %	Max 15 %
Characteristics of	f fraction passing	0.425 mm (No.4	10)	
Liquid Limit				
Plasticity index "	0	Max 6 %	Max 6 %	Max 10 %

The test results are (  $\Box$  Comply -  $\Box$  Not Comply ) with specifications limits

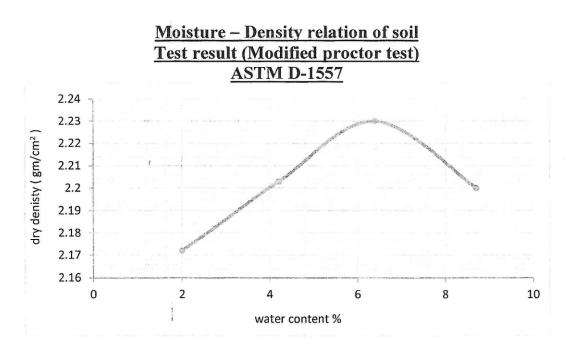
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C	onsulting Engineering Bureau & Laboratories
	مكتب معامل الإستشارات الهندسية
Company Name	شركة مهندس كريم:
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2



- Max dry density (gm/cm<sup>2</sup>) : 2.23
- Optimum moisture content % : 6.4 %

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Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شركة مهندس كريم:		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: St 668+700 E=40°25'40" N=32°48'0.6"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 08/11/2023		
<b>Reporting Date</b>	: 12/11/2023		
<b>Reporting No.</b>	: 05-2		

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

	<u>ASTIVI D 1865</u>		
penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.47	
1.27	0.050	1.47	
1.91	0.075	2.51	
2.54	0.100	3.46	
3.18	0.125	4.44	
3.81	0.150	5.17	
4.45	0.175	5.68	
5.08	0.200	6.04	
6.35	0.250	6.14	
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CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm)	St. Value	Sample results	50.2 %
penetration	6.90	3.46	50.2 70

Notes:

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

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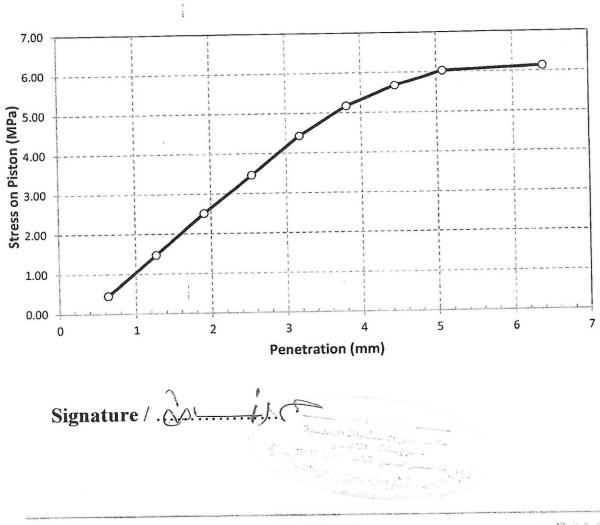


۲ ش الملك الأقصل الرجائك القاهرة الميمين - فاكرن - ۲۲۲۱ (۲۷۳ - ۲۶۰ ۳۳۷۷



<b>Company Name</b>	شركة مهندس كريم :
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2
-	Load Penetration Curve of CBR Test

ASTM D-1883



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Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية

Company Name	شرکه مهندس کریم :
Project	: Electric Express Train – HSR From Qous To Armant
<b>Testing Date</b>	: 29 / 11 /2023
Soil type	: Upper Embankment
Location	: ST from 667+787 TO 667+980
Level	: - 0.25 M
Report No.	: 110

Compaction test by using Sand – Cone Test Method

Test #	Station	Test Hole Volume cm <sup>3</sup>	Bulk Density gm/ cm³	Moistur e Content %	Dry Density (gm/ cm <sup>3</sup> )	Degree of Compac tion (%)	Acceptanc e
1	667+820	1485	2.33	6	2.20	98.5%	Comply
2	667+850	1439	2.36	6.4	2.22	99.6%	Comply
3	667+870	1281	2.33	6.4	2.19	98.2%	Comply
4	667+895	1321	2.33	5.8	2.20	98.7%	Comply
5	667+910	1300	2.30	6.4	2.16	96.8%	Comply
6	667+930	1371	2.25	5.3	2.14	95.8%	Comply
7	667+55	1438	2.26	5	2.15	96.4%	Comply
8	667+975	1537	2.26	5.3	2.14	96.1%	Comply

Degree of compaction based on proctor test dated At

- Max. dry density = 2.23 gm/cm<sup>3</sup>
- At optimum moisture content = 6.4 %

Signature / ....

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۲ ش الملك الاعضل
 الزمانك – الداهرة
 تليفون + هاكس : ۲۷۳٦٬۲۲۲۱ - ۲۷۳٦٬۲۲۱



<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

Dear Gentleman,

Attached here with the delivered on 08 / 11 / 2023

This sample is representative for 5.000 M<sup>3</sup>

### Materials test

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883



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۲ ش الملك الانتسان الزمالك - الفاهرة تليفون - ١٩كس : - ٢٧٣٦،٢٢٣٦ -٢٢٣

	GEL
C	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية
<b>Company Name</b>	شركة مهندس كريم:
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25′40″ N=32°48′0.6″
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

#### **RESULTS OF SIEVE ANALYSIS According to ASTM D-422.**

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	94.5
37.5	1.5	87.5
25	1	77.1
19	3/4	71.0
12.50	1/2	60.8
9.50	3/8	53.5
4.75	4	41.7
2.00	10	31.2
0.425	40	18.3

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۲ ش الملك الأفضل . الزمالك - القاهرة تليمون - فاكس : ۲۷۳٦۷۳۲۱ - ۲۷۳٦۲۰۹۲

	GEL
6	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية
<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25′40″ N=32°48′0.6″
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

### <u>Materials finer than 75 μm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μM (No.200)	4.1

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۲ ش الملك الأفضلي الزمالك - القاهرة عليفون + فاكس : - ۲۷۳٦۷۲۲۱ - ۲۷۳٦۲

	GEL
c	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية
<b>Company Name</b>	شرکة مهندس کريم :
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

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### <u>Results of liquid limit and plasticity index</u> of soils according to ASTM D-4318

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



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۲ ش الملك الأفضل الزمالك - القاهرة تليفون - فاكس : ۲۷۳۲، ۲۷۳۱، ۲۷۳۲



<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

#### Soil Classification According To Project Specs

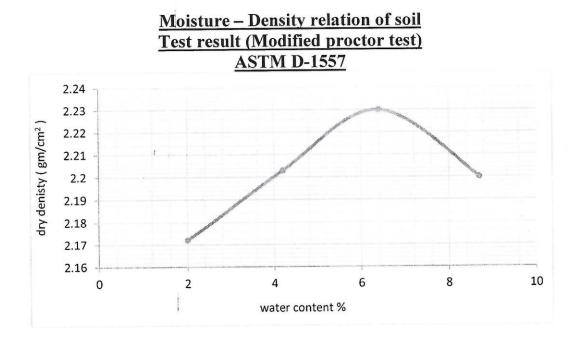
TEST	Results (%)	Limits according Projects Specs		
•Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10).	31.2	Max 50 %		
0.425 mm (No. 40).	18.3	Max 30 %	Max 50 %	
0.075 mm (No. 200).	4.1	Max 15 %	Max 15 %	Max 15 %
Characteristics of	of fraction passing	g 0.425 mm (No.4	40)	
Liquid Limit				
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

The test results are (  $\square$  Comply -  $\square$  Not Comply ) with specifications limits

1 Signature / .....Qu L. ( 219.991 437 مشروحات انود ٢ ش الملك الأفضل 3 El Malek El Afdal Street الزمالك القاهرة Zamalek, Cairo. ىليقون د قاكس : ۲۷۳٦۷۲۲۱ - ۲۰ ۲۳۲۲۲ Tet& Fax: 27367231 - 27363093 ACCREDITED

	GEL
C	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية
<b>Company Name</b>	شركة مهندس كريم:
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

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- Max dry density (gm/cm<sup>2</sup>) : 2.23
- Optimum moisture content % : 6.4 %

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مكتب معامل الاستشادات المنتسبية مكتب معامل الاستشادات المنتسبية مشروسات ، الاقتسر ، 219 و219 (زادان الاكر رف التسب السريس 137 الافتار - الإنتانية -

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۲ ش المللة الأقضل الزمالك - القاهرة ظهور - هاكس - ۲۲۳۵٬۷۴۹ - ۲۰۰۹٬۳۹۴



<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: St 668+700 E=40°25′40″ N=32°48′0.6″
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 08/11/2023
<b>Reporting Date</b>	: 12/11/2023
<b>Reporting No.</b>	: 05-2

# Test Results of California Bearing Ratio on Base Materials

**ASTM D 1883** 

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.47	
1.27	0.050	1.47	
1.91	0.075	2.51	
2.54	0.100	3.46	
3.18	0.125	4.44	
3.81	0.150	5.17	
4.45	0.175	5.68	
5.08	0.200	6.04	
6.35	0.250	6.14	

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm)	St. Value	Sample results	50.2 %
penetration	6.90	3.46	30.2 70

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Notes:

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

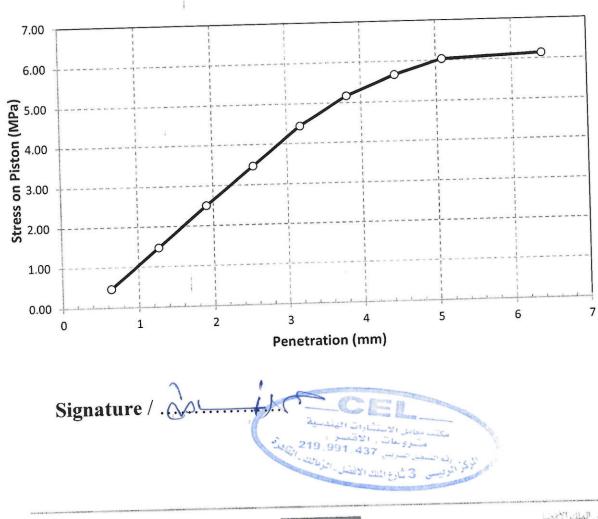
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Zanalek, Galfo Tel& Fax: 27367231 - 27363093 ۲ ش الملك الافضل الزمالك - القاهرة تليفون - فاكس - ۲۷۳٦،۳۳۱ - ۲۷۳٦۲۰۰

C	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية
Company Name Project Location Type of sample Delivery Date Reporting Date Reporting No.	: شركة مهندس كريم : Electric Express Train – HSR From Qous To Armant : St 668+700 E=40°25′40″ N=32°48′0.6″ : Soil Embankment ( Upper Embankment 0.0 M ) : 08/11/2023 : 12/11/2023 : 05-2 Load Penetration Curve of CBR Test

ASTM D-1883



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Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية

Company Name	شرکه مهندس کریم : 🗧
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 7 / 12 /2023
Soil type	: Middle Embankment
Location	: ST from 668+160/668+400
Level	: - 1.5 M
Report No.	: 117
<u>c</u>	Compaction test by using Sand – Cone Test Method

ASTM D- 1556

Test #	Station	Test Hole Volume cm <sup>3</sup>	Bulk Density gm/ cm <sup>3</sup>	Moisture Content %	Dry Density (gm/ cm <sup>3</sup> )	Degree of Compacti on (%)	Acceptance
1	668+185	1470	2.29	6	2.16	97.8%	Comply
2	668+250	1526	2.32	6.4	2.18	98.8%	Comply
3	668+330	1498	2.28	5.8	2.16	97.7%	Comply
4	668+385	1476	2.25	5.3	2.14	96.7%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.21 gm/cm<sup>3</sup>

At optimum moisture content = 6.4 %

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۲ ش الملك الأعصل الزمالك - الماهره تليفين - فلكس - ۲۳۳۱ - ۲۷۰۱۲ - ۲۳۳۱

Consulting Engineering Bureau & Laboratories مکتب معامل الاستشارات المهندسیلا			
Company Name	شركة مهندس كريم:		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 16/11/2023		
<b>Reporting Date</b>	: 20/11/2023		
<b>Reporting No.</b>	: 06-3		

5.0

Dear Gentleman,

Attached here with the delivered on 16 / 11 / 2023

This sample is representative for 5.000 M<sup>3</sup>

#### Materials test

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

Signature /.....

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۲ ش الملك الأفضلي الزمالك القاهرة تليفين - فاكس : ۲۷۳٦،۰۳۴ - ۲۷۳٦،۰۹۴

GEL			
Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية			
Company Name	شرکة مهندس کريم :		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 16/11/2023		
<b>Reporting Date</b>	: 20/11/2023		
<b>Reporting No.</b>	: 06-3		

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#### **RESULTS OF SIEVE ANALYSIS According to ASTM D-422.**

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	91.1
37.5	1.5	83.5
25	1	78.2
19	3/4	72.9
12.50	1/2	68.4
9.50	3/8	56.0
4.75	4	50.5
2.00	10	32.2
0.425	40	23.1

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٢ ش الملك الأفضيل

الزمالك القاهرة

نلېفېن - فاکس - ۲۷۳٦۷۲۳۱ - ۲۷۳٦۲

CEL Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شرکة مهندس کريم		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 16/11/2023		
<b>Reporting Date</b>	: 20/11/2023		
<b>Reporting No.</b>	: 06-3		

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### <u>Materials finer than 75 μm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μΜ (No.200)	5.8

Signature /.....

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Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية			
<b>Company Name</b>	شركة مهندس كريم		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 16/11/2023		
<b>Reporting Date</b>	: 20/11/2023		
<b>Reporting No.</b>	: 06-3		

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### <u>Results of liquid limit and plasticity index</u> of soils according to ASTM D-4318

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

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Consulting Engineering Burcau & Laboratories مكتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شركة مهندس كريم :		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 16/11/2023		
<b>Reporting Date</b>	: 20/11/2023		
<b>Reporting No.</b>	: 06-3		

### Soil Classification According To Project Specs

TEST	Results (%)	Limits according Projects Specs		
•Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10).	32.2	Max 50 %		
0.425 mm (No. 40).	23.1	Max 30 %	Max 50 %	
0.075 mm (No. 200).	5.8	Max 15 %	Max 15 %	Max 15 %
Characteristics o	of fraction passing	0.425 mm (No.4	10)	
Liquid Limit			-	
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

The test results are (  $\Box$  Comply -  $\Box$  Not Comply ) with specifications limits

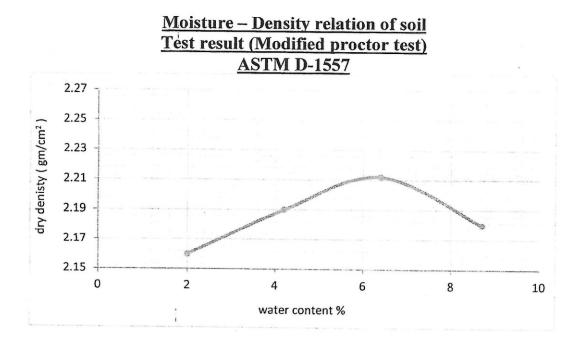
Signature / .....

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۲ ش الملك الأفضار . الزمالك - الداهرة تليمون - هاكس - ۲۷۳٦،۷۳۱ - ۱۷۳۵،۷۳۹

Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شركة مهندس كريم:		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 16/11/2023		
<b>Reporting Date</b>	: 20/11/2023		
<b>Reporting No.</b>	: 06-3		



- Max dry density (gm/cm<sup>2</sup>) : 2.21
- Optimum moisture content % : 6.4 %

Signature / .......

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Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية				
<b>Company Name</b>	شركة مهندس كريم			
Project	: Electric Express Train – HSR From Qous To Armant			
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"			
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )			
<b>Delivery Date</b>	: 16/11/2023			
<b>Reporting Date</b>	: 20/11/2023			
<b>Reporting No.</b>	: 06-3			

## Test Results of California Bearing Ratio on Base Materials

**ASTM D 1883** 

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	penetration	stragg on nigton (Mag)			
mm	Inch	stress on piston (Mpa)			
0.64	0.025	0.43			
1.27	0.050	1.35			
1.91	0.075	2.32			
2.54	0.100	3.15			
3.18	0.125	3.95			
3.81	0.150	4.62			
4.45	0.175	5.17			
5.08	0.200	5.63			
6.35	0.250	6.24			

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	
	6.90	3.15	45.7%

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of =  $2.21 (\text{gm}/\text{cm}^3)$ 
  - At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kg.
- 4- CBR > 10 for middle and lower embankments according project spec page No 36.
  - Signature / .......

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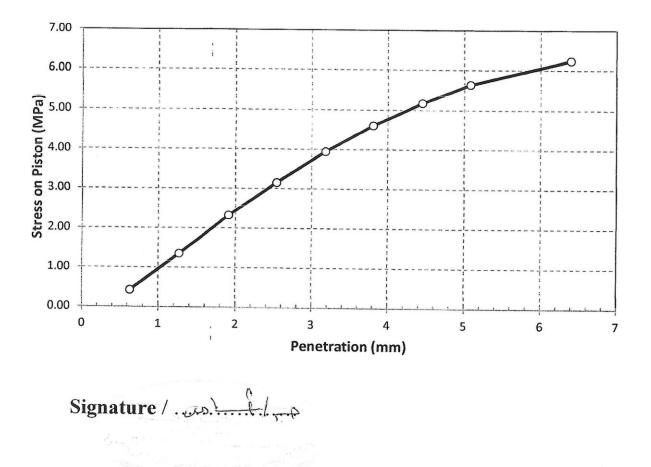


۲ ش الملك الأقضل . الزمالك - القاهرة تليفون • فاكس • ۲۷۳٦٬۷۲۱

Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية				
<b>Company Name</b>	شركة مهندس كريم:			
Project	: Electric Express Train – HSR From Qous To Armant			
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"			
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )			
<b>Delivery Date</b>	: 16/11/2023			
<b>Reporting Date</b>	: 20/11/2023			
<b>Reporting No.</b>	: 06-3			
	Load Ponotration Curve of CDD Test			

#### Load Penetration Curve of CBR Test

ASTM D-1883



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: 120	Report No.
MB.1 - :	Ϳ϶ν϶Ͻ
. ST from 669+835 \ 009+835 mont TS	Location
: Middle Embankment	Soil type
: 10/15/2023	Testing Date
: Electric Express Train – HSR From Qous To Armant	Project
شرکه هوندس کریش :	өтьИ үльqmoЭ

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

Comply	%8.26	2.13	<b>t</b> .8	5.26	1613	929+899	5
Comply	%7'96	2.14	4.9	2.28	1454	968+635	ŀ
əɔnsiqəɔɔA	on (%) Compacti Degree of	(gm/ cm <sup>3</sup> ) Density Dry	Moisture Content %	βmlk Density Bulk	Test Hole Volume cm <sup>3</sup>	Station	# î≳∍T

# Degree of compaction based on proctor test dated At

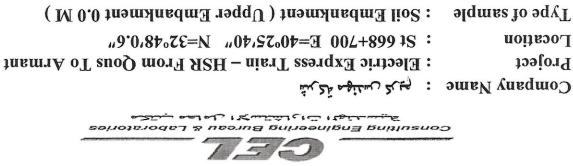
Max. dry density = 2.22 gm/cm³

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Dear Gentleman,

Reporting No.

Reporting Date

Delivery Date

Attached here with the delivered on 28 / 11 / 2023

This sample is representative for 5.000 M<sup>3</sup>

#### <u>Aaterials test</u>

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.

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- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

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Delivery Date	: 58/11/2053
oldmas to oqvT	: Soil Embankment ( Upper Embankment 0.0 M )
Location	.: St 668+700 E=40°25'40" N=32°48'0.6"
Project	: Electric Express Train – HSR From Qous To Armant
Company Name	شرکة مهندس کريم

Reporting No.	£-20 :
Reporting Date	: 2/12/2023
<b>η</b> ειιλείλ ματε	£Z0Z/11/8Z:

1

5.22	40	0.425
<b>Z.</b> 2E	01	00.2
2.09	Þ	5L't
1.63	8/£	05.6
7.89	⅔	15.50
0.07	*∕ε	61
9 <b>.</b> 57	I	57
7.88	<b>S.I</b>	5.75
0.96	7	05
% gnizzr¶	szie sveie (NI)	əzi2 əvəi2 (mm)

# RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Signature / ..... 1

 $T^{i+i,j} = e(\xi^{n,j} + (\xi^{n,j}), i, i, j, i), i) = 0, i \neq j$ ENG REVER <u>। প্রাণাল হেরকার্</u>

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Te8 Fex 27367231 27363093 Zamalek, Cairo. 3 El Malek El Afdal Street



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Reporting No.	: 02-3
Reporting Date :	: 5/15/2033
Delivery Date :	: 28/11/2023
: slqmss to sqyT	( M 0.0 timenk medat ( Upper Embankment 0.0 M )
: noite201	.9°0,87₀72=N "07,57₀07=3 00L+899 3S :
Project :	: Electric Express Train – HSR From Qous To Armant
: omeny Vaneo	شرکة مهندس کريم :

## By washing ASTM D-1140. <u>Avsie (002.0n) mu 77 nent ronit eleiroteM</u>

٤.٤	Percentage of material finer than Sieve Size 75 µM (No.200)
(%) Kesults	tsəT

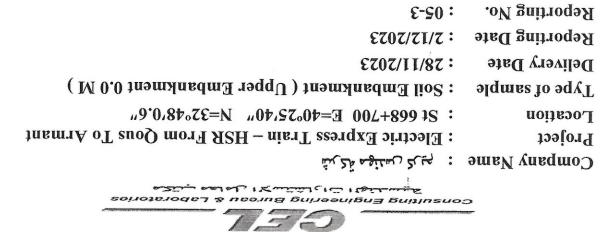
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# Results of liquid limit and plasticity index of soils according to ASTM D-4318

0	Plasticity Index
0	Plastic Limit
0	timiJ biupiJ
(%) Kesults	tzəT

DILED.

