

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة وبعد ،،،،،

نتشرف أن نرفق لسيادتك عدد ١ مقايضة معدلة ٢ لمشروع أعمال إنشاء الجسر الترابي للقطار الكهربائي السريع ٦ أكتوبر
أبوسمبل (القطاع الخامس) من الكم ٦٤٠.٥٧٩ حتي الكم ٦٤١.٢٣٦ على أن تراجع الأسعار بمعرفة الإدارة بالقاهرة .
اعداد المكتب الاستشاري سبكتروم للاستشارات الهندسية وعلي مسئوليته .

تنفيذ شركة الذهبي للمقاولات

برجاء التكرم بالعلم والتوجيه باللازم

وتفضلوا بقبول وافر التحية والإحترام ،،،،،



رئيس الإدارة المركزية

مهندس / عماد حسين
عماد حسين



تحريرا في ٢٠٢٣/١٢/٢٦

المرفقات / عدد (١) مقايضة



الهيئة العامة للطرق والمواصلات

وزارة النقل

مقايمة معدلة 2 (جزيرة لنينوا لأعمال)

مشروع : الجسر الترابي للطريق المربع (أكتوبر / أبو سمبل)

القطاع الخامس من الكم 629 + 110.13 إلى الكم 715 + 824.53 بطول 86.52 كم

من إحداثي E 489929.6671 و N 2874215.5671

إلى إحداثي E 440168.6522 و N 2817778.3175

إستشاري القطاع سبكتروم للإستشارات الهندسية د. م. / عماد الدين شبل

تنفيذ الشركة / الذهبى للمقاولات فئة : الرابعة بقيمة : مليون

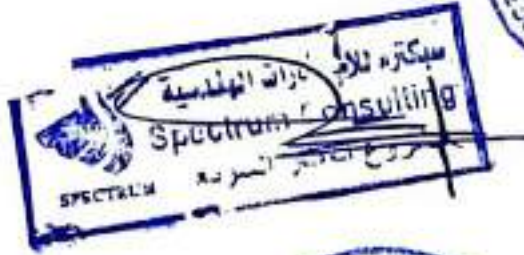
من الكم 640 + 579 إلى الكم 641 + 236 بطول 657 م

19,959,325 مليون



المقاول /

الإستشاري /



المنطقة الثامنة بقنا /





من محطة 110.13 629 حالي محطة 624.63 715 بطول 86.5145 كم
التي تقسمها إلى المقاطعات الخمسة من محطة 640.579 إلى 641.236 بطول
بين الأضلاع

الأجمالي

CamScanner

مشروع القطار الكهربائي السريع القطاع الخامس				
تنفيذ شركة الذهبى للمقاولات				
من الكم 637+952 الى 643+863				
بيان اعمال توضيحي لمستخلص جاري (4) عقد (2024/2023/306)				
العقد	قيمة العقد	المستخلص	كميات حفر ثرية عادية	كميات الردم
(2024/2023/306)	عشرون مليون	جاري 1	-	23100.00
		جاري 2	10000.00	121500.00
		جاري 3	-	34400.00
		جاري 4	-	30000.00
كميات تم حصرها			-	24219.30
			14051.66	128231.31
				33745.88
			-	30262.98
اجمالي كميات تم حصرها			14051.66	216459.47
كميات تم صرفها			-	23100.00
			10000.00	121500.00
			-	34400.00
			-	30000.00
اجمالي كميات تم صرفها			10000.00	209000.00
المتبقى من القيمة			4051.66	7459.47





محضر اعتماد حصر كميات



التاريخ: 30/1/2024

اسم المشروع: مشروع القطر الكهربائي السريع (6 أكتوبر - اسوان - ابوسمبل) / القطاع الخامس

قلبت شركة برليات كولت للاستشارات الهندسية المساحية (استشارى الاعمال المساحية لهيئة الطرق والكبارى)

باعتماد الكميات المنفذة الخاصة بشركة الذهبى للمقاولات

م	من المحطة رقم	الى المحطة رقم	التصريف	الكمية بالمتر المكعب	الملاحظات
1	638+720	639+100	اعمال الردم	11823.3	اعمال ردم على (REV07)
2	639+580	639+940	اعمال الردم	7248.51	اعمال ردم على (REV07)
3	641+000	641+840	اعمال الردم	11191.17	اعمال ردم على (REV07)
اجملى لكمية				30262.98	

حصر جارى (4)

المرفقات :

استلام ميزانية شبكية

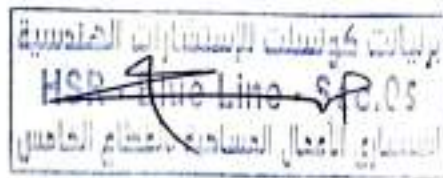
قطاعات عرضية

شيت اكسيل موضح به الكميات

استشارى / مكتب سبكتروم



استشارى المساحة / مكتب برليات



مهندس الشركة المنفذة



حصر كميات الردم مستخلص جاري (4) شركة الذهبى (863+643-952+637) مشروع
القطار السريع القطاع الخامس (قوس /ارمنت)

Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
638+720.00	30.97	309.7	309.7
638+740.00	30.97	619.4	929.1
638+760.00	30.97	619.4	1548.5
638+780.00	30.97	619.4	2167.9
638+800.00	30.97	619.4	2787.3
638+820.00	30.97	619.4	3406.7
638+840.00	30.97	619.4	4026.1
638+860.00	30.97	619.4	4645.5
638+880.00	30.97	619.4	5264.9
638+900.00	30.97	619.4	5884.3
638+920.00	30.97	619.4	6503.7
638+940.00	29.47	604.4	7108.1
638+960.00	29.47	589.4	7697.5
638+980.00	29.47	589.4	8286.9
639+000.00	29.47	589.4	8876.3

شركة
HSE BLUE LINE
مستشارين هندسيين
مستشارين انشائية بالقطاع الخامس



Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
639+020.00	29.47	589.4	9465.7
639+040.00	29.47	589.4	10055.1
639+060.00	29.47	589.4	10644.5
639+080.00	29.47	589.4	11233.9
639+100.00	29.47	589.4	11823.3
639+580.00	21.49	214.87	12038.17
639+600.00	21.49	429.73	12467.9
639+620.00	21.49	429.73	12897.63
639+640.00	21.49	429.73	13327.36
639+660.00	21.49	429.73	13757.09
639+680.00	21.49	429.73	14186.82
639+700.00	21.49	429.73	14616.55
639+720.00	21.49	429.73	15046.28
639+740.00	21.49	429.73	15476.01
639+760.00	21.49	429.73	15905.74
639+780.00	17.36	388.47	16294.21
639+800.00	17.36	347.2	16641.41
639+820.00	17.36	347.2	16988.61

برایات کونسالت الاستشارات الهندسية
HSE BLUELINE Sec.05



Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
639+840.00	17.36	347.2	17335.81
639+860.00	17.36	347.2	17683.01
639+880.00	17.36	347.2	18030.21
639+900.00	17.36	347.2	18377.41
639+920.00	17.36	347.2	18724.61
639+940.00	17.36	347.2	19071.81
641+000.00	9.01	90.05	19161.86
641+020.00	9.01	180.1	19341.96
641+040.00	9.01	180.1	19522.06
641+060.00	9.01	180.1	19702.16
641+080.00	9.01	180.1	19882.26
641+100.00	9.01	180.1	20062.36
641+120.00	9.01	180.1	20242.46
641+140.00	9.01	180.1	20422.56
641+160.00	9.01	180.1	20602.66

دریافت کونسولت للإستشارات الهندسية
HGP-BLUE LINE Sec.C3



Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
641+180.00	9.01	180.1	20782.76
641+200.00	9.01	180.1	20962.86
641+220.00	9.01	180.1	21142.96
641+240.00	9.01	180.1	21323.06
641+260.00	9.01	180.1	21503.16
641+280.00	9.01	180.1	21683.26
641+300.00	9.01	180.1	21863.36
641+320.00	9.01	180.1	22043.46
641+340.00	9.01	180.1	22223.56
641+360.00	9.01	180.1	22403.66
641+380.00	9.01	180.1	22583.76
641+400.00	9.01	180.1	22763.86
641+420.00	9.01	180.1	22943.96
641+440.00	17.01	260.2	23204.16
641+460.00	17.01	340.29	23544.45
641+480.00	17.01	340.29	23884.74
641+500.00	17.01	340.29	24225.03
641+520.00	17.01	340.29	24565.32

برقيات كوستات للإستشارات الهندسية
HSE BLUE LINE 8/20/05
إستشارى الأعمال المساحية والقطاع

مختبر
مختبر
مختبر

Station	Fill Area (Sq.M.)	Fill Volume (Cu.M.)	Cum. Fill Vol. (Cu.M.)
641+540.00	17.01	340.29	24905.61
641+560.00	17.01	340.29	25245.9
641+580.00	17.01	340.29	25586.19
641+600.00	17.01	340.29	25926.48
641+620.00	17.01	340.29	26266.77
641+640.00	17.01	340.29	26607.06
641+660.00	17.01	340.29	26947.35
641+680.00	17.01	340.29	27287.64
641+700.00	17.01	340.29	27627.93
641+720.00	17.01	340.29	27968.22
641+740.00	17.01	340.29	28308.51
641+760.00	17.01	340.29	28648.8
641+780.00	17.01	340.29	28989.09
641+800.00	22.07	390.89	29379.98
641+820.00	22.07	441.5	29821.48
641+840.00	22.07	441.5	30262.98
اجمالي الكمية			30262.98

برأيت كمستشار الهندسية
HOSSELINE
استشاري الأعمال المساعدة بالخط الخامس





محضر اعتماد حصر كميات



التاريخ: 30/1/2024

اسم المشروع: مشروع القطار الكهربائي السريع (6 أكتوبر - أسوان - أبوسمبل) القطاع الخامس

قامت شركة برليات كواليت للاستشارات الهندسية المساحية (استشاري الأعمال المساحية لهيئة الطرق والكباري)

باعتماد الكميات المفصلة الخاصة بشركة الذهبى للمقاولات

م	من المحطة رقم	الى المحطة رقم	التصنيف	الكمية بالمتر المكعب	الملاحظات
1	638+720	639+100	اعمال الردم	78552.75	اعمال ردم على (REV07)
2	639+580	639+940	اعمال الردم	31543.52	اعمال ردم على (REV07)
3	641+000	641+840	اعمال الردم	65308.03	اعمال ردم على (REV07)
4	642+220	642+480	اعمال الردم	41055.17	اعمال ردم على (REV07)
اجمالي للكمية				216459.47	

حصر الكميات حتى جولى (4)

المرفقات:

استلام ميزانية شبكية

قطاعات عرضية

تمت اكمال موضح به الكميات



استشاري المساحة / مكتب برليات

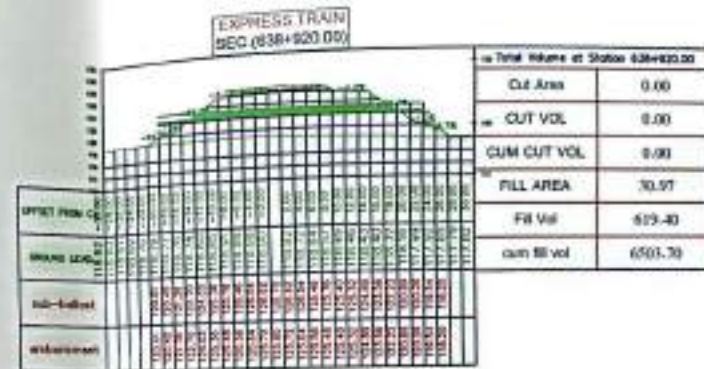


مهندس الشركة المنفذة





Ministry of Transportation National Authority for Tunnels (NAT)			
Project Name National Authority for Tunnels - Independent Transport			
Project Location P.O. Box 107000, Riyadh 11461-2000, Saudi Arabia Tel: +966 11 461 107000 Fax: +966 11 461 107000			
Site Plan			
			
SECTION (FROM QUA TO ARABIA) SECTION 100-100 (100-100 - 100-100)			
No.	Size	Location	Notes
100	100	100-100	100-100
*All dimensions are in meters.			
List of cross-sections:			
Section	Location	Notes	Notes
100	100	100-100	100-100
General Information			
Owner	National Authority for Tunnels	Project	100-100
Designer	E. JAWAD	Project	100-100
Contractor	E. JAWAD	Project	100-100
Contract Name National Authority for Tunnels - Independent Transport			
Drawing No.	100-100	Project	100-100
Drawing Date	100-100	Project	100-100



100% ELABORATED
100% ELABORATED
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Ministry of Transportation
National Authority for Tunnels (NAT)

Project Name
TUNNELING TRAIN (FROM STATION 638+880.00 TO STATION 643+863.00)

Section (FROM QUE TO ARABY)
STATION 638+880.00 - STATION 643+863.00

Scale
1:1000

Drawn by
H. SEC 5 - 01000-001 - (1)

Checked by
H. SEC 5 - 01000-001 - (1)

Approved by
H. SEC 5 - 01000-001 - (1)

Contractor
EL-ZAHABY

Drawn by
H. SEC 5 - 01000-001 - (1)

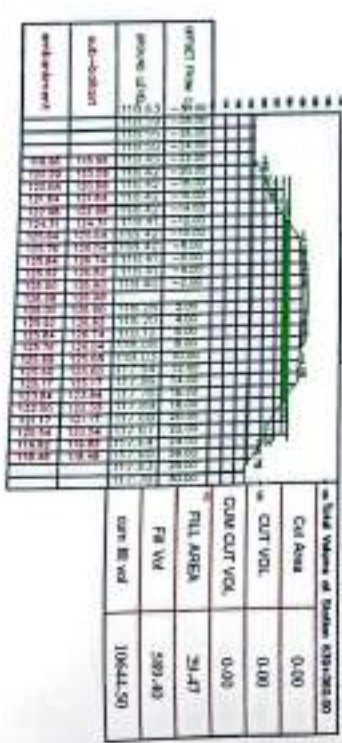
Checked by
H. SEC 5 - 01000-001 - (1)

Approved by
H. SEC 5 - 01000-001 - (1)



Total Values at Station 630+00 to 630+00	
CUA AREA	0.00
CUT VOL	0.00
CUM CUT VOL	0.00
FILL AREA	29.47
FILL VOL	589.40
CUA BAL	10055.10

Third Station at Station 534+30.00	
Cut Area	0.00
Cut Vol	0.00
CLM CUT VOL	0.00
FILL AREA	29.47
Fill Vol	593.40
cut fill vol	11231.90

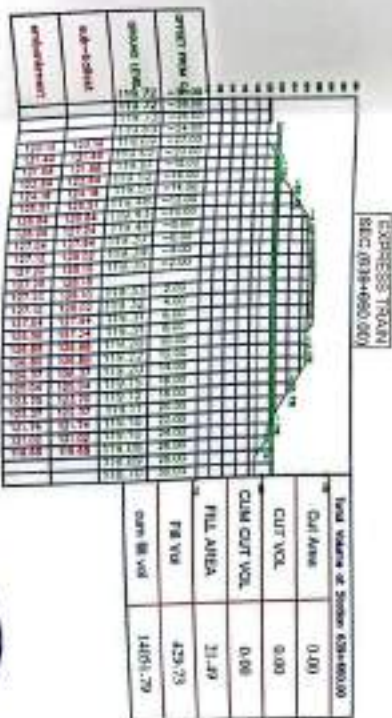


EXPENSE TRANS	
BSC 0326-100.00	
== Total Issues at Station 0326-100.00	
Cut Area	0.00
== CUT VOL	0.00
== CUT CUT VOL	0.00
FILL AREA	29.47
FILL VOL	530.40
== CUT FILL	1187.50

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NOTICE: RESPONSE TO THIS SOLICITATION IS REQUIRED BY 10:00 A.M. OCTOBER 11, 2006			
NO. 00000000	DATE 09/28/06	PROJECT NAME 00000000	PROJECT NUMBER 00000000
*All drawings are in meters			
Unit of price: see Expression of Interest			
1. General Description of Work 1.1. Project Name: EL-ZAHARIY 1.2. Project Location: EL-ZAHARIY			
2. Technical Specifications 2.1. Technical Specifications: EL-ZAHARIY			
3. Contract Documents 3.1. Contract Documents: EL-ZAHARIY			
4. Contract Award 4.1. Contract Award: EL-ZAHARIY			
5. Contract Execution 5.1. Contract Execution: EL-ZAHARIY			
6. Contract Termination 6.1. Contract Termination: EL-ZAHARIY			
7. Contract Dispute Resolution 7.1. Contract Dispute Resolution: EL-ZAHARIY			
8. Contract Assignment 8.1. Contract Assignment: EL-ZAHARIY			
9. Contract Modification 9.1. Contract Modification: EL-ZAHARIY			
10. Contract Termination 10.1. Contract Termination: EL-ZAHARIY			
11. Contract Dispute Resolution 11.1. Contract Dispute Resolution: EL-ZAHARIY			
12. Contract Assignment 12.1. Contract Assignment: EL-ZAHARIY			
13. Contract Modification 13.1. Contract Modification: EL-ZAHARIY			
14. Contract Termination 14.1. Contract Termination: EL-ZAHARIY			
15. Contract Dispute Resolution 15.1. Contract Dispute Resolution: EL-ZAHARIY			
16. Contract Assignment 16.1. Contract Assignment: EL-ZAHARIY			
17. Contract Modification 17.1. Contract Modification: EL-ZAHARIY			
18. Contract Termination 18.1. Contract Termination: EL-ZAHARIY			
19. Contract Dispute Resolution 19.1. Contract Dispute Resolution: EL-ZAHARIY			
20. Contract Assignment 20.1. Contract Assignment: EL-ZAHARIY			
21. Contract Modification 21.1. Contract Modification: EL-ZAHARIY			
22. Contract Termination 22.1. Contract Termination: EL-ZAHARIY			
23. Contract Dispute Resolution 23.1. Contract Dispute Resolution: EL-ZAHARIY			
24. Contract Assignment 24.1. Contract Assignment: EL-ZAHARIY			
25. Contract Modification 25.1. Contract Modification: EL-ZAHARIY			
26. Contract Termination 26.1. Contract Termination: EL-ZAHARIY			
27. Contract Dispute Resolution 27.1. Contract Dispute Resolution: EL-ZAHARIY			
28. Contract Assignment 28.1. Contract Assignment: EL-ZAHARIY			
29. Contract Modification 29.1. Contract Modification: EL-ZAHARIY			
30. Contract Termination 30.1. Contract Termination: EL-ZAHARIY			
31. Contract Dispute Resolution 31.1. Contract Dispute Resolution: EL-ZAHARIY			
32. Contract Assignment 32.1. Contract Assignment: EL-ZAHARIY			
33. Contract Modification 33.1. Contract Modification: EL-ZAHARIY			
34. Contract Termination 34.1. Contract Termination: EL-ZAHARIY			
35. Contract Dispute Resolution 35.1. Contract Dispute Resolution: EL-ZAHARIY			
36. Contract Assignment 36.1. Contract Assignment: EL-ZAHARIY			
37. Contract Modification 37.1. Contract Modification: EL-ZAHARIY			
38. Contract Termination 38.1. Contract Termination: EL-ZAHARIY			
39. Contract Dispute Resolution 39.1. Contract Dispute Resolution: EL-ZAHARIY			
40. Contract Assignment 40.1. Contract Assignment: EL-ZAHARIY			
41. Contract Modification 41.1. Contract Modification: EL-ZAHARIY			
42. Contract Termination 42.1. Contract Termination: EL-ZAHARIY			
43. Contract Dispute Resolution 43.1. Contract Dispute Resolution: EL-ZAHARIY			
44. Contract Assignment 44.1. Contract Assignment: EL-ZAHARIY			
45. Contract Modification 45.1. Contract Modification: EL-ZAHARIY			
46. Contract Termination 46.1. Contract Termination: EL-ZAHARIY			
47. Contract Dispute Resolution 47.1. Contract Dispute Resolution: EL-ZAHARIY			
48. Contract Assignment 48.1. Contract Assignment: EL-ZAHARIY			
49. Contract Modification 49.1. Contract Modification: EL-ZAHARIY			
50. Contract Termination 50.1. Contract Termination: EL-ZAHARIY			
51. Contract Dispute Resolution 51.1. Contract Dispute Resolution: EL-ZAHARIY			
52. Contract Assignment 52.1. Contract Assignment: EL-ZAHARIY			
53. Contract Modification 53.1. Contract Modification: EL-ZAHARIY			
54. Contract Termination 54.1. Contract Termination: EL-ZAHARIY			
55. Contract Dispute Resolution 55.1. Contract Dispute Resolution: EL-ZAHARIY			
56. Contract Assignment 56.1. Contract Assignment: EL-ZAHARIY			
57. Contract Modification 57.1. Contract Modification: EL-ZAHARIY			
58. Contract Termination 58.1. Contract Termination: EL-ZAHARIY			
59. Contract Dispute Resolution 59.1. Contract Dispute Resolution: EL-ZAHARIY			
60. Contract Assignment 60.1. Contract Assignment: EL-ZAHARIY			
61. Contract Modification 61.1. Contract Modification: EL-ZAHARIY			
62. Contract Termination 62.1. Contract Termination: EL-ZAHARIY			
63. Contract Dispute Resolution 63.1. Contract Dispute Resolution: EL-ZAHARIY			
64. Contract Assignment 64.1. Contract Assignment: EL-ZAHARIY			
65. Contract Modification 65.1. Contract Modification: EL-ZAHARIY			
66. Contract Termination 66.1. Contract Termination: EL-ZAHARIY			
67. Contract Dispute Resolution 67.1. Contract Dispute Resolution: EL-ZAHARIY			
68. Contract Assignment 68.1. Contract Assignment: EL-ZAHARIY			
69. Contract Modification 69.1. Contract Modification:</			

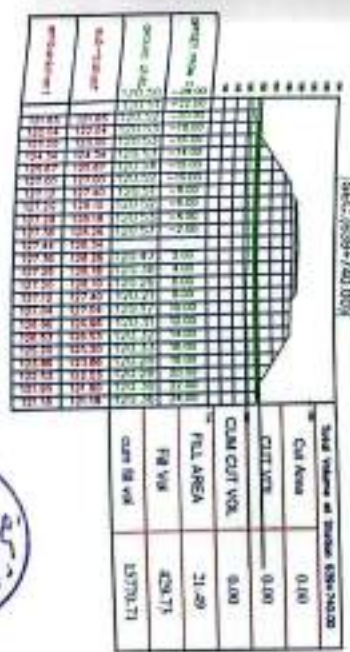
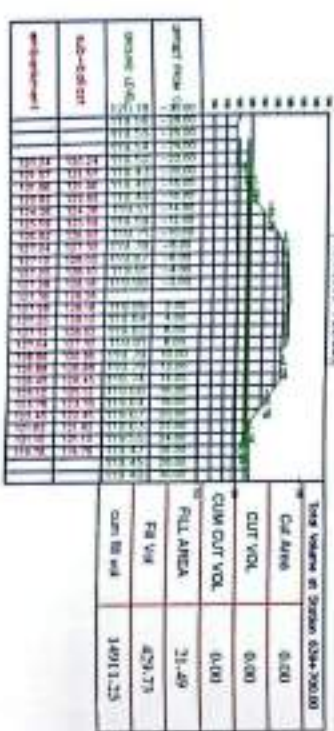
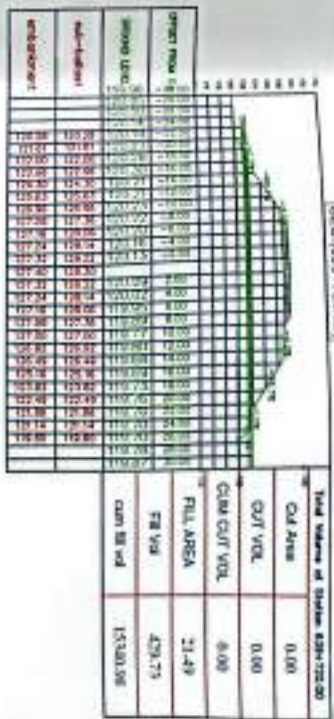
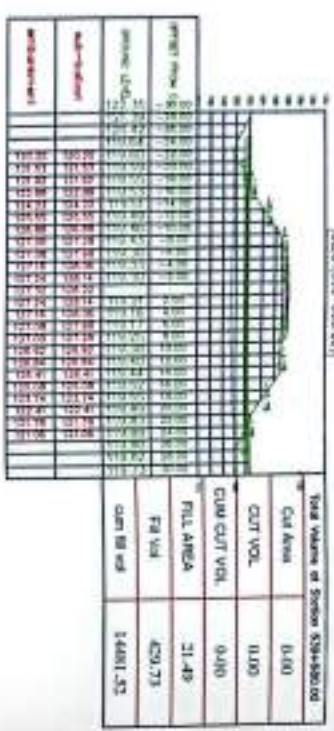


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Ministry of Transportation
 General Authority for Tunnels (GAT)
 General Authority for Tunnels (GAT)
 General Authority for Tunnels (GAT)
 General Authority for Tunnels (GAT)

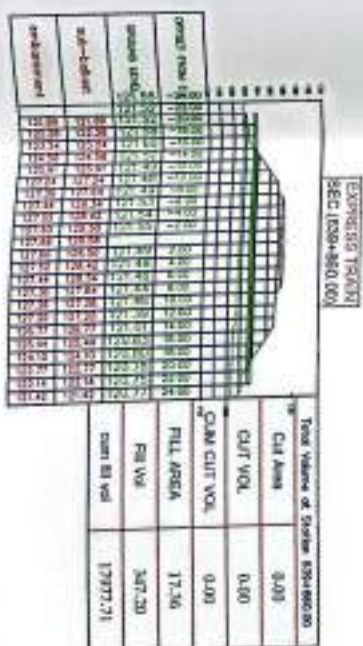
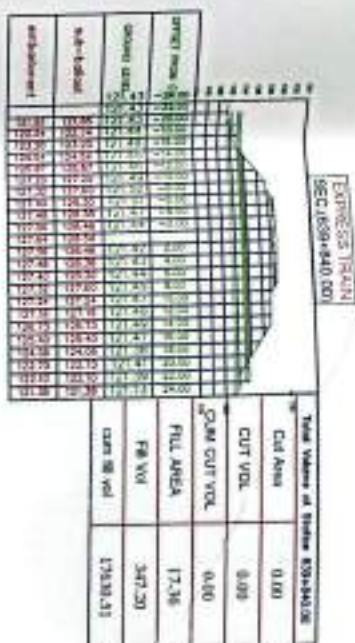


Drawing NO
 659-SEC 5-EXPRESS-05

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 ٢٠٢٠

SECTION 659+690 TO 695
 PROJECT NO. 100-100-100
 List of cross-section Expressions
 All dimensions are in meters
 Drawing NO
 659-SEC 5-EXPRESS-05

100



Abstract
Modeling of Transportation
 and **Land Use** for **Urban** and **Suburban** Areas
 by **Dr. R. S. Srinivasan**
 and **Dr. S. S. Srinivasan**
 Published by **World Scientific**
 Singapore

SECTION 10000 (G) (1) (a) (i) (ii)			
General Information (G) (1) (a) (i) (ii) (iii)			
Item	Quantity	Unit	Amount
10000 (G) (1) (a) (i) (ii) (iii)	1	Unit	1.00
10000 (G) (1) (a) (i) (ii) (iii)	1	Unit	1.00

• All dimensions are in meters

List of cross-site 2 superolateral

☐	Library Street Light
☐	Removal of Utility Pole

0-9

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100%	100%
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	d	

Contractor	IL-2004087	(2)
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Study Book	

Call today for more information - 1-800-368-5631
ELZABETH COMPANY
 10000 W. 10th Ave. Suite 100
 Denver, CO 80231

not been observed in any other	
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Drawing No	02-120000
Issue - SFC 5 - 07/04/00	113

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NOTES

Ministry of Transportation
General Highway for Transit Part

1. This drawing is for the purpose of providing information only. It is not to be used for construction or for any other purpose without the approval of the Ministry of Transportation.

2. The Ministry of Transportation is not responsible for the accuracy or completeness of the information provided in this drawing.

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KEY PLAN

ACTION FROM QUARTY ACCOUNT

NO.	DATE	DESCRIPTION	AMOUNT
1	2011/11/15	Initial estimate	1000000.00
2	2012/01/15	Revised estimate	1000000.00
3	2012/03/15	Final estimate	1000000.00

* All dimensions are in meters

List of cross-section description

NO.	SECTION	DESCRIPTION
1	SECTION 1	SECTION 1
2	SECTION 2	SECTION 2
3	SECTION 3	SECTION 3

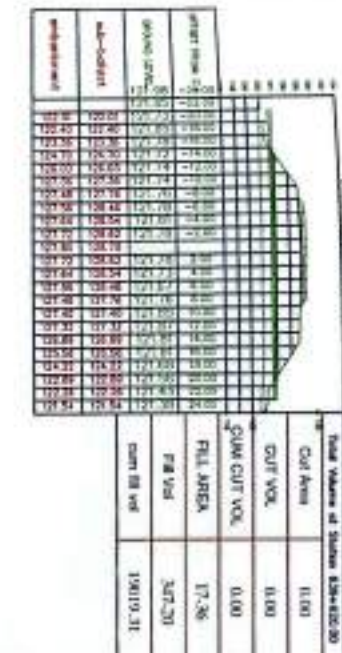


DESIGNED BY	EL-ZAHABY COMPANY
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DATE	2012/03/15

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EL-ZAHABY COMPANY
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2012/03/15

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2012/03/15

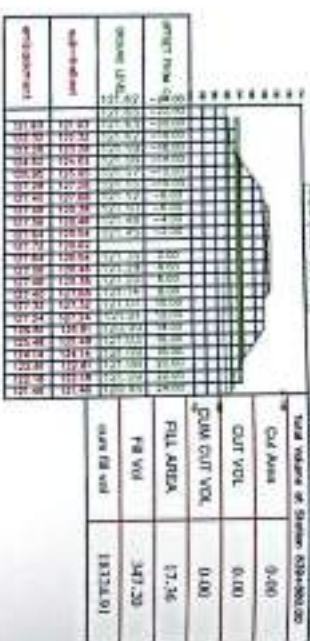
EXPRESS TRAIN
SEC. (839+820.00)



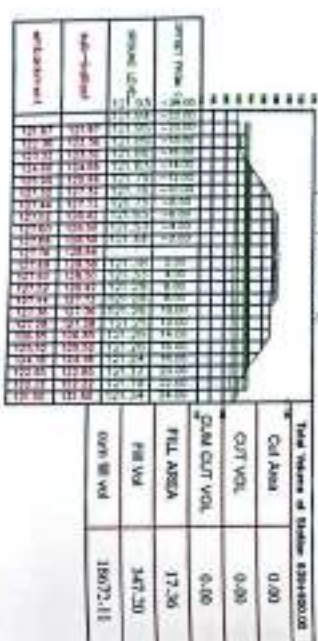
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EXPRESS TRAIN
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EXPRESS TRAIN
SEC. (839+800.00)



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DATE
2012/03/15



...
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SECTION 041+180.00 TO 041+240.00
 SECTION 041+240.00 TO 041+280.00
 SECTION 041+280.00 TO 041+320.00
 SECTION 041+320.00 TO 041+360.00
 SECTION 041+360.00 TO 041+400.00
 SECTION 041+400.00 TO 041+440.00
 SECTION 041+440.00 TO 041+480.00
 SECTION 041+480.00 TO 041+520.00
 SECTION 041+520.00 TO 041+560.00
 SECTION 041+560.00 TO 041+600.00
 SECTION 041+600.00 TO 041+640.00
 SECTION 041+640.00 TO 041+680.00
 SECTION 041+680.00 TO 041+720.00
 SECTION 041+720.00 TO 041+760.00
 SECTION 041+760.00 TO 041+800.00
 SECTION 041+800.00 TO 041+840.00
 SECTION 041+840.00 TO 041+880.00
 SECTION 041+880.00 TO 041+920.00
 SECTION 041+920.00 TO 041+960.00
 SECTION 041+960.00 TO 041+1000.00

EXPRESS TRAIL SEC 16(1)+40.00(1)	
Total Volume of Station 081+10.00	
CU Cut Area	8.60
CUT VOL	6.60
CUA CUT VOL	8.60
FILL AREA	9.01
FILL VOL	188.10
GRAV FILL VOL	21000.56