NO. .... / srutangi2 ()

สาขารี - ฟรีรี - โละสร้างก่องไปส่วง สร้างสุขายสาขาร์จ มาติ สาขาร์เอาร์

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3 El Malok El Afrial Street Zahalek, Cairo Te 8 Fax 2736723 I 27363093



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£-30 :	Reporting No.
: 5/15/2023	Reporting Date
: 58/11/2023	Delivery Date
( M 0.0 tnemknadm ${ m T}$ mper Embankment 0.0 M )	əlqmsz to əq ${ m vT}$
: St 998+700 E=40°25'40" N=32°48'0.6"	Location
: Electric Express Train – HSR From Qous To Armant	Project
شركة مهندس كريم :	Sompany Name

		% 02 xBM	32.2	.(01.0N) mm 00.2
(4-1-A) (d-1-A)		I-I-A) (R-I-A) (R-I-A)		•Group Classification
	ibrooos stir rojects Specs		(%) Kesults	LESL
	coode so			

# Soil Classification According To Project Specs

The test results are (  $\Box$  Comply -  $\Box$  Not Comply ) with specifications limits

0

Characteristics of fraction passing 0.425 mm (No.40)

5.3

22.3

% 8 xBM

-----

% SI XBM

Max 30 %

0/ 00 WMTH

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gint off the state at the

% 9 xBM

-----

% 21 xBM

Wax 50 %

গগৈ নালকে প্রা

শত্রী হার্মান প্রেরন্য

% 01 xBM

-----

% SI xBM

-----

.........................

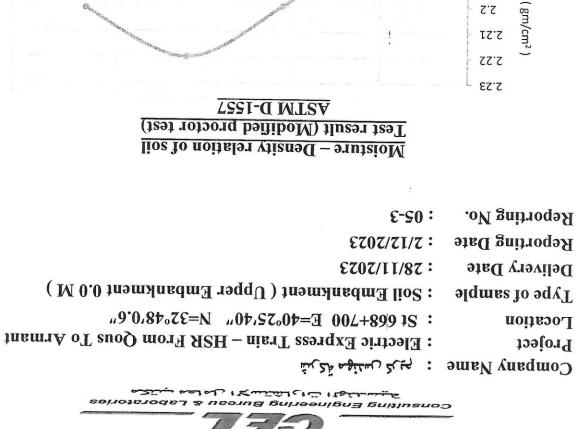
Plasticity index

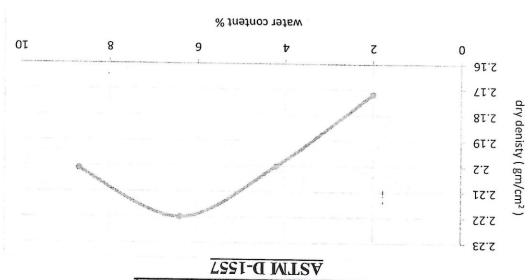
.....

Liquid Limit

.(002 .oV) mm 270.0

0.425 mm (No. 40).







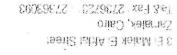
- % † 9 : Optimum moisture content %

D Signature / ..... 10

and our contractions about the สารหา และหาร <u>। প</u>োলান (জেলা)



Te& Fax: 2736723 - 27363093 Cares, Cares 3 Er Malek Er Afdal Street



penetration

(mm 42.2) doni 1.0 tA

**CBK Kesult** 

55.9

80.2

54.45

18.8

81.8

2.54

16.1

1.27

79.0 шш

Reporting No.

Reporting Date

Delivery Date

oldmas to oqvT

Location

Project

Setor



Collor (Secol

% 8.64

CBB %

61'9

L6'S

85.2

L0.2

14.41

3.44 2.50

1.45

97.0

(stress on piston (Mpa)

D. Landon V. Sutangiz

At = 6.4 % optimum water content.

3- Surcharge load 4.50 Kg.

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

2- The sample was compacted to dry density of = 2.22 (gm/cm<sup>3</sup>)

06.9

St. Value

1- Attached graph shows penetration resistance versus penetration magnitude.

0.250

0.200

SL1.0

051.0

0.125

001.0

ST0.0

050.0

220.0

youI

**E881 G MTRA** Test Results of California Bearing Ratio on Base Materials

: 21 908+100 E=40°25'40" N=32°48'0.6"

متعاتات اشتدها د consulting Engineering Bureau & Laboratories

( M 0.0 Insmkmedut ( Upper Embankment 0.0 M )

: Electric Express Train – HSR From Qous To Armant

penetration

: 02-3

Company Name : میلا بالد ظری ا

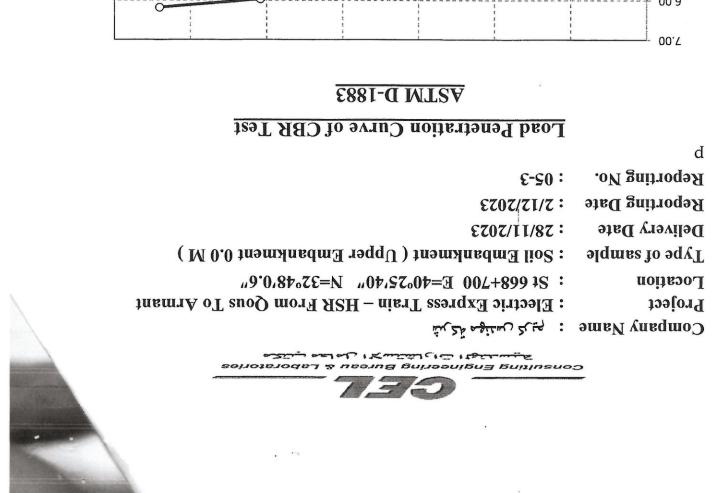
£202/21/2:

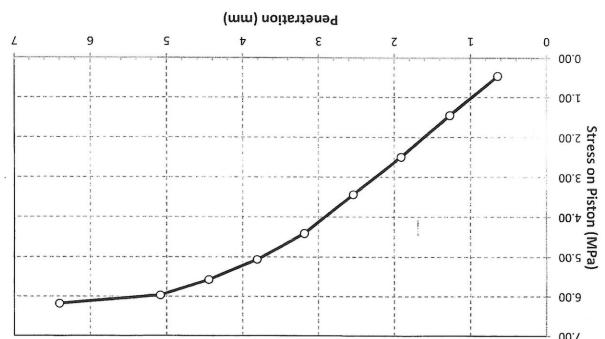
£202/11/82:

Stress (Mpa)

3.44

Sample results





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NG, BABA PERAL. RAMA BARAS RAMA REALS



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	9 uo	Revisio						12- MU	1-92		Contractor UIR
	MA	10:00			5023	4-15-2	'I	0000	1	Eng. Mohammed Mostafa	Issued by Contractor
			əmiT				Date		ngiZ	Name	
8		tignI ( offO gr			S)	Aue		des Karim		787+838 oT 08	37+760 TS mor <del>I</del>
	ќu	company	igner (	Des				actor Com			Location
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	sappropriate	VIDENCE Wast be Included as	a abivit involu	
				: noitginosed noitosqua
cuo-monanana rado	Fill Layer (C	000+800 TS oT 042+800 TS r	LST+87	00 oT 087+700 TS mor
Item Fill Layer (Upper embankment -0.75)		Area Element		Агеа
-	0	DE MOBR LO BE INSECLEI	EXPLANATION C	and the second
Sub Element of Activity CODE-3	Activity ODE-2 Work	For Kilometer point only	Debot Refetence D1 to 23 CODE-1	Station Reference S1 to S21 CODE-1

Comments by: (SPECTRUM) QC	ECTRUM) Civil	Comments by: (SP	3 3 fm	Comments by: ( Brilliant ) مرواسه کار حکار ویک کاردها هو اکم سم ط
Other as indicated MS Reference	Calibration Attached	sults Ausched 🗌 ITP Referen	Test Re	Checklist Attached

						Employer representative
					1	C∀KB∗∗
			52/21191	1-1	Ban	SPECTRUM
		- Alternation Contraction	191523	الشركر	First	Brilliant Survey
	A-AWC-R	əmiT	Date	ngiZ	Jame	Organisation
Please Tick if Not Attend	sutat Status	Appro				<b>BESULT</b> INSPECTION

layer depth (m) -0.75

Total layer width (m) 24.60

27.00	منسوب الطبقة 0.75-	منسوب الا		لمح الميزان	منسوب سطح الميزان		قراءة القامة		رقم الثابتة		اسم الثابتة
Station	Upper Embank.		Let	Left Side		þ			Right Side		
	Level										
			10.63	80	4		4	00	12	13.97	
Slope		WIDTN	1.00%	1.00%	1.00%		1.00%	1.00%	1.00%	1.00%	
668+540	144.87	10.63	144.01	144.04	144.08	144.12	144.08	144.04	144.00	143.98	
668+560	144.67	10.63	143.81	143.84	143.88	143.92	143.88	143.84	143.80	143.78	
			- / 1	-101	401	+ 02	4.2	-01	111	+- 1	
668+580	144.48	10.63	143.61	143.64	143.68	143.72	143.68	143.64	143.60	143.58	13.97
			101	tal	-101	101	tel	-201	- cel	-101	
668+600	144.278	10.63	143.4237	143.45	143.49	143.53	143.49	143.45	143.41	143.3903	13.97
			101-	197	+ c [	107	ーシー	107	1/0	+	

استشاري المساحه التوقيع: كمسر برج



Location :	: ST from	07 079+899	009+899
Soil type :	: Upper	Embankment	
: ətsüng Date	: 14/12/2	053	
Project :	: Electric E	I – nisrT eesrqx	tnamrA oT suoQ morA A2H
Company Name	÷ندس کريم :	ه ملک بش	

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

Comply	%2'96	21.2	<b>†</b> .9	5.26	669L	<b>L69+899</b>	3
Comply	%0'96	2.13	<b>†</b> '9	2.27	1225	285+899	2
Comply	%2'96	51.2	5.3	5.26	1248	995+899	٢
əɔnstqəɔɔA	Degree of Compacti (%)	(gm/ cm³) Density Dry	Moisture Content %	Bulk Density Bulk	Fest Hole Volume 5m³	noitst2	#j≳∋T

### Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm<sup>3</sup>

: 124

M87.0 - :

At optimum moision content = 6.4 %

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র ক্রী প্রায়ান মির্জন্তু রাইন্টা - প্রায়ন্ত্র রাইন্টা - প্রায়ন্ত্র 3 El Maiek El Afdal Street Zanalek, Carto Ta& Fax, 2736753 - 27363093

Report No.

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کورنوا تاریک Engineering Bureau & Laboratories کیپسکنوا تاریکشتس کا رکه لغه بیشکه

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.0N gnitroqsA	£-30 :
Reporting Date	: 5/15/2023
Delivery Date	£202/11/82 :
olqmss to oqyT	: Soil Embankment ( Upper Embankment 0.0 M )
Location	.9°0,8¢₀7€=N "0¢л€л₀72,40° E=40°25°40° S :
Project	: Electric Express Train – HSR From Qous To Armant
ompany Name	شرکیده ظریش :

Dear Gentleman,

Attached here with the delivered on 28 / 11 / 2023

This sample is representative for 5.000  $\ensuremath{\mathsf{M}}^3$ 

#### Materials test

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.

ACCREDITED

- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

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প্রদেশ নার্গের্ট বিরুপ্রেরের বন্য উক্তার র্জপ্রেয়ার নিয়ের্গের রজ্যায় র্র্বেয়ার্গি 3 El Malek El Attal Street Zanalek, Calito. 26 Fex 2736723 - 27363093



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شركة مهندس كريم		ompany Name
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- Project : Electric Express Train HSR From Qous To Armant
- Location : St 668+700 E=40°25'40" N=32°48'0.6"
- Type of sample : Soil Embankment ( Upper Embankment 0.0 M )
- Delivery Date : 28/11/2023

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- Reporting Date : 2/12/2023
- Reporting No. : 05-3

ESULTS OF SIEVE ANALYSIS According to ASTM D-422.	ng to ASTM D-422	VSIS Accordi	SIEVE ANAL	SESULTS OF
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5.22	40	0.425
<b>Z.</b> 2£	01	5.00
2.09	<b>t</b>	SL°Þ
1.69	8/E	05.6
7:89	γ,	15.50
0.07	*∕ε	61
9.27	I	57
7.88	S.I	S.75
0'96	7	09
% gnizzk¶	(NI) (NI)	əzi8 əvəi8 (mm)

New Stations الاتا كاروك بالا يدين المارين. يستقالا بالكلامي بالمارين مريني بالاتكار موليات .... / srutangiz 1QQ 8

প্রাপনি এই বিজ্ঞান বিজ বিজ্ঞান বিজ্ঞান



3 El Malek El Atdal Street Zamalek, Calro 168 Fax: 27367231 27363093



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olqmss to oqyT	( ${ m M}$ 0.0 tmemkmedur Embankment 0.0 M )
Location	.9°0,87°2€=N "04°25°40" =32°48°0.6"
Project	: Electric Express Train – HSR From Qous To Armant
omen ynegmo)	شرکة مهندس کريم :
	هیدسینودا تار لشتسکا را دامه سنتک

# <u>Materials finer than 75 µm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

٤.٤	Percentage of material finer than Sieve Size 75 µM (No.200)
(%) Kesults	ĴсэТ

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র্জনে রালে । সম্প্রাল্য স্থানস্থ মন্দ্রি প্রায়ের স্থানস্থ রাল্যান্ট্রিয়ার্



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Reporting No.

Reporting Date

Delivery Date

: 02-3

£202/21/2:

: 28/11/2023



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Company Name : میندم ظریش

Project : Electric Express Train – HSR From Qous To Armant

Location : St 668+700 E=40°25'40" N=32°48'0.6"

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

Delivery Date : 28/11/2023

Reporting Date : 2/12/2023

Reporting No. : 05-3

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

Plasticity Index	0
Plastic Limit	0
timiJ biupiJ	0
ţzəŢ	Results (%)

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3 El Malek El Afdal Street Zerralek, Cairo 165 Fax 27367231 - 27363093



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: 58/11/5053	Delivery Date
( M 0.0 femkankurd Tmpger Embankment 0.0 M ) instantation ${ m S}$ :	Jype of sample
	Location
: Electric Express Train – HSR From Qous To Armant	Project
شركة مهندس كريم :	Company Name

Project Specs	According To	Soil Classification

% 01 xrM	% д хвМ	%	0	Plasticity index
				timid biupid
	(0	4.0N) mm Z24.0	gnizzed noitzerif fo	Characteristics (
% 21 xBM	% 21 xBM	% 21 xbM	5.3	.(002 .o <sup>N</sup> ) mm č70.0
	% 02 xrM	% 0E xbM	£°77	.(04 .0V) mm 224.0
		% 02 xbM	32.2	.(01.0 <sup>N</sup> ) mm 00.2
(4-2-A)	(d-I-A)	(s-I-A)	(s-1-A)	noitestification
	ibrosse stin 20992 stosjor		(%) Kesults	LEST

The test results are (  $\Box$  Comply -  $\Box$  Not Comply ) with specifications limits

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Reporting No.

Reporting Date

: 02-3

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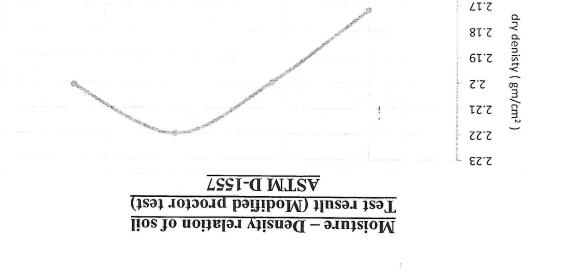
Consulting Engineering Bureau & Laboratories تمیسانیوا تاریشنسگا باماهه بینتکه

Company Name : میند منظوم تر یست

- Project : Electric Express Train HSR From Qous To Armant
- Location : St 668+700 E=40°25'40" N=32°48'0.6"
- Type of sample : Soil Embankment ( Upper Embankment 0.0 M )
- Delivery Date : 28/11/2023
- Reporting Date : 2/12/2023
- Reporting No. : 05-3

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• Max dry density (gm/cm<sup>2</sup>) . 2.22

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• Optimum moisture content %

Signature / ......

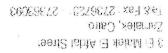
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ส<sup>ระสาว</sup> + 605<sup>40</sup> - 13 เคริมงมา และ มนเหม สโทสตา (คิสตร์) มาริ (ศศภาณชาว<sup>111</sup>

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- Let CBR > 10 for middle and lower egabankments according project spec page No 36.
  - 3- Surcharge load 4.50 Kg.
  - At = 6.4 % optimum water content.
  - 2- The sample was compacted to dry density of =  $2.22 \text{ (gm / cm^3)}$
- 1- Attached graph shows penetration resistance versus penetration magnitude.

#### . sofol.

% 8°6† s	Sample result 3.44	St. Value 6.90	(mm 42.2) dəni 1.0 14. notisritənəq	
CBK %	(sqM) ssə	CBK Kesult		
61.9		0.250	<u> </u>	
L6°S		0.200	80.2	
85.2		SL1.0	54.45	
۲0.2		051.0	18.5	
4.4]		0.125	31.8	
3.44		001.0	5.54	
5.50		SL0.0	16.1	
54.I		050.0	1.27	
97.0		0.025	79.0	
		youl	uuu	
(sqM) notsiq no see	ətte	tration	əuəd	

#### **E881 G MTRA**

#### Test Results of California Bearing Ratio on Base Materials

"9.0'84'02E=N "04'22'40" E=4 007'22'40" :

سلتودات الشتسكا دلماعد ببتك

Consulting Engineering Burcau & Laboratories

: Electric Express Train – HSR From Qous To Armant

Reporting No. : 02-3

Location

Project

Reporting Date 2/12/2023

£202/11/82:

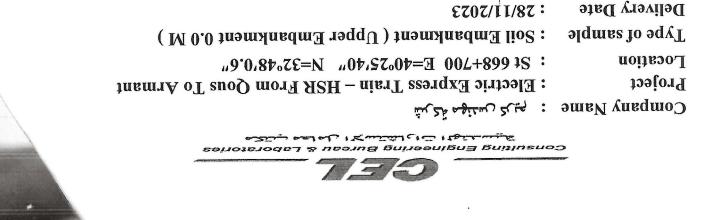
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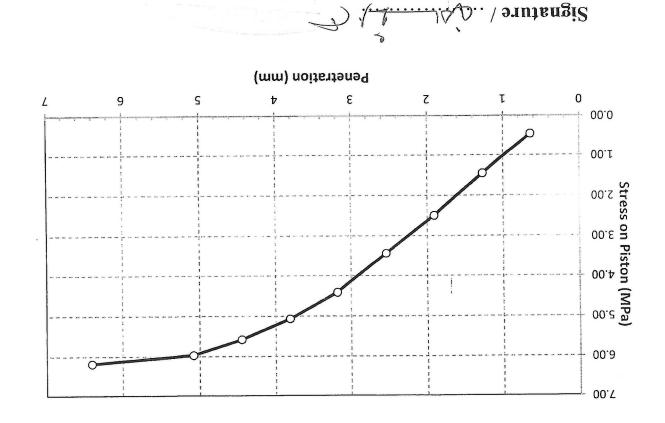
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fype of sample

Delivery Date



#### **ASTM D-1883**



ACCREDITED.

Tree of the target and the stake

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ra, Gun Pica.

Te& Fax . 2736723 - - 27363093

3 El Malok El Afrial Street

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d

Reporting No.

Reporting Date

## Load Penetration Curve of CBR Test

£-20:

£202/21/2:



ICATION - Mir	SECEIPT of NOTIF
र्थ्या सम्बद्धाः इ.स. हिल्लासः स्वरं	BEQUEST INSPECTION ONIVERSAL

Drawing Reference

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			əmiT				Sign Date		Name		
នា	(SPECTRUM) Engineering Consulting Office					бub	El Mohandes Karim company for contracts			787+888 oT 087+788 TS mort	
	Кu	eduto	igner (	Des			Contractor Company		Location Name Contractor		
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					j u bi	
hecklist Attached	Test Result	Attached	Calibration Atta	Ched C	Other as indicated	
	СОМЫТУИС	E ENIDENCE	Must be Included as	appropriate		
: noitqineseription :						
oT 087+788 T2 mo	L8L+899	9+899 TS morf	089+899 TS oT 0	Fill Layer (	Upper embankment -1)	
Area		Ele	tnem	mətl		
	CONTRACTOR OF A DECISION OF A DECISIONO OF A DECISIO		TO BE INSPECTED	(		
Station Reference	Depot Reference		ter point only	Activity	Sub Element of Activity	

AT 2 1émes	Levices Provide	avolution mode as
Comments by: (SPECTRUM) QC	Comments by: (SPECTRUM) Civil	Comments by: ( Brilliant )

ITP Reference

MS Reference

		52/21/91	The	Mary Charles	Brilliant Survey
A-AWC-R	əmiT	Date	ngiz	S Name	Organisation

layer depth (m)

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Total layer width (m) 24.97

	-101	-101	トット	tol	+ 61	-rel	162	1102			
14.13	142.48	142.48	142.48	142.48	142.48	142.48	142.48	142.48	10.84	143,48	668+680
	51	1.01	401	101	2.5	A/A	-101	1101			
14.13	142.69	142.69	142.69	142.69	142.69	142.69	142.69	142.69	10.84	143.688	668+660
	-101	- 201	tid	-101	101	- 601	1:-	よいい			
14.13	142.63	142.88	142.88	142.88	142.88	142.88	142.88	142.88	10.84	143.88	668+640
	-101	tri	1.1	-201	+ • ~	2201	+61	1/01			
14.13	142.58	143.08	143.08	143.08	143.08	143.08	143.08	143.08	10.84	144.08	668+620
1											
14.13	143.28	143.28	143.28	143.28	143.28	143.28	143.28	143.28	10.84	144.28	668+600
MICH	0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%			Slope
width	14.13	12.00	10	u		5	10	10.84	width		
										Level	
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اسم الثابتة		رقم الثابتة		قراءة القامة		منسوب س	منسوب سطح الميزان		منسوب	منسوب الطبقة 1-	
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استثناري العساحه . التوفيع: كرمر- ب

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M 1-:							
089+899 oT 009+899 mont TS :							
: Upper Embankment							
: 16/12/2023							
: Electric Express Train – HSR From Qous To Armant							
شرکه مهندین کریم :							

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

	•	ta hoteh ta	104 NO400NG	and hoosed		<b>,</b>	<u> </u>
Comply	<b>66.2%</b>	11.2	8.8	2.24	1632	929+899	4
Comply	%9'86	2.19	8.8	12.31	697L	099+899	3
Comply	%9`26	21.2	8.3	2.29	1291	079+899	2
Comply	%2.76	21.2	8.ð	5.30	1618	029+899	ŀ
əɔnstqəɔɔA	Degree of Compacti On (%)	(đư, cm³) Density Dry	Moisture Content %	gm/ cm <sup>3</sup> Density Bulk	Test Hole Volume Cm <sup>3</sup>	Station	# ]s9⊺

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

: 125-1

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শ হৃ, ৫.৪৯. প্রহান্য এ,এ৯. - ৬৫.৫. এ,এ৯. - ৬৫.৫. - १९९४ १९९१ - ११९९४



3 El Maiek El Atdal Street Zanalek, Cauto. Tels Fax: 27367231 - 27363093

Report No.