	EXPENSES TRAIN
	BEC. 1943 = \$60.00)
Said values of Bonds \$44+850.00	Cut Area .0.00
TILL AREA 9.46	CUT VOL 0.00
FIR Vol 130.10	CUM CUT VOL 0.00
Gross Soil vol 21873.76	

[illegible]

Ministry of Transportation
General Building, 10th Floor
1000-10th Avenue, NW
Calgary, Alberta T2C 1P5
Canada
Tel: (403) 297-3100
Fax: (403) 297-3101
www.alberta.ca



SECTION FROM STA 10+00 TO STA 10+50
SECTION 10+00 TO 10+50 - FINISH TO CH-18

List of cross-sections
*All dimensions are in meters

Contractor: EL-JAWADY

Drawn by: HOS - SEC 5 - cross-section (1)

EXPRESS TRAIL SEC (641+000.00)



EXPRESS TRAIL SEC (641+000.00)



EXPRESS TRAIL SEC (641+000.00)

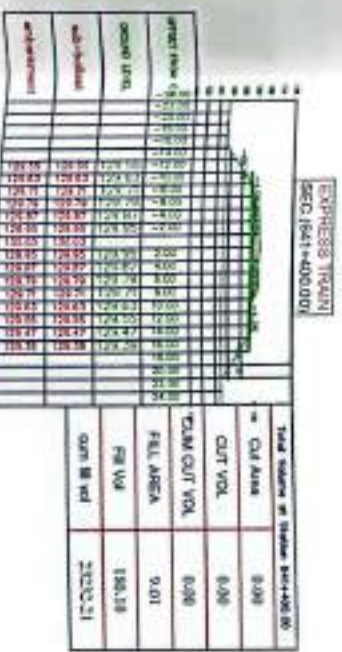
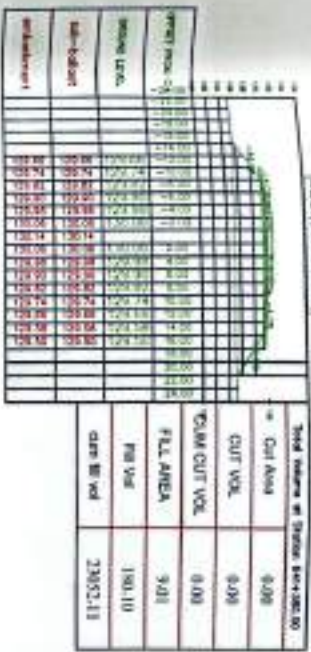
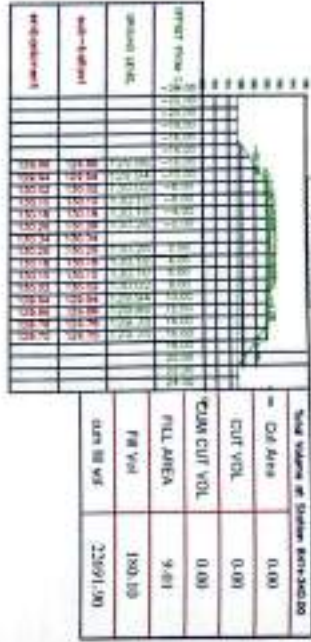


EXPRESS TRAIL SEC (641+000.00)



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Use of cross-sections:

1. All dimensions are in meters.

2. The drawing is for the purpose of construction.

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4. The drawing is for the purpose of construction.

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8. The drawing is for the purpose of construction.

1841+300.00

1841+300.00





TOTAL VOLUMES AT STATION 60+11.500.00	
CU CUT AREA	0.00
CUT VOL.	0.00
C20M CUT VOL.	0.00
FILL AREA	13.46
FILL VOL.	297.20
CUTS BE VOL.	207.25/11

مركز الدراسات والبحوث
Spectrum Consulting
مشروع التطوير الإداري



BEYOND THE SCOPE OF THE PROJECT FROM 12-12-17 TO 17-03-18			
NO.	DATE	ISSUING AUTHORITY	APPROVED AUTHORITY
000001	17-03-18		

*** All Information is in the present**

List of approved Expressions

1. Approved 2. Not Approved 3. Not in Scope	1. Approved 2. Not Approved 3. Not in Scope
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Approved 	Not Approved 
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Approved 	Not Approved 
Approved 	Not Approved 
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PROJECT
Ministry of Transportation
General Engineering for Roadway (GEM) Project

SECTION
General Engineering for Roadway (GEM) Project

PROJECT NO.
GEM/2019/001

SECTION NO.
SECTION 11111111

DATE
2019/11/11

BY
[Signature]

CHECKED BY
[Signature]

APPROVED BY
[Signature]



SECTION
Ministry of Transportation
General Engineering for Roadway (GEM) Project

SECTION
General Engineering for Roadway (GEM) Project

PROJECT NO.
GEM/2019/001

SECTION NO.
SECTION 11111111

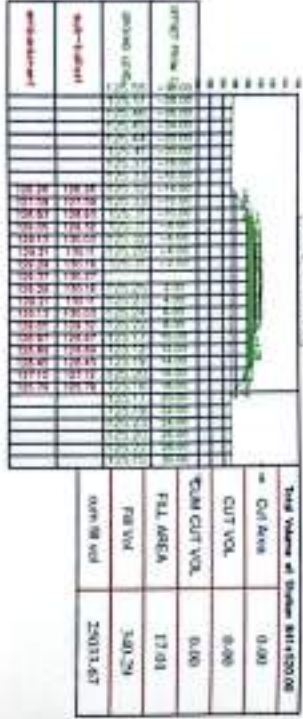
DATE
2019/11/11

BY
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EXPRESS TRAIN
SEC. 084+650.00



EXPRESS TRAIN
SEC. 084+650.00



EXPRESS TRAIN
SEC. 084+650.00



EXPRESS TRAIN
SEC. 084+650.00



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SEC. 084+650.00

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SEC. 084+650.00

EXPRESS TRAIN
SEC. 084+650.00

SECTION
Ministry of Transportation
General Engineering for Roadway (GEM) Project

SECTION
General Engineering for Roadway (GEM) Project

PROJECT NO.
GEM/2019/001

SECTION NO.
SECTION 11111111

DATE
2019/11/11

BY
[Signature]

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APPROVED BY
[Signature]

Ministry of Transportation
National Authority for Tunnels (NAT)

Project Name: ...
Project No: ...

Contract No: ...
Contract Value: ...

NOT PLAN



Station	Station Name	Station Type	Station Length
1	Station 1	Station Type	Station Length

*All dimensions are in meters

Unit of cross-section: Expression

Station	Station Name	Station Type	Station Length
2	Station 2	Station Type	Station Length

Contractor: EL-201487

Drawing No: ...
Drawing Date: ...

EXPRESS TRAIN
SEC (641+600.00)



EXPRESS TRAIN
SEC (641+600.00)



EXPRESS TRAIN
SEC (641+640.00)



EXPRESS TRAIN
SEC (641+640.00)



St setrum Consulting
Institute

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Institute



E:\PROJECTS\11-05-2012\SEC 1041+020.00	
Total volume at Station 841+430.00	
Cut Area	8.00
Cut Vol.	0.00
CU Cut Vol.	0.00
FILL AREA	22.07
FILL Vol	441.50
over fill vol	30259.34

EXPENSE TRACK		Total square ft. Division 1-10-10-20	
Cost Area	0.00		
CU1 VOL	0.40		
CU4 CU1 VOL	0.00		
FL1 AREA	22.47		
FL1 VOL	441.50		
CU1 FL VOL	30771.34		

1. James M. Smith
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 99. James M. Smith
 100. James M. Smith

مستشاره
Special consultant
مشروع

[illegible]

EXPRESS TRAIL		Total Volume of Solution 811+180.00	
REC 4841+750.00		CLT Area	0.00
CLT VOL	0.00		
CLM CLT VOL	0.00		
FILL AREA	17.05		
PIL VOL	340.29		
Over Bed vol	29457.45		

Express Train					
SEC 0941-0950 (00)					
					Total Volume at Station 801+00=80
				Cut Area	0.00
				Cut Vol.	0.00
				Cum Cut Vol.	0.00
				FILL AREA	22.87
				FILL Vol	799.89
				Gross Fill vol	299.48 Yds

Spectroscopy

[illegible]

[illegible]

EXPENSE TOTAL		SEC 004 = 700.00	
Total Volume of Station 004 = 500.00			
Cut Area	0.00		
Cut Vol	0.00		
Gravel Cut Vol	0.00		
Fill Area	17.00		
Fill Vol	340.00		
Gravel Vol	280.00		

C&G 885 TRAIN SEC 1641+140.00'		Total Volume of Station 6401+00.00	
Old Area	0.00	FILL AREA	17.00
CUT VOL.	0.00	PR VOL	348.39
		GRV BR VOL	2878.47

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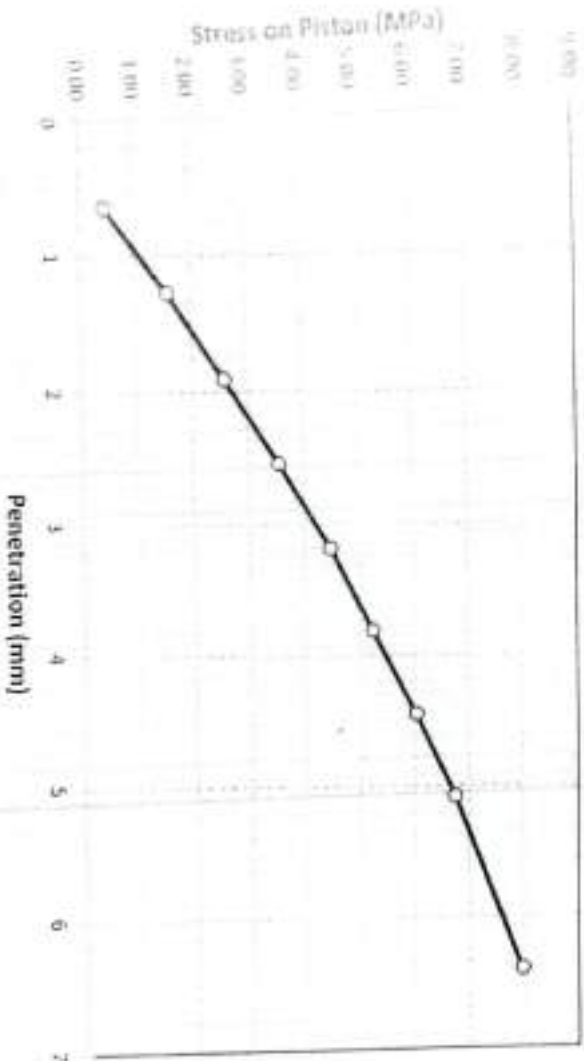
مجلس أمناء جامعة القاهرة
جامعة القاهرة
القاهرة
مصر

[illegible]

Company Name : شركة الخلقي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E=492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature /


CEL
مكتب استشارات الهندسة ومختبرات
رقم التسجيل: 219, 991, 437
الشارع: 3 شارع الملك فيصل، الرياض، المملكة العربية السعودية

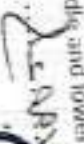
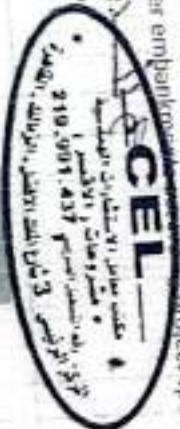
Company Name : شركة المكي
Project : Electric Express Train - HSR from Qous To Arman
Location : ST:641+400 E=492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
	0.050	1.58	
1.27	0.075	2.58	
1.91	0.100	3.55	
2.54	0.125	4.47	
3.18	0.150	5.23	
3.81	0.175	6.03	
4.45	0.200	6.74	
5.08	0.250	7.97	
6.35			
CBR Result		Stress (Mpa)	
At 1 inch (2.54 mm) penetration		St. Value	Sample results
		6.90	3.55
			CBR 100 %
			51.5 %

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

At = 6.4 % optimum water content.
3. Surcharge load 4.50 Kg.

CBR = 10 for middle and lower embankment.
Signature /  

(الشركة) : شركة الكهرباء
 Project : Electric Express Train – HSR From Qous To Armanat
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

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



- Max dry density (g/cm³) : 2.22
- Optimum moisture content % : 6.4 %

Signature /





Consulting Engineering Bureau & Laboratories
بureau d'ingénierie et de laboratoires

Company Name : شركة النخيل

Project : Electric Express Train - HSR From Qous To Arman

Location : ST:641+400 E= 492410,088 N=2862759,57

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

Delivery Date : 08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10)	27.5	Max 50 %	-----	-----
4.75 mm (No. 40)	15.6	Max 30 %	Max 50 %	-----
6.00 mm (No. 200)	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	-----	-----	-----	-----
Plasticity Index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature

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بureau d'ingénierie et de laboratoires
215 991 437
بureau 3



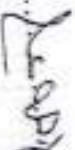
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Company Name : شركة الانجي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

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

Signature / : 



44, 42400 P.O. Box 10, Sharjah
Tel: 06-2611111
Fax: 06-2611111



Company Name : شركة الأهلي
Project : Electric Express Train - IISR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	9.1

Signature / *Le Abdin*



Company Name : شركة المظفر
 Project : Electric Express Train - HSR From Qous To Armat
 Location : ST:641+400 E=492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	3/4	72.2
12.50	1/2	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature /

[Handwritten Signature]



Company Name : شركة الأقيس
Project : Electric Express Train – HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman,

Attached here with the delivered on 08 / 01 / 2024

This sample is representative for 5.000 M³

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 / 

Consultant Eng : Abderrahman Ahmed



CEL

Consulting Engineering Bureau & Laboratories
مكتب مهندسين واستشارات ومختبرات

Company Name : شركة الخبي

Project

Location

Type of sample

Delivery Date

Reporting Date

Reporting No.

: Electric Express Train - HSR From Qous To Arman
: ST:641+400 E= 492410,088 N=2862759,57

: Soil Embankment (Upper Embankment 0.0 M)

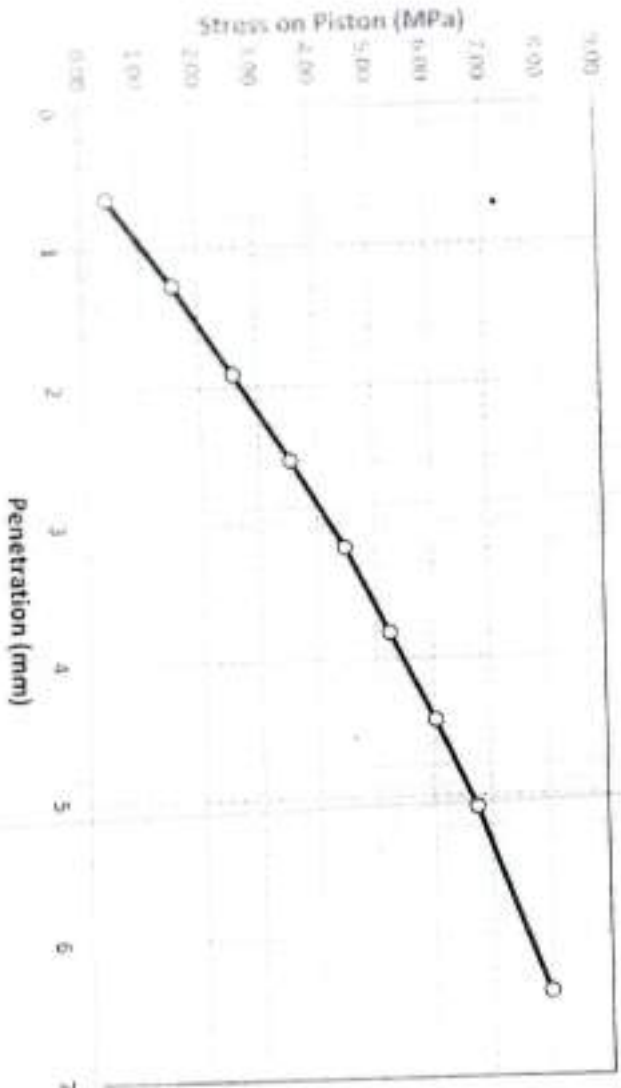
:08/01/2024

: 11/1/2024

: 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature

CEL
مكتب مهندسين واستشارات ومختبرات
شماره تماس : 219 991 437
فکس : 219 991 437
تاریخ صدور : 11/1/2024

IAS
REGISTERED

Company Name : شركة (الذبي)
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
1.27	0.050	1.58	
1.91	0.075	2.58	
2.54	0.100	3.55	
3.18	0.125	4.47	
3.81	0.150	5.23	
4.45	0.175	6.03	
5.08	0.200	6.74	
6.35	0.250	7.97	

CBR Result		Stress (Mpa)		CBR 100 %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results		
	6.90	3.55	51.5 %	

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.22 (gm/cm³)
At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kg.

CBR = 10 for middle and lower embankment.
Signature /  Project spec page No 36.



IAS

Company Name : شركة الخبي
Project : Electric Express Train - HSR From Qous To Armani
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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



- Max dry density (gm/cm³) : 2.22
- Optimum moisture content % : 6.4 %

Signature /



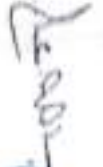
Company Name : شركة خليج
 Project : Electric Express Train - HSR From Qous To Arman
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)			
2.00 mm (No.10)	27.5	Max 50 %	-----	-----
0.425 mm (No. 40)	15.6	Max 30 %	Max 50 %	-----
0.075 mm (No. 200)	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	---	---	---	---
Plasticity Index	0	Max 6 %	Max 6 %	Max 10 %

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

Signature :


CEL
 219 591 437
 0097 003 003 1243

CEL

Construction Engineering Services & Laboratories
مهندسين واستشارات الهندسة والاختبار

Company Name : شركة الزاوي
Project : Electric Express Train - HSR From Qous To Armanat
Location : ST:641+400 E = 492410.088 N = 2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Report No. : 10-19

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

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

Signature /



IAS
ARCHITECT

CEL

Company of Engineering, Research & Development
 Avenida 10 de Agosto 17, Ciudad de México

Company Name: **CEL**
 Project: **Electro-Figuras Tintas - 100% Tinta (Papel 70 gramos)**
 Location: **471-441-448 01-482440088 No-2960779-27**
 Type of service: **Sub-Entendimiento / Super-Entendimiento 4.0 V**
 Service Date: **08/01/2024**
 Accounting Date: **01/01/2024**
 Issuing No: **01-0**

Microscopio (Papel 70 gr. 100.700) sobre
El visor (ESTAD-1140)

Base	Resistencia (ohm)
Porcentaje de material (Papel 70 gr. 100.700) sobre el visor (ESTAD-1140)	

Signature: *[Handwritten Signature]*



CEL

Consulting Engineering Bureau & Laboratories
مكتب استشارات الهندسة ومختبرات

Company Name : عقبات 45 ج5
Project : Electric Express Train - HSR From Qous To Armani
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	$\frac{3}{4}$	72.2
12.50	$\frac{1}{2}$	64.1
9.50	$\frac{3}{8}$	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature / *Reza*



11/01/2024
219, 891, 437
800-000-0000

IAS
ACCREDITED

CEL

Consulting Engineering Bureau & Laboratories
مكتب استشارات الهندسة ومختبرات

Company Name : شركة النقي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman,

Attached here with the delivered on 08 / 01 / 2024

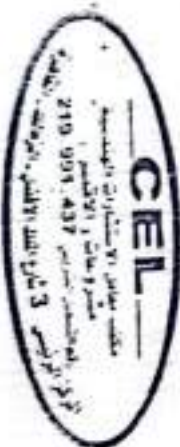
This sample is representative for 5.000 M³

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 / *Abderrahman Ahmed*

Consultant Eng : Abderrahman Ahmed



1999-2000

Electricity Expenses Paid – Held From 2006 to Amount

127 / 1303-1

Robertson
Robert

1811-1812 1813-1814 1815-1816 1817-1818 1819-1820 1821-1822 1823-1824 1825-1826 1827-1828 1829-1830 1831-1832 1833-1834 1835-1836 1837-1838 1839-1840 1841-1842 1843-1844 1845-1846 1847-1848 1849-1850 1851-1852 1853-1854 1855-1856 1857-1858 1859-1860 1861-1862 1863-1864 1865-1866 1867-1868 1869-1870 1871-1872 1873-1874 1875-1876 1877-1878 1879-1880 1881-1882 1883-1884 1885-1886 1887-1888 1889-1890 1891-1892 1893-1894 1895-1896 1897-1898 1899-1900 1901-1902 1903-1904 1905-1906 1907-1908 1909-1910 1911-1912 1913-1914 1915-1916 1917-1918 1919-1920 1921-1922 1923-1924 1925-1926 1927-1928 1929-1930 1931-1932 1933-1934 1935-1936 1937-1938 1939-1940 1941-1942 1943-1944 1945-1946 1947-1948 1949-1950 1951-1952 1953-1954 1955-1956 1957-1958 1959-1960 1961-1962 1963-1964 1965-1966 1967-1968 1969-1970 1971-1972 1973-1974 1975-1976 1977-1978 1979-1980 1981-1982 1983-1984 1985-1986 1987-1988 1989-1990 1991-1992 1993-1994 1995-1996 1997-1998 1999-2000 2001-2002 2003-2004 2005-2006 2007-2008 2009-2010 2011-2012 2013-2014 2015-2016 2017-2018 2019-2020 2021-2022 2023-2024 2025-2026 2027-2028 2029-2030 2031-2032 2033-2034 2035-2036 2037-2038 2039-2040 2041-2042 2043-2044 2045-2046 2047-2048 2049-2050 2051-2052 2053-2054 2055-2056 2057-2058 2059-2060 2061-2062 2063-2064 2065-2066 2067-2068 2069-2070 2071-2072 2073-2074 2075-2076 2077-2078 2079-2080 2081-2082 2083-2084 2085-2086 2087-2088 2089-2090 2091-2092 2093-2094 2095-2096 2097-2098 2099-2100 2101-2102 2103-2104 2105-2106 2107-2108 2109-2110 2111-2112 2113-2114 2115-2116 2117-2118 2119-2120 2121-2122 2123-2124 2125-2126 2127-2128 2129-2130 2131-2132 2133-2134 2135-2136 2137-2138 2139-2140 2141-2142 2143-2144 2145-2146 2147-2148 2149-2150 2151-2152 2153-2154 2155-2156 2157-2158 2159-2160 2161-2162 2163-2164 2165-2166 2167-2168 2169-2170 2171-2172 2173-2174 2175-2176 2177-2178 2179-2180 2181-2182 2183-2184 2185-2186 2187-2188 2189-2190 2191-2192 2193-2194 2195-2196 2197-2198 2199-2200 2201-2202 2203-2204 2205-2206 2207-2208 2209-2210 2211-2212 2213-2214 2215-2216 2217-2218 2219-2220 2221-2222 2223-2224 2225-2226 2227-2228 2229-2230 2231-2232 2233-2234 2235-2236 2237-2238 2239-2240 2241-2242 2243-2244 2245-2246 2247-2248 2249-2250 2251-2252 2253-2254 2255-2256 2257-2258 2259-2260 2261-2262 2263-2264 2265-2266 2267-2268 2269-2270 2271-2272 2273-2274 2275-2276 2277-2278 2279-2280 2281-2282 2283-2284 2285-2286 2287-2288 2289-2290 2291-2292 2293-2294 2295-2296 2297-2298 2299-2300 2301-2302 2303-2304 2305-2306 2307-2308 2309-2310 2311-2312 2313-2314 2315-2316 2317-2318 2319-2320 2321-2322 2323-2324 2325-2326 2327-2328 2329-2330 2331-2332 2333-2334 2335-2336 2337-2338 2339-2340 2341-2342 2343-2344 2345-2346 2347-2348 2349-2350 2351-2352 2353-2354 2355-2356 2357-2358 2359-2360 2361-2362 2363-2364 2365-2366 2367-2368 2369-2370 2371-2372 2373-2374 2375-2376 2377-2378 2379-2380 2381-2382 2383-2384 2385-2386 2387-2388 2389-2390 2391-2392 2393-2394 2395-2396 2397-2398 2399-2400 2401-2402 2403-2404 2405-2406 2407-2408 2409-2410 2411-2412 2413-2414 2415-2416 2417-2418 2419-2420 2421-2422 2423-2424 2425-2426 2427-2428 2429-2430 2431-2432 2433-2434 2435-2436 2437-2438 2439-2440 2441-2442 2443-2444 2445-2446 2447-2448 2449-2450 2451-2452 2453-2454 2455-2456 2457-2458 2459-2460 2461-2462 2463-2464 2465-2466 2467-2468 2469-2470 2471-2472 2473-2474 2475-2476 2477-2478 2479-2480 2481-2482 2483-2484 2485-2486 2487-2488 2489-2490 2491-2492 2493-2494 2495-2496 2497-2498 2499-2500 2501-2502 2503-2504 2505-2506 2507-2508 2509-2510 2511-2512 2513-2514 2515-2516 2517-2518 2519-2520 2521-2522 2523-2524 2525-2526 2527-2528 2529-2530 2531-2532 2533-2534 2535-2536 2537-2538 2539-2540 2541-2542 2543-2544 2545-2546 2547-2548 2549-2550 2551-2552 2553-2554 2555-2556 2557-2558 2559-2560 2561-2562 2563-2564 2565-2566 2567-2568 2569-2570 2571-2572 2573-2574 2575-2576 2577-2578 2579-2580 2581-2582 2583-2584 2585-2586 2587-2588 2589-2590 2591-2592 2593-2594 2595-2596 2597-2598 2599-2600 2601-2602 2603-2604 2605-2606 2607-2608 2609-2610 2611-2612 2613-2614 2615-2616 2617-2618 2619-2620 2621-2622 2623-2624 2625-2626 2627-2628 2629

 $\lambda = 0.50 \text{ nm}$

14-00

Compaction test by uniform sand - Cone Test Method
ASTM D-1556

Test #	Station	Test Hole Volume cm ³	Soil Density gm/cm ³	Moisture Content %	Dry Density gm/cm ³	Degree of Compaction (%)	Acceptance
1	641+820	1504.2	2.25	5.3	2.14	96.4%	Comply
2	641+840	1519.4	2.28	5.8	2.16	97.1%	Comply
3	641+860	1527.1	2.23	6	2.13	96.9%	Comply
4	641+876	1520.8	2.30	6.4	2.16	97.6%	Comply

Max. dry density = 2.22 gm/cm³

Signature

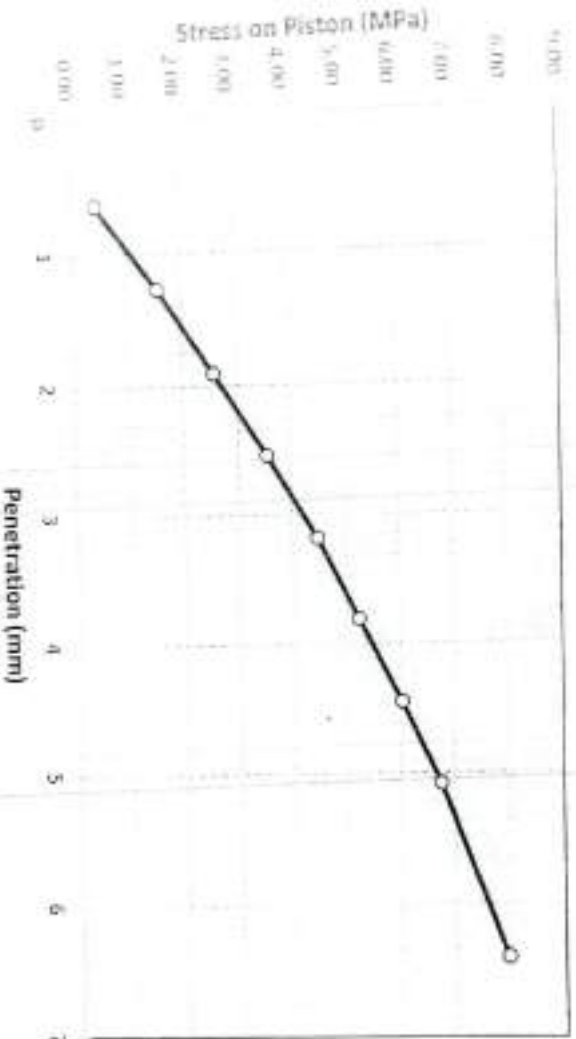
CEL

1. *Chlorophyll a* (Chl *a*) (mg/g)

IAS
ACADEMY

Company Name : شركة الهندسة
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Load Penetration Curve of CBR Test ASTM D-1883



Signature /



IAS

Company
Engineering
Office

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Station 5

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DO

LOC

10

10

10

Company Name : شركة الأهلي
Project : Electric Express Train – HSR From Qous To Arman
Location : ST:641+400 E= 492410.088 N=2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
1.27	0.050	1.58	
1.91	0.075	2.58	
2.54	0.100	3.55	
3.18	0.125	4.47	
3.81	0.150	5.23	
4.45	0.175	6.03	
5.08	0.200	6.74	
6.35	0.250	7.97	
CBR Result		Stress (Mpa)	
At 6.1 inch (154 mm) penetration		St. Value	Sample results
		6.90	3.55
		CBR 100 %	
		51.5 %	

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of = 2.22 (gm/cm³)
At = 6.4 % optimum water content.
- 3- Surcharge load 4.50 Kgf.

+ CBR > 10 for middle and lower embankment as per project spec page No 36.
Signature /



CEL

Geotechnical Engineering Bureau & Laboratories
مكتب ومختبر الجيوتقنيك والهندسة المدنية

Company Name : شركة الألفي
Project : Electric Express Train - HSR From Qous To Armanat
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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



- Max dry density (g/cm³) : 2.22
- Optimum moisture content % : 6.4 %

Signature / *[Signature]*



IAS
ACCREDITED

Company Name : شركة الأحمدي
 Project : Electric Express Train - HSR From Qous To Arman
 Location : ST:641+400 E= 492410,088 N=2862759,57
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/01/2024
 Reporting Date : 11/1/2024
 Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)	Max 50 %	-----	-----
2.00 mm (No.10).	27.5	Max 30 %	Max 50 %	-----
0.425 mm (No. 40).	15.6	Max 15 %	Max 15 %	Max 15 %
0.075 mm (No. 200).	9.1			
Liquid Limit	-----	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

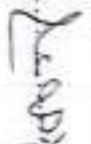
Signature /


 مكتب استشارات ومختبرات الهندسة
 قسم الطرق والبنية التحتية
 رقم 219 901 437
 شارع 3 شارع وسط القدس، الرياض - 11564

Company Name : شركة الانجي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

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

Signature / 

 شركة الهندسة والبناء والدراسات الهندسية
 مقر الشركة: 219 991 407
 فرع القاهرة: 3 شارع الملك فيصل
 فرع الإسكندرية: 3 شارع الملك فيصل

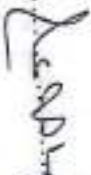
CEL

Consulting Engineering Bureau & Laboratories
مكتب استشارات ومختبرات الهندسة

Company Name : شركة الخافي
Project : Electric Express Train - HSR From Qous To Armanat
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	9.1

Signature / 



Company Name : شركة الخفجي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	$\frac{3}{4}$	72.2
12.50	$\frac{1}{2}$	64.1
9.50	$\frac{3}{8}$	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature /.....



CEL

Consulting Engineering Bureau & Laboratories
مكتب استشارات ومختبرات الهندسة

Company Name : شركة القيسي
Project : Electric Express Train – HSR From Qous To Armanat
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman,

Attached here with the delivered on 08 / 01 / 2024

This sample is representative for 5.000 M³

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 / 

Consultant Eng : Abderrahman Ahmed



15. 15. 15.