Reporting Date	£202/21/E :
Delivery Date	£202/11/62 :
fype of sample	( M 0.0 tnemAnadmE required ( ${ m M}$ of the mean of
Location	: 249 988+350 E=33052,40" N=32048110"
Project	: Electric Express Train – HSR From Qous To Armant
ompany Name	شركة مهندس كريم :

Dear Gentleman,

Reporting No.

Attached here with the delivered on 29 / 11 / 2023

This sample is representative for 5.000  $\ensuremath{\mathsf{M}}^3$ 

#### <u>Aaterials test</u>

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.

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- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

7-80:

word from me INFT min is -ملينية الماري 5

প্রান্থ প্রায়া (১৯৯৫ চন ১৯৫৫ প্রান্থ প্রায়ার্থ প্রান্থ প্রায়ার্থ 3 Er Malek Er Afdal Sheet Zamalek, Cairo 16 K Pax - 2536723 - 27363093

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کیبستونا تاریکتسکا ریاد بتکه

- Project : Electric Express Train HSR From Qous To Armant
- Location : Sta 668+920 E=39°25'40" N=32°48'10"
- Type of sample Soil Embankment (Upper Embankment 0.0 M)
- Delivery Date : 29/11/2023
- Reporting Date : 3/12/2023
- Reporting No. : 08-2

ASTM D-422.	01 201D1000A	CICILANA	IF SIEVE	KESULIS
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20.4	40	0.425
6.66	01	00.2
<b>38.0</b>	<b>†</b>	57.4
<b>t*t*</b>	8/E	05.6
2.22	Ч	12.50
0.27	*∕ε	61
1.97	I	57
84.3	5.1	5.75
5.46	7	09
% gnizzr¶	əziS əvəiZ (NI)	əziZ əvəiZ (mm)

Resting Laboratory

- خلالية المنافع المالية التي الم 2691 437 July 100 Signature /..... - 21 20100 -61 7.1010

۲ ش الماله (کفینی الزمالت الفامی ناینون فاکس : ۲۳۹۶ ۳۷۹ ۳۶۰۹۲۹۷۲ 3 El Majek El Atdal Shee: Zimalek, Calito 168 Fax - 2736723 I - 27363093



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~	~	-	~	محمد کے		- 150-		
							Bunnsuc	00
		- 1		-	70			

Reporting Date : 3/12/2023	
Delivery Date : 29/11/2023	
Type of sample : Soil Embankment (	( M 0.0 tnəminadmA
Location : Sta 668+920 E=39°2	101,87°26=N
Project : Electric Express Tra	from Qous To Armant
Company Name : محيد لاستنهم تركيش	

# <u>Materials finer than 75 µm (no.200) sieve</u> <u>By washing ASTM D-1140</u>

<b>t</b> .9	nant rənil lairətam fo əgatnəərə¶ (002.0N) Mu 27 əzi8 əvəi8
Results (%)	Test

مربطة ساور ليشتسكا والمعالمة ).000.....\ 97utangiZ CET 0

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1681-02239675 - 10376675 : x64 8-41 Offices, Califo 3 EI Matek EI Afdal Sheet

Reporting No.

7-80 :



Consulting Engineering Bureau & Laboratories

Reporting No.	7-80 :
Reporting Date	: 3/15/2023
Delivery Date	£202/11/62 :
Jype of sample	( M 0.0 tnəmknadmA rəquU ) tnəmknadmA lio ${f S}$ :
Location	: 249 668+920 E=39°25'40" N=32°48'10"
Project	: Electric Express Train – HSR From Qous To Armant
Smpany Name	شركة مهندس كريم :

:

# <u>Results of liquid limit and plasticity index</u> of soils according to ASTM D-4318

0	Plasticity Index
0	Plastic Limit
0	timiJ biupiJ
(%) Kesults	tesT

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3 El Majek El Midal Sheet Zmrajek, Cano 163 Fax - 2736723 - 27367093



Reporting No.	7-80 :
Reporting Date	: 3/15/5053
Delivery Date	£202/11/62 :
olqmss to oqvT	. Soil Embankment ( Upper Embankment 0.0 M )
Location	: Sta 668+920 E=39°25'40" N=32°48'10"
Project	: Electric Express Train – HSR From Qous To Armant
ome <sup>N</sup> yneqmo <sup>O</sup>	شركة مهندس كريم :

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62200 122	OTTOT	According	HOUPSILLESI	NO HOC
2290 120		Duipaussy	uvitositissi	1 1 10
57	• • •	• • • •		

% 01 xBM	% 8 xrM	%	0	rsbni viisitsela
				timiJ biupiJ
	(0	4.0N) mm 224.0	gnizzed noitzerif	Characteristics
% 21 xeM	% či xeM	% 21 xBM	<b>t.</b> 9	.(002 .o <sup>N</sup> ) mm 770.0
	% 08 xBM	% 0£ хвМ	20.4	.(04.0 <sup>N</sup> ) mm 724.0
		% 05 хвM	6.66	.(01.0 <sup>N</sup> ) mm 00.2
( <b>†</b> -7-∀)	A) (d-I-A) (r-I-A)		( <b>6-I-</b> A)	noitesifieselD quord•
Limits according Projects Specs			(%) Kesults	TEST

The test results are (  $\square$  Comply -  $\square$  Not Comply ) with specifications limits

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( M 0.0 IEmbankment ( Upper Embankment 0.0 M )

: Sta 668+920 E=39°25'40" N=32°48'10"

Train – HSR From Qous To	Electric Express	:	Project
	شرکة مهندس کريم		Company Name
اکتنس ۲۹ ایم ۱۳۹۵ کر دومروه اکتنس ۲۹ ایم ۱۳۹۵ کر دومروم		10,	0

στ	8	9	t	Z	0
·	-				5.16
				. And the second se	۲.27
			and the second se	and the second sec	dry denisty ( gm/cm <sup>2</sup> ۲۲.۲ ۲۲.۲ ۲۲.۲
			and the second se		61.2 shirty
	(Propage 1)		A Contraction		mg 5.2
	10 million	- State Market	f.		- TZ'Z /cm <sup>2</sup>
	NO SEAL STRATEGY.	Manager			5.22
					5.23
		LSS	I-O WISY		
	(18	proctor te	t (Modified	Test resu	

• Max dry density (gm/cm<sup>2</sup>) : 5.22

**Z-80**:

£202/21/E:

£202/11/62:

 Optimum moisture content % 7'9:



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**Armant** 

Te& Fax: 27367231 - 27363093 Camalex, Cairo. 3 El Malek El Atdal Sheet

Reporting No.

Reporting Date

Delivery Date

Location

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میسیدیود ا می ایندسکا رام ایم ایم اور میسیدیود تاریشتسکا رام ایم می مردده

Company Name : جيلا سننوء ظريش

Project : Electric Express Train – HSR From Qous To Armant

- Location : Sta 668+920 E=39°25'40" N=32°48'10"
- Type of sample : Soil Embankment ( Upper Embankment 0.0 M )
- Delivery Date : 29/11/2023
- Reporting Date : 3/12/2023
- Reporting No. : 08-2

# Test Results of California Bearing Ratio on Base Materials

A			COLUMN TWO IS NOT
E881	D	IM	SV

% 7.67	3.40 Sample results	06'9 2t. Value	(mm +2.2) dani 1.0 tA penetration	
СВК %	(rdM) ssə	ut2	CBK Kesult	
6.54		0.250	\$6.3	
6.14		0.200	80.2	
89.2		571.0	54.45	
۲0.2		051.0	18.6	
4.26		0.125	3.18	
3.40		0.100	5.54	
LS.2		ST0.0	16.1	
09.1		0\$0.0	1.27	
05.0		0.025	79.0	
		цэиI	uu	
(sqM) notsiq no	stress	noitert	əuəd	

<u>SetoN</u>

- I Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of =  $2.22 \text{ (gm/cm}^3)$
- At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kg.
- 4- CBR > 10 for middle and lower embankments according project spec page No 36.

VCCLGEDITED. Te& Fax: 2736720 - 27363093 Times . My . LAINLAL - 2 - 2LALL Canalek, Cano अर्थन्यका अष्टार्थन्त्र 3 El Malek El Attal Street A THE ISSUE 510-001.43 ..... \ Signature \ .... \ Sutangil 



( M 0.0 IEmbankment ( Upper Embankment 0.0 M )

: Electric Express Train – HSR From Qous To Armant







دorsiona & Labora gaineeniga Buisiuza کپیسکنوا تارلنشند کا رکه کمادودها

: Sta 668+920 E=39°25'40" N=32°48'10"

Reporting Date Delivery Date £202/11/62:

:3/12/2023

Company Name : مينغ مخريش

Appe of sample

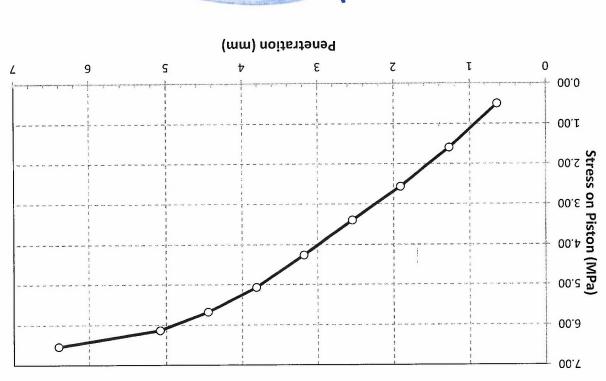
Location

Project

Reporting No. **Z-80**:

# Load Penetration Curve of CBR Test

**E881-Q MTRA** 



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Transford - Mr. - Carelana - B. Alana ICALLY MALEYS ४ २<sup>°</sup> (लाग दरस्त)

Test Par - 27367231 - 27363093 Zamalek, Calto. 3 EI Malek E Attal Street



RECEIPT of NOTIF	ICATION - Minimun ill be complete and ready for i				Hours					
Location	n Name	Cont	ractor Con	npany		De	signer	Compa	my	
From ST 667+7	80 To 668+787	El Mohandes Karim company for contracts		(	(SPECTRUM) Engineering Consulting Office			ıg		
	Name	Sign		Date			Time			
Issued by Contractor	Eng. Mohammed Mostafa	( idea معم معطف المعطف) 14-12-2023				6	10:00 AM			
Contractor UIR Reference	SG – UM -23 Revision 6									
Received by ER	2		UIR	C1 C2	C3	DD	MM	үү 2023	нн	MM

CODE-1 S1 to S21 Station Reference	CODE-1 D1 to S3 Depot Reference EXPLANAT	CODE- Kp XX For Kilometer j ION OF WORK TO	X point only	CODE-2 Work Activity	Activity Sub Element of Activity		
Area		Eleme	nt		Item		
From ST 667+780 To 668+	787	From ST 668+600 1	To ST 668+680	Fill Layer	(Upper embankment -1)		
	COMPLIAN	CE EVIDENCE Mu	ist be Included	as appropriate			
Checklist Attached 🗆		CE EVIDENCE Mu	ist be Included	1	Other as indicated		

Comments by: ( Brilliant )	Comments by: ( SPECTRUM ) Civil	Comments by: ( SPECTRUM ) QC
and here the the of the set of th		575-21 E

INSPECTION RESULT				Appr	oval Status	Please Tick if Not Attend
Organisation	Name	Sign	Date	Time	A-AWC-R	Not Attend
Brilliant Survey	10205	T. J.	16,12,23	-		
SPECTRUM	CE GAR		16/12/2	3		
GARB**						
Employer representative						

layer depth (m) -1 Total layer width (m) 24.97

	-1 Zö. hall			1 - H - H	•		1 1 2 2 2 2		1 3- 44 2		
	intin T-	muli		12 12/10	منسوب سطح الميران		20130 112104		( ning		me lais
	Upper										
Station	Embank.		3	Left Side		5			<b>Right Side</b>		
	Level										
			10.84	10	ŋ		S	10	12.00	14.13	
Slope		MICHI	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%	WIGTH
668+600	144.28	10.84	143.28	143.28	143.28	143.28	143.28	143.28	143.28	143.28	14.13
											1
668+620	144.08	10.84	143.08	143.08	143.08	143.08	143.08	143.08	143.08	142.58	14.13
			10/-	tai	100-	107	1-1 -1	ーニー	1.4	1-1-	
668+640	143.88	10.84	142.88	142.88	142.88	142.88	142.88	142.88	142.88	142.63	14.13
			ナノノ	t	- ce (	i o t	101-	ろして	- 201	-101	
668+660	143.688	10.84	142.69	142.69	142.69	142.69	142.69	142.69	142.69	142.69	14.13
			-101	101-	11011	P1-	104	てって	くっこ	くい	
668+680	143.48	10.84	142.48	142.48	142.48	142.48	142.48	142.48	142.48	142.48	14.13
			201-	191	100-	107	107	ر ۲°۲	10/-	- 101	

استشاري المساحه ، التوقيع: محمد .| ~

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Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية

Company Name	شرکه مهندس کریم :
Project	: Electric Express Train – HSR From Qous To Armant
<b>Testing Date</b>	: 16 / 12 /2023
Soil type	: Upper Embankment
Location	: ST from 668+600 To 668+680
Level	:-1 M
Report No.	: 125-1

#### <u>Compaction test by using Sand – Cone Test Method</u> <u>ASTM D- 1556</u>

Test#	Station	Test Hole Volume cm <sup>3</sup>	Bulk Density gm/ cm <sup>3</sup>	Moisture Content %	Dry Density (gm/ cm <sup>3</sup> )	Degree of Compacti on (%)	Acceptance
1	668+620	1518	2.30	5.8	2.17	97.7%	Comply
2	668+640	1571	2.29	5.8	2.17	97.5%	Comply
3	668+660	1469	2.31	5.8	2.19	98.5%	Comply
4	668+676	1532	2.24	5.8	2.11	95.2%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm<sup>3</sup>

At optimum moisture content = 6.4 %

Signature / .....

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



۲ ش الملك الأفضل الزمالك - الذاهرة يُتَلِفون ، فاكس : ۲۷۳٦۷۲۴۱ - ۲۷۳٦۲۰۴۲ الفون ، فاكس : ۲۷۳٦۷۲۴۱



<b>Company Name</b>	شرکة مهندس کریم :
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+920 E=39°25′40″ N=32°48′10″
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 29/11/2023
<b>Reporting Date</b>	: 3/12/2023
<b>Reporting No.</b>	: 08-2

Dear Gentleman,

Attached here with the delivered on 29 / 11 / 2023

This sample is representative for 5.000 M<sup>3</sup>

#### **Materials test**

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883



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٢ ش الملك الأفضل . الزمالك - الق**اهرة** تليفون • فاكس : ٢٧٣٦٧٢٢١ - ٢٧٣٦٢٠٩٢

Consulting Engineering Bureau & Laboratories مکتب معامل الاستشارات الهندسیة			
<b>Company Name</b>	شرکة مهندس کريم :		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+920 E=39°25′40″ N=32°48′10″		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 29/11/2023		
<b>Reporting Date</b>	: 3/12/2023		
<b>Reporting No.</b>	: 08-2		

#### **RESULTS OF SIEVE ANALYSIS According to ASTM D-422**.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	94.5
37.5	1.5	84.3
25	1	76.1
19	3/4	72.0
12.50	1/2	55.2
9.50	3/8	44.1
4.75	4	38.0
2.00	10	33.9
0.425	40	20.4

Signature /..... 219.991.437 الترطالك ى 3 شارع الملك الأفة

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



۲ ش الملك الأفضل . الزمالك القاهرة تليفون دفاكس : ۲۷۳٦۲۰۳۱

Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية			
<b>Company Name</b>	شركة مهندس كريم:		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+920 E=39°25′40″ N=32°48′10″		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 29/11/2023		
<b>Reporting Date</b>	: 3/12/2023		
<b>Reporting No.</b>	: 08-2		

## Materials finer than 75 µm (no.200) sieve By washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μΜ (No.200)	6.4

Signature /..... üle a 219.991.437 . 219.991.437 . الأول الترامات . 3 ثارع الملك الافضل

تلېفون ، فاکس : ۲۷۳۱ ۲۰۹۲ - ۲۷۳۱ ۲۷۳۱

٢ ش الملك الأفضل

الزمائك القاهرة

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



GEL	
neering Bureau مل الإستشارات	

<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+920 E=39°25'40" N=32°48'10"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 29/11/2023
<b>Reporting Date</b>	: 3/12/2023
<b>Reporting No.</b>	: 08-2

# <u>Results of liquid limit and plasticity index</u> <u>of soils according to ASTM D-4318</u>

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

Signature /.... تشارات التهله بات , الاقدسر 219.991 مى . 219.991 مى . 3 ئىن الله الافتار - الزمانية - الكانية -

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



۲ ش الملك الأفضل . الزمالك - القاهرة تليفون • هاكس : ۲۷۳٦٬۷۲۲۱ - ۲۷۳٦۲ ۲۷۳۱



<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+920 E=39°25′40″ N=32°48′10″
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 29/11/2023
<b>Reporting Date</b>	: 3/12/2023
<b>Reporting No.</b>	: 08-2

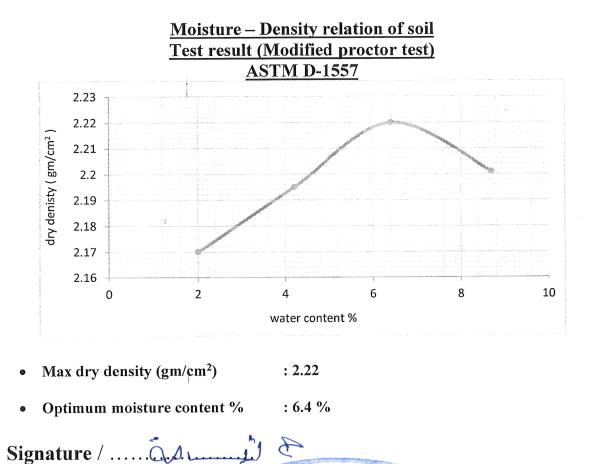
#### Soil Classification According To Project Specs

TEST	Results (%)	Limits according Projects Specs			
•Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)	
2.00 mm (No.10).	33.9	Max 50 %			
0.425 mm (No. 40).	20.4	Max 30 %	Max 50 %		
0.075 mm (No. 200).	6.4	Max 15 %	Max 15 %	Max 15 %	
Characteristics of fraction passing 0.425 mm (No.40)					
Liquid Limit					
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %	

The test results are (  $\square$  Comply -  $\square$  Not Comply ) with specifications limits

11.8 Signature / .... 🗘 219 3 Ei Malek Ei Afdal Street ٢ ش البلك الأفضل الزمالك القاهرة Zamalek, Cairo. 3 ثارغ Tel& Fax: 27367231 - 27363093 تلبقین ، فاکس : ۲۷۳٦۷۱۳۱ - ۲۷۳٦۲۰۹۲ ACCREDITED

GEL			
0	onsulting Engineering Bureau & Laboratories		
	مكتب معامل الإستشارات الهندسية		
<b>Company Name</b>	شركة مهندس كريم		
Project	: Electric Express Train – HSR From Qous To Armant		
Location	: Sta 668+920 E=39°25′40″ N=32°48′10″		
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )		
<b>Delivery Date</b>	: 29/11/2023		
<b>Reporting Date</b>	: 3/12/2023		
<b>Reporting No.</b>	: 08-2		



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



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۲ ش الملك الأفضل . الزمالك - القاهرة تليفون • فاكس : ۲۷۳٦٬۲۰۳۱ ۲۷۳٦۲۰۹۲۰ ۲۷۳٦۲۰۹۲۰۰۲۰۲۷۲۲۱

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 neering Bure تلاستشاری	au & Laboratories

<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+920 E=39°25'40" N=32°48'10"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 29/11/2023
<b>Reporting Date</b>	: 3/12/2023
<b>Reporting No.</b>	: 08-2

# Test Results of California Bearing Ratio on Base Materials

		n	1	007
AN	TM		11	88.1
	TT TA T			000

penetration		stress on piston (Mpa)	
mm	Inch	buebb on pibton (inpa)	
0.64	0.025	0.50	
1.27	0.050	1.60	
1.91	0.075	2.57	
2.54	0.100	3.40	
3.18	0.125	4.26	
3.81	0.150	5.07	
4.45	0.175	5.68	
5.08	0.200	6.14	
6.35	0.250	6.54	

CBR Result	SI	CBR %	
At 0.1 inch (2.54 mm)	St. Value	Sample results	40.2.0/
penetration	6.90	3.40	- 49.2 %

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of =  $2.22 \text{ (gm/cm^3)}$

219-991

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- At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kg.
- 4- CBR > 10 for middle and lower embankments according project spec page No 36.

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Signature / .....