Abstract

● 2011 年 11 月 24 日

Embarcadero = Upper

[illegible]

Experiment No. _____

二、

Construction must be using SURE - Extra Time Method
ASTM C-4526

ASTM D-1536

Degree of contraction based on pressure test shown as

Mat. dry density = 2.23 g/cm^3

Acetaminophen molecular content = 6.4 %

Signature

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1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26



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شركة استشارات ومختبرات الهندسة المدنية

Company Name : شركة الطائي

Project : Electric Express Train - HSR From Qous To Armanat

Location : ST:641+400 E= 492410,088 N=2862759,57

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

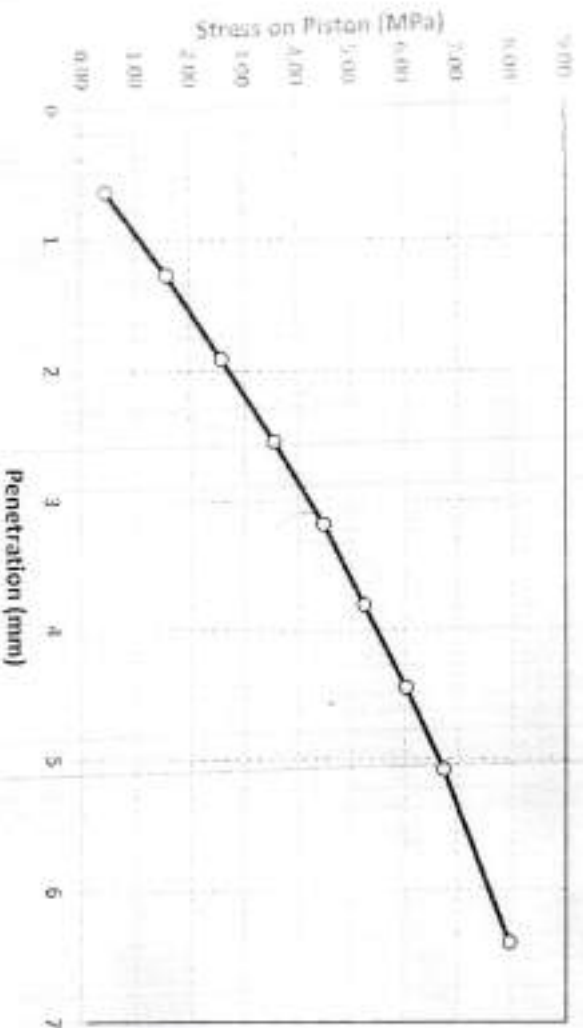
Delivery Date : 08/01/2024

Reporting Date : 11/1/2024

Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature /


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شركة الطائي
مختبرات ومختبرات الهندسة المدنية
الطائي - الرياض
الهاتف: 219 991 437
الفاكس: 219 991 437
البريد الإلكتروني: info@cel-sa.com

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Company Name : شركة الأهلي
Project : Electric Express Train – HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Test Results of California Bearing Ratio on Base Materials

ASTM D 1883

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	0.46	
1.27	0.050	1.58	
1.91	0.075	2.58	
2.54	0.100	3.55	
3.18	0.125	4.47	
3.81	0.150	5.23	
4.45	0.175	6.03	
5.08	0.200	6.74	
6.35	0.250	7.97	

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.55	51.5 %

Notes:

1. Attached graph shows penetration resistance versus penetration magnitude.
2. The sample was compacted to dry density of = 2.22 (gm /cm³)
At = 6.4 % optimum water content.
3. Surcharge load 4.50 Kgf.

4. CBR = 10 for middle and lower embankment. See project spec page No 36.

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رقم التسجيل 219-991-437
الرياض - المملكة العربية السعودية



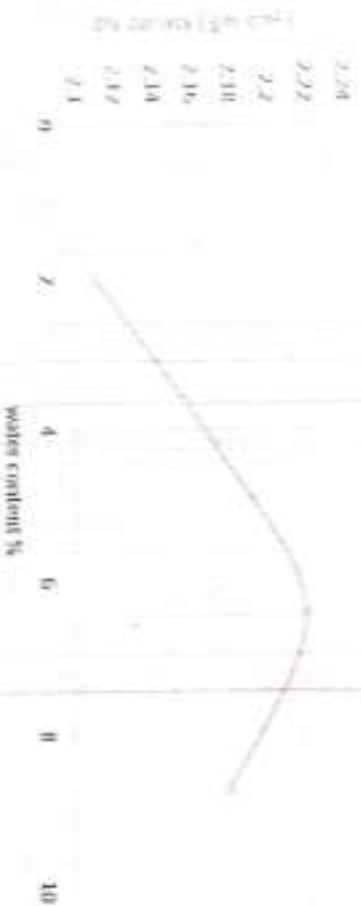
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مكتب استشارات ومختبرات الهندسة

Company Name : شركة الخبي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Moisture - Density relation of soil
Test result (Modified proctor test)

ASTM D-1557



• Max dry density (gm/cm³)

1.2.22

• Optimum moisture content %

6.4 %

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Company Name : شركة الأهلي
Project : Electric Express Train – HSR From Qous To Armani
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Soil Classification

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).	27.5	Max 50 %	-----	-----	
0.425 mm (No. 40).	15.6	Max 30 %	Max 50 %	-----	
0.075 mm (No. 200).	9.1	Max 15 %	Max 15 %	Max 15 %	
Liquid Limit	-----	-----	-----	-----	
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %	

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

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Company Name : شركة الأهلي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

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

Signature /

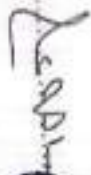


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Company Name : شركة الطائي
Project : Electric Express Train - HSR From Qous To Armanit
Location : ST:641+400 E= 492410.088 N=2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	9.1

Signature : 

مختبر استشارات الهندسة ومختبرات
مكتب استشارات الهندسة ومختبرات
رقم الترخيص: 319-991-437
مكتب الطائي

Company Name : شركة الخرافي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST 641+400 E= 492419.088 N=2862759.57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	3/4	72.2
12.50	1/2	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature / *Dr. Abdullah*



Company Name : شركة الخبي
Project : Electric Express Train - HSR From Qous To Armani
Testing Date : 21 / 1 / 2024
Soil type : Upper Embankment
Location : ST From 641+400 To 641+780
Level : - 0.25 M
Report No. : 138

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

Test #	Station	Test Hole Volume cm ³	Bulk Density gr/cm ³	Moisture Content %	Dry Density (gr/cm ³)	Degree of Compaction (%)	Acceptance
1	641+425	1473.6	2.27	5.3	2.16	97.1%	Comply
2	641+450	1553.5	2.27	6.4	2.13	96.0%	Comply
3	641+475	1763.2	2.26	5.8	2.13	96.1%	Comply
4	641+500	1281.3	2.29	5.8	2.17	97.5%	Comply
5	641+525	1634.0	2.26	6.4	2.13	95.8%	Comply
6	641+550	1404.2	2.31	5.8	2.19	98.5%	Comply
7	641+575	1319.4	2.26	5.8	2.14	96.4%	Comply
8	641+600	1450.7	2.25	5.8	2.13	95.8%	Comply
9	641+625	1539.6	2.24	5.3	2.13	96.0%	Comply
10	641+650	1548.6	2.29	5.3	2.17	97.9%	Comply
11	641+675	1323.6	2.24	5.8	2.12	95.4%	Comply
12	641+700	1512.5	2.28	6.4	2.15	96.7%	Comply
13	641+720	1460.4	2.30	6.4	2.16	97.3%	Comply
14	641+740	1472.9	2.35	6.4	2.21	99.3%	Comply
15	641+760	1521.5	2.28	6.4	2.14	96.4%	Comply
16	641+776	1412.5	2.30	6.4	2.16	97.2%	Comply

Degree of compaction based on proctor test listed At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

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TEL: 011 2736221, 2736222
FAX: 011 2736223

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مكتب محاسن والاستشارات الهندسية

Company Name : شركة الذبيبي

Project : Electric Express Train - HSR From Qous To Arment

Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"

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

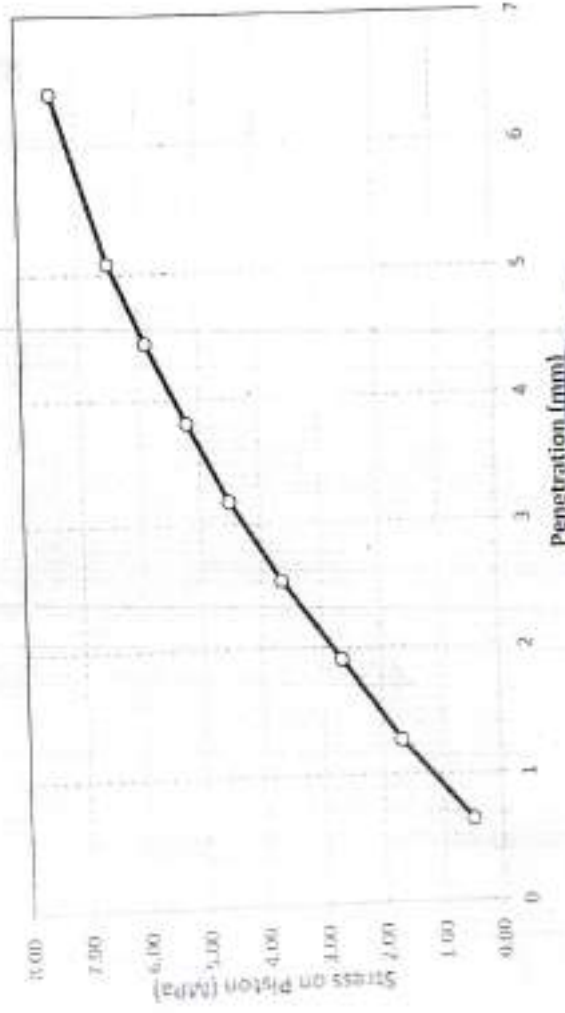
Delivery Date : 08/11/2023

Reporting Date : 12/11/2023

Reporting No. : 08-15

Load Penetration Curve of CBR Test

ASTM D-1883



Penetration (mm)

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مكتب محاسن والاستشارات الهندسية

مقر ومخازن : القاهرة - 119 999 437

الفرع الرئيسي : شارع الملك فيصل - الهرم - الجيزة

Signature / *[Handwritten Signature]*

Dr. Mohamed El-Mohamed
General Manager
0111 437 999 119

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Company Name : شركة الهندسة
Project : Electric Express Train - HSE from Qassim To Arnamut
Location : ST: 639-0000 E=12.5475.6° N=25.5579.1°
Type of sample : Soil Embankment (Upper Embankment (0.0 M)
Delivery Date : 06.11.2023
Reporting Date : 12.11.2023
Reporting No. : 06-15

Test Results of California Bearing Ratio on Base Materials
ASTM D 1553

penetration		stress on piston (Mpa)
mm	inch	
0.54	0.025	
1.27	0.050	
1.91	0.075	
2.54	0.100	
3.18	0.125	
3.81	0.150	
4.45	0.175	
5.08	0.200	
6.35	0.250	
CBR Result		Stress (Mpa)
4.11 inch (2.54 mm) penetration		Sample results
		4.00 1.65
		CBR 100 % 52.8%

Note:

- 1- Attached graph shows Penetration resistance versus Penetration magnitude
- 2- The sample was compared to 40% standard value (2.5 mm) for
- 3- At = 6.4 % optimum water content
- 4- Surcharge load 4.5 kg

4- CBR = 10 for middle and lower section results (4.11 inch) 4.11 inch 4.11 inch

Signature:  3 فبراير 2023



Engineer
Civil Eng.
0000000000000000

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Continued

Appendix

W. J. G. M. Brouwer

1. *Staphylococcus aureus*

6345014

12-00000-00000

12666 • J. Neurosci., September 24, 2008 • 28(39):12660–12666

Moisture – Density relation of soil

: 212

: 6.4 %

Signature / *Leah*

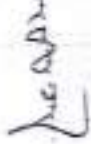
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ACCOMMODATION

Company Name : شركة النخيل
 Project : Electric Express Train - HSR From Qous To Arman
 Location : ST : 639+000 E=32°54'25.6" N=25°53'59.1"
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/11/2023
 Reporting Date : 12/11/2023
 Reporting No. : 08-15

Soil Classification

TEST	Results (%)	Limits according Projects Specs			
		(A-1-a)	(A-1-b)	(A-1-c)	(A-2-4)
Group Classification	(A-1-a)				
2,000 mm (No. 10).	47.7	Max 50 %	-----	-----	-----
75 µm (No. 200).	28.8	Max 30 %	Max 50 %	-----	-----
4.75 mm (No. 40).	10.0	Max 15 %	Max 15 %	Max 15 %	Max 15 %
0.075 mm (No. 200).					
Liquid Limit	---	-----	-----	-----	-----
Plasticity Index	0	Max 6 %	Max 6 %	Max 6 %	Max 10 %

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

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 مكتب استشارات الهندسة والبحوث
 مقره: شارع 3، حي النخيل، الرياض 219 801 437
 رقم الترخيص: 3

CEL

Consulting Engineering Bureau & Laboratories
مكتب محاميل للاستشارات والهندسة

Company Name : شركة الذهبى

Project

: Electric Express Train - HSR From Qous To Armant

Location

: ST: 639+000 E=32°54'25.6" N=25°53'59.1"

Type of sample

: Soil Embankment (Upper Embankment 0.0 M)

Delivery Date

: 08/11/2023

Reporting Date

: 12/11/2023

Reporting No.

: 08-15

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

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

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210 901 437
3 شارع الملك فيصل - القاهرة



Project	: Electric Express Train – HSR From Qous To Armand
Location	: ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample	: Soil Embankment (Upper Embankment 0.0 M)
Delivery Date	: 08/11/2023
Reporting Date	: 12/11/2023
Reporting No.	: 08-15

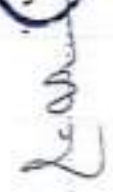
Test	Results (%)
Percentage of material finer than sieve Size 75 μm (No. 200)	10.0

Signature: *[Signature]*
 219 991 437
 3 شارع الملك فيصل، الرياض 11564
 المملكة العربية السعودية
 CEL

Company Name : شركة الدبي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	97.5
37.5	1.5	92.7
25	1	84.2
19	¾	82.8
12.50	½	71.3
9.50	3/8	62.6
4.75	4	47.9
2.00	10	47.7
0.425	40	28.8

Signature / 


 مكتب محاسن الاستشارات والهندسة
 مشروع : قطارات كهربائية
 رقم الملف : 08-15-23
 التاريخ : 12/11/2023

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Consulting Engineering Bureau & Laboratories
مكتب استشارات ومختبرات الهندسة

Company Name : شركة المكي
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Dear Gentleman,

Attached here with the delivered on 8 / 11 / 2023

This sample is representative for 5.000 M³

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 /  Consultant Eng : Abderrahman Ahmed



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مكتب معامل الإستشارات الهندسية
مشروعات محافظات الوجه القبلى

شركة تالعى للبحوث والدراسات الهندسية
: Elctric Express Train - Sector (S) - Giza (V) Amend.
: 13/04/2024
: 16/01/2024
: 02/01/2020
: 01

Company Name
Project
Test Date
Report Date
Author
Test No.