٢ ش الملك الأفضل . الزمالك القاهرة

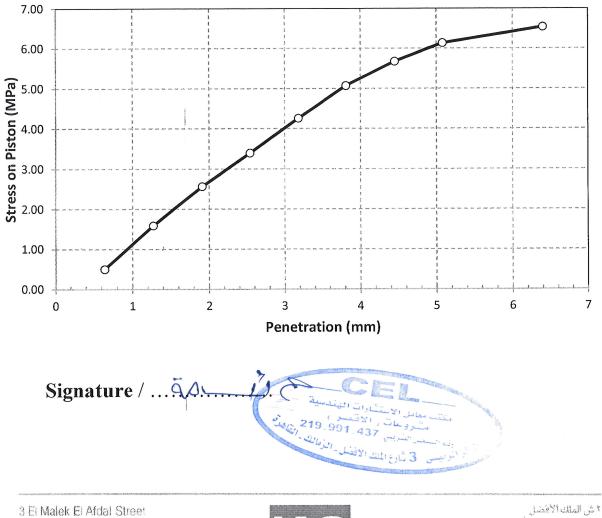
تليفون ، فاكس : ۲۲۲۱۷۲۲۲۱ - ۲۲۰۶۲۲۷۲۲



<b>Company Name</b>	شرکة مهندس کريم :
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+920 E=39°25′40″ N=32°48′10″
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 29/11/2023
<b>Reporting Date</b>	: 3/12/2023
<b>Reporting No.</b>	: 08-2
	Land Donatration Curve of CPD Test

#### Load Penetration Curve of CBR Test

ASTM D-1883



، من الصف العلمي . الزمالك - القاهرة تليفون + فاكس : - ۲۷۳٦۷۰۲۱ - ۲۷۴٦۲۰۹۲

Zamalek, Cairo. Tel& Fax : 27367231 - 27363093





Locat	ion Name	Co	ntractor Con	ipany			Designer Company				
From ST 667-	+780 To 668+787	El Moh	andes Karin for contrac	-	any	(			A) Engi ing Offi		ng
Income of here	Name	Sign		Date				Time			
Issued by Contractor	Eng. Mohammed Mostafa	e	ممدممه	14	4-12-	2023			10:00	AM	
Contractor UIR Reference	SG – UM -24 Revision 6										
Received by ER			UIR	C1	C2	C3	DD	MM	YY	НН	MM
Sector of BR			UIK						2023		

CODE-1 S1 to S21 Station Reference	CODE-1 D1 to S3 Depot Referen					
	EXPLANA	ATION OF WORK TO	BE INSPECTED	)		
Area		Elemen	nt		Item	
From ST 667+780 To 668	8+787	From ST 668+160 T	o ST 668+400	Fill Layer (U	pper embankment -1.25)	
Inspection Description :						
	COMPLIA	ANCE EVIDENCE Mu	st be Included as	appropriate		
Checklist Attached	Test Re	sults Attached	Calibration Attac	ched C	Other as indicated	
Drawing Reference	•	ITP Reference		М	S Reference	
Comments by: ( Brilliant )		Comments by: ( SPE	CTRUM ) Civil	Comments	by: ( SPECTRUM ) QC	
میدو(مدی) الالحال الاعمام ه (ته مه میرین	stimit is	June 1	201 - 201 - 201 - 201 - 201 - 201 - 201	(st	- PIE	

INSPECTION RESULT				Appr	roval Status	Please Tick if
Organisation	Name	Sign	Date	Time	A-AWC-R	Not Attend
Brilliant Survey	The state	E. S	17,12,23			
SPECTRUM	attat	FL	17-112-123			
GARB**		7				
Employer representative			<u></u>	-		

استشاري العساده التوقيع: تحكس محيم

	102	よ 101	+ 10	4101	1101	+ 10-	4 10 7	+ 101			
14.50	144.99	144.99	144.99	144.99	144.99	144.99	144.99	144.99	11.21	146.245	668+400
	7207	101	+101	4102	4102	-10	4701	-101			
14.50	145.19	145.19	145.19	145.19	145.19	145.19	145.19	145.19	11.21	146.442	668+380
	201	-102	101	105	12 61	101	101	710L			
1.4.50	145.39	145.39	145.39	145.39	145.39	145.39	145.39	145.39	11.21	146.639	668+360
	- jes	401	104	101	201	-101	4766	101			
14.50	145.58	145.58	145.58	145.58	145.58	145.58	145.58	145.58	11.21	146.835	668+340
	4102	-102	とって	-101	101	101	トート	101			
14.50	145.78	145.78	145.78	145.78	145.78	145.78	145.78	145.78	11.21	147.032	668+320
	-10(	401	-701	たい	202	-101	101	Jel			
14.50	145.98	145.98	145.98	145.98	145.98	145.98	145.98	145.98	11.21	147.229	668+300
	101	-102	4102	-102	-101	-101	2018	7007			
14.50	146.18	146.18	146.18	146.18	146.18	146.18	146.18	146.18	11.21	147.426	668+280
	7705	さら	1961	4102	101	101	202	202			
14.50	146.37	146.37	146.37	146.37	146.37	146.37	146.37	146.37	11.21	147.622	668+260
	-101	とっし	101	-261	101	201	101	101-			
14.50	146.56	146.56	146.56	146.56	146.56	146.56	146.56	146.56	11.21	147.81	668+240
	-101	-101	101	101	2014	-102	101	AJEL			
14.50	146.73	146.73	146.73	146.73	146.73	146.73	146.73	146.73	11.21	147.981	668+220
	とう	1001	1001	ちっと	-101	701	[	101			
14.50	146.89	146.89	146.89	146.89	146.89	146.89	146.89	146.89	11.21	148.14	668+200
	1261	-) 6	~)01	202	101	1001	AVO'L	7			
14.50	147.02	147.02	147.02	147.02	147.02	147.02	147.02	146.77	11.21	148.27	668+180
1 24.00	ATOID		101110			- 11 1-1				10.07	
14 50	146 80	147 14	147 1A	147 14	147.14	147 14	147.14	147.14	11 21	148 30	668+160
WIDTN	0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	Width		Slope
	14.50	12.00	10	5		л	10	11.21	midat		
										Level	
		Right Side	70		þ		Left Side	Left		Upper Embank.	Station
سم الثابتة	2	رقم الثابتة	رقم الثابتة 944	قراءة القامة	2,50	منسوب سا	منسوب سطح الميزان	46.99	منسوب اا	منسوب الطبقة 1.25-	
											25.71

layer depth (m) -1.25

Total laver width (m)

# CEL

Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية

Company Name	شرکه مهندس کریم :
Project	: Electric Express Train – HSR From Qous To Armant
<b>Testing Date</b>	: 17 / 12 /2023
Soil type	: Upper Embankment
Location	: ST from 668+160 To 668+400
Level	: - 1.25M
Report No.	: 126

#### Compaction test by using Sand - Cone Test Method

	1	Testilala		<u>M D- 1556</u>	D	D	
T	Ctation	Test Hole	Bulk	Moisture	Dry	Degree of	
Test #	Station	Volume	Density	Content	Density	Compacti	Acceptance
		cm <sup>3</sup>	gm/ cm <sup>3</sup>	%	(gm/ cm <sup>3</sup> )	on (%)	
1	668+190	1601	2.27	6	2.14	96.3%	Comply
2	668+210	1557	2.25	6.4	2.11	95.2%	Comply
3	668+230	1572	2.28	6	2.15	97.1%	Comply
4	668+250	1768	2.27	5.8	2.14	96.5%	Comply
5	668+270	1669	2.32	6	2.19	98.6%	Comply
6	668+290	1540	2.29	6	2.16	97.3%	Comply
7	668+310	1562	2.31	6.4	2.17	97.6%	Comply
8	668+330	1962	2.25	6	2.13	95.8%	Comply
9	668+350	1869	2.28	6.4	2.14	96.4%	Comply
10	668+390	1561	2.28	6.4	2.14	96.3%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm<sup>3</sup>

At optimum moisture content = 6.4 %

Signature / .....

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3 ثارع المن الا

۲ ش الملك الأفضل الزمانك - القاهرة تليفون • فاكس • ۲۷۳۱ ۲۷۳۱ ۲۷۳۱ Company Name : شرکة مهندس کریم : Electric Express Train – HSR From Qous To Armant Project : Electric Express Train – HSR From Qous To Armant Location : Sta 668+780 E=40°25′40″ N=32°48′0.6″ Type of sample : Soil Embankment ( Upper Embankment 0.0 M ) Delivery Date : 05/12/2023 Reporting Date : 09/12/2023 Reporting No. : 06-5

ering Bureau & Laboratories

Dear Gentleman,

Attached here with the delivered on 5 / 12 / 2023

This sample is representative for 5.000 M<sup>3</sup>

#### Materials test

1. Sieve analysis according to ASTM D-422.

|.

Consulting Engin

- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

Signature /	SC
	العناب منافق الاستنقاء بالما المستعادة المائير وحالت المائي المراجع المائيس المائي المائي المراجع المراجع المراجع المائيس المائيس المائيس المراجع الم المراجع المراجع المائيس المائيس المائيس المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع

3 El Malek El Afdal Street Zamalek, Cairo Te & Laz 2736723 - 27363093



۲ ش الملقة الافضى الزمالات الداهرة طيعان - حافان - ۲۲۵٬۵۲۴ - ۲۰ ۲۳۹۹

Consulting Engineering Burcau & Laboratories مكتب معامل الإستشارات المندسية				
<b>Company Name</b>	شركة مهندس كريم:			
Project	: Electric Express Train – HSR From Qous To Armant			
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"			
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )			
<b>Delivery Date</b>	: 05/12/2023			
<b>Reporting Date</b>	: 09/12/2023			
<b>Reporting No.</b>	: 06-5			

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## **RESULTS OF SIEVE ANALYSIS According to ASTM D-422**.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	97.2
37.5	1.5	91.2
25	1	86.8
19	3/4	74.5
12.50	1/2	67.1
9.50	3/8	58.3
4.75	4	50.0
2.00	10	36.1
0.425	40	23.2

311 Signature /.....

3 Er Malek El Afdal Stree' Zanalek, Cairo Te& Fax: 27367231 - 27363003



۲۰ الملك الأقتس الزمانك العاهرة طعري الانتري (۲۳۹، ۲۰۱۲ ۲۰۱۲، ۱۹۳۲

Consulting Engineering Bureau & Laboratories محتب معامل الاستشارات المهندسية				
<b>Company Name</b>	شركة مهندس كريم			
Project	: Electric Express Train – HSR From Qous To Armant			
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"			
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )			
<b>Delivery Date</b>	: 05/12/2023			
<b>Reporting Date</b>	: 09/12/2023			
<b>Reporting No.</b>	: 06-5			

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# <u>Materials finer than 75 μm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

Test	Results (%)
Percentage of material finer than Sieve Size 75 μM (No.200)	7.3

Signature /.....

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۲ ش الملك الأفتسر الزمالك - القاهرة اليمور - هاكس - ۲۳۰۱٬۵۳۱ - ۲۰ ۱۹۳۱

Consulting Engineering Burcau & Laboratories مكتب معامل الإستشارات المهندسية					
<b>Company Name</b>	شركة مهندس كريم				
Project	: Electric Express Train – HSR From Qous To Armant				
Location	: Sta 668+780 E=40°25′40″ N=32°48′0.6″				
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )				
<b>Delivery Date</b>	: 05/12/2023				
<b>Reporting Date</b>	: 09/12/2023				
<b>Reporting No.</b>	: 06-5				

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# <u>Results of liquid limit and plasticity index</u> of soils according to ASTM D-4318

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

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Con	sulting En	gineering Bureau & L	aboratories
		معامل الإستشارات ال	

1. .

<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 05/12/2023
<b>Reporting Date</b>	: 09/12/2023
<b>Reporting No.</b>	: 06-5

#### Soil Classification According To Project Specs

TEST	Results (%)	Limits according Projects Specs		
•Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10).	36.1	Max 50 %		
0.425 mm (No. 40).	23.2	Max 30 %	Max 50 %	
0.075 mm (No. 200).	7.3	Max 15 %	Max 15 %	Max 15 %
Characteristics of fraction passing 0.425 mm (No.40)				
Liquid Limit				
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

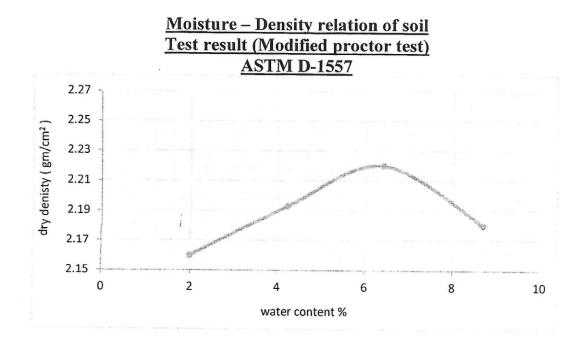
# Signature / .... A.A.

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۲ ش الملك الاعتان الزمالة – المقدرة تليمين معتقين

Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية					
<b>Company Name</b>	شركة مهندس كريم				
Project	: Electric Express Train – HSR From Qous To Armant				
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"				
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )				
<b>Delivery Date</b>	: 05/12/2023				
<b>Reporting Date</b>	: 09/12/2023				
<b>Reporting No.</b>	: 06-5				



- Max dry density (gm/cm<sup>2</sup>) : 2.22
- Optimum moisture content % : 6.4 %

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۲۰ ش المالة الأقصلي الزمالله - الداهرة الزمالله - ۱۹۲۵، ۲۷۳۱، ۲۹۴۰ ۲۷۳۱

GEL					
Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المهندسية					
<b>Company Name</b>	شركة مهندس كريم :				
Project	: Electric Express Train – HSR From Qous To Armant				
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"				
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )				
<b>Delivery Date</b>	: 05/12/2023				
<b>Reporting Date</b>	: 09/12/2023				
Reporting No.	: 06-5				

#### Test Results of California Bearing Ratio on Base Materials

**ASTM D 1883** 

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.47	
1.27	0.050	1.48	
1.91	0.075	2.49	
2.54	0.100	3.50	
3.18	0.125	4.36	
3.81	0.150	5.02	
4.45	0.175	5.53	
5.08	0.200	5.93	
6.35	0.250	6.19	

CBR Result	Stress (Mpa)		CBR %	
At 0.1 inch (2.54 mm)	St. Value	Sample results	=====	
penetration	6.90	3.50	- 50.7 %	

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of =  $2.22 \text{ (gm / cm^3)}$
- At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kg.
- 4- CBR > 10 for middle and lower embankments according project spec page No 36.

Signature / ..... Signature / ....

3 El Malek El Afdal Street Zamalek, Cairo Te & Fax: 2736723 - 27363093

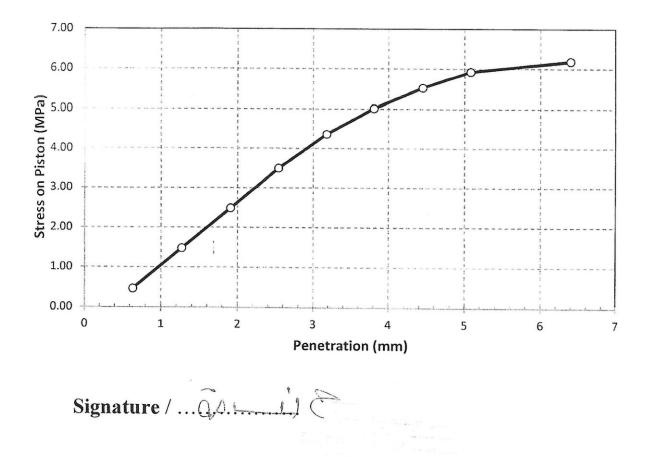


۲۵ المانه الأقصى الزمانك - الماهير: تليسي - هادي بـ ۲۲۴۱٬۲۴۱ - ۲۰۱۳٬۹۷۱

Consulting Engineering Burcau & Laboratories مكتب معامل الإستشارات المهندسية					
Company Name	شركة مهندس كريم:				
Project	: Electric Express Train – HSR From Qous To Armant				
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"				
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )				
<b>Delivery Date</b>	: 05/12/2023				
<b>Reporting Date</b>	: 09/12/2023				
<b>Reporting No.</b>	: 06-5				
	Load Penetration Curve of CBR Test				

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ASTM D-1883



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۲۰ الملك الانتشار الزمال - العاهرة تلمدين مماكن - ۲۲۰،۰۰۳۱ - ۲۰،۰۰۳۲

UNIVERSAL INSPECTION REQUEST	لنەنىدىرىتەن 🐹 🖪 С		AND THE MAN	
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Loca	tion Name	Cont	ractor Con	npany		De	signer	Compa	any	
From ST 667+780 To 668+787		El Mohandes Karim company for contracts			(	(SPECTRUM) Engineering Consulting Office				
Issued by Contractor	Name	Sign		Date		Time				
	Eng. Mohammed Mostafa	16-12-2023			10:00 AM					
Contractor UIR Reference		SG – UM -26 Revision 6								
Dession J has ED			LUD	CI C2	C3	DD	MM	YY	HH	MN
Received by ER			UIR					2023		

CODE-1 S1 to S21 Station Reference	CODE-1 D1 to S3 Depot Reference	Kp	DE-1 XXX ster point only	CODE-2 Work Activity Sub Element of Activity		
	EXPLAN/	ATION OF WORK	TO BE INSPECT	ED		
Area		Ele	ement		Item	
From ST 667+780 To 6	68+787	From ST 668+6	80 To ST 668+787	Fill Laye	er (Upper embankment -0.5)	
Inspection Description :						
and the second second second	COMPLIA	NCE EVIDENCE	Must be Included	as appropriate	and a state of the second s	
Checklist Attached Test Results Attached Calibration Attached Other as indicated						
Drawing Reference ITP Reference MS Reference					MS Reference	
Comments by: ( Brilliant )		Comments by: ( SPECTRUM ) Civil		il Comme	nts by: (SPECTRUM) QC	
up Luch JL + JI Polini pr Genard Polini Polini Comments by (SPECTROM) (CVI Comments by (SPECTROM) (CVI COmments by (SPECTROM) (CVI COmments by (SPECTROM) (CVI CVI CVI CVI CVI CVI CVI CVI CVI CVI						
F.JS	(		· JEYO	< 3°	Ŷ	

INSPECTION RESULT	Annroval Status				Please Tick if Not Attend	
Organisation	, Name	Sign	Date	Time	A-AWC-R	Not Attend
Brilliant Survey	F	Fres	17,12,23			
SPECTRUM						
GARB**		10.24 · A.		19 - Campo II.		
Employer representative						

layer depth (m) -0.5 ,å.,

Total layer width (m)

	2017	105-	101	201	201	-101	101	101			
13.80	141.732	141.768	141.848	141.928	142.008	141.928	141.848	141.8	10.40	142.508	668+780
	105	10(+	さつ	-101	202	-101	101	Tolt			
13.80	141.928	141.964	142.044	142.124	142.204	142.124	142.044	141.996	10.40	142.7	668+760
	101-	-101	とい	tool	4/01	-)01	101	101			
13.80	142.124	142.16	142.24	142.32	142.4	142.32	142.24	142.192	10.40	142.9	668+740
	1001	しい	202	4/62	-101	10.14	-102	×102			
13.80	142.32	142.36	142.44	142.52	142.60	142.52	142.44	142.39	10.40	143.10	668+720
	-101	4101	4102	-121	1014	101	-101	さい			
13.80	142.52	142.55	142.63	142.71	142.79	142.71	142.63	142.59	10.40	143.29	668+700
13.80	142.71	142.75	142.83	142.91	142.99	142.91	142.83	142.78	10.40	143.49	668+680
WIDEN	2.00%	2.00%	2.00%	2.00%		2.00%	2.00%	2.00%			Slope
	13.80	12	8	4		4	8	10.40	width		
										Level	
		<b>Right Side</b>			6		Left Side	Left		Embank.	Station
										Upper	
اسم الثابتة	Ser >	رقم الثابتة	142 10	٥ 14 4 قراءة القامة	1103	منسوب س	منسوب سطح الميزان	143, 341	منسوب ال	منسوب الطبقة 0.5-	
											10 10 10 10 10 10 10 10 10 10 10 10 10 1

استشاري المساحه التوقيح: تحمد سريح



Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية

Company Name	شرکه مهندس کریم:
Project	: Electric Express Train – HSR From Qous To Armant
Testing Date	: 17 / 12 /2023
Soil type	: Upper Embankment
Location	: ST from 668+680 To 668+787
Level	: - 0.50M
Report No.	: 128

#### <u>Compaction test by using Sand – Cone Test Method</u> <u>ASTM D- 1556</u>

		Test Hole	Bulk	Moisture	Dry	Degree of	
Test #	Station	Volume	Density	Content	Density	Compacti	Acceptance
		cm <sup>3</sup>	gm/ cm <sup>3</sup>	%	(gm/ cm <sup>3</sup> )	on (%)	
1	668+700	1458	2.24	5	2.13	95.6%	Comply
2	668+725	1356	2.23	5.3	2.12	95.0%	Comply
3	668+750	1446	2.27	5.5	2.15	96.5%	Comply
4	668+775	1452	2.22	5	2.11	94.7%	Comply
5	668+784	2179	2.29	6	2.16	96.7%	Comply

# Degree of compaction based on proctor test dated At

Max. dry density = 2.23 gm/cm<sup>3</sup>

At optimum moisture content = 6.4 %

Signature / ..... 219 991 437 3 شارع الملك الأفة

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



\* ش الملك الأفضل الزمالك – القاهرة تليفين - فاكس - ۲۷۲۱ ۲۷۲۰ ۲۷۲۰ ۲۷۲۹



<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 10/12/2023
<b>Reporting Date</b>	: 14/12/2023
<b>Reporting No.</b>	: 06-6

Dear Gentleman,

Attached here with the delivered on 10 / 12 / 2023

This sample is representative for 5.000 M<sup>3</sup>

#### Materials test

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

Signature /.....

3 Er Malek Er Afdal Street Zamalek, Gairo Ta& Fax: 2736723 - 27363093



۲ ش الماندا الافضل الزمانات القاهرة تليمون طاكس بـ ۲۲۳۱٬۰۲۹ ۲۰۱۳۰۱

	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية
<b>Company Name</b>	شركة مهندس كريم
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 10/12/2023
<b>Reporting Date</b>	: 14/12/2023
Reporting No.	: 06-6

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# **RESULTS OF SIEVE ANALYSIS According to ASTM D-422**.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	96.1
37.5	1.5	90.8
25	1	83.6
19	3/4	72.4
12.50	1/2	64.3
9.50	3/8	55.4
4.75	4	52.3
2.00	10	37.2
0.425	40	22.7

Signature /....

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3 El Malek El Afdai Street Zamalek, Gairo Tal& Fax: 2736723 - 27363093



۲۰۵۵ لەللاما ۳۰۰۰. الزريلان، الاللىرة تلىقىن «كىن»، ۲۰۰۰، مىلامە، ۲۰۰۰، ۲۰۰۰، ۲۰۰۲

	GEL				
Consulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية					
	مكتب معامل الإستسارات الهندسية				
<b>Company Name</b>	شرکة مهندس کريم :				
Project	: Electric Express Train – HSR From Qous To Armant				
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"				
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )				
<b>Delivery Date</b>	: 10/12/2023				
<b>Reporting Date</b>	: 14/12/2023				
<b>Reporting No.</b>	: 06-6				

## <u>Materials finer than 75 μm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

Test	Results (%)	
Percentage of material finer than Sieve Size 75 μM (No.200)	6.9	

Signature /.....

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ا تار الملاد <sup>(ال</sup>عمد) الزمانات الماهرة النمود - ماكس - ۱۹۳۹ ۲۰۲۶ ۲۰۲۹

	GEL
C	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات الهندسية
<b>Company Name</b>	شركة مهندس كريم:
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 10/12/2023
<b>Reporting Date</b>	: 14/12/2023
<b>Reporting No.</b>	: 06-6

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# <u>Results of liquid limit and plasticity index</u> of soils according to ASTM D-4318

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

Signature /...

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۲ تن الطان <sup>الإ</sup>لامنى . الزمالك - الناهرة الليس - قاض - ۲۲۲۱٬۲۲۱ - ۲۷۳۱٬۲۲۱



<b>Company Name</b>	شركة مهندس كريم :
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 10/12/2023
<b>Reporting Date</b>	: 14/12/2023
<b>Reporting No.</b>	: 06-6

#### Soil Classification According To Project Specs

TEST	Results (%)		nits accordi Projects Spece	U		
•Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)		
2.00 mm (No.10).	37.2	Max 50 %				
0.425 mm (No. 40).	22.7	Max 30 %	Max 50 %			
0.075 mm (No. 200).	6.9	Max 15 %	Max 15 %	Max 15 %		
Characteristics of fraction passing 0.425 mm (No.40)						
Liquid Limit						
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %		

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

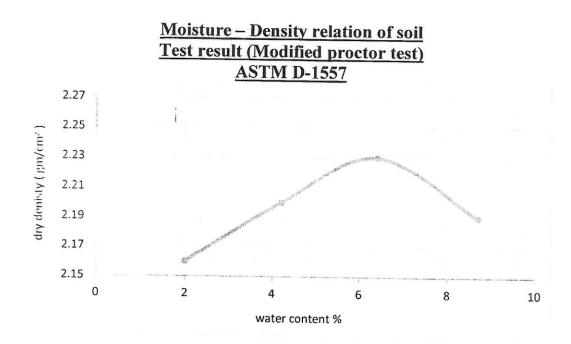
G

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



۳ ش المادة الاقتصر. الرُسَالَت - الداهرة تليمرن - ماكس - ۲۳۳۱، ۲۲۱ - ۲۹۳۱، ۲۷۳۱

C	onsulting Engineering Bureau & Laboratories مكتب معامل الإستشارات المندسية
<b>Company Name</b>	شركة مهندس كريم:
Project	: Electric Express Train – HSR From Qous To Armant
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Type of sample	: Soil Embankment ( Upper Embankment 0.0 M )
<b>Delivery Date</b>	: 10/12/2023
<b>Reporting Date</b>	: 14/12/2023
<b>Reporting No.</b>	: 06-6



- Max dry density (gm/cm<sup>2</sup>) : 2.23
- Optimum moisture content % : 6.4 %

Signature / .... Ast

3 Ei Malek Ei Afdal Street Zarnalek, Gairo Ta& Fax: 27367231 - 27369093



ا على الملاحاً الاقتلاعي الزمانات القاهرة اللمري - هاكس - الاستاراتية - الاستاراتية



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<b>Яесеі</b> чеd by ER						G	DD	MM	5053 XX	НН	NW
Contractor UIR Reference		2G - UM - 27							siv9A	9 uoi	
Contractor	Eng. Mohammed Mostafa	18-12-			5023			0:01	MA (		
y by by the second seco	ameN	Sign Date						əmiT			
-799 TS mor <del>1</del>	+780 To 668+787 El Mohandes Karim company (SPECTRUM for contracts Consult		gn∃ (N ftO gni	ineeri. Jce	ສີບ						
Locat	ameN noi	n Name Contractor Compa			бueduu			iongie	duto J.	Aue	

agranata 2 2	N I	ence.	ITP Refe	1	Drawing Reference
Other as indicated	Attached	Calibration A	Attached	Test Results.	Checklist Attached
	as appropriate	Must be Included	E EAIDENCI	COMPLIANCI	
					: noitqrised noitographic :
(Upper embankment -1)	Fill Layer	00‡+868 TS oT 081	+800 TZ morH	L8L	+800 oT 087+700 T2 mor
Item		tneme	Е		Area
	LED	C TO BE INSPEC		EXPLANATIO	a de este sex construir a sex construir este sex
Sub Element of Activity	Activity	peter point only		Depot Reference	Station Reference

Other as indicated MS Reference	Calibration Attache nce	est Results Ausched [] ITP Refere	Drawing Reference
Comments by: ( SPECTRUM ) QC	SECTRUM ) Civil	Comments by: ( SI	Comments by: ( Brilliant )
212-21)	3/ (2-3) 1.4 -12) 1.4 2) (2-3-	12(123)C 24	میه دسط، ما رو ۲۰ از باشهٔ ماروم بع ده سه یا د بازیر

Please Tick if bnonA toN	oval Status	Appr				RESULT
	Time A-AWC-R		Date	ngiz	SmeN	Organisation
			212161	in 25	2 set à	Brilliant Survey
· · · · · · · · · · · · · · · · · · ·			26/01/01		2 2 2 2 P	SPECTRUM
			5721/61	+		C∀KB**
	-					Employer representative

layer depth (m) -1

Total layer width (m)

								I			and the second s
	منسوب الطبقة 1-	منسوب	147,56		منسوب سطح الميزان	58°	قراءة القامة	رقم الثابتة 14,71 1	رقم الثابتة	é fi	اسم الثابتة
Station	Upper Embank. Level		Le	Sic		5			Right Side		
		unidet	10.84	10	5		5	10	12.00	14.13	141
Slope			%00.0	%00.0	%00.0		0.00%	0.00%	0.00%	0.00%	WIGTH
668+160	148.39	10.84	147.39	147.39	147.39	147.39	147.39	147.39	147.39	147.39	14.13
668+180	148.27	10.84	147.27	147.27	147.27	147.27	147.27	147.27	147.27	147.27	14.13
			182-	7.4	br-	107-	4	-201	57	ヤイト	
668+200	148.14	10.84	147.14	147.14	147.14	147.14	147.14	147.14	147.14	147.14	14.13
			10+	4 22	4/ 11	すい	2-	122-	t cd	AJA	
668+220	147.981	10.84	146.98	146.98	146.98	146.98	146.98	146.98	146.98	146.98	14.13
			101-	101	10-	12-	1 20)	1 cd	17-	12-	
668+240	147.81	10.84	146.81	146.81	146.81	146.81	146.81	146.81	146.81	146.81	14.13
			101-	とって	10/-	107		1222	1017	7064	
668+260	147.622	10.84	146.62	146.62	146.62	146.62	146.62	146.62	146.62	146.62	14.13
			100	1014	10-	4 02	しっし	1-6	- 201	JUL	
668+280	147.426	10.84	146.43	146.43	146.43	146.43	146.43	146.43	146.43	146.43	14.13
			101	2014	1 20)	-101	]	サイト	2014	]	
668+300	147.229	10.84	146.23	146.23	146.23	146.23	146.23	146.23	146.23	146.23	14.13
			1011	-101	-11	10 +	1017	1-201	-20	101-	
668+320	147.032	10.84	146.032	146.032	146.032	146.032	146.032	146.032	146.032	146.032	14.13
			×102	101-	101-	Lor	12-	-w	- 24	204	
668+340	146.835	10.84	145.83	145.83	145.83	145.83	145.83	145.83	145.83	145.83	14.13
			101-	1010	2014	-01		191	- w	() +	
668+360	146.639	10.84	145.64	145.64	145.64	145.64	145.64	145.64	145.64	145.64	14.13
			2012	しょうし		-101	-261	- 64	61	2012	
668+380	146.442	10.84	145.44	145.44	145.44	145.44	145.44	145.44	145.44	145.44	14.13
			12/2	-101	+ rol	A ru	ライー	トラ	Jo CT	Kort	
668+400	146.245	10.84	145.24	145.24	145.24	145.24	145.24	145.24	145.24	145.24	14.13
			イント	-10	101+	hr-	(1 +	2110	10(-	3015	

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Consulting Engineering Bureau & Laboratories میسینوا تارکشتسگا راملعه بیتکه

Report No.	: 129
ləvəJ	M L - :
Location	004+8 <b>3</b> 8 oT 091+838 mo17 TC :
Soil type	: Upper Embankment
Testing Date	: 18/15/2023
Project	: Electric Express Train – HSR From Qous To Armant
Сотралу Иате	شرکه مهندس کریم :

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

			tA beteb tes	on proctor te	action based	gmos to serp	θQ
Comply	%7.96	2.13	8.8	5.26	1486	262+899	10
Comply	% <b>†</b> '66	2.21	9	2.34	1326	082+899	6
Comply	%9'96	21.2	8.7	5.25	1452	092+899	8
Comply	%9'26	2.16	8.2	5.29	1347	072+899	L
Comply	%2.96	2.14	4.8	2.27	1327	668+320	9
Comply	%7.86	2.19	9	2.32	1490	967+899	ç
Comply	%£'96	2.14	9	5.24	1522	942+899	4
Comply	%2.96	5.15	5.3	5.26	1320	668+235	3
Comply	%£'26	2.16	8.2	5.29	1427	012+899	2
Comply	%7.96	2.13	8.2	5.26	1486	<b>981+899</b>	ł
an an ann an Air an	(%) uo	(ձա\ cա <sub>3</sub> )	%	ձա\ cա <sub>3</sub>	cm <sup>3</sup>		
Acceptance	Compacti	Density	Content	Density	∫olume	Station	# 129T
	Degree of	Dry	Moisture	Bulk	aloH isaT		

Degree of compaction based on proctor test dated At

Max. dry density =  $2.22 \text{ gm/cm}^3$ 

At optimum moisture content = 6.4 %

Signature / Signature

$$\begin{split} r & \widehat{\mathcal{L}}_{0}(\mathbf{k}_{1}) \cap \mathcal{L}_{2}(\mathbf{k}_{1}) \\ & \mathbb{I}_{c}(\mathbf{k}_{1}) \cap \mathbb{I}_{c}(\mathbf{k}_{1}) \\ & \mathbb{I}_{c}(\mathbf{k}_{1}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \\ & \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \\ & \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \\ & \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \\ & \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \\ & \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{k}) \\ & \mathbb{I}_{c}(\mathbf{k}) \cap \mathbb{I}_{c}(\mathbf{$$

ACCREDITED.

3 El Malek El Midel Street Zenalek, Cauto Te& Fax: 27367531 - 27363093



S-90: .0N	Reporting
Date :09/12/2023	Reporting
ete : 05/12/2023	Delivery D
mple $$ : Soil Embankment ( Upper Embankment 0.0 M )	se to sqyT
: Sta 668+780 E=40°25'40" N=32°48'0.6"	Location
: Electric Express Train – HSR From Qous To Arma	Project
شرکة مهندس کريم : msN	Company

Dear Gentleman,

Attached here with the delivered on 5 / 12 / 2023

This sample is representative for 5.00  $\ensuremath{\mathsf{M}}^3$ 

#### Materials test

1. Sieve analysis according to ASTM D-422.

1

• [

- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557
- 6. CBR according to ASTM D-1883

lever ign Signature /..... Signature

ACCREDITED

ช่าวกับสร้าง ระการณา กับสร้าง สถารถา เสรรร์ง มชาตายนสรรว 3 El Malek El Attal Street Sanalek, Cairo 2005 Street Stre

#" >	Basilw Lie . an
ت، اشت ۲۰ رام امه جنده	كبيب ستبطا ا
neering Bureau & Laboratories	ibug bunnsuog
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Reporting Date	£202/21/60 :
Delivery Date	£202/21/S0 :
Jype of sample	: Soil Embankment ( Upper Embankment 0.0 M )
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Project	: Electric Express Train – HSR From Qous To Armant
Company Name	شركة مهندس كريم :

73.2	40	0.425
1.95	01	00.2
0.02	4	SL*†
5.82	8/£	05.6
1.73	7/1	05.21
5.47	₹	61
8.98	I	52
2.16	S.I	5.75
<b>Z·</b> <i>L</i> 6	7	05
% gnizzr¶	əziS əvəiS (NI)	əzi8 əvəi8 (mm)

According to ASTM D-422.	SISATANA	SIEVE	OF	<b>BESULTS</b>

Signature / ...... Signature

Train the last in a part ETTE WAR 17° 6787 63977



\$67696.12 . C2296272 . X84 924\_ 3 E-Malek E-Afdal Sheet

Reporting No. : 06-5



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\$-90 ·	Reporting No.
£202/21/60 :	Reporting Date
£202/21/S0 :	Delivery Date
: Soil Embankment ( Upper Embankment 0.0 M )	Jype of sample
.: Sta 668+780 E=40°25'40" N=32°48'0.6"	Location
nsmrA oT 200 mor4 ASH – nisrT 2297qxI Sites to Arman	Project
شركة مهندس كريم :	Company Name

# <u>Materials finer than 75 um (no.200) sieve</u> <u>By washing ASTM D-1140.</u>

£.7	Percentage of material finer than Sieve Size 75 µM (No.200)
(%) Results	ţгэТ

Signature / ..... Signature

nd, water strates and states and strates



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	شركة مهندس كريم	:	ame
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Reporting No.	S-90:
Reporting Date	£202/21/60 :
Delivery Date	£202/21/50 :
Type of sample	( ${f M}$ 0.0 The main matrix of the main matrix of the main matrix of the main matrix of the matr
Location	: 219 968+780 E=40°25'40" N=32°48'0.6"
Project .	: Electric Express Train – HSR From Qous To Armant
Company Name	in 24 agitur 21 in :

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

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0	Plasticity Index
0	Plastic Limit
0	timiJ biupiJ
Results (%)	tesT

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S-90 :	Reporting No.
£202/21/60 :	Reporting Date
£202/21/S0 :	Delivery Date
: Soil Embankment ( Upper Embankment 0.0 M )	alqmss to aqyT
.: Sta 668+780 E=40°25'40" N=32°48'0.6"	Location
: Electric Express Train – HSR From Qous To Armant	Project
شرکة مهندس کريم :	Company Name

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	% 08 xeM	% 0E xBM	2.52	.(04.0 <sup>N</sup> ) mm <del>2</del> 24.0
		% 02 xBM	1.95	.(01.oV) mm 00.2
(†-7-Y)	(d-I-A)	(s-I-A)	( <b>g-I-A</b> )	noitesifiesefO quord.
Limits according Projects Specs		(%) Kesults	TEST	

The test results are (  $\Box$  Comply -  $\Box$  Not Comply ) with specifications limits

Signature / Signature / Signature

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3 El Malek El Afdal Sheet Zanalek, Cairo Te& Fax: 2736723 - 2736303

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	<b>"9°0,8†</b> a	bber Етраг 40'' N=32°	ıkment ( U 30 E=40°25	Sta 668+78 Soil Embar 05/12/2023 09/12/2023 26-5	: sample : Date : g Date :	elivery eportin
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• Max dry density ( $gm/cm^2$ ) : 2.22

• Optimum moisture content %

1

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3 El Malok El Afdal Sheet Zeihalek, Calito Ta& Fax - 2736723 - 27369093



Reporting No.	S-90 :
Reporting Date	£202/21/60 :
Delivery Date	£202/21/50 :
Jype of sample	. Soil Embankment ( Upper Embankment 0.0 M )
Location	: Sta 668+780 E=40°25'40" N=32°48'0.6"
Project	: Electric Express Train – HSR From Qous To Armant
Sompany Name	شركة مهندس كريم :

#### **E881 G MTZA** Test Results of California Bearing Ratio on Base Materials

СВВ %	Stress (Mpa)	CBK Kesnit	
61.9	052.0	55.9	
٤6.5	0.200	80.2	
5.53	SZI.0	54.45	
5.02	051.0	18.£	
4.36	0.125	81.6	
3.50	0.100	2.54	
5,49	S70.0	16.1	
1.48	050.0	1.27	
Lt.0	0.025	79.0	
(ndr.r) monard manager	цэиІ	աա	
stress on piston (Mpa)	penetration		

:SOLON penetration

1- Attached graph shows penetration resistance versus penetration magnitude.

3.50

Sample results

2- The sample was compacted to dry density of =  $2.22 (gm/cm^3)$ 

At = 6.4 % optimum water content.

3- Surcharge load 4.50 Kg.

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

06.9

St. Value

Signature / Signatures

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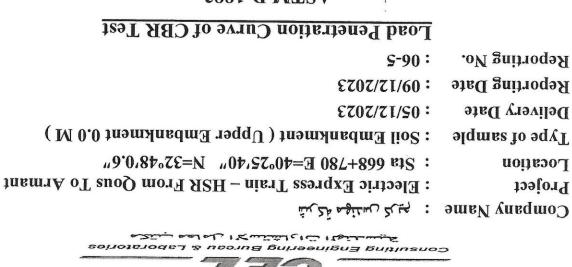


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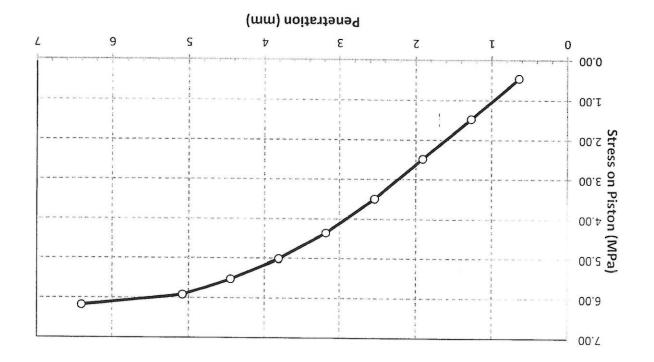
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(mm 42.2) doni 1.0 1A



# **E881-Q MTZA**





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REQUEST
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درغة البياد رسيسا الرب الدين ريايك البيان

CODE-3 Sub Element of Activity					Activity	KU XXX			Kp	Depot Reference D1 to 53 CODE-1	CODE-1 S1 to S21 CODE-1
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						t - NSM – ĐS				Contractor UIR Reference	
MA 00:01				<b>EO-8</b> 0	Eng. Mohammed Creace 2023-0 2023-0			Issued by Contractor			
əmiT				Sign Date		AmeN					
(SPECTRUM) Engineering Consulting Office					El Mohandes Karim company for contracts			787+899 TS oT 08	7+7 <b>8</b> 5 TS mo1 <del>1</del>		
Designer Company				Contractor Company			Contra	Location Name			
	and the	Carlos Carlos		See.		sinol				t <b>oN muminiN - NOITA</b> i not vbeat and ready for i	

		: nopection Description :
قيفلشكتسا تلسج نلخا	614 From ST 667+780 To ST 668+160	787+899 TS oT 087+789 TS mon-
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ed	Checklist Attached
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2/12-2/2	و لما عرد بعدا المعنا الم	
Comments by: ( SPECTRUM ) QC	Comments by: ( SPECTRUM ) Civil	Comments by: ( Brilliant )

						Employer representative
				1	,	**8ЯАӘ
			C2/81h	17	Bro ar	SPECTRUM
					-	Brilliant Survey
MOL MICHIN	A-AWC-R	əmiT	Date	ngi2	əmsN	Organisation
Please Tick if Not Attend	eval Status	Appr				



Reporting No.	10:	
Reporting Date :	£202/8/41:	
Delivery Date	£202/8/01:	
: slqmss to sqyT	: Original Earth	
Location :	( 0\$6+299 )\$8 :	001+800 оТ 087+700 morA : эпоХ
Project :	: Electric Express	tnamrA oT 200 mor7 ASH – niarT
Company Name	شركة المهندس كريم :	

Dear Gentleman,

Attached here with the delivered on 10 / 8 / 2023

This sample is representative for 5.000  $M^3$ 

# Materials test

- 1. Sieve analysis according to ASTM D-422.
- 2. Material finer than sieve No. 200 according to ASTM D-1140.
- 3. Liquid limits and plasticity index of soil according to ASTM D-4318.
- 4. Soil classification according to Project Specs.
- 5. Proctor Test according to ASTM D-1557

6. CBR according to ASTM D-1883

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Company Name : جیے کی سناؤ مال آخریک Project : Electric Express Train – HSR From Qous To Armant Type of sample : St( 667+950 ) Zone : From 667+780 To 668+160 Type of sample : Original Earth Delivery Date : 10/8/2023 Reporting Date : 14/8/2023 Reporting No. : 01 Reporting No. : 01

## RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

9.7	40	0.425
<i>L</i> .81	01	00.2
1.15	4	52.4
9.24	8/E	05.6
8.22	У,	05.21
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1.47	I	57
7.28	S.I	5.75
I'S6	Z	05
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: 14/8/2023	Reporting Date
£202/8/01 :	Delivery Date
: Original Earth	oldmas to oqyT
• St( 667+930 ) Zone : From 667+780 To 668+160	Location
: Electric Express Train – HSR From Qous To Armant	Project
شركة المهندس كريم :	Sompany Name