Nonresistive Static Plate Load Tests of Soils DIN 18134



Unloading (%)	1	2	3	4
Stress (kg/cm²)	3253	1766	884	31
Stress (kg/cm²)	5.00	2.50	1.250	0.10
Settlement (mm)	0.96	0.91	0.89	0.23

$$E_{vd} = 1 = 1.13$$

Loading (%)	0	1	2	3	4	5	6
Stress (kg/cm²)	0	988	1172.8	1768.3	2352.5	2946.1	3532.5
Stress (kg/cm²)	0.00	0.83	1.06	2.02	3.35	4.17	6.00
Settlement (mm)	0.00	0.13	0.36	0.53	0.66	0.87	0.98

D (mm) =	320
E _{vd} (MPa) =	0.75 x 10 ³ kg/cm²
E _{vd} (MPa) =	1151.7

Loading (%)	0	1	2	3	4	5
Stress (kg/cm²)	0	988.295	1172.8	1768.3	2352.5	2946.1
Stress (kg/cm²)	0.00	0.83	1.06	2.02	3.35	4.17
Settlement (mm)	0.21	0.31	0.47	0.63	0.74	0.86

D (mm) =	320
E _{vd} (MPa) =	0.42
E _{vd} (MPa) =	138.3

E_{vd} = Modulus of deformation during the loading stage.
E_{vd} = Modulus of deformation during the reloading stage.
D = Plate diameter (mm)
D₁ = The difference between 0.3 and 0.7 from the maximum loading (mm)
D₂ = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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Company Name : شركة طهني للميكانيك و التوريدات المعمومية :
Project : Electric Business Train - Sector 5 - Giza to Asyut
Test Date : 13/01/2024
report date : 15/01/2024
Station : 539+620
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)				Settlement		Average
Loading	Stress Kg/cm ²	Dial 1	mm	Dial 2	mm	
0	0.00	20.00	0.00	19.70	0.30	0.35
1	0.83	19.96	0.05	19.50	0.20	0.73
2	1.66	19.70	0.30	19.30	0.40	0.35
3	2.50	19.46	0.54	19.08	0.51	0.53
4	3.33	19.30	0.70	18.98	0.82	0.36
5	4.17	19.11	0.89	18.75	0.64	0.87
6	5.00	19.00	1.00	18.54	0.96	0.35

Unloading Stage (1)				Settlement		Average
Loading	Stress Kg/cm ²	Dial 1	mm	Dial 2	mm	
1	2.50	19.10	0.90	18.08	0.82	0.51
2	1.25	19.37	0.63	19.25	0.75	0.59
3	0.100	19.50	0.20	19.78	0.22	0.41

Loading Stage (2)				Settlement		Average
Loading	Stress Kg/cm ²	Dial 1	mm	Dial 2	mm	
0	0.83	19.59	0.31	19.70	0.50	0.31
1	1.66	19.48	0.52	19.59	0.41	0.47
stress is reached.						
2	2.50	19.36	0.54	19.38	0.62	0.53
3	3.33	19.25	0.75	19.27	0.73	0.74
4	4.17	19.14	0.86	19.18	0.82	0.54



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مشروعات محافظات الوجه القبلي

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 : Lower Embankment
- Job requiremer : Ev2 > 30 MPa

Item		Description
Type of bedding material below the plate		Natural Soil
Plate Diameter (mm)		300
Date of measurement		13/01/2024
Unusual observation made during test		NO
Description of the soil conditions below the plate after testing		No deformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To			E_{v1} (MPa)	E_{v2} (MPa)	
1	639+580	639+680	639+620	-5.5	111.7	135.3	1.21

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مشروعات محافظات الوجه القبلي

Company : شركة لماسي للمحلات و التوزيعات المعمارية

Project : Electric Express Train - Sector (5) - Qasr to Arment.
Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications EN 18134/2012-04 and project requirements
Test Location : Station 039+303 to 839+050
Station : 039+020
Level : -5.5
Test Date : 13/05/2024
Report Date : 15/01/2024
Type of soil : Lower Embankment
Report No. : 01

Dear Gentleman,

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

Apparatus

1. Loading plates consists of two plates with 303 mm and 303 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel struts/gauges with magnetic supports to load 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 (Eimco)
7. Reaction loading system by roller comparator 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 303 mm and 303 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 20 seconds
4. The strain gauge and the dial gauge shall be set to zero
5. For a 300 mm loading plate, the first values are 2.0 kg/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
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 60 %, 20 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (i.e. 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.
11. Remove the loads



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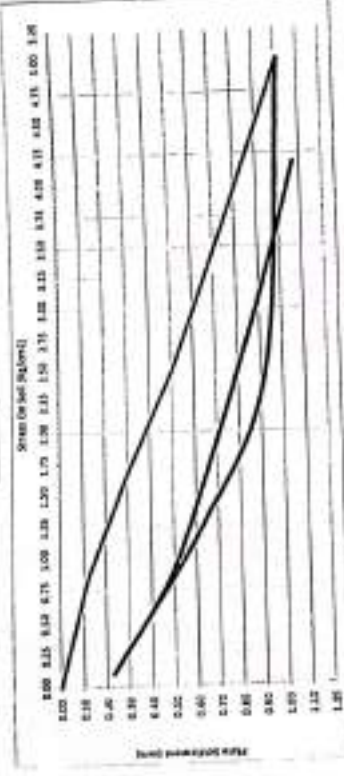
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Company Name
Project
Test Date
Report Date
Material
Test No.

شركة المعاملات والدراسات الهندسية
: Electronic Business Train - Sector (S) - Ques to Khamet
: 13/01/2024
: 15/01/2024
: 6.38 x 100
: 101

**Nondestructive Static Plate Load Tests of Soils
QIN 18134**



Loading (t)	0	1	2	3	4	5	k
Slugs (kg)	0	500	1172.8	1766.3	2359.8	2953.3	3546.8
Stress (kg/cm²)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.12	0.30	0.51	0.68	0.84	1.01

D (mm) =	300
E ₁ (MPa) =	61700 kg/cm²
E ₂ (MPa) =	98.3

Loading (t)	0	1	2	3	4	5
Slugs (kg)	0	500	1172.8	1766.3	2359.8	2953.3
Stress (kg/cm²)	0.00	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.00	0.12	0.30	0.51	0.68	0.84

D (mm) =	300
E ₁ (MPa) =	61700 kg/cm²
E ₂ (MPa) =	128.4

E₁ = Modulus of deformation during the loading stage.
E₂ = Modulus of deformation during the reloading stage.
D = Plate diameter (mm).
Es = The difference between S3 and S4 has the maximum loading (mm) (kg/cm²).
DS = Difference in settlements (mm) (kg/cm²).



Unloading (t)	1	2	3	4
Slugs (kg)	500	1766	884	71
Stress (kg/cm²)	0.83	2.50	1.250	0.10
Settlement (mm)	1.01	0.92	0.83	0.23

E₂/E₁ = 1.37

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Report

1. Evaluation and representation of results.
2. 1 read 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 .
 - Diag gauge reading and corresponding normal stress - Loading-settlement curve.
 - Description of the soil condition below the plate after testing.

Report

- Type of soil : Lower Embankment
- Job requirement : $E_v > 30 \text{ MPa}$

Item		Description
Type of bedding material below the plate		Natural Soil
Plate Diameter (mm)		300
Date of measurement		13/01/2024
Unusual observation made during test		NO
Description of the soil conditions below the plate after testing		No deformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle		Second Cycle	E_v / E_v Ratio
	From	To			E_v (MPa)	E_v (MPa)		
1	639+860	639+760	639+700	-5.5	60.3	126.4		1.27

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والمختبرات

مركز استشارات الهندسة والمختبرات

1. The following information is required for the design of the structure:
a. The structure is a reinforced concrete frame structure.
b. The structure is subjected to the following loads:
i. Dead load (DL) = 10 kN/m²
ii. Live load (LL) = 5 kN/m²
iii. Wind load (WL) = 15 kN/m²
iv. Seismic load (SL) = 10 kN/m²
c. The structure is located in a seismic zone of category II.
d. The structure is subjected to the following boundary conditions:
i. The structure is fixed at the base.
ii. The structure is free at the top.

2. The following information is required for the design of the structure:

a. The structure is a reinforced concrete frame structure.

b. The structure is subjected to the following loads:

i. Dead load (DL) = 10 kN/m²

ii. Live load (LL) = 5 kN/m²

iii. Wind load (WL) = 15 kN/m²

iv. Seismic load (SL) = 10 kN/m²

c. The structure is located in a seismic zone of category II.

d. The structure is subjected to the following boundary conditions:

i. The structure is fixed at the base.

ii. The structure is free at the top.

iii. The structure is subjected to the following loads:

i. Dead load (DL) = 10 kN/m²

ii. Live load (LL) = 5 kN/m²

iii. Wind load (WL) = 15 kN/m²

iv. Seismic load (SL) = 10 kN/m²

c. The structure is located in a seismic zone of category II.

d. The structure is subjected to the following boundary conditions:

i. The structure is fixed at the base.

ii. The structure is free at the top.



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مركز استشارات الهندسة
والمختبرات

3101 Main St. - 1st Floor -
Burlington, Canada

Company Name : شركة الأهلي
Project : Electric Express Train – HSR From Qous To Armanit
Testing Date : 13 / 1 / 2024
Soil type : Lower Embankment
Location : ST From 639+580 To 639+760
Level : - 5.5 M
Report No. : 131

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

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	639+610	1550.0	2.27	5.8	2.15	97.7%	Comply
2	639+675	1441.7	2.25	5.8	2.12	96.5%	Comply
3	639+710	1387.5	2.27	5.3	2.16	98.2%	Comply
4	639+755	1325.7	2.27	6	2.14	97.4%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

Signature / ...

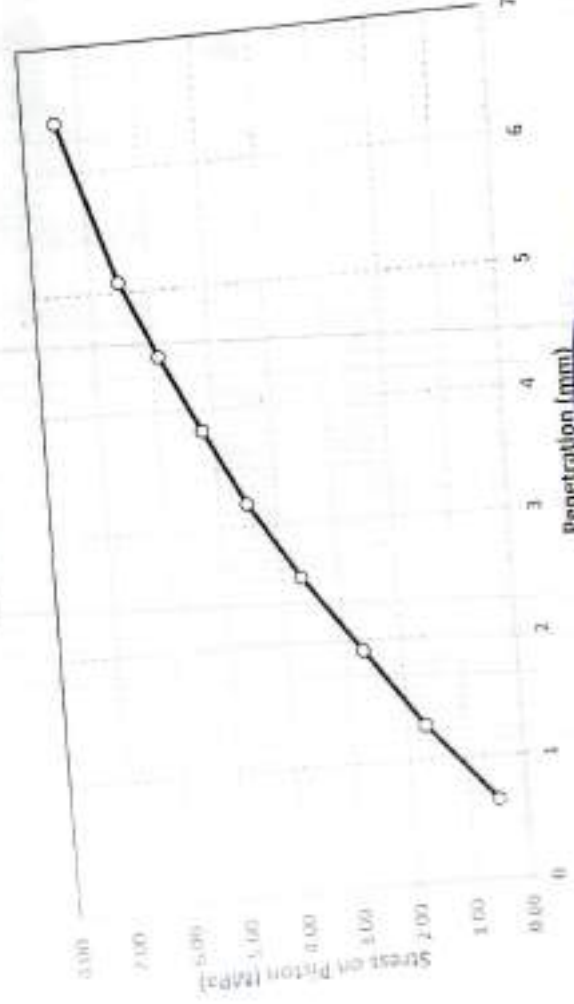


Mr. Mervat El-Din Shouk
Lab. No. 131
Date: 13/1/2024



Company Name : شركة الذهبية
Project : Electric Express Train - HSR From Qous To Armanat
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Load Penetration Curve of CBR Test
ASTM D-1883



Signature / *[Signature]*
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الرقم المقياس: 319.001.437



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Company Name : شركة الأهلي
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

Test Results of California Bearing Ratio on			
ASTM D 1883			
penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025		
1.27	0.050		
1.91	0.075		
2.54	0.100		
3.18	0.125		
3.81	0.150		
4.45	0.175		
5.08	0.200		
6.35	0.250		
CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
at 0.5 inch (12.54 mm) penetration	6.90	3.65	52.8%

penetration mm

Notes: 1- Attached graph shows penetration resistance versus penetration magnitude.

2- The sample was compacted to dry density of 2.22(gm/cm³)

At = 6.4 % optimum water content.

3- Surcharge load 4.50 Kg.

4- CBR > 10 for middle and lower embankments.

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Company Name : شركة النخعي
 Project : Electric Express Train - HSR From Qous To Armanat
 Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
 Type of sample : Soil Embankment (Upper Embankment 0.0 M)
 Delivery Date : 08/11/2023
 Reporting Date : 12/11/2023
 Reporting No. : 08-15

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



• Max dry density (g/cm³) : 2.22

• Optimum moisture content % : 6.4 %

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 مقترحات : 439 991 219
 رقم الترخيص : 3 شارع الملك فيصل - الرياض



Dr. Hani F. Al-Najdi
 Technical Manager
 Hani@cel.com.sa

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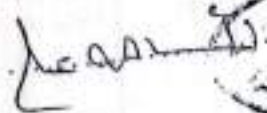
Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)			
2.00 mm (No.10).	47.7	Max 50 %	-----	-----
0.425 mm (No. 40).	28.8	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	10.0	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	---	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

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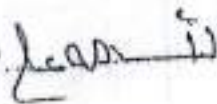
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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

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

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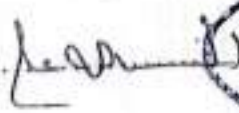
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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	10.0

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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	97.5
37.5	1.5	92.7
25	1	84.2
19	3/4	82.8
12.50	1/2	71.3
9.50	3/8	62.6
4.75	4	47.9
2.00	10	47.7
0.425	40	28.8

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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Dear Gentleman,

Attached here with the delivered on 8 / 11 / 2023

This sample is representative for 5.000 M³

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 /...

Consultant Eng : Abderrahman Ahmed



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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Testing Date : 30 / 1 / 2024
Soil type : Middli Embankment
Location : ST From 638+740 To 639+100
Level : - 2 M
Report No. : 144

Compaction test by using Sand – Cone Test Method

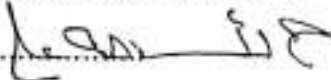
ASTM D- 1556

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	638+762	1398.6	2.30	5.8	2.17	97.8%	Comply
2	638+795	1348.6	2.29	5.3	2.17	98.0%	Comply
3	638+830	1436.8	2.23	5.3	2.12	95.6%	Comply
4	638+885	1486.8	2.25	5.8	2.13	95.8%	Comply
5	638+930	1506.9	2.28	5.3	2.16	97.4%	Comply
6	638+991	1534.0	2.27	5.8	2.14	96.5%	Comply
7	639+045	1452.1	2.23	5	2.13	95.8%	Comply
8	639+085	1511.8	2.25	6.4	2.11	95.2%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

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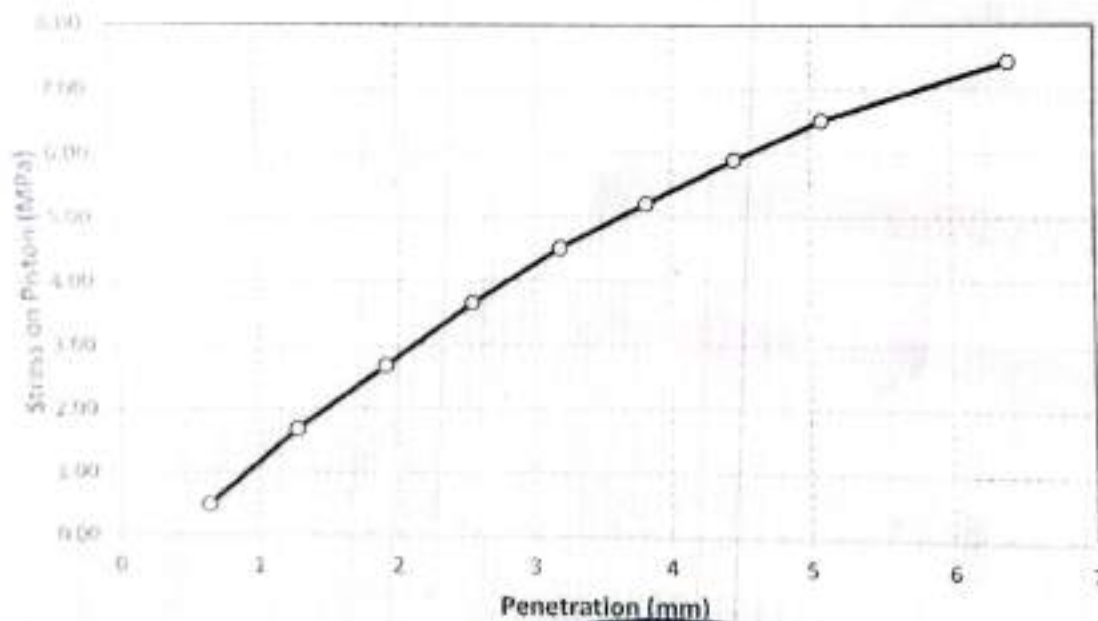


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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Load Penetration Curve of CBR Test ASTM D-1883



Signature /



Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Arman
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

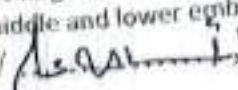
penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	
1.27	0.050	
1.91	0.075	
2.54	0.100	
3.18	0.125	
3.81	0.150	
4.45	0.175	
5.08	0.200	
6.35	0.250	

CBR Result	Stress (Mpa)		CBR 100 %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	3.65	52.8%

Notes:

- Attached graph shows penetration resistance versus penetration magnitude.
- The sample was compacted to dry density of 2.22(gm/cm³)
- AI = 6.4 % optimum water content.
- Surcharge load 4.50 Kg.