# <u>Materials finer than 75 µm (no.200) sieve</u> <u>By washing ASTM D-1140</u>.

8.2	nadt 19nîî laiterîal fîner than Sieve Size 75 µM (No.200)
Results (%)	Test

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Reporting No. : 01



10:	Reporting No.
: 14/8/2023	Reporting Date
£202/8/01 :	Delivery Date
: Original Earth	oldmas to oqyT
St(667+950) Zone: From 667+780 To 668+160	Location
: Electric Express Train – HSR From Qous To Armant	Project
: ميلا منافعها قرح بش	Company Name

# <u>8164-U MTSA of gnibrosse elios fo</u> <u>Results of liquid limit and plasticity index</u>

0	rsbnI yticity Index
0	Plastic Limit
0	timiJ biupiJ
(%) Kesults	теst

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: 14/8/2023	Reporting Date
£20238/01:	Delivery Date
driginal Earth	Type of sample
.St( 667+950 ) Zone : From 667+780 To 668+160	Location
: Electric Express Train – HSR From Qous To Armant	Project
شركة المغنوس كريم :	Company Name

Soil Classification According To Project Specs :

10:

Reporting No.

the second se				
% 01 xeM	% д хвМ	% d xrM	0	Plasticity index
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		(0 <del>7</del> .0N) n	ım 224.0 gnizzec	Characteristics of fraction I
% 21 xBM	% 21 xBM	% 21 xbM	8.2	.(002 .oV) mm č70.0
	% 08 xBM	% 0E xbM	9.7	.(04.0N) mm č24.0
		% 02 xBM	L.81	.(01.oV) mm 00.2
(†-Z-Y)	(d-I-A)	(B-I-A)	( <b>s-I-</b> A)	Group Classification
	ibrocors stin 20992 stocior		Results (%)	TEST

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

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Ta& Fax 27367231 - 27363093 Canalex, Cairo. 3 El Malek El Afdal Street

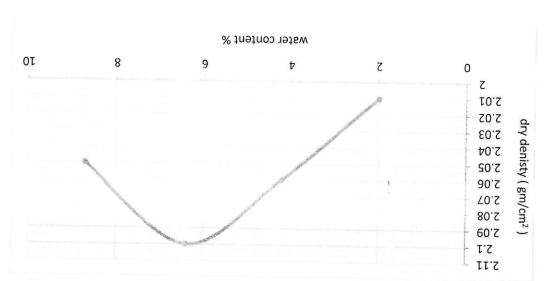
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	10:	Reporting No.
	: 14/8/2023	Reporting Date
	£202/8/01:	Delivery Date
	: Original Earth	alqmss to aqvT
Zone : From 667+780 To 668+160	( 0\$6+ <b>/99 )</b> \$S :	Location
tnemrA oT euoQ mor7 A2H – nierT e	: Electric Express	Project
	شركة المهندس كريم :	Company Name

# <u>Moisture – Density relation of soil</u> <u>Test result (Modified proctor test)</u> <u>ASTM D-1557</u>



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- Max dry density (gm/cm<sup>2</sup>) . 2.10
- Optimum moisture content % : 6.4 %

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Delivery Date	£202/8/01 :	
alqmss to aqvT	: Original Earth	
Location	( 0 <b>56+</b> /99 ) <b>1</b> S :	001+800 oT 087+700 morA : 9noS
Project	: Electric Express	tnam1A oT 2000 MorA Armant
Company Name	شركة المهندس كريم:	
	کیپنے انجا ا	، اشتندی۲ ز به اعد بیتکه

# Test Results of California Bearing Ratio on Base Materials

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LOOL				
000 F	-			
<b>E881</b>	u			

% 1.05	Sample results 2.08	St. Value St. Value	(mm <del>1</del> .2.54 mm) At 0.1 inch (2.54 mm) penetration
СВВ %	(kqM) ees	цS	CBK Kesult
62.2	10 m m m m m m m m m m m m m m m m m m m	052.0	55.9
3.04		0.200	80.2
66.2		S71.0	54.45
62.2		051.0	18.6
5.48		0.125	3.18
2.08		0.100	5.54
1.52		S70.0	16.1
\$6°0		050.0	1.27
6.33		0.025	0.64
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(sqM) notsiq no sea	Stre	noiterte	bend

<u>sətoN</u>

Reporting No.

10:

Reporting Date : 14/8/2023

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- At = 6.4 % optimum water content. 2- The sample was compacted to dry density of = 2.10 (gm/s)
- 3- Surcharge load 4.50 Kg.
- 4- CBR > 10 for middle and lower embankments according project spec page No 36.

Signature / .... 0

198 Fax: 2736723 - 27363433 Zanalek, Gaino. 3 El Malek El Atali Street



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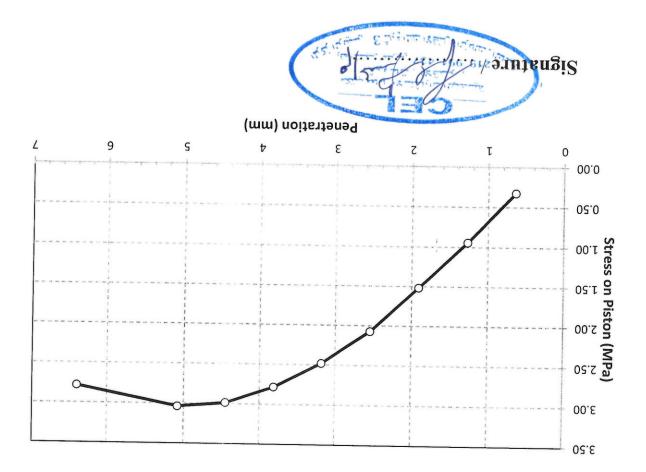


Zone : From 667+780 To 668+160

: Electric Express Train – HSR From Qous To Armant

Load Penetration Curve of CBR Test

E881-U MTRA



3 El Malek El Attal Street Zamalek, Cauto Te& Fax: 27367231 - 27363093

Reporting No.

Reporting Date

Delivery Date

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Location

Project

10:

: 14/8/2023

£202/8/01:

: Original Earth

(0\$6+299)**1**S:

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Depot Reference D1 to 53 CODE-1	χ d χ	XXX		CODE-2 Work Activity			CODE-3 Sub Element of Activity			
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787+899 oT 087+799 TS mor					S)	SPECTRUM) Enginee Sonsulting Office				
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	PT80 To 668+787 Name Mostafa Mostafa Mostafa	F1 80 To 668+787 F780 To 668+787 Mame Mostafa Mostafa Mostafa F1 Mol CODE-1 COT CODE-1 COT COT COT COT COT COT COT COT	PT 668+787 PT 80 To 668+787 COPE-1 Mostafa Mostafa SG – WSN - 3 SG – SG – 3 SG – 3 S	PT80 To 668+787     El Mohandes Karim       Name     5ign     Date       Mostafa     SG – WSN - 3       Mostafa     SG – WSN - 3	PT80 To 668+787     El Mohandes Karim       Mostafa     SG – WSN - 3       Mostafa     SG – WSN - 3	PT 80 To 668+787     El Mohandes Karim CODE-1     CODE-2       Mostafa     SG – WSN - 3       Mostafa     SG – WSN - 3       Mostafa     Date	PT 10 53     Kp XXX     Modé Achily       CODE-1     CODE-1     CODE-2       Mostafa     SG – WSN - 3     2023-08-08       Mostafa     SG – WSN - 3     2023-08-08	PT80 To 668+787     El Mohandes Karim     CODE-2     DD     MM       Mostafa     'company for contracts     2023-08-08       Mostafa     'company for contracts     Cone-1	PT/80 To 668+787     El Mohandes Karim CODE-1     CODE-2     CODE-2     CODE-2       Mostafa     'Leng. Mohandes Karim Mostafa     2023-08-08     10:00       Mostafa     'Leng. Mohandes Karim Mostafa     2023-08-08     10:00	Image: Sign company for contracts     CODE-2     CODE-3       Image: Sign company for contracts     CODE-2     2023       Image: Sign company for contracts     2023-08-08     10:00 AM       Image: Sign company for contracts     2023-08-08     10:00 AM

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MS Reference		ITP Reference	Checklist Attached  Drawing Reference
Other as indicated	Calibration Attached	Test Results Attached	

7 Comments by: (SPECTRUM) QC Comments by: ( SPECTRUM ) Civil Comments by: ( Brilliant )

Please Tick if	oval Status	Appr			The second second	NSPECTION RESULT
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		30	8-8-20	84	Dorogist	Brilliant Survey
			201816	1 C	Sum	SPECTRUM
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						Employer representative



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Company : Magmod

2:1:

Project: Electric Express Train - Sector (5) - Qous to Arment.Subject: Determine the deformation and strength characteristics of soil by theplate loading test according specifications DIN 18134:2012-04 and project requirementsTest Location: Station (667+780 to 667+980)Test Location: 08/08/2023Test Date: 08/08/2023Test Date: 09/08/2023

Dear Gentleman,

.oN hoq9A

According to the above mentioned subject the test performed as follows:-

- Apparatus 1. Loading plates consists of two plates with 300 mm and 300 mm diameter
- The thickness of plates 30 mm
- Dial gauges with accuracy 0.01 mm to measuring the settlement
- 4. Steel straightedges with magnetic supports to fixed the dial gauges
- 5. Hydraulic jack with pump to transfer reactive loads to the loading plates
- 6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
- 7. Reaction loading system by roller compactor with weight approximately 15 ton.
- 8. Calibration certificates are attached.

#### Test Procedure:

- 1. Clean the ground on test area to the required level with undisturbed soil
- 2. Install loading plates 300 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
- 3. Prior to starting the test applied preloading about 30 seconds.
- 4. The strain gauge and the dial gauge shall be set to zero
- 5. For a 300 mm loading plate, the limit values are 5.0 kg/cm^2  $\,$
- 6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
- Each change in load (from stage to stage) shall be completed within one minute
- 8. The load shall be released in 3 stages, to 50 % , 25 %, and approximately 2 % of the maximum load.

9.Following unloading, a further (2<sup>nd</sup>) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).

10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.

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# Consulting Engineering Bureau & Laboratories

هیسانها تارشتسها راماهم بنتده

ولبقاا هجهاا تالفظاعه تادوبشه

### Report

- 1. Evaluation and representation of results.
- Load Settlement curve.
- The test report content the following:-
- location of test site Dimension of loading plate.
- Measuring device used Type of soil.
- Type of Bedding material below the plate -Weathering condition.
- Time and date of measurements Unusual observation made during test .
- Dial gauge reading and corresponding normal stress Loading-settlement curve.
   Description of the soil condition below the plate after testing.

## Report

- Type of soil : Original earth
- Job requirement : Ev2 > 40 MPa

Descriptions	məji
Natural Soil	<ul> <li>Type of bedding material below the plate</li> </ul>
300	- Plate Diameter (mm)
08/08/2023	aate of measurement
ON	Unusual observation made during test
No deformation	- Description of the soil conditions below the plate after testing

### Evaluation and representation of results

	T			CEL	A REAL PROPERTY OF	
S1.1	6.631	6.941	076+299	086+299	088+299	5
10.1	1.941	0.741	028+768	088+299	082+299	L
oiteЯ	Ev2 (MPa)	(69M) (VPa)	Housees	oT	From	.oN
EV2 EV1	Second Cycle	First Cycle	Location	uor	Isi2	Test







ولبقاا هجهاات الوجه القبلي هیسدنها تاراشتسیا راماعه بتده Consulting Engineering Bureau & Laboratories

ets Date Project Company Name

.oN fest No.

Location

report date

: Electric Express Train - Sector (5) – Qous to Arment. llagiren 24 :

: 08/08/2023

: 09/08/2023

10: ( 058+788 ) noits : Station ( 667+820 )

Nonrepetitive Static Plate Load Tests of Soils

### DIN 18134

	kg/cm2		աա	2 Isid		Average
pribso.	Stress	I IBIG	Inamalija2	C Isiu	3nemelt1e2	
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9	9.00	ST'GT	98.0	£1.91	78.0	98.0
<u> </u>	4:4	75.61	89.0	£2.01	12.0	67.0
9 17	3:33	£4.61	29'0	29.43	29.0	78.0
3	5.50	SS'6T	97.0	05'6T	09.0	84.0
	99.L	\$9'6I	9:32	89.0I	0.32	0.34
5	0.83	88.01	21.0	08.91	0.20	91.0
<u> </u>	00.0	00.02	00.0	20.00	00.0	00.00
0	Kg/cm2	0000			աա	
	Kalomy	r leid		S leid	Settlement	Average
Guibeol	Stress		Settlement		tromolitio2	

# 001.0

1.25

2.50

Kg/cm2

3

2

L

	Settlement	Settlement Diet 2 Settlement			Stage (2) Stress	guibsol
Average	<u> </u>	S Isid	աա	L IBIO	қа/сшұ	
06 0	0 85	80.61	28.0	8161	8.0	0
80.1	01.1	06.81	1.05	56'8T	99.1	L
91.1	21.1	£8.81	91.1	58'8I	5.50	5
1.32	1.29	17.81	1.36	59'8I	3.33	3
1 40	1.35	59.81	54.r	SS'81	71.4	Þ

SP'L

92.0

87.0

28.0

աա

SS'81 217

52'6T

19.22

81'6T

59'8T

19.22

81.01

21.91



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1.40

22.0

08.0

\$8.0

Average

1.35

87.0

28.0

98.0

աա



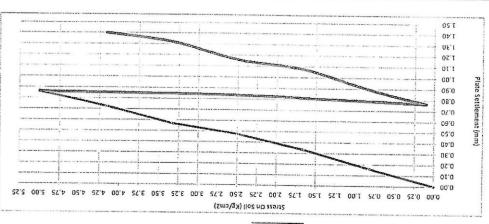
теl.& Тах.: 27367231 - 27363093 Zamalek, Cairo. 3 El Malek El Afdal Street



ولبقاا هج وات الفظات الوجه القبلي میسینها تارلشتس ۲۱ ماهم بتکه

10: .oN 129T ( 058+766 ) nothers : Location : 09/08/2023 eport date · 08/08/5053 Date Date : Electric Express Train - Sector (5) - Qous to Arment. Project : بسبال دسه فرسا Company Name

#### DIN 18134 Nonrepetitive Static Plate Load Tests of Soils



77.0	08.0	\$8.0	98.0	(mm) tramelitied
01.0	1.250	5.50	5.00	Stress (Kg/cm2)
12	\$84	9921	2533	Stage(Kg)
t	3	Z	L	(t) gnibsoJnU

		04.1	1.32	91.1	80.f	06.0	27.0	Settlement (mm)
		21.4	3.33	5.50	99.1	£8.0	01.0	Stress (Kg/cm2)
		1.9462	3352.6	1766.3	8.2711	566.395	0	(6X)sgata
Ev2/Ev1 = 1.01		G	4	3	Z	1	0	(2) Buipeon
	<b>P</b>		·		0.741		24)(DA	*0*27.0) = (69M) 1v3
	0:30	= SV	09.0	=(ww)zs	05.0	=(mm) 12		D (mm) = 300
[ /	<b></b>							
Settlement (mm)	98.0	67.0	78.0	84.0	0.34	91.0	00.00	(mm) triamelita2
Stress (Kg/cm2)	5.00	11.1	3.33	5.50	99°L	68.0	00.0	Stress (Kg/cm2)
Stage(Kg)	3532.5	1.946.1	3352.6	1766.3	8.2711	989	0	(6X)9pet2

1.951

۴0.1

.evt = Modulus of deformation during the loading stage.

SA1(04'0'27.0)

300

Ev2 = Modulus of deformation during the Relocating stage.

D = Plate diameter (mm)

= (c9M) Sv3

= (mm) d

(similar the difference between 0.3 and 0.7 from the multimum loading (kg/cm<sup>2</sup>)  $\approx 10^{-2}$ 

(mm) pribeol mumixem and most 5.0 bus 5.0 of pribrogrammers stremelities in something = 20

=(uuu) LS



02.0

= SV

1.34

=(uuu)2S

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Теl.& Fax : 27367231 - 273693 Zamalek, Cairo. 3 El Malek El Afdal Street



ولبقاا هج وات الفظات الوجه القبلى ميسئنها تارلشتسكا راماعه بتكه Consulting Engineering Bureau & Laboratories

llatie 2 cene :

: Electric Express Train - Sector (5) – Qous to Arment.

ets Date

: 09/08/2023 : 08/08/2023

: 05

(026+788) noitet2:

.oN fest No. Location

report date

Company Name

Project

Vonrepetitive Static Plate Load Tests of Soils

#### DIN 18134

obelony	Settlement		3nement	L Isid	Stress	gnibso.
Average	աա	2 Isid	աա	L IDIG	Kg/cm2	
00.0	0.00	20.00	0.00	20.00	00.0	0
0.21	0.22	87.01	0.20	08.CI	6.83	Ļ
0.33	0.34	99°6T	0.32	89.61	99.1	5
0.48	67'0	12.01	84.0	19.52	5.50	3
69'0	0.62	85.01	0.55	S\$'61	3.33	4
02.0	17.0	65.91	89.0	75'35	4.17	g
08.0	08.0	07.51	62.0	12.21	00.8	9

	Settlement	010	<b>Jnemeltte</b> R	P Più	Stress	nuihen l
Average	<u></u>	2 Ibid	աա	r Isid	Kg/cm2	бигреол
92.0	0.75	52.91	92.0	19.24	5.50	ł
6.73	0.72	82.91	0.73	75.21	1.25	5
02.0	01.0	05.01	69.0	19.31	0.100	3

#### (2) apert Dribso (2)

	Settlement	00	Jnemeltte2	L leid	Stress	gnibso
Average	աա	2 leid	աա	1 IBIO	Kg/cm2	
18.0	28.0	81.01	08.0	02.01	58.0	0
96.0	96'0	S0.61	26'0	£0.01	99.1	L
01.1	01.1	06.81	01.1	06.81	2.50	5
81.1	21.1	£8.81	61.1	18.81	3.33	3
1.28	1,23	77.81	1.33	18.67	71.4	4



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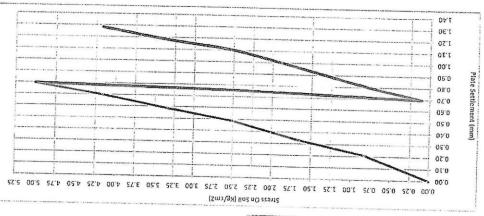
Теі.& Гах : 27367231 - 27363093 Zamalek, Cairo. 3 El Malek El Afdal Street



ريلبقاا هجهاا تالففاهم تادى شه ميسدنها تارلشتسها راماعه بتحه

: 05 .ON ISOT ( 026+/99 ) uolieis : Location : 09/08/2023 report date : 08/08/5053 etsO taeT : Electric Express Train - Sector (5) - Qous to Armont. Project : بالمعالم المعالم الم Company Name

#### DIN 18134 Nonrepetitive Static Plate Load Tests of Soils



G

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3

Þ	3	Z	L	(1) EnibsolaU
12	\$84	9971	3233	Stage(Kg)
01.0	1.250	2'20	5.00	Stress (Kg/cm2)
02.0	6.73	92.0	08.0	(mm) tromolities

	8S.1	81.1	01.1	96.0	18.0	02.0	(mm) tnamaltta
	11.4	3.33	5.50	1.66	68.0	01.0	(Kg/cm2)
	1.846S	2352.6	1766.3	1172.8	565.385	0	Stage(Kg)
	9	4	3	5	F	0	(Z) fuipeog
0.30				6.941	in the second	SV/LOV.	(MPa) = (675) TV
	= SV	19.0	=(ww)zs	10.0	-(upu) Le	Address of the local division of the local d	
000	= \$7	19.0	=(mm)\$2	15.0	=(mm) 12		00E = (mm) (
08.0	= <b>S</b> V	0.61	31.0 52(mm)=	0.33	12.0 =(mm) 12	00.0	00E = (mm) (
					لــــــــــــــــــــــــــــــــــــ	00.0	) (mm) = 300 300 = 300
08.0	02.0	69.0	34.0	0.33	0.21		) (ພາມ) = 300

Z

Ļ

0

163.9

26.0

Ev2/Ev1 = 1.12

Ev1 = Modulus of deformation during the loading stage.

SA(04.0.21.0)

300

Ev2 = Modulus of deformation during the Reloading stage.

(mm) notomeib otel9 = 0

= (e 9M) Sv3

= (um) a

(1) pribsol

 $(^{s}molga)$  (xems) polibeol mumixem all most 7.0 bnc 6.0 naewted soneattib witt = s0

=(mm) 12

(mm) guibeot menixem off most T.0 has E.0 of gnibnoteonos stromolities at occurs DG = 2G



72.0

9

= SA

1.20

=(ww)zs

moo.jqyg9-l90.www ।থি। এয়া - । শ্রেক্ট الغفالا العلاما الثانية الم



телекта стала в 27367231 - 273693 Zamalek, Cairo. 3 El Malek El Afdal Street

UNIVERSAL INSPECTION REQUEST	ميندن لزيم المتعلَّج في والمقاولات الملهُ		BC		SPECTRUM	الإنكاق	الهيئة القومية النهائة والفرار	والقبارى وا	ورارة النقل فلينة المامة للطرق		pass jabas press Train SHAKER	
<b>RECEIPT of NOTIFI</b> The Work describe						iown						
Location M	Location Name Contractor Company							D	esigner Comp	bany		
From St 667+7 668+78		EL Moha	andes Karin	n compan	y for contracts		(SPECTR	UM) E	ngineering	ngineering Consulting Office		
Issued by	Nan	Name Sign					Date			Time		
Contractor	Mohamed	hamed Mostafa Ceeps			, it	<b>25/9/2023</b>			10:00 AM			
Contractor UIR Reference				SG-WSN-	9 (	Revision6						
Received by ER				UIR	C1 C2 kp EW	C3 QS	DD	MM	YY	нн	ММ	
S1 to S2	S1 to S21 D1 to S3 Kp				CODE-1 Kp XXX ometer point only		CODE-2 Work Activity		Su	CODE-3 b Element of Act	tivity	
				EXPLANAT	ION OF WORK TO	and the second se	CTED					
	Area				Elen	ient				Item		
From S	t 667+787 1	o St 668-	F787	Fro	m St 668+160	To S	t 668+42	0	(	فات ( بعد الازالة	مخل	
Inspection Descr	iption :											

ł,

INSPECTION DETAILS THE FOROWING WIR DE	e ready at the Planned Inspection Time		
Planned Inspection Date	Planned Inspection Time		

Checklist Attached "	Test Results Attached "	Calibration Attached"	Other as indicated"		
Drawing Reference	ITP Reference		MS Reference		

Comments by: ( Brilliant )	Comments by: ( SPECTRUM ) Civil	Comments by: ( SPECTRUM ) QC
VL de Male 2 - moline	Elesser energe ( al 3	
م الست من عاد المرج لل عام للعقاع عردمانة من متالعية	مدا متحال ا محاد فرحال	
163 16.	galares sup / 50	

INSPECTION RESUL	T		Approval Status	Please Tick if		
Organisation	Name	Sign	Date	Time	A-AWC-R	Not Attend
Brilliant Survey	Book	A P	> 11-00-2	023		
SPECTRUM	action		12/10/	22		
GARB**						
Employer representative						

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	الوصف
1	2840586.551	480428.363	142.547	SH	ارض طبيعية
2	2840607.195	480453.446	142.915	SH	ارض طبيعية
3	2840595.857	480442.472	142.599	SH	ارض طبيعية
4	2840603.867	480449.142	142.892	SH	ارض طبيعية
5	2840609.059	480450.744	142.747	SH	ارض طبيعية
6	2840547.169	480397.494	139.685	SH	ارض طبيعية
7	2840612.188	480446.239	142.64	SH	ارض طبيعية
8	2840572.087	480413.59	141.768	SH	ارض طبيعية
9	2840615.813	480460.294	142.673	SH	ارض طبيعية
10	2840623.061	480450.559	142.857	SH	ارض طبيعية
11	2840496.284	480352.785	138.824	SH	ارض طبيعية
12	2840626.845	480443.202	142.471	SH	ارض طبيعية
13	2840612.08	480457.756	142.532	SH	ارض طبيعية
14	2840616.171	480446.845	142.589	SH	ارض طبيعية
15	2840599.436	480438.153	142.472	SH	ارض طبيعية
16	2840576.155	480426.368	142.354	SH	ارض طبيعية
17	2840578.142	480424.603	142.274	SH	ارض طبيعية
18	2840580.462	480421.754	142.191	SH	ارض طبيعية
19	2840569.478	480421.939	141.822	SH	ارض طبيعية
20	2840571.803	480419.125	141.903	SH	رض طبيعية
21	2840574.041	480416.43	141.822	SH	رض طبيعية
22	2840559.667	480415.4	140.941	SH	ارض طبيعية
23	2840561.61	480413.194	141.081	SH	ارض طبيعية
24	2840564.215	480410.094	141.154	SH	ارض طبيعية
25	2840546.723	480400.301	139.84	SH	رض طبيعية
26	2840570.838	480421.071	140.396	SH	رض طبيعية
27	2840548.989	480397.77	139.558	SH	رض طبيعية
28	2840538.03	480391.782	139.614	SH	رض طبيعية
29	2840540.239	480389.179	139.284	SH	رض طبيعية
30	2840526.901	480383.931	139.558	SH	رض طبيعية
31	2840529.055	480381.592	139.405	SH	رض طبيعية
32	2840514.363	480375.806	139.576	SH	رض طبيعية
33	2840517.452	480372.21	139.31	SH	رض طبيعية
34	2840503.128	480368.141	139.55	SH	رض طبيعية
35	2840506.805	480364.9	139.184	SH	رض طبيعية
36	2840495.218	480359.094	138.954	SH	رض طبيعية
37	2840497.837	480357.103	138.942	SH	رض طبيعية
38	2840485.687	480349.613	138.753	SH	رض طبيعية
39	2840489.701	480345.442	138.61	SH	رض طبيعية
40	2840472.51	480333.778	138.536	SH	رض طبيعية
41	2840476.375	480329.831	138.167	SH	رض طبيعية
42	2840456.841	480320.62	137.992	SH	رض طبيعية
43	2840460.803	480316.838	137.741	SH	رض طبيعية
44	2840447.929	480311.184	137.876	SH	رض طبيعية
45	2840451.5	480307.431	137.588	SH	رض طبيعية
46	2840439.516	480300.906	137.783	SH	رض طبيعية

برليانة كونسة لإستشراق الهندسية HSR- Blue Line - sec.05 إستشارى الأعدال الساحية بالقطاع

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	الوصف
47	2840443.591	480296.747	137.353	SH	رض طبيعية
48	2840429.205	480290.307	137.85	SH	رض طبيعية
49	2840433.309	480286.84	137.51	SH	رض طبيعية
50	2840439.486	480281.482	137.353	SH	رض طبيعية
51	2840589.243	480429.906	142.569	SH	رض طبيعية
52	2840438.583	480278.917	137.544	SH	رض طبيعية
53	2840586.025	480417.305	142.26	SH	رض طبيعية
54	2840588.131	480421.128	142.411	SH	رض طبيعية
55	2840587.726	480422.001	142.417	SH	رض طبيعية
56	2840586.848	480424.959	142.475	SH	رض طبيعية
57	2840578.867	480421.532	142.256	SH	رض طبيعية
58	2840578.622	480422.672	142.312	SH	ض طبيعية
59	2840576.59	480422.76	142.277	SH	ض طبيعية
60	2840577.8	480426.557	142.475	SH	رض طبيعية
61	2840582.749	480432.305	142.682	SH	ض طبيعية
62	2840584.77	480428.988	142.549	SH	ض طبيعية
63	2840619.527	480464.292	142.62	SH	ض طبيعية
64	2840617.3	480465.866	142.61	SH	ض طبيعية
65	2840601.896	480451.703	142.89	SH	ض طبيعية
66	2840594.026	480444.475	142.6	SH	ض طبيعية
67	2840580.614	480434.859	142.68	SH	ض طبيعية
68	2840567.752	480423.747	141.82	SH	ض طبيعية
69	2840557.671	480416.345	140.94	SH	ض طبيعية
70	2840543.823	480402.376	139.84	SH	ض طبيعية
71	2840535.317	480394.704	139.61	SH	ض طبيعية
72	2840525.171	480385.97	139.56	SH	ض طبيعية
73	2840513.125	480376.897	139.58	SH	ض طبيعية
74	2840501.571	480369.892	139.55	SH	ض طبيعية
75	2840500.82	480370.846	139.55	SH	ض طبيعية
76	2840483.344	480351.215	138.75	SH	ض طبيعية
77	2840469.84	480336.313	138.54	SH	ض طبيعية
78	2840454.621	480323.042	137.99	SH	ض طبيعية
79	2840445.452	480313.618	137.88	SH	ض طبيعية
80	2840436.728	480303.444	137.78	SH	ض طبيعية
81	2840427.069	480291.272	137.85	SH	ض طبيعية
82	2840633.856	480445.541	144.737	SH	ض طبيعية
83	2840639.301	480440.169	144.558	SH	ض طبيعية
84	2840645.424	480435.213	144.862	SH	ض طبيعية
85	2840650.526	480430.048	142.431	SH	ض طبيعية
86	2840644.555	480421.942	141.787	SH	ين طبيعية
87	2840635.705	480429.442	141.844	SH	ض طبيعية
88	2840629.345	480434.992	142.101	SH	ض طبيعية ض طبيعية
89	2840624.26	480439.687	142.387	SH	<u>ص طبيعية</u>
90	2840618.966	480432.615	142.105	SH	يص طبيعية رض طبيعية
91	2840628.34	480425.602	141.929	SH	يص طبيعية
92	2840633.832	480414.85	141.995	SH	رض طبيعية



POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	الوصف
93	2840627.406	480398.684	143.216	SH	ارض طبيعية
94	2840617.404	480404.086	141.791	SH	ارض طبيعية
95	2840607.791	480412.412	142.024	SH	ارض طبيعية
96	2840599.627	480420.999	142.424	SH	ارض طبيعية
97	2840588.585	480412.33	142.041	SH	ارض طبيعية
98	2840595.644	480404.407	142.1	SH	ارض طبيعية
99	2840605.68	480395.614	141.935	SH	ارض طبيعية
100	2840614.035	480387.839	143.112	SH	ارض طبيعية
101	2840608.764	480374.607	143.663	SH	رض طبيعية
102	2840599.849	480383.702	142.189	SH	رض طبيعية
103	2840589.401	480393.07	141.719	SH	رض طبيعية
104	2840579.983	480398.02	140.047	SH	رض طبيعية
105	2840570.094	480405.753	141.209	SH	رض طبيعية
106	2840563.697	480398.856	139.612	SH	رض طبيعية
107	2840570.084	480391.453	139.042	SH	رض طبيعية
108	2840578.79	480384.896	140.302	SH	رض طبيعية
109	2840586.419	480376.326	140.829	SH	رض طبيعية
110	2840593.166	480367.664	141.56	SH	رض طبيعية
111	2840600.029	480359.756	141.56	SH	ض طبيعية
112	2840584.125	480355.478	141.502	SH	ض طبيعية
113	2840577.919	480360.525	141.881	SH	ض طبيعية
114	2840573.546	480364.906	139.308	SH	ض طبيعية
115	2840565.263	480369.667	138.926	SH	ض طبيعية
116	2840557.438	480378.137	138.925	SH	ض طبيعية
117	2840549.861	480386.037	139.123	SH	ض طبيعية
118	2840534,966	480380.856	139.161	SH	ض طبيعية
119	2840540.815	480373.968	138.924	SH	ض طبيعية
120	2840549.541	480365.008	138.861	SH	ض طبيعية
120	2840556.963	480357.714	139.806	SH	ض طبيعية
122	2840564.212	480350.961	140.931	SH	ض طبيعية
122	2840566.595	480347.797	143.308	SH	ض طبيعية
123	2840561.755	480342.858	143.55	SH	ض طبيعية
125	2840556.753	480345.963	141.168	SH	بن طبيعية
125	2840545.676	480353.7	138.994	SH	ض طبيعية <u>ب</u>
120	2840545.070	480361.396	138.776	SH	ض طبيعية
127	2840525.295	480369.03	139.125	SH	ض طبيعية
128	2840512.686	480357.092	138.975	SH	ض طبيعية
129	2840512.080	480357.092	138.694	SH	ص طبيعية ض طبيعية
			138.63	SH	
131	2840530.103	480345.564		SH	ض طبيعية ض طبيعية
132	2840538.271	480342.467	139.179	SH SH	ض طبيعية ض طبيعية
133	2840540.615	480334.006	140.796		ض طبيعية ض طبيعية
134	2840545.646	480327.851	142.183	SH	ض طبيعية   ذر مارجة
135	2840568.012	480341.103	144.628	SH	ض طبيعية من ما يو قر
136	2840532.463	480317.223	141.803	SH	ض طبيعية
137	2840524.062	480325.7	139.146	SH	ض طبيعية
138	2840515.703	480335.869	138.78	SH	ض طبيعية

2023-09-25 بتاريخ 668+420 الي 668+420 بتاريخ 25-20-20 بر المحقق الرقيع للقطاع 668+160 الي 668+420 مرتب الرقيع القطاع 668+160 الي 668+420 اللاستشارات الهندسية HSR-Blue Line الساحية بالقطاع

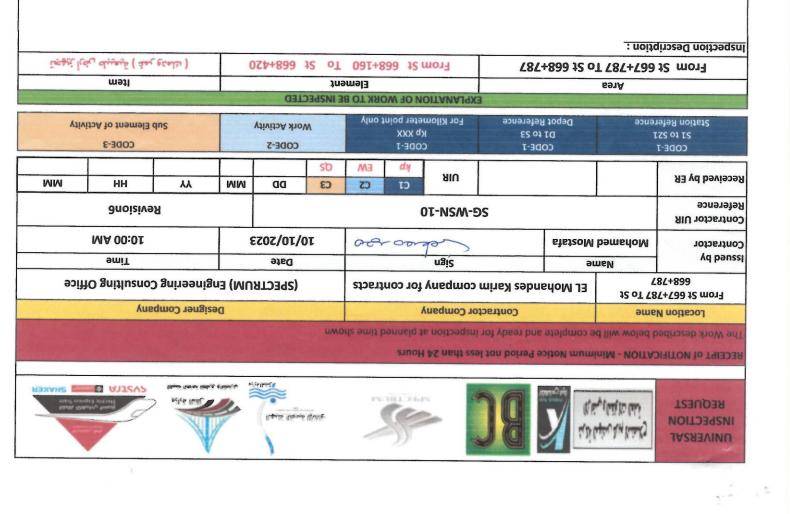
POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	الوصف
139	2840506.264	480345.207	138.646	SH	ض طبيعية
140	2840496.136	480353.06	138.7	SH	ض طبيعية
141	2840491.125	480343.154	138.485	SH	ض طبيعية
142	2840502.213	480333.79	138.504	SH	ض طبيعية
143	2840516.889	480320.892	138.807	SH	ض طبيعية
144	2840526.334	480311.497	140.799	SH	ض طبيعية
145	2840515.356	480300.215	139.995	SH	ض طبيعية
146	2840504.478	480307.752	137.887	SH	ض طبيعية
147	2840495.754	480314.678	138.154	SH	ض طبيعية
148	2840488.794	480320.648	137.924	SH	ض طبيعية
149	2840480.285	480328.181	138.045	SH	ض طبيعية
150	2840476.349	480331.853	138.401	SH	ض طبيعية
151	2840468.308	480315.349	137.429	SH	ض طبيعية
152	2840478.466	480309.188	137.414	SH	ض طبيعية
153	2840490.138	480301.229	137.644	SH	ض طبيعية
154	2840499.245	480295.621	137.91	SH	ض طبيعية
155	2840504.84	480290.479	141.525	SH	ض طبيعية
156	2840491.061	480283.542	141.877	SH	ض طبيعية
157	2840482.894	480277.023	141.115	SH	ض طبيعية
158	2840487.59	480272.683	142.367	SH	ض طبيعية
159	2840479.134	480265.77	142.13	SH	ض طبيعية
160	2840475.468	480269.323	140.86	SH	ض طبيعية
161	2840472.167	480273.412	138.382	SH	ض طبيعية
162	2840461.642	480284.69	137.513	SH	ض طبيعية
163	2840451.823	480293.456	137.188	SH	ض طبيعية
164	2840456.519	480300.09	137.346	SH	ض طبيعية
165	2840463.901	480292.548	137.495	SH	ض طبيعية
166	2840471.838	480283.984	137.668	SH	ض طبيعية
167	2840477.915	480278.535	138.138	SH	ض طبيعية
168	2840487.231	480289.018	137.461	SH	ض طبيعية
169	2840476.291	480295.153	137.568	SH	ض طبيعية
170	2840466.939	480303.659	137.386	SH	ض طبيعية
171	2840444.428	480283.309	137.05	SH	ض طبيعية
172	2840453.617	480274.449	137.482	SH	ض طبيعية
173	2840461.388	480266.009	137.929	SH	ض طبيعية
174	2840465.612	480261.314	139.705	SH	ف طبيعية
175	2840446.273	480265.638	137.541	SH	ض طبيعية
176	2840471.42	480253.376	141.11	SH	ض طبيعية

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SR Blue Lin الم الم

# تم الرفع للقطاع 160+668 الي 668+420 بتاريخ 25-09-202

برليانة كونسة الإستراق الهندسية HSR- Blue Line - sec.05 إستشارق الأعدال المحية بالقطاع



Planned Inspection Time	Pared noitopagen bannel
ady at the Planned Inspection Time	INSPECTION DETAILS The Following will be re

MS Reference		TP Reference	Drawing Reference	
Other as indicated"	"behaction Attached"	" bədəstifa silusəfi teat	" bərtastra trilası	

J (2-sl)	2) 4 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	on on on the sub events
Comments by: ( SPECTRUM ) QC		

Please Tick if	proval Status	2 levorgqA			<b>NSPECTION RESULT</b>	
Not Attend	A-AWC-R	əmiT	Date	ngi2	ameN	noitesinegrO
			15,10,2023	still -	suscert	Brilliant Survey
			22/01/21		10-2-27	SPECTRUM
						€A88**
						Employer representative



# Consulting Engineering Bureau & Laboratories

ميسلنها تالشتستا لماعه بتتده

ولبقاا هج واتت الفظات الوجه القبلي

llagi - w 2 cenq:

Report No. 10: : Origional Earth Type of soil : 11/10/2023 Repot Date : 10/10/2023 916G 129T Jevel 0.8- : noitete : 668+200 nottet2: notteood test 01 091+899 097+899 plate loading test according specifications DIN 18134:2012-04 and project requirements : Determine the deformation and strength characteristics of soil by the Subject Project : Electric Express Train - Sector (5) - Qous to Arment.

#### Dear Gentleman,

**VIEDMOD** 

1- 1- V

According to the above mentioned subject the test performed as follows:-

#### Apparatus

- 1. Loading plates consists of two plates with 300 mm and 300 mm diameter
- 2. The thickness of plates 30 mm
- 3. Dial gauges with accuracy 0.01 mm to measuring the settlement
- 4. Steel straightedges with magnetic supports to fixed the dial gauges
- 5. Hydraulic jack with pump to transfer reactive loads to the loading plates
- 6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
- Reaction loading system by roller compactor with weight approximately 15 ton.
- 8. Calibration certificates are atlached.
- Test Procedure:
- 1. Clean the ground on test area to the required level with undisturbed soil
- 2. Install loading plates 300 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
- 3. Prior to starting the test applied preloading about 30 seconds.
- The strain gauge and the dial gauge shall be set to zero
- 5. For a 300 mm loading plate, the limit values are 5.0 kg/cm <sup>2</sup>
- 6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal
- bendages is reached.
- Each change in load (from stage to stage) shall be completed within one minute.
- .6. The load shall be released in 3 stages, to 50 % , 25 %, and approximately 2 % of the maximum toad.

9. Following unloading, a further (2 <sup>nd</sup>) loading cycle shall be carried out, in which, however, the load is to be increased

10. At each stage the load shall be maintained of semiconed elsie plate becomes only to the panultimate stage of the first cycle (so that the full load is not reached).

וגנצו וננישים ד شופ וגנוצ ולומין - ונישונצ - ונמושני 219 - 991 - 537: حين المستاد الم مشروعات (سوهاج وقنا) همسيسلسنها اتاراستسكا بالماهد بد 151 11. Remove the loads CET .nim/mm S0.0 nsd) 💦 sel





بلبقاا هجهاات الوجه القبلى

#### Report

- 1. Evaluation and representation of results.
- 2. Load Settlement curve.
- 3. The test report content the following:-
- location of test site Dimension of loading plate.
- Measuring device used Type of soil.
- Type of Bedding material below the plate -Weathering condition.
- Time and date of measurements of usual observation made during test.
- Dial gauge reading and corresponding normal stress Loading-settlement curve.
- Description of the soil condition below the plate after testing.

### ПодэЯ

- Type of soil : Origional Earth
- Job requirement : Ev2 > 30 MPa

Sescription of the soil conditions below the plate after testing	No deformation
test gurne during test	ON
taee of meseurement	£202/01/01:
(mm) siste Diameter (mm)	300
γρε of bedding marketing below the plate	lio2 letuteN
mətl	Descriptions

#### Evaluation and representation of results

ر لىنغە خلىمىس ) تالىمىيىشە 219 - 991 - 537:يىيىشا لىيمستا ھق 3يەلتا - دانارىيا - ئىنغانا يىلىرا يېلى خىيىيا يەريتا

				Laboratories	a neourfa.	Buupauja De		aotengiS
6.0	0.411	155.9	0.8- :	: 668+200	668+260	091+899	L	
	E <sup>v2</sup> (Mpa)	E~(MPa)	( w )		oT	From		
E <sub>v2</sub> I E <sub>v1</sub> Ratio	Cycle Second	First Cycle	level	Location	noi	Ist2	Test No.	





# لبقاه مجها تلفظات الوجه القبلى هیسینها تاراشتسها راماعه بتده Consulting Engineering Bureau & Laboratories

alio 2 to aton Theo Lotol Contained anitities	
10:	.oN test
: 998+200	Station
: 11/10/2023	report date
: 10/10/2023	Test Date
: Electric Express Train - Sector (5) – Qous to Armant.	Project
llati we zeen :	этьи ульдто Э

## Nonrepetitive Static Plate Load Tests of Soils

#### DIN 18134

obcienty	Settlement	01.0	3n9m9l))92		Stress	
				(	r) spate p	nibsolnl
26.0	96.0	\$0.61	66.0	10.01	6.00	9
58'0	0.82	81.01	88.0	21.01	71.4	S
99.0	19'0	68.et	69'0	19.31	3.33	4
05.0	67.0	IS'6I	1.9.0	64.01	5.50	3
75.0	62'0	19.61	95.0	59°6T	99.1	5
21.0	12.0	62.61	0.13	78.et	68.0	<u>ا</u>
00.0	0.00	20.00	00.0	20.00	00.0	0
	աա		աա		Kg/cm2	
Average	Settlement	Dial 2	Settlement	f leid	Stress	Loading
		<u></u>			(1) 90632	buipeo-

өрьтөүА	arment Settlement	- S Ibia	3nəməlitə2 mm	r Isid	Stress Stress	
				1 1010	Kg/cm2	6uipeo7
68.0	78.0	£1.91	06.0	01.01	5.50	1
79.0	09.0	01.61	29.0	19.33	1.25	2
0.23	0.21	62.61	0.25	52.61	0.100	<u> </u>

### Loading Stage (2)

4	71.4	66.81	10.1	10.01	66'0	00.1
3	3.33	60.61	1.6.0	01.01	06.0	06.0
2	5.50	15.91	69.0	62.61	1.2.0	02.0
stres	s ls reache	'''''		1 1	1	012 0
Jupa ylotamixa	99°L	01.01	09'0	JP.GI	19'0	19.0
0	0.83	65'61	14.0	19.61	65.0	04.0
	К9/ст2		աա			
<u>Poading</u>	Stress	r leid	frameltta2	2 leid	Settlement Aver	Average

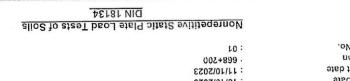
ة بهايته: . بشاهيه: . بايشهايه: بيليه: ي يش ٣ وجمدة به ر لنقع 3 لمهسه ) سالد و سفه 219 - 991 - 537 : منا بليمستا و 5 Consulting Engineering Bureau & Laboratories CEI

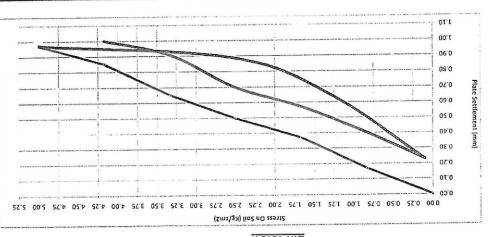




لبقاه فجهاات الفظاعه تدعيشه ميسلنها تالشتسكا لماعه بتكه

.oN test	L0 :
noting	. 668+200
report date	: 11/10/2023
9160 Test	: 10/10/2023
Project	: Electric Express Train - Sector (5) – Qous to Ament.
Smen Vame	Ilatine 2 Ling :





62.0	0.64	68.0	26.0	Settlement (mm)
01.0	1.250	2.50	5.00	Stress (Kg/cm2)
11	1988	9921	3233	(gX)9ge12
Þ	3	Z	L	(†) pribsoJnU

Ev2/Ev1 = 0.93

	00.1	0.90	07.0	29.0	0.40	0.23	(mm) tnomolitos
	11.4	3.33	5.50	99.I	£8.0	01.0	(Kg/cm2) seeub
	1.9462	5325.6	1766.3	8.2711	965.985	0	(6X)egei2
	S	4	3	5	L	0	(2) enibsol
				122.9		SVIOV.	'0'87.0) = (69M) rva
95.0	= 57	69'0	=(uuu)25	0.33	=(ww) LS		D (mm) = 300
0.36	= 57	69'0			لــــــــــــــــــــــــــــــــــــ	00.0	
<i>26</i> .0	58.0	0.65 9.05 9.65	2.50 0.50	88.0 75.0 33	£8.0 71.0 =(mm) 12	00.0	
	68.0	99.0	03.0	75.0	21.0		Settlement (mm)

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Z6'0

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(mm) resemble estarg = 0 Ev2 = Modulus of deformation during the Reloading stage.