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

Signature / 

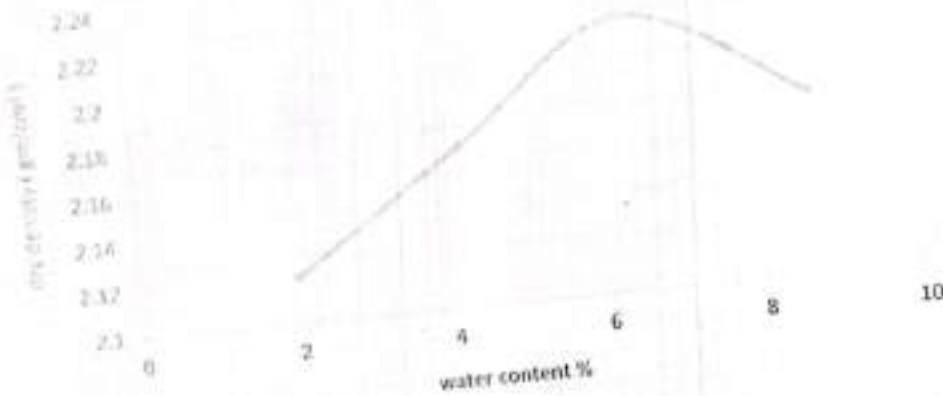


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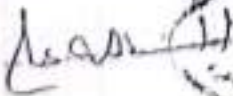
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مكتب محاسن الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Arment
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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



- Max dry density (gm/cm³) : 2.22
- Optimum moisture content % : 6.4 %

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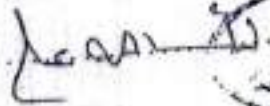
Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Arment
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
• Group Classification	(A-1-a)			
2.00 mm (No.10).	47.7	Max 50 %	-----	-----
0.425 mm (No. 40).	28.8	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	10.0	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	---	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

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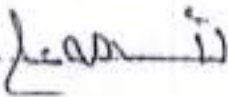
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Company Name : شركة الذهبي
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

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

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

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P.O. Box 111, Jeddah 21511, Saudi Arabia

Company Name: شركة
Project: Electric Express Train - HSR From Qassim To Ar-Ramadh
Location: ST: 639+000 E=32°54'25.6" N=25°51'50.1"
Type of sample: Soil Embankment (Upper Embankment 0.0 M)
Delivery Date: 08/11/2023
Reporting Date: 12/11/2023
Reporting No.: 08-15

Materials finer than 75 μ m (No.200) sieve
By washing ASTM D-1140

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ m (No.200)	0.2

Signature: [Signature]

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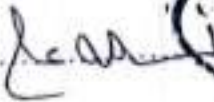
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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	97.5
37.5	1.5	92.7
25	1	84.2
19	3/4	82.8
12.50	1/2	71.3
9.50	3/8	62.6
4.75	4	47.9
2.00	10	47.7
0.425	40	28.8

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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST: 639+000 E=32°54'25.6" N=25°53'59.1"
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/11/2023
Reporting Date : 12/11/2023
Reporting No. : 08-15

Dear Gentleman ,

Attached here with the delivered on 8 / 11 / 2023

This sample is representative for 5.000 M³

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 /...

Consultant Eng : Abderrahman Ahmed



15, rue El-Ahmed Street
Cairo 11561
Tél: 23962041



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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Testing Date : 15 / 1 / 2024
Soil type : Middle Embankment
Location : ST From 638+940 To 638+980
Level : - 4.5 M
Report No. : 134-2

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

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	638+955	1545.8	2.26	6.4	2.13	95.9%	Comply
2	638+976	1568.1	2.30	6	2.17	97.8%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

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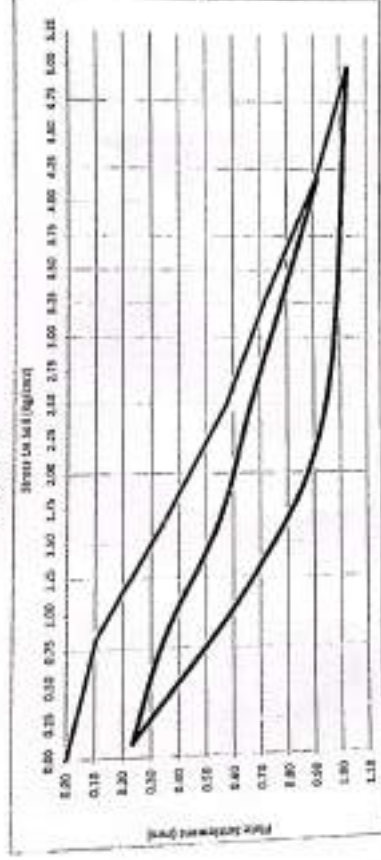
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مشروعات محافظات الوجه القبلى

Company Name
Project
Test Date
report date
Station
Test No.

شركة طهي القويك و التبريد للصويا :
: Electric Express Train - Sector (5) - Qous la Arment.
: 23/01/2024
: 25/01/2024
: 641+188
: 01

Nonrepelitive Static Plate Load Tests of Soils DIN 18134



Loading (t)	0	1	2	3	4	5	0
Stage (kg)	0	886	1172.8	1766.3	2352.6	2946.1	3532.5
Stress (kg/cm²)	0.00	0.83	1.66	2.49	3.33	4.17	5.00
Settlement (mm)	0.00	0.11	0.35	0.67	0.73	0.91	1.03

D (mm) =	340
Ex (MPa) =	0.75 * D² / A² / 65
	95.2

Loading (t)	0	1	2	3	4	5
Stage (kg)	0	886.385	1172.8	1766.3	2352.6	2946.1
Stress (kg/cm²)	0.10	0.83	1.66	2.49	3.33	4.17
Settlement (mm)	0.23	0.35	0.55	0.67	0.79	0.91

D (mm) =	300
Ex (MPa) =	6.39 * D² / A² / 65
	143.2
ST (mm) =	8.51
S0 (mm) =	0.50
ΔS =	0.38

Sx1 = modulus of deformation during the loading stage.
Sx2 = modulus of deformation during the relaxing stage.
D = Plate diameter (mm)
ΔS = Difference between Sx1 and Sx2 from the maximum loading (kg/cm²)
S0 = Difference in settlement corresponding to Sx1 and Sx2 from the zero load loading (mm)



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مشاريع ومحطات الوجه القبلي

Company Name

شركة قاضي للمحولات والكهرباء السمية :

Project

Electric Express Train - Sector (B) - Doors to Arrive :

Test Date
report data

: 23/01/2024

Station

: 641+180

Test No.

: 61

Nonrepesitive Static Plate Load Tests of Soils

DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.00	30.50	0.00	30.30	0.00	0.00
1	0.83	15.94	0.16	15.56	0.05	0.11
2	1.66	15.55	0.40	15.70	0.30	0.35
3	2.50	15.55	0.61	15.86	0.54	0.57
4	3.33	15.24	0.76	15.30	0.70	0.73
5	4.17	15.07	0.93	15.13	0.89	0.91
6	5.00	14.94	1.09	15.00	1.09	1.09

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
1	2.50	15.92	0.98	15.09	0.91	0.85
2	1.25	15.30	0.70	15.35	0.55	0.67
3	0.100	15.15	0.27	15.89	0.20	0.23

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.83	15.61	0.39	15.69	0.31	0.35
1	1.66	15.43	0.58	15.48	0.52	0.55
stress is reached.						
2	2.50	15.31	0.69	15.36	0.64	0.67
3	3.33	15.19	0.81	15.33	0.77	0.79
4	4.17	15.07	0.93	15.10	0.80	0.91



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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 : Upper Embankment
- Job requirement : $E_v2 > 60 \text{ MPa}$

Item	Description
Type of bedding material below the plate.	Natural Soil
Plate diameter (mm)	300
Date of measurement	: 23/01/2004
Unusual observation made during test	NO
Description of the soil conditions below the plate after testing	No reformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle		Second Cycle	E_v / E_{vs} Ratio
	From	To			$E_{vs1} \text{ (MPa)}$	$E_{vs2} \text{ (MPa)}$		
1	641+150	641+200	: 641+160	: 0.0	95.2		145.2	1.53

Signature /



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مشروعات محافظات الوجه القبلي

Company Name : شركة فاخس للمشاريع والتوريدات العمومية :
Project : Badr El Ezzine Train - Badr (B) - Down to Alignment
Test Date : 23/01/2024
report date : 25/01/2024
Station : 541+120
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm ²	Settlement		Average
		Dial 1 mm	Dial 2 mm	
0	0.00	10.00	10.00	0.00
1	0.83	10.80	10.91	0.15
2	1.66	10.01	10.74	0.33
3	2.50	10.43	10.57	0.51
4	3.33	10.15	10.30	0.68
5	4.17	10.10	10.25	0.83
6	5.00	10.88	10.90	0.98

Unloading Stage (1)

Loading	Stress Kg/cm ²	Settlement		Average
		Dial 1 mm	Dial 2 mm	
1	2.50	10.05	10.14	0.90
2	1.25	10.30	10.38	0.66
3	0.100	10.13	10.23	0.23

Loading Stage (2)

Loading	Stress Kg/cm ²	Settlement		Average
		Dial 1 mm	Dial 2 mm	
0	0.83	10.64	10.03	0.33
1	1.66	10.40	10.53	0.50
stress is reached				
2	2.50	10.50	10.37	0.66
3	3.33	10.35	10.21	0.82
4	4.17	10.01	10.05	0.97



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مكتب معمار الإستشارات الهندسية

مشروعات محافظات الوجه القبلي

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 : Upper Embankment
- Job requiremer : $E_{v2} > 60 \text{ MPa}$

Item		Descriptions
Type of bedding material below the plate		Natural Soil
plate Diameter (mm)		300
date of measurement		12/3/01/2024
Unusual observation made during test		NO
Description of the soil conditions below the plate after testing		No deformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle		Second Cycle	E_{v2} / E_{v1} Ratio
	From	To			$E_{v1} \text{ (MPa)}$	$E_{v2} \text{ (MPa)}$		
1	641+100	641+150	641+120	0.0	104.8	117.0		1.12

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مكتب معام الإستشارات الهندسية

مشروعات محافظات الوجه القبلي

Summary

شركة خلاص للدراسات والدراسات الهندسية

Project : Electric Express Trials - Sector (S) - Giza to Arment
Subject : Determining the deformation and strength characteristics of soil by the plate loading test according specifications UH 18 (EN 12368) and project requirements
Test Location : Station : 641+100 to 641+150
Station : 641+120
Level : 8.0
Test Date : 23/01/2024
Report Date : 25/01/2024
Type of soil : Upper Embankment
Report No. : 01

Dear Gentleman,

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 (Enwetac)
7. Reaction loading system by roller computer 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 first values are 0.0 kg/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
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 60 %, 20 %, and approximately 2 % of the stress in load
9. Following unloading, a further (2nd) 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.
11. Remove the loads



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Company : شركة نذفى للمحولات و التوريدات المعمية :

Project : Electric Express Train - Sector (5) - Qous to Arment
Subject : Determine the deformation and strength characteristics of soil by the
plate loading test according specifications DIN 18 134:2012-04 and project requirements
Test Location : Station 641+100 to 641+150
Station : 641+120
Level : 0.0
Test Date : 23/01/2024
Report Date : 25/01/2024
Type of soil : Upper Embankment
Report No. : 01

Dear Gentleman,

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 (Enerpac)
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/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
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 unloading, a further (2nd) 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.
11. Remove the loads



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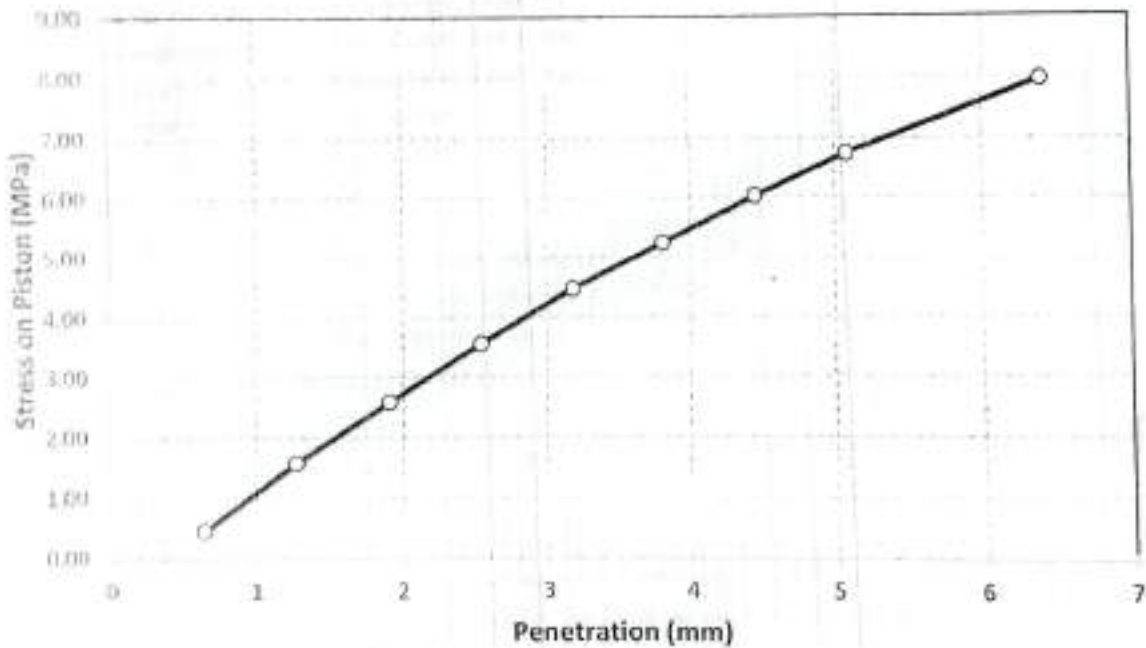
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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Load Penetration Curve of CBR Test

ASTM D-1883



Signature / ..



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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.46
1.27	0.050	1.58
1.91	0.075	2.58
2.54	0.100	3.55
3.18	0.125	4.47
3.81	0.150	5.23
4.45	0.175	6.03
5.08	0.200	6.74
6.35	0.250	7.97

CBR Result	Stress (Mpa)		CBR 100 %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	51.5 %
	6.90	3.55	

Notes:

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

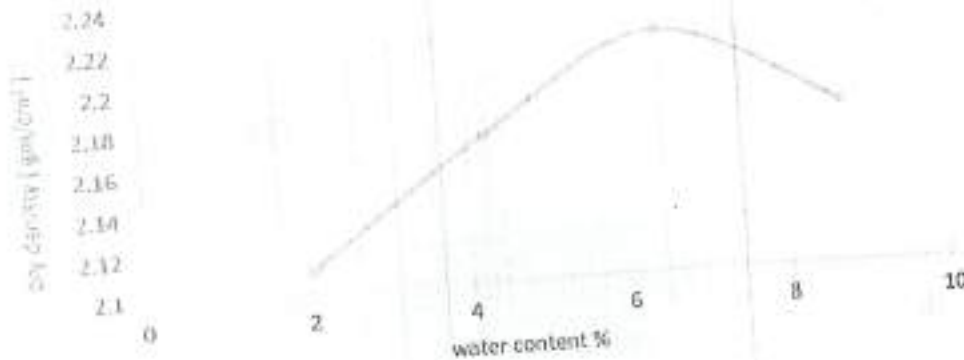


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Company Name : شركة الذهبي
Project : Electric Express Train - HSR From Qous To Arment
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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



- Max dry density (gm/cm³) : 2.22
- Optimum moisture content % : 6.4 %

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Project : Electric Express Train - HSR From Qous To Arment
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10).	27.5	Max 50 %	-----	-----
0.425 mm (No. 40).	15.6	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	-----	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

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REFERENCE: 10/10/2024
January, 2024
10/10/2024 - 722/374



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Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

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

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Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ M (No.200)	9.1

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El Mansour Abdelhakim
Engineer
011594 276053 - 01159490



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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	3/4	72.2
12.50	1/2	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

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El Mostafa El Attia Salem
Director / مدير
44 El Mostafa El Attia Salem



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Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman,

Attached here with the delivered on 08 / 01 / 2024

This sample is representative for 5.000 M³

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 /

Consultant Eng : Abderrahman Ahmed



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Company Name	: شركة الذهبى
Project	: Electric Express Train – HSR From Qous To Arman
Testing Date	: 29 / 1 /2024
Soil type	: Upper Embankment
Location	: ST From 641+200 To 641+400
Level	: - 0.0 M
Report No.	: 143

Compaction test by using Sand – Cone Test Method

ASTM D-1556

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	641+225	1513.2	2.31	6	2.18	98.3%	Comply
2	641+250	1558.3	2.24	5.3	2.13	95.7%	Comply
3	641+275	1535.4	2.26	5.8	2.14	96.4%	Comply
4	641+300	1566.0	2.25	5.8	2.12	95.7%	Comply
5	641+325	1484.7	2.33	5.8	2.21	99.4%	Comply
6	641+350	1513.9	2.30	5.8	2.18	98.1%	Comply
7	641+375	1511.1	2.25	5.8	2.13	95.8%	Comply
8	641+395	1431.3	2.28	5.8	2.16	97.3%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

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$$\frac{1}{2} \left(\frac{1}{2} \right)^{n-1} = \frac{1}{2^n}$$

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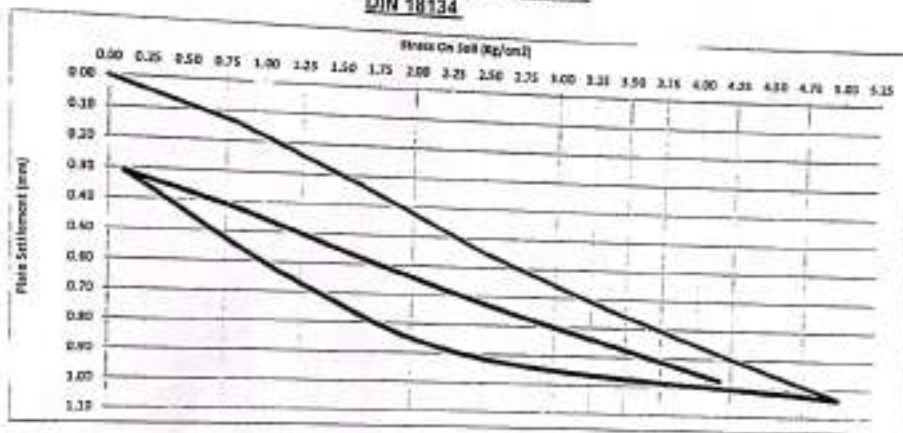
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مكتب معامل الاستشارات الهندسية
مشروعات محافظات الوجه القبلي

Company Name
Project
Test Date
report date
Station
Test No.