SAI(0A.0.27.0)

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= (E4M) ZV3

= (ww) a

DS = Difforence in sellio (ww) Bujpeoj wo<mark>w</mark>tew ou wou  $(^{2}m)$  (xeme) galaxies in unixem off mont 7.0 bits 6.0 noowted eoneteitib of 7 = 20

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تركز الرفيس ٢ شارع الملك الأقصل - الزمالك - القاعرة 219 - 991 - 537 . من المستا الم مشروعات (سوهاج وقنا) seinofendel & useang Burianengina Buriausno) 30

moo.iqyg9-l90.www تليفون + فاكس ، ١٣٢٧٢٦٧٢ - ٦٩٠٩٢٩٧٢ रिंगान् - राहार्ष्ट الغن العلك الأفضل



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# ميسئنها تالشتسكا باملعه بنتكه Consulting Engineering Bureau & Laboratories

ولبقاا هجهاات الفظاحه تدويشه

Company مىلىكە رىس<del>امىلىكە</del>

Repot Date : 11/10/2023 **Test Date** : 10/10/2023 level 0.8-: noitete 082+899: Test Location : Station 092+899 01 092+899 plate loading test according specifications DIN 18134:2012-04 and project requirements : Determine the deformation and strength characteristics of soil by the **Subject** Project : Electric Express Train - Sector (5) - Qous to Arment.

Dear Gentleman,

Report No.

Type of soil

According to the above mentioned subject the test performed as follows:-

#### **SuteredgA**

- 1. Loading plates consists of two plates with 300 mm and 300 mm diameter
- 2. The thickness of plates 30 mm

10:

: Origional Earth

- 3. Dial gauges with accuracy 0.01 mm to measuring the settlement
- 4. Steel straightedges with magnetic supports to fixed the dial gauges
- 5. Hydraulic jack with pump to transfer reactive loads to the loading plates
- 6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
- 7. Reaction loading system by roller compactor with weight approximately 15 ton.
- 8. Calibration certificates are atlached.

Test Procedure:

- 1. Clean the ground on test area to the required level with undisturbed soil
- 2. Install loading plates 300 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
- 3. Prior to starting the test applied preloading about 30 seconds.
- 4. The strain gauge and the dial gauge shall be set to zero
- 5. For a 300 mm loading plate, the limit values are 5.0 kg/cm  $^{\circ}$
- 6. The load shall be applied in siz stages, in approximately equal increments, until the required maximum normal

'poupou si ssens

- 7. Each change in load (from stage to stage) shall be completed within one minute
- 8. The load shall be released in 3 stages, to 50 %, 25 %, and approximately 2 % of the maximum load.

9. Following unioading, a further (2 <sup>nd</sup>) loading cycle shall be camed out, in which, however, the load is to be increased

10. At each stage the load shall be maintained until the rate of settlement of the plate becomes only to the penultimate stage of the first cycle (so that the full load is not reached).

ت بعاقدا - دور الزواد ، الفقة ا دولدا في الله مسين با ي 219 - 591 - 537: Jun 1 Jun ر لننقع ج لمعين ( سروهما ج وهندا ) مسيسلنيوا تالشتسكا للعامه Consulting Engineering Bureau & Laboratories Remove the loads um/mm 50.0 nerti azel





رلبقا هجهاا تالففاحه تدويشه

#### hodeA

- 1. Evaluation and representation of results.
- 2. Load Settlement curve.
- 3. The test report content the following:-
- location of test site Dimension of loading plate.
- Measuring device used Type of soil.
- Type of Bedding material below the plate -Weathering condition.
- Time and date of measurements Unusual observation made during test.
- Dial gauge reading and corresponding normal stress Loading-settlement curve.
- Description of the soil condition below the plate after testing.

### Report

- : Origional Earth Type of soil 0
- 69M 05 < Sv3 : nemeriuper dol

pescription of the soil conditions below the plate after testing	No deformation
teas grisub abem noitevtaedo leueun	ON
ate of measurement	£202/01/01 :
(mm) tətəmeiQ ətel	008
ype of bedding material below the plate	lio2 latuteN
məəl	Descriptions

### Evaluation and representation of results

ة بعاقار عنادينا - الخفظ علا وي لله ٣ وسينينا بديا

				بستکه میستا مق	العام لا العام الما ما المعام العام ما ما ما ما	1-237	66 - 61	autengis
1.53	152.9	82.1	0.8- :	. 668+280	098+899	008+500		
annu	E <sup>AS</sup> (Wba)	E~1(MPa)	(w)		OT	From		
Ev2l Ev1 Ratio	Cycle Second	First Cycle	ləvəl	Location	noi	1612	.oN lesT	





# ميسئنها تار لشتسكا راماعه بتكه Consulting Engineering Bureau & Laboratories

ولبقاا هجهاا تالفظاحه تادى شه

10: Station : 668+280 report date :11/10/2023 Test Date : 10/10/2023 Project : Electric Express Train - Sector (5) - Qous to Arment. Sompany Name Ilagine 2 cens :

Nonrepetitive Static Plate Load Tests of Soils

18134	NIC

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9	5.00	£9.81	1.37	16.81	60.1	1.23
9	21.4	08.81	1.20	60.61	16.0	90.1
4	3.33	60.et	16.0	15.91	69'0	08.0
3	5.50	19.33	29.0	95'6T	0.44	99.0
2	99.1	Z9.61	0.38	59'6T	0.35	15.0
L	28.0	£6.91	20.0	78.et	0.13	01.0
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	Kg/cm2		աա		 	000
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Ауегаде	Settlement		Settlement		Steels	S pribso-
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80.1	26.0	£0.61	61.1	18.81	3.33	<u>د</u>
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الذكر الرفيسي ٢ شارع الملك الأفضل ـ الزمالك ـ الشمرة

ACCREDITED تليفون + فاكس ، ١٣٢٧٢٩٧٢ - ٣٩٠٩٢٩٧٢

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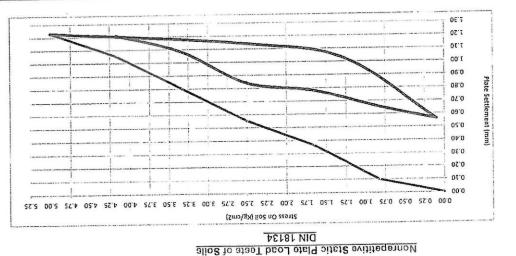
ا ش العلك الأفضل

Теl.& Fax : 27367231 - 273693 Zamalek, Cairo. 3 El Malek El Afdal Street



رلبقا هجهاا تالففاحه تدويشه ميسلنها تالشتسكا لماعه بتكه

.oN tesT	10:
noitate	. 968+380
report date	: 11/10/2023
9160 test	: 10/10/2023
Project	: Electric Express Train - Sector (5) - Gous to Ament.
Company Name	، وسيايك للمقلمة الم



(mm) triemeltte	1.23	41.1	1.02	99.0
(Stress (Kg/cm2)	2.00	2.50	1.250	01.0
Stage(Kg)	3233	9921	\$84	12
(r) gnibsoJnU	Ł	2	3	t

EV2/EV1 = 1.53

			6.22f		SAI(DA	.a.sz.o)	= (e9M) Sv3	
96.0	= S7	11.1	=(ww)zS	92.0	=(mm) 12		300	= (mm) D
			1.010	87.0	99 <sup>.</sup> 0	99.0	(11111)	านอนเอากอเร
	12.1	80.1	18.0	-				Stress (Kg)
	71.4	3.33	2.50	99.f	68.0	01.0	16m2	10 A 1 3 3 3 4 5
	1.9462	5325.6	1766.3	8.2711	965.388	0	(6X)age12	
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								()
				1.28		SAILOA	·0·27.0)	= (69M) IV3
¢9.0	= S∀	58.0	=(mm)2S	15.0 1.28	=(mm) r2	SAI(DA	008	= (mm) (I
	= S <b>∆</b>	08.0 28.0	6.00 =(mm)58		01.0 =(mm) 12	00.0	300	
1.23				15.0	L		300 (ww)	= (mm) U
	90.1	08.0	95.0	15.0	01.0	00.0	300 (mm)	) triament ( D (mm) =

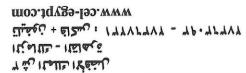
Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

(mm) totemsib etsig = Q

(mm) gnibsol mumixem erit moni 7.0 bns 6.0 neevisd econsistib erit = sd (mm) gnibsol mumixem erit moni 7.0 bns 6.0 ek gnibingesorros stramelitas ni econsistiti = SD

الدكر الدنيسي ٢ شارع اللك، الأقسل - الرمالك - ال رقم التسجيل المريبي: 537 - 537 - 199 - 212 earofang Bureau & Laboratories کیپیکنیدا تارلیشتیکا الیانی بختکی







# Consulting Engineering Bureau & Laboratories

ميسمنها تالشتسكا للعلعه بنتكه

ولبقاا هجهاا تالفظاعه تادوبشه

: بمسيد مدلم

Report No. 10: lios to eqvT : Origional Earth Repot Date : 11/10/2023 **Test Date** : 10/10/2023 19491 0.8-: 062+899: uoners nollale . והאן רסכפווחוו 01 0951899 077+999 plate loading test according specifications DIN 18134:2012-04 and project requirements : Determine the deformation and strength characteristics of soil by the **Subject** Project ; Electric Express Train - Sector (5) - Qous to Arment.

Dear Gentleman,

Ynsqmol

According to the above mentioned subject the test performed as follows:-

#### <u>eutereqqA</u>

- 1. Loading plates consists of two plates with 300 mm and 300 mm diameter
- 2. The thickness of plates 30 mm
- Dial gauges with accuracy 0.01 mm to measuring the settlement
- 4. Steel straightedges with magnetic supports to fixed the dial gauges
- 5. Hydraulic jack with pump to transfer reactive loads to the loading plates
- 6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
- 7. Reaction loading system by roller compactor with weight approximately 15 ton.
- 8. Calibration certificates are attached.

Test Procedure:

- 1. Clean the ground on test area to the required level with undisturbed soil
- Install loading plates 300 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
- 3. Prior to starting the test applied preloading about 30 seconds.
- 4. The strain gauge and the dial gauge shall be set to zero
- 5. For a 300 mm loading plate, the limit values are 5.0 kg/cm  $^{\rm 2}$
- 6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal

paupear st seaths

- 7. Each change in load (from stage to stage) shall be completed within one minute
- 6. The load shall be released in 3 stages, to 50 % , 25 %, and approximately 2 % of the maximum load.

9. Following unloading, a further (2 <sup>nd</sup>) loading cycle shall be carried out, in which, however, the load is to be increased

only to the penultimate stage of the first cycle (so that the full load is not reached).

10. At each stage the load shall be maintained until the rate of settlement of the plate becomes

nim/mm SO D nedl 2291

וגנצו וננישש ז שנש וצוש וצפטו - ונואנש - ונשבנה 219 - 991 - 537: Lauren 1 Lauren 1 مشروعيات ( سوهناج وقنيا ) Consulting Engineering Bureau & Laboratories T1. Remove the load





يلبقاا هجهاا تالففاحه تادويشه

#### Report

- 1. Evaluation and representation of results.
- 2. Load Settlement curve.
- 3. The test report content the following:-
- location of test site Dimension of loading plate.
- Measuring device used Type of soil.
- Type of Bedding material below the plate -Weathering condition.
- Time and date of measurements Unusual observation made during test.
- Dial gauge reading and corresponding normal stress Loading-settlement curve.
- Description of the soil condition below the plate after testing.

### Report

- Type of soil : Origional Earth 0
- Job requiremer : Ev2 > 30 MPa .

Description of the soil conditions below the plate after testing	No deformation
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Jnomoruzeom 10 ofte	£202/01/01:
(mm) 1939mbiQ 94619	00E
Type of bedding material delaw the plate	Natural Soil
ftem	Descriptions

#### Evaluation and representation of results

۲ به الما ، مثلاله بدا ، رائدة ۲ ا ملالا الی الله ۲ رسینه بدا با حرید ا مشروعيات ( سوفطع وقنيا ) 1949 - 1958 - 1991 - 222

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1.27	6.711	97.6	0.8- :	062+899:	668+420	098+399	ŀ	AND DECK
Ratio	Ev2 (Mpa)	Evi ( MPa )	(w)		OT	From		
Ev2 Ev1	Cycle. Second	First Cycle	Төүөд	Location	ion Locatio		.oN ts∋⊺	

ستا مع





# میسدنها تار اشتسها راماعه بنتده Consulting Engineering Bureau & Laboratories

ولبقاا هجهاات الفظاعه تدويشه

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Station	068+899 :
report date	: 11/10/2023
Test Date	: 10/10/2023
Project	: Electric Express Train - Sector (5) – Qous to Arment.
emeN yneqmoD	: بسيايك كسلسنوما

#### Nonrepetitive Static Plate Load Tests of Soils 10:

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3	2°20	05.01	09.0	25'6I	84.0	¢2'0
5	99.1	19.61	62'0	17.01	0.29	0.34
	28.0	67.61	0.21	£8.91	41.0	61.0
0	00.0	20.00	00.0	50.00	0.00	00'0
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2 pribeo.	(1) apsid					

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94.0	62.0	t9.6t	0'20	05.01	001.0	<u> </u>

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02.0	69'0	15.91	120	62.61	99 1	dimately equ
	1			d.	e is reache	
88.0	68.0	ST'6T	16.0	60.01	2,50	5
1.02	66'0	10.01	\$0.F	96.81	3.33	3
9L'L	11.1	68.81	61.1	18.81	71.4	4

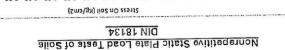
التامرة الرابعين اللك الأفسل الزمالك التاهرة دقم التسجيل المديني: 537 - 537 - 291 - 210 soinofenda & Laboratorieg Bureau & Laboratories CET

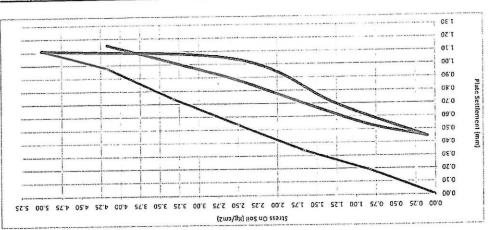




# consulting Engineering Bureau & Laboratories هیسینها تارلشتسگا رام اهم بنتگم ریلبقا هچها تالففاحه تادهیشه

10 :
: 668+390
: 11/10/2023
: 10/10/2023
: Electric Express Train - Sector (5) Gous to Arment.
الم <del>اند</del> مرحم الم





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(Smoles (Kg/cm2)	5.00	2°20	1.250	01.0
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(r) gnibsolnU	L	z	3	t

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	YL L	1 05	88.0	02.0	VG.0	Gh.0	(mm) tremeitte2
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	1.946.1	5352.6	1766.3	8.2711	565.985	0	Stage(Kg)
	S	7	3	5	L	0	(2) Buibsod
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84.0	= SV	62.0	∍(mm)s2	15.0	=(mm) r2		D (mm) = 300
010		1					
11.1	86.0	72.0	0.54	0.34	61.0	00.0	(mm) triamaltta2
11.1		£5.5 47.0	0.54	1.66	61.0 61.0	0.00	Stress (Kg/cm2) Stress (Kg/cm2)
	86.0						

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Ev1 = Modulus of deformation during the loading stage.

SA1(04.0.21.0)

300

= (c9M) 2v3

= (ww) (

.eges and allow of deformation during the Reloading stage.

D = Plate diameter (mm) D = Plate difference between 0.3 and 0.1 from and mumixem of from<sup>5</sup>) D5 = The difference between 0.3 and 0.1 from the maximum loading (from the maximum load) = D5 = D1Helence in estimation of the maximum load in the maxi

=(mm) 12

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



المنطقة المركزية الثامنة

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة وبد ....

بالإشارة إلى مشروع إستكمال أعمال الجسر الترابي للخط الثانى القطاع الخامس من مشروع إنشاء القطار الكهرباني السريع قطاع (قوص – ارمنت) حيث تمت المفاوضة مع الشركة على البنود لتنفيذ المسافة من الكم 787+667 الي 787+668 بطول 1 كم طبقا للعقد (بالامر المباشر).

تنفيـــذ : شركة المهندس كريم لاستصلاح الاراضى والمقاولات العامة عقد رقم (2024/2023/1007) نتشرف بأن نرفق لسيادتكم طيه (مقايسة معدلة رقم 1)

وتفضلوا بقبول فانق التحية والاحترام،،



	سعر الله	الكعية	الوحدة	بيان الأعمال Embankment اعمال الردم Embankment اعمال تعميل وتوريد ونقل أتربة مطابقة المواصفات وتشغيلها باستغدام الات التموية بسمك لا يزيد عن ٥٠ مم حتى منصوب (2-2 متر) اسقل منموب الفرمه و بسمك لايزيد عن ٥٠مم اعلى من ملصوب (-2 متر) من منصوب الفرمه لاستكمال المنموب التعميري لتشكيل الجمر والأكتاف (نسبة تعمل كاليفورنيا حتى ٥٠%) ورشها بالعياه الأصولية الوصول إلى نسبة الرطوبة المطاوبة والدمك الجيد باليرامات الوصول إلى اقصى
1.,907,795	-			أصل تعميل وتوريد ونقل أتربة مطابقة المواصفات وتشغيلها باستغدام الات التسوية بسمك لا يزيد عن ٥٠ مم حتى منسوب (-2 متر) استل منسوب القرمه و بسمك لايزيد عن ٢٥مم اعلى من منسوب (-2 متر ) من منسوب الفرمه لاستكمال المنسوب التعميمي لتشكيل الجسر والأكلاف (نسبة تعمل كاليفورنيا حتى ١٥%) ورشها بالسياه الأصولية للوصول إلى نسبة الرطوية السطلوية و الدمك الجد بليو اسات للمحمد إر إلى أقس.
1.,907,795			•	مم حتى منسوب (2 مثر) اسقل منسوب الفرمه و بعسك لايزيد عن ٢٥مم اعلى من منسوب (-2 مثر ) من منسوب الفرمه لاستكمال المنسوب التصميمي لتشكيل الجسر والأكذاف (نسبة تعمل كاليفورنيا حتى ١٥%) أورشها بالسياه الأصولية للوصول إلى نسبة الرطوبة المطلوبة و المك الجد بالير اسات للرصول إلى أقصي
	1.,	147,05.	Te.	كتافة جلقة (95% من التلافة الجلفة القسوى) ويتم التنفيذ طبقاً للمناسب التصميمية والقطاعات المرضية المونجية والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقاً لأصول الصناعة ومواصفات الهرنية - في حلقة طلب جهاز الإشراف زيادة نسبة النمك عن 20% يحسب زيادة ١ جليه على زيادة نسبة الدمك الكل ١%. - مسافة النقل حتى ٢ كم و يتم احتساب علاوة ١،٤ جليه لكل كم بالزيادة او النقصان وتصبح ١،٥ جليه /كم ايتداء من ٢٢-٢/٥/٤. - السعر يشمل عمل تشوينات و تخليط و اختبارات و نقل لموقع العمل حتي مسافة ٢ كم ، - علاوة زيادة السولار ٦،٩ جنية /م٢ ابتداء من ٢٢/٢/٤ - السعر لا يشمل قيمة المادة المحجرية.
TE1,471	1,1.	١٨٢,٥٤٠	Te.	علاوة زيادة السولار ١,٩ جنية /٣ ابتداء من ٤/٥/٢،٢٣ الأجمالي

مهندس الشركة المنفذة مهندس هينة الطرق والكباري (المنطقة الثامنة - قنا) المهندس/ ص المهند التوقيع/ معدة ركة الله التوقيع تصلاح الاراضي والمتناولات العام المهندس/ أمريك التوقيع/ . Y "echalis 1YAVA :.... في: ٥٠٠-٢٩٩-٠٠٩

يعتمدااا رنيس الإدارة المركزية المنطقة الثامنة (قنا) السيد المهندس / عماد 9 1 توع