شركة القابض للتقنيات والكهرباء
: Electric Express Train - Sector (5) - Quss to Assiut.
: 23/01/2024
: 26/01/2024
: 641+020
: 01

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	588	1172.8	1756.3	2340.8	2925.3	3509.8
Stress (Kg/cm²)	0.00	0.83	1.66	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.14	0.33	0.55	0.73	0.88	1.04

UnLoading (1)	1	2	3	4
Stage(Kg)	3533	1766	884	71
Stress (Kg/cm²)	5.00	2.50	1.250	0.10
Settlement (mm)	1.04	0.82	0.67	0.31

D (mm) =	300	S1 (mm) =	0.33	S2 (mm) =	0.76	ΔS =	0.46
E _{v1} (MPa) =	(0.75 * D * ΔS) / ΔS		95.9				

$$E_{v2}/E_{v1} = 1.40$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	588.395	1172.8	1756.3	2340.8	2925.3
Stress (Kg/cm²)	0.10	0.83	1.66	2.50	3.33	4.17
Settlement (mm)	0.31	0.42	0.53	0.73	0.88	0.98

D (mm) =	300	S1 (mm) =	0.55	S2 (mm) =	0.88	ΔS =	0.33
E _{v2} (MPa) =	(0.75 * D * ΔS) / ΔS		135.7				

E_{v1} = Modulus of deformation during the loading stage.
E_{v2} = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
ΔS = The difference between 0.3 and 0.7 from the maximum loading (mm) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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مكتب معامل الاستشارات الهندسية
مشروعات محافظات الوجه القبلى

Company Name : شركة الذهبى للمقاولات و التوريدات العمومية
Project : Electric Express Train - Sector (5) - Qous to Asment.
Test Date : 23/01/2024
report date : 25/01/2024
Station : 641+020
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils

DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement	Dial 2	Settlement	Average
			mm		mm	
0	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.83	0.17	19.89	0.11	0.14
2	1.66	19.64	0.36	19.69	0.31	0.33
3	2.50	19.43	0.57	19.47	0.53	0.55
4	3.33	19.25	0.75	19.30	0.70	0.73
5	4.17	19.09	0.91	19.14	0.86	0.89
6	5.00	18.94	1.06	18.99	1.01	1.04

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement	Dial 2	Settlement	Average
			mm		mm	
1	2.50	19.06	0.94	19.11	0.89	0.92
2	1.25	19.31	0.69	19.35	0.65	0.67
3	0.100	19.67	0.33	19.71	0.29	0.31

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement	Dial 2	Settlement	Average
			mm		mm	
0	0.83	19.60	0.40	19.55	0.45	0.42
approximately equal	1.66	19.44	0.56	19.40	0.60	0.58
stress is reached.						
2	2.50	19.29	0.71	19.26	0.74	0.73
3	3.33	19.17	0.83	19.13	0.87	0.85
4	4.17	19.04	0.96	19.01	0.99	0.98



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مشروعات محافظات 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 - 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 : Upper Embankment
- Job requiremer : $E_{v2} > 60 \text{ MPa}$

Item	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
date of measurement	: 23/01/2024
Unusual observation made during test	NO
Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle	Second Cycle	E_{v2} / E_{v1} Ratio
	From	To			$E_{v1} \text{ (MPa)}$	$E_{v2} \text{ (MPa)}$	
1	641+000	641+050	: 641+020	: 0.0	95.8	135.7	1.41

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مكتب معامل الاستشارات الهندسية
مشروعات محافظات الوجه القبلي

Company : شركة الذهبى للمطاولات والتوريدات المعمارية
Project : Electric Express Train - Sector (5) - Qous to Arment.
Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements
Test Location : Station 641+000 to 641+030
Station : 641+020
Level : 0.0
Test Date : 23/01/2024
Report Date : 25/01/2024
Type of soil : Upper Embankment
Report No. : 01

Dear Gentleman,

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)
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/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
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 60 %, 25 %, and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) 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.
11. Remove the loads



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مشروعات محافظات الوجه القبلى

Company Name : شركة الأهلي للمقاولات والتوريدات العمومية
Project : Electric Express Train - Sector (S) - Gous to Arment.
Test Date : 23/01/2024
report date : 25/01/2024
Station : 641+080
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils DIN 18134

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.87	0.13	19.79	0.21	0.17
2	1.66	19.66	0.34	19.62	0.38	0.36
3	2.50	19.45	0.55	19.41	0.59	0.57
4	3.33	19.27	0.73	19.23	0.77	0.75
5	4.17	19.08	0.92	19.05	0.95	0.94
6	5.00	18.94	1.06	18.90	1.10	1.08

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
1	2.50	19.04	0.98	18.99	1.01	0.99
2	1.25	19.26	0.74	19.22	0.78	0.76
3	0.100	19.63	0.37	19.59	0.41	0.39

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Average
0	0.83	19.47	0.53	19.43	0.57	0.55
approximately equal	1.66	19.32	0.68	19.28	0.72	0.70
stress is reached.						
2	2.50	19.18	0.82	19.13	0.87	0.85
3	3.33	19.03	0.97	19.00	1.00	0.98
4	4.17	18.91	1.09	18.88	1.12	1.11



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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 : Upper Embankment
- Job requiremer : $E_{v2} > 60 \text{ MPa}$

Item	Descriptions
Type of bedding material below the plate	Natural Soil
Plate Diameter (mm)	300
date of measurement	: 23/01/2024
Unusual observation made during test	NO
Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station		Location	Level (m)	First Cycle	Second Cycle	E_{v2} / E_{v1} Ratio
	From	To			$E_{v1} \text{ (MPa)}$	$E_{v2} \text{ (MPa)}$	
1	641+050	641+100	: 641+080	: 0.0	95.1	130.4	1.37

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Company : شركة الذهب للمقاولات والتوريدات الموسمية

Project : Electric Express Train - Sector (B) - Qous to Arment.
Subject : Determine the deformation and strength characteristics of soil by the
plate loading test according specifications DIN 18134:2012-04 and project requirements
Test Location : Station 641+050 to 641+100
Station : 641+080
Level : 0.0
Test Date : 23/01/2024
Report Date : 26/01/2024
Type of soil : Upper Embankment
Report No. : 01

Dear Gentleman,

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)
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/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
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 60 % , 25 % , and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) 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.
11. Remove the loads



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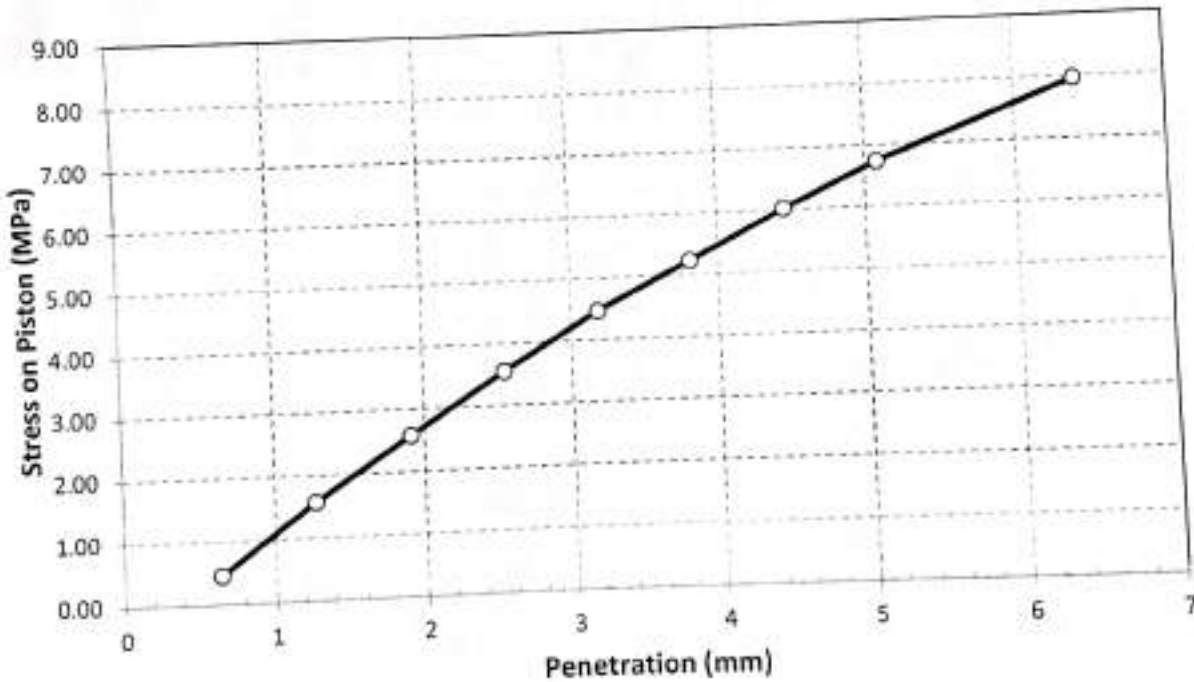
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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Load Penetration Curve of CBR Test ASTM D-1883



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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	0.46
1.27	0.050	1.58
1.91	0.075	2.58
2.54	0.100	3.55
3.18	0.125	4.47
3.81	0.150	5.23
4.45	0.175	6.03
5.08	0.200	6.74
6.35	0.250	7.97

CBR Result	Stress (Mpa)		CBR 100 %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	51.5 %
	6.90	3.55	

Notes:

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of = 2.22 (gm /cm³)
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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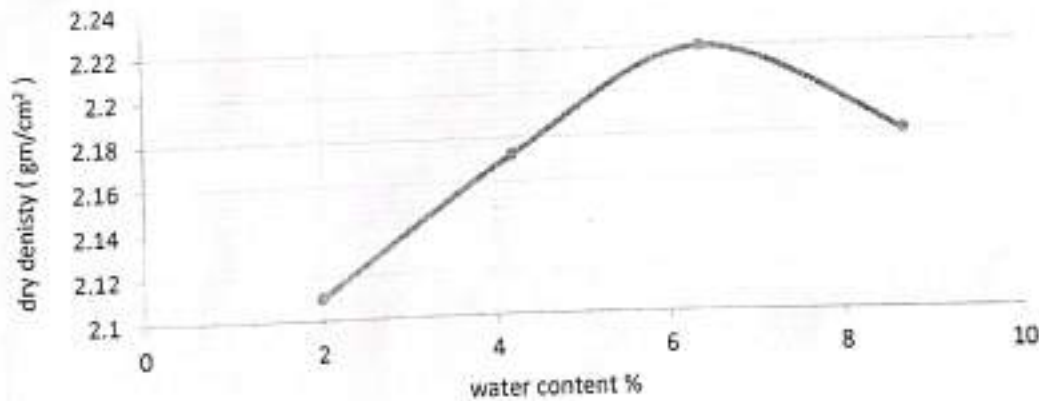
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Company Name : شركة الذهبي
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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



- Max dry density (gm/cm³) : 2.22
- Optimum moisture content % : 6.4 %

Signature /



CEL

Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Soil Classification

TEST	Results (%)	Limits according Projects Specs		
		(A-1-a)	(A-1-b)	(A-2-4)
• Group Classification	(A-1-a)	(A-1-a)	(A-1-b)	(A-2-4)
2.00 mm (No.10).	27.5	Max 50 %	-----	-----
0.425 mm (No. 40).	15.6	Max 30 %	Max 50 %	-----
0.075 mm (No. 200).	9.1	Max 15 %	Max 15 %	Max 15 %
Liquid Limit	-----	-----	-----	-----
Plasticity index	0	Max 6 %	Max 6 %	Max 10 %

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

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Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

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

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مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

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

Test	Results (%)
Percentage of material finer than Sieve Size 75 μ M (No.200)	9.1

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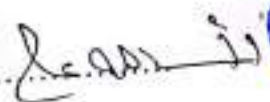


مركز المعايير القياسية
البيانات
البيانات

Company Name : شركة الذهبي
Project : Electric Express Train - HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 08/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

RESULTS OF SIEVE ANALYSIS According to ASTM D-422.

Sieve Size (mm)	Sieve Size (IN)	Passing %
50	2	95.1
37.5	1.5	91.9
25	1	80.7
19	¾	72.2
12.50	½	64.1
9.50	3/8	45.8
4.75	4	34.6
2.00	10	27.5
0.425	40	15.6

Signature /.....  

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تم إعداد التقرير
في 11/1/2024
مكتب معامل الاستشارات الهندسية

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Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train – HSR From Qous To Armant
Location : ST:641+400 E= 492410,088 N=2862759,57
Type of sample : Soil Embankment (Upper Embankment 0.0 M)
Delivery Date : 03/01/2024
Reporting Date : 11/1/2024
Reporting No. : 10-19

Dear Gentleman ,

Attached here with the delivered on 08 / 01 / 2024

This sample is representative for 5.000 M³

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 /

Consultant Eng : Abderrahman Ahmed



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إبراهيم عبد الرحمن
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3 شارع الملك الافضل - القاهرة

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Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company Name : شركة الذهبى
Project : Electric Express Train - HSR From Qous To Armant
Testing Date : 23 / 1 / 2024
Soil type : Upper Embankment
Location : ST From 641+000 To 641+200
Level : - 0.0 M
Report No. : 139

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

Test #	Station	Test Hole Volume cm ³	Bulk Density gm/ cm ³	Moisture Content %	Dry Density (gm/ cm ³)	Degree of Compaction (%)	Acceptance
1	641+025	1465.3	2.27	5.3	2.15	97.0%	Comply
2	641+050	1527.8	2.25	5	2.14	96.4%	Comply
3	641+075	1575.0	2.29	5.3	2.18	98.1%	Comply
4	641+100	1660.4	2.26	5.8	2.13	96.0%	Comply
5	641+125	1575.0	2.29	5.8	2.16	97.3%	Comply
6	641+150	1667.4	2.22	5.3	2.11	94.9%	Comply
7	641+175	1552.8	2.26	5.3	2.15	96.7%	Comply
8	641+198	1515.3	2.28	5.8	2.16	97.1%	Comply

Degree of compaction based on proctor test dated At

Max. dry density = 2.22 gm/cm³

At optimum moisture content = 6.4 %

